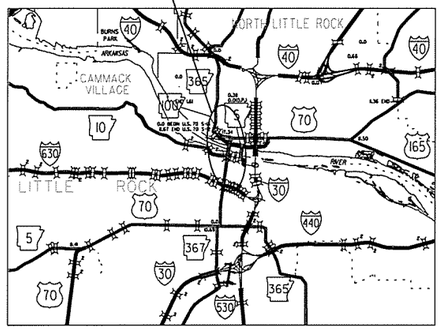
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7-9-14				6	ARK.			
				JOB NO.		061275	1	505
				(2) ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)				

PROJECT LOCATION



VICINITY MAP

BRIDGE CONSTRUCTION DATA

(1) STA. 103+33.92 BRIDGE END
BRIDGE NO. 07292 OVER ARKANSAS RIVER
869'-0" COMP. PLATE GIRDER UNITS &
896'-0" TIED ARCH UNIT
52'-0" CLEAR ROADWAY
1767'-2 1/16" BRIDGE LENGTH
STA. 121+01.09 BRIDGE END

(2) STA. 124+90.37 BRIDGE END
BRIDGE NO. 07293 OVER PEDESTRIAN WALKWAY
2 - 31'-3" SLAB SPANS & 30'-0" SLAB SPAN
74'-0" CLEAR ROADWAY
92'-6" BRIDGE LENGTH
STA. 125+82.87 BRIDGE END

(3) STA. 103+62.27 BRIDGE END
BRIDGE NO. 07294 HWY. 10 ENTRANCE RAMP
225'-0" CONT. COMP. PLATE GIRDER UNIT
31'-0" CLEAR ROADWAY
33° 23'19" RT FORWARD SKEW
226'-1" BRIDGE LENGTH
STA. 105+88.35 BRIDGE END

(4) STA. 102+04.16 BRIDGE END
BRIDGE NO. 07295 OVER ARCH ST.
50'-0" COMP. W-BEAM SPAN
25'-0" CLEAR ROADWAY
22°09'35" LT FORWARD SKEW
52'-3 1/2" BRIDGE LENGTH
STA. 102+56.45 BRIDGE END

(5) STA. 10+53.72 BRIDGE END
BRIDGE NO. 04927 SOUTH SHARED USE RAMP
175'-0" COMP. W-BEAM SPANS &
112'-0" PREFABRICATED ARCH SPAN
16'-0" CLEAR WIDTH
05°08'34" RT FORWARD SKEW
288'-0 3/4" BRIDGE LENGTH
STA. 13+41.76 BRIDGE END

(6) STA. 10+53.53 BRIDGE END
BRIDGE NO. 04926 NORTH SHARED USE RAMP
6 - 75'-0" COMP. W-BEAM SPANS
16'-0" CLEAR WIDTH
02°00'00" LT FORWARD SKEW
451'-0 3/4" BRIDGE LENGTH
STA. 15+04.59 BRIDGE END

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 34°44'56"	N 34°45'10"	N 34°45'25"
LONGITUDE	W 92°16'31"	W 92°16'28"	W 92°16'25"
STATION	100+18.63	115+26.04	130+33.45

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)

PULASKI COUNTY

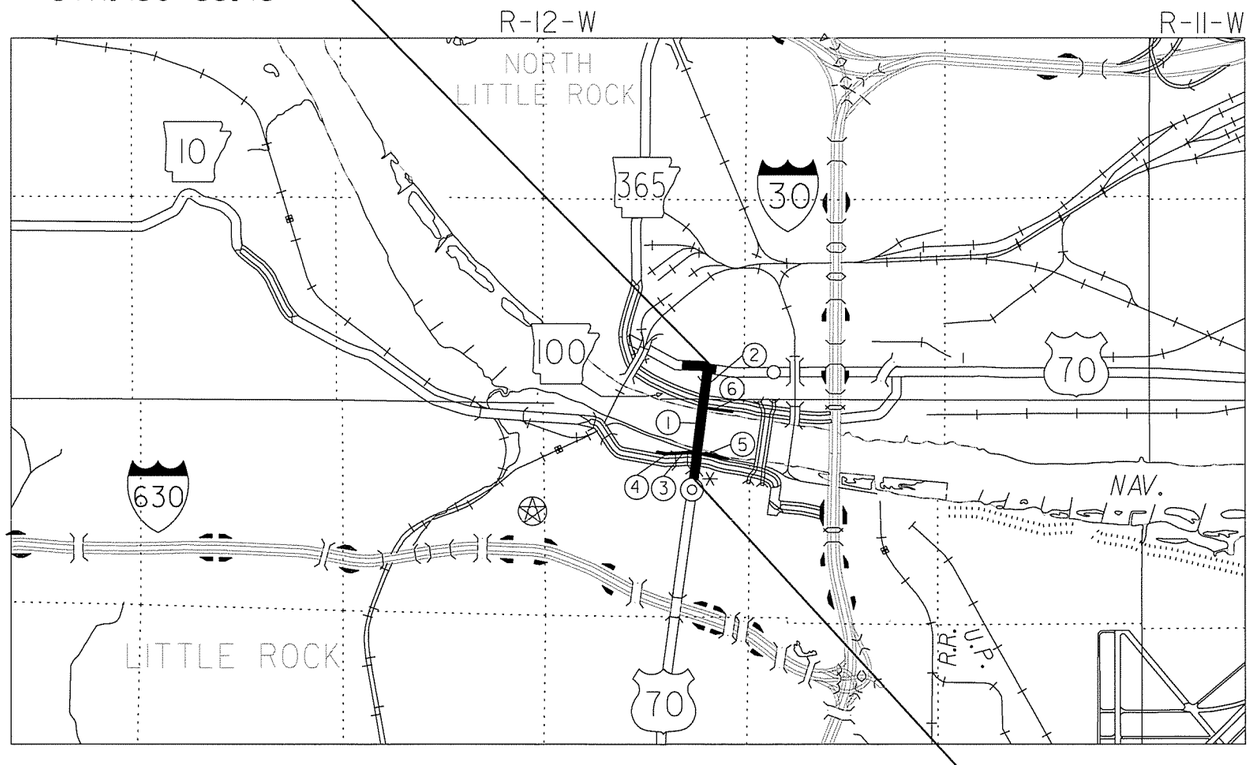
ROUTE 70 SECTION 12

FEDERAL AID PROJECT NHPP-STPF-9253(63)

JOB 061275

NOT TO SCALE

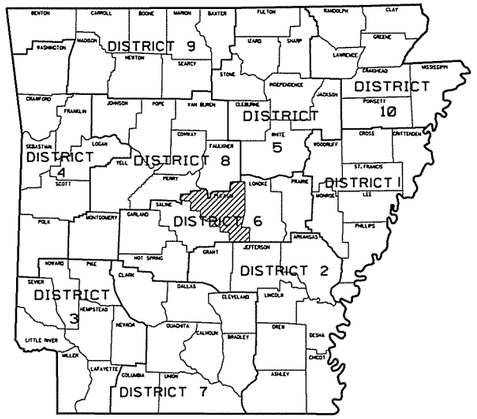
END JOB 061275
STA. 130+33.45



BEGIN JOB 061275
STA. 100+18.63
L.M. 8.35

LENGTH COMPUTED ALONG C.L.

GROSS LENGTH OF PROJECT	3014.82 FEET OR	0.571 MILES
NET LENGTH OF ROADWAY	1155.15 FEET OR	0.219 MILES
NET LENGTH OF BRIDGES	1859.67 FEET OR	0.352 MILES
NET LENGTH OF PROJECT	3014.82 FEET OR	0.571 MILES



ARKANSAS HIGHWAY DISTRICT 6

· DESIGN TRAFFIC DATA · HWY. 70

DESIGN YEAR	2033
2013 ADT	24,501
2033 ADT	30,126
2033 DHV	3,314
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	1%
DESIGN SPEED	40 MPH

GARVER LLC
CERTIFICATE OF AUTHORIZATION
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
7-9-14

P.E. JOB 061275
F.A.P. NON-PART.

JFCantabery 7/15/2014 1:50:59 PM
WORKSPACE: AHTD
\\GlitdC01\201\101080 - Broadway Bridge over the Arkansas River\Drawings\R061275_C0_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	2	505

(2) INDEX OF SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

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REVISED DATE:

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				6	ARK.			
				JOB NO.		061275	3	505

(2) INDEX OF SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

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	NOT USED	54461	
	NOT USED	54462	
	NOT USED	54463	
	NOT USED	54464	
	NOT USED	54465	
	NOT USED	54466	
	NOT USED	54467	
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	NOT USED	54469	
	NOT USED	54470	
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WORKSPACE: ARTD
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REVISED DATES:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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9-10-14				JOB NO.		061275	4	505
				(2)	INDEX OF SHEETS, GOV. SPECS. & GEN. NOTES			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-10-14

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437	CURBING DETAILS	CG-1	11/29/2007
438	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	2/27/2014
439	FLARED END SECTION	FES-1	10/18/1996
440	FLARED END SECTION	FES-2	10/18/1996
441	DETAILS OF DROP INLETS & JUNCTION BOXES	FPC-9	11/16/2001
442	DETAILS OF DROP INLETS (TYPE C)	FPC-9E	8/22/2002
443	DETAILS OF DROP INLET (TYPE MO)	FPC-9M	8/22/2002
444	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	FPC-9S	7/26/2012
445	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1	2/27/2014
446	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1	2/27/2014
447	PAVEMENT MARKING DETAILS	PM-1	9/12/2013
448	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAY	PM-2	9/12/2013
449	SPAN WIRE ASSEMBLY STEEL POLE	SD-3	2/27/2014
450	LOOP DETECTOR INSTALLATION	SD-4	9/12/2013
451	CONTROLLER CABINET UTILITY DRAWER	SD-5	9/12/2013
452	HEAVY DUTY PULL BOX	SD-6	9/12/2013
453	SIGNAL HEAD PLACEMENT	SD-8	9/12/2013
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455	STEEL POLE WITH MAST ARM	SD-11	2/27/2014
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457	U-CHANNEL POST ASSEMBLIES	SHS-2	2/27/2014
458	DETAILS OF SPECIAL ITEMS	SI-1	9/12/2013
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460	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1	12/15/2011
461	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2	9/12/2013
462	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3	10/15/2009
463	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER	TC-4	2/27/2014
464	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER	TC-5	10/15/2009
465	TEMPORARY EROSION CONTROL DEVICES	TEC-1	12/15/2011
466	TEMPORARY EROSION CONTROL DEVICES	TEC-2	6/2/1994
467	TEMPORARY EROSION CONTROL DEVICES	TEC-3	11/3/1994
468	TEMPORARY EROSION CONTROL DEVICES	TEC-4	7/26/2012
469	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS	TR-1	1/12/2000
470	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11/10/2005
471-505	CROSS SECTIONS		

NOTE:
CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
7. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT REMOVED SHALL BE PAID FOR UNDER PAY ITEM 210 - EXCAVATION AND EMBANKMENT, UNLESS OTHERWISE NOTED.

GOVERNING SPECIFICATIONS

ARKANSAS HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 061275
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
620-1	MULCH COVER

GOVERNING SPECIFICATIONS (CONTINUED)

NUMBER	TITLE
JOB 061275	AIRWAY OBSTRUCTION LIGHTING SYSTEM
JOB 061275	ARCHITECTURAL FINISH
JOB 061275	BRIDGE WORK IN NAVIGABLE WATERS
JOB 061275	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 061275	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 061275	CABINET DRAWER ASSEMBLY
JOB 061275	CEMENT-MORTAR LINED AND EPOXY COATED STEEL PIPE
JOB 061275	CEMENT-MORTAR LINED DUCTILE IRON PIPE
JOB 061275	CHANNEL POST SIGN SUPPORT
JOB 061275	CLEARANCE GAUGES
JOB 061275	CONCRETE FOR STRUCTURES
JOB 061275	CONSTRUCTION ADJACENT TO DICKEY STEPHENS PARK
JOB 061275	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 061275	COORDINATION OF WORK
JOB 061275	CRASH CUSHION
JOB 061275	DEMOLITION OF RIVER SPANS
JOB 061275	DETAILS FOR RIVER TRAFFIC SAFETY
JOB 061275	DRILLED SHAFT FOUNDATIONS
JOB 061275	EDGE CARD VIDEO PROCESSOR
JOB 061275	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 061275	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 061275	EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
JOB 061275	ERECTION OF TIED ARCH SPANS
JOB 061275	EXCAVATION AND EMBANKMENT
JOB 061275	EXCAVATION, THRUST BLOCKING, BACKFILLING OF PIPELINE
JOB 061275	FABRICATION OF STRUCTURAL STEEL
JOB 061275	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 061275	HIGH PERFORMANCE PAVEMENT MARKING
JOB 061275	HLMR BEARING ASSEMBLY
JOB 061275	HYDROSTATIC & LEAKAGE TESTING, DISINFECTION OF PIPELINE
JOB 061275	INSPECTION LIGHTING SYSTEM
JOB 061275	LED BLANK OUT SIGN
JOB 061275	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 061275	LED TRAFFIC SIGNAL HEAD
JOB 061275	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 061275	MAINTENANCE OF TRAFFIC
JOB 061275	MANDATORY USE OF INTERNET BIDDING
JOB 061275	MECHANICAL ANCHORAGE OF REINFORCING STEEL
JOB 061275	METAL HANDRAIL
JOB 061275	NAVIGATION LIGHTING SYSTEM
JOB 061275	NESTING SITES OF MIGRATORY BIRDS
JOB 061275	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 061275	PAN-TILT-ZOOM CAMERA SYSTEM
JOB 061275	PARTNERING REQUIREMENTS
JOB 061275	PREFABRICATED STEEL TRUSS
JOB 061275	PROSECUTION AND PROGRESS - CALENDAR DAY CONTRACT WITH CPM
JOB 061275	REMOVABLE PIPE BOLLARDS
JOB 061275	REMOVAL AND DISPOSAL OF FOUNDATIONS AND DECORATIVE LIGHT POLES
JOB 061275	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 061275	RESTRAINING CONDITIONS
JOB 061275	RETAINING WALLS
JOB 061275	RIVER TRAIL COORDINATION
JOB 061275	ROADWAY AND SECURITY LIGHTING SYSTEM
JOB 061275	SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS
JOB 061275	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 061275	SHORING
JOB 061276	SIGN PANEL MATERIALS AND FABRICATION
JOB 061276	SITE USE (A+B+C METHOD) - CALENDAR DAY CONTRACT
JOB 061275	SOIL STABILIZATION
JOB 061275	SPECIAL FACILITIES AT SITE
JOB 061275	SPECIAL REQUIREMENTS FOR WORK NEAR LEVEE
JOB 061275	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES OVER ROADWAYS
JOB 061275	SPLICING REINFORCING STEEL
JOB 061275	STEEL FENCE AND SECURITY GATE
JOB 061275	STORM WATER POLLUTION PREVENTION PLAN
JOB 061275	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 061275	STRUCTURAL HANGERS
JOB 061275	STRUCTURAL STEEL IN ARCH SPANS
JOB 061275	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 061275	SYSTEM LOCAL CONTROLLER
JOB 061275	TEXTURED COATING FINISH
JOB 061275	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 061275	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)
JOB 061275	UTILITY ADJUSTMENTS
JOB 061275	VALUE ENGINEERING
JOB 061275	VIDEO DETECTOR (COLOR)
JOB 061275	WARM MIX ASPHALT
JOB 061275	WATERLINE APPURTENANCES
JOB 061275	WIRE FACE WALLS

INDEX OF SHEETS, GOVERNING SPECIFICATIONS & GENERAL NOTES

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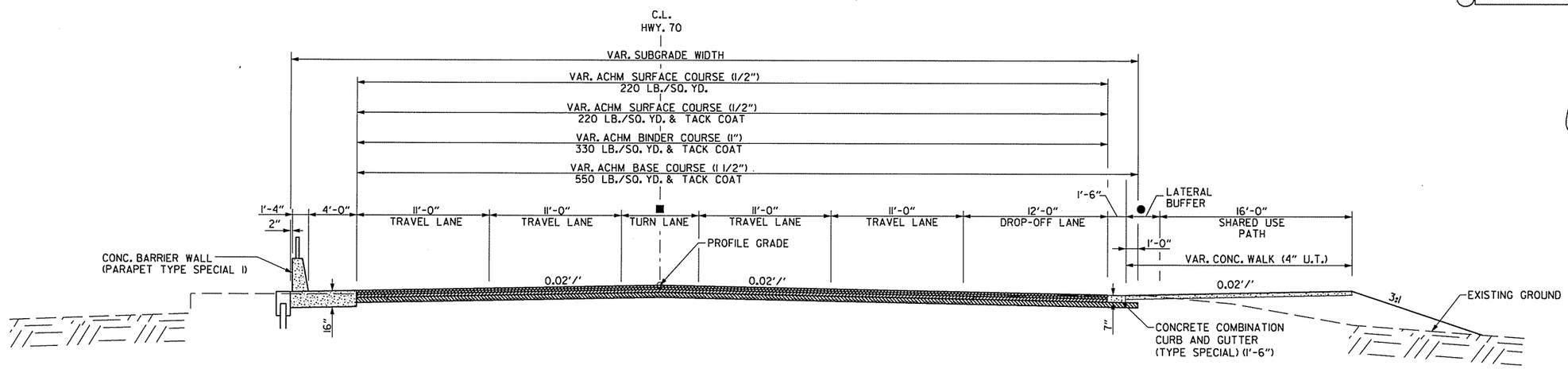
				JOB NO.		061275	5	505

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 70

STA. 101+65.88 TO STA. 102+53.53

■ TRANSITION TURN LANE FROM
6.43' AT STA. 101+65.88 TO
0' AT STA. 102+53.53

● TRANSITION LATERAL BUFFER FROM
4'-3" AT STA. 101+65.88 TO
0' AT STA. 101+90.77

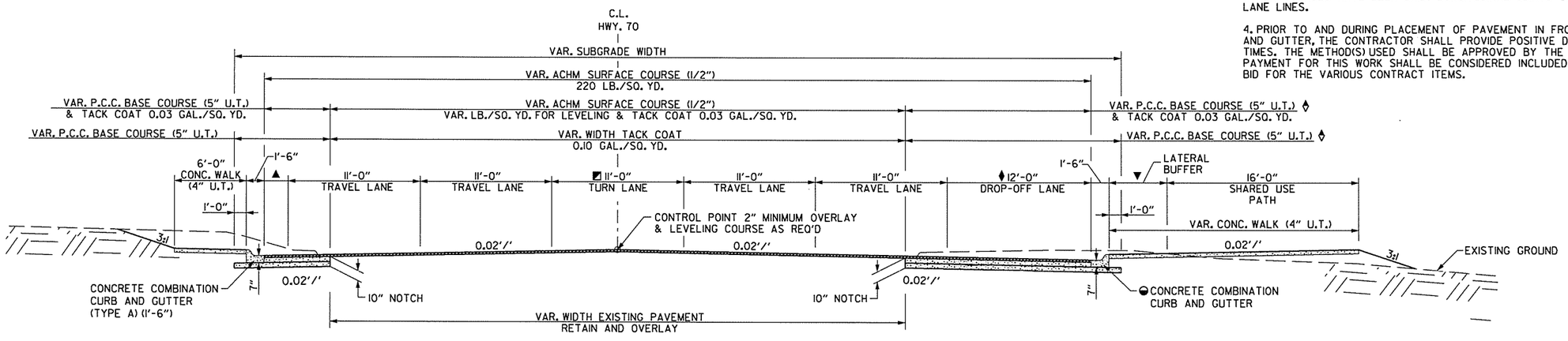
NOTES:

1. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS CONTRACT ITEMS.

2. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT THE LANE LINES.

4. PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



HWY. 70 - NOTCH AND WIDEN

STA. 100+18.63 TO STA. 101+65.88

▲ 0' FROM STA. 100+18.63 TO STA. 101+25.88

TRANSITION FROM
0' AT STA. 101+25.88 TO
4' AT STA. 101+65.88

◩ TRANSITION TURN LANE FROM
11' AT STA. 101+03.53 TO
6.43' AT STA. 101+65.88

▼ 9'-5" FROM STA. 100+18.63 TO STA. 100+53.53

TRANSITION FROM
9'-5" AT STA. 100+53.53 TO
6'-0" AT STA. 101+03.53

TRANSITION FROM
6'-0" AT STA. 101+55.77 TO
4'-3" AT STA. 101+65.88

♦ TRANSITION DROP-OFF LANE FROM
0' AT STA. 100+53.53 TO
12' AT STA. 101+03.53

◊ ONCE NOTCH AREA EXCEEDS 8' IN WIDTH, FULL DEPTH ASPHALT MAY BE UTILIZED AS SHOWN IN TYPICAL ABOVE.

◒ (TYPE A) (1'-6") STA. 100+18.63 TO STA. 101+03.53
(TYPE SPECIAL) STA. 101+03.53 TO STA. 102+53.53

TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTARERY
5-30-14

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WORKSPACE: AHTD
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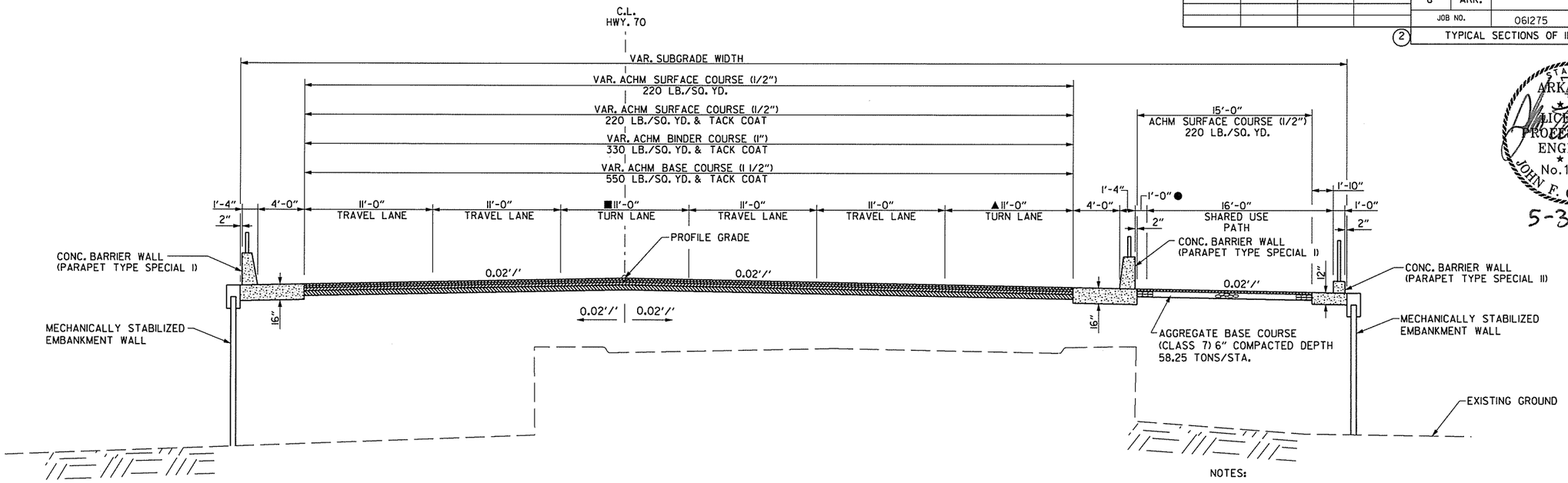
				JOB NO.		061275	6	505

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 70

STA. 123+17.84 TO STA. 124+90.37
STA. 125+82.87 TO STA. 127+00.21

■ TRANSITION TURN LANE FROM 0' AT STA. 123+17.84 TO 11' AT STA. 124+67.84

▲ TRANSITION TURN LANE FROM 0' AT STA. 123+17.84 TO 11' AT STA. 124+67.84

NOTES:

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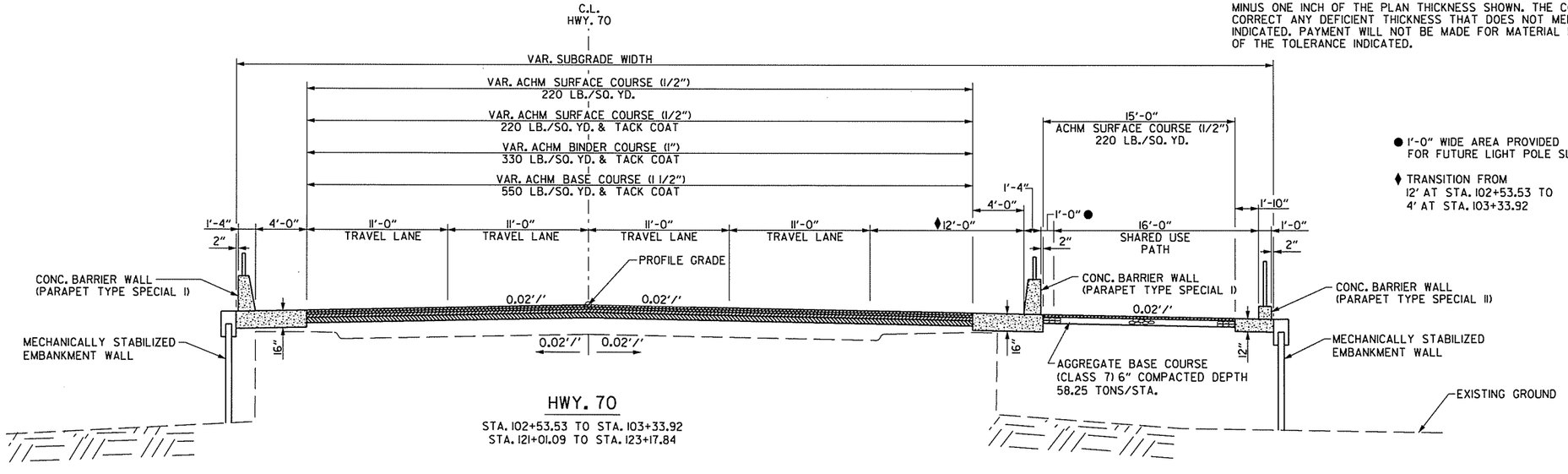
3. PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE BARRIER WALL, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

4. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.



HWY. 70

STA. 102+53.53 TO STA. 103+33.92
STA. 121+01.09 TO STA. 123+17.84

● 1'-0" WIDE AREA PROVIDED FOR FUTURE LIGHT POLE SUPPORT PEDESTALS

♦ TRANSITION FROM 12' AT STA. 102+53.53 TO 4' AT STA. 103+33.92

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

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WORKSPACE: AHTD
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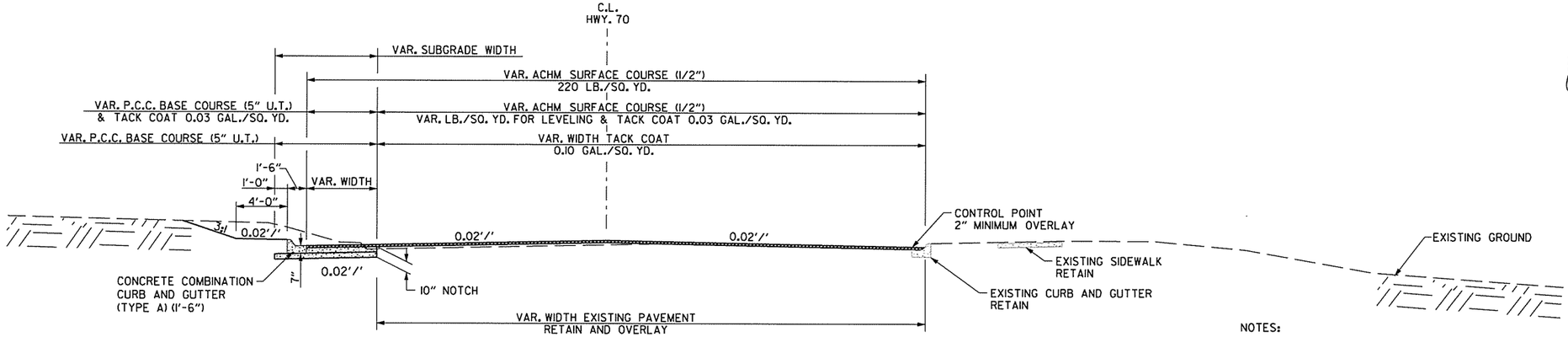
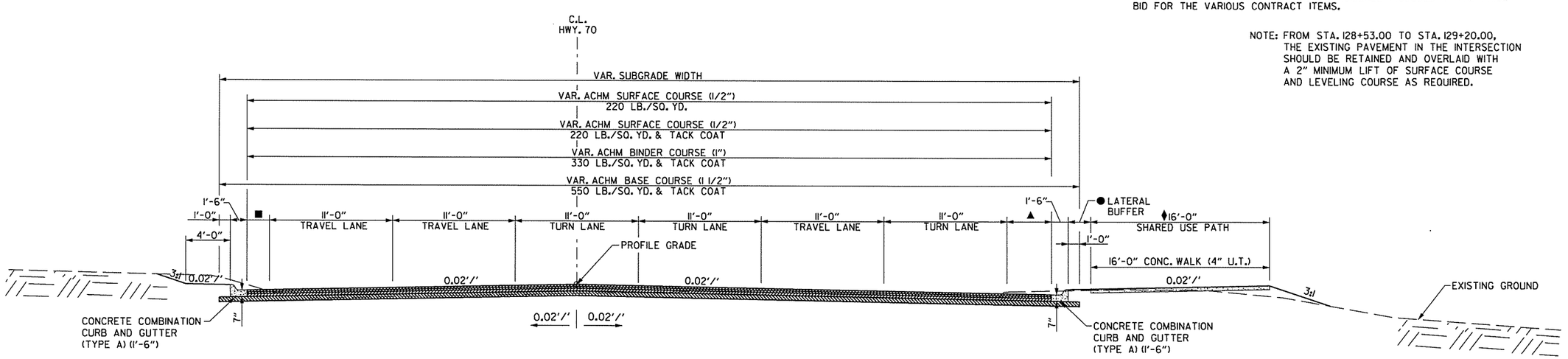


HWY. 70 - NOTCH AND WIDEN

STA. 129+20.00 TO STA. 130+33.45



HWY. 70

STA. 127+00.21 TO STA. 128+53.00

■ TRANSITION FROM
4' AT STA. 127+00.21 TO
0' AT STA. 127+40.21

● TRANSITION LATERAL BUFFER FROM
0' AT STA. 127+00.21 TO
4'-10" AT STA. 127+40.21

▲ TRANSITION FROM
4' AT STA. 127+00.21 TO
0' AT STA. 127+40.21

♦ SEE PLAN AND PROFILE SHEETS
FOR LIMITS OF SHARED USE PATH

NOTES:

1. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS CONTRACT ITEMS.

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NOTE: FROM STA. 128+53.00 TO STA. 129+20.00, THE EXISTING PAVEMENT IN THE INTERSECTION SHOULD BE RETAINED AND OVERLAID WITH A 2" MINIMUM LIFT OF SURFACE COURSE AND LEVELING COURSE AS REQUIRED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

TYPICAL SECTIONS OF IMPROVEMENT

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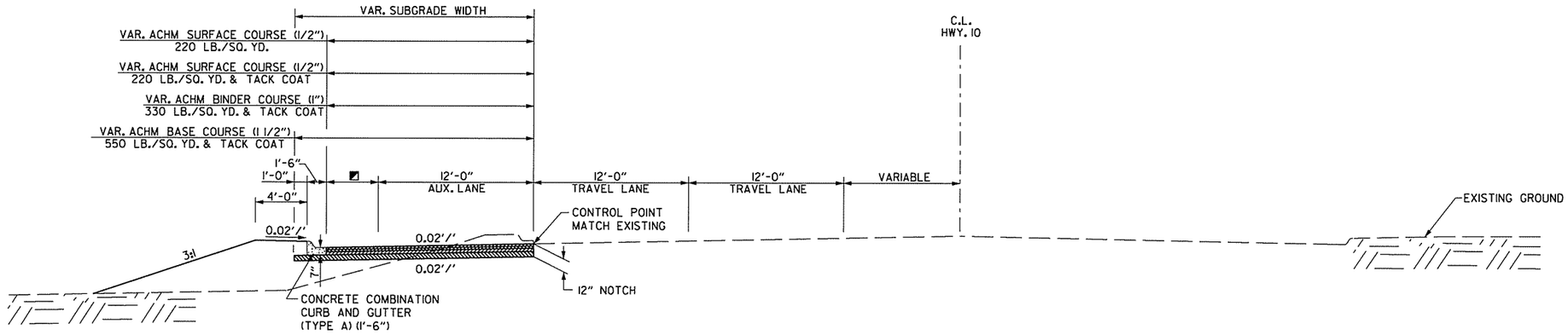

HWY. 10 - NOTCH AND WIDEN

STA. 12+78.74 TO STA. 13+38.74

■ TRANSITION FROM
0' AT STA. 12+78.74 TO
6' AT STA. 13+38.74

NOTES:

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STATE OF ARKANSAS
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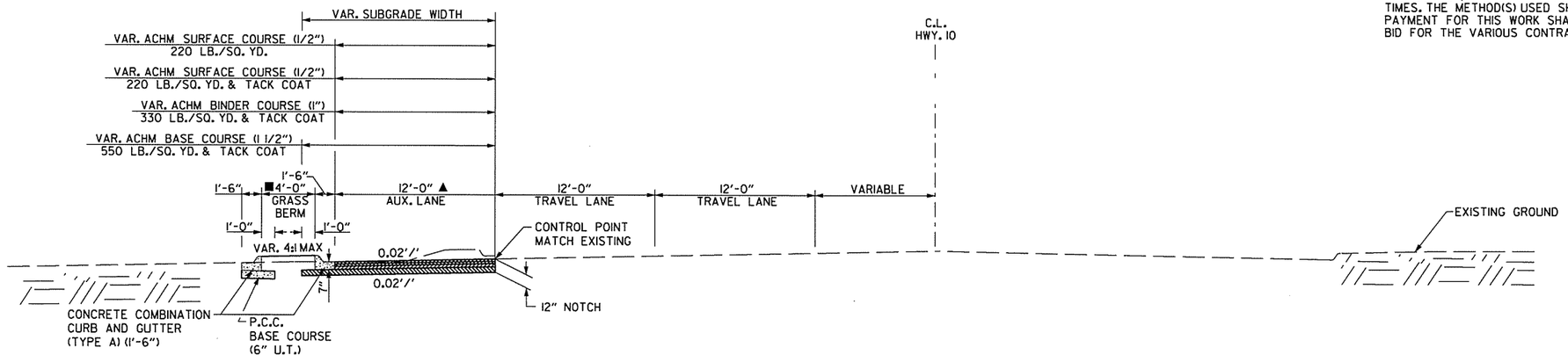

HWY. 10 - NOTCH AND WIDEN

STA. 9+90.73 TO STA. 12+78.74

■ BEGIN GRASS BERM STA. 10+50.25

▲ TRANSITION LANE FROM
0' AT STA. 9+90.73 TO
12' AT STA. 12+40.73

TYPICAL SECTIONS OF IMPROVEMENT

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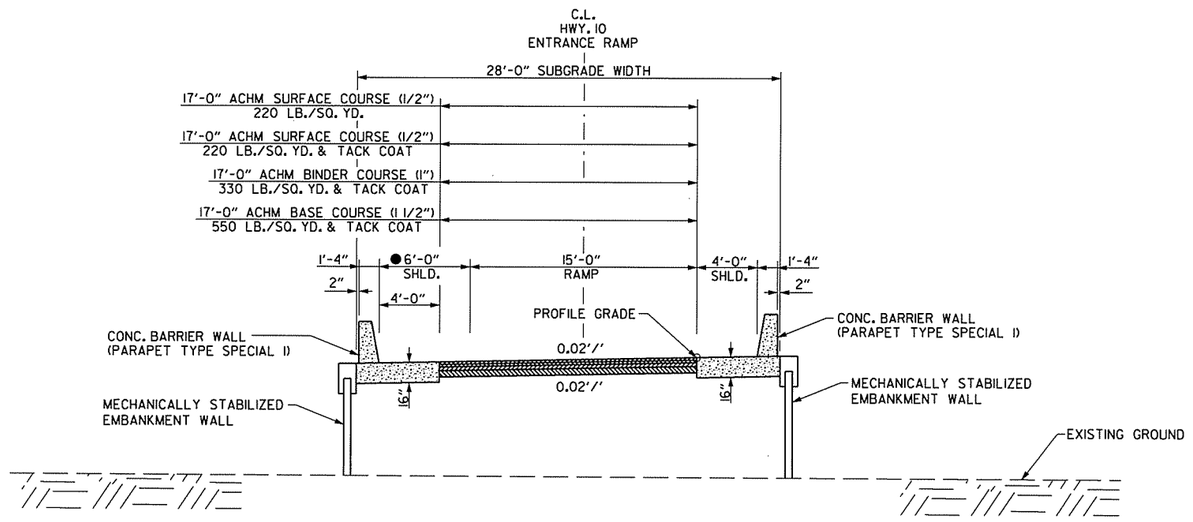
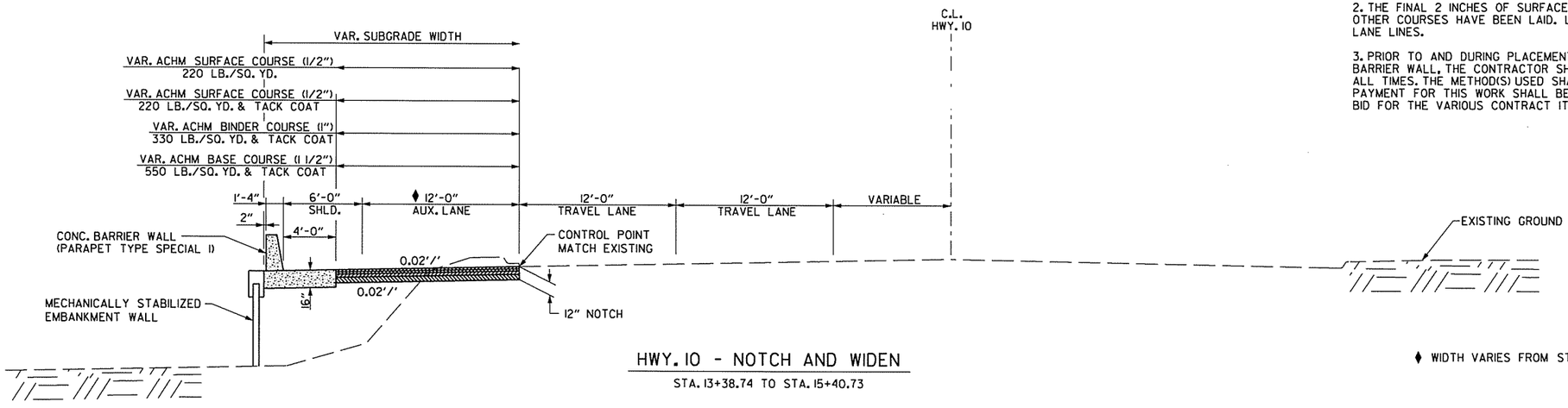


HWY. 10 ENTRANCE RAMP

(SHOWN IN DIRECTION OF STATIONING)

STA. 101+27.54 TO STA. 102+04.16
STA. 102+56.45 TO STA. 103+62.27



HWY. 10 - NOTCH AND WIDEN

STA. 13+38.74 TO STA. 15+40.73

♦ WIDTH VARIES FROM STA. 14+59.17 TO STA. 15+40.73

● TRANSITION SHOULDER FROM
6' AT STA. 102+87.27 TO
12' AT STA. 103+47.27

NOTES:

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STATE OF ARKANSAS
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No. 13422
JOHN F. CANTABERY
5-30-14

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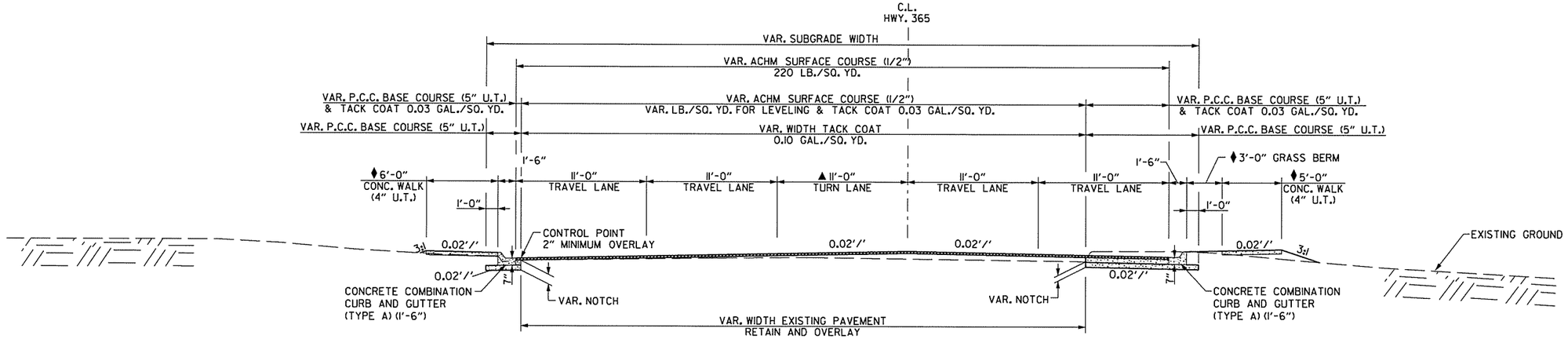

HWY. 365 - NOTCH AND WIDEN

STA. 16+61.36 TO STA. 19+71.85

▲ TRANSITION TURN LANE FROM 0' AT STA. 16+61.36 TO 11' AT STA. 18+26.36

♦ SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF NEW SIDEWALK AND GRASS BERM.

NOTES:

1. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS CONTRACT ITEMS.

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STATE OF ARKANSAS
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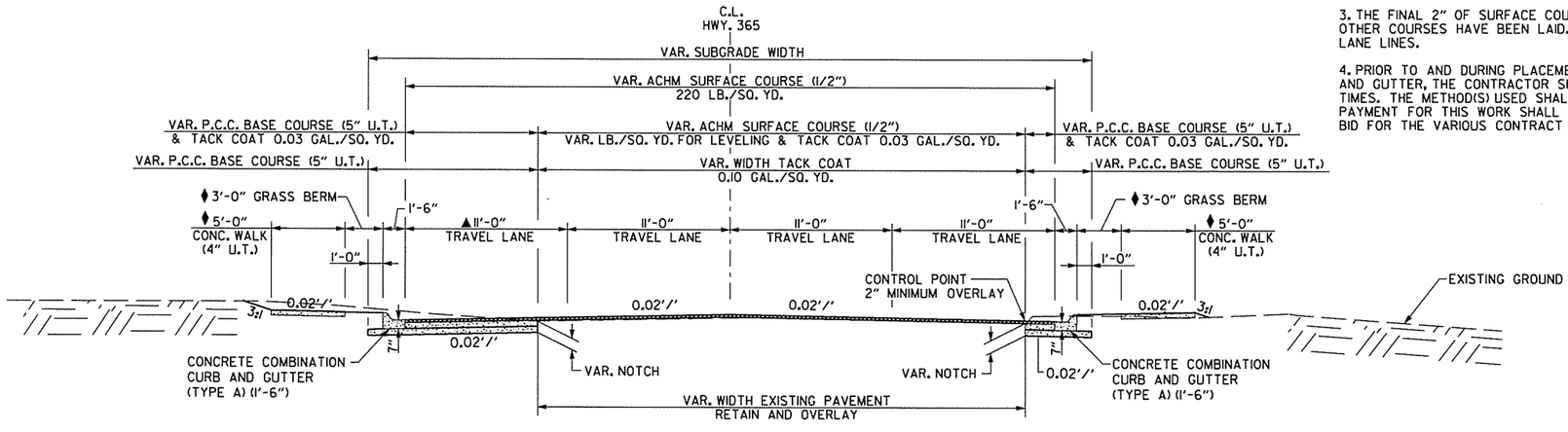
No.13422
JOHN F. CANTABERY
5-30-14



HWY. 365 - NOTCH AND WIDEN

STA. 13+10.00 TO STA. 16+61.36

▲ TRANSITION TRAVEL LANE FROM 0' AT STA. 13+10.00 TO 11' AT STA. 14+75.00

♦ SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF NEW SIDEWALK AND GRASS BERM.

TYPICAL SECTIONS OF IMPROVEMENT

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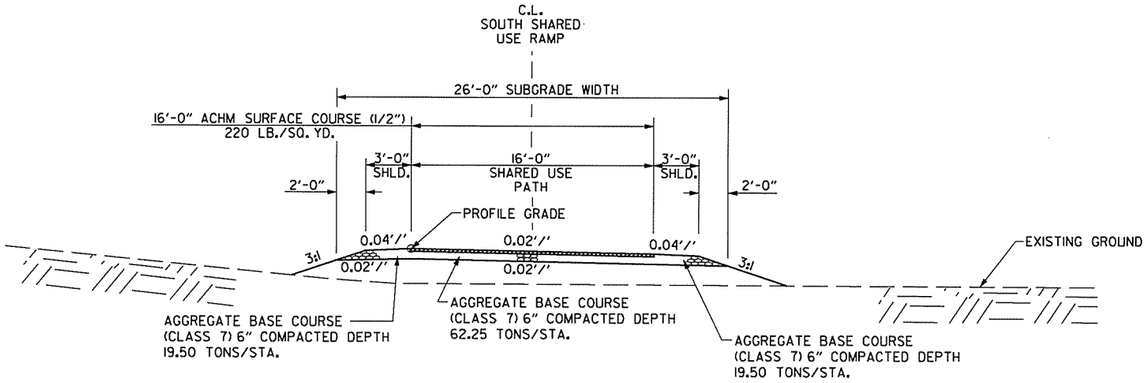
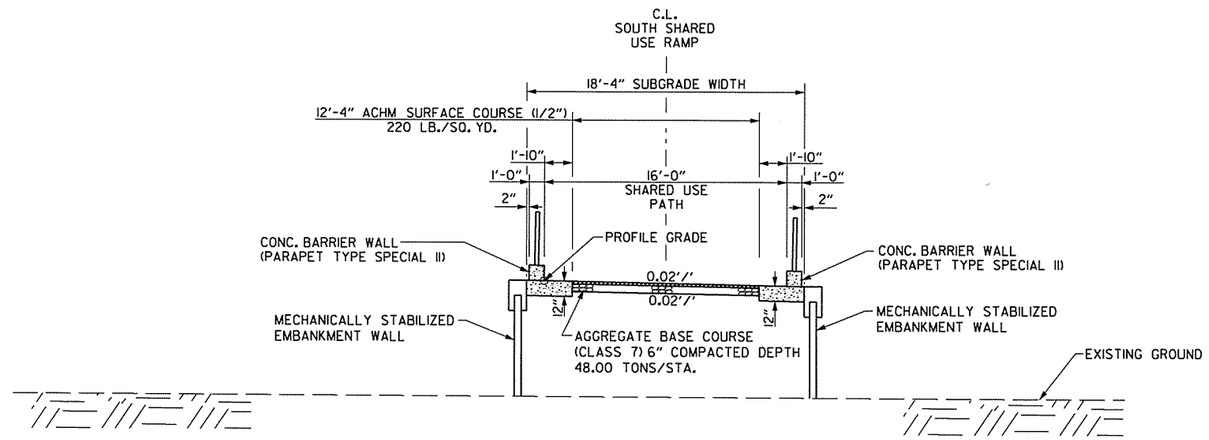


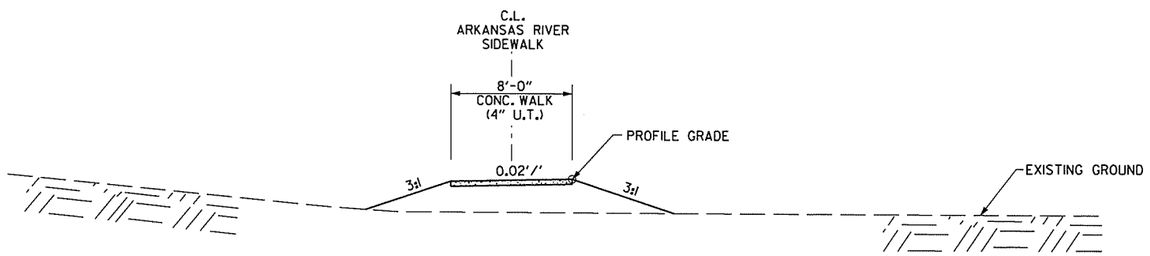
SOUTH SHARED USE RAMP

STA. 15+03.06 TO STA. 15+60.46



SOUTH SHARED USE RAMP

STA. 13+41.78 TO STA. 15+03.06



ARKANSAS RIVER SIDEWALK

STA. 10+06.76 TO STA. 13+47.96

NOTES:

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2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

TYPICAL SECTIONS OF IMPROVEMENT

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REVISED DATE:

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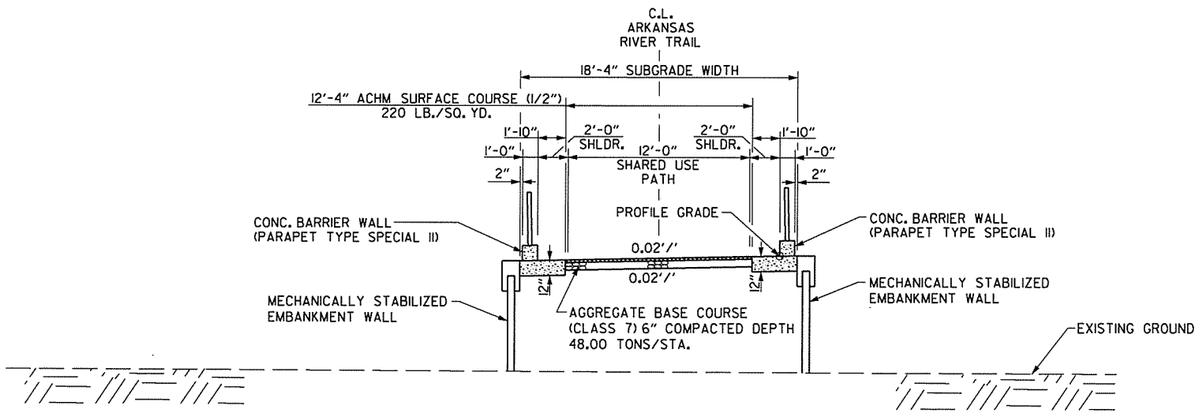
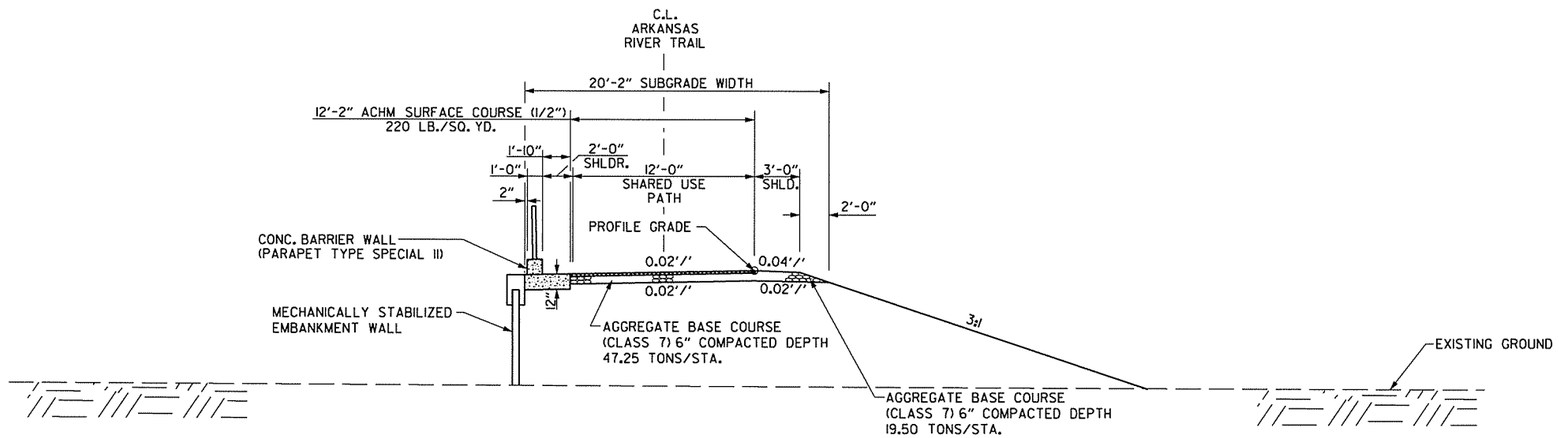


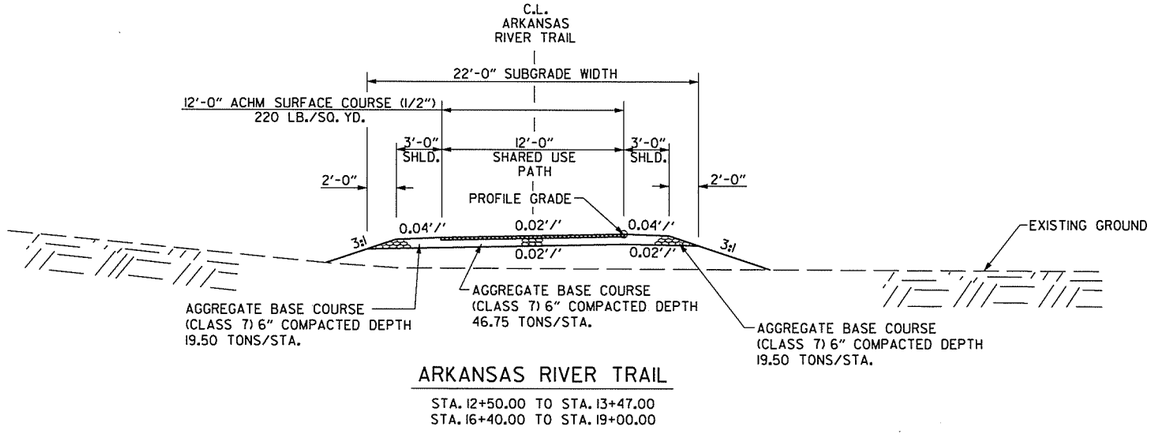
ARKANSAS RIVER TRAIL

STA. 13+90.00 TO STA. 14+80.00



ARKANSAS RIVER TRAIL

STA. 13+47.00 TO STA. 13+90.00
STA. 14+80.00 TO STA. 16+40.00



ARKANSAS RIVER TRAIL

STA. 12+50.00 TO STA. 13+47.00
STA. 16+40.00 TO STA. 19+00.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

TYPICAL SECTIONS OF IMPROVEMENT

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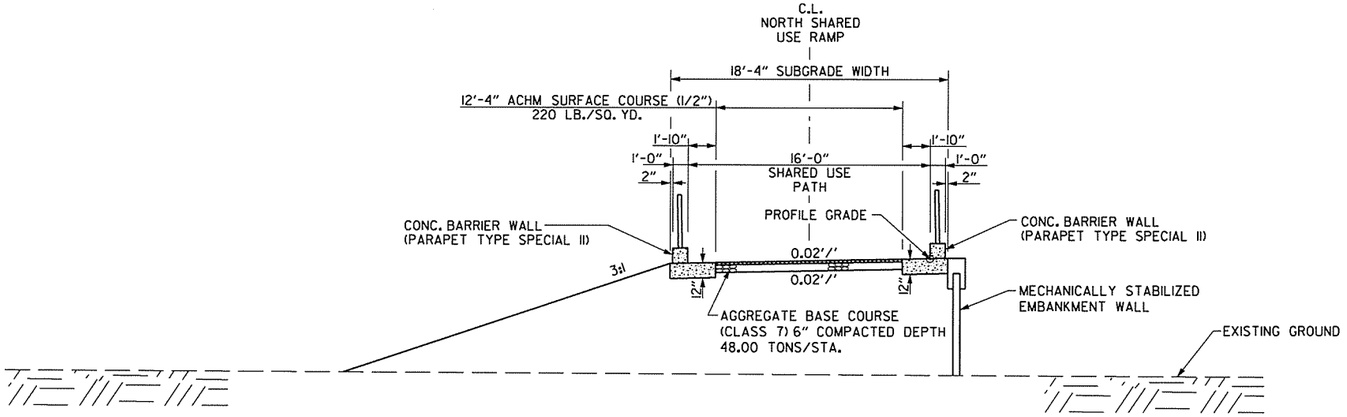
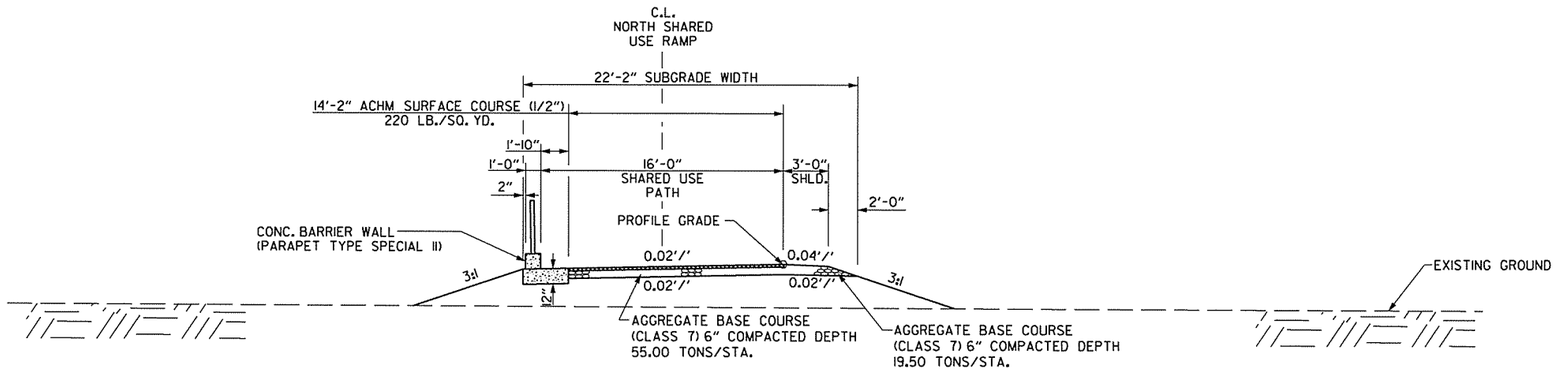
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	13	505
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



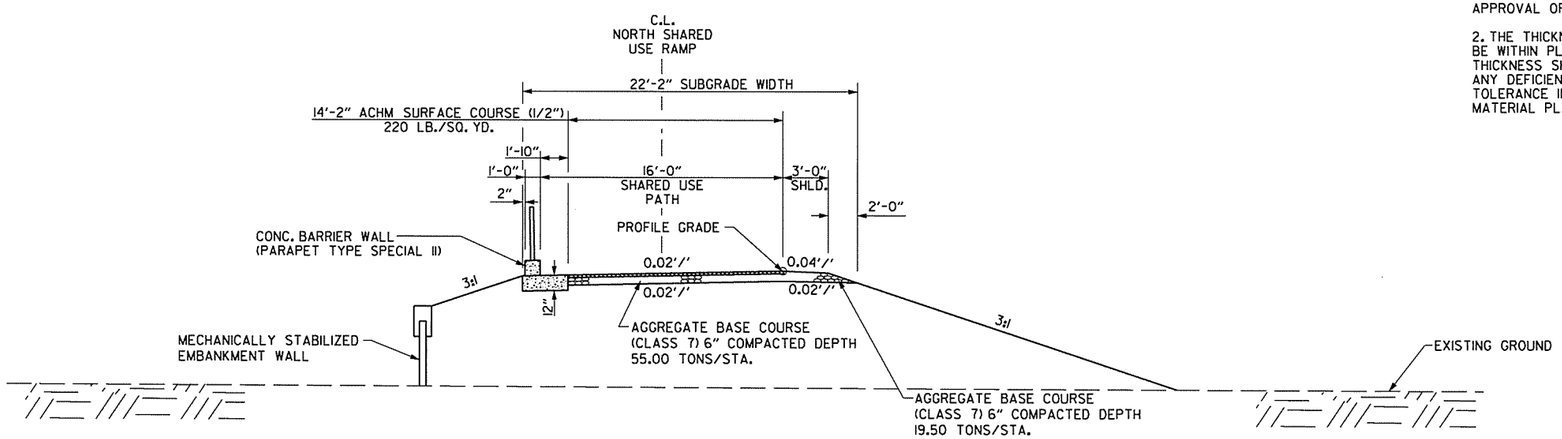
NORTH SHARED USE RAMP

STA. 16+84.00 TO STA. 17+83.38



NORTH SHARED USE RAMP

STA. 16+13.27 TO STA. 16+84.00
STA. 17+83.38 TO STA. 18+26.04



NORTH SHARED USE RAMP

STA. 15+04.59 TO STA. 16+13.27

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

TYPICAL SECTIONS OF IMPROVEMENT

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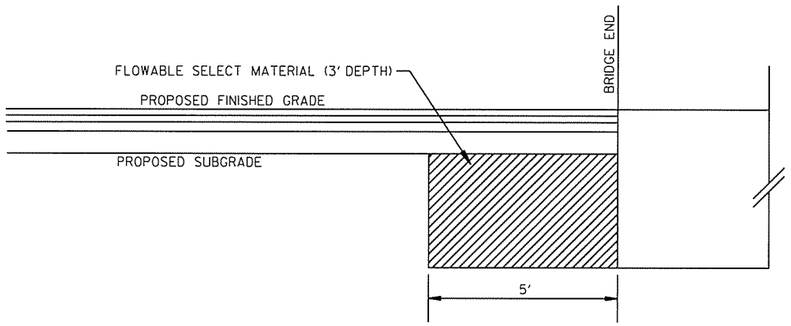
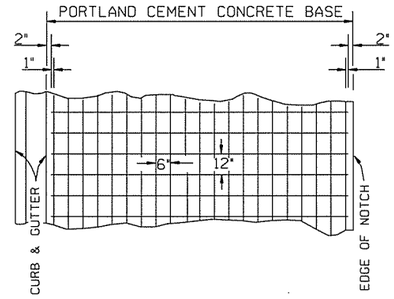
				6	ARK.			
				JOB NO.		061275	14	505
				(2)	SPECIAL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14



FLOWABLE SELECT MATERIAL AT PROPOSED BRIDGE ENDS

NOTE: EXCAVATION FOR PLACING FLOWABLE SELECT MATERIAL WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT SHALL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS BID ITEMS.

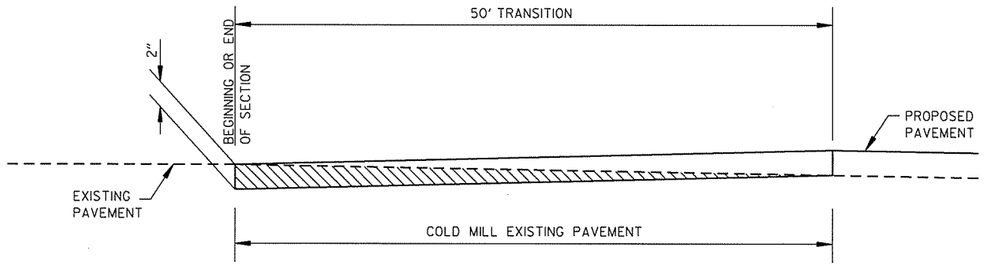


DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)

6"X 12" MESH FABRIC (TYPE 3) (W5.5 x W2.9) = 4.26 LBS./SQ.YD.

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE.



DETAIL FOR TRANSITIONS

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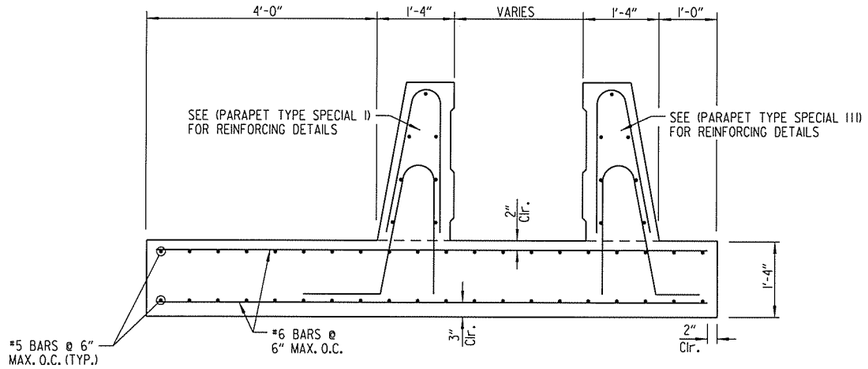
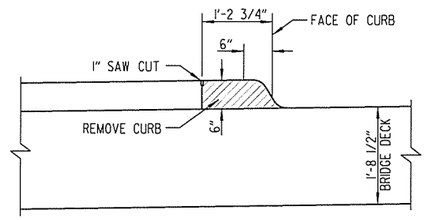
				JOB NO.		061275	15	505

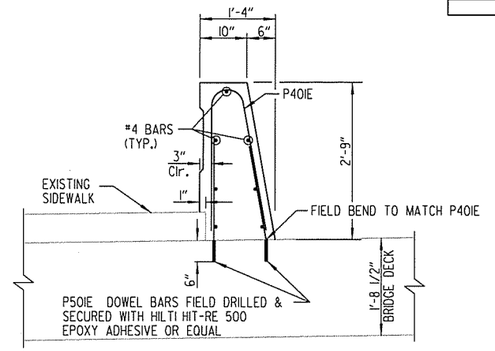
(2) SPECIAL DETAILS



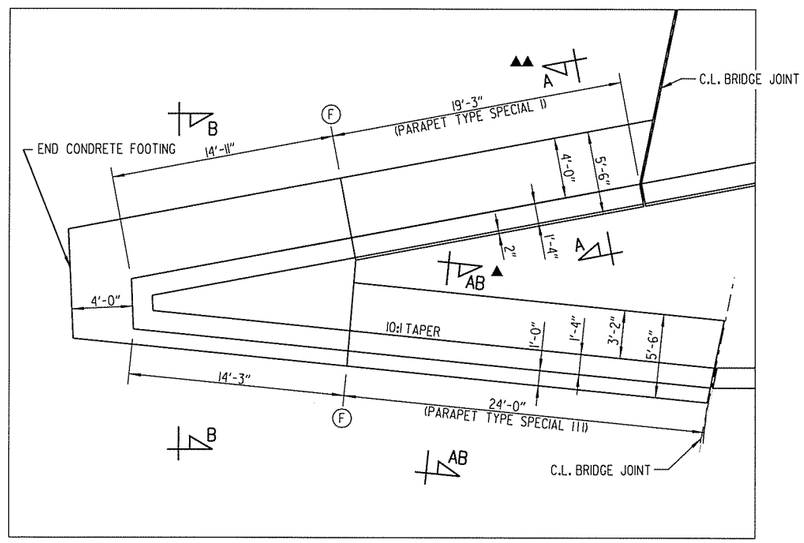
SECTION B-B
SCALE: 3/4" = 1'-0"



CURB REMOVAL DETAIL
SCALE: 3/4" = 1'-0"



BARRIER WALL CONSTRUCTION DETAIL
SCALE: 3/4" = 1'-0"

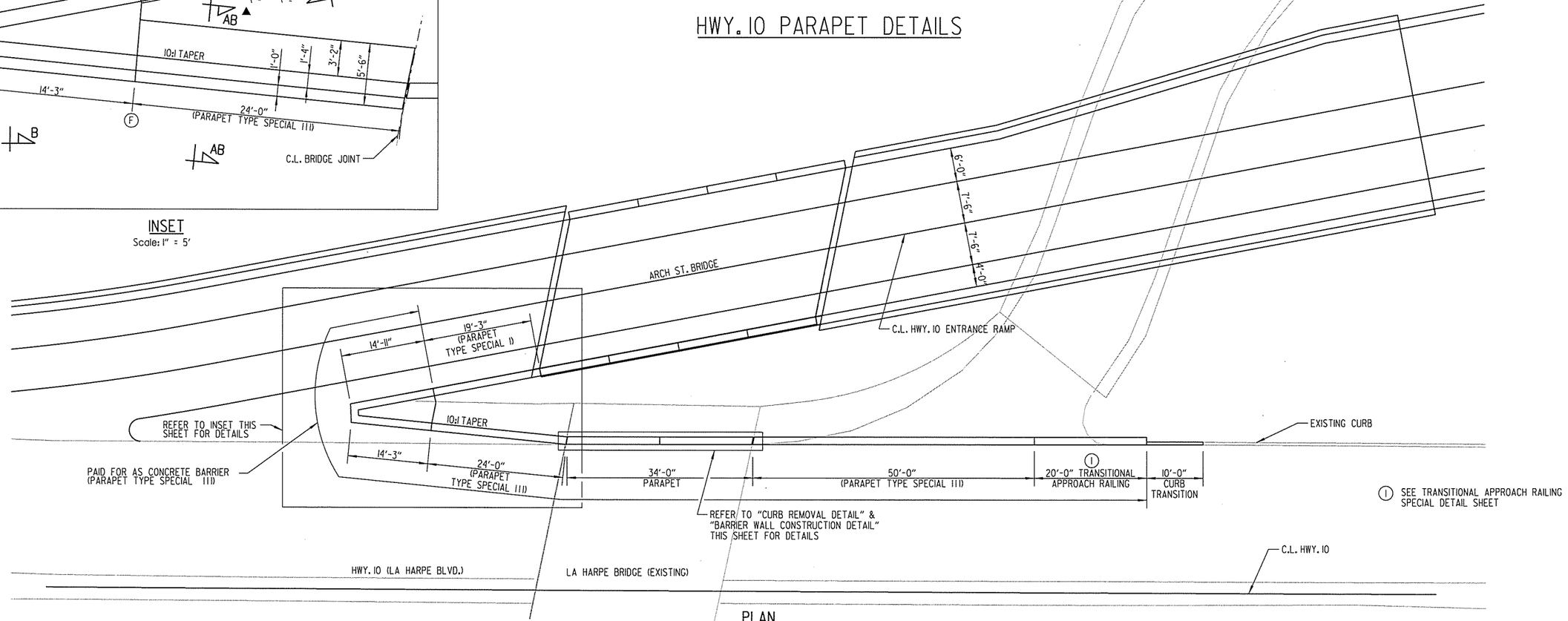


INSET
Scale: 1" = 5'

▲▲ SEE CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I) SPECIAL DETAIL SHEET FOR DETAILS ON SECTION A-A

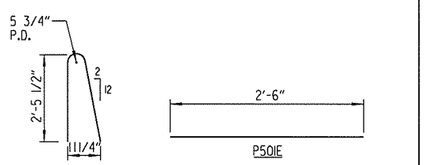
▲ SEE CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL III) SPECIAL DETAIL SHEET FOR DETAILS ON SECTION AB-AB

HWY. 10 PARAPET DETAILS



PLAN
Scale: 1" = 10'

REINFORCING BAR DETAILS



NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

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WORKSPACE: AHTD
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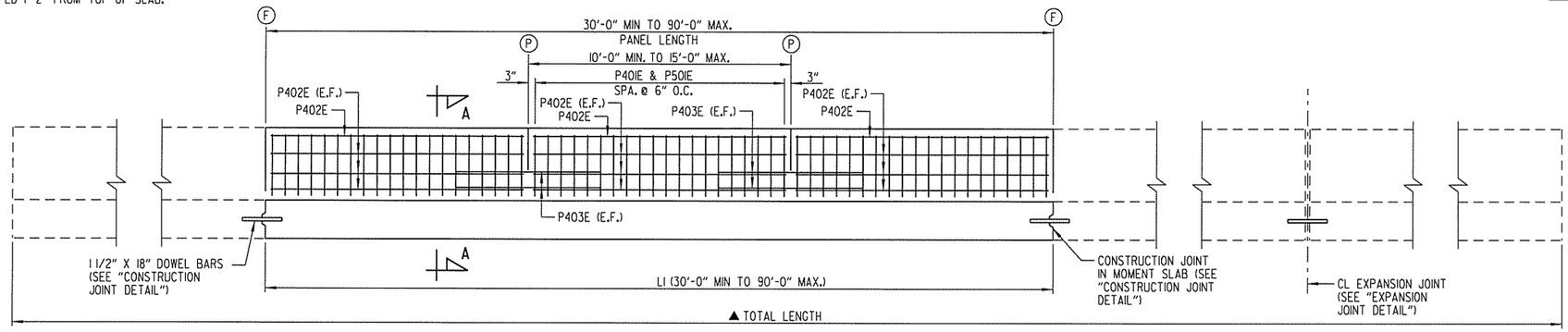
				6	ARK.			
				JOB NO.		061275	16	505
				(2)	SPECIAL DETAILS			

NOTE:
PARAPET JOINTS DESIGNATED WITH SYMBOL (F) SHALL BE STOPPED 4" FROM TOP OF SLAB. ALL OTHER PARAPET JOINTS WITH SYMBOL (P) SHALL BE PARTIAL DEPTH JOINTS STOPPED 1'-2" FROM TOP OF SLAB.



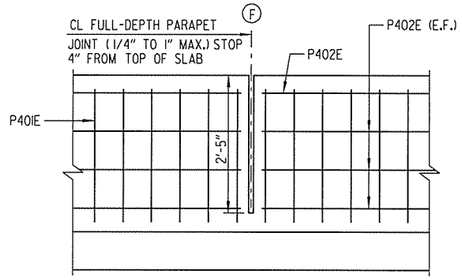
PARAPET AND MOMENT SLAB ELEVATION

SCALE: 3/8" = 1'-0"

▲ WHERE TOTAL LENGTH OF MOMENT SLAB EXCEEDS 200'-0", PROVIDE EXPANSION JOINTS AT SPACING NOT TO EXCEED 200'-0".

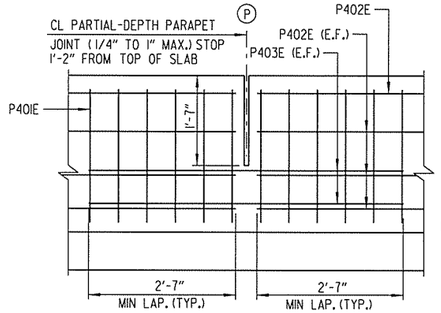
GENERAL NOTES

1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
2. CONCRETE USED FOR PARAPET CONSTRUCTION OF MOMENT SLAB (FOOTING) SHALL BE CLASS S(AE).
3. ALL REINFORCING STEEL SHALL BE AASHTO M31 OR M322, TYPE A (GRADE 60) AND SHALL BE EPOXY COATED.
4. ALL COST ASSOCIATED WITH THE CONSTRUCTION OF THE PARAPET AND MOMENT SLAB (FOOTING) INCLUDING CONCRETE, REINFORCING STEEL, JOINT MATERIAL & DOWEL BARS SHALL BE INCLUDED IN THE LINEAR FOOT COST OF CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I).
5. WHERE REQUIRED, ALL COST ASSOCIATED WITH CONSTRUCTION OF METAL HANDRAILING SHALL BE INCLUDED IN THE LINEAR FOOT COST OF METAL HANDRAILING (TYPE HI).



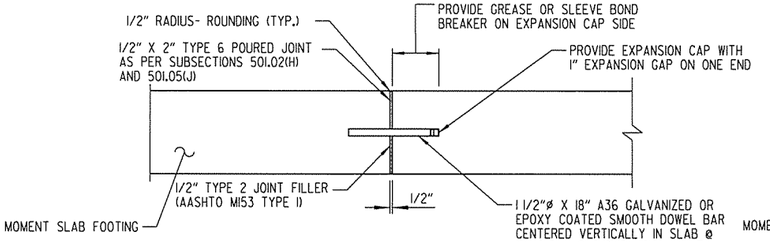
PARAPET REINFORCING (FULL DEPTH JOINTS)

SCALE: 3/4" = 1'-0"



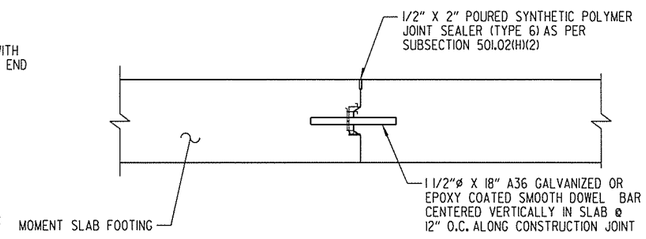
PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

SCALE: 3/4" = 1'-0"



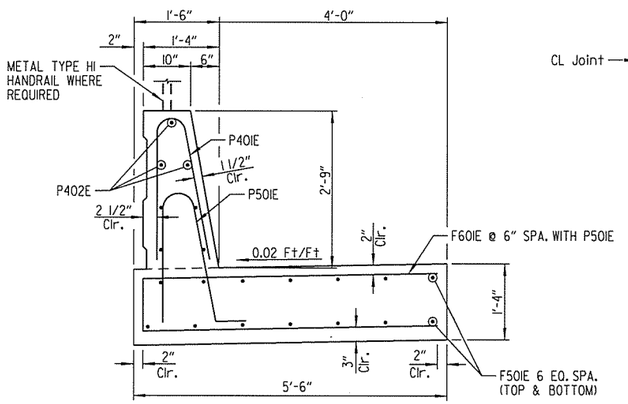
EXPANSION JOINT DETAIL

SCALE: 3/4" = 1'-0"



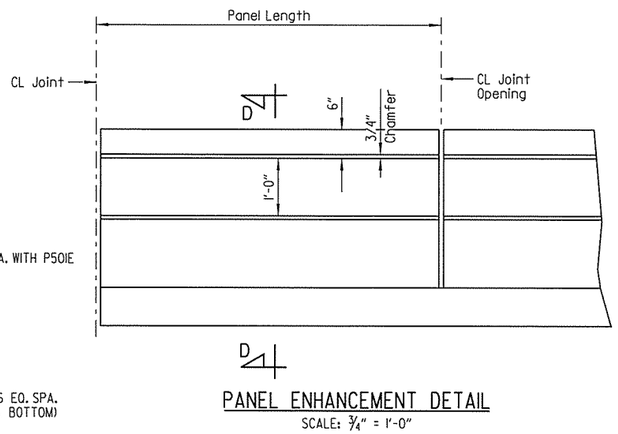
CONSTRUCTION JOINT DETAIL

SCALE: 3/4" = 1'-0"



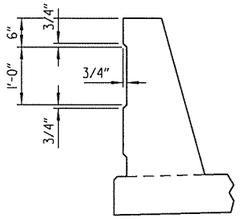
SECTION A-A

SCALE: 3/4" = 1'-0"



PANEL ENHANCEMENT DETAIL

SCALE: 3/4" = 1'-0"

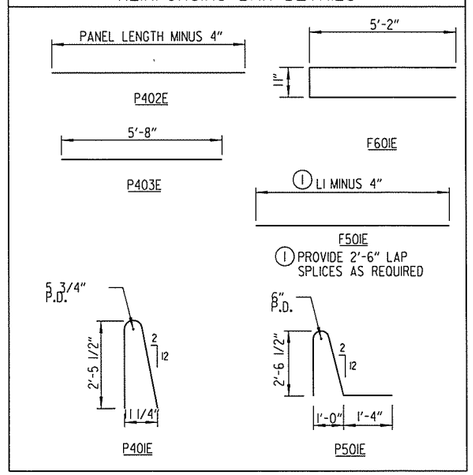


SECTION D-D

SCALE: 3/4" = 1'-0"

NOTE:
CONCRETE FORM LINER ON BACK FACE OF PARAPET SHALL BE INCLUDED ON PARAPETS LOCATED BETWEEN THE ROADWAY AND SHARED USE PATH ON HWY. 70. SEE BRIDGE SHEETS FOR FORM LINER DETAILS. PARAPET PANEL ENHANCEMENT SHALL BE USED AT ALL OTHER LOCATIONS. SEE THIS SHEET FOR DETAILS.

REINFORCING BAR DETAILS



NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

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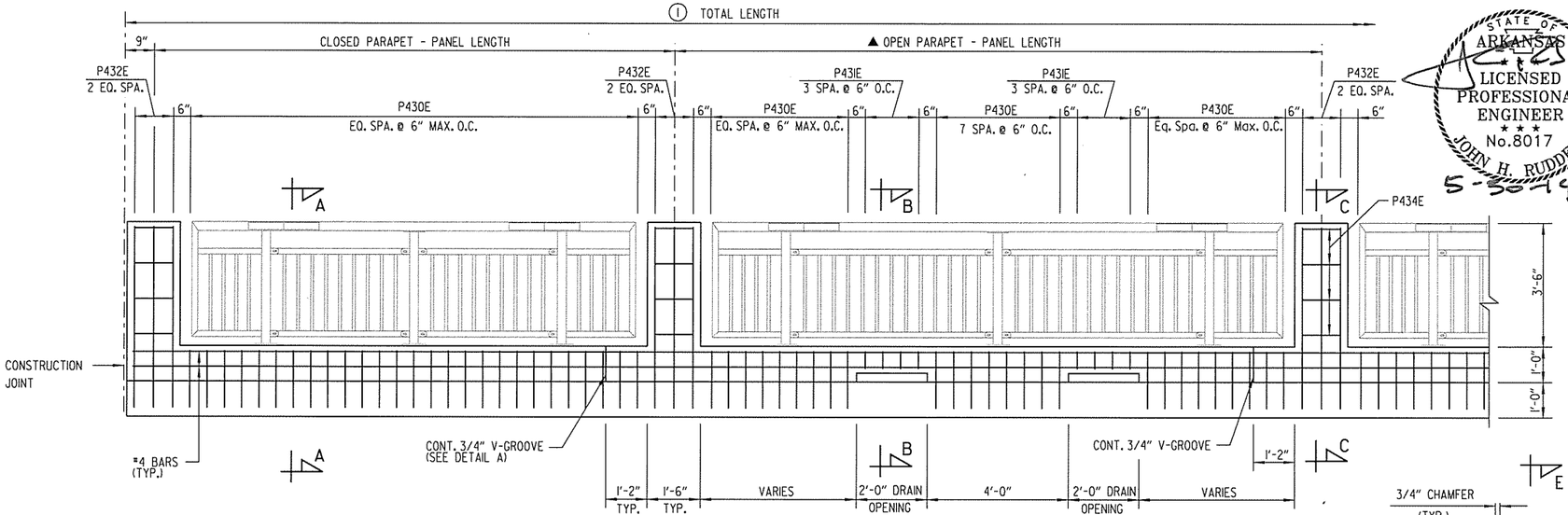
				6	ARK.			
				JOB NO.		061275	17	505

(2) SPECIAL DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No. 8017
JOHN H. RUDDELL
5-30-14

NOTE:
OPEN AND CLOSED PARAPET PANELS SHALL BE 18'-4" FROM CL TO CL OF CONCRETE PEDESTALS MEASURED ALONG THE INSIDE FACE OF THE PARAPET. DIMENSIONS OF PANELS MAY BE ADJUSTED AT THE ENDS OF THE PEDESTRIAN WALL TO ACCOUNT FOR VARIOUS OVERALL LENGTHS.

(1) WHERE TOTAL LENGTH EXCEEDS 200', PROVIDE EXPANSION JOINT AT 200' MAX.

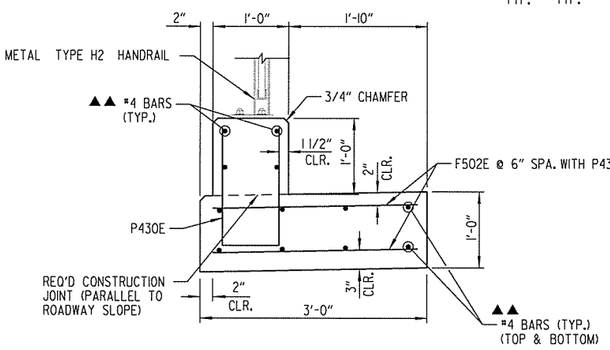
GENERAL NOTES

1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
2. CONCRETE USED FOR PARAPET CONSTRUCTION OF MOMENT SLAB (FOOTING) SHALL BE CLASS S(AE).
3. ALL REINFORCING STEEL SHALL BE AASHTO M31 OR M322, TYPE A (GRADE 60) AND SHALL BE EPOXY COATED.
4. ALL COST ASSOCIATED WITH THE CONSTRUCTION OF THE PARAPET AND MOMENT SLAB (FOOTING) INCLUDING CONCRETE, REINFORCING STEEL, JOINT MATERIAL & DOWEL BARS SHALL BE INCLUDED IN THE LINEAR FOOT COST OF CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL II).
5. ALL COST ASSOCIATED WITH METAL HANDRAIL SHALL BE INCLUDED IN THE LINEAR FOOT COST OF METAL HANDRAIL (TYPE H2).

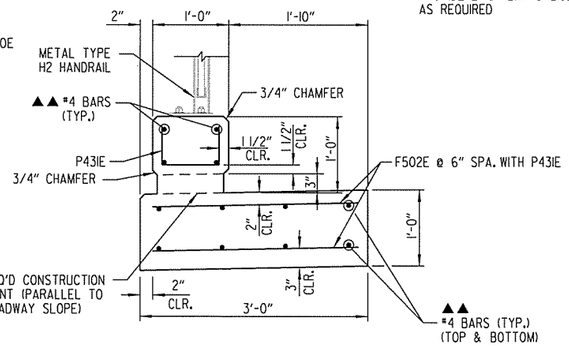
PARAPET ELEVATION
SCALE: 1/2" = 1'-0"

▲ CENTER DRAIN OPENINGS AT NORTH PEDESTRIAN RAMP STA. 17+50.00.

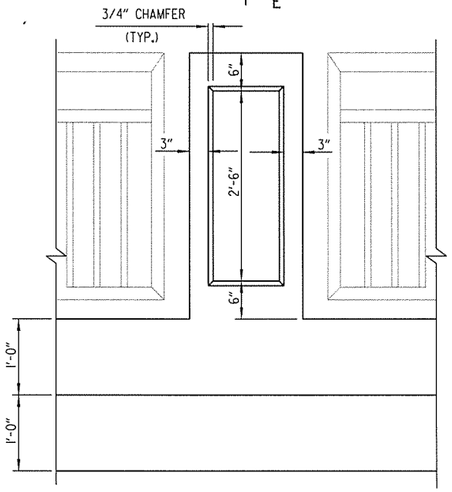
▲▲ PROVIDE 2'-6" LAP SPLICES AS REQUIRED



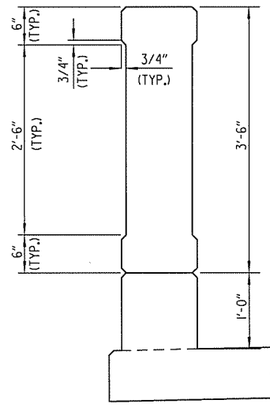
SECTION A-A
SCALE: 1" = 1'-0"



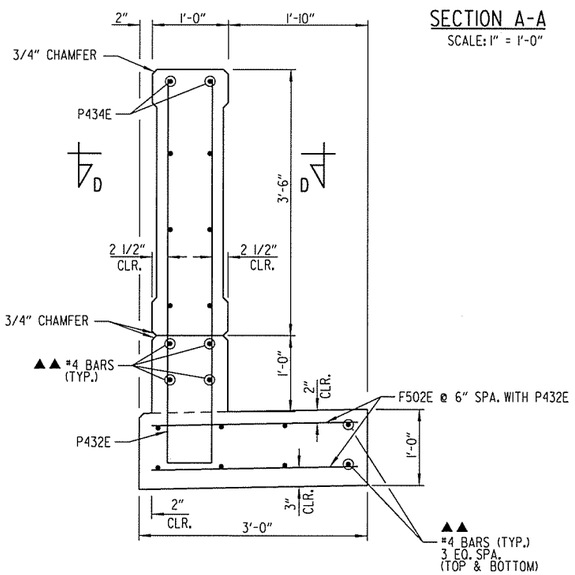
SECTION B-B
SCALE: 1" = 1'-0"



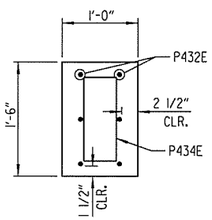
PEDESTAL ENHANCEMENT DETAIL
SCALE: 1" = 1'-0"



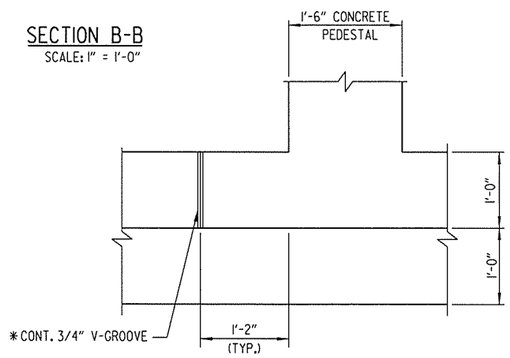
SECTION E-E
SCALE: 1" = 1'-0"



SECTION C-C
SCALE: 1" = 1'-0"



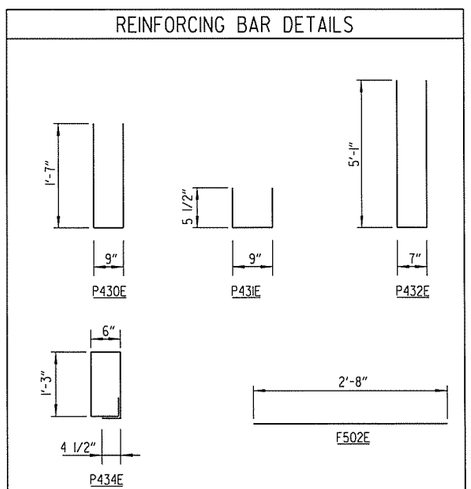
SECTION D-D
SCALE: 1" = 1'-0"



DETAIL A
SCALE: 1" = 1'-0"

* NOTE:
3/4" V-GROOVE SHALL BE CONTINUOUS ON INSIDE FACE, TOP, & OUTSIDE FACE OF PARAPET. ONE V-GROOVE JOINT SHALL BE PLACED AT EACH PARAPET PANEL.

REINFORCING BAR DETAILS



NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL II)

SPECIAL DETAILS

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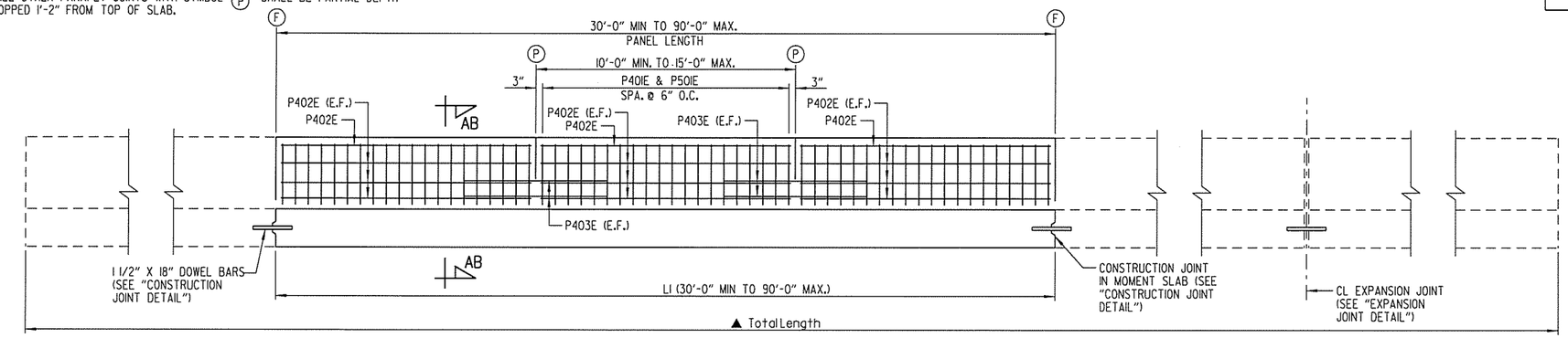
				6	ARK.			
				JOB NO.		061275	18	505

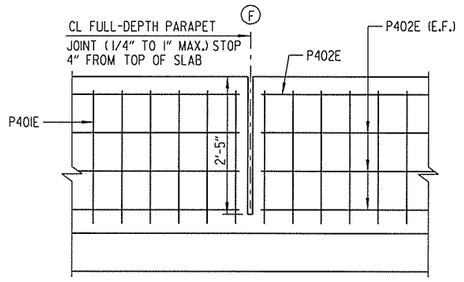
(2) SPECIAL DETAILS

NOTE:
PARAPET JOINTS DESIGNATED WITH SYMBOL (F) SHALL BE STOPPED 4" FROM TOP OF SLAB. ALL OTHER PARAPET JOINTS WITH SYMBOL (P) SHALL BE PARTIAL DEPTH JOINTS STOPPED 1'-2" FROM TOP OF SLAB.

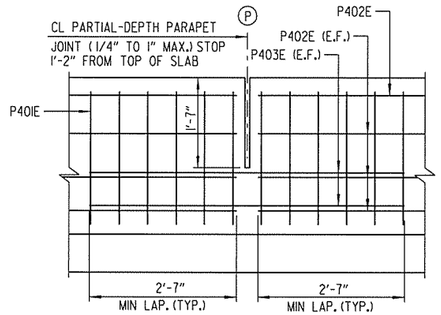


PARAPET AND MOMENT SLAB ELEVATION
SCALE: 3/8" = 1'-0"

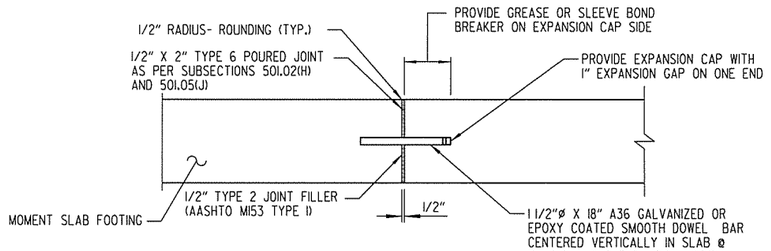
▲ WHERE TOTAL LENGTH OF MOMENT SLAB EXCEEDS 200'-0", PROVIDE EXPANSION JOINTS AT SPACING NOT TO EXCEED 200'-0".



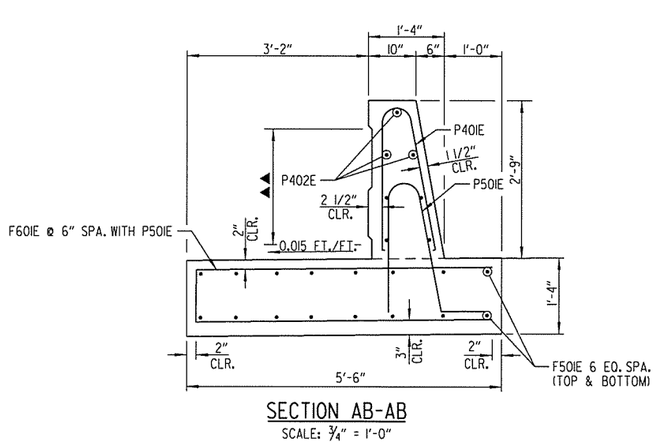
PARAPET REINFORCING (FULL DEPTH JOINTS)
SCALE: 3/4" = 1'-0"



PARAPET REINFORCING (PARTIAL DEPTH JOINTS)
SCALE: 3/4" = 1'-0"

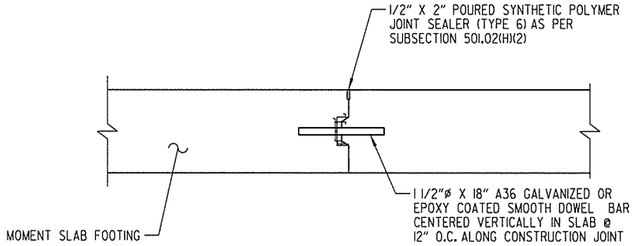


EXPANSION JOINT DETAIL
SCALE: 3/4" = 1'-0"



SECTION AB-AB
SCALE: 3/4" = 1'-0"

▲▲ SEE "PANEL ENHANCEMENT DETAIL" ON CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I) SPECIAL DETAIL SHEET.

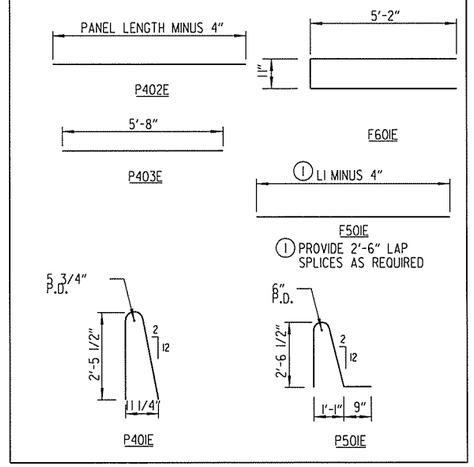


CONSTRUCTION JOINT DETAIL
SCALE: 3/4" = 1'-0"

GENERAL NOTES

1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
2. CONCRETE USED FOR PARAPET CONSTRUCTION OF MOMENT SLAB (FOOTING) SHALL BE CLASS S(AE).
3. ALL REINFORCING STEEL SHALL BE AASHTO M31 OR M322, TYPE A (GRADE 60) AND SHALL BE EPOXY COATED.
4. ALL COST ASSOCIATED WITH THE CONSTRUCTION OF THE PARAPET AND MOMENT SLAB (FOOTING) INCLUDING CONCRETE, REINFORCING STEEL, JOINT MATERIAL & DOWEL BARS SHALL BE INCLUDED IN THE LINEAR FOOT COST OF CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL III).

REINFORCING BAR DETAILS



NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

STATE OF ARKANSAS
12934
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL III)

aggervasini 5/29/2014 5:07:24 PM
WORKSPACE: AHTD
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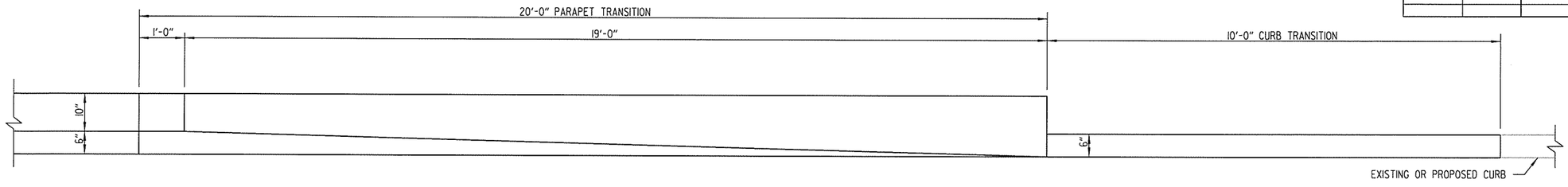
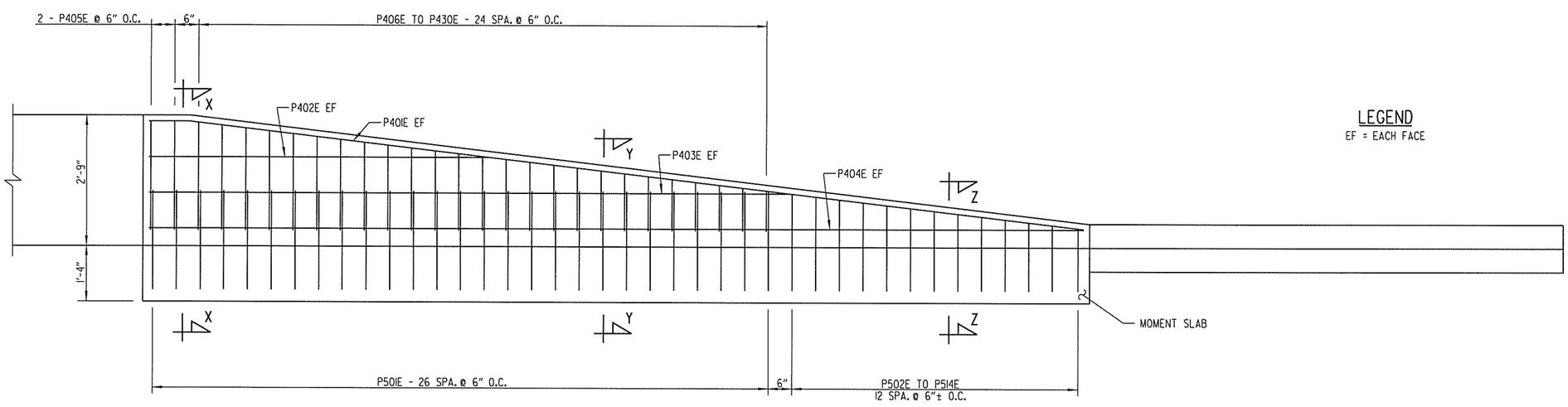
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	19	505

(2) SPECIAL DETAILS



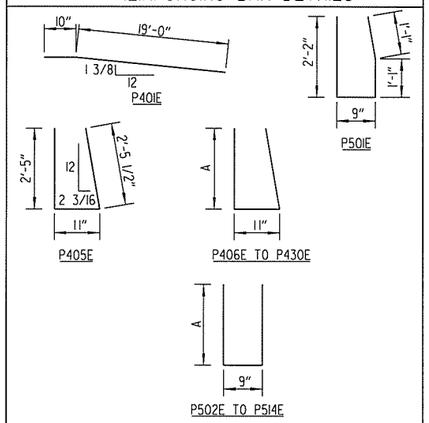
PLAN - TRANSITIONAL APPROACH RAILING
SCALE: 3/4" = 1'-0"



ELEVATION - TRANSITIONAL APPROACH RAILING
SCALE: 3/4" = 1'-0"

LEGEND
EF = EACH FACE

REINFORCING BAR DETAILS



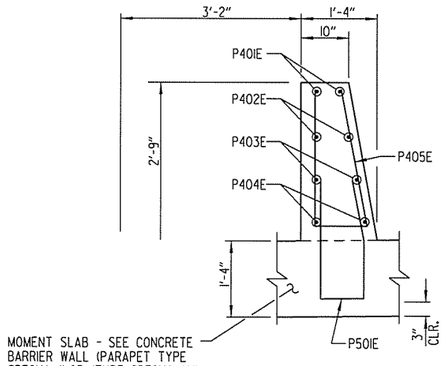
BAR LIST

MARK	NO.	LENGTH	PIN DIA.	A
P401E	2	19'-10"	3"	
P402E	2	7'-2"	STR.	
P403E	2	13'-6"	STR.	
P404E	2	19'-8"	STR.	
P405E	2	5'-7 1/2"	2"	
P406E TO P430E	1 EACH	5'-6" TO 2'-8"	2"	2'-4 1/2" TO 11 1/2"
P501E	27	4'-10 1/2"	2 1/2"	
P502E TO P514E	1 EACH	4'-7 1/2" TO 3'-2 1/2"	2 1/2"	2'-0 1/2" TO 1'-4"

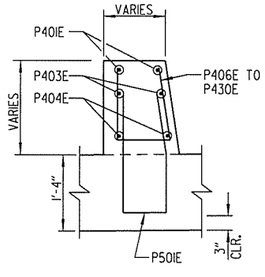
NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

GENERAL NOTES

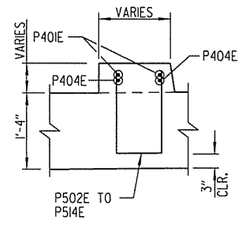
1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
2. CONCRETE USED FOR PARAPET CONSTRUCTION OF MOMENT SLAB (FOOTING) SHALL BE CLASS S(AE).
3. ALL REINFORCING STEEL SHALL BE AASHTO M31 OR M322, TYPE A (GRADE 60) AND SHALL BE EPOXY COATED.
4. ALL COST ASSOCIATED WITH THE TRANSITIONAL APPROACH RAILING INCLUDING CONCRETE AND REINFORCING STEEL SHALL BE INCLUDED IN THE LINEAR FOOT COST OF CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I) OR CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL III).



SECTION X-X
SCALE: 3/4" = 1'-0"



SECTION Y-Y
SCALE: 3/4" = 1'-0"



SECTION Z-Z
SCALE: 3/4" = 1'-0"

TRANSITIONAL APPROACH RAILING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

cgervasini 5/29/2014 5:07:24 PM
WORKGROUP: AHTD
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REVISED DATE:

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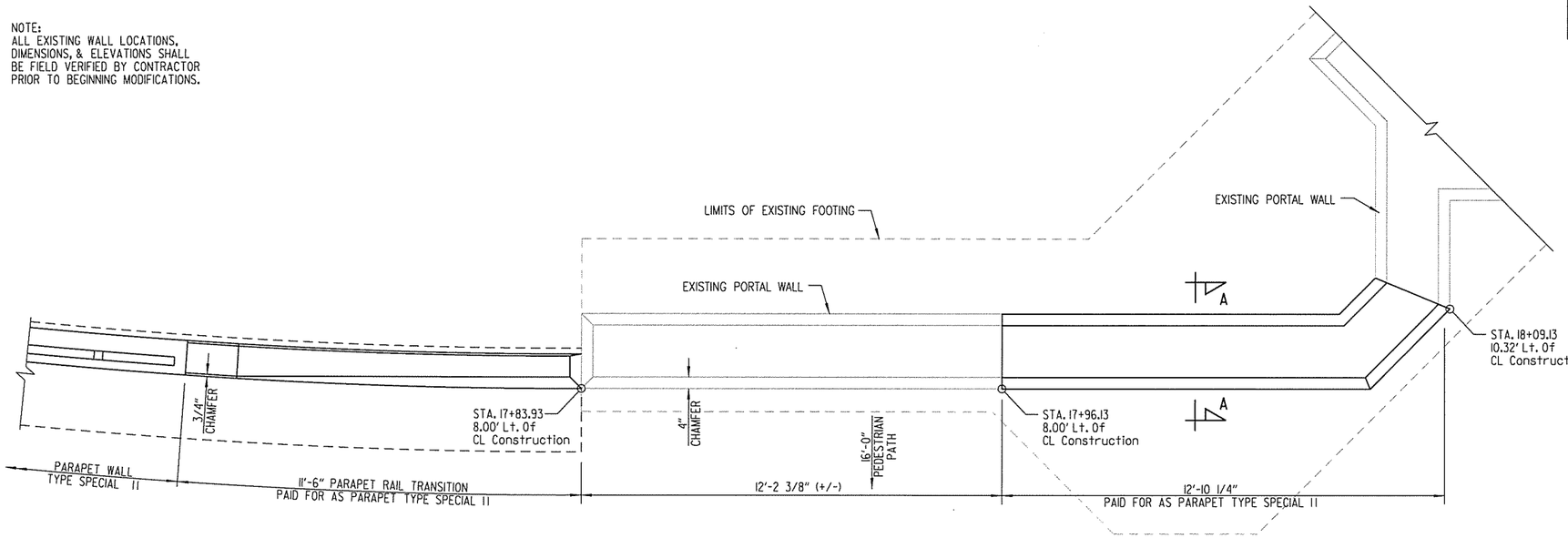
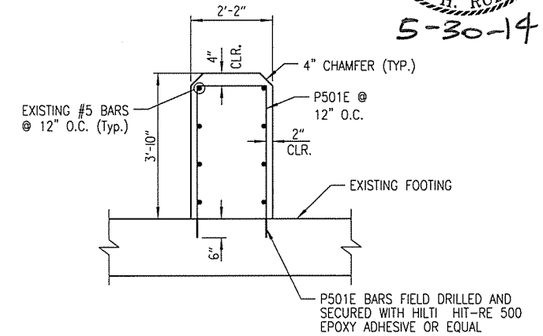
				6	ARK.			
				JOB NO.		061275	20	505
				(2)	SPECIAL DETAILS			

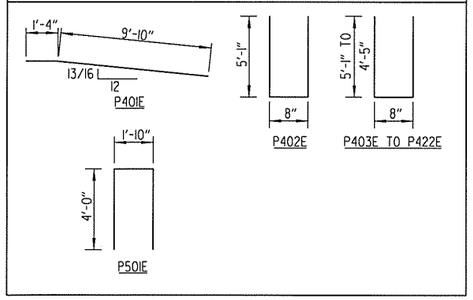
NOTE:
ALL EXISTING WALL LOCATIONS, DIMENSIONS, & ELEVATIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING MODIFICATIONS.



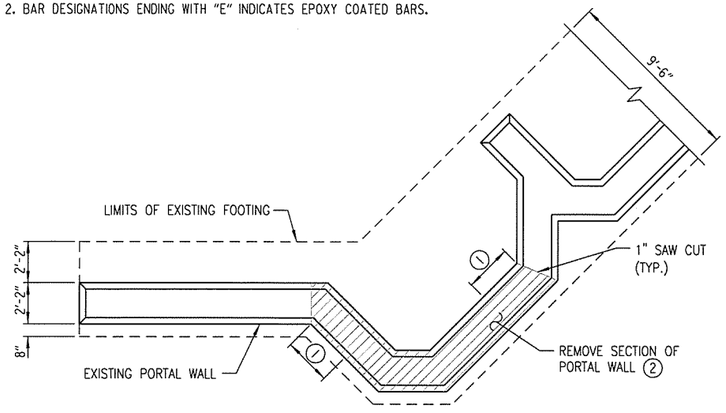


SECTION A-A
SCALE: ½" = 1'-0"

REINFORCING BAR DETAILS



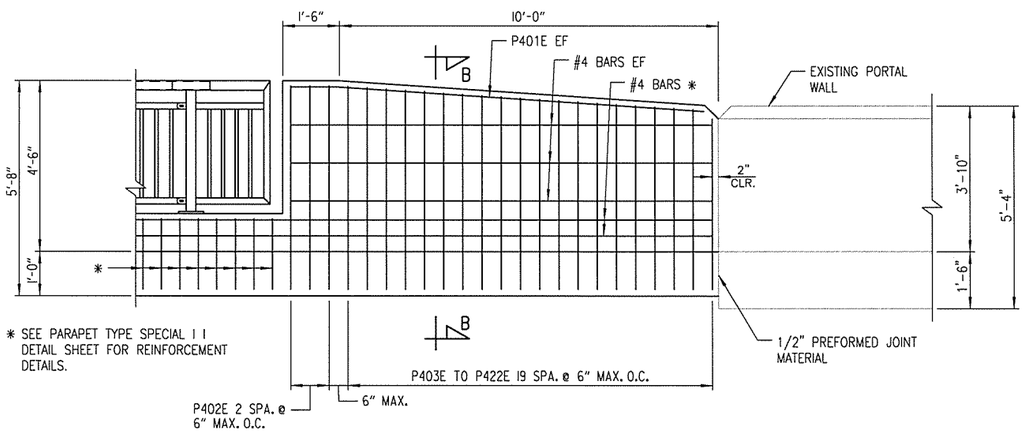
NOTE:
1. DIMENSION OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.



PLAN - REMOVAL DETAIL
SCALE: ¼" = 1'-0"

NOTE:
ONLY REMOVE PORTIONS OF PORTAL WALL. EXISTING FOOTING SHALL REMAIN INTACT.

PLAN - PARAPET RAIL TIE IN
SCALE: ½" = 1'-0"



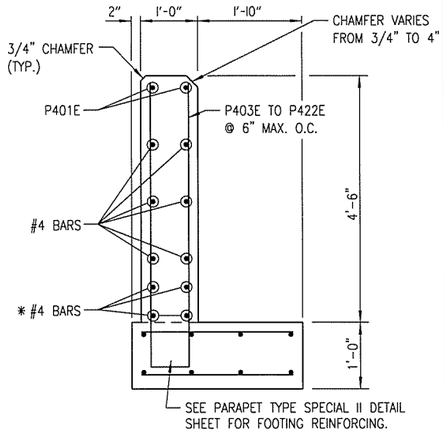
* SEE PARAPET TYPE SPECIAL I I DETAIL SHEET FOR REINFORCEMENT DETAILS.

ELEVATION - PARAPET RAIL TRANSITION
SCALE: ½"= 1'-0"

NOTE:
PARAPET RAIL TRANSITION @ PORTAL WALL SHALL BE PAID FOR AS A SUBSIDIARY COST TO PARAPET WALL TYPE SPECIAL II.

(1) PRESERVE & CLEAN 2'-0" OF EXISTING LONGITUDINAL REINFORCEMENT FOR USE IN NEW SECTION OF WALL. (FIELD BEND AS REQUIRED)

(2) COST OF THE REMOVAL OF PORTIONS OF THE EXISTING PORTAL WALL IS CONSIDERED SUBSIDIARY TO CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL II).



SECTION B-B
SCALE: ¾" = 1'-0"

LEGEND
EF = EACH FACE

NORTH SHARED USE RAMP PORTAL WALL DETAILS

SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

cgarrison1 5/29/2014 5:07:25 PM
WORKSPACE: AHTD
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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	21	505

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

LITTLE ROCK CITY HALL

TEMPORARY CONSTRUCTION LIMITS FOR DEMOLITION OF EXISTING WALL

CONSTRUCT CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1'-6")

3' GRASS BERM

MSE RETAINING WALL

101+66.49
-32.28

103+33.42
-29.08

101+00 102+00 103+00 104+00

C.L. HWY. 70

1.5' TYP.

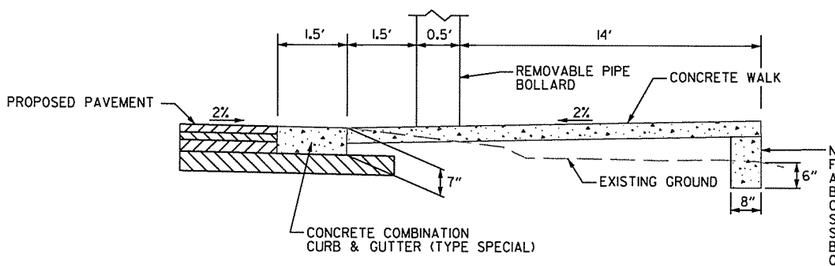
8'-0" C. TYP.

REMOVABLE PIPE BOLLARDS SEE SPECIAL DETAILS

16' SHARED USE PATH

CONSTRUCTION LIMITS

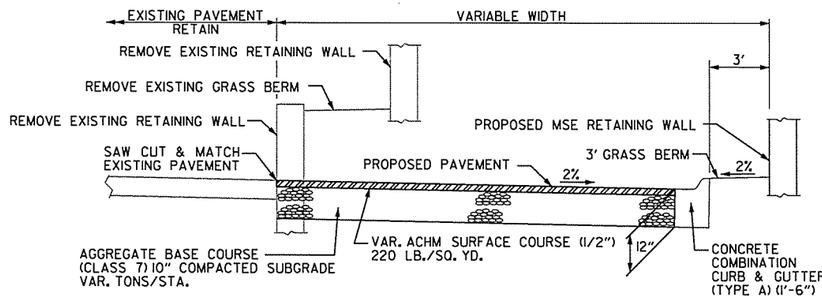
LAYOUT OF CURB & GUTTER AT ROBINSON CENTER



SECTION B-B

NOTE: CONCRETE TURNDOWN IS REQUIRED FROM STA. 102+05 TO 102+95. THE COST ASSOCIATED WITH THE TURNDOWN WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED INCLUDED IN THE VARIOUS ITEMS SHOWN FOR THE SHARED USE PATH PAVEMENT SECTION DETAILED IN THE TYPICAL SECTIONS. BETWEEN STA. 102+53 AND STA. 102+95, THE CONCRETE TURNDOWN SHALL BE PLACED BENEATH THE AGGREGATE BASE COURSE.

LAYOUT OF CURB & GUTTER AT LITTLE ROCK CITY HALL



SECTION A-A

SPECIAL DETAILS

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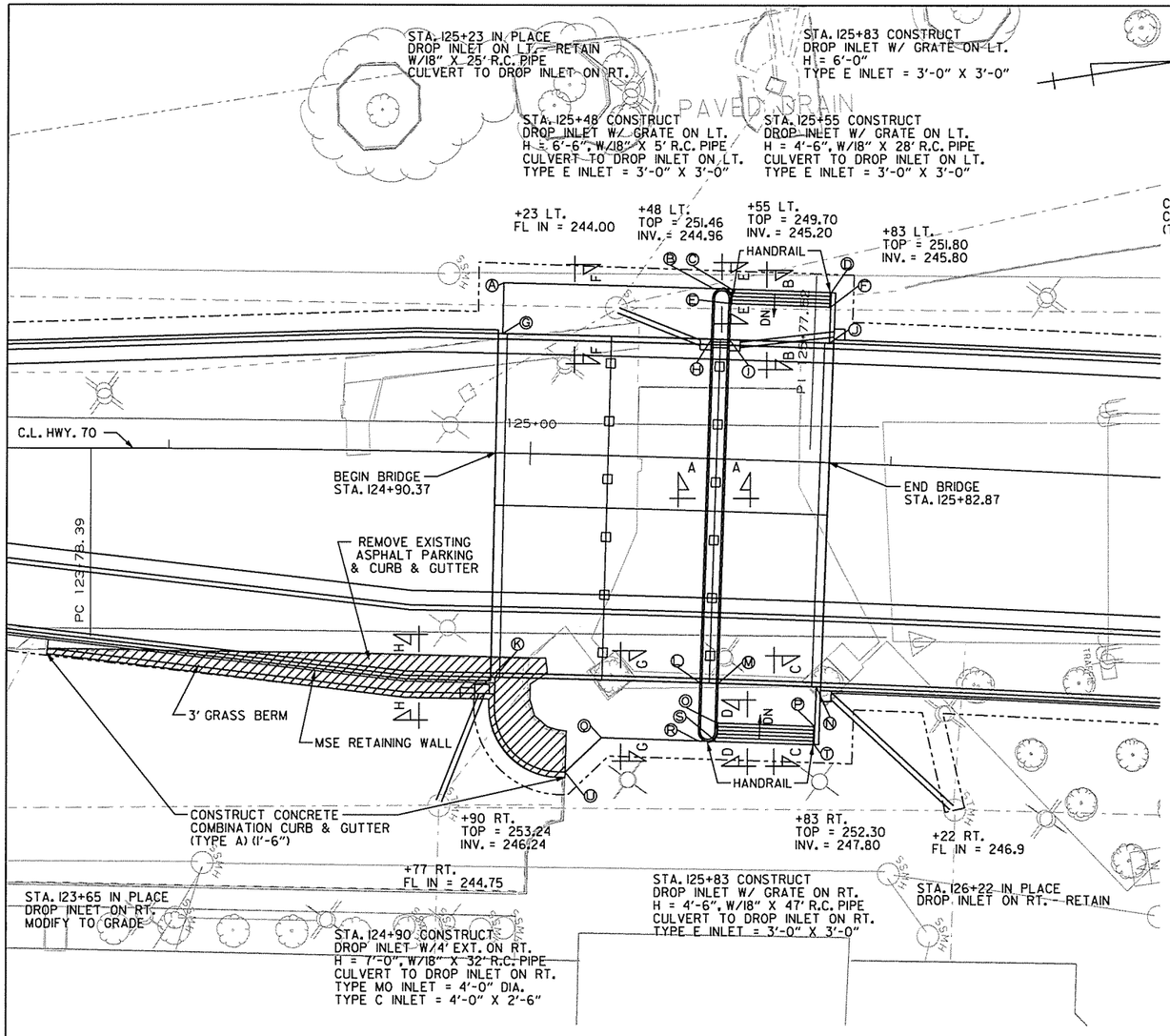
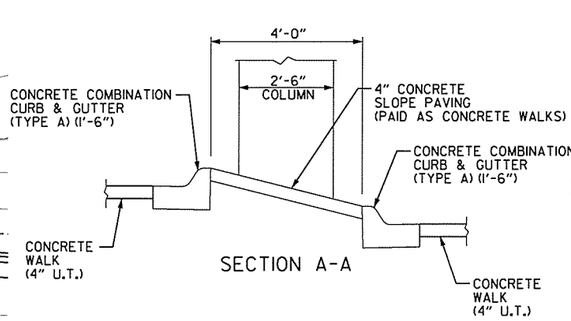
				6	ARK.			
				JOB NO.		061275	22	505

(2) SPECIAL DETAILS

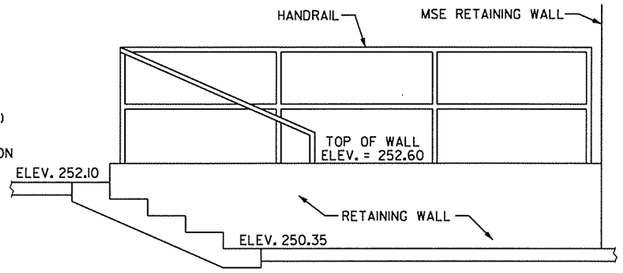
NOTE:
SEE STANDARD DRAWING SI-1 FOR HAND RAILING DETAILS & DETAILS OF CONCRETE STEPS & WALKS. SEE STANDARD DRAWING SI-2 FOR RETAINING WALL DETAILS AT STEP LOCATIONS.



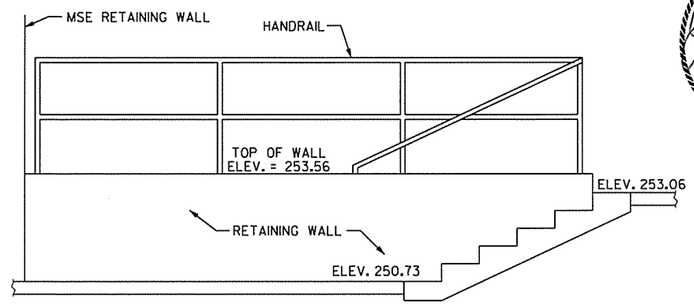
DICKEY-STEPHENS ACCESS DETAILS



SECTION A-A

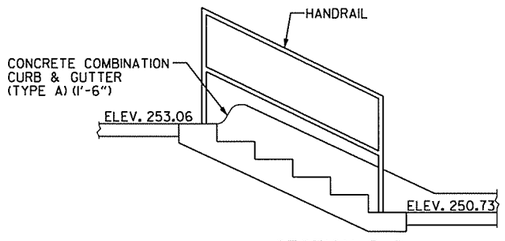


SECTION B-B



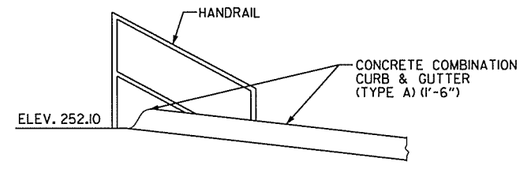
SECTION C-C

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14



SECTION D-D

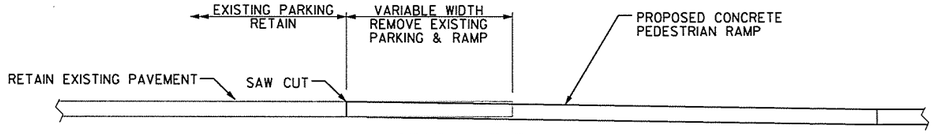
SHOWN FOR EAST STEPS,
WEST STEPS ARE SIMILAR.



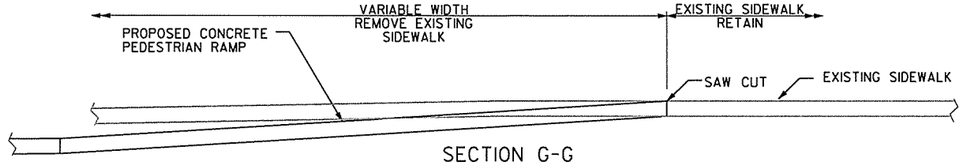
SECTION E-E

SHOWN FOR WEST STEPS,
EAST STEPS ARE SIMILAR.

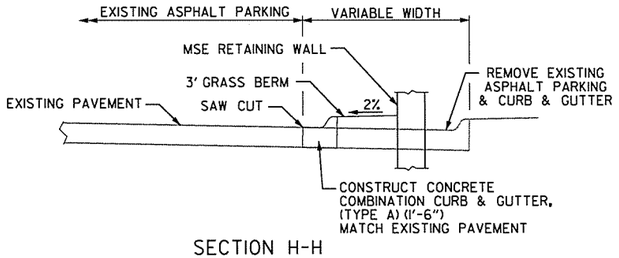
POINT TABLE			
POINT	STA.	OFFSET	ELEV.
A	124+91.61	-47.00	252.44
B	125+49.14	-47.00	252.27
C	125+54.10	-47.00	252.10
D	125+81.63	-47.00	252.10
E	125+54.10	-43.00	250.35
F	125+81.63	-43.00	250.35
G	124+91.61	-33.00	252.57
H	125+49.13	-33.00	251.46
I	125+54.10	-33.00	249.70
J	125+81.62	-33.00	250.22
K	124+91.63	62.00	253.04
L	125+49.09	62.00	251.93
M	125+54.15	62.00	250.17
N	125+81.60	62.00	250.69
O	125+54.15	73.00	250.73
P	125+81.60	73.00	250.73
Q	125+21.94	78.00	253.44
R	125+49.08	78.08	253.18
S	125+54.15	78.08	253.06
T	125+81.60	78.01	253.06
U	125+11.98	87.75	253.65



SECTION F-F



SECTION G-G



SECTION H-H

NOTE:
TRANSITION BOTH ENDS WITH A
SAW CUT TO MATCH EXISTING
CURB & GUTTER

SPECIAL DETAILS

cggervasini 5/29/2014 5:07:26 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	23	505
				(2)	SPECIAL DETAILS			

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

C.L. SOUTH SHARED USE RAMP

BRIDGE, RAMP PAVING & PORTION OF RETAINING WALL TO BE REMOVED FOR SOUTH SHARED USE RAMP CONSTRUCTION

C.L. ARKANSAS RIVER SIDEWALK

24+07.92

TRANSITION END WITH A SAW CUT TO MATCH EXISTING INTEGRAL CURB & GUTTER

50' TRANSITION

C.L. HWY. 10

REMOVE EXISTING RAMP PAVING & INTERGRAL CURB & GUTTER TO LONGITUDINAL JOINT. TRANSITION BOTH ENDS W/ A SAW CUT TO MATCH INTEGRAL CURB & GUTTER.

25+00

CONSTRUCT TYPE A CONCRETE COMBINATION CURB & GUTTER, MATCH EXISTING PAVEMENT

LONGITUDINAL JOINT

EXISTING 2 - 12' LANES

15.00

15.00

12+48

ARKANSAS RIVER

EXISTING RETAINING WALL & RAIL TO REMAIN IN PLACE STA. 24+93 TO STA. 26+94

SKY WALK

SPAN PEDESTRIAN BR

50' TRANSITION

26+46.91

C.L. ARKANSAS RIVER TRAIL

TRANSITION END WITH A SAW CUT TO MATCH EXISTING INTEGRAL CURB & GUTTER

27+43

EXISTING 2 - 12' LANES

VARIABLE WIDTH REMOVE EXISTING RAMP PAVEMENT TO LONGITUDINAL JOINT

EXISTING RETAINING WALL & RAIL TO REMAIN IN PLACE STA. 24+93 TO STA. 26+94

RETAIN EXISTING PAVEMENT

EXISTING LONGITUDINAL JOINT

FINISHED GROUND GRADE TO DRAIN

CONSTRUCT CONCRETE COMBINATION CURB & GUTTER, (TYPE A) (1'-6") MATCH EXISTING PAVEMENT ELEVATION

SECTION A-A

NOTE:
TRANSITION BOTH ENDS WITH A SAW CUT TO MATCH EXISTING INTEGRAL CURB & GUTTER

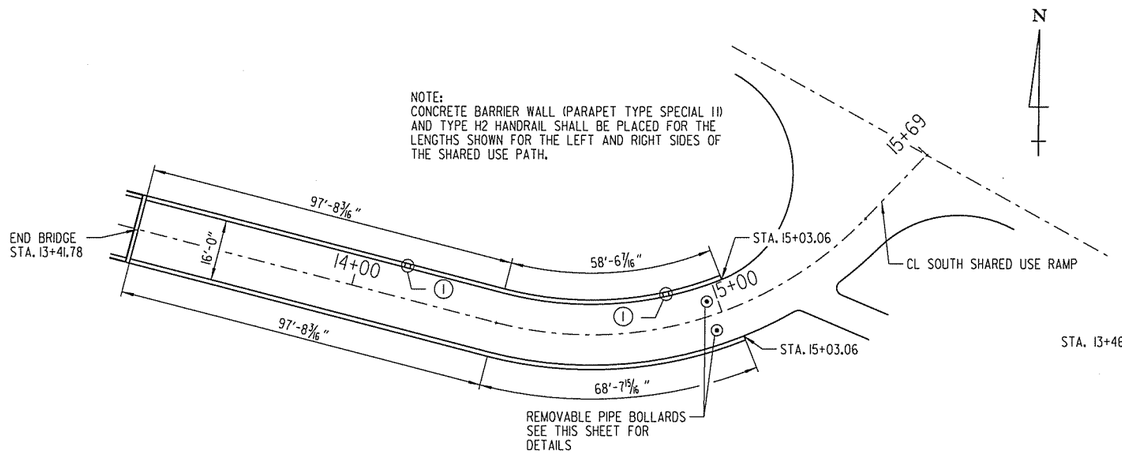
HWY. 10 EXIT RAMP MODIFICATION DETAILS

LEGEND

EXISTING RAMP PAVING TO BE REMOVED

cggervasini 5/29/2014 5:07:27 PM
WORKSPACE: MTD
L:\2011\11080 - Broadway Bridge over the Arkansas River\Drawings\R061275_SD_HWY10.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	24	505
				(2)	SPECIAL DETAILS			

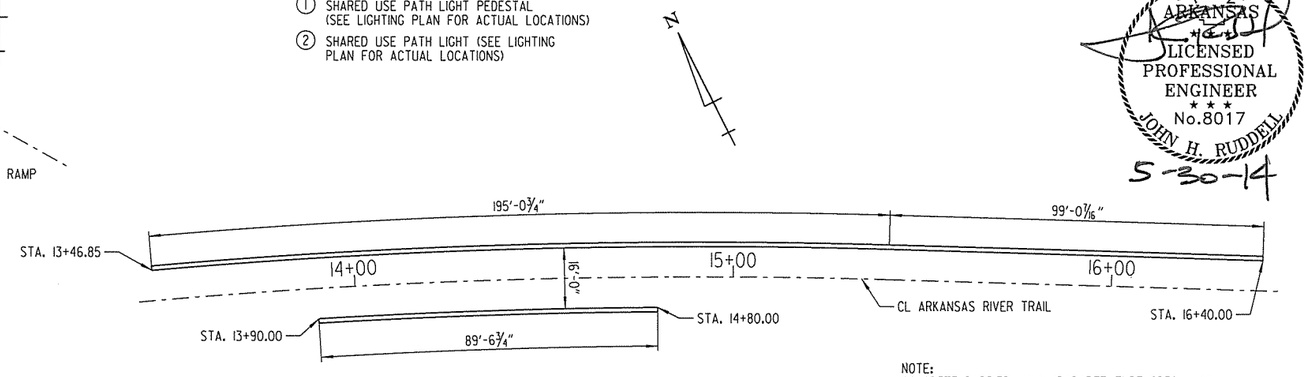


CONCRETE BARRIER WALL PLAN
(END OF SOUTH SHARED USE RAMP)

NOTE:
ALL DIMENSIONS SHOWN ARE MEASURED FROM THE INSIDE FACE OF THE CONCRETE BARRIER WALLS.

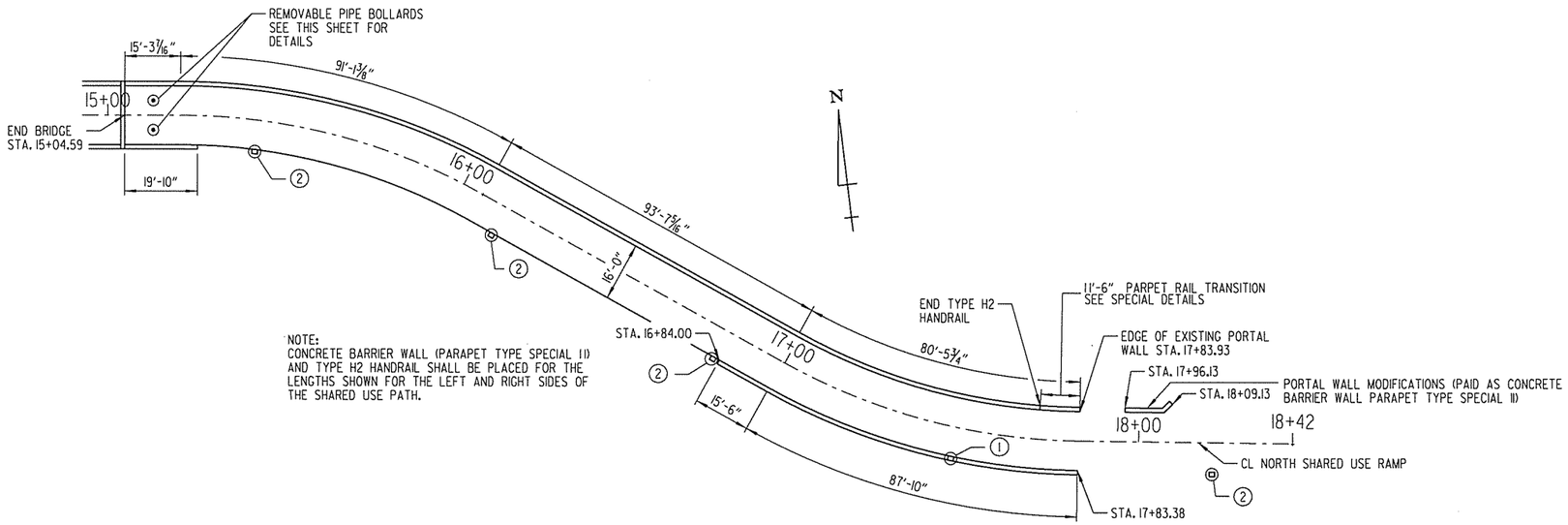
(1) SHARED USE PATH LIGHT PEDESTAL (SEE LIGHTING PLAN FOR ACTUAL LOCATIONS)

(2) SHARED USE PATH LIGHT (SEE LIGHTING PLAN FOR ACTUAL LOCATIONS)



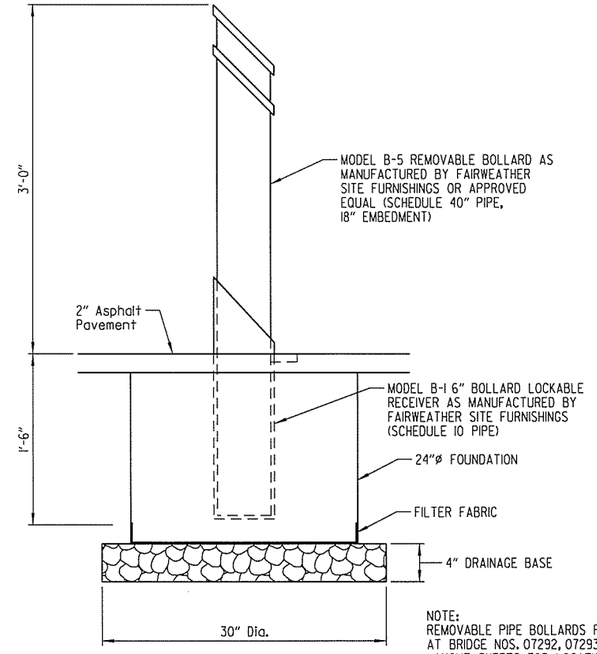
NOTE:
CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL II) AND TYPE H2 HANDRAIL SHALL BE PLACED FOR THE LENGTHS SHOWN FOR THE LEFT AND RIGHT SIDES OF THE SHARED USE PATH.

CONCRETE BARRIER WALL PLAN
(ARKANSAS RIVER TRAIL)



NOTE:
CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL II) AND TYPE H2 HANDRAIL SHALL BE PLACED FOR THE LENGTHS SHOWN FOR THE LEFT AND RIGHT SIDES OF THE SHARED USE PATH.

CONCRETE BARRIER WALL PLAN
(END OF NORTH SHARED USE RAMP)



REMOVABLE PIPE BOLLARD DETAIL
NO SCALE

NOTE:
REMOVABLE PIPE BOLLARDS REQUIRED AT BRIDGE NOS. 07292, 07293 (SEE LAYOUT SHEETS FOR LOCATIONS).

NOTE:
BOLLARD RECEIVER SHALL BE INSTAL LED BY MANUFACTURER'S RECOMMODATIONS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

CONCRETE BARRIER WALL DETAILS

cggervasini 5/29/2014 5:07:27 PM
WORKSPACE: AHTD
L:\ROW\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_SD_MS_3.dgn
REVISED DATE:

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				6	ARK.			
				JOB NO.		061275	25	505
				(2)	SPECIAL DETAILS			

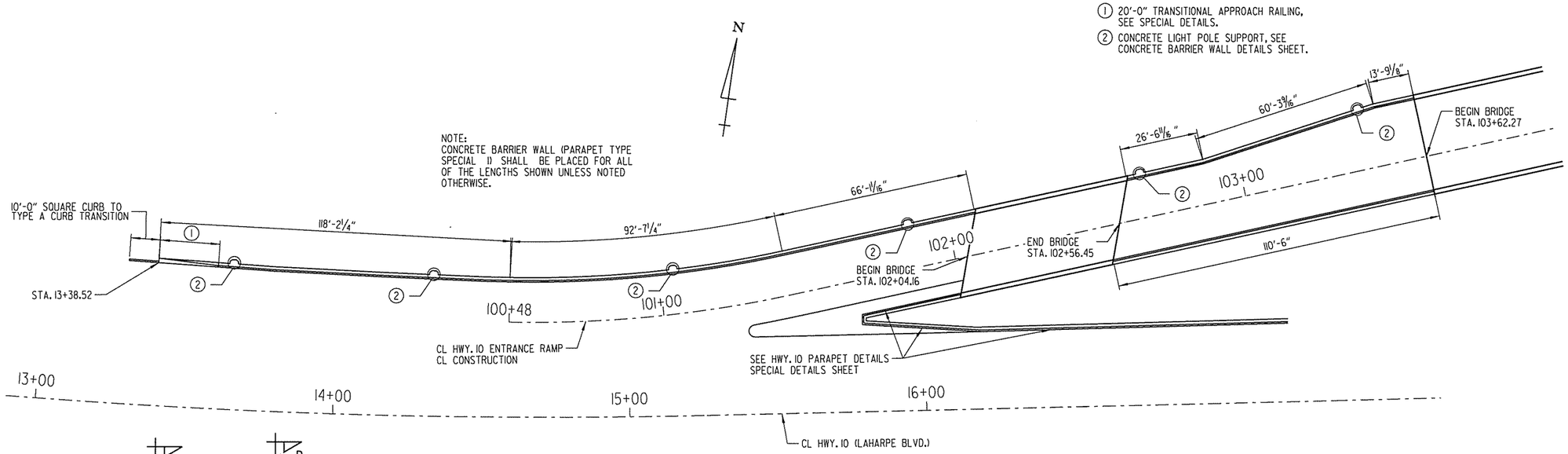
NOTE:
ALL DIMENSIONS SHOWN ARE MEASURED FROM THE INSIDE FACE OF THE CONCRETE BARRIER WALLS.

(1) 20'-0" TRANSITIONAL APPROACH RAILING, SEE SPECIAL DETAILS.

(2) CONCRETE LIGHT POLE SUPPORT, SEE CONCRETE BARRIER WALL DETAILS SHEET.

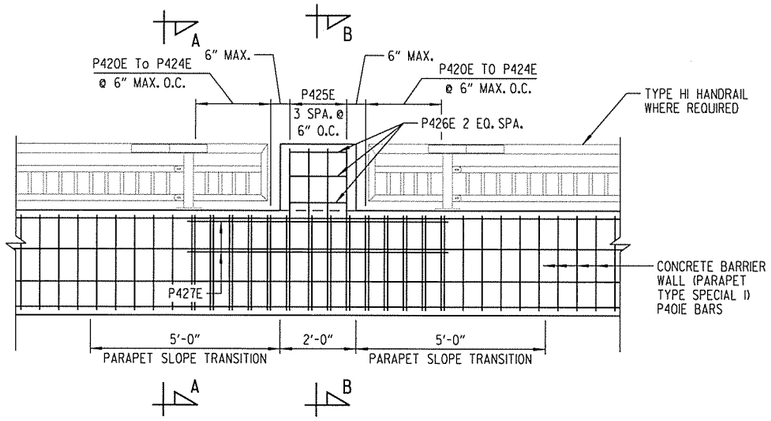
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

NOTE:
CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL I) SHALL BE PLACED FOR ALL OF THE LENGTHS SHOWN UNLESS NOTED OTHERWISE.



CONCRETE BARRIER WALL AND LIGHTING PLAN

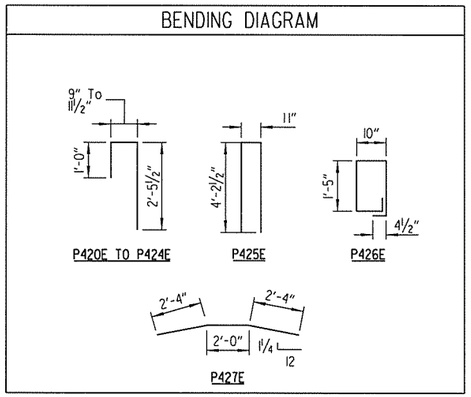
(AT HWY. 10 ENTRANCE RAMP)

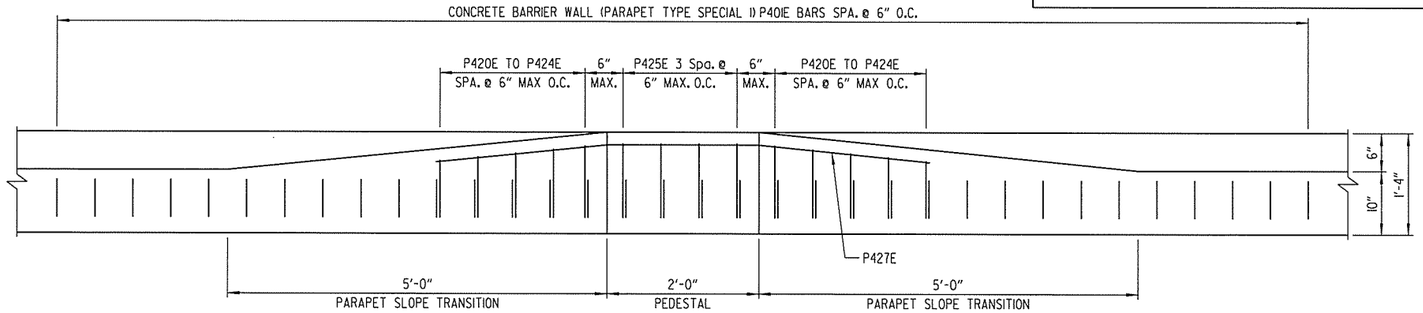


LIGHT POLE PEDESTAL ELEVATION

SCALE: ½" = 1'-0"

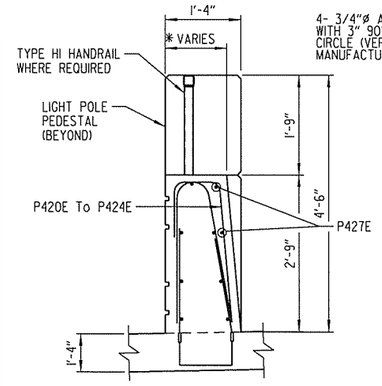
BENDING DIAGRAM





LIGHT POLE PEDESTAL PLAN

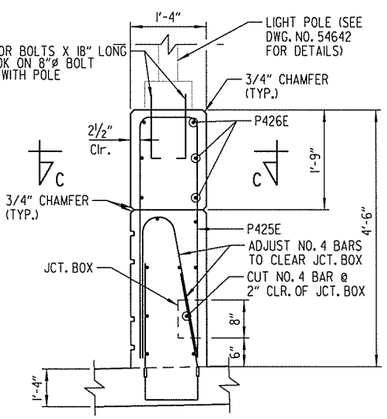
SCALE: 1" = 1'-0"



SECTION A-A

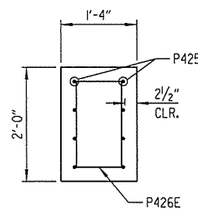
SCALE: ¾" = 1'-0"

* WIDTH VARIES FROM 10" TO 1'-4"



SECTION B-B

SCALE: ¾" = 1'-0"



SECTION C-C

SCALE: ¾" = 1'-0"

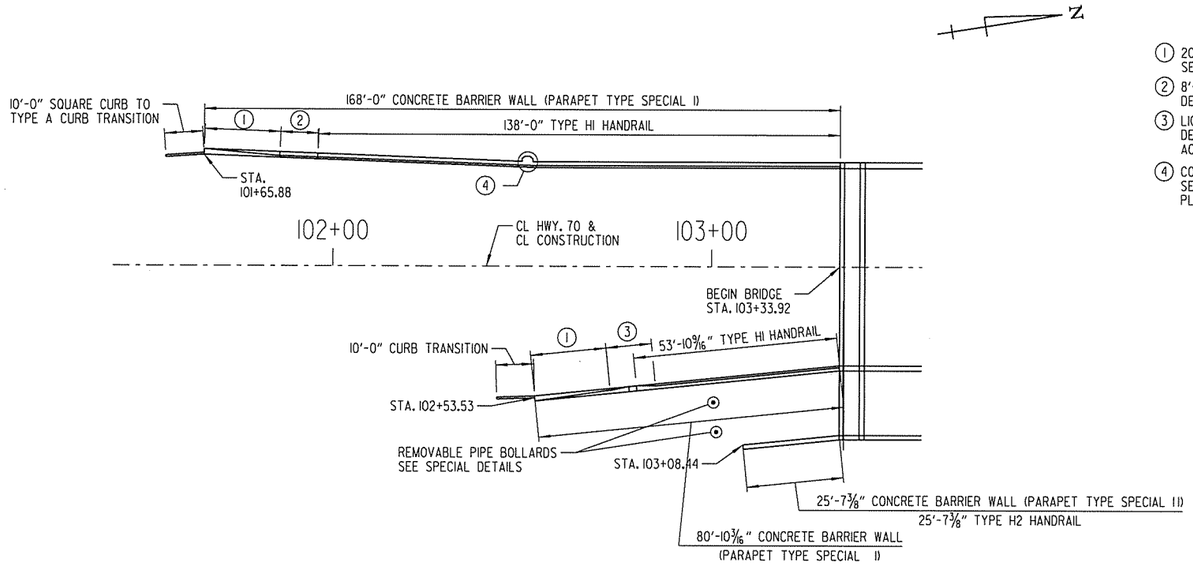
CONCRETE BARRIER WALL DETAILS

SPECIAL DETAILS

eggervasini 5/29/2014 5:07:28 PM
WORKSPACE: LITTLE ROCK AUTO
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_SD_MS_4.dgn
REVISED DATE:

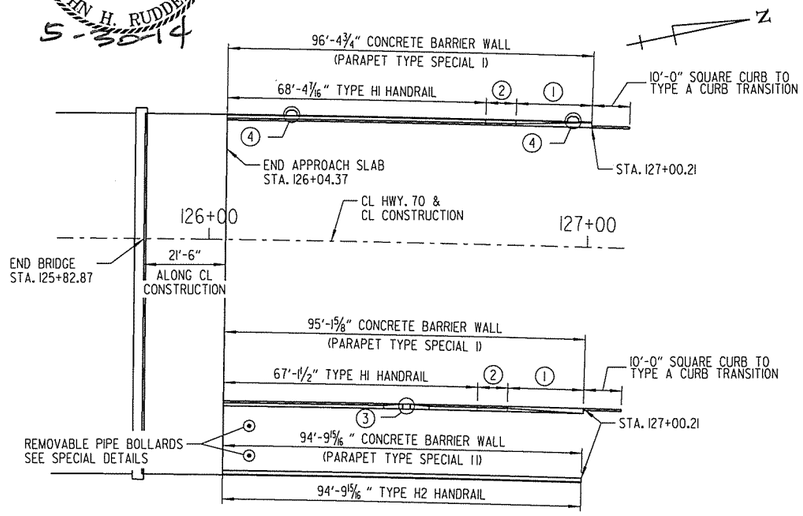
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	26	505
				(2)	SPECIAL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14

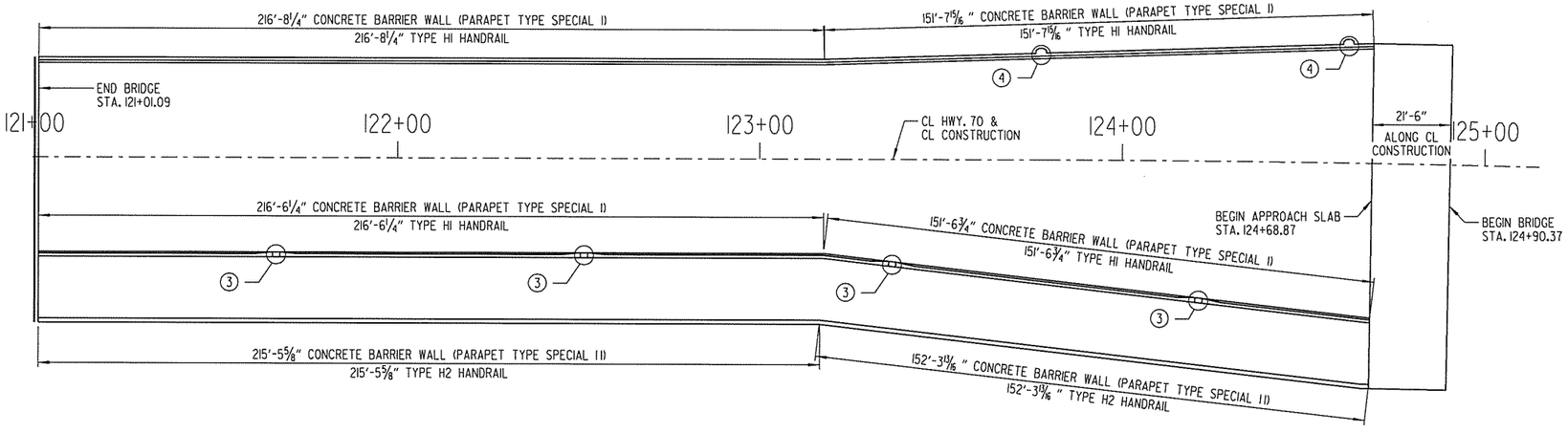


CONCRETE BARRIER WALL AND LIGHTING PLAN
(SOUTH END OF BRIDGE NO. 07292)

1. 20'-0" TRANSITIONAL APPROACH RAILING, SEE SPECIAL DETAILS
2. 8'-0" RAIL TRANSITION, SEE SPECIAL DETAILS ON NEXT SHEET
3. LIGHT POLE PEDESTAL, SEE SPECIAL DETAILS (SEE LIGHTING PLAN FOR ACTUAL LOCATIONS)
4. CONCRETE LIGHT POLE SUPPORT, SEE SPECIAL DETAILS (SEE LIGHTING PLAN FOR ACTUAL LOCATIONS)



CONCRETE BARRIER WALL AND LIGHTING PLAN
(NORTH END OF BRIDGE NO. 07293)



CONCRETE BARRIER WALL AND LIGHTING PLAN
(NORTH END OF BRIDGE NO. 07292)

CONCRETE BARRIER WALL DETAILS

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WORKSPACE: AHTD
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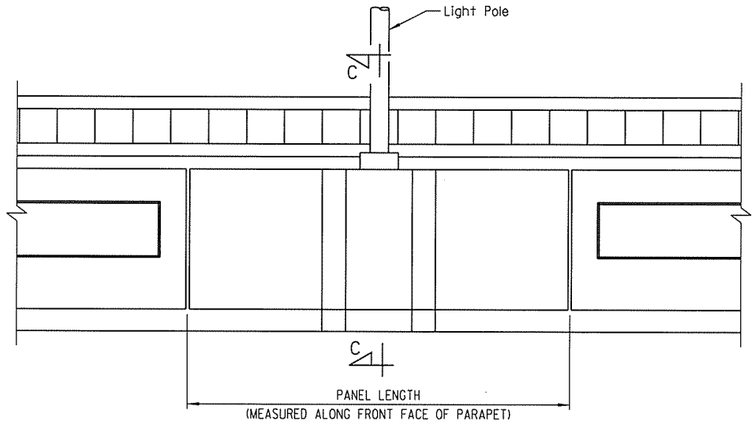
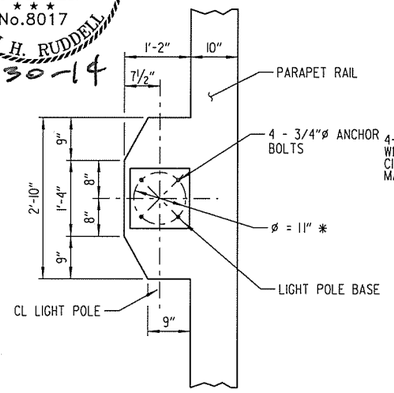
				6	ARK.			
				JOB NO.		061275	27	505
				(2)	SPECIAL DETAILS			

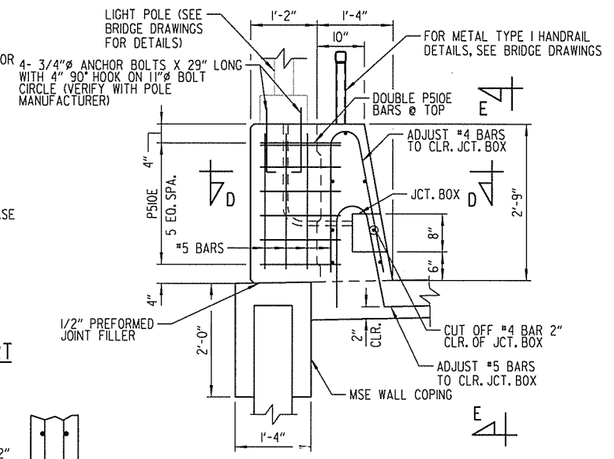
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
5-30-14



ELEVATION SHOWING CONCRETE LIGHT POLE SUPPORT
(LOOKING AT BACK FACE)
NO SCALE

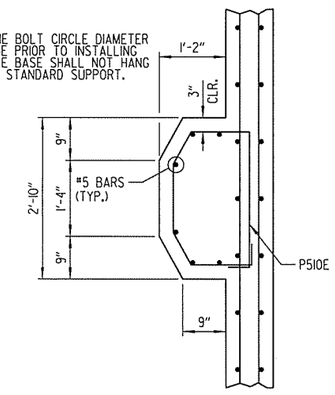


PLAN - CONCRETE LIGHT POLE SUPPORT
(FOR USE AT LOCATIONS ALONG MSE WALLS)
SCALE: ¾" = 1'-0"

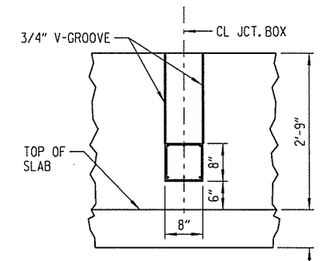


SECTION C-C
SCALE: ¾" = 1'-0"

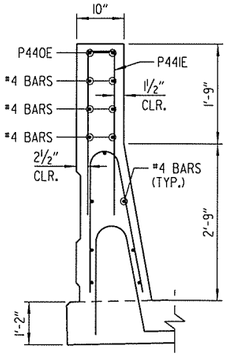
*CONTRACTOR SHALL VERIFY THE BOLT CIRCLE DIAMETER MATCHES THE LIGHT POLE BASE PRIOR TO INSTALLING ANCHOR BOLTS. THE LIGHT POLE BASE SHALL NOT HANG OVER THE FACE OF THE LIGHT STANDARD SUPPORT.



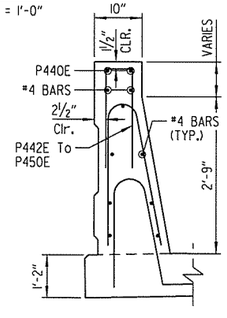
SECTION D-D
SCALE: ¾" = 1'-0"



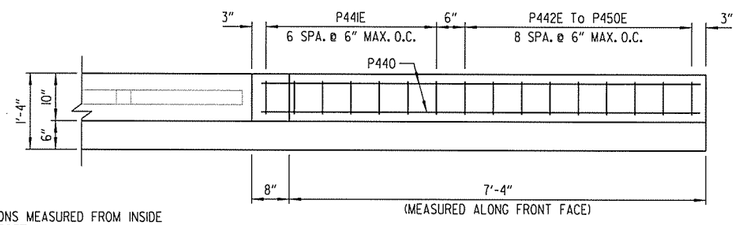
VIEW E-E
SCALE: ¾" = 1'-0"



SECTION A-A
SCALE: ¾" = 1'-0"



SECTION B-B
SCALE: ¾" = 1'-0"

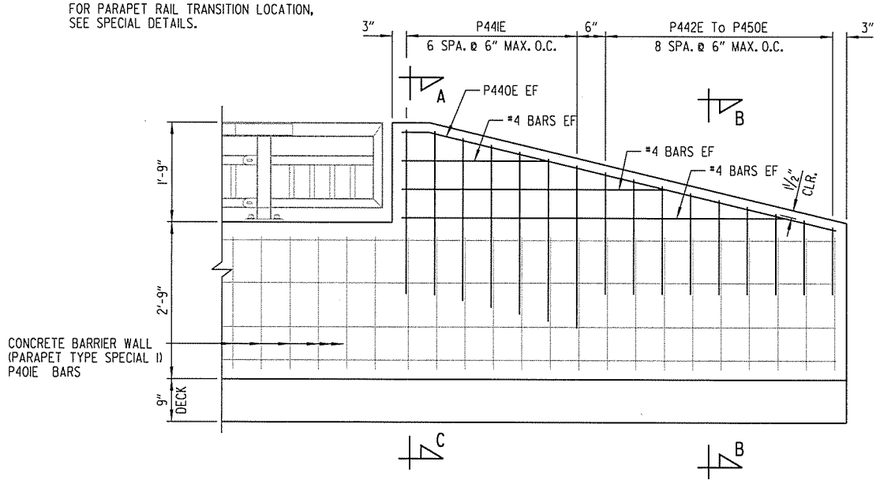


NOTES:
ALL DIMENSIONS MEASURED FROM INSIDE FACE OF PARPET.

STIRRUP BARS IN PARAPET RAIL TRANSITION SHALL BE SPACED WITH P40IE BARS.

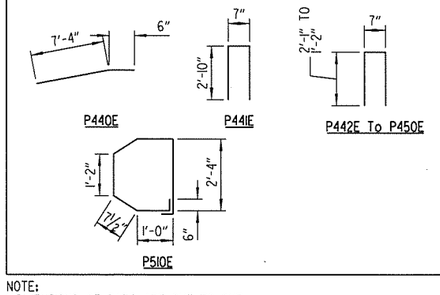
FOR PARAPET RAIL TRANSITION LOCATION, SEE SPECIAL DETAILS.

PLAN - RAIL TRANSITION
SCALE: ¾" = 1'-0"



ELEVATION - RAIL TRANSITION
SCALE: ¾" = 1'-0"

BENDING DIAGRAM



NOTE:
1. DIMENSIONS OF BARS ARE OUT-TO-OUT.
2. BAR DESIGNATIONS ENDING WITH "E" INDICATES EPOXY COATED BARS.

LEGEND
EF = EACH FACE

CONCRETE BARRIER WALL DETAILS

SPECIAL DETAILS

cgger-vadn1 5/29/2014 5:07:29 PM
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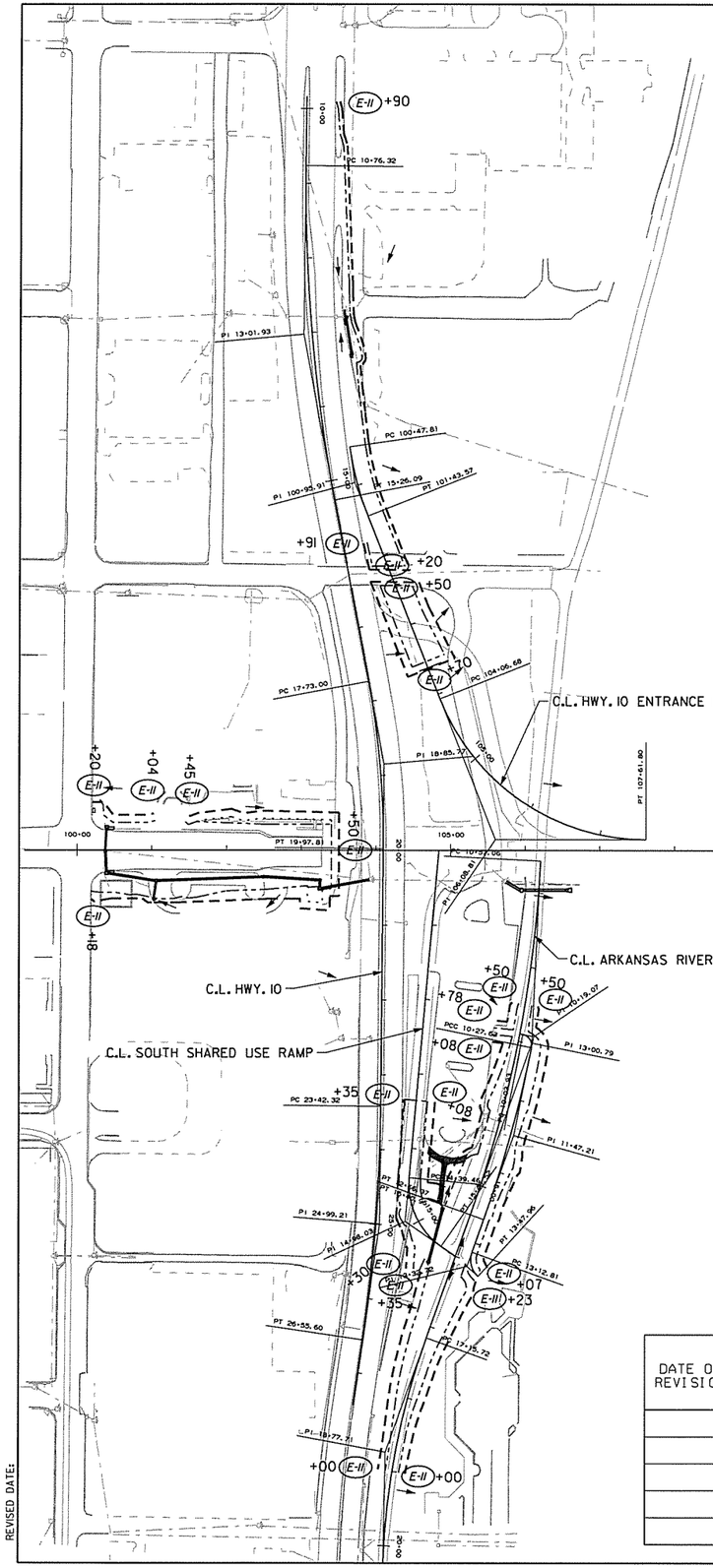
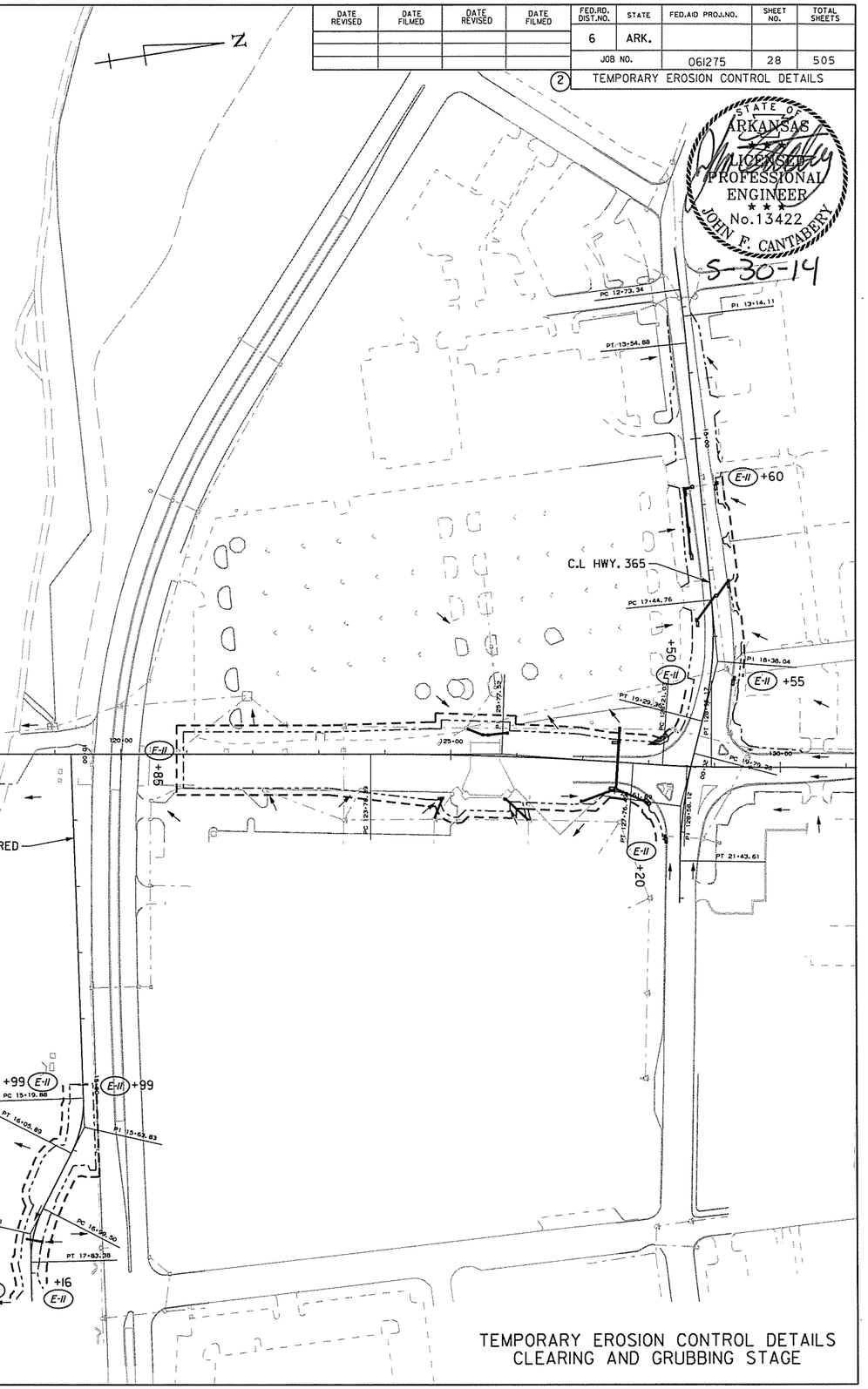
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	28	505

(2) TEMPORARY EROSION CONTROL DETAILS





LEGEND

E-II = SILT FENCE

CLEARING AND GRUBBING EROSION CONTROL MEASURES TO BE PLACED BEFORE ANY CONSTRUCTION. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

HWY. 70

SILT FENCE	E-II	LIN. FT.
STA. 100+20 TO 101+04	LT.	85
STA. 100+18 TO 103+50	RT.	430
STA. 101+45 TO 103+50	LT.	260
STA. 120+85 TO 128+20	RT.	865
STA. 120+85 TO 128+50	LT.	900

HWY. 10

SILT FENCE	E-II	LIN. FT.
STA. 9+90 TO 16+20	LT.	715
STA. 15+91 TO 16+20	RT.	25
STA. 16+50 TO 17+70	LT.	185
STA. 16+50 TO 17+70	RT.	195

ARKANSAS RIVER TRAIL

SILT FENCE	E-II	LIN. FT.
STA. 12+50 TO 16+07	LT.	380
STA. 16+23 TO 19+00	LT.	275
STA. 12+50 TO 12+78	RT.	45
STA. 13+08 TO 14+08	RT.	360
STA. 16+35 TO 19+00	RT.	270

SOUTH SHARED USE RAMP

SILT FENCE	E-II	LIN. FT.
STA. 13+35 TO 15+30	RT.	230

NORTH SHARED USE RAMP

SILT FENCE	E-II	LIN. FT.
STA. 14+99 TO 18+37	RT.	365
STA. 14+99 TO 18+16	LT.	350

HWY. 365

SILT FENCE	E-II	LIN. FT.
STA. 15+60 TO 18+55	LT.	310

REVISION BOX

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED
PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING STAGE

cggervasini 5/30/2014 11:02:15 AM
WORKSPACE1.AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	29	505

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

HWY. 10

SILT FENCE	(E-11)	LIN. FT.
STA. 9+90 TO 16+20	LT.	RETAIN
STA. 15+91 TO 16+20	RT.	RETAIN
STA. 16+50 TO 17+70	LT.	RETAIN
STA. 16+50 TO 17+70	RT.	RETAIN

DROP INLET SILT FENCE	[E-7]	LIN. FT.
STA. 12+83	LT.	20
STA. 13+32	LT.	20
STA. 14+07	LT.	20

SOUTH SHARED USE RAMP

SILT FENCE	(E-11)	LIN. FT.
STA. 13+35 TO 15+30	RT.	RETAIN

SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 15+00	LT.	1

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 15+45	RT.	1

HWY. 70

SILT FENCE	(E-11)	LIN. FT.
STA. 100+20 TO 101+04	LT.	RETAIN
STA. 100+18 TO 103+50	RT.	RETAIN
STA. 101+45 TO 103+50	LT.	RETAIN
STA. 120+85 TO 128+20	RT.	RETAIN
STA. 120+85 TO 128+50	LT.	RETAIN

NORTH SHARED USE RAMP

SILT FENCE	(E-11)	LIN. FT.
STA. 14+99 TO 18+37	RT.	RETAIN
STA. 14+99 TO 18+16	LT.	RETAIN

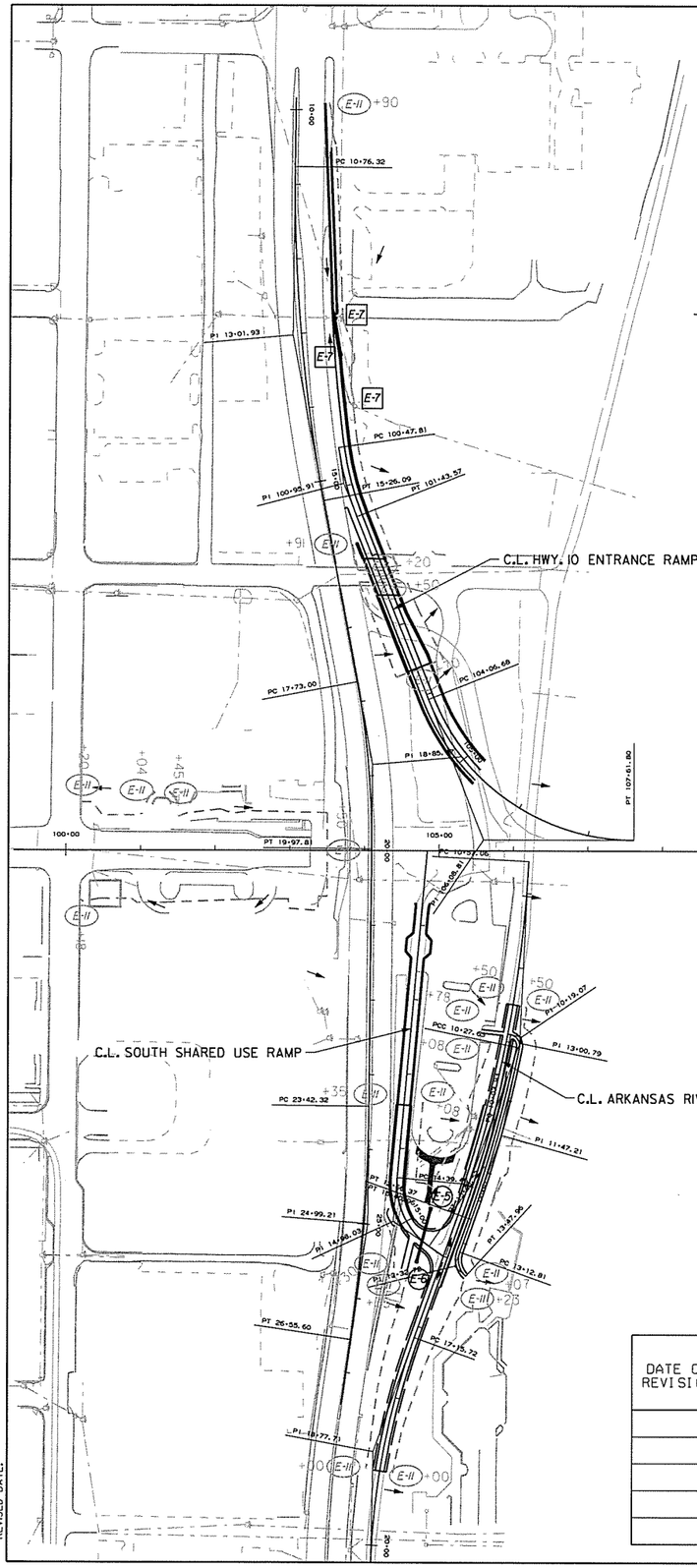
DROP INLET SILT FENCE	[E-7]	LIN. FT.
STA. 17+50	LT.	20

ARKANSAS RIVER TRAIL

SILT FENCE	(E-11)	LIN. FT.
STA. 12+50 TO 16+07	LT.	RETAIN
STA. 16+23 TO 19+00	LT.	RETAIN
STA. 12+50 TO 12+78	RT.	RETAIN
STA. 13+08 TO 14+08	RT.	RETAIN
STA. 16+35 TO 19+00	RT.	RETAIN

HWY. 365

SILT FENCE	(E-11)	LIN. FT.
STA. 15+60 TO 18+55	LT.	RETAIN



REVISION BOX

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS STAGE I

eggervasini 5/29/2014 5:07:31PM
W:\DOCS\FE AHTD
LIVDOT\061275 Broadway Bridge over the Arkansas River\Drawings\R061275_EC_STG1.01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	30	505

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 70

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 100+38	RT.	20
STA. 100+40	LT.	20
STA. 100+40	RT.	20
STA. 101+00	RT.	20
STA. 101+06	RT.	20
STA. 102+50	RT.	20
STA. 105+95	RT.	20
STA. 124+90	RT.	20
STA. 125+22	LT.	20
STA. 125+48	LT.	20
STA. 125+55	LT.	20
STA. 125+82	RT.	20
STA. 125+83	LT.	20
STA. 126+22	RT.	20
STA. 127+02	RT.	20
STA. 127+53	RT.	20
STA. 127+53	LT.	20
STA. 127+53	LT.	20
STA. 128+04	RT.	20

SILT FENCE	E-11	LIN. FT.
STA. 9+90 TO 16+20	LT.	RETAIN
STA. 15+91 TO 16+20	RT.	RETAIN
STA. 16+50 TO 17+70	LT.	RETAIN
STA. 16+50 TO 17+70	RT.	RETAIN

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 12+83	LT.	RETAIN
STA. 13+32	LT.	RETAIN
STA. 14+07	LT.	RETAIN

SOUTH SHARED USE RAMP

SILT FENCE	E-11	LIN. FT.
STA. 13+35 TO 15+30	RT.	RETAIN

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 15+00	LT.	RETAIN

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 15+45	RT.	RETAIN

HWY. 70

SILT FENCE	E-11	LIN. FT.
STA. 100+20 TO 101+04	LT.	RETAIN
STA. 100+18 TO 103+50	RT.	RETAIN
STA. 101+45 TO 103+50	LT.	RETAIN
STA. 120+85 TO 128+20	RT.	RETAIN
STA. 120+85 TO 128+50	LT.	RETAIN

NORTH SHARED USE RAMP

SILT FENCE	E-11	LIN. FT.
STA. 14+99 TO 18+37	RT.	RETAIN
STA. 14+99 TO 18+16	LT.	RETAIN

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 17+50	LT.	RETAIN

ARKANSAS RIVER TRAIL

SILT FENCE	E-11	LIN. FT.
STA. 12+50 TO 16+07	LT.	RETAIN
STA. 16+23 TO 19+00	LT.	RETAIN
STA. 12+50 TO 12+78	RT.	RETAIN
STA. 13+08 TO 14+08	RT.	RETAIN
STA. 16+35 TO 19+00	RT.	RETAIN

HWY. 365

SILT FENCE	E-11	LIN. FT.
STA. 15+60 TO 18+55	LT.	RETAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

C.L. HWY. 10 ENTRANCE RAMP
C.L. HWY. 70
C.L. ARKANSAS RIVER TRAIL
C.L. HWY. 10
C.L. SOUTH SHARED USE RAMP
C.L. HWY. 365
C.L. NORTH SHARED USE PATH

LEGEND

E-5 = SAND BAG DITCH CHECK
E-6 = ROCK DITCH CHECK
E-7 = DROP INLET SILT FENCE
E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

REVISION BOX

DATE OF REVISION	REVISION

REVISED DATE:
cgarvosini 5/30/2014 11:02:48 AM
W:\PROJECTS\ AHTD
L:\ZOII\I0070 - Broadway Bridge over the Arkansas River\Drawings\R061275_EC_STG2_01.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	31	505

(2) TEMPORARY EROSION CONTROL DETAILS

HWY. 70

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 100+38	RT.	RETAIN
STA. 100+40	LT.	RETAIN
STA. 100+40	RT.	RETAIN
STA. 101+00	RT.	RETAIN
STA. 101+06	RT.	RETAIN
STA. 102+50	RT.	RETAIN
STA. 105+95	RT.	RETAIN
STA. 124+90	RT.	RETAIN
STA. 125+22	LT.	RETAIN
STA. 125+48	LT.	RETAIN
STA. 125+55	LT.	RETAIN
STA. 125+82	RT.	RETAIN
STA. 125+83	LT.	RETAIN
STA. 126+22	RT.	RETAIN
STA. 127+02	RT.	RETAIN
STA. 127+53	RT.	RETAIN
STA. 127+53	LT.	RETAIN
STA. 127+53	LT.	RETAIN
STA. 128+04	RT.	RETAIN
STA. 129+54	LT.	20

HWY. 10

SILT FENCE	E-11	LIN. FT.
STA. 9+90 TO 16+20	LT.	RETAIN
STA. 15+91 TO 16+20	RT.	RETAIN
STA. 16+50 TO 17+70	LT.	RETAIN
STA. 16+50 TO 17+70	RT.	RETAIN

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 12+83	LT.	RETAIN
STA. 13+32	LT.	RETAIN
STA. 14+07	LT.	RETAIN

SOUTH SHARED USE RAMP

SILT FENCE	E-11	LIN. FT.
STA. 13+35 TO 15+30	RT.	RETAIN

SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 15+00	LT.	RETAIN

ROCK DITCH CHECK	E-6	INSTALLATION
STA. 15+45	RT.	RETAIN

HWY. 70

SILT FENCE	E-11	LIN. FT.
STA. 100+20 TO 101+04	LT.	RETAIN
STA. 100+18 TO 103+50	RT.	RETAIN
STA. 101+45 TO 103+50	LT.	RETAIN
STA. 120+85 TO 128+20	RT.	RETAIN
STA. 120+85 TO 128+50	LT.	RETAIN

NORTH SHARED USE RAMP

SILT FENCE	E-11	LIN. FT.
STA. 14+99 TO 18+37	RT.	RETAIN
STA. 14+99 TO 18+16	LT.	RETAIN

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 17+50	LT.	RETAIN

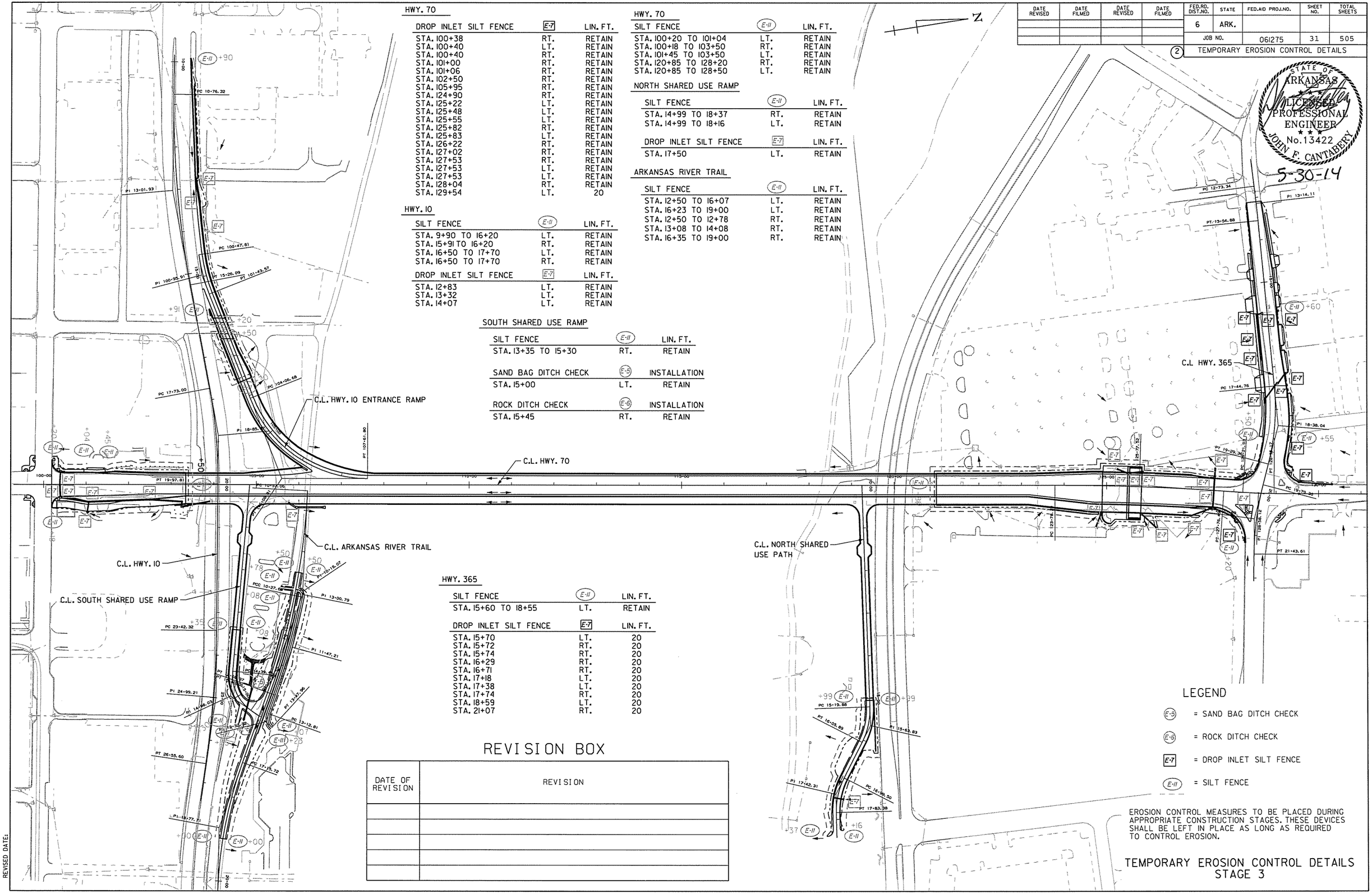
ARKANSAS RIVER TRAIL

SILT FENCE	E-11	LIN. FT.
STA. 12+50 TO 16+07	LT.	RETAIN
STA. 16+23 TO 19+00	LT.	RETAIN
STA. 12+50 TO 12+78	RT.	RETAIN
STA. 13+08 TO 14+08	RT.	RETAIN
STA. 16+35 TO 19+00	RT.	RETAIN

HWY. 365

SILT FENCE	E-11	LIN. FT.
STA. 15+60 TO 18+55	LT.	RETAIN

DROP INLET SILT FENCE	E-7	LIN. FT.
STA. 15+70	LT.	20
STA. 15+72	RT.	20
STA. 15+74	RT.	20
STA. 16+29	RT.	20
STA. 16+71	RT.	20
STA. 17+18	LT.	20
STA. 17+38	LT.	20
STA. 17+74	RT.	20
STA. 18+59	LT.	20
STA. 21+07	RT.	20



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

LEGEND

E-5 = SAND BAG DITCH CHECK

E-6 = ROCK DITCH CHECK

E-7 = DROP INLET SILT FENCE

E-11 = SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE CONSTRUCTION STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

REVISION BOX

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE 3

cgarrison1 5/30/2014 11:03:27 AM
W:\ROCK\PASEL AHTD
L:\ROCK\061275 - Broadway Bridge over the Arkansas River\Drawings\R061275_EC_STG3_01.dgn
REVISED DATE:

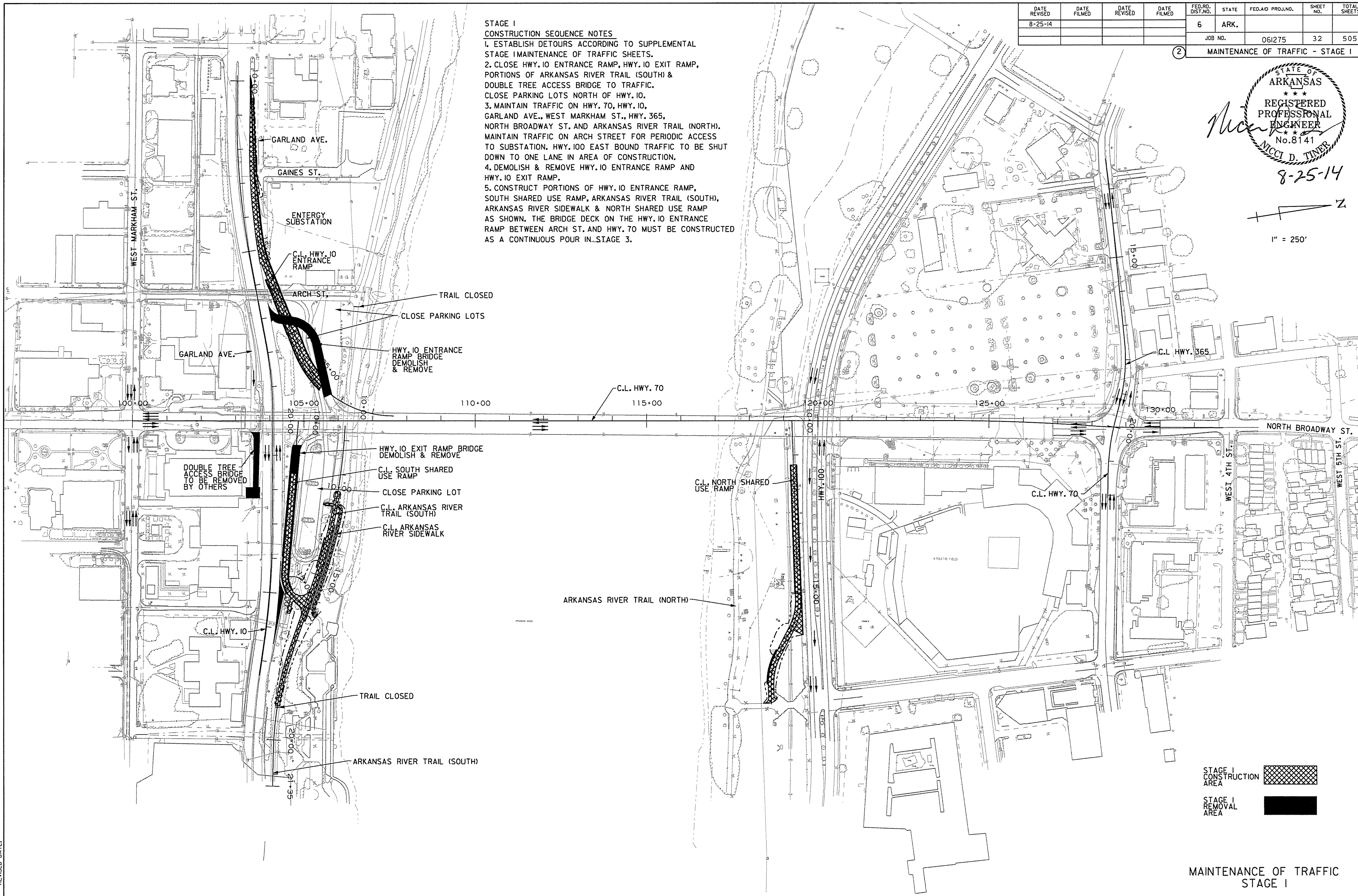
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	32	505

(2) MAINTENANCE OF TRAFFIC - STAGE I

STAGE I

CONSTRUCTION SEQUENCE NOTES

1. ESTABLISH DETOURS ACCORDING TO SUPPLEMENTAL STAGE I MAINTENANCE OF TRAFFIC SHEETS.
2. CLOSE HWY. 10 ENTRANCE RAMP, HWY. 10 EXIT RAMP, PORTIONS OF ARKANSAS RIVER TRAIL (SOUTH) & DOUBLE TREE ACCESS BRIDGE TO TRAFFIC. CLOSE PARKING LOTS NORTH OF HWY. 10.
3. MAINTAIN TRAFFIC ON HWY. 70, HWY. 10, GARLAND AVE., WEST MARKHAM ST., HWY. 365, NORTH BROADWAY ST. AND ARKANSAS RIVER TRAIL (NORTH). MAINTAIN TRAFFIC ON ARCH STREET FOR PERIODIC ACCESS TO SUBSTATION. HWY. 100 EAST BOUND TRAFFIC TO BE SHUT DOWN TO ONE LANE IN AREA OF CONSTRUCTION.
4. DEMOLISH & REMOVE HWY. 10 ENTRANCE RAMP AND HWY. 10 EXIT RAMP.
5. CONSTRUCT PORTIONS OF HWY. 10 ENTRANCE RAMP, SOUTH SHARED USE RAMP, ARKANSAS RIVER TRAIL (SOUTH), ARKANSAS RIVER SIDEWALK & NORTH SHARED USE RAMP AS SHOWN. THE BRIDGE DECK ON THE HWY. 10 ENTRANCE RAMP BETWEEN ARCH ST. AND HWY. 70 MUST BE CONSTRUCTED AS A CONTINUOUS POUR IN STAGE 3.



STATE OF ARKANSAS ★ ★ ★ REGISTERED PROFESSIONAL ENGINEER ★ ★ ★ No.8141 NICCI D. TINER

8-25-14

MAINTENANCE OF TRAFFIC
STAGE I

JFCantabery 8/25/2014 2:11:22 PM
WORKSPACE: AHTD
\\GIltdc01\2011\1017080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG1.dgn
REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

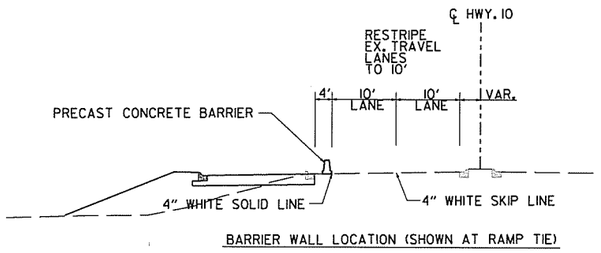
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	33	505

(2) MAINTENANCE OF TRAFFIC - STAGE I

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
MICCI D. TINER
5-30-14

N

1" = 100'



BARRIER WALL LOCATION (SHOWN AT RAMP TIE)

CONSTRUCTION PAVEMENT MARKINGS

HWY. 10 STA. 9+74 - STA. 28+94
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 480 LIN. FT.

HWY. 10 STA. 9+74 - STA. 28+94
REMOVABLE WESTBOUND SKIP WHITE CENTERLINE (4") = 480 LIN. FT.
REMOVABLE WESTBOUND SOLID WHITE EDGELINE (4") = 1,920 LIN. FT.

STAGE I CONSTRUCTION AREA

STAGE I REMOVAL AREA

TEMPORARY IMPACT ATTENUATION BARRIER ▶

TRAIL CLOSED — SPECIAL SIGN G (48" X 30")
8' BARR. TYPE III RT.

ROAD CLOSED — (1) R11-2 (48" X 30")
12' BARR. TYPE III RT.

ROAD CLOSED — (1) R11-2 (48" X 30")
8' BARR. TYPE III RT.

(1) W20-2 (48" X 48") DETOUR AHEAD
350'
(1) M6-3 (21"X15")
(1) M1-5 (24"X24")
(1) M3-4 (24"X12")
(1) M4-8 (24"X12")
350'

ARKANSAS RIVER TRAIL

TEMPORARY PRECAST CONCRETE BARRIER

TEMPORARY PRECAST CONCRETE BARRIER

4" WHITE SOLID LINE

10 TRAFFIC DRUMS @ 40' O.C.

20+00

SIDEWALK CLOSED — (1) R9-9 (24" X 12")
6' BARR. TYPE III RT.

110' TAPER

MATCH LINE A

(1) G20-2 (48" X 24") END ROAD WORK

END REMOVAL OF CONFLICTING PAVEMENT MARKINGS

350'

GARLAND AVE.

15+00

HWY. 10 (LA HARPE BLVD.)

10+00

TEMPORARY PRECAST CONCRETE BARRIER STA. 9+90 TO STA. 18+25

4" WHITE SKIP LINE

8' BARR. TYPE III RT.

ROAD CLOSED — (1) R11-2 (48" X 30")
8' BARR. TYPE III RT.

TEMPORARY PRECAST CONCRETE BARRIER

ROAD CLOSED — (1) R11-2 (48" X 30")
8' BARR. TYPE III LT.

SIDEWALK CLOSED — (1) R9-9 (24" X 12")
6' BARR. TYPE III RT.

END DETOUR (1) M4-8a (24"x18")

(1) SPECIAL SIGN A (30"x48") Broadway Bridge NORTH DETOUR

(1) SPECIAL SIGN A (30"x48") Broadway Bridge NORTH DETOUR

N. STATE ST.

(1) M4-8 (24"x12") DETOUR
(1) M3-4 (24"x12") WEST
(1) M1-5 (24"x24") 10
(1) M6-1R (21"x15")

N. ARCH ST.

(1) M4-8 (24"x12") DETOUR
(1) M3-4 (24"x12") WEST
(1) M1-5 (24"x24") 10
(1) M6-3 (21"x15")

(1) M6-1R (21"x15")
(1) M1-5 (24"x24") 10
(1) M3-4 (24"x12") WEST
(1) M4-8 (24"x12") DETOUR

US 70

POND

W. MARKHAM ST.

S. GAINES ST.

END DETOUR (1) M4-8a (24"x18")

MAINTENANCE OF TRAFFIC
STAGE I

cggervasini 5/29/2014 5:08:06 PM
W061275 AHTD
L:\ROW\061275\Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG1.01.dgn
REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

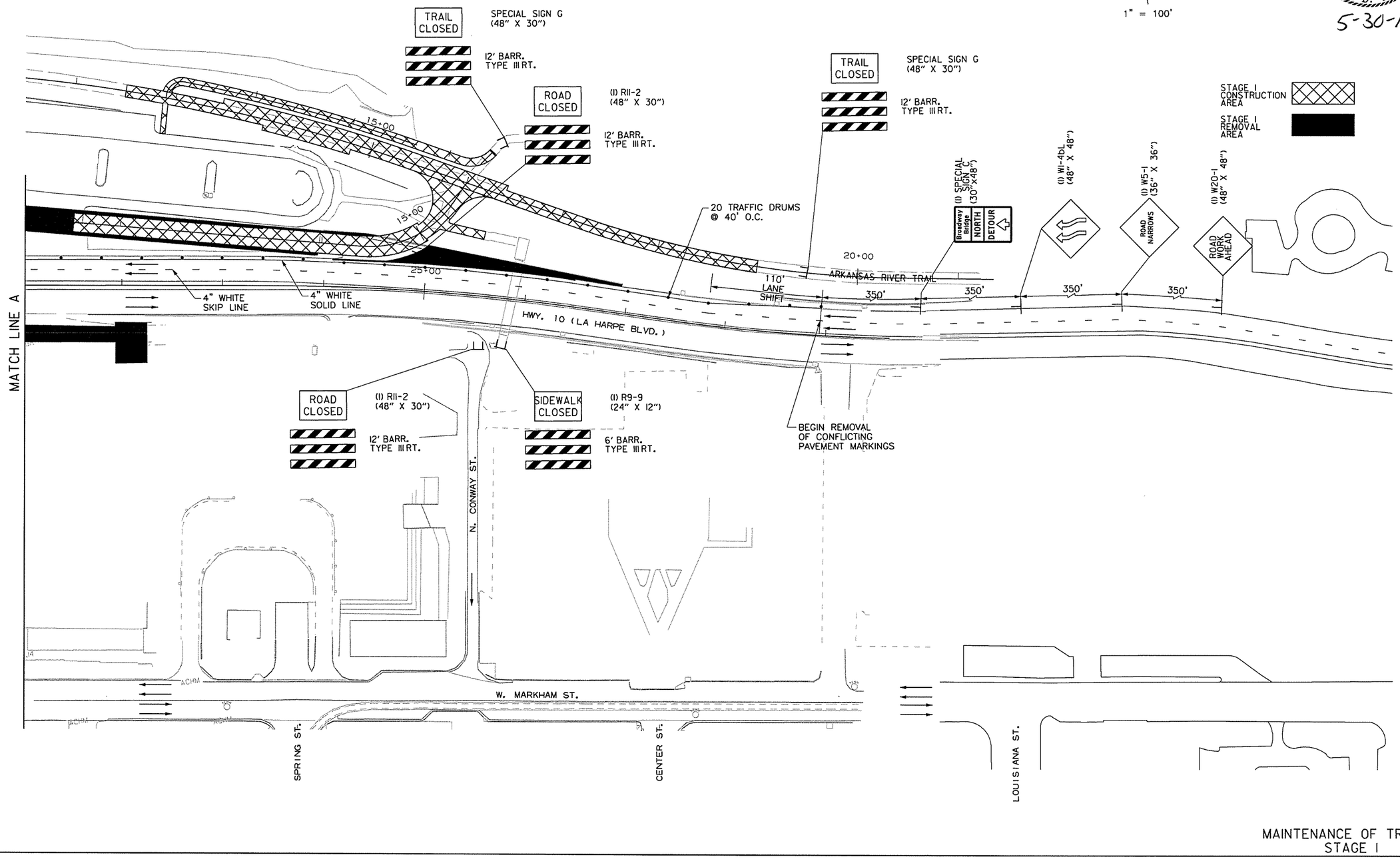
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	34	505

(2) MAINTENANCE OF TRAFFIC - STAGE 1

N

1" = 100'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14



MAINTENANCE OF TRAFFIC
STAGE 1

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WORKSPACE: AHTD
L:\ROW\MOT\060 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG1_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	35	505

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING CONSTRUCTION.

(2) MAINTENANCE OF TRAFFIC - STAGE I

STAGE I CONSTRUCTION AREA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

N

1" = 100'

22 TRAFFIC DRUMS @ 40' O.C.

4 TRAFFIC DRUMS @ 25' O.C.

HWY. 100

HWY. 70

N. WILLOW ST.

350'

350'

350'

320' TAPER

30'

100'

350'

(1) W20-1 (48" X 48")

ROAD WORK AHEAD

(1) W20-5R (48" X 48")

RIGHT LANE CLOSED AHEAD

(1) W4-2R (36" X 36")

(1) G20-2 (48" X 24")

END ROAD WORK

TRAIL CLOSED

SPECIAL SIGN G (48" X 30")

12' BARR. TYPE III RT.

ARKANSAS RIVER TRAIL (NORTH)

MAINTENANCE OF TRAFFIC
STAGE I

cggervasini 5/29/2014 5:08:07 PM
WORKSPACE: AHTD
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG1_03.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	36	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STAGE 2
CONSTRUCTION SEQUENCE NOTES
1. ESTABLISH AND MAINTAIN DETOURS ACCORDING TO SUPPLEMENTAL STAGE 2 MAINTENANCE OF TRAFFIC SHEETS.
2. MAINTAIN TRAFFIC ON HWY. 10, GARLAND AVE., ARCH ST., WEST MARKAM ST., HWY. 100, NORTH BROADWAY ST., HWY. 365 AND EASTERN PORTION OF HWY. 70. DETOUR ARKANSAS RIVER TRAIL TRAFFIC.
3. CLOSE HWY. 70 ROADWAY AND BRIDGE TRAFFIC FROM WEST MARKHAM ST. TO HWY. 365.
4. DEMOLISH AND REMOVE HWY. 70 BRIDGE OVER ARKANSAS RIVER & DICKEY STEPHENS PEDESTRIAN WALKWAY.
5. CONSTRUCT NEW HWY. 70 BRIDGE STRUCTURE AND ROADWAY.

STATE OF ARKANSAS
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No. 8141
NICCI D. TINER
5-30-14

1" = 250'

GARLAND AVE.
GAINES ST.
WEST MARKHAM ST.
C.L. HWY. 10 ENTRANCE RAMP
ARCH ST.
TRAIL CLOSED
CLOSED PARKING LOTS
GARLAND AVE.
100+00
105+00
110+00
115+00
120+00
125+00
130+00
DEMOLISH AND REMOVE EXISTING HWY. 70 BRIDGE AND CONSTRUCT NEW BRIDGE
C.L. HWY. 70
C.L. HWY. 365
NORTH BROADWAY ST.
C.L. SOUTH SHARED USE RAMP
CLOSED PARKING LOT
C.L. ARKANSAS RIVER TRAIL (SOUTH)
C.L. ARKANSAS RIVER SIDEWALK
C.L. HWY. 10
TRAIL CLOSED
ARKANSAS RIVER TRAIL (SOUTH)
C.L. NORTH SHARED USE RAMP
HWY. 100
ARKANSAS RIVER TRAIL (NORTH)
ATHLETIC FIELD
WEST 4TH ST.
WEST 5TH ST.

STAGE 2 CONSTRUCTION AREA

MAINTENANCE OF TRAFFIC
STAGE 2

cggervasini 5/29/2014 5:08:08 PM
WORKSPACE: AHTD
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REVISED DATE:

STAGE 2 OVERALL TRAFFIC PATTERN

(SHOWN FOR TRAFFIC SOUTH OF ARKANSAS RIVER)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	37	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

N

STATE ST.

WEST MARKHAM ST.

WEST MARKHAM ST.

2ND ST.

2ND ST.

HWY. 70

SCOTT ST.

4TH ST.

6TH ST.

MAINTENANCE OF TRAFFIC
STAGE 2

eggervostinl 5/29/2014 5:08:40 PM
WORKSPACE:ANTD
L:\CON\061060 - Broadway Bridge over the Arkansas River\Drawings\R06I275_MOT_Overall_LR.dgn
REVISED DATE:

STAGE 2 OVERALL TRAFFIC PATTERN

(SHOWN FOR TRAFFIC NORTH OF ARKANSAS RIVER)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	38	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

7TH ST.

N. BROADWAY ST.

MAPLE ST.

MAIN ST.

HWY. 70

N

MAINTENANCE OF TRAFFIC
STAGE 2

cgarrison1 5/29/2014 5:08:41 PM
WORKSPACE: AHTD
L:\20IN\I60T080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_Overall_NLR.dgn
REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	39	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

HWY. 10 (LA HARPE BLVD)
HWY. 70 CONSTRUCTION
N. STATE ST.
WEST MARKHAM ST.
2ND ST.
3RD ST.
STATE ST.
GAINES ST.
ARCH ST.
SPRING ST.
HWY. 70

LEGEND
STAGE 2 CONSTRUCTION AREA

END DETOUR (1) M4-8a (24"x18")
(1) G20-2 (48" X 24")
ROAD WORK AHEAD
(1) W20-1 (48" X 48")
LEFT LANE CLOSED AHEAD
(1) W20-5L (48" X 48")
ROAD CLOSED (1) R11-2 (48" X 30")
DETOUR (1) M4-10R (48" X 18")
12' BARR. TYPE III RT.
12' BARR. TYPE III LT.
4 TRAFFIC DRUMS @ 10' O.C.
8 TRAFFIC DRUMS @ 30' O.C.
7 TRAFFIC DRUMS @ 10' O.C.
3 TRAFFIC DRUMS @ 10' O.C.
16 TRAFFIC DRUMS @ 10' O.C.
14 TRAFFIC DRUMS @ 30' O.C.
10 TRAFFIC DRUMS @ 30' O.C.
15 TRAFFIC DRUMS @ 10' O.C.
1 TRAFFIC DRUMS @ 10' O.C.
4 TRAFFIC DRUMS @ 30' O.C.
(1) SPECIAL SIGN A (30"x48") Broadway Bridge NORTH DETOUR
(1) SPECIAL SIGN B (30"x48") Broadway Bridge NORTH DETOUR
(1) SPECIAL SIGN C (30"x48") Broadway Bridge NORTH DETOUR
(1) R3-1 (36"x36")
(1) M4-8 (24"x12") DETOUR
(1) M3-4 (24"x12") WEST
(1) M1-5 (24"x24") 10
(1) M6-3 (21"x15")
(1) M4-9aR (30" X 24") DETOUR
(1) M4-9aL (30" X 24") DETOUR
(1) M6-1R (24"x18")
(1) M6-2 (24"x18")
LEFT LANE MUST TURN LEFT (1) R3-7 LT. (30" X 30")
RIGHT LANE MUST TURN RIGHT (1) R3-7 RT. (30" X 30")
ROAD WORK AHEAD (1) W20-1 (48" X 48")
350' 300' 100' 80' 275'
MATCH LINE A
MATCH LINE B
N
1" = 120'

MAINTENANCE OF TRAFFIC
STAGE 2

caggervosini 5/29/2014 5:08:41PM
WORKSPACE: AHTD
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REVISED DATES:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	40	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

MATCH LINE A

CENTER ST.

LOUISIANA ST.

MAIN ST.

SCOTT ST.

WEST MARKHAM ST.

2ND ST.

3RD ST.

MATCH LINE D

MATCH LINE C

350'

350'

(1) W20-5R (48" X 48")
RIGHT LANE CLOSED AHEAD

(1) W20-1 (48" X 48")
ROAD WORK AHEAD

(1) M6-3 (21"x15")
(1) MI-5 (24"x24")
(1) M3-4 (24"x12")
(1) M4-8 (24"x12")
DETOUR WEST 10
(1) SPECIAL SIGN F (30"x48")
Broadway Bridge SOUTH DETOUR

(1) M6-1R (21"x15")
(1) MI-5 (24"x24")
(1) M3-4 (24"x12")
(1) M4-8 (24"x12")
DETOUR WEST 10
(1) SPECIAL SIGN F (30"x48")
Broadway Bridge SOUTH DETOUR

(1) SPECIAL SIGN C (30"x48")
Broadway Bridge NORTH DETOUR

(1) WII-1 (30" X 30")
(1) WI6-1P (18" X 24")
SHARE THE ROAD

WORD "ONLY" THERMOPLASTIC

TURN LANE-USE ARROW THERMOPLASTIC

40' 50' 10' 40' 50' 10' 40' 50'
285'
REMOVE CONFLICTING PAVEMENT MARKINGS

SEE SIGNAL PLAN SHEETS FOR MODIFICATIONS TO THE EXISTING SIGNAL

N

1" = 120'

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.
2. PROVIDE R3-7 FOR USE IF AND WHERE DIRECTED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC
STAGE 2

cggervasini 5/29/2014 5:08:42 PM
WORKSPACE: AHTD
L:\ZONING\07080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG2_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	41	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

N

1" = 120'

STATE OF ARKANSAS
- REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

PRESIDENT CLINTON AVE.

CUMBERLAND ST.

RIVER MARKET AVE.

SHERMAN ST.

2ND ST.

I-30 FRONTAGE RD.

3RD ST.

MATCH LINE D

MATCH LINE E

(1) W11-1 (30" X 30")
(1) W16-1P (18" X 24")
SHARE THE ROAD

(1) W16-1P (18" X 24")
SHARE THE ROAD
(1) W11-1 (30" X 30")

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

MAINTENANCE OF TRAFFIC
STAGE 2

oggervosinl 5/29/2014 5:08:43 PM
WORKSPACE: AHTD
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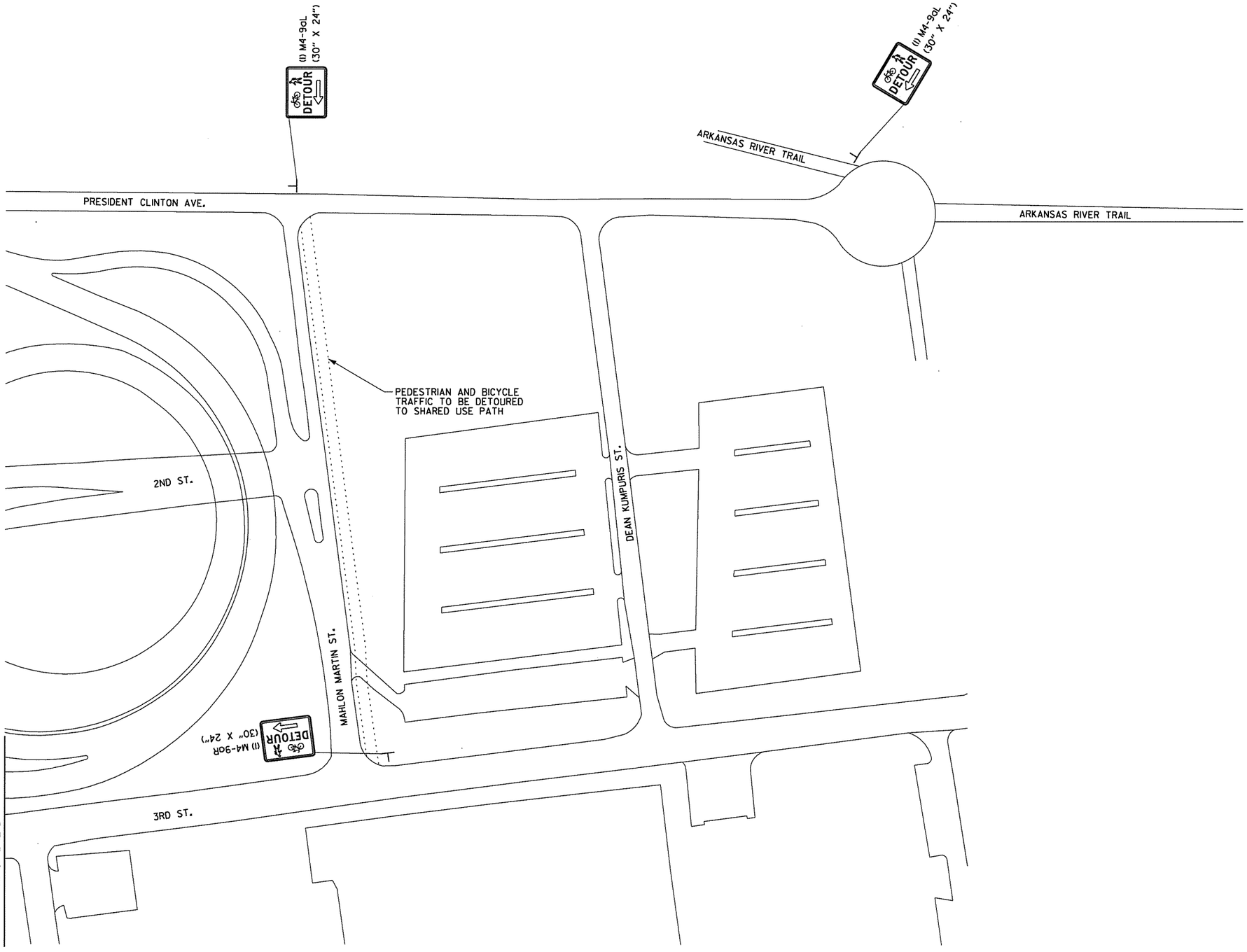
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	42	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14



N

1" = 120'

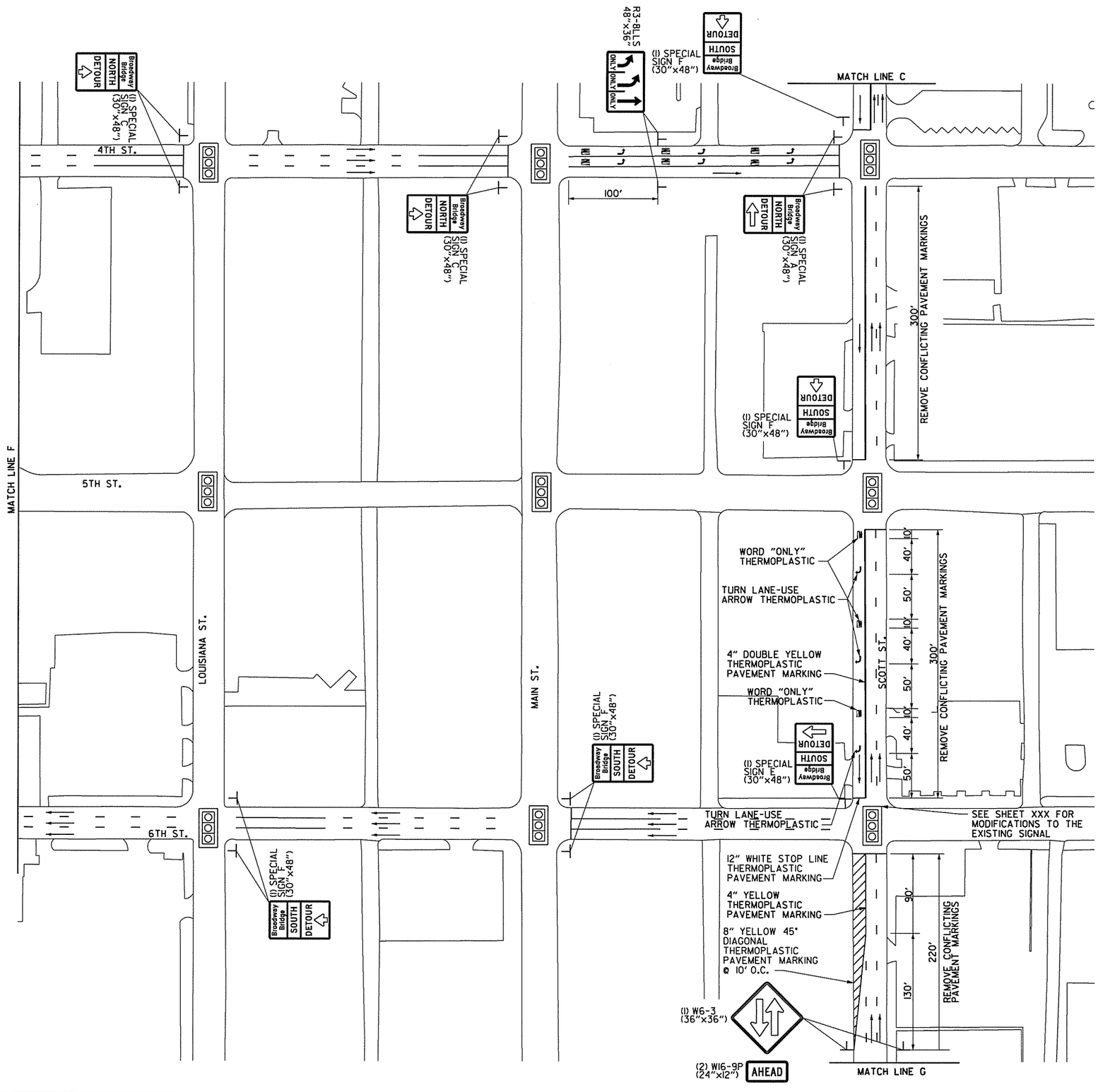
NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

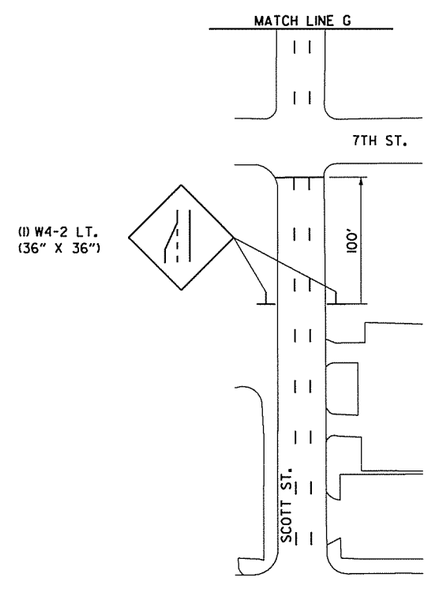
MAINTENANCE OF TRAFFIC
STAGE 2

cggervasini 5/29/2014 5:08:43 PM
WORKSPACE: AHTD
L:\CGI\M\061060 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG2_04.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	43	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2





N

1" = 120'

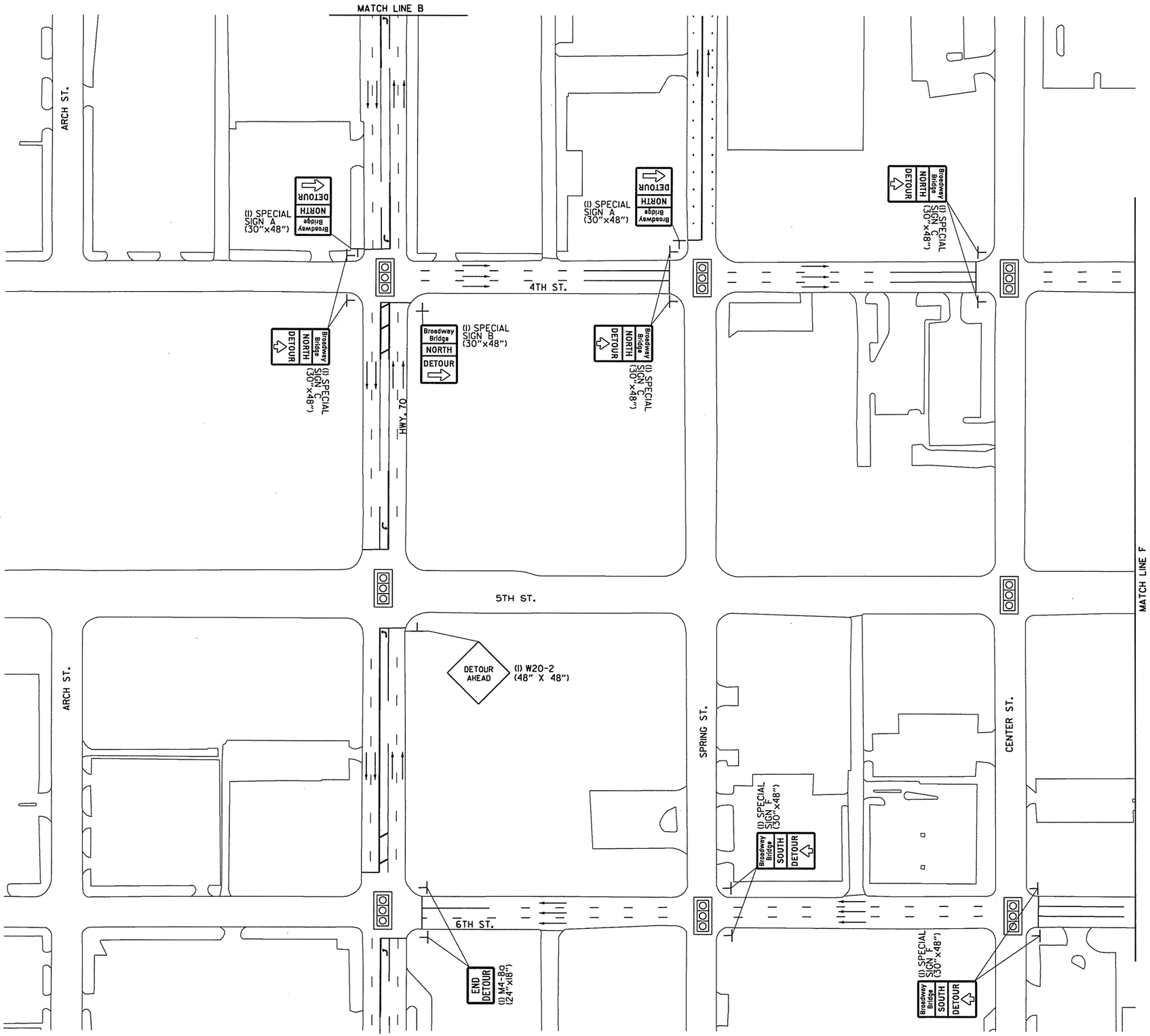
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.
2. PROPOSED PAVEMENT MARKINGS SHOWN SHALL BE PAID FOR AS PERMANENT PAVEMENT MARKINGS.

MAINTENANCE OF TRAFFIC
STAGE 2

eggervastinl 5/29/2014 5:08:43 PM
W:\ROCK\ROCK\MTD
L:\ROW\MOT\060 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG2_05.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	44	505
				(2) MAINTENANCE OF TRAFFIC - STAGE 2				



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

N

1" = 120'

MAINTENANCE OF TRAFFIC
STAGE 2

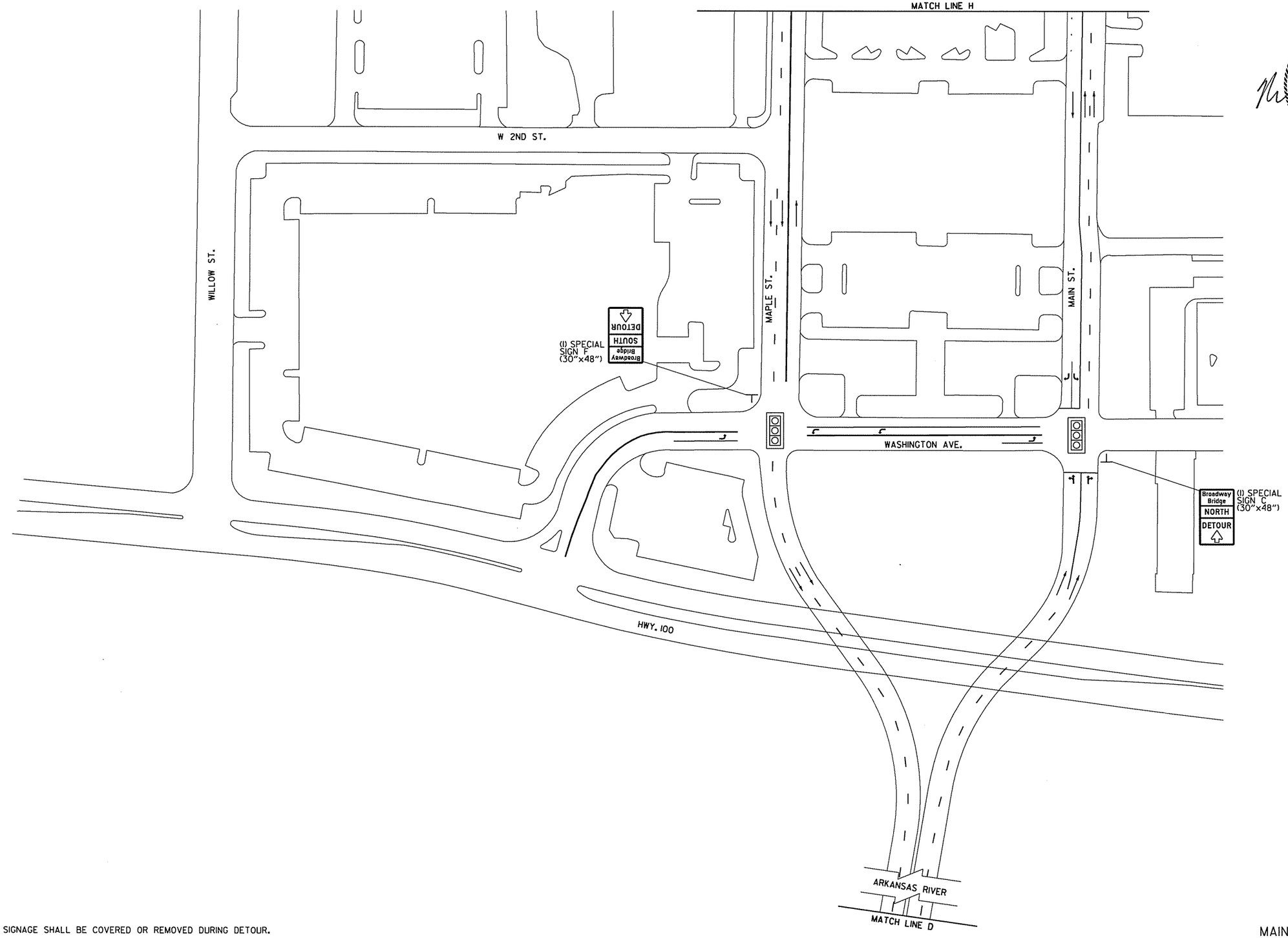
cggervassini 5/29/2014 5:08:44 PM
WORKSPACE: AHTD
L:\20IN\I007080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_ST02_06.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	45	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14



NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

MAINTENANCE OF TRAFFIC
STAGE 2

cgger.vostn1 5/29/2014 5:08:48 PM
WORKSPACE: AHTD
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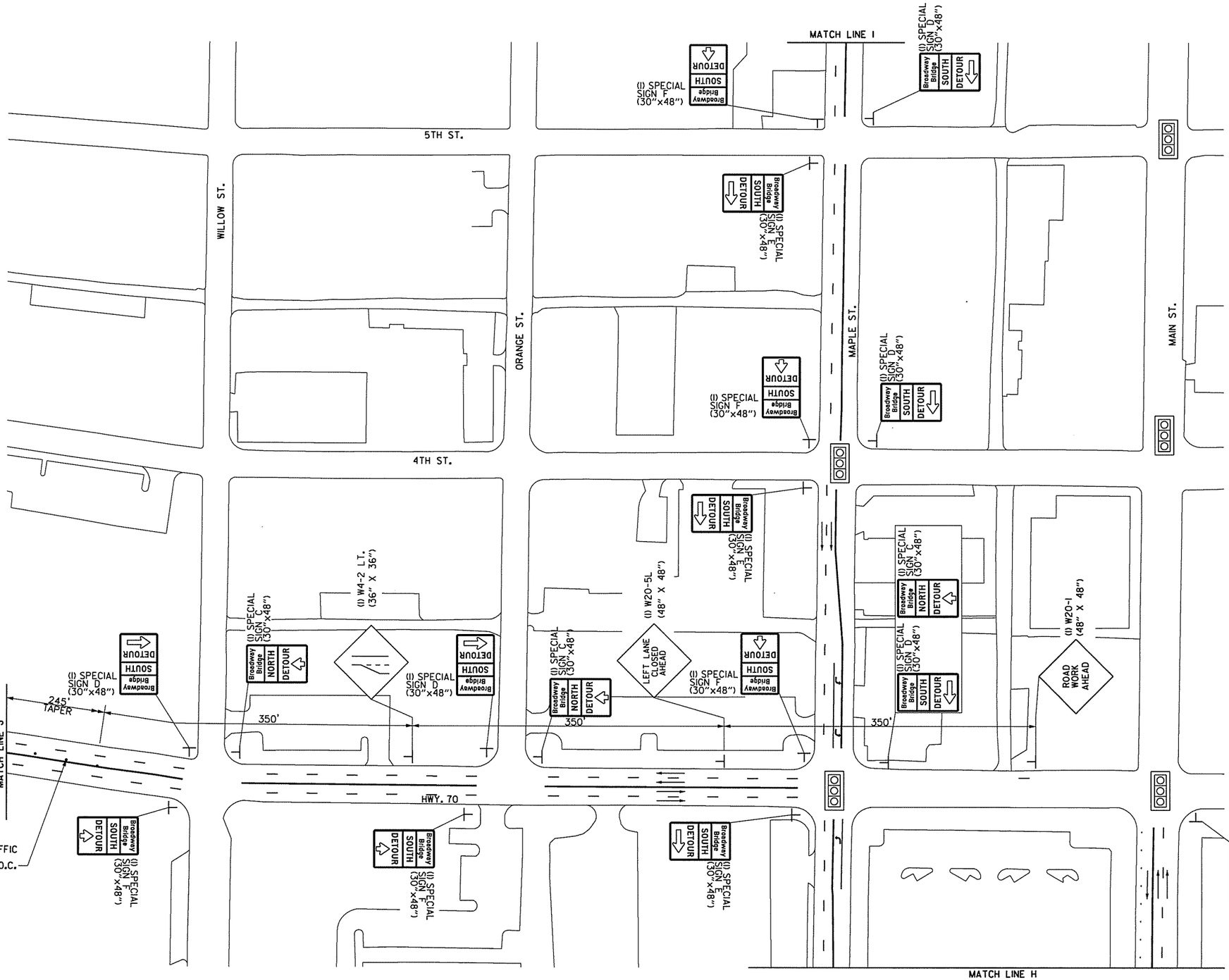
REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	46	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER



MAINTENANCE OF TRAFFIC
STAGE 2

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	47	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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NICCI D. TINER
5-30-14

MAINTENANCE OF TRAFFIC
STAGE 2

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	48	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

LEGEND
STAGE 2 CONSTRUCTION AREA

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

N

1" = 120'

OAK ST.

4TH ST.

5TH ST.

CHANDLER ST.

N. BROADWAY ST.

HWY. 365

HWY. 70

KARROTT ST.

(1) W20-2 (48" X 48") DETOUR AHEAD

(1) G20-2 (48" X 24") END Road Work

(1) W20-1 (48" X 48") ROAD WORK AHEAD

(1) W20-5R (48" X 48") RIGHT LANE CLOSED AHEAD

350'

350'

350'

(1) SPECIAL SIGN D (30"x48") DETOUR Broadway Bridge SOUTH

12' BARR. TYPE III L.T.

(1) M4-8 (24" X 18") END DETOUR

26 TRAFFIC DRUMS @ 35' O.C.

245' TAPER

100'

4 TRAFFIC DRUMS @ 25' O.C.

12' BARR. TYPE III R.T.

(1) M4-10L (48" X 18")

(1) R11-2 (48" X 30") ROAD CLOSED

HWY. 70 CONSTRUCTION

MATCH LINE J

10 TRAFFIC DRUMS @ 35' O.C.

2 TRAFFIC DRUMS @ 10' O.C.

2 TRAFFIC DRUMS @ 35' O.C.

3 TRAFFIC DRUMS @ 10' O.C.

2 TRAFFIC DRUMS @ 10' O.C.

5 TRAFFIC DRUMS @ 35' O.C.

6 TRAFFIC DRUMS @ 35' O.C.

(1) R3-1 (36"X36")

(1) SPECIAL SIGN D (30"X48") DETOUR Broadway Bridge SOUTH

MAINTENANCE OF TRAFFIC
STAGE 2

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L:\20N\NOT080 Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG2_10.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	49	505

(2) MAINTENANCE OF TRAFFIC - STAGE 2

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

LEGEND
STAGE 2 CONSTRUCTION AREA
STAGE 2 REMOVAL AREA

SAW CUT AND REMOVE 10' SECTION OF EXISTING ISLAND

(1) M4-9aL (30" X 24")
(1) M4-9aR (30" X 24")
(1) M4-8a (24" X 18")
(1) M4-10R (48" X 18")
(1) M4-10L (48" X 18")
(1) W11-1 (30" X 30")
(1) W16-1P (18" X 24")
SPECIAL SIGN G (48" X 30")
12' BARR. TYPE III RT.
TRAIL CLOSED
DETOUR
SHARE THE ROAD
ARKANSAS RIVER TRAIL
HWY. 70
HWY. 100
1" = 200'

cgarry.asfnl 5/29/2014 5:08:51 PM
W:\ROAD\PROJECTS\HTD
L:\ZON\I061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_ST02_ILdgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	50	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

STAGE 3
CONSTRUCTION SEQUENCE NOTES
1. MAINTAIN TRAFFIC ACCORDING TO SUPPLEMENTAL STAGE 3 MAINTENANCE OF TRAFFIC SHEETS.
2. MAINTAIN TRAFFIC ON HWY. 70, HWY. 10, GARLAND AVE., ARCH ST., WEST MARKHAM, ARKANSAS RIVER TRAIL NORTH AND SOUTH, HWY. 100, HWY. 365 & NORTH BROADWAY ST.
3. CONSTRUCT REMAINING PORTIONS OF HWY. 10 ENTRANCE RAMP, SOUTH SHARED USE RAMP & NORTH SHARED USE RAMP. OVERLAY THE EXISTING LANES OF HWY. 365 & NORTH BROADWAY ST. UNDER TRAFFIC. THEN CONSTRUCT NOTCH AND WIDENING ON HWY. 365 AND NORTH BROADWAY ST.
4. OPEN ALL ROADWAYS, BRIDGES, RAMPS, SIDEWALKS & PARKING LOTS TO TRAFFIC.
5. REMOVE DETOURS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

N

1" = 250'

GARLAND AVE.
GAINES ST.
WEST MARKHAM ST.
C.L. HWY. 10 ENTRANCE RAMP
ARCH ST.
CLOSED PARKING LOTS
GARLAND AVE.
C.L. HWY. 70
C.L. HWY. 365
NORTH BROADWAY ST.
C.L. SOUTH SHARED USE RAMP
CLOSED PARKING LOT
C.L. ARKANSAS RIVER TRAIL (SOUTH)
C.L. ARKANSAS RIVER SIDEWALK
C.L. NORTH SHARED USE RAMP
HWY. 100
C.L. HWY. 70
WEST 4TH ST.
WEST 5TH ST.
C.L. HWY. 10
ARKANSAS RIVER TRAIL (NORTH)
ARKANSAS RIVER TRAIL (SOUTH)

STAGE 3A CONSTRUCTION AREA
STAGE 3B CONSTRUCTION AREA

MAINTENANCE OF TRAFFIC
STAGE 3

cggervasini 5/29/2014 5:08:51PM
WORKSPACE: AHTD
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REVISED DATE:

NOTES:
1. OVERLAY HWY. 365 AND HWY. 70 UNDER TRAFFIC
2. SHIFT BARRELS AS NEEDED TO DIVERT TRAFFIC WHEN OVERLAYING.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	51	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
MICCI D. TINER
5-30-14

N

1" = 120'

(1) W20-1 (48" X 48")
ROAD WORK AHEAD

(1) W20-5R ** (48" X 48")
RIGHT LANE CLOSED AHEAD

(1) W4-2 RT. ** (36" X 36")

350'
350'
350'

W. BROADWAY ST.

(1) G20-2 (48" X 24")
END ROAD WORK

210' TAPER

4 TRAFFIC DRUMS @ 35' C.C.

MATCH LINE A

** CHANGE SIGNS TO INDICATE LEFT LANE CLOSURE AHEAD AS NEEDED.

MATCH LINE A

210' TAPER
100' BUFFER
105' LANE SHIFT

3 TRAFFIC DRUMS @ 35' O.C.
5 TRAFFIC DRUMS @ 10' O.C.
15 TRAFFIC DRUMS @ 35' O.C.

4TH ST.

HWY. 70 CONSTRUCTION
2 TRAFFIC DRUMS @ 10' O.C.
28 TRAFFIC DRUMS @ 35' O.C.

130'-00"

(1) W4-2 LT. * (36" X 36")
N. WILLOW ST.
(1) W20-5L * (48" X 48")
LEFT LANE CLOSED AHEAD
(1) W20-1 (48" X 48")
ROAD WORK AHEAD

245' TAPER
350'
350'
350'

W. BROADWAY ST. (US 70)

100' TAPER
350'

8 TRAFFIC DRUMS @ 25' O.C.

(1) G20-2 (48" X 24")
END ROAD WORK

40 TRAFFIC DRUMS @ 35' O.C.

(1) G20-2 (48" X 24")
END ROAD WORK

350'
15'-00"

W. BROADWAY ST.

350'
140' LANE SHIFT

4 TRAFFIC DRUMS @ 10' O.C.
3 TRAFFIC DRUMS @ 35' O.C.

HWY. 365 CONSTRUCTION

(1) W20-1 (48" X 48")
ROAD WORK AHEAD

TRAIL CLOSED
SPECIAL SIGN G (48" X 30")

20 TRAFFIC DRUMS @ 40' O.C.

12' BARR. TYPE III RT.

(1) W12-1 (30" X 30")

125'-00"

22 TRAFFIC DRUMS @ 10' O.C.

CENTER LANE CLOSED AHEAD
(1) W9-3 (36" X 36")

350'
350'

ROAD WORK AHEAD
(1) W20-1 (48" X 48")

(1) G20-2 (48" X 24")
END ROAD WORK

* CHANGE SIGNS TO INDICATE RIGHT LANE CLOSURE AHEAD AS NEEDED.

STAGE 3A OVERLAY

MAINTENANCE OF TRAFFIC
STAGE 3A

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WORKSPACE: AHTD
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REVISED DATE:

NOTES:
1. CONSTRUCT HWY. 365 AND HWY. 70 REMAINING NOTCH AND WIDENING AND GURB AND GUTTER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	52	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

N

1" = 120'

CONSTRUCTION PAVEMENT MARKINGS

N. BROADWAY ST. STA. 129+57 - STA. 131+79
REMOVABLE SOLID DOUBLE YELLOW CENTERLINE (4") = 444 LIN. FT.

N. BROADWAY ST. STA. 129+57 - STA. 131+04
REMOVABLE SOLID WHITE LANE LINE (4") = 147 LIN. FT.

(1) W20-1 (48" X 48") ROAD WORK AHEAD

END ROAD WORK (1) G20-2 (48" X 24")

4TH ST.

350'

4 TRAFFIC DRUMS @ 35' C.C.

HWY. 70 CONSTRUCTION

6 TRAFFIC DRUMS @ 10' C.C.

130+00

4" DOUBLE YELLOW SOLID LINE

4" WHITE SOLID LINE

(1) W20-1 (48" X 48") ROAD WORK AHEAD

END ROAD WORK (1) G20-2 (48" X 24")

18 TRAFFIC DRUMS @ 35' C.C.

350'

15+00

20+00

ONE WAY

ONE WAY

W. BROADWAY ST. (US 70)

W. BROADWAY ST.

350'

140' LANE SHIFT

4 TRAFFIC DRUMS @ 10' C.C.

3 TRAFFIC DRUMS @ 35' C.C.

3 TRAFFIC DRUMS @ 10' C.C.

HWY. 365 CONSTRUCTION

18 TRAFFIC DRUMS @ 35' C.C.

350'

TRAIL CLOSED

SPECIAL SIGN G (48" X 30")

12' BARR. TYPE III RT.

END ROAD WORK (1) G20-2 (48" X 24")

48 TRAFFIC DRUMS @ 20' C.C.

(1) W12-1 (30" X 30")

125+00

CENTER LANE CLOSED AHEAD (1) W9-3 (36" X 36")

350'

350'

ROAD WORK AHEAD (1) W20-1 (48" X 48")

END ROAD WORK (1) G20-2 (48" X 24")

STAGE 3B NOTCH AND WIDEN

MAINTENANCE OF TRAFFIC
STAGE 3B

(1) W20-1 (48" X 48") ROAD WORK AHEAD

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WORKSPACE: MTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	53	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

N

1" = 100'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

STAGE 3 CONSTRUCTION AREA

ARKANSAS RIVER TRAIL

ROAD CLOSED — (1) R11-2 (48" X 30")

16' BARR. TYPE III RT.

TEMPORARY PRECAST CONCRETE BARRIER

DETOUR AHEAD (48" X 48") — (1) W20-2

350'

DETOUR (24"x12") — (1) M4-8
WEST (24"x12") — (1) M3-4
10 (24"x24") — (1) M1-5
(21"x15") — (1) M6-3

350'

GARLAND AVE.

15+00

HWY. 10 (LA HARPE BLVD.)

10+00

GARLAND AVE.

20+00

MATCH LINE A

END DETOUR — (1) M4-8a (24"x18")

N. STATE ST.

DETOUR (24"x12") — (1) M4-8
WEST (24"x12") — (1) M3-4
10 (24"x24") — (1) M1-5
(21"x15") — (1) M6-1R

W. MARKHAM ST.

S. GAINES ST.

N. ARCH ST.

DETOUR (24"x12") — (1) M4-8
WEST (24"x12") — (1) M3-4
10 (24"x24") — (1) M1-5
(21"x15") — (1) M6-3

US 70

TRAIL CLOSED — SPECIAL SIGN G (48" X 30")

12' BARR. TYPE III RT.

MAINTENANCE OF TRAFFIC
STAGE 3

cggervasini 5/29/2014 5:09:25 PM
WORKSPACE1.AHTD
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REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING DETOUR.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	54	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

N

1" = 100'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

TRAIL CLOSED

SPECIAL SIGN G (48" X 30")

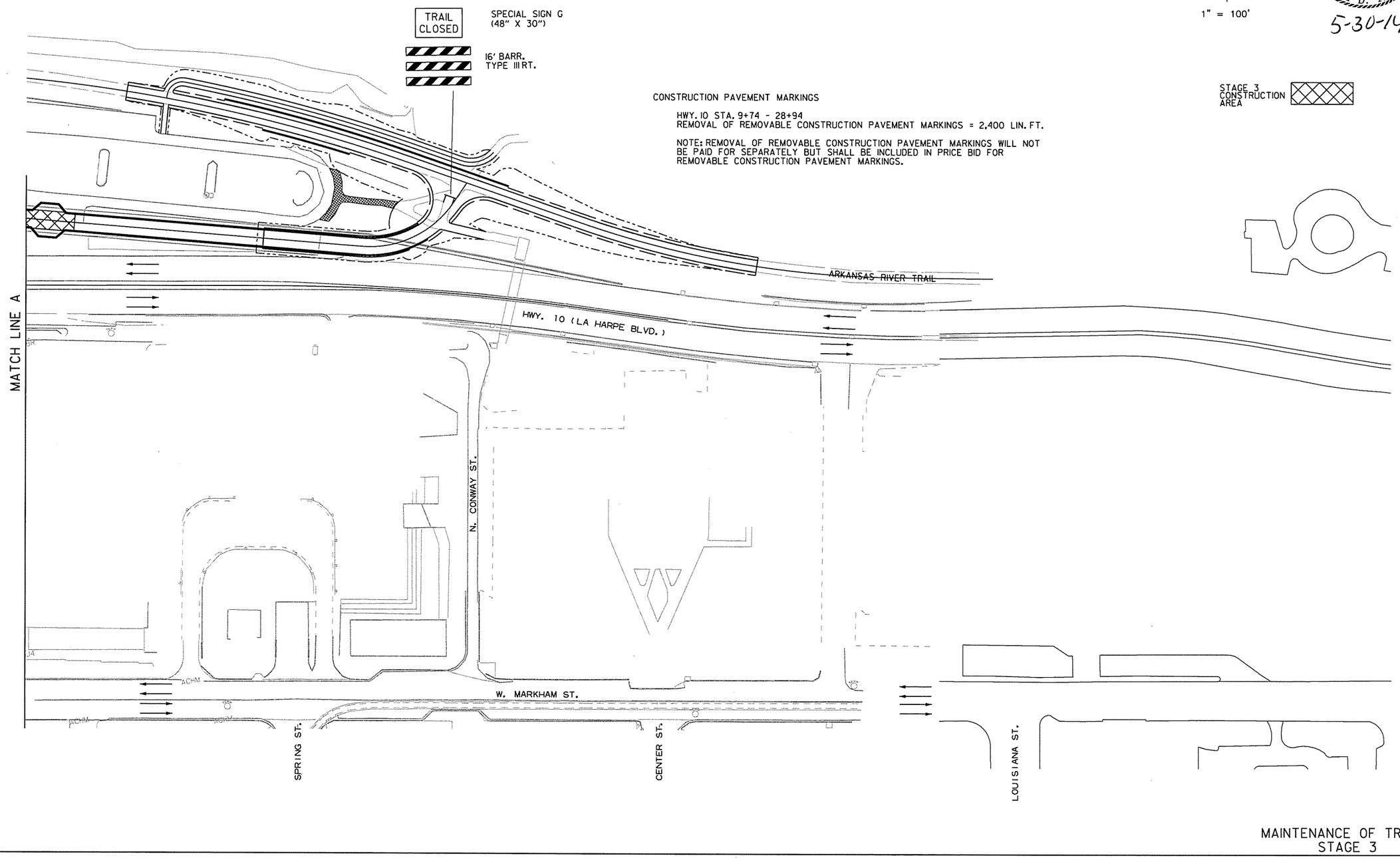
16' BARR. TYPE III RT.

CONSTRUCTION PAVEMENT MARKINGS

HWY. 10 STA. 9+74 - 28+94
REMOVAL OF REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 2,400 LIN. FT.

NOTE: REMOVAL OF REMOVABLE CONSTRUCTION PAVEMENT MARKINGS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN PRICE BID FOR REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.

STAGE 3 CONSTRUCTION AREA



MAINTENANCE OF TRAFFIC
STAGE 3

cggervasini 5/29/2014 5:09:25 PM
WORKSPACE: MTD
LX:\Design\061080 Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_ST03_04.dgn
REVISED DATE:

NOTES:
1. ANY CONFLICTING SIGNAGE SHALL BE COVERED OR REMOVED DURING CONSTRUCTION.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	55	505

(2) MAINTENANCE OF TRAFFIC - STAGE 3

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

STAGE 3 CONSTRUCTION AREA

N

1" = 100'

N. WILLOW ST.

HWY. 100

HWY. 70

TRAIL CLOSED

SPECIAL SIGN G (48" X 30")

12' BARR. TYPE III RT.

ARKANSAS RIVER TRAIL (NORTH)

MAINTENANCE OF TRAFFIC
STAGE 3

cgarvosini 5/29/2014 5:09:27 PM
WORKSPACE: AHTD
L:\2014\14071060 - Broadway Bridge over the Arkansas River\Drawings\R061275_MOT_STG3_05.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	56	505
				(2)	PERMANENT PAVEMENT MARKINGS			

STATE OF ARKANSAS
JOHN F. CANTABERRY
LICENSED PROFESSIONAL ENGINEER
No. 13422
5-30-14

HWY. 10 STA. 9+34 TO STA. 28+94
C.L. WESTBOUND LANES
4" SKIP WHITE THERMOPLASTIC
PAVEMENT MARKING W/ TYPE II
RED/WHITE RAISED PAVEMENT MARKERS

215' - 8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

60'

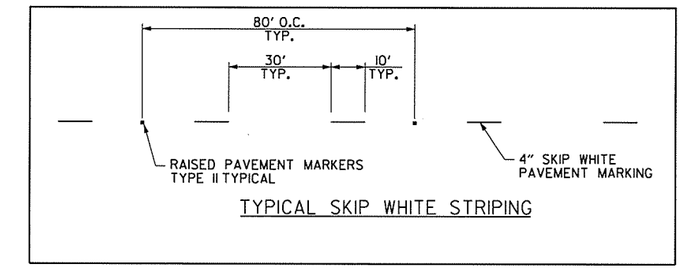
15+00

8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 10' O.C.

4" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" CONTINUOUS YELLOW HIGH PERFORMANCE PAVEMENT MARKING

C.L. HWY. 10 ENTRANCE RAMP



TYPICAL SKIP WHITE STRIPING

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

WORD "ONLY" THERMOPLASTIC

TURN LANE-USE ARROW THERMOPLASTIC

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING

12" WHITE CROSSWALK LINE (TYPICAL AT INTERSECTION)

4" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (2' STRIPE, 6' GAP)

60' LT. TURN LANE

40'

10'

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

WEST MARKHAM ST.

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING

105+00

20

00

110+00

8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 10' O.C.

C.L. HWY. 70

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS ON BRIDGE

TURN LANE-USE ARROW THERMOPLASTIC

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS ON BRIDGE

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

C.L. ARKANSAS RIVER TRAIL

ARKANSAS RIVER

C.L. HWY. 10

C.L. SOUTH SHARED USE RAMP

TURN LANE-USE ARROW THERMOPLASTIC

WORD "ONLY" THERMOPLASTIC

HWY. 10 STA. 9+34 TO STA. 28+94
C.L. WESTBOUND LANES
4" SKIP WHITE THERMOPLASTIC
PAVEMENT MARKING W/ TYPE II
RED/WHITE RAISED PAVEMENT MARKERS

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

PERMANENT PAVEMENT MARKINGS

cggervasini 5/30/2014 11:04:25 AM
WORKSPACE: AHTD
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_PM_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	57	505

(2) PERMANENT PAVEMENT MARKINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

N

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

355' TURN LANES
40' 215' 40' 50'

TURN LANE-USE ARROW THERMOPLASTIC

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS ON BRIDGE

4" DOUBLE YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS ON BRIDGE

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

C.L. HWY. 70

115+00 120+00 125+00 10+00 20+00

6" DOTTED WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

4" DOUBLE YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS ON BRIDGE

C.L. NORTH SHARED USE PATH

HWY. 100

ARKANSAS RIVER

WORD "ONLY" THERMOPLASTIC

10' 40' 200'

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

150' TAPER

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

WORD "ONLY" THERMOPLASTIC

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

ONLY ONLY

15+00

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

PERMANENT PAVEMENT MARKINGS

cooper\cashl 5/29/2014 5:09:28 PM
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L:\2011\11017080 - Broadway Bridge over the Arkansas River\Drawings\R061275_PM_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	58	505
				(2)	PERMANENT PAVEMENT MARKINGS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

N

NORTH BROADWAY ST.

WEST 4TH ST.

CHANDLER ST.

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

WORD "ONLY" THERMOPLASTIC

8" YELLOW - 45° DIAGONAL THERMOPLASTIC PAVEMENT MARKING @ 25' O.C.

12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING

TURN LANE-USE ARROW THERMOPLASTIC

4" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (2' STRIPE, 6' GAP)

12" WHITE CROSSWALK LINE (TYPICAL)

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

165'

110'

130'-00

15+00

20+00

12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING

TURN LANE-USE ARROW THERMOPLASTIC

WORD "ONLY" THERMOPLASTIC

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

HWY. 70

C.L HWY. 365

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING

12" WHITE CROSSWALK LINE (TYPICAL)

12" WHITE STOP BAR THERMOPLASTIC PAVEMENT MARKING

4" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKERS

4" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS

WILLOW ST.

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS @ 36' O.C.

200'

8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING (TYP. AROUND ISLAND) & 10" REFL. PAINT ON ISLAND CURBS

ONLY ONLY ONLY ONLY

C.L. HWY. 70

125+00

ONLY ONLY ONLY ONLY

TURN LANE-USE ARROW THERMOPLASTIC

10' 40' 60' 40' 50'

WORD "ONLY" THERMOPLASTIC

TURN ARROW AND "ONLY" SPACING FOR HWY. 356

PERMANENT PAVEMENT MARKINGS

cggervasini 5/29/2014 5:09:28 PM
WORKSPACE: AHTD
L:\ROW\061060 - Broadway Bridge over the Arkansas River\Drawings\R061275_PM_03.dgn
REVISED DATE:

NOTES:
1. ALL SIGNS SHOWN AS "REMOVE AND RELOCATE" SHALL BE INSTALLED WITH NEW SIGNS AND POSTS.
2. ALL "SPECIAL SIGNS" REMOVED SHALL BECOME THE PROPERTY OF THE CITIES OF LITTLE ROCK OR NORTH LITTLE ROCK. ALL OTHER SIGNS AND ALL SIGN POSTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
3. THE EXISTING FOOTINGS SHALL BE REMOVED TO A MINIMUM OF 12" BELOW NORMAL GRADE AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	59	505

(2) SIGNING PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

MATCH LINE A
15+00
LA HARPE BLVD. (HWY. 10)
SS-010-08
W4-1R 36"x36"
STA. 15+85 WB
EXSTING RI-2 TO BE REMOVED
EXISTING W4-1R TO BE REMOVED
EXISTING SIGN TO REMAIN
SS-010-08
W11-2 36"x36"
W16-7P 24"x12"
STA. 12+60 WB REMOVE AND RELOCATE
EXISTING SIGNS TO REMAIN
GAINES ST.
LA HARPE BLVD. (HWY. 10)
MATCH LINE A

SS-070-12
SPECIAL SIGN 2 36"x30"
ADOPT A HIGHWAY LITTER CONTROL WEST 2 MILES PULASKI-HARMONY MODERN FREE #002
STA. 99+64 SB REMOVE AND RELOCATE

SS-070-12
TURNING VEHICLES TO
R10-15 30"x30"
STA. 100+27 WB MOUNTED ON SIGNAL POLE

SS-070-12
STA. 99+56 NB REMOVE AND RELOCATE MOUNTED ON SIGNAL POLE
SPECIAL SIGN 1 36"x8"
M6-1R 21"x15"
OLD STATE HOUSE
SS-070-12
R10-15 30"x30"
TURNING VEHICLES TO
STA. 99+56 SB MOUNTED ON SIGNAL POLE

SS-070-12 MOUNTED ON SIGNAL POLE
SPECIAL SIGN 4 30"x36"
6 AM-6 PM Fri-Mon
STA. 100+36 WB REMOVE AND RELOCATE

SS-070-12
SPECIAL SIGNS 5 & 6 18"x24"
MON-FRI 6 AM-6 PM
STA. 100+33 WB REMOVE AND RELOCATE

SS-070-12
SPECIAL SIGN 7 24"x30"
PRESERVE AMERICA WELCOME TO LITTLE ROCK
SPECIAL SIGN 8 36"x18"
VISITOR INFORMATION
W6-1L 21"x15"
STA. 101+44 SB REMOVE AND RELOCATE

EXISTING M3-4, MI-4, M6-2R, AND R3-2 TO BE REMOVED

SS-070-12
R3-2 24"x24"
M3-4 24"x12"
WEST
MI-5 24"x24"
10
M6-2R 21"x15"
STA. 106+04 SB REMOVE AND RELOCATE

EXISTING M2-1, MI-5 AND SPECIAL SIGN "WELCOME TO LITTLE ROCK" TO BE REMOVED

105+00
110+00
W. BROADWAY ST. (US 70)
MATCH LINE C

W. MARKHAM ST.
200

SS-070-12
R10-15 30"x30"
TURNING VEHICLES
STA. 99+67 NB MOUNTED ON SIGNAL POLE

SS-070-12
R7-2 12"x18"
ALT LINE
STA. 99+77 EB REMOVE AND RELOCATE

SS-070-12
R7-6 12"x18"
STA. 101+12 NB REMOVE AND RELOCATE

SS-070-12
R7-6 12"x18"
STA. 102+47 REMOVE AND RELOCATE

SS-070-12
R10-15 30"x30"
TURNING VEHICLES TO
OLD STATE HOUSE
SPECIAL SIGN 3 36"x48"
STA. 100+48 NB MOUNTED ON SIGNAL POLE
STA. 100+48 NB REMOVE AND RELOCATE MOUNTED ON SIGNAL POLE

EXISTING "HERITAGE TRAIL" SIGNS TO BE REMOVED
EXISTING SPECIAL SIGN "MCCLELLAN KERR ARKANSAS RIVER NAVIGATION SYSTEM" TO BE REMOVED
EXISTING M3-2, MI-4, AND R3-2 TO BE REMOVED
EXISTING RI-I AND R5-I TO BE REMOVED
C.L. ARKANSAS RIVER TRAIL
EXISTING RI-I TO BE REMOVED
C.L. SOUTH SHARED USE RAMP
C.L. HWY. 10
MATCH LINE B

ARKANSAS RIVER

MATCH LINE B
LA HARPE BLVD. (HWY. 10)
EXISTING W8-13 TO BE REMOVED
EXISTING SPECIAL SIGN "NORTH LITTLE ROCK" TO BE REMOVED

N

SIGNING PLAN

cggervaslnl 5/29/2014 5:09:30 PM
WORKSPACE: 4HTD
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_SN_01.dgn
REVISED DATE:

NOTES:
1. ALL SIGNS SHOWN AS "REMOVE AND RELOCATE" SHALL BE INSTALLED WITH NEW SIGNS AND POSTS.

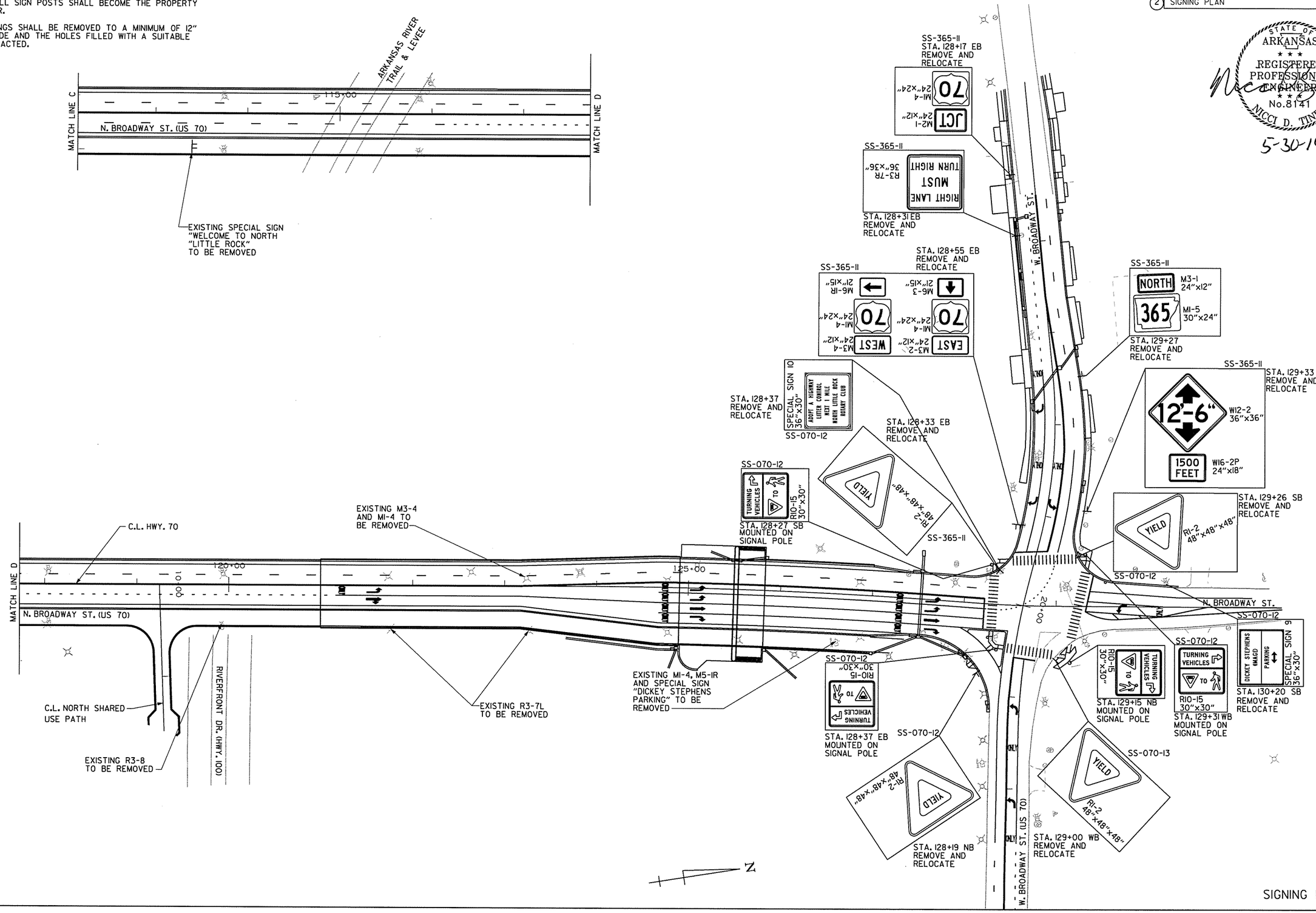
2. ALL "SPECIAL SIGNS" REMOVED SHALL BECOME THE PROPERTY OF THE CITIES OF LITTLE ROCK OR NORTH LITTLE ROCK. ALL OTHER SIGNS AND ALL SIGN POSTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

3. THE EXISTING FOOTINGS SHALL BE REMOVED TO A MINIMUM OF 12" BELOW NORMAL GRADE AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	60	505

(2) SIGNING PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14



SIGNING PLAN

eggervostini 5/29/2014 5:09:31 PM
WORKSHEET: AHTD
LL:\2014\061275\060 - Broadway Bridge over the Arkansas River\Drawings\R061275_SN_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	61	505

(2) SOIL BORING LOGS

SOIL BORING LOG

BORING NO.	APPROX. HWY 70 STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
B-5	103+37, 46'L	4.5-5.5	16	32	16	16	45	SC	A-6
B-5	103+37, 46'L	9-10	11	35	22	13	18	SC	A-2-6
B-5	103+37, 46'L	19-20	20	30	19	11	10	SP-SC	A-2-6
B-6	103+34, 44'R	4.5-5.5	17	39	20	19	37	SC	A-6
B-6	103+34, 44'R	9-10	13	35	20	15	23	SC	A-2-6
B-7	104+57, 35'L	7-8	4	29	20	9	10	GP-GC	A-2-4
B-8	104+92, 92'R	6.5-7.5	9	30	19	11	15	GC	A-2-6
B-8	104+92, 92'R	14-15	22	---	---	---	10	GP-GC	A-2-6
B-9	105+93, 76'L	9-10	15	34	24	10	15	SC	A-2-4
B-9	105+93, 76'L	19-20	18	30	22	8	25	SC	A-2-4
B-10	106+10, 55'R	2.5-3.5	9	29	16	13	42	SC	A-6
B-10	106+10, 55'R	6.5-7.5	6	28	21	7	12	GP-GC	A-2-4
B-11	101+68, 45'L	2.5-3.5	18	53	19	34	63	CH	A-7-6
B-11	101+68, 45'L	6.5-7.5	15	46	18	28	41	SC	A-7-5
B-11	101+68, 45'L	19-20	8	27	20	7	13	SC	A-2-4
B-12	104+97, 145'R	1-2	9	24	18	6	26	SC-SM	A-2-4
B-12	104+97, 145'R	6.5-7.5	14	34	20	14	16	SC	A-2-6
B-13	104+83, 265'R	9-10	22	22	19	3	37	SM	A-4
B-13	104+83, 265'R	14-15	65	69	23	46	85	CH	A-7-6
B-14	104+68, 378'R	2.5-3.5	12	30	16	14	28	SC	A-2-6
B-14	104+68, 378'R	9-10	11	33	19	14	15	GC	A-2-6
B-16	105+19, 535'R	3.5-4	10	27	16	11	39	SC	A-6
B-17	105+70, 387'R	4-5	8	25	22	3	17	GM	A-1-b
B-18	105+47, 347'R	2.5-3.5	19	32	20	12	47	SC	A-6
B-19	105+43, 83'L	6.5-7.5	14	35	18	17	18	SC	A-2-6
B-20	104+86, 184'L	2.5-3.5	12	34	17	17	23	SC	A-2-6
B-20	104+86, 184'L	9-10	15	32	20	12	14	SC	A-2-6
B-21	104+59, 260'L	6.5-7.5	12	53	22	31	25	SC	A-2-7
B-21	104+59, 260'L	14-15	15	31	23	8	14	SC	A-2-4
B-22	104+31, 338'L	4.5-5.5	11	34	15	19	24	GC	A-2-6
B-22	104+31, 338'L	9-10	17	21	16	5	38	SC-SM	A-4
B-22	104+31, 338'L	14-15	37	68	23	45	91	CH	A-7-6
B-23	104+21, 423'L	6.5-7.5	12	39	15	24	21	SC	A-2-6
B-24	104+42, 508'L	4.5-5.5	9	28	19	9	19	GC	A-2-4
B-25	118+13, 59'L	2.5-3.5	15	---Non Plastic---			50	ML	A-4
B-25	118+13, 59'L	9-10	8	---Non Plastic---			39	SM	A-4
B-25	118+13, 59'L	14-15	3	---Non Plastic---			5	SW-SM	A-1-b
B-25	118+13, 59'L	24-24.5	32	24	20	4	89	ML	A-4
B-25	118+13, 59'L	34-35	20	---Non Plastic---			5	SP-SM	A-3
B-25	118+13, 59'L	49-50	14	---Non Plastic---			4	SW	A-1-b
B-26	118+45, 69'R	2.5-3.5	9	---Non Plastic---			20	SM	A-2-4
B-26	118+45, 69'R	6.5-7.5		---Non Plastic---			58	ML	A-4
B-26	118+45, 69'R	19-20	32	26	21	5	92	CL-ML	A-4
B-26	118+45, 69'R	24-25	30	28	23	5	96	ML	A-4
B-26	118+45, 69'R	44-45	19	---Non Plastic---			3	SP	A-1-b
B-26	118+45, 69'R	64-65	24	---Non Plastic---			2	SP	A-1-b
B-27	121+01, 27'L	19-20	27.9	22	20	2	95	ML	A-4
B-27	121+01, 27'L	29-30	22.3	---Non Plastic---			6	SP-SM	A-2-4
B-27	121+01, 27'L	44-45	24.3	---Non Plastic---			6	SP-SM	A-2-4
B-27	121+01, 27'L	54-55	15.2	---Non Plastic---			4	SW	A-1-b
B-27	121+01, 27'L	68.5-69.5	12	---Non Plastic---			3	GW	A-1-a
B-28	121+03, 61'R	6.5-7.5	21	24	19	5	76	CL-ML	A-4
B-28	121+03, 61'R	19-20	24	Non Plastic---			75	ML	A-4
B-28	121+03, 61'R	29-30	23	---	---	---	9	SP-SM	A-3
B-28	121+03, 61'R	44-45	15	---	---	---	2	SP	A-1-b
B-28	121+03, 61'R	58.5-59.5	21	---	---	---	3	SW	A-1-b
B-29	122+16, 32'L	2.5-3.5	11	28	19	9	57	CL	A-4
B-29	122+16, 32'L	14-15	12	---Non Plastic---			89	ML	A-4
B-29	122+16, 32'L	34-35	21	---	---	---	21	SM	A-2-4

SOIL BORING LOG

BORING NO.	APPROX. HWY 70 STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
B-30	122+68, 64'R	2-3	15	23	19	4	84	CL-ML	A-4
B-30	122+68, 64'R	9-10	13	---Non Plastic---			83	ML	A-4
B-30	122+68, 64'R	19-20	14	---	---	---	9	SP	A-3
B-31	123+74, 32'L	2.5-3.5	15	28	22	6	74	CL-ML	A-4
B-31	123+74, 32'L	14-15	12	---Non Plastic---			90	ML	A-4
B-31	123+74, 32'L	34-35	23	---	---	---	15	SM	A-2-4
B-32	124+19, 69'R	4.5-5.5	27	29	21	8	99	CL	A-4
B-32	124+19, 69'R	9-10	24	---Non Plastic---			83	ML	A-4
B-32	124+19, 69'R	24-25	24	---	---	---	24	SM	A-2-4
B-33	124+95, 36'L	2.5-3.5	16	23	22	1	79	ML	A-4
B-33	124+95, 36'L	6.5-7.5	17	---Non Plastic---			83	ML	A-4
B-33	124+95, 36'L	24-25	25	---Non Plastic---			63	ML	A-4
B-34	124+90, 64'R	9-10	28	---Non Plastic---			96	ML	A-4
B-34	124+90, 64'R	19-20	30	26	23	3	97	ML	A-4
B-34	124+90, 64'R	24-25	35	---Non Plastic---			93	ML	A-4
B-34	124+90, 64'R	38.5-39	21	---	---	---	16	SM	A-2-4
B-34	124+90, 64'R	54-55	13	---	---	---	4	SW	A-1-b
B-34	124+90, 64'R	64-65	14	---	---	---	2	GW	A-1-a
B-35	125+72, 25'R	4.5-5.5	16	26	20	6	75	CL-ML	A-4
B-35	125+72, 25'R	9-10	29	28	20	8	97	CL	A-4
B-35	125+72, 25'R	19-20	33	31	24	7	99	ML	A-4
B-35	125+72, 25'R	29-30	25	---Non Plastic---			13	SM	A-2-4
B-35	125+72, 25'R	49-49.5	21	---Non Plastic---			6	SP-SM	A-3
B-35	125+72, 25'R	64-65	22	---Non Plastic---			4	SW	A-1-a
B-36	126+68, 32'L	4.5-5.5	7	27	19	8	54	CL	A-4
B-36	126+68, 32'L	14-15	19	---	---	---	77	ML	A-4
B-36	126+68, 32'L	19-20	31	31	21	10	96	CL	A-4
B-37	126+82,68'R	6.5-7.5	23	26	21	5	94	CL-ML	A-4
B-37	126+82,68'R	19-20	30	26	24	2	99	ML	A-4
B-37	126+82,68'R	29-30	26	---Non Plastic---			93	ML	A-4
B-37	126+82,68'R	34-35	24	---Non Plastic---			11	SP-SM	A-2-4
B-38	118+72, 135'R	6.5-7.5	23	28	21	7	95	CL-ML	A-4
B-38	118+72, 135'R	9-10	19	---	---	---	76	CL	A-4
B-38	118+72, 135'R	19-20	28	27	22	5	97	CL-ML	A-4
B-38	118+72, 135'R	24-25	30	29	23	6	99	ML	A-4
B-38	118+72, 135'R	29-30	22	---	---	---	3	SP	A-3
B-38	118+72, 135'R	44-45	16	---	---	---	4	SP	A-1-b
B-38	118+72, 135'R	68.5-69.5	13	---	---	---	2	SW	A-1-a
B-38A	119+08, 142'R	2.5-3.5	14	35	17	18	91	CL	A-6
B-38A	119+08, 142'R	9-10	9.7	---	---	---	70	ML	A-4
B-38A	119+08, 142'R	19-20	22	---	---	---	98	ML	A-4
B-38A	119+08, 142'R	24-25	10	---	---	---	16	SM	A-1-b
B-39	118+63, 258'R	0.5-1.5	14	---Non Plastic---			42	SM	A-4
B-39	118+63, 258'R	4.5-5.5	12	---Non Plastic---			26	SM	A-2-4
B-39	118+63, 258'R	9-10	11	---Non Plastic---			44	SM	A-4
B-39	118+63, 258'R	14-15	31	27	23	4	99	CL-ML	A-4
B-39	118+63, 258'R	24-24.5	33	28	21	7	98	CL-ML	A-4
B-39	118+63, 258'R	29-29.5	21	---Non Plastic---			2	SP	A-3
B-39	118+63, 258'R	34-35	23	---Non Plastic---			3	SP	A-3
B-39	118+63, 258'R	54-55	14	---Non Plastic---			5	SW	A-1-b
B-39	118+63, 258'R	63.5-64.5	14	---Non Plastic---			1	SP	A-1-a
B-39A	119+12, 250'R	2.5-3.5	11	35	16	19	88	CL	A-6
B-39A	119+12, 250'R	9-10	17	32	16	16	88	CL	A-6
B-39A	119+12, 250'R	19-20	19	25	20	5	93	CL-ML	A-4
B-39A	119+12, 250'R	29-30	20	---	---	---	5	SM-SP	A-3
B-40	119+17, 531'R	6.5-7.5	13	32	18	14	89	CL	A-6
B-40	119+17, 531'R	9-10	13	32	17	15	84	CL	A-6
B-40	119+17, 531'R	19-20	18	---	---	---	83	ML	A-4
B-40	119+17, 531'R	24-25	18	---	---	---	70	ML	A-4

SOIL BORING LOG

BORING NO.	APPROX. HWY 70 STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
B-40A	118+48, 527'R	4.5-5.5	18	Non Plastic---			68	ML	A-4
B-40A	118+48, 527'R	19-20	29	28	21	7	93	CL-ML	A-4
B-40A	118+48, 527'R	33.5-34.5	19	---	---	---	6	SM-SP	A-3
B-40A	118+48, 527'R	44-45	17	---	---	---	4	SP	A-3
B-41	118+61, 702'R	4.5-5.5	15	---Non Plastic---			48	SM	A-2-4
B-41	118+61, 702'R	19-20	31	30	22	8	99	CL	A-4
B-41	118+61, 702'R	34-35	27	---	---	---	28	SM	A-2-4
B-41	118+61, 702'R	44-45	21	---	---	---	4	SP	A-3
B-42	119+68, 484'R	6.5-7.5	7	---Non Plastic---			40	SM	A-4
B-42	119+68, 484'R	24-25	19	---Non Plastic---			5	SP-SM	A-1-a
B-43	119+72, 585'R	6.5-7.5	18	---Non Plastic---			82	ML	A-4
B-43	119+72, 585'R	19-20	23	---Non Plastic---			4	SP	A-2-4
B-45	118+55, 59'R	14-15	24	---Non Plastic---			84	ML	A-4
B-45	118+55, 59'R	19-20	28	24	20	4	87	ML	A-4
B-45	118+55, 59'R	23-24	35	36	23	13	99	CL	A-6
B-45	118+55, 59'R	27-28	25	---Non Plastic---			20	SM	A-2-4
B-46	118+08, 61'R	21.5-22.5	36	34	19	15	99	CL	A-6
B-46	118+08, 61'R	24-25	33	21	18	3	77	ML	A-4
B-46	118+08, 61'R	26.5-27.5	38	39	19	20	98	CL	A-6
B-46	118+08, 61'R	29-30	28	23	20	3	80	ML	A-4
B-47	118+53, 63'R	14-15	27	---Non Plastic---			83	ML	A-4
B-47	118+53, 63'R	19-20	33	24	21	3	95	ML	A-4
B-47	118+53, 63'R	21-22.5	30	30	22	8	97	CL	A-6
B-47	118+53, 63'R	24-25	31	27	22	5	98	ML	A-4
B-48	118+05, 67'R	19-20	30	---Non Plastic---			79	ML	A-4
B-48	118+05, 67'R	21.5-22.5	27	24	21	3	72	ML	A-4
B-48	118+05, 67'R	24-25	29	25	19	6	80	CL-ML	A-4
B-48	118+05, 67'R	26.5-27.5	26	32	19	13	99	CL	A-6
B-49	119+08, 141'R	6.5-7.5	13	33	19	14	85	CL	A-6
B-49	119+08, 141'R	19-20	23	25	21	4	86	ML	A-4
B-49	119+08, 141'R	34-35	25	---Non Plastic---			3	SP	A-2-4
C-1	128+80, 295'L	2-3	30	46	19	27	98	CL	A-7-6
C-1	128+80, 295'L	6.5-7.5	32	25	23	2	99	ML	A-4
C-2	129+98, 12'L	2.5-3.5	15	---Non Plastic---			64	ML	A-4
C-2	129+98, 12'L	3.5-4	12	---	---	---	30	SM	A-2-4
C-2	129+98, 12'L	4-4.5	26	26	21	5	99	CL-ML	A-4
C-3	127+33, 5'R	1.5-2.5	17	23	20	3	87	ML	A-4
C-3	127+33, 5'R	3-4	12	---	---	---	52	CL	A-6
C-3	127+33, 5'R	6.5-7.5	24	34	19	15	99	CL	A-6
C-4	102+04, 15'R	1.5-2.5	14	33	15	18	32	SC	A-2-6

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

SOIL BORING LOGS

SARoberson 5/29/2014 4:50:59 PM
WORKSPACE: AHTD
L:\2014\061060 - Broadway Bridge over the Arkansas River\Drawings\R061275_SBL_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	62	505

(2) QUANTITIES

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAX. NUMBER	TOTAL REQUIRED	PORTABLE CHANGEABLE MESSAGE SIGN	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMP. IMP. ATT. BAR.	TEMP. IMP. ATT. REPAIR	FURNISH AND INSTALL PRECAST CONC. BAR.
										RIGHT	LEFT			
		IN.	EACH	EACH	EACH	REQ'D.	SQ. FT.	WEEK	EACH	L.F.		EACH	EACH	L.F.
G20-2	END ROAD WORK	48" X 24"	2	2	4	4	32.00							
M1-5	STATE ROUTE	24" X 24"	4	18	4	18	72.00							
M3-4	WEST	24" X 12"	4	18	4	18	36.00							
M4-8	DETOUR	24" X 12"	4	18	4	18	36.00							
M4-8a	END DETOUR	24" X 18"	2	7	1	7	21.00							
M4-9aL	BICYCLE AND PEDESTRIAN DETOUR	30" X 24"		5		5	25.00							
M4-9aR	BICYCLE AND PEDESTRIAN DETOUR	30" X 24"		5		5	25.00							
M4-10L	DETOUR ARROW LEFT	48" X 18"		2		2	12.00							
M4-10R	DETOUR ARROW RIGHT	48" X 18"		3		3	18.00							
M6-1R	RIGHT ARROW AUXILIARY	21" X 15"	2	2	2	2	4.38							
M6-3	STRAIGHT ARROW AUXILIARY	21" X 15"	2	16	2	16	35.00							
R3-1	NO RIGHT TURN	36" X 36"		2		2	18.00							
R3-7 LT.	LEFT LANE MUST TURN LEFT	30" X30"		1		1	6.25							
R3-7 RT.	RIGHT LANE MUST TURN RIGHT	30" X30"		1		1	6.25							
R3-8LLS	ADVANCE INTERSECTION 3 LANE CONTROL	48" X36"		2		2	24.00							
R9-9	SIDEWALK CLOSED	24" X 12"	4			4	8.00							
R11-2	ROAD CLOSED	48" X 30"	6	2	1	6	60.00							
SPECIAL SIGN A	BROADWAY BRIDGE NORTH DETOUR	30" X 48"	2	9		9	90.00							
SPECIAL SIGN B	BROADWAY BRIDGE NORTH DETOUR	30" X 48"		4		4	40.00							
SPECIAL SIGN C	BROADWAY BRIDGE NORTH DETOUR	30" X 48"	1	23		23	230.00							
SPECIAL SIGN D	BROADWAY BRIDGE SOUTH DETOUR	30" X 48"		8		8	80.00							
SPECIAL SIGN E	BROADWAY BRIDGE SOUTH DETOUR	30" X 48"		7		7	70.00							
SPECIAL SIGN F	BROADWAY BRIDGE SOUTH DETOUR	30" X 48"		23		23	230.00							
SPECIAL SIGN G	TRAIL CLOSED	48" X 30"	4	3	4	4	40.00							
W1-4bL	TWO LANE REVERSE CURVE	48" X 48"	1			1	16.00							
W4-2L	LEFT LANE ENDS	36" X 36"		3	1	3	27.00							
W4-2R	RIGHT LANE ENDS	36" X 36"	1		1	1	9.00							
W5-1	ROAD NARROWS	36" X 36"	1			1	9.00							
W6-3	TWO-WAY TRAFFIC	36" X 36"		2		2	18.00							
W9-3	CENTER LANE CLOSED AHEAD	36" X 36"			1	1	9.00							
W11-1	BICYCLE	30" X 30"		12		12	75.00							
W12-1	DOUBLE ARROW	30" X 30"			1	1	6.25							
W16-IP	SHARE THE ROAD	18" X 24"		12		12	36.00							
W16-9P	AHEAD	24" X 12"		2		2	4.00							
W20-1	ROAD WORK AHEAD	48" X 48"	2	5	4	5	80.00							
W20-2	DETOUR AHEAD	48" X 48"	1	2	1	2	32.00							
W20-5R	RIGHT LANE CLOSED AHEAD	48" X 48"	1	2	1	2	32.00							
W20-5L	LEFT LANE CLOSED AHEAD	48" X 48"		2	1	2	32.00							
	TYPE III BARRICADE-RT. (6')		4			4				24				
	TYPE III BARRICADE-RT. (8')		4			4				32				
	TYPE III BARRICADE-LT. (8')		1			1					8			
	TYPE III BARRICADE-LT. (12')			6		6					72			
	TYPE III BARRICADE-RT. (12')		6	5	3	6				72				
	TYPE III BARRICADE-RT. (16')				2	2				32				
	TRAFFIC DRUMS		56	145	154	154			154					
	TEMPORARY IMPACT ATTENUATION BARRIER		1			1						1		
	TEMPORARY IMPACT ATTENUATION REPAIR		1			1							1	
	FURN. AND INST. PRECAST CONC. BARRIER		891			891								891
*	PORTABLE CHANGEABLE MESSAGE SIGN		4	4	4	4		320						
* R4-1	DO NOT PASS	24" X 30"				2	10.00							
TOTALS							1614.13	320	154	160	80	1	1	891

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.
* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	WIDTH FEET	SQ. YD.
100+18.63	100+68.63	HWY. 70	60.36	335.33
129+83.45	130+33.45	HWY. 70	46.00	255.56
13+10.00	13+60.00	HWY. 365	34.66	192.56
TOTAL				783.45

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

CONCRETE COMBINATION CURB AND GUTTER (TYPE A)(1'6")

STATION	STATION	LOCATION	SIDE	L.F.
100+18.63	101+65.88	HWY. 70	LT.	167
100+18.63	101+03.53	HWY. 70	RT.	103
101+66.49	103+33.42	HWY. 70 (BASE OF RETAINING WALL)	LT.	175
123+66.35	125+54.15	HWY. 70 (DICKEY-STEPHENS ACCESS)	LT. & RT.	410
127+00.21	128+56.24	HWY. 70	LT.	175
127+00.21	128+34.36	HWY. 70	RT.	177
129+18.07	130+33.45	HWY. 70	LT.	154
13+10.00	19+05.63	HWY. 365	LT.	606
13+10.00	19+35.56	HWY. 365	RT.	617
9+90.73	13+38.74	HWY. 10	LT.	572
24+07.92	26+46.91	HWY. 10	LT.	239
TOTAL				3395

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ. YD.
99+49.12	100+94.71	HWY. 70 - LT	145.59	105.13
99+53.86	102+53.53	HWY. 70 - RT	299.67	423.70
127+00.21	127+37.17	HWY. 70 - RT	36.96	52.00
10+05.43	13+47.96	ARKANSAS RIVER SIDEWALK	342.53	304.78
124+90.00	125+83.00	HWY. 70 (DICKEY-STEPHENS ACCESS)	93.00	1250.85
13+38.43	20+62.95	HWY. 365 - LT.	724.52	172.77
14+29.19	18+67.34	HWY. 365 - RT.	438.15	191.37
TOTAL				2500.60

CONCRETE STEPS

STATION	LOCATION	SIDE	CONCRETE STEPS
			SQ. YD.
125+54.00	HWY. 70 (DICKEY-STEPHENS ACCESS)	LT.	13
125+54.00	HWY. 70 (DICKEY-STEPHENS ACCESS)	RT.	16
TOTAL			29

WIRE FACE RETAINING WALLS

STATION	STATION	LOCATION	SQ. FT.
124+73.24	124+89.87	HWY. 70 LT. & RT.	1261
125+83.37	126+00.59	HWY. 70 LT. & RT.	1261
TOTAL			2522

PERMANENT PAVEMENT MARKINGS

DESCRIPTION	UNIT	TOTAL
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	L.F.	160
THERMOPLASTIC PAVEMENT MARKING (ARROWS)	EACH	39
THERMOPLASTIC PAVEMENT MARKING (WORDS)	EACH	37
THERMOPLASTIC PAVEMENT MARKING WHITE (4")	L.F.	9110
THERMOPLASTIC PAVEMENT MARKING WHITE (6")	L.F.	236
THERMOPLASTIC PAVEMENT MARKING WHITE (8")	L.F.	410
THERMOPLASTIC PAVEMENT MARKING WHITE (12")	L.F.	1012
THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	L.F.	6618
THERMOPLASTIC PAVEMENT MARKING YELLOW (8")	L.F.	225
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")	L.F.	915
HIGH PERFORMANCE PAVEMENT MARKING WHITE (8")	L.F.	54
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")	L.F.	500
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")	L.F.	793
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (6")	L.F.	125
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")	L.F.	3804
RAISED PAVEMENT MARKER (TYPE II)	EACH	274

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

CONCRETE COMBINATION CURB AND GUTTER (TYPE SPECIAL)(1'6")

STATION	STATION	LOCATION	SIDE	L.F.
101+03.53	102+53.53	HWY. 70	RT.	150
TOTAL				150

WHEELCHAIR RAMPS

STATION	LOCATION	(TYPE 1) S.Y.	(TYPE 2) S.Y.	(TYPE 3) S.Y.	(TYPE 4) S.Y.
99+58.00	HWY. 70 - RT.			3.53	
99+80.00	HWY. 70 - RT.				6.88
99+59.00	HWY. 70 - LT.				13.85
99+81.00	HWY. 70 - LT.				13.81
100+21.00	HWY. 70 - LT.				9.18
100+19.00	HWY. 70 - RT.			16.64	
100+35.00	HWY. 70 - LT.				8.91
100+35.00	HWY. 70 - RT.			3.48	
128+14.00	HWY. 70 - RT.				9.26
128+28.00	HWY. 70 - RT.			3.02	
128+31.00	HWY. 70 - LT.		9.39		
128+31.00	HWY. 70 - RT.			2.68	
128+45.00	HWY. 70 - RT.			2.67	
129+14.00	HWY. 70 - RT.		8.40		
129+33.00	HWY. 70 - LT.	29.02			
TOTALS		29.02	17.79	32.02	61.89

CRASH CUSHION

STATION	LOCATION	CRASH CUSHION
		EACH
106+08	RT. OF HWY. 10 ENTRANCE RAMP	1
TOTAL		1

NOTE: THE CRASH CUSHION SHALL BE NON-GATING AND REDIRECTIVE AND COMPATIBLE WITH THE SITE GEOMETRY SHOWN IN THE PLANS.

SOIL STABILIZATION

LOCATION	TON
ENTIRE PROJECT	100

QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

SARobertson 5/29/2014 4:52:07 PM
WORKSPACE: AHTD
L:\201\N0170B0 - Broadway Bridge over the Arkansas River\0rawings\R061275.QTY.03.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	63	505
				(2)	QUANTITIES			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

REMOVAL AND DISPOSAL OF STRUCTURES

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE DRIVEWAYS	CONCRETE ISLANDS	CONCRETE PARAPET WALL	CONCRETE PAVEMENT	DECORATIVE LIGHT POLE	HANDRAIL	RETAINING WALL *	SIGNS	STEPS	WALKS	WALLS	BENCH	BRICK PAVEMENT	PLANTER	RPZ BACKFLOW PREVENTER	LUMINAIRE POLE AND FOUNDATION
			L.F.	L.F.	SQ. YD.	SQ. YD.	L.F.	SQ. YD.	EACH	L.F.	L.F.	EACH	SQ. YD.	SQ. YD.	L.F.	EACH	SQ. YD.	EACH	EACH	EACH
99+69.36		HWY. 70 - RT.																1		
100+30.00		HWY. 70 - LT.																1		
100+30.00	100+44.22	HWY. 70 - LT.																	1	
101+53.00	102+25.46	HWY. 70 - RT.										6								
99+49.13	103+28.88	HWY. 70 - LT.												399						
99+49.13	103+28.88	HWY. 70 - RT.												205						
100+86.30		HWY. 70 - RT.														1				
100+30.80	100+74.96	HWY. 70 - RT.																		
100+18.34	101+08.29	HWY. 70 - RT.															183			
101+66.24	103+12.70	HWY. 70 - LT.									157									
101+88.00		HWY. 70 - RT.																		1
102+77.00		HWY. 70 - RT.									40									
102+87.35	103+07.60	HWY. 70 - RT.													45					
99+65.00	102+84.00	HWY. 70 - LT.																		2
99+65.00	103+20.00	HWY. 70 - RT.																		
102+02.29	103+33.92	HWY. 70 - LT.					131													
103+18.47	103+33.92	HWY. 70 - RT.					15													
103+20.00		HWY. 70 - RT.																		1
100+89.48	101+45.51	HWY. 70 - LT.			51															
100+87.44	103+10.14	HWY. 70 - RT.			264															
100+37.13	100+45.23	HWY. 70 - LT.						4												
99+60.67	99+64.97	HWY. 70 - RT.						1												
99+49.12	103+29.17	HWY. 70 - LT.		340																
99+56.47	102+51.44	HWY. 70 - RT.		293																
101+30.93	102+81.49	HWY. 70 - RT.	203																	
103+00.00		HWY. 70 - LT.											33							
103+12.00		HWY. 70 - RT.											48							
122+64.00		HWY. 70 - LT.																		1
124+47.27	128+15.44	HWY. 70 - LT.												198						
125+08.00		HWY. 70 - LT.																		1
125+56.00		HWY. 70 - RT.							1											
126+87.58	129+22.30	HWY. 70 - RT.												60						
129+13.00		HWY. 70 - LT.				10														
128+28.00		HWY. 70 - RT.				16														
125+00.73	128+32.40	HWY. 70 - RT.						895												
126+84.89	130+33.24	HWY. 70 - LT.		338																
120+94.70	129+19.43	HWY. 70 - RT.		427																
126+41.00		HWY. 70 - LT.																		1
127+55.00	128+07.00	HWY. 70 - RT.							2											
99+65.00	130+20.00	HWY. 70 - LT.										9								
99+56.00	128+38.73	HWY. 70 - RT.										10								
15+18.00		HWY. 365 - RT.																		1
16+01.75	18+13.96	HWY. 365 - LT.			172															
14+55.48	17+55.95	HWY. 365 - RT.			266															
16+96.00		HWY. 365 - RT.																		1
17+44.93	20+57.15	HWY. 365 - LT.										3								
15+25.25	19+73.62	HWY. 365 - RT.										5								
13+19.30	20+62.95	HWY. 365 - LT.												167						
14+22.66	19+81.08	HWY. 365 - RT.												285						
15+54.81	19+41.66	HWY. 365 - LT.		228																
13+12.26	21+18.24	HWY. 365 - RT.		535																
9+84.25	15+42.73	HWY. 10 - LT.	767																	
10+49.21	11+84.18	HWY. 10 - LT.			91															
12+37.56	12+43.75	HWY. 10 - LT.												5						
12+60.00	18+22.40	HWY. 10 - LT.										4								
15+31.66	17+00.00	HWY. 10 - LT.									190									
23+93.64	24+93.64	HWY. 10 - LT.									100									
23+93.64	26+51.92	HWY. 10 - LT.						383												
16+52.87	16+95.64	HWY. 10 ENTRANCE RAMP - RT.									24									
101+90.42	102+10.09	HWY. 10 ENTRANCE RAMP - LT.													49					
102+37.95	103+00.00	HWY. 10 ENTRANCE RAMP - RT.					50													
13+97.11	15+52.26	SOUTH SHARED USE RAMP - LT.					128													
14+00.46	15+00.34	SOUTH SHARED USE RAMP - LT.																		
13+35.65	13+81.80	SOUTH SHARED USE RAMP - LT.		46																
15+20.33	15+42.95	SOUTH SHARED USE RAMP								65			18							
16+00.19	16+18.74	ARKANSAS RIVER TRAIL - LT.												26						
14+64.96	16+34.78	ARKANSAS RIVER TRAIL - RT.												212						
14+68.22	15+46.70	ARKANSAS RIVER TRAIL - RT.													77					
18+26.00		NORTH SHARED USE PATH - LT.							1											
18+37.00		NORTH SHARED USE PATH - RT.							1											
		HWY. 100 STAGE 2 TRAIL DETOUR				17														
		TOTALS	970	2207	844	43	324	1283	5	65	511	37	99	1557	171	1	183	2	1	9

*LIMITS OF REMOVAL AND DISPOSAL OF RETAINING WALL IS APPROXIMATE. FINAL REMOVAL LIMITS TO BE AS DIRECTED BY THE ENGINEER. REMOVAL INCLUDES ALL SUBSIDIARY ELEMENTS CONNECTED TO THE RETAINING WALL.

QUANTITIES

cggervasini 5/30/2014 9:52:35 AM
WORKSPACE: AHTD
L:\ROW\ROT060 Broadway Bridge over the Arkansas River\Drawings\R060275.DTY_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	64	505

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ASPHALT CONCRETE	TACK COAT
	TON	GAL.
ENTIRE PROJECT	18	37

QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

BASIS OF ESTIMATE:
ASPHALT CONCRETE= 25 TONS PER MILE
TACK COAT = 50 GAL. PER MILE

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STA.	
100+18.63	103+33.92	HWY. 70	3	3
121+01.75	124+90.37	HWY. 70	4	4
125+82.87	130+33.45	HWY. 70	5	5
TOTALS			12	12

NOTE: CLEARING AND GRUBBING LIMITS ON HWY. 70 INCLUDE ANY SUBSIDIARY CONSTRUCTION ON ADJOINING CONNECTIONS.

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

LOCATION	ASPHALT
	TON
HWY. 70 STA. 100+39.00	32
HWY. 365 STA. 17+41.00	29
HWY. 365 STA. 15+73.00	1
TOTAL	62

BASIS OF ESTIMATE:
1.5' OUTSIDE TRENCH EXCAVATION
12" ESTIMATED PAVEMENT DEPTH

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

LOCATION	ASPHALT
	CU. YD.
HWY. 10 STA. 20+39.43	14.0
TOTAL	14.0

BASIS OF ESTIMATE:
1.5' OUTSIDE TRENCH EXCAVATION
8" ESTIMATED PAVEMENT DEPTH

EARTHWORK

LOCATION	UNCLASSIFIED EXCAVATION			COMPACTED EMBANKMENT		
	UNDERCUT	TYPICAL	TOTAL	TYPICAL	SM-1	TOTAL[3]
	CU. YD.					
HWY. 70	3519	7698	11217	477	4133	4610
HWY. 365		319	319	77		77
HWY. 10 WIDEN		1297	1297	136	452	588
HWY. 10 RAMP		1045	1045	2	137	139
NORTH SHARED USE RAMP		200	200	361	472	833
SOUTH SHARED USE RAMP		380	380	827	0	827
RIVER TRAIL		447	447	1123	945	2068
ARKANSAS RIVER SIDEWALK		6	6	271	0	271
APPROACHES		1227	1227	0	0	0
TOTALS	3519	12619	16138	3274	6139	9413

EARTHWORK NOTES:

1. ESTIMATES FOR QUANTITIES OF EXCAVATION AND EMBANKMENT ARE TAKEN DIRECTLY FROM THE CROSS SECTIONS, DETAILED IN ACCORDANCE WITH THE PLANS.

2. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT REMOVED SHALL BE PAID FOR UNDER PAY ITEM 210 - EXCAVATION AND EMBANKMENT, UNLESS OTHERWISE NOTED.

3. INCLUDES 3,519 CU.YD. OF SM-1 MATERIAL USED FOR BACKFILL OF UNDERCUT. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

ACHM PATCHING OF EXISTING ROADWAY

STATION	STATION	LOCATION	TON
120+95	126+00	HWY. 70 - LT.	62
ENTIRE PROJECT *			50
TOTAL			112

*QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

FLOWABLE SELECT MATERIAL

STATION	STATION	LOCATION	CU. YD.
103+28.92	103+33.92	HWY. 70	40.56
121+01.09	121+06.09	HWY. 70	40.56
124+85.37	124+90.37	HWY. 70	53.89
125+82.87	125+87.87	HWY. 70	53.89
15+04.59	15+09.59	NORTH SHARED USE PATH	10.18
13+41.76	13+46.76	SOUTH SHARED USE PATH	10.18
102+04.16	102+09.16	HWY. 10 ENTRANCE RAMP	15.56
102+51.45	102+56.45	HWY. 10 ENTRANCE RAMP	15.56
103+62.27	103+67.27	HWY. 10 ENTRANCE RAMP	15.56
TOTAL			255.94

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
100+59.60	101+97.02	HWY. 10 ENTRANCE RAMP - LT.	140
100+59.60	101+89.70	HWY. 10 ENTRANCE RAMP (UTILITY YARD) - LT.	135
14+53.57		ARKANSAS RIVER TRAIL - LT.	17
10+45.00	16+32.00	NORTH SHARED USE PATH - LT.	632
TOTAL			924

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	GRATE INLETS	DROP INLETS
		EACH	EACH	EACH
100+36	HWY. 70 - RT		1	
100+36	HWY. 70 - RT	1		
100+38	HWY. 70 - LT			1
100+38	HWY. 70 - LT	1		
100+96	HWY. 70 - RT		1	
100+96	HWY. 70 - RT	1		
124+82	HWY. 70 - LT		1	
124+82	HWY. 70 - LT	1		
125+04	HWY. 70 - RT			1
125+04	HWY. 70 - RT	1		
15+70	HWY. 365 - LT			1
15+78	HWY. 365 - RT			1
18+64	HWY. 365 - LT			1
21+08	HWY. 365 - RT			1
12+82	HWY. 10 - LT			1
TOTALS		5	3	7

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE

CONSTRUCTION PAVEMENT MARKINGS

STATION	STATION	LOCATION	REMOVAL OF PERMANENT PAVEMENT MARKINGS	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF REMOVABLE CONSTRUCTION PAVEMENT MARKINGS*
			L.F.	EACH	EACH	L.F.	L.F.
		STAGE 1					
09+74.00	28+94.00	HWY. 10 (LA HARPE BLVD.) WESTBOUND SKIP WHITE CENTERLINE (4")	480			480	
09+74.00	28+94.00	HWY. 10 (LA HARPE BLVD.) WESTBOUND SOLID WHITE EDGELINE (4")				1920	
		STAGE 2					
		SCOTT ST. (BETWEEN 4TH ST. & 7TH ST. - SEE MAINTENANCE OF TRAFFIC)	690	2	2		
		STAGE 3					
129+57.00	131+79.00	N. BROADWAY ST. SOLID DOUBLE YELLOW CENTERLINE (4")				444	444
129+57.00	131+04.00	N. BROADWAY ST. SOUTHBOUND SOLID WHITE LANE LINE (4")				147	147
09+74.00	28+94.00	HWY. 10 (LA HARPE BLVD.) WESTBOUND SKIP WHITE CENTERLINE (4")					480
09+74.00	28+94.00	HWY. 10 (LA HARPE BLVD.) WESTBOUND SOLID WHITE EDGELINE (4")					1920
TOTALS			1,170	2	2	2991	2991

*NOTE: REMOVAL OF REMOVABLE CONSTRUCTION PAVEMENT MARKINGS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN PRICE BID FOR REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.

QUANTITIES

cggervasini 5/30/2014 9:53:46 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	65	505

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No.13422
5-30-14

TEMPORARY EROSION CONTROL

STATION	STATION	SAND BAG DITCH CHECK (E-5)	ROCK DITCH CHECK (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	SEDIMENT REMOVAL AND DISPOSAL	TEMPORARY SEEDING	MULCH COVER	WATER
		BAG	CU. YD.	L.F.	L.F.	CU. YD.	ACRE	ACRE	M.G.
HWY. 70									
100+20	101+04				85				
100+18	103+50				430				
101+45	103+50				260				
120+85	128+20				865				
120+85	128+50				900				
100+38				20					
100+40				20					
100+40				20					
101+00				20					
101+06				20					
102+50				20					
105+95				20					
124+90				20					
125+22				20					
125+48				20					
125+55				20					
125+82				20					
125+83				20					
126+22				20					
127+02				20					
127+53				20					
127+53				20					
127+53				20					
127+53				20					
128+04				20					
129+54				20					
HWY. 10									
9+90	16+20				715				
15+91	16+20				25				
16+50	17+70				185				
16+50	17+70				195				
12+83				20					
13+32				20					
14+07				20					
ARKANSAS RIVER TRAIL									
12+50	16+07				380				
16+23	19+00				275				
12+50	12+78				45				
13+08	14+08				360				
16+35	19+00				270				
SOUTH SHARED USE RAMP									
13+35	15+30				230				
15+00		20							
15+45			15						
NORTH SHARED USE RAMP									
14+99	18+37				365				
14+99	18+16				350				
17+50				20					
HWY. 365									
15+60	18+55				310				
15+70				20					
15+72				20					
15+74				20					
16+29				20					
16+71				20					
17+18				20					
17+38				20					
17+74				20					
18+59				20					
21+07				20					
* ENTIRE PROJECT AS DIRECTED BY THE ENGINEER						1000	2.10	2.10	42.8
TOTALS		20	15	680	6245	1000	2.10	2.10	42.8

* QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
BASIS OF ESTIMATE:
SAND BAG DITCH CHECKS = 20 BAGS / LOCATION
ROCK DITCH CHECKS = 15 CU. YD. / LOCATION
WATER = 20.4 M.G. PER ACRE TEMPORARY SEEDING

TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

EROSION CONTROL

LOCATION	LIME	SEEDING	MULCH COVER	SECOND SEEDING	WATER
	TON	ACRE			M.G.
BROADWAY	0.62	0.31	0.31	0.31	31.6
WEST BROADWAY	0.62	0.31	0.31	0.31	31.6
HWY. 10 ENTRANCE RAMP	0.38	0.19	0.19	0.19	19.4
NORTH PEDESTRIAN RAMP	0.80	0.40	0.40	0.40	40.8
ARKANSAS RIVER SIDEWALK	0.86	0.43	0.43	0.43	43.9
SOUTH PEDESTRIAN RAMP	0.92	0.46	0.46	0.46	46.9
TOTALS	4.20	2.10	2.10	2.10	214.2

BASIS OF ESTIMATE:
LIME = 2 TONS PER ACRE SEEDING
WATER = 102.0 M.G.PER ACRE SEEDING

BENCH MARK CAPS

STATION	LOCATION	BENCH MARKS
		EACH
101+06	HWY. 70 - RT. ON DROP INLET	1
127+53	HWY. 70 - LT. ON DROP INLET	1
13+32	HWY. 10 - LT. ON DROP INLET	1
16+71	HWY. 365 - RT. ON DROP INLET	1
TOTAL		4

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

WATERLINE

DESCRIPTION	UNIT	TOTAL
6" COMBINATION AIR RELEASE VALVE AND ENCLOSURE	EACH	1
20" BUTTERFLY VALVE	EACH	1
20" ADJUSTABLE PIPE ROLL (ANVIL FIGURE 177 OR APPROVED EQUAL)	EACH	4
SPRING CUSHION (ANVIL FIGURE 178, SPRING NUMBER 3 OR APPROVED EQUAL)	EACH	4
30" ALL STEEL ADJUSTABLE PIPE ROLL STAND (ANVIL FIGURE 274 SPECIAL OR APPROVED EQUAL)	EACH	69
ARCH SPAN WATERLINE SUPPORT STRUCTURE	EACH	48
ARCH SPAN FIXED CENTER SUPPORT	EACH	1
APPROACH SPAN WATERLINE SUPPORT STRUCTURE	EACH	20
BENT WATERLINE SUPPORT STRUCTURE	EACH	2
STEEL PIPE STRAP	EACH	35
20" STEEL PIPE, CEMENT-MORTAR LINED AND EPOXY COATED	L.F.	1265
NONDESTRUCTIVE TESTING	EACH	5
20" RESTRAINED JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	L.F.	280
20" BALL JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	L.F.	60
16" RESTRAINED JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	L.F.	20
20" RESTRAINED JOINT DUCTILE IRON 90 DEGREE BEND	EACH	2
20" DUCTILE IRON FL BASE 90 DEGREE BEND, LONG RADIUS	EACH	1
20" DUCTILE IRON FL BASE 90 DEGREE BEND, SHORT RADIUS	EACH	1
20" RESTRAINED JOINT DUCTILE IRON 45 DEGREE BEND	EACH	2
20" MECHANICAL JOINT DUCTILE IRON SOLID SLEEVE WITH RETAINER GLAND	EACH	1
20" TO 16" RESTRAINED JOINT DUCTILE IRON REDUCER	EACH	1
20" RESTRAINED JOINT DUCTILE IRON 11.25 DEGREE BEND	EACH	1
16" MECHANICAL JOINT DUCTILE IRON SOLID SLEEVE WITH RETAINER GLAND	EACH	1

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WORKSPACE: AHTD
L:\20\NHDT060 - Broadway Bridge over the Arkansas River\Drawings\R061275_QTY_02.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	66	505

(2) QUANTITIES

STRUCTURES

STATION	LOCATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERTS				FLARED END SECTIONS		DROP INLETS			DROP INLETS ADJUSTED TO GRADE	JUNCTION BOXES ADJUSTED TO GRADE	JUNCTION BOXES	SOLID SODDING	WATER	STANDARD DRAWINGS
			CLASS III			CLASS IV			(TYPE MO)	(TYPE E)	(TYPE ST)			(TYPE ST)			
			18 IN.	24 IN.	36 IN.	24 IN.	24 IN.	36 IN.									
			L.F.				EACH	EACH	EACH			EACH	EACH	EACH	SQ. YD.	M.G.	
100+37.94	HWY. 70	CONSTRUCT JUNCTION BOX ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.		27										1			FPC-9M, FPC-9E, PCC-1
100+39.68	HWY. 70	CONSTRUCT DROP INLET W/ EXT. ON LT. W/ R.C. PIPE CULVERT TO JUNCTION BOX ON RT.	30						1								FPC-9M, FPC-9E, PCC-1
100+39.68	HWY. 70	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.		64					1								FPC-9M, FPC-9E, PCC-1
101+00.00	HWY. 70	CONSTRUCT DROP INLET W/ GRATE ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	23							1							FPC-9, PCC-1
101+06.00	HWY. 70	CONSTRUCT DROP INLET W/ PEDESTRIAN GRATE ON RT.W/ R.C. PIPE CULVERT TO DROP INLET ON RT.				142					1						FPC-9S, PCC-1
102+50.00	HWY. 70	CONSTRUCT DROP INLET W/ PEDESTRIAN GRATE ON RT.W/ R.C. PIPE CULVERT TO JUNCTION BOX ON RT.				73					1						FPC-9S, PCC-1
103+25.00	HWY. 70	CONSTRUCT JUNCTION BOX ON RT. W/ R.C. PIPE CULVERT TO JUNCTION BOX ON RT.				8								1			FPC-9S, PCC-1
103+25.00	HWY. 70	CONSTRUCT JUNCTION BOX ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.		66										1			FPC-9S, PCC-1
105+73.00	HWY. 70	CONSTRUCT R.C. PIPE CULVERT TO JUNCTION BOX ON RT.			23												FPC-9S, PCC-1
105+95.00	HWY. 70	CONSTRUCT JUNCTION BOX ON RT. W/ R.C. PIPE CULVERT			57			1						1	17	214.2	FES-1, FES-2, FPC-9S, PCC-1
124+90.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	32						1								FPC-9M, FPC-9E, PCC-1
125+23.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT R.C. PIPE TO DROP INLET ON RT.	25														PCC-1
125+48.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT DROP INLET W/ GRATE ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	5							1							FPC-9, PCC-1
125+55.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT DROP INLET W/ GRATE ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	28							1							FPC-9, PCC-1
125+83.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT DROP INLET W/ GRATE ON LT.								1							FPC-9
125+83.00	HWY. 70 (UNDER BRIDGE)	CONSTRUCT DROP INLET W/ GRATE ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	47							1							FPC-9, PCC-1
127+02.00	HWY. 70	CONSTRUCT DROP INLET W/ PEDESTRAIN GRATE ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	54								1						FPC-9S, PCC-1
127+53.00	HWY. 70	CONSTRUCT DROP INLET W/ EXT. ON LT. W/ R.C. PIPE CULVERT TO JUNCTION BOX ON LT.		16					1								FPC-9M, FPC-9E, PCC-1
127+53.00	HWY. 70	CONSTRUCT JUNCTION BOX ON LT. W/ EXISTING R.C. PIPE CULVERT ON LT.												1			FPC-9S
127+53.00	HWY. 70	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.		70					1								FPC-9M, FPC-9E, PCC-1
128+06.00	HWY. 70	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	52						1								FPC-9M, FPC-9E, PCC-1
129+54.00	HWY. 70	ADJUST DROP INLET TO GRADE ON LT.										1					
12+83.22	HWY. 10	CONSTRUCT DROP INLET W/ EXT. ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	3						1								FPC-9M, FPC-9E, PCC-1
13+31.99	HWY. 10	CONSTRUCT DROP INLET W/ EXT. ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON LT.	46						1								FPC-9M, FPC-9E, PCC-1
17+50.00	NORTH SHARED USE RAMP	CONSTRUCT DROP INLET W/ GRATE ON LT. W/ R.C. PIPE TO WALL ON RT.	24							1							FPC-9, PCC-1
15+33.63	SOUTH SHARED USE PATH	CONSTRUCT R.C. PIPE CULVERT RT. FWD. SKEW WITH FES LT. & RT.		64			2								16	201.6	FES-1, FES-2, PCC-1
15+59.00	HWY. 365	ADJUST JUNCTION BOX TO GRADE ON LT.											1				
15+70.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON LT.							1								FPC-9M, FPC-9E
15+74.00	HWY. 365	ADJUST DROP INLET TO GRADE WITH R.C. PIPE CULVERT TO DROP INLET ON RT.	11									1					PCC-1
15+74.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	52						1								FPC-9M, FPC-9E, PCC-1
16+30.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON RT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	37						1								FPC-9M, FPC-9E, PCC-1
16+71.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON RT.							1								FPC-9M, FPC-9E
17+19.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	28						1								FPC-9M, FPC-9E, PCC-1
17+39.00	HWY. 365	CONSTRUCT JUNCTION BOX ON LT. W/ R.C. PIPE CULVERT TO DROP INLET ON RT.	48											1			FPC-9S, PCC-1
17+74.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON RT.							1								FPC-9M, FPC-9E
18+48.00	HWY. 365	ADJUST JUNCTION BOX TO GRADE ON LT.											1				
18+59.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON LT.							1								FPC-9M, FPC-9E
19+37.00	HWY. 365	ADJUST JUNCTION BOX TO GRADE ON LT.											1				
19+65.00	HWY. 365	ADJUST JUNCTION BOX TO GRADE ON LT.											1				
21+08.00	HWY. 365	CONSTRUCT DROP INLET W/ EXT. ON RT.							1								FPC-9M, FPC-9E
TOTALS			545	307	80	223	2	1	16	6	3	2	4	6	33	415.8	

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

SELECTED PIPE BEDDING

LOCATION	SELECTED BEDDING
	CU. YD.
ENTIRE PROJECT	100

QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	SIDE	PARAPET TYPE SPECIAL 1	PARAPET TYPE SPECIAL 2	PARAPET TYPE SPECIAL 3
				L.F.		
101+65.88	103+33.92	HWY. 70	LT.	168		
102+53.53	103+33.92	HWY. 70	RT.	81		
103+08.44	103+33.92	HWY. 70	RT.		26	
121+01.09	124+68.87	HWY. 70	LT.	369		
121+01.09	124+68.87	HWY. 70	RT.	369		
121+01.09	124+68.87	HWY. 70	RT.		368	
126+04.37	127+00.21	HWY. 70	LT.	97		
126+04.37	127+00.21	HWY. 70	RT.	96		
126+04.37	127+00.21	HWY. 70	RT.		95	
13+41.78	15+03.06	SOUTH SHARED USE RAMP	LT.		157	
13+41.78	15+03.06	SOUTH SHARED USE RAMP	RT.		167	
15+04.59	17+83.93	NORTH SHARED USE RAMP	LT.		280	
15+04.59	15+24.42	NORTH SHARED USE RAMP	RT.		20	
16+84.00	17+83.38	NORTH SHARED USE RAMP	RT.		104	
17+96.13	18+09.13	NORTH SHARED USE RAMP	LT.		13	
13+46.85	16+40.00	ARKANSAS RIVER TRAIL	LT.		295	
13+90.00	14+80.00	ARKANSAS RIVER TRAIL	RT.		90	
13+38.52	14+59.17	HWY. 10	LT.	119		
15+77.85	17+21.35	HWY. 10	LT.			143
100+47.81	102+09.66	HWY. 10 ENTRANCE RAMP	LT.	159		
101+65.30	101+80.22	HWY. 10 ENTRANCE RAMP	RT.			15
101+80.22	101+99.47	HWY. 10 ENTRANCE RAMP	RT.	20		
102+61.95	103+62.27	HWY. 10 ENTRANCE RAMP	LT.	101		
102+51.77	103+62.27	HWY. 10 ENTRANCE RAMP	RT.	111		
TOTALS				1690	1615	158

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	CONCRETE DITCH PAVING (TYPE B)		SOLID SODDING	WATER
			FEET	"W"	SQ. YD.	SQ. YD.	M.G.
15+40.00	16+20.00	NORTH SHARED USE RAMP LT.	120	4	54	27	0.4
*ENTIRE PROJECT			100	4	45	45	0.6
TOTALS					99	72	1.0

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

*QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

HAND RAILING

STATION	STATION	LOCATION	SIDE	STANDARD	METAL HANDRAIL	
					TYPE H1	TYPE H2
				L.F.		
101+65.88	103+33.92	HWY. 70	LT.		138	
102+53.53	103+33.92	HWY. 70	RT.		54	
103+08.44	103+33.92	HWY. 70	RT.			26
121+01.09	124+68.87	HWY. 70	LT.		369	
121+01.09	124+68.87	HWY. 70	RT.		369	
121+01.09	124+68.87	HWY. 70	RT.			368
125+53.00	125+83.00	1	LT.	26		
125+53.00	125+83.00	HWY. 70 (DICKEY-STEPHENS ACCESS)	RT.	26		
126+04.37	127+00.21	HWY. 70	LT.		68	
126+04.37	127+00.21	HWY. 70	RT.		67	
126+04.37	127+00.21	HWY. 70	RT.			95
13+41.78	15+03.06	SOUTH SHARED USE RAMP	LT.			157
13+41.78	15+03.06	SOUTH SHARED USE RAMP	RT.			167
15+04.59	17+72.43	NORTH SHARED USE RAMP	LT.			254
15+04.59	15+24.42	NORTH SHARED USE RAMP	RT.			20
16+84.00	17+83.38	NORTH SHARED USE RAMP	RT.			104
13+46.85	16+40.00	ARKANSAS RIVER TRAIL	LT.			295
13+90.00	14+80.00	ARKANSAS RIVER TRAIL	RT.			90
TOTALS				52	1065	1576

NOTE: SEE SUMMARY OF BRIDGE QUANTITIES SHEETS FOR HAND RAILING ON BRIDGE STRUCTURES.

RETAINING WALL

STATION	STATION	LOCATION	RETAINING WALL	SELECT GRANULAR BACKFILL	CLASS S CONCRETE - ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)
			SQ. FT.	CU. YD.	CU. YD.	POUNDS
101+65.99	103+40.50	HWY. 70 LT. & RT.	3931	1715		
120+94.51	124+89.86	HWY. 70 LT. & RT.	20725	25491		
125+82.87		HWY. 70 RT.			2.01	211
125+82.87		HWY. 70 LT.			2.54	168
125+83.37	126+84.49	HWY. 70 RT.	1012	1594		
125+83.37	126+43.01	HWY. 70 LT.	690	1108		
102+44.55	103+68.85	HWY. 10 ENTRANCE RAMP LT. & RT.	7365	2730		
13+38.73	16+16.95	HWY. 10 LT.	5271	2036		
13+35.70	15+03.06	SOUTH SHARED USE RAMP LT. & RT.	5104	1082		
14+82.41	16+13.27	NORTH SHARED USE RAMP LT.	1622	481		
16+84.00	17+83.38	NORTH SHARED USE RAMP RT.	770	88		
13+46.85	16+40.00	ARKANSAS RIVER TRAIL LT.	3447	1096		
13+90.00	14+80.00	ARKANSAS RIVER TRAIL RT.	848	274		
TOTALS			50785	37695	4.55	379

REMOVABLE PIPE BOLLARDS

STATION	LOCATION	BOLLARD
		EACH
14+97.14	SOUTH SHARED USE RAMP	2
15+12.41	NORTH SHARED USE RAMP	2
101+06.50 TO 102+50.50	HWY. 70	19
103+01.03	HWY. 70	2
126+11.25	HWY. 70	2
TOTAL		27

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
8-25-14

QUANTITIES

JFCantabery 8/25/2014 2:59:37 PM
WORKSPACE: AHTD
\\GIISDSVR01\INI\07080 - Broadway Bridge over the Arkansas River\Drawings\R061275_QTY_04.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	67	505
				(2)	QUANTITIES			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

BASE & SURFACING

STATION	STATION	LOCATION	LENGTH	ACHM SURFACE COURSE (1/2") (PG 76-22)				ACHM SURFACE COURSE (1/2") (PG 64-22)				ACHM BINDER COURSE (1") (PG 64-22)				ACHM BASE COURSE (1 1/2") (PG 64-22)				AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				
				AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	AVG. WIDTH	SQUARE YARDS	LBS. PER SQ. YD.	TON	TONS PER STATION	TON	TOTAL WIDTH	SQUARE YARDS	0.03 G/SY	AVG. WIDTH	SQUARE YARDS	0.1 G/SY
			FEET	FEET				FEET				FEET				FEET						FEET		GAL.	FEET		GAL.
100+18.63	101+65.88	HWY. 70 (W/ TURNOUTS)	147.25	VAR.	1029.22	220	113															VAR.	1029.22	31	VAR.		
100+18.63	101+65.88	HWY. 70 (LEVELING)	147.25	VAR.	VAR.	VAR.	42																		VAR.	863.44	86
101+65.88	102+53.53	HWY. 70	87.65	VAR.	615.69	440	135					VAR.	615.69	330	102	VAR.	640.04	550.00	176			VAR.	1847.07	55			
101+66.49	103+33.42	HWY. 70 (LT. AT BOTTOM OF RETAINING WALL)	166.93					VAR.	113.05	220	12									VAR.	66						
102+53.53	103+33.92	HWY. 70	80.39	VAR.	463.76	440	102					VAR.	463.76	330	77	VAR.	463.76	550.00	128			VAR.	1391.28	42			
102+53.53	103+33.92	HWY. 70 SHARED USE PATH	80.39					15.00	133.98	220	15									58.25	47						
121+01.09	123+17.84	HWY. 70	216.75	44.00	1059.67	440	233					44.00	1059.67	330	175	44.00	1059.67	550.00	291			132.00	3179.00	95			
121+01.09	123+17.84	HWY. 70 SHARED USE PATH	216.75					15.00	361.25	220	40									58.25	126						
123+17.84	124+68.87	HWY. 70	151.03	VAR.	923.78	440	203					VAR.	923.87	330	152	VAR.	923.87	550.00	254			VAR.	2771.52	83			
123+17.84	124+68.87	HWY. 70 SHARED USE PATH	151.03					15.00	251.72	220	28									58.25	88						
126+04.37	127+00.21	HWY. 70	95.84	66.00	702.83	440	155					66.00	702.83	330	116	66.00	702.83	550.00	193			198.00	2108.48	63			
126+04.37	127+00.21	HWY. 70 SHARED USE PATH	95.84					15.00	159.73	220	18									58.25	56						
127+00.21	128+53.00	HWY. 70 (W/ TURNOUTS)	152.79	VAR.	1285.31	440	283					VAR.	1373.23	330	227	VAR.	1460.08	550.00	402			VAR.	4031.77	121			
128+53.00	129+20.00	HWY. 70 (INTERSECTION)	67.00	VAR.	918.11	220	101															VAR.	918.11	28			
128+53.00	129+20.00	HWY. 70 (LEVELING)	67.00	VAR.	VAR.	VAR.	38																		VAR.	918.11	92
129+20.00	130+33.45	HWY. 70 (W/ TURNOUTS)	113.45	VAR.	679.00	220	75															VAR.	679.00	20			
129+20.00	130+33.45	HWY. 70 (LEVELING)	113.45	VAR.	VAR.	VAR.	12																		VAR.	617.96	62
13+10.00	16+61.36	HWY. 365	351.36	VAR.	1616.67	220	178															VAR.	1616.67	49			
13+10.00	16+61.36	HWY. 365 (LEVELING)	351.36	VAR.	VAR.	VAR.	147																		VAR.	1342.82	134
16+61.36	19+71.85	HWY. 365	310.49	VAR.	1891.40	220	208															VAR.	1891.40	57			
16+61.36	19+71.85	HWY. 365 (LEVELING)	310.49	VAR.	VAR.	VAR.	218																		VAR.	1597.63	160
9+90.73	12+78.74	HWY. 10	288.01	VAR.	216.89	440	48					VAR.	216.89	330	36	VAR.	296.89	550.00	82			VAR.	650.67	20			
12+78.74	13+38.74	HWY. 10	60.00	VAR.	99.13	440	22					VAR.	99.13	330	16	VAR.	115.80	550.00	32			VAR.	297.39	9			
13+38.74	15+40.73	HWY. 10	201.99	VAR.	286.87	440	63					VAR.	286.87	330	47	VAR.	286.87	550.00	79			VAR.	860.61	26			
101+27.54	102+04.16	HWY. 10 ENTRANCE RAMP	76.62	17.00	144.73	440	32					17.00	144.73	330	24	17.00	144.73	550.00	40			51.00	434.18	13			
102+56.45	103+62.27	HWY. 10 ENTRANCE RAMP	105.82	VAR.	176.33	440	39					VAR.	176.33	330	29	VAR.	176.33	550.00	48			VAR.	528.99	16			
13+41.78	15+03.06	SOUTH SHARED USE RAMP	161.28					12.33	220.95	220	24									48.00	77						
15+03.06	15+60.46	SOUTH SHARED USE RAMP (W/ TURNOUTS)	57.40					VAR.	177.50	220	20									VAR.	91						
15+04.59	16+13.27	NORTH SHARED USE RAMP	108.68					14.17	171.11	220	19									74.50	81						
16+13.27	16+84.00	NORTH SHARED USE RAMP	70.73					14.17	111.36	220	12									74.50	53						
16+84.00	17+83.38	NORTH SHARED USE RAMP	99.38					12.33	136.15	220	15									48.00	48						
17+83.38	18+26.04	NORTH SHARED USE RAMP (W/ TURNOUTS)	42.66					VAR.	106.59	220	12									VAR.	60						
12+50.00	13+47.00	ARKANSAS RIVER TRAIL	97.00					12.00	129.33	220	14									85.75	83						
13+47.00	13+90.00	ARKANSAS RIVER TRAIL	43.00					12.17	58.15	220	6									66.75	29						
13+90.00	14+80.00	ARKANSAS RIVER TRAIL	90.00					12.33	123.30	220	14									48.00	43						
14+80.00	16+40.00	ARKANSAS RIVER TRAIL	160.00					12.17	216.36	220	24									66.75	107						
16+40.00	19+00.00	ARKANSAS RIVER TRAIL	260.00					12.00	346.67	220	38									85.75	223						
TOTALS				VAR.		2447			2817.20		311		6063.00		1001		6270.87		1725		1278		24235.36	728		5339.96	534

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2") : 5.0% ASPHALT BINDER (PG 76-22), 95.0% MINERAL AGGREGATE, N_{MAX}=205
ACHM SURFACE COURSE (1/2") : 5.2% ASPHALT BINDER (PG 64-22), 94.8% MINERAL AGGREGATE, N_{MAX}=115
ACHM BINDER COURSE (1") : 4.2% ASPHALT BINDER (PG 64-22), 95.8% MINERAL AGGREGATE, N_{MAX}=115
ACHM BASE (1 1/2") : 4.0% ASPHALT BINDER (PG 64-22), 96.0% MINERAL AGGREGATE, N_{MAX}=115

BASE & SURFACING - DRIVEWAYS

LOCATION	WIDTH	** MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	AGGREGATE BASE COURSE (CLASS 7)(7" DEPTH)	ACHM SURFACE COURSE (1/2") (220 LBS. PER S.Y.) (PG 64-22)	
	FEET	STATION	STATION	SQUARE YARDS	TON	SQUARE YARDS	TON
HWY. 365 STA. 14+52 LT.	20	14+28	14+76	28.44	10	24.5	3
HWY. 365 STA. 14+80 RT.	15	14+59	15+02	35.41			
HWY. 365 STA. 15+15 LT.	12	14+95	15+35	21.33	2	4.7	1
HWY. 365 STA. 15+47 LT.	15	15+26	15+69	24.00	2	5.8	1
HWY. 365 STA. 15+51 RT.	30	15+22	15+80	94.14			
HWY. 365 STA. 16+27 LT.	36	15+95	16+59	58.18			
HWY. 365 STA. 16+90 LT.	40	16+56	17+24	61.94			
HWY. 365 STA. 17+37 RT.	30	17+08	17+66	80.92			
HWY. 365 STA. 17+89 LT.	40	17+55	18+23	51.16			
HWY. 70 STA. 101+20 LT.	38	100+87	101+53	52.23			
*ENTIRE PROJECT - TEMPORARY DRIVES					20		10
TOTALS				507.75	34	35.0	15

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2") : 5.2% ASPHALT BINDER (PG 64-22), 94.8% MINERAL AGGREGATE, N_{MAX}=115

* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
** FOR INFORMATION ONLY

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE				
				AVG. WID.	5" U.T.	AVG. WID.	6" U.T.	
			FEET	FEET	SQ YD.	FEET	SQ YD.	
100+18.63	101+65.88	HWY. 70 NOTCH AND WIDEN	147.25	VAR.	486			
129+20.00	130+33.45	HWY. 70 NOTCH AND WIDEN	113.45	VAR.	153			
13+10.00	16+61.36	HWY. 365 NOTCH AND WIDEN	351.36	VAR.	743			
16+61.36	19+71.85	HWY. 365 NOTCH AND WIDEN	310.49	VAR.	747			
9+90.73	12+78.74	HWY. 10 NOTCH AND WIDEN	VAR.			2.5	57	
TOTALS					2129		57	

APPROACH SLABS

STATION	STATION	LOCATION	APPROACH SLAB	REINFORCING STEEL RDWY.
			CU. YD.	POUND
124+68.87	124+90.37	HWY. 70	116	14151
125+82.87	126+04.37	HWY. 70	116	14151
TOTALS			232	28302

CONCRETE ISLAND

STATION	LOCATION	SIDE	CURB FACE TYPE	AREA SQ. YD.
128+08	HWY. 70	RT.	C	88

QUANTITIES

SARobertson 5/29/2014 4:52:49 PM
WORKSPACE: AHTD
L:\220\100T080 - Broadway Bridge over the Arkansas River\Drawings\R06i275_QTY_05.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	68	505
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14

STANDARD ROADSIDE SIGNS
SHEET ALUMINUM 0.100" THICKNESS (5 SF OR LESS)

SIGN NO.	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
M1-4	24" x 24"	4.00	4	16.00	BLACK/WHITE
M1-5	30" x 24"	5.00	1	5.00	BLACK/WHITE
M2-1	24" x 12"	2.00	1	2.00	BLACK/WHITE
M3-1	24" x 12"	2.00	1	2.00	BLACK/WHITE
M3-2	24" x 12"	2.00	1	2.00	BLACK/WHITE
M3-4	24" x 12"	2.00	2	4.00	BLACK/WHITE
M6-1L	21" x 15"	2.19	1	2.19	BLACK/WHITE
M6-1R	21" x 15"	2.19	2	4.38	BLACK/WHITE
M6-2R	21" x 15"	2.19	1	2.19	BLACK/WHITE
M6-3	21" x 15"	2.19	1	2.19	BLACK/WHITE
R3-2	24" x 24"	4.00	2	8.00	BLACK/WHITE
R6-1L	36" x 12"	3.00	0	0.00	BLACK/WHITE
R6-1R	36" x 12"	3.00	0	0.00	BLACK/WHITE
R6-2R	24" x 30"	5.00	1	5.00	BLACK/WHITE
R7-2	12" x 18"	1.50	1	1.50	BLACK/WHITE
R7-6	12" x 18"	1.50	2	3.00	BLACK/WHITE
W16-2P	24" x 18"	3.00	1	3.00	BLACK/YELLOW
W16-7P	24" x 12"	2.00	1	2.00	BLACK/YELLOW
TOTAL 0.100" THICKNESS				64.45	

STANDARD ROADSIDE SIGNS
SHEET ALUMINUM 0.125" THICKNESS (GREATER THAN 5 SF)

SIGN NO.	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
R1-2	48" x 48" x 48"	6.93	4	27.71	RED/WHITE
R3-5R	30" x 36"	7.50	1	7.50	BLACK/WHITE
R3-7R	36" x 36"	9.00	1	9.00	WHITE/RED
R5-1	30" x 30"	6.25	1	6.25	WHITE/RED
R10-15	30" x 30"	6.25	8	50.00	RED/WHITE
W4-1R	36" x 36"	9.00	1	9.00	BLACK/YELLOW
W11-2	36" x 36"	9.00	1	9.00	BLACK/YELLOW
W12-2	36" x 36"	9.00	1	9.00	BLACK/YELLOW
TOTAL 0.125" THICKNESS				127.46	

GUIDE SIGN - ROADSIDE MOUNTED
SHEET ALUMINUM 0.125" THICKNESS

SIGN NO.	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	LEGEND/BACKGROUND
SPECIAL SIGN 1	36" x 18"	4.50	1	4.50	WHITE/BLUE
SPECIAL SIGN 2	36" x 30"	7.50	1	7.50	WHITE/BLUE
SPECIAL SIGN 3	36" x 48"	12.00	1	12.00	WHITE/BROWN
SPECIAL SIGN 4	30" x 36"	7.50	1	7.50	RED/WHITE
SPECIAL SIGN 5	18" x 24"	3.00	1	3.00	RED/WHITE
SPECIAL SIGN 6	18" x 24"	3.00	1	3.00	RED/WHITE
SPECIAL SIGN 7	24" x 30"	5.00	1	5.00	BLACK/YELLOW
SPECIAL SIGN 8	36" x 18"	4.50	1	4.50	BLACK/YELLOW
SPECIAL SIGN 9	36" x 30"	7.50	1	7.50	BLACK/YELLOW
SPECIAL SIGN 10	36" x 30"	7.50	1	7.50	BLACK/YELLOW
TOTAL 0.125" THICKNESS				62.00	

CODE LETTER THIS SHEET	STANDARD ROADSIDE SIGNS TO BE MOUNTED	U-CHANNEL POST ASSEMBLIES			
		U1-1	U1-2	U2-1	U2-7
		EACH	EACH	EACH	EACH
SS-070-12-STA99+64SB	SPECIAL SIGN 2			1	
SS-070-12-STA99+77EB	R7-2	1			
SS-070-12-STA100+33WB	SPECIAL SIGN 5, SPECIAL SIGN 6	1			
SS-070-12-STA101+12NB	R7-6	1			
SS-070-11-STA101+44SB	SPECIAL SIGN 7, SPECIAL SIGN 8, M6-1L			1	
SS-070-12-STA102+47NB	R7-6	1			
SS-010-08-STA15+85WB	W4-1R		1		
SS-070-12-STA106+04SB	R3-2, M3-4, M1-4, M6-2R			1	
SS-010-08-STA12+60WB	W11-2, W16-7P		1		
SS-070-12-STA128+19NB	R1-2		1		
SS-070-12-STA128+33EB	R1-2		1		
SS-070-13-STA129+00WB	R1-2		1		
SS-070-12-STA129+26SB	R1-2		1		
SS-070-12-STA130+20SB	SPECIAL SIGN 9			1	
SS-365-11-STA129+33SB	W12-2, W16-2P		1		
SS-365-11-STA129+27WB	M3-1, M1-5	1			
SS-070-12-STA128+37SB	SPECIAL SIGN 10			1	
SS-365-11-STA128+55EB	M3-2, M3-4, M1-4, M1-4, M6-3, M6-1R				1
SS-365-11-STA128+31EB	R3-7R			1	
SS-365-11-STA128+17EB	M2-1, M1-4	1			
TOTALS		6	7	6	1

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WORKSPACE: AHTD
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REVISED DATE:

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 061275

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP & 205	801	SP & 802	SP & 802	SP & 802	803	SP & 804	804	805	805	805	807	807
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE -BRIDGE	CLASS B CONCRETE-BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP12X53) *	STEEL PILING (HP14X73) *	PREBORING	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50)	STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50)
		UNIT	LUMP SUM	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	SQUARE YARD	POUND	POUND	LINEAR FOOT	LINEAR FOOT	LINEAR FOOT	POUND	POUND
07292 X044 BROADWAY STREET OVER ARKANSAS RIVER	BENT NO. 1			71.55			7.8	11,400		782			1,421	
	BENT NO. 2			410	318.59				64,425			840	840		
	BENT NO. 3			716	691.27				131,746			1,400	1,200		
	BENT NO. 4					2,513.40			725,080						
	BENT NO. 5					2,846.35			749,059						
	BENT NO. 6					2,396.25			642,289						
	BENT NO. 7			746	601.64				135,090			2,925	160		
	BENT NO. 8				83.95			7.8	13,761			1,666		1,345	
	263'-0" CONT. COMP. PLATE GIRDER UNIT						762.94	1,619.6		190,285				921,013	
	180'-0" SIMPLE COMP. PLATE GIRDER SPAN						603.42	1,476.5		145,572				~~1,597,822~~ 1,608,472 ⚠1	
	896'-0" TIED ARCH UNIT						1,843.40	5,158.0		659,168					
	426'-0" CONT. COMP. PLATE GIRDER UNIT						1,168.94	2,460.3		276,275				2,302,079	
	EXISTING BRIDGE NO. A2978 (SITE NO. 1)		1												
	TOTALS FOR BRIDGE NO. 07292		-	1,872	1,767.00	7,756.00	4,378.70	10,730.0	2,472,850	1,271,300	782	6,831	2,200	4,834,330 ⚠1	-
07293 X920 DICKEY STEPHENS PARK ACCESS	BENT NO. 1				123.88				8,465			1,672			
	BENT NO. 2			197	65.88				12,165	12,700		2,100			
	BENT NO. 3			232	65.88				12,165	12,700		2,044			
	BENT NO. 4				102.36				7,465			1,596			
	92'-6" CONT. CONCRETE SLAB UNIT						702.00	758.6		136,210					
	TOTALS FOR BRIDGE NO. 07293		-	429	358.00	-	702.00	758.6	40,260	161,610	-	7,412	-	-	-
07294 X971 LA HARPE BOULEVARD RAMP	BENT NO. 1				29.23			3.4	3,695		252			630	
	BENT NO. 2				54.82				13,590						
	BENT NO. 3				60.55				15,625						
	BROADWAY BENT NO. 3 BK. ⚠2														
	225'-0" CONT. COMP. PLATE GIRDER UNIT						247.90	756.7		70,760				203,530	
	EXISTING BRIDGE NO. 02982 (SITE NO. 2)		1												
	TOTALS FOR BRIDGE NO. 07294		-	-	144.60	-	247.90	760.1	32,910	70,760	252	-	-	204,160	-
07295 X271 ARCH STREET	BENT NO. 1				21.60			3.0	2,710		124				543
	BENT NO. 2				20.10			3.0	2,420		136				543
	50'-0" SIMPLE COMP. W-BEAM SPAN						48.00	138.5		13,490					31,434
	TOTALS FOR BRIDGE NO. 07295		-	-	41.70	-	48.00	144.5	5,130	13,490	260	-	-	-	32,520
04927 X971 SOUTH PEDESTRIAN RAMP	BENT NO. 1			89	83.43				15,374		248		216		
	BENT NO. 2			110	82.13				14,872		192		160		
	BENT NO. 3			121	77.34				13,361		200		168		
	BENT NO. 4				10.30				1,513		155				336
	100'-0" SIMPLE COMP. W-BEAM SPAN						68.29			13,687					99,469
	112'-0" PREFABRICATED SIMPLE TRUSS SPAN														
	75'-0" SIMPLE COMP. W-BEAM SPAN						41.21			6,603					36,825
	TOTALS FOR BRIDGE NO. 04927		-	320	253.20	-	109.50	-	45,120	20,290	795	-	544	-	136,630
04926 X971 NORTH PEDESTRIAN RAMP	BENT NO. 1			120	85.60				15,818		600				
	BENT NO. 2			113	83.00				14,978		600				
	BENT NO. 3			113	79.95				14,026		600				
	BENT NO. 4			113	76.91				13,023		600				
	BENT NO. 5			113	73.86				12,071		600				
	BENT NO. 6			106	70.40				10,952		600				
	BENT NO. 7				13.68				2,132		425				332
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 1)						42.95			7,733					45,400
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 2)						50.43			9,751					51,572
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 3)						41.08			6,604					36,809
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 4)						41.08			6,604					36,809
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 5)						41.08			6,604					36,809
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 6)						41.08			6,604					36,809
	TOTALS FOR BRIDGE NO. 04926		-	678	483.40	-	257.70	-	83,000	43,900	4,025	-	-	-	244,540
	EXISTING BRIDGE NO. 02983 (SITE NO. 3)		1												
	TOTALS FOR JOB 061275			3,299	3,047.90	7,756.00	5,743.80	12,393.2	2,679,270	1,581,350	6,114	14,243	2,744	~~5,027,840~~ 5,038,490 ⚠1	413,690

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-25-14			
9-10-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	69	505
① 07292-07295, 04926 & 04927		QUANTITIES		54288

⚠1 Added Field Splice No. 2 for Girders 1-3, SRY 8-25-14

⚠2 Added Item Location, SRY 9-10-14

* Steel piles are required to be Grade 50 and have approved driving points which will not be paid for directly but shall be considered subsidiary to Item "STEEL PILING (HP12x53)" or "STEEL PILING (HP14x73)".

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No.8017 9-10-14

BRIDGE ENGINEER

SHEET 1 OF 4
SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: AUG. 2013 FILENAME: B061275_01.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54288

drgood
WORKSPACE: AHTD Bridge
\\GLITDCN\LITProjects\20IN\I0I080 - Broadway Bridge over the Arkansas River\Drawings\B061275.01(Project Dtys-1).dgn
REVISED DATE: 9/10/2014 4:43:38 PM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-10-14				6	ARK.			
				JOB NO.		061275	70	505
				① 07292-07295, 04926 & 04927		QUANTITIES		54289

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 061275

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	807	808	809	809	812	812	816	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275
		ITEM	PAINTING STRUCTURAL STEEL **	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE C)	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	AIRWAY OBSTRUCTION LIGHTING SYSTEM	CLEARANCE GAUGES	DRILLED SHAFT (72" DIAMETER)	DRILLED SHAFT (102" DIAMETER)
		UNIT	TON	CUBIC INCH	LINEAR FOOT	LINEAR FOOT	EACH	EACH	CUBIC YARD	LUMP SUM	LUMP SUM	LINEAR FOOT	LINEAR FOOT
07292 X044 BROADWAY STREET OVER ARKANSAS RIVER	BENT NO. 1		0.7	7,017.0		73			1				
	BENT NO. 2			8,316.0									
	BENT NO. 3			21,235.5		127							
	BENT NO. 4			11,220.0							1		426
	BENT NO. 5												498
	BENT NO. 6			11,745.0									626
	BENT NO. 7			10,837.5					210				
	BENT NO. 8		0.7	11,745.0	72				1				
	263'-0" CONT. COMP. PLATE GIRDER UNIT		458.9					1					
	180'-0" SIMPLE COMP. PLATE GIRDER SPAN		795.3										
	896'-0" TIED ARCH UNIT		4,100.0			73				1			
	426'-0" CONT. COMP. PLATE GIRDER UNIT		1,148.4					1					
	EXISTING BRIDGE NO. A2978 (SITE NO. 1)												
	TOTALS FOR BRIDGE NO. 07292		6,504.0	82,116.0	72	273	-	2	212	1	1	-	1,550
07293 X920 DICKEY STEPHENS PARK ACCESS	BENT NO. 1												
	BENT NO. 2												
	BENT NO. 3												
	BENT NO. 4												
	92'-6" CONT. CONCRETE SLAB UNIT							1					
	TOTALS FOR BRIDGE NO. 07293		-	-	-	-	-	1	-	-	-	-	-
07294 X971 LA HARPE BOULEVARD RAMP	BENT NO. 1		0.3	2,720.0		34			1				
	BENT NO. 2			2,106.0								89	
	BENT NO. 3			2,106.0								100	
	BROADWAY BENT NO. 3 BK. ⚠			2,720.0 ⚠									
	225'-0" CONT. COMP. PLATE GIRDER UNIT		101.2					1					
	EXISTING BRIDGE NO. 02982 (SITE NO. 2)												
	TOTALS FOR BRIDGE NO. 07294		101.5	9,652.0 ~~6,932.0~~ ⚠	-	34	-	1	1	-	-	189	-
07295 X271 ARCH STREET	BENT NO. 1		0.3	1,170.0		30			1				
	BENT NO. 2		0.3	1,170.0		30			1				
	50'-0" SIMPLE COMP. W-BEAM SPAN		15.5					1					
	TOTALS FOR BRIDGE NO. 07295		16.1	2,340.0	-	60	-	1	2	-	-	-	-
04927 X971 SOUTH PEDESTRIAN RAMP	BENT NO. 1			1,170.0		42							
	BENT NO. 2			1,170.0		18							
	BENT NO. 3			877.5		18							
	BENT NO. 4		0.2	877.5		18			1				
	100'-0" SIMPLE COMP. W-BEAM SPAN		49.5										
	112'-0" PREFABRICATED SIMPLE TRUSS SPAN												
	75'-0" SIMPLE COMP. W-BEAM SPAN		18.3				1						
	TOTALS FOR BRIDGE NO. 04927		68.0	4,095.0	-	96	1	-	1	-	-	-	-
04926 X971 NORTH PEDESTRIAN RAMP	BENT NO. 1			877.5		37							
	BENT NO. 2			1,755.0		18							
	BENT NO. 3			1,755.0		18							
	BENT NO. 4			1,755.0		18							
	BENT NO. 5			1,755.0		18							
	BENT NO. 6			1,755.0		18							
	BENT NO. 7		0.2	877.5		18			8				
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 1)		22.6										
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 2)		25.6										
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 3)		18.3										
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 4)		18.3										
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 5)		18.3										
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 6)		18.3				1						
	TOTALS FOR BRIDGE NO. 04926		121.6	10,530.0	-	145	1	-	8	-	-	-	-
	EXISTING BRIDGE NO. 02983 (SITE NO. 3)												
	TOTALS FOR JOB 061275		6,811.2	108,733.0 ⚠ ~~106,013.0~~	72	608	2	5	224	1	1	189	1,550

⚠ Added Item Location And Quantity For "ELASTOMERIC BEARINGS" SRY, 9-10-14

** Except as otherwise noted in the plans, paint shall conform to Federal Standard 595C, Color Chip No. 27925, White.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 4
SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: AUG. 2013 FILENAME: B061275_02.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54289

dr.good 9/10/2014 4:43:49 PM
WORKSPACE: AHTD Bridge
\\OLITDCONLITFP\projects\20IN\I07080 - Broadway Bridge over the Arkansas River\Drawings\B061275_02 (Project 0-sys-2).dgn
REVISED DATE:

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 061275

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275
		ITEM	PERMANENT STEEL CASING (78" DIAMETER) ***	PERMANENT STEEL CASING (108" DIAMETER) ***	SID INSPECTION	HLMR BEARING ASSEMBLY	INSPECTION LIGHTING SYSTEM	METAL HANDRAIL (TYPE H1)	METAL HANDRAIL (TYPE H2)	NAVIGATION LIGHTING SYSTEM	CROSSHOLE SONIC LOGGING (72" DIAMETER)	CROSSHOLE SONIC LOGGING (102" DIAMETER)
		UNIT	LINEAR FOOT	LINEAR FOOT	EACH	EACH	LUMP SUM	LINEAR FOOT	LINEAR FOOT	LUMP SUM	EACH	EACH
07292 X044 BROADWAY STREET OVER ARKANSAS RIVER	BENT NO. 1											
	BENT NO. 2											
	BENT NO. 3											
	BENT NO. 4			210	8	2						8
	BENT NO. 5			322	8	4						8
	BENT NO. 6			434	8	2						8
	BENT NO. 7											
	BENT NO. 8											
	263'-0" CONT. COMP. PLATE GIRDER UNIT							510	193			
	180'-0" SIMPLE COMP. PLATE GIRDER SPAN							352	156			
	896'-0" TIED ARCH UNIT						1	1,768	818	1		
	426'-0" CONT. COMP. PLATE GIRDER UNIT							834	340			
	EXISTING BRIDGE NO. A2978 (SITE NO. 1)											
TOTALS FOR BRIDGE NO. 07292			-	966	24	8	1	3,464	1,507	1	-	24
07293 X920 DICKEY STEPHENS PARK ACCESS	BENT NO. 1											
	BENT NO. 2											
	BENT NO. 3											
	BENT NO. 4											
	92'-6" CONT. CONCRETE SLAB UNIT							179	77			
TOTALS FOR BRIDGE NO. 07293			-	-	-	-	-	179	77	-	-	-
07294 X971 LA HARPE BOULEVARD RAMP	BENT NO. 1											
	BENT NO. 2		44		2						2	
	BENT NO. 3		55		2						2	
	BROADWAY BENT NO. 3 BK. ⚠1											
	225'-0" CONT. COMP. PLATE GIRDER UNIT											
	EXISTING BRIDGE NO. 02982 (SITE NO. 2)											
TOTALS FOR BRIDGE NO. 07294			99	-	4	-	-	-	-	-	4	-
07295 X211 ARCH STREET	BENT NO. 1											
	BENT NO. 2											
	50'-0" SIMPLE COMP. W-BEAM SPAN											
TOTALS FOR BRIDGE NO. 07295			-	-	-	-	-	-	-	-	-	-
04927 X971 SOUTH PEDESTRIAN RAMP	BENT NO. 1											
	BENT NO. 2											
	BENT NO. 3											
	BENT NO. 4											
	100'-0" SIMPLE COMP. W-BEAM SPAN								200			
	112'-0" PREFABRICATED SIMPLE TRUSS SPAN											
	75'-0" SIMPLE COMP. W-BEAM SPAN								129			
TOTALS FOR BRIDGE NO. 04927			-	-	-	-	-	-	329	-	-	-
04926 X971 NORTH PEDESTRIAN RAMP	BENT NO. 1											
	BENT NO. 2											
	BENT NO. 3											
	BENT NO. 4											
	BENT NO. 5											
	BENT NO. 6											
	BENT NO. 7											
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 1)								116			
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 2)								150			
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 3)								129			
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 4)								129			
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 5)								129			
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 6)								129			
TOTALS FOR BRIDGE NO. 04926			-	-	-	-	-	-	782	-	-	-
EXISTING BRIDGE NO. 02983 (SITE NO. 3)												
TOTALS FOR JOB 061275			99	966	28	8	1	3,643	2,695	1	4	24

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
9-10-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	71	505
① 07292-07295, 04926 & 04927		QUANTITIES		54290

⚠1 Added Item Location, SRY 9-10-14

*** The permanent steel casing shall conform to ASTM 252, Grade 2 or 3. Corrugated steel pipe will not be allowed.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 3 OF 4
SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: AUG. 2013 FILENAME: B061275_03.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54290

dgnload 9/10/2014 4:43:57 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\20N\N01080 - Broadway Bridge over the Arkansas River\Drawings\B061275.03 (Project 0ty=3).dgn
REVISED DATE:

SCHEDULE OF BRIDGE QUANTITIES FOR JOB 061275

BRIDGE NO. / CODE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275	SP JOB 061275
		ITEM	CORING DRILLED SHAFT	112' STEEL TRUSS	ROADWAY AND SECURITY LIGHTING SYSTEM	SHORING	STEEL FENCE AND SECURITY GATE	STRUCTURAL HANGERS	STRUCTURAL STEEL IN ARCH SPANS (M270-GR. 50)
		UNIT	LINEAR FOOT	EACH	LUMP SUM	LUMP SUM	LUMP SUM	LINEAR FOOT	POUND
07292 X044 BROADWAY STREET OVER ARKANSAS RIVER	BENT NO. 1								
	BENT NO. 2								
	BENT NO. 3								
	BENT NO. 4		40						
	BENT NO. 5		40						
	BENT NO. 6		40						
	BENT NO. 7								
	BENT NO. 8								
	263'-0" CONT. COMP. PLATE GIRDER UNIT								
	180'-0" SIMPLE COMP. PLATE GIRDER SPAN								
	896'-0" TIED ARCH UNIT							14,154	8,193,280
	426'-0" CONT. COMP. PLATE GIRDER UNIT								
	EXISTING BRIDGE NO. A2978 (SITE NO. 1)								
	TOTALS FOR BRIDGE NO. 07292		120	-	-	-	-	14,154	8,193,280
07293 X920 DICKEY STEPHENS PARK ACCESS	BENT NO. 1								
	BENT NO. 2								
	BENT NO. 3								
	BENT NO. 4								
	92'-6" CONT. CONCRETE SLAB UNIT								
	TOTALS FOR BRIDGE NO. 07293		-	-	-	-	-	-	-
07294 X971 LA HARPE BOULEVARD RAMP	BENT NO. 1								
	BENT NO. 2		40						
	BENT NO. 3		40						
	BROADWAY BENT NO. 3 BK. ⚠								
	225'-0" CONT. COMP. PLATE GIRDER UNIT								
	EXISTING BRIDGE NO. 02982 (SITE NO. 2)								
	TOTALS FOR BRIDGE NO. 07294		80	-	-	-	-	-	-
07295 X271 ARCH STREET	BENT NO. 1								
	BENT NO. 2								
	50'-0" SIMPLE COMP. W-BEAM SPAN								
	TOTALS FOR BRIDGE NO. 07295		-	-	-	-	-	-	-
04927 X971 SOUTH PEDESTRIAN RAMP	BENT NO. 1								
	BENT NO. 2								
	BENT NO. 3								
	BENT NO. 4								
	100'-0" SIMPLE COMP. W-BEAM SPAN								
	112'-0" PREFABRICATED SIMPLE TRUSS SPAN			1					
	75'-0" SIMPLE COMP. W-BEAM SPAN								
	TOTALS FOR BRIDGE NO. 04927		-	1	-	-	-	-	-
04926 X971 NORTH PEDESTRIAN RAMP	BENT NO. 1								
	BENT NO. 2								
	BENT NO. 3								
	BENT NO. 4								
	BENT NO. 5								
	BENT NO. 6								
	BENT NO. 7								
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 1)						1		
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 2)								
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 3)								
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 4)								
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 5)								
	75'-0" SIMPLE COMP. W-BEAM SPAN (SPAN 6)								
	TOTALS FOR BRIDGE NO. 04926		-	-	-	-	1	-	-
	EXISTING BRIDGE NO. 02983 (SITE NO. 3)								
	TOTALS FOR JOB 061275		200	1	1	1	1	14,154	8,193,280

⚠ Added Item Location, SRY 9-10-14

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
9-10-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	72	505
① 07292-07295, 04926 & 04927		QUANTITIES		54291

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 4
SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: AUG. 2013 FILENAME: B061275_04.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54291

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WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2011\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275_04 (Project Otys-4).dgn
REVISED DATE:

SUMMARY OF QUANTITIES (BOX 1 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	12	STA.
201	GRUBBING	12	STA.
202	REMOVAL AND DISPOSAL OF BENCH	1	EACH
202	REMOVAL AND DISPOSAL OF BRICK PAVEMENT	183	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	844	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	43	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE PARAPET WALL	324	L.F.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	1283	SQ. YD.
202	REMOVAL AND DISPOSAL OF CURB	970	L.F.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	2207	L.F.
SP & 202	REMOVAL AND DISPOSAL OF DECORATIVE LIGHT POLE	5	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	7	EACH
202	REMOVAL AND DISPOSAL OF FENCE	924	L.F.
202	REMOVAL AND DISPOSAL OF GRATE INLETS	3	EACH
202	REMOVAL AND DISPOSAL OF HANDRAIL	65	L.F.
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLE AND FOUNDATION	9	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	5	EACH
202	REMOVAL AND DISPOSAL OF PLANTER	2	EACH
202	REMOVAL AND DISPOSAL OF RETAINING WALLS	511	L.F.
202	REMOVAL AND DISPOSAL OF RPZ BACKFLOW PREVENTER	1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	37	EACH
202	REMOVAL AND DISPOSAL OF STEPS	99	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS	1557	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALLS	171	L.F.
206	FLOWABLE SELECT MATERIAL	256	CU. YD.
210	UNCLASSIFIED EXCAVATION	16138	CU. YD.
SP & 210	COMPACTED EMBANKMENT	9413	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
303	AGGREGATE BASE COURSE (CLASS 7)	1312	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)	2129	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)	57	SQ. YD.
401	TACK COAT	1299	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	1656	TON
SP & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	69	TON
SP, SS & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	959	TON
SP, SS & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	42	TON
SP, SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	2634	TON
SP, SS & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	17	TON
SP, SS & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	122	TON
412	COLD MILLING ASPHALT PAVEMENT	783	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	18	TON
SP & 415	ACHM PATCHING OF EXISTING ROADWAY	112	TON
504	APPROACH SLABS	232	CU. YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY	507.75	SQ. YD.
601	MOBILIZATION	1.00	L.S.
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	L.S.
604	SIGNS	1614	SQ. FT.
604	TRAFFIC DRUMS	154	EACH
604	BARRICADES	240	L.F.
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	891	L.F.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2991	L.F.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1170	L.F.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	2	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)	2	EACH
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	320	WEEK
605	CONCRETE DITCH PAVING (TYPE B)	99	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	545	L.F.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	307	L.F.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	80	L.F.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	223	L.F.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
609	DROP INLETS (TYPE E)	6	EACH
609	DROP INLETS (TYPE MO)	16	EACH
609	DROP INLETS (TYPE ST)	3	EACH
609	JUNCTION BOXES (TYPE ST)	6	EACH
610	DROP INLETS ADJUSTED TO GRADE	2	EACH
610	JUNCTION BOXES ADJUSTED TO GRADE	4	EACH
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	14.0	CU. YD.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	62	TON
620	LIME	4	TON
620	SEEDING	2.10	ACRE
SS & 620	MULCH COVER	4.20	ACRE
620	WATER	673.8	M.G.
621	TEMPORARY SEEDING	2.10	ACRE
621	SILT FENCE	6245	L.F.
621	SAND BAG DITCH CHECKS	20	BAG
621	DROP INLET SILT FENCE	680	L.F.
621	SEDIMENT REMOVAL AND DISPOSAL	1000	CU. YD.
621	ROCK DITCH CHECKS	15	CU. YD.
623	SECOND SEEDING APPLICATION	2.10	ACRE
624	SOLID SODDING	105	SQ. YD.
631	CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL 1)	1690	L.F.
631	CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL 2)	1615	L.F.
631	CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL 3)	158	L.F.
632	CONCRETE ISLAND	88	SQ. YD.
633	HAND RAILING	52	L.F.
633	CONCRETE STEPS	29	SQ. YD.
633	CONCRETE WALKS	2501	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A)(1'6")	3395	L.F.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE SPECIAL)(1'6")	150	L.F.
635	ROADWAY CONSTRUCTION CONTROL	1.00	L.S.
641	WHEELCHAIR RAMPS (TYPE 1)	29	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 2)	18	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 3)	32	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)	62	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	17	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	5	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	16	EACH

SUMMARY OF QUANTITIES (BOX 2 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	3666	L.F.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	558	L.F.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	336	L.F.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	607	L.F.
709	GALVANIZED STEEL CONDUIT (1.25")	15	L.F.
710	NON-METALLIC CONDUIT (1")	45	L.F.
710	NON-METALLIC CONDUIT (1.25")	9	L.F.
710	NON-METALLIC CONDUIT (2")	112	L.F.
710	NON-METALLIC CONDUIT (3")	1487	L.F.
711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	13	EACH
713	SPAN WIRE ASSEMBLY	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (24')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (26')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	2	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60')	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	10	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	160	L.F.
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	39	EACH
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	37	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	9110	L.F.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	236	L.F.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	410	L.F.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	1012	L.F.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	6618	L.F.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (8")	225	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4") (ALTERNATE NO. 1)	915	L.F.
* SP	HIGH PERFORMANCE MARKING TAPE WHITE (4") (ALTERNATE NO. 2)	915	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8") (ALTERNATE NO. 1)	54	L.F.
* SP	HIGH PERFORMANCE MARKING TAPE WHITE (8") (ALTERNATE NO. 2)	54	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4") (ALTERNATE NO. 1)	500	L.F.
* SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4") (ALTERNATE NO. 2)	500	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4") (ALTERNATE NO. 1)	793	L.F.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4") (ALTERNATE NO. 2)	793	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (6") (ALTERNATE NO. 1)	125	L.F.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (6") (ALTERNATE NO. 2)	125	L.F.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4") (ALTERNATE NO. 1)	3804	L.F.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4") (ALTERNATE NO. 2)	3804	L.F.
721	RAISED PAVEMENT MARKERS (TYPE II)	274	EACH
725	GUIDE SIGN - ROADSIDE MOUNTED (DIRECT APPLIED LEGEND)	62	SQ. FT.
726	STANDARD SIGN	192	SQ. FT.
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U1-1)	6	EACH
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U1-2)	7	EACH
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U2-1)	6	EACH
SP & 729	CHANNEL POST SIGN SUPPORT (TYPE U2-7)	1	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
SP & 732	CRASH CUSHION	1	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP & 733	VEHICLE DETECTOR RACK (20 CHANNEL)	1	EACH
SP & 733	VIDEO DETECTOR (CLR)	13	EACH
733	VIDEO CABLE	1976	L.F.
733	VIDEO MONITOR (CLR)	2	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	9	EACH
SP & 733	VIDEO EDGE CARD EXTENDER	2	EACH
802	CLASS S CONCRETE - ROADWAY	4.55	CU. YD.
804	REINFORCING STEEL - ROADWAY (GRADE 60)	28681	LB.
SP	METAL HANDRAIL (TYPE H1)	1065	L.F.
SP	METAL HANDRAIL (TYPE H2)	1576	L.F.
SP	REMOVABLE PIPE BOLLARDS	27	EACH
SP	RETAINING WALL	50785	SQ. FT.
SP	SELECT GRANULAR BACKFILL	37695	CU. YD.
SP	WIRE FACE RETAINING WALL	2522	SQ. FT.
SP	ANTENNA CABLE (TYPE 6)	54	L.F.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8, A.W.G., EGC)	945	L.F.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12, A.W.G., EGC)	400	L.F.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6, A.W.G.)	24	L.F.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1343	L.F.
SP	LED BLANK OUT SIGN	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	LUMINAIRE ASSEMBLY	8	EACH
SP	PTZ CAMERA SYSTEM	2	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	L.S.
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	EACH
SP	18" STREET NAME SIGN	8	EACH
SP	RIVER TRAFFIC SAFETY	1.00	L.S.
SP	6" COMBINATION AIR RELEASE VALVE AND ENCLOSURE	1	EACH
SP	20" BUTTERFLY VALVE	1	EACH
SP	20" ADJUSTABLE PIPE ROLL (ANVIL FIGURE 177 OR APPROVED EQUAL)	4	EACH
SP	SPRING CUSHION (ANVIL FIGURE 178, SPRING NUMBER 3 OR APPROVED EQUAL)	4	EACH
SP	30" ALL STEEL ADJUSTABLE PIPE ROLL STAND (ANVIL FIGURE 274 SPECIAL OR APPROVED EQUAL)	69	EACH
SP	ARCH SPAN WATERLINE SUPPORT STRUCTURE	48	EACH
SP	ARCH SPAN FIXED CENTER SUPPORT	1	EACH
SP	APPROACH SPAN WATERLINE SUPPORT STRUCTURE	20	EACH
SP	BENT WATERLINE SUPPORT STRUCTURE	2	EACH
SP	STEEL PIPE STRAP	35	EACH
SP	20" STEEL PIPE, CEMENT-MORTAR LINED AND EPOXY COATED	1265	L.F.
SP	NONDESTRUCTIVE TESTING	5	EACH
SP	20" RESTRAINED JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	280	L.F.
SP	20" BALL JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	60	L.F.
SP	16" RESTRAINED JOINT DUCTILE IRON PIPE, CEMENT-MORTAR LINED, CLASS 50	20	L.F.
SP	20" RESTRAINED JOINT DUCTILE IRON 90 DEGREE BEND	2	EACH
SP	20" DUCTILE IRON FL BASE 90 DEGREE BEND, LONG RADIUS	1	EACH
SP	20" DUCTILE IRON FL BASE 90 DEGREE BEND, SHORT RADIUS	1	EACH
SP	20" RESTRAINED JOINT DUCTILE IRON 45 DEGREE BEND	2	EACH
SP	20" MECHANICAL JOINT DUCTILE IRON SOLID SLEEVE WITH RETAINER GLAND	1	EACH
SP	20" TO 16" RESTRAINED JOINT DUCTILE IRON REDUCER	1	EACH
SP	20" RESTRAINED JOINT DUCTILE IRON 11.25 DEGREE BEND	1	EACH
SP	16" MECHANICAL JOINT DUCTILE IRON SOLID SLEEVE WITH RETAINER GLAND	1	EACH

* DENOTES ALTERNATE BID ITEMS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	73	505

(2) SUMMARY OF QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
8-25-14

JFCantabery 8/25/2014 3:16:06 PM
WORKSPACE: AHTD
\\GITFOCD\20\N\07080 - Broadway Bridge over the Arkansas River\Drawings\R061275_QTY_SUM.dgn
REVISED DATE:

SUMMARY OF QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
7-9-14		8-25-14	
8-13-14		8-28-14	
8-18-14		9-10-14	

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	74	505

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY

9-10-14

SUMMARY OF QUANTITIES (BOX 3 OF 3)

STRUCTURES OVER 20' SPAN

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	L.S.
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	L.S.
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	L.S.
636	BRIDGE CONSTRUCTION CONTROL	1.00	L.S.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	3299	CU. YD.
SP & 802	CLASS S CONCRETE - BRIDGE	3047.90	CU. YD.
SP & 802	CLASS B CONCRETE - BRIDGE	7756.00	CU. YD.
SP & 802	CLASS S(AE) CONCRETE - BRIDGE	5743.80	CU. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	12393.2	SQ. YD.
SP & 804	REINFORCING STEEL - BRIDGE (GRADE 60)	2679270	LB.
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	1581350	LB.
805	STEEL PILING (HP12X53)	6114	L.F.
805	STEEL PILING (HP14X73)	14243	L.F.
805	PREBORING	2744	L.F.
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR 50)	5038490	LB.
807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR 50)	413690	LB.
807	PAINTING STRUCTURAL STEEL	6811.2	TON
808	ELASTOMERIC BEARINGS	108733.0	CU. IN.
809	ARMORED JOINT WITH NEOPRENE STRIP SEAL	72	L.F.
809	SILICONE JOINT SEALANT	608	L.F.
812	BRIDGE NAME PLATE (TYPE C)	2	EACH
812	BRIDGE NAME PLATE (TYPE D)	5	EACH
816	CONCRETE RIPRAP	224	CU. YD.
SP	AIRWAY OBSTRUCTION LIGHTING SYSTEM	1.00	L.S.
SP	CLEARANCE GAUGES	1.00	L.S.
SP	DRILLED SHAFT (72" DIAMETER)	189	L.F.
SP	DRILLED SHAFT (102" DIAMETER)	1550	L.F.
SP	PERMANENT STEEL CASING (78" DIAMETER)	99	L.F.
SP	PERMANENT STEEL CASING (108" DIAMETER)	966	L.F.
SP	SID INSPECTION	28	EACH
SP	HLMR BEARING ASSEMBLY	8	EACH
SP	INSPECTION LIGHTING SYSTEM	1.00	L.S.
SP	METAL HANDRAIL (TYPE H1)	3643	L.F.
SP	METAL HANDRAIL (TYPE H2)	2695	L.F.
SP	NAVIGATION LIGHTING SYSTEM	1.00	L.S.
SP	CROSSHOLE SONIC LOGGING (72" DIAMETER)	4	EACH
SP	CROSSHOLE SONIC LOGGING (102" DIAMETER)	24	EACH
SP	CORING DRILLED SHAFT	200	L.F.
SP	112' STEEL TRUSS	1	EACH
SP	ROADWAY AND SECURITY LIGHTING SYSTEM	1.00	L.S.
SP	SHORING	1.00	L.S.
SP	STEEL FENCE AND SECURITY GATE	1.00	L.S.
SP	STRUCTURAL HANGERS	14154	L.F.
SP	STRUCTURAL STEEL IN ARCH SPANS (M270-GR 50)	8193280	LB.

SUMMARY OF NON-PARTICIPATING QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP	BATTERY BACKUP SYSTEM	1	EACH

REVISIONS

DATE	REVISION	SHEET NUMBER
7-9-14	REVISED FAP NUMBER	1, 74
7-9-14	REMOVED TACK WELD NOTE	214, 74
7-9-14	REVISED DETAIL 4 ANCHOR EMBEDMENT DIMENSION AND NOTE 1	406, 74
7-9-14	REVISED DETAIL 4 DIMENSION TO TOP OF EACH WALL	407, 74
8-13-14	REVISED SECOND SENTENCE IN SECTION 108.02 (d) OF THE "PROSECUTION AND PROGRESS - CALENDAR DAY CONTRACT WITH CPM" SPECIAL PROVISION	74
8-18-14	REVISED SPECIAL PROVISION "NESTING SITES OF MIGRATORY BIRDS"	74
8-25-14	REVISED NOTE FOR DOUBLE TREE BRIDGE REMOVAL	32, 74
8-25-14	ADDED FIELD SPLICE FOR GIRDERS 1-3 AND UPDATED STRUCTURAL STEEL IN PLATE GIRDER SPANS QUANTITY	69, 166, 167, 169, 74
8-25-14	ADDED SPECIAL PROVISION "FABRICATION OF STRUCTURAL STEEL"	4, 74
8-25-14	ADDED DROP INLETS ADJUSTED TO GRADE AND JUNCTION BOXES ADJUSTED TO GRADE PAY ITEMS AND NOTES	66, 73, 80, 83, 74
8-28-14	ADDED RETAINING WALL ELEVATIONS	380, 382, 385, 387, 389, 391, 393, 395, 74
9-10-14	REVISED ELASTOMERIC BEARING QUANTITY, ADDED SPECIAL PROVISION "CONSTRUCTION ADJACENT TO DICKEY STEPHENS PARK", AND ADDED STANDARD DRAWING NO. 55020.	4, 69, 70, 71, 72, 74

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WORKSPACE: AHTD
\\GIFtdc01\2011\061080 - Broadway Bridge over the Arkansas River\Drawings\R061275_QTY_SUM2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	75	505

(2) SURVEY CONTROL DETAILS

MID POINT LAT N 34-45-07
MID POINT LON W092-16-28

SURVEY CONTROL COORDINATES

Project Name: s061275
Date: 5/2/2011
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
10	151887.3297	1228262.0816	296.927	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 10
11	151720.1766	1228787.9507	285.384	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 11
12	151698.0351	1229319.8229	284.465	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 12
13	151763.2695	1229612.9790	275.015	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 13
14	151651.5478	1230108.9353	273.652	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 14
15	151536.5424	1230675.4477	265.631	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 15
16	151398.6366	1231264.0253	271.406	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 16
17	149943.5246	1229381.6463	309.105	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 17
18	150318.4758	1229525.2674	300.658	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 18
19	150643.5101	1229498.8261	297.461	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 19
20	151497.8078	1229642.0087	290.415	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 20
21	153195.0348	1229479.1289	249.657	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 21
22	154376.4574	1228421.3638	249.802	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 22
23	153899.7956	1228952.5366	253.472	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 23
24	153498.6046	1229438.9636	253.435	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 24
25	153089.5530	1230704.3720	261.441	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 25
26	152965.0753	1231455.8606	260.602	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 26
27	153983.5850	1230144.8549	255.551	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 27
28	154749.1449	1230181.4097	260.146	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 28
29	155389.1272	1230459.3983	262.253	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 29
30	155466.6144	1230883.8952	261.542	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 30
31	154262.7556	1229313.7653	248.535	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 31
32	154244.0931	1229790.1066	250.393	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 32
33	154082.3547	1230548.6261	256.832	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 33
34	153969.7619	1231149.5564	260.326	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn: 34
100	154905.2162	1226580.3202	261.289	GPS	AHTD GPS 600067, 28' N OF C\L RIVER RD
101	153628.5414	1233330.2755	256.644	GPS	AHTD GPS 600042, 9.5' W OF BACK OF CB CYPRESS ST.
104	151208.4806	1229678.6027	292.302	GPS	PAGIS 1003 1990, 17.5' E OF BACK OF CB BROADWAY ST.
105	153179.2808	1230068.2803	261.190	GPS	PAGIS J8-002, 25' S OF METAL FE 43' W OF STEPS
106	152980.3621	1231392.5476	261.162	GPS	PAGIS J9-001
900	151953.4799	1227964.2243	302.368	TBM	CH SQ CUT IN LP CHESTER & LA HARP, HWY 10 7' BACK OF CB
901	151825.1547	1228632.3135	291.734	TBM	CH SQ, BASE OF TRAFFIC LIGHT COR LA HARP & STATE
902	151765.7623	1229429.2298	283.134	TBM	CH SQ CUT IN N\E COR W EXIT RAMP HWY 10
903	151896.3747	1229822.4910	263.393	TBM	CH SQ IN CONC AROUND MH UNDER BROADWAY BR 10'S OF BIKE PATH
904	151683.4232	1230111.1230	276.209	TBM	CH SQ IN S\E COR E ON RAMP FROM HWY 10 TO HWY 70
905	151648.4143	1230645.8429	258.652	TBM	CH SQ IN DI BETWEEN OLD STATE HOUSE & PEABODY HOTEL
906	151410.8807	1231234.4068	272.979	TBM	CH SQ IN RW W OF MAIN ST BRIDGE ACROSS FROM EXHIBIT HALL
907	150233.2350	1229429.2356	303.873	TBM	CH SQ IN TA S\ CORNER OF BROADWAY & 4TH STREET
908	151607.0831	1229663.0020	291.580	TBM	CH SQ CUT IN TOP STEP S END BROADWAY BRIDGE
909	154019.3377	1228853.3360	252.170	TBM	CH SQ IN CA RIVERFRONT ST, 87' N OF COR CARE LINK BRICK BU
910	153384.1306	1229572.3203	253.432	TBM	CH SQ IN BASE OF N\E TOWER LEG 21' S OF BACK OF CB
911	153196.1310	1230029.5775	259.629	TBM	CH SQ IN BASE OF W STAIRS OF BROADWAY BR 14'S OF IRON FE
912	153033.0867	1230886.0980	255.431	TBM	CH SQ IN CONC BASE OF ELECTRIC BOX, 29' S OF TOP OF LEVEE
913	152806.8984	1231534.4527	248.756	TBM	CH SQ IN CONC TOP DI 31.5' W OF SIGN POST, 20' N OF OAK TREE
914	154195.3871	1229380.0158	249.225	TBM	CH SQ IN BACK OF CA W BROADWAY 14' N OF POPLAR TREE
915	154199.6263	1230164.2774	255.073	TBM	CH SQ IN BASE LA N\E COR N BROADWAY & W BROADWAY
916	153969.5242	1231163.7346	260.016	TBM	CH SQ IN REAR OF CA 19' N OF 14" PINE, 17' W OF LIGHT POLE
917	155399.5797	1230493.9655	259.416	TBM	CH SQ IN REAR OF CA W BROADWAY 21' N OF PP
991	152656.4763	1227164.3350	268.650	BM	NGS MARK A 290 1984, 19, W OF WEST TRACK
993	151249.7658	1229888.0485	291.200	BM	NGS MARK Q 10, W END OF THIRD STEP MAIN ENTRANCE CO COURT HOUSE
994	153859.8003	1227901.1199	267.995	BM	NGS MARK L 10 1932, W END OF N ABUTMENT RR BR, 11' W OF W RAIL

ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 1.0000260210 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME. s061275gi.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 600067 - 600042
CONVERGENCE ANGLE: 00 09 38 LEFT AT LT: 34-45-14.0 LG: 092-16-32.5
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

ALIGNMENT NAME: HWY. 70

POINT	STATION	TYPE	NORTHING	EASTING
8000	100+00.00	POB	151312.99	1229652.58
8001	123+78.39	PC	153662.45	1230022.39
8002	125+77.52	PI	153859.17	1230053.36
8003	127+76.49	PT	154053.25	1230097.90
8004	128+21.03	PC	154096.66	1230107.87
8005	128+58.12	PI	154132.80	1230116.16
8006	128+95.17	PT	154169.41	1230122.10
8007	131+83.84	POE	154454.35	1230168.35

ALIGNMENT NAME: ARKANSAS RIVER SIDEWALK

POINT	STATION	TYPE	NORTHING	EASTING
8010	10+00.00	POB	151860.55	1229986.98
8011	10+03.93	PC	151864.25	1229988.31
8012	10+19.07	PI	151878.49	1229993.45
8013	10+27.63	PCC	151873.22	1230007.64
8014	11+47.21	PI	151831.59	1230119.74
8015	12+66.37	PT	151774.28	1230224.69
8016	13+12.81	PC	151752.02	1230265.45
8017	13+32.72	PI	151742.49	1230282.92
8018	13+47.96	PT	151754.87	1230298.50

ALIGNMENT NAME: HWY. 365

POINT	STATION	TYPE	NORTHING	EASTING
8020	12+09.52	POB	154237.02	1229338.74
8021	12+73.34	PC	154235.2	1229402.53
8022	13+14.11	PI	154234.04	1229443.28
8023	13+54.88	PT	154231.71	1229483.99
8024	17+44.76	PC	154209.48	1229873.24
8025	18+38.04	PI	154204.16	1229966.37
8026	19+29.36	PT	154166.86	1230051.86
8027	19+79.36	PC	154146.86	1230097.69
8028	20+61.89	PI	154113.85	1230173.33
8029	21+43.61	PT	154100.07	1230254.7
8030	22+06.98	POE	154089.48	1230317.18

ALIGNMENT NAME: ARKANSAS RIVER TRAIL

POINT	STATION	TYPE	NORTHING	EASTING
8041	10+57.06	PC	151923.83	1229763.00
8042	13+00.79	PI	151874.41	1230001.66
8043	15+40.96	PT	151757.61	1230215.58
8044	17+15.72	PC	151673.86	1230368.97
8045	18+77.71	PI	151596.23	1230511.15
8046	20+36.90	PT	151567.63	1230670.60
8047	21+34.80	POE	151550.35	1230766.96

ALIGNMENT NAME: NORTH SHARED USE RAMP

POINT	STATION	TYPE	NORTHING	EASTING
8050	10+00.00	POB	153214.21	1229951.84
8051	15+19.88	PC	153151.34	1230467.91
8052	15+63.83	PI	153146.03	1230511.53
8053	16+05.89	PT	153120.22	1230547.10
8054	16+99.50	PC	153065.23	1230622.86
8055	17+42.31	PI	153040.08	1230657.51
8056	17+83.38	PT	153034.37	1230699.94
8057	18+42.04	POE	153026.55	1230758.07

ALIGNMENT NAME: SOUTH SHARED USE RAMP

POINT	STATION	TYPE	NORTHING	EASTING
8060	10+00.00	POB	151791.29	1229727.87
8061	14+39.46	PC	151684.32	1230154.11
8062	14+98.03	PI	151670.07	1230210.91
8063	15+45.52	PT	151712.45	1230251.33
8064	15+68.81	POE	151729.31	1230267.40

ALIGNMENT NAME: HWY. 10

POINT	STATION	TYPE	NORTHING	EASTING
8070	9+83.72	POB	151770.36	1228703.98
8071	10+76.32	PC	151755.16	1228795.31
8072	13+01.93	PI	151718.12	1229017.87
8073	15+26.09	PT	151725.19	1229243.37
8074	17+73.00	PC	151732.92	1229490.15
8075	18+85.77	PI	151736.45	1229602.86
8076	19+97.81	PT	151717.94	1229714.10
8077	23+42.32	PC	151661.40	1230053.95
8078	24+99.21	PI	151635.66	1230208.70
8079	26+55.60	PT	151589.06	1230358.50
8080	27+43.37	POE	151562.99	1230442.32

ALIGNMENT NAME: HWY. 10 ENTRANCE RAMP

POINT	STATION	TYPE	NORTHING	EASTING
8090	100+47.81	PC	151755.91	1229176.39
8091	100+95.91	PI	151755.31	1229224.49
8092	101+43.57	PT	151765.88	1229271.41
8093	104+06.68	PC	151823.69	1229528.09
8094	106+08.81	PI	151868.11	1229725.28
8095	107+61.80	PT	152067.78	1229756.71

SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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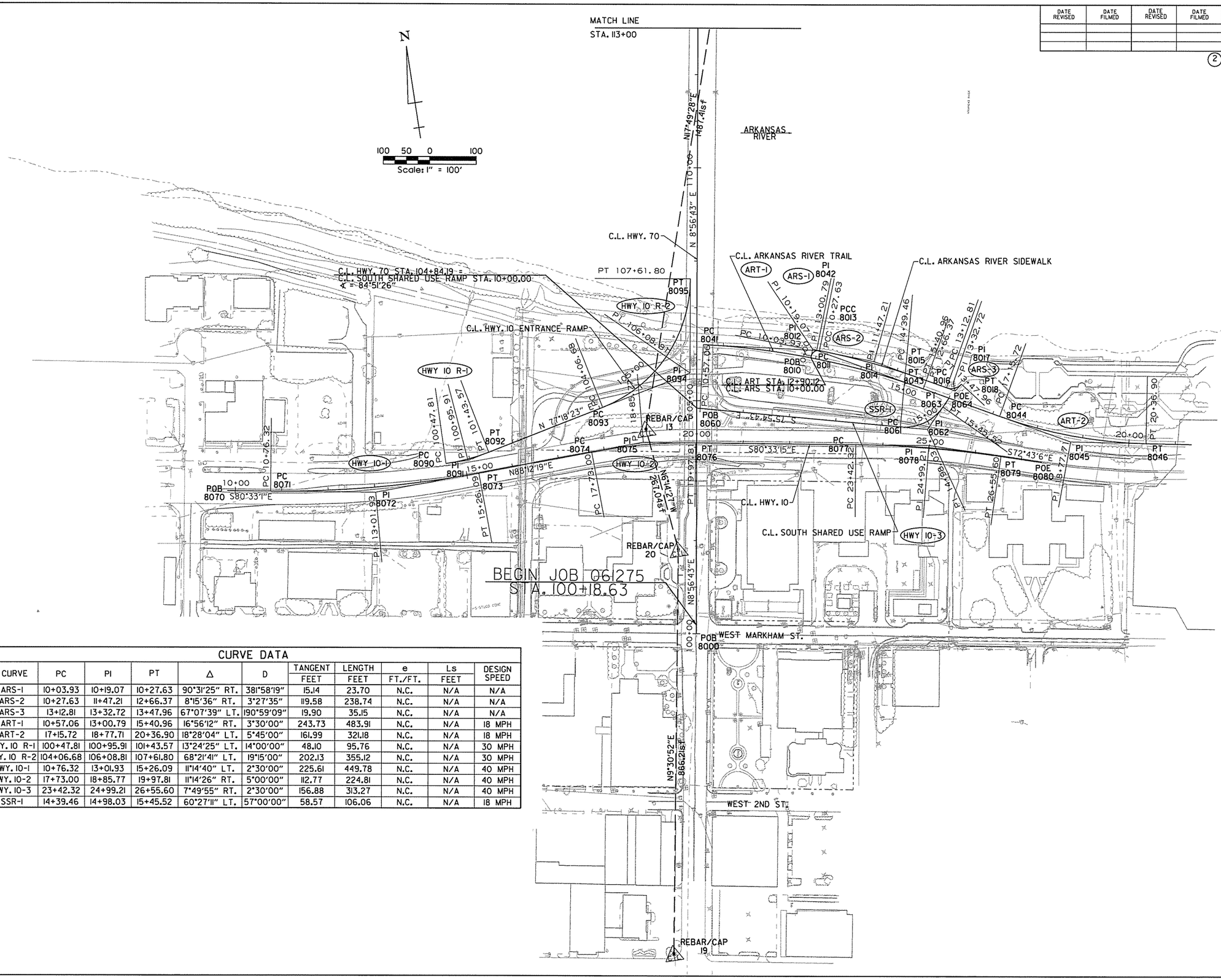
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	76	505
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
JOHN F. CANTABERY
LICENSED PROFESSIONAL ENGINEER
No.13422
5-30-14



CURVE DATA

CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
ARS-1	10+03.93	10+19.07	10+27.63	90°31'25" RT.	381°58'19"	15.14	23.70	N.C.	N/A	N/A
ARS-2	10+27.63	11+47.21	12+66.37	8°15'36" RT.	3°27'35"	119.58	238.74	N.C.	N/A	N/A
ARS-3	13+12.81	13+32.72	13+47.96	67°07'39" LT.	190°59'09"	19.90	35.15	N.C.	N/A	N/A
ART-1	10+57.06	13+00.79	15+40.96	16°56'12" RT.	3°30'00"	243.73	483.91	N.C.	N/A	18 MPH
ART-2	17+15.72	18+77.71	20+36.90	18°28'04" LT.	5°45'00"	161.99	321.18	N.C.	N/A	18 MPH
HWY. 10 R-1	100+47.81	100+95.91	101+43.57	13°24'25" LT.	14°00'00"	48.10	95.76	N.C.	N/A	30 MPH
HWY. 10 R-2	104+06.68	106+08.81	107+61.80	68°21'41" LT.	19°15'00"	202.13	355.12	N.C.	N/A	30 MPH
HWY. 10-1	10+76.32	13+01.93	15+26.09	11°14'40" LT.	2°30'00"	225.61	449.78	N.C.	N/A	40 MPH
HWY. 10-2	17+73.00	18+85.77	19+97.81	11°14'26" RT.	5°00'00"	112.77	224.81	N.C.	N/A	40 MPH
HWY. 10-3	23+42.32	24+99.21	26+55.60	7°49'55" RT.	2°30'00"	156.88	313.27	N.C.	N/A	40 MPH
SSR-1	14+39.46	14+98.03	15+45.52	60°27'11" LT.	57°00'00"	58.57	106.06	N.C.	N/A	18 MPH

SURVEY CONTROL DETAILS

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WORKSPACE: AHTD
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REVISED DATE:

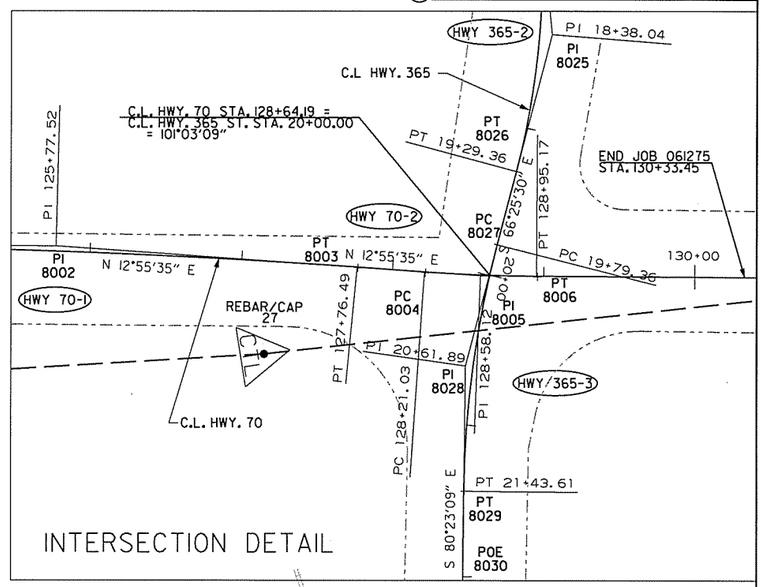
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	77	505

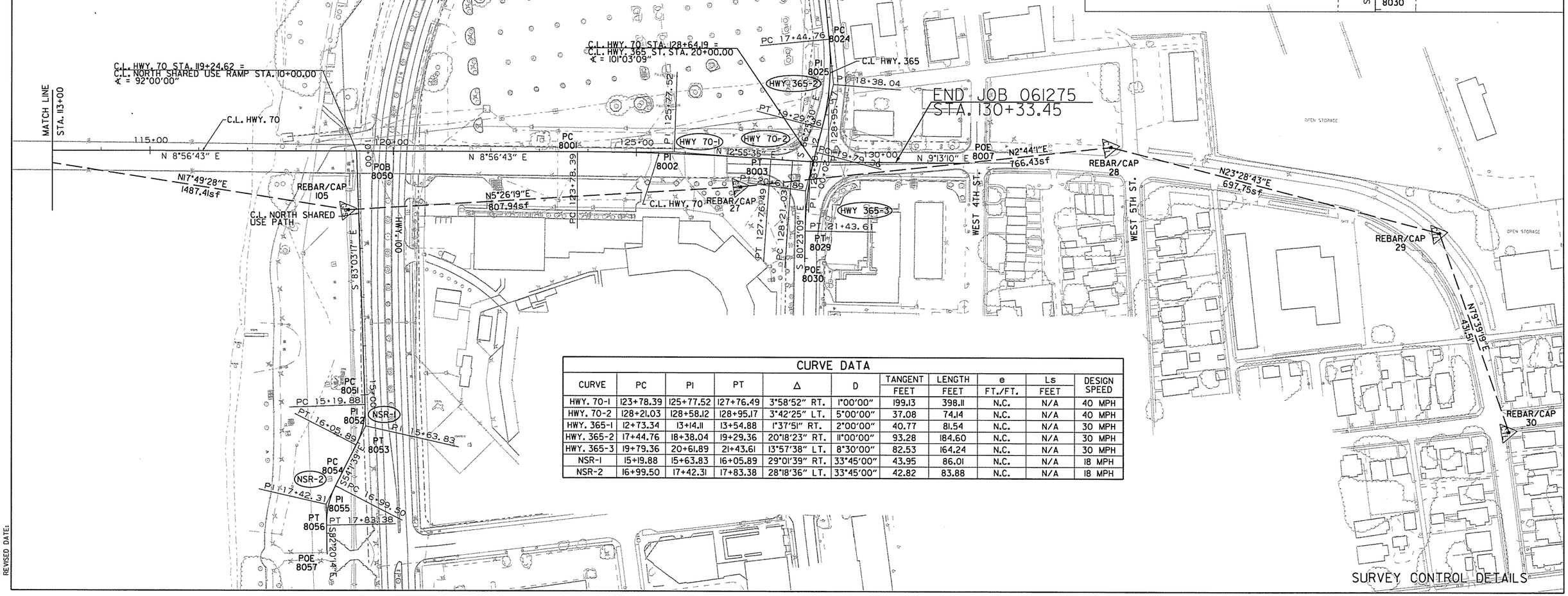
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

N

100 50 0 100
Scale: 1" = 100'





CURVE DATA

CURVE	PC	PI	PT	Δ	D	TANGENT FEET	LENGTH FEET	e FT./FT.	Ls FEET	DESIGN SPEED
HWY. 70-1	123+78.39	125+77.52	127+76.49	3°58'52" RT.	1°00'00"	199.13	398.11	N.C.	N/A	40 MPH
HWY. 70-2	128+21.03	128+58.12	128+95.17	3°42'25" LT.	5°00'00"	37.08	74.14	N.C.	N/A	40 MPH
HWY. 365-1	12+73.34	13+14.11	13+54.88	1°37'51" RT.	2°00'00"	40.77	81.54	N.C.	N/A	30 MPH
HWY. 365-2	17+44.76	18+38.04	19+29.36	20°18'23" RT.	11°00'00"	93.28	184.60	N.C.	N/A	30 MPH
HWY. 365-3	19+79.36	20+61.89	21+43.61	13°57'38" LT.	8°30'00"	82.53	164.24	N.C.	N/A	30 MPH
NSR-1	15+19.88	15+63.83	16+05.89	29°01'39" RT.	33°45'00"	43.95	86.01	N.C.	N/A	18 MPH
NSR-2	16+99.50	17+42.31	17+83.38	28°18'36" LT.	33°45'00"	42.82	83.88	N.C.	N/A	18 MPH

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WORKSPACE: MTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	78	505

(2) PLAN AND PROFILE - HWY. 70

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER ★★★ No.13422 JOHN F. CANTABERY 5-30-14

STA. 99+59 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 13.85 SY. YD.

STA. 99+81 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 13.81 SY. YD.

STA. 100+38 IN PLACE DROP INLET LT. W/ PIPE REMOVE

STA. 100+39.68 CONSTRUCT DROP INLET W/8' EXT. ON LT. H = 4'-6", W/18" X 30' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 100+21 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 9.18 SY. YD.

PROPOSED R/W

+70.30 -70.00

BEGIN JOB 061275
STA. 100+18.63
L.M. 8.35

+40.00 -40.53

100+00

STA. 103+25 CONSTRUCT TYPE ST JUNCTION BOX, 40' RT. H = 22'-6" X 3'-0" X 3'-0" W/ 24" X 8' R.C. PIPE CULVERT TO JUNCTION BOX ON RT.

STA. 103+25 CONSTRUCT TYPE ST JUNCTION BOX, 51' RT. H = 14'-0" X 3'-0" X 3'-0" W/ 24" X 66' R.C. PIPE CULVERT TO EX. JUNC. BOX ON RT.

STA. 100+35 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON LT. = 8.91 SY. YD.

C.L. HWY. 10

PC 17+73.00

STA. 101+20 CONSTRUCT APPROACH ON LT. = 1 CU. YD.

TEMPORARY CONSTRUCTION EASEMENT

CONSTRUCTION LIMITS

TEMP. CONST. LIMITS

+30.36 -75.00

+44.22 -50.00

+50.00 -39.56

150' TAPER

40' SHOULDER TAPER

+53.53

+25.88

+65.88

REBAR/CAP 20

+30.11 -50.00

BEGIN BRIDGE STA. 103+33.92

PT 19+97.81

PC 104+06.68

+03.80 30.00

C.L. HWY. 10 ENTRANCE RAMP

EXIST. R/W

REBAR/CAP 13

PI 18+85.

+80.00 LT 30.00

+20.33 30.00

+32.23 -50.00

138.44' TAPER

+65.41 -45.00

+68.63

+79.18 -125.00

PROP. R/W

+50.00 -75.00

+94.20 -64.80

PT 107+61.80

+80.00 -45.00

PERMANENT CONSTRUCTION EASEMENT

C.L. HWY. 70

N 8°56'43" E

105+00

110+00

STA. 100+36 IN PLACE GRATE INLET RT. W/PIPE REMOVE

STA. 100+96 IN PLACE GRATE INLET RT. W/ PIPE REMOVE

EXIST. R/W

+35.00 39.43

PROPOSED R/W

+69.36 65.00

WEST 2ND ST.

WEST MARKHAM ST.

STA. 99+58 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 3.53 SY. YD.

STA. 100+37.94 CONSTRUCT TYPE ST JUNCTION BOX ON RT. H = 5'-7" X 4'-0" X 3'-0" W/ 24" X 27' R.C. PIPE CULVERT TO DROP INLET ON RT.

STA. 99+80 CONSTRUCT TYPE 4 WHEELCHAIR RAMP ON RT. = 6.88 SY. YD.

STA. 100+19 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 16.64 SY. YD.

STA. 100+39.68 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 6'-0", W/24" X 64' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 3'-0"

50' TAPER

+89.44 57.00

+05.00 75.00

+29.36 65.00

+80.00 71.69

+29.18 85.00

+80.00 85.00

CONST. LIMITS

+45.00 80.39' SHLDR. TAPER 75.00

+55.00 54.00

+05.00 75.00

+29.44 57.00

+05.00 49.00

+29.28 75.00

C.L. HWY. 70 STA. 104+84.19 = C.L. SOUTH SHARED USE RAMP STA. 10+00.00 Δ = 84°51'26"

PROPOSED R/W

TEMPORARY CONSTRUCTION EASEMENT

STA. 100+35 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 3.48 SY. YD.

STA. 101+00 CONSTRUCT DROP INLET W/ PEDESTRIAN GRATE, 66' RT. H = 4'-0", W/18" X 23' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE E INLET = 3'-0" X 3'-0"

STA. 101+06 CONSTRUCT DROP INLET W/ PEDESTRIAN GRATE ON RT. H = 6'-10", W/24" X 142' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE ST INLET = 3'-0" X 3'-0"

STA. 102+50 CONSTRUCT DROP INLET W/ PEDESTRIAN GRATE ON RT. H = 15'-0", W/24" X 73' R.C. PIPE CULVERT TO JUNCTION BOX ON RT. TYPE ST INLET = 3'-0" X 3'-0"

C.L. SOUTH SHARED USE RAMP

STA. 100+38 TO STA. 103+91 IN PLACE R.C. PIPE CULVERT ON RT. PLUG AND ABANDON

30' R.

PI 110+08.81

40' R.

S 75°54'43" E

+82.81 60.00

+79.52 60.00

STA. 105+75 TO STA. 106+74 IN PLACE R.C. PIPE CULVERT ON RT. PLUG AND ABANDON

PERMANENT CONSTRUCTION EASEMENT

STA. 103+93 IN PLACE JUNCTION BOX ON RT. RETAIN

PROP. R/W

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

C.L. ARKANSAS RIVER TRAIL

STA. 103+94 TO STA. 105+72 IN PLACE R.C. PIPE CULVERT ON RT. RETAIN

ARKANSAS RIVER

STA. 105+73 IN PLACE JUNCTION BOX RT. RETAIN AND CONSTRUCT 36" X 23' R.C. PIPE CULVERT TO JUNCTION BOX ON RT.

+35.00 20.00

+35.00 -20.00

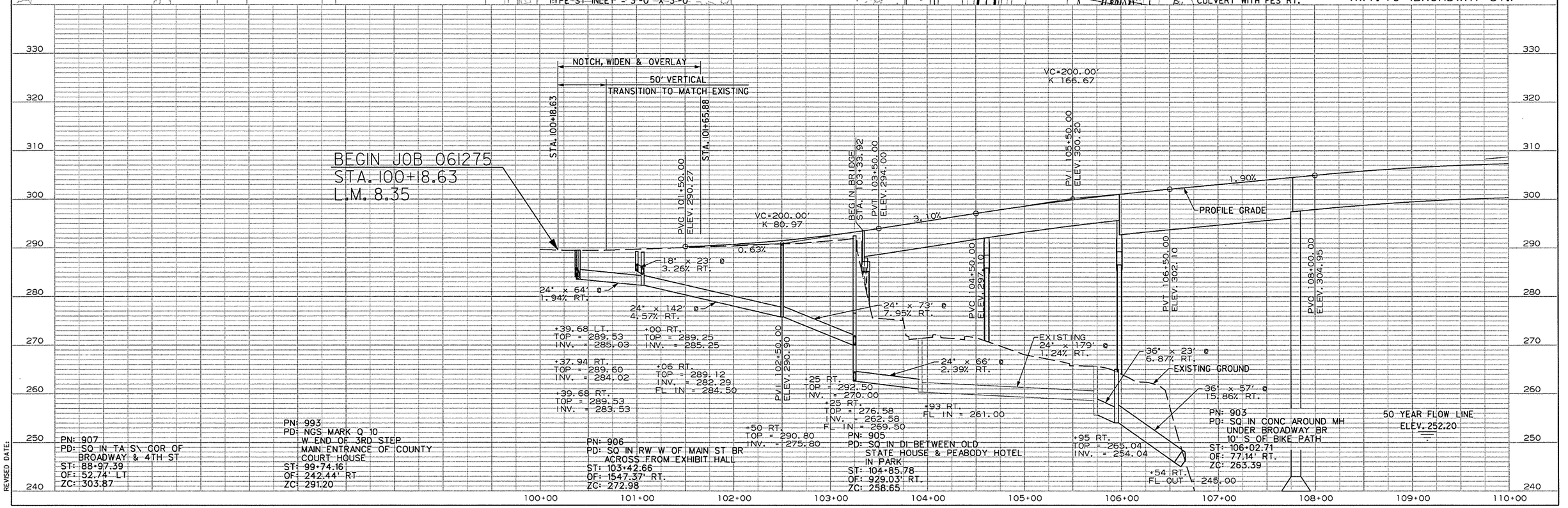
+95.00 40.00

PCC 10+27

PI 110+19.07

STA. 105+95 CONSTRUCT TYPE ST JUNCTION BOX, 53' RT. H = 11'-0" X 5'-0" X 4'-0" W/ 36" X 57' R.C. PIPE CULVERT WITH FES RT.

HWY. 70 (BROADWAY ST.)



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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	79	505

(2) PLAN AND PROFILE - HWY. 70

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

C.L. HWY. 70
PI = 125+77.52
Δ = 3°58'52"RT.
D = 1°00'00"
T = 199.13'
L = 398.11'
PC= 123+78.39
PT= 127+76.49
e = N.C.
Ls = N/A

124+82 IN PLACE GRATE INLET LT. W/ PIPE REMOVE

TEMPORARY CONSTRUCTION EASEMENT

+65.00 -70.00

150' TAPER

+65.00 -50.00

+67.84

+17.84

+15.00 -45.00

C.L. HWY. 70 STA. 119+24.62 = C.L. NORTH SHARED USE RAMP STA. 10+00.00
Δ = 92°00'00"

PROPOSED R/W

EXIST. R/W

+87.69 -45.00

+03.81 -45.00

+54.08 -44.78

+22.08 -45.00

+73.28 -45.00

C.L. HWY. 70

N 8°56'43" E

110+00

115+00

120+00

125+00

4'
22'
22'
4'
17'

800'

38.5'

PERMANENT CONSTRUCTION EASEMENT

+45.76 60.00

+85.00 60.00

30' R.

+85.00 25.00

PROPOSED R/W

C.L. NORTH SHARED USE PATH

GPS

16'

REBAR/CAP 105

HWY. 100

S 83°03'11" E

+51.68 60.00

EXIST. R/W

PROPOSED R/W

+22.77 60.00

PC 123+78

+63.29 75.00

+63.29 105.00

END BRIDGE STA. 121+01.09

TEMPORARY CONSTRUCTION EASEMENT

BEGIN BRIDGE STA. 124+90.37

ARKANSAS RIVER

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

NOTE: SEE SPECIAL DETAILS FOR DRAINAGE STRUCTURES UNDER BRIDGE AT STA. 124+90.37 TO STA. 125+82.87.

HWY. 70 (BROADWAY ST.)

330
320
310
300
290
280
270
260
250
240

PVI 111+50.00
ELEV. 311.60

1.90%

VC=700.00'
K 142.28

-3.02%

PROFILE GRADE

4.16%

VC=200.00'
K 175.44

PVI 121+00.00
ELEV. 282.91

END BRIDGE STA. 121+01.09

PVC 120+00.00
ELEV. 285.93

PVT 122+00.00
ELEV. 278.75

BEGIN BRIDGE STA. 124+90.37

PVT 115+00.00
ELEV. 301.03

50 YEAR FLOW LINE
ELEV. 252.20

PN: 913
PD: SQ IN CONC TOP DI
31.5' W OF SIGN POST
20' N OF OAK TREE
ST: 117+68.35
OF: 1626.70' RT.
ZC: 248.76

PN: 912
PD: SQ IN CONC BASE OF ELECTRIC BOX
29' S OF TOP OF LEVEE
ST: 118+90.97
OF: 951.06' RT.
ZC: 255.43

EXISTING GROUND

PN: 910
PD: SQ IN BASE OF N\E TOWER LEG
21' S OF BACK OF CB
ST: 120+33.47
OF: 401.32' LT.
ZC: 253.43

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-25-14			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	80	505

(2) PLAN AND PROFILE - HWY. 70

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No. 13422
8-25-14

C.L. HWY. 70
PI = 125+77.52
Δ = 3°58'52"RT.
D = 1°00'00"
T = 199.11'
L = 398.11'
PC= 123+78.39
PT= 127+76.49
e = N.C.
Ls = N/A

C.L. HWY. 70
PI= 128+58.12
Δ = 3°42'25"LT.
D = 5°00'00"
T = 37.08'
L = 74.14'
PC= 128+21.03
PT= 128+95.17
e = N.C.
Ls = N/A

STA. 127+53 CONSTRUCT
DROP INLET W/8' EXT. ON LT.
H = 7'-0", W/24" X 16' R.C. PIPE
CULVERT TO JUNCTION BOX ON LT.
TYPE MO INLET = 4'-0" DIA.
TYPE C INLET = 4'-0" X 2'-6"

STA. 127+53 CONSTRUCT
TYPE ST JUNCTION BOX ON LT.
H = 15'-6" X 6'-0" X 3'-0"
W/ EXISTING 60" R.C. PIPE CULVERT
ON LT.

STA. 129+54 IN PLACE
DROP INLET ON LT.
ADJUST TO GRADE W/ PEDESTRIAN GRATE

STA. 128+14 CONSTRUCT
TYPE 4 WHEELCHAIR RAMP ON RT.
= 9.26 SY. YD.

STA. 128+28 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.02 SY. YD.

STA. 128+31 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON LT.
= 9.39 SY. YD.

STA. 128+31 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 2.68 SY. YD.

STA. 128+45 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 2.67 SY. YD.

STA. 129+14 CONSTRUCT
TYPE 2 WHEELCHAIR RAMP ON RT.
= 8.40 SY. YD.

STA. 129+33 CONSTRUCT
TYPE 1 WHEELCHAIR RAMP ON LT.
= 29.02 SY. YD.

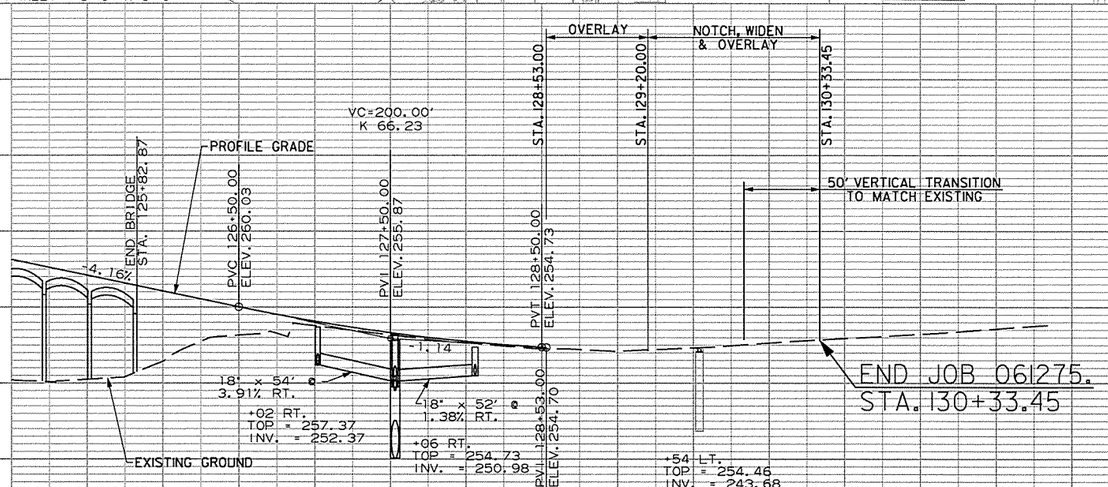
CONSTRUCTION LIMITS
EXIST. R/W
C.L. HWY. 365
PROPOSED R/W
RETAIN EXISTING WALK
RETAIN EXISTING CONCRETE
40' SHOULDER TAPER
TEMPORARY CONSTRUCTION EASEMENT
125+04 IN PLACE DROP INLET RT. W/ PIPE REMOVE
REBAR/CAP 28
REBAR/CAP 27
BEGIN BRIDGE STA. 124+90.37
END BRIDGE STA. 125+82.87
PC 17+44.76
PI 18+38.04
PC 19+29.36
PT 19+29.36
PC 128+21.03
PT 128+95.17
PI 128+58.12
PT 21+43.61
PT 127+16.40
PC 127+56.94
PT 127+76.49
A = 101°03'09"
S 66°25'30" E
N 8°56'43" E
N 12°55'35" E
N 9°13'10" E
S 80°23'09" E
68.61' TAPER
WEST 4TH ST.
WEST 5TH ST.
HWY. 70 (BROADWAY ST.)

END JOB 061275
STA. 130+33.45

STA. 127+02 CONSTRUCT
DROP INLET W/ PEDESTRIAN GRATE ON RT.
H = 5'-0", W/18" X 54' R.C. PIPE
CULVERT TO DROP INLET ON LT.
TYPE ST INLET = 3'-0" X 3'-0"

STA. 127+53 CONSTRUCT
DROP INLET W/8' EXT. ON RT.
H = 6'-0", W/24" X 70' R.C. PIPE
CULVERT TO DROP INLET ON LT.
TYPE MO INLET = 4'-0" DIA.
TYPE C INLET = 4'-0" X 2'-6"

STA. 128+06 CONSTRUCT
DROP INLET W/8' EXT. ON RT.
H = 3'-9", W/18" X 52' R.C. PIPE
CULVERT TO DROP INLET ON LT.
TYPE MO INLET = 4'-0" DIA.
TYPE C INLET = 4'-0" X 3'-0"



NOTE: SEE SPECIAL DETAILS FOR DRAINAGE STRUCTURES UNDER BRIDGE AT STA. 124+90.37 TO STA. 125+82.87.

PN: 909
PD: SQ IN CA RIVERFRONT ST 87' N OF COR CARE LINK BRICK BL
ST: 125+19.34
OF: 1212.43' LT.
ZC: 252.17

PN: 914
PD: SQ IN BACK OF CA W BROADWAY 14' N OF POPLAR TREE
ST: 127+56.94
OF: 731.53' LT.
ZC: 249.23

PN: 916
PD: SQ IN REAR OF CA 19' N OF 14" PINE 17' W LIGHT POLE
ST: 128+79.37
OF: 1060.41' RT.
ZC: 260.02

PN: 915
PD: SQ IN BASE LA NW COR N BROADWAY & W BROADWAY
ST: 129+31.76
OF: 36.79' RT.
ZC: 255.07

PN: 917
PD: SQ IN REAR OF CA W BROADWAY 21' N OF PP
ST: 141+69.03
OF: 169.97' RT.
ZC: 259.42

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	81	505

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No. 13422
5-30-14

(2) PLAN AND PROFILE - HWY. 10 ENTRANCE RAMP

N

STA. 13+31.99 CONSTRUCT DROP INLET W/4' EXT. ON LT. H = 4'-0", W/18" X 46' R.C. PIPE CULVERT TO DROP INLET ON LT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 12+83.22 CONSTRUCT DROP INLET W/8' EXT. ON LT. H = 6'-3", W/18" X 3' R.C. PIPE CULVERT TO DROP INLET ON LT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 12+82 IN PLACE DROP INLET LT. REMOVE

C.L. HWY. 10 ENTRANCE RAMP

PROPOSED R/W

EXIST. R/W

CONSTRUCTION LIMITS

N. GAINES ST.

N. STATE ST.

N. ARCH ST.

60' SHOULDER TAPER

250' TAPER

300' ACCELERATION LANE

BEGIN HWY. 10
STA. 9+90.73

END HWY. 10
STA. 15+40.73

C.L. HWY. 10 STA. 14+59.17, 31.84 LT.= C.L. HWY. 10 ENT. RAMP STA. 100+47.81

C.L. HWY. 10
PI = 13+01.93
Δ = 11°14'40" LT.
D = 2°30'00"
T = 225.61'
L = 449.78'
PC = 10+76.32
PT = 15+26.09
e = N.C.
Ls = N/A

C.L. HWY. 10
PI = 18+85.77
Δ = 11°14'26" RT.
D = 5°00'00"
T = 112.77'
L = 224.81'
PC = 17+73.00
PT = 19+97.81
e = N.C.
Ls = N/A

HWY. 10 (LA HARPE BLVD.)

NOTCH & WIDEN

STA. 9+90.73

STA. 15+40.73

18" x 46' ø
5.61% LT.

+83.22 LT.
TOP = 277.82
INV. = 271.57

+31.99 LT.
TOP = 278.15
INV. = 274.15

330 320 310 300 290 280 270 260 250 240 230

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

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WORKSPACE: MTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	82	505

2 PLAN AND PROFILE - HWY. 10 ENTRANCE RAMP

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
5-30-14

END HWY. 10
STA. 9+90.73

C.L. HWY. 10
PI = 13+01.93
Δ = 11°14'40" LT.
D = 2°30'00"
T = 225.61'
L = 449.78'
PC = 10+76.32
PT = 15+26.09
e = N.C.
Ls = N/A

C.L. HWY. 10 ENT. RAMP
PI = 100+95.91
Δ = 13°24'25" LT.
D = 14°00'00"
T = 48.10'
L = 95.76'
PC = 100+47.81
PT = 101+43.57
e = N.C.
Ls = N/A

C.L. HWY. 10 ENT. RAMP
PI = 106+08.81
Δ = 68°21'41" LT.
D = 19°15'00"
T = 202.13'
L = 355.12'
PC = 104+06.68
PT = 107+61.80
e = N.C.
Ls = N/A

C.L. HWY. 10
PI = 18+85.77
Δ = 11°14'26" RT.
D = 5°00'00"
T = 112.77'
L = 224.81'
PC = 17+73.00
PT = 19+97.81
e = N.C.
Ls = N/A

C.L. HWY. 10 ENT. RAMP STA. 100+47.81 =
C.L. HWY. 10 STA. 14+59.17, 31.84 LT.

C.L. HWY. 10 ENT. RAMP STA. 107+61.80 =
C.L. HWY. 70 STA. 107+61.80, 14.50' LT.

STA. 106+08
INSTALL
CRASH CUSHION

HWY. 10 (L.A. HARPE BLVD.) ENTRANCE RAMP

C.L. HWY. 10 ENT. RAMP STA. 101+27.54, 7.50' RT. =
C.L. HWY. 10 STA. 15+40.73, 29.66' LT.
ELEV. 283.08

C.L. HWY. 10 ENT. RAMP STA. 105+93.15, 7.50' RT. =
C.L. HWY. 70 STA. 105+98.00, 54.69' LT.
ELEV. 299.94

PN: 905
PD: SQ IN DI BETWEEN OLD STATE HOUSE & PEABODY HOTEL IN PARK
ST: 104+85.78
OF: 929.03' RT.
ZC: 258.65

PN: 903
PD: SQ IN CONC AROUND MH UNDER BROADWAY BR 10' S OF BIKE PATH
ST: 106+02.71
OF: 77.14' RT.
ZC: 263.39

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-25-14			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	83	505

2 PLAN AND PROFILE - HWY. 365

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
8-25-14

C.L. HWY. 365
PI = 13+14.11
Δ = 1°37'51" RT.
D = 2°00'00"
T = 40.77'
L = 81.54'
PC= 12+73.34
PT= 13+54.88
e = N.C.
Ls = N/A

C.L. HWY. 365
PI = 18+38.04
Δ = 20°18'23" RT.
D = 11°00'00"
T = 93.28'
L = 184.60'
PC= 17+44.76
PT= 19+29.36
e = N.C.
Ls = N/A

C.L. HWY. 365
PI = 20+61.89
Δ = 13°57'38" LT.
D = 8°30'00"
T = 82.53'
L = 164.24'
PC= 19+79.36
PT= 21+43.61
e = N.C.
Ls = N/A

BEGIN HWY. 365
STA. 13+10.00

END JOB 061275
STA. 130+33.45

END HWY. 365
STA. 19+71.85

CHANDLER ST.

S 88°21'44" E

S 86°43'54" E

S 66°25'30" E

S 80°23'09" E

N 12°55'35" E

N 91°31'10" E

PC 12+73.34

PT 13+54.88

PI 13+14.11

PC 17+44.76

PT 19+29.36

PI 18+38.04

PC 19+79.36

PT 21+43.61

PI 128+58.12

PI 127+76.49

STA. 14+52 CONSTRUCT APPROACH ON LT. = 304 CU. YD.

STA. 15+15 CONSTRUCT APPROACH ON LT. = 100 CU. YD.

STA. 15+59 IN PLACE JUNCTION BOX LT. ADJUST TO GRADE

STA. 15+70 IN PLACE DROP INLET LT. REMOVE

STA. 16+27 CONSTRUCT APPROACH ON LT. = 1 CU. YD.

STA. 15+70 CONSTRUCT DROP INLET W/8' EXT. ON LT. H = 3'-0", W/18" EXISTING R.C. PIPE TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 4'-0"

STA. 15+47 CONSTRUCT APPROACH ON LT. = 83 CU. YD.

STA. 16+90 CONSTRUCT APPROACH ON LT. = 1 CU. YD.

STA. 17+19 CONSTRUCT DROP INLET W/8' EXT. ON LT. H = 4'-0", W/18" X 28' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 17+39 CONSTRUCT TYPE ST JUNCTION BOX ON LT. H = 10'-6" X 4'-0" X 4'-0", W/18" X 48' R.C. PIPE CULVERT TO DROP INLET ON RT.

STA. 17+89 CONSTRUCT APPROACH ON LT. = 1 CU. YD.

STA. 18+64 IN PLACE DROP INLET LT. REMOVE

STA. 18+48 IN PLACE JUNCTION BOX LT. ADJUST TO GRADE

STA. 18+59 CONSTRUCT DROP INLET W/ 8' EXT. ON LT. H = 10'-6" TYPE MO INLET = 5'-0" DIA. TYPE C INLET = 5'-0" X 2'-6"

STA. 19+37 IN PLACE JUNCTION BOX LT. ADJUST TO GRADE

STA. 19+65 IN PLACE JUNCTION BOX LT. ADJUST TO GRADE

TEMPORARY CONSTRUCTION EASEMENT

CONSTRUCTION LIMITS

EXIST. R/W

PROPOSED R/W

TEMPORARY CONSTRUCTION EASEMENT

EXIST. R/W

165' TAPER

165' TAPER

40'

40'

36'

20'

12'

15'

22'

22'

22'

22'

22'

22'

15'

30'

30'

29'

33'

+10.00 PI 13+14.11

+75.00

+79.78 -35.00

+54.80 -35.00

+54.84 -33.56

+61.36

+26.36 PI 18+38.04

+86.36

+13.97 -45.20

+53.49 -44.15

+17.00 -55.00

+50.00 37.20

+95.00 91.15

+10.00 38.66

+10.00 50.00

+71.00 38.37

+60.00 38.72

+35.59 -92.83

+60.00 50.00

+10.49 37.58

+25.00 37.66

+25.00 55.00

+75.00 37.93

+75.00 55.00

+10.00 -65.00

+80.00 -50.00

+18.15 118.11

+80.00 75.00

PROPOSED R/W

RETAIN EXISTING SIDEWALK

CONSTRUCTION LIMITS

REMOVE EXISTING SIDEWALK

C.L. HWY. 365

STA. 15+74 IN PLACE DROP INLET W/ GRATE ON RT. ADJUST TO GRADE W/18" X 11' R.C. PIPE CULVERT TO DROP INLET ON RT.

STA. 15+78 IN PLACE DROP INLET RT. REMOVE

STA. 14+80 CONSTRUCT APPROACH ON RT. = 1 CU. YD.

STA. 15+74 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 4'-6", W/18" X 52' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 16+30 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 4'-0", W/18" X 37' R.C. PIPE CULVERT TO DROP INLET ON RT. TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 16+71 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 4'-0" TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

STA. 15+51 CONSTRUCT APPROACH ON RT. = 493 CU. YD.

STA. 17+37 CONSTRUCT APPROACH ON RT. = 244 CU. YD.

STA. 17+74 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 4'-0" TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

C.L. HWY. 70 STA. 128+64.19 = C.L. HWY. 365 STA. 20+00.00 Δ = 101°03'09"

C.L. HWY. 70

REBAR/CAP 27

RETAIN EXISTING CONCRETE

STA. 21+08 IN PLACE DROP INLET RT. REMOVE

STA. 21+08 CONSTRUCT DROP INLET W/8' EXT. ON RT. H = 3'-6", W/18" EXISTING R.C. PIPE TYPE MO INLET = 4'-0" DIA. TYPE C INLET = 4'-0" X 2'-6"

HWY. 365 (WEST BROADWAY ST.)

NOTCH, WIDEN & OVERLAY

50' VERTICAL TRANSITION TO MATCH EXISTING

STA. 13+10.00

STA. 19+71.85

18" x 52' @ 1.46% RT.

18" x 37' @ 0.68% RT.

18" x 28' @ 7.07% LT.

18" x 48' @ 5.02% RT.

EXISTING GROUND

+70 LT.
TOP = 250.25
INV. = 247.25

+30 RT.
TOP = 250.52
INV. = 246.52

+74 RT.
TOP = 250.00
FL IN = 245.00

+71 RT.
TOP = 250.77
INV. = 246.77

+74 RT.
TOP = 250.26
INV. = 245.76

+19 LT.
TOP = 250.98
INV. = 246.98

+39 LT.
TOP = 250.92
INV. = 240.42
FL IN = 245.00

+74 RT.
TOP = 251.41
INV. = 247.41

+59 LT.
TOP = 252.28
INV. = 241.78

+08 RT.
TOP = 253.68
INV. = 250.18

PN: 914
PD: SQ IN BACK OF CA W BROADWAY 14' N OF POPLAR TREE
ST: 127+56.94
OF: 731.53' LT.
ZC: 249.23

PN: 916
PD: SQ IN REAR OF CA 19' N OF 14" PINE 17' W LIGHT POLE
ST: 128+79.37
OF: 1060.41' RT.
ZC: 260.02

PN: 915
PD: SQ IN BASE LA N\E COR N BROADWAY & W BROADWAY
ST: 129+31.76
OF: 36.79' RT.
ZC: 255.07

290 280 270 260 250 240 230 220 210 200

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	84	505

(2) PLAN AND PROFILE - SOUTH SHARED USE RAMP

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
S-30-14

C.L. ARKANSAS RIVER TRAIL
PERMANENT CONSTRUCTION EASEMENT
C.L. ARKANSAS RIVER SIDEWALK
C.L. S. SHARED USE RAMP
PI = 14+98.03
Δ = 60°27'11" LT.
D = 57°00'00"
T = 58.57'
L = 106.06'
PC= 14+39.46
PT= 15+45.52
e = N.C.
Ls = N/A
C.L. SOUTH SHARED USE RAMP STA. 15+68.81 = C.L. ARKANSAS RIVER TRAIL STA. 16+00.00
∠ = 75°00'00"
CONSTRUCTION LIMITS
PERMANENT CONSTRUCTION EASEMENT
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
C.L. ARKANSAS RIVER TRAIL STA. 12+90.00 = C.L. ARKANSAS RIVER SIDEWALK STA. 10+00.00
REMOVE EXISTING SIDEWALK
C.L. SOUTH SHARED USE RAMP
C.L. HWY. 70 STA. 104+84.19 = C.L. SOUTH SHARED USE RAMP STA. 10+00.00
∠ = 84°51'26"
END BRIDGE STA. 13+41.78
C.L. HWY. 10
EXISTING R/W
EXIST. R/W
C.L. HWY. 70
C.L. HWY. 10
PI = 18+85.77
Δ = 11°14'26" RT.
D = 5°00'00"
T = 112.77'
L = 224.81'
PC= 17+73.00
PT= 19+97.81
e = N.C.
Ls = N/A
STA. 15±33.63 CONSTRUCT 24" X 64' R.C. PIPE CULVERT 26° RT. FWD. SKEW (CLASS III) TYPE 3 BEDDING WITH FES LT. & RT.
Q50 = 2 CFS DA = 1 ACRES
N CONWAY ST.
C.L. HWY. 10
PI = 24+99.21
Δ = 7°49'55" RT.
D = 2°30'00"
T = 156.88'
L = 313.27'
PC= 23+42.32
PT= 26+55.60
e = N.C.
Ls = N/A

SOUTH SHARED USE RAMP

C.L. SOUTH SHARED USE RAMP STA. 10+53.00, 8.00' LT. =
C.L. HWY. 70 STA. 104+87.41, 53.50' RT.
ELEV. 297.51

PROFILE GRADE
-4.93%
END BRIDGE STA. 13+41.78
EXISTING GROUND

C.L. SOUTH SHARED USE RAMP STA. 15+60.46, 8.00' LT. =
C.L. ARKANSAS RIVER TRAIL STA. 15+90.11, 6.00' RT.
ELEV. 272.49

F.L. = 262.80 (LT.)
F.L. = 266.75 (RT.)

PN: 906
PD: SQ IN RW W OF MAIN ST BR ACROSS FROM EXHIBIT HALL
ST: 103+42.66
OF: 1547.37' RT.
ZC: 272.98

PN: 905
PD: SQ IN DI BETWEEN OLD STATE HOUSE & PEABODY HOTEL IN PARK
ST: 104+85.78
OF: 929.03' RT.
ZC: 258.65

PN: 903
PD: SQ IN CONC AROUND MH UNDER BROADWAY BR 10' S OF BIKE PATH
ST: 106+02.71
OF: 77.14' RT.
ZC: 263.39

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WORKSPACE: ArTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	85	505

(2) P & P - ARKANSAS RIVER TRAIL & SIDEWALK

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

C.L. ARKANSAS RIVER TRAIL
PI = 13+00.79
Δ = 16°56'12" RT.
D = 3°30'00"
T = 243.73'
L = 483.91'
PC= 10+57.06
PT= 15+40.96
e = N.C.
Ls = N/A

C.L. ARKANSAS RIVER TRAIL
PI = 18+77.71
Δ = 18°28'04" LT.
D = 5°45'00"
T = 161.99'
L = 321.18'
PC= 17+15.72
PT= 20+36.90
e = N.C.
Ls = N/A

C.L. ARKANSAS RIVER SIDEWALK
PI = 10+19.07
Δ = 90°31'25" RT.
D = 381°58'19"
T = 15.14'
L = 23.70'
PC= 10+03.93
PT= 10+27.63
e = N.C.
Ls = N/A

C.L. ARKANSAS RIVER SIDEWALK
PI = 11+47.21
Δ = 8°15'36" RT.
D = 3°27'35"
T = 119.58'
L = 238.74'
PC= 10+27.63
PT= 12+66.37
e = N.C.
Ls = N/A

C.L. ARKANSAS RIVER SIDEWALK
PI = 13+32.72
Δ = 67°07'39" LT.
D = 190°59'09"
T = 19.90'
L = 35.15'
PC= 13+12.81
PT= 13+47.96
e = N.C.
Ls = N/A

C.L. HWY. 10
PI = 18+85.77
Δ = 11°14'26" RT.
D = 5°00'00"
T = 112.77'
L = 224.81'
PC= 17+73.00
PT= 19+97.81
e = N.C.
Ls = N/A

C.L. HWY. 10
PI = 24+99.21
Δ = 7°49'55" RT.
D = 2°30'00"
T = 156.88'
L = 313.27'
PC= 23+42.32
PT= 26+55.60
e = N.C.
Ls = N/A

C.L. ARKANSAS RIVER TRAIL STA. 12+90.00 = C.L. ARKANSAS RIVER SIDEWALK STA. 10+00.00 = 90°00'00"

C.L. SOUTH SHARED USE RAMP STA. 15+68.81 = C.L. ARKANSAS RIVER TRAIL STA. 16+00.00 = 75°00'00"

C.L. ARKANSAS RIVER TRAIL
C.L. ARKANSAS RIVER SIDEWALK
C.L. SOUTH SHARED USE RAMP
C.L. HWY. 10
C.L. HWY. 70
PERMANENT CONSTRUCTION EASEMENT
CONSTRUCTION LIMITS
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
EXISTING R/W
N CONWAY ST.
BRICK

ARKANSAS RIVER TRAIL AND SIDEWALK

ARKANSAS RIVER TRAIL

PVC 12+50.00 ELEV. 261.60
VC=100.00' K 15.87
PVT 13+50.00 ELEV. 263.35
PVI 13+00.00 ELEV. 260.90 P.G. ELEV. 261.69
PVI 14+75.00 ELEV. 269.47
PVI 16+00.00 ELEV. 275.60 P.G. ELEV. 272.51
VC=250.00' K 25.25
PVT 17+25.00 ELEV. 269.35
PVC 18+00.00 ELEV. 265.60
VC=100.00' K 18.38
PVT 19+00.00 ELEV. 263.92
PVI 18+50.00 ELEV. 263.10 P.G. ELEV. 263.78
-1.40%
4.90%
-5.00%
0.44%
PROFILE GRADE
EXISTING GROUND

ARKANSAS RIVER SIDEWALK

C.L. ARKANSAS RIVER SIDEWALK STA. 10+06.76, 4.00' RT. = C.L. ARKANSAS RIVER TRAIL STA. 12+94.18, 6.00' LT.
ELEV. 261.36

PVI 10+06.76 ELEV. 261.36
PVC 11+35.00 ELEV. 262.34
VC=50.00' K 25.25
PVI 11+60.00 ELEV. 262.54
PVT 11+85.00 ELEV. 262.23
PVI 13+47.96 ELEV. 260.27
0.77%
-1.21%
PROFILE GRADE
EXISTING GROUND

PN: 906
PD: SQ IN RW W OF MAIN ST BR ACROSS FROM EXHIBIT HALL
ST: 103+42.66
OF: 1547.37' RT.
ZC: 272.98

PN: 905
PD: SQ IN DI BETWEEN OLD STATE HOUSE & PEABODY HOTEL IN PARK
ST: 104+85.78
OF: 929.03' RT.
ZC: 258.65

PN: 903
PD: SQ IN CONC AROUND MH UNDER BROADWAY BR 10' S OF BIKE PATH
ST: 106+02.71
OF: 77.14' RT.
ZC: 263.39

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WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

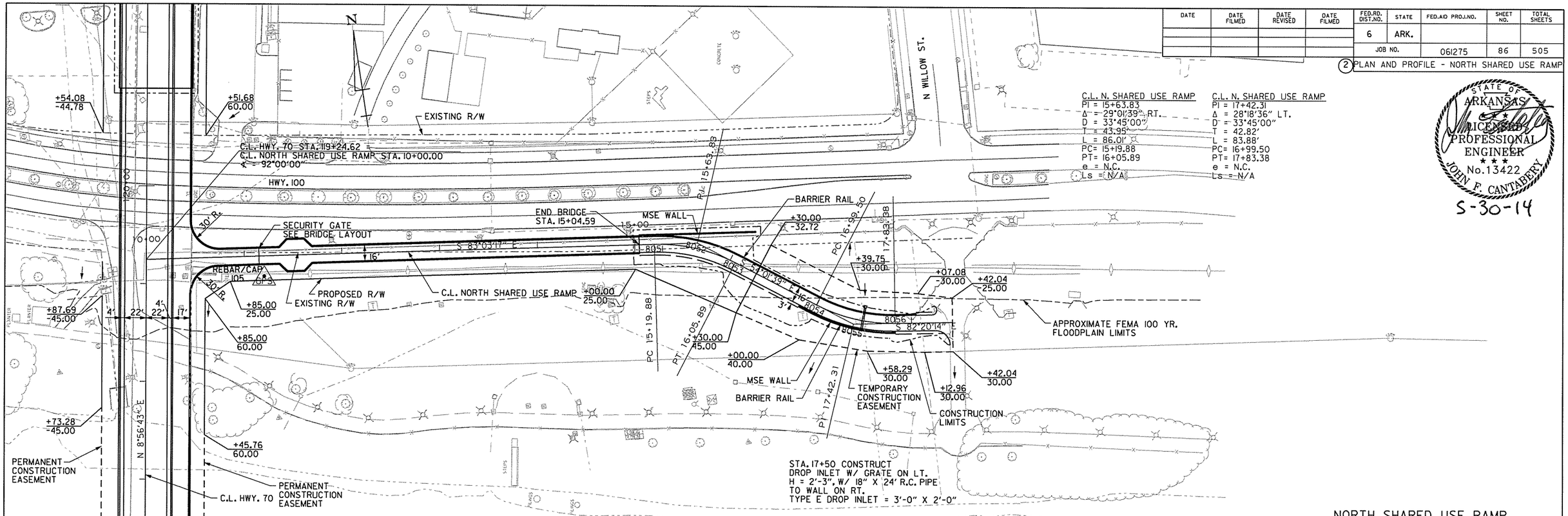
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	86	505

(2) PLAN AND PROFILE - NORTH SHARED USE RAMP

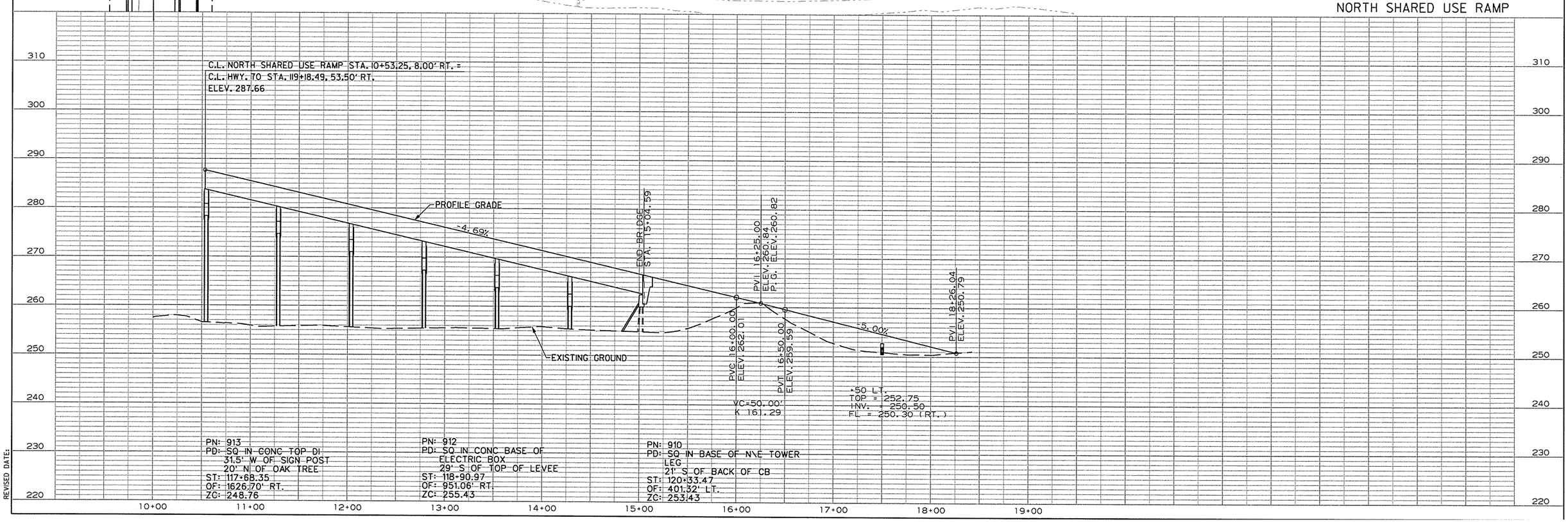
STATE OF ARKANSAS
LICENSED
PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
5-30-14

C.L. N. SHARED USE RAMP
PI = 15+63.83
Δ = 29°01'39" RT.
D = 33°45'00"
T = 43.95'
L = 86.01'
PC= 15+19.88
PT= 16+05.89
e = N.C.
Ls = N/A

C.L. N. SHARED USE RAMP
PI = 17+42.31
Δ = 28°18'36" LT.
D = 33°45'00"
T = 42.82'
L = 83.88'
PC= 16+99.50
PT= 17+83.38
e = N.C.
Ls = N/A



NORTH SHARED USE RAMP



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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	87	505

(2) SIGNAL NOTES AND QUANTITIES

TRAFFIC SIGNAL NOTES

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2014) NATIONAL ELECTRICAL CODE, NFPA 101 (2012) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE DETAILS MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKINGS FOR REFERENCE ONLY. SEE PAVEMENT MARKING AND SIGNAGE PLANS.
11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY OF NORTH LITTLE ROCK (BROADWAY AT BROADWAY).
17. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, 38 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF 21 FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.
18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS 6 FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT IS KEYED INTO COMPETENT ROCK.
20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HANDHOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714-TRAFFIC SIGNAL MAST ARM POLE WITH FOUNDATION.
21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.
22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
23. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.
25. TRAFFIC SIGNAL CONTROLLER SHALL BE COMPATIBLE WITH THE CITIES' EXISTING EAGLE SYSTEM IN NORTH LITTLE ROCK AND LITTLE ROCK.
26. NEW TRAFFIC SIGNALS MUST BE OPERATIONAL PRIOR TO REMOVAL OF EXISTING SIGNALS.
27. TRAFFIC SIGNAL EQUIPMENT REMOVED FROM THE INTERSECTION OF MARKHAM AT BROADWAY SHALL BE THE PROPERTY OF THE CITY OF LITTLE ROCK. (SEE SPECIAL PROVISION.)
28. TRAFFIC SIGNAL EQUIPMENT REMOVED FROM THE INTERSECTION OF BROADWAY AT BROADWAY SHALL BE THE PROPERTY OF THE CITY OF NORTH LITTLE ROCK. (SEE SPECIAL PROVISION.)
29. BATTERY BACK-UP SYSTEM AT THE INTERSECTION OF BROADWAY AT BROADWAY IN NORTH LITTLE ROCK SHALL BE A CLARY UPS SYSTEM WITH CABINET ASSEMBLY OR APPROVED EQUAL. SPECIFICS OF THIS SYSTEM INCLUDE THE FOLLOWING:
    -SP SERIES TRAFFIC UPS (UNINTERRUPTED POWER SYSTEM) SP-1250-SR
    -30 AMP POWER INTERFACE MODULE (PIM)
    -OUTPOST SERIES EXTREME ENVIRONMENT BATTERY SYSTEM-72 VOLT BATTERY WITH SIX 51 AH BATTERIES
    -BATTERY CABLE
    -336 CABINET ASSEMBLY

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	BROADWAY AT MARKHAM	BROADWAY AT BROADWAY	6TH AT SCOTT	3RD AT SCOTT	TOTAL	UNIT	
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	0	1	0	0	1	EACH	
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	5	10	2	0	17	EACH	
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	1	0	0	2	EACH	
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	3	1	0	1	5	EACH	
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	8	0	0	16	EACH	
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1822	1741	103	0	3666	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	213	136	0	209	558	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	296	40	0	0	336	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	142	465	0	0	607	LIN. FT.	
709	GALVANIZED STEEL CONDUIT (1.25")	0	15	0	0	15	LIN. FT.	
710	NON-METALLIC CONDUIT (1")	0	45	0	0	45	LIN. FT.	
710	NON-METALLIC CONDUIT (1.25")	0	9	0	0	9	LIN. FT.	
710	NON-METALLIC CONDUIT (2")	68	44	0	0	112	LIN. FT.	
710	NON-METALLIC CONDUIT (3")	657	830	0	0	1487	LIN. FT.	
711	CONCRETE PULL BOX (TYPE 1 HD)	1	0	0	0	1	EACH	
711	CONCRETE PULL BOX (TYPE 2 HD)	6	7	0	0	13	EACH	
713	SPAN WIRE ASSEMBLY	0	0	1	0	1	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (24')	1	0	0	0	1	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (26')	0	1	0	0	1	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	1	1	0	0	2	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	2	0	0	0	2	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	0	1	0	0	1	EACH	
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60')	0	1	0	0	1	EACH	
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	5	5	0	0	10	EACH	
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	0	1	0	0	1	EACH	
SP & 733	VEHICLE DETECTOR RACK (20 CHANNEL)	1	0	0	0	1	EACH	
SP & 733	VIDEO DETECTOR (CLR)	7	6	0	0	13	EACH	*
733	VIDEO CABLE	1005	971	0	0	1976	LIN. FT.	
733	VIDEO MONITOR (CLR)	1	1	0	0	2	EACH	
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	5	0	0	9	EACH	*
SP & 733	VIDEO EDGE CARD EXTENDER	2	0	0	0	2	EACH	
SP	ANTENNA CABLE (TYPE 6)	0	54	0	0	54	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G, EGC)	467	478	0	0	945	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G, EGC)	200	200	0	0	400	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	0	24	0	0	24	LIN. FT.	
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	638	705	0	0	1343	LIN. FT.	
SP	LED BLANK OUT SIGN	1	0	0	0	1	EACH	
SP	LOCAL RADIO WITH ANTENNA	0	1	0	0	1	EACH	
SP	LUMINAIRE ASSEMBLY	4	4	0	0	8	EACH	
SP	PTZ CAMERA SYSTEM	1	1	0	0	2	EACH	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	0.50	-	-	1.00	L.S.	
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	0	1	0	0	1	EACH	
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	0	0	0	1	EACH	
SP	18" STREET NAME SIGN	4	4	0	0	8	EACH	

* ONE ADDITIONAL VIDEO DETECTOR AND ONE ADDITIONAL VIDEO PROCESSOR, EDGE CARD SHALL BE PROVIDED FOR FUTURE USE.

NON-PARTICIPATING TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	BROADWAY AT MARKHAM	BROADWAY AT BROADWAY	6TH AT SCOTT	3RD AT SCOTT	TOTAL	UNIT
SP	BATTERY BACKUP SYSTEM	0	1	0	0	1	EACH

LOCATION: BROADWAY BRIDGE
CITY: NORTH LITTLE ROCK/LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 06 SCALE: 1'=N.A. DRAWN BY: AMP

DATE: 05/28/14 FILE NAME: t061275_qty.dgn

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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	88	505
				(2) SIGNALIZATION PLANS (LITTLE ROCK)				

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR
- EXISTING CONDUIT
- EXISTING PULL BOX

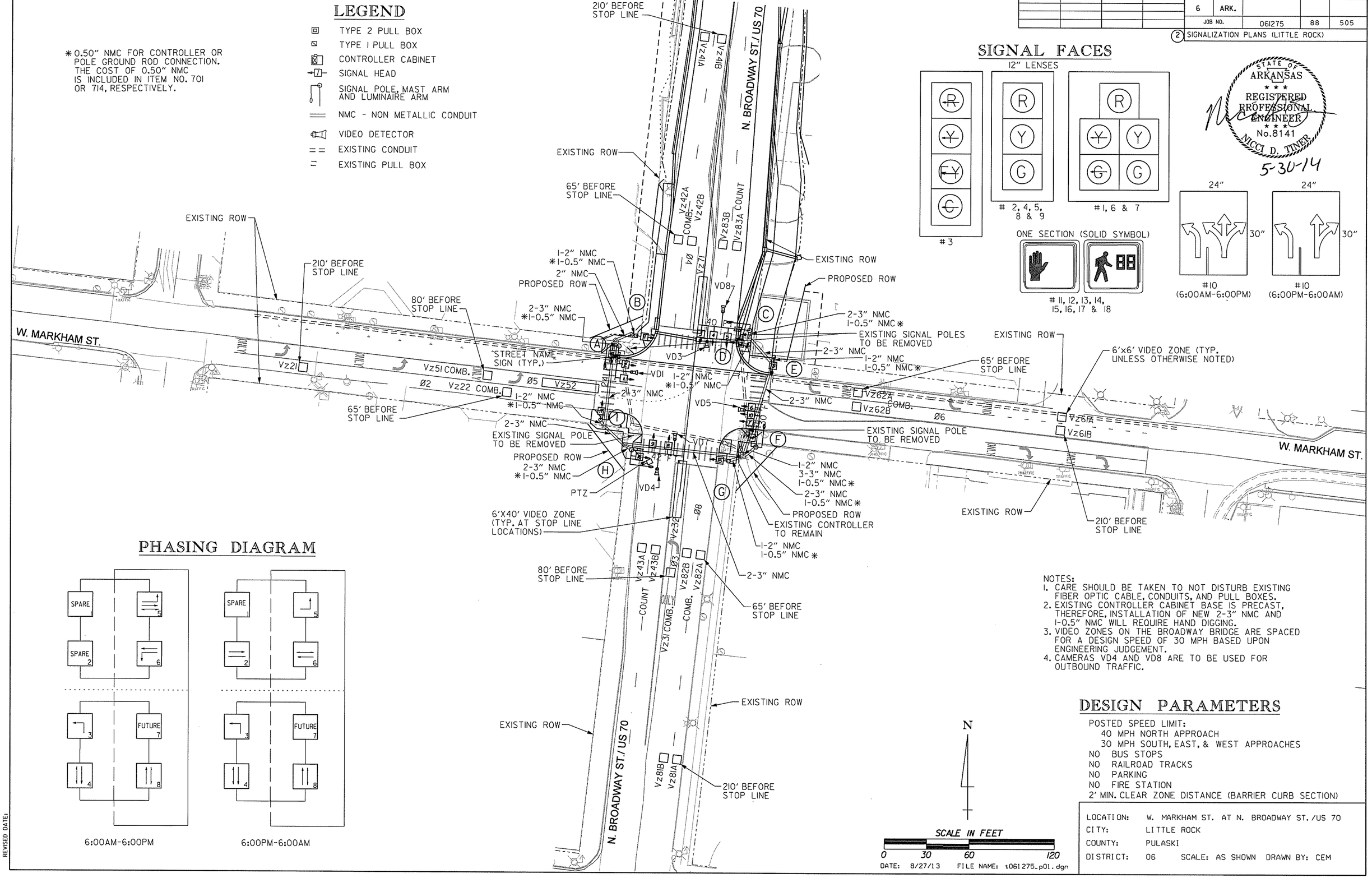
*0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

SIGNAL FACES

12" LENSES

ONE SECTION (SOLID SYMBOL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14



PHASING DIAGRAM

NOTES:
1. CARE SHOULD BE TAKEN TO NOT DISTURB EXISTING FIBER OPTIC CABLE, CONDUITS, AND PULL BOXES.
2. EXISTING CONTROLLER CABINET BASE IS PRECAST, THEREFORE, INSTALLATION OF NEW 2-3" NMC AND 1-0.5" NMC WILL REQUIRE HAND DIGGING.
3. VIDEO ZONES ON THE BROADWAY BRIDGE ARE SPACED FOR A DESIGN SPEED OF 30 MPH BASED UPON ENGINEERING JUDGEMENT.
4. CAMERAS VD4 AND VD8 ARE TO BE USED FOR OUTBOUND TRAFFIC.

DESIGN PARAMETERS

POSTED SPEED LIMIT:
- 40 MPH NORTH APPROACH
- 30 MPH SOUTH, EAST, & WEST APPROACHES

NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

LOCATION:	W. MARKHAM ST. AT N. BROADWAY ST./US 70
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

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REVISED DATE:

POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	STATION US 70	OFFSET	NORTHING	EASTING
A	24 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	100+27.04	54' LT.	151348.1049	1229603.4432
B	-	-	15'-0"	-	-	100+35.68	43' LT.	151354.9162	1229615.7168
C	36 FT.	270 DEGREES	35'-0"	15'-0"	270 DEGREES	100+48.25	37' RT.	151354.9702	1229696.2331
D	-	-	15'-0"	-	-	100+38.50	37' RT.	151345.2490	1229695.2468
E	-	-	15'-0"	-	-	100+31.58	56' RT.	151335.5271	1229712.5391
F	30 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	99+67.25	50' RT.	151272.8693	1229696.8921
G	-	-	15'-0"	-	-	99+55.13	32' RT.	151263.7256	1229677.0164
H	36 FT.	270 DEGREES	35'-0"	15'-0"	270 DEGREES	99+55.50	37' LT.	151274.8140	1229608.9208
I	-	-	15'-0"	-	-	99+74.05	61' LT.	151296.8908	1229587.9883

NOTES:

1. CARE SHOULD BE TAKEN TO NOT DISTURB EXISTING FIBER OPTIC CABLE, CONDUIT AND PULL BOXES.
2. EXISTING CONTROLLER CABINET BASE IS PRECAST, THEREFORE, INSTALLATION OF NEW 2-3" NMC AND 1-0.5" NMC WILL REQUIRE HAND DIGGING.
3. VIDEO ZONES ON THE BROADWAY BRIDGE ARE SPACED FOR A DESIGN SPEED OF 30 MPH BASED UPON ENGINEERING JUDGEMENT.
4. CAMERAS VD4 AND VD8 ARE TO BE USED FOR OUTBOUND TRAFFIC.

*0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTOR. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714 RESPECTIVELY.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	89	505

(2) SIGNALIZATION PLANS (LITTLE ROCK)

STATE OF ARKANSAS
- REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR
- EXISTING CONDUIT
- EXISTING PULL BOX

PHASING DIAGRAM

6:00AM-6:00PM

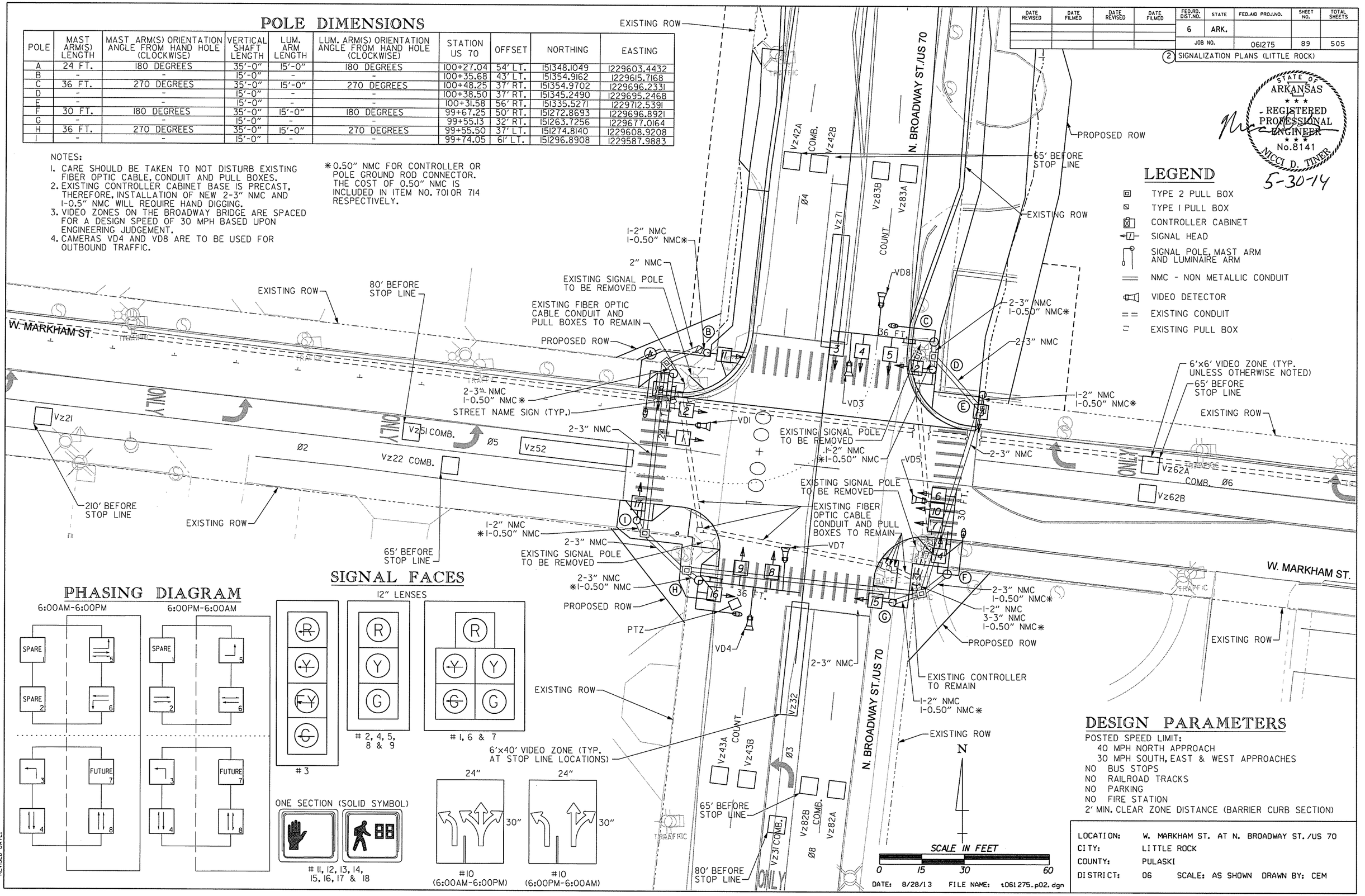
6:00PM-6:00AM

SIGNAL FACES

11, 12, 13, 14, 15, 16, 17 & 18

#10 (6:00AM-6:00PM)

#10 (6:00PM-6:00AM)



DESIGN PARAMETERS

POSTED SPEED LIMIT:
- 40 MPH NORTH APPROACH
- 30 MPH SOUTH, EAST & WEST APPROACHES

NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

LOCATION:	W. MARKHAM ST. AT N. BROADWAY ST./US 70
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

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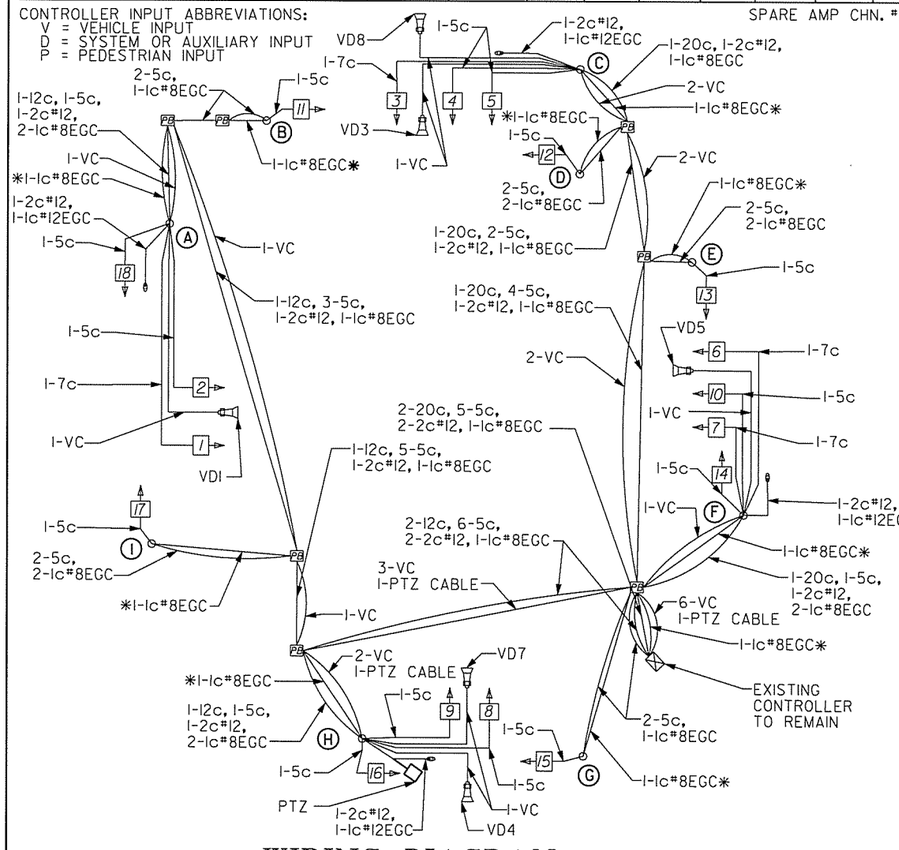
REVISED DATE:

DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
							LOCAL		MSTR. SYS. DET. #		
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS.	SYS. DET. #			
VZ2I	EB RIGHT FAR	LOCAL			5	V2	2			74"	VD5
VZ22	EB RIGHT NEAR	COMB.			6	V10	2	2		74"	VD5
VZ3I	NB LEFT FAR	COMB.			9	VII	3	3		74"	VD3
VZ32	NB LEFT NEAR	LOCAL			10	V3	3			74"	VD3
VZ4I A&B	SB FAR	LOCAL			17	V4	4			74"	VD7
VZ42A&B	SB NEAR	COMB.			18	VI2	4	4		74"	VD7
VZ43A&B	SB (OUTBOUND)	COUNT			19	VI	N/A			23"	VD4
VZ5I	EB LEFT FAR	COMB.			7	VI3	2	5		74"	VD5
VZ52	EB LEFT NEAR	LOCAL			8	V5	2			74"	VD5
VZ6IA&B	WB FAR	LOCAL			1	V6	6			74"	VDI
VZ62A&B	WB NEAR	COMB.			2	VI4	6	6		74"	VDI
VZ7I	SB LEFT	LOCAL			20	V7	4			74"	VD4
VZ8IA&B	NB FAR	LOCAL			11	V8	8			74"	VD3
VZ82A&B	NB NEAR	COMB.			12	VI6	8	8		74"	VD3
VZ83A&B	NB (OUTBOUND)	COUNT			13	V9	N/A			23"	VD8
PB2	W TO E	PED.				P2	2				
PB4	N TO S	PED.				P4	4				
PB6	E TO W	PED.				P6	6				
PB8	S TO N	PED.				P8	8				

SPARE AMP CHN. #3, 4, 14, 15, & 16

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT



WIRING DIAGRAM

NOTES TO CONTRACTOR
1. SEPARATE 5c/#14 AWG FROM EACH 3 SEC SIGNAL HEAD TO BASE OF POLE.
2. SEPARATE 7c/#14 FROM EACH 4 SEC OR 5 SEC HEAD TO BASE OF POLE.
3. SEPARATE 5c/#14 AWG TO EACH POLE WITH PEDESTRIAN PUSH BUTTONS.
4. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
5. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

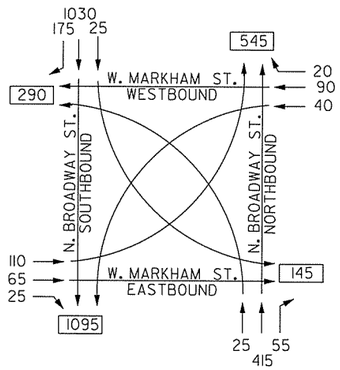
N

INTERVAL CHARTS

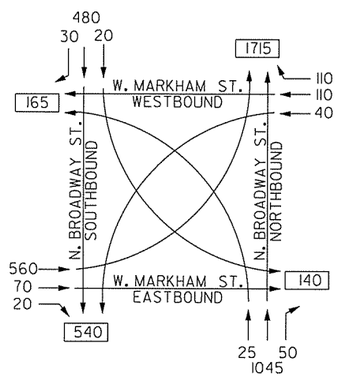
SIGNAL FACES	INTERSECTION INTERVALS 6:00AM-6:00PM								FLASH SEQ.
	5	CLR.	6	CLR.	3+8	CLR.	4+8	CLR.	
1	R	R	G/~~G~~	Y	R	R	R	R	R
2	R	R	G	Y	R	R	R	R	R
3	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~FY~~	~~Y~~	~~R~~
4 & 5	R	R	R	R	G	**	G	**	R
6 & 7	G/~~G~~	Y/~~Y~~	R	R	R	R	R	R	R
8 & 9	R	R	R	R	R	R	G	Y	R
10	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	BLK
11 & 12	DW	DW	DW	DW	DW	DW	DW	DW	BLK
13 & 14	DW	DW	DW	DW	DW	DW	W	FDW	BLK
15 & 16	W	FDW	DW	DW	DW	DW	DW	DW	BLK
17 & 18	DW	DW	DW	DW	DW	DW	W	FDW	BLK

SIGNAL FACES	INTERSECTION INTERVALS 6:00PM-6:00AM								FLASH SEQ.
	2+5	CLR.	2+6	CLR.	3+8	CLR.	4+8	CLR.	
1	R	R	G	Y	R	R	R	R	R
2	R	R	G	Y	R	R	R	R	R
3	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~FY~~	~~Y~~	~~R~~
4 & 5	R	R	R	R	G	**	G	**	R
6	G/~~G~~	**/~~**~~	G	Y	R	R	R	R	R
7	G	**	G	Y	R	R	R	R	R
8 & 9	R	R	R	R	R	R	G	Y	R
10	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	↿↾	BLK
11 & 12	DW	DW	W	FDW	DW	DW	DW	DW	BLK
13 & 14	DW	DW	DW	DW	DW	DW	W	FDW	BLK
15 & 16	DW	DW	W	FDW	DW	DW	DW	DW	BLK
17 & 18	DW	DW	DW	DW	DW	DW	W	FDW	BLK

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES YELLOW OR FLASHING YELLOW ARROW DEPENDING ON NEXT PHASE
BLK=BLANK

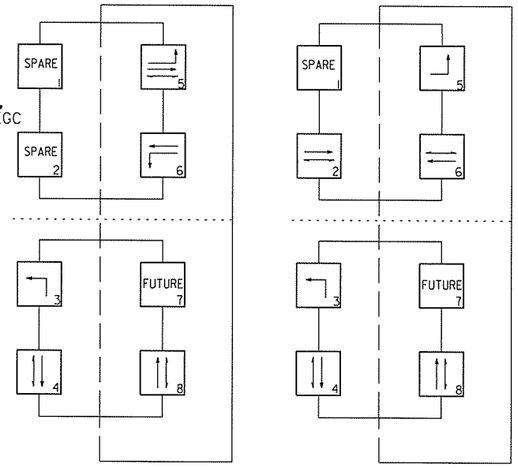


W. MARKHAM ST. AT N. BROADWAY ST.
TRAFFIC FLOW DIAGRAM
2011 EXISTING TRAFFIC VOLUME
A.M. PEAK HOUR



W. MARKHAM ST. AT N. BROADWAY ST.
TRAFFIC FLOW DIAGRAM
2011 EXISTING TRAFFIC VOLUME
P.M. PEAK HOUR

PHASING DIAGRAMS



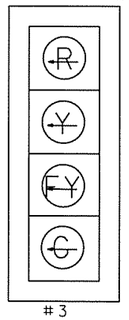
6:00AM-6:00PM

6:00PM-6:00AM

* I-Ic#8EGC SHOWN SEPARATELY FROM CONTROLLER OR POLE TO NEAREST PULL BOX IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

SIGNAL FACES

12" LENSES



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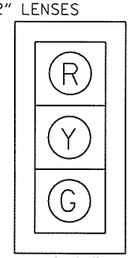
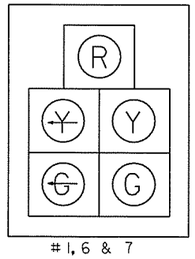
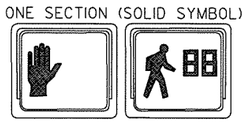


2, 4, 5, 8 & 9

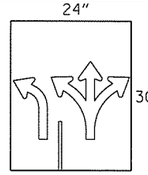


1, 6 & 7

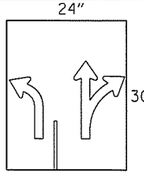


ONE SECTION (SOLID SYMBOL)

11, 12, 13, 14, 15, 16, 17 & 18

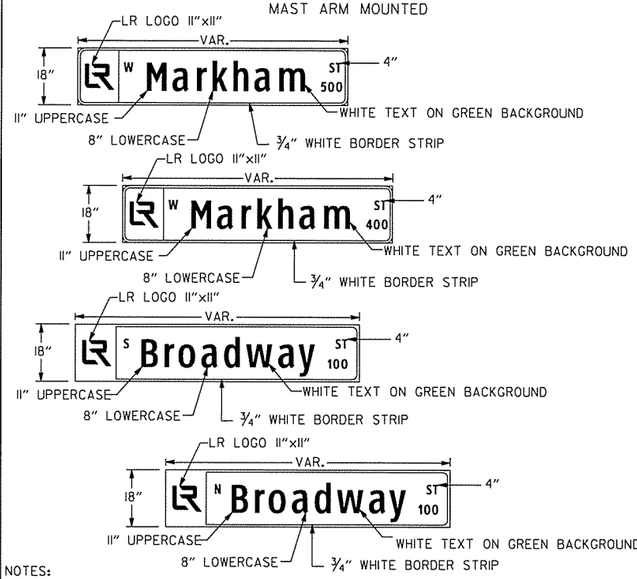


#10 (6:00PM-6:00AM)



#10 (6:00PM-6:00AM)

TYPICAL OVERHEAD STREET NAME MARKER
MAST ARM MOUNTED



NOTES:

1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY OF LITTLE ROCK.

3. SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 3-W FONT SHALL BE USED FOR ALL LETTERS PER CITY OF LITTLE ROCK.

5. STREET NAME "N. BROADWAY ST ON POLE A AND S. BROADWAY ST. ON POLE F. STREET NAME "W. MARKHAM ST 400" ON POLE C AND "W. MARKHAM ST 500" ON POLE H.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	90	505

(2) SIGNALIZATION PLANS (LITTLE ROCK)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

LOCATION:	W. MARKHAM ST. AT N. BROADWAY ST. /US 70
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: 1" = NA' DRAWN BY: AMP

DATE: 8/27/13 FILE NAME: t061275_p01.dgn

cggervasini 5/29/2014 5:10:00 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	91	505

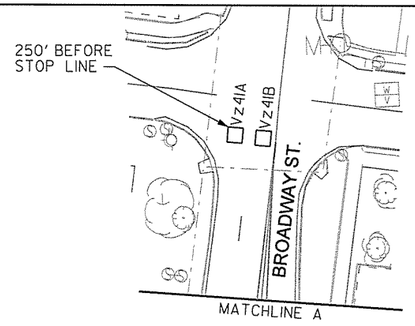
(2) SIGNALIZATION PLANS (NORTH LITTLE ROCK)

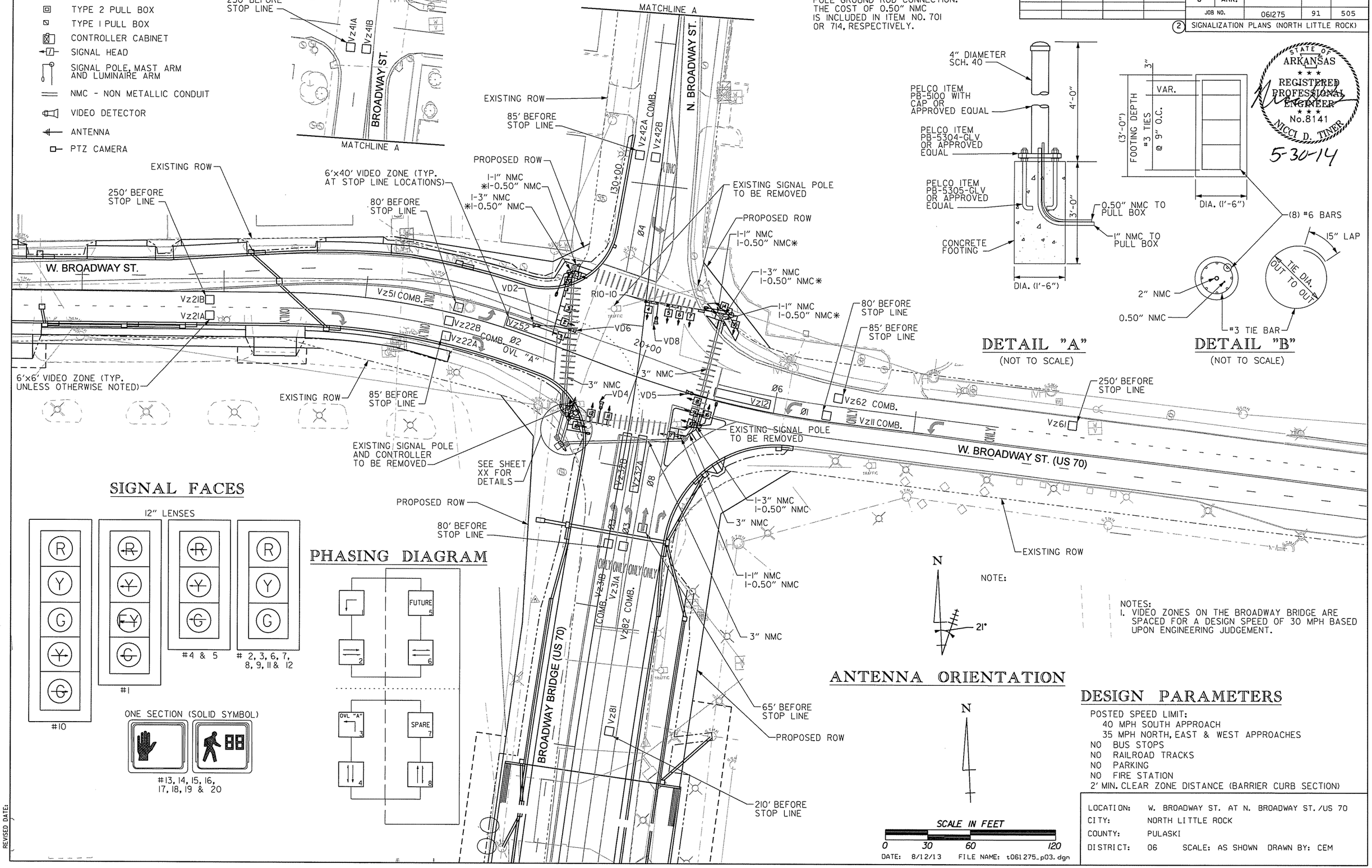
LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR
- ANTENNA
- PTZ CAMERA

* 0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No.8141 NICCI D. TINER 5-30-14





DETAIL "A"
(NOT TO SCALE)

DETAIL "B"
(NOT TO SCALE)

SIGNAL FACES

PHASING DIAGRAM

NOTE:

NOTES:
1. VIDEO ZONES ON THE BROADWAY BRIDGE ARE SPACED FOR A DESIGN SPEED OF 30 MPH BASED UPON ENGINEERING JUDGEMENT.

ANTENNA ORIENTATION

DESIGN PARAMETERS

POSTED SPEED LIMIT:
- 40 MPH SOUTH APPROACH
- 35 MPH NORTH, EAST & WEST APPROACHES

NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

SCALE IN FEET
0 30 60 120

DATE: 8/12/13 FILE NAME: t061275_p03.dgn

LOCATION:	W. BROADWAY ST. AT N. BROADWAY ST./US 70
CITY:	NORTH LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

aggervasinl 5/29/2014 5:00:01PM
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REVISED DATE:

POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	STATION US 70	OFFSET	NORTHING	EASTING
A	46 FT.	270 DEGREES	35'-0"	15'-0"	270 DEGREES	129+31.89	56' LT.	154214.6697	1230072.4451
B	-	-	4'-0"	-	-	129+37.70	50' LT.	154219.3427	1230079.9119
C	-	-	4'-0"	-	-	129+16.54	48' RT.	154182.8803	1230172.4936
D	-	-	4'-0"	-	-	129+08.01	57' RT.	154172.9104	1230180.6421
E	60 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	129+15.11	61' RT.	154179.2931	1230185.6631
F	26 FT.*	270 DEGREES	35'-0"	15'-0"	270 DEGREES	128+37.33	49' RT.	154102.2807	1230159.3292
G	-	-	15'-0"	-	-	128+27.78	36' RT.	154095.3409	1230144.7584
H	30 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	128+27.20	43' LT.	154111.9977	1230067.6111
I	-	-	4'-0"	-	-	128+35.02	50' LT.	154120.8423	1230062.3035

*MAST ARM LENGTH ALLOWS FOR FUTURE LEFT TURN SIGNAL HEAD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	92	505

(2) SIGNALIZATION PLANS (NORTH LITTLE ROCK)

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No.8141 NICCI D. TINER

5-30-14

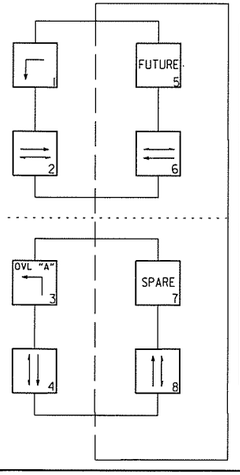
NOTES:
1. VIDEO ZONES ON THE BROADWAY BRIDGE ARE SPACED FOR A DESIGN SPEED OF 30 MPH BASED UPON ENGINEERING JUDGEMENT.
2. CROSSWALKS NOT SHOWN FOR CLARITY. REFER TO PAVEMENT MARKING PLANS.

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR
- ANTENNA
- PTZ CAMERA

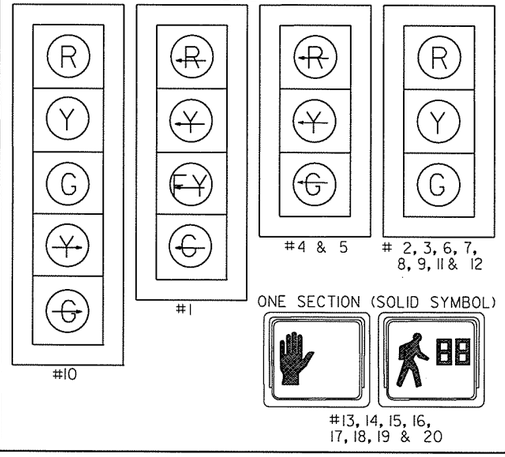
*0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



DESIGN PARAMETERS

POSTED SPEED LIMIT:
40 MPH SOUTH APPROACH
35 MPH NORTH, EAST & WEST APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

LOCATION:	W. BROADWAY ST. AT N. BROADWAY ST./US 70
CITY:	NORTH LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

SCALE IN FEET
0 15 30 60
DATE: 8/28/13 FILE NAME: t061275_p04.dgn

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WORKSPACE: AHTD
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REVISED DATE:

DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	LOCAL PHS.	LOCAL SYS. DET. #	MSTR. SYS. DET. #		
VZ11	WB LEFT FAR	COMB.			1	V9	1	1		74"	VD6
VZ12	WB LEFT NEAR	LOCAL			2	V1	1			74"	VD6
VZ21A&B	EB FAR	LOCAL			5	V2	2			23"	VD2
VZ22A&B	EB NEAR	COMB.			6	V10	2	2		23"	VD5
VZ31A&B	NB LEFT FAR	COMB.			9	V11	3	3		74"	VD8
VZ32A&B	NB LEFT NEAR	LOCAL			10	V3	3			74"	VD8
VZ41 A&B	SB FAR	LOCAL			13	V4	4			74"	VD4
VZ42A&B	SB NEAR	COMB.			14	V12	4	4		74"	VD4
VZ51	EB LEFT FAR	COMB.			7	V13	2	5		23"	VD5
VZ52	EB LEFT NEAR	LOCAL			8	V5	2			23"	VD5
VZ61	WB FAR	LOCAL			3	V6	6			74"	VD6
VZ62	WB NEAR	COMB.			4	V14	6	6		74"	VD6
VZ81	NB FAR	LOCAL			11	V8	8			74"	VD8
VZ82	NB NEAR	COMB.			12	V16	8	8		74"	VD8
PB2	W TO E	PED.				P2	2				
PB4	N TO S	PED.				P4	4				
PB6	E TO W	PED.				P6	6				
PB8	S TO N	PED.				P8	8				

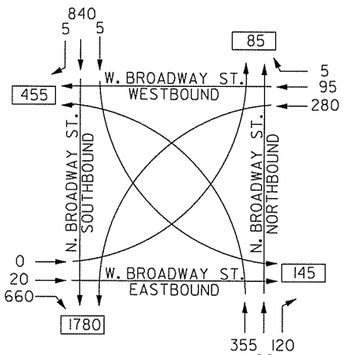
CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

SPARE AMP CHN. #15 & 16

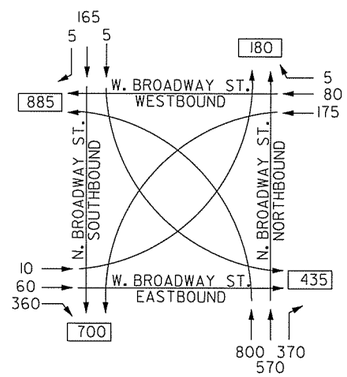
INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS								FLASH SEQ.
	1+6	CLR.	2+6	CLR.	3+8	CLR.	4+8	CLR.	
1	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2 & 3	G	**	G	**	R	R	R	R	R
4 & 5	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~R~~	~~R~~	~~R~~
6 & 7	R	R	R	R	G	**	G	**	R
8 & 9	R	R	G	Y	R	R	R	R	R
10	R	R	G	**	R / ~~G~~	R / *	R	R	R
11 & 12	R	R	R	R	R	R	G	Y	R
13 & 14	DW	DW	W	FDW	DW	DW	DW	DW	B
15 & 16	DW	DW	DW	DW	DW	DW	W	FDW	B
17 & 18	DW	DW	W	FDW	DW	DW	DW	DW	B
19 & 20	DW	DW	DW	DW	DW	DW	W	FDW	B

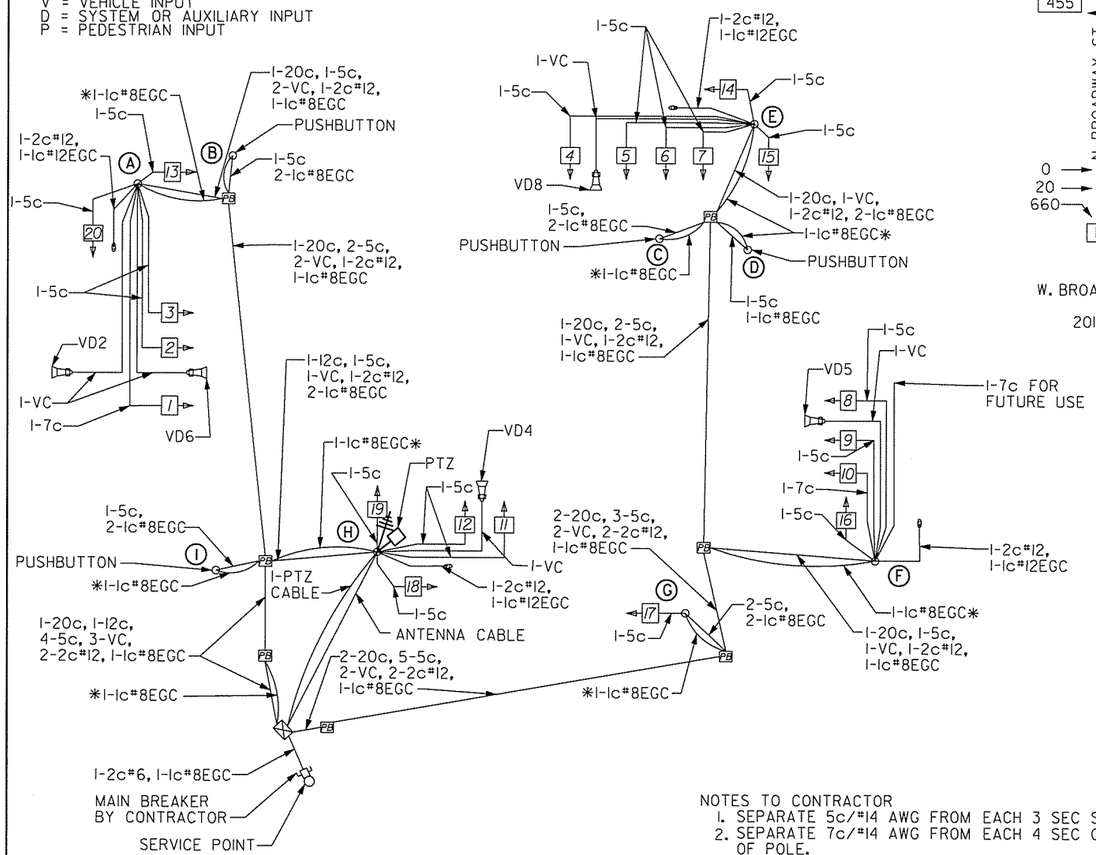
* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES YELLOW OR FLASHING YELLOW ARROW DEPENDING ON NEXT PHASE



W. BROADWAY ST. AT N. BROADWAY ST.
TRAFFIC FLOW DIAGRAM
2011 EXISTING TRAFFIC VOLUME
A.M. PEAK HOUR



W. BROADWAY ST. AT N. BROADWAY ST.
TRAFFIC FLOW DIAGRAM
2011 EXISTING TRAFFIC VOLUME
P.M. PEAK HOUR

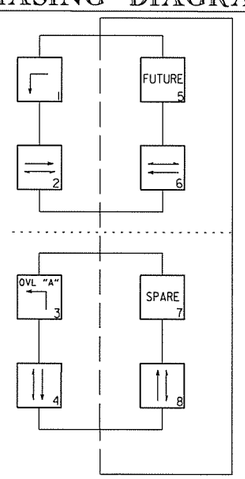


WIRING DIAGRAM

* I-1c*8EGC SHOWN SEPARATELY FROM CONTROLLER OR POLE TO NEAREST PULL BOX IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

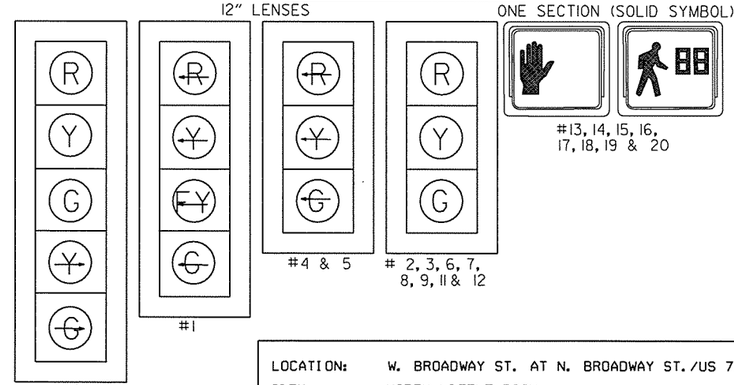
NOTES TO CONTRACTOR
1. SEPARATE 5c/#14 AWG FROM EACH 3 SEC SIGNAL HEAD TO BASE OF POLE.
2. SEPARATE 7c/#14 AWG FROM EACH 4 SEC OR 5 SEC SIGNAL HEAD TO BASE OF POLE.
3. SEPARATE 5c/#14 AWG TO EACH POLE WITH PEDESTRIAN PUSH BUTTONS.
4. PROVIDE SEPARATE CONDUIT FOR ANTENNA CABLE.
5. PROVIDE SEPARATE CONDUIT FOR PTZ CAMERA CABLE.
6. PROVIDE SEPARATE CONDUIT FOR FIBER OPTIC
7. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
8. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

PHASING DIAGRAM



SIGNAL FACES

12" LENSES — ONE SECTION (SOLID SYMBOL)

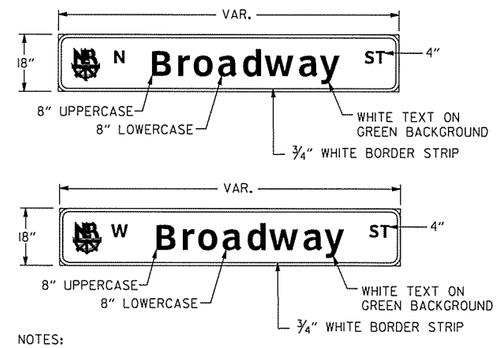


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	93	505

(2) SIGNALIZATION PLANS (NORTH LITTLE ROCK)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14

TYPICAL OVERHEAD STREET NAME MARKER
MAST ARM MOUNTED



NOTES:

1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY OF NORTH LITTLE ROCK.

3. SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

5. STREET NAME "N. BROADWAY ST" ON POLES A AND F. STREET NAME "W. BROADWAY ST" ON POLES E AND H.

LOCATION:	W. BROADWAY ST. AT N. BROADWAY ST./US 70
CITY:	NORTH LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: 1"=NA' DRAWN BY: CEM

DATE: 8/27/13 FILE NAME: t061275_p03.dgn

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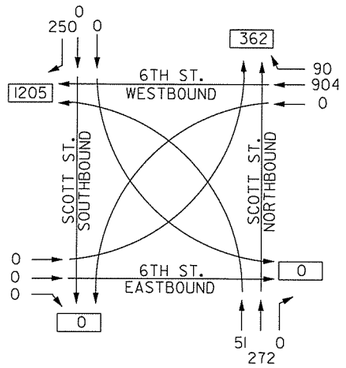
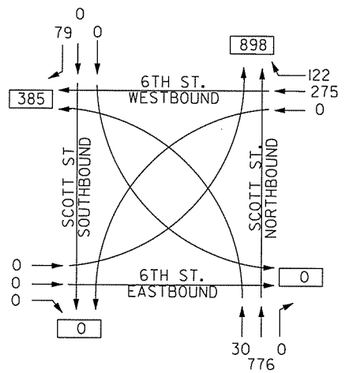
REVISED DATE:



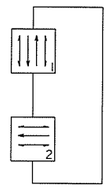
6TH ST. AT SCOTT ST.
TRAFFIC FLOW DIAGRAM
DETOUR TRAFFIC VOLUME
A.M. PEAK HOUR

NOTE:
ESTIMATED DETOUR VOLUMES



6TH ST. AT SCOTT ST.
TRAFFIC FLOW DIAGRAM
DETOUR TRAFFIC VOLUME
P.M. PEAK HOUR

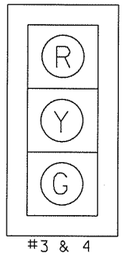
PHASING DIAGRAM



INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS				FLASH SEQ.
	6	CLR.	4+8	CLR.	
1& 2	R	R	G	Y	Y
3 & 4	R	R	G	Y	Y
5 & 6	G	Y	R	R	R

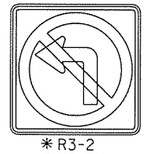
SIGNAL FACES



#3 & 4

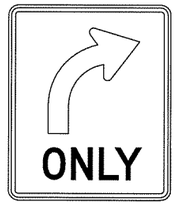
* QUANTITY INCLUDED IN PERMANENT SIGNING STANDARD SIGN QUANTITIES.

SIGN LEGEND



* R3-2
24"x24"

* R5-1
30"x30"



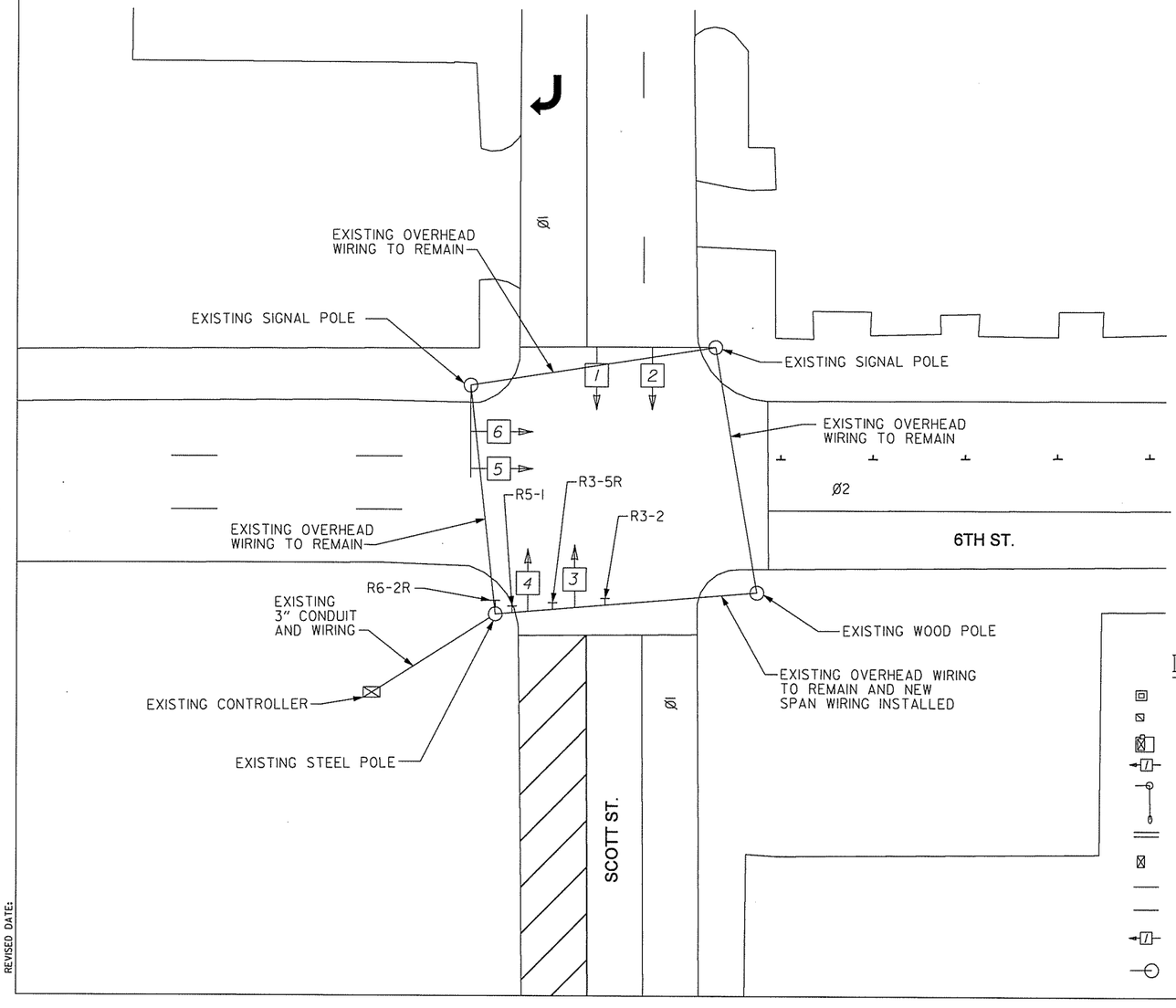
* R3-5R
30"x36"

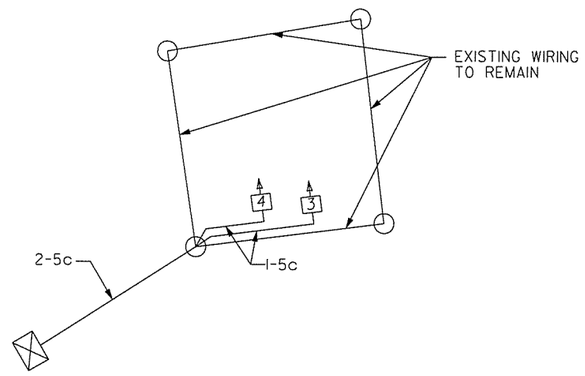
* R6-2R
24"x30"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	94	505

(2) SIGNALIZATION PLANS (TEMPORARY)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
5-30-14





WIRING DIAGRAM
(NOT TO SCALE)

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- EXISTING CONTROLLER CABINET
- EXISTING CONDUIT
- EXISTING OVERHEAD WIRING
- EXISTING SIGNAL HEAD
- EXISTING SIGNAL POLE AND MAST ARM

SCALE IN FEET
0 15 30 60

DATE: 08/27/13 FILE NAME: t061275_p05.dgn

NOTE:
1. CARE SHOULD BE TAKEN TO NOT DISTURB EXISTING FIBER OPTIC CABLE, CONDUITS, AND PULL BOXES.
2. CITY OF LITTLE ROCK PLANS TO MAINTAIN TWO WAY TRAFFIC AFTER DETOUR IS COMPLETE. PLEASE COORDINATE WITH THE CITY OF LITTLE ROCK BEFORE REMOVING THE SOUTHBOUND TRAFFIC SIGNAL HEADS.

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH NORTH, SOUTH AND EAST APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
YES PARKING
NO FIRE STATION

LOCATION:	6TH ST. AT SCOTT ST.
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

cgarrison1 5/29/2014 5:10:33 PM
WORKSPACE: AHTD
L:\20N\10T1060 - Broadway Bridge over the Arkansas River\Drawings\t061275_p05.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	95	505

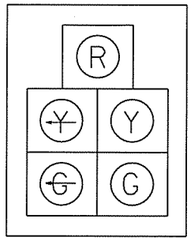
(2) SIGNALIZATION PLANS (TEMPORARY)

INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS 2	CLR.	3	CLR.	4	CLR.	FLASH SEQ.
1 & 2	G	Y	R	R	R	R	Y
3	R	R	G→6	*→Y	G	*	R
4	R	R	G	*	G	*	R
5 & 6	G	Y	R	R	R	R	Y
7 & 8	R	R	R	R	G	Y	R
9 & 10	W	FDW	DW	DW	DW	DW	B
11 & 12	DW	DW	DW	DW	W	FDW	B
13 & 14	W	FDW	DW	DW	DW	DW	B
15 & 16	DW	DW	DW	DW	W	FDW	B

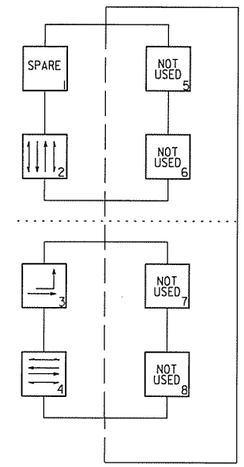
*DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

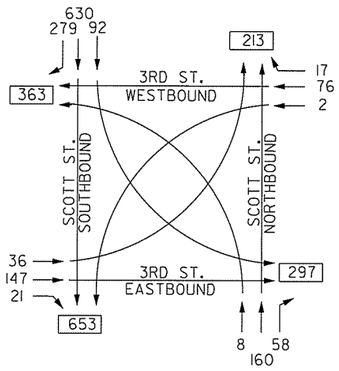
SIGNAL FACES



#3

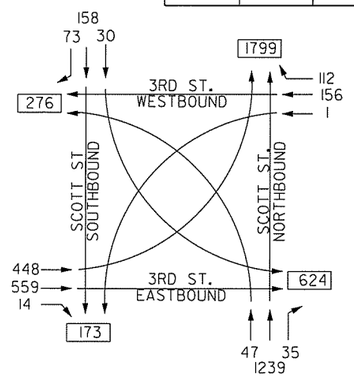
PHASING DIAGRAM





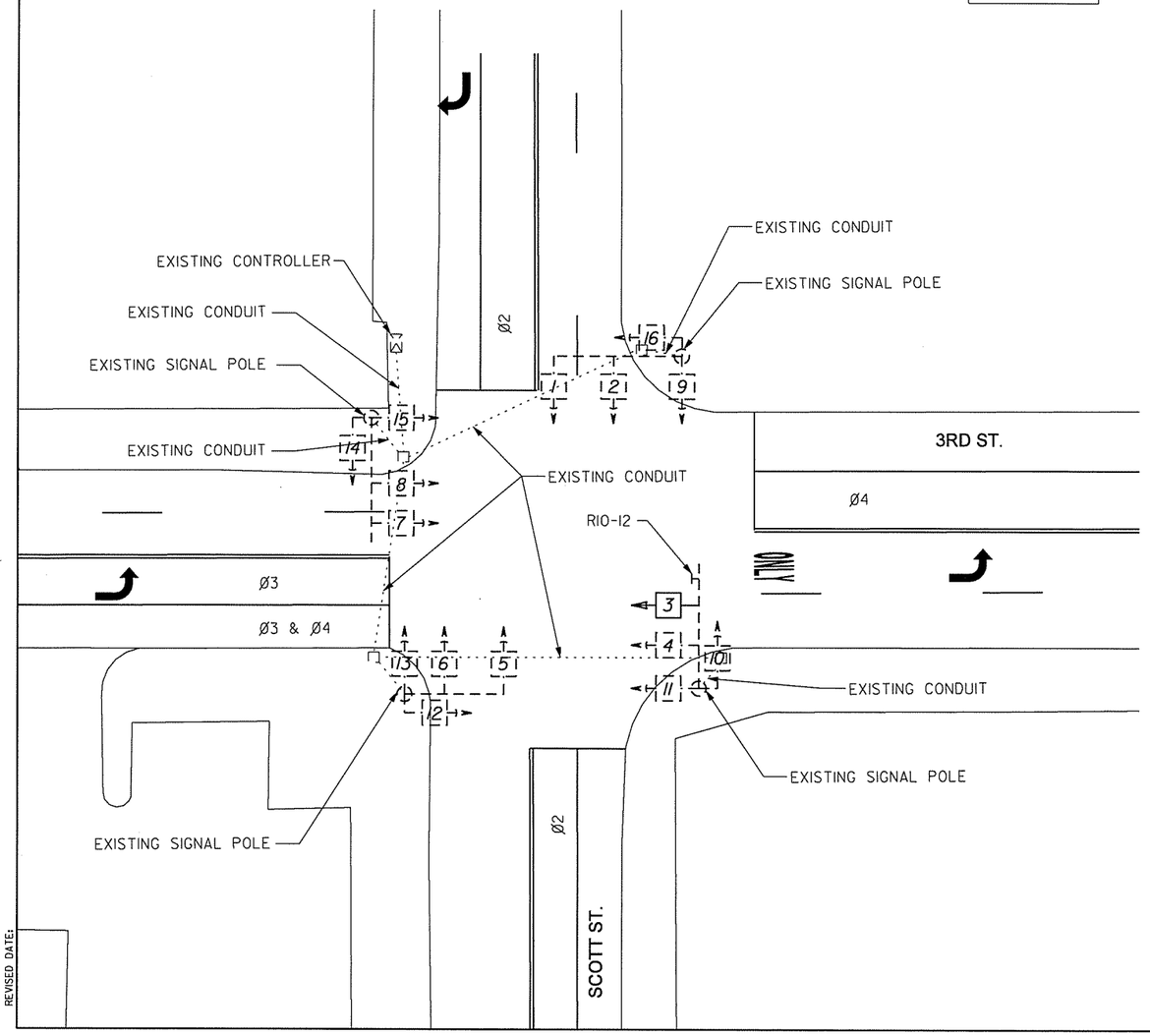
3RD ST. AT SCOTT ST.
TRAFFIC FLOW DIAGRAM
DETOUR TRAFFIC VOLUME
A.M. PEAK HOUR

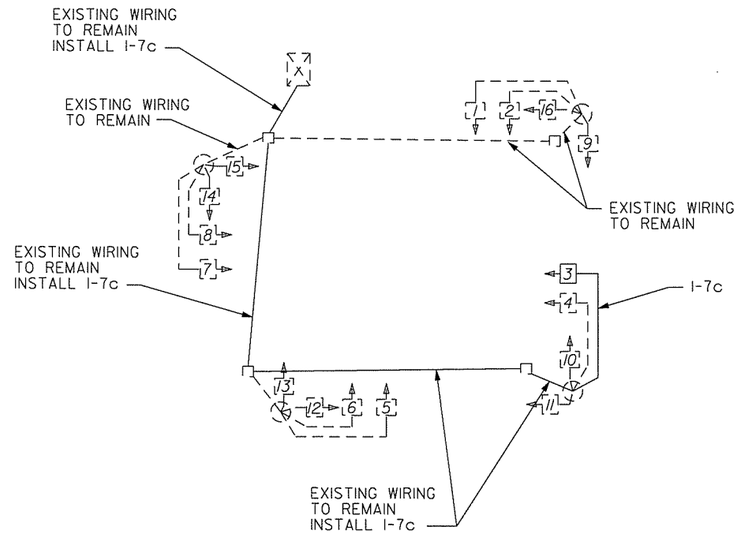
NOTE:
ESTIMATED DETOUR VOLUMES



3RD ST. AT SCOTT ST.
TRAFFIC FLOW DIAGRAM
DETOUR TRAFFIC VOLUME
P.M. PEAK HOUR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
5-30-14





WIRING DIAGRAM

(NOT TO SCALE)

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- EXISTING CONTROLLER CABINET
- EXISTING CONDUIT
- EXISTING WIRING
- EXISTING SIGNAL HEAD
- EXISTING SIGNAL POLE AND MAST ARM
- EXISTING PULL BOX

N

SCALE IN FEET
0 15 30 60

DATE: 11/04/13 FILE NAME: t061275_p06.dgn

NOTE:
1. CARE SHOULD BE TAKEN TO NOT DISTURB EXISTING FIBER OPTIC CABLE, CONDUITS, AND PULL BOXES.
2. PLEASE COORDINATE WITH THE CITY OF LITTLE ROCK BEFORE REMOVING THE EB 5 SECTION SIGNAL HEAD.

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH NORTH, SOUTH EAST AND WEST APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
YES PARKING
NO FIRE STATION

LOCATION:	3RD ST. AT SCOTT ST.
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	06 SCALE: AS SHOWN DRAWN BY: CEM

cggervasini 5/29/2014 5:10:34 PM
WORKSPACE1-HTD
L:\JOB\J061060 Broadway Bridge over the Arkansas River\Drawings\t061275_p06.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	96	505
				①	07292-07295, 04926 & 04927	PROJ. GEN. NOTES		54292

PROJECT GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to The Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012) with 2013 Interim Specifications

AASHTO Guide Specifications and Commentary for Vessel Collision Design for Highway Bridges current edition with current interims

AASHTO Guide for Development of Bicycle Facilities current edition

LIVE LOADING: HL93,
Trolley Load (See "TROLLEY LOADING DIAGRAM") for Bridge Nos. 07292 & 07293

SEISMIC PERFORMANCE ZONE: 2 SDI = 0.219, Site Classification D (typical except as noted)
Bridge No. 07292 Sta. 107+78.00 to Sta. 116+74.00 SDI = 0.155, Site Classification C

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)	f'c = 4,000 psi
Class S - Bridge Concrete (Substructure)	f'c = 3,500 psi
Class B - Bridge Concrete (Substructure)	f'c = 3,000 psi
Reinforcing Steel (AASHTO M31 Or M322, Type A GR. 60)	fy = 60,000 psi
Structural Steel (AASHTO M270, GR. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M270, GR. 36)	Fy = 36,000 psi

For additional Materials and Strengths, see Dwg. No. 54381.

BORING LOGS: Boring Logs may be obtained from Programs And Contracts Division.

PILES IN END BENTS: Unless noted otherwise in the Bridge Layout "GENERAL NOTES", the Contractor may drive the piling in end bents in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction, extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 6" greater than the pile size. Piles shall be driven after any required preboring and through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12X53)" or "STEEL PILING (HP14X73)".

PILE FOOTING: The top of footings shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

BRIDGE DECK: The roadway surface shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. The shared use path surface shall be given a broomed finish as specified in Subsection 802.19 for Class 6 Broomed Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface only.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to all areas as specified in SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All Structural Steel, except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be White and shall match Federal Standard 595B, Color Chip No. 27925. The Contractor shall paint a test area for review and acceptance by the Owner prior to beginning the painting process.

EXISTING BRIDGE: Existing Bridge No. A2978 is 60.0' wide and 2,354.58' long and consists of multiple simple spans with concrete beams and a concrete deck supported by a concrete substructure for the north and south approaches, a single steel arch span with a concrete deck, multiple concrete arch spans with a concrete deck supported by a concrete substructure for the river spans. The new bridge will be located on the existing alignment.

Existing Bridge No. 02982 is 25.5' wide and 430.0' long and consists of simple spans with steel beams and a concrete deck and reinforced concrete slab spans supported by a concrete substructure with steel piling. The existing bridge is located North of the new bridge.

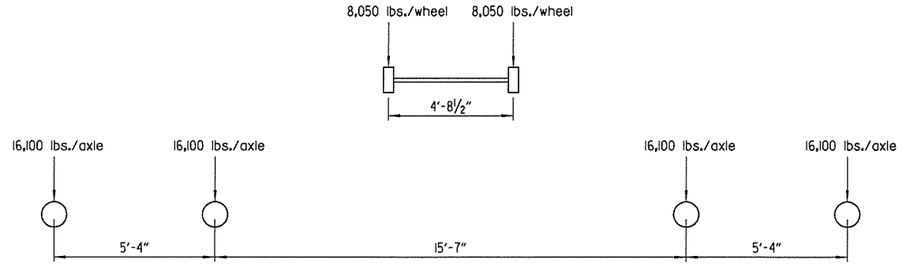
Existing Bridge No. 02983 is 25.5' wide and 470.0' long and consists of simple spans with steel beams and a concrete deck and reinforced concrete slab spans supported by a concrete substructure with steel piling. The new bridge is located on existing aligment.

Existing Double Tree bridge is 16.0' wide and 220.0' long and consists of continuous spans with steel beams and a concrete deck supported by a steel cap and concrete columns.

REMOVAL AND SALVAGE: Existing Bridge No. A2978, Bridge No. 02982 & Bridge No. 02983 shall be removed in accordance with Section 205. All material from the existing bridges shall become property of the Contractor, except for navigational lighting fixtures and existing bridge name plate located on Bridge No. A2978 and 65 - 2'I-beams 37'-9" in length from Bridge Nos. 02982 & 02983.

MAINTENANCE OF TRAFFIC: The road will be closed during portions of construction for this project. See roadway plans for construction sequence notes.

RESTRAINING CONDITIONS: A restraining condition is located east of Existing Bridge No. A2978 and shall be avoided in accordance with SP JOB 061275 "RESTRAINING CONDITIONS".



NOTE:
Trolley Load applicable to Bridge Nos. 07292 & 07293 only.

TROLLEY LOADING DIAGRAM

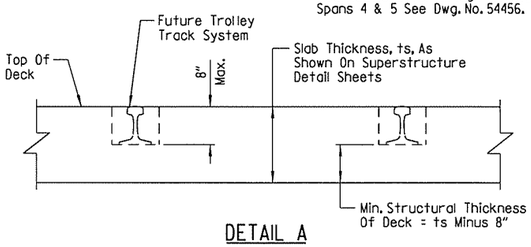
No Scale

ACCOMODATIONS FOR FUTURE TROLLEY: Bridge Nos. 07292 and 07293 have been designed to accomodate future expansion of the River Rail trolley system. The bridge deck and components have been designed for the additional loading shown in the "TROLLEY LOADING DIAGRAM".

An additional 1'-0" of clear width has been provided in the shared use path to accomodate the addition of an overhead catanery system for the future trolley.

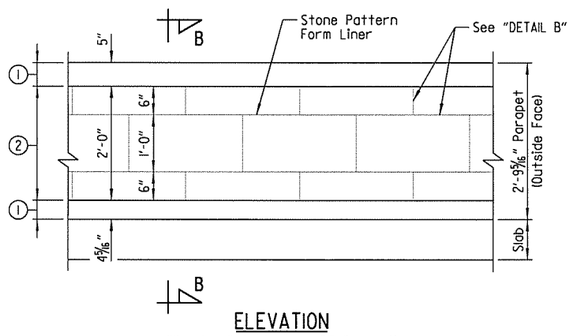
See "DETAIL A" for limitations of bridge deck modifications for future track installation.

NOTE:
For details of future trolley modifications for Bridge No. 07292 Spans 4 & 5 See Dwg. No. 54456.



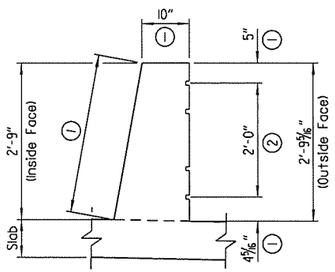
DETAIL A

Bridge No. 07292 Spans 1-3, 6 & 7 and Bridge No. 07293
Scale: ¼" = 1'-0"

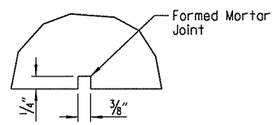


ELEVATION

(Showing Outside Face Of Parapet)



SECTION B-B



DETAIL B

No Scale

ARCHITECTURAL FINISH FOR RIGHT PARAPET OF BRIDGE NOS. 07292 & 07293

Scale: ¼" = 1'-0"

① Class 3 Textured Coating Finish
(Color = Gray, Color Chip No. 36628)

② Class 3 Textured Coating Finish
(Color = Gray, Color Chip No. 36493)

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

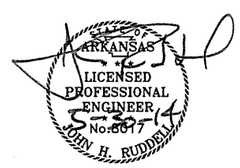
EXCAVATION NEAR LEVEE: For Bent No. 7 of Broadway Bridge and all intermediate bents for the North Shared Use Ramp, construction will most likely include the installation of temporary sheet piling prior to excavation. After excavation to the bottom of the new footing (which includes removal of required portions of the existing foundation at Bent No. 7), pile installation for the new foundation and concrete placement for the footing and columns, the excavated site may be backfilled in one of the two following sequences:

Flowable fill may be used to backfill the excavation to approximately 3 to 5 feet below existing grade. Compacted lean or fat clay fill (with liquid limit between 40 and 55) shall then be used to restore the excavation to match the existing grade.

Compacted lean or fat clay fill (with liquid limit between 40 and 55) can be used to backfill the excavation to match the existing grade. The Contractor shall design and construct safe sloping side walls from the bottom to the top of the excavation prior to removing the temporary sheet pile. The fill shall be placed by benching the new fill into the sloped excavation. Minimum bench width shall be sized to accommodate construction equipment.

During excavation and construction of the foundations and columns, a stockpile of clay backfill material shall be kept near the above-referenced bents in case the Arkansas River is forecasted to rise. If the predicted river stage is planned to reach an elevation of 5 feet below the bottom of the footing excavation, preparation for backfilling the excavation shall occur. When the river level reaches 5 feet below the bottom of the footing excavation, immediate backfilling of the excavation is required. The nearest upstream and downstream river gauges shall be periodically checked to monitor changes in the river level and used to estimate the river levels at the site.

Where backfill material consists of clay (CL/CH), the clay shall be compacted to a minimum of 95% of the maximum dry density at a moisture content ranging from -1% to +3% of the optimum moisture content as determined by the Standard Proctor (ASTM D698).



BRIDGE ENGINEER

PROJECT GENERAL NOTES
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275_N1.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54292

SRYancey 5/30/2014 11:38:52 AM
WORKSPACE: AHTD Bridge
L:\ZOIN\IDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_N1\Project General Notes1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	97	505
(1) 07292		DEMOLITION		54293

(1) Existing Utility Building constructed around bents of Bridge No. 02983. At this location, bent caps are to be removed and columns are to be removed to 1'-0" above roof of building.

(2) Shoring as needed will be required for removal of existing retaining walls and construction of proposed MSE Retaining Walls while maintaining traffic on Hwy. 10. See SP JOB 061275 "SHORING".

(3) Coordination with Robinson Center Contractor shall take place before removal. See SP JOB 061275 "COORDINATION OF WORK".

(4) Limits of retaining wall is approximate. Final limits to be determined by Engineer.

(5) Existing elements attached to existing Bridge No. A2978 shall be included in "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)".

NOTE:
See Roadway Plans for Maintenance of Traffic.

Existing Bridge No. 02982 (Site No. 2) To Be Removed

Existing Water Meter Vault And Shed For Metering Station Shall Be Included In "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)".

Existing Electric Vault In Service (To Remain)

Existing Electric Vault And Access Tunnel To Be Filled And Abandoned

Existing Retaining * (4) Wall To Be Removed

(5) Existing Bridge No. A2978 (Site No. 1) To Be Removed

Existing Bridge (1) No. 02983 (Site No. 3) To Be Removed

Existing Utility (1) Building Beneath Span To Remain

Existing Hotel Access To Remain

(2) Shoring

Remove Portion Of (4) Existing Retaining Wall See "DETAIL A"

Existing Bridge No. 02979 (To Remain)

Remove Top 3' Of (4) Existing Retaining Wall To Allow Placement Of New Pavement

Existing Stairs & Sidewalk To Be Removed (5)

See "DETAIL B"

Existing Retaining * (4) Wall To Be Removed

Existing Brick Enclosure (5)

Existing Hwy. 10

(2) Shoring

GAS MOUNTED TO BR

Existing Bridge To Be Removed By Others (3)

* Existing Stairs To Be Removed

Existing Stairs * To Be Removed (3)

* Existing Retaining Wall To Be Removed

Portion of Existing Retaining Wall To Be Removed

Existing Abutment Bridge No. 02982 (To Be Removed)

1'-0"

Existing Abutment Bridge No. 02979 (To Remain)

Elev. 277.00

DETAIL A
(Looking South)
No Scale

Cap And Column To Be Removed. Contractor To Use Extreme Caution To Prevent Debris From Falling On Existing Building.

Existing Building

1'-0" (Typ.)

DETAIL B
No Scale

* - Included in Removal and Disposal Items

NOTE:
All work shall be done in accordance with Section 205 and SP JOB 061275 "SPECIAL SAFETY REQUIREMENTS FOR BRIDGES OVER ROADWAYS".

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 1 OF 3
DEMOLITION PLAN
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275_D1.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=40'
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54293

SRYancey 6/11/2014 8:10:41 AM
WORKSPACE: AHTD Bridge
L:\ROW\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275_D1Demo Plan1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	98	505
				(1) 07292		DEMOLITION		54294

Removal Of Existing Bridge Between Sta. 107+00 To 118+00
Shall Be Performed In Accordance With SP JOB 061275 "DEMOLITION OF RIVER SPANS"

Existing 330' Navigational Channel

Arkansas River

Existing Bridge No. A2978 (Site No. 1) To Be Removed

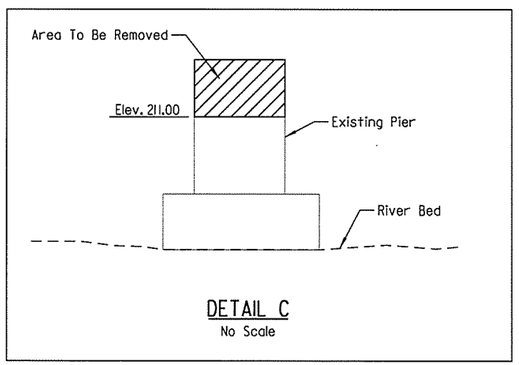
Existing Steel Arch Span (1)(2)

Existing Concrete Arch Spans (Typ. U.N.O.) (2)

(3)

Area To Be Avoided In Accordance With SP JOB 061275 "RESTRAINING CONDITIONS"

Existing Cells To Be Removed (Typ.) Cost Of Removal To Be Included In The Item "REMOVAL OF EXISTING BRIDGE STRUCTURE" (Site No. 1)



DETAIL C
No Scale

NOTE:
All work shall be done in accordance with Section 205, JOB 061275 Special Provisions and United States Army Corps Of Engineer's approved workplan.

(1) Contractor responsible for coordinating with the United States Coast Guard and the United States Army Corps Of Engineers in order to determine appropriate means & methods of removal.

(2) SP JOB 061275 "SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS" permits a predetermined amount of material to enter the Arkansas River. Material not anticipated to enter the Arkansas River and to be removed using conventional demolition techniques include the bridge rail, sidewalks, cantilever supports, bridge deck, steel stringers of the steel arch span, concrete stringers and concrete spandrels of the concrete arch spans. The remaining elements have been permitted to enter the river in accordance with SP JOB 061275 "SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS".

(3) Remove existing substructure to Elev. 211.00 (See "DETAIL C")

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
DEMOLITION PLAN
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12

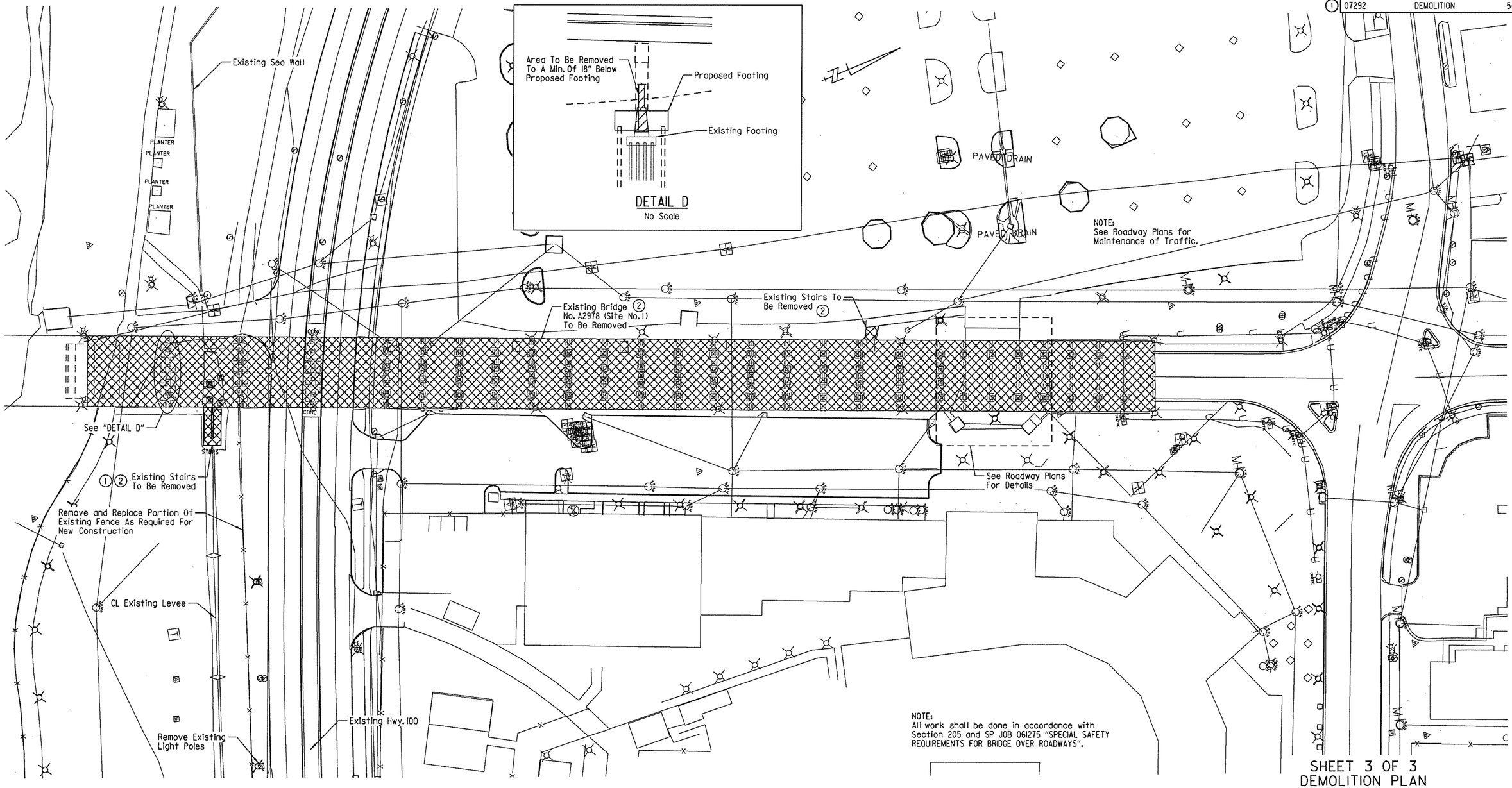
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275_D2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=40'
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54294

SRYancey 5/30/2014 8:26:34 AM
WORKSPACE: ANTO Bridge
L:\ROW\ROTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_02 (Demo Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	99	505
				① 07292		DEMOLITION		54295



(1) Once structure & foundation are removed, any disturbed area shall be finished to match existing levee condition.

(2) Existing elements attached to existing Bridge No. A2978 shall be included in "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.1)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
DEMOLITION PLAN
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

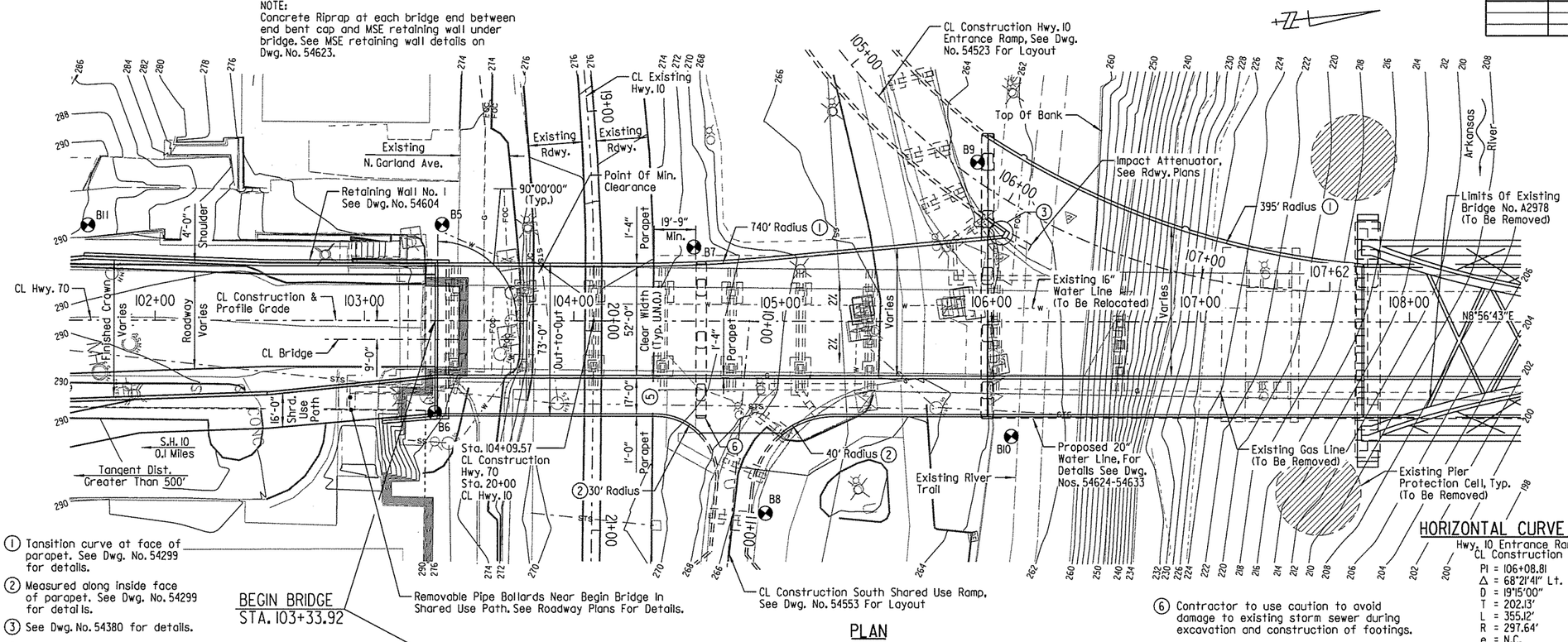
DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275_D3.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=40'
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54295

SRYancey 5/30/2014 8:42:09 AM
WORKSPACE: AHTD Bridge
L:\20IN\D0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275.D3 (Demo Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	100	505
				(1) 07292		LAYOUT		54296

NOTE:
Concrete Riprap at each bridge end between end bent cap and MSE retaining wall under bridge. See MSE retaining wall details on Dwg. No. 54623.



PLAN

(1) Tansition curve at face of parapet. See Dwg. No. 54299 for details.

(2) Measured along inside face of parapet. See Dwg. No. 54299 for details.

(3) See Dwg. No. 54380 for details.

(4) Concrete parapet with Metal Type HI Handrail (both sides of roadway), Metal Type H2 Handrail (east side of shared use path)

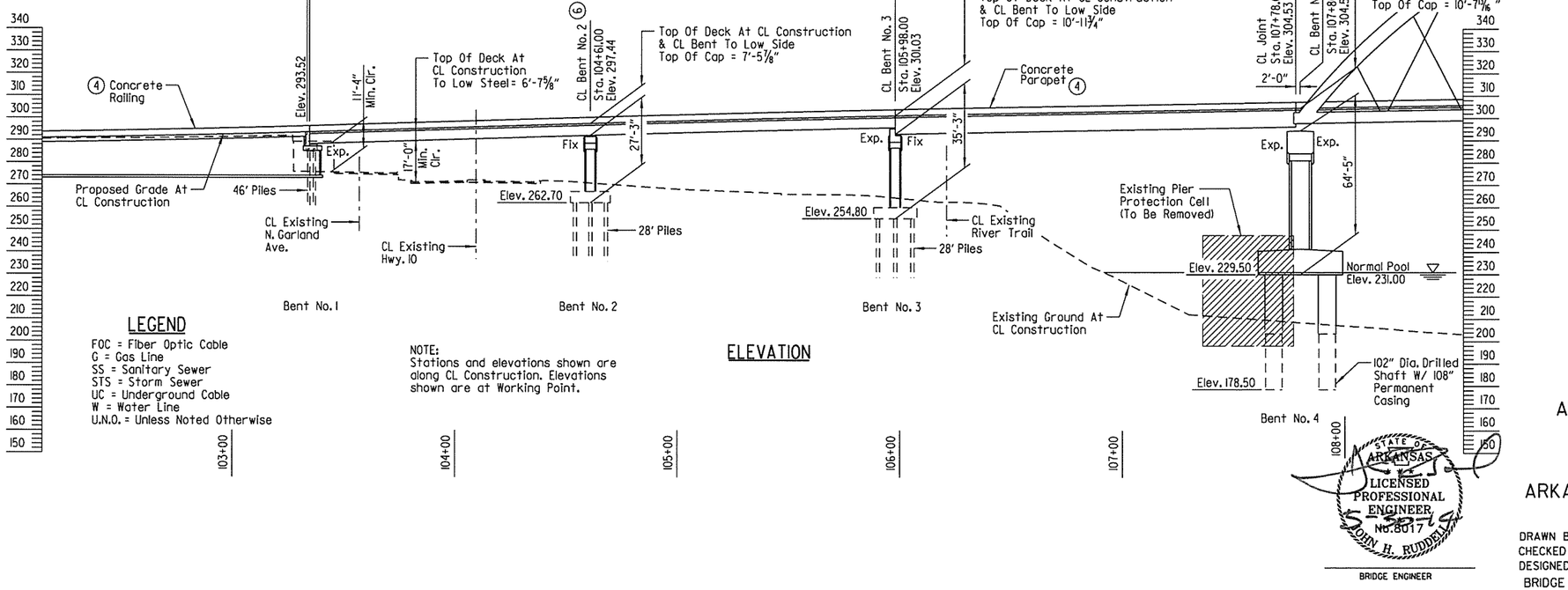
(5) 16'-0" Shared Use Path plus 1'-0" allowance for blister to accommodate future trolley catenary system.

(6) Contractor to use caution to avoid damage to existing storm sewer during excavation and construction of footings.

HORIZONTAL CURVE DATA

Hwy. 10 Entrance Ramp
CL Construction

PI = 106+08.81
Δ = 68°21'41" Lt.
D = 19°15'00"
T = 202.13'
L = 355.12'
R = 297.64'
e = N.C.



ELEVATION

LEGEND

FOC = Fiber Optic Cable
G = Gas Line
SS = Sanitary Sewer
STS = Storm Sewer
UC = Underground Cable
W = Water Line
U.N.O. = Unless Noted Otherwise

NOTE:
Stations and elevations shown are along CL Construction. Elevations shown are at Working Point.

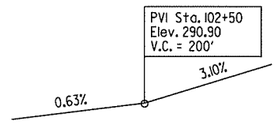
FOR R/W DATA SEE ROADWAY PLANS

NOTES:
For "PROJECT GENERAL NOTES", See Dwg. No. 54292.

For "GENERAL NOTES", See Dwg. No. 54299.

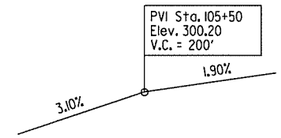
For "SOIL BORING PROFILE", See Dwg. Nos. 54302-54306.

For "HYDRAULIC DATA", See Dwg. No. 54297.



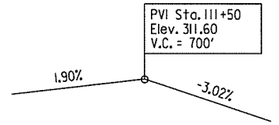
VERTICAL CURVE DATA 1

Highway 70
(Profile Grade Along CL Construction)



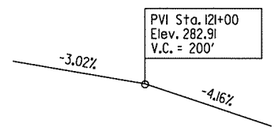
VERTICAL CURVE DATA 2

Highway 70
(Profile Grade Along CL Construction)



VERTICAL CURVE DATA 3

Highway 70
(Profile Grade Along CL Construction)



VERTICAL CURVE DATA 4

Highway 70
(Profile Grade Along CL Construction)

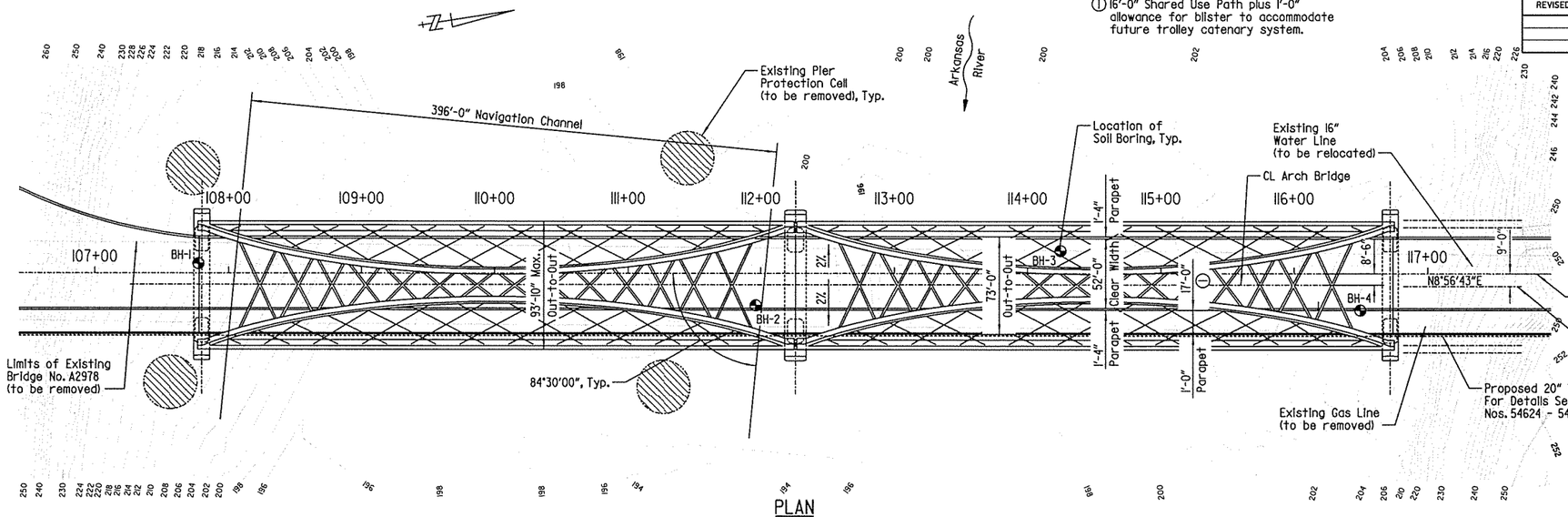
SHEET 1 OF 4
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061265x1_L1.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1" = 30'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07292 DRAWING NO. 54296

SRYancey 5/29/2014 4:35:39 PM
WORKSPACE, AHTD Bridge
L:\2DWGS\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_L1\Layout-South.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	101	505
				①	07292	LAYOUT		54297



PLAN

FOR R/W DATA, SEE ROADWAY PLANS

NOTES:

For "PROJECT GENERAL NOTES", See Dwg. No. 54292.

For "ARCH GENERAL NOTES", See Dwg. Nos. 54381 and 54382.

For "SOIL BORING PROFILE", See Dwg. Nos. 54302 - 54306.

For Vertical Curve Data, see Dwg. No. 54296.

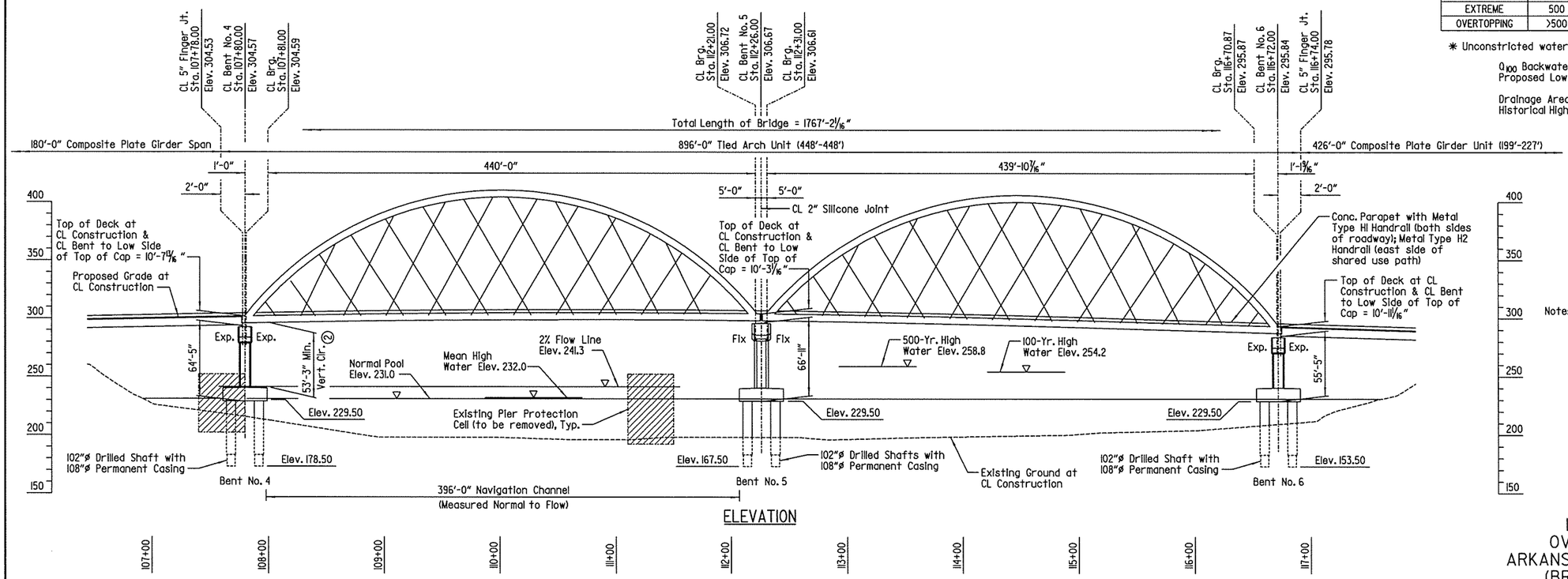
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NORMAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	50	430,000	252.04	252.29
BASE	100	480,000	253.87	254.15
EXTREME	500	625,000	258.40	258.77
OVERTOPPING	>500	N/A	N/A	N/A

* Unconstricted water surface without structure or roadway approaches.

Q_{100} Backwater Elevation for Existing Structure = 254.16 feet
Proposed Low Bridge Chord Elev. = 284.37

Drainage Area = 158,200 square miles
Historical High Water Elev. = 258.21 feet (1943)



ELEVATION

Note:
Stations and elevations are along CL Construction. Elevations shown are at Working Point.

② Minimum Vertical Clearance measured from 2% flow line to bottom of 20" water line support bracket. See Dwg. Nos. 54624-54633 for details.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

SHEET 2 OF 4
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: KDG DATE: MAY 2014 SCALE: 1" = 50'
DESIGNED BY: KDG DATE: MAR. 2014

BRIDGE NO. 07292 DRAWING NO. 54297

wgregory 5/29/2014 2:33:52 PM
WORKSPACE: ##WORKSPACE##
N:\57048\Bridges\Redesign\Plans\Drawings\ZPLOT_B002.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	102	505
				① 07292		LAYOUT		54298

NOTE:
Concrete Riprap where shown and at each bridge end between end bent cap and MSE retaining wall under bridge. See MSE retaining wall details on Dwg. No. 54623.

FOR R/W DATA SEE ROADWAY PLANS

NOTES:
For "PROJECT GENERAL NOTES", See Dwg. No. 54292.

For "GENERAL NOTES", See Dwg. No. 54299.

For "SOIL BORING PROFILE", See Dwg. Nos. 54302-54306.

For Vertical Curve Data, See Dwg. No. 54296.

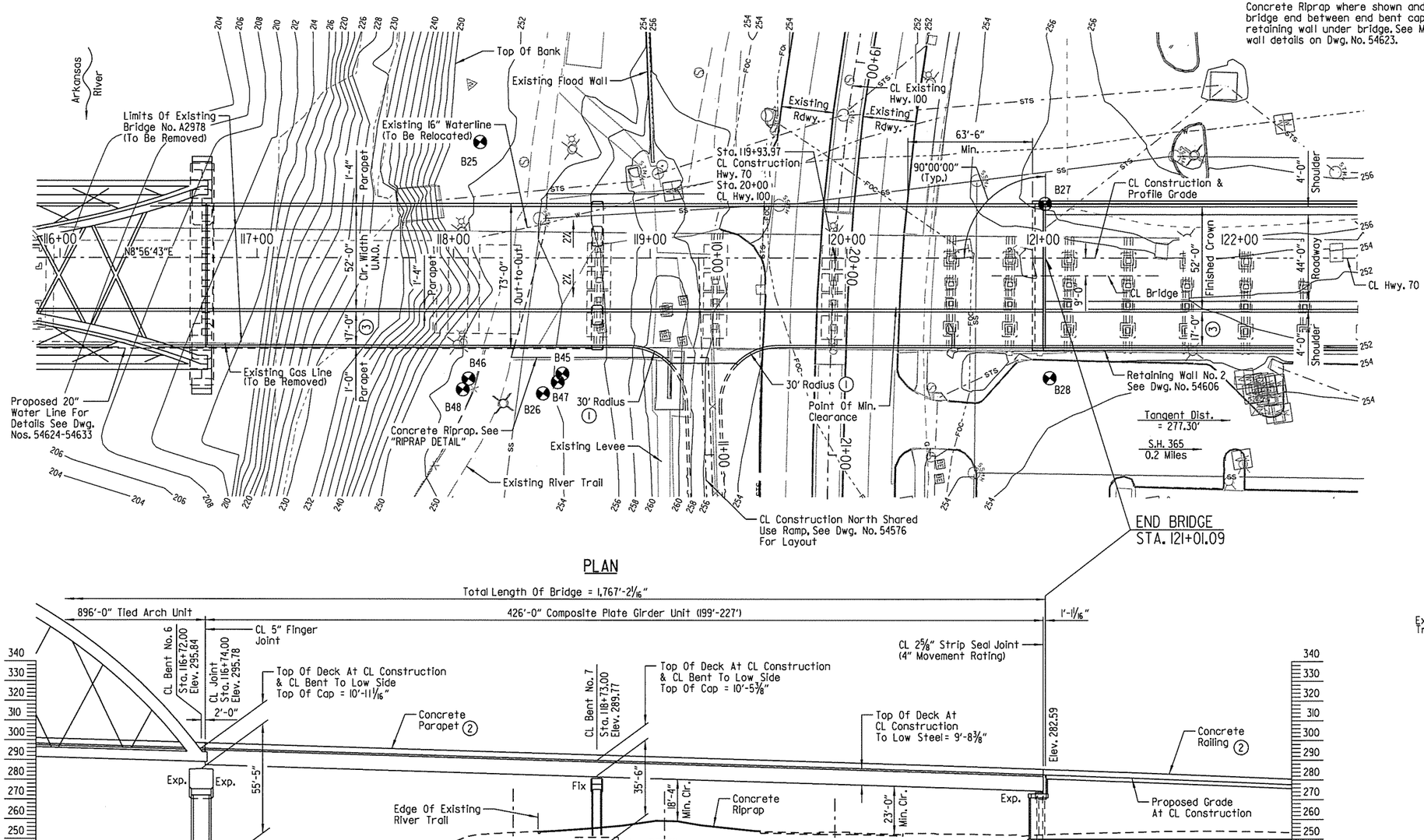
For "HYDRAULIC DATA", See Dwg. No. 54297.

① Measured along inside face of parapet. see Dwg. No. 54299 for details.

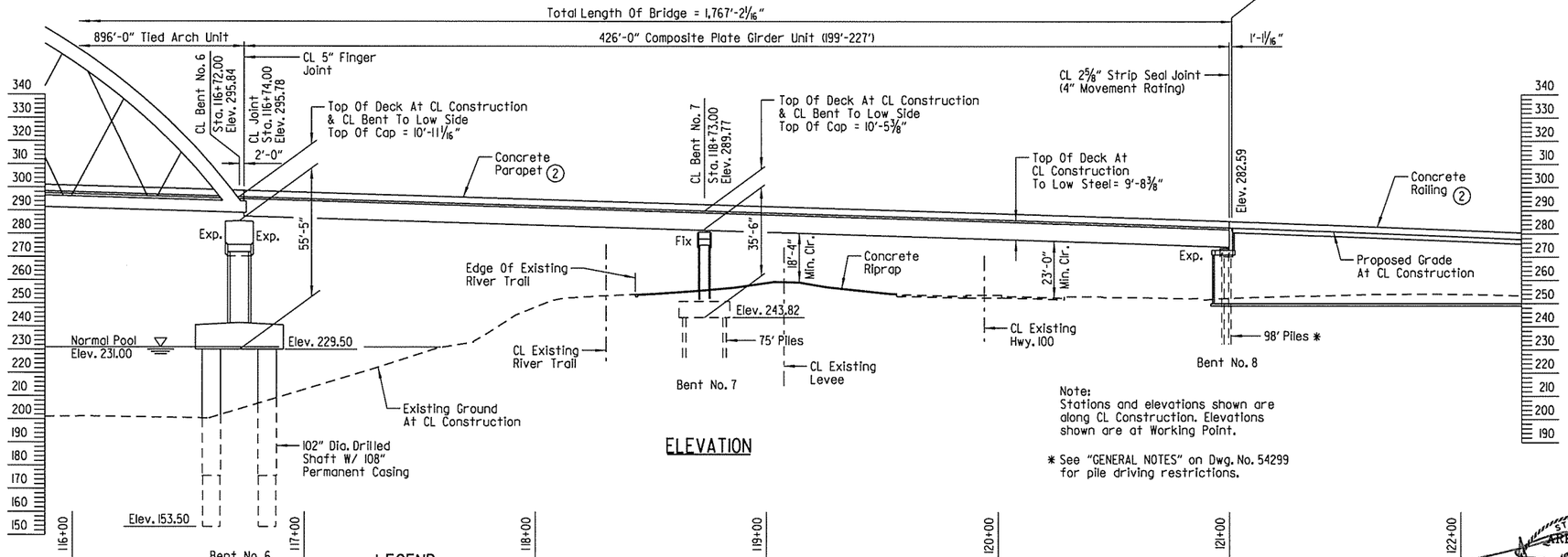
② Concrete parapet with Metal Type HI Handrail (both sides of roadway), Metal Type H2 Handrail (least side of shared use path)

③ 16'-0" Shared Use Path plus 1'-0" allowance for blister to accommodate future trolley catenary system.

④ Concrete Riprap shall be placed as shown and shall extend 5' beyond bridge deck and extend to the limits of the existing River Trail and to the existing Hwy. 100 back of curb.



PLAN



ELEVATION

Note:
Stations and elevations shown are along CL Construction. Elevations shown are at Working Point.

* See "GENERAL NOTES" on Dwg. No. 54299 for pile driving restrictions.

LEGEND

FOC = Fiber Optic Cable
G = Gas Line
SS = Sanitary Sewer
STS = Storm Sewer
W = Water Line
U.N.O. = Unless Noted Otherwise

RIPRAP DETAIL

STATE OF ARKANSAS 14018 LICENSED PROFESSIONAL ENGINEER 5-30-14 No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 4
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1" = 30'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07292 DRAWING NO. 54298

SRYancey 5/29/2014 4:35:40 PM
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L:\CON\HDOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_L3 (Layout-North).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	103	505
				① 07292		LAYOUT		54299

GENERAL NOTES - BRIDGE OVER ARKANSAS RIVER

BENCH MARK: PN: 903, PD: Square In Concrete, ST: 106+02.71 OF: 77.14' RT. ZC: 263.39
PN: 193, PD: Square In Concrete, ST: 117+68.35 OF: 1626.70' RT. ZC: 248.76

OPERATIONAL CATEGORY: ESSENTIAL

STEEL PILING: Piling for Bent No. 1 shall be HP 12x53 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. Piling for Bent Nos. 2, 3, 7 and 8 shall be HP14x73 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 370 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in Bent No. 1 shall be driven per the requirements on Dwg. No. 54292. The Contractor shall use approved steel H-pile driving points on all piles.

Pile casings shall be used for all piling at Bent No. 8. Piling shall be driven through the open casings no sooner than 30 days after embankment construction is completed to the final roadway section for not less than 100 feet from the centerline of the pile-supported end bent. Pile driving shall not start until approval is given by the Engineer.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test Piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

PILE CASING: Pile casings at Bent No. 8 shall be installed prior to embankment construction and shall extend from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 6" greater than the cross sectional dimension of the pile. After pile driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP14X73)".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 55,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent No. 1, a minimum rated hammer energy of 85,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 2 and 3, and a minimum rated hammer energy of 110,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 7 and 8.
PREBORING: Preboring is required for Bent Nos. 2 and 3 to obtain a minimum embedment of 10' below material designated as Hard Shale or Sandstone on the boring logs. Prebored holes shall be 6" greater than the cross sectional dimension of the pile. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After pile driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will be included in the item "PREBORING".

Preboring is required for the piles designated on Dwg. No. 54338 for Bent No. 7 to an elevation of 228.00 to ensure that no damage occurs to the existing sanitary sewerline during the pile driving operation. The flow line of the sanitary sewer is to be field verified by the Contractor, and adjustments to preboring depth shall be made accordingly to maintain a bottom of prebored hole 2 ft. below the existing flow line. Prebored holes shall be 6" greater than the cross sectional dimension of the pile. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with an approved non-shrink grout or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will be included in the item "PREBORING".

DRILLED SHAFTS: All drilled shafts shall be founded to the minimum rock penetrations and tip elevations as shown on the plans. No adjustment in Plan Tip Elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB 061275 "DRILLED SHAFT FOUNDATIONS". Any casing used as a means for construction of the drilled shafts, such as to prevent caving, to exclude groundwater, or to provide shoring, shall extend approximately 3 feet below top of competent rock. The Contractor must obtain approval from the Engineer for any deviation from this requirement.

CROSSHOLE SONIC LOGGING: Nondestructive testing shall be performed on each drilled shaft in accordance with SP JOB 061275 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS".

SPECIAL NOTES FOR EXCAVATION NEAR LEVEE

1. A probable sequence of construction for Bent No. 7 is to install temporary sheet piling around the planned excavation, excavate to the bottom of new footing while removing the required portion of the existing foundation, drive planned piles for support of the new footing, place footing and column concrete, and finally remove the temporary sheet piling.

2. Flowable fill can be used to backfill the excavation to Elevation 252.00, which is 3 to 5 feet below existing grade. Compacted lean or fat clay fill (minimum liquid limit of 40 and maximum liquid limit of 55) shall then be used to restore the excavation to match the existing adjacent grade.

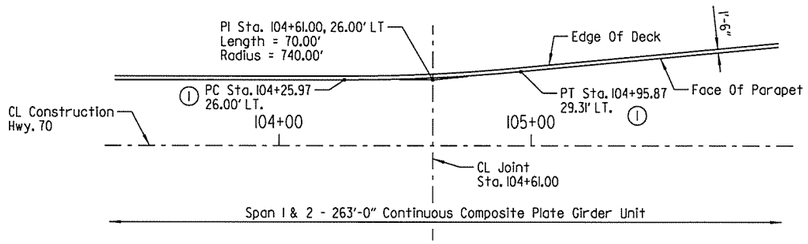
   As an alternative to backfilling the excavation with flowable fill, compacted lean or fat clay fill having a minimum liquid limit of 40 and maximum liquid limit of 55 can be used to restore the entire excavation. The Contractor shall design and construct safe sloping side walls from the bottom to the top of the excavation prior to removing the temporary sheet pile. The fill shall be placed by benching the new fill into the sloped excavation. Minimum bench width shall be sized to accommodate construction equipment.

3. A stockpile of clay backfill material shall be kept near Bent No. 7 in case the Arkansas River is forecasted to rise. If the predicted river stage is planned to reach an elevation of 5 feet below the bottom of the footing excavation at Bent No. 7, preparation for backfilling the excavation shall occur. When the river level reaches 5 feet below the bottom of the footing excavation, immediate backfilling of the excavation is required. The nearest upstream and downstream river gauges shall be periodically checked to monitor changes in the river level and used to estimate the river levels at the site.

4. Where backfill material consists of clay (CL/CH), the clay shall be compacted to a minimum of 95% of the maximum dry density at a moisture content ranging from -1% to +3% of the optimum moisture content as determined by the Standard Proctor (ASTM D698).

DETAIL DRAWINGS:	DRAWING NOS:
End Bents	54307-54310
Intermediate Bents	54311-54341
263' Cont. Comp. Plate Girder Unit	54342-54360
180' Simple Comp. Plate Girder Span	54361-54380
896' Tied Arch Unit	54381-54473
426' Cont. Comp. Plate Girder Unit	54474-54493
Joint Details	54494-54500
Elastomeric Bearings	54501
Steel Piling	55020
Concrete Riprap	55002

For "PROJECT GENERAL NOTES", See Dwg. No. 54292.



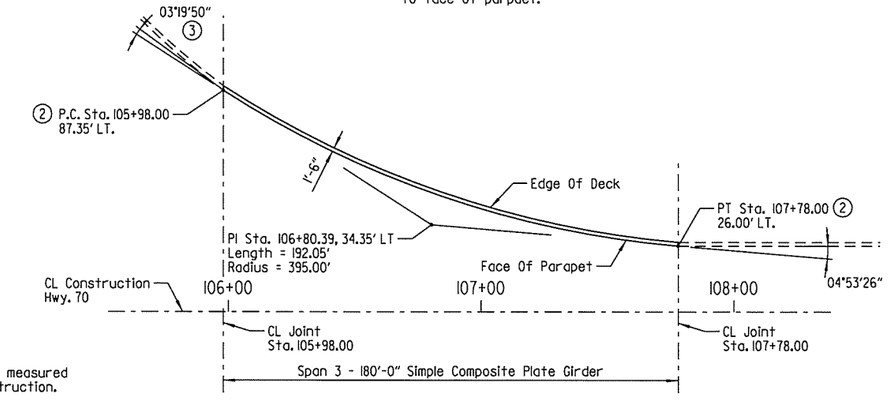
TRANSITION CURVE - SPANS 1 & 2

No Scale

① Measured to face of parapet.

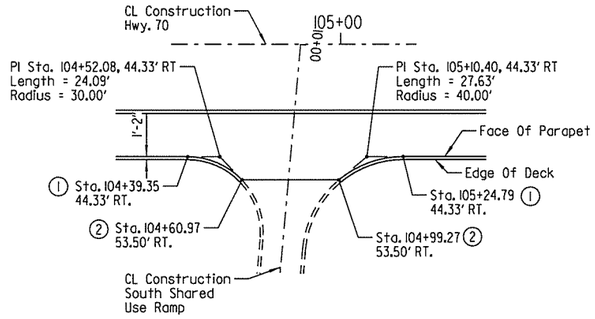
② Measured to face of parapet at CL joint.

③ Measured from a line tangent to face of parpaet.

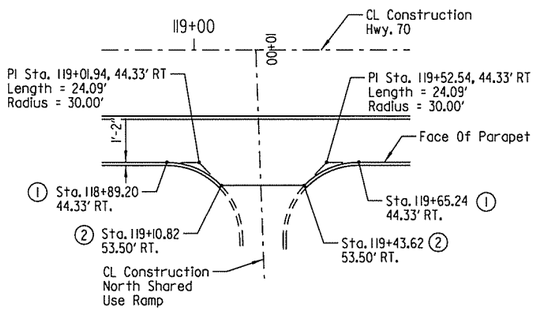


TRANSITION CURVE - SPAN 3

No Scale



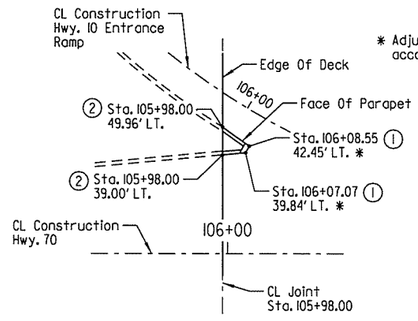
SOUTH SHARED USE RAMP



NORTH SHARED USE RAMP

SHARED USE CONNECTIONS

No Scale



PARAPET RAIL TRANSITION

No Scale

NOTE:
Stations and offsets measured along Hwy. 70 CL Construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 4 OF 4
LAYOUT OF BRIDGE OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

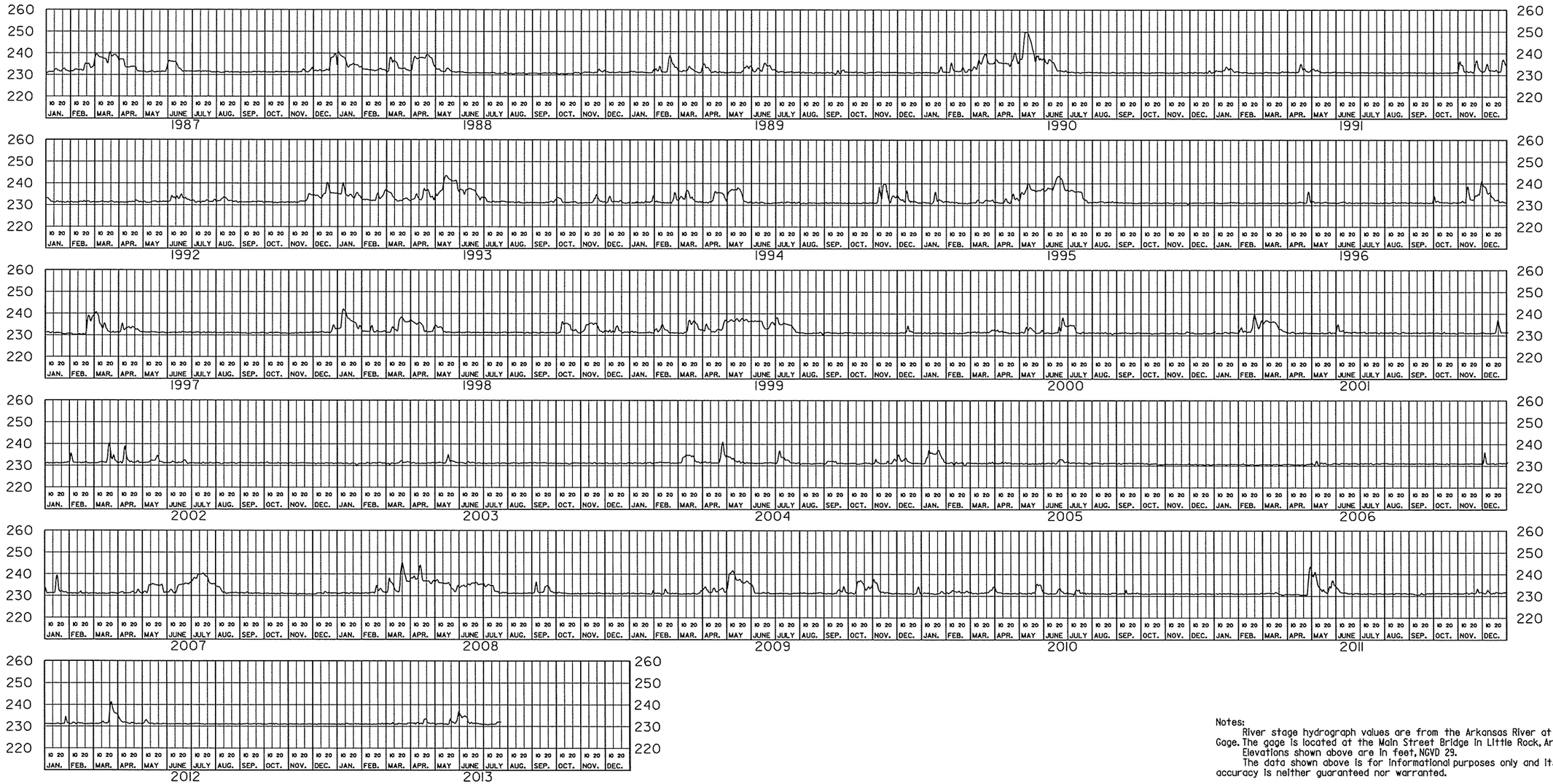
DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275xl_L4.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2013

BRIDGE NO. 07292 DRAWING NO. 54299

SRYancey 5/29/2014 4:35:41 PM
WORKSPACE: AHTD Bridge
L:\ROW\07292 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_L4 (Layout-Notes).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	104	505
(1) 07292	RIVER STAGE HYDROGRAPH			54300



Notes:
River stage hydrograph values are from the Arkansas River at Little Rock Gage. The gage is located at the Main Street Bridge in Little Rock, Arkansas.
Elevations shown above are in feet, NGVD 29.
The data shown above is for informational purposes only and its accuracy is neither guaranteed nor warranted.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

RIVER STAGE HYDROGRAPH
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: MMD DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: KDG DATE: JUL. 2013

BRIDGE NO. 07292 DRAWING NO. 54300

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	105	505
				(1) 07292		SOIL BORING LEGEND		54301

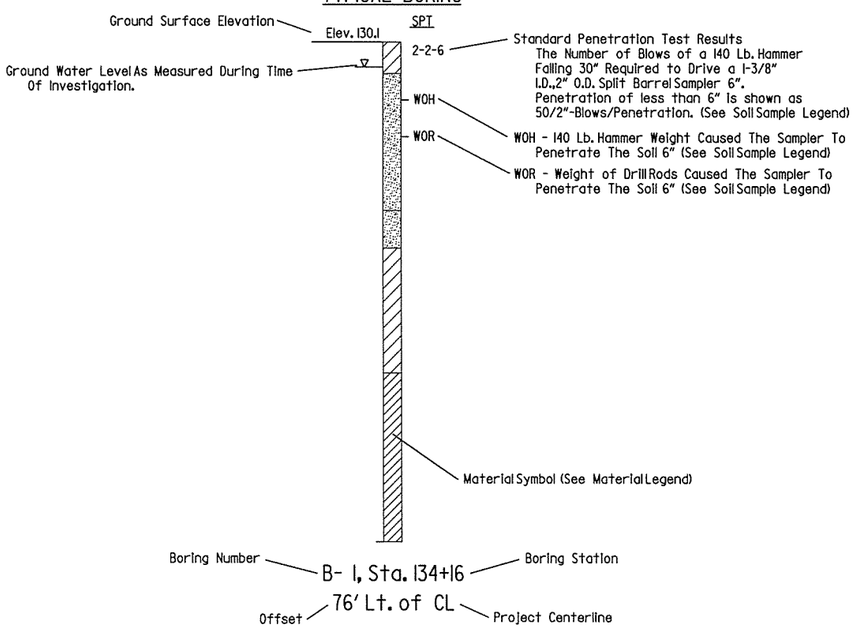
MATERIAL LEGEND

GRAPHIC SYMBOL	UNIFIED CLASSIFICATION SYMBOL (ASTM D2488)	DESCRIPTION
	CH	Fat CLAY
	CL/CH	Lean to Fat CLAY
	CH/CL	Fat to Lean CLAY
	CL	Lean CLAY
	CL-ML	Lean CLAY Stratified With SILT
	CH-ML	Fat CLAY Stratified With SILT

GRAPHIC SYMBOL	UNIFIED CLASSIFICATION SYMBOL (ASTM D2488)	DESCRIPTION
	GP	Poorly Graded GRAVEL
	GW	Well Graded GRAVEL
	ML	SILT
	MH	Elastic SILT
	SM	Silty SAND
	SP-SM	SAND With SILT

GRAPHIC SYMBOL	UNIFIED CLASSIFICATION SYMBOL (ASTM D2488)	DESCRIPTION
	SC	Clayey SAND
	SP	Poorly Graded SAND
	SW	Well Graded SAND
		Shale
		Sandstone

TYPICAL BORING



GENERAL NOTES:

Classification symbols shown are field classifications in general accordance with the Unified Soil Classification System, as described in Technical Memorandum No. 3-357, Waterways Experiment Station, March 1953.
The boring elevation datum referred to is NAVD 88.
The ground water levels shown were recorded during time of drilling. Porosity of soil strata, weather conditions, seasonal changes, site topography, river levels, etc., may cause changes in the water levels reported.
Boring Logs may be obtained from the Program and Contracts Division.
The boring information shown on these drawings are abbreviated.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

SOIL BORING LEGEND
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

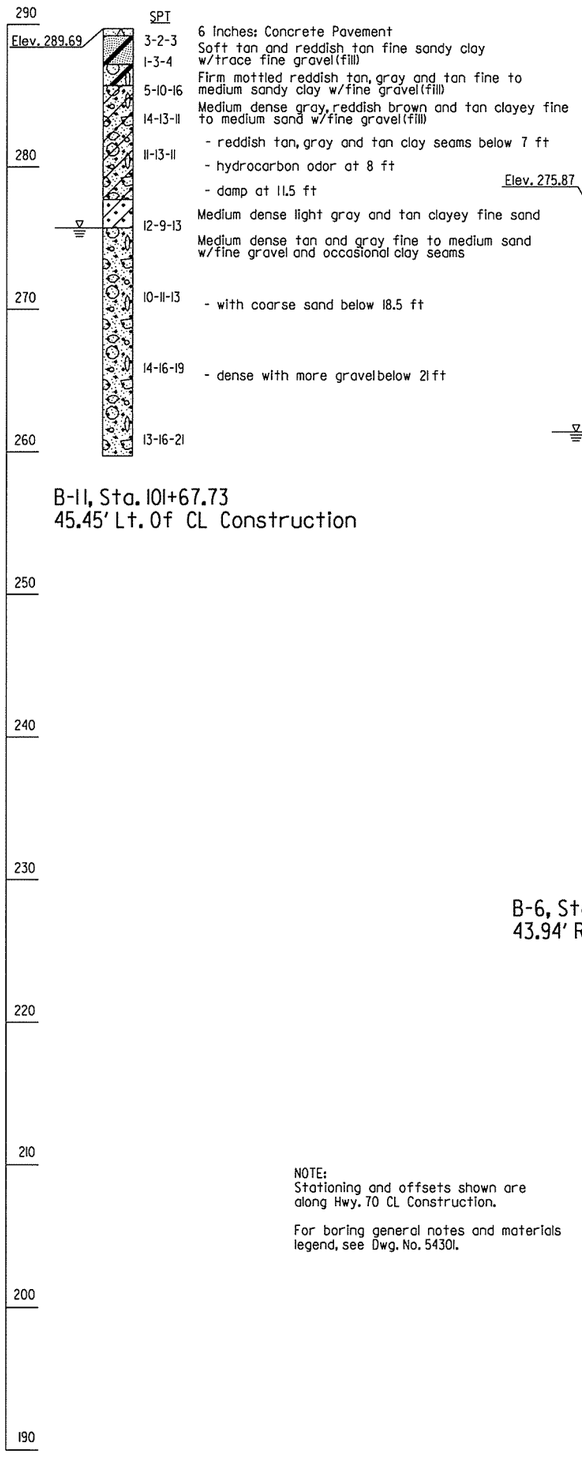
LITTLE ROCK, ARK.

DRAWN BY: DAL DATE: MAY 2013 FILENAME: B061275xlL6.dgn
CHECKED BY: AMK DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: KDG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54301

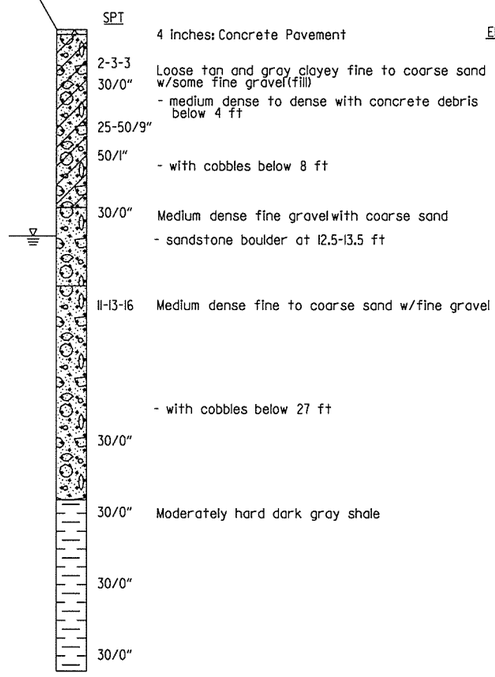
wgregory 5/29/2014 2:33:59 PM
WORKSPACE: **WORKSPACE**
N:\STOMBridges\Bridgedsign\Plans\Drawings\ZPLOT_B004.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	106	505
				① 07292		SOIL BORING PROFILE		54302



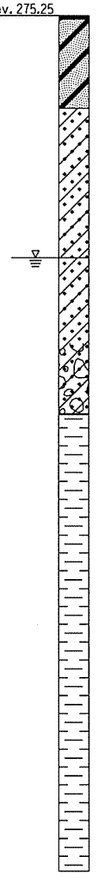
6 inches: Concrete Pavement
Soft tan and reddish tan fine sandy clay w/trace fine gravel (fill)
Firm mottled reddish tan, gray and tan fine to medium sandy clay w/fine gravel (fill)
Medium dense gray, reddish brown and tan clayey fine to medium sand w/fine gravel (fill)
- reddish tan, gray and tan clay seams below 7 ft
- hydrocarbon odor at 8 ft
- damp at 11.5 ft
Medium dense light gray and tan clayey fine sand
Medium dense tan and gray fine to medium sand w/fine gravel and occasional clay seams
- with coarse sand below 18.5 ft
- dense with more gravel below 21 ft

B-11, Sta. 101+67.73
45.45' Lt. Of CL Construction



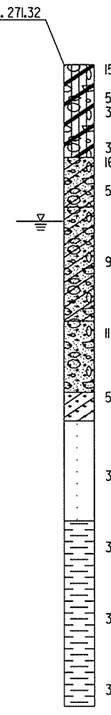
4 inches: Concrete Pavement
Loose tan and gray clayey fine to coarse sand w/some fine gravel (fill)
- medium dense to dense with concrete debris below 4 ft
- with cobbles below 8 ft
Medium dense fine gravel with coarse sand
- sandstone boulder at 12.5-13.5 ft
Medium dense fine to coarse sand w/fine gravel
- with cobbles below 27 ft
Moderately hard dark gray shale

B-6, Sta. 103+33.80
43.94' Rt. Of CL Construction



3 inches: Asphalt Concrete
Very soft to soft tan and gray fine to medium sandy clay/clayey sand w/a little fine gravel (fill)
Medium dense tan clayey fine to coarse sand
- with hydrocarbon odor at 14 ft
Medium dense tan clayey fine to coarse sand
- with cobbles below 23 ft
Moderately hard dark gray shale w/thin, closely spaced sandstone seams and partings, 20° dip ±

B-5, Sta. 103+37.13
45.87' Lt. Of CL Construction



Medium dense to dense crushed stone, dark brown silt and some tan clay w/surface organics (fill)
- with concrete debris below 2 ft
- black below 3 ft
Medium dense reddish brown and tan clayey fine to coarse gravel w/fine to coarse sand (fill)
- with sandstone cobbles below 8.3 ft
Medium dense gray clayey fine sand and gravel (fill) w/hydrocarbon odor
Medium dense tan and gray fine to coarse sand w/fine gravel
Dense light gray and tan clayey fine sand (completely weathered sandstone)
Hard brown fine-grained sandstone fractured w/close quartz veins
- less fractured below 29.5 ft
Moderately hard dark gray shale w/close quartz veins

B-7, Sta. 104+57.43
35.26' Lt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8817
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 5
SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

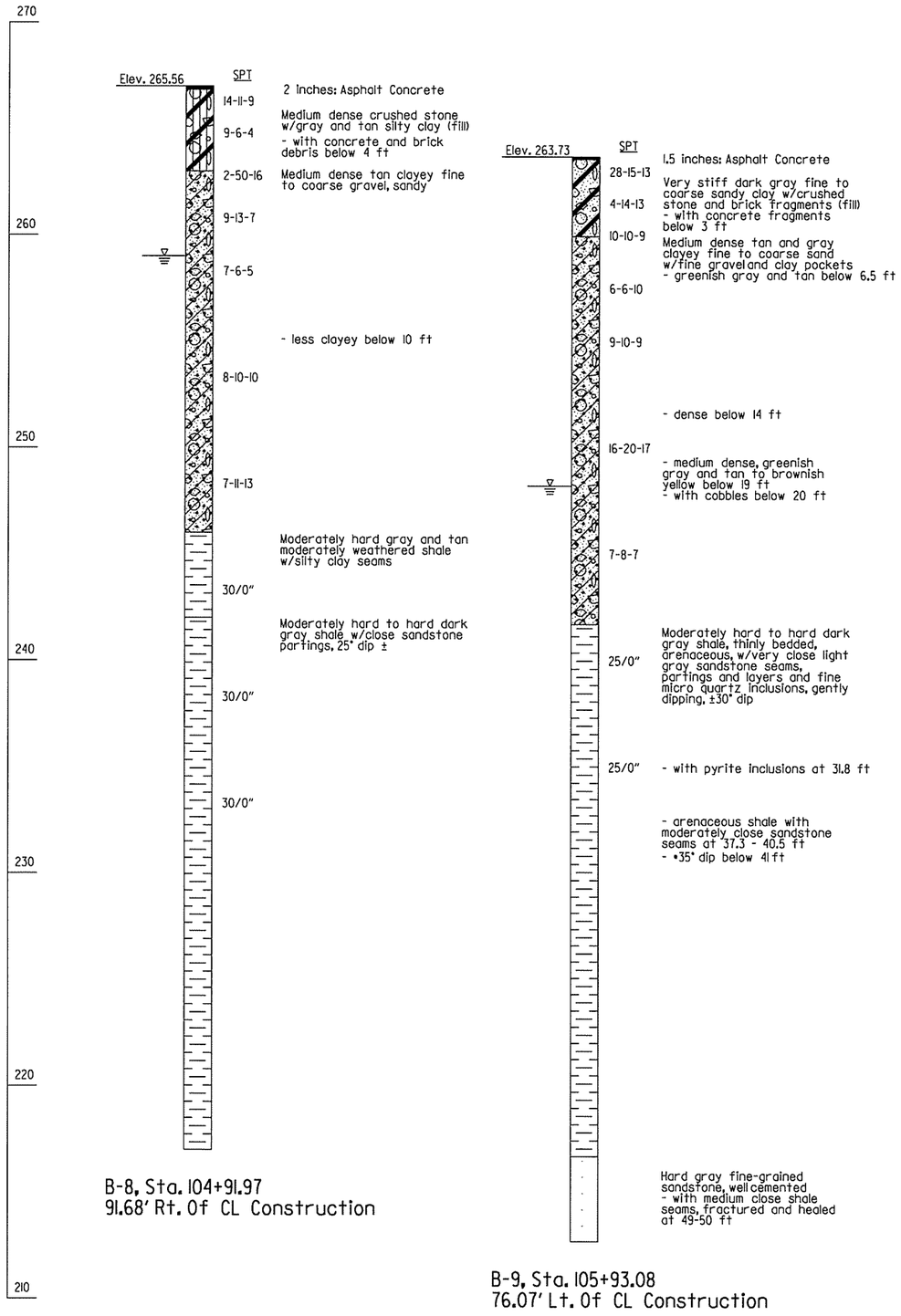
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x1_L7.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54302

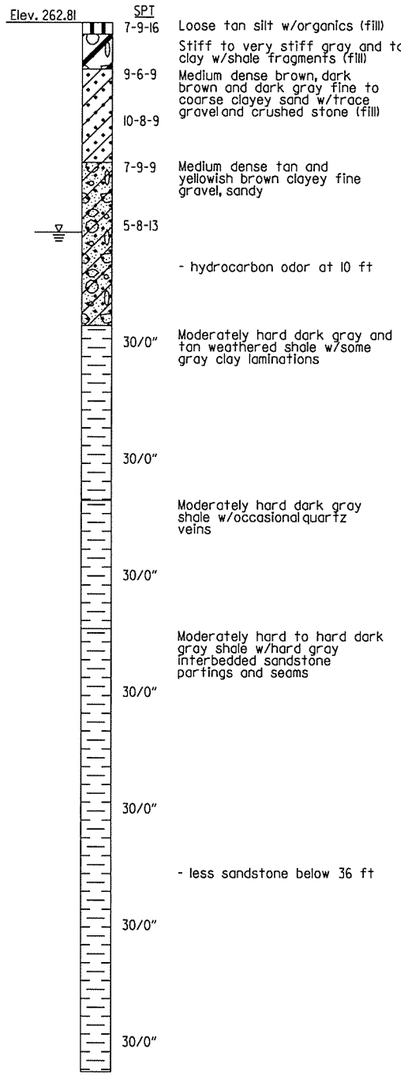
SRYancey 5/29/2014 4:35:42 PM
WORKSPACE: AHTD Bridge
L:\X2DWGMGT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_L5 (Boring Log 1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	107	505
				(1) 07292		SOIL BORING PROFILE		54303



B-8, Sta. 104+91.97
91.68' Rt. Of CL Construction

B-9, Sta. 105+93.08
76.07' Lt. Of CL Construction



B-10, Sta. 106+09.51
54.84' Rt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.

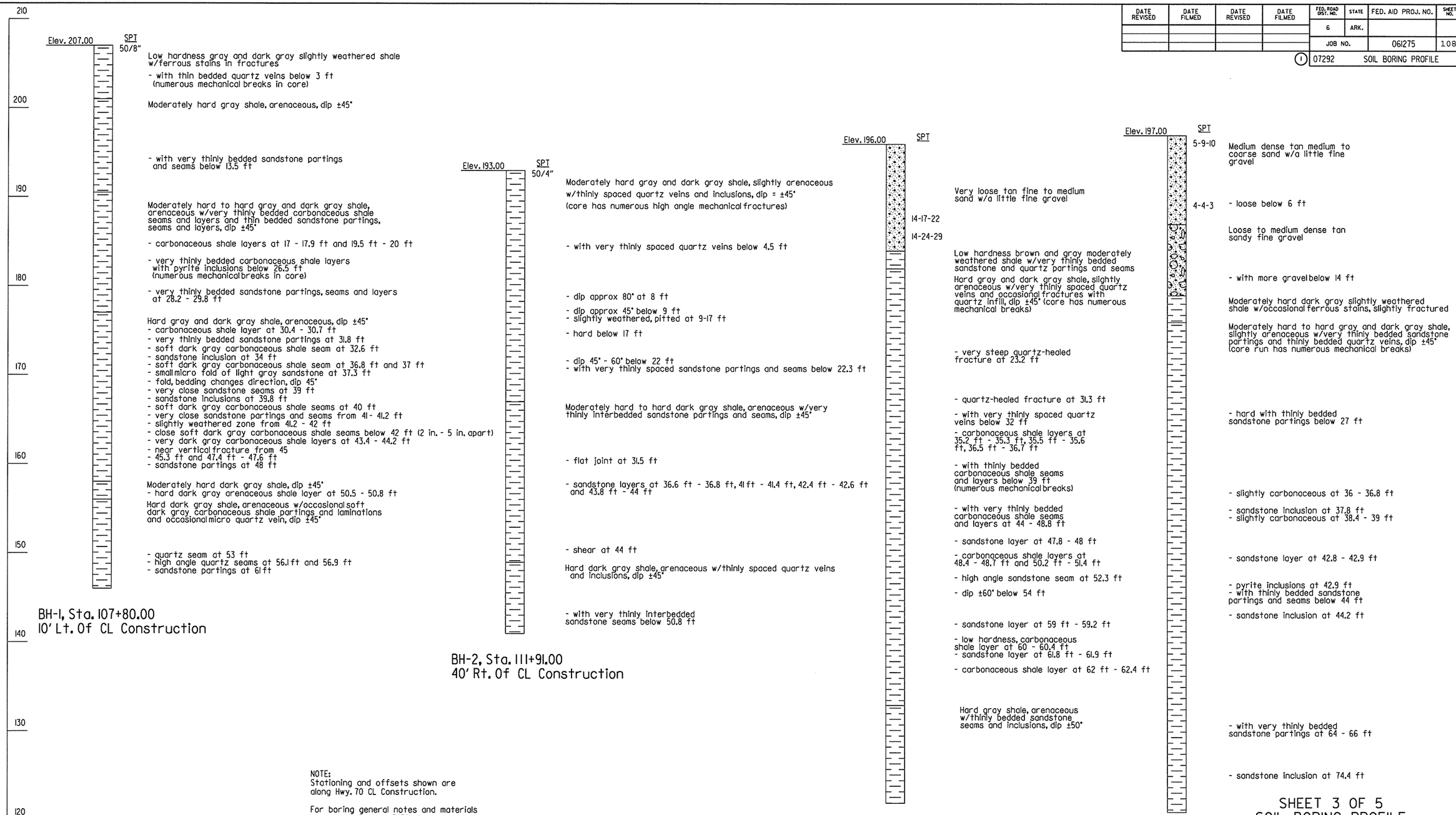
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 5
SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x1_L8.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54303

SRYancey 5/29/2014 4:35:43 PM
WORKSPACE: AHTD Bridge
L:\ROADWAY\B061275 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_L6 (Boring Log 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	108	505
				(1) 07292		SOIL BORING PROFILE		54304



NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.

SHEET 3 OF 5
SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12

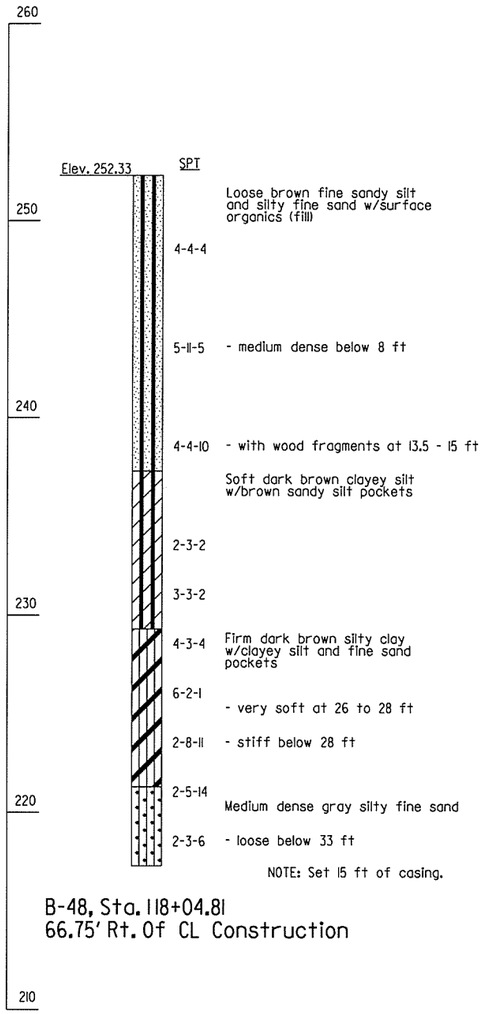
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

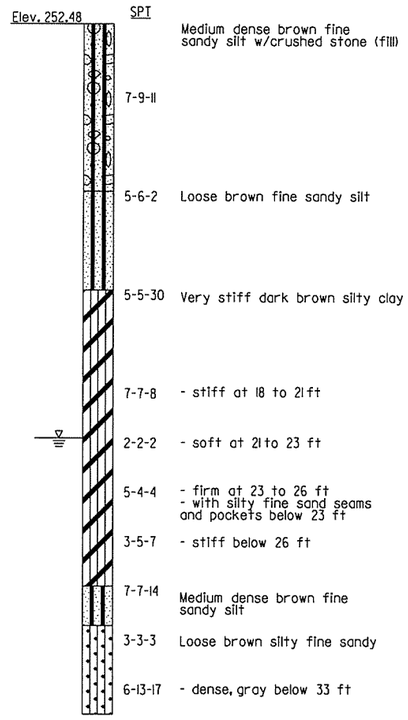
DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x1.L9.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54304

SRYancey 5/29/2014 4:35:44 PM
WORKSPACE: AHTD Bridge
L:\20INOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1.L7 (Boring Log 3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	109	505
				(1) 07292		SOIL BORING PROFILE		54305



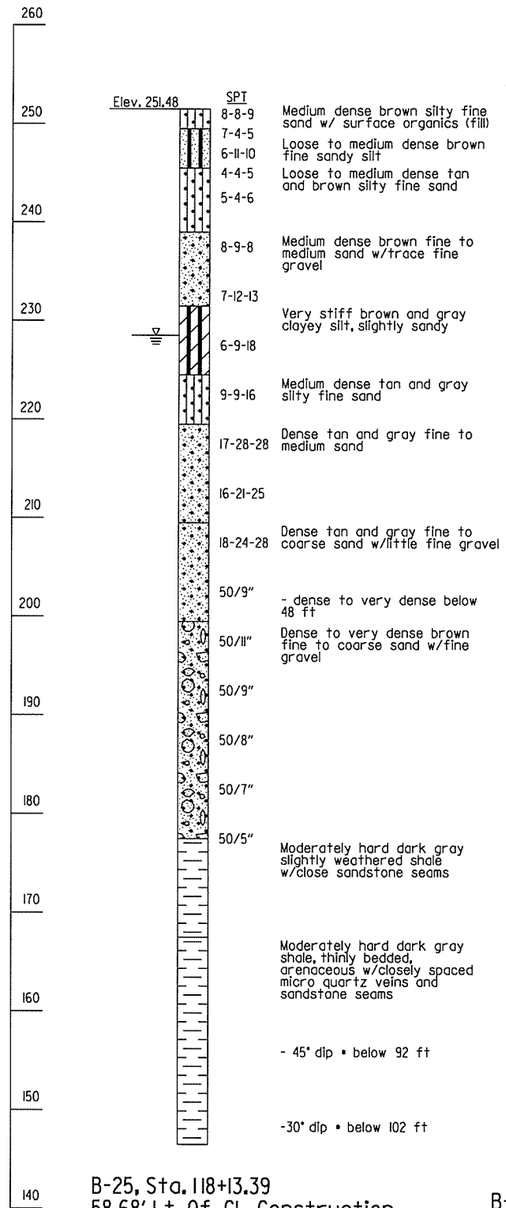
B-48, Sta. 118+04.81
66.75' Rt. Of CL Construction



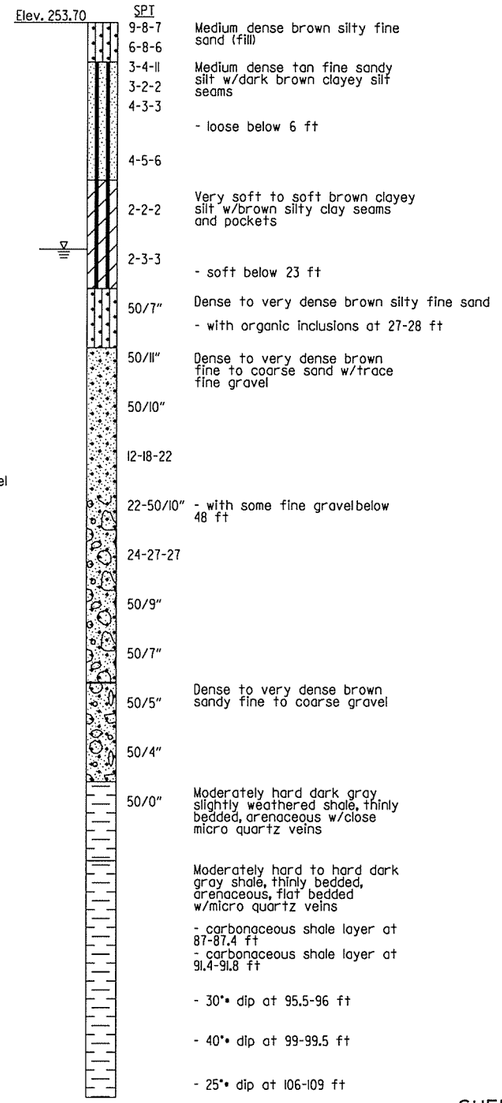
B-46, Sta. 118+07.74
61.35' Rt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.



B-25, Sta. 118+13.39
58.68' Lt. Of CL Construction



B-26, Sta. 118+45.45
68.78' Rt. Of CL Construction

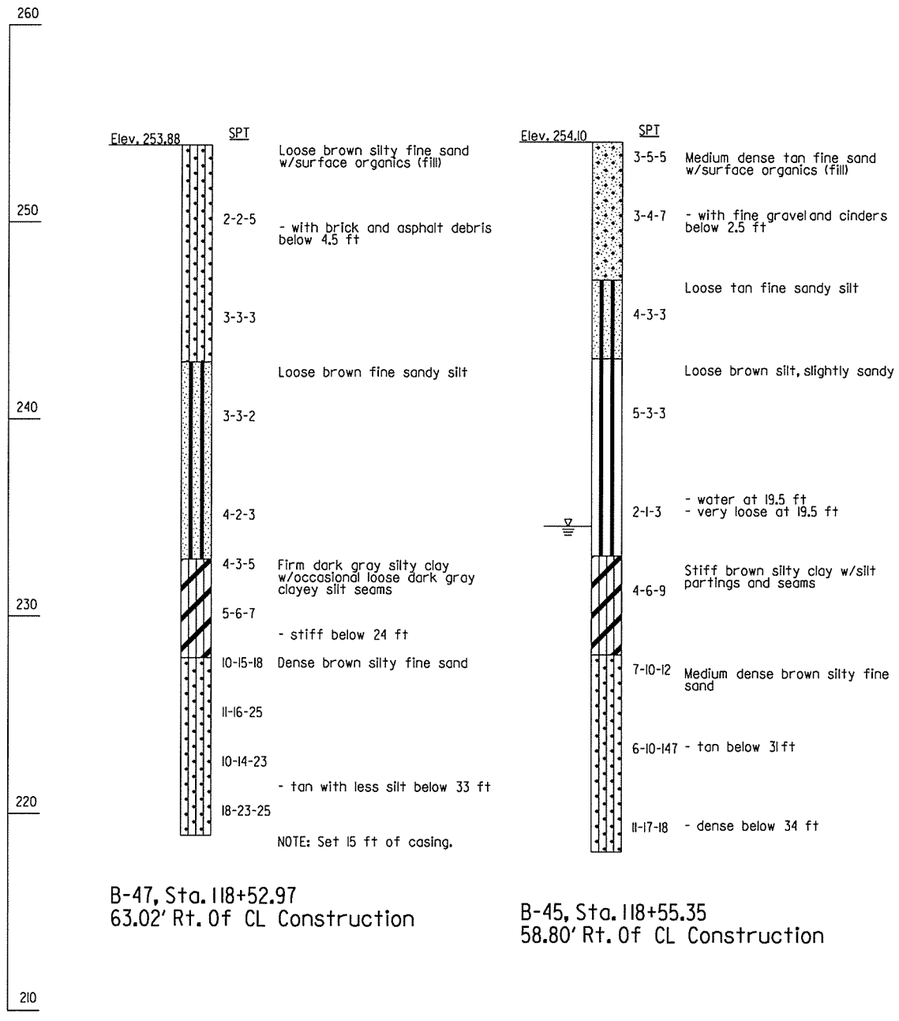
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 5
SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x1_L10.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54305

SRYancey 5/29/2014 4:35:45 PM
WORKSPACE: ANTD Bridge
L:\ROW\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_L8 (Boring Log 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	110	505
				(1) 07292		SOIL BORING PROFILE		54306

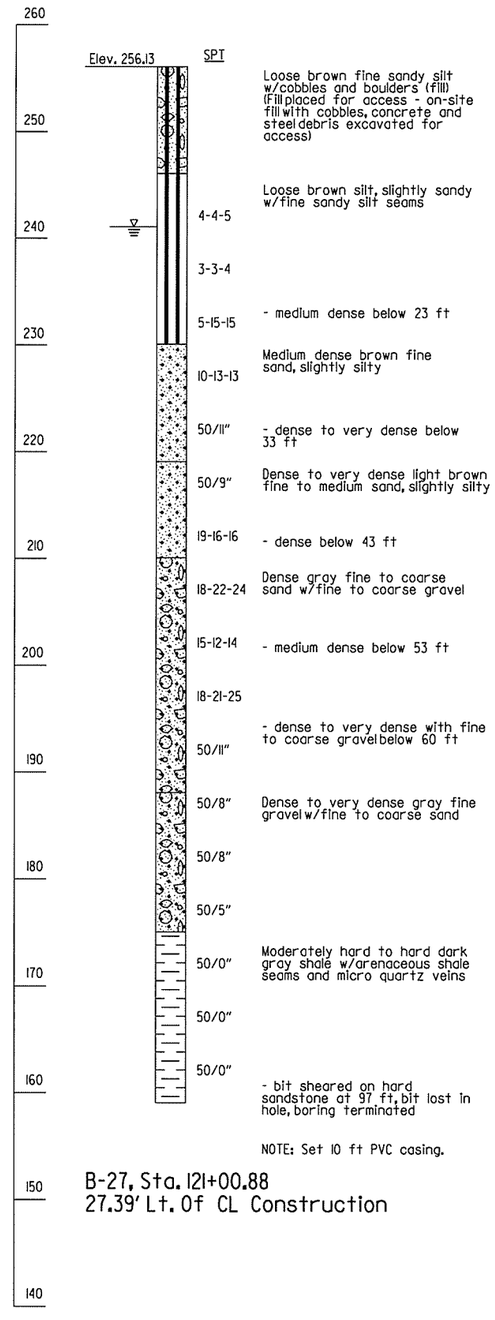


B-47, Sta. 118+52.97
63.02' Rt. Of CL Construction

B-45, Sta. 118+55.35
58.80' Rt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.



B-27, Sta. 121+00.88
27.39' Lt. Of CL Construction

B-28, Sta. 121+03.29
60.95' Rt. Of CL Construction

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

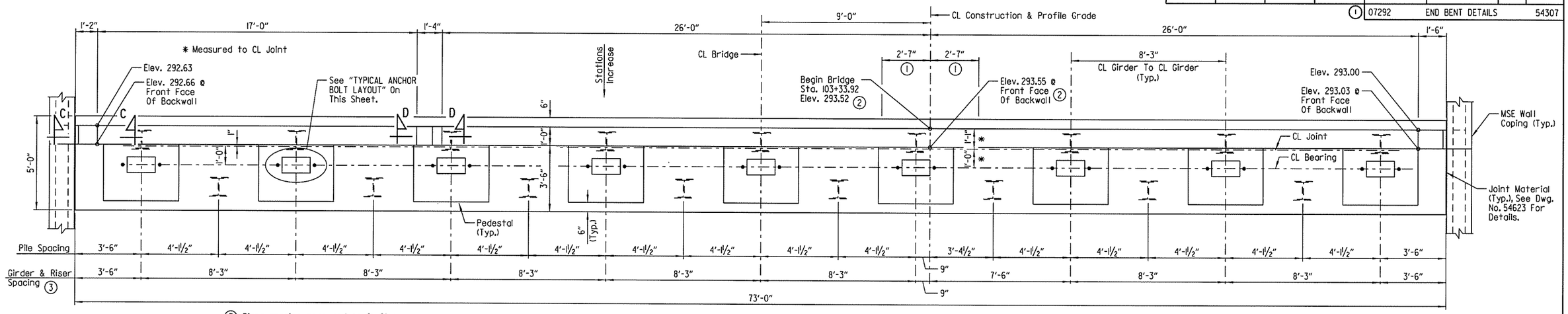
SHEET 5 OF 5
SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARKANSAS RIVER
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x1_L11.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54306

SRYancey 5/29/2014 4:35:46 PM
WORKSPACE: AHTD Bridge
L:\ROW\07068 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_L9 (Boring Log 5).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	111	505
				(1) 07292		END BENT DETAILS		54307

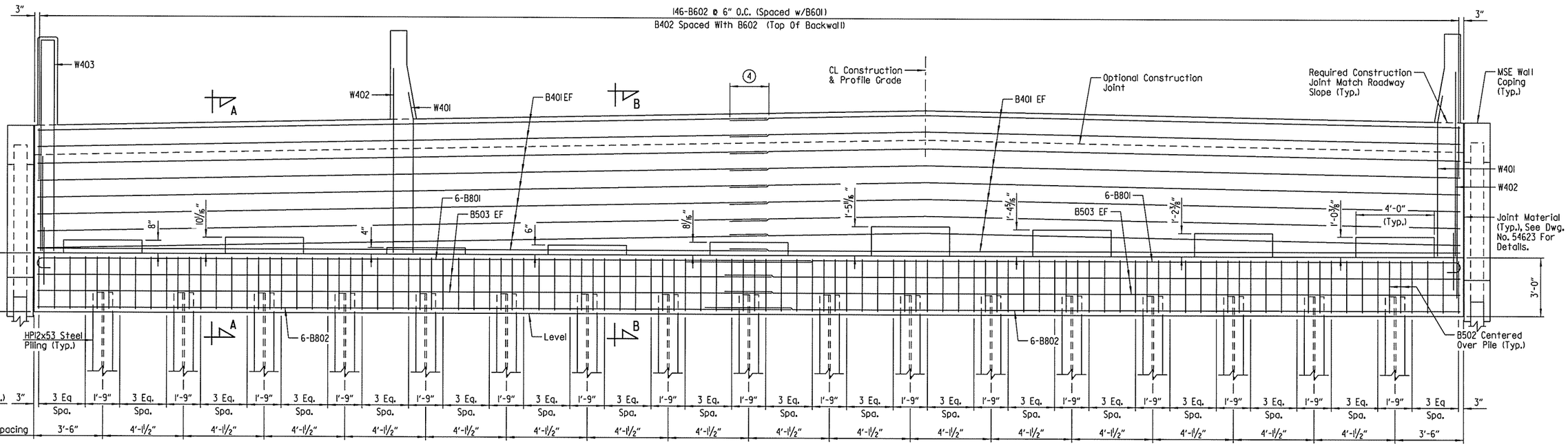
(1) See "ROUNDING DETAIL" on Dwg No. 54342. (2) Measured to Working Point - See "ROUNDING DETAIL" on Dwg. No. 54342.



(3) Riser spacing measured to CL Riser. See "PEDESTAL DETAIL" On Dwg. No. 54310.

PLAN - END BENT NO. 1

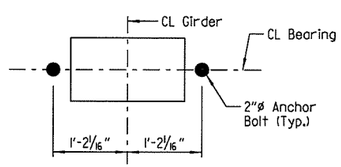
Scale: ⅜" = 1'-0"



ELEVATION - END BENT NO. 1

(Looking Back)
Scale: ⅜" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54501.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

NOTES:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST", "BAR BENDING DIAGRAM" & "END BENT STRAP DETAIL" see Dwg. No. 54309.

For "SECTION C-C" & "SECTION D-D", see Dwg. No. 54310.

(4) B401 - 2'-0" Min. Lap
B503 - 2'-6" Min. Lap
B801 - 6'-6" Min. Lap
B802 - 4'-6" Min. Lap

LEGEND
EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENTS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_B1.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54307

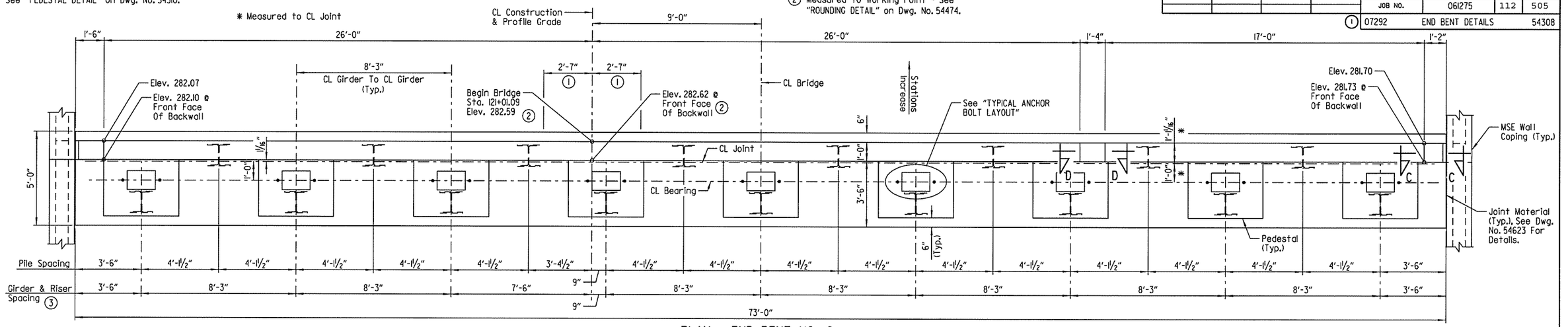
SRYancey 5/29/2014 4:35:46 PM
WORKSPACE: AHTD Bridge
L:\ROW\07060 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B1(End Bent No.1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	112	505
				(1) 07292		END BENT DETAILS		54308

(3) Riser spacing measured to CL Riser, See "PEDESTAL DETAIL" On Dwg. No. 54310.

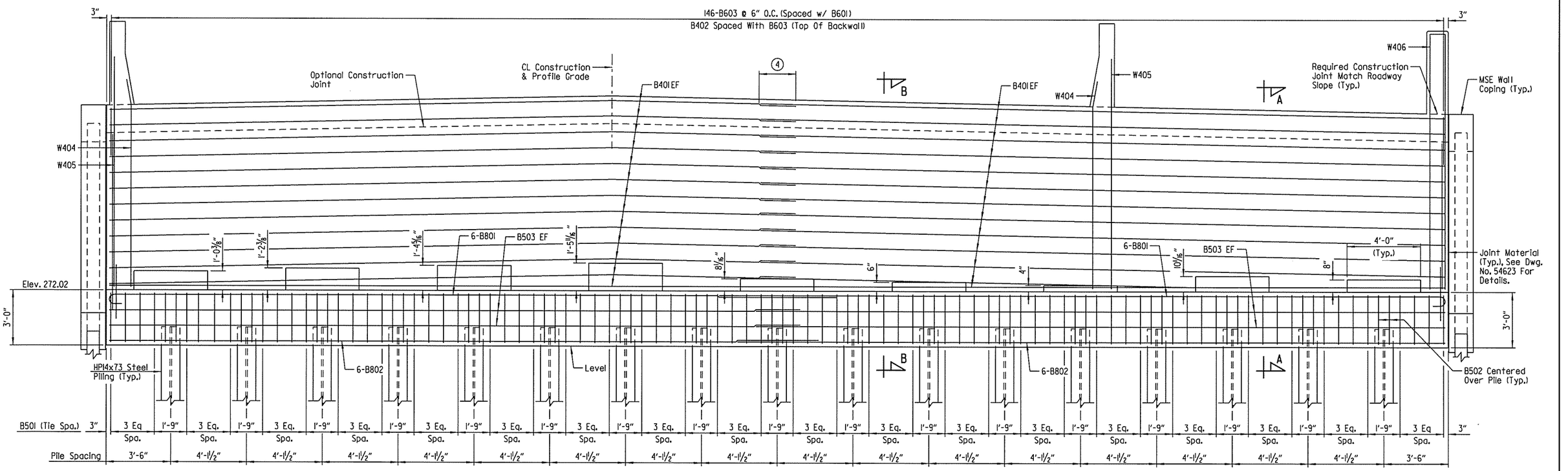
(1) See "ROUNDING DETAIL" on Dwg No. 54474.

(2) Measured to Working Point - See "ROUNDING DETAIL" on Dwg. No. 54474.



PLAN - END BENT NO. 8

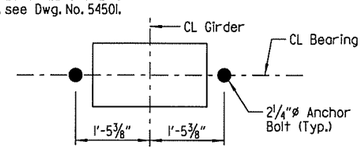
Scale: 3/8" = 1'-0"



ELEVATION - END BENT NO. 8

(Looking Forward)
Scale: 3/8" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54501.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

LEGEND

EF = Each Face

NOTES:
For "GENERAL NOTES", "SECTION A-A", "SECTION B-B", "BAR LIST", "BAR BENDING DIAGRAM" & "END BENT STRAP DETAIL" see Dwg. No. 54309.

For "SECTION C-C" & "SECTION D-D", see Dwg. No. 54310.

(4) B401 - 2'-0" Min. Lap
B503 - 2'-6" Min. Lap
B801 - 6'-6" Min. Lap
B802 - 4'-6" Min. Lap

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SEAN B. YANCEY 5/30/14 BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENTS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275xl.B2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54308

SRYancey 5/29/2014 4:35:47 PM
WORKSPACE: AHTD Bridge
L:\260IN\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl.B2 (End Bent No. 8).dgn
REVISED DATE:

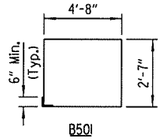
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	113	505
				(1) 07292		END BENT DETAILS		54309

BAR LIST

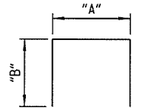
	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B402	146	7'-2"	8"	3'-4"	2"
	B403	36	8'-6"	3'-8"	2'-6"	2"
	B404	45	7'-6"	2'-8"	2'-6"	2"
	B405	16	13'-4"	3'-9"	2'-9"	2"
	B501	72	15'-0"			2½"
	B502	34	9'-7"	4'-8"	2'-7"	2½"
	B503	8	37'-7"			Str.
	B601	146	11'-4"	1'-2"	5'-3"	4½"
	B801	12	40'-6"			6"
	B802	12	38'-7"			Str.
	R401	4	3'-10"			2"
	R402	34	8"			Str.
	R403	5	3'-4"	9"	9"	2"
	R404	4	5'-10"	6"	2'-9"	2"
END BENT NO. 1	B401	36	37'-4"			Str.
	B602	146	10'-6"	1'-2"	4'-10"	4½"
	W401	4	7'-11"	6'-10"		2"
	W402	4	9'-8"			Str.
	W403	2	22'-0"	8"	10'-9"	2"
END BENT NO. 8	B401	52	37'-4"			Str.
	B603	146	19'-4"	1'-2"	9'-3"	4½"
	W404	4	11'-2"	10'-0"		2"
	W405	4	12'-9"			Str.
	W406	2	28'-6"	8"	14'-0"	2"

NOTE:
Number of common bars shown is for one bent only.

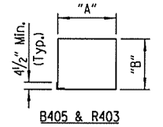
BAR BENDING DIAGRAM



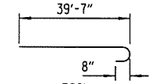
B501



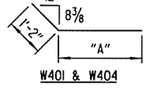
B402-B404, B502, B601-B603
R404, W403 & W406



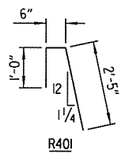
B405 & R403



B801

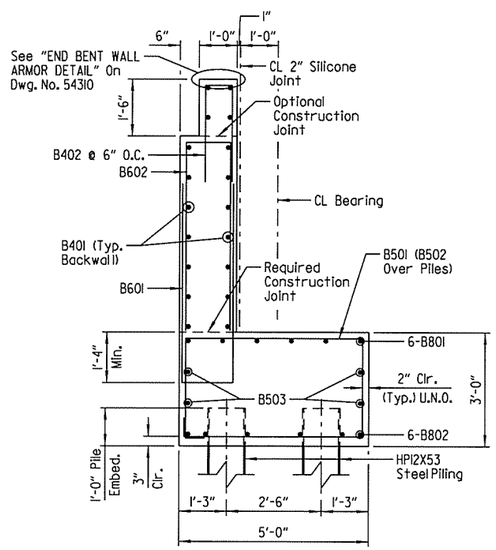


W401 & W404

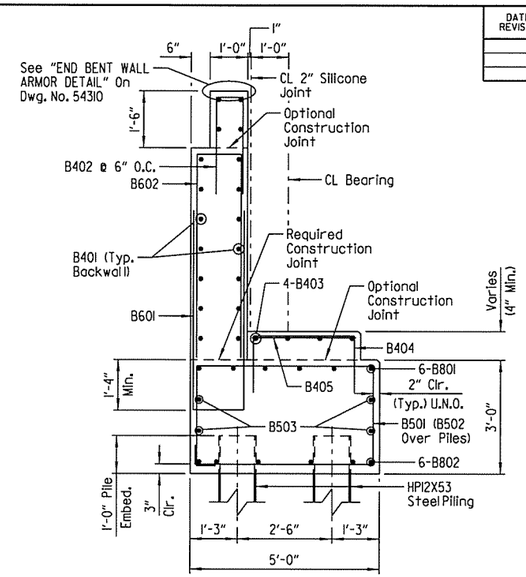


R401

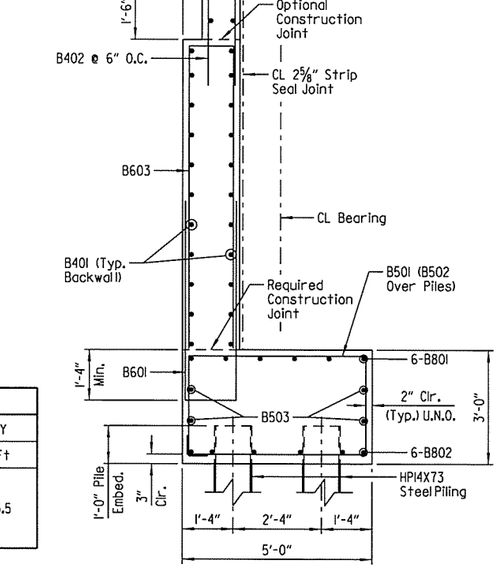
NOTE:
Dimensions of bars are out-to-out.



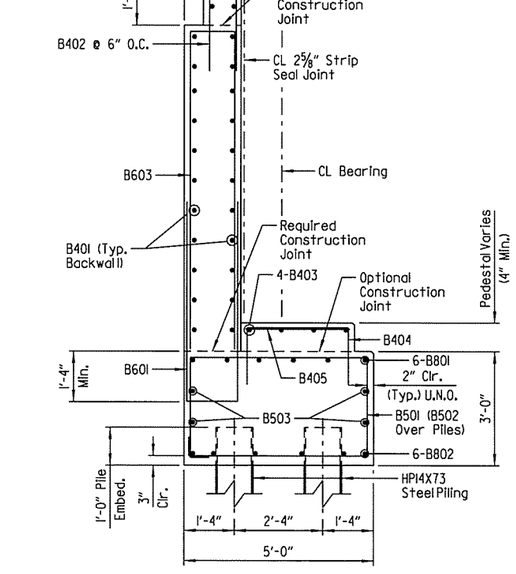
SECTION A-A
(End Bent No.1)
Scale: ½" = 1'-0"



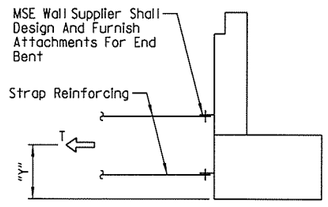
SECTION B-B
(End Bent No.1)
Scale: ½" = 1'-0"



SECTION A-A
(End Bent No. 8)
Scale: ½" = 1'-0"



SECTION B-B
(End Bent No. 8)
Scale: ½" = 1'-0"



END BENT STRAP DETAIL
Scale: N.T.S.

LIMIT STATE	END BENT NO. 1		END BENT NO. 8	
	T	Y	T	Y
	Kips/Ft	Ft	Kips/Ft	Ft
Service	3.8	4.25	10.8	5.5
Strength	6.0		16.8	
Extreme	4.1		11.6	

T = Resultant Force required to be resisted by strap reinforcing.

Y = Centroid of strap reinforcing.

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry.
All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

All piles for Bent No. 1 shall be HPI2x53 (AASHTO M270, Gr. 50).
All piles for Bent No. 8 shall be HPI4x73 (AASHTO M270, Gr. 50).

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638. Cleaning and painting will be paid for under the item "PAINTING STRUCTURAL STEEL".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Class 2 Protective Surface Treatment shall be applied to the top of backwall (only along the width of the clear roadway). Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. Nos. 54494 & 54499 for additional information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
5/29/14
BRIDGE ENGINEER

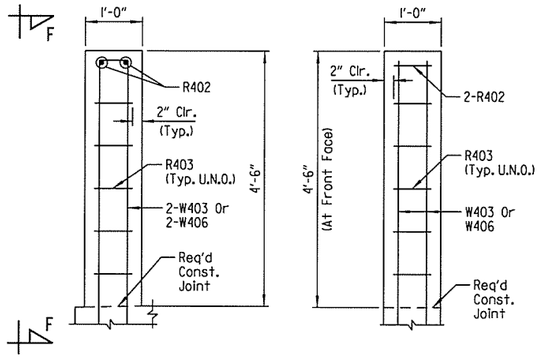
SHEET 3 OF 4
DETAILS OF END BENTS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_B3.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54309

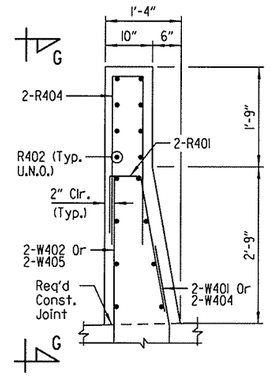
SRYancey 5/29/2014 4:35:47 PM
WORKSPACE: AHTD Bridge
L:\R20\N\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B3 (End Bent Bar List).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	114	505
				(1) 07292		END BENT DETAILS		54310

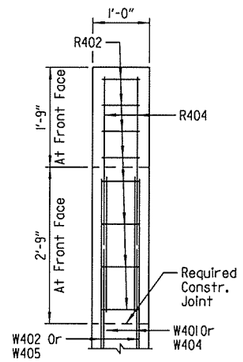


SECTION C-C
Scale: 3/4" = 1'-0"

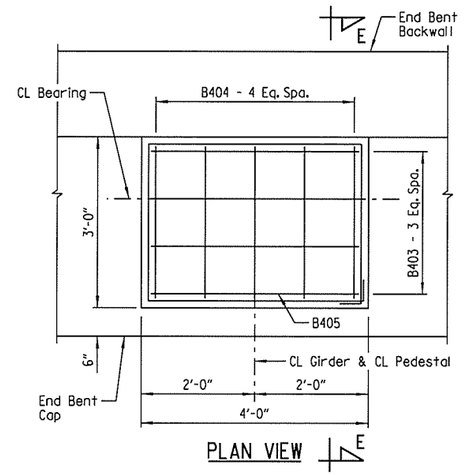
VIEW F-F
Scale: 3/4" = 1'-0"



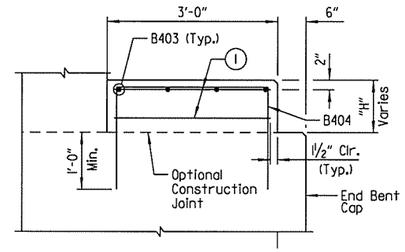
SECTION D-D
Scale: 3/4" = 1'-0"



VIEW G-G
Scale: 3/4" = 1'-0"



PLAN VIEW

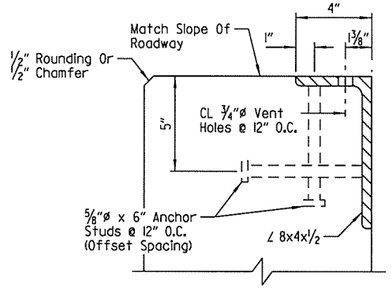


SECTION E-E

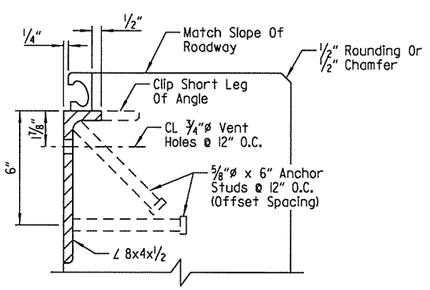
PEDESTAL DETAIL
Scale: 3/4" = 1'-0"

(1) 1-B405 when "H" = 4" to 9"
2-B405 Spa. @ 6" when "H" = 9" to 1'-3"
3-B405 Spa. @ 6" when "H" = 1'-3" to 1'-5 11/16"

NOTE:
For height of each pedestal, see "ELEVATION - END BENT NO. 1" on Dwg. No. 54307 or "ELEVATION - END BENT NO. 8" on Dwg. No. 54308.



BENT NO. 1



BENT NO. 8

NOTE:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

END BENT WALL ARMOR DETAIL
No Scale

LEGEND
U.N.O. = Unless Noted Otherwise

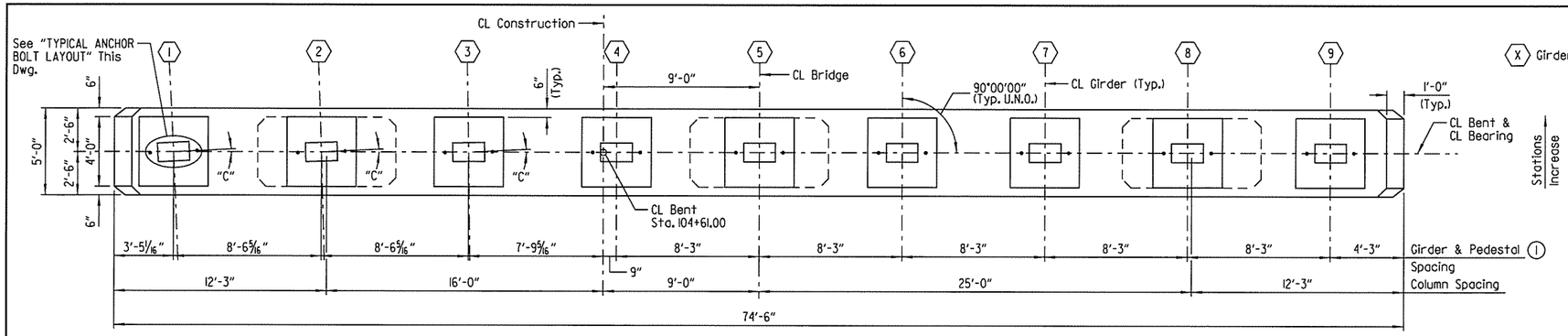
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENTS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_B4.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54310

SRYancey 5/29/2014 4:35:48 PM
WORKSPACE: AHTD Bridge
L:\ROW\RDT\080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B4 (End Bent Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	115	505
				(1) 07292		INT. BENT DETAILS		54311

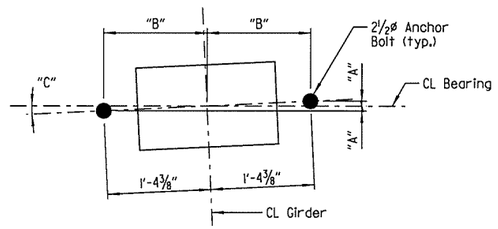


(1) Pedestal spacing measured to CL Pedestal, See "PEDESTAL DETAIL" On Dwg. No. 54312.

PLAN

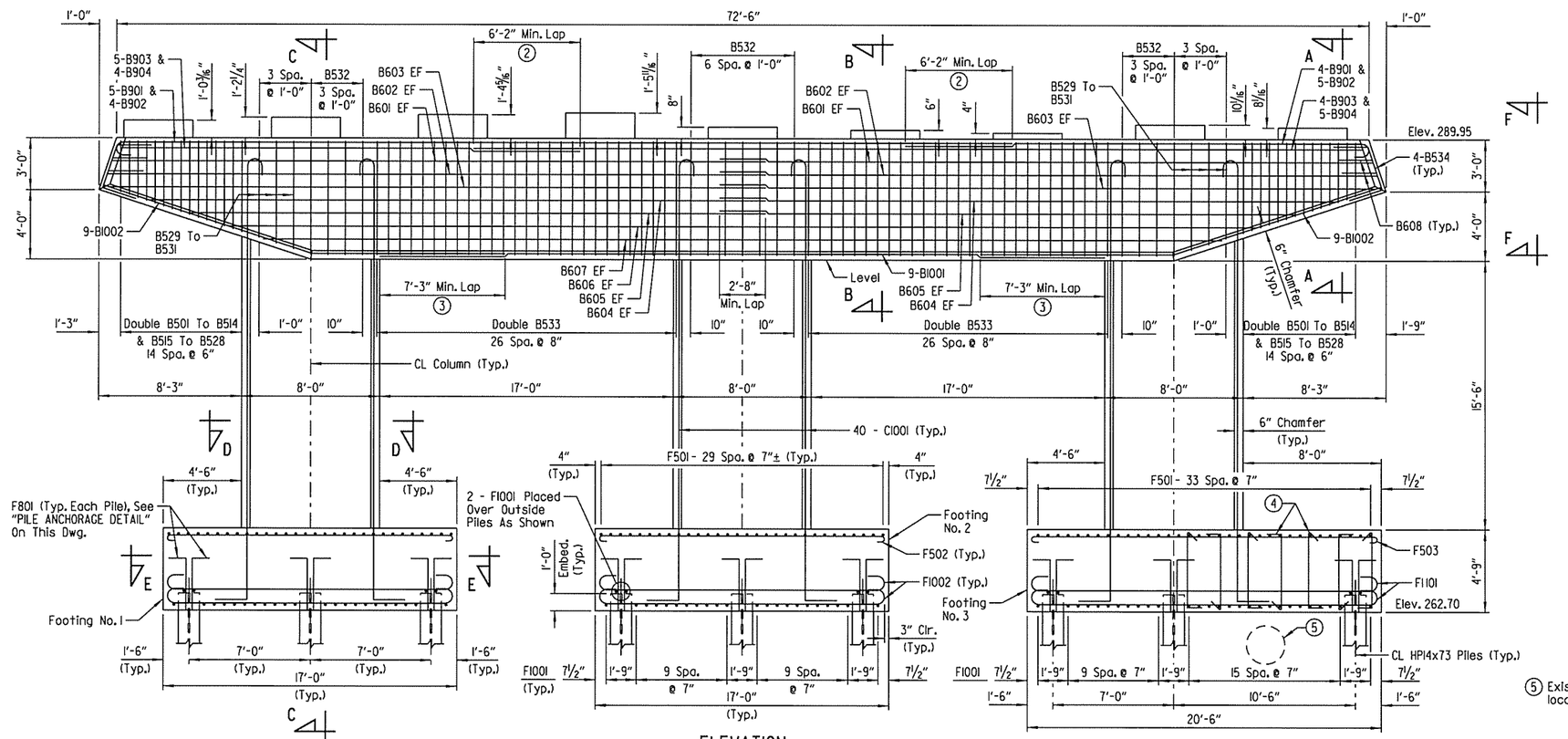
Scale: 1/4" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54501.



TYPICAL ANCHOR BOLT LAYOUT

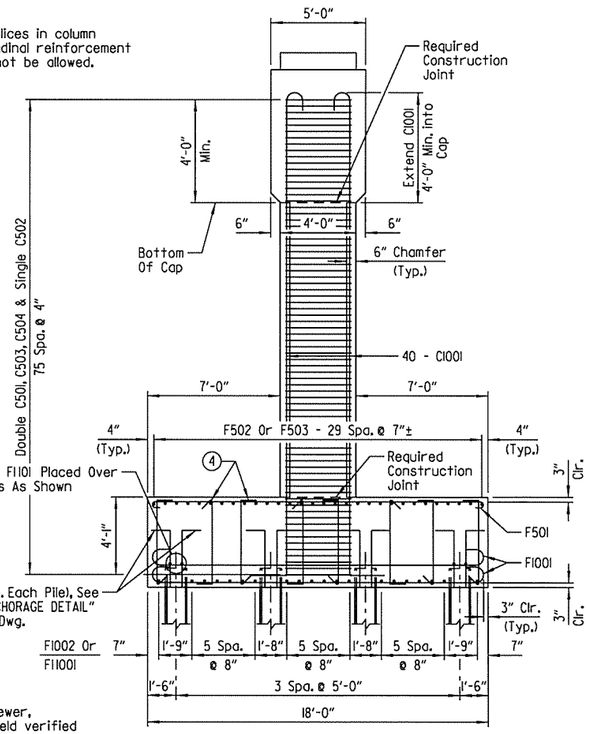
Scale: 1" = 1'-0"



ELEVATION

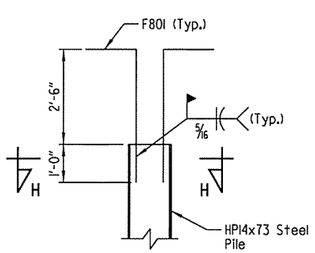
(Looking Forward)
Scale: 1/4" = 1'-0"

NOTE:
Lap splices in column longitudinal reinforcement shall not be allowed.



SECTION C-C

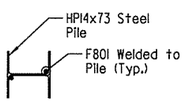
(Reinforcing In Cap Not Shown For Clarity)
Scale: 1/4" = 1'-0"



PILE ANCHORAGE DETAIL

No Scale

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION D-D" "SECTION E-E", "VIEW F-F", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54312.



SECTION H-H

No Scale

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

(2) Lap splice bars at center of bay. Splices shall also alternate between bays such that no two adjacent bars are spliced at the same location.

(3) Lap splice bars immediately adjacent to the inside face of exterior column and extend into bay.

(4) F504 (Typ.) - See DETAIL "A" on Dwg. No. 54312 for number and placement.

TABLE OF VARIABLES			
BEAM	"A"	"B"	"C"
1	3/4"	1'-4 3/8"	2°42'22"
2	1/2"	1'-4 3/8"	1°48'39"
3	1/4"	1'-4 3/8"	0°54'21"
4-9	0"	1'-4 3/8"	0°0'0"

LEGEND

EF = Each Face

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SEAN R. YANCEY 5/30/14 BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAY 2013 FILENAME: B061275x1_B5.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54311

SRYancey 5/29/2014 4:35:49 PM
WORKSPACE: AHTD Bridge
L:\120NWJ\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B5 Int. Bent No. 2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	116	505
				① 07292		INT. BENT DETAILS		54312

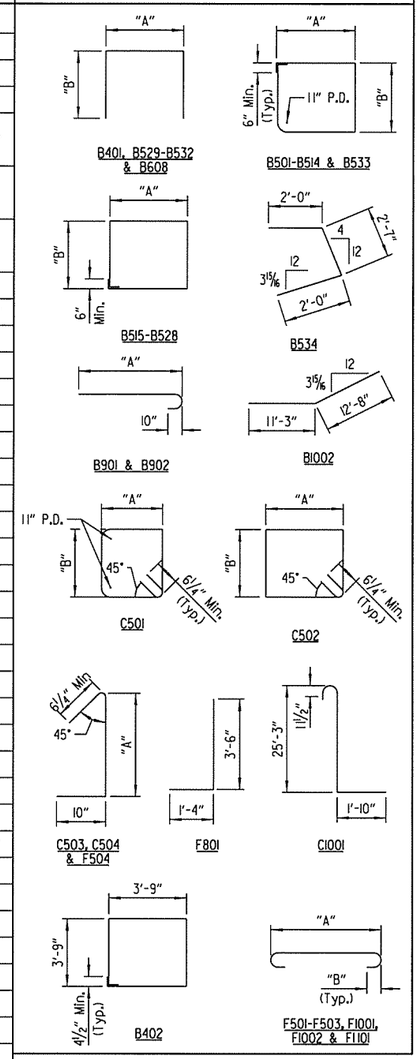
BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	90	8'-2"	3'-8"	2'-4"	2"
B402	16	15'-4"			2"
B501 To B514	4 Each	9'-8" To 14'-2"	1'-7"	3'-0" To 5'-3"	2½", 11"
B515 To B528	2 Each	13'-8" To 18'-2"	3'-7"	3'-0" To 5'-3"	2½"
B529 To B531	2 Each	15'-5½" To 16'-9½"	4'-6"	5'-7" To 6'-3"	2½"
B532	15	17'-3½"	4'-6"	6'-6"	2½"
B533	108	20'-10"	3'-7"	6'-7"	2½", 11"
B534	8	6'-4"			2½"
B601	4	37'-11"			Str.
B602	4	38'-2"			Str.
B603	4	38'-1"			Str.
B604	4	35'-9"			Str.
B605	4	33'-7"			Str.
B606	2	59'-10"			Str.
B607	2	55'-2"			Str.
B608	4	9'-0½"	4'-4½"	2'-6"	4½"
B901	9	53'-2"	51'-11"		10"
B902	9	28'-2"	26'-11"		10"
B903	9	51'-6"			Str.
B904	9	26'-6"			Str.
B1001	9	42'-0"			Str.
B1002	18	23'-11"			10"
C501	456	14'-4"	3'-4"	3'-6"	3¾", 11"
C502	228	14'-4"	3'-4"	3'-6"	3¾"
C503	456	4'-7"	3'-6"		3¾"
C504	456	8'-7"	7'-6"		3¾"
C1001	120	28'-3"			10"
F501	94	18'-8"	17'-6"	5"	3¾"
F502	60	17'-8"	16'-6"	5"	3¾"
F503	30	21'-2"	20'-0"	5"	3¾"
F504	52	5'-4"	4'-3"		2½"
② F801	60	4'-7½"			6"
F1001	84	20'-4"	17'-6"	1½"	10"
F1002	48	19'-4"	16'-6"	1½"	10"
F1101	24	23'-0"	20'-0"	1'-0½"	1¼"

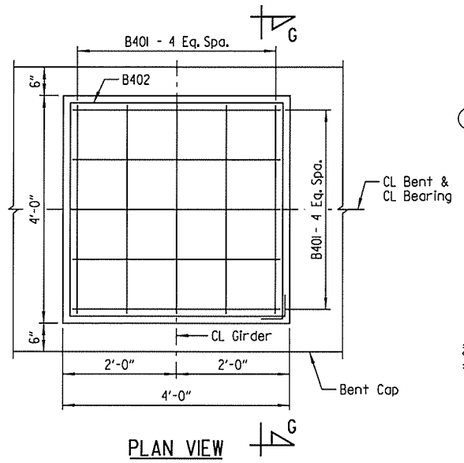
② F801 bars must be a weldable grade, meeting the requirements of ASTM A706 (GR. 60)

TABLE OF VARIABLES		
FOOTING	"C"	"D"
1 & 2	17'-0"	7'-0"
3	20'-6"	10'-6"

BAR BENDING DIAGRAM



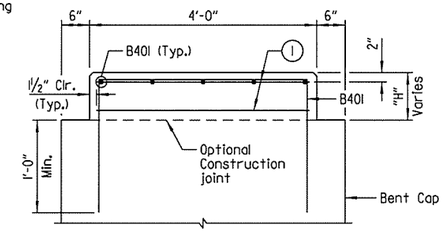
NOTE:
Dimensions of bars are out-to-out.



PLAN VIEW

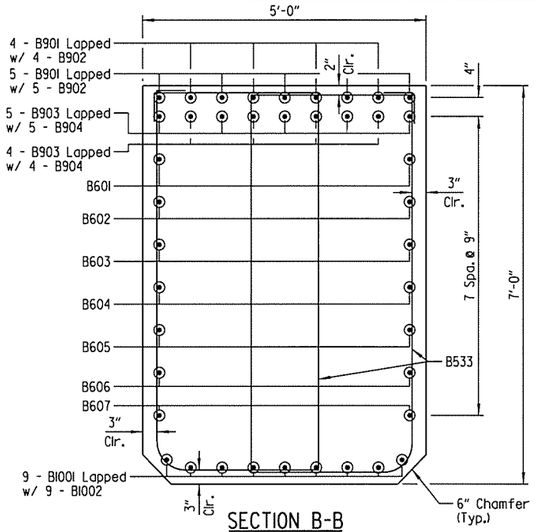
NOTE:
For height of each pedestal, see "ELEVATION" on Dwg. No. 54311.

① 1-B402 when "H" = 4" to 9"
2-B402 Spa. @ 6" when "H" = 9" to 1'-3"
3-B403 Spa. @ 6" when "H" = 1'-3" to 1'-5¹¹/₁₆"

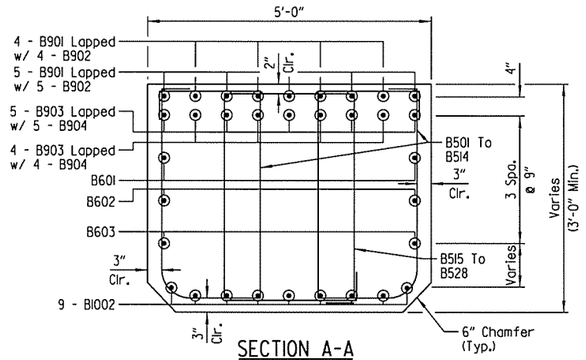


SECTION G-G

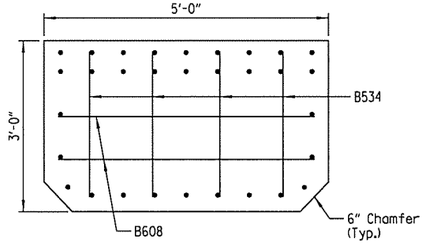
PEDESTAL DETAIL
Scale: ¾" = 1'-0"



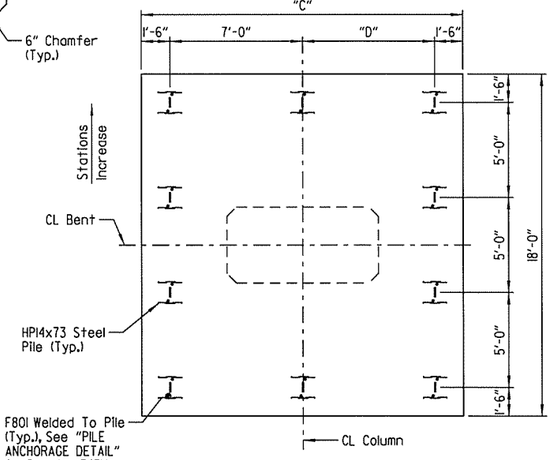
SECTION B-B
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"



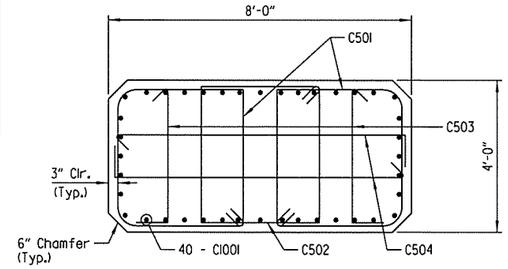
SECTION A-A
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"



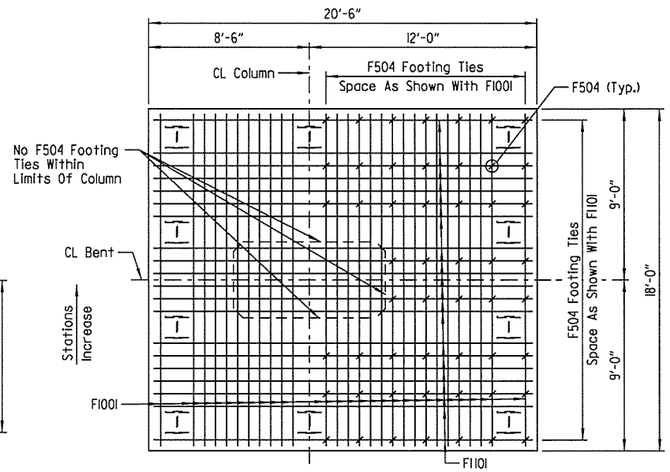
VIEW F-F
(Showing End Cap Reinforcing)
Scale: ¾" = 1'-0"



SECTION E-E
Scale: ¼" = 1'-0"



SECTION D-D
Scale: ½" = 1'-0"



DETAIL A
(Showing Spacing of F504 Footing Ties And Bottom Mat Of Reinforcing In Footing No. 3)
Scale: ¼" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

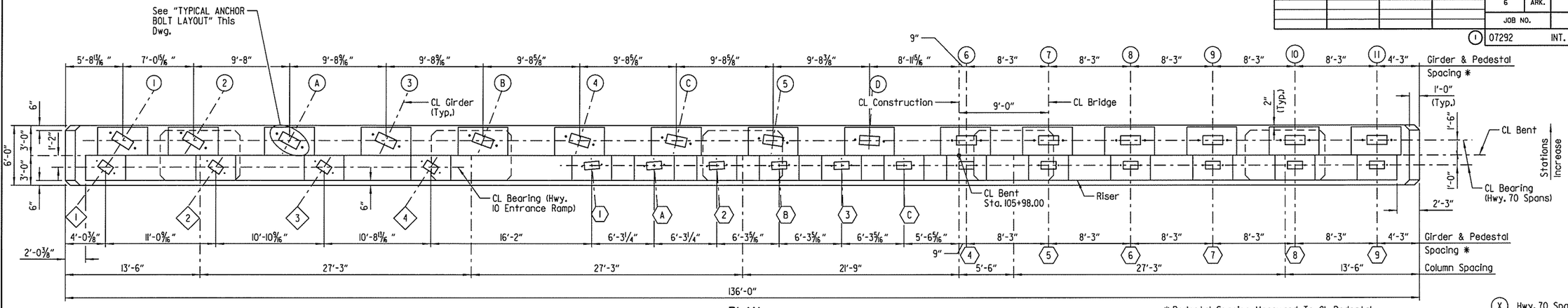
SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275x1_B6.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54312

SRYancey 5/29/2014 4:35:49 PM
WORKSPACE: AHTD Bridge
L:\V2011\11D1T080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B6 Int. Bent No. 2 Details1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	117	505
(1) 07292		INT. BENT DETAILS		54313

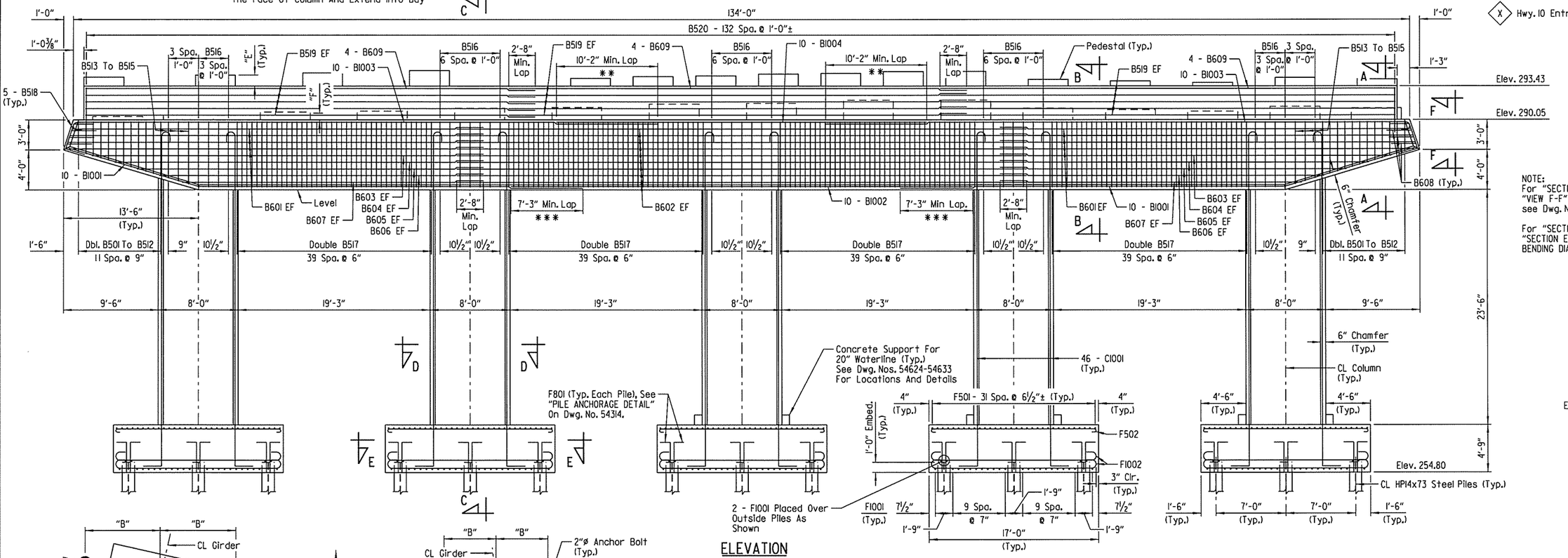


PLAN
Scale: 3/16" = 1'-0"

** Lap Splice Bars at Center of Bay.
*** Lap Splice Bars Immediately Adjacent To The Face Of Column And Extend Into Bay

* Pedestal Spacing Measured To CL Pedestal, See "PEDESTAL DETAIL" On Dwg. No. 54314.

(X) Hwy. 70 Span 3 Girder Number
⟨X⟩ Hwy. 70 Span 2 Girder Number
⟨X⟩ Hwy. 10 Entrance Ramp Girder Number

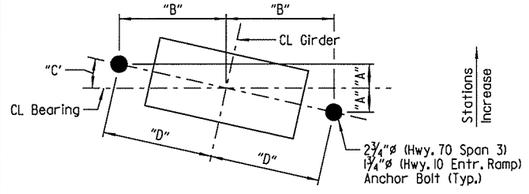


ELEVATION
(Looking Forward)
Scale: 3/16" = 1'-0"

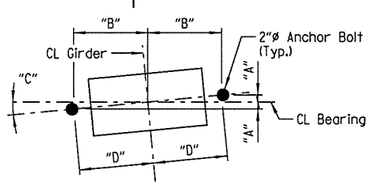
NOTE:
For "SECTION A-A", "SECTION B-B", "VIEW F-F" & "TABLE OF VARIABLES", see Dwg. No. 54314.

For "SECTION C-C", "SECTION D-D", "SECTION E-E", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54315.

LEGEND
EF = Each Face



HWY. 70 SPAN 3 & HWY. 10 ENTRANCE RAMP



HWY. 70 SPAN 2

NOTE:
For Hwy. 70 "DETAILS OF ELASTOMERIC BEARINGS", See Dwg. No. 54501.

For Hwy. 10 Entrance Ramp "DETAILS OF ELASTOMERIC BEARINGS", See Dwg. No. 54540.

TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

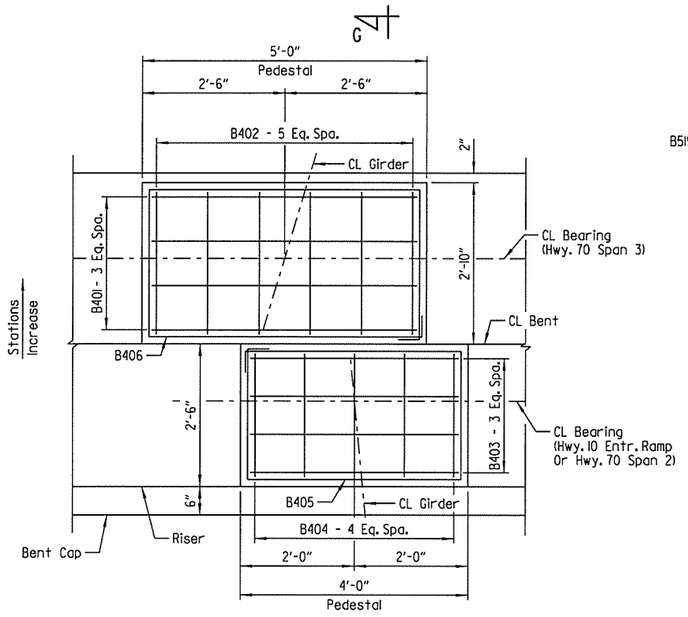
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENT NO. 3
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

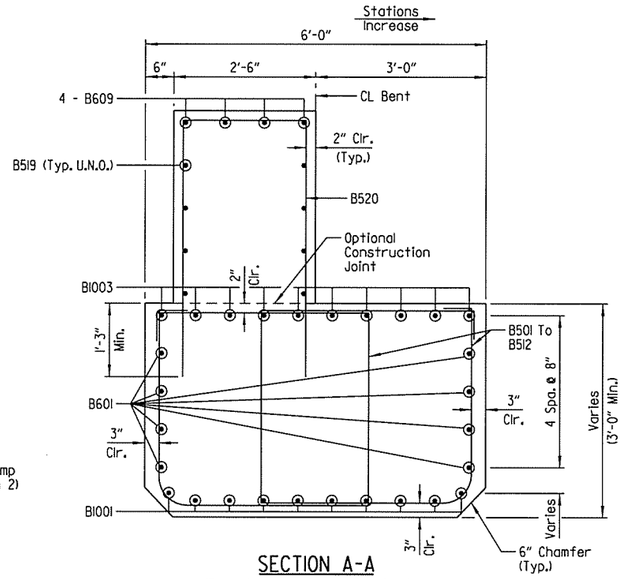
DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275x1_B7.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54313

SRYancey 5/29/2014 4:35:50 PM
WORKSPACE: AHTD Bridge
L:\ZONAL\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B7 (Int. Bent No. 3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	118	505
				(1) 07292		INT. BENT DETAILS		54314

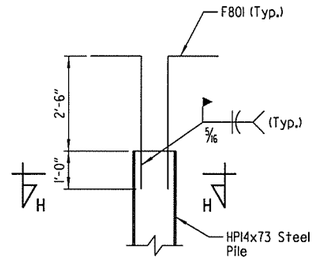


PLAN VIEW



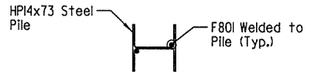
SECTION A-A

(Pedestals Not Shown For Clarity)
Scale: 3/4" = 1'-0"



PILE ANCHORAGE DETAIL

No Scale

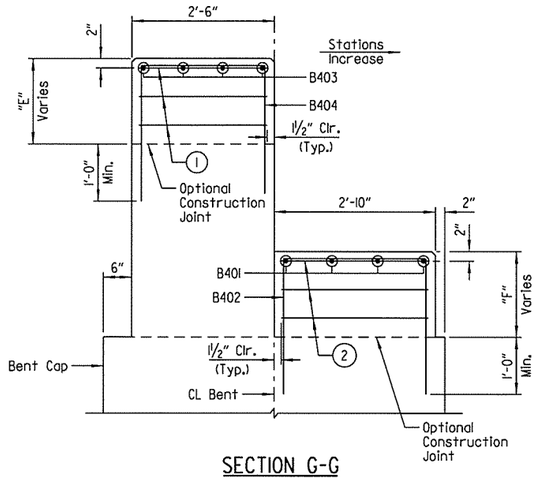


SECTION H-H

No Scale

TABLE OF VARIABLES

	GIRDER	"A"	"B"	"C"	"D"	"E"	"F"
HWY. 10 EN. RAMP	1	7 9/16"	10 3/8"	36°04'34"	1'-0 13/16"	10 5/8"	
	2	7 5/16"	10 1/2"	34°47'14"	1'-0 13/16"	1'-1 1/4"	
	3	7 1/16"	10 11/16"	33°35'39"	1'-0 13/16"	1'-3 7/8"	
	4	6 7/8"	10 13/16"	32°29'09"	1'-0 13/16"	1'-6 5/8"	
HWY. 70 SPAN 2	1	1 1/8"	11 5/16"	5°25'14"	1'-0"	9 9/16"	
	A	15/16"	11 5/16"	4°31'17"	1'-0"	11 3/8"	
	2	3/4"	1'-0"	3°37'11"	1'-0"	1'-0 3/8"	
	B	9/16"	1'-0"	2°42'59"	1'-0"	1'-2 3/8"	
	3	3/8"	1'-0"	1°48'42"	1'-0"	1'-3 3/8"	
	C	3/16"	1'-0"	0°54'22"	1'-0"	1'-5 3/8"	
	4	0"	1'-0"	0°	1'-0"	1'-5 11/16"	
	5	0"	1'-0"	0°	1'-0"	8/16"	
	6	0"	1'-0"	0°	1'-0"	6 1/16"	
	7	0"	1'-0"	0°	1'-0"	4 1/16"	
	8	0"	1'-0"	0°	1'-0"	10 1/8"	
	9	0"	1'-0"	0°	1'-0"	8 1/8"	
HWY. 70 SPAN 3	1	9 1/8"	1'-2 7/16"	32°18'23"	1'-5 1/16"		4 1/16"
	2	9"	1'-2 1/2"	31°46'07"	1'-5 1/16"		5 3/4"
	A	8 1/8"	1'-3"	28°19'26"	1'-5 1/16"		9 7/16"
	3	7 1/8"	1'-3 1/2"	24°36'19"	1'-5 1/16"		10 7/16"
	B	6 1/16"	1'-3 15/16"	20°44'41"	1'-5 1/16"		1'-2 1/8"
	4	4 15/16"	1'-4 5/16"	16°45'31"	1'-5 1/16"		1'-3 1/16"
	C	3 3/4"	1'-4 5/8"	12°40'00"	1'-5 1/16"		1'-6 13/16"
	5	2 1/2"	1'-4 7/8"	8°29'31"	1'-5 1/16"		1'-7 3/4"
	D	1"	1'-5 1/16"	3°20'18"	1'-5 1/16"		1'-11 7/16"
	6	0"	1'-5 1/16"	0°	1'-5 1/16"		1'-11 3/4"
	7	0"	1'-5 1/16"	0°	1'-5 1/16"		1'-2 1/16"
	8	0"	1'-5 1/16"	0°	1'-5 1/16"		1'-0 1/8"
	9	0"	1'-5 1/16"	0°	1'-5 1/16"		10 1/8"
	10	0"	1'-5 1/16"	0°	1'-5 1/16"		1'-4 1/8"
	11	0"	1'-5 1/16"	0°	1'-5 1/16"		1'-2 1/8"



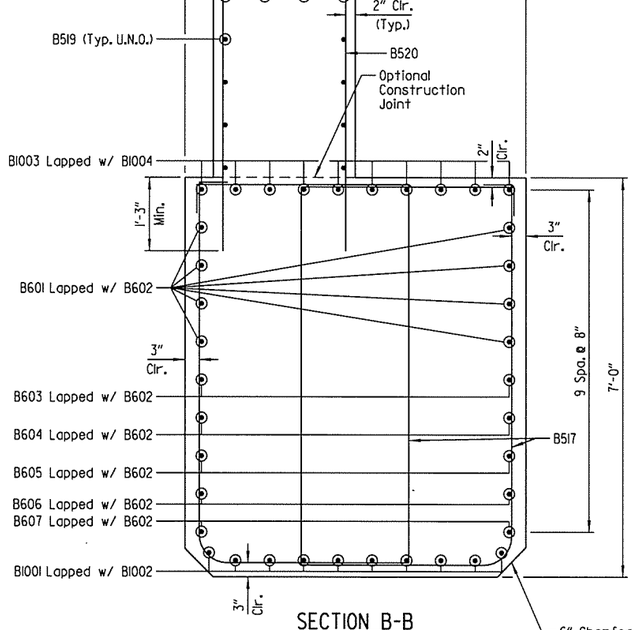
SECTION G-G

PEDESTAL DETAIL

Scale: 3/4" = 1'-0"

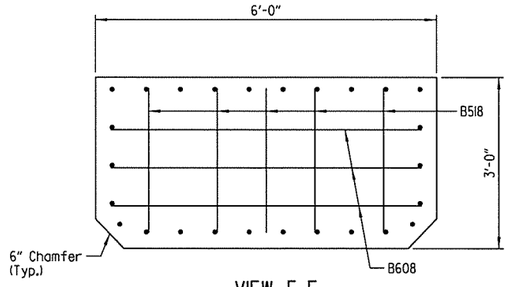
(1) 1-B405 when "E" = 4 1/16" to 9"
2-B405 Spa. @ 6" when "E" = 9" to 1'-3"
3-B405 Spa. @ 6" when "E" = 1'-3" to 1'-6 5/8"

(2) 1-B406 when "F" = 4 1/16" to 9"
2-B406 Spa. @ 6" when "F" = 9" to 1'-3"
3-B406 Spa. @ 6" when "F" = 1'-3" to 1'-9"
4-B406 Spa. @ 6" when "F" = 1'-9" to 1'-11 3/4"



SECTION B-B

(Pedestals Not Shown For Clarity)
Scale: 3/4" = 1'-0"



VIEW F-F

(Showing End Cap Reinforcing)
Scale: 3/4" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

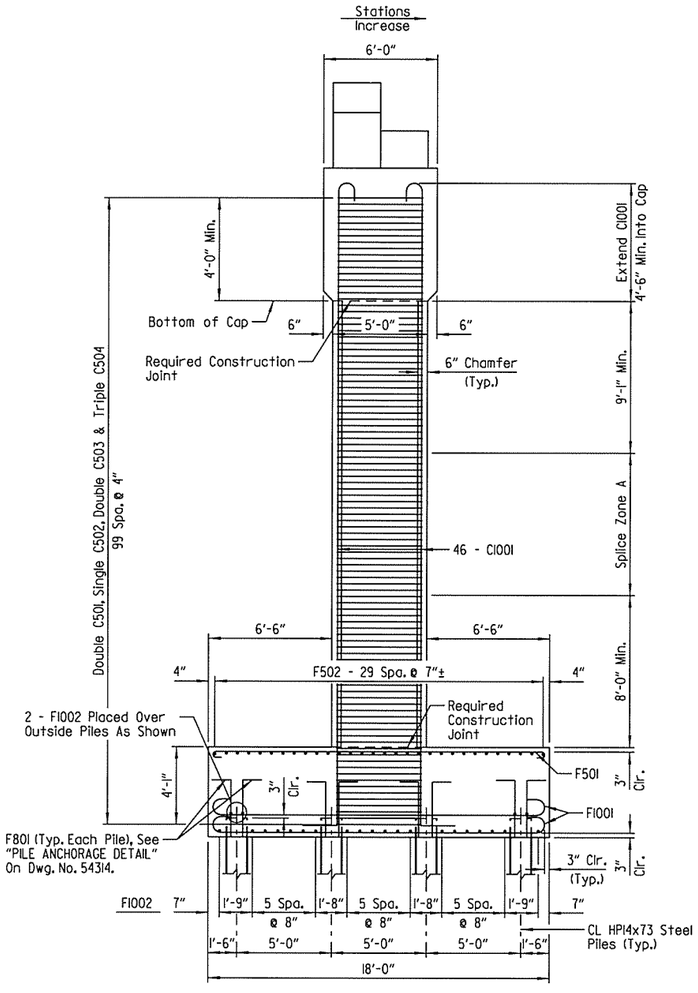
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENT NO. 3
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275x1_B8.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54314

SRYancey 5/29/2014 4:35:51 PM
WORKSPACE: AHTD Bridge
L:\ZOA\MDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B8 Int. Bent No. 3 Details 1of 2i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	119	505
				(1) 07292		INT. BENT DETAILS		54315



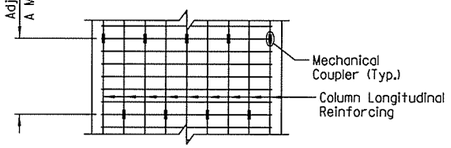
SECTION C-C

(Reinforcing In Cap Not Shown For Clarity)
Scale: 1/4" = 1'-0"

Adjacent Mechanical Couplers Shall Be Staggered A Min. Of 2'-0" Or The Length Of The Mechanical Coupler, Whichever Is Greater

Mechanical couplers in the columns shall consist of a QPL approved mechanical splice and shall maintain the clearances shown. Their payment shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)". The couplers shall develop at least 125% of the specified yield strength of the bar.

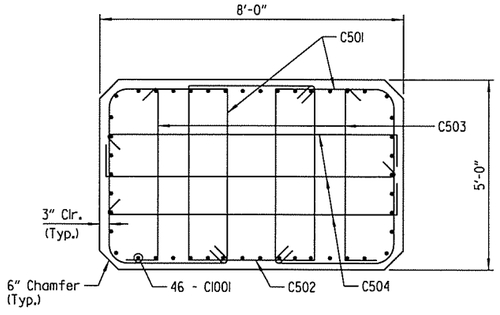
The bars shall be assembled as shown in "OPTIONAL MECHANICAL SPLICE DETAIL" within Splice Zone A only. No more than one mechanical coupler per bar shall be permitted. Not more than alternate bars shall be spliced at a given section.



OPTIONAL MECHANICAL SPLICE DETAIL

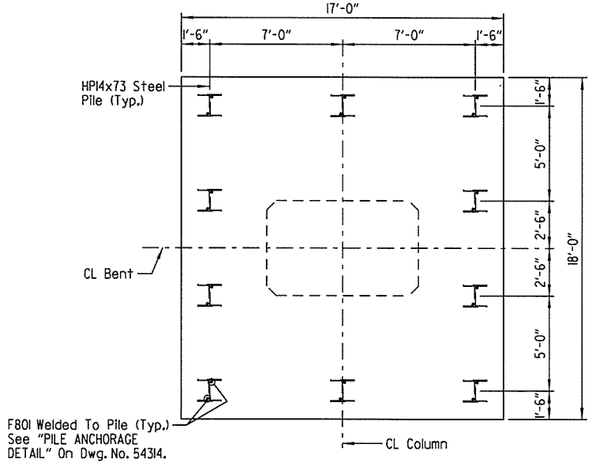
Scale: 1/2" = 1'-0"

NOTE:
Lap splices in column longitudinal reinforcement shall not be allowed.



SECTION D-D

Scale: 1/2" = 1'-0"



SECTION E-E

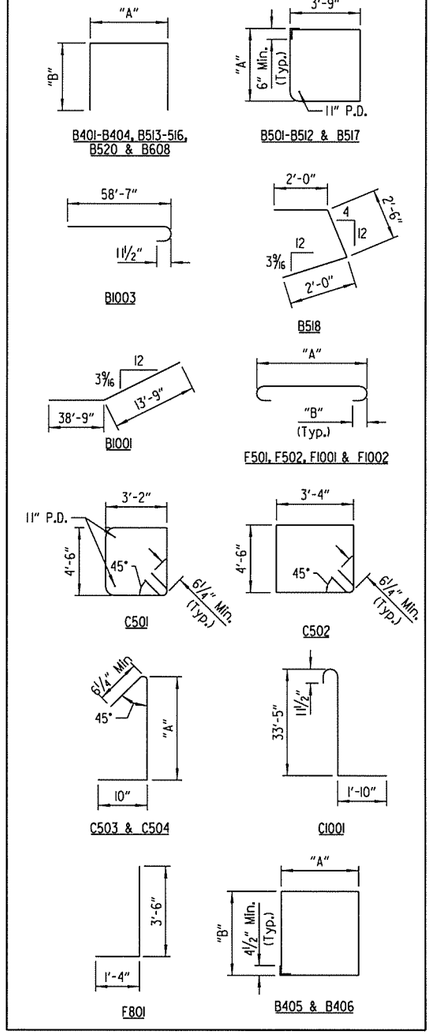
Scale: 1/4" = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	60	10'-6"	4'-8"	3'-0"	2"
B402	90	8'-4"	2'-6"	3'-0"	2"
B403	64	8'-6"	3'-8"	2'-6"	2"
B404	80	7'-0"	2'-2"	2'-6"	2"
B405	33	12'-4"	3'-9"	2'-3"	2"
B406	36	15'-0"	4'-9"	2'-7"	2"
B501 To B512	4 Each	13'-11" To 18'-10"	3'-0" To 5'-5½"		2½", 11"
B513 To B515	2 Each	16'-7½" To 17'-9½"	5'-6"	5'-8" To 6'-3"	2½"
B516	29	18'-5½"	5'-6"	6'-7"	2½"
B517	320	21'-1"	6'-7"		2½", 11"
B518	10	6'-5"			2½"
B519	24	45'-9"			Str.
B520	133	10'-11½"	2'-2"	4'-6"	2½"
B601	16	41'-10"			Str.
B602	18	57'-2"			Str.
B603	4	39'-5"			Str.
B604	4	37'-2"			Str.
B605	4	34'-11"			Str.
B606	4	32'-8"			Str.
B607	4	30'-6"			Str.
B608	6	10'-0½"	5'-4½"	2'-6"	4½"
B609	12	45'-9"			Str.
B1001	20	52'-6"			10"
B1002	10	46'-4"			Str.
B1003	20	60'-0"			10"
B1004	10	37'-2"			Str.
C501	1000	16'-0"			3¾", 11"
C502	500	16'-4"			3¾"
C503	1000	5'-10"	4'-6"		3¾"
C504	1500	8'-10"	7'-6"		3¾"
C1001	230	36'-5"			10"
F501	160	18'-8"	17'-6"	5"	3¾"
F502	150	17'-8"	16'-6"	5"	3¾"
(1) F801	100	4'-7½"			6"
F1001	130	20'-4"	17'-6"	11½"	10"
F1002	120	19'-4"	16'-6"	11½"	10"

(1) F801 Bars must be a weldable grade meeting the requirements of ASTM A706 (Gr.60)

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

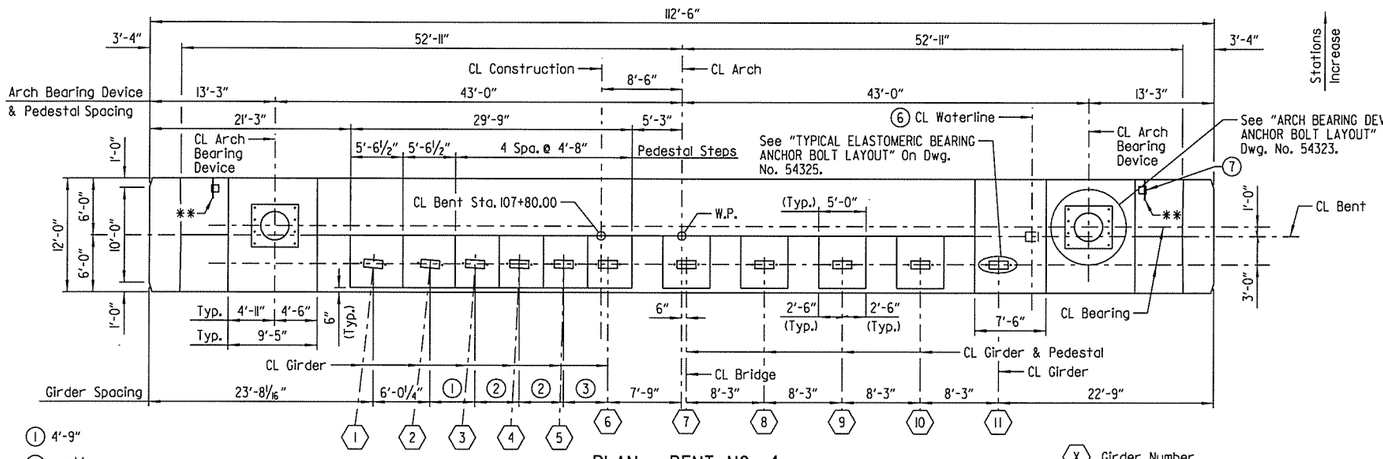
SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENT NO. 3
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275x1_B3.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54315

SRYancey 5/29/2014 4:35:51 PM
WORKSPACE: AHTD Bridge
L:\ZDATA\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B3 Int. Bent No. 3 Details 2 of 2i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	120	505
				(1) 07292		INT. BENT DETAILS		54318

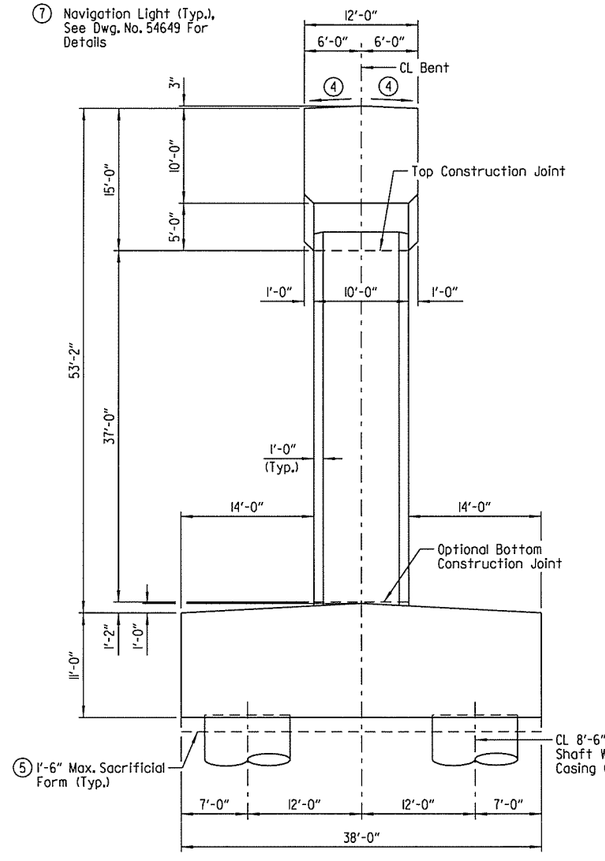


PLAN - BENT NO. 4

(Columns Not Shown For Clarity)
Scale: 1/8" = 1'-0"

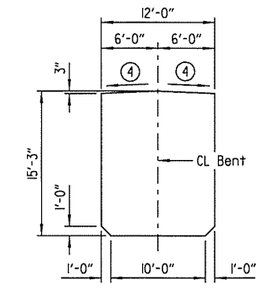
** Red High Intensity Retro-Reflective Panel, See Dwg. No. 54649 For Details

7 Navigation Light (Typ.), See Dwg. No. 54649 For Details



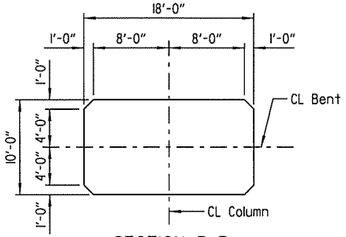
END ELEVATION - BENT NO. 4

(Arch And Girder Pedestals Are Not Shown For Clarity)
Scale: 1/8" = 1'-0"



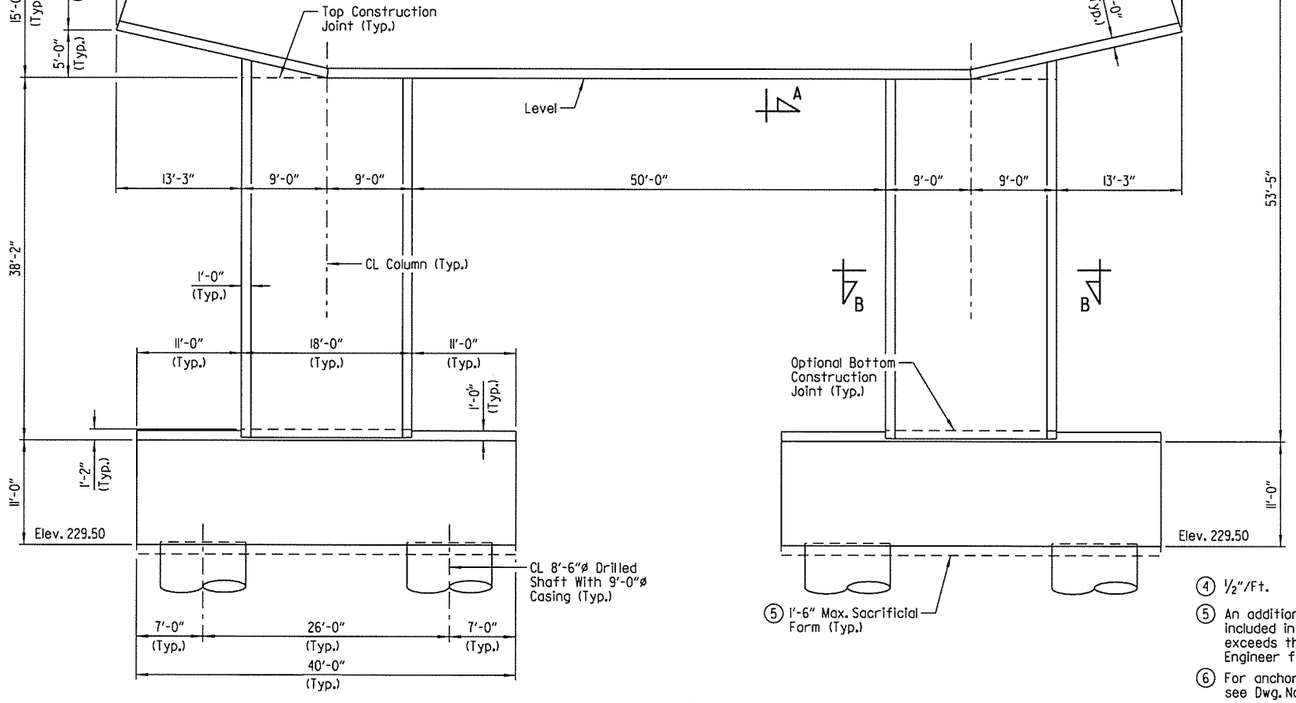
SECTION A-A

(Rebar And Pedestals Not Shown)
Scale: 1/8" = 1'-0"



SECTION B-B

(Rebar Not Shown)
Scale: 1/8" = 1'-0"



ELEVATION - BENT NO. 4

Looking Forward
(Rebar Not Shown For Clarity)
Scale: 1/8" = 1'-0"

GENERAL NOTES

All Concrete, except that used for drilled shafts, shall be Class "B" with a minimum 28-day compressive strength f'c = 3,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

Concrete used for drilled shafts shall be Class "S" as modified by SP Job 061275 "DRILLED SHAFT FOUNDATIONS", with a minimum 28-day compressive strength f'c = 3,500 psi.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap and in pedestals shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

Concrete and reinforcing steel in drilled shafts will not be paid for directly but will be included in the unit prices of the drilled shaft items.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 061275 "DRILLED SHAFT FOUNDATIONS".

NOTES:
For drilled shaft and waterline footing details, see Dwg. Nos. 54320 & 54321.

For column details, see Dwg. No. 54322.

For cap beam and pedestal details, see Dwg. Nos. 54323-54325.

(4) ½"/Ft.

(5) An additional sacrificial form load of 0.225 ksf was included in the analysis. If weight of sacrificial form exceeds this value, the Contractor shall notify the Engineer for approval.

(6) For anchor bolt location and waterline details, see Dwg. No. 54624-54633.

* CONSTRUCTION NOTE:
Dimensions shown are for estimating purposes only and are dependent upon the dimensions of the bearing assembly as determined by the manufacturer. The Contractor shall submit to the Engineer shop drawings of the bearing assembly to be used, such that the true dimensions will be reflected on this drawing by revision. See Dwg. No. 54383 for bearing assembly details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
5-30-14
JOHN H. RUDDELL
No. 8017

BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B10.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54318

SRYancey 5/30/2014 10:23:46 AM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B12 (Int. Bent Nos. 4 & 6 - 1 of 8).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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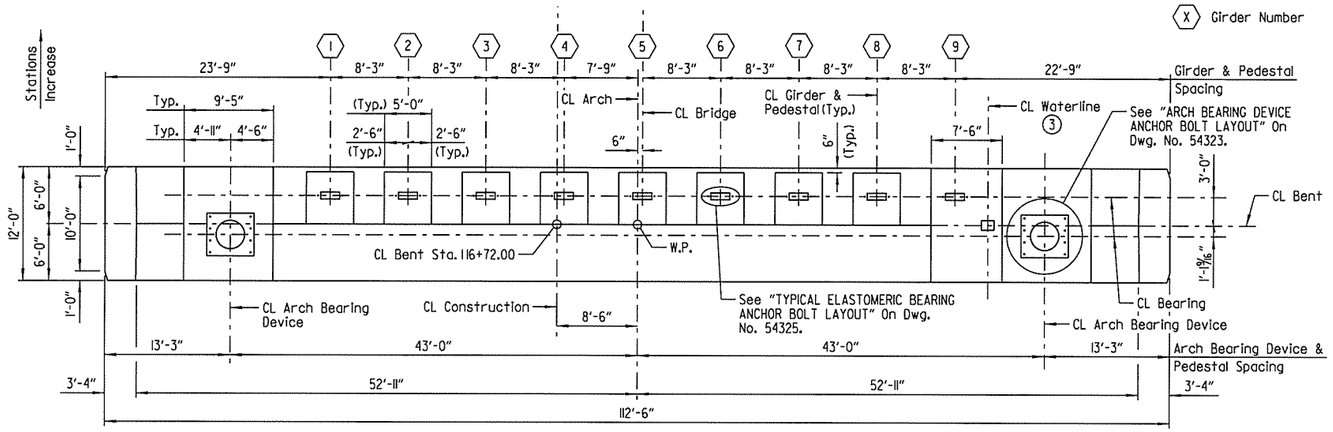
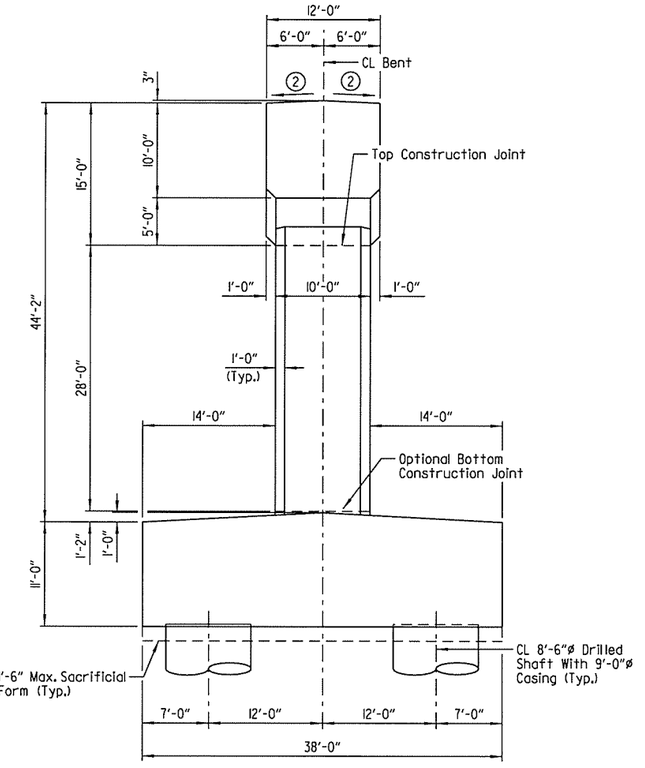
				JOB NO.		061275	121	505
				(1) 07292		INT. BENT DETAILS		54319



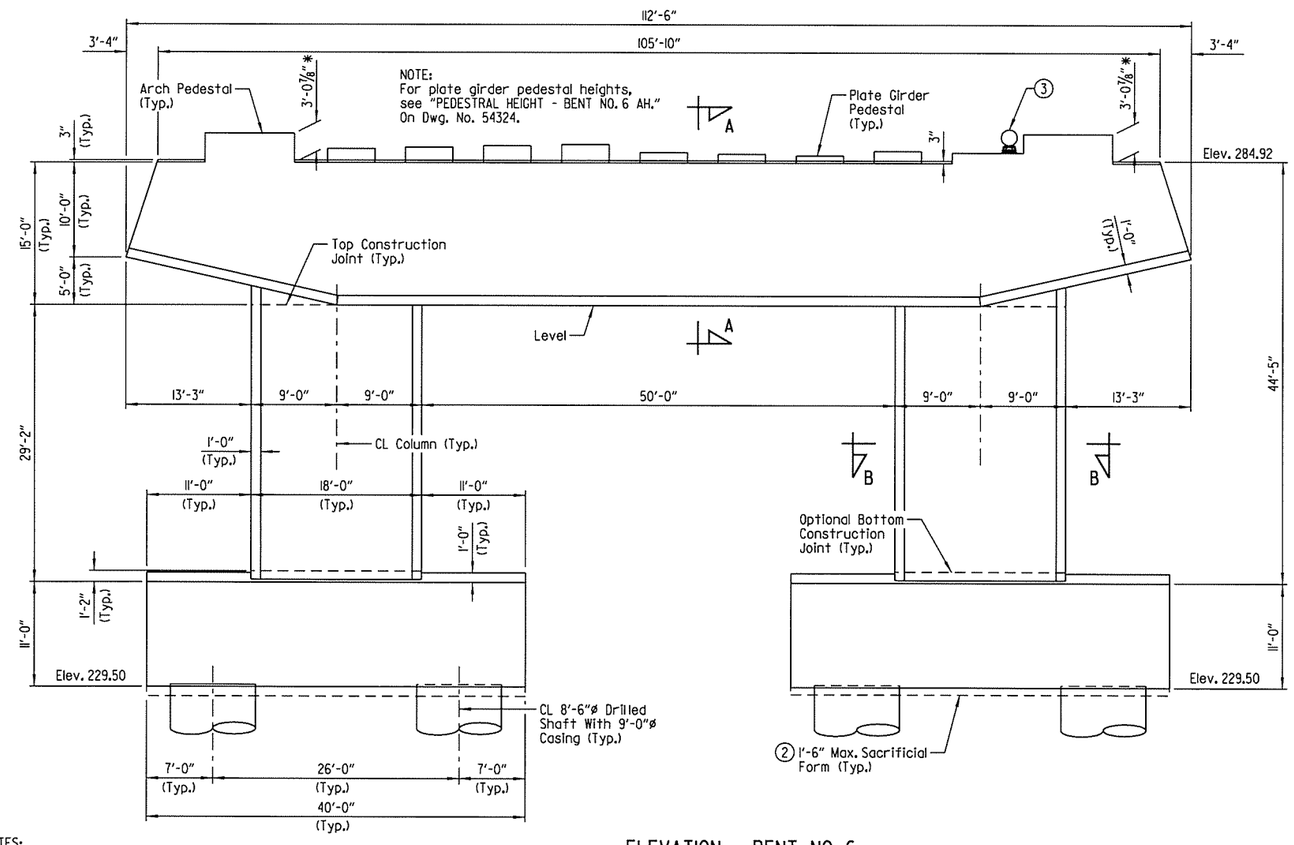
PLAN - BENT NO. 6

(Columns Not Shown For Clarity)
Scale: ⅛" = 1'-0"



END ELEVATION - BENT NO. 6

(Arch And Girder Pedestals Are Not Shown For Clarity)
Scale: ⅛" = 1'-0"



ELEVATION - BENT NO. 6

Looking Forward
(Rebar Not Shown For Clarity)
Scale: ⅛" = 1'-0"

NOTES:
For "GENERAL NOTES", "SECTION A-A" & "SECTION B-B", see Dwg. No. 54318.

For drilled shaft and waterline footing details, see Dwg. Nos. 54320 & 54321.

For column details, see Dwg. No. 54322.

For cap beam and pedestal details, see Dwg. Nos. 54323-54325.

(1) ½"/Ft.

(2) An additional sacrificial form load of 0.225 ksf was included in the analysis. If weight of sacrificial form exceeds this value, the Contractor shall notify the Engineer for approval.

(3) For anchor bolt location and waterline details, see Dwg. No. 54624-54633.

* CONSTRUCTION NOTE:
Dimensions shown are for estimating purposes only and are dependent upon the dimensions of the bearing assembly as determined by the manufacturer. The Contractor shall submit to the Engineer shop drawings of the bearing assembly to be used, such that the true dimensions will be reflected on this drawing by revision. See Dwg. No. 54383 for bearing assembly details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B11.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54319

SRYancey 5/29/2014 4:35:53 PM
WORKSPACE: AHTD 9-2-09
L:\2DN\NGDT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B13 Int. Bent Nos. 4 & 6 - 2 of 8].dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		061275	122	505
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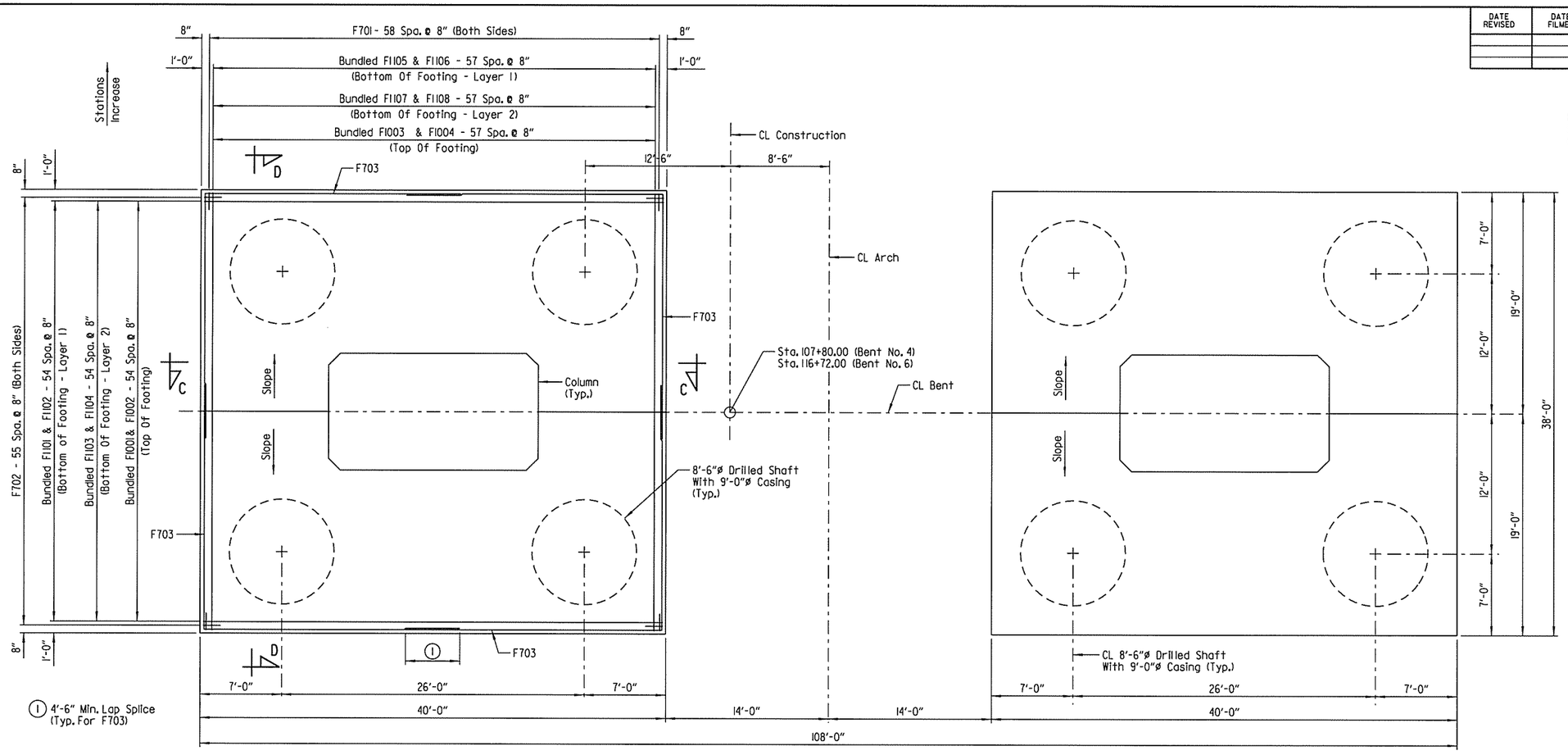
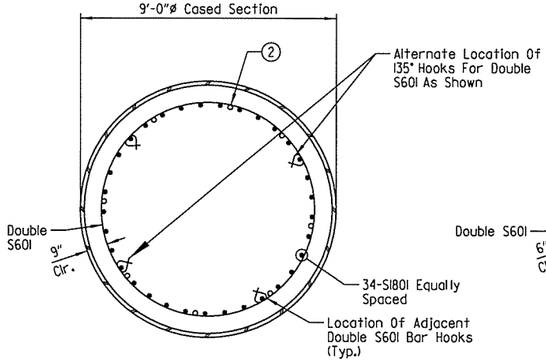


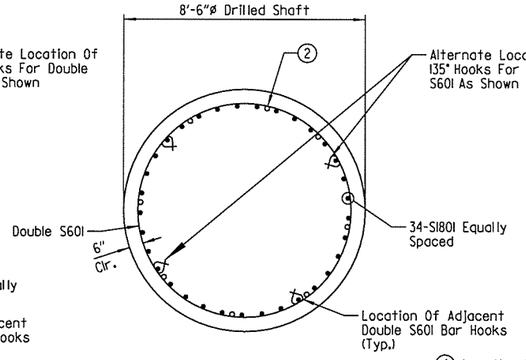
PLAN - WATERLINE FOOTINGS

Scale: 3/16" = 1'-0"



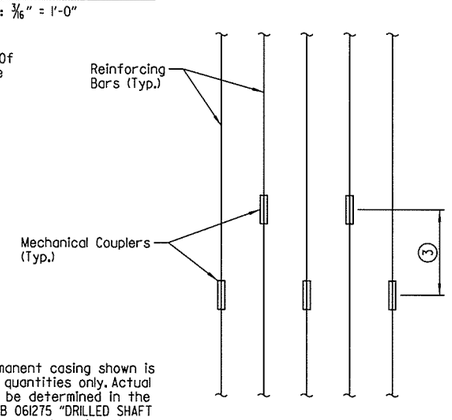
SECTION A-A

Scale: 3/8" = 1'-0"



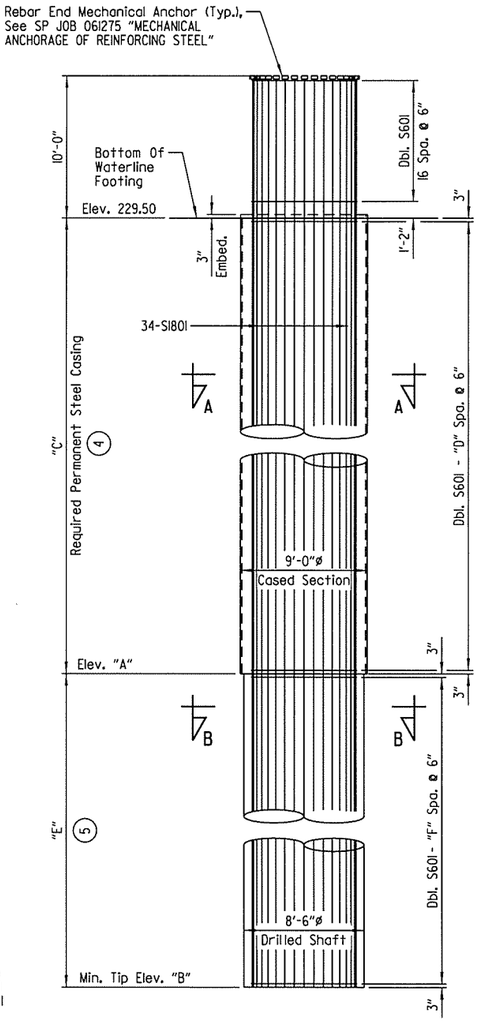
SECTION B-B

Scale: 3/8" = 1'-0"



BAR SPLICE DETAIL

No Scale



ELEVATION - DRILLED SHAFT

Scale: 3/16" = 1'-0"

MECHANICAL COUPLER & SPLICE NOTES

Contractor shall be required to use mechanical couplers to splice reinforcing bars whose lengths given in the bar lists on Dwg. Nos. 54321, 54322 & 54324 exceed 60'-0". The bars shall be assembled as shown in "BAR SPLICE DETAIL" or "BUNDLED BAR SPLICE DETAIL".

The Contractor may choose location of splices for convenience so long as no bar to be spliced is less than 5'-0" in length and no closer than 10'-0" from top of footing. The Contractor shall not splice a single bar more than two times.

The Contractor may also elect to splice bars whose lengths are less than 60'-0" to provide ease of construction so long as the previously mentioned requirements are met.

Mechanical couplers shall conform to the requirements of SP JOB 061275 "SPLICING REINFORCING STEEL", and shall maintain the clearances shown in "BAR SPLICE DETAIL" or "BUNDLED BAR SPLICE DETAIL". Not more than alternate bars shall be spliced at a given section. Payment for mechanical couplers shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)" for splicing No. 10 & No. 11 bars and to the item "DRILLED SHAFT (102")" for splicing No. 18 bars. The couplers shall develop at least 125% of the specified yield strength of the bar.

NOTE:
For "SECTION C-C", "SECTION D-D", "BAR LIST - FOOTING & DRILLED SHAFTS" & "BAR BENDING DIAGRAM - FOOTING & DRILLED SHAFTS", see Dwg. No. 54321.

TABLE OF VARIABLES

BENT NO.	"A"	"B"	"C"	"D"	"E"	"F"
4	203.50	176.50	26'-0"	51	27'-0"	53
6	175.50	151.50	54'-0"	107	24'-0"	47

① 4'-6" Min. Lap Splice (Typ. For F703)

② 8 - 2" Min. ø Schedule 40 Steel Pipes Equally Spaced. See SP JOB 061275 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS".

③ Adjacent mechanical couplers shall be staggered a minimum of 3'-0" or the length of the mechanical coupler, whichever is greater.

④ Length of permanent casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB 061275 "DRILLED SHAFT FOUNDATIONS". Permanent casing shall extend approximately 3 feet below top of competent rock.

⑤ Minimum penetration into competent rock below permanent casing

STATE OF ARKANSAS 12390 LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

BRIDGE ENGINEER

SHEET 3 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

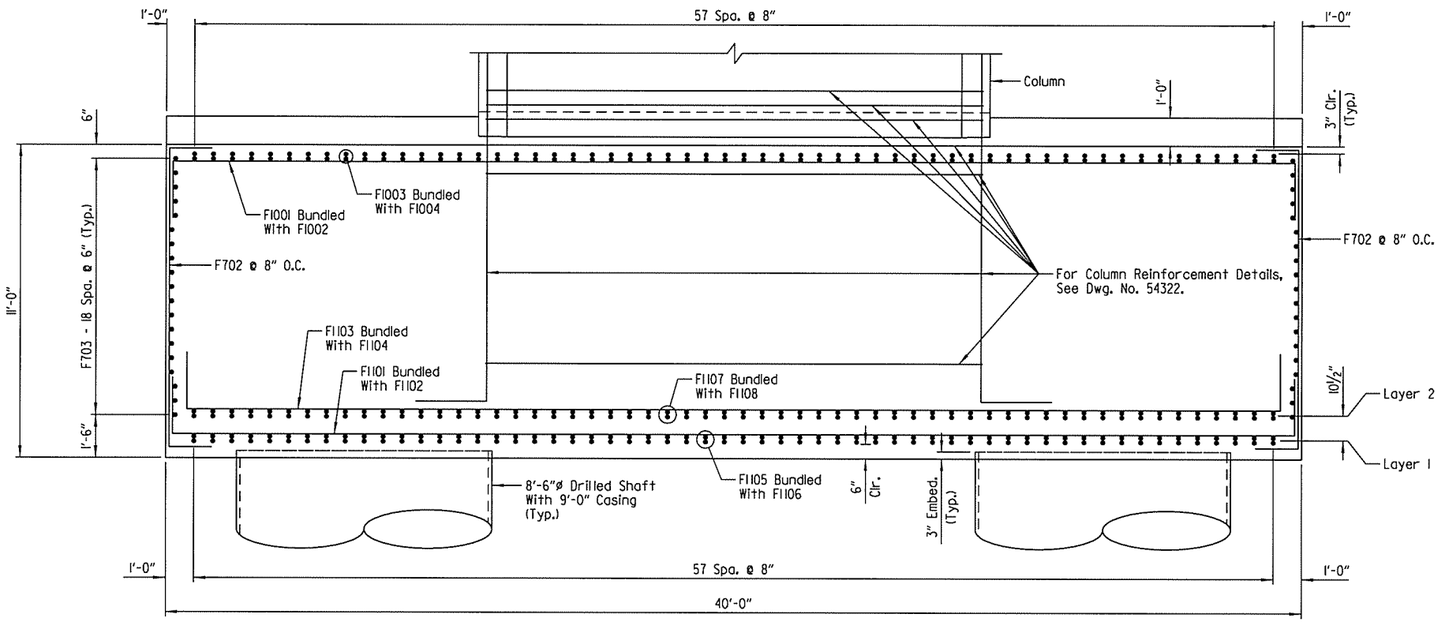
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_BI2.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54320

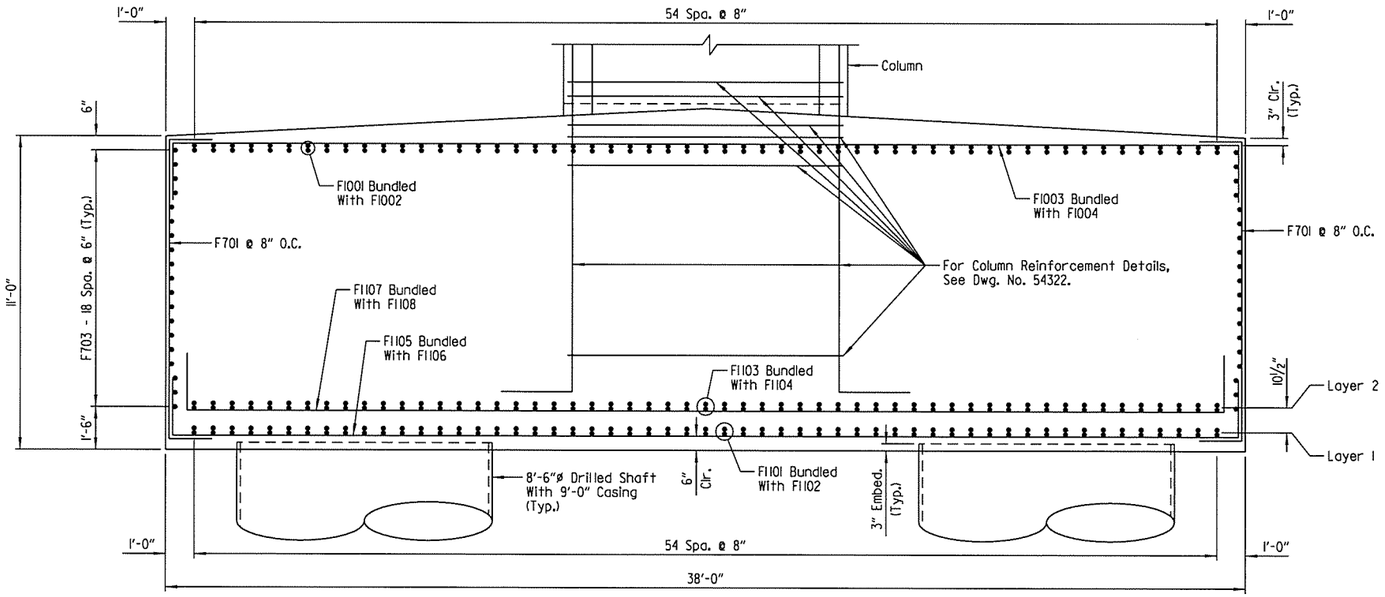
SRYancey 5/29/2014 4:35:54 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTIBD Broadway Bridge over the Arkansas River\Drawings\B061275x1_BI4 Int. Bent Nos. 4 & 6 - 3 of 8).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	123	505
				(1) 07292		INT. BENT DETAILS		54321



SECTION C-C

(Drilled shaft reinforcement not shown for clarity)
Scale: 3/8" = 1'-0"



SECTION D-D

(Drilled shaft reinforcement not shown for clarity)
Scale: 3/8" = 1'-0"

BAR LIST - FOOTING & DRILLED SHAFTS

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	F701	236	12'-10½"	10'-3"	1'-6"	5¼"
	F702	224	12'-4½"	9'-9"	1'-6"	5¼"
	F703	152	42'-10"			5¼"
	F1001	110	42'-7"	39'-6"	1'-10"	1'-0½"
	F1002	110	42'-4"	39'-3"	1'-10"	10"
	F1003	116	40'-7"	37'-6"	1'-10"	1'-0½"
	F1004	116	40'-4"	37'-3"	1'-10"	10"
	F1101	110	42'-10"	39'-6"	2'-0"	1'-2"
	F1102	110	42'-7"	39'-3"	2'-0"	11¼"
	F1103	110	41'-10"	38'-6"	2'-0"	1'-2"
	F1104	110	41'-7"	38'-3"	2'-0"	11¼"
	F1105	116	40'-10"	37'-6"	2'-0"	1'-2"
	F1106	116	40'-7"	37'-3"	2'-0"	11¼"
	F1107	116	39'-10"	36'-6"	2'-0"	1'-2"
	F1108	116	39'-7"	36'-3"	2'-0"	11¼"
(2)	S601	"C"	25'-2"			4½"
(1) (2)	S1801	272	"D"			Str.

NOTE:
Number of bars shown is for one bent only.

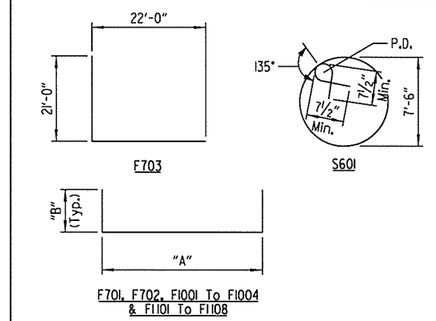
(1) Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54320.

(2) Non-Pay Item - Subsidiary to SP JOB 061275 "DRILLED SHAFT FOUNDATIONS"

TABLE OF VARIABLES

BENT NO.	"C"	"D"
4	1968	63'-0"
6	2768	88'-0"

BAR BENDING DIAGRAM - FOOTING & DRILLED SHAFTS



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
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No. 8617
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BRIDGE ENGINEER

SHEET 4 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_BI3.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54321

SRYancey 5/29/2014 4:35:54 PM
WORKSPACE: AHTD Bridge
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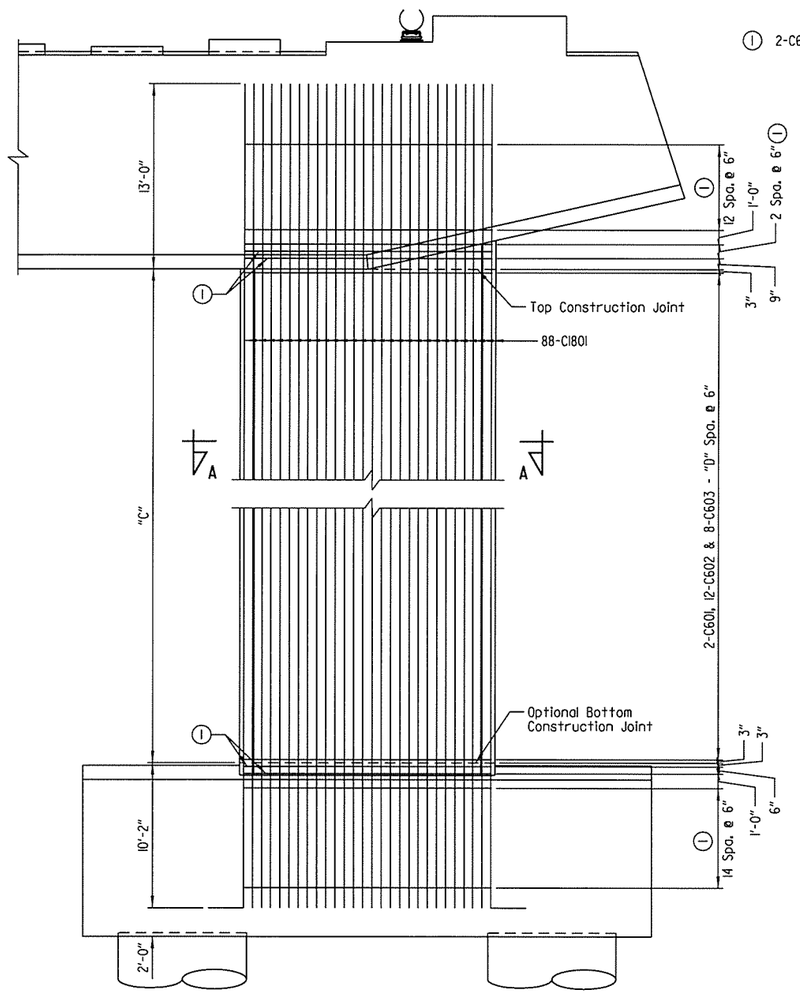
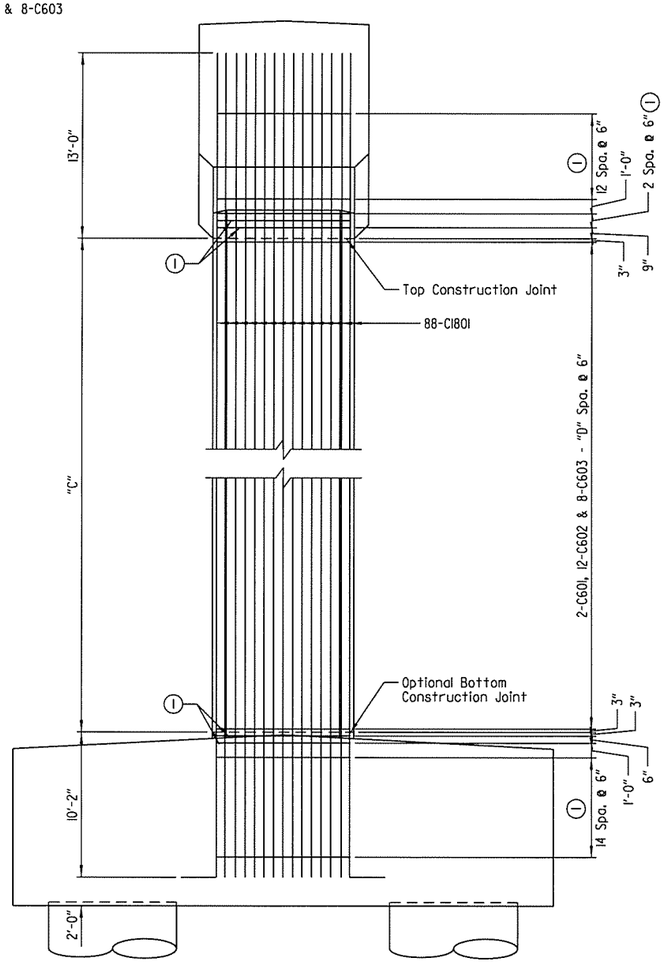
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

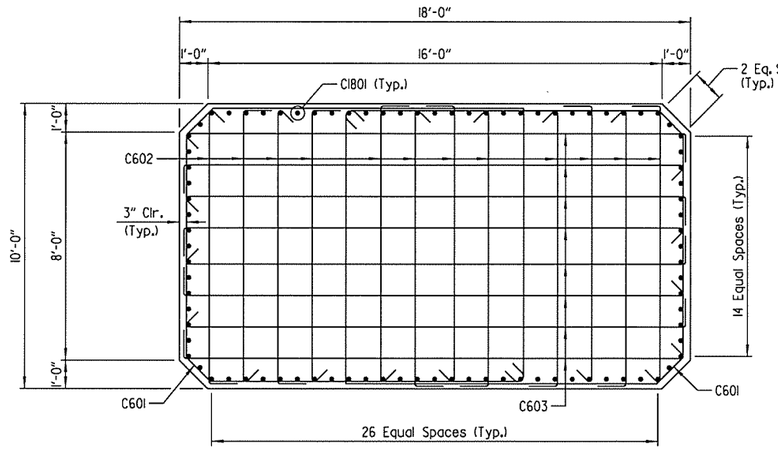
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	124	505
① 07292		INT. BENT DETAILS		54322



ELEVATION - COLUMN REINFORCING
Scale: 3/16" = 1'-0"



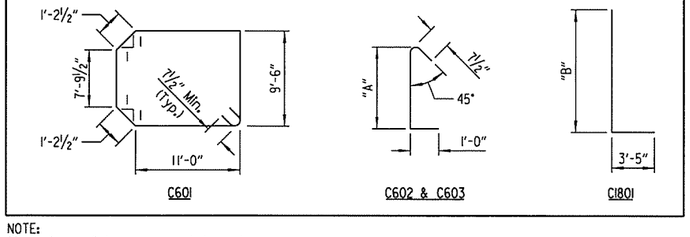
END ELEVATION - COLUMN REINFORCING
(Pedestals Not Shown For Clarity)
Scale: 3/16" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES		
BENT NO.	"C"	"D"
4	37'-0"	73
6	28'-0"	55

BAR BENDING DIAGRAM - COLUMNS



NOTE:
Dimensions of bars are out-to-out.

BAR LIST - BENT NO. 4 COLUMNS					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
C601	432	42'-6½"			4½"
C602	2592	11'-3"	9'-6"		4½"
C603	1728	19'-3"	17'-6"		4½"
② C1801	176	63'-2"		60'-2"	2'-0"

NOTE:
Number of bars shown is for entire bent.

② Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54320.

BAR LIST - BENT NO. 6 COLUMNS					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
C601	360	42'-6½"			4½"
C602	2160	11'-3"	9'-6"		4½"
C603	1440	19'-3"	17'-6"		4½"
C1801	176	54'-2"		51'-2"	2'-0"

NOTE:
Number of bars shown is for entire bent.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF INTERMEDIATE
BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B14.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54322

SRYancey 5/29/2014 4:35:55 PM
WORKSPACE: ARTD Bridge
L:\COM\M07868 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B16 (Int. Bent Nos. 4 & 6 - 5 of 8).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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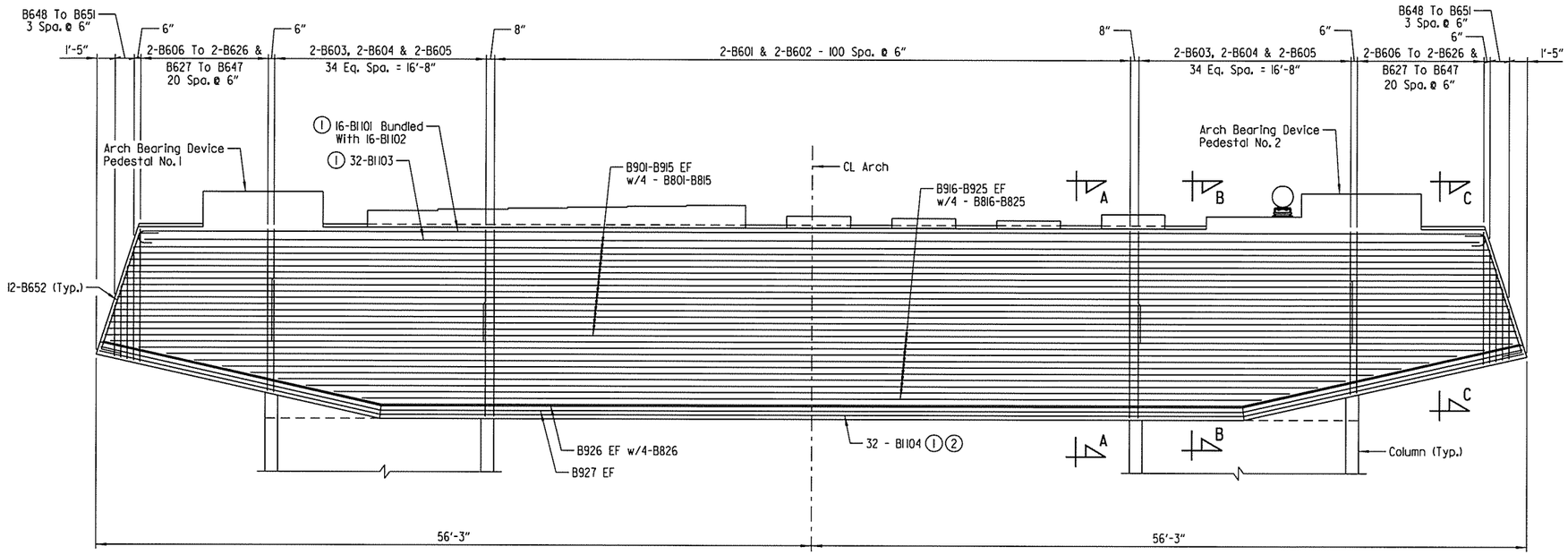


(1) In Two Bar Bundles

(2) Place Bars B1104 as shown. Adjust spacing as necessary to avoid interference with column reinforcement

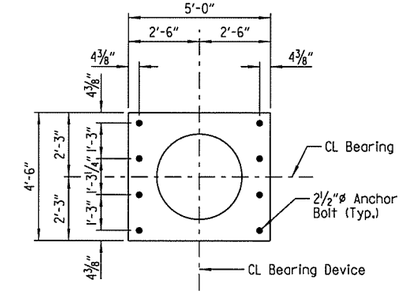
NOTE:
For pedestal reinforcing, see details on Dwg. Nos. 54324-54325.

CAP BEAM REINFORCING

(Looking Forward)
(Bent No. 4 Shown, Bent No. 6 Similar)
Scale: 3/16" = 1'-0"

LEGEND

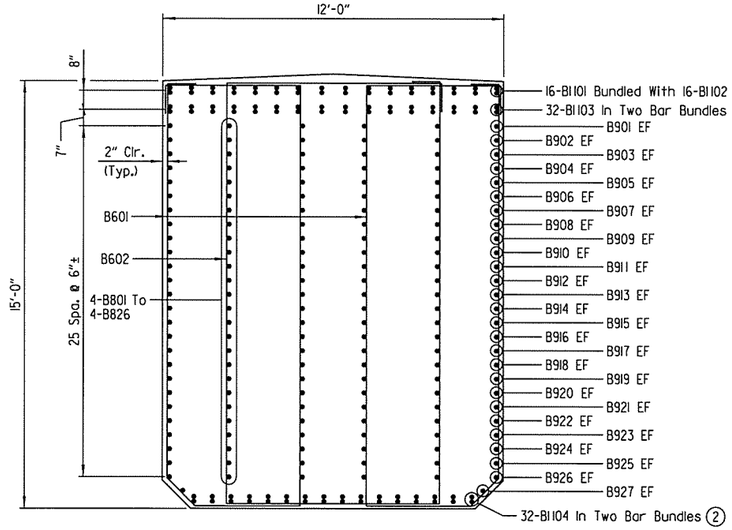
EF = Each Face



ARCH BEARING DEVICE ANCHOR BOLT LAYOUT

Scale: 3/8" = 1'-0"

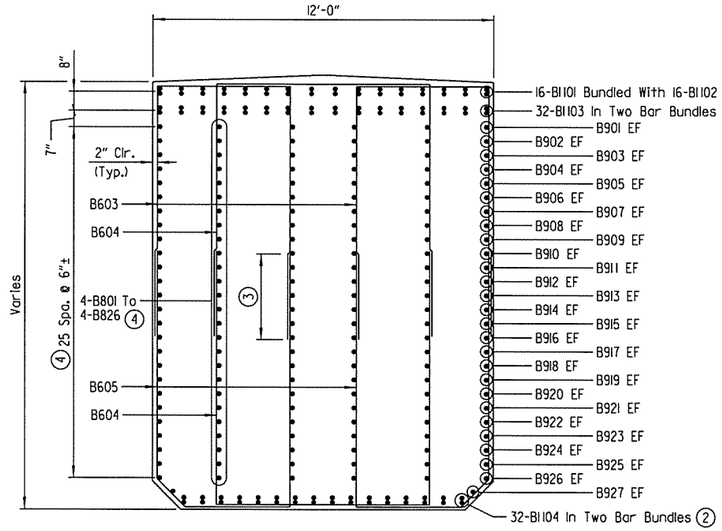
NOTE:
For design loads for arch bearing devices, see Dwg. No. 54383.



SECTION A-A

(Pedestals Are Not Shown For Clarity)
Scale: 3/8" = 1'-0"

NOTE:
For "BAR LIST-CAP BEAM" & "BAR BENDING DIAGRAM-CAP BEAM", see Dwg. No. 54324.

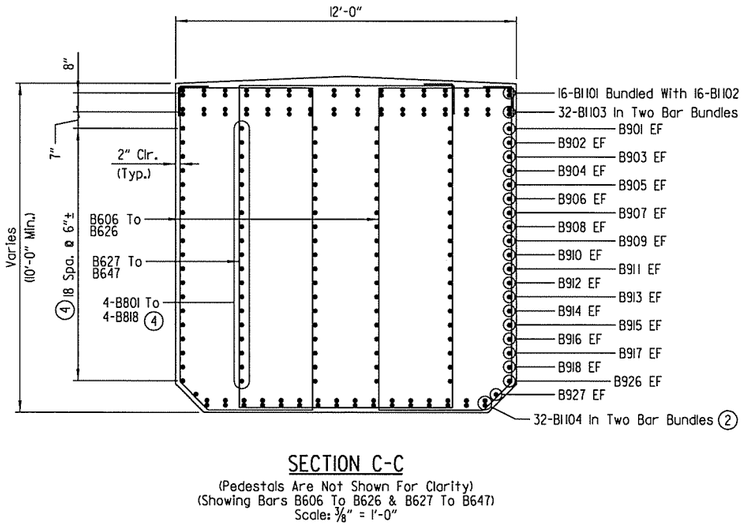


SECTION B-B

(Pedestals Are Not Shown For Clarity)
(Showing Bars B603, B604 & B605)
Scale: 3/8" = 1'-0"

(3) 3'-0" min. lap splice included for bars within column region to allow access for column tie placement.

(4) Number of longitudinal bars and spaces shown are at the section cut shown on "CAP BEAM REINFORCING" this sheet. Number of longitudinal bars and spaces will vary along length of cap beam where "SECTION B-B" and "SECTION C-C" is applicable.



SECTION C-C

(Pedestals Are Not Shown For Clarity)
(Showing Bars B606 To B626 & B627 To B647)
Scale: 3/8" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8677
JOHN H. RUDDELL
5-23-14

BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

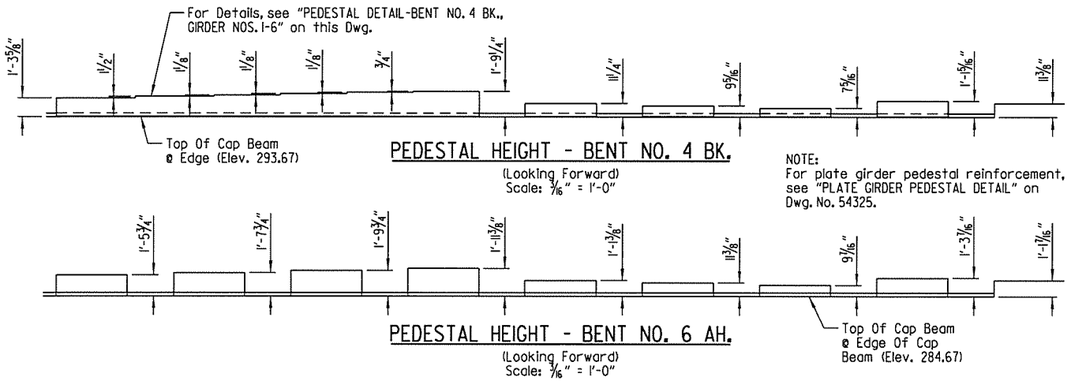
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B15.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54323

SRYancey 5/29/2014 4:35:55 PM
WORKSPACE: AHTD Bridge
L:\R2011\07060 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B20 Int. Bent Nos. 4 & 6 - 6 of 8).dgn
REVISED DATE:

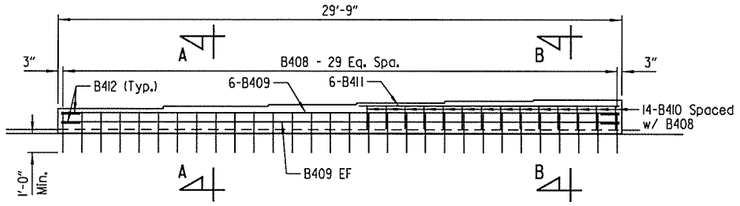
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	126	505
				① 07292		INT. BENT DETAILS		54324



PEDESTAL HEIGHT - BENT NO. 4 BK.
(Looking Forward)
Scale: ⅞" = 1'-0"

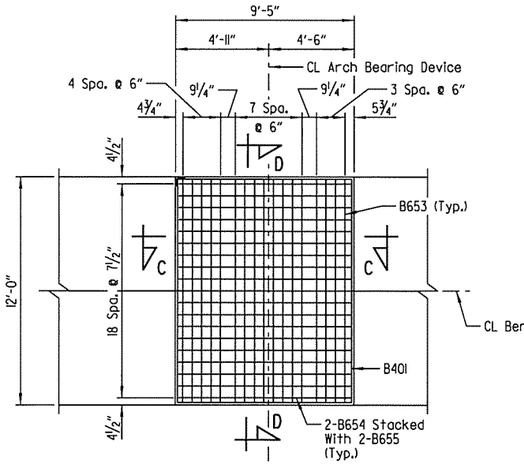
PEDESTAL HEIGHT - BENT NO. 6 AH.
(Looking Forward)
Scale: ⅞" = 1'-0"

NOTE:
For plate girder pedestal reinforcement, see "PLATE GIRDER PEDESTAL DETAIL" on Dwg. No. 54325.

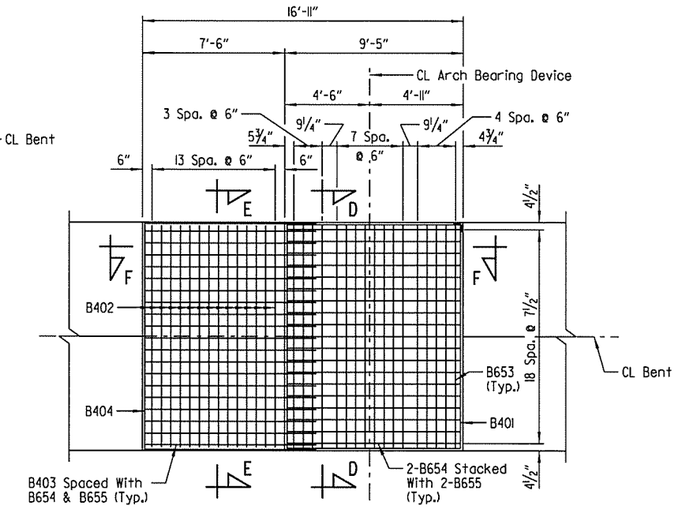


PEDESTAL DETAIL - BENT NO. 4 BK., GIRDER NOS. 1-6
(Looking Forward)
Scale: ¼" = 1'-0"

LEGEND
EF = Each Face



ARCH BEARING DEVICE PEDESTAL NO. 1
(Showing Plan View)
Scale: ¼" = 1'-0"



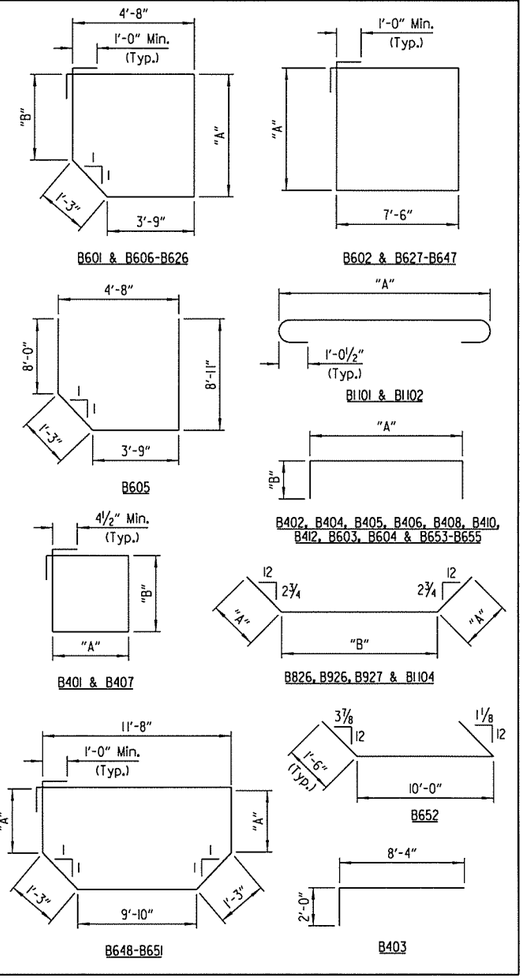
ARCH BEARING DEVICE PEDESTAL NO. 2
(Showing Plan View)
Scale: ¼" = 1'-0"

BAR LIST - CAP BEAM

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B401	8	42'-2"	9'-2"	11'-9"	2"
	B402	14	15'-6"	11'-8"	2'-0"	2"
	B403	17	10'-3"			2"
	B404	1	28'-7"	11'-9"	8'-6"	2"
	B601	202	39'-3"	14'-8"	13'-9"	4½"
	B602	101	45'-6"	14'-8"		4½"
	B603	140	22'-3"	4'-8"	8'-11"	4½"
	B604	140	25'-1"	7'-6"	8'-11"	4½"
	B605	140	21'-8"			4½"
	B606 To B626	4 Ea.	35'-3" To 30'-9"	12'-8" To 10'-5"	11'-9" To 9'-6"	4½"
	B627 To B647	2 Ea.	41'-6" To 37'-0"	12'-8" To 10'-5"		4½"
	B648 To B651	2 Ea.	41'-2" To 31'-2"	8'-0" To 3'-0"		4½"
	B652	24	12'-9"			4½"
	B653	34	20'-0"	11'-8"	4'-4"	4½"
	B654	76	17'-5"	9'-1"	4'-4"	4½"
	B655	76	15'-0"	8'-1"	3'-7"	4½"
①	B801 To B815	4 Ea.	106'-8" To 111'-2"			Str.
①	B816 To B825	4 Ea.	110'-3½" To 70'-10"			Str.
①	B826	4	112'-7"	22'-5"	67'-9"	6"
①	B901 To B915	2 Ea.	106'-8" To 111'-2"			Str.
①	B916 To B925	2 Ea.	110'-3½" To 70'-10"			Str.
①	B926	2	112'-7"	22'-5"	67'-9"	9"
①	B927	2	112'-10"	22'-6"	67'-10"	9"
②	B1101	16	109'-1"	106'-1"		1'-2"
②	B1102	16	108'-10"	105'-10"		11¼"
②	B1103	32	105'-2"			Str.
②	B1104	32	113'-1"	22'-7"	67'-11"	11¼"
BENT NO. 4 BARS	B405	24	8'-6"	4'-8"	2'-0"	2"
	B406	24	9'-2"	5'-2"	2'-1"	2"
	B407	5	20'-4"	4'-9"	5'-3"	2"
	B408	30	9'-7"	5'-3"	2'-3"	2"
	B409	8	29'-5"			Str.
	B410	14	8'-1"	5'-3"	1'-6"	2"
	B411	6	13'-8"			Str.
	B412	4	7'-0"	5'-2"	1'-0"	2"
BENT NO. 6 BARS	B405	48	9'-11"	4'-8"	2'-8½"	2"
	B406	48	10'-5"	5'-2"	2'-8½"	2"
	B407	14	20'-4"	4'-9"	5'-3"	2"

NOTE:
Number of common bars shown is for one bent only.

BAR BENDING DIAGRAM - CAP BEAM



NOTE:
Dimensions of bars shown are out-to-out.

① Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54320.
② Length exceeds 60'-0". See "BUNDLED BAR SPLICE DETAIL" on Dwg. No. 54325.

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B16.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54324

SRYancey 5/29/2014 4:35:56 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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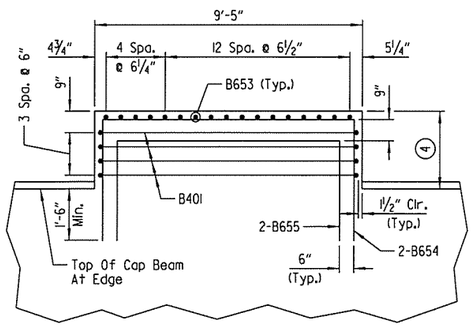
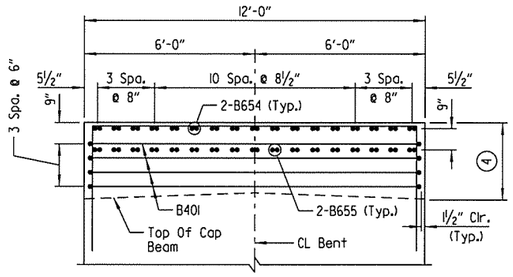
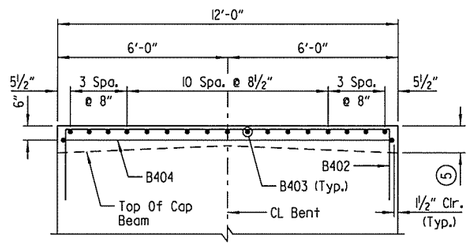
				JOB NO.		061275	127	505
				(1) 07292		INT. BENT DETAILS		54325



SECTION C-C
Scale: ⅜" = 1'-0"



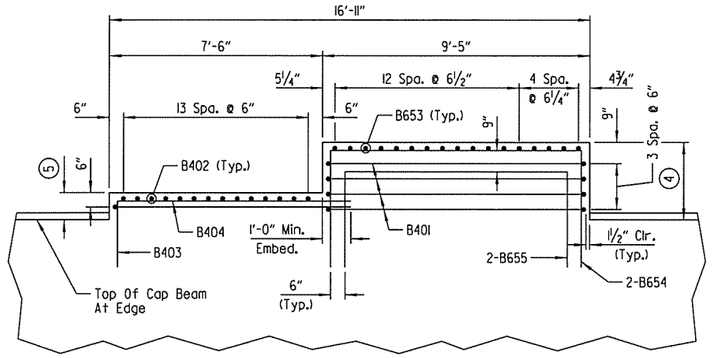
SECTION D-D
Scale: ⅜" = 1'-0"



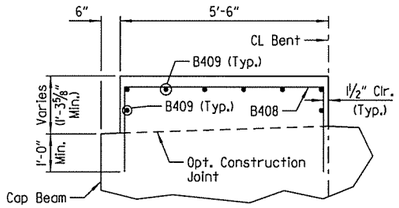
SECTION E-E
Scale: ⅜" = 1'-0"

(4) See "ELEVATION - BENT NO. 4" on Dwg. No. 54318 and "ELEVATION - BENT NO. 6" on Dwg. No. 54319 for arch pedestal heights.

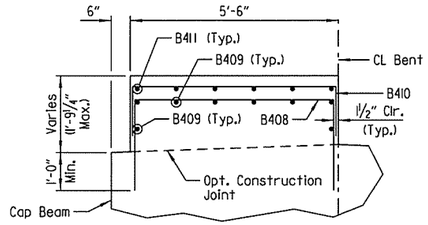
(5) See "PEDESTAL HEIGHT - BENT NO. 4 BK" & "PEDESTAL HEIGHT - BENT NO. 6 AH" on Dwg. No. 54324 for pedestal height.



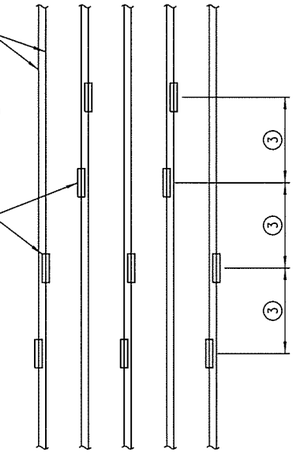
SECTION F-F
Scale: ⅜" = 1'-0"



SECTION A-A
Scale: ½" = 1'-0"



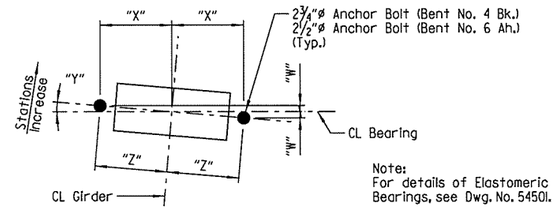
SECTION B-B
Scale: ½" = 1'-0"



(3) Adjacent mechanical couplers shall be staggered a minimum of 3'-0" or the length of the mechanical coupler, whichever is greater.

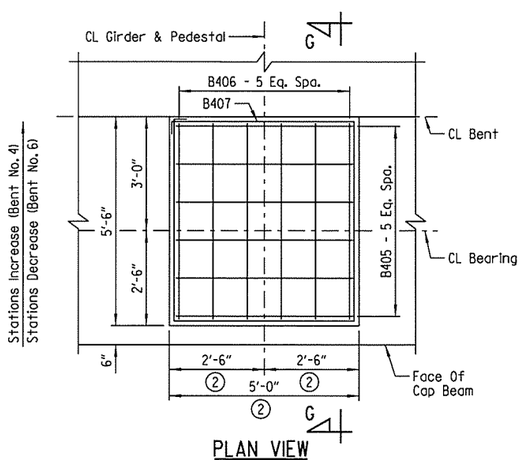
NOTE:
For "MECHANICAL COUPLER & SPLICE NOTES", see Dwg. No. 54320.

BUNDLED BAR SPLICE DETAIL
(For Bundled Bars)
No Scale

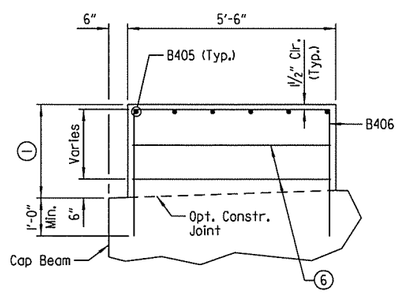


Note:
For details of Elastomeric Bearings, see Dwg. No. 54501.

TYPICAL ELASTOMERIC BEARING ANCHOR BOLT LAYOUT
Scale: ¾" = 1'-0"



PLAN VIEW



SECTION G-G

PLATE GIRDER PEDESTAL DETAIL
Scale: ½" = 1'-0"

(1) For height of each pedestal, see "PEDESTAL HEIGHT - BENT NO. 4 BK." & "PEDESTAL HEIGHT - BENT NO. 6 AH." on Dwg. No. 54324.

(2) Measured at CL Bearing

(6) 1 - B407 when pedestal height is less than 1'-0"
2 - B407 when pedestal height is greater than 1'-0"

TABLE OF VARIABLES					
BENT NO.	GIRDER NO.	"W"	"X"	"Y"	"Z"
4 Bk.	1	1 3/8"	1'-3 7/16"	5°00'39"	1'-3½"
	2	1 5/16"	1'-3 7/16"	4°56'10"	1'-3½"
	3	15/16"	1'-3½"	3°23'33"	1'-3½"
	4	9/16"	1'-3½"	2°07'12"	1'-3½"
	5	¼"	1'-3½"	1°00'49"	1'-3½"
	6 To 11	0	1'-3½"	0°00'00"	1'-3½"
6 Ah.	1 To 9	0	1'-5⅜"	0°00'00"	1'-5⅜"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8817
JOHN H. RUDDELL
5/29/14
BRIDGE ENGINEER

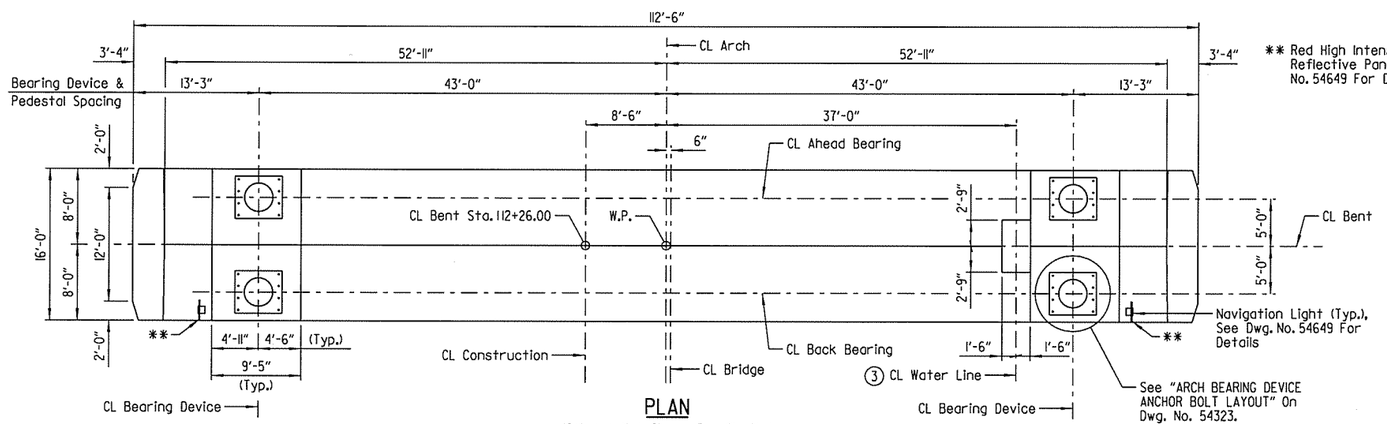
SHEET 8 OF 8
DETAILS OF INTERMEDIATE BENT NOS. 4 & 6
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275xl_BI7.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54325

SRYancey 5/29/2014 4:35:57 PM
WORKSPACE: AHTD Bridge
L:\ROW\BGI\DGN - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B2Iint. Bent Nos. 4 & 6 - 8 of 8).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	128	505
				①	07292	INT. BENT DETAILS		54328

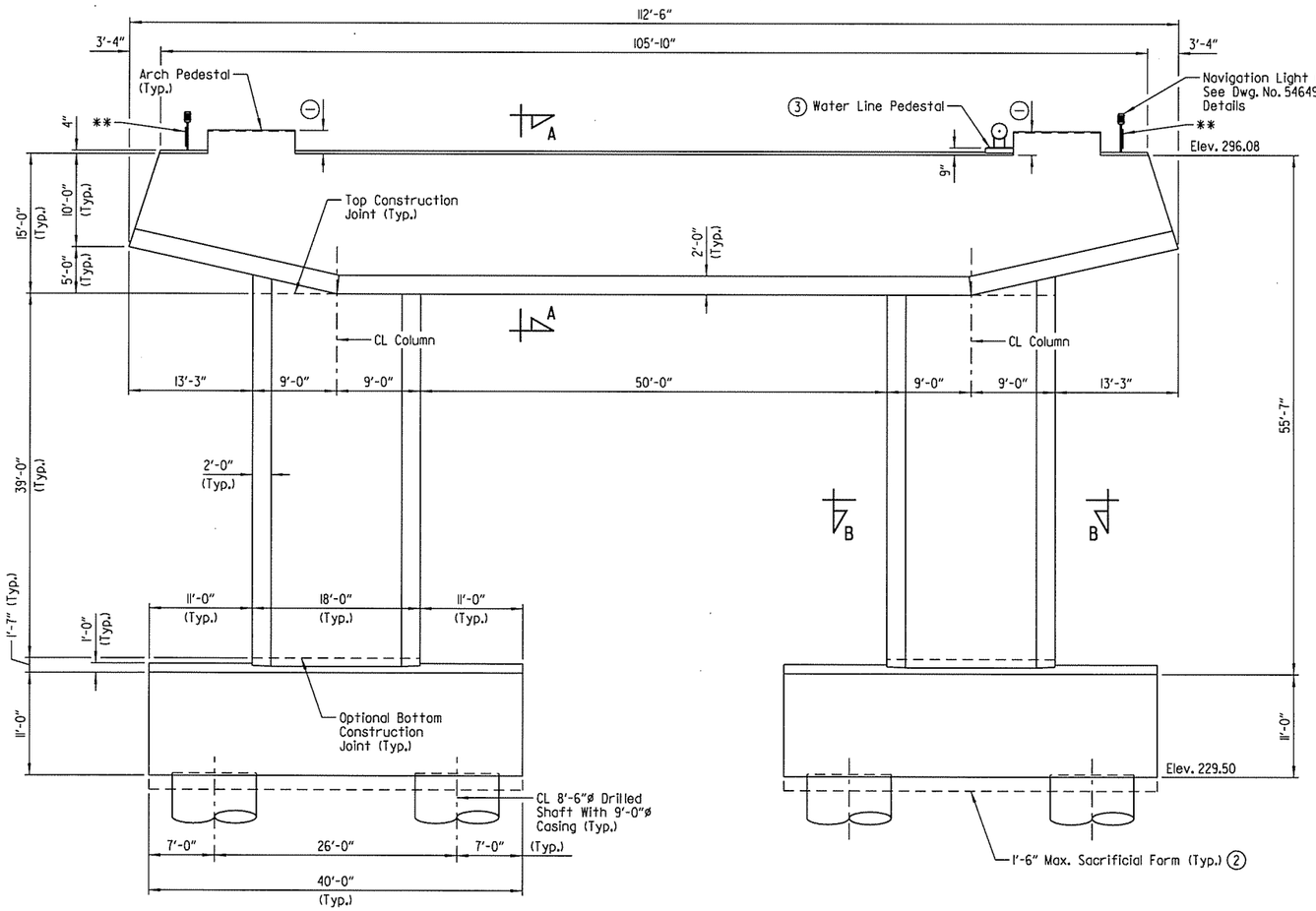
Stations Increase



** Red High Intensity Retro-Reflective Panel, See Dwg. No. 54649 For Details

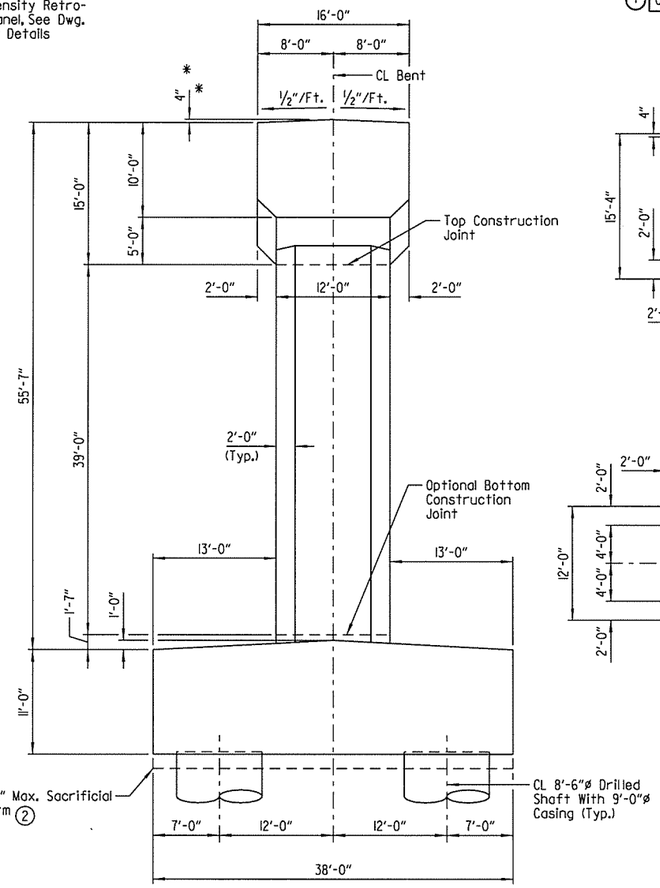
PLAN

(Columns Not Shown For Clarity)
Scale: 1/8" = 1'-0"



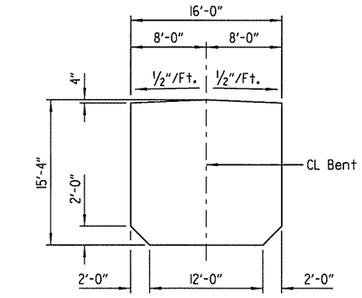
ELEVATION

Looking Forward
(Rebar Not Shown For Clarity)
Scale: 1/8" = 1'-0"



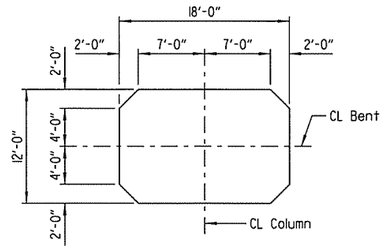
END ELEVATION

(Pedestals Are Not Shown For Clarity)
Scale: 1/8" = 1'-0"



SECTION A-A

(Rebar And Pedestals Not Shown)
Scale: 1/8" = 1'-0"



SECTION B-B

(Rebar Not Shown)
Scale: 1/8" = 1'-0"

GENERAL NOTES

All Concrete, except that used for drilled shafts, shall be Class "B" with a minimum 28-day compressive strength f'c = 3,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

Concrete used for drilled shafts shall be Class "S" as modified by SP Job 061275 "DRILLED SHAFT FOUNDATIONS", with a minimum 28-day compressive strength f'c = 3,500 psi.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap and in pedestals shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

Concrete and reinforcing steel in drilled shafts will not be paid for directly but will be included in the unit prices of the drilled shaft items.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 061275 "DRILLED SHAFT FOUNDATIONS".

① Back Bearing: 2'-6 1/8" *
Ahead Bearing: 2'-4 1/16" *

② An additional sacrificial form load of 0.225 ksf was included in the analysis. If weight of sacrificial form exceeds this value, the Contractor shall notify the Engineer for approval.

③ For anchor bolt location and waterline details, see Dwg. No. 54624-54633.

NOTES:
For drilled shaft and waterline footing details, see Dwg. Nos. 54329 & 54330.

For column details, see Dwg. No. 54331.

For cap beam details, see Dwg. Nos. 54332 & 54333.

* CONSTRUCTION NOTE:
Dimensions shown are for estimating purposes only and are dependent upon the dimensions of the bearing assembly as determined by the manufacturer. The Contractor shall submit to the Engineer shop drawings of the bearing assembly to be used, such that the true dimensions will be reflected on this drawing by revision. See Dwg. No. 54383 for bearing assembly details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_BI8.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54328

SRYancey 5/30/2014 10:23:47 AM
WORKSPACE: AHTD Bridge
L:\20IN\10170180 - Broadway Bridge over the Arkansas River\Drawings\B061275xLB22 Int. Bent No.5 - 1 of 6.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	129	505
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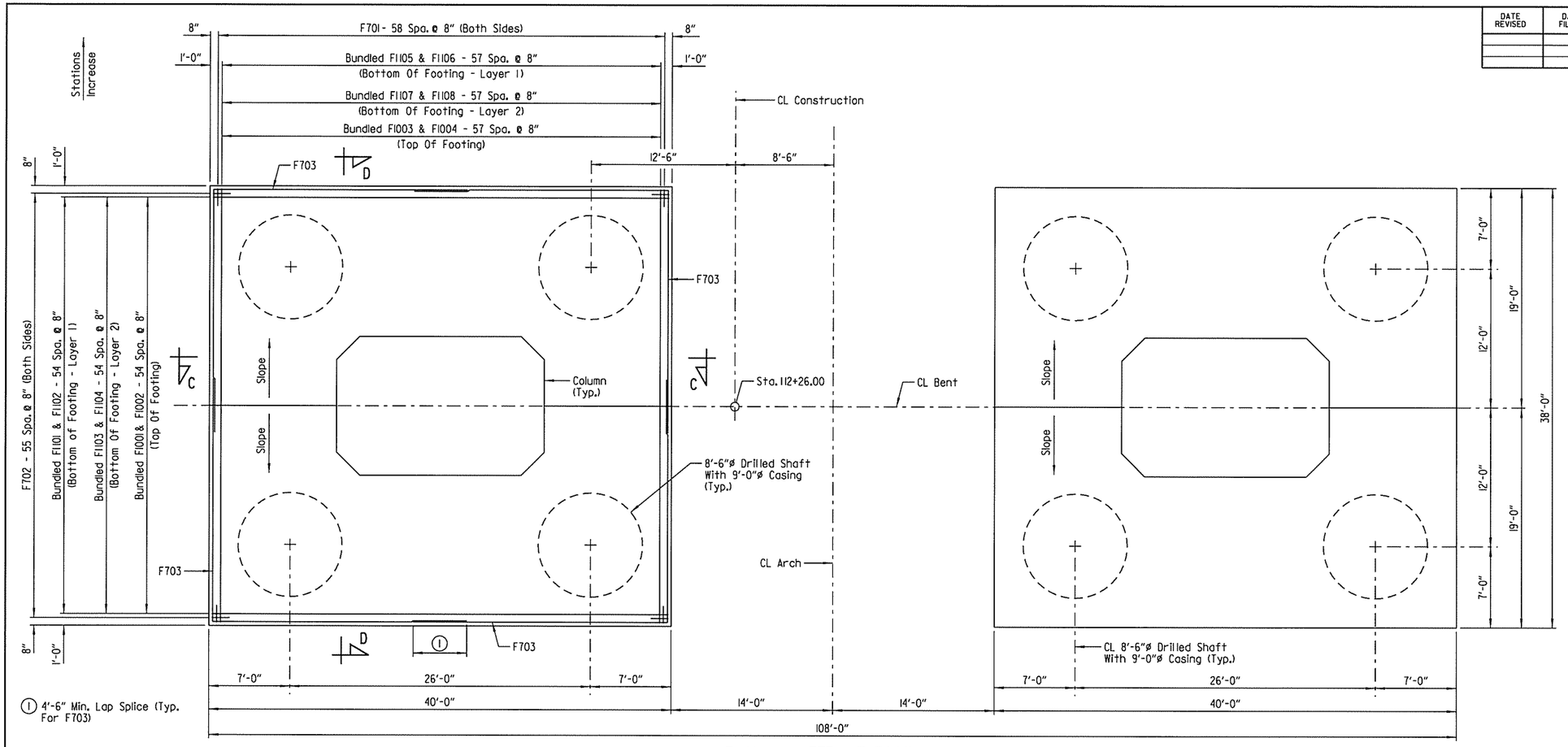
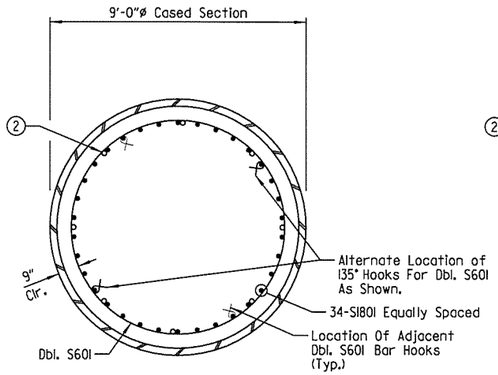


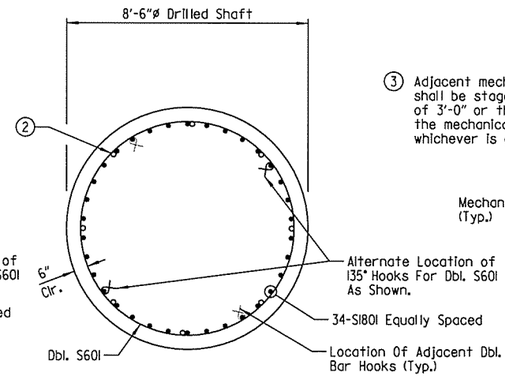
PLAN - WATERLINE FOOTINGS

Scale: 3/16" = 1'-0"



SECTION A-A

Scale: 3/8" = 1'-0"

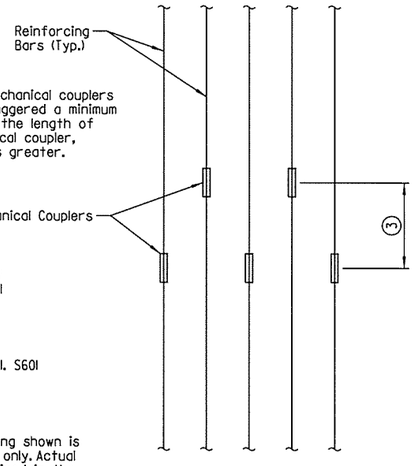


SECTION B-B

Scale: 3/8" = 1'-0"

② 8 - 2" Min. ø Schedule 40 Steel Pipes Equally Spaced. See SP JOB 061275 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS."

NOTE:
For "SECTION C-C," "SECTION D-D," "BAR LIST - FOOTING & DRILLED SHAFTS," And "BAR BENDING DIAGRAM - FOOTING & DRILLED SHAFTS," see Dwg. No. 54330.

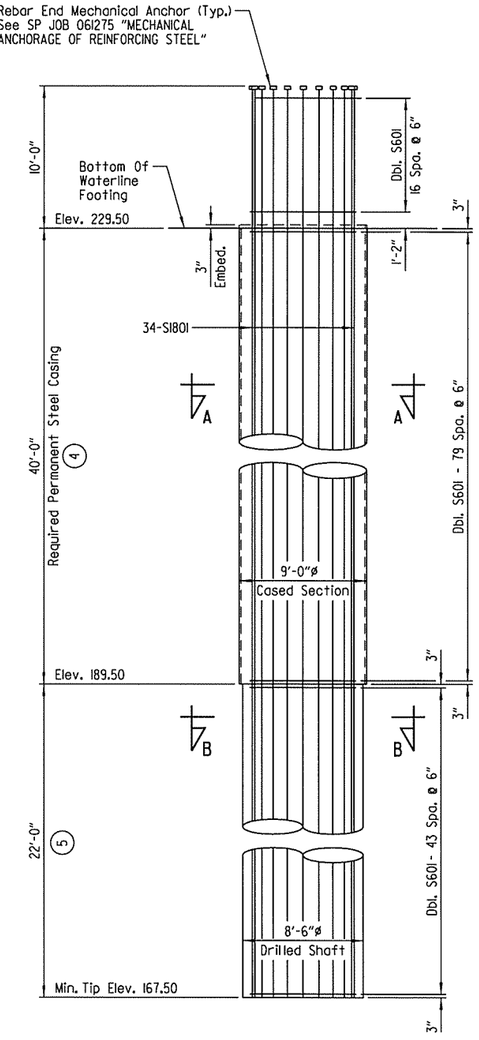


BAR SPLICE DETAIL

No Scale

④ Length of permanent casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB 061275 "DRILLED SHAFT FOUNDATIONS." Permanent casing shall extend approximately 3 feet below top of competent rock.

⑤ Minimum penetration into competent rock below permanent casing



ELEVATION - DRILLED SHAFT

Scale: 3/16" = 1'-0"

MECHANICAL COUPLER & SPLICE NOTES

Contractor shall be required to use mechanical couplers to splice reinforcing bars whose lengths given in the bar lists on Dwg. Nos. 54321, 54322 & 54324 exceed 60'-0". The bars shall be assembled as shown in "BAR SPLICE DETAIL" or "BUNDLED BAR SPLICE DETAIL".

The Contractor may choose location of splices for convenience so long as no bar to be spliced is less than 5'-0" in length and no closer than 10'-0" from top of footing. The Contractor shall not splice a single bar more than two times.

The Contractor may also elect to splice bars whose lengths are less than 60'-0" to provide ease of construction so long as the previously mentioned requirements are met.

Mechanical couplers shall conform to the requirements of SP JOB 061275 "SPLICING REINFORCING STEEL", and shall maintain the clearances shown in "BAR SPLICE DETAIL" or "BUNDLED BAR SPLICE DETAIL". Not more than alternate bars shall be spliced at a given section. Payment for mechanical couplers shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)" for splicing No. 10 & No. 11 bars and to the item "DRILLED SHAFT (102")" for splicing No. 18 bars. The couplers shall develop at least 125% of the specified yield strength of the bar.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL
5-15-14
BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B19.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54329

SRYancey 5/29/2014 4:35:58 PM
WORKSPACE_AHTD Bridge
L:\2DN\B07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B23 Int. Bent No. 5 - 2 of 6i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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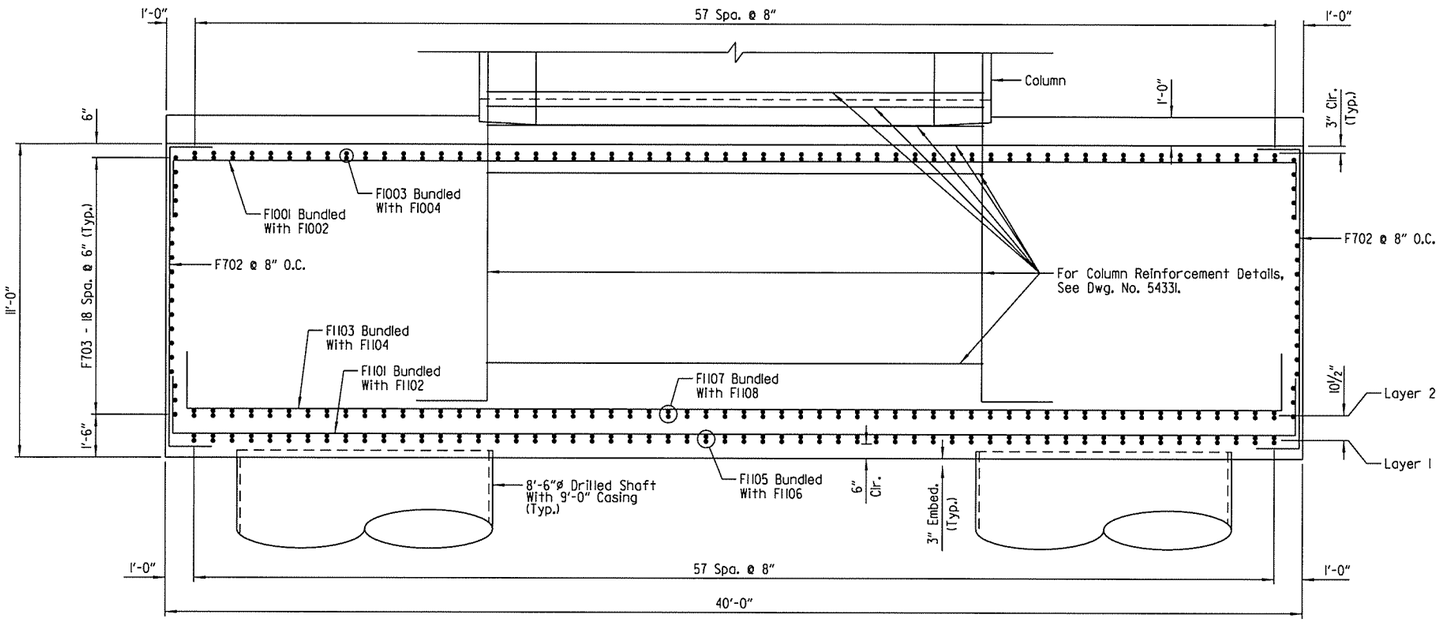
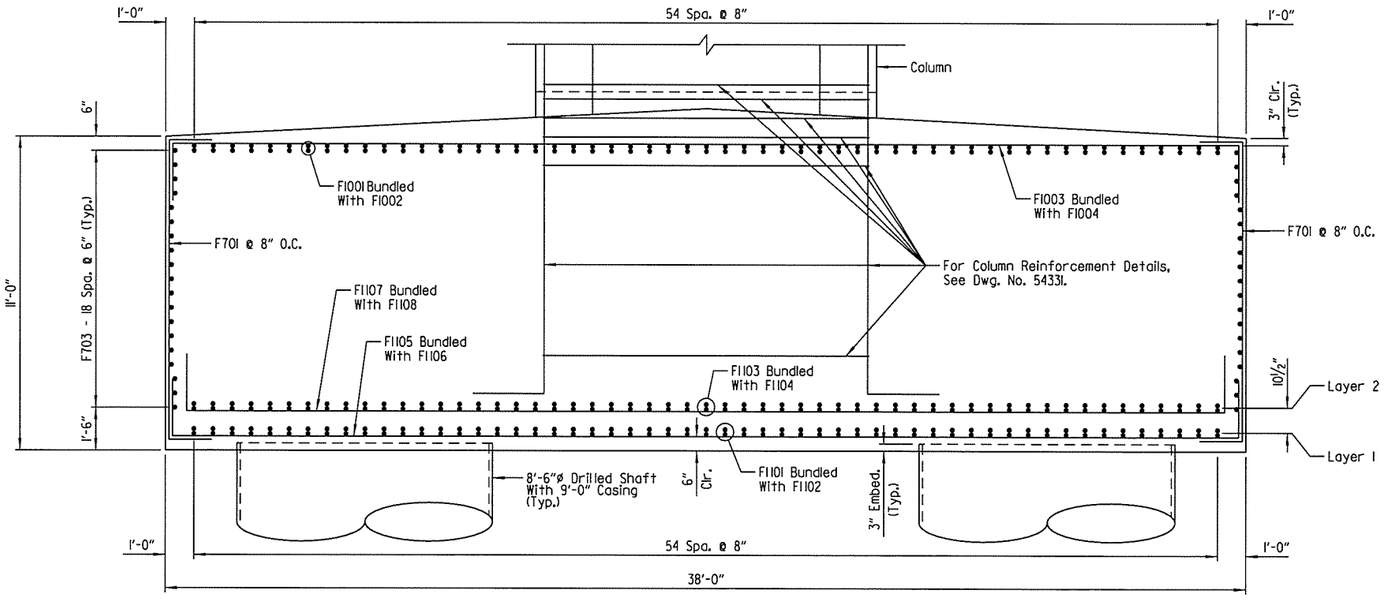
				JOB NO.		061275	130	505
				(1) 07292		INT. BENT DETAILS		54330



SECTION C-C

(Drilled shaft reinforcement not shown for clarity)
Scale: ⅜" = 1'-0"



SECTION D-D

(Drilled shaft reinforcement not shown for clarity)
Scale: ⅜" = 1'-0"

BAR LIST - FOOTING & DRILLED SHAFTS

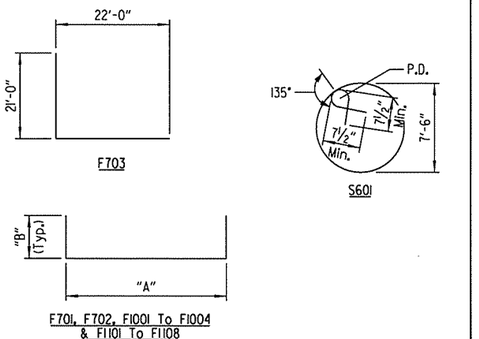
	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	F701	236	12'-10½"	10'-3"	1'-6"	5¼"
	F702	224	12'-4½"	9'-9"	1'-6"	5¼"
	F703	152	42'-10"			5¼"
	F1001	110	42'-7"	39'-6"	1'-10"	1-0½"
	F1002	110	42'-4"	39'-3"	1'-10"	10"
	F1003	116	40'-7"	37'-6"	1'-10"	1-0½"
	F1004	116	40'-4"	37'-3"	1'-10"	10"
	F1101	110	42'-10"	39'-6"	2'-0"	1'-2"
	F1102	110	42'-7"	39'-3"	2'-0"	11¼"
	F1103	110	41'-10"	38'-6"	2'-0"	1'-2"
	F1104	110	41'-7"	38'-3"	2'-0"	11¼"
	F1105	116	40'-10"	37'-6"	2'-0"	1'-2"
	F1106	116	40'-7"	37'-3"	2'-0"	11¼"
	F1107	116	39'-10"	36'-6"	2'-0"	1'-2"
	F1108	116	39'-7"	36'-3"	2'-0"	11¼"
(2)	S601	2256	25'-2"			4½"
(1) (2)	S1801	272	72'-0"			Str.

NOTE:
Number of bars shown is for entire bent.

(1) Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54329.

(2) Non-Pay Item - Subsidiary to SP JOB 061275 "DRILLED SHAFT FOUNDATIONS"

BAR BENDING DIAGRAM-FOOTING & DRILLED SHAFTS



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8817
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275xl_B20.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54330

SRYancey 5/29/2014 4:35:59 PM
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L:\ZON\NIOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B24 Int. Bent No.5 - 3 of 6.dgn
REVISED DATE:

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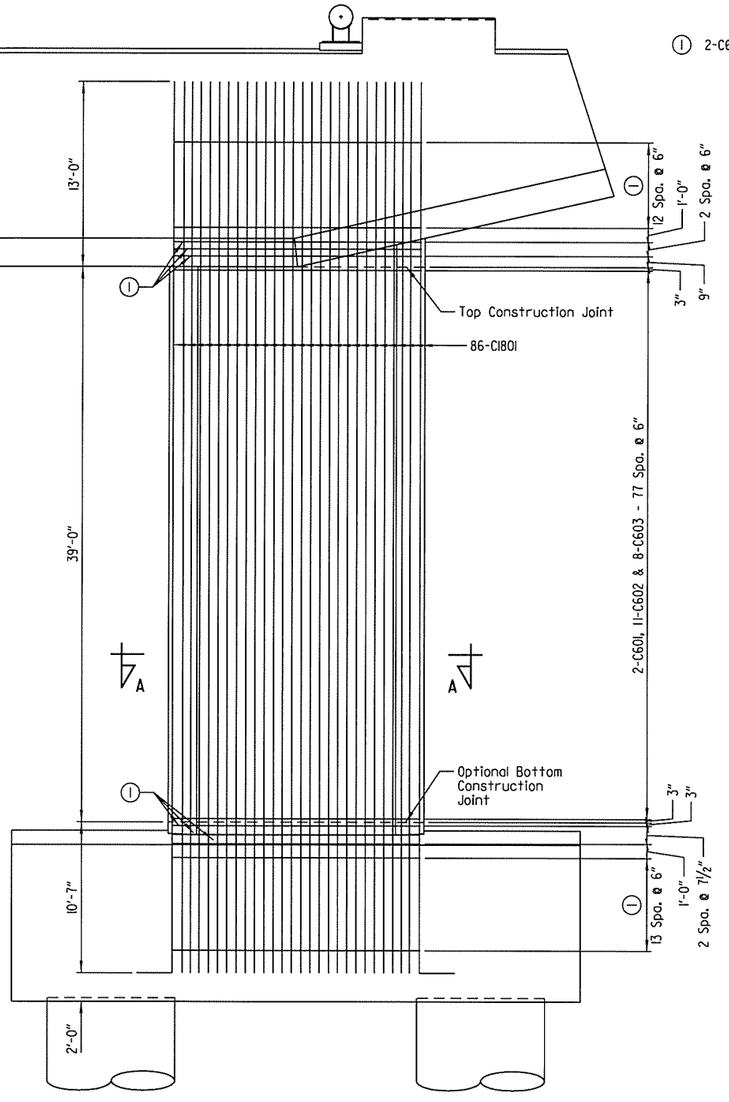
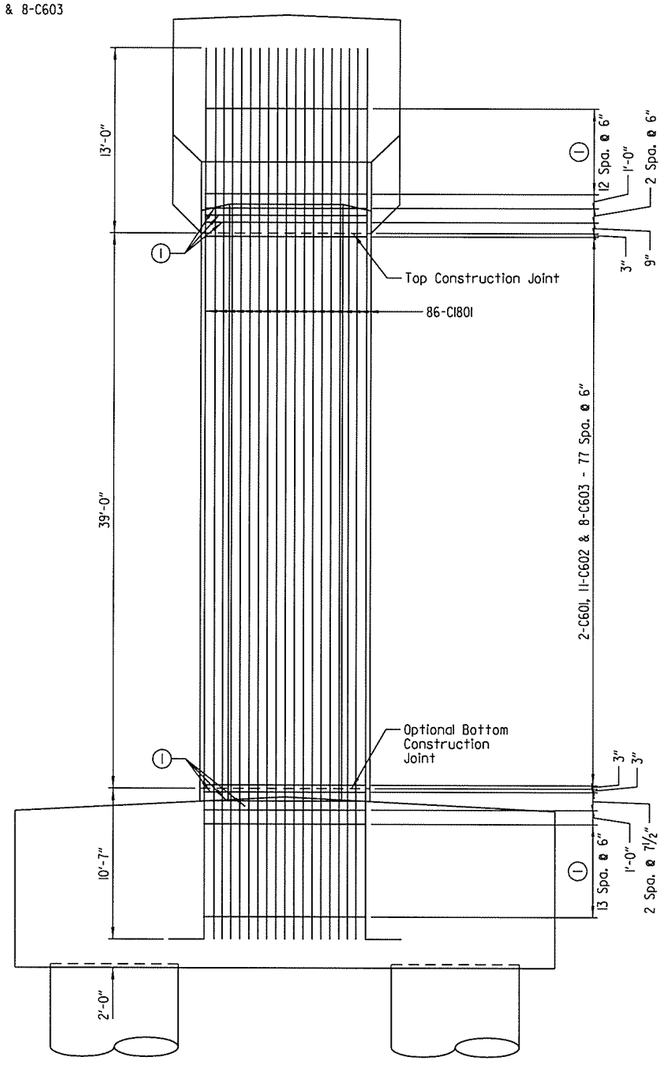
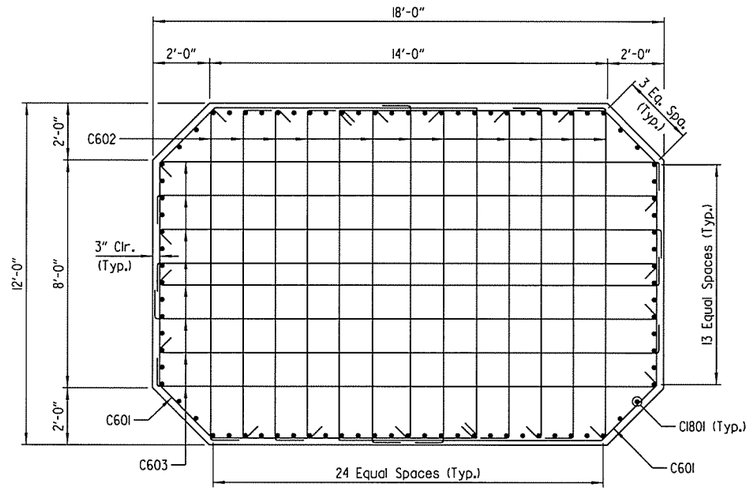
				JOB NO.		061275	131	505
				① 07292		INT. BENT DETAILS		54331



ELEVATION - COLUMN REINFORCING
Scale: 3/16" = 1'-0"



END ELEVATION - COLUMN REINFORCING
(Pedestals Not Shown For Clarity)
Scale: 3/16" = 1'-0"



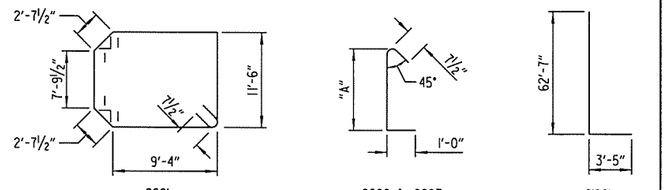
SECTION A-A
Scale: 3/16" = 1'-0"

BAR LIST - COLUMNS				
MARK	NO. REQ'D	LENGTH	"A"	P.D.
C601	444	44'-1"		4½"
C602	2442	13'-2"	11'-6"	4½"
C603	1776	19'-2"	17'-6"	4½"
② C1801	172	65'-4"		2'-0"

NOTE:
Number of bars shown is for entire bent.

② Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54329.

BAR BENDING DIAGRAM - COLUMNS



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8867
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B21.dgn
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DESIGNED BY: PCC DATE: JULY 2013
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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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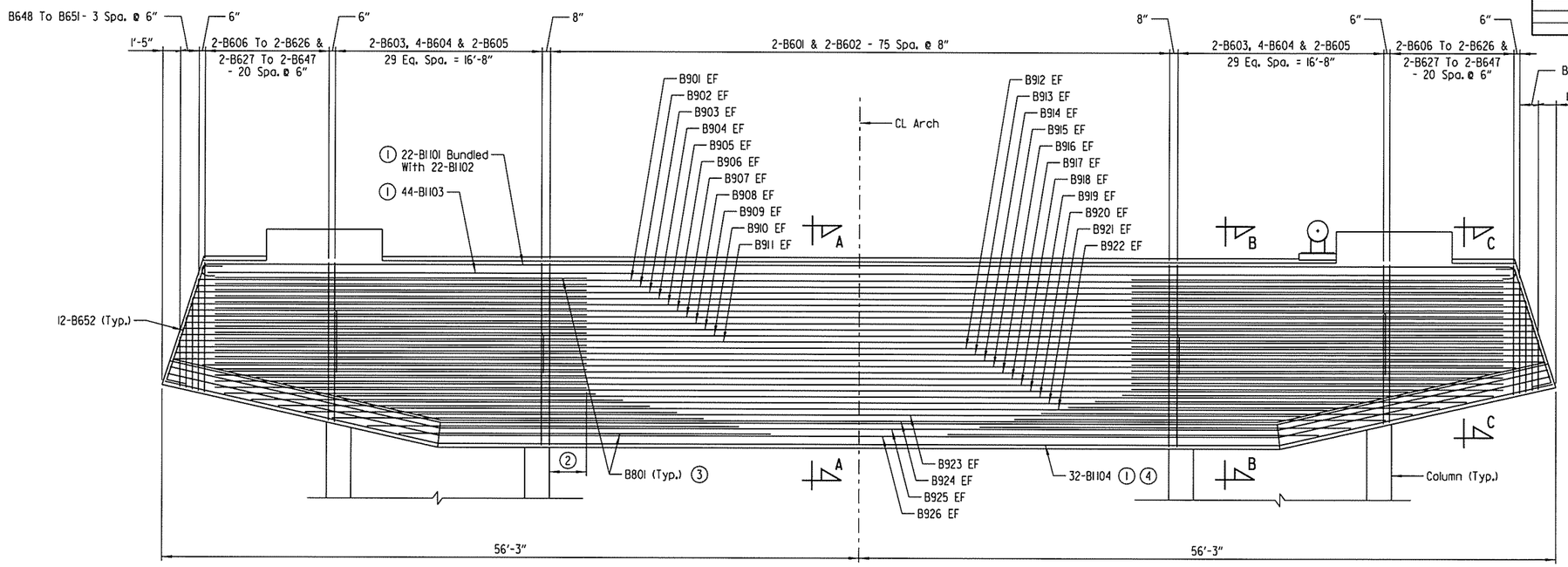
				(1) 07292		INT. BENT DETAILS		54332



NOTE:
For pedestal reinforcing, see details on Dwg. No. 54333.

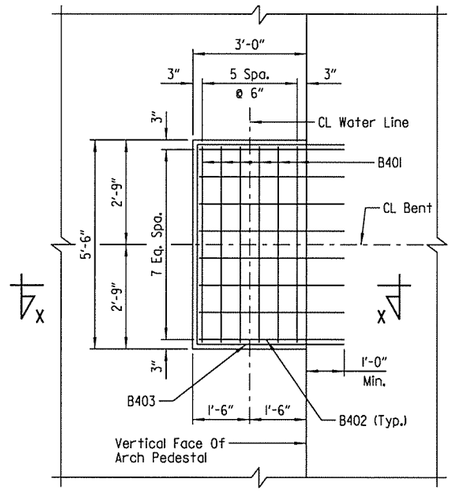
CAP BEAM REINFORCING

(Looking Forward)
Scale: 3/16" = 1'-0"

LEGEND

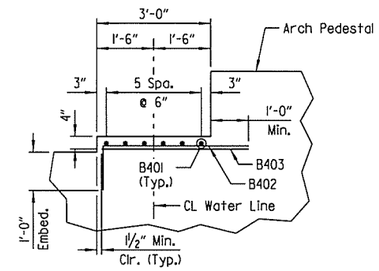
EF = Each Face

(1) In Two Bar Bundles
(2) Extend B801 Bars 3'-0" Min. Past Interior Column Face
(3) 6 Bars Per Layer



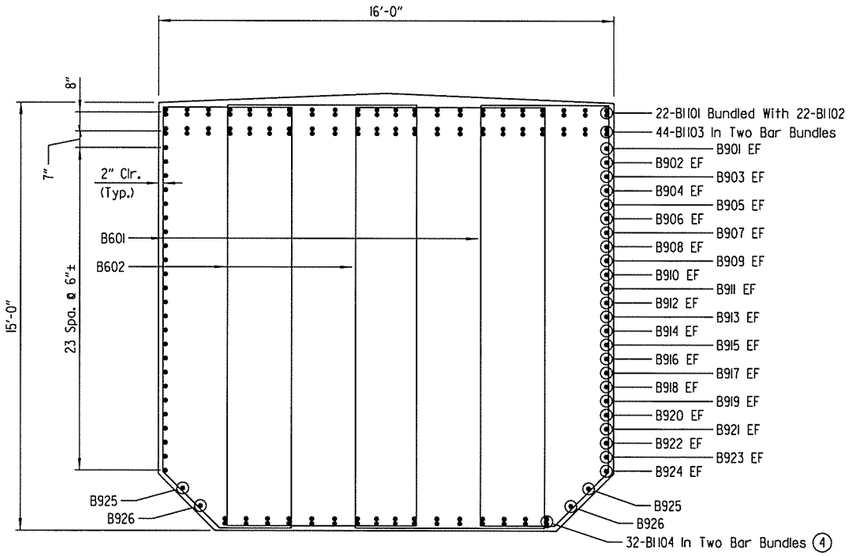
WATER LINE PEDESTAL

(Showing Plan View)
Scale: 1/2" = 1'-0"



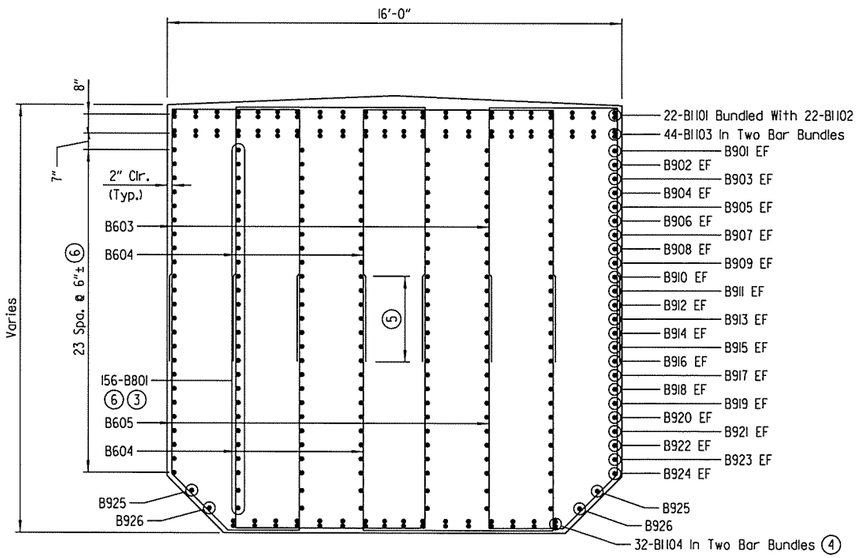
SECTION X-X

Scale: 1/2" = 1'-0"



SECTION A-A

(Pedestal Are Not Shown For Clarity)
Scale: 3/8" = 1'-0"



SECTION B-B

(Pedestal Are Not Shown For Clarity)
(Showing Bars B603, B604 & B605)
Scale: 3/8" = 1'-0"

NOTE:
For "SECTION C-C", "BAR LIST - CAP BEAM" & "BAR BENDING DIAGRAM - CAP BEAM", see Dwg. No. 54333.

(4) Place Bars B1104 as shown. Adjust spacing as necessary to avoid interference with column reinforcement.

(5) 3'-0" min. lap splice included for bars within column region to allow access for column tie placement.

(6) Number of longitudinal bars and spaces shown are at the section cut shown on "CAP BEAM REINFORCING" this sheet. Number of longitudinal bars and spaces will vary along length of cap beam where "SECTION B-B" is applicable.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275xl_B22.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54332

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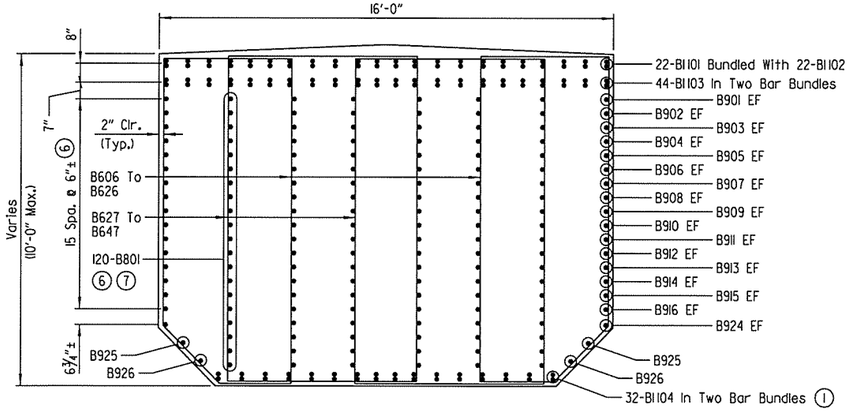
WORKSPACE: AHTD Bridge
L:\20N\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B27 Int. Bent No.5 - 5 of 6i.dgn
REVISED DATE:



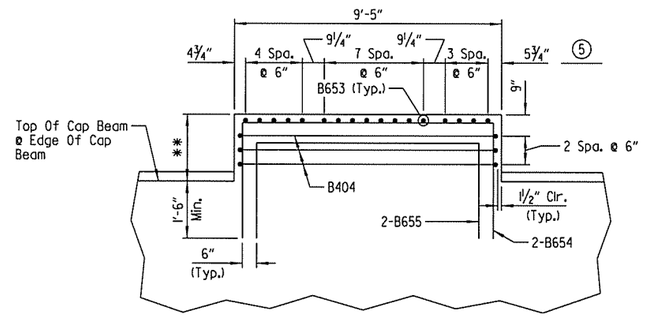
SECTION C-C

(Showing Bars B606 To B626 & B627 To B647)
Scale: ⅜" = 1'-0"

(1) Place Bars B1104 as shown. Adjust spacing as necessary to avoid interference with column reinforcement.

(6) Number of longitudinal bars and spaces shown are at the section cut shown on "CAP BEAM REINFORCING" on Dwg. No. 54332. Number of longitudinal bars and spaces will vary along length of cap beam where "SECTION C-C" is applicable.

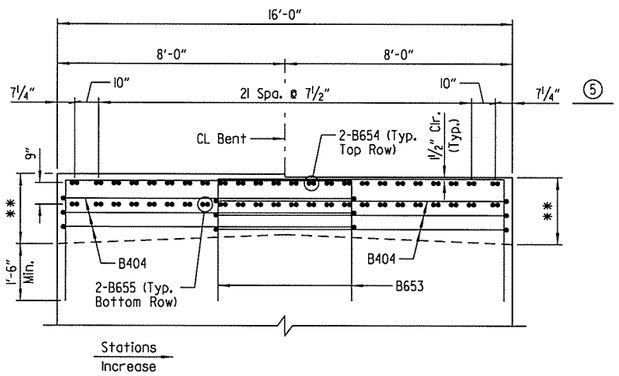
(7) 6 Bars Per Layer



SECTION E-E

Scale: ⅜" = 1'-0"

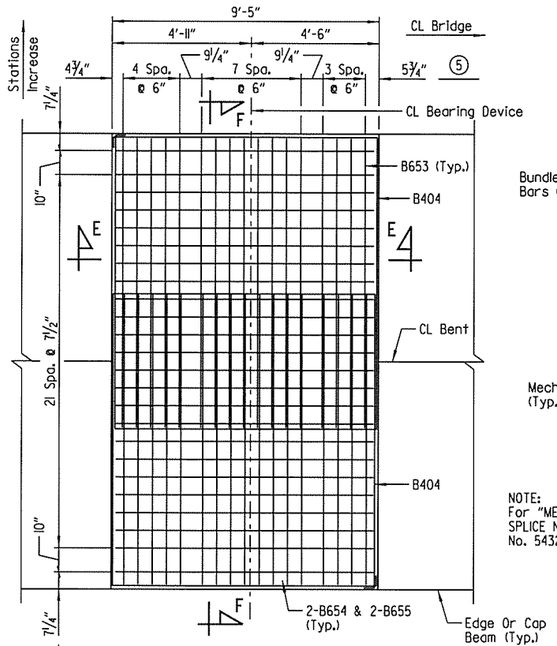
(5) Bar spacing set to provide clearance for anchor bolts. Spacing may be adjusted by revision once the Contractor submits shop drawings of the bearing assembly. See Dwg. No. 54383 for bearing assembly details.



SECTION F-F

Scale: ⅜" = 1'-0"

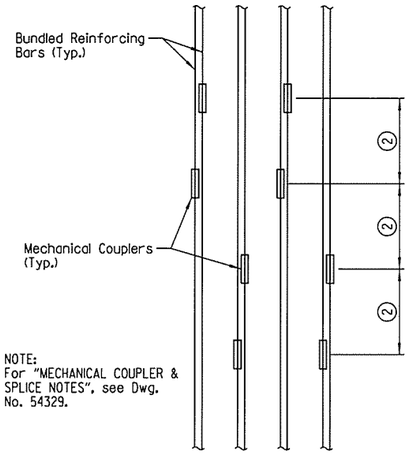
** See Notes (1) and (2) on Dwg. No. 54328 for pedestal heights.



ARCH BEARING DEVICE PEDESTAL

(Showing Plan View)
Scale: ⅜" = 1'-0"

(2) Adjacent mechanical couplers shall be staggered a minimum of 3'-0" or the length of the mechanical coupler, whichever is greater.

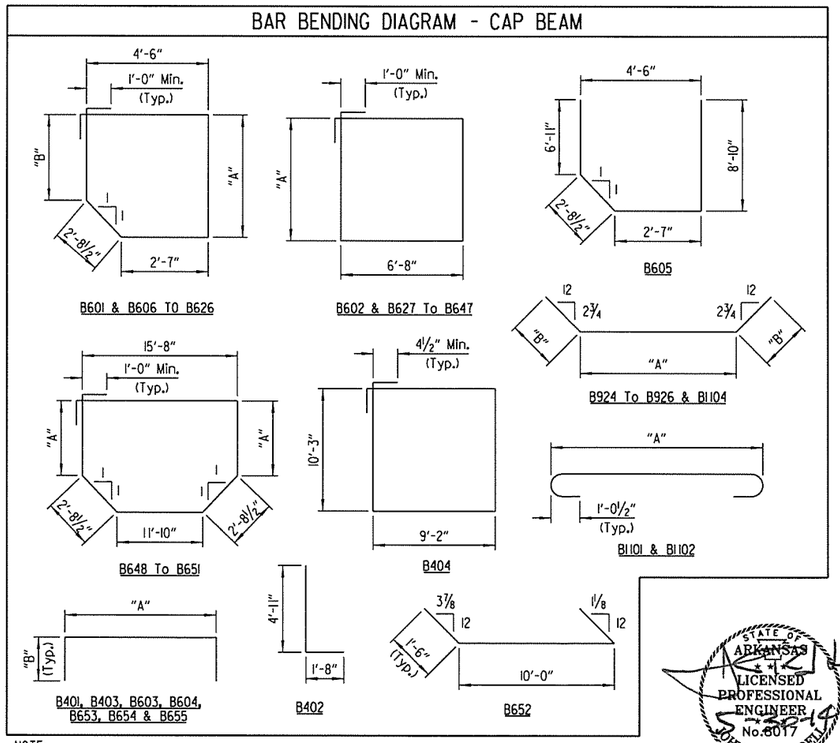


NOTE:
For "MECHANICAL COUPLER & SPLICE NOTES", see Dwg. No. 54329.

BUNDLED BAR SPLICE DETAIL

(For Bundled Bars)
No Scale

BAR BENDING DIAGRAM - CAP BEAM



NOTE:
Dimensions of bars are out-to-out.

BAR LIST - CAP BEAM

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	B401	6	8'-6"	5'-2"	1'-9"	2"
	B402	8	5'-6"			2"
	B403	1	12'-5"	5'-3"	4'-11"	2"
	B404	12	39'-2"			2"
	B601	152	38'-4½"	14'-8"	12'-9"	4½"
	B602	152	43'-10"	14'-8"		4½"
	B603	120	21'-10"	4'-6"	8'-10"	4½"
	B604	240	24'-0"	6'-8"	8'-10"	4½"
	B605	120	20'-8½"			4½"
	B606 To B626	4 Ea.	34'-5½" To 29'-10½"	12'-8½" To 10'-5"	10'-9½" To 8'-6"	4½"
	B627 To B647	4 Ea.	39'-11" To 35'-4"	12'-8½" To 10'-5"		4½"
	B648 To B651	2 Ea.	48'-3" To 38'-3"	7'-1" To 2'-1"		4½"
	B652	24	12'-8"			4½"
	B653	68	18'-10"	10'-2"	4'-6"	4½"
	B654	96	17'-9"	9'-1"	4'-6"	4½"
	B655	96	15'-3"	8'-1"	3'-9"	4½"
	B801	312	30'-0"			Str.
(3)	B901 To B914	2 Ea.	106'-8½" To 110'-5½"			Str.
(3)	B915 To B923	2 Ea.	106'-1" To 71'-3"			Str.
(3)	B924 To B926	2 Ea.	111'-11" To 112'-8½"	67'-6" To 67'-9½"	22'-2½" To 22'-5½"	9"
(4)	B1101	22	109'-1"	106'-1"		1'-2⅛"
(4)	B1102	22	108'-10"	105'-10"		11¼"
(4)	B1103	44	105'-2"			Str.
(4)	B1104	32	113'-1"	67'-11"	22'-7"	11¼"

(3) Length exceeds 60'-0". See "BAR SPLICE DETAIL" on Dwg. No. 54329.

(4) Length exceeds 60'-0". See "BUNDLED BAR SPLICE DETAIL" on this sheet.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	133	505
				(1) 07292		INT. BENT DETAILS		54333

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF INTERMEDIATE BENT NO. 5
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_B23.dgn
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54333

SRYancey 5/29/2014 4:36:01 PM
WORKSPACE: AHTD Bridge
L:\20IN\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B23 Int. Bent No. 5 - 6 of 6i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		061275	134	505
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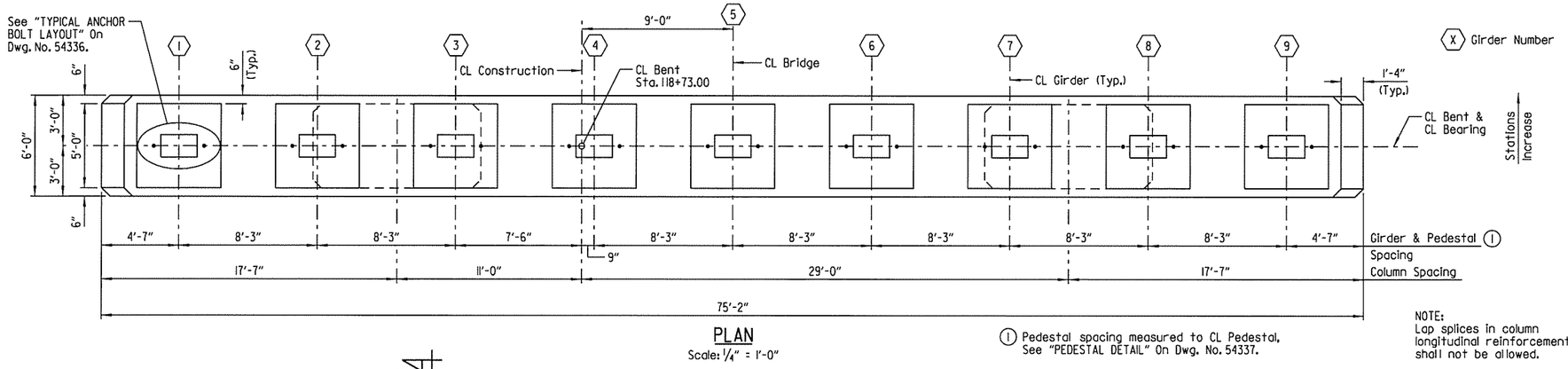
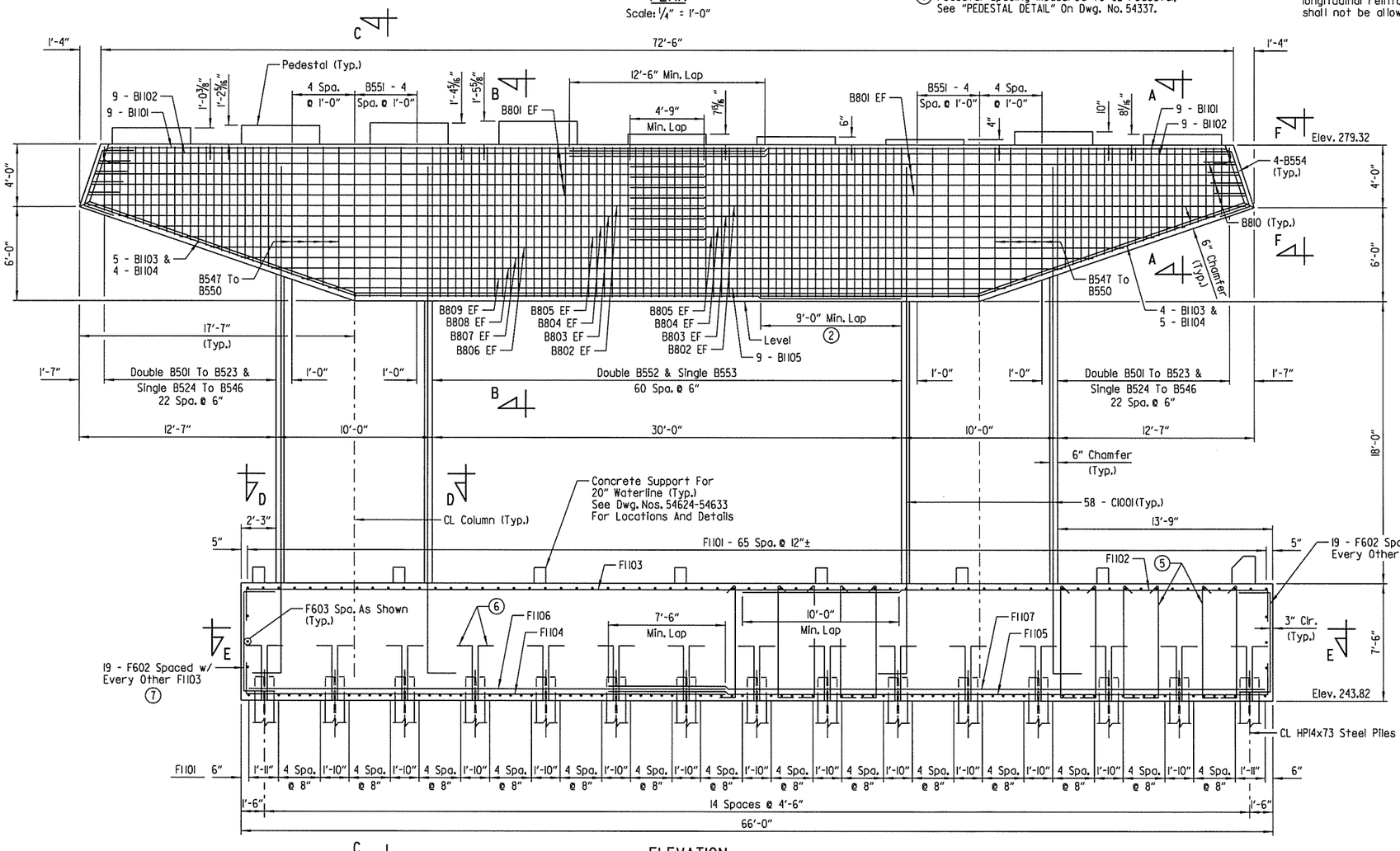


PLAN
Scale: 1/4" = 1'-0"

(1) Pedestal spacing measured to CL Pedestal, See "PEDESTAL DETAIL" On Dwg. No. 54337.



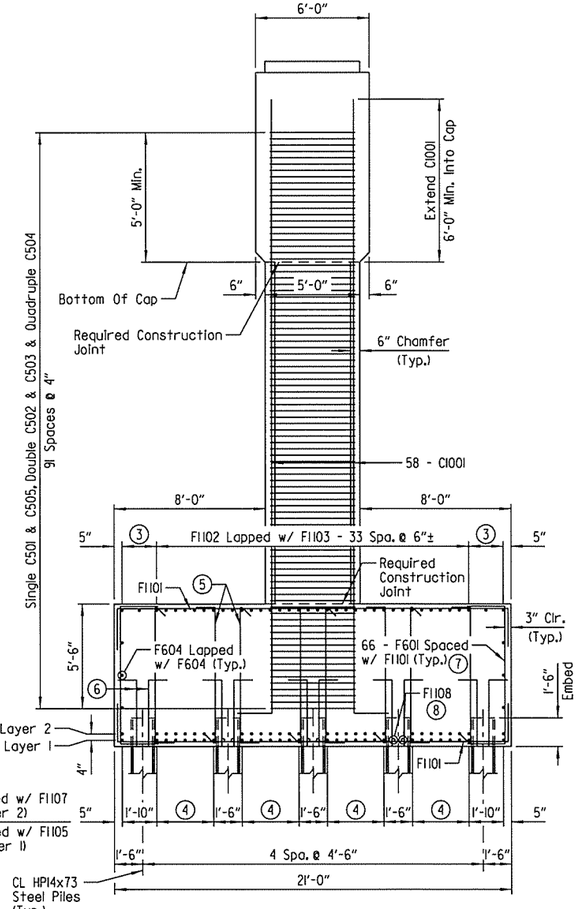
ELEVATION
(Looking Forward)
Scale: 1/4" = 1'-0"

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION D-D", "VIEW F-F", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54336.

For "SECTION E-E", see Dwg. No. 54337.

(2) Lap splice bars immediately adjacent to the inside face of column and extend into bay. Splices shall also alternate between columns such that no two adjacent bars are spliced at the same location.

LEGEND
EF = Each Face



SECTION C-C
(Reinforcing In Cap Not Shown For Clairty)
Scale: 1/4" = 1'-0"

(3) F1102 Lapped w/ F1103 - 2 Spa. @ 11"±

(4) 6 Spa. @ 6"±

(5) F605 (Typ.) - See DETAIL "A" On Dwg. No. 54337 For Number And Placement

(6) F801 (Typ. Each Pile), See "PILE ANCHORAGE DETAIL" On Dwg. No. 54337.

(7) Adjust Spacing As Required For Bottom Leg To Clear Piles.

(8) Typ. @ Inside Piles. See "SECTION E-E On Dwg. No. 54337.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF INTERMEDIATE BENT NO. 7
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

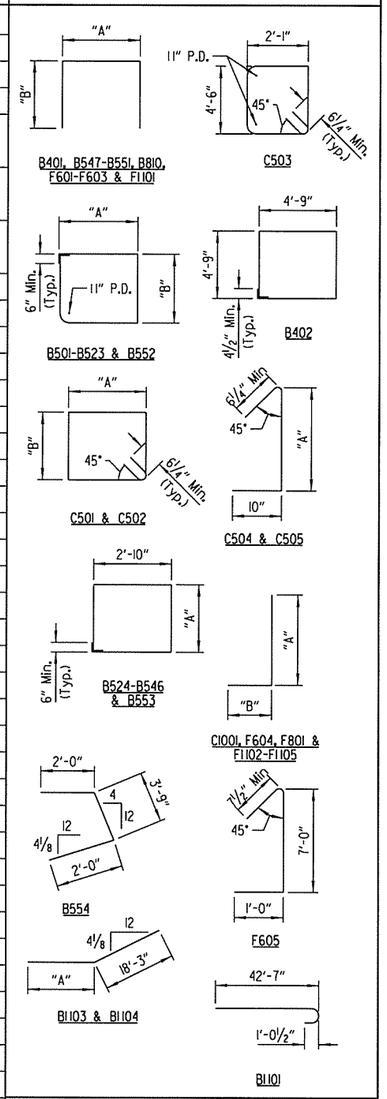
DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275xl_B24.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54335

SRYancey 5/29/2014 4:36:02 PM
WORKSPACE: AHTD Bridge
L:\2DIN\DIT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B29 Int. Bent No. 7 Details 1 of 6i.dgn
REVISED DATE:

BAR LIST

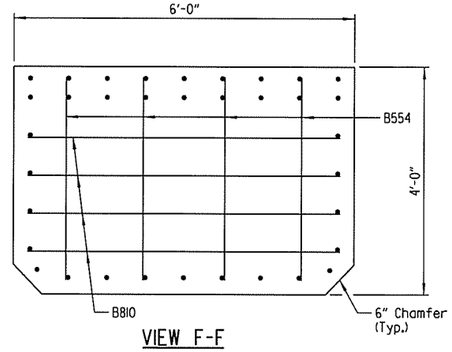
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	108	9'-4"	4'-8"	2'-5"	2"
B402	16	19'-4"			2"
B501 To B523	4 Each	12'-11½" To 20'-5½"	2'-2"	4'-1" To 7'-10"	2½", 11"
B524 To B546	2 Each	14'-4" To 21'-10"	4'-1" To 7'-10"		2½"
B547 To B550	2 Each	21'-8½" To 23'-9½"	5'-6"	8'-2½" To 9'-3"	2½"
B551	10	24'-5½"	5'-6"	9'-7"	2½"
B552	122	23'-11½"	2'-2"	9'-7"	2½", 11"
B553	61	25'-4"	9'-7"		2½"
B554	8	7'-7"			2½"
B801	16	39'-6"			Str.
B802	4	39'-7"			Str.
B803	4	37'-6"			Str.
B804	4	35'-8"			Str.
B805	4	33'-7"			Str.
B806	2	58'-6"			Str.
B807	2	54'-7"			Str.
B808	2	50'-8"			Str.
B809	2	46'-9"			Str.
B810	8	10'-11½"	5'-4½"	3'-0"	6"
B1101	18	44'-1"			11¼"
B1102	18	42'-1"			Str.
B1103	9	32'-3"	14'-0"		11¼"
B1104	9	53'-3"	35'-0"		11¼"
B1105	9	43'-4"			Str.
C501	184	17'-4"	3'-10"	4'-6"	3¾"
C502	368	15'-6"	2'-11"	4'-6"	3¾"
C503	368	13'-8½"			3¾", 11"
C504	736	10'-10"	9'-6"		3¾"
C505	184	5'-10"	4'-6"		3¾"
C1001	116	33'-11"	32'-4"	1'-10"	10"
F601	132	8'-8½"	7'-0"	1'-0"	4½"
F602	38	8'-5½"	6'-9"	1'-0"	4½"
F603	6	22'-1"	20'-4½"	1'-0"	4½"
F604	12	35'-5½"	34'-7"	1'-0"	4½"
F605	276	8'-3½"			4½"
(1) F801	78	5'-1½"	4'-0"	1'-4"	6"
F1101	138	23'-9½"	20'-6"	2'-0"	11¼"
F1102	38	35'-5"	33'-9"	2'-0"	11¼"
F1103	38	43'-11"	42'-3"	2'-0"	11¼"
F1104	30	32'-6"	30'-10"	2'-0"	11¼"
F1105	30	44'-0"	42'-4"	2'-0"	11¼"
F1106	30	30'-9"			Str.
F1107	30	42'-3"			Str.
F1108	6	57'-0"			Str.

BAR BENDING DIAGRAM

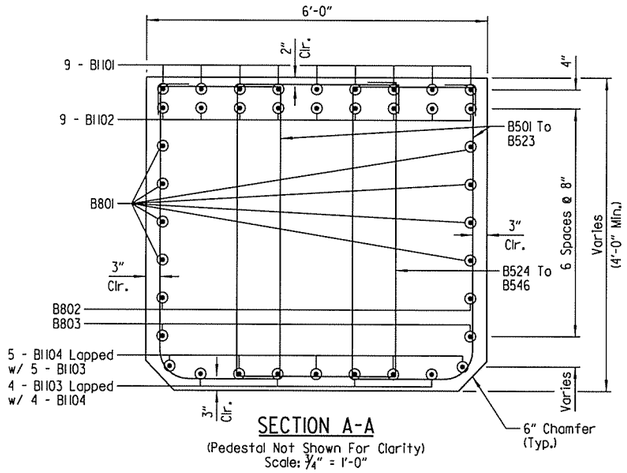


NOTE:
Dimensions of bars are out-to-out.

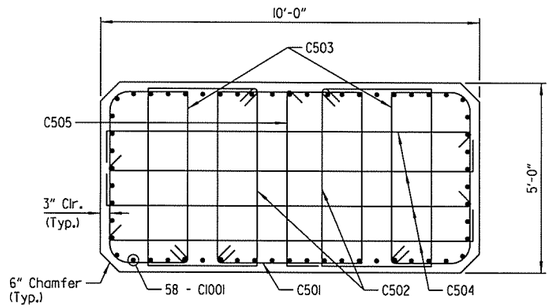
(1) F801 Bars must be a weldable grade meeting the requirements of ASTM A706 (GR.60)



VIEW F-F
(Showing End Cap Reinforcing)
Scale: ¾" = 1'-0"

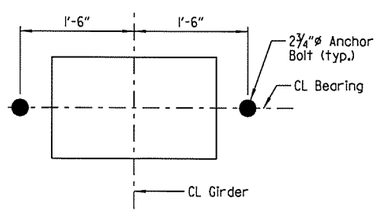


SECTION A-A
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"

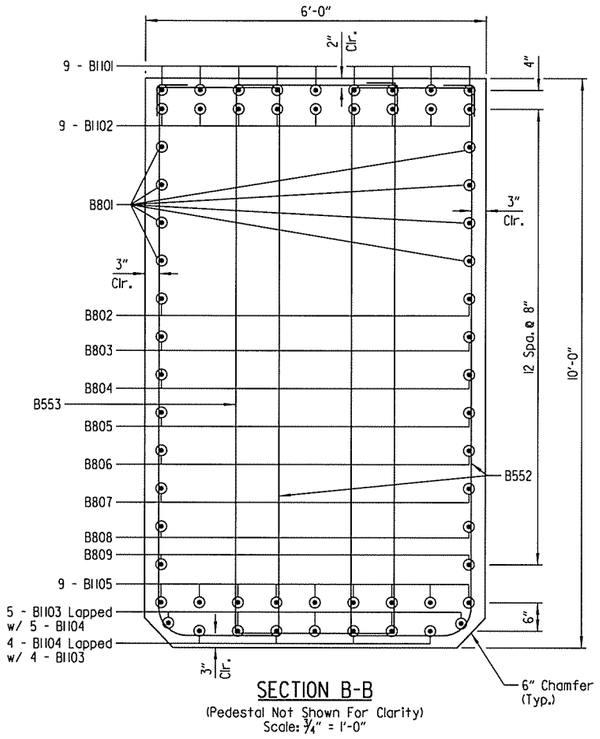


SECTION D-D
Scale: ½" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54501.



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"



SECTION B-B
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	135	505
				(1) 07292		INT. BENT DETAILS		54336

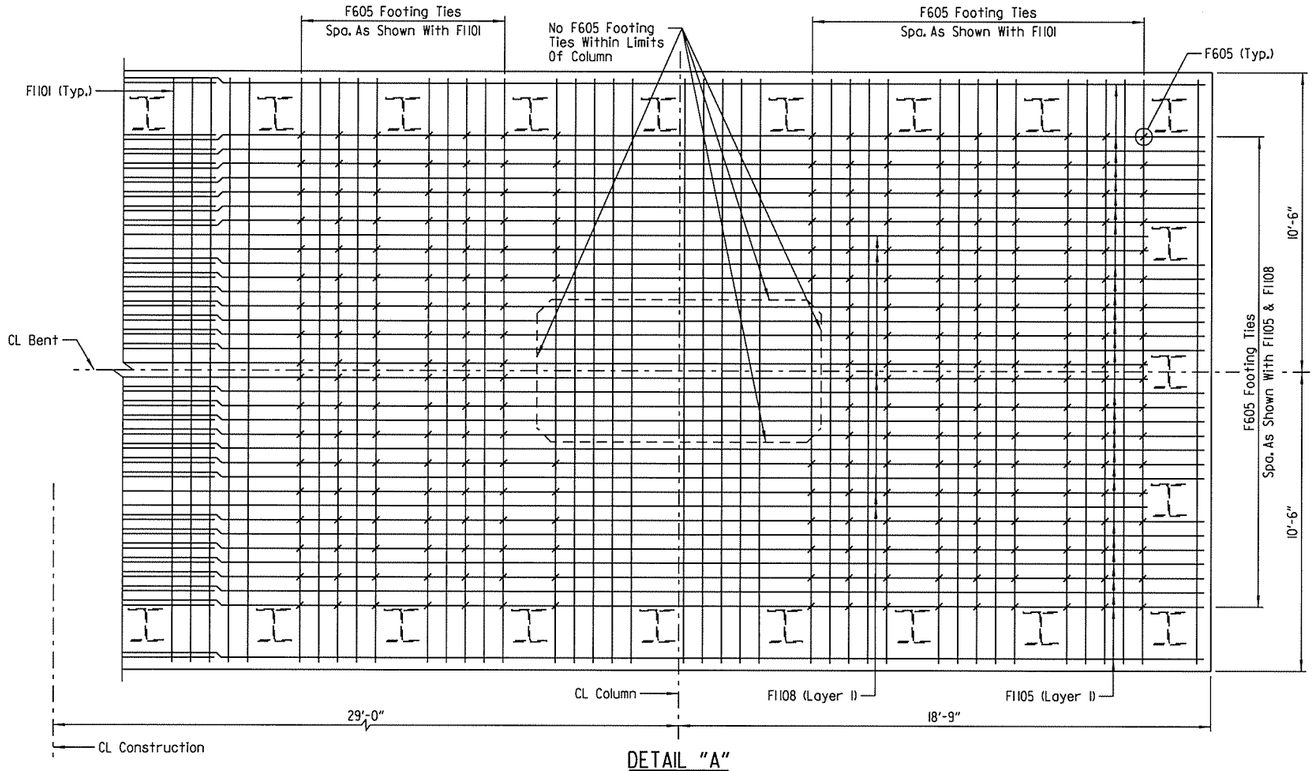
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER
5/28/14

SHEET 2 OF 4
DETAILS OF INTERMEDIATE BENT NO. 7
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275x1_B25.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54336

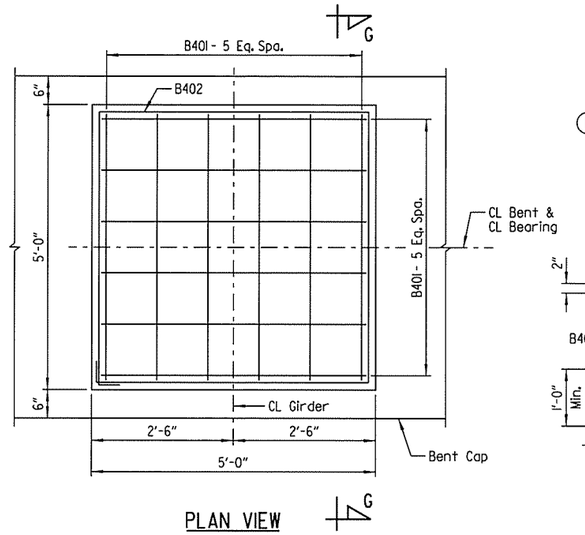
SRYancey 5/29/2014 4:36:02 PM
WORKSPACE: AHTD Bridge
L:\ZDM\M0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_B30 Int. Bent No. 7 Details 2 of 6.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	136	505
				(1) 07292		INT. BENT DETAILS		54337

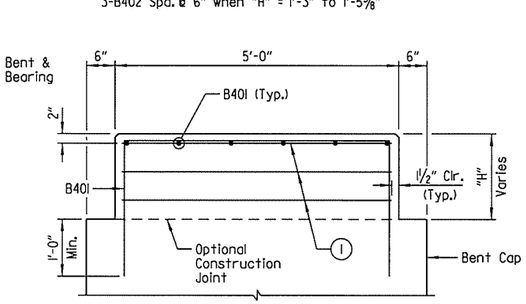


DETAIL "A"

(Showing Spacing of F605 Footing Ties And Bottom Mat Of Reinforcing In Footing)
Scale: 3/8" = 1'-0"



PLAN VIEW

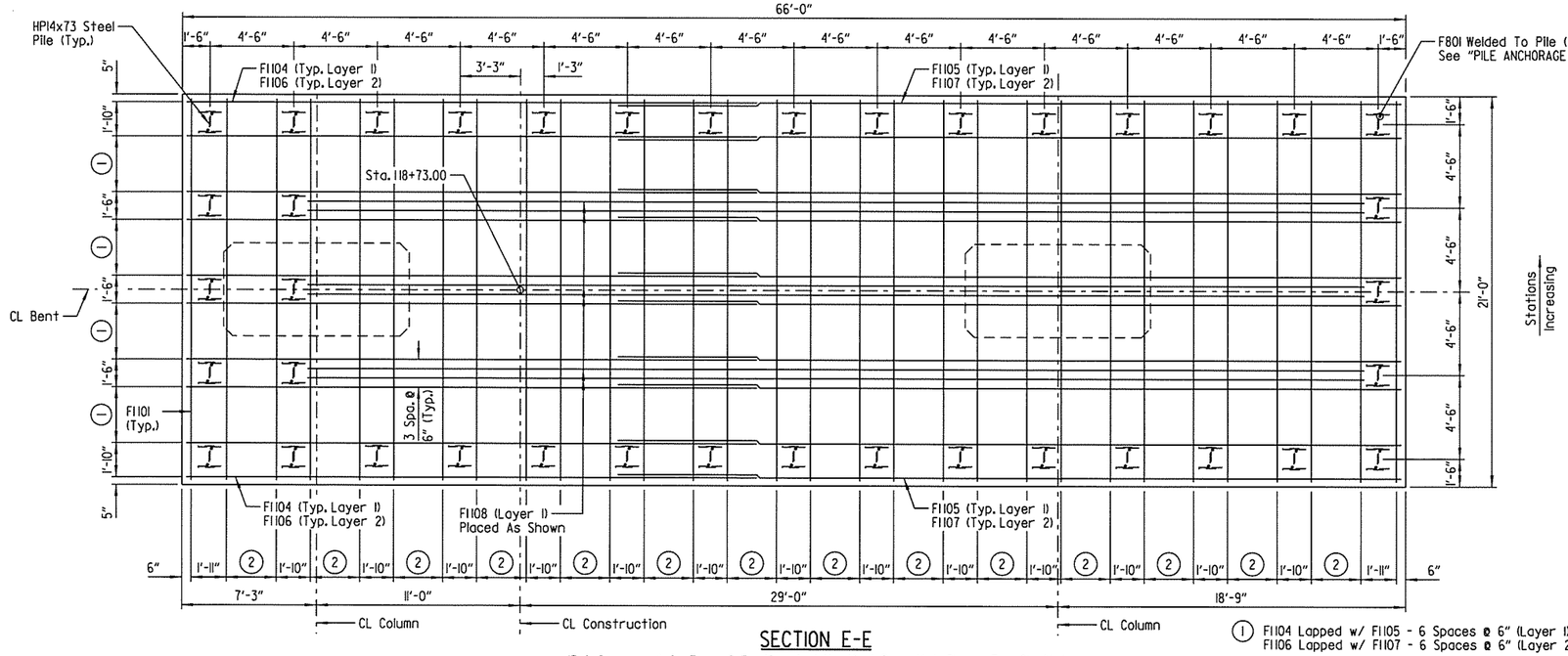


NOTE:
For height of each pedestal, see "ELEVATION" on Dwg. No. 54335.

SECTION G-G

PEDESTAL DETAIL

Scale: 3/4" = 1'-0"

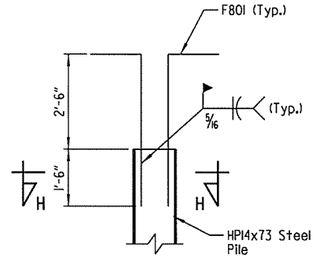


SECTION E-E

(Reinforcement In Top of Footing And Vertical Bars Not Shown For Clarity)
Scale: 1/4" = 1'-0"

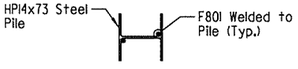
(1) F1104 Lapped w/ F1105 - 6 Spaces @ 6" (Layer 1)
F1106 Lapped w/ F1107 - 6 Spaces @ 6" (Layer 2)

(2) F1101 - 4 Spaces @ 8"



PILE ANCHORAGE DETAIL

No Scale



SECTION H-H

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF INTERMEDIATE BENT NO. 7
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

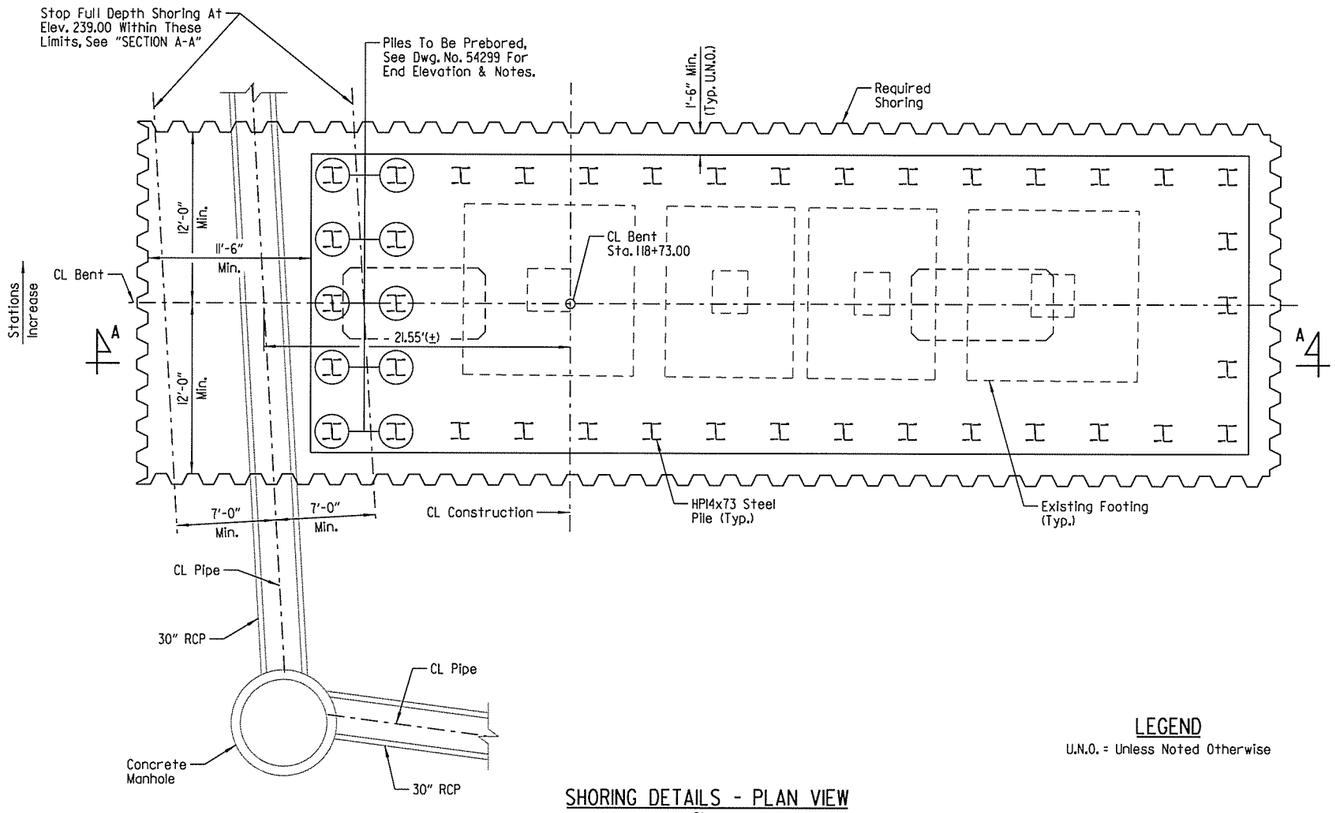
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: MAR. 2013 FILENAME: B061275xl.B26.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54337

SRTancey 5/29/2014 4:36:03 PM
WORKSPACE: AHTD Bridge
L:\X20\NDOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl.B31int. Bent No. 7 Details 3 of 61.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	137	505
				(1) 07292		INT. BENT DETAILS		54338

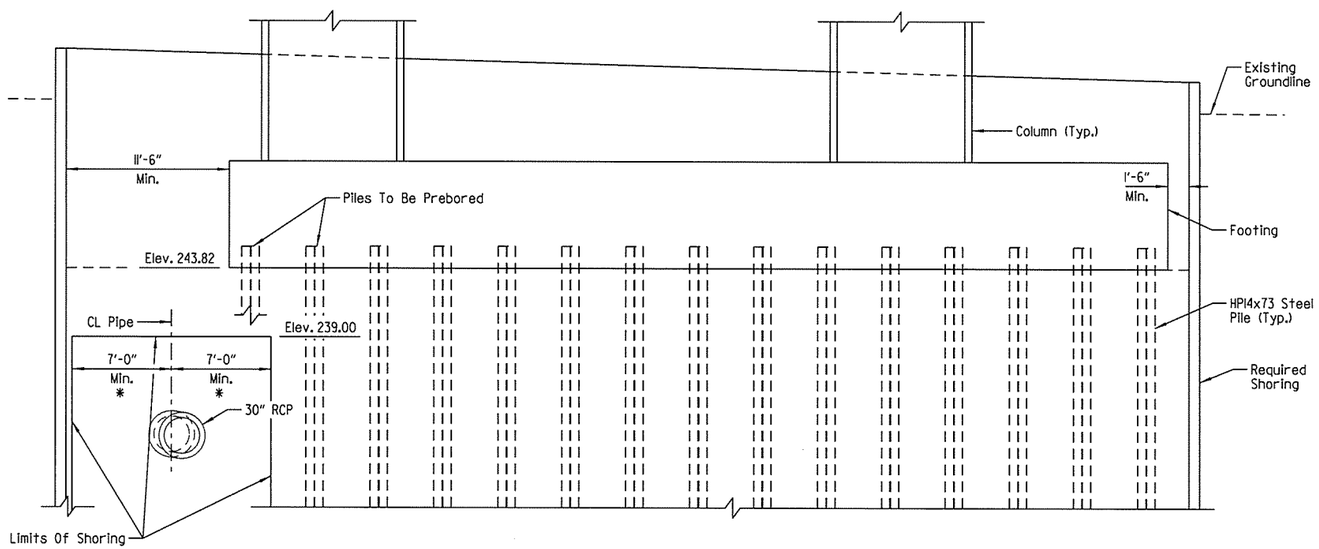


SHORING DETAILS - PLAN VIEW

Scale: 3/16" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise



* Measured perpendicular to CL Pipe

SECTION A-A

Scale: 3/16" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF INTERMEDIATE BENT NO. 7
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

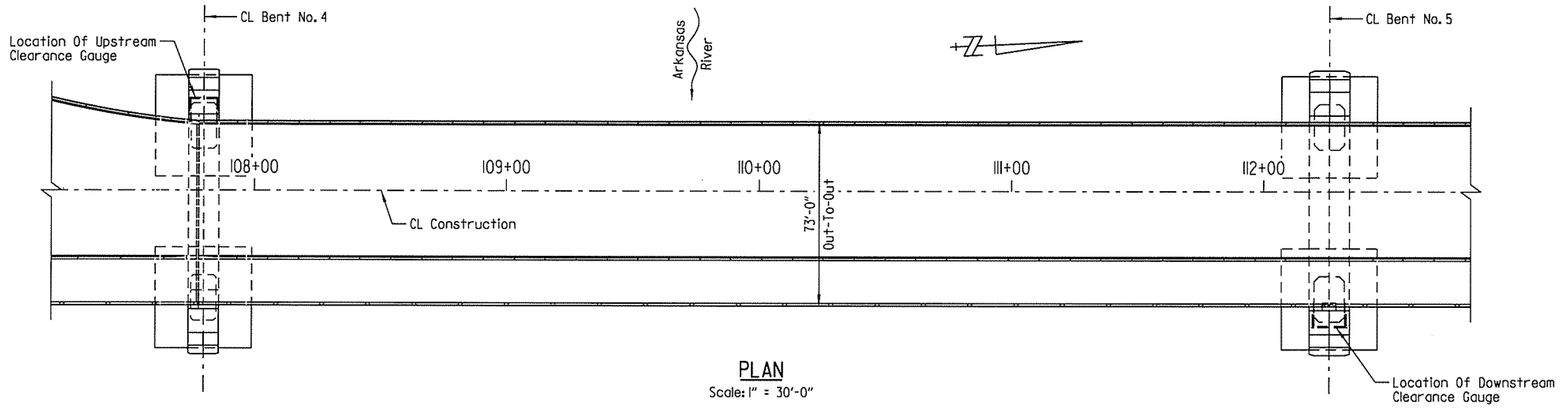
LITTLE ROCK, ARK.

DRAWN BY: JES DATE: AUG. 2013 FILENAME: B061275xl_B27.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: AUG. 2013

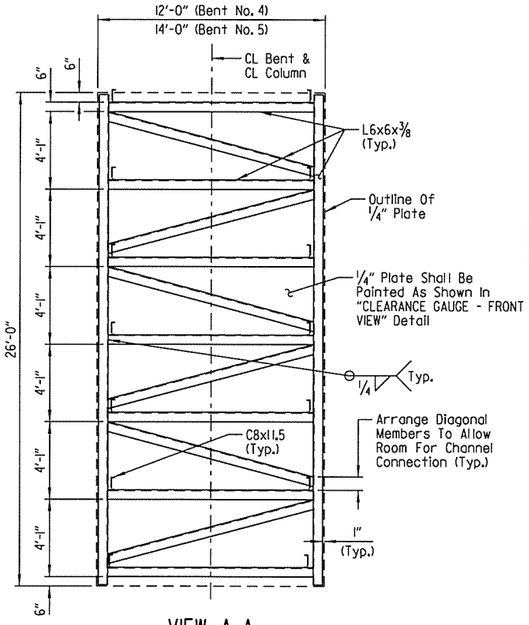
BRIDGE NO. 07292 DRAWING NO. 54338

SRYancey 5/29/2014 4:36:04 PM
WORKSPACE: AHTD Bridge
L:\ZDM\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B32 Int. Bent No. 7 Details 4 of 6i.dgn
REVISED DATE:

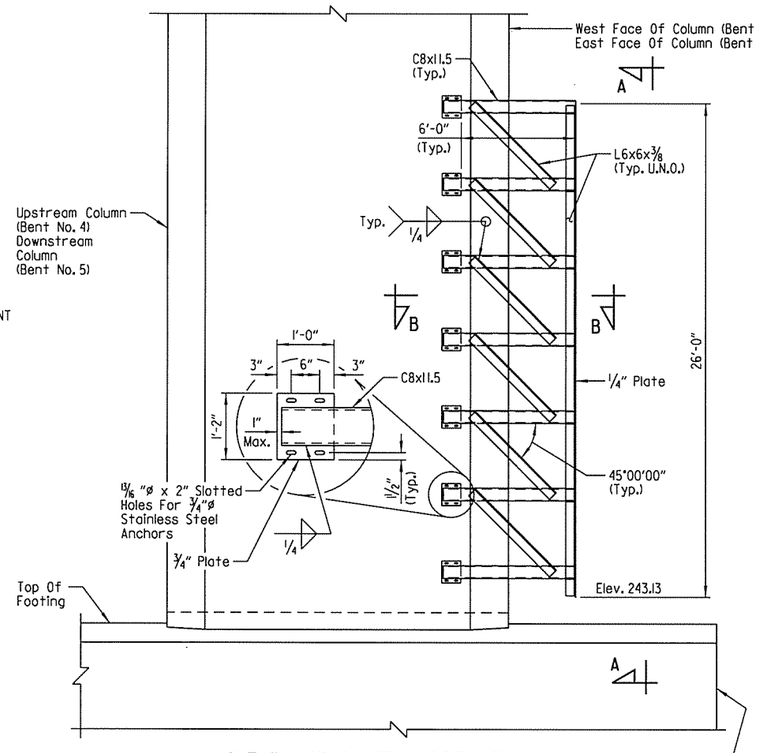
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	138	505
				①	07292	INT. BENT DETAILS		54341



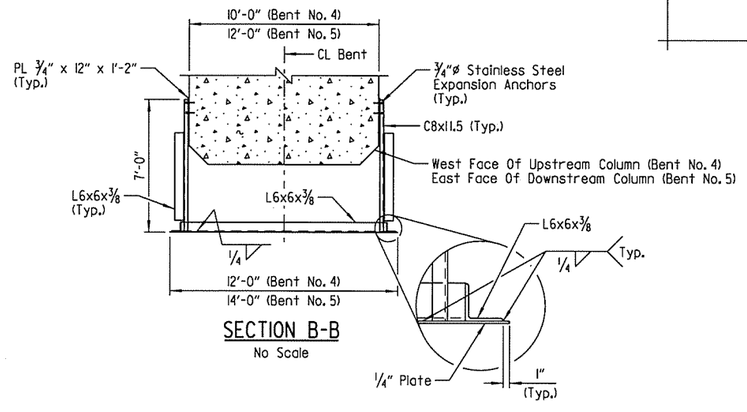
PLAN
Scale: 1" = 30'-0"



VIEW A-A
No Scale



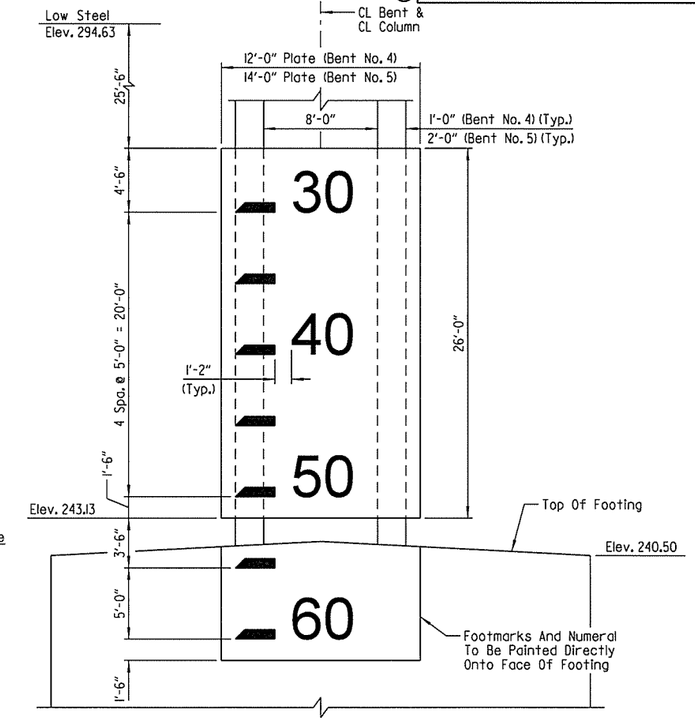
CLEARANCE GAUGE - SIDE VIEW
Looking Back Station (Bent No. 4)
Looking Forward Station (Bent No. 5)
No Scale



SECTION B-B
No Scale

NOTE:
Clearance gauges shall be installed on Bent Nos. 4 and 5 prior to erection of superstructure.

LEGEND
U.N.O = Unless Noted Otherwise



CLEARANCE GAUGE - FRONT VIEW
No Scale

NOTES:
At Bent No. 4, the upstream clearance gauge shall be fabricated and attached to the west face of the upstream column and painted directly onto the west face of the upstream footing per the details shown on this drawing. At Bent No. 5, the downstream clearance gauge shall be fabricated and attached to the east face of the downstream column and painted directly onto the east face of the downstream footing per the details shown on this drawing.

Numerals shall conform to Series E as shown in "Standard Alphabets for Highway Signs", U.S. Department of Transportation, Federal Highway Administration, with a height of 36" (measured vertically). The footmarks and numerals shall be black on a white background.

The length of the footmarks must be no less than the width of a single numeral used (except numerals 1 and 4), and the thickness must be the same as the width of stroke of the numeral. The footmarks should extend to the nearest margin of the white background.

The minimum width of white background must not be less than three times the width of a single numeral (except numerals 1 and 4), plus the width of each additional numeral (when multiple numerals are used), plus numeral spacing.

All structural steel used in the fabrication of the clearance gauges shall conform to AASHTO M270, Gr. 36 and shall be fabricated in accordance with Section 807. The 1/4" plate and support bracing shall be cleaned in accordance with Subsection 807.84(b). All coats of paint shall be shop applied to the clearance gauges. Painting shall be in accordance with Subsection 807.75. See SP Job 061275 "CLEARANCE GAUGES" for method of measurement and payment.

Anchors shall be installed according to the Manufacturer specifications and shall have the following ultimate capacities.

Shear 20,000 lbs. Tension 16,000 lbs.

Anchors may be cast in place or drilled and grouted into place. If anchors are drilled and grouted into place, the anchors shall be set and fixed using a QPL-approved epoxy or non-shrink grout that completely fills the holes.

Stainless steel shall conform to ASTM A193 or A320, Gr. B8.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF CLEARANCE GAUGES BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275xl_B28.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54341

SRYancey 5/30/2014 11:25:49 AM
WORKSPACE: AHTD Bridge
L:\ROADWAY\DTGD - Broadway Bridge over the Arkansas River\Drawings\B061275xl_B35 (Int. Bent Nos. 4 & 5 Clr. Gauge).dgn
REVISED DATE:

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 54343.

(2) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to mee slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 54343.

(3) Measured to theoretical top of roadway surface. See "ROUNDING DETAIL".

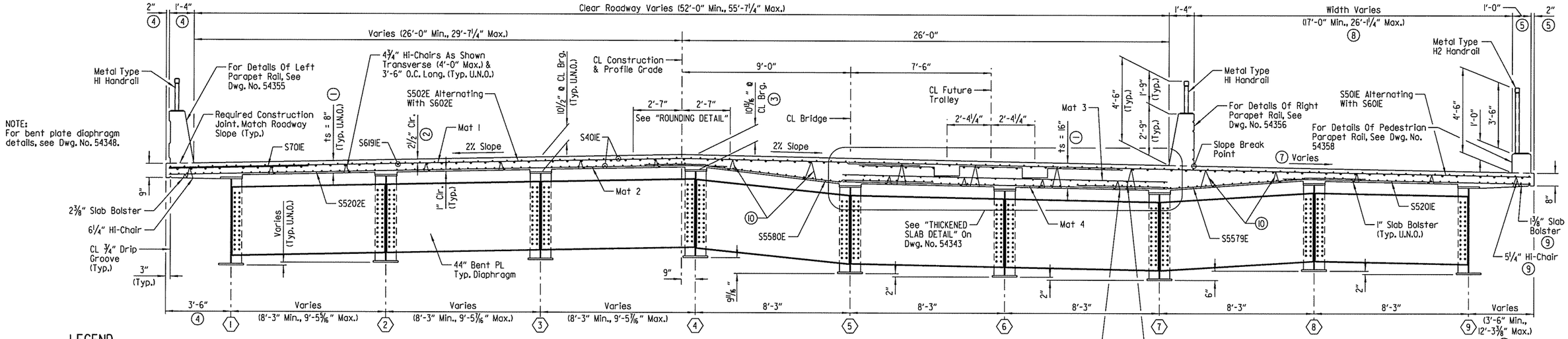
(4) Measured perpendicular or radial to left edge of deck.

(5) Measured perpendicular or radial to right edge of deck. See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 54344 for limits of pedestrian parapet rail.

(6) See Dwg. Nos. 54351 - 54353 for details and limits of support members under extended overhang. See "DETAIL B" on Dwg. No. 54345 for additional reinforcement in extended overhang.

(7) For cross slope transition details, see "DECK TRANSITION DETAIL" on Dwg. No. 54343.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	139	505
				(1) 07292		263'-0" PL GIRDER UNIT		54342



NOTE:
For bent plate diaphragm details, see Dwg. No. 54348.

LEGEND

U.N.O. = Unless Noted Otherwise

NOTE:
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only. For details of Class 3 Textured Coating Finish to be applied to parapet rail surfaces in accordance with SP JOB 061275 "TEXTURED COATING FINISH".

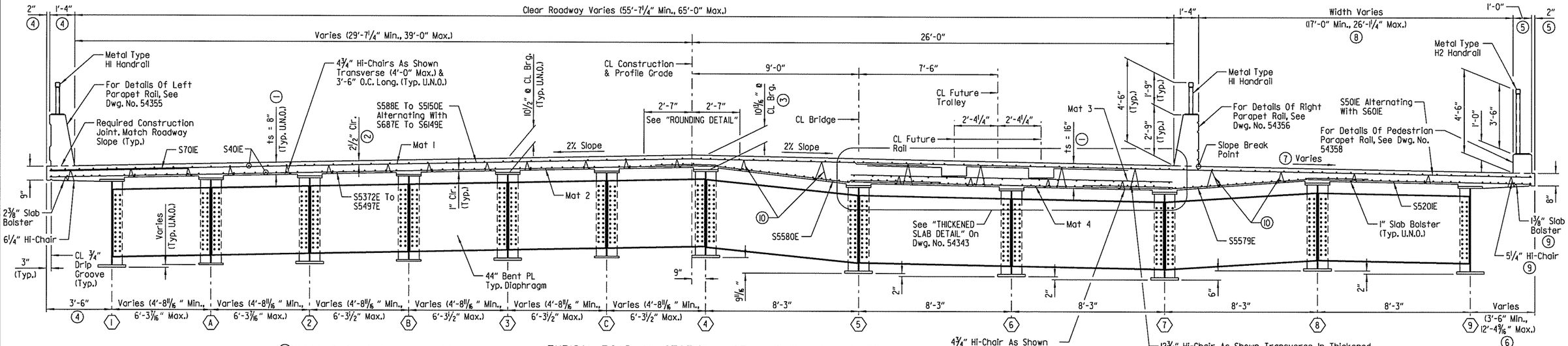
TYPICAL ROADWAY SECTION - BEGIN UNIT TO STA. 104+99

U.N.O., min. dimensions shown are at begin unit (CL Joint) & max. dimensions shown are at Sta. 104+99.
Looking Forward
No Scale

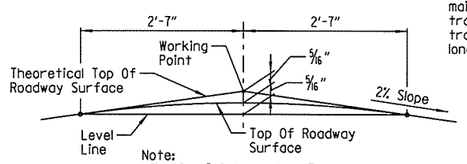
4 3/4" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

12 3/4" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

(8) Dimensions vary near pedestrian ramp connection (near CL Bent 2). See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 54344.



(10) Height of hi-chairs in slab transition areas shall be set as necessary to maintain 2 1/2" clear cover to top transverse bars. Space as shown transverse (4'-0" max.) & 3'-6" O.C. long.



Note: Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

No Scale

TYPICAL ROADWAY SECTION - STA. 104+99 TO END UNIT

U.N.O., min. dimensions shown are at Sta. 104+99 & max. dimensions shown are at end unit (CL Joint).
Looking Forward
No Scale

SLAB REINFORCING:

Transverse: S601E lapped with S602E @ 14" O.C. - Mat 1 — Alternate
S501E lapped with U401E lapped with S502E @ 14" O.C. - Mat 1
S5202E lapped with S5580E and S5579E lapped with S5201E @ 7" O.C. - Mat 2
S701E in left overhang spa. with #6 bars - Mat 1
S6200E - Mats 3 & 4

Longitudinal: S401E as shown in typical sections on this drawing & "THICKENED SLAB DETAIL" on Dwg. No. 54343 - Mats 1, 2, 3 & 4
S619IE as shown over int. support - Mat 1

See slab plans on Dwg. Nos. 54344 & 54346 for additional slab reinforcing details.

NOTE:
Girders A, B & C begin and frame into Diaphragms D2 at Sta 104+99. See "FRAMING PLAN" on Dwg. No. 54347.

NOTES:
Horizontal dimensions shown are measured perpendicular to CL Construction unless noted otherwise.

For "TYPICAL SECTION THRU JOINT", see Dwg. No. 54343.

For "BAR LIST", see Dwg. No. 54346.

For "GENERAL NOTES", see Dwg. No. 54354.

4 3/4" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

12 3/4" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

(9) Typ. in right overhang. The hi-chair and slab bolster are shown for typical 3'-6" cantilever. Add additional hi-chairs and bolsters for widened sections and adjust heights as necessary.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 1 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: APR. 2013 FILENAME: B061275x1_SI.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: APR. 2013

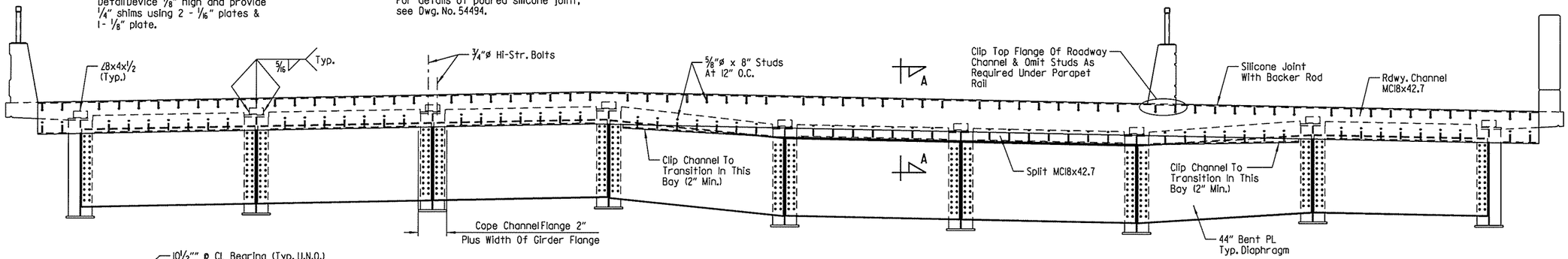
BRIDGE NO. 07292 DRAWING NO. 54342

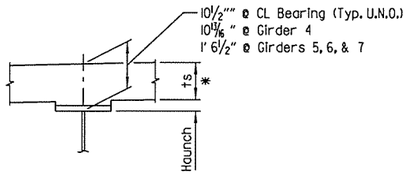
SRYancey 5/29/2014 4:36:05 PM
WORKSPACE: AHTD Bridge
L:\ROADWAY\DGN\B - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI\Spans 1& 2 Typ Sect.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	140	505
				(1) 07292		263'-0" PL GIRDER UNIT		54343

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7 (Modified with attachment of ∠5x3½x⅝ as shown)
Connection Angles ∠8x4x½
Detail Device ⅛" high and provide ¼" shims using 2 - 1/16" plates & 1- ⅛" plate.

Note:
For details of poured silicone joint, see Dwg. No. 54494.





Note: t_s = Slab Thickness as shown on typical roadway sections

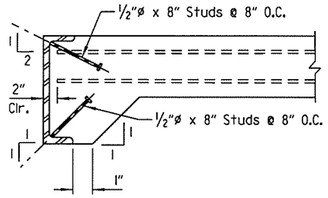
* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 ¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



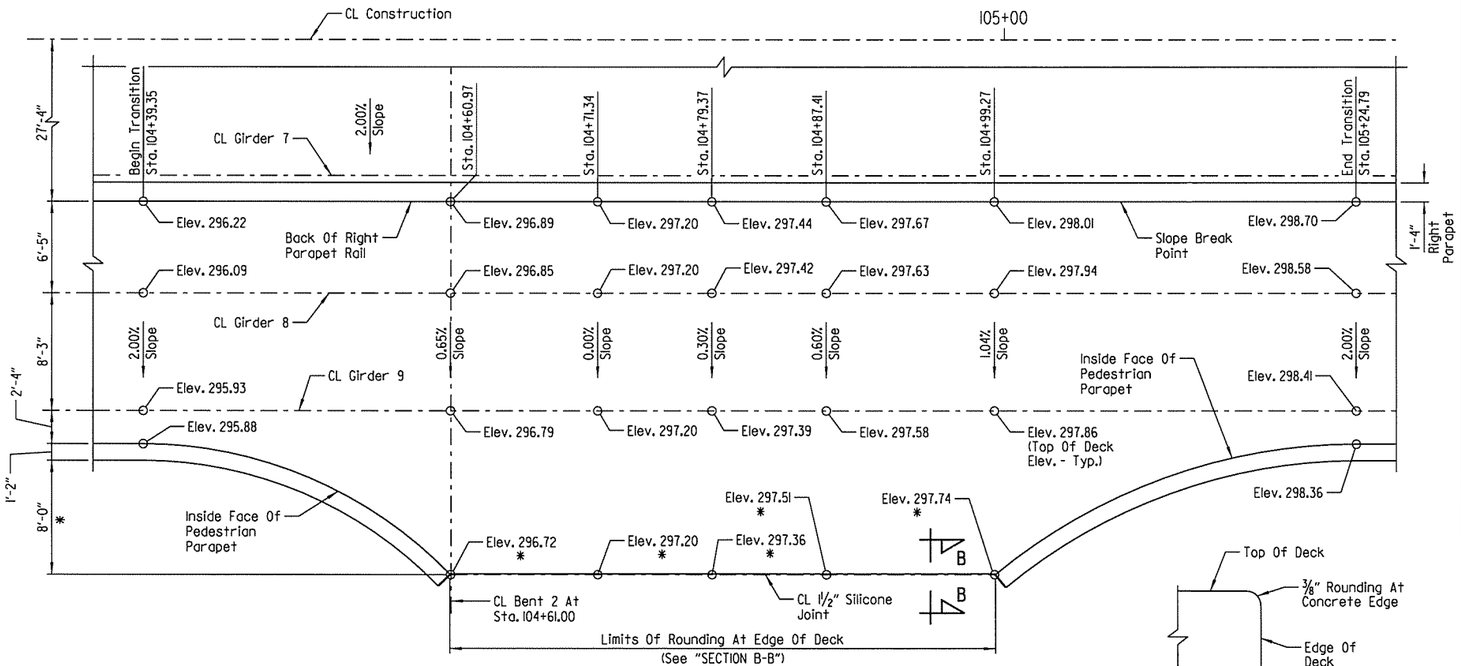
DETAIL OF ALTERNATE ANCHORS

No Scale

Note:
As an alternate to ⅝" dia. studs, ½" dia. x 8" studs spaced as shown may be used. Use weight of ⅞" dia. stud as basis of measurement of Structural Steel.

TYPICAL SECTION THRU JOINT

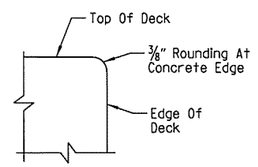
No Scale



DECK TRANSITION DETAIL

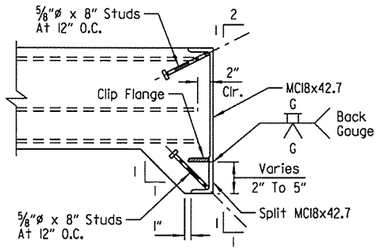
Scale: ⅜" = 1'-0"

* Measured at CL Joint



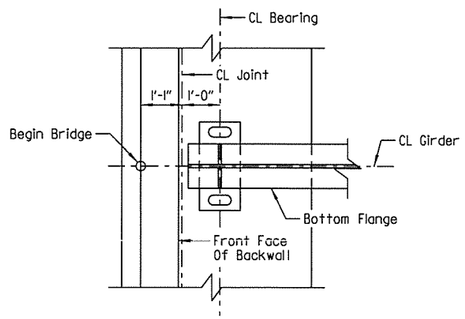
SECTION B-B

Scale: 6" = 1'-0"



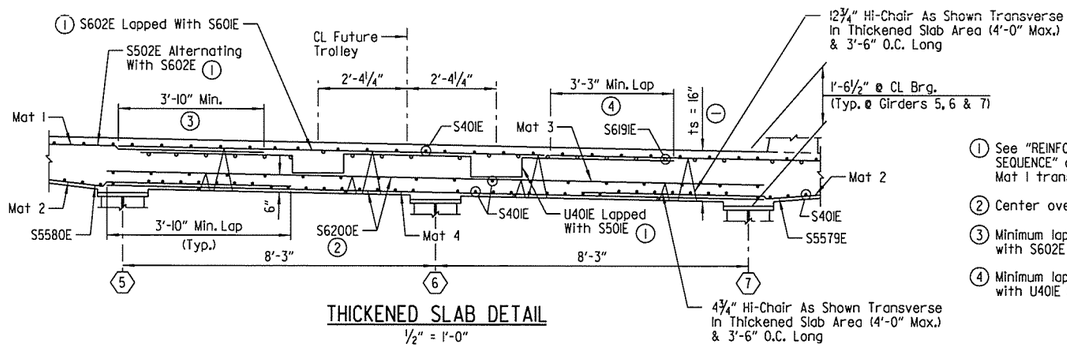
SECTION A-A

Scale: 1" = 1'-0"



BEARING PLAN AT END BENT 1

No Scale



THICKENED SLAB DETAIL

½" = 1'-0"

(1) See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 54344 for Mat 1 transverse bar designations.

(2) Center over Girder 6 as shown.

(3) Minimum lap shown for S601E lapped with S602E (left side only)

(4) Minimum lap shown for S501E lapped with U401E (typ. both sides)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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SHEET 2 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: APR. 2013 FILENAME: B061275x1_S2.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54343

SRTrancey 5/29/2014 4:36:06 PM
WORKSPACE: AHTD Bridge
L:\x20\NHOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S2 (Spans 1& 2 Typ Sec-2).dgn
REVISED DATE:

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab. Parapet joint designation shown is for both the left and right parapet rails.

* Refer to typical roadway sections on Dwg. No. 54342 for placement.

** Pouring Sequence Construction Joint

*** Required Slab Joint

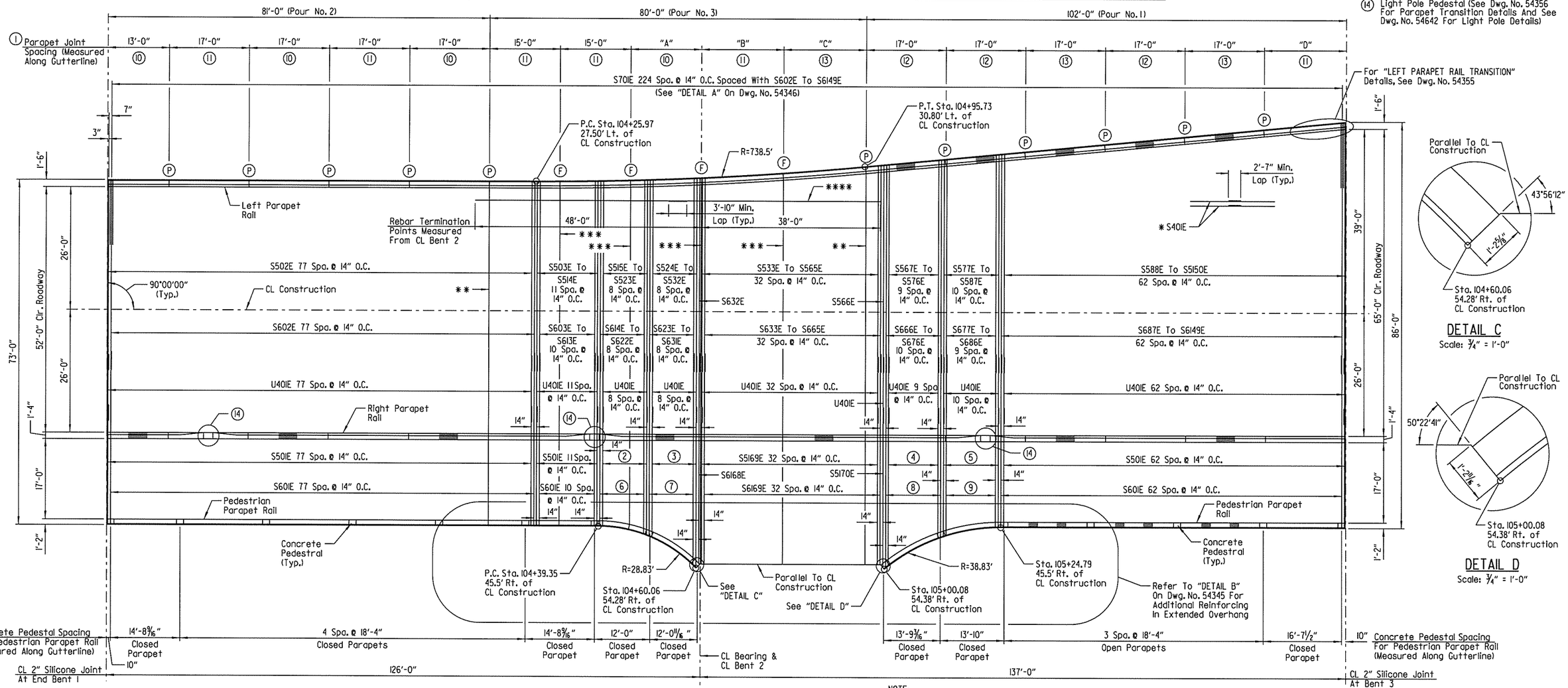
**** S619IE placed over intermediate supports as shown in typical roadway sections on Dwg. No. 54342

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

TABLE OF VARIABLES

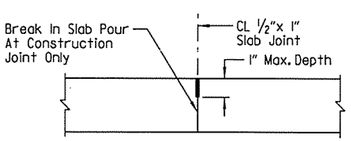
MARK	LEFT PARAPET SPACING	RIGHT PARAPET SPACING
"A"	15'-0 1/8"	15'-0"
"B"	17'-6 3/8"	17'-6"
"C"	17'-6 3/4"	17'-6"
"D"	17-5 1/2"	17'-0"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	141	505
				(1) 07292		263'-0" PL GIRDER UNIT		54344



DETAIL C
Scale: 3/4" = 1'-0"

DETAIL D
Scale: 3/4" = 1'-0"

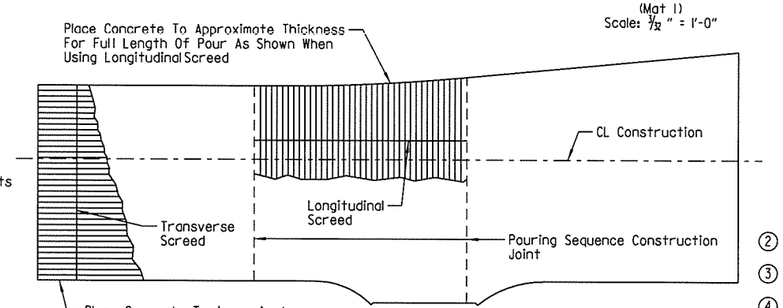


The 1/2" x 1" Poured Joint Sealer (Type 3 & 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL
No Scale

REINFORCING PLAN & POURING SEQUENCE

(Mat 1)
Scale: 1/12 " = 1'-0"



CONCRETE PLACEMENT PROCEDURE
No Scale

(2) S5151E To S5159E 8 Spa. @ 14" O.C.
(3) S5160E To S5168E 8 Spa. @ 14" O.C.
(4) S5171E To S5180E 9 Spa. @ 14" O.C.
(5) S5181E To S5191E 10 Spa. @ 14" O.C.
(6) S6150E To S6158E 8 Spa. @ 14" O.C.
(7) S6159E To S6167E 8 Spa. @ 14" O.C.
(8) S6170E To S6180E 10 Spa. @ 14" O.C.
(9) S6181E To S6190E 9 Spa. @ 14" O.C.
(10) Closed Left Parapet Rail Open Right Parapet Rail
(11) Closed Left Parapet Rail Closed Right Parapet Rail
(12) Open Left Parapet Rail Closed Right Parapet Rail
(13) Open Left Parapet Rail Open Right Parapet Rail

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours must be placed in the order shown. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet and pedestrian parapet rail. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

NOTES:
See Dwg. Nos. 54355 & 54356 for parapet reinforcing details.

See Dwg. No. 54357 for pedestrian parapet rail and concrete pedestal details.

See Dwg. No. 54345 for Mat 2 reinforcing details.

See Dwg. No. 54346 for Mats 3 & 4 reinforcing details.

SHEET 3 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

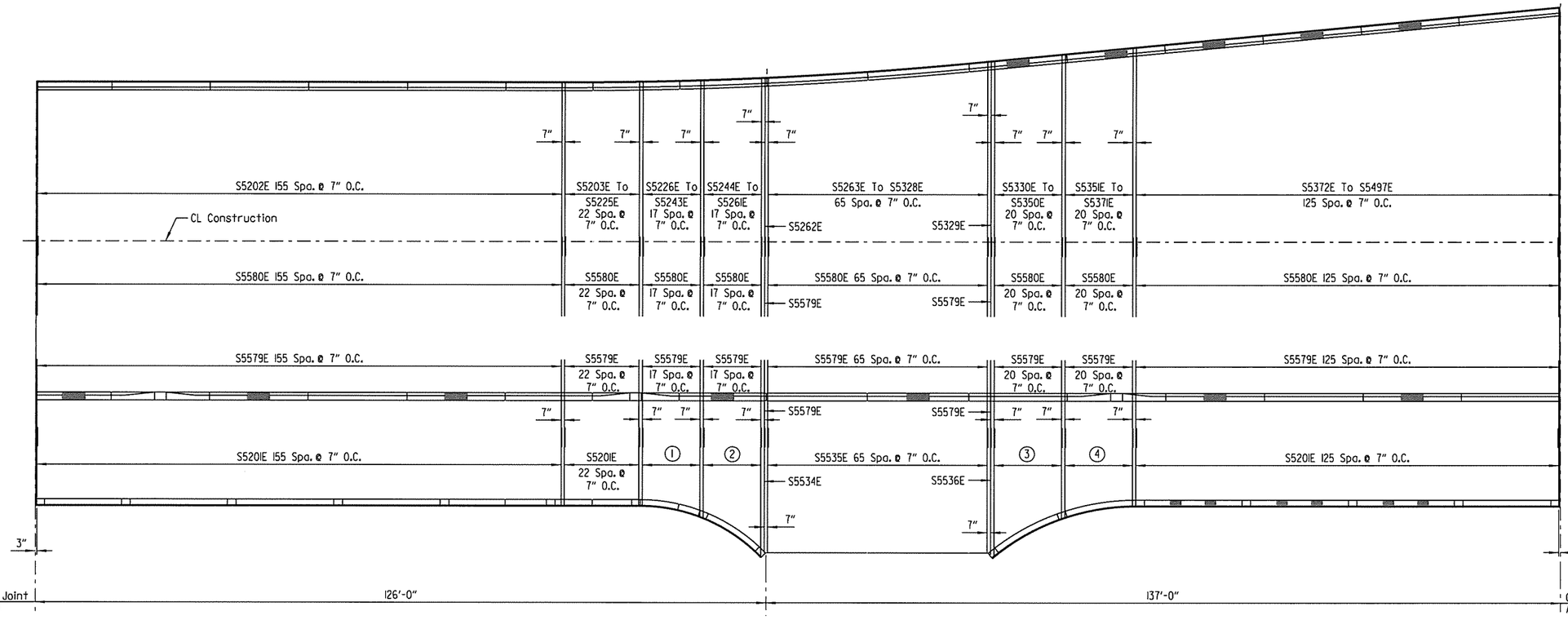
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_S3.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54344

SRYancey 5/29/2014 4:36:07 PM
WORKSPACE: AHTD Bridge
L:\CGI\MAT\B061275x1_S3 (Spans 1 & 2 Slab - Mat 1).dgn
REVISED DATE:
Broadway Bridge over the Arkansas River\Drawings\B061275x1_S3 (Spans 1 & 2 Slab - Mat 1).dgn

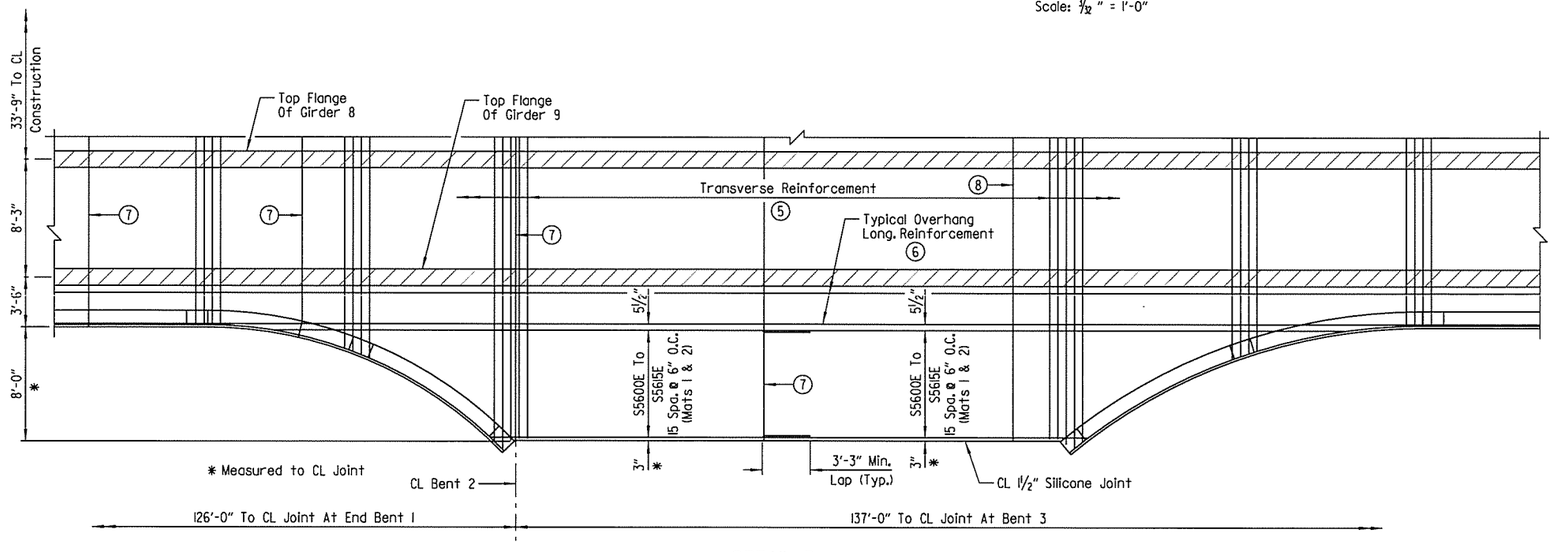
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	142	505
① 07292		263'-0" PL GIRDER UNIT		54345



REINFORCING PLAN

(Mat 2)
Scale: 3/32" = 1'-0"



DETAIL B

Showing Additional Reinforcing At Extended Overhang
Scale: 3/16" = 1'-0"

① S5498E To S5515E 17 Spa. @ 7" O.C.
② S5516E To S5533E 17 Spa. @ 7" O.C.
③ S5537E To S5557E 20 Spa. @ 7" O.C.
④ S5558E To S5578E 20 Spa. @ 7" O.C.

⑤ See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 54344 for transverse reinforcing in Mat 1.

See "REINFORCING PLAN" on this drawing for transverse reinforcing in Mat 2.

⑥ See typical roadway sections on Dwg. No. 54342.

⑦ Required Slab Joint

⑧ Pouring Sequence Construction Joint

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 4 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_S4.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: MAR. 2013

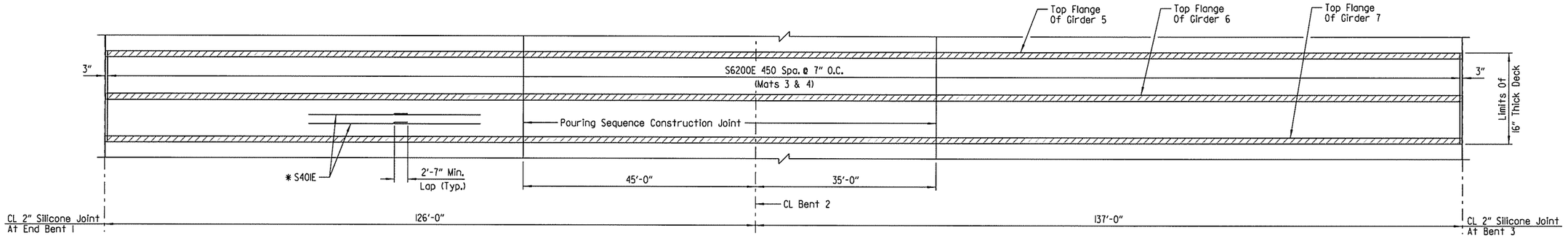
BRIDGE NO. 07292 DRAWING NO. 54345

SRYancey 5/29/2014 4:36:08 PM
WORKSPACE: AHTD Bridge
L:\ROW\DOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S4 (Spans 1& 2 Slab - Mat 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	143	505
① 07292	263'-0" PL GIRDER UNIT			54346

* Refer to "THICKENED SLAB DETAIL" on Dwg. No. 54343 for placement.



REINFORCING PLAN

(Mats 3 & 4)
Scale: 1/12 " = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S401E	1820	39'-10"	Str.
S501E	153	25'-1"	Str.
S502E	78	40'-1"	Str.
S503E To S514E	1 Each	40'-1" To 40'-2"	Str.
S515E To S523E	1 Each	40'-2" To 40'-5"	Str.
S524E To S532E	1 Each	40'-6" To 40'-10"	Str.
S533E To S565E	1 Each	40'-11" To 43'-7"	Str.
S566E	1	43'-9"	Str.
S567E To S576E	1 Each	43'-10" To 44'-10"	Str.
S577E To S587E	1 Each	44'-11" To 46'-1"	Str.
S588E To S5150E	1 Each	46'-2" To 53'-0"	Str.
S5151E To S5159E	1 Each	25'-1" To 26'-11"	Str.
S5160E To S5168E	1 Each	27'-5" To 33'-9"	Str.
S5169E	33	33'-1"	Str.
S5170E	1	33'-5"	Str.
S5171E To S5180E	1 Each	33'-3" To 27'-5"	Str.
S5181E To S5191E	1 Each	27'-0" To 25'-1"	Str.
S5201E	305	13'-3"	Str.
S5202E	156	29'-9"	Str.
S5203E To S5225E	1 Each	29'-9" To 29'-10"	Str.

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S5226E To S5243E	1 Each	29'-11" To 30'-2"	Str.
S5244E To S5261E	1 Each	30'-2" To 30'-7"	Str.
S5262E	1	30'-7"	Str.
S5263E To S5328E	1 Each	30'-7" To 33'-5"	Str.
S5329E	1	33'-5"	Str.
S5330E To S5350E	1 Each	33'-6" To 34'-7"	Str.
S5351E To S5371E	1 Each	34'-8" To 35'-9"	Str.
S5372E To S5497E	1 Each	35'-10" To 42'-9"	Str.
S5498E To S5515E	1 Each	13'-3" To 15'-2"	Str.
S5516E To S5533E	1 Each	15'-4" To 22'-0"	Str.
S5534E	1	21'-5"	Str.
S5535E	66	21'-3"	Str.
S5536E	1	21'-7"	Str.
S5537E To S5557E	1 Each	21'-11" To 15'-5"	Str.
S5558E To S5578E	1 Each	15'-3" To 13'-3"	Str.
S5579E	451	15'-4"	3"
S5580E	451	15'-5"	3"
S5600E To S5615E	2 Each	22'-10" To 39'-4"	Str.
S601E	152	36'-5"	Str.
S602E	78	40'-1"	Str.
S603E To S613E	1 Each	40'-1" To 40'-2"	Str.

BAR LIST

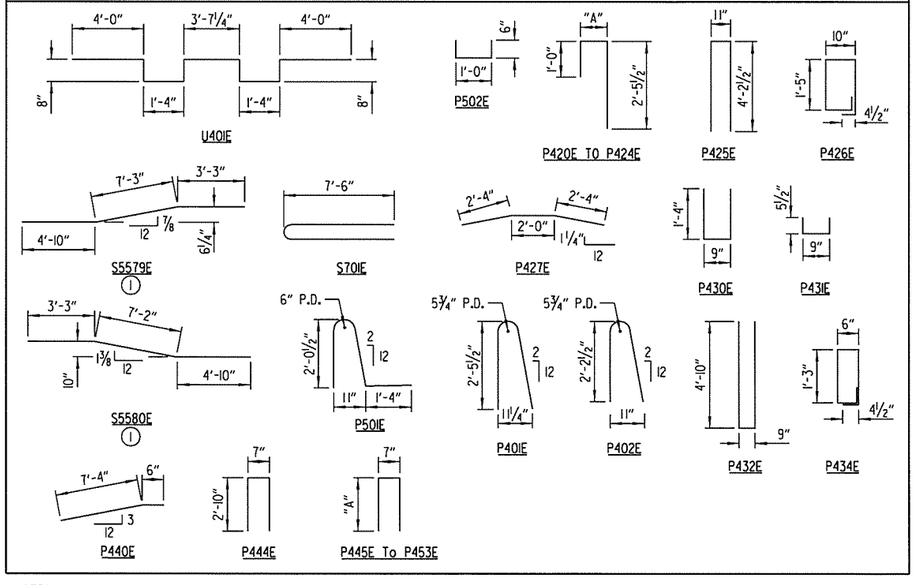
MARK	NO. REQ'D	LENGTH	P.D.
S614E To S622E	1 Each	40'-2" To 40'-5"	Str.
S623E To S631E	1 Each	40'-5" To 40'-10"	Str.
S632E	1	40'-10"	Str.
S633E To S665E	1 Each	40'-11" To 43'-8"	Str.
S666E To S676E	1 Each	43'-9" To 44'-11"	Str.
S677E To S686E	1 Each	45'-0" To 46'-0"	Str.
S687E To S6149E	1 Each	46'-2" To 53'-0"	Str.
S6150E To S6158E	1 Each	36'-5" To 38'-1"	Str.
S6159E To S6167E	1 Each	38'-7" To 44'-8"	Str.
S6168E	1	44'-8"	Str.
S6169	33	44'-6"	Str.
S6170E To S6180E	1 Each	45'-1" To 38'-8"	Str.
S6181E To S6190E	1 Each	38'-3" To 36'-6"	Str.
S6191E	176	44'-11"	Str.
S6200E	902	17'-4"	Str.
S701E	225	15'-4"	5¼"
U401E	226	16'-3"	3"

* Threaded Bar with Mechanical Couplers.
** Threaded Bar

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	P.D.
P401E	961	5'-4"		5¾"
P402E	104	4'-9½"		5¾"
P403E	88	5'-8"		Str.
P404E	14	12'-6"		Str.
P405E	133	16'-6"		Str.
P406E	42	14'-6"		Str.
P407E	7	17'-0"		Str.
P408E	7	17'-1"		Str.
P409E	7	16'-11"		Str.
P410E	14	17'-0"		Str.
P420E To P424E	6 Each	4'-0½" To 4'-3"	9" To 11½"	2"
P425E	12	9'-2"		2"
P426E	9	4'-10"		2"
P427E	6	6'-8"		2"
P430E	391	3'-3"		2"
P431E	24	1'-6"		2"
P432E	48	10'-3"		2"
P433E	28	35'-3"		Str.
P434E	64	3'-10"		2"
P440E	2	7'-10"		2"
P441E	2	2'-7"		Str.
P442E	2	4'-8"		Str.
P443E	2	6'-9"		Str.
P444E	7	6'-1"		2"
P445E To P453E	1 Each	4'-7" To 2'-9"	2'-1" To 1'-2"	2"
P501E	490	5'-9½"		6"
* P502E	471	1'-9"		3¾"
** P503E	942	2'-0"		Str.

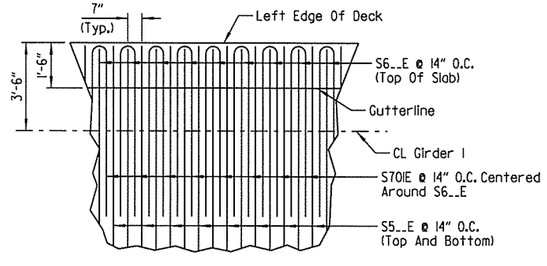
BAR BENDING DIAGRAM



NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

① Looking forward station for placement



DETAIL A
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 5 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

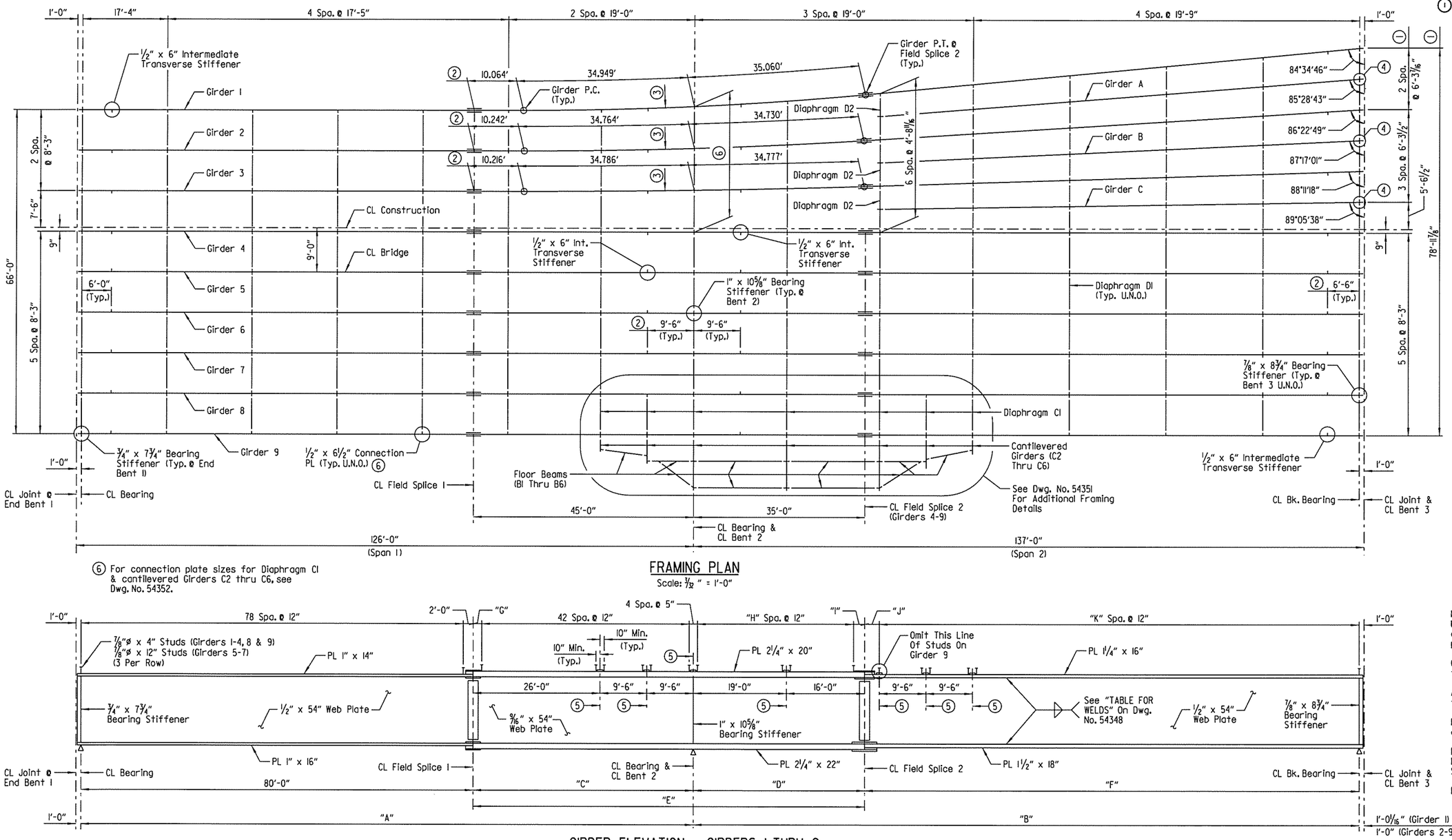
DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x1_S5.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54346

SRYancey 5/29/2014 4:36:08 PM
WORKSPACE: AHTD Bridge
L:\2201\101080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S5 (Spans 1& 2 Slab - Mats 3 & 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	144	505
(1) 07292		263'-0" PL GIRDER UNIT		54347



(1) Measured At CL Joint

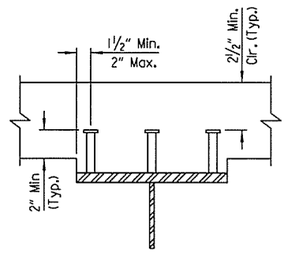
(2) Measured Along CL Girder

(3) Girder 1 Radius = 740'-0"
Girder 2 Radius = 1100'-0"
Girder 3 Radius = 2200'-0"

(4) 3/4" x 7 3/4" Bearing Stiffener

LEGEND

U.N.O. = Unless Noted Otherwise



Stud shear connectors shown shall be 7/8"ø x 4" long (Girders 1-4, 8 & 9), 7/8"ø x 12" long (Girders 5-7), granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 1/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

No Scale

(6) For connection plate sizes for Diaphragm C1 & cantilevered Girders C2 thru C6, see Dwg. No. 54352.

FRAMING PLAN

Scale: 1/32 " = 1'-0"

GIRDER ELEVATION - GIRDERS 1 THRU 9

(Dimensions measured along CL Girder)
No Scale

NOTES:
Unless noted otherwise, all longitudinal dimensions in "FRAMING PLAN" are measured parallel to CL Construction.

Girder spacing is measured perpendicular to CL Construction.

All diaphragms are oriented perpendicular to CL Construction.

For "GIRDER ELEVATION - GIRDERS A, B & C" and diaphragm details, see Dwg. No. 54348.

For "BEARING STIFFENER DETAIL", "CONNECTION PLATE DETAIL", and "INTERMEDIATE TRANSVERSE STIFFENER DETAIL", see Dwg. No. 54350.

For "GENERAL NOTES", see Dwg. No. 54354.

TABLE OF VARIABLES

Girder(s)	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"
1	125'-0 1/8"	136'-6 9/16"	45'-0 1/8"	35'-0 3/4"	80'-0 7/8"	101'-5 11/16"	2'-2 1/8"	32	2'-2 3/4"	2'-5 11/16"	99
2	125'-0 1/16"	136'-2 15/16"	45'-0 1/16"	34'-8 3/4"	79'-8 11/16"	101'-6 3/16"	2'-2 1/16"	31	2'-10 3/4"	2'-6 3/16"	99
3	125'-0"	136'-0 11/16"	45'-0"	34'-9 5/16"	79'-9 5/16"	101'-3 3/8"	2'-2"	31	2'-11 5/16"	2'-3 3/8"	99
4-9	125'-0"	136'-0"	45'-0"	35'-0"	80'-0"	101'-0"	2'-2"	32	2'-2"	3'-0"	98

TABLE OF CENTER OF CIRCLE LOCATIONS USED TO POSITION CL GIRDER ARCS

Girder(s)	Station	Offset
1	104+26.064	764.000' Lt.
2	104+26.242	1,115.750' Lt.
3	104+26.216	2,207.500' Lt.

(5) CL Top Flange Splice Plate For Cantilevered Girder & Diaphragm C1, As Detailed On Dwg. No. 54353, Locations Shown Are For Girder 9 Only. Provide Gap In Shear Studs To Clear Splice Plate At These Locations.

For Girder 9 Only, Bolt Holes In Girder Top Flange Are Required For The Cantilevered Girder & Diaphragm C1 Splice Plate Connections. See "SPLICE DETAILS" On Dwg. No. 54353.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 6 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

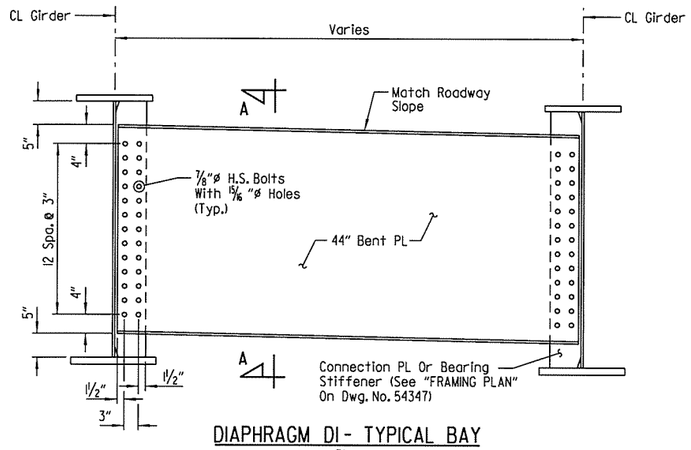
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275xl_S6.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54347

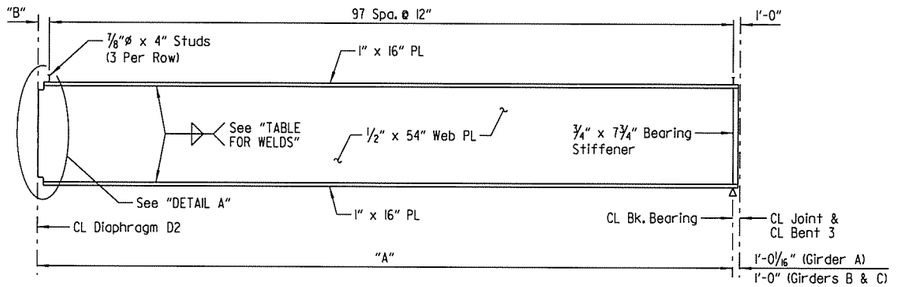
SRYancey 5/29/2014 4:36:09 PM
WORKSPACE: AHTD Bridge
L:\260IN\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S6 (Spans 1& 2 Framing).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	145	505
				(1) 07292		263'-0" PL GIRDER UNIT		54348



DIAPHRAGM DI - TYPICAL BAY

Scale: 3/4" = 1'-0"

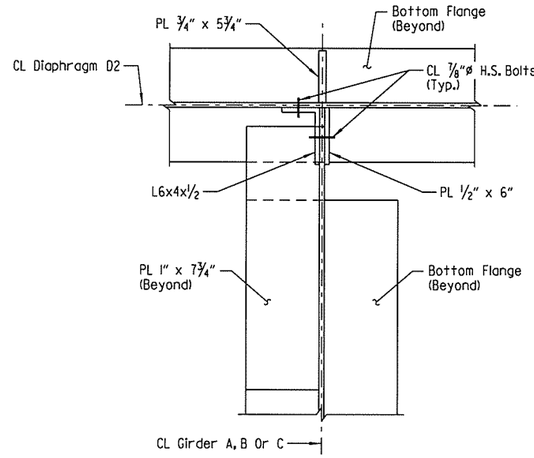


GIRDER ELEVATION - GIRDERS A, B & C

No Scale

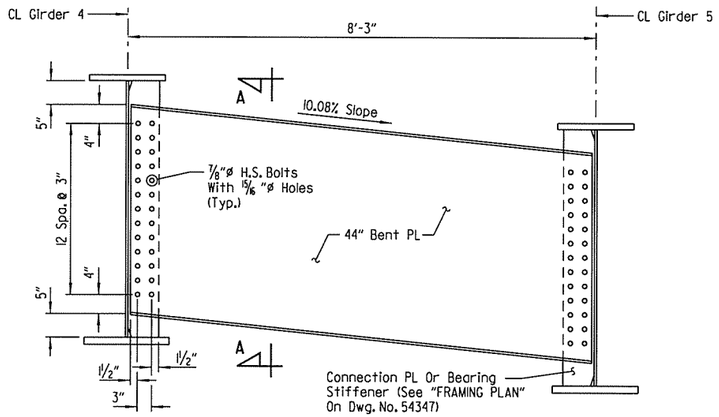
NOTE:
For "SHEAR CONNECTOR DETAIL", See Dwg. No. 54347.

TABLE OF VARIABLES		
Girder	"A"	"B"
A	98'-3 11/16"	1'-3 11/16"
B	98'-1 15/16"	1'-1 15/16"
C	98'-0 1/8"	1'-0 1/8"



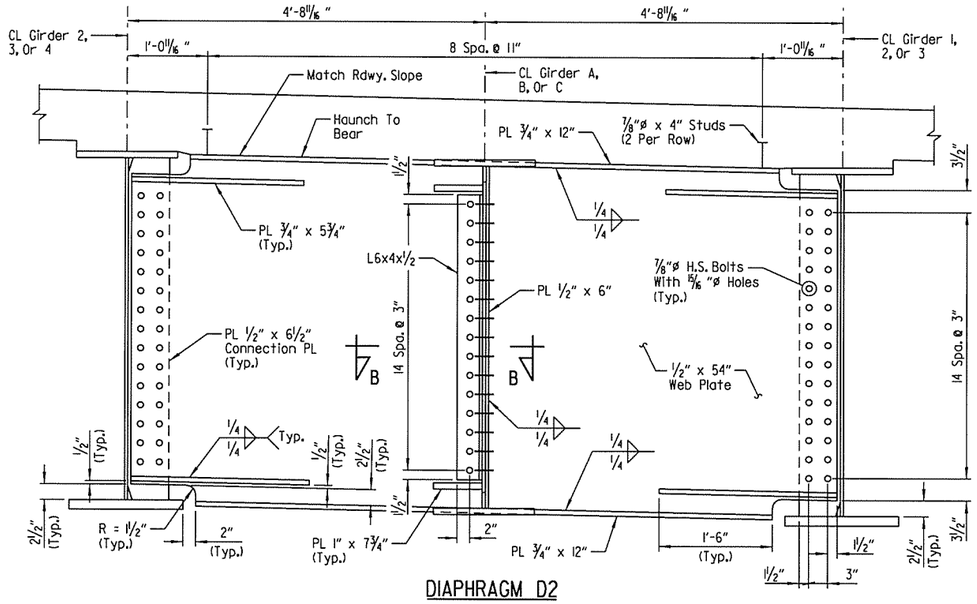
SECTION B-B

Scale: 1 1/2" = 1'-0"



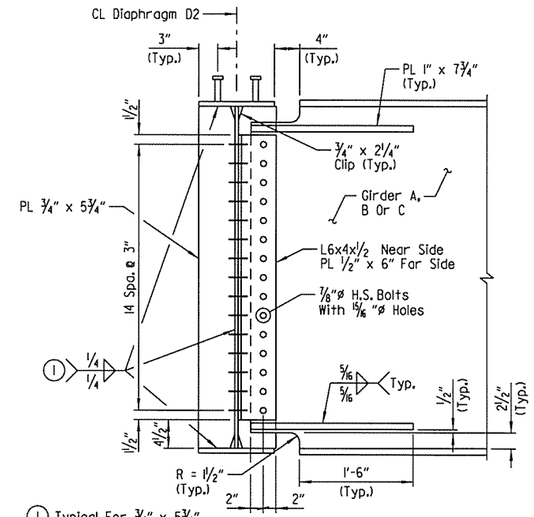
DIAPHRAGM DI - BAY 4

(Looking Forward)
Scale: 3/4" = 1'-0"



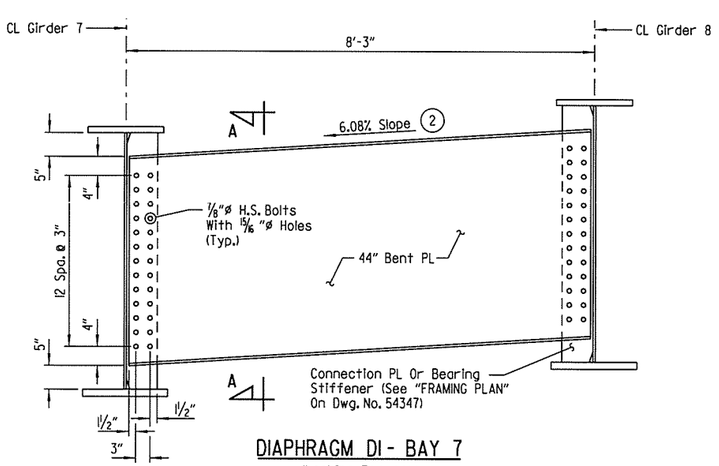
DIAPHRAGM D2

Looking Back
Scale: 1" = 1'-0"



DETAIL A

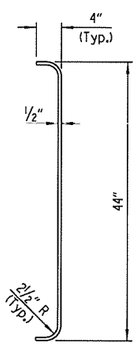
Scale: 1" = 1'-0"



DIAPHRAGM DI - BAY 7

(Looking Forward)
Scale: 3/4" = 1'-0"

(2) Typical except as noted on Dwg. No. 54351.



Typical Cross-Section For All DI Diaphragms

SECTION A-A

Scale: 1" = 1'-0"

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTE:
Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.11.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 7 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

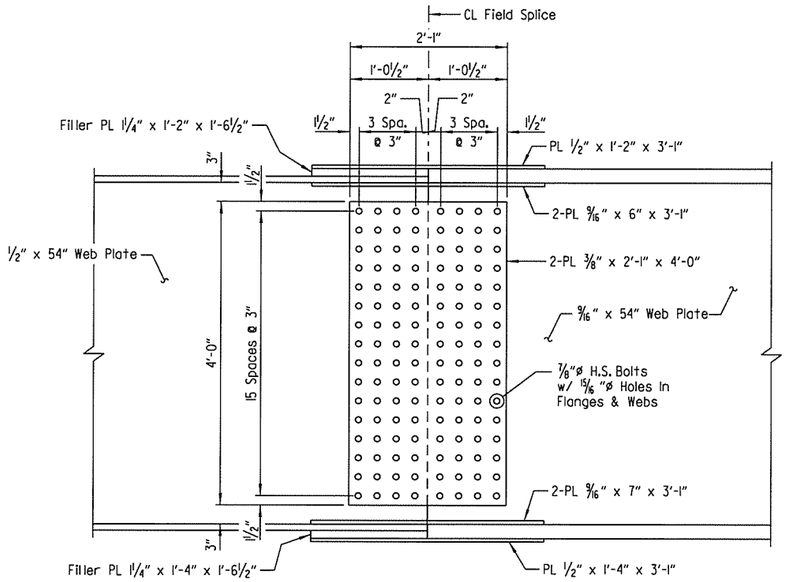
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAR. 2013 FILENAME: B061275xl_S7.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54348

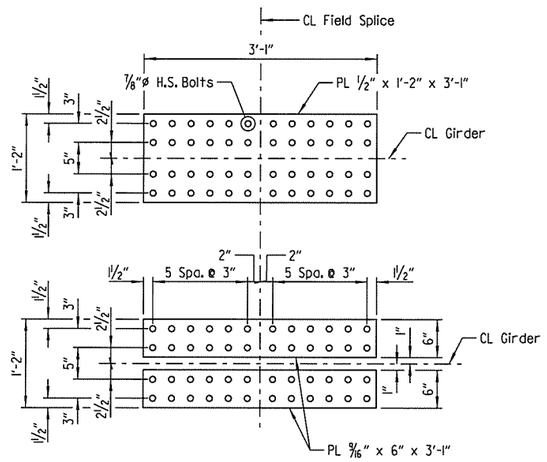
SRYancey 5/29/2014 4:36:10 PM
WORKSPACE: AHTD Bridge
L:\ROADWAY\DGN\B061275xl_S7 (Spans 1& 2 Diaphragms).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	146	505
				① 07292		263'-0" PL GIRDER UNIT		54349



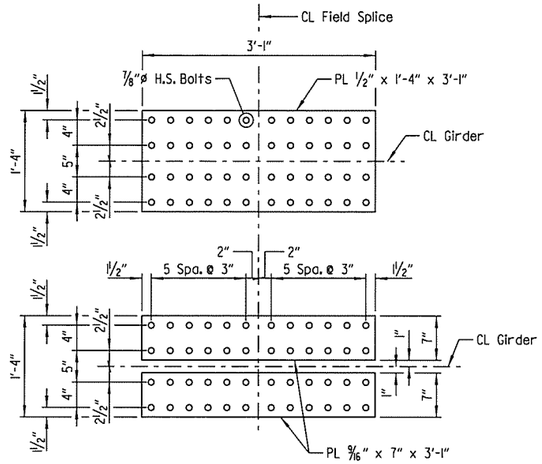
ELEVATION OF FIELD SPLICE 1

Scale: 1" = 1'-0"



TOP FLANGE SPLICE - FIELD SPLICE 1

Scale: 1" = 1'-0"



BOTTOM FLANGE SPLICE - FIELD SPLICE 1

Scale: 1" = 1'-0"

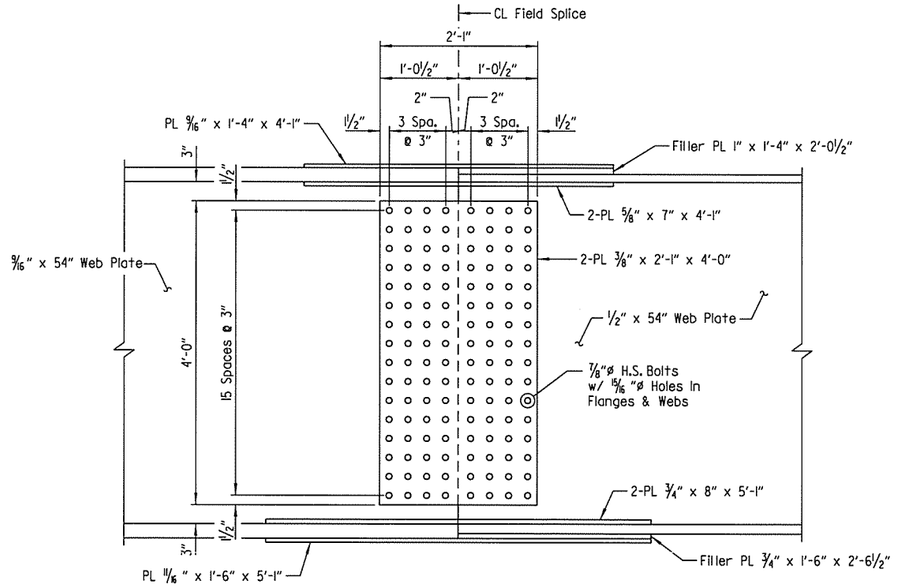
NOTES:

All field splice bolts shall be ⅞"ø H.S. bolts.

All holes for splice bolts shall be 15/16 "ø.

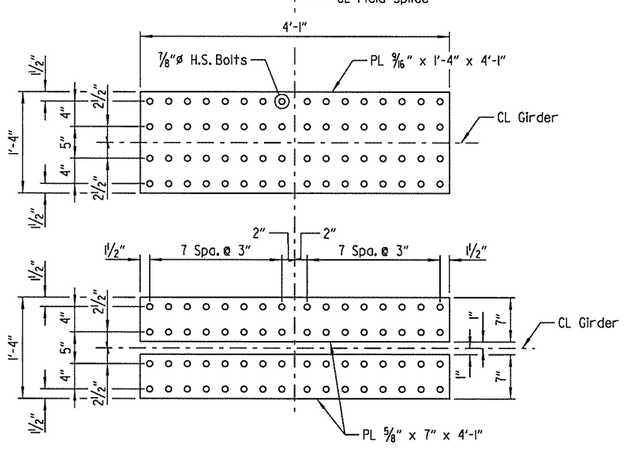
All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.



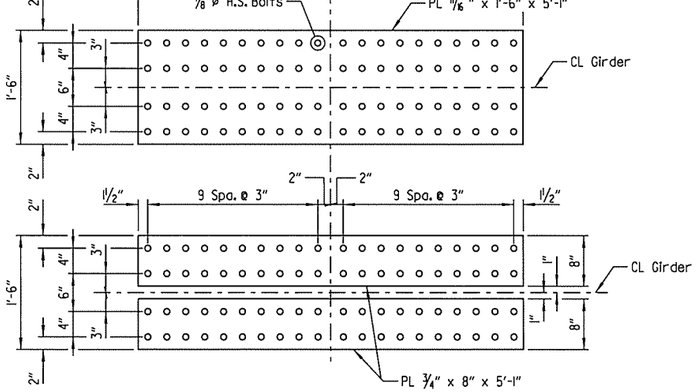
ELEVATION OF FIELD SPLICE 2

Scale: 1" = 1'-0"



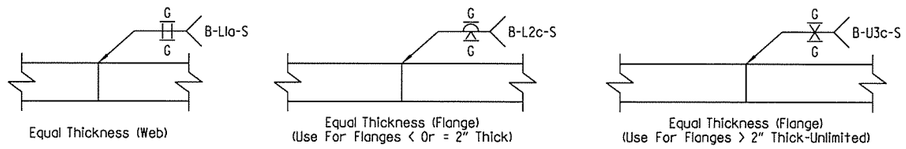
TOP FLANGE SPLICE - FIELD SPLICE 2

Scale: 1" = 1'-0"



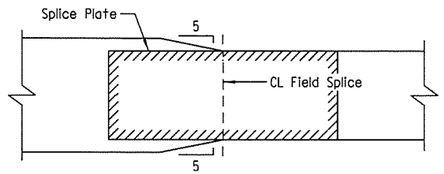
BOTTOM FLANGE SPLICE - FIELD SPLICE 2

Scale: 1" = 1'-0"



DETAILS OF WELDED SPLICES

No Scale



DETAIL OF BOTTOM FLANGE TRANSITION

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 8 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAR. 2013 FILENAME: B061275xl_S8.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54349

SRYancey 5/29/2014 4:36:10 PM
WORKSPACE: AHTD Bridge
L:\20\NOTDBD - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S8 (Spans 1& 2 Splice).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	147	505
				(1) 07292		263'-0" PL GIRDER UNIT		54350

TABLE OF DEAD LOAD DEFLECTIONS - GIRDERS 1 THRU 9 (INCHES)

SPAN	Girder No.	Girder 1			Girder 2			Girder 3			Girder 4			Girder 5			Girder 6		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
SPAN 1	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.097	0.618	0.678	0.116	0.740	0.800	0.132	0.871	0.930	0.143	1.009	1.066	0.149	1.113	1.169	0.151	1.139	1.195
	1.2	0.160	1.083	1.188	0.195	1.299	1.404	0.225	1.530	1.634	0.247	1.771	1.872	0.260	1.956	2.055	0.262	2.003	2.104
	1.3	0.190	1.386	1.520	0.236	1.665	1.799	0.278	1.962	2.095	0.310	2.266	2.396	0.328	2.505	2.633	0.332	2.570	2.701
	1.4	0.172	1.441	1.581	0.224	1.737	1.877	0.273	2.052	2.191	0.311	2.374	2.512	0.334	2.630	2.767	0.339	2.701	2.843
	1.5	0.119	1.286	1.410	0.171	1.555	1.680	0.220	1.843	1.969	0.262	2.144	2.270	0.288	2.386	2.514	0.294	2.451	2.585
	1.6	0.046	0.965	1.057	0.090	1.171	1.264	0.135	1.399	1.494	0.175	1.644	1.743	0.202	1.845	1.947	0.209	1.896	2.005
	1.7	-0.023	0.571	0.624	0.008	0.698	0.751	0.043	0.848	0.905	0.078	1.018	1.080	0.102	1.159	1.226	0.110	1.190	1.264
	1.8	-0.060	0.250	0.271	-0.041	0.313	0.334	-0.018	0.394	0.418	0.008	0.492	0.522	0.027	0.574	0.610	0.033	0.587	0.628
	1.9	-0.058	0.032	0.032	-0.051	0.048	0.048	-0.040	0.075	0.077	-0.025	0.113	0.119	-0.015	0.142	0.152	-0.011	0.143	0.157
SPAN 2	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2.1	0.164	0.302	0.338	0.161	0.323	0.358	0.149	0.335	0.365	0.131	0.340	0.362	0.116	0.355	0.369	0.112	0.379	0.388
	2.2	0.389	0.827	0.921	0.385	0.897	0.989	0.364	0.954	1.036	0.327	1.002	1.066	0.298	1.064	1.110	0.289	1.127	1.162
	2.3	0.630	1.449	1.610	0.625	1.581	1.739	0.596	1.700	1.842	0.546	1.826	1.939	0.507	1.957	2.044	0.495	2.067	2.137
	2.4	0.821	1.987	2.204	0.807	2.149	2.360	0.775	2.333	2.524	0.724	2.568	2.723	0.687	2.784	2.907	0.675	2.940	3.042
	2.5	0.931	2.336	2.587	0.912	2.510	2.753	0.878	2.738	2.958	0.832	3.070	3.251	0.802	3.359	3.506	0.791	3.549	3.673
	2.6	0.942	2.431	2.688	0.921	2.596	2.844	0.891	2.844	3.070	0.852	3.236	3.423	0.828	3.563	3.718	0.822	3.772	3.905
	2.7	0.838	2.207	2.437	0.821	2.350	2.573	0.795	2.578	2.781	0.765	2.963	3.132	0.748	3.278	3.419	0.745	3.476	3.598
	2.8	0.634	1.693	1.868	0.621	1.797	1.966	0.603	1.974	2.129	0.582	2.284	2.413	0.571	2.535	2.643	0.570	2.692	2.786
	2.9	0.344	0.930	1.025	0.338	0.985	1.077	0.328	1.081	1.166	0.318	1.259	1.329	0.313	1.402	1.461	0.312	1.489	1.541
	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

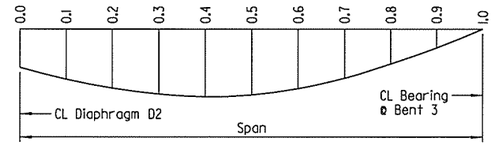
SPAN	Girder No.	Girder 7			Girder 8			Girder 9		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
SPAN 1	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.148	1.073	1.134	0.141	0.948	1.015	0.131	0.811	0.886
	1.2	0.256	1.888	1.996	0.243	1.662	1.783	0.226	1.404	1.538
	1.3	0.323	2.424	2.566	0.305	2.122	2.280	0.281	1.763	1.939
	1.4	0.329	2.542	2.696	0.307	2.205	2.377	0.279	1.800	1.991
	1.5	0.283	2.294	2.440	0.260	1.964	2.127	0.229	1.567	1.749
	1.6	0.198	1.755	1.875	0.175	1.468	1.603	0.146	1.131	1.282
	1.7	0.100	1.079	1.162	0.080	0.865	0.959	0.055	0.622	0.728
	1.8	0.026	0.514	0.561	0.010	0.376	0.430	-0.009	0.226	0.287
	1.9	-0.015	0.109	0.126	-0.024	0.048	0.068	-0.035	-0.017	0.006
SPAN 2	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2.1	0.117	0.403	0.409	0.131	0.433	0.438	0.149	0.474	0.478
	2.2	0.300	1.167	1.197	0.330	1.201	1.230	0.369	1.255	1.283
	2.3	0.511	2.115	2.178	0.555	2.134	2.196	0.613	2.172	2.236
	2.4	0.694	2.990	3.083	0.745	2.977	3.071	0.813	2.972	3.069
	2.5	0.812	3.596	3.711	0.862	3.542	3.659	0.930	3.479	3.601
	2.6	0.841	3.808	3.932	0.884	3.716	3.842	0.943	3.594	3.726
	2.7	0.761	3.499	3.614	0.794	3.386	3.503	0.837	3.232	3.355
	2.8	0.581	2.703	2.792	0.604	2.601	2.692	0.632	2.460	2.556
	2.9	0.318	1.492	1.541	0.329	1.427	1.478	0.342	1.341	1.394
	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE OF DEAD LOAD DEFLECTIONS - GIRDERS A, B & C (INCHES)

Girder No.	Girder A			Girder B			Girder C		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.589	1.403	1.553	0.573	1.514	1.655	0.534	1.623	1.743
0.1	0.741	1.849	2.042	0.721	1.997	2.180	0.679	2.172	2.328
0.2	0.850	2.183	2.408	0.828	2.359	2.572	0.785	2.590	2.773
0.3	0.918	2.409	2.655	0.894	2.600	2.833	0.852	2.878	3.079
0.4	0.943	2.522	2.777	0.918	2.718	2.959	0.880	3.032	3.242
0.5	0.905	2.453	2.700	0.881	2.641	2.874	0.847	2.960	3.163
0.6	0.812	2.228	2.451	0.791	2.395	2.606	0.763	2.697	2.881
0.7	0.668	1.849	2.033	0.651	1.985	2.159	0.629	2.241	2.393
0.8	0.472	1.316	1.446	0.461	1.412	1.535	0.446	1.596	1.704
0.9	0.253	0.709	0.779	0.247	0.760	0.826	0.239	0.860	0.918
1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

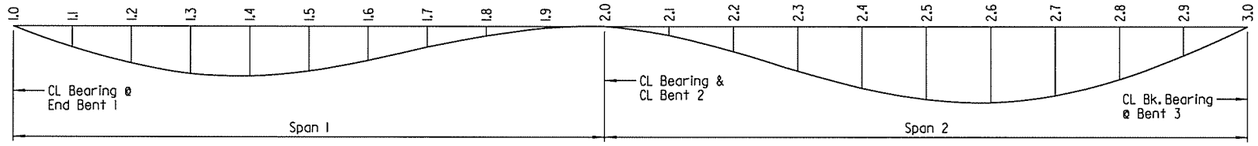
NOTE:

Camber for dead load deflection plus vertical curve +/- 1/4" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing for Girders 1 thru 9 and from Centerline Diaphragm D2 to Centerline Bearing for Girders A, B & C. Corrections for vertical curve & deck transition (Girders 8 & 9) are not included. Negative sign (-) indicates point above chord.



DEAD LOAD DEFLECTION DIAGRAM - GIRDERS A, B & C

No Scale

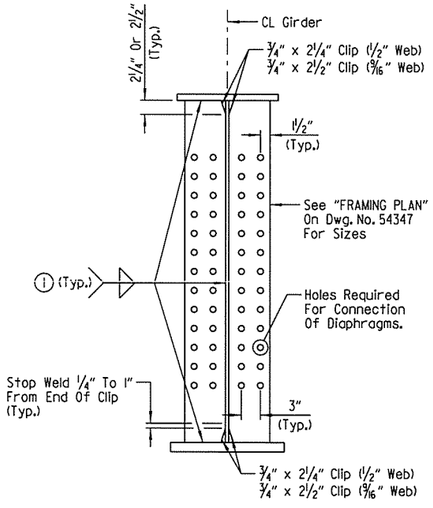


DEAD LOAD DEFLECTION DIAGRAM - GIRDERS 1 THRU 9

No Scale

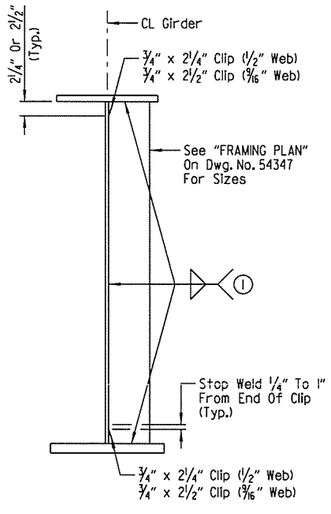
(1) See "TABLE FOR WELDS" on Dwg. No. 54348 for min. weld size.

(2) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.



CONNECTION PLATE DETAIL

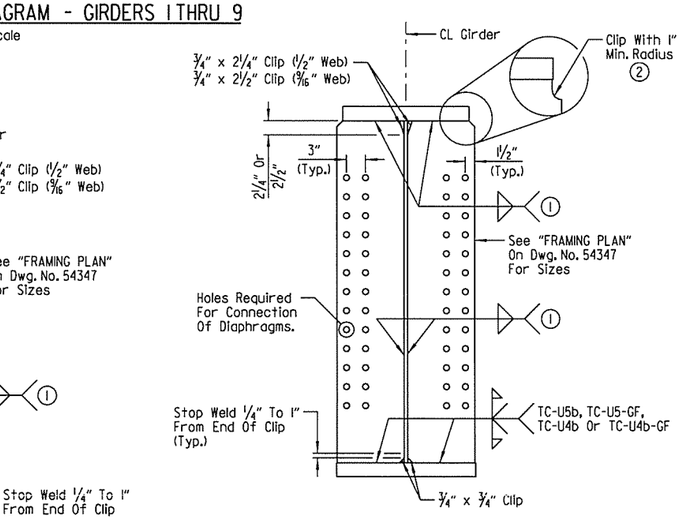
Scale: 1" = 1'-0"



INTERMEDIATE TRANSVERSE STIFFENER DETAIL

Scale: 1" = 1'-0"

NOTE:
Bearing Stiffeners shall be fabricated to be plumb in their final positions.



BEARING STIFFENER DETAIL

Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/30/14
BRIDGE ENGINEER

SHEET 9 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAR. 2013 FILENAME: B061275xl_S9.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013

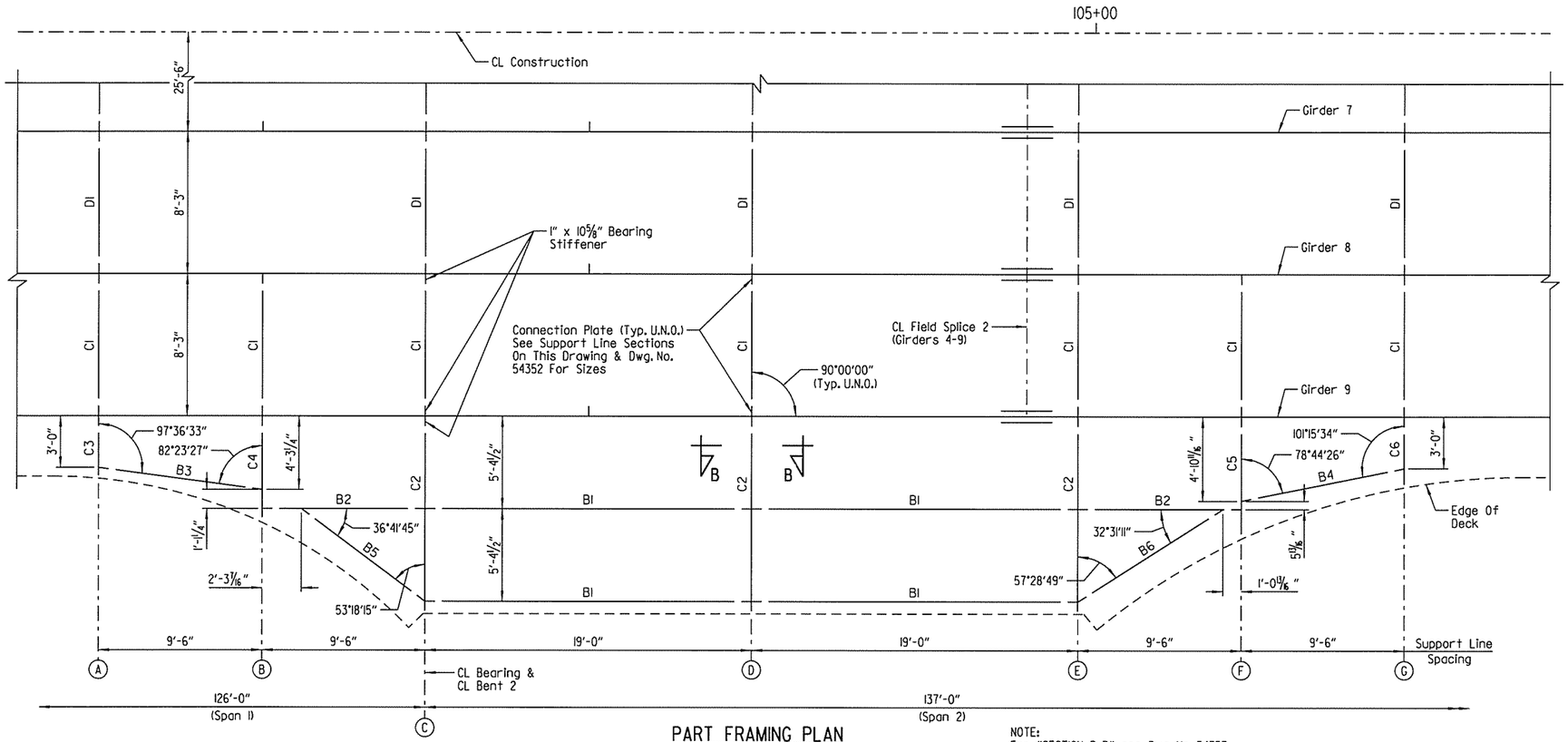
BRIDGE NO. 07292 DRAWING NO. 54350

SRYancey 5/29/2014 4:36:11 PM
WORKSPACE: AHTD Bridge
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S9 (Spans 1& 2 Deflections).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	148	505

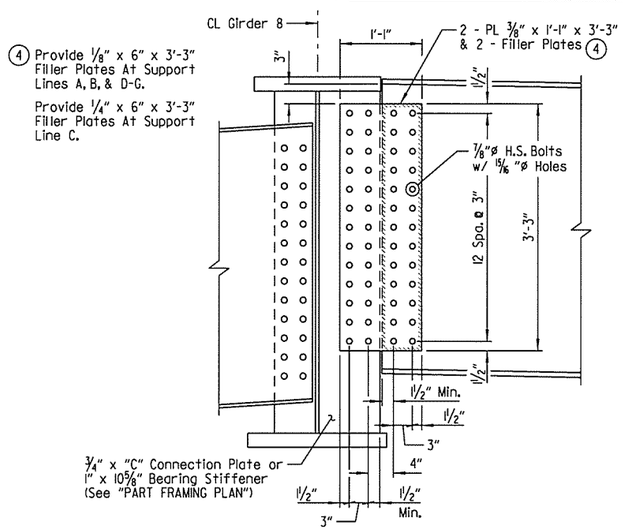
(1) 07292 263'-0" PL GIRDER UNIT 54351



PART FRAMING PLAN

Scale: 1/4" = 1'-0"

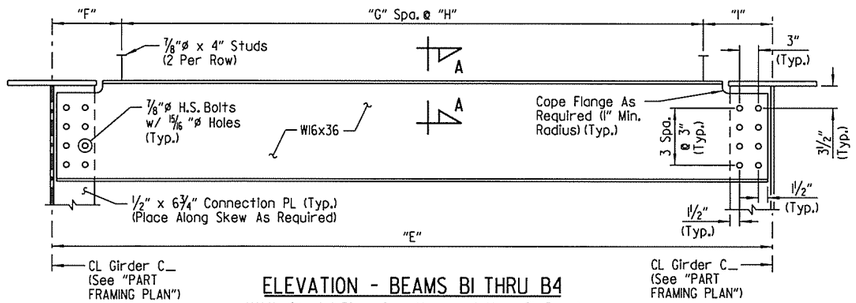
NOTE:
For "SECTION B-B", see Dwg. No. 54353.



DETAIL A

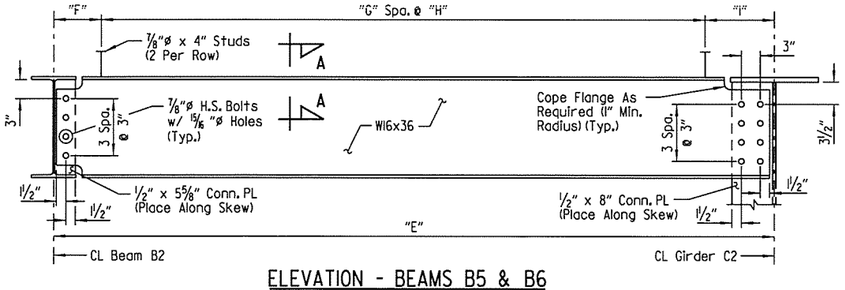
Scale: 1" = 1'-0"

TABLE OF SUPPORT LINE VARIABLES			
Support Line	"A"	"B"	"C"
C	0.65%	7.13%	-
D	0.32%	7.38%	9¾"
E	1.04%	6.83%	7¾"



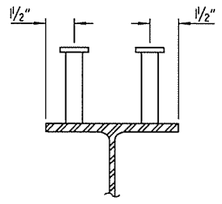
ELEVATION - BEAMS BI THRU B4

(All Horizontal Dimensions Measured Along CL Beam)
No Scale



ELEVATION - BEAMS B5 & B6

(All Horizontal Dimensions Measured Along CL Beam)
No Scale



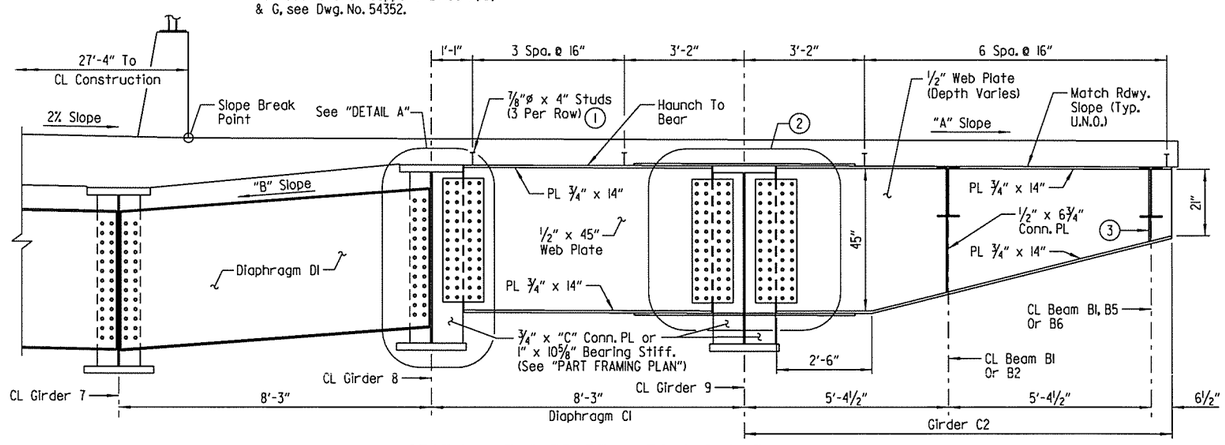
SECTION A-A

No Scale

Stud shear connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.36 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

TABLE OF BEAM VARIABLES					
Beam	"E"	"F"	"G"	"H"	"I"
BI	19'-0"	1'-0"	17	12"	1'-0"
B2	9'-6"	1'-0"	9	10"	1'-0"
B3	9'-7"	1'-0½"	9	10"	1'-0½"
B4	9'-8¼"	1'-1⅛"	9	10"	1'-1⅛"
B5	8'-11 15/16"	7 15/16"	8	11"	1'-0"
B6	10'-0"	9"	9	11"	1'-0"

NOTE:
For sections at Support Lines A, B, F & G, see Dwg. No. 54352.



SECTION AT SUPPORT LINES C, D & E

(Looking Forward)
Scale: ½" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

(1) See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54347

(2) See "SPLICE DETAILS" On Dwg. No. 54353

(3) ½" x 6¾" Connection PL for connection of Beam BI.
½" x 8" Connection PL for connection of Beams B5 & B6.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 10 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

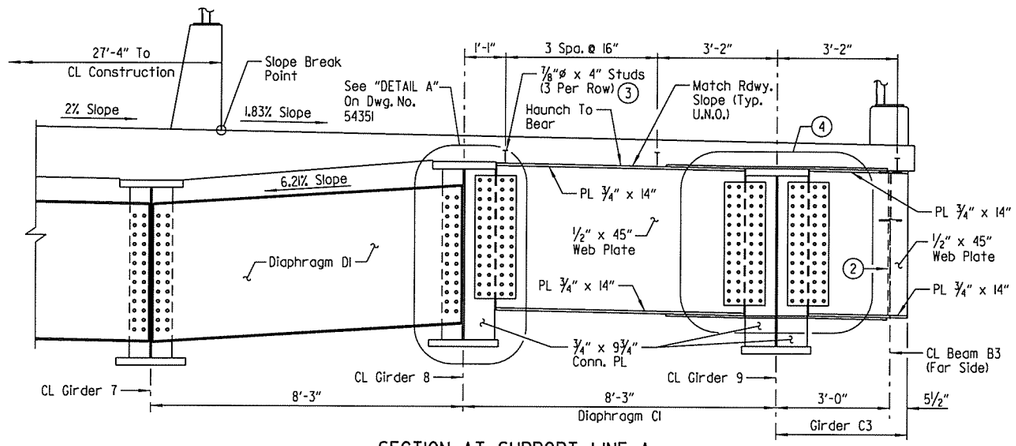
DRAWN BY: ABH DATE: MAR. 2013 FILENAME: B061275x1_S10.DGN
CHECKED BY: JHR DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54351

5/29/2014 4:36:12 PM
SRYancey
WORKSPACE: AHTD Bridge
L:\x20in\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S10 (Spans 1& 2 Ped Framing).dgn
REVISED DATE:

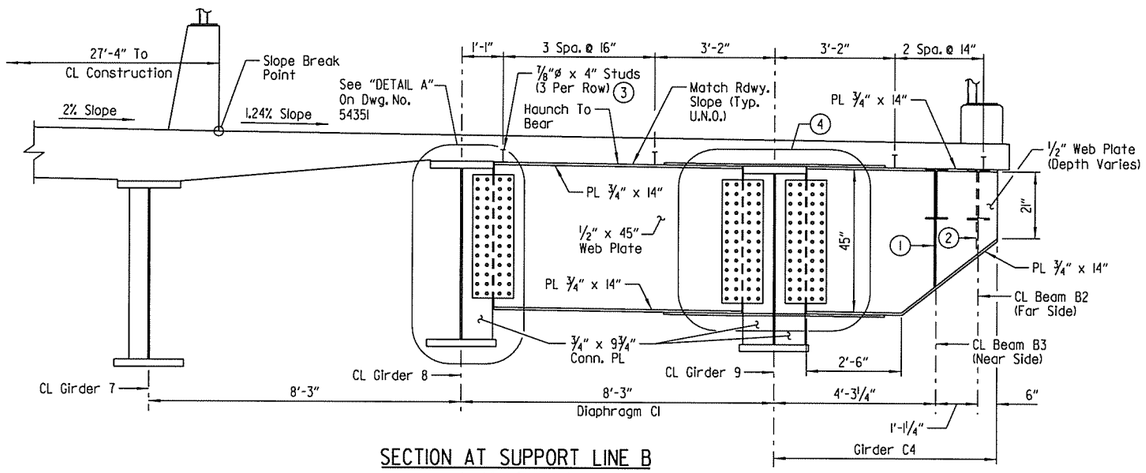
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	149	505
① 07292	263'-0" PL GIRDER UNIT			54352



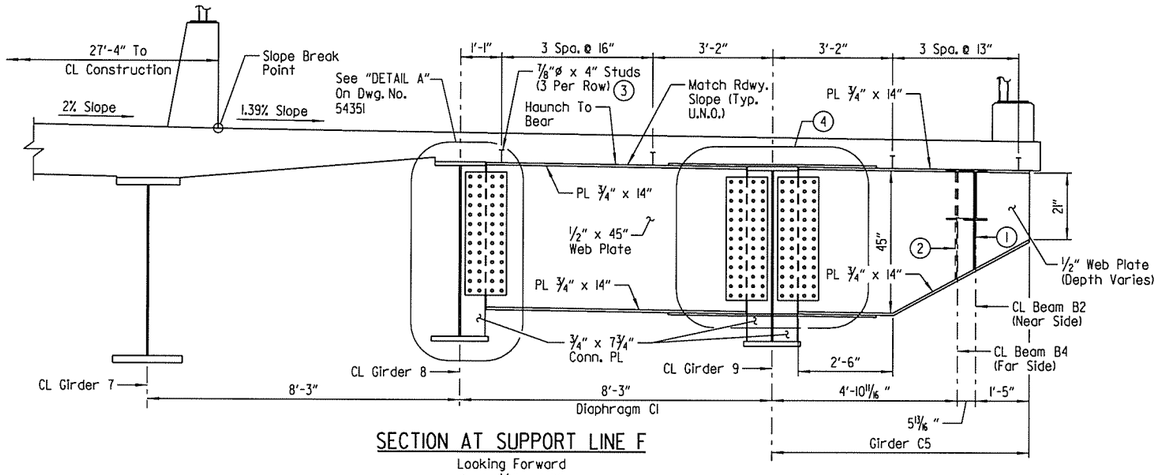
SECTION AT SUPPORT LINE A

Looking Forward
Scale: 1/2" = 1'-0"



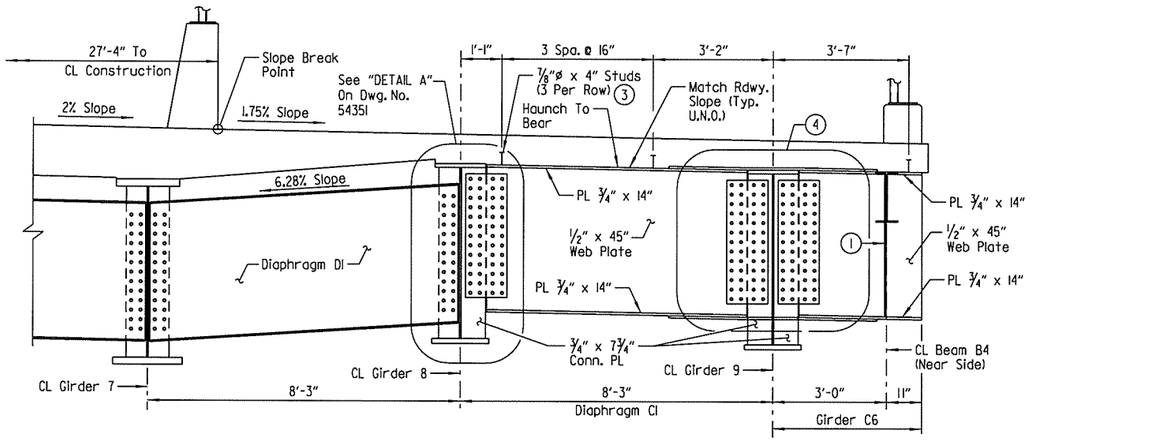
SECTION AT SUPPORT LINE B

Looking Forward
Scale: 1/2" = 1'-0"



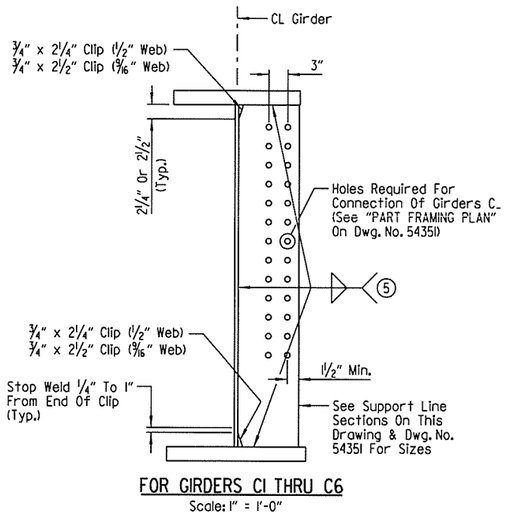
SECTION AT SUPPORT LINE F

Looking Forward
Scale: 1/2" = 1'-0"



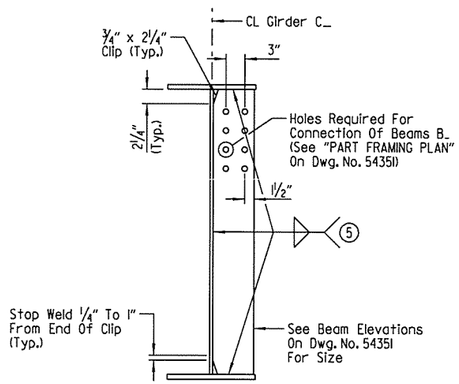
SECTION AT SUPPORT LINE G

Looking Forward
Scale: 1/2" = 1'-0"



FOR GIRDERS C1 THRU C6

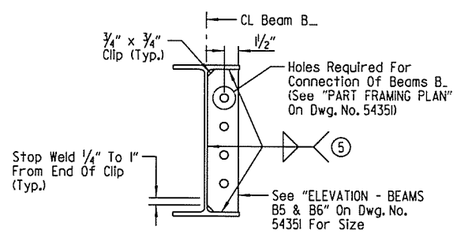
Scale: 1" = 1'-0"



FOR BEAMS B1 THRU B6

Scale: 1" = 1'-0"

CONNECTION PLATE DETAILS



FOR BEAMS B5 & B6

Scale: 1 1/2" = 1'-0"

⑤ See "TABLE FOR WELDS" on Dwg. No. 54348 for min. weld size.

LEGEND

U.N.O. = Unless Noted Otherwise

① 1/2" x 6 3/4" Connection PL (Near Side)
② 1/2" x 6 3/4" Connection PL (Far Side)
③ See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54347
④ See "SPLICE DETAILS" On Dwg. No. 54353

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 11 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

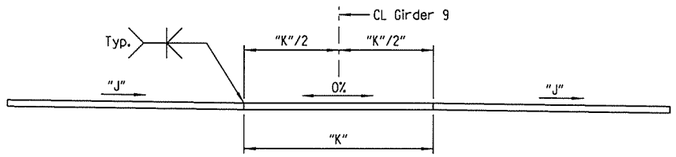
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

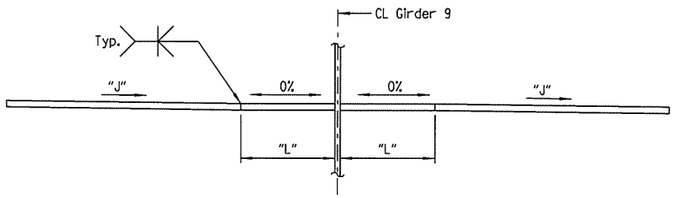
DRAWN BY: ABH DATE: MAR. 2013 FILENAME: B061275x1_S11.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54352

SRYancey 5/29/2014 4:36:12 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S11(Spans 1& 2 Ped Sections).dgn
REVISED DATE:

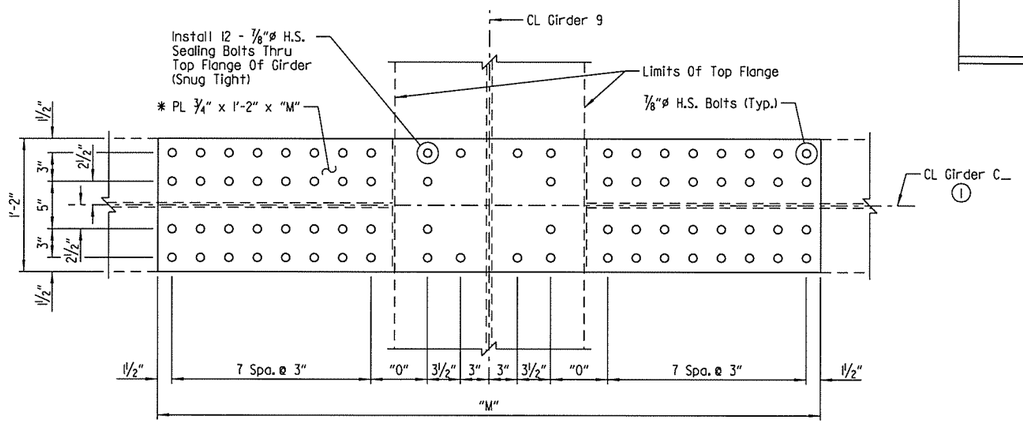
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	150	505
				①	07292	263'-0" PL GIRDER UNIT		54353



TOP FLANGE SPLICE PLATE DETAIL

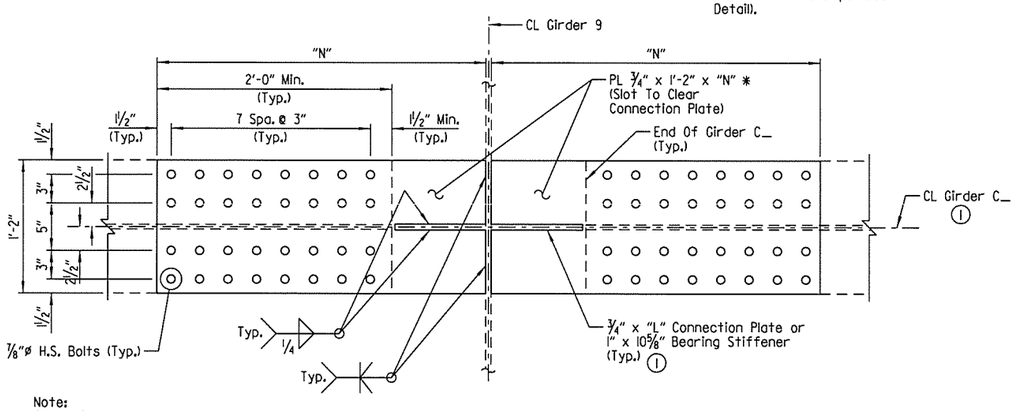


BOTTOM FLANGE SPLICE PLATE DETAIL



TOP FLANGE SPLICE PLATE

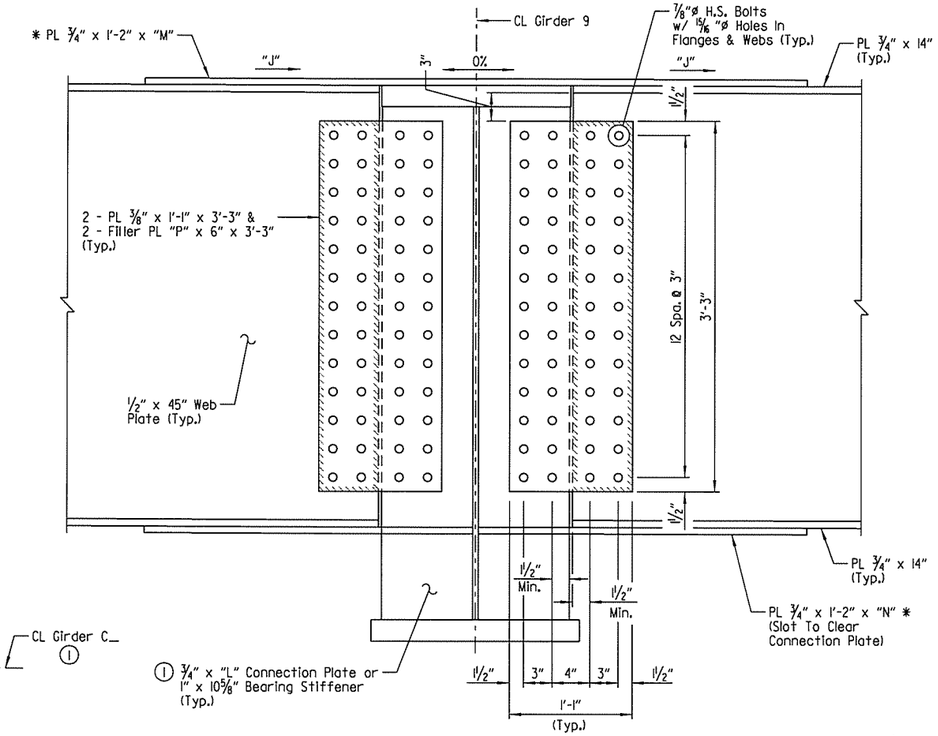
* Flange splice plates shall be fabricated to accomodate break in cross slope (See Detail).



Note:
Web splice plates omitted for clarity.

BOTTOM FLANGE SPLICE PLATES

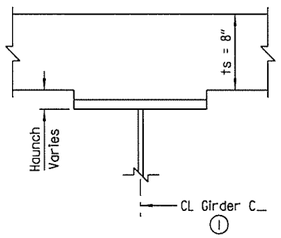
SPLICE DETAILS
Scale: 1 1/2" = 1'-0"



WEB SPLICE PLATES

TABLE OF SUPPORT LINE VARIABLES							
Support Line	"J"	"K"	"L"	"M"	"N"	"O"	"P"
A	1.83%	1'-8"	9 3/4"	5'-10"	2'-10 3/4"	6"	1/8"
B	1.24%						
C	0.65%	1'-8"	10 5/8"	6'-0"	2'-11 3/4"	7"	1/4"
D	0.32%	1'-8"	9 3/4"	5'-10"	2'-10 3/4"	6"	1/8"
E	1.04%	1'-4"	7 3/4"	5'-6"	2'-8 3/4"	4"	1/8"
F	1.39%						
G	1.75%						

① See "PART FRAMING PLAN" On Dwg. No. 54351



SECTION B-B
(Showing Deck Thickness In Extended Overhang)
Scale: 1 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

SHEET 12 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAR. 2013 FILENAME: B061275xl_S12.DGN
CHECKED BY: JHR DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013

BRIDGE NO. 07292 DRAWING NO. 54353

SRYancey 5/29/2014 4:36:13 PM
WORKSPACE: AHTD Bridge
L:\CGN\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275xl_S12 (Spans 1& 2 Ped Splice).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	151	505
				(1) 07292		263'-0" PL GIRDER UNIT		54354

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

In the shared use path area, the concrete deck shall be given a broomed finish in accordance with Subsection 802.19 for Class 6 Broomed Finish. In all other areas, the concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. See "PROJECT GENERAL NOTES" for paint color and Federal Standard Color Chip No. All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Drawing No. 54501 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girder webs, flanges of plate girders and splice plates, as well as all crossframes, diaphragms and connection plates connected to curved girders, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method. All Quality Control (Q. C.) testing is at the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Crossframes and diaphragms shall be installed as girders are erected. All bolts in diaphragms, crossframes and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

Field connections shall be bolted with high-strength bolts and shall be ⅞"ø bolts unless otherwise noted. Open holes shall be 15/16 "ø unless otherwise noted. Holes for ⅞"ø high-strength bolts may be 1 1/16"ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

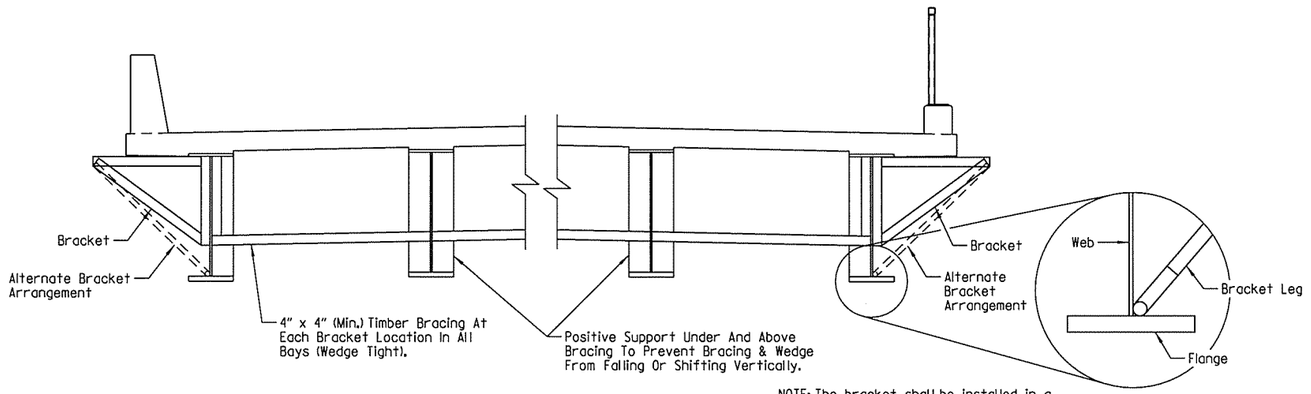
Anchor bolts shall be AASHTO designation M314 Gr. 55 or 105, including supplemental requirement S1 except as noted, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

ERECTION OF STRUCTURAL STEEL (CURVED GIRDER SPANS):

The erection of the structural steel shall be performed according to a plan permitting the steel to be erected plumb with bolts tightened while the steel is as close as possible to the no-load condition, so that the bolt holes can be aligned. This requirement may necessitate the use of large capacity cranes, temporary shoring or jacking frames.

The Contractor shall submit to the Engineer for informational and record purposes details of falsework construction in accordance with Subsection 807.64.

The Contractor shall ensure that girders are stable throughout the erection process. The Contractor will be responsible for providing temporary bracing or stiffening devices to accomodate handling stresses in individual members or segments of the structure during erection.



SCREED RAIL SUPPORT DETAIL

No Scale

NOTE: The bracket shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.

NOTE:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for intermediate transverse stiffeners shown on this drawing. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 13 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: APR. 2013 FILENAME: B061275x1_SI3.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54354

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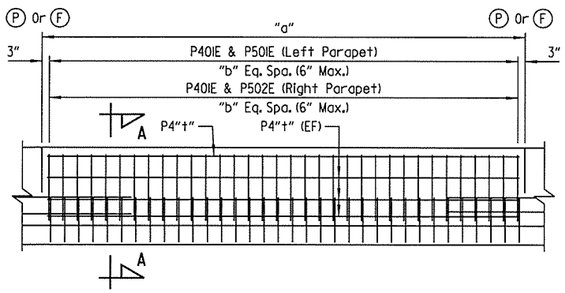
L:\2013\061080 Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI3 (Gen Super Notes).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	152	505
				①	07292	263'-0" PL GIRDER UNIT		54355

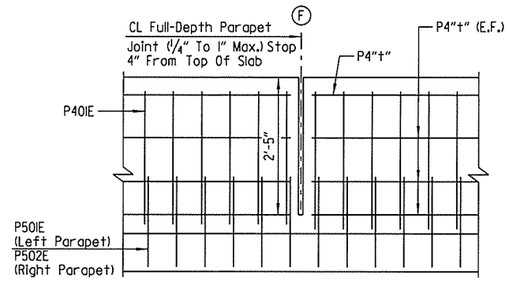


TYPICAL CLOSED PARAPET RAIL ELEVATION

(Looking At Front Face)
Scale: 3/8" = 1'-0"

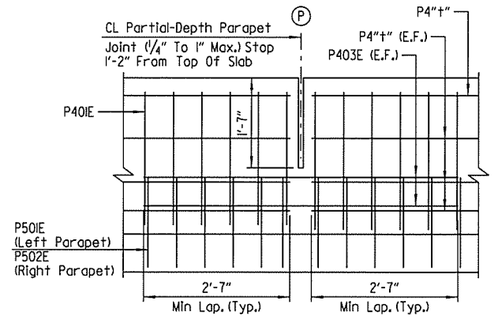
Ⓟ CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg No. 54343. Stop 1'-2" from top of slab.

Ⓕ CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg No. 54343. Stop 4" from top of slab.



PARAPET REINFORCING (FULL DEPTH JOINTS)

Scale: 3/4" = 1'-0"



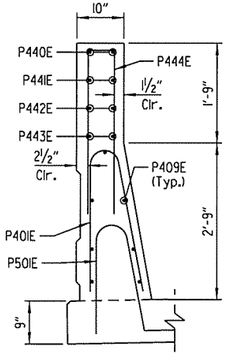
PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

Scale: 3/4" = 1'-0"

TABLE OF PARAPET VARIABLES			
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET
"a"	"t"	"b"	"c"
13'-0"	04E	25	8
15'-0"	06E	29	10
17'-0"	05E	33	12
17'-5 1/2"	09E	34	-
17'-6"	10E	34	13
17'-6 3/8"	07E	34	-
17'-6 3/4"	08E	-	13

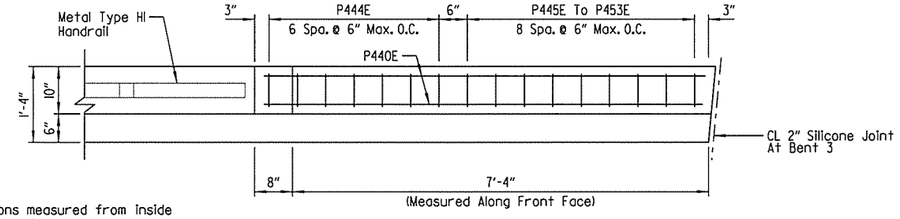
NOTE:
For "PANEL ENHANCEMENT DETAIL - LEFT PARAPET", See Dwg. No. 54360.

For "DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL - LEFT PARAPET", See Dwg. No. 54360.



SECTION C-C

Scale: 3/4" = 1'-0"



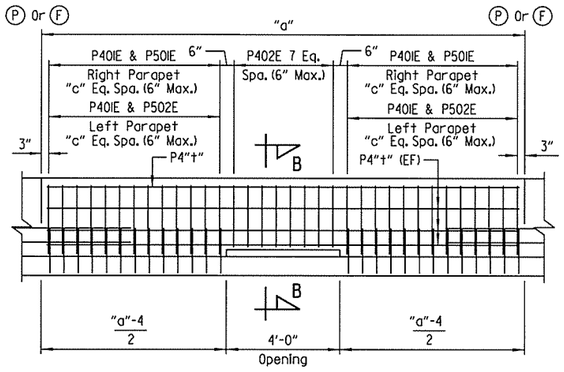
NOTES:
All dimensions measured from inside face of parpet.

Stirrup bars in parapet rail transition shall be spaced with P401E bars.

For parapet rail transition location, see Dwg. No. 54344 for details.

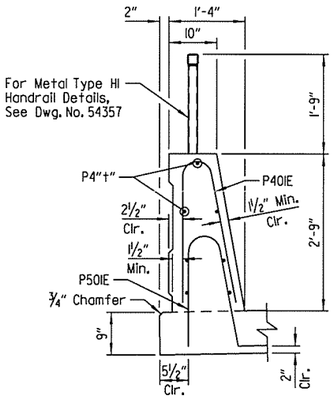
PLAN - LEFT PARAPET RAIL TRANSITION

Scale: 3/4" = 1'-0"



TYPICAL OPEN PARAPET RAIL ELEVATION

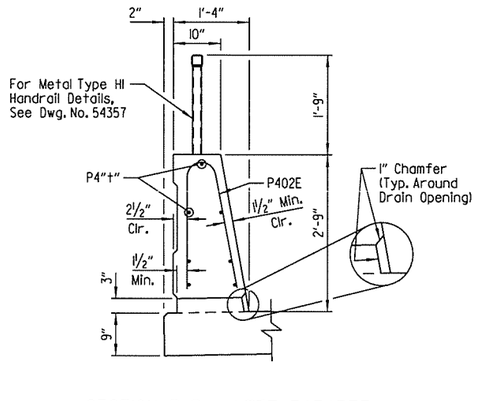
(Looking At Front Face)
Scale: 3/8" = 1'-0"



SECTION A-A - LEFT PARAPET

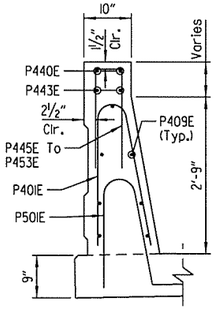
Scale: 3/4" = 1'-0"

NOTE:
For "SECTION A-A - RIGHT PARAPET" And "SECTION B-B - RIGHT PARAPET" See Dwg. No. 54356.



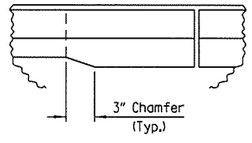
SECTION B-B - LEFT PARAPET

(At Open Drains)
Scale: 3/4" = 1'-0"



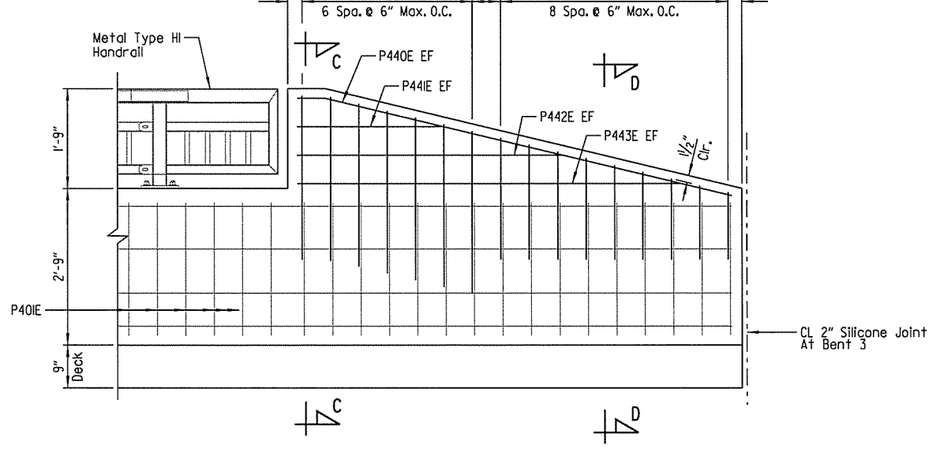
SECTION D-D

Scale: 3/4" = 1'-0"



PLAN OF RAIL POST CHAMFER

(Typ. for Open Drain Panels Only)
No Scale



ELEVATION - LEFT PARAPET RAIL TRANSITION

Scale: 3/4" = 1'-0"

SHEET 14 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
5-29-14
JOHN H. RUDDELL
BRIDGE ENGINEER

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S14.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54355

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WORKSPACE: AHTD Bridge
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REVISED DATE:

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				JOB NO.		061275	153	505
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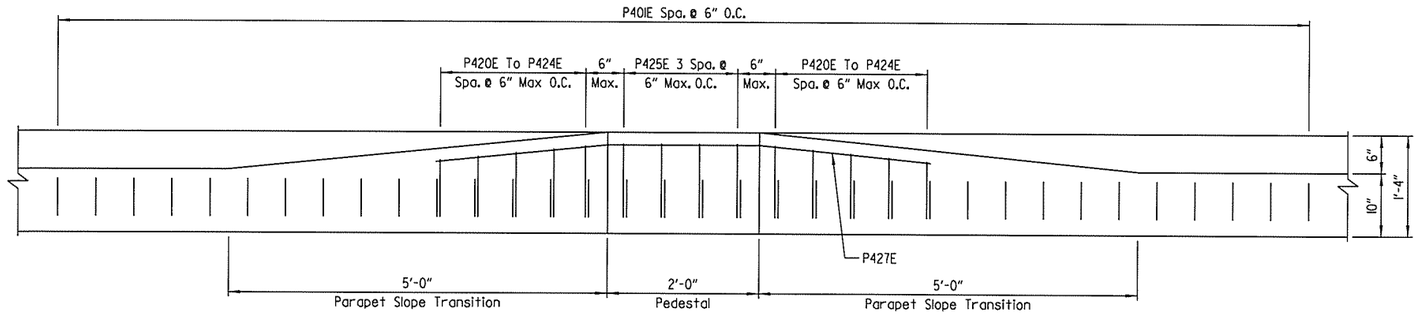
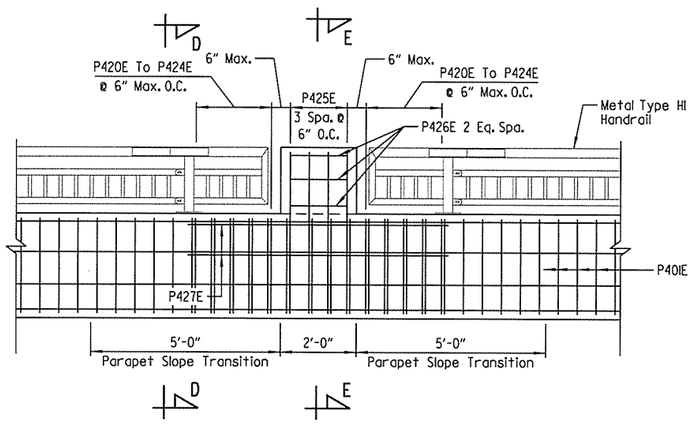


PARAPET TRANSITION PLAN - RIGHT PARAPET

Scale: 1" = 1'-0"

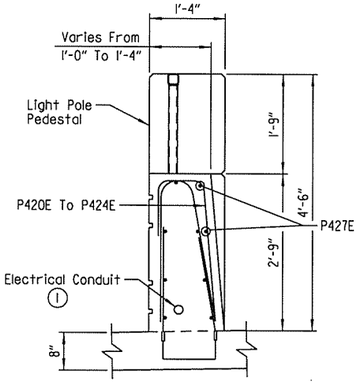
NOTE:
Right parapet shall be widened by increasing top width from 10" to 1'-4" over 5'-0" transition length on each side of light pedestal.

NOTE:
For typical parapet reinforcement details, see Dwg. No. 54355.



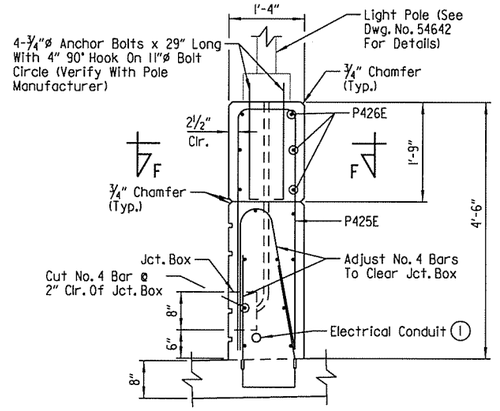
PARAPET TRANSITION ELEVATION - RIGHT PARAPET

Scale: 1/2" = 1'-0"



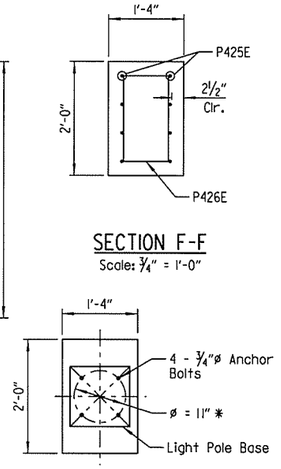
SECTION D-D

Scale: 3/4" = 1'-0"



SECTION E-E

Scale: 3/4" = 1'-0"



SECTION F-F

Scale: 3/4" = 1'-0"

LIGHT POLE PEDESTAL PLAN

Scale: 3/4" = 1'-0"

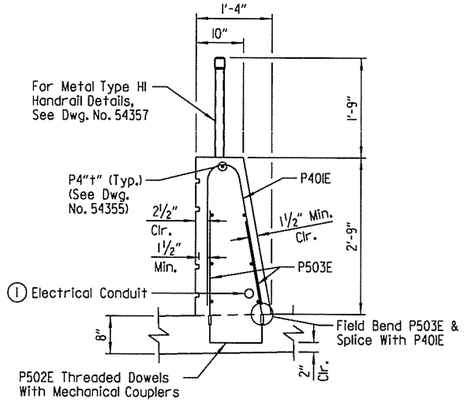
*Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.

(1) For details see Dwg. Nos. 54634-54653.

NOTE:
Protect threads in couplers until right parapet is constructed.

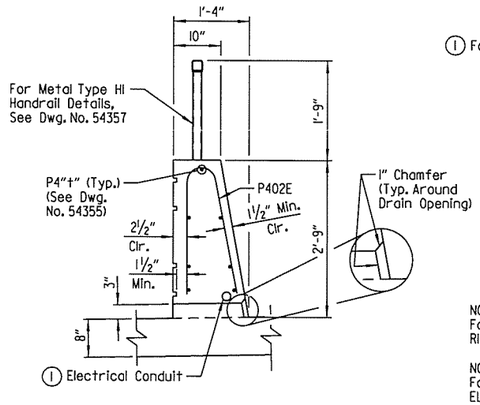
NOTE:
The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (P502E and P503E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

P502E and P503E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



SECTION A-A - RIGHT PARAPET

Scale: 3/4" = 1'-0"



SECTION B-B - RIGHT PARAPET

(At Open Drains)
Scale: 3/4" = 1'-0"

NOTE:
For "ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET, See Dwg. No. 54360.

NOTE:
For "TYPICAL CLOSED PARAPET RAIL ELEVATION" And "TYPICAL OPEN PARAPET RAIL ELEVATION", See Dwg. No. 54355.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 15 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S15.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54356

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REVISED DATE:

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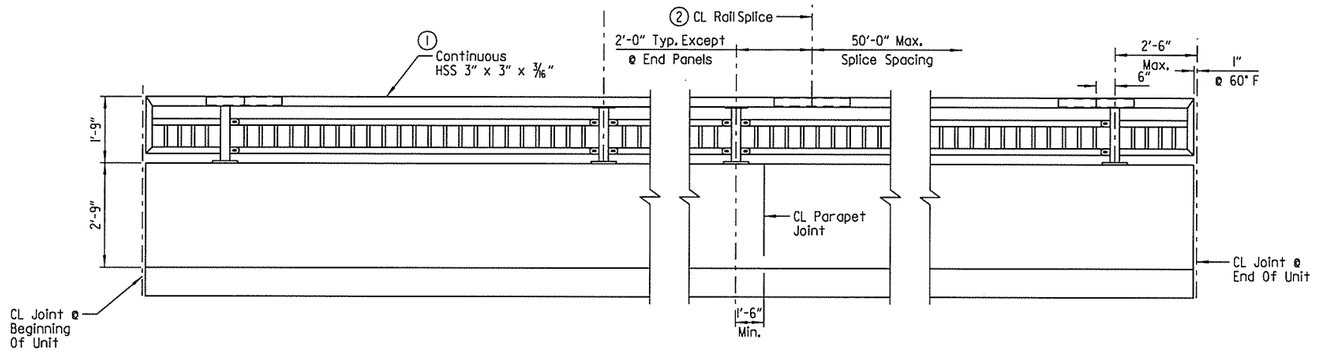
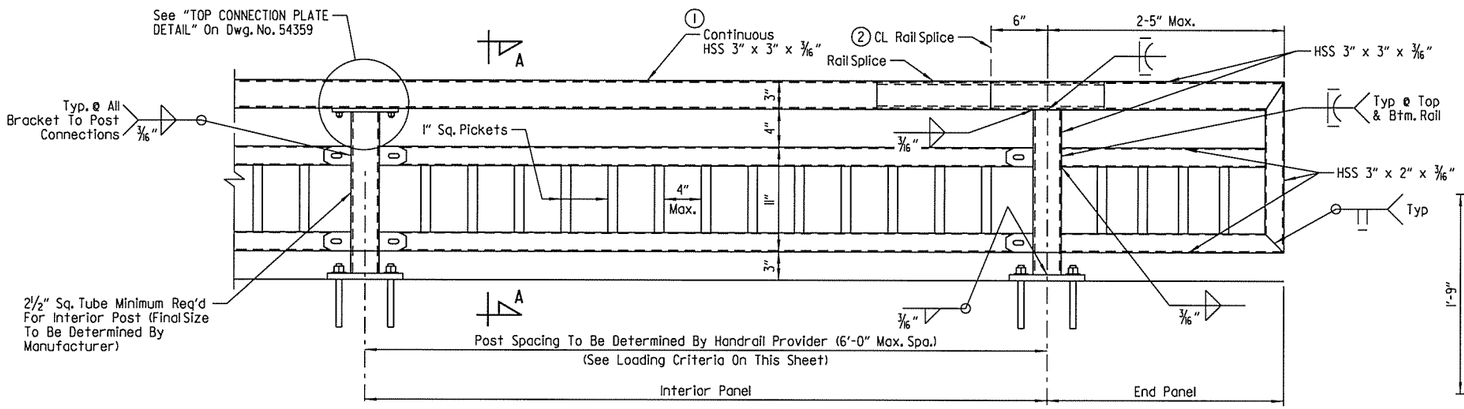


METAL TYPE HI HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"



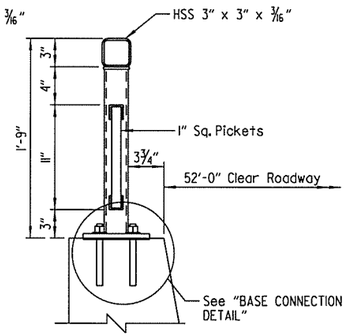
(1) The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

(2) See Dwg. No. 54359 for "RAIL SPLICE DETAL".

TYPICAL INTERIOR AND END PANEL DETAILS

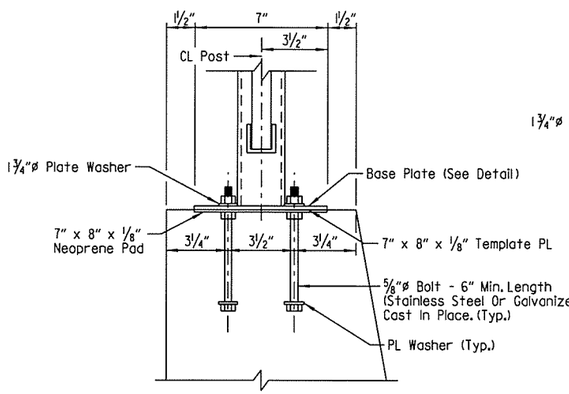
Scale: 1 1/2" = 1'-0"

NOTES:
All posts shall be set perpendicular to top of parapet.



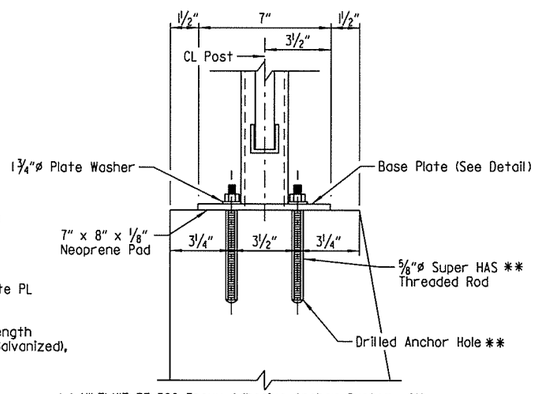
SECTION A-A

Scale: 1 1/2" = 1'-0"



BASE CONNECTION DETAIL

Scale: 3" = 1'-0"

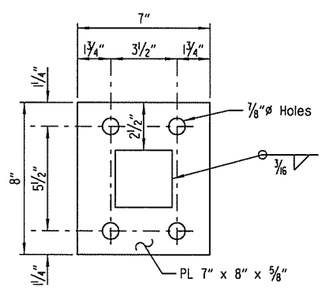


** HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or approved equal.

The Epoxy Adhesive Anchor System shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(Epoxy Adhesive Anchors)
Scale: 3" = 1'-0"



BASE PLATE DETAIL

Scale: 3" = 1'-0"

LOADING CRITERIA

1. All horizontal members shall be designed for an uniform loading of 50 pounds per foot applied vertically and horizontally plus a concentrated load of 200 pounds applied in any direction at the top of the horizontal member. All loadings shall be applied simultaneously.
2. All rail posts shall be designed for a transverse load (in kips) equal to 0.20 + 0.050L where L is equal to the post spacing (in feet).
3. The top continuous 3" HSS member shall be fabricated to attach to a minimum of three posts.

NOTES FOR METAL HANDRAIL

The metal handrail shall be designed, fabricated, and painted in accordance with SP JOB 061275 SP "METAL HANDRAIL".

The interior panels and posts shall be Aegis II Series manufactured by Ameristar Fence Products, Inc., Tulsa, Oklahoma or approved equal.

Handrail layout shall conform to vertical and horizontal alignment of Bridge. All posts shall be normal to grade.

Maximum post spacing = 6'-0"
Minimum distance from centerline post to centerline open joints in parapet = 1'-6".

Rail splices shall be at 50' maximum spacing. Centerline splices shall be located at a minimum of 2 feet from centerline of post unless noted otherwise.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Shop drawings showing details of the metal handrail, including design calculations and a detailed post spacing layout in relation to the parapet joints and light pole pedestals, shall be submitted and approval secured before fabrication begins.

MATERIALS:

Tubing, Posts, and Accessories: AASHTO M270, Gr. 36 or ASTM A500-Grade B.

Railing End Caps shall conform to AASHTO M270, Grade 36 galvanized.

Steel rail members shall be galvanized in accordance with AASHTO M111 after fabrication and shall receive a powder coating process after galvanizing. Galvanizing shall not interfere with the powder coating process. Galvanized surfaces shall be prepared in accordance with subsection 807.87 and the powder coating manufacturer's recommendations before application of the powder coating process. The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2-4 mils. The top coat shall be a tough polyester powder coat with a minimum thickness of 2-4 mils. Color shall be Black equal to or close to Federal Std. 595B, color chip 27038. Coated galvanized framework shall have a salt spray resistance of 3,000 hours using ASTM B117 without loss of adhesion. The powder coating process shall be in accordance with Manufacturer's recommendations.

The Contractor shall submit a paint color sample prior to fabrication for Owner's approval.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or A354-Grade BC galvanized in accordance with AASHTO M232 or Class C or ASTM B695 Class 50.

Splice Set Screws shall conform to the requirments of ASTM A193 or A320-Gr.B8 (Stainless steel) or AASHTO M270, Gr.36 (Galvanized).

Nuts shall conform to AASHTO M292, Gr.8A (Stainless steel) or galvanized in accordance with AASHTO M232 or ASTM B695 Class 50.

Threads on bolts, screws and nuts shall conform to American Standard Coarse Series, Class 2 Fit, ASA Specification B1.1.

Washers shall be stainless steel and conform to the requirements of ASTM A276 or A167-Type 302 with dimensions meeting ASTM F436, or high strength steel conforming to AASHTO M293 and galvanized in accordance with AASHTO M232 or Class C or ASTM B695 Class 50.

Plate Washers shall be stainless steel and conform to the requirements of ASTM A167-Type 302 or AASHTO M270, Gr.36, galvanized in accordance with AASHTO M232 or Class C or ASTM B695 Class 50. Plate washers shall have dimensions meeting the requirments of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

Mixing of stainless steel and galvanized fasteners will not be permitted.

Metal handrail, including posts, fasteners, base plates, template plates, balusters, anchor bolts, neoprene pad, galvanizing and powder coatings; fabrication and erection; and all incidentals necessary to complete the work shall be paid for in accordance with Section 806 at the contract unit price per linear foot bid for "METAL HANDRAIL (TYPE HI)" or "METAL HANDRAIL (TYPE H2)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 16 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

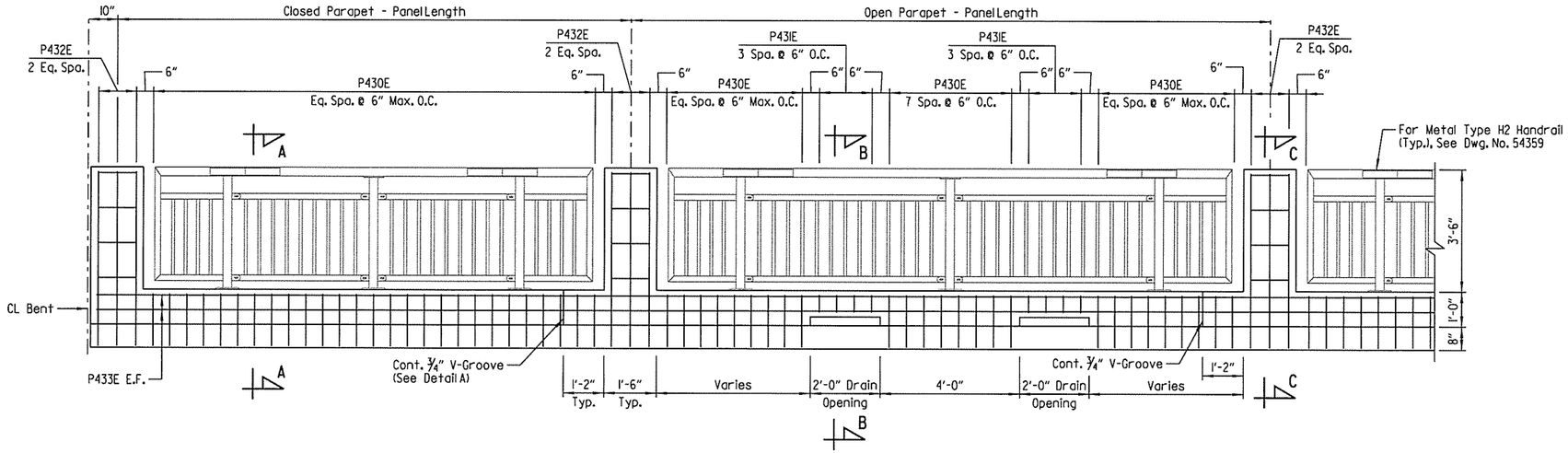
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S16.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54357

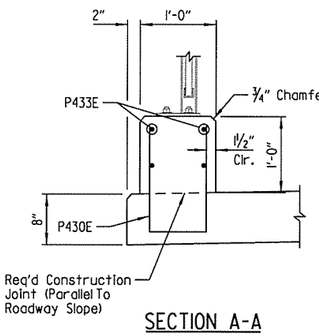
SRYancey 5/29/2014 4:36:16 PM
WORKSPACE: AHTD Bridge
L:\ZION\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S16 (Span 1& 2 Parapet Rail).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	155	505
				(1) 07292		263'-0" PL GIRDER UNIT		54358



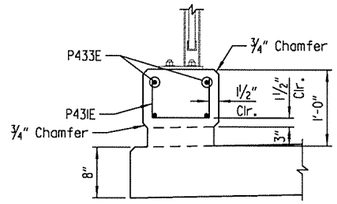
PEDESTRIAN PARAPET RAIL ELEVATION

Scale: ½" = 1'-0"



SECTION A-A

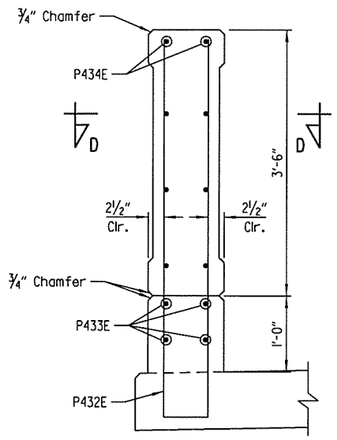
Scale: 1" = 1'-0"



SECTION B-B

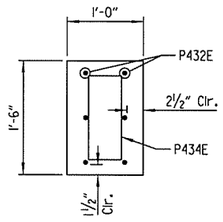
Scale: 1" = 1'-0"

NOTE:
For "PEDESTAL ENHANCEMENT DETAIL", See Dwg. No. 54360.



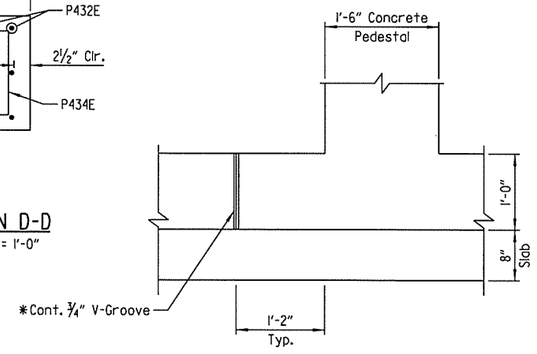
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

Scale: 1" = 1'-0"



DETAIL A

Scale: 1" = 1'-0"

* NOTE:
¾" V-Groove shall be continous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8077
JOHN H. RUDDELL
5-29-14
BRIDGE ENGINEER

SHEET 17 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

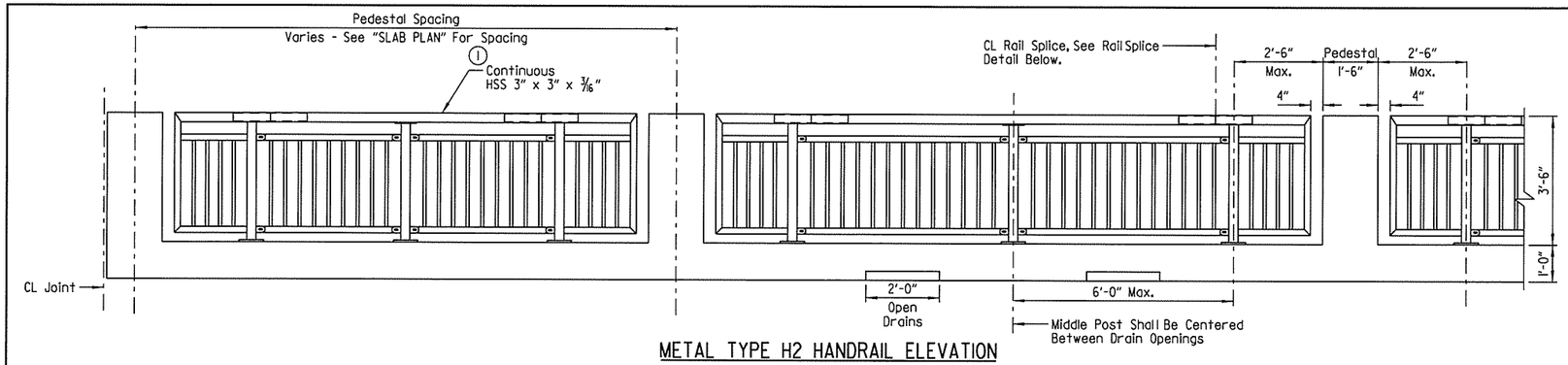
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x1_SI7.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54358

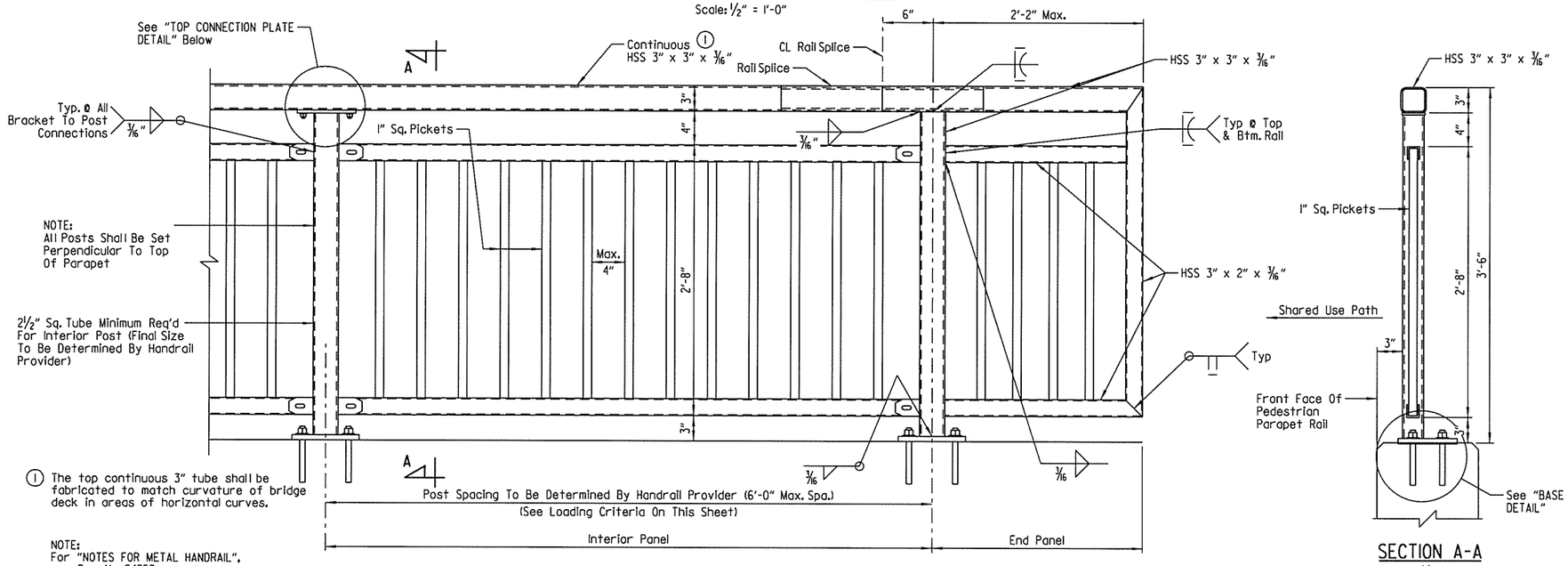
SRYancey 5/29/2014 4:36:16 PM
WORKSPACE: AHTD Bridge
L:\EDM\MOTIOBD - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI7 (Spans 1& 2 Ped Parapet).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	156	505
				①	07292	263'-0" PL GIRDER UNIT		54359



METAL TYPE H2 HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"



① The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

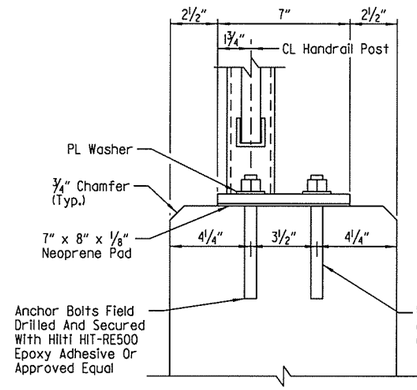
NOTE:
For "NOTES FOR METAL HANDRAIL", see Dwg. No. 54357.

TYPICAL INTERIOR AND END PANELS

Scale: 1 1/2" = 1'-0"

SECTION A-A

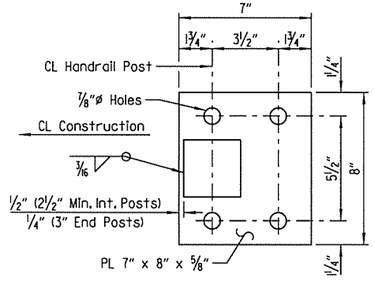
Scale: 1 1/2" = 1'-0"



NOTE:
For "DETAILS OF ALTERNATE POST ANCHOR SYSTEM", See Dwg. No. 54357.

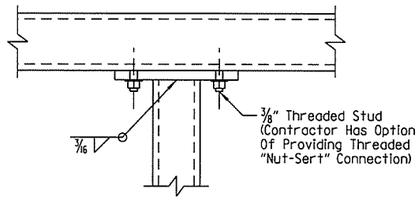
BASE CONNECTION DETAIL

Scale: 3" = 1'-0"



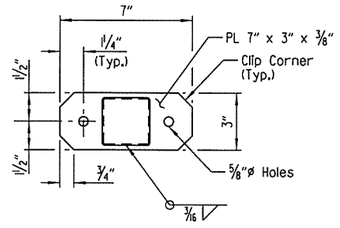
BASE PLATE DETAIL

Scale: 3" = 1'-0"



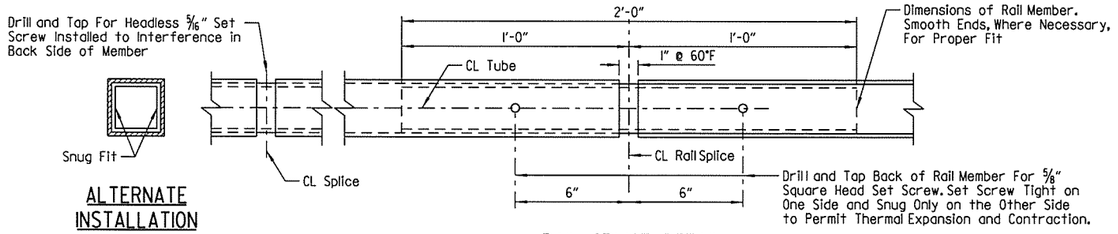
TOP CONNECTION DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION PLATE DETAIL

Scale: 3" = 1'-0"



ALTERNATE INSTALLATION

RAIL SPLICE DETAIL

Scale: 3" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 18 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

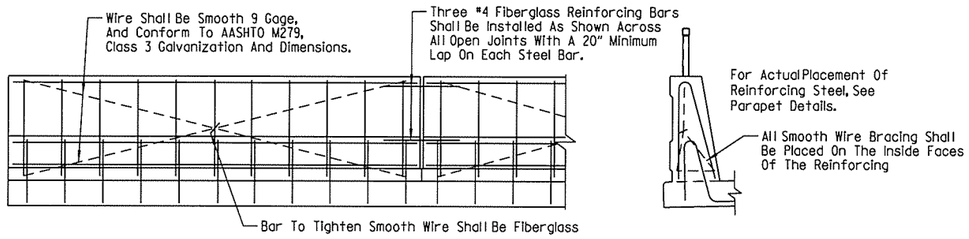
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x1_S18.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54359

SRYancey 5/29/2014 4:36:17 PM
WORKSPACE: AHTD Bridge
L:\2DRAWINGS\B061275x1_S18 (Spans 1& 2 Ped Rail).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	157	505
				① 07292		263'-0" PL GIRDER UNIT		54360

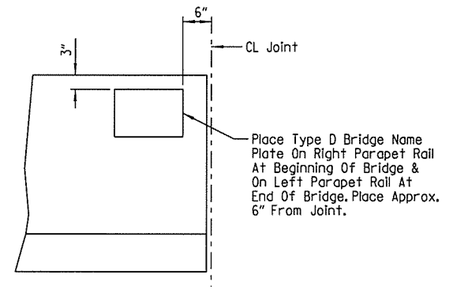


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the engineer and shall present a smooth, uniform appearance and texture.

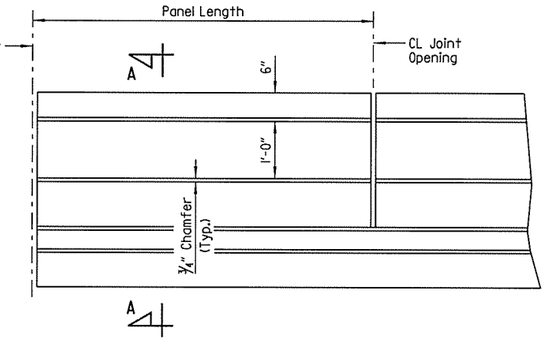
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL - LEFT PARAPET
No Scale

NOTE:
A Class 3 Texture Coating Finish shall be applied to bridge surfaces as specified in SP JOB 061275 "TEXTURE COATING FINISH" and in accordance with Subsection 802.19.

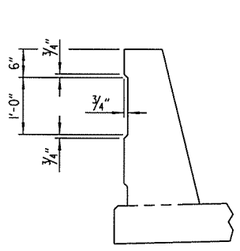


VIEW SHOWING LOCATION OF NAME PLATE
Scale: 3/4" = 1'-0"

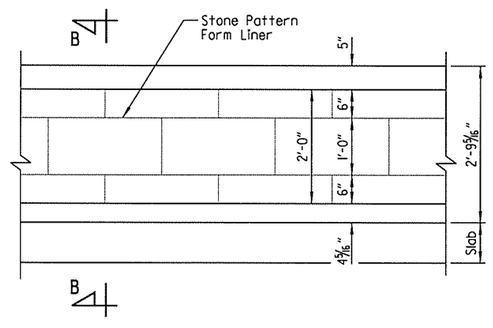
NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.



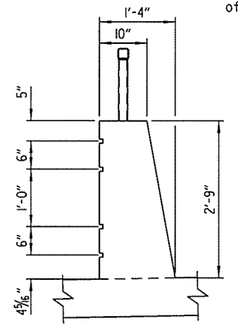
PANEL ENHANCEMENT DETAIL - LEFT PARAPET
Scale: 3/4" = 1'-0"



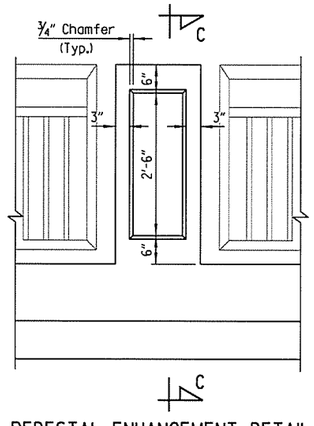
SECTION A-A
Scale: 3/4" = 1'-0"



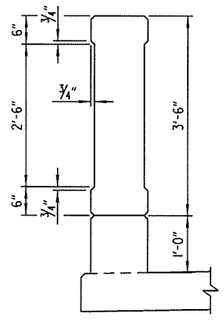
ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET
(Showing Outside Face Of Parapet)
Scale: 3/4" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"



PEDESTAL ENHANCEMENT DETAIL
Scale: 3/4" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 26177
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 19 OF 19
DETAILS OF 263'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275x1_S19.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54360

SRYancey 5/29/2014 4:36:18 PM
W:\BRIDGE\PLANS AHTD Bridge
L:\JOBS\061080 Broadway Bridge over the Arkansas River\Drawings\B061275x1_S19 (General Parapet Dtls).dgn
REVISED DATE:

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 54362.

(2) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to mee slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 54362.

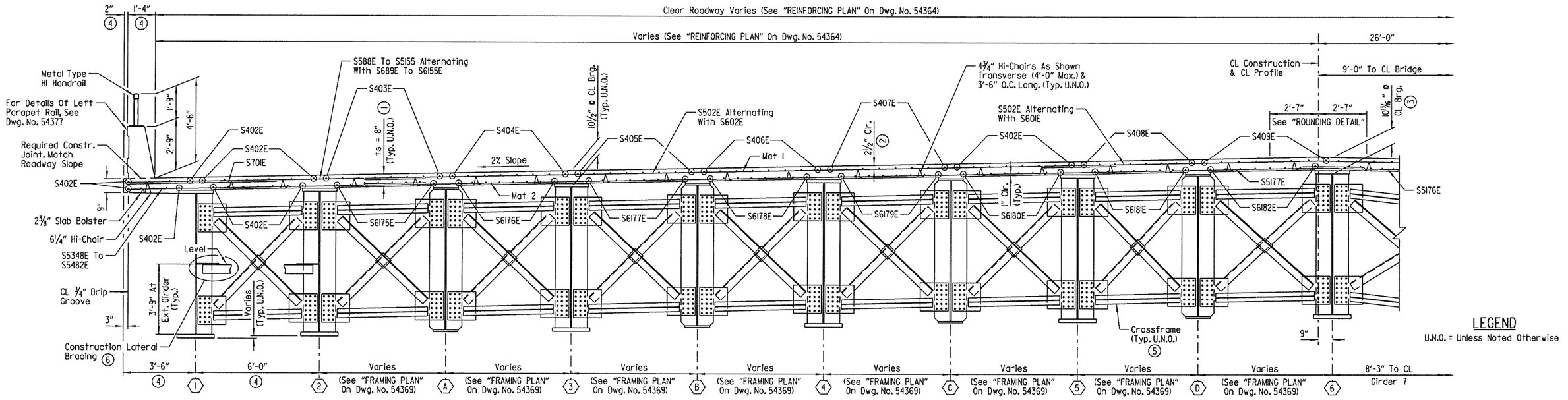
(3) Measured to theoretical top of roadway surface. See "ROUNDING DETAIL".

(4) Measured perpendicular or radial to left edge of deck.

(5) See "FRAMING PLAN" on Dwg. No. 54369 for crossframe locations. See "CROSSFRAME DETAIL" on Dwg. No. 54370 for details of crossframe members and connections.

NOTE:
Typical crossframes shown in typical roadway section. See "FRAMING PLAN" on Dwg. No. 54369 for locations of Diaphragms D1-D4. See Dwg. No. 54371 for diaphragm details.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	158	505
				(1) 07292		180'-0" PL GIRDER SPAN		54361



LEGEND

U.N.O. = Unless Noted Otherwise

(6) See "FRAMING PLAN" on Dwg. No. 54369 for locations of construction lateral bracing. For construction lateral bracing connection details, see Dwg. No. 54373.

(7) Height of hi-chairs in slab transition areas shall be set as necessary to maintain 2 1/2" clear cover to top transverse bars. Space as shown transverse (4'-0" max.) & 3'-6" O.C. long.

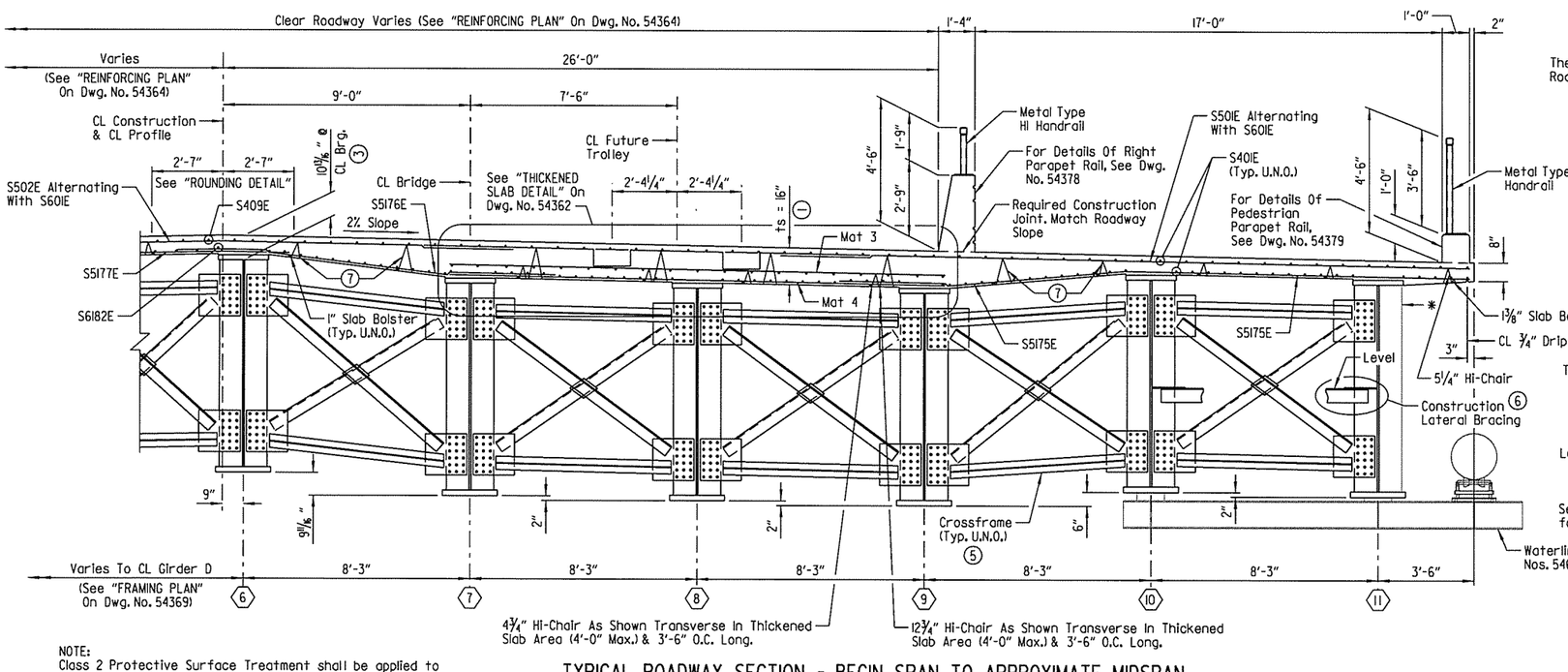
NOTE:
Horizontal dimensions shown are measured perpendicular to CL Construction unless noted otherwise.

For "TYPICAL ROADWAY SECTION - APPROXIMATE MIDSPAN TO END SPAN", see Dwg. No. 54362.

For "TYPICAL SECTION THRU JOINT AT BENT 3" & "TYPICAL SECTION THRU JOINT AT BENT 4", see Dwg. No. 54363.

For "BAR LIST", see Dwg. No. 54368.

For "GENERAL NOTES", see Dwg. No. 54354.

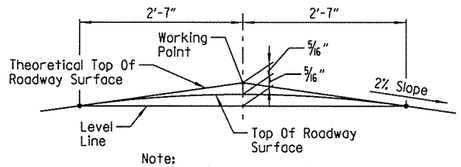


TYPICAL ROADWAY SECTION - BEGIN SPAN TO APPROXIMATE MIDSPAN

Looking Forward
No Scale

NOTE:
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only. For details of Class 3 Textured Coating Finish to be applied to parapet rail surfaces, see SP JOB 061275 "TEXTURED COATING FINISH".

NOTE:
Girders A, B, C & D terminate and frame into Diaphragms D4 at approximate midspan. See "FRAMING PLAN" on Dwg. No. 54369.



Note:
Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

No Scale

* Additional stiffener required at waterline support locations. See Dwg. No. 54374 for details.

SLAB REINFORCING:

Transverse: S601E lapped with S602E lapped with S689E To S6155E @ 14" O.C. - Mat 1
S501E lapped with U401E lapped with S502E lapped with S588E To S5155E @ 14" O.C. - Mat 1 — Alternate
S5175E & S5176E lapped with S5177E lapped with S5348E To S5482E @ 7" O.C. - Mat 2
S701E in left overhang spa. with #6 Bars - Mat 1
S6187E @ 7" O.C. - Mats 3 & 4

Longitudinal: S401E thru S409E as shown in "REINFORCING PLAN" on Dwg. No. 54365 - Mat 1
S401E, S402E & S6175E thru S6182E as shown in "REINFORCING PLAN" on Dwg. No. 54367 - Mat 2
S401E as shown in "THICKENED SLAB DETAIL" on Dwg. No. 54362 - Mats 3 & 4

See slab plans on Dwg. Nos. 54364-54367 for additional slab reinforcing details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 1 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2013 FILENAME: B061275x1_S20.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54361

SRYancey 5/29/2014 4:36:18 PM
WORKSPACE: AHTD Bridge
L:\ZION\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S20 (Span 3 Typ. Sec).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	159	505
				(1) 07292		180'-0" PL GIRDER SPAN		54362

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to mee slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

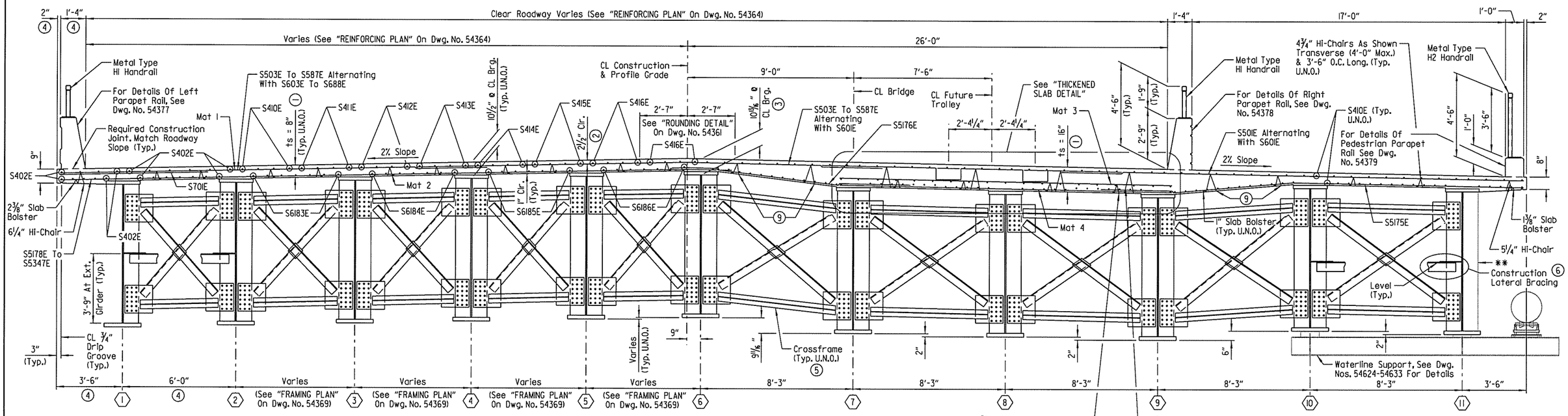
(3) Measured to theoretical top of roadway surface. See "ROUNDING DETAIL" on Dwg. No. 54361.

(4) Measured perpendicular or radial to left edge of deck.

(5) See "FRAMING PLAN" on Dwg. No. 54369 for crossframe locations. See "CROSSFRAME DETAIL" on Dwg. No. 54370 for details of crossframe members and connections.

NOTE:
Typical crossframes shown in typical roadway section. See "FRAMING PLAN" on Dwg. No. 54369 for locations of Diaphragms D1-D4. See Dwg. No. 54371 for diaphragm details.

** Additional stiffener required at waterline support locations. See Dwg. No. 54374 for details.



TYPICAL ROADWAY SECTION - APPROXIMATE MIDSPAN TO END SPAN

Looking Forward
No Scale

NOTE:
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only. For details of Class 3 Textured Coating Finish to be applied to parapet rail surfaces, see SP JOB 061275 "TEXTURED COATING FINISH".

4¾" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

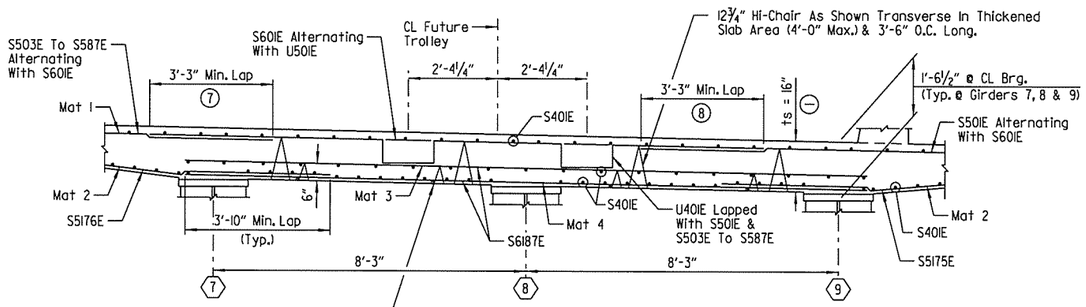
12¾" Hi-Chair As Shown Transverse In Thickened Slab Area (4'-0" Max.) & 3'-6" O.C. Long.

SLAB REINFORCING:

Transverse: S601E lapped with S603E To S688E @ 14" O.C. - Mat 1 — Alternate
S501E lapped with U401E lapped with S503E To S587E @ 14" O.C. - Mat 1 — Alternate
S5175E & S5176E lapped with S5178E To S5347E @ 7" O.C. - Mat 2
S701E in left overhang spa. with #6 Bars - Mat 1
S6187E @ 7" O.C. - Mats 3 & 4

Longitudinal: S401E, S402E & S410E thru S416E as shown in "REINFORCING PLAN" on Dwg. No. 54365 - Mat 1
S401E, S402E & S6183E thru S6186E as shown in "REINFORCING PLAN" on Dwg. No. 54367 - Mat 2
S401E as shown in "THICKENED SLAB DETAIL" - Mats 3 & 4

See slab plans on Dwg. Nos. 54364-54367 for additional slab reinforcing details.



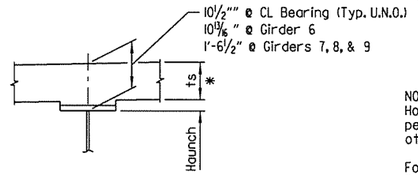
THICKENED SLAB DETAIL

½" = 1'-0"

(7) Minimum lap shown for S502E lapped with U401E.

(8) Minimum lap shown for S503E To S587E lapped with U401E.

(9) Height of hi-chairs in slab transition areas shall be set as necessary to maintain 2½" clear cover to top transverse bars. Space as shown transverse (4'-0" max.) & 3'-6" O.C. long.



Note: t_S = Slab Thickness as shown on typical roadway sections

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 ¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

NOTES:
Horizontal dimensions shown are measured perpendicular to CL Construction unless noted otherwise.

For "TYPICAL SECTION THRU JOINT AT BENT 3 AH." & "TYPICAL SECTION THRU JOINT AT BENT 4 BK.", see Dwg. No. 54363.

For "BAR LIST", see Dwg. No. 54368.

(6) See "FRAMING PLAN" on Dwg. No. 54369 for locations of construction lateral bracing. For construction lateral bracing connection details, see Dwg. No. 54373.

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 2 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275xl_S2i.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54362

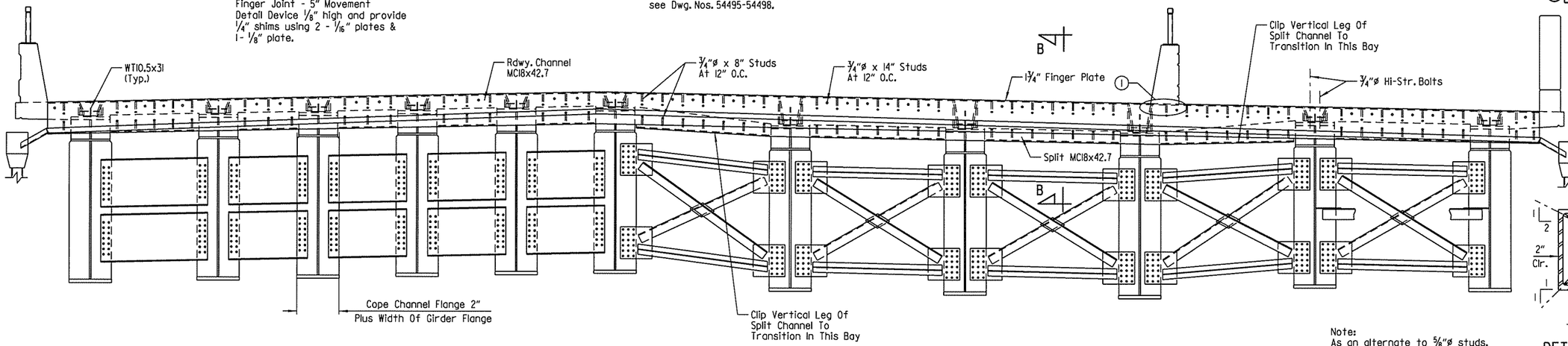
SRYancey 5/29/2014 4:36:19 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S2i(Span 3 Typ. Sec-2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

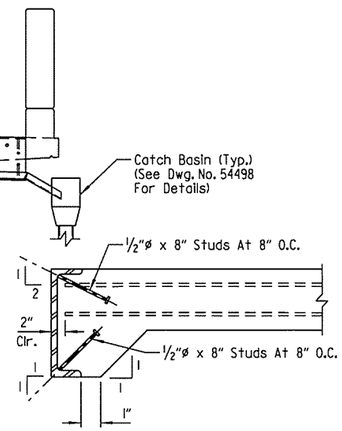
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	160	505
① 07292	180'-0" PL GIRDER SPAN			54363

BENT 4 EXPANSION DEVICE:
Rdwy. Channel MCI8x42.7 (Modified with attachment of Split MCI8x42.7 as shown)
Channel Connection - WTI0.5x31
Finger Joint - 5" Movement
Detail Device 1/8" high and provide 1/4" shims using 2 - 1/16" plates & 1- 1/8" plate.

Note:
For details of finger joint, see Dwg. Nos. 54495-54498.

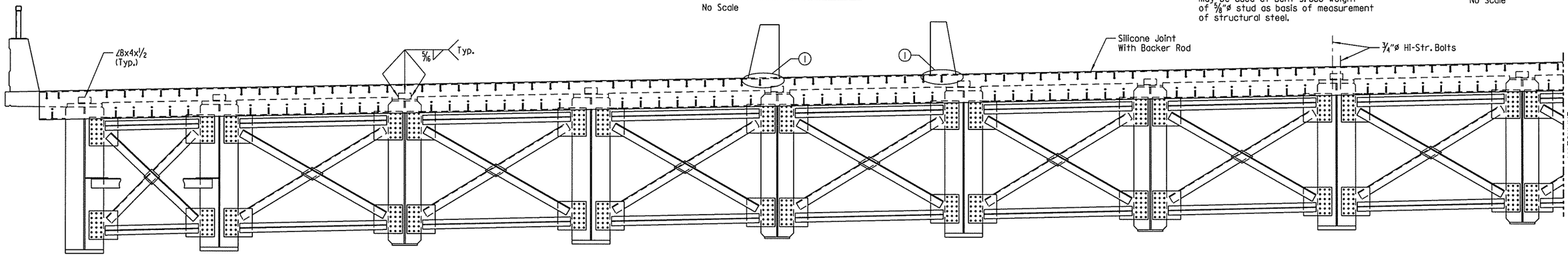


TYPICAL SECTION THRU JOINT AT BENT 4 BK.
No Scale



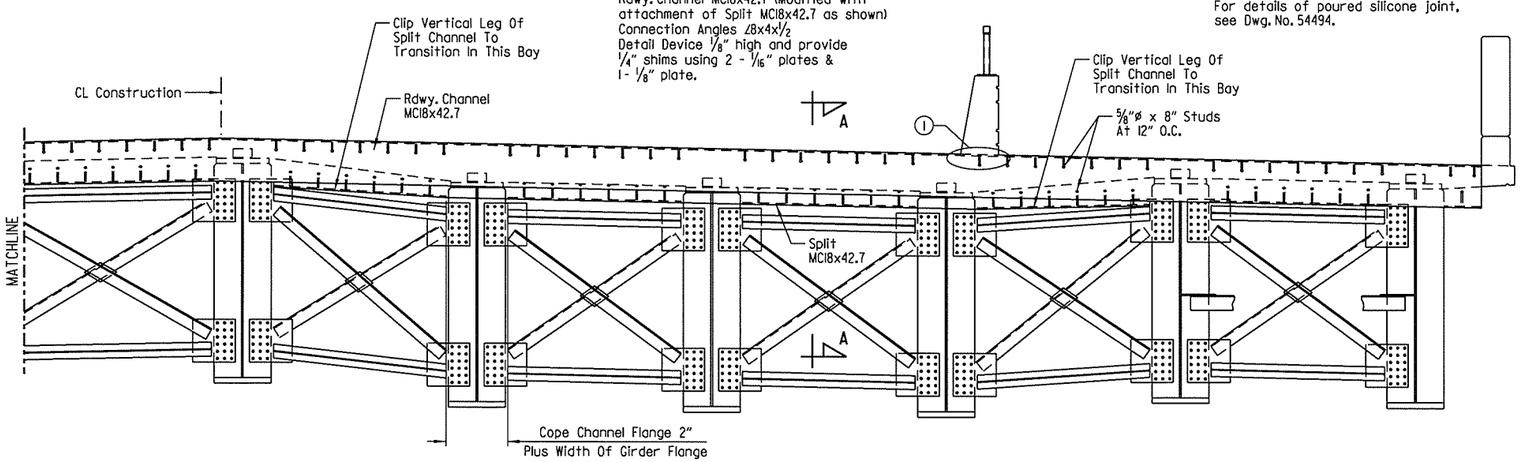
Note:
As an alternate to 5/8"ø studs, 1/2"ø x 8" studs spaced as shown may be used at Bent 3. Use weight of 5/8"ø stud as basis of measurement of structural steel.

DETAIL OF ALTERNATE ANCHORS
No Scale



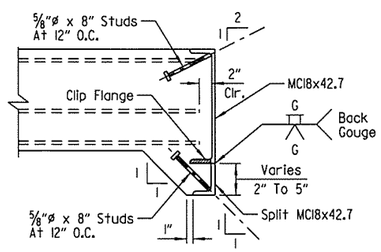
BENT 3 EXPANSION DEVICE:
Rdwy. Channel MCI8x42.7 (Modified with attachment of Split MCI8x42.7 as shown)
Connection Angles L8x4x1/2
Detail Device 1/8" high and provide 1/4" shims using 2 - 1/16" plates & 1- 1/8" plate.

Note:
For details of poured silicone joint, see Dwg. No. 54494.

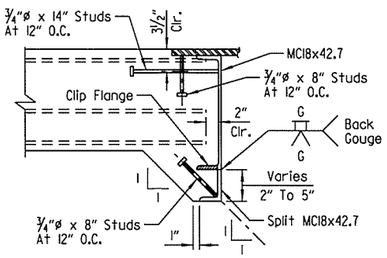


TYPICAL SECTION THRU JOINT AT BENT 3 AH.
No Scale

① Clip Top Flange Of Roadway Channel & Omit Studs As Required Under Parapet Rail



SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 3 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x1_S22.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54363

SRYancey 5/29/2014 4:36:20 PM
WORKSPACE: AHTD Bridge
L:\ZDATA\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S22 (Span 3 Typ. Sec-3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	161	505
				(1) 07292		180'-0" PL GIRDER SPAN		54364

NOTES:
See Dwg. No. 54377 for parapet reinforcing details.

See Dwg. No. 54379 for pedestrian parapet rail details.

See Dwg. No. 54365 for Mat 1 longitudinal reinforcing details & "CONCRETE PLACEMENT PROCEDURE".

See Dwg. No. 54366 for Mat 2 transverse reinforcing details & "SECTION E-E".

See Dwg. No. 54367 for Mat 2 longitudinal reinforcing details.

See Dwg. No. 54368 for Mats 3 & 4 transverse & longitudinal reinforcing details.

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab. Parapet joint designation shown is for both the left and right parapet rails.

(2) Measured along left edge of deck, from CL Joint to CL Joint

(3) Measured to intersection of gutterline and CL Joint

(4) Bars placed along lines radial to left edge of deck. Spacing measured along left edge of deck.

(5) Measured along line radial to left edge of deck

(6) Measured along left edge of deck

(7) Open parapet rail

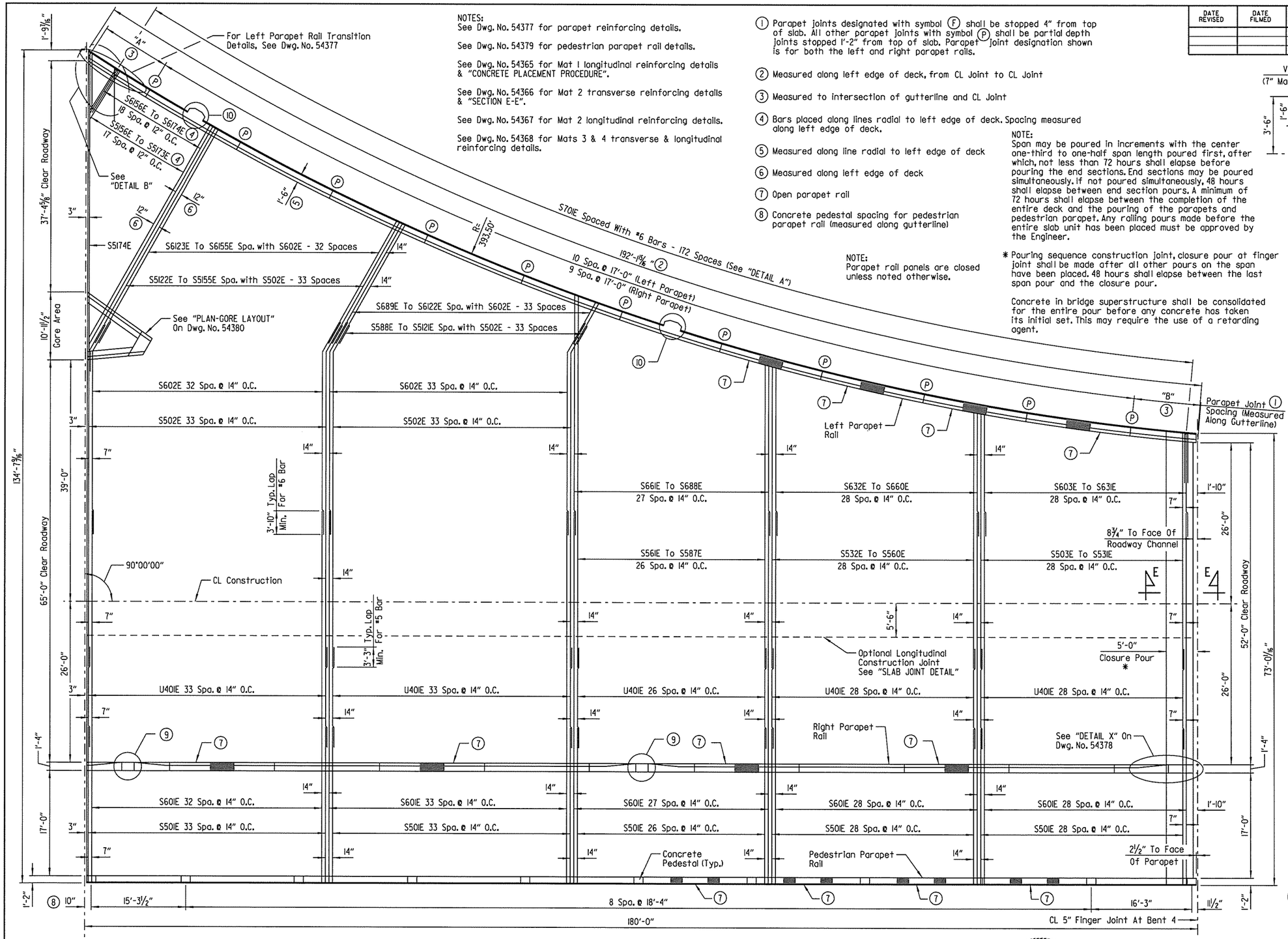
(8) Concrete pedestal spacing for pedestrian parapet rail (measured along gutterline)

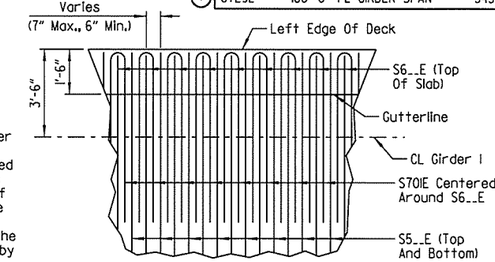
NOTE:
Parapet rail panels are closed unless noted otherwise.

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapets and pedestrian parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

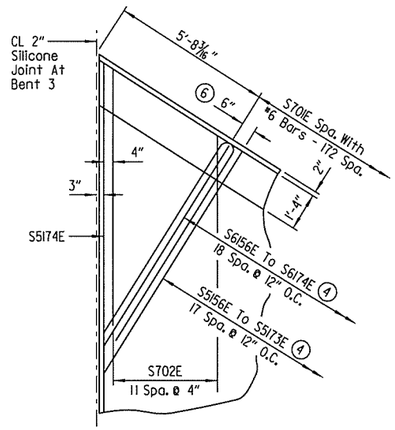
* Pouring sequence construction joint, closure pour at finger joint shall be made after all other pours on the span have been placed. 48 hours shall elapse between the last span pour and the closure pour.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

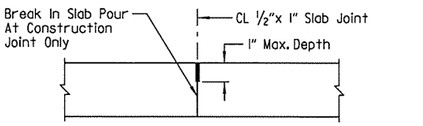




DETAIL A
No Scale



DETAIL B
Scale: ⅜" = 1'-0"



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL
No Scale

(9) Light Pole Pedestal (See Dwg. No. 54378 for parapet transition details and see Dwg. No. 54642 for light pole details)

(10) Concrete Light Pole Support (See Dwg. No. 54380 for support details and see Dwg. No. 54642 for light pole details)

NOTES:
Unless noted otherwise, transverse bar spacing is measured parallel to CL Construction.

Unless noted otherwise, transverse dimensions shown are measured perpendicular to CL Construction at CL Joint.

REINFORCING PLAN
(Mat 1- Transverse Reinforcing)
Scale: ⅛" = 1'-0"

TABLE OF VARIABLES		
Dimension	Left Parapet Rail	Right Parapet Rail
"A"	11'-0 7/16"	13'-6"
"B"	11'-0 1/4"	13'-6"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

5/30/14
BRIDGE ENGINEER

SHEET 4 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

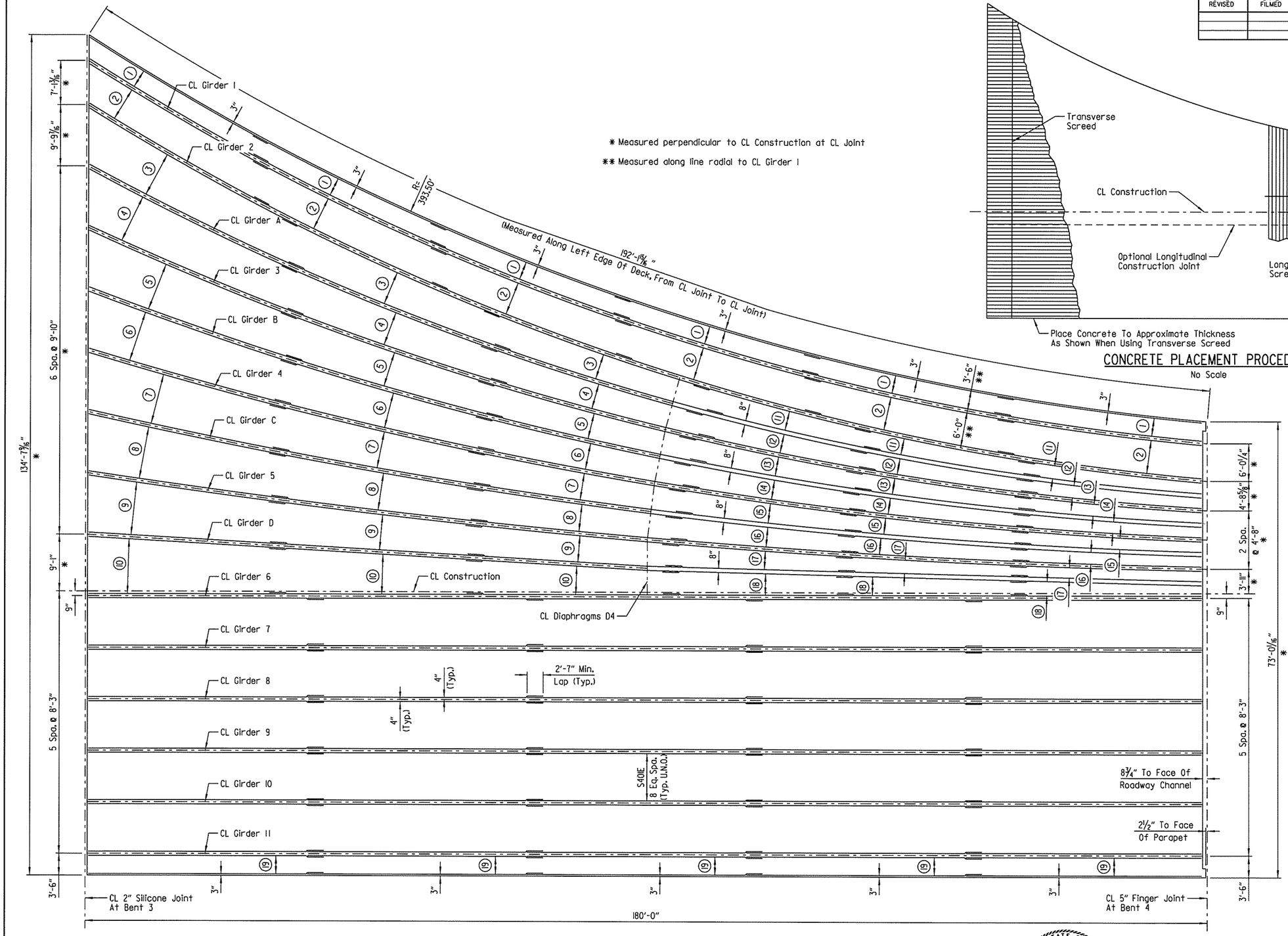
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275xl_S23.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54364

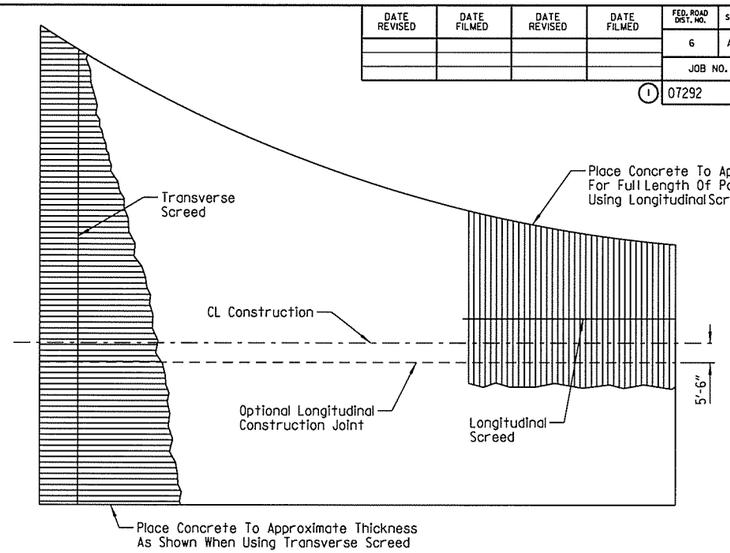
SRYancey 5/29/2014 4:36:21PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S23 (Span 3 Slab - Mat 1-Transl.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	162	505
				(1) 07292		180'-0" PL GIRDER SPAN		54365



REINFORCING PLAN

(Mat 1- Longitudinal Reinforcing)
Scale: 1/8" = 1'-0"



CONCRETE PLACEMENT PROCEDURE

No Scale

(1) S402E 3 Equal Spaces
(2) S402E 5 Equal Spaces
(3) S403E 7 Equal Spaces
(4) S404E 7 Equal Spaces
(5) S405E 7 Equal Spaces
(6) S406E 7 Equal Spaces
(7) S407E 7 Equal Spaces
(8) S402E 7 Equal Spaces
(9) S408E 7 Equal Spaces
(10) S409E 7 Equal Spaces
(11) S410E 3 Equal Spaces
(12) S411E 3 Equal Spaces
(13) S412E 3 Equal Spaces
(14) S413E 3 Equal Spaces
(15) S414E 3 Equal Spaces
(16) S415E 3 Equal Spaces
(17) S416E 3 Equal Spaces
(18) S416E 3 Equal Spaces
(19) S401E 3 Equal Spaces

LEGEND

U.N.O. = Unless Noted Otherwise

NOTES:
Field bend longitudinal bars as required to maintain equal spacing within each bay.

Equal spaces should be measured along lines approximately perpendicular or radial to CL Girders.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

5/30/14
BRIDGE ENGINEER

SHEET 5 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

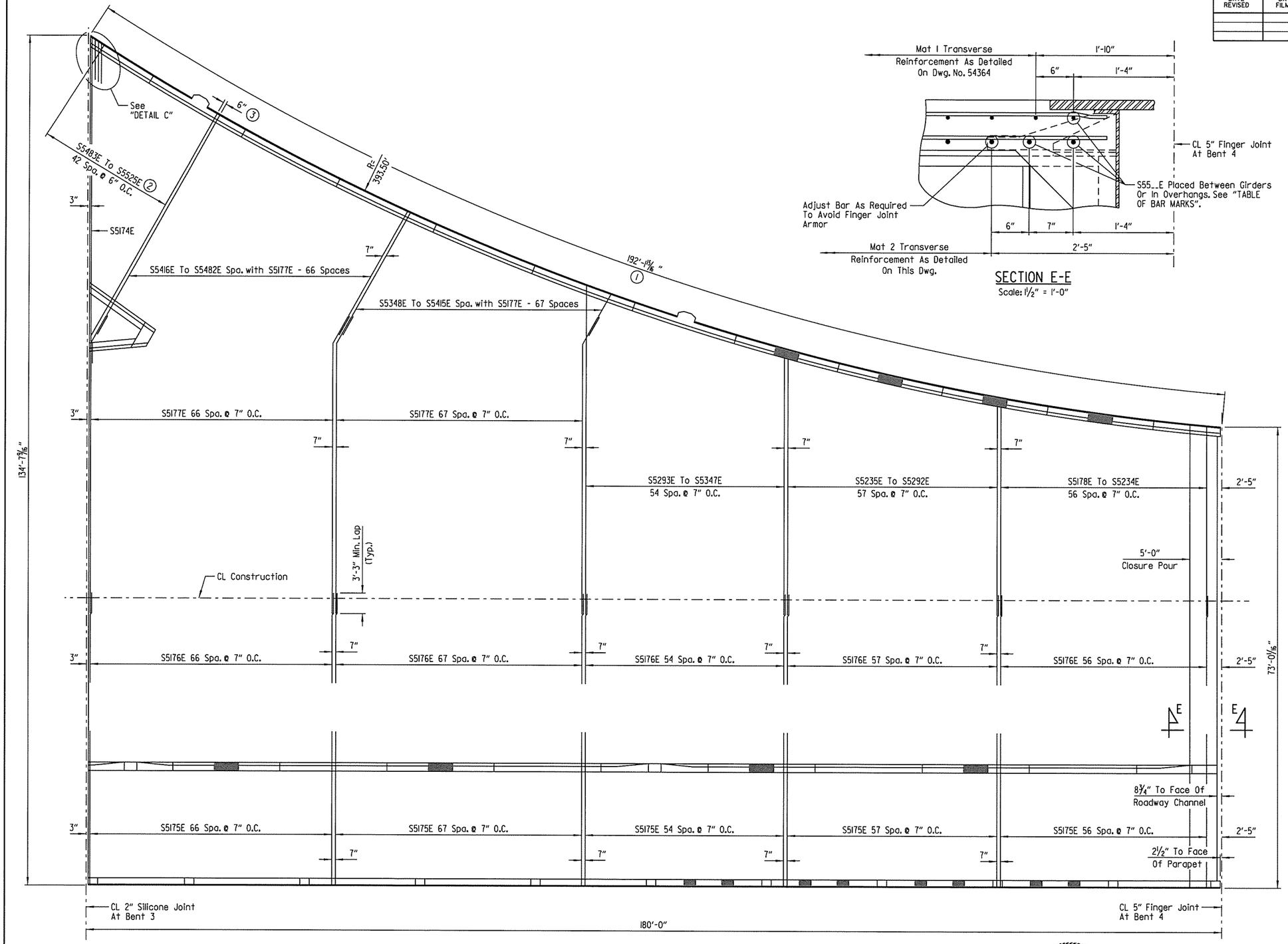
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2013 FILENAME: B061275xl_S24.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54365

SRYancey 5/29/2014 4:36:21 PM
WORKSPACE: AHTD Bridge
L:\20UNIONTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S24 (Span 3 Slab - Mat 1-Long).dgn
REVISED DATE:

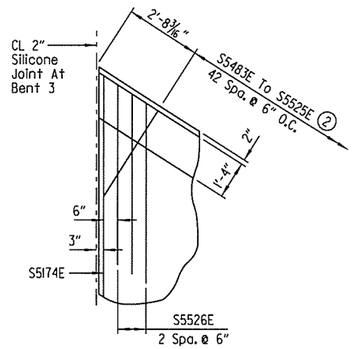
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	163	505
				① 07292		180'-0" PL GIRDER SPAN		54366



REINFORCING PLAN
(Mat 2 - Transverse Reinforcing)
Scale: ⅛" = 1'-0"

SECTION E-E
Scale: 1½" = 1'-0"

TABLE OF BAR MARKS	
Bar Mark	Between Girders
S5527E	6 & 7, 7 & 8, 8 & 9, 9 & 10, 10 & 11
S5528E	2 & 3, 3 & 4, 4 & 5, 5 & 6
S5529E	1 & 2
S5530E	Left & Right Overhangs



DETAIL C
Scale: ⅜" = 1'-0"

① Measured along left edge of deck, from CL Joint to CL Joint

② Bars placed along lines radial to left edge of deck. Spacing measured along left edge of deck.

③ Measured along left edge of deck

NOTES:
Unless noted otherwise, transverse bar spacing is measured parallel to CL Construction.

Unless noted otherwise, transverse dimensions shown are measured perpendicular to CL Construction at CL Joint.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

5/30/14
BRIDGE ENGINEER

SHEET 6 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

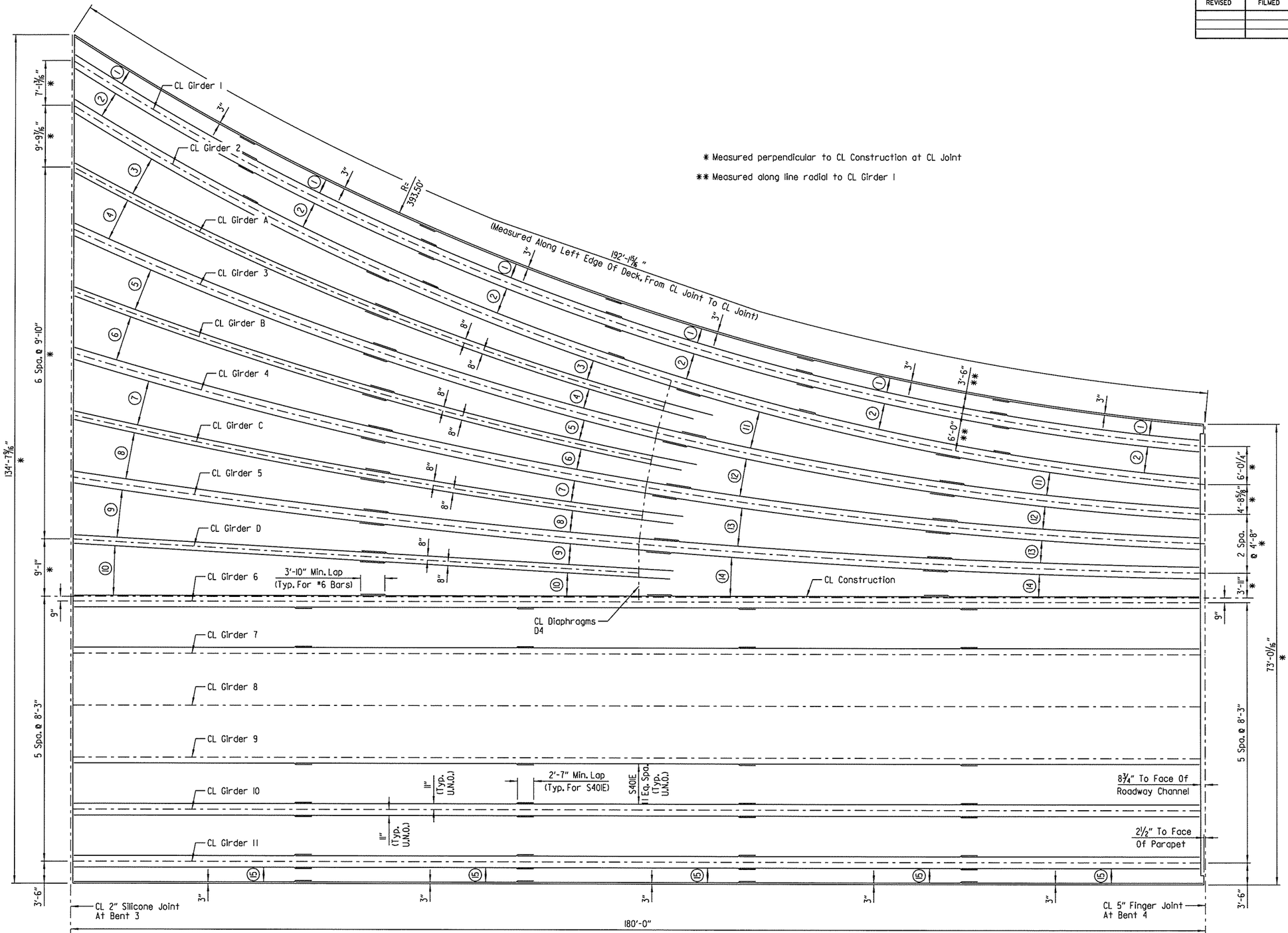
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275xl_S25.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54366

SRYancey 5/29/2014 4:36:22 PM
W:\DESIGN\EC HITD Bridge
L:\DGN\MOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S25 (Span 3 Slab - Mat 2-Transl.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	164	505
				(1) 07292		180'-0" PL GIRDER SPAN		54367



* Measured perpendicular to CL Construction at CL Joint

** Measured along line radial to CL Girder 1

(1) S402E 4 Equal Spaces
(2) S402E 6 Equal Spaces
(3) S6175E 7 Equal Spaces
(4) S6176E 7 Equal Spaces
(5) S6177E 7 Equal Spaces
(6) S6178E 7 Equal Spaces
(7) S6179E 7 Equal Spaces
(8) S6180E 7 Equal Spaces
(9) S6181E 7 Equal Spaces
(10) S6182E 7 Equal Spaces
(11) S6183E 6 Equal Spaces
(12) S6184E 6 Equal Spaces
(13) S6185E 6 Equal Spaces
(14) S6186E 6 Equal Spaces
(15) S401E 4 Equal Spaces

REINFORCING PLAN

(Mat 2 - Longitudinal Reinforcing)
Scale: ⅛" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

NOTES:
Field bend longitudinal bars as required to maintain equal spacing within each bay.

Equal spaces should be measured along lines approximately perpendicular or radial to CL Girders.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

5/30/14
BRIDGE ENGINEER

SHEET 7 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2013 FILENAME: B061275x1_S26.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54367

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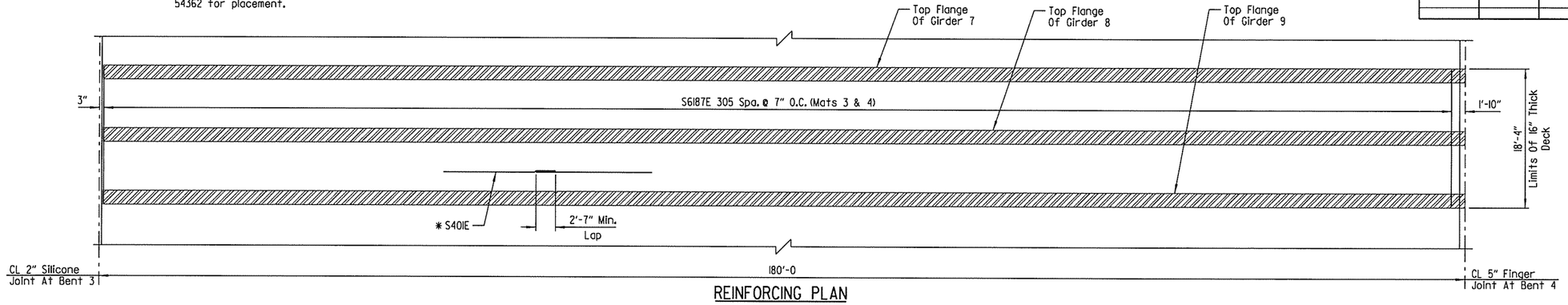
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S26 (Span 3 Slab - Mat 2-Longit.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	165	505
				(1) 07292		180'-0" PL GIRDER SPAN		54368

* Refer to "THICKENED SLAB DETAIL" on Dwg. No. 54362 for placement.



REINFORCING PLAN

(Mats 3 & 4)
Scale: 1/8" = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S401E	760	38'-0"	Str.
S402E	156	34'-0"	Str.
S403E	24	38'-3"	Str.
S404E	24	37'-2"	Str.
S405E	24	36'-2"	Str.
S406E	24	35'-3"	Str.
S407E	24	34'-6"	Str.
S408E	24	33'-7"	Str.
S409E	24	33'-5"	Str.
S410E	12	29'-7"	Str.
S411E	12	29'-10"	Str.
S412E	12	30'-1"	Str.
S413E	12	30'-3"	Str.
S414E	12	30'-6"	Str.
S415E	12	30'-7"	Str.
S416E	24	30'-8"	Str.
S501E	153	25'-1"	Str.
S502E	68	55'-10"	3"
S503E To S531E	1 Each	38'-2" To 42'-6"	Str.
S532E To S560E	1 Each	42'-9" To 50'-1"	Str.
S561E To S587E	1 Each	50'-5" To 60'-0"	Str.
S588E To S5121E	1 Each	7'-4" To 21'-10"	Str.
S5122E To S5155E	1 Each	22'-4" To 39'-9"	Str.
S5156E To S5173E	1 Each	9'-2" To 39'-6"	Str.
S5174E	2	51'-6"	Str.
S5175E	305	23'-0"	3"
S5176E	305	13'-10"	3"
S5177E	135	47'-9"	3"
S5178E To S5234E	1 Each	30'-0" To 34'-5"	Str.
S5235E To S5292E	1 Each	34'-6" To 41'-11"	Str.
S5293E To S5347E	1 Each	42'-1" To 52'-1"	Str.

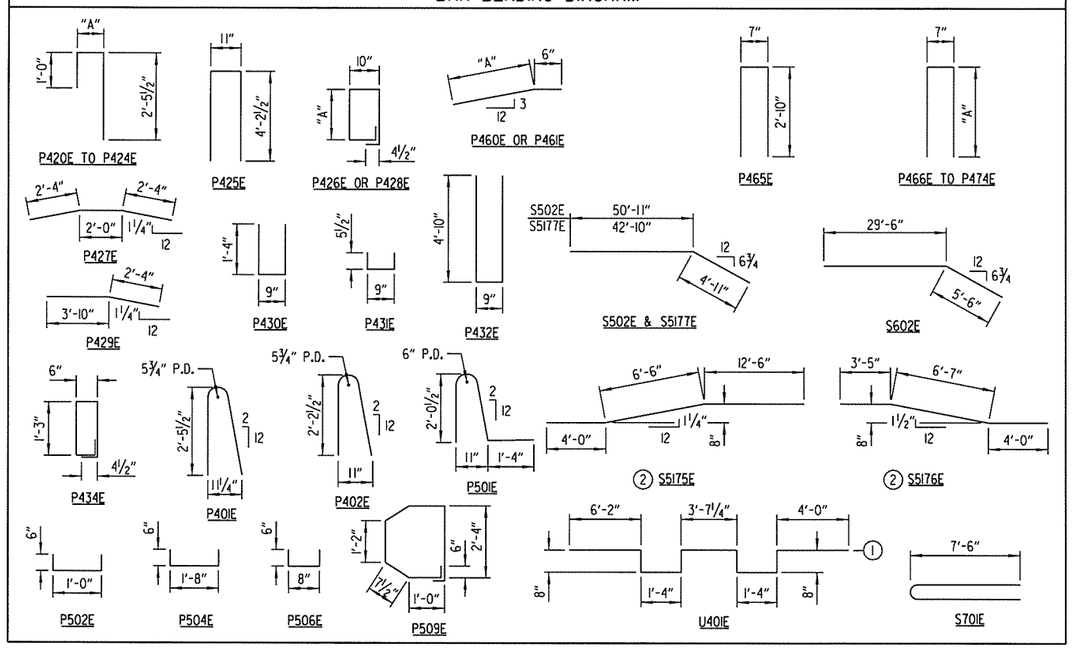
BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S5348E To S5415E	1 Each	7'-5" To 22'-1"	Str.
S5416E To S5482E	1 Each	22'-4" To 39'-9"	Str.
S5483E To S5525E	1 Each	3'-6" To 40'-5"	Str.
S5526E	3	6'-4"	Str.
S5527E	15	7'-0"	Str.
S5528E	12	3'-6"	Str.
S5529E	3	4'-9"	Str.
S5530E	6	2'-8½"	Str.
S601E	153	60'-0"	Str.
S602E	67	35'-0"	4½"
S603E To S631E	1 Each	16'-7" To 20'-11"	Str.
S632E To S660E	1 Each	21'-2" To 28'-5"	Str.
S661E To S688E	1 Each	28'-9" To 38'-10"	Str.
S689E To S6122E	1 Each	7'-6" To 22'-1"	Str.
S6123E To S6155E	1 Each	22'-6" To 39'-5"	Str.
S6156E To S6174E	1 Each	8'-3" To 40'-4"	Str.
S6175E	16	56'-7"	Str.
S6176E	16	55'-0"	Str.
S6177E	16	53'-5"	Str.
S6178E	16	52'-2"	Str.
S6179E	16	51'-1"	Str.
S6180E	16	50'-3"	Str.
S6181E	16	49'-8"	Str.
S6182E	16	49'-5"	Str.
S6183E	14	44'-4"	Str.
S6184E	14	45'-1"	Str.
S6185E	14	45'-8"	Str.
S6186E	14	46'-0"	Str.
S6187E	612	18'-0"	Str.
S701E	173	15'-4"	5¼"
S702E	12	9'-0"	Str.
U401E	153	18'-3"	3"

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	P.D.
P401E	715	5'-4"		5¾"
P402E	64	4'-9½"		5¾"
P403E	84	5'-8"		Str.
P404E	7	10'-3"		Str.
P405E	7	10'-7"		Str.
P406E	14	13'-0"		Str.
P407E	133	16'-6"		Str.
P420E To P424E	5 Each	4'-0½" To 4'-3"	9" To 11½"	2"
P425E	16	9'-2"		2"
P426E	6	4'-10"	1'-5"	2"
P427E	8	6'-8"		2"
P428E	3	8'-10"	3'-5"	2"
P429E	2	6'-2"		2"
P430E	297	3'-3"		2"
P431E	32	1'-6"		2"
P432E	33	10'-3"		2"
P433E	20	38'-0"		Str.
P434E	44	3'-10"		2"
P435E	3	6'-5"		Str.
P436E	4	6'-11"		Str.
P437E	4	9'-10"		Str.
P438E	3	10'-3½"		Str.
P439E	4	1'-8"		Str.
P440E	1	2'-0"		Str.
P441E	1	1'-0"		Str.
P442E To P447E	1 Each	3'-0" To 4'-2"		Str.
P448E To P453E	1 Each	1'-8" To 2'-10"		Str.
P460E	1	8'-6"	8'-0"	3"
P461E	1	8'-2"	7'-8"	3"
P462E	2	2'-7"		Str.
P463E	2	4'-8"		Str.
P464E	2	6'-9"		Str.
P465E	7	6'-1"		2"
P466E To P474E	1 Each	4'-7" To 2'-9"	2'-1" To 1'-2"	2"
P501E	352	5'-9½"		6"
* P502E	363	1'-9"		3¾"
** P503E	726	2'-0"		Str.
* P504E	4	2'-6"		2½"
** P505E	11	2'-7"		Str.
* P506E	1	1'-6"		2½"
* P507E	1	1'-11"		2½"
* P508E	1	1'-8"		2½"
P509E	14	7'-6½"		2½"
P510E	12	2'-5"		Str.

BAR BENDING DIAGRAM



NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

* Threaded Bar with Mechanical Couplers.
** Threaded Bar

(1) Denotes right side of bar (looking forward station) for placement

(2) Looking forward station for placement

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 8 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x1_S27.DGN
CHECKED BY: AJK DATE: JUNE 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54368

SRTancey 5/29/2014 4:36:23 PM
WORKSPACE: AHTD Bridge
L:\ROW\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S27 (Span 3 Slab - Mats 3 & 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	166	505
				(1) 07292		180'-0" PL GIRDER SPAN		54369

TABLE OF ANGLES

Angle	Girder(s)									
	1	2	A	3	B	4	C	5	D	6-11
"A"	122°23'30"	121°51'08"	118°23'52"	114°40'07"	110°47'51"	106°48'03"	102°41'55"	98°30'48"	93°20'18"	90°00'00"
"B"	84°59'21"	85°03'50"	-	86°36'27"	-	87°52'48"	-	88°59'11"	-	90°00'00"
"C"	-	90°00'00"	90°00'00"	91°53'33"	90°00'00"	92°07'30"	90°00'00"	92°18'08"	86°39'42"	-

Note:
Angles are measured to local tangents for curved girders.

(1) Added Field Splice No. 2 for Girders 1-3, SRY 8-25-14

(1) Measured Along CL Joint

(2) See "GIRDER ELEVATION - GIRDERS 1 THRU 11" On Dwg. No. 54370 For Field Splice Locations For Girders 1-5.

(3) Measured Along Diaphragm D4

(4) 1" x 10" Bearing Stiffener

(5) Use 1/2" x 7" Connection Plate For Connection Of Diaphragms D2 To Girders.

Use 3/4" x 11 5/8" Connection Plate For Connection Of Diaphragms D4 To Girders And For Connection Of Diaphragms D1 To Girders 1-6.

Use 3/4" x 8 5/8" Connection Plate For Connection Of Diaphragms D1 To Girders A-D.

TABLE OF INTERMEDIATE DIAPHRAGM OR CROSSFRAME SPACING

Bay	Girder(s)									
	1	2	A	3	B	4	C	5	D	6-11
"A"	9'-7 7/8"	9'-9 5/8"	-	-	-	-	-	-	-	-
"B"	8'-11 1/4"	9'-0 7/8"	9'-3 1/8"	9'-5 11/16"	-	-	-	-	-	-
"C"	13'-5 3/8"	13'-7 13/16"	13'-10 15/16"	14'-2 11/16"	15'-6 5/16"	16'-11 3/4"	15'-8 1/4"	14'-5 3/4"	14'-4 5/16"	14'-4"
"D"	13'-10 15/16"	14'-1 1/2"	14'-4 7/16"	14'-7 5/16"	14'-9 7/8"	15'-0 1/2"	14'-11 15/16"	14'-11 5/16"	14'-10 5/16"	14'-10"
"E"	13'-10 15/16"	14'-1 1/2"	14'-4 3/16"	14'-7 5/16"	14'-9 1/4"	14'-11 11/16"	14'-11 3/16"	14'-11 5/16"	14'-10 5/16"	14'-10"
"F"	13'-10 15/16"	14'-1 1/2"	14'-3 15/16"	14'-6 3/4"	14'-8 5/8"	14'-11"	14'-10 15/16"	14'-11 5/16"	14'-10 5/16"	14'-10"
"G"	13'-10 15/16"	14'-1 1/2"	14'-3 11/16"	14'-6 3/16"	14'-8 5/8"	14'-11 7/16"	14'-11"	14'-10 7/8"	14'-10 5/16"	14'-10"
"H"	13'-10 15/16"	14'-1 1/2"	14'-5 1/16"	14'-8 7/8"	14'-11 3/8"	15'-2 3/16"	15'-0 1/4"	14'-10 11/16"	14'-10 5/16"	14'-10"
"I"	13'-11 5/8"	14'-2 1/8"	-	14'-2 11/16"	-	14'-10 1/4"	-	14'-10 9/16"	-	14'-10"
"J"	13'-11 5/8"	14'-2 1/8"	-	14'-5 1/2"	-	14'-7 5/8"	-	14'-10 3/8"	-	14'-10"
"K"	13'-11 5/8"	14'-2 1/8"	-	14'-5 1/8"	-	14'-7 7/16"	-	14'-10 1/4"	-	14'-10"
"L"	13'-11 5/8"	14'-2 1/8"	-	14'-9 1/2"	-	14'-6 11/16"	-	14'-10 3/16"	-	14'-10"
"M"	13'-11 5/8"	14'-2 1/8"	-	14'-6 3/16"	-	14'-10 7/16"	-	14'-10 1/8"	-	14'-10"
"N"	13'-11 5/8"	14'-8 7/16"	-	14'-9 1/4"	-	14'-10 3/16"	-	14'-10 1/16"	-	14'-10"

TABLE OF CENTER OF CIRCLE LOCATIONS USED TO POSITION CL GIRDER ARCS

Girder(s)	Station	Offset
1 & 2	108+11.675	419.562' Lt.
A	108+08.539	455.110' Lt.
3	108+06.406	509.375' Lt.
B	108+04.602	589.354' Lt.
4	108+03.125	714.334' Lt.
C	108+01.977	929.313' Lt.
5	108+01.156	1369.293' Lt.

(6) Diaphragm D3

NOTES:
Unless noted otherwise, all longitudinal dimensions shown in "FRAMING PLAN" are horizontal or horizontal arc dimensions measured along CL Girder.

Girder spacing shown at CL Joint is measured perpendicular to CL Construction.

For girder elevation details and "CROSSFRAME DETAIL", see Dwg. No. 54370.

For diaphragm details, see Dwg. No. 54371.

For bearing stiffener details, connection plate details and "INTERMEDIATE TRANSVERSE STIFFENER DETAIL", see Dwg. No. 54373.

For "GENERAL NOTES", see Dwg. No. 54354.

(7) Additional Stiffener (Girder 11 only) and 7/8"ø holes to be provided in the bottom flange for waterline support connection. See Dwg. Nos. 54624-54633 for Waterline Support details. See Dwg. No. 54374 for "VIEW A-A".

FRAMING PLAN
Scale: 1/8" = 1'-0"

LEGEND
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

8/25/14
BRIDGE ENGINEER

SHEET 9 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

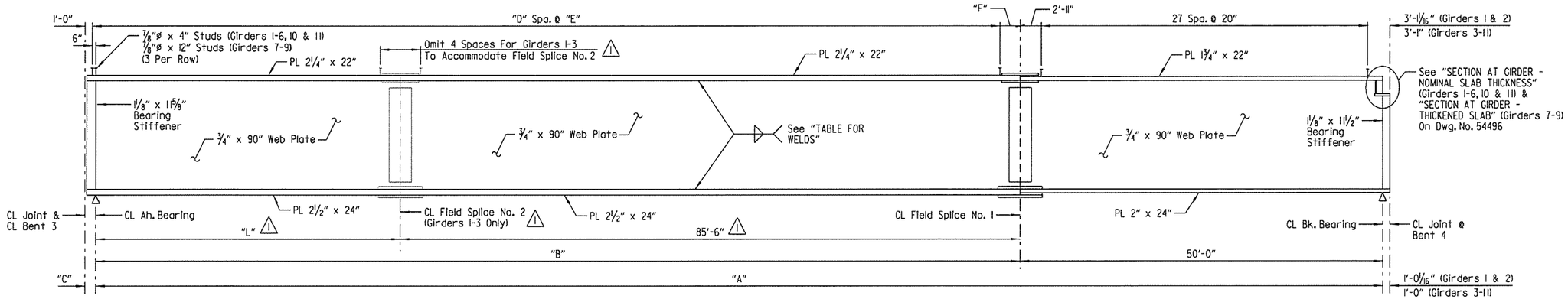
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275xl_S28.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013
BRIDGE NO. 07292 DRAWING NO. 54369

CWThomas 8/25/2014 1:36:00 PM
WORKSPACE: AHTD Bridge
L:\20\NIO1T080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S28 (Span 3 Framing).dgn
REVISED DATE:

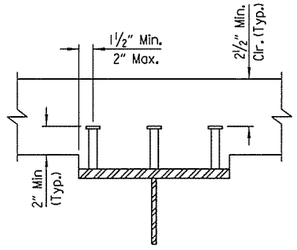
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	167	505
				07292		180'-0" PL GIRDER SPAN		54370



GIRDER ELEVATION - GIRDERS 1 THRU 11

(Dimensions measured along CL Girder)
No Scale

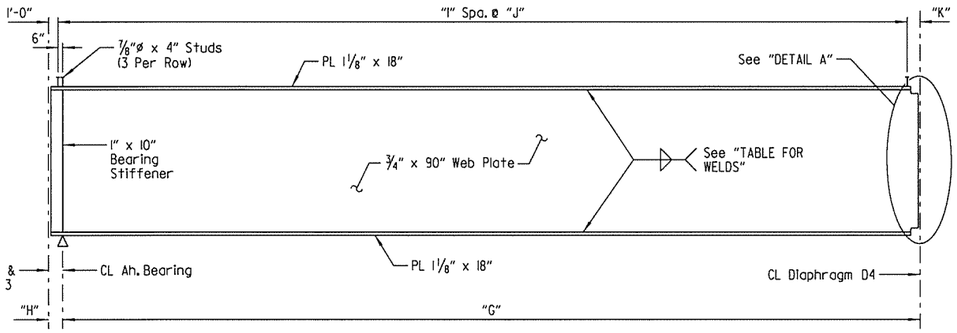
1 Added Field Splice No. 2, added "L" to "TABLE OF VARIABLES" and added shear connector note for Girders 1-3, SRY 8-25-14



Stud shear connectors shown shall be 7/8"ø x 4" long (Girders 1-6, 10 & 11) and 7/8"ø x 12" long (Girders 7-9), granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.36 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

No Scale



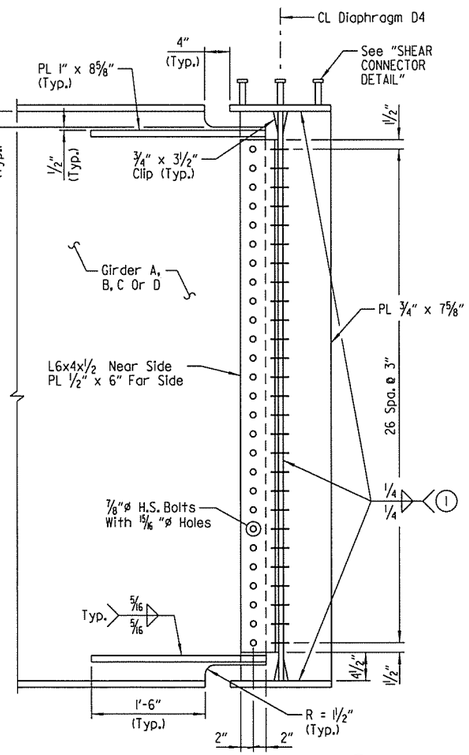
GIRDER ELEVATION - GIRDERS A THRU D

(Dimensions measured along CL Girder)
No Scale

TABLE OF VARIABLES												
Girder	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L" 1
1	189'-1 9/16"	139'-1 9/16"	1'-9 5/16"	82	20"	3'-2 7/8"	-	-	-	-	-	53'-7 9/16"
2	188'-8 3/4"	138'-8 3/4"	1'-9 3/16"	78	21"	2'-11 5/16"	-	-	-	-	-	53'-2 3/4"
3	183'-11 3/4"	133'-11 3/4"	1'-7 13/16"	79	20"	2'-11 9/16"	-	-	-	-	-	48'-5 3/4"
4	180'-5 1/8"	130'-5 1/8"	1'-6 13/16"	73	21"	3'-2 15/16"	-	-	-	-	-	-
5	178'-2 7/8"	128'-2 7/8"	1'-6 3/16"	70	21 1/2"	3'-4 1/16"	-	-	-	-	-	-
6, 10 & 11	177'-6"	127'-6"	1'-6"	75	20"	3'-0"	-	-	-	-	-	-
7-9	177'-6"	127'-6"	1'-6"	75	20"	3'-0"	-	-	-	-	-	-
A	-	-	-	-	-	-	99'-10 5/16"	1'-8 1/2"	66	18"	1'-6 13/16"	-
B	-	-	-	-	-	-	94'-3 3/8"	1'-7 1/4"	66	17"	1'-4 5/8"	-
C	-	-	-	-	-	-	90'-5 3/16"	1'-6 7/16"	67	16"	1'-7 5/8"	-
D	-	-	-	-	-	-	88'-7 13/16"	1'-6"	62	17"	1'-3 13/16"	-

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

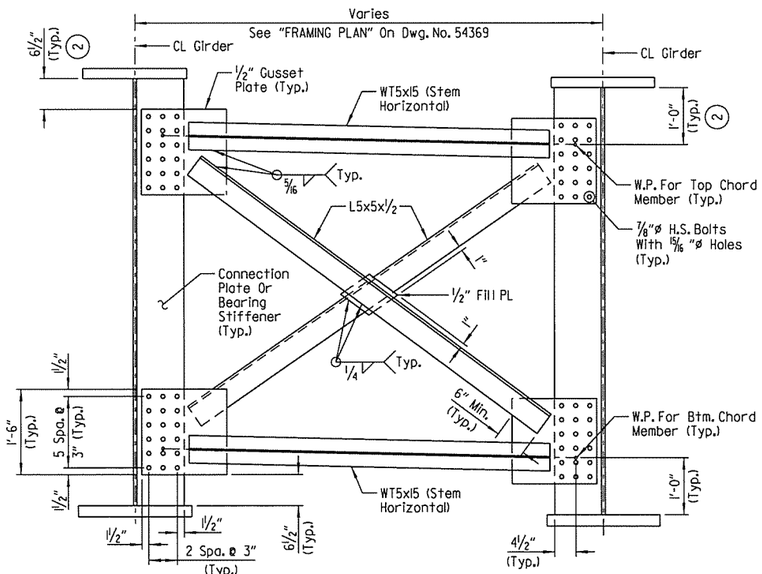
NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



DETAIL A

Scale: 1" = 1'-0"

1 Typical For 3/4" x 7 5/8" Stiffener Plate & 1/2" x 6" Connection Plate



CROSSFRAME DETAIL

Scale: 3/4" = 1'-0"

2 For end crossframes at Bent 4, this dimension is measured from the top of the bearing stiffener.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
8/25/14
BRIDGE ENGINEER

SHEET 10 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

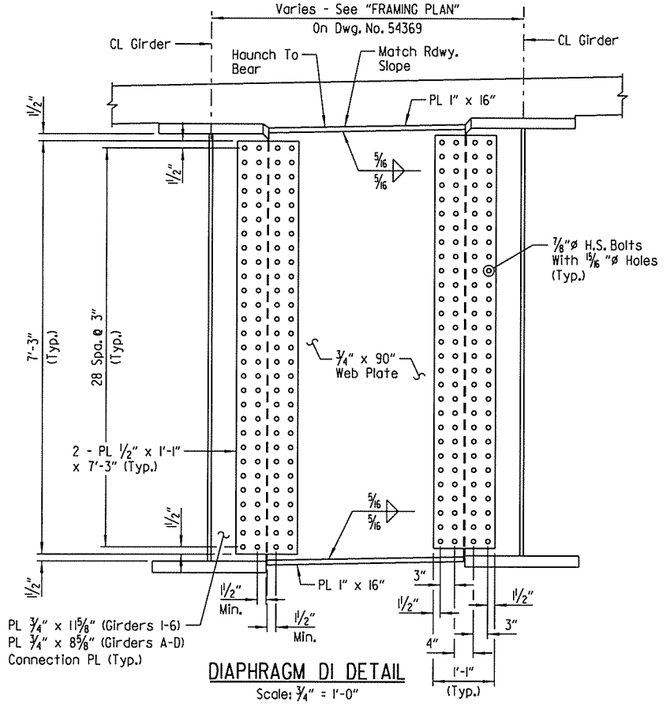
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275xl_S29.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAR. 2013

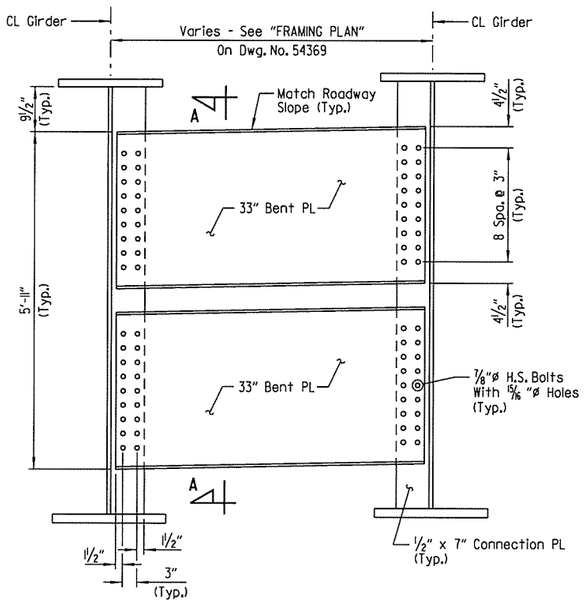
BRIDGE NO. 07292 DRAWING NO. 54370

CWThomas 8/25/2014 11:36:55 PM
WORKSPACE: AHTD Bridge
L:\2011\11080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S29 (Span 3 Grd Elev).dgn
REVISED DATE:

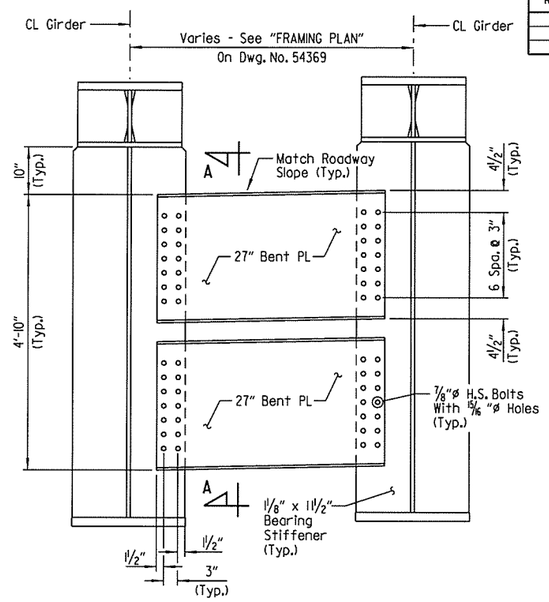
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	168	505
				① 07292		180'-0" PL GIRDER SPAN		54371



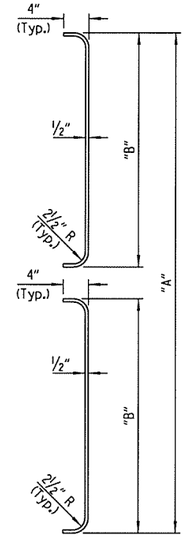
DIAPHRAGM D1 DETAIL
Scale: ¾" = 1'-0"



DIAPHRAGM D2 DETAIL
Scale: ¾" = 1'-0"

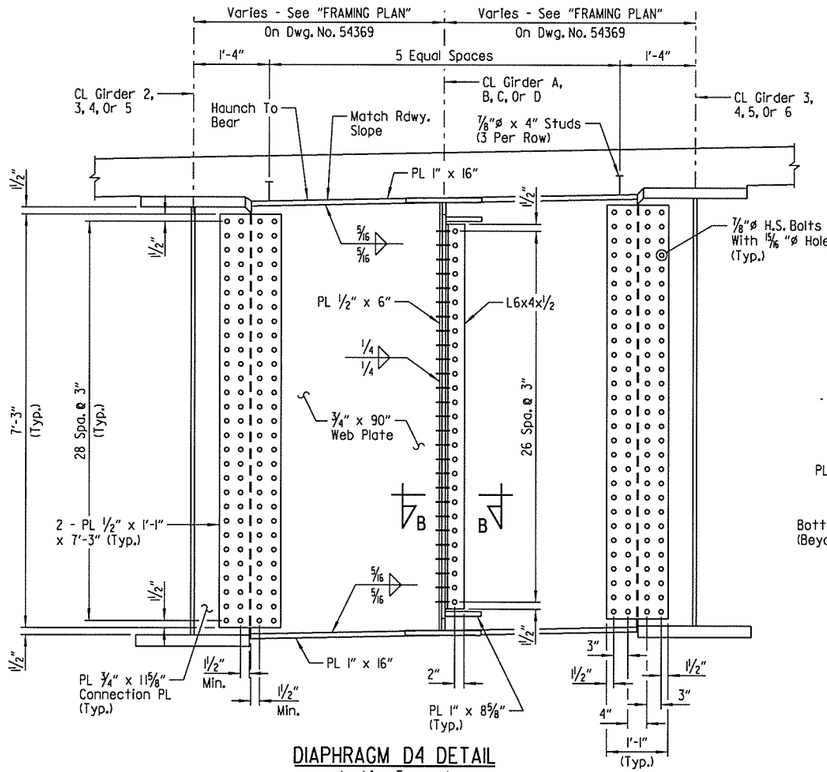


DIAPHRAGM D3 DETAIL
Scale: ¾" = 1'-0"

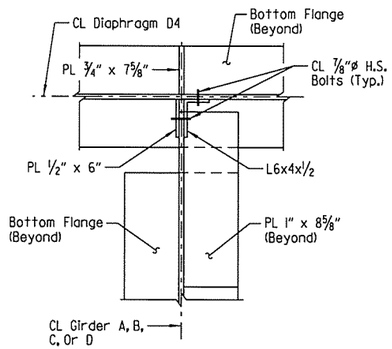


SECTION A-A
No Scale

TABLE OF VARIABLES		
Diaphragm	"A"	"B"
D2	5'-11"	2'-9"
D3	4'-10"	2'-3"



DIAPHRAGM D4 DETAIL
Looking Forward
Scale: ¾" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"

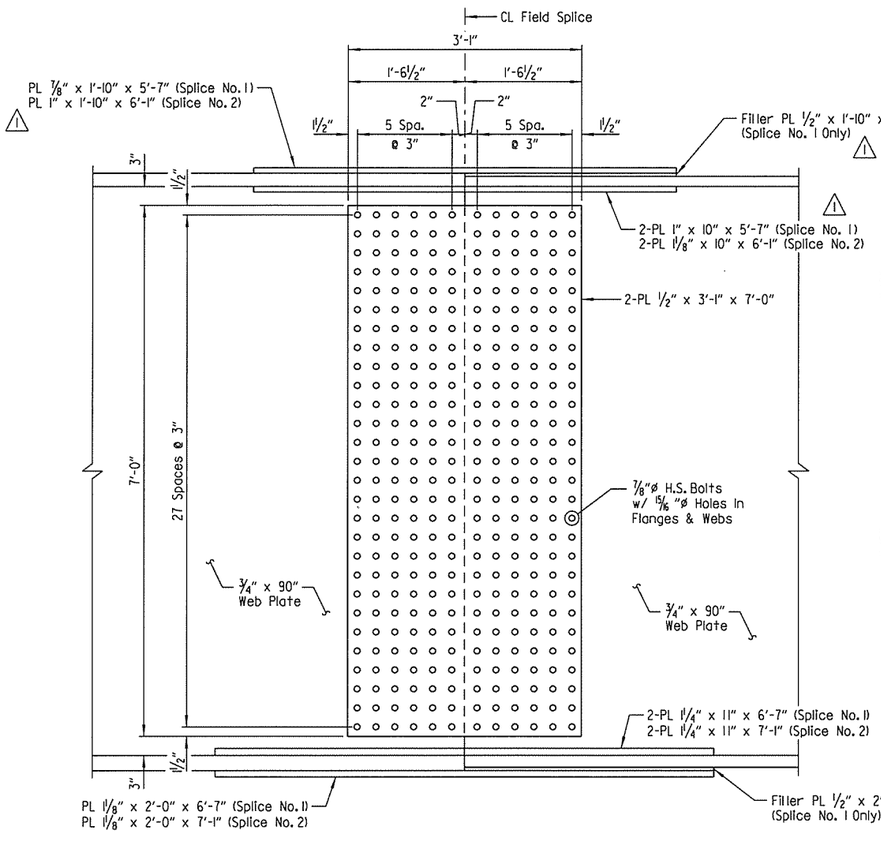
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 11 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: APR. 2013 FILENAME: B061275xl_S30.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54371

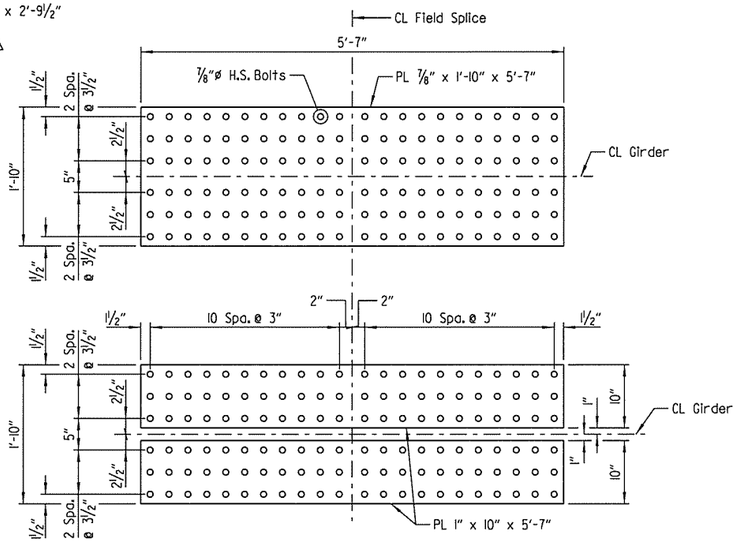
SRTancay 5/29/2014 4:36:25 PM
WORKSPACE: AHTD Bridge
L:\ZDM\MDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S30 (Span 3 Diaphragms).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-25-14				6	ARK.			
				JOB NO.		061275	169	505
				(1) 07292		180'-0" PL GIRDER SPAN		54372



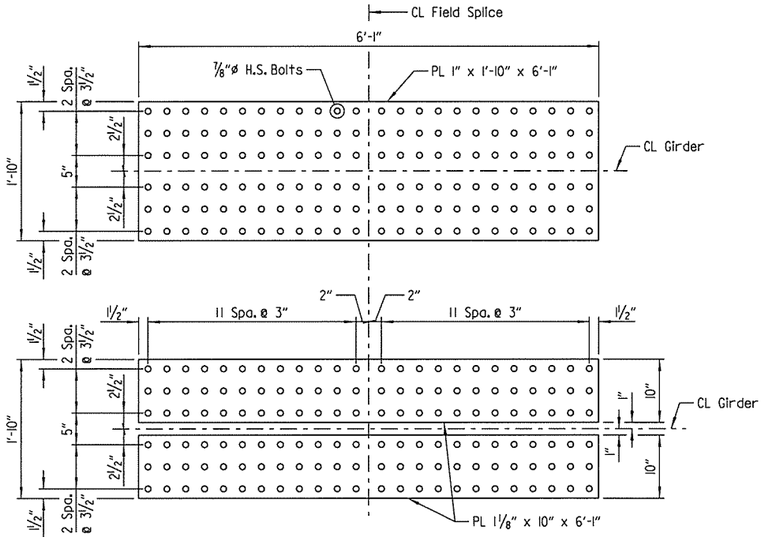
ELEVATION OF FIELD SPLICE NOS. 1 & 2 ⚠

Scale: 1" = 1'-0"



TOP FLANGE SPLICE NO. 1

Scale: 1" = 1'-0"



TOP FLANGE SPLICE NO. 2 ⚠

Girders 1-3 Only
Scale: 1" = 1'-0"

⚠ Added "TOP FLANGE SPLICE NO. 2", "BOTTOM FLANGE SPLICE NO. 2" and revised field splice details, SRY 8-25-14

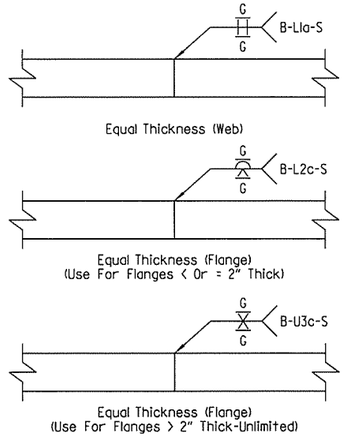
NOTES:

All field splice bolts shall be ⅞"ø H.S. bolts.

All holes for splice bolts shall be 15/16 "ø.

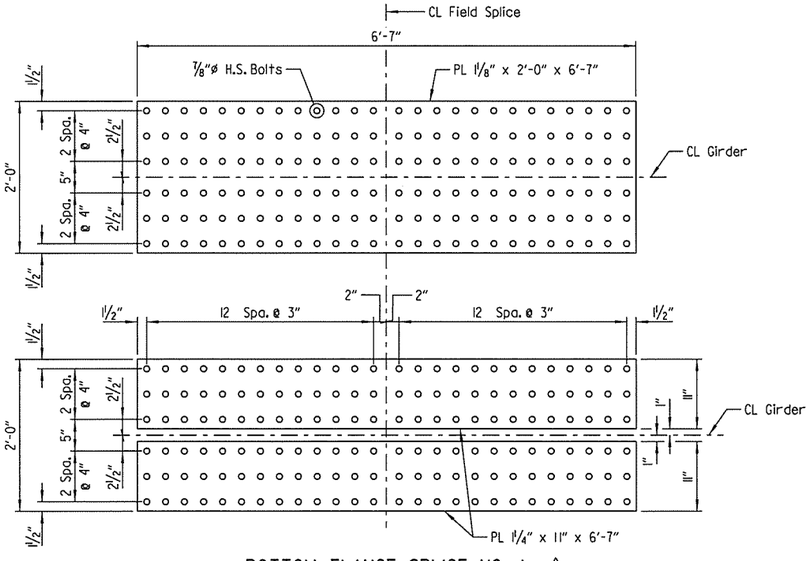
All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.



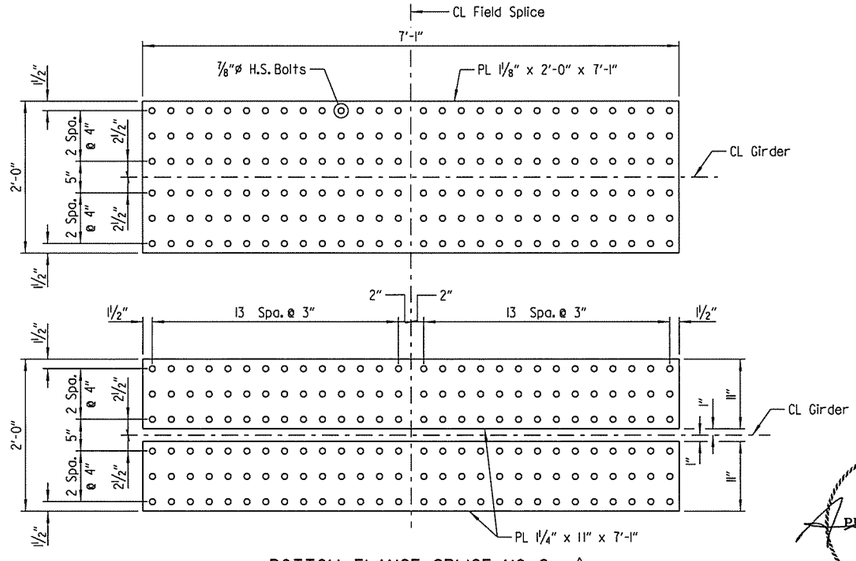
DETAILS OF WELDED SPLICES

No Scale



BOTTOM FLANGE SPLICE NO. 1 ⚠

Scale: 1" = 1'-0"



BOTTOM FLANGE SPLICE NO. 2 ⚠

Girders 1-3 Only
Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL

8/25/14

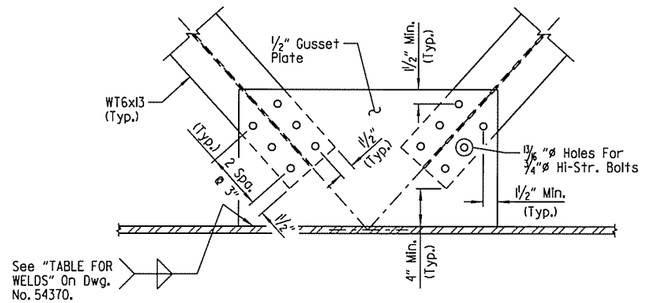
BRIDGE ENGINEER

SHEET 12 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275xl_S31.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54372

CWThomas 8/25/2014 11:36:34 PM
WORKSPACE: AHTD Bridge
L:\20II\II0I708O - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S31(Span 3 Splice).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	170	505
				(1) 07292		180'-0" PL GIRDER SPAN		54373

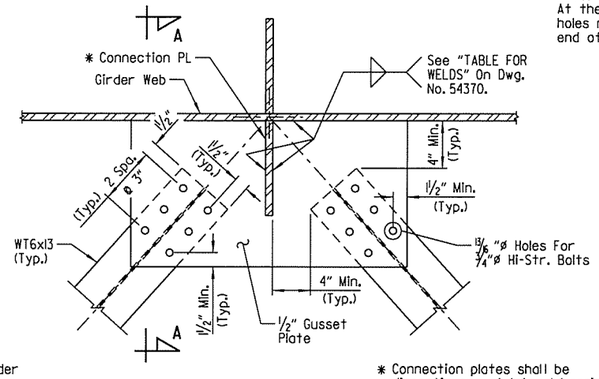


DETAIL A

Scale: 1 1/2" = 1'-0"

(1) Measured Along CL Girder

(2) Stop Weld 1/4" To 1" From End Of Clip

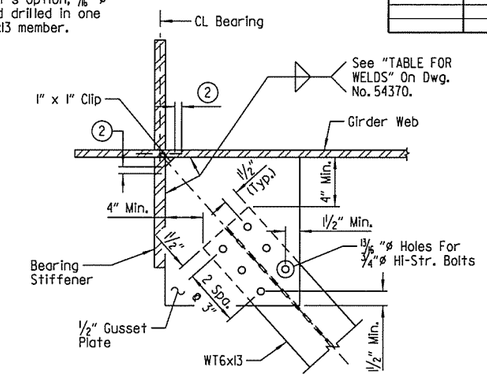


DETAIL B

Scale: 1 1/2" = 1'-0"

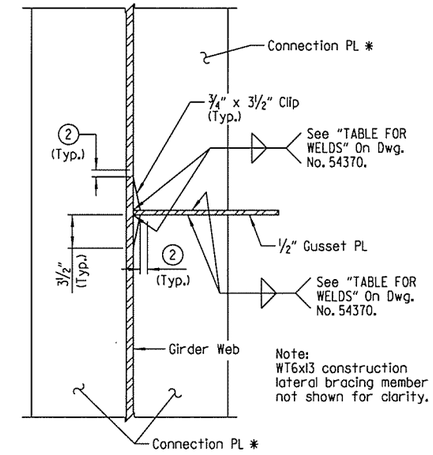
* Connection plates shall be discontinuous at lateral bracing gusset plates. See "SECTION A-A".

Note:
At the Contractor's option, 13/16 "ø holes may be field drilled in one end of each WT6x13 member.



DETAIL C

Scale: 1 1/2" = 1'-0"

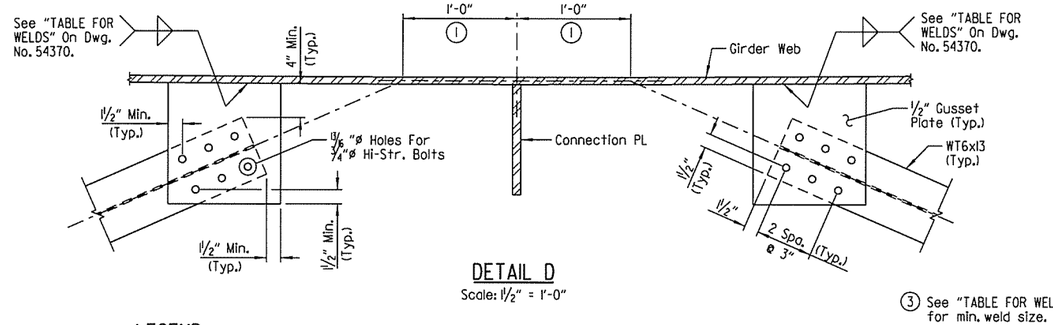


Note:
WT6x13 construction lateral bracing member not shown for clarity.

SECTION A-A

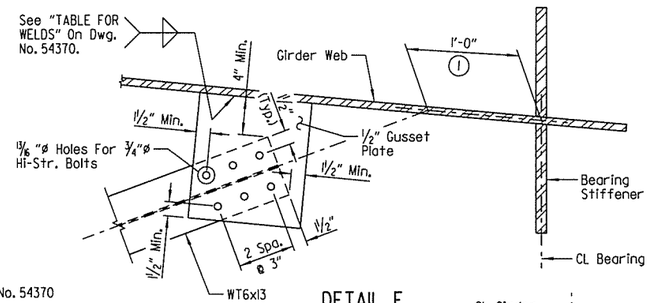
Scale: 1 1/2" = 1'-0"

Note:
See "FRAMING PLAN" on Dwg. No. 54369 for locations of construction lateral bracing.



DETAIL D

Scale: 1 1/2" = 1'-0"



DETAIL E

Scale: 1 1/2" = 1'-0"

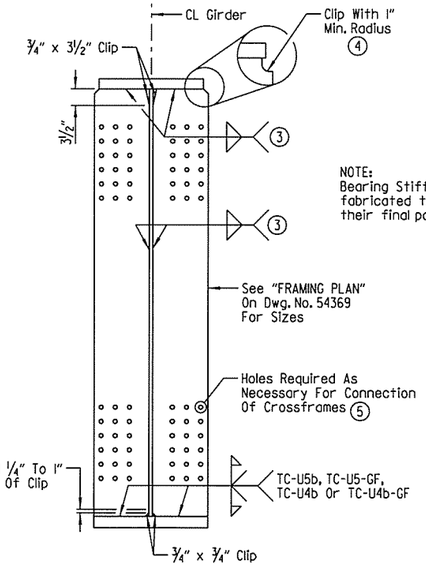
(3) See "TABLE FOR WELDS" on Dwg. No. 54370 for min. weld size.

(4) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

(5) See Dwg. No. 54370 for "CROSSFRAME DETAIL". See Dwg. No. 54371 for diaphragm details.

LEGEND

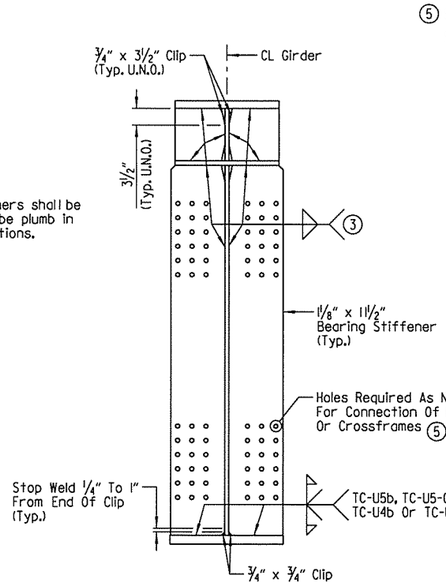
U.N.O. = Unless Noted Otherwise



NOTE:
Bearing Stiffeners shall be fabricated to be plumb in their final positions.

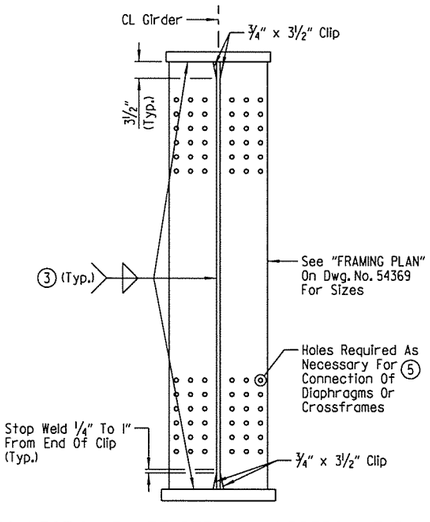
BENT 3 AH. BEARING STIFFENER DETAIL

Scale: 3/4" = 1'-0"



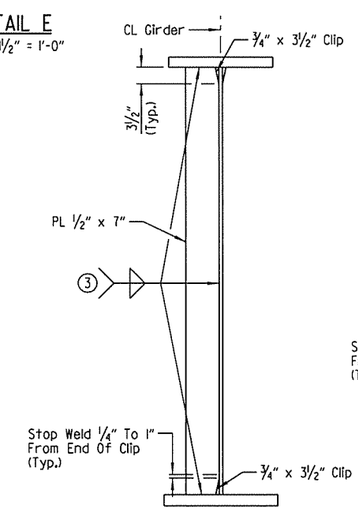
BENT 4 BK. BEARING STIFFENER DETAIL

Scale: 3/4" = 1'-0"



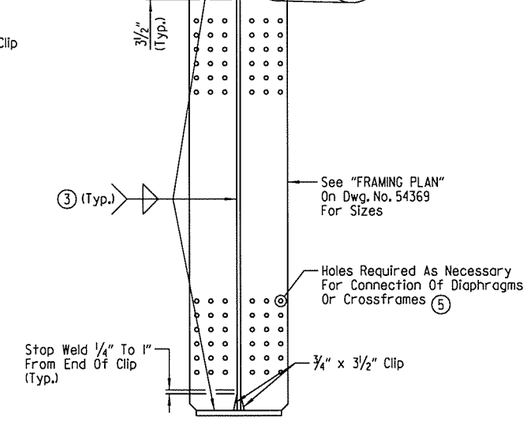
CONNECTION PLATE DETAIL - GIRDERS I THRU II

Scale: 3/4" = 1'-0"



INTERMEDIATE TRANSVERSE STIFFENER DETAIL

Scale: 3/4" = 1'-0"



CONNECTION PLATE DETAIL - GIRDERS A THRU D

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 13 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275xl_S32.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54373

SRTancey 5/29/2014 4:36:27 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl.S32 (Span 3 Lat Brac).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	171	505
				① 07292		180'-0" PL GIRDER SPAN		54374

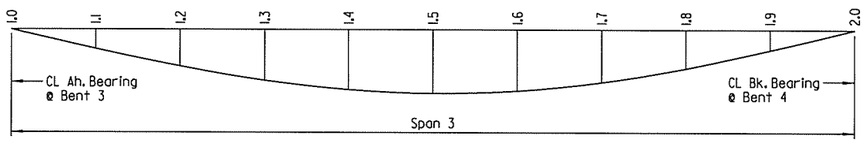
TABLE OF DEAD LOAD DEFLECTIONS - GIRDERS I THRU II (INCHES)

SPAN	Girder No.	Girder I			Girder 2			Girder 3			Girder 4			Girder 5			Girder 6		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *
SPAN 3	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.598	1.179	1.252	0.631	1.267	1.344	0.694	1.462	1.545	0.730	1.617	1.702	0.748	1.753	1.836	0.739	1.864	1.945
	1.2	1.148	2.260	2.401	1.212	2.436	2.585	1.323	2.789	2.948	1.390	3.079	3.240	1.423	3.335	3.494	1.407	3.540	3.695
	1.3	1.596	3.136	3.333	1.687	3.395	3.602	1.829	3.859	4.079	1.923	4.261	4.484	1.962	4.601	4.821	1.944	4.871	5.087
	1.4	1.901	3.725	3.961	2.015	4.060	4.308	2.174	4.593	4.854	2.288	5.075	5.341	2.329	5.461	5.724	2.307	5.755	6.013
	1.5	2.026	3.958	4.212	2.166	4.374	4.641	2.344	4.962	5.244	2.465	5.477	5.765	2.504	5.870	6.154	2.463	6.121	6.398
	1.6	1.948	3.797	4.042	2.120	4.294	4.556	2.298	4.876	5.153	2.403	5.347	5.628	2.428	5.692	5.968	2.375	5.884	6.152
	1.7	1.676	3.262	3.474	1.857	3.774	4.004	2.004	4.262	4.504	2.086	4.649	4.893	2.100	4.923	5.162	2.052	5.070	5.302
	1.8	1.236	2.403	2.560	1.393	2.839	3.012	1.495	3.185	3.366	1.550	3.457	3.639	1.556	3.647	3.824	1.521	3.749	3.921
	1.9	0.659	1.281	1.365	0.752	1.536	1.630	0.803	1.712	1.809	0.829	1.850	1.948	0.831	1.947	2.042	0.813	2.000	2.092
	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SPAN	Girder No.	Girder 7			Girder 8			Girder 9			Girder 10			Girder 11		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *
SPAN 3	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.719	1.895	1.981	0.688	1.876	1.978	0.649	1.791	1.926	0.608	1.659	1.846	0.567	1.511	1.767
	1.2	1.368	3.599	3.762	1.305	3.555	3.748	1.230	3.392	3.648	1.152	3.144	3.500	1.074	2.865	3.348
	1.3	1.887	4.955	5.180	1.792	4.878	5.145	1.685	4.648	5.001	1.578	4.311	4.800	1.472	3.931	4.591
	1.4	2.228	5.841	6.108	2.106	5.730	6.045	1.976	5.453	5.869	1.849	5.058	5.633	1.725	4.614	5.388
	1.5	2.357	6.174	6.458	2.218	6.039	6.372	2.078	5.741	6.181	1.945	5.325	5.932	1.815	4.859	5.675
	1.6	2.258	5.917	6.190	2.120	5.781	6.100	1.985	5.492	5.913	1.857	5.091	5.672	1.734	4.645	5.427
	1.7	1.944	5.099	5.335	1.822	4.979	5.254	1.705	4.727	5.088	1.596	4.379	4.879	1.490	3.993	4.667
	1.8	1.438	3.777	3.952	1.346	3.689	3.892	1.260	3.500	3.766	1.179	3.239	3.608	1.102	2.952	3.452
	1.9	0.767	2.018	2.111	0.718	1.973	2.081	0.672	1.871	2.013	0.630	1.731	1.928	0.588	1.575	1.843
	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

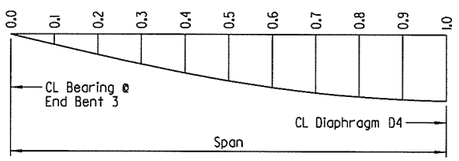
TABLE OF DEAD LOAD DEFLECTIONS - GIRDERS A THRU D (INCHES)

Girder No.	Girder A			Girder B			Girder C			Girder D		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.1	0.363	0.746	0.790	0.374	0.808	0.852	0.384	0.874	0.918	0.384	0.929	0.971
0.2	0.717	1.475	1.562	0.741	1.601	1.689	0.751	1.710	1.796	0.751	1.818	1.900
0.3	1.053	2.167	2.295	1.086	2.347	2.475	1.101	2.508	2.634	1.102	2.667	2.788
0.4	1.359	2.797	2.962	1.407	3.039	3.205	1.427	3.249	3.412	1.426	3.449	3.606
0.5	1.628	3.353	3.551	1.690	3.651	3.851	1.718	3.911	4.107	1.716	4.150	4.340
0.6	1.856	3.825	4.051	1.932	4.175	4.403	1.967	4.479	4.704	1.964	4.746	4.964
0.7	2.035	4.198	4.446	2.130	4.606	4.858	2.173	4.950	5.199	2.168	5.237	5.479
0.8	2.165	4.470	4.733	2.277	4.928	5.198	2.330	5.309	5.576	2.323	5.608	5.868
0.9	2.244	4.640	4.913	2.376	5.147	5.428	2.439	5.560	5.840	2.432	5.868	6.141
1.0	2.276	4.711	4.989	2.427	5.263	5.551	2.501	5.704	5.992	2.494	6.018	6.299



DEAD LOAD DEFLECTION DIAGRAM - GIRDERS I THRU II

No Scale

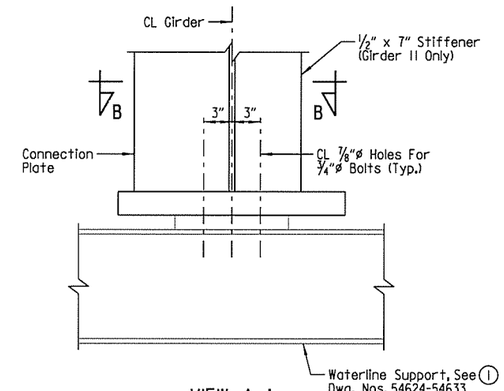


DEAD LOAD DEFLECTION DIAGRAM - GIRDERS A THRU D

No Scale

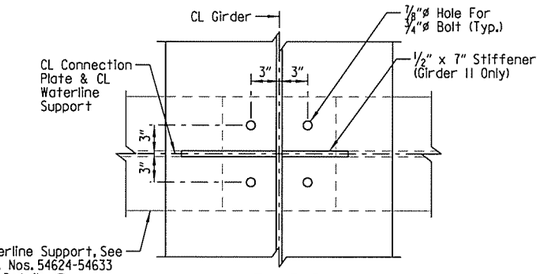
NOTE;

Camber for dead load deflection plus vertical curve +/- 1/4" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing for Girders I thru II and from Centerline Bearing to CL Diaphragm D4 for Girders A thru D. Vertical curve corrections are not included. Negative sign (-) indicates point above chord.



VIEW A-A

No Scale



VIEW B-B

No Scale

* Includes waterline and steel required for waterline supports

① Cost of waterline support shall be paid for in accordance with SP JOB 061275 "WATERLINE APPURTENANCES".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

SHEET 14 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

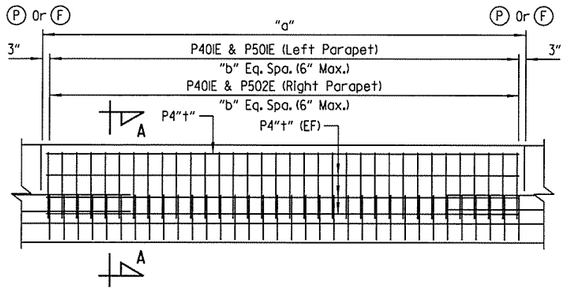
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: APR. 2013 FILENAME: B061275xl_S33.DGN
CHECKED BY: JHR DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54374

SRYancey 5/29/2014 4:36:27 PM
WORKSPACE: ANTD Bridge
L:\ZDATA\ANTD80 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S33 (Span 3 Deflections).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	172	505
				① 07292		180'-0" PL GIRDER SPAN		54377

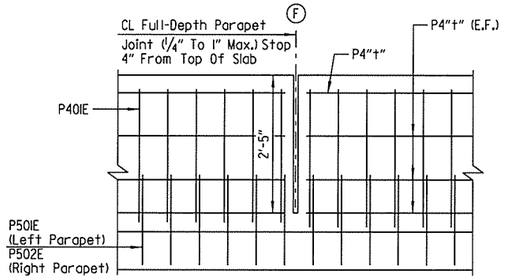


TYPICAL CLOSED PARAPET RAIL ELEVATION

(Looking At Front Face)
Scale: 3/8" = 1'-0"

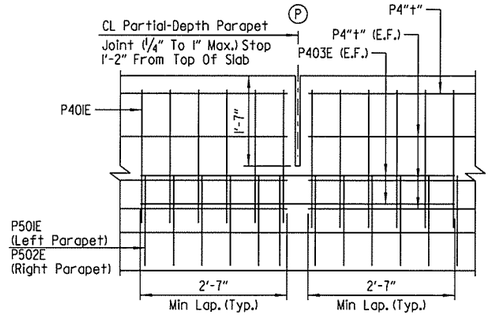
Ⓟ CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN" on Dwg No. 54364. Stop 1'-2" from top of slab.

Ⓕ CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN" on Dwg No. 54364. Stop 4" from top of slab.



PARAPET REINFORCING (FULL DEPTH JOINTS)

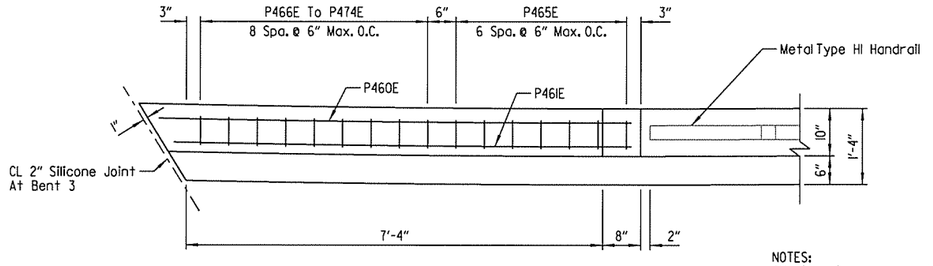
Scale: 3/4" = 1'-0"



PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

Scale: 3/4" = 1'-0"

TABLE OF PARAPET VARIABLES			
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET
"a"	"t"	"b"	"c"
11'-0 1/4"	04E	21	-
11'-0 3/16"	05E	21	-
13'-6"	06E	26	-
17'-0"	07E	33	12



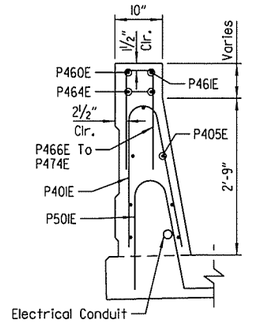
PLAN - LEFT PARAPET RAIL TRANSITION

Scale: 3/4" = 1'-0"

NOTES:
All dimensions measured from inside face of parpet.

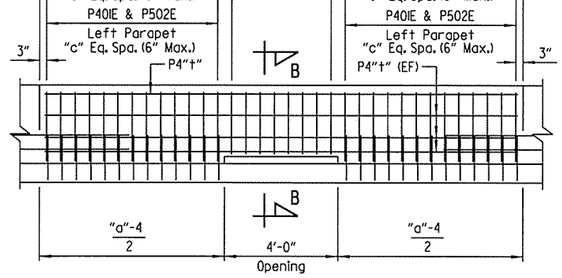
Stirrup bars in parapet rail transition shall be spaced with P401E bars.

For parapet rail transition location, see Dwg. No. 54364.



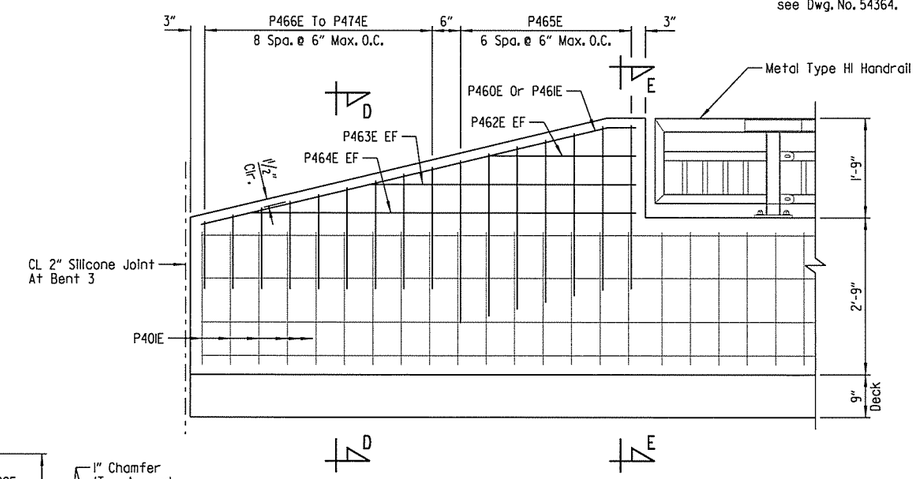
SECTION D-D

Scale: 3/4" = 1'-0"



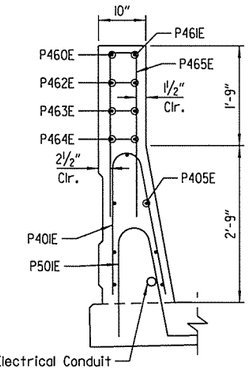
TYPICAL OPEN PARAPET RAIL ELEVATION

(Looking At Front Face)
Scale: 3/8" = 1'-0"



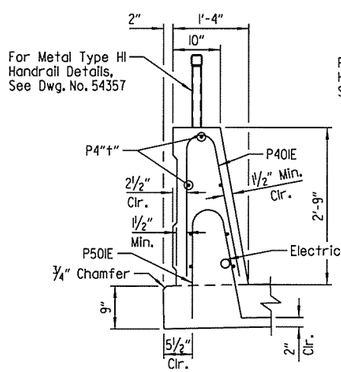
ELEVATION - LEFT PARAPET RAIL TRANSITION

Scale: 3/4" = 1'-0"



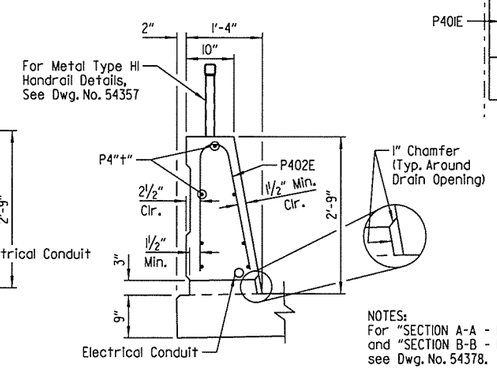
SECTION E-E

Scale: 3/4" = 1'-0"



SECTION A-A - LEFT PARAPET

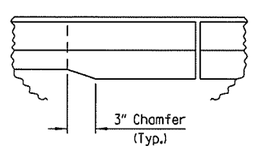
Scale: 3/4" = 1'-0"



SECTION B-B - LEFT PARAPET

(At Open Drains)
Scale: 3/4" = 1'-0"

NOTES:
For "SECTION A-A - RIGHT PARAPET" and "SECTION B-B - RIGHT PARAPET", see Dwg. No. 54378.



PLAN OF RAIL POST CHAMFER

No Scale
(Typ. for Open Drain Panels Only)

NOTE:
For "PANEL ENHANCEMENT DETAIL - LEFT PARAPET", See Dwg. No. 54360.

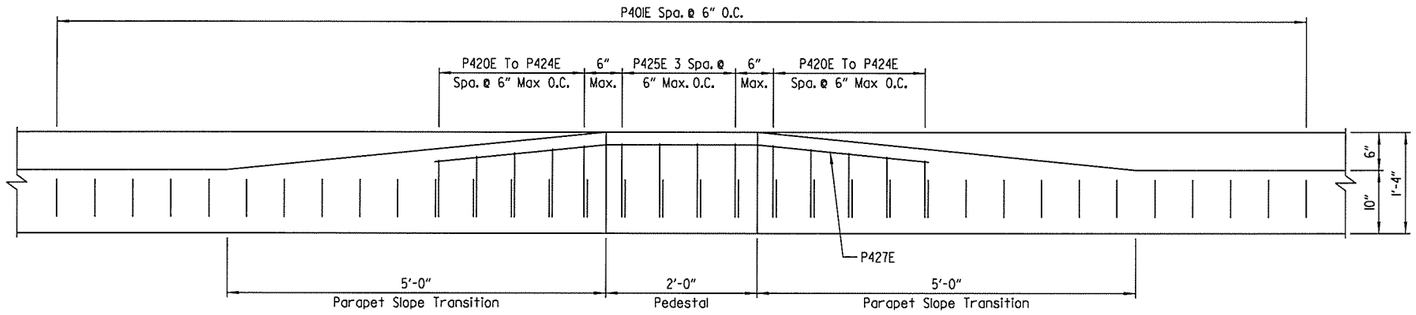
For "DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL - LEFT PARAPET", See Dwg. No. 54360.

SHEET 15 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S34.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54377

SRYancey 5/29/2014 4:36:28 PM
WORKSPACE: AHTD Bridge
L:\120\M\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S36 (Span 3 Parapet).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	173	505
				① 07292		180'-0" PL GIRDER SPAN		54378

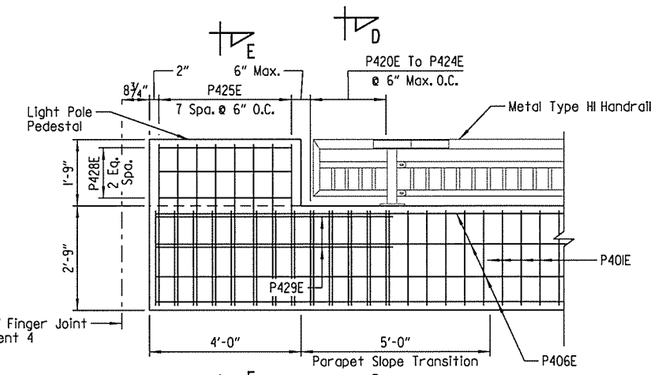


TYPICAL PARAPET TRANSITION PLAN - RIGHT PARAPET

Scale: 1" = 1'-0"

NOTE:
Right parapet shall be widened by increasing top width from 10" to 1'-4" over 5'-0" transition length on each side of light pedestal.

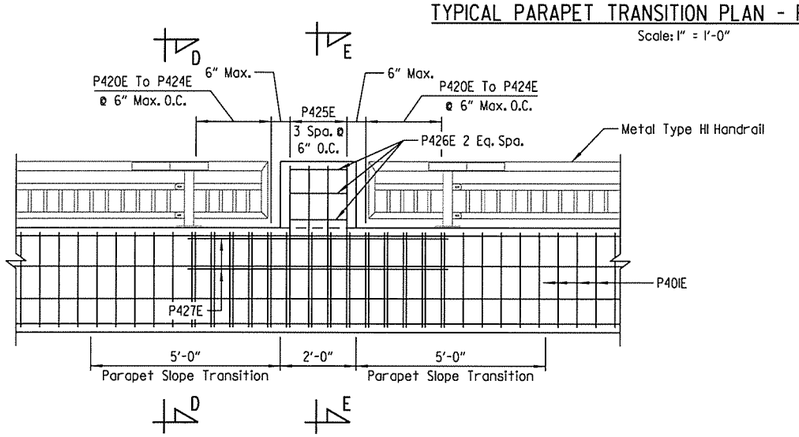
NOTE:
For typical parapet reinforcement details, see Dwg. No. 54377.



DETAIL X

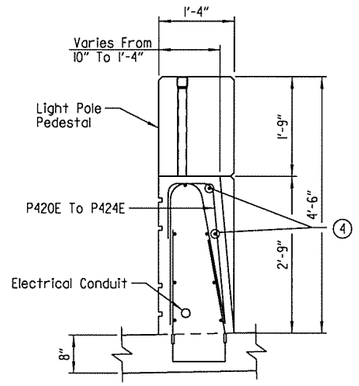
(Looking At Front Face)
Scale: ½" = 1'-0"

NOTE:
Light pole not shown for clarity. Center light pole on 4'-0" pedestal.



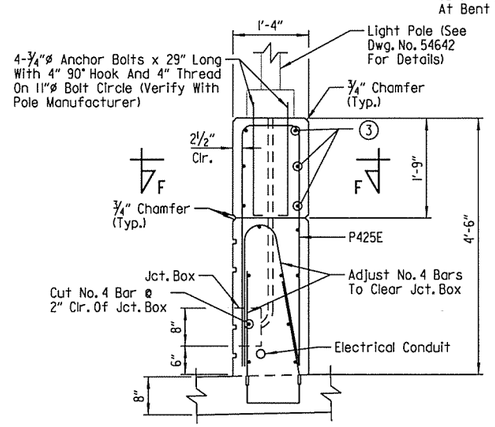
TYPICAL PARAPET TRANSITION ELEVATION - RIGHT PARAPET

Scale: ½" = 1'-0"



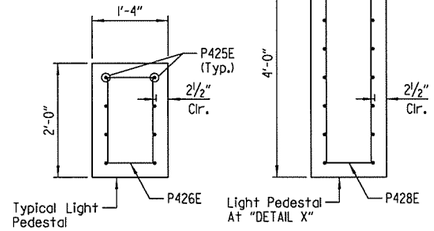
SECTION D-D

Scale: ¾" = 1'-0"



SECTION E-E

Scale: ¾" = 1'-0"



SECTION F-F

Scale: ¾" = 1'-0"

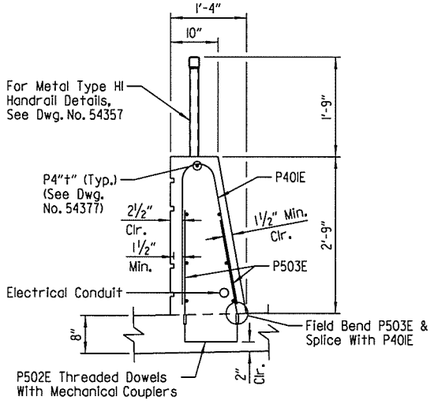
③ P426E (Typ.)
P428E At "DETAIL X"

④ P427E (Typ.)
P429E At "DETAIL X"

NOTE:
Protect threads in couplers until right parapet is constructed.

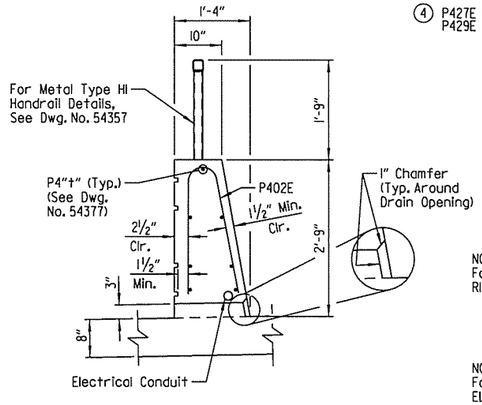
NOTE:
The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (P502E and P503E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

P502E and P503E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



SECTION A-A - RIGHT PARAPET

Scale: ¾" = 1'-0"

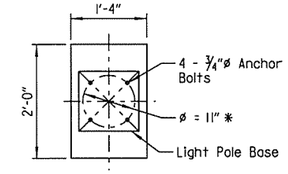


SECTION B-B - RIGHT PARAPET

(At Open Drains)
Scale: ¾" = 1'-0"

NOTE:
For "ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET", see Dwg. No. 54360.

NOTE:
For "TYPICAL CLOSED PARAPET RAIL ELEVATION" And "TYPICAL OPEN PARAPET RAIL ELEVATION", See Dwg. No. 54377.



LIGHT POLE PEDESTAL PLAN

Scale: ¾" = 1'-0"

*Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

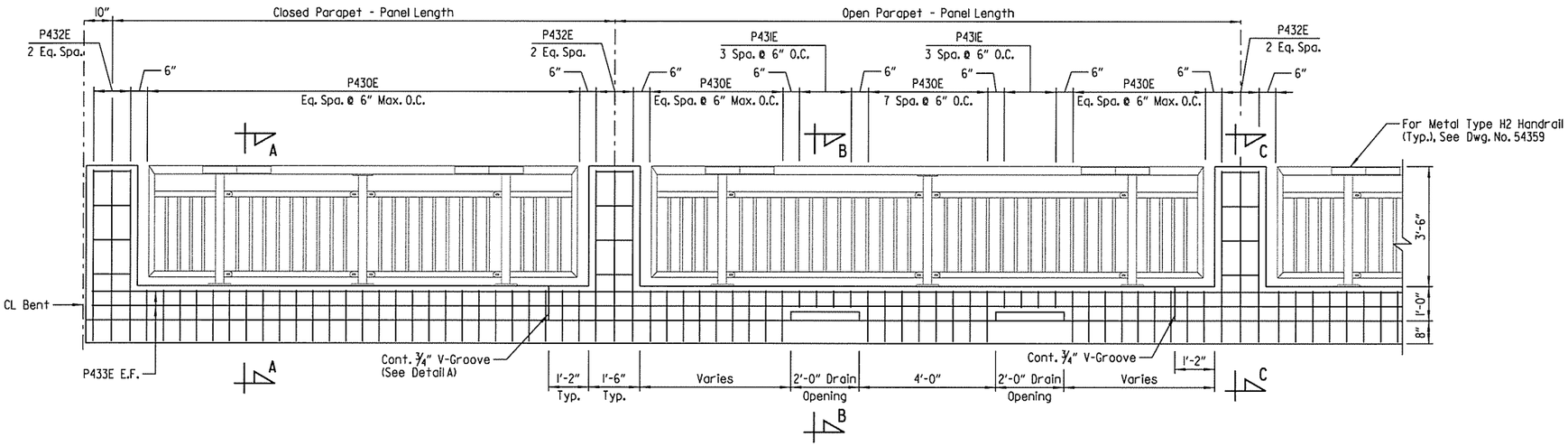
SHEET 16 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S35.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54378

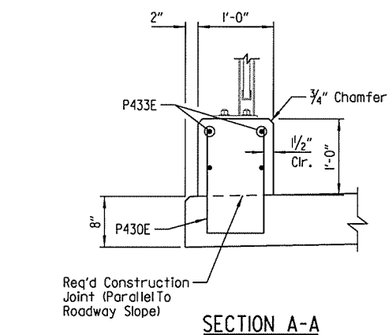
5/29/2014 4:36:29 PM
SRYancey
WORKSPACE: AHTD Bridge
L:\2013\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S37 (Span 3 Rt Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	174	505
				(1) 07292		180'-0" PL GIRDER SPAN		54379



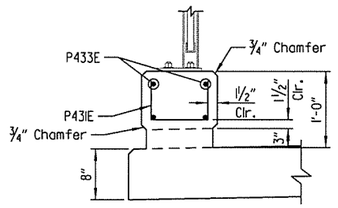
PEDESTRIAN PARAPET RAIL ELEVATION

Scale: ½" = 1'-0"



SECTION A-A

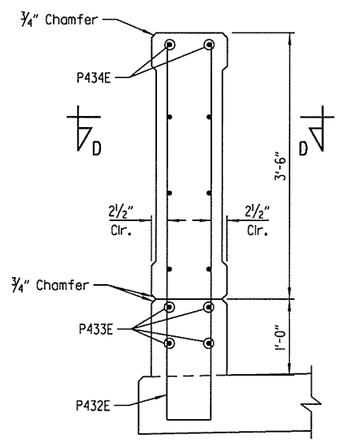
Scale: 1" = 1'-0"



SECTION B-B

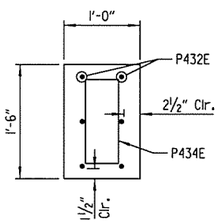
Scale: 1" = 1'-0"

NOTE:
For "PEDESTAL ENHANCEMENT DETAIL", See Dwg. No. 54358.



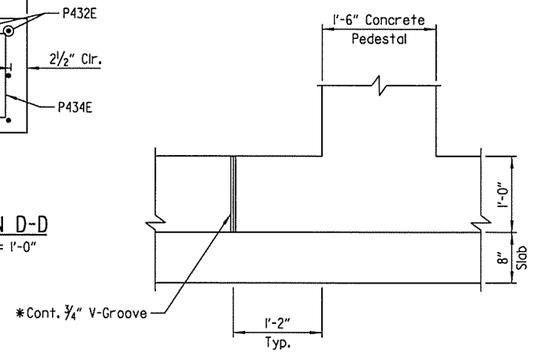
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

Scale: 1" = 1'-0"



DETAIL A

Scale: 1" = 1'-0"

* NOTE:
¾" V-Groove shall be continous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 17 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

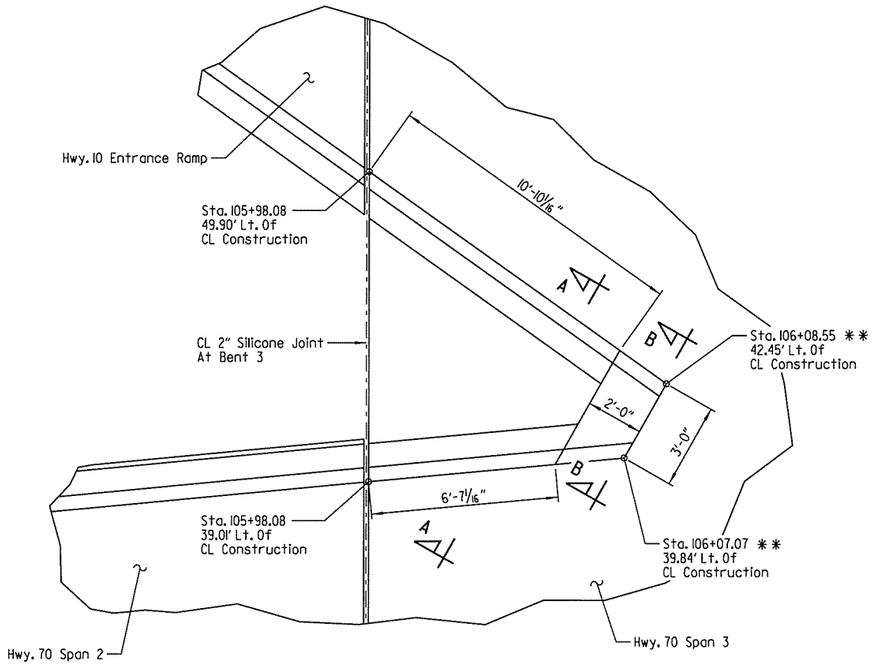
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_S36.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54379

SRYancey 5/29/2014 4:36:29 PM
WORKSPACE: AHTD Bridge
L:\ROW\DOT06D - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S38 (Span 3 Pad Parapet).dgn
REVISED DATE:

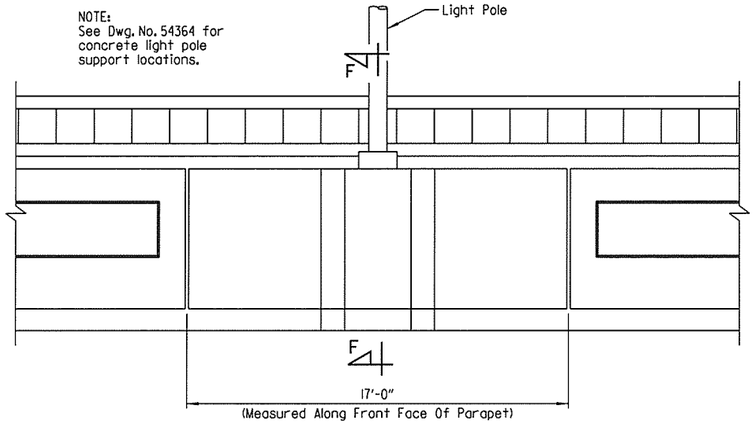
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	175	505
				① 07292		180'-0" PL GIRDER SPAN		54380



PLAN - GORE LAYOUT

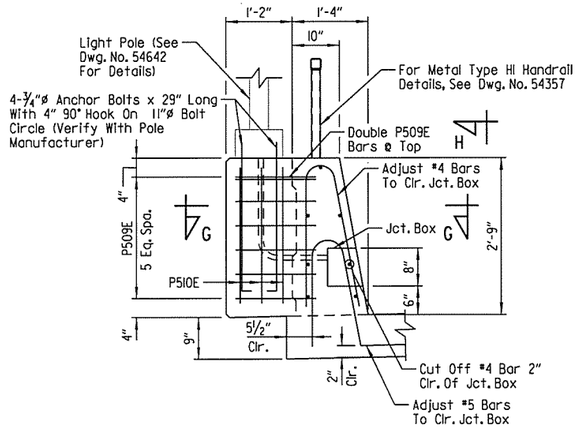
Scale: 3/8" = 1'-0"

** Adjust as required to accommodate selected impact attenuator.



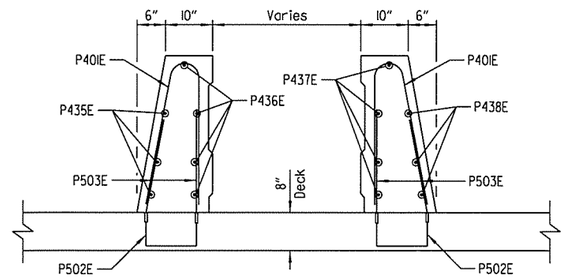
ELEVATION SHOWING CONCRETE LIGHT POLE SUPPORT

(Looking At Back Face)
No Scale



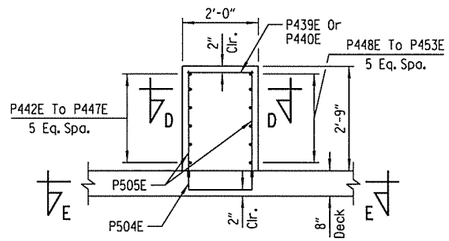
SECTION F-F

Scale: 3/4" = 1'-0"



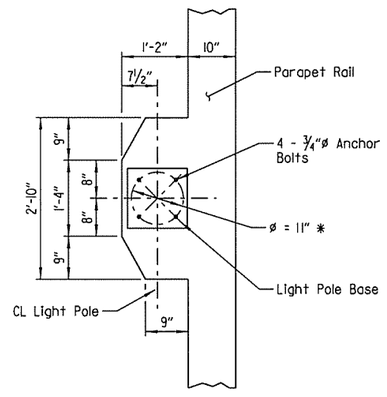
SECTION A-A

Scale: 3/4" = 1'-0"



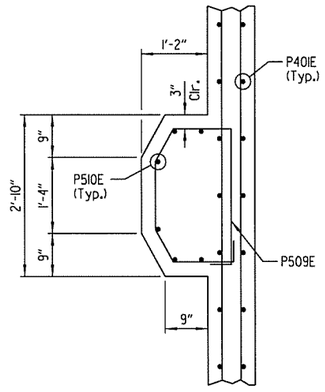
SECTION C-C

Scale: 1/2" = 1'-0"



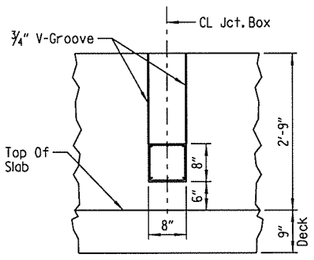
PLAN - CONCRETE LIGHT POLE SUPPORT

(For Locations See Sheet No. 54364)
Scale: 3/4" = 1'-0"



SECTION G-G

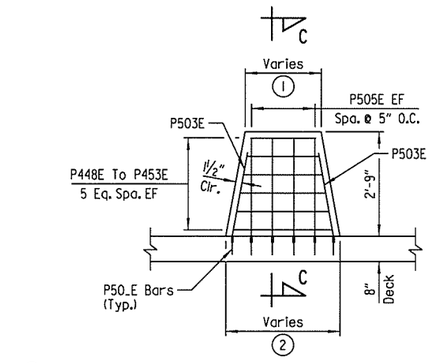
Scale: 3/4" = 1'-0"



VIEW H-H

3/4" = 1'-0"

*Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.

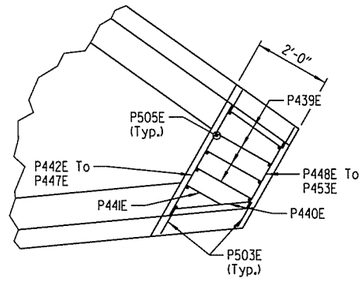


SECTION B-B

Scale: 1/2" = 1'-0"

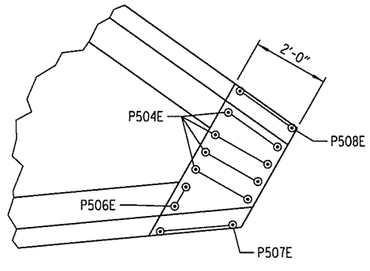
① Width Varies From 1'-10 5/8" To 3'-5 7/8"

② Width Varies From 3'-0" To 4'-7 3/8"



SECTION D-D

Scale: 1/2" = 1'-0"



SECTION E-E

Scale: 1/2" = 1'-0"

LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-22-14
BRIDGE ENGINEER

SHEET 18 OF 18
DETAILS OF 180'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275xl_S37.DGN
CHECKED BY: AJK DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54380

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WORKSPACE: AHTD Bridge
L:\ROW\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_S39 (Span 3 Misc Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	176	505
				(1) 07292		ARCH GENERAL NOTES		54381

GENERAL NOTES

DESIGN SPECIFICATIONS:
AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012.
AASHTO LRFD Bridge Construction Specifications, 3rd Edition, with 2012 Interims.
ANSI/AASHTO/AWS Bridge Welding Code D1.5-2010.

CONSTRUCTION SPECIFICATIONS:
Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014, with applicable supplemental specifications and special provisions. Unless otherwise noted, references to section and subsection numbers in the plans refer to the Construction Specifications.

DATUM:
All elevations are in feet, based on the North American Vertical Datum (NAVD), 1988 adjustment, except as noted. Horizontal - NAD 83 (1997) Arkansas North Zone.

DIMENSIONS:
Dimensions given on the plans are measured horizontally at 60° F, unless noted otherwise.

DESIGN LOADS:
Dead Load:

Reinforced Concrete	150	pcf	
Structural Steel	490	pcf	
Hanger Wire	490	pcf	
Roadway Future Wearing Surface (on 52'-0" Roadway Only)	24	psf	
Stay-In-Place Deck Forms	18	psf	
Left Parapet Rail	450	lb/ft	
Right Parapet Rail	450	lb/ft	
Pedestrian Parapet Rail	250	lb/ft	
Water Line & Water Line Supports	290	lb/ft	
* Future Conduit Bank (In any stringer bay)	250	lb/ft	* Not part of this contract, included as allowance for potential future loading on Arch spans.
* Future Trolley Appurtences (on Right Parapet Rail)	68	lb/ft	
* Future Trolley Superstructure additions	320	lb/ft	

Live Load:
AASHTO HL-93
Trolley Load (See "TROLLEY LOADING DIAGRAM") on Dwg. No. 54292.
Design Speed = 40 mph
Live load for Strength Design case includes the maximum effects of four vehicular lanes plus pedestrian lane or five vehicular lanes.

Pedestrian live load of 75 psf is applied with vehicular traffic on.
Pedestrian live load of 90 psf is applied without vehicular traffic.

Seismic:
Operational Classification: Essential Bridge
Seismic Performance Zone = 2

Thermal Forces:
The design mean temperature is 60° F.

Thermal effects were considered due to the following:
Steel:
Temperature Rise = 60° F.
Temperature Fall = 60° F.

LIMIT STATE COMBINATIONS:
Limit states shall be in accordance with AASHTO Article 3.4, Table 3.4.1-1.

The effects of hanger force adjustments, "Hanger Pretension", are treated as dead load.

Load modifiers relating to ductility (η_D), redundancy (η_R), and operational importance (η_I) are to be applied as follows:
η_D = 1.00
η_R = 1.00 typical, 1.05 for Arch Rib, Tie Girder, and End Floorbeam
η_I = 1.00 typical, 1.05 for Extreme Event I

The extreme event of plate loss was considered in the design of the Tie Girder, Extreme Event III. In the event one plate were to crack, the remaining three plates are designed to carry the loadfor the load combination 1.25DC + 1.5DW + 1.3 (LL+I) with a resistance factor of 1.0. Live Load (LL) includes a maximum of 4 lanes of HL-93 loading centered in striped lanes with appropriate multiple presence factors. In the event the End Floorbeam flange plate cracks, the bearings are designed to lock up and take the tensile force once the design movement occurs. Local yielding up to 1% strain will be allowed on the gross tie girder section.

The structure is designed to allow one hanger in any pair to be replaced at a time for the load combination 1.2 DC + 1.4 DW + 1.5 (LL + I) + Cable Exchange Forces. Live Load (LL) includes two traffic lanes, one each direction, farthest from the hanger being replaced.

MATERIALS AND STRENGTHS:

Class S(AE) - Bridge Concrete (Superstructure)	f'c =	4000 psi
Reinforcing Steel (AASHTO M31 or M322, Type A, Gr. 60)	fy =	60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	Fy =	36,000 psi
Structural Steel (AASHTO M270, Gr. 50)	Fy =	50,000 psi
Lateral bracing HSS members (ASTM A500, Gr. C)	Fy =	50,000 psi

Hangers (ASTM A586, Grade 2, Zinc coated with Class C coating on all wires)

Hanger Castings (ASTM A148, Gr. 105/85)	Fu = 105,000 psi, Fy =	85,000 psi
Hanger Pin, AISI 4130-4150	Fu = 105,000 psi, Fy =	85,000 psi

REINFORCING STEEL:
Epoxy coated reinforcing steel, including chairs and ties, shall be used at the following locations:
Deck slab and parapet railing.

Unless noted otherwise, the minimum clear cover to reinforcing bars shall be as follows:

Top of Deck Slab	2¾ in.
Bottom of Deck Slab	1 in.
All Other Locations	2 in.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:
All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN ARCH SPANS (M270, Gr. 50)". All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. For exterior paint color and Federal Standard Chip No., see "PROJECT GENERAL NOTES" on Dwg. No. 54292. All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless noted otherwise. The inside of the Tie Girder shall be painted white and shall conform to Federal Standard 595C, Color Chip No. 27925. The contractor shall submit a color sample, 6x6 inch minimum, for Engineer approval, prior to application of external and internal finish coat.

For shop assembly, progressive member assembly shall be utilized to ensure proper fit. Components fit shall include arch, arch bracing, tie girder, tied arch ends, floorbeams and stringers. For additional information, see Dwg. No. 54432.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication begins.

Bolted field splices in the arch rib may be eliminated or shop welded splices may be substituted with approval of the Engineer. Welded shop splices in the tie girder or tied arch end will not be allowed unless shown in the plans. Welded shop splices at optional field splice locations are not permitted. Optional bolted field splices shown in the tie girders may be used. Payment will be made based on plan quantities. No additional compensation will be made for the optional splices.

Structural steel designated as (CVN) in the plans are considered main load carrying members and shall meet the Charpy V-Notch impact test requirements specified for Zone 3 minimum service temperature. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN ARCH SPANS (M270, GR. 50)".

Structural steel designated as Fracture Critical (FCM) in the plans are considered main load carrying members and shall meet the requirements of Section 12 of ANSI/AASHTO/AWS D1.5 (2010) as required for Zone 3. This material and work will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN ARCH SPANS (M270, GR. 50)".

Steel plates for main load carrying members including flange and web plates, tie girder web to flange connection plates, hanger plates, flange and web field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Arch Rib and Floorbeam webs may be made by shop splicing with a minimum length of 25'-0" for sections. Arch Rib flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the stringers or floorbeams that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26. Welding to the tied arch end or tie girder will not be allowed unless designated in the plans or with written approval.

Groove welds shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds of main load carrying members shall be Quality Control (Q.C.) tested by magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense and is subsidiary to other items.

Stringer diaphragm connection plates shall be fabricated normal to the top flange and on the side of the stringer web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior stringer. Floorbeam intermediate stiffeners shall be fabricated normal to the bottom flange. All bearing stiffener diaphragms shall be fabricated normal to the tie girder top flange. Tie Girder intermediate diaphragms shall be fabricated normal to the flanges unless noted otherwise.

Stringer diaphragms shall be installed as stringers are erected. All bolts in diaphragms and stringer to floorbeam connections shall be installed and tightened in the sequence shown on Dwg. No. 54446 and in accordance with Subsection 807.71 prior to pouring of the concrete deck.

STRUCTURAL STEEL (CONT'D.):
Reaming of bolted connections is not allowed without written approval from the Engineer.

Accurately align all connections by driving drift pins in all corners and ¼ of the remaining holes in each plate in a well distributed pattern to align or "fair-up" the holes. Before removing any drift pins from structures being connected, or moving the connected members, fully tighten the bolts in a minimum of ¼ of the holes in the connections. For structures carrying workers and equipment, fully tighten the bolts in ¾ of the holes. Use high-strength erection bolts in combination with drift pins to hold the material together during fit-up. For additional requirements, see Special Provision "Erection of Tied Arch Spans".

Dimensional fabrication tolerances for all structural steel members shall conform to the requirements of AWS D1.5 3.5.

Bolted connections shall be made with ASTM A325, Type 1, high-strength bolts and shall be ⅞" ø unless noted otherwise. All bolts shall be placed in holes 1/16" larger than the required bolt diameter, unless noted otherwise. Bolts should be placed with heads on the outside face of the Tied Arch End, Tie Girder and Arch Rib. Bolt holes shall be drilled or subpunched and reamed. Punching full size holes is not permitted. Bolt threads shall be excluded from the shear plane in all bolted connections. All bolted connections are considered mechanically connected joints and shall meet the requirements of AWS D1.5 3.5.1.1.4.

All contact surfaces between plates shall be free of oil, rust, or scale before assembly. Class B slip surfaces, where required, are designated in the plans. Class A slip surface shall be used unless noted otherwise. All field and shop bolted connections shall be blast-cleaned and primed with the appropriate coating prior to bolting.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Anchor bolts for HLMR Bearings shall be AASHTO M314 Gr. 105, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50. Anchor bolts for the HLMR Bearings shall be considered subsidiary to the bid price for "HLMR BEARING ASSEMBLY".

The details shown in the plans are intended to be used to fabricate and construct two separate Arch Spans. The tie girder shall be fabricated to follow the profile grade. Tie Girder local coordinates shown in the Tied Arch Camber Diagram are calculated based on the following criteria. Dimensons of floor system are spaced along Working Line between T0 and T12. Panel Points T0 and T12 are placed at elevations given on Dwg. No. 54385 and CL Bearing Stations given on Dwg. No. 54297. Stations of Work Points along Working Line between T0 and T12 and elevations at those stations are calculated at the Centerline of Tie Girder along incline. Other methods to calculate geometry may be used and shall be submitted to the engineer for approval.

Separate shop drawings shall be prepared for each Arch span in accordance with Section 807.04 of the Standard Specifications. Different piece marks shall be used for each arch even if pieces have the same dimensions and details.

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WORKSPACE: ##WORKSPACE##
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REVISED DATE:

SHEET 1 OF 2
ARCH GENERAL NOTES - TIED ARCH UNIT
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
6·16·14
BRIDGE ENGINEER

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275x1S38.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: NONE
DESIGNED BY: KDG DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54381

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	177	505
				(1) 07292		ARCH GENERAL NOTES		54382

GENERAL NOTES (CONT'D.):

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength shown in the materials list.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Bridge Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

In the shared use path area, the concrete deck shall be given a broomed finish in accordance with Subsection 802.19 for Class 6 Broomed Finish. In all other areas, the concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

The slab concrete pouring sequence is shown on Dwg. Nos. 54437 and 54438. Slab Pour Nos. 1 thru 6 shall be poured in sequential order. Stringer to floorbeam connection bolts shall be tightened as indicated on Dwg. No. 54446 prior to slab closure pour Nos. 7 thru 13.

STRUCTURAL HANGERS:

For Hanger requirements, see Special Provision "Structural Hangers".

HANGER REPLACEMENT SEQUENCE:

FOR INFORMATION ONLY:
To facilitate future maintenance actions.

1. New hangers and materials shall conform to the details shown in the plans.
2. Restrict all traffic to the curb lane on opposite side of hanger being replaced. Traffic control will be required.
3. Remove hanger spacers.
4. Only one single hanger can be replaced at a time. At the Tie Girder Hanger Connection, detension one hanger per manufacturer's recommendations.
5. Remove pin at Arch Rib Hanger Connection and Tie Girder Hanger Connection, remove hanger.
6. Inspect pins and hanger plates.
7. Place new hanger at the Arch Rib Hanger Connection and install pin.
8. Install pin at the Tie Girder Hanger connection and tension hanger per manufacturer's recommendations.
9. Replace neoprene wrap and reinstall hanger spacers.

ACCOMMODATIONS FOR FUTURE TROLLEY:

FOR INFORMATION ONLY:
The Tied Arch Unit has been designed to accommodate future expansion of the River Rail trolley system. A portion of the existing deck will be removed and new stringers will be installed to support each rail on the non-composite stringer. The Tied Arch Unit has been designed for the Trolley System to be placed between Stringer 6 and Stringer 7. For proposed details, see Dwg. No. 54456. Alternate details may be proposed at the time of trolley installation but shall not exceed the additional weight per foot shown on Dwg. No. 54381. Modifications to the transverse location of the Trolley System shall be checked at the time of installation if the location is moved.

WATERLINE ACCOMMODATIONS:

The Waterline Support system will attach to the stringers and tie girder in the Tied Arch Unit. For details of Waterline Supports, see Dwg. Nos. 54624 thru 54633.

The cost of the Waterline Support system shall be in accordance with SP JOB 061275 "WATERLINE APPURTENANCES."

ACCOMMODATIONS FOR FUTURE DUCT BANK:

FOR INFORMATION ONLY:
A conduit Duck bank may be suspended beneath any stringer bay of the composite Arch Superstructure. The Duct bank shall pass beneath the Floorbeams, and shall not impede on the minimum vertical clearance shown on Dwg. No. 54297. The Conduit Duct bank shall not produce a loading on the arch superstructure greater than the load listed on Dwg. No. 54381.

INSPECTION ACCESS:

Inspection access doors and miscellaneous door hardware are subsidiary to the item "STRUCTURAL STEEL IN ARCH SPANS (M270, GR. 50)". Access Ladders, Grab Bars and associated miscellaneous details are included in the bid item "STRUCTURAL STEEL IN ARCH SPANS (M270, GR. 50)". Steel shall meet the requirements of M270 Gr. 36 unless noted otherwise.

All access doors shall form a watertight seal and have a locking mechanism. All access doors shall match the dimensions shown in the plans. Contractor shall demonstrate that the access doors open correctly before installation. For additional Access Door details, see Dwg. No. 54400.

ELECTRICAL PROVISIONS:

For electrical conduit, see Dwg. Nos. 54634 thru 54653.

Provisions for conduit in the Arch Rib have been provided. Conduit, as part of this contract and future contracts, shall not be placed on the top side of the arch to impede the flow of water.

Conduit holes in the tie girder diaphragms are detailed with the maximum number of holes. At the contractor's option, conduit holes not used do not need to be fabricated. Exterior conduit holes shall be sealed and water tight.

SYMBOLS:

Abt.:	About
Ah.:	Ahead
AHTD:	Arkansas State Highway and Transportation Department
Brg.:	Bearing
Bk.:	Back
Clr:	Clear
CL:	Center Line
CJP:	Complete Joint Pentration
Conn.:	Connection
Const.:	Construction
CVN:	Charpy V-Notch
Dia.:	Diameter
E.F.:	Each Face
Elev.:	Elevation
Eq.:	Equal
Exp.:	Expansion
FCM:	Fracture Critical Member or Member Component
F.S.:	Field Splice
FT:	Feet
Galv:	Galvanized
Gr.:	Grade
HLMR:	High Load Multi Rotational
H.S.:	High Strength
I.D.:	Inside Diameter
Jt.:	Joint
Lb.:	Pound
Max.:	Maximum
Min.:	Minimum
MTB:	Mill to Bear
No. or Nos.:	Number
O.C.:	On Center
OCS:	Overhead Catenary System
O.D.:	Outside Diameter
P.D.:	Pin Diameter
PL:	Plate
pcf:	pounds per cubic foot
psf:	pounds per square foot
psi:	pounds per square inch
R:	Radius
Spa.:	Space
Sta.:	Station
Symm.:	Symmetrical
Thru:	Through
Tol:	Tolerance
Typ.:	Typical
U.N.O.:	Unless Noted Otherwise
WP:	Work Point
&:	And

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

6·16·14

BRIDGE ENGINEER

SHEET 2 OF 2
ARCH GENERAL NOTES - TIED ARCH UNIT
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275x1S39.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: NONE
DESIGNED BY: KDG DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54382

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WORKSPACE: ##WORKSPACE##
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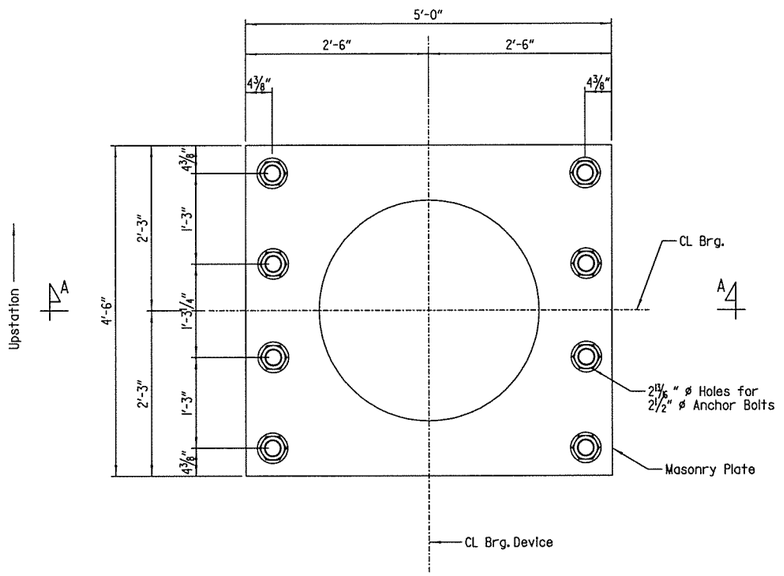
REVISED DATE:

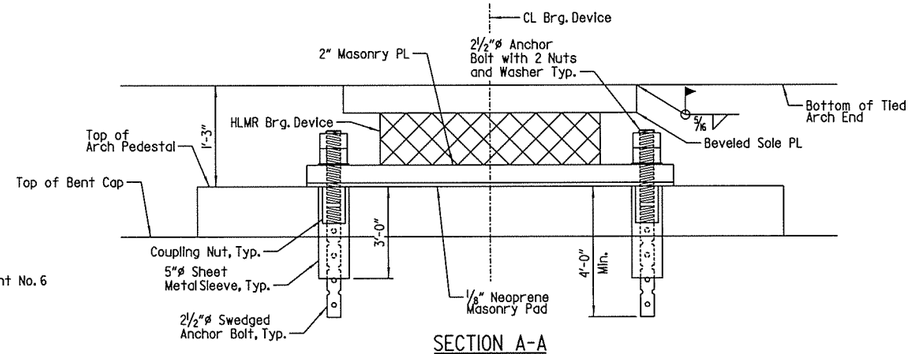
BEARING DATA TABLE

Units: Load (Kips) Rotation (radians) Movement (inches)			Expansion Guided Longitudinally	Fixed	Unguided Expansion	Expansion Guided Transversely
Quantity •			2	2	2	2
Locations			Bent No. 4&6	Bent No. 5	Bent No. 4&6	Bent No. 5
Service Limit State	Maximum Vertical Capacity Required	Dead	2460	2480	2375	2380
		Live	565	575	545	545
		Other	95	120	90	125
		Total	3120	3175	3010	3050
	Minimum Vertical Capacity Required	Total	2295	2275	2200	2185
	Lateral Capacity Required	Transverse	190	265	240	245
		Longitudinal	250	340	240	335
Strength Limit State	Maximum Vertical Capacity Required	Dead	3305	3325	3180	3195
		Live	1040	1055	1000	1005
		Other	10	5	5	10
		Total	4355	4385	4185	4210
	Minimum Vertical Capacity Required	Total	1460	1325	1380	1250
	Lateral Capacity Required	Transverse	715	1035	335	340
		Longitudinal	350	880	335	885
Extreme Event Limit State	Maximum Vertical Capacity Required	Total	3430	3455	3300	3315
	Lateral Capacity Required	Transverse	865	875	265	265
		Longitudinal	275	920	265	875
Extreme Event Limit State III •••	Maximum Vertical Capacity Required	Total	3590	3610	3665	3695
	Lateral Capacity Required	Transverse	1200	1200	•• 1200	•• 1200
		Longitudinal	290	115	295	115
Design Movement (Δ)		Transverse	--	--	0'-1 1/16"••	0'-1 1/16"••
		Longitudinal	0'-6 3/4"	--	0'-6 1/16"	--
Strength Design Rotation (θ)			0.02	0.02	0.02	0.02

• Quantity shown is total for both spans 4 and 5.
•• Bearings shall be designed to lock up after the design movement is reached.
••• Extreme Event III is the plate fracture case for the end floorbeam. The bearings will lock up and take End Floorbeam tension.

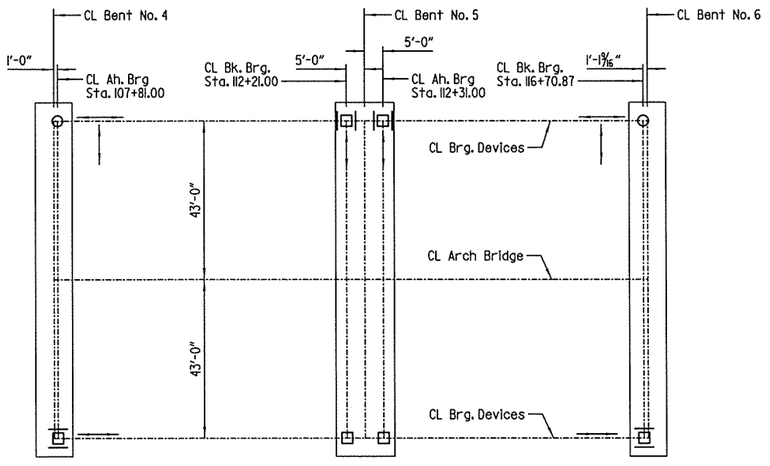


PLAN
Scale: 1"=1'-0"



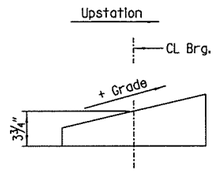
SECTION A-A
Scale: 1"=1'-0"
(Stopper bars not shown)

Anchor Bolt Notes:
It is the responsibility of the Contractor to coordinate the location of the anchor bolts with the Bearing Manufacturer to avoid bent cap reinforcing steel.
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.
If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "HLMR Bearing Assembly".



LAYOUT - BEARING DEVICES
No Scale
Note: Dimensions shown above are horizontal dimensions.

○ Indicates Unguided Expansion
□|□ Indicates Guided Expansion
□ Indicates Fixed
—— Indicates Direction of Expansion

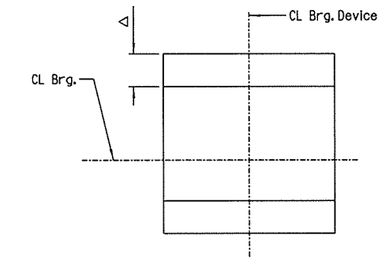


BEVELED SOLE PLATE DETAIL
No Scale

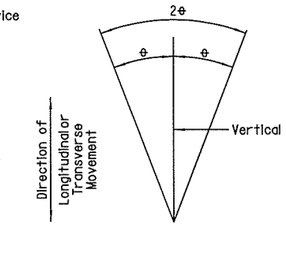
Location	Grade
Pier 4 Ah. Brg.	1.9%
Pier 5 Bk. Brg.	-1.06%
Pier 5 Ah. Brg.	-1.13%
Pier 6 Bk. Brg.	-3.02%

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	178	505

(1) 07292 BEARING DEVICE-TIED ARCH UNIT 54383

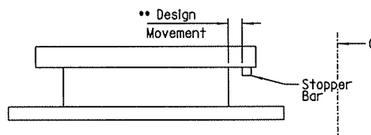


MOVEMENT DETAIL
Δ=Movement shown in EXPANSION BEARING DATA TABLE
2Δ=Total movement



ROTATION DETAIL
θ =Rotation shown in BEARING DATA TABLE
2θ=Total rotational movement

Notes:
Longitudinal translation is measured parallel to CL Tie Girder. Transverse translation is measured perpendicular to CL Tie Girder.
Bearings shall be in the neutral position at 60°F after all dead load (including structural steel, slab, barriers and sidewalk) has been placed. Neutral position is defined as centerline masonry plate in-line with the centerline of the sole plate. The neutral position shall be adjusted for temperatures other than 60°F. Move sole plate and tied arch end 5/16" towards centerline of arch span for each 10°F below 60°F. Move sole plate and tied arch end 5/16" away from centerline of arch span for each 10°F above 60°F.
Design horizontal load is the maximum of 25% of vertical load or value shown in Bearing Data Table.
For HLMR bearing requirements, see Special Provisions "HLMR Bearing Assembly".
The HLMR bearing, sole plate, masonry plate, anchor bolts and neoprene masonry pad shall be included in the item "HLMR Bearing Assembly".
The bearings shall be manufactured HLMR bearings with the vertical, lateral, translational and rotational capacity as shown in the Bearing Data Table.
The Contractor shall submit calculations sealed by a Professional Engineer in the state of Arkansas for the review for conformance with Design Load and Material Criteria in the contract plans. All design shall be in accordance with AASHTO LRFD Bridge Design Specifications.
Steel for HLMR bearings shall be AASHTO M270 Grade 50. Sole plates over 4" thick shall conform to ASTM A572 Grade 50 steel.
The bearing device, sole plate and masonry plate shall be assembled in the shop. This assembly shall be field welded to the bottom flange.
Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolts shall conform to AASHTO M314, Grade 105. Swedged anchor bolt indentations shall be circular with rounded bottoms and staggered as shown in the section.
Location, size, length and quantity of anchor bolts may be adjusted to better fit Bearing Manufacturer's details. All anchor bolt calculations shall be included with the proposed HLMR bearing device submittal.
Bearings shall not be disassembled without written approval of the Engineer.
Heights and dimensions of bearing device shown are based on typical manufacturer requirements. If actual height varies, adjustments shall be made to the thickness of the Arch Pedestal as needed by the Contractor at no additional cost to the Department.
The Contractor in coordination with the Bearing Manufacturer shall be responsible for sizing the sole plates, masonry plates and anchor bolts for the bearings. If actual masonry plate dimensions vary, adjustments shall be made to the provisions for future jacking by the Contractor at no additional cost to the Department.
All design shall be in accordance with AASHTO LRFD Bridge Design Specifications.
For alignment of CL Brg. and Brg. Device with Tied Arch End, see Dwg. Nos. 54384 and 54397.
The direction of the bevel of the sole plate may not be accurately depicted in the "BEVELED SOLE PLATE DETAILS".



TRANSVERSE MOVEMENT RESTRAINT
(Unguided Expansion and Expansion Guided Transversely only)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DETAILS OF HLMR BEARING DEVICE - TIED ARCH UNIT BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: FWG DATE: MAY 2014 FILENAME: B061275xlS40.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54383

workspace: 5/29/2014 2:34:05 PM
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REVISED DATE:

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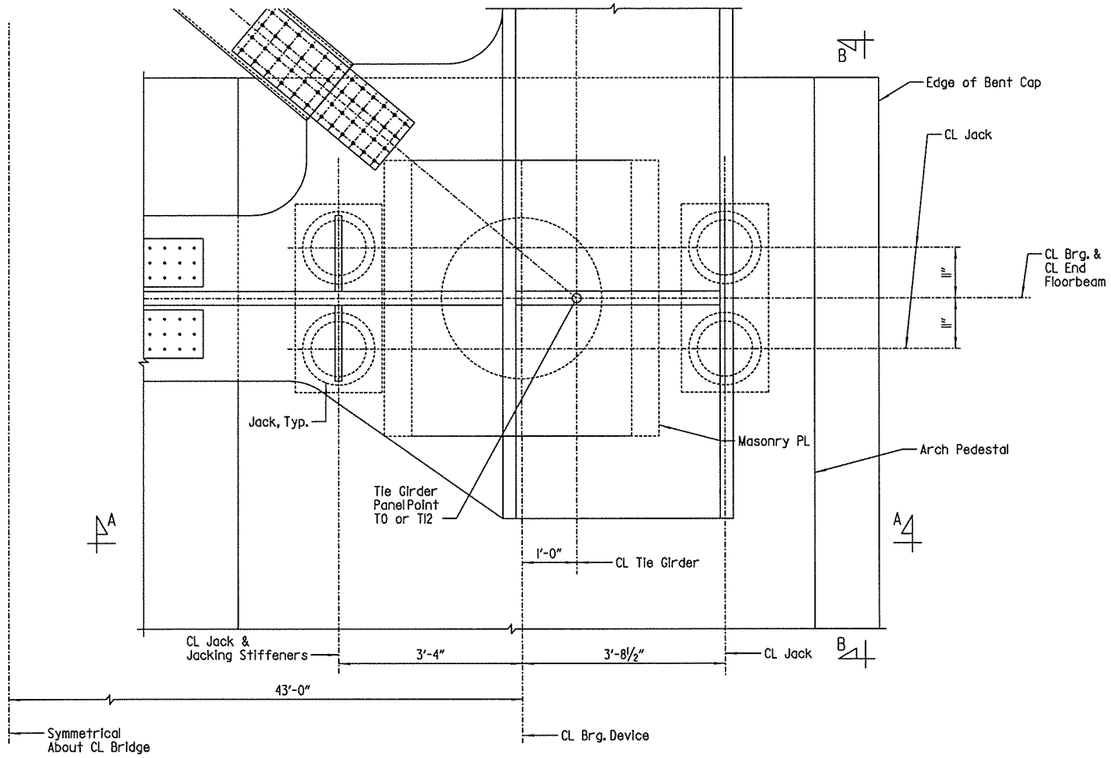
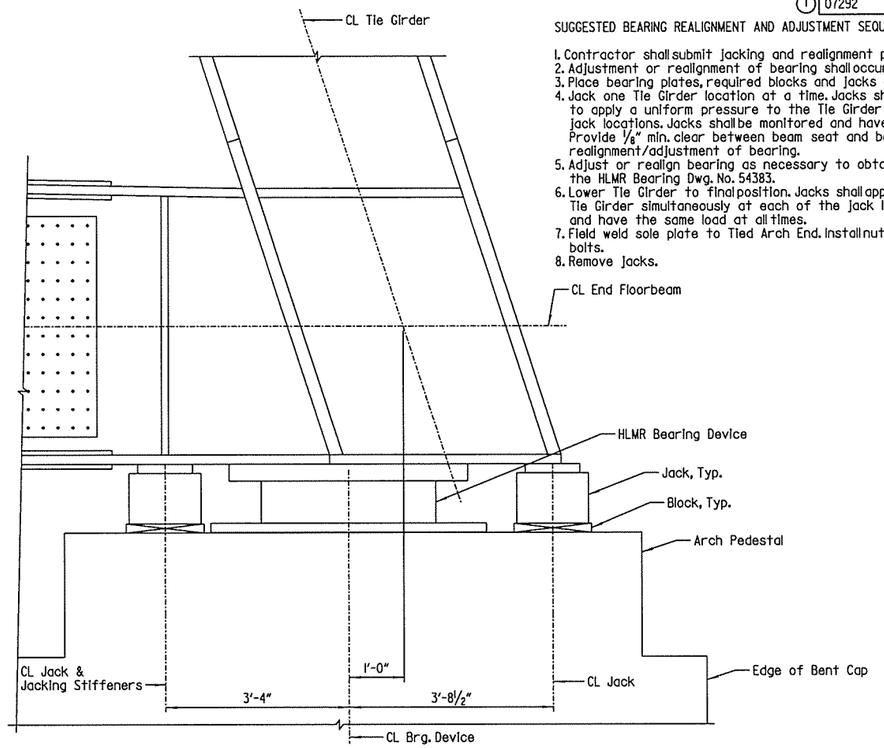
				6	ARK.			
				JOB NO.		061275	179	505
				(1) 07292		BEARING JACKING		54384



PLAN

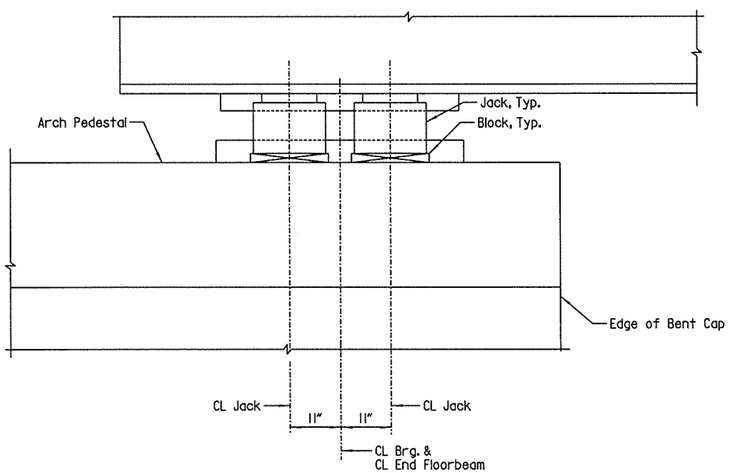
(Top Flange Plates and Plate Connection Details not shown for clarity)



SECTION A-A

SUGGESTED BEARING REALIGNMENT AND ADJUSTMENT SEQUENCE:

1. Contractor shall submit jacking and realignment plan to Engineer for approval.
2. Adjustment or realignment of bearing shall occur prior to opening of bridge.
3. Place bearing plates, required blocks and jacks as shown on this sheet.
4. Jack one Tie Girder location at a time. Jacks shall be manifolded together to apply a uniform pressure to the Tie Girder simultaneously at each of the jack locations. Jacks shall be monitored and have the same load at all times. Provide 1/8" min. clear between beam seat and bottom of bearing prior to realignment/adjustment of bearing.
5. Adjust or realign bearing as necessary to obtain neutral position specified on the HLMR Bearing Dwg. No. 54383.
6. Lower Tie Girder to final position. Jacks shall apply a uniform pressure to the Tie Girder simultaneously at each of the jack locations. Jacks shall be monitored and have the same load at all times.
7. Field weld sole plate to Tied Arch End. Install nuts and top portion of anchor bolts.
8. Remove jacks.



SECTION B-B

SUGGESTED BEARING REPLACEMENT SEQUENCE:
(Included for information only, not part of this contract.)

1. Restrict all traffic to the curb lane on side opposite from bearing replacement. Traffic control will be required.
2. Place required blocks, and jacks as shown on this sheet.
3. Jack one Tie Girder location at a time. Jacks shall be manifolded together to apply a uniform pressure to the Tie Girder simultaneously at each of the jack locations. Jacks shall be monitored and have the same load at all times. Provide 1/8" min. clear between beam seat and bottom of bearing prior to removal of bearing.
4. Remove nuts and top portion of anchor bolts from threaded coupling nuts. Remove bearing from Tie Girder.
5. Install new bearing, anchor bolts, and nuts.
6. Lower Tie Girder to final position. Jacks shall apply a uniform pressure to the Tie Girder simultaneously at each of the jack locations. Jacks shall be monitored and have the same load at all times.
7. Field weld sole plate to Tied Arch End. Install nuts and top portion of anchor bolts.
8. Remove jacks and return traffic to typical lane configuration.

Notes:
For Bent Details, see Dwg. Nos 54318 thru 54333.
For HLMR Bearing Details, see Dwg. No. 54383.
Four 400 ton jacks are required at each bearing.
Suggested Bearing Construction Realignment and Adjustment Sequence shall be used in correlation with Suggested Erection Sequence shown on Dwg. No. 54432. Materials, equipment and procedure for Arch Bearing Realignment and Adjustment, shall be included in the Contractors submitted erection plan.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5.29.14
BRIDGE ENGINEER

DETAILS OF BEARING JACKING - TIED ARCH UNIT BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: NAM DATE: MAY 2014 SCALE: 3/4" = 1'-0"
DESIGNED BY: NAM DATE: MAY 2014

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6	ARK.			
JOB NO.		061275	180	505
(1) 07292	TIED ARCH GEOMETRY			54385

LEGEND:

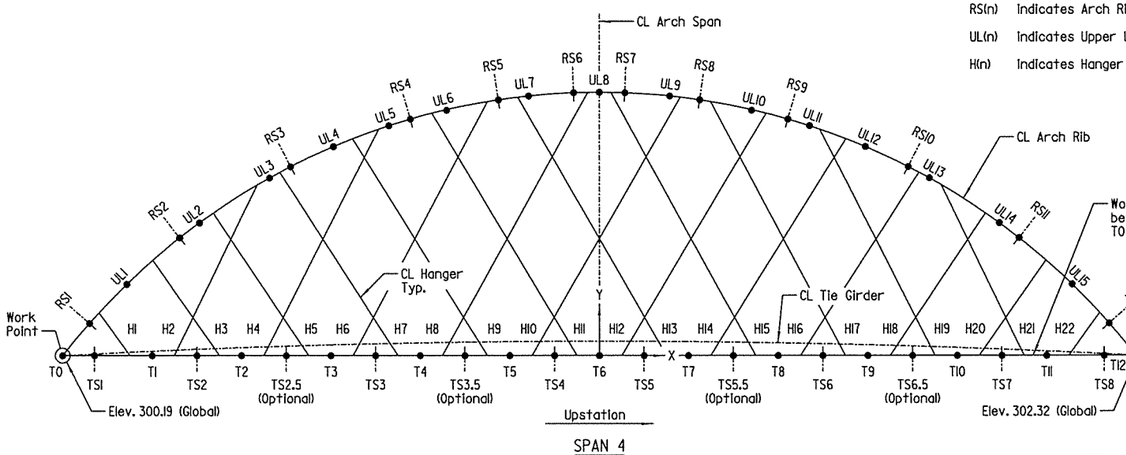
T(n) Indicates Tie Girder Panel Point along Working Line between T0 and T12.

TS(n) Indicates Tie Girder Splice & Work Point along Working Line between T0 and T12.

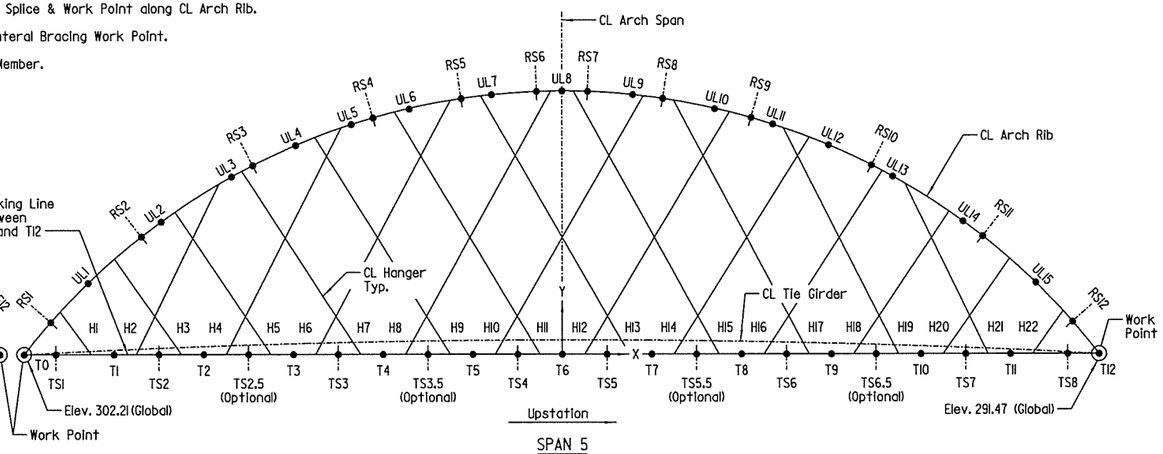
RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.

UL(n) Indicates Upper Lateral Bracing Work Point.

H(n) Indicates Hanger Member.



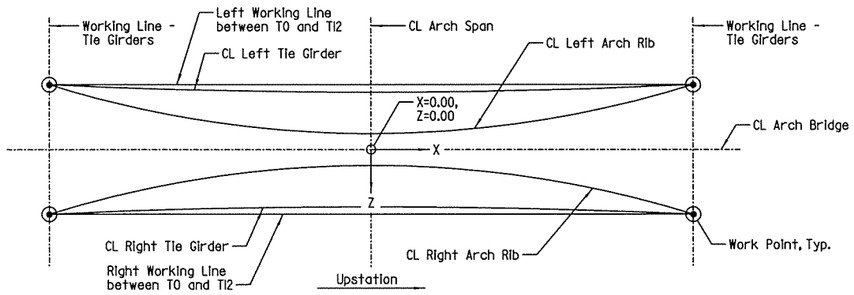
SPAN 4



SPAN 5

KEY ELEVATION

Scale: 1" = 30'



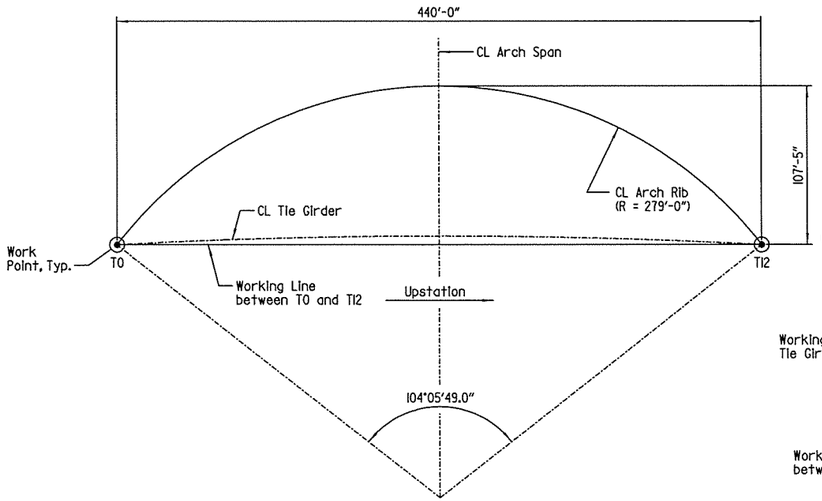
SPAN 4 OR SPAN 5 KEY PLAN

Scale: 1" = 50'

ARCH RIB SPLICE WORK POINTS RS(n)			
WORK POINT	X (FEET)	Y (FEET)	Z (FEET)
T0	-220.000	0.000	+/-44.000
RS1	-209.144	12.438	+/-39.959
RS2	-172.091	45.670	+/-29.161
RS3	-126.639	73.250	+/-20.200
RS4	-76.458	92.001	+/-14.107
RS5	-41.296	99.237	+/-11.756
RS6	-10.446	101.973	+/-10.867
RS7	10.446	101.973	+/-10.867
RS8	41.296	99.237	+/-11.756
RS9	76.458	92.001	+/-14.107
RS10	126.639	73.250	+/-20.200
RS11	172.091	45.670	+/-29.161
RS12	209.144	12.438	+/-39.959
T12	220.000	0.000	+/-44.000

TIE GIRDER SPLICE WORK POINTS TS(n)			
WORK POINT	X (FEET)	Y (FEET)	Z (FEET)
T0	-220.000	0.000	+/-44.000
TS1	-207.000	0.000	+/-44.000
TS2	-165.000	0.000	+/-44.000
TS2.5	-128.333	0.000	+/-44.000
TS3	-91.667	0.000	+/-44.000
TS3.5	-55.000	0.000	+/-44.000
TS4	-18.333	0.000	+/-44.000
TS5	18.333	0.000	+/-44.000
TS5.5	55.000	0.000	+/-44.000
TS6	91.667	0.000	+/-44.000
TS6.5	128.333	0.000	+/-44.000
TS7	165.000	0.000	+/-44.000
TS8	207.000	0.000	+/-44.000
T12	220.000	0.000	+/-44.000

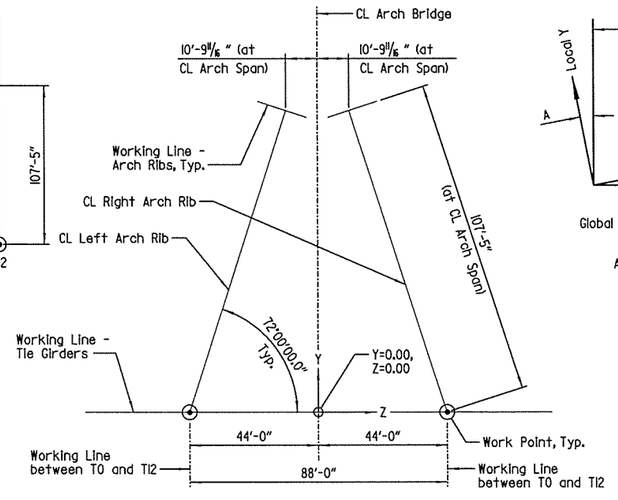
TIE GIRDER PANEL POINTS T(n)			
WORK POINT	X (FEET)	Y (FEET)	Z (FEET)
T0	-220.000	0.000	+/-44.000
T1	-183.333	0.000	+/-44.000
T2	-146.667	0.000	+/-44.000
T3	-110.000	0.000	+/-44.000
T4	-73.333	0.000	+/-44.000
T5	-36.667	0.000	+/-44.000
T6	0.000	0.000	+/-44.000
T7	36.667	0.000	+/-44.000
T8	73.333	0.000	+/-44.000
T9	110.000	0.000	+/-44.000
T10	146.667	0.000	+/-44.000
T11	183.333	0.000	+/-44.000
T12	220.000	0.000	+/-44.000



ARCH GEOMETRY

Scale: 1" = 50'

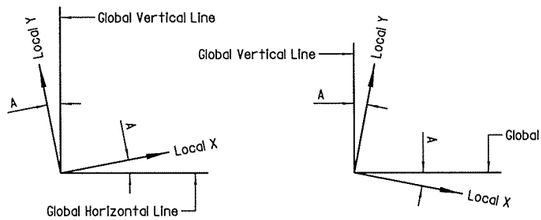
(Dimensions shown in the plane of the arch)



ARCH END VIEW

Scale: 1" = 25'

(Looking Upstation)



SCHEMATIC FOR LOCAL COORDINATES & GLOBAL GEOMETRY

Scale: N.T.S.

Notes:

For Upper & Lower Lateral Bracing geometry, see Dwg. No. 54386.

For Hanger geometry, see Dwg. No. 54387.

+/- Indicates a positive value for Right Arch Rib and Right Working Line between T0 and T12 Work Points and a negative value for Left Arch Rib and Left Working Line between T0 and T12 Work Points.

Work Points are on CL Arch Rib or Working Line between T0 and T12 and use Local Coordinate System.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5.29.14

BRIDGE ENGINEER

SHEET 1 OF 3
TIED ARCH GEOMETRY AND LAYOUT
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DAL DATE: MAY 2014 FILENAME: B061275x1S42.DGN

CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN

DESIGNED BY: AEC DATE: MAR. 2014

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				6	ARK.			
				JOB NO.		061275	181	505
				(1) 07292		TIED ARCH GEOMETRY		54386

UPPER LATERAL BRACING WORK POINT COORDINATES

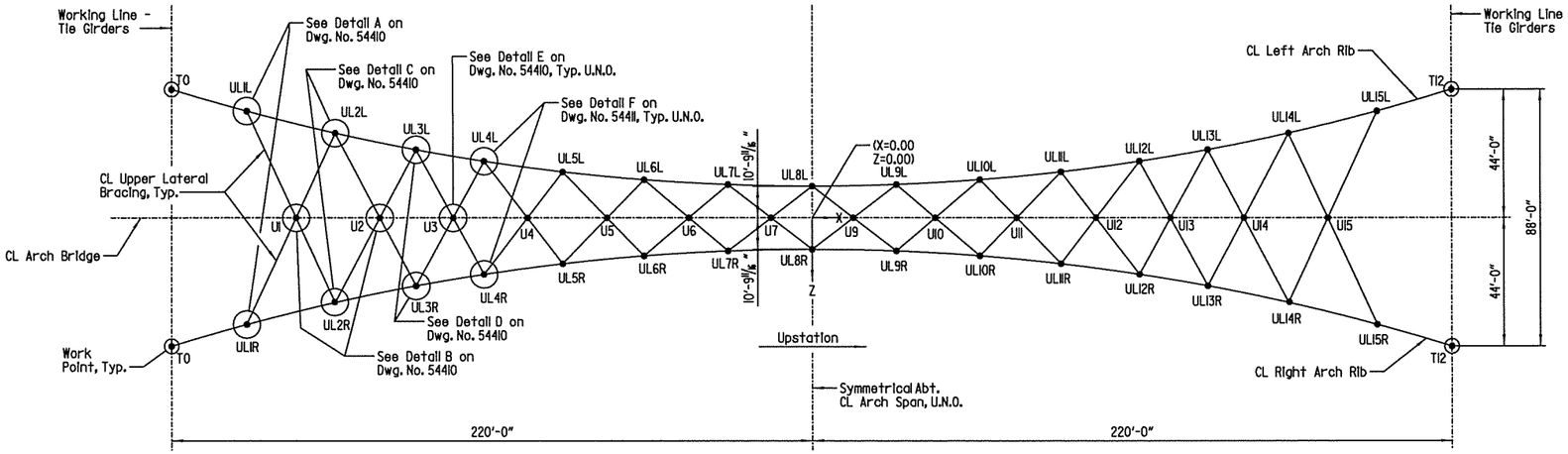
WORK POINT	X (FEET)	Y (FEET)	Z (FEET)	WORK POINT	X (FEET)	Y (FEET)	Z (FEET)	WORK POINT	X (FEET)	Y (FEET)	Z (FEET)
UL1L	-194.164	27.361	-35.110	UL1R	-194.164	27.361	35.110				
UL2L	-163.749	51.651	-27.218	UL2R	-163.749	51.651	27.218	U1	-177.031	41.044	0.000
UL3L	-135.948	68.527	-21.734	UL3R	-135.948	68.527	21.734	U2	-148.291	61.034	0.000
UL4L	-112.687	79.553	-18.152	UL4R	-112.687	79.553	18.152	U3	-123.273	74.536	0.000
UL5L	-85.597	89.363	-14.964	UL5R	-85.597	89.363	14.964	U4	-97.838	84.930	0.000
UL6L	-57.583	96.446	-12.663	UL6R	-57.583	96.446	12.663	U5	-70.423	93.200	0.000
UL7L	-28.948	100.727	-11.272	UL7R	-28.948	100.727	11.272	U6	-42.433	98.711	0.000
UL8L	0.000	102.159	-10.806	UL8R	0.000	102.159	10.806	U7	-14.169	101.458	0.000
UL9L	28.948	100.727	-11.272	UL9R	28.948	100.727	11.272	U9	14.169	101.458	0.000
UL10L	57.583	96.446	-12.663	UL10R	57.583	96.446	12.663	U10	42.433	98.711	0.000
UL11L	85.597	89.363	-14.964	UL11R	85.597	89.363	14.964	U11	70.423	93.200	0.000
UL12L	112.687	79.553	-18.152	UL12R	112.687	79.553	18.152	U12	97.838	84.930	0.000
UL13L	135.948	68.527	-21.734	UL13R	135.948	68.527	21.734	U13	123.273	74.536	0.000
UL14L	163.749	51.651	-27.218	UL14R	163.749	51.651	27.218	U14	148.291	61.034	0.000
UL15L	194.164	27.361	-35.110	UL15R	194.164	27.361	35.110	U15	177.031	41.044	0.000

LEGEND:

T(n) Indicates Tie Girder Panel Point along Working Line between T0 and T12.

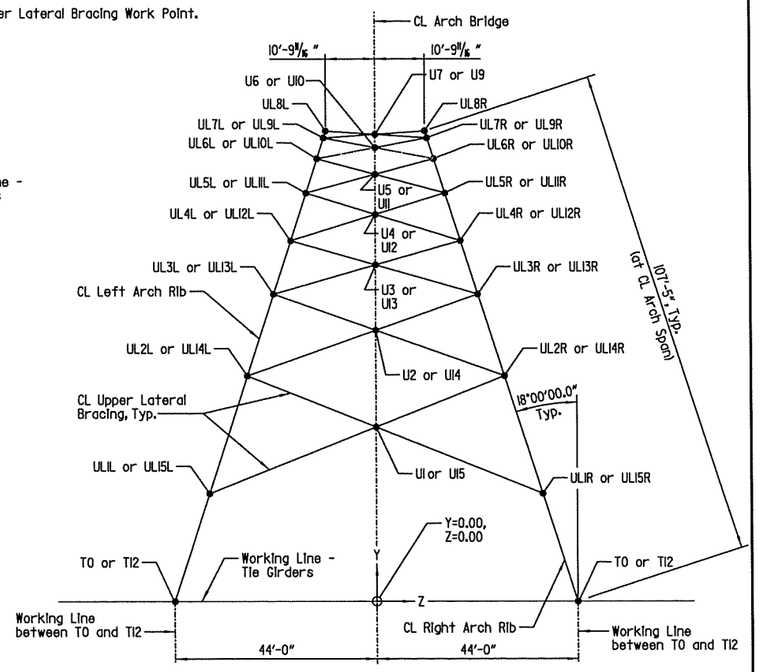
UL(n) Indicates Upper Lateral Bracing Work Point.

U(n) Indicates Upper Lateral Bracing Work Point.



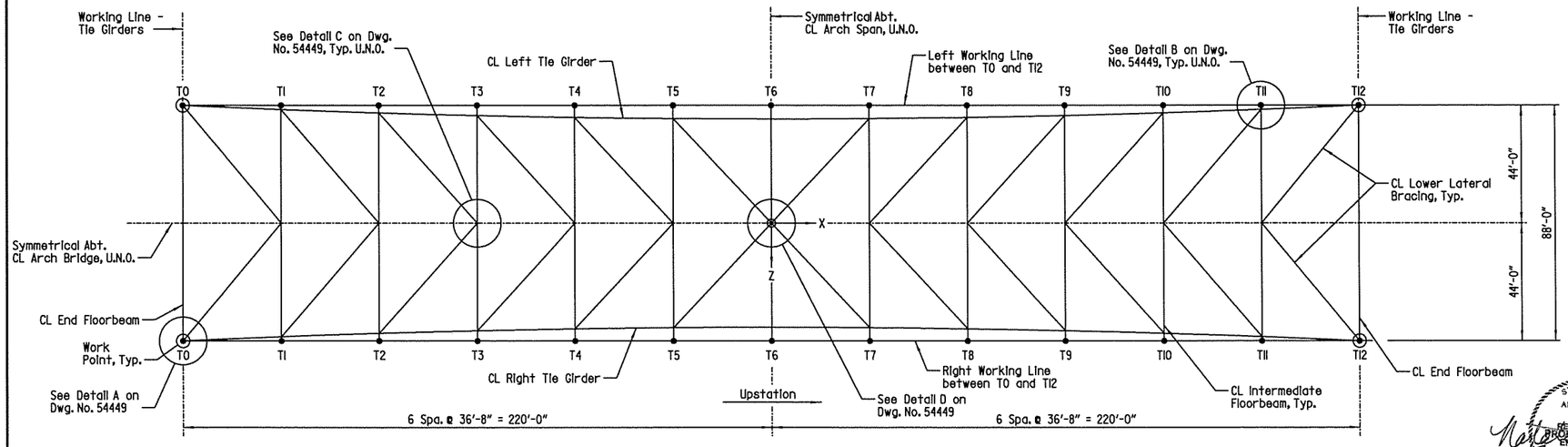
PLAN - UPPER LATERAL BRACING

Scale: 1" = 25'



END VIEW

Scale: 1/16" = 1'-0"
(Looking Upstation)



PLAN - LOWER LATERAL BRACING

Scale: 1" = 25'

Notes:
For Arch Rib & Tie Girder geometry, see Dwg. No. 54385.
Work Points are on CL Arch Rib or CL Arch Bridge and use Local Coordinate System.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE McCOMBS
6-16-14
BRIDGE ENGINEER

SHEET 2 OF 3
TIED ARCH GEOMETRY AND LAYOUT
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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DESIGNED BY: AEC DATE: MAR. 2014

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				JOB NO.		061275	182	505
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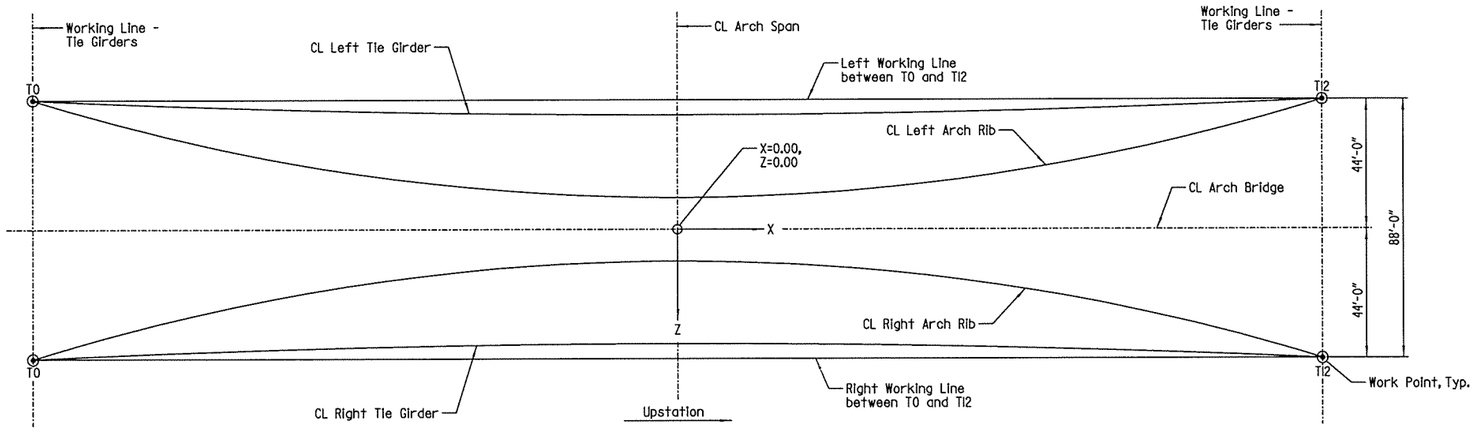
HANGER GEOMETRY

HANGER	WORK POINT AT CL ARCH RIB				WORK POINT ALONG WORKING LINE BETWEEN TO AND T12				CABLE LENGTH BETWEEN WORK POINTS (FEET)
	RH(n)	X (FEET)	Y (FEET)	Z (FEET)	TH(n)	X (FEET)	Y (FEET)	Z (FEET)	
H1	RH1	-205.188	16.609	+/-38.603	TH1	-192.500	0.000	+/-44.000	21.59
H2	RH4	-140.207	66.221	+/-22.484	TH2	-174.167	0.000	+/-44.000	77.47
H3	RH2	-183.095	37.028	+/-31.969	TH3	-155.833	0.000	+/-44.000	47.53
H4	RH7	-90.446	87.830	+/-15.462	TH4	-137.500	0.000	+/-44.000	103.65
H5	RH3	-158.366	55.271	+/-26.041	TH5	-119.167	0.000	+/-44.000	70.10
H6	RH9	-45.725	98.572	+/-11.972	TH6	-100.833	0.000	+/-44.000	117.38
H7	RH5	-131.032	71.075	+/-20.906	TH7	-82.500	0.000	+/-44.000	89.11
H8	RH11	-4.646	102.123	+/-10.818	TH8	-64.167	0.000	+/-44.000	122.77
H9	RH6	-101.105	84.124	+/-16.667	TH9	-45.833	0.000	+/-44.000	104.30
H10	RH13	33.361	100.256	+/-11.425	TH10	-27.500	0.000	+/-44.000	121.72
H11	RH8	-68.568	94.021	+/-13.451	TH11	-9.167	0.000	+/-44.000	115.33
H12	RH15	68.568	94.021	+/-13.451	TH12	9.167	0.000	+/-44.000	115.33
H13	RH10	-33.361	100.256	+/-11.425	TH13	27.500	0.000	+/-44.000	121.72
H14	RH17	101.105	84.124	+/-16.667	TH14	45.833	0.000	+/-44.000	104.30
H15	RH12	4.646	102.123	+/-10.818	TH15	64.167	0.000	+/-44.000	122.77
H16	RH18	131.032	71.075	+/-20.906	TH16	82.500	0.000	+/-44.000	89.11
H17	RH14	45.725	98.572	+/-11.972	TH17	100.833	0.000	+/-44.000	117.38
H18	RH20	158.366	55.271	+/-26.041	TH18	119.167	0.000	+/-44.000	70.10
H19	RH16	90.446	87.830	+/-15.462	TH19	137.500	0.000	+/-44.000	103.65
H20	RH21	183.095	37.028	+/-31.969	TH20	155.833	0.000	+/-44.000	47.53
H21	RH19	140.207	66.221	+/-22.484	TH21	174.167	0.000	+/-44.000	77.47
H22	RH22	205.188	16.609	+/-38.603	TH22	192.500	0.000	+/-44.000	21.59



KEY PLAN

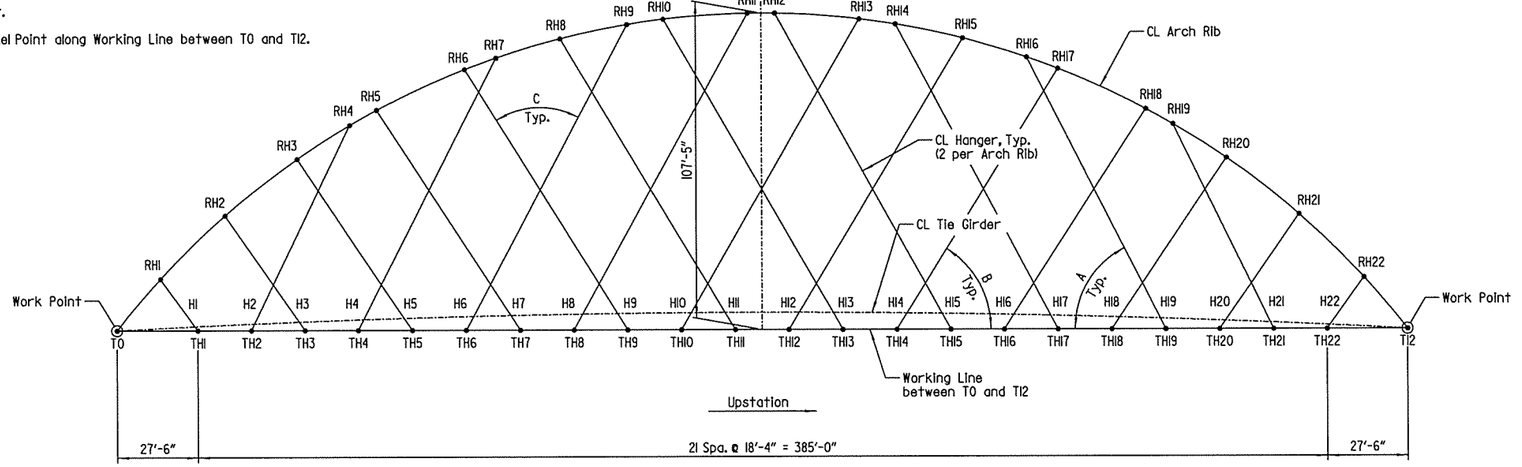
LEGEND:

TH(n) Indicates Hanger Work Point along Working Line between T0 and T12.

RH(n) Indicates Hanger Work Point along CL Arch Rib.

H(n) Indicates Hanger Member.

T(n) Indicates Tie Girder Panel Point along Working Line between T0 and T12.



KEY ELEVATION

(Dimensions shown in the plane of the arch)

HANGER GEOMETRY	
HANGER	ANGLE A (DEGREES)
H1	54.0
H3	55.0
H5	56.0
H7	57.0
H9	58.0
H11	59.0
H13	60.0
H15	61.0
H17	62.0
H19	63.0
H21	64.0

HANGER GEOMETRY	
HANGER	ANGLE B (DEGREES)
H2	64.0
H4	63.0
H6	62.0
H8	61.0
H10	60.0
H12	59.0
H14	58.0
H16	57.0
H18	56.0
H20	55.0
H22	54.0

HANGER GEOMETRY	
HANGERS	ANGLE C (DEGREES)
H2, H3	61.0
H2, H5	60.0
H4, H5	61.0
H4, H7	60.0
H4, H9	59.0
H6, H7	61.0
H6, H9	60.0
H6, H11	59.0
H8, H9	61.0
H8, H11	60.0
H8, H13	59.0
H10, H11	61.0
H10, H13	60.0
H10, H15	59.0
H12, H13	61.0
H12, H15	60.0
H12, H17	59.0
H14, H15	61.0
H14, H17	60.0
H14, H19	59.0
H16, H17	61.0
H16, H19	60.0
H18, H19	61.0
H18, H21	60.0
H20, H21	61.0

Notes:

For Arch Rib & Tie Girder geometry, see Dwg. No. 54385.

+/- indicates a positive value for Right Arch Rib and Right Working Line between T0 and T12 Work Points and a negative value for Left Arch Rib and Left Working Line between T0 and T12 Work Points.

Cable length shown is based on the theoretical straight line dimensions, from hanger work point RH(n) to hanger work point TH(n), and does not include cable sag.

Work Points are on CL Arch Rib or Working Line between T0 and T12 and use Local Coordinate System.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 3 OF 3

TIED ARCH GEOMETRY AND LAYOUT
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DAL DATE: MAY 2014 FILENAME: B061275xlS44.DGN

CHECKED BY: NAM DATE: MAY 2014 SCALE: 1" = 25'

DESIGNED BY: AEC DATE: MAR. 2014

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				6	ARK.			
				JOB NO.		061275	183	505
				(1) 07292		TIED ARCH ELEVATION		54388

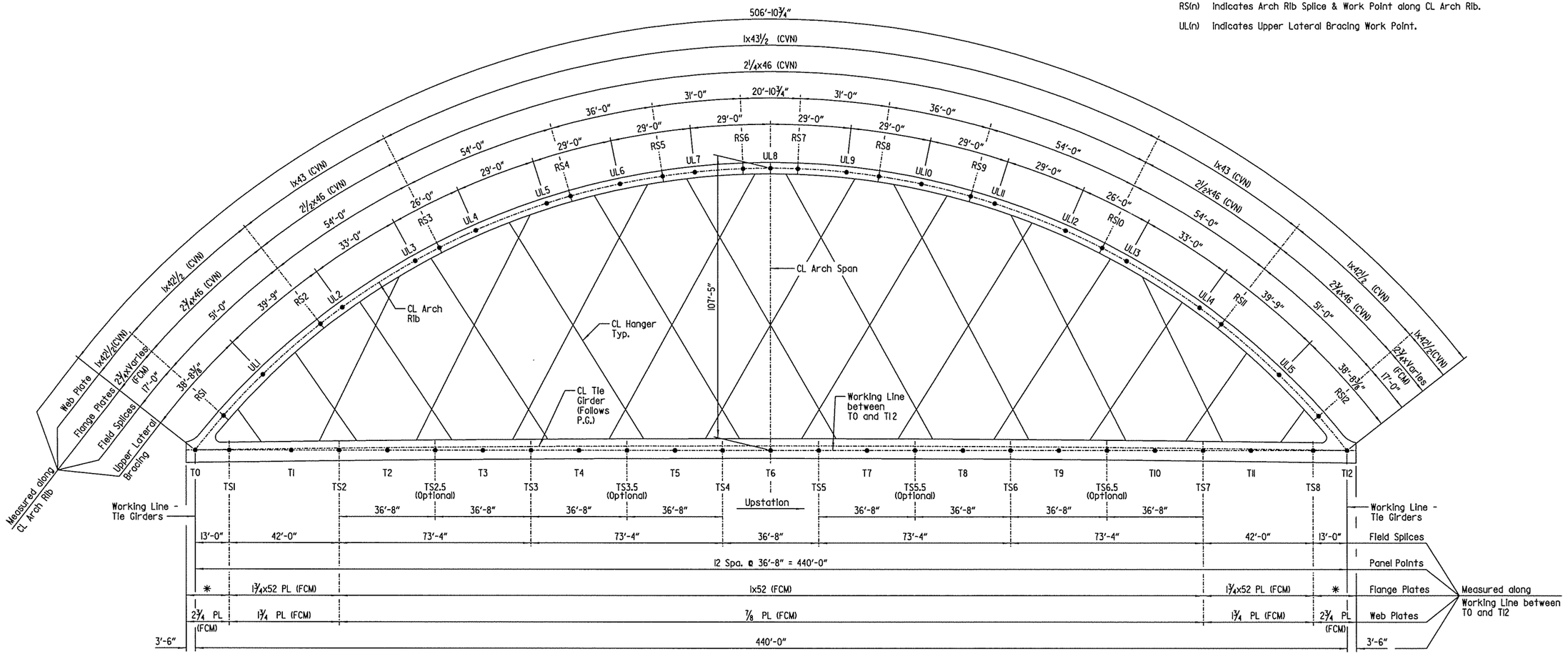
LEGEND:

T(n) indicates Tie Girder Panel Point along Working Line between T0 and T12.

TS(n) indicates Tie Girder Splice & Work Point along Working Line between T0 and T12.

RS(n) indicates Arch Rib Splice & Work Point along CL Arch Rib.

UL(n) indicates Upper Lateral Bracing Work Point.



ELEVATION

(Dimensions shown in the plane of the arch)

* See Tied Arch End Details

Notes:
For Arch Rib & Tie Girder geometry, see Dwg. No. 54385.
For Upper Lateral Bracing geometry, see Dwg. No. 54386.
For Hanger geometry, see Dwg. No. 54387.
For details of Tied Arch Ends, see Dwg. Nos. 54397 thru 54400.
For details of Arch Rib & Arch Rib Field Splice, see Dwg. Nos. 54402 thru 54409.
For details of Tie Girder & Tie Girder Field Splice, see Dwg. Nos. 54414 thru 54425.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

TIED ARCH ELEVATION
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: NAM DATE: MAY 2014 SCALE: 1" = 20'
DESIGNED BY: AEC DATE: APR. 2014

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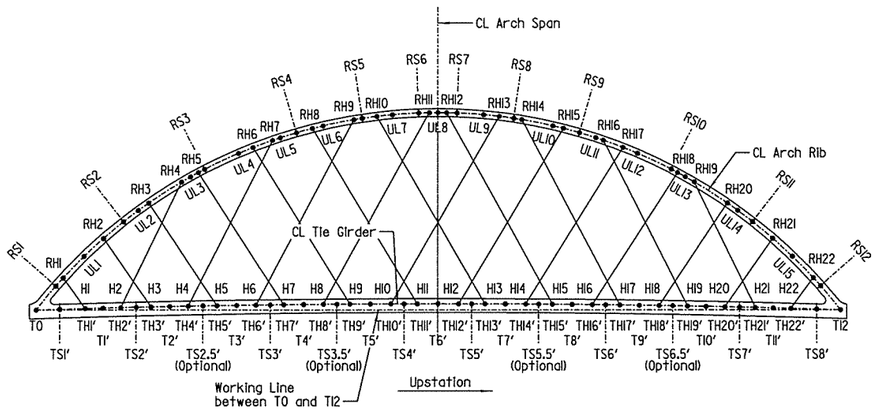
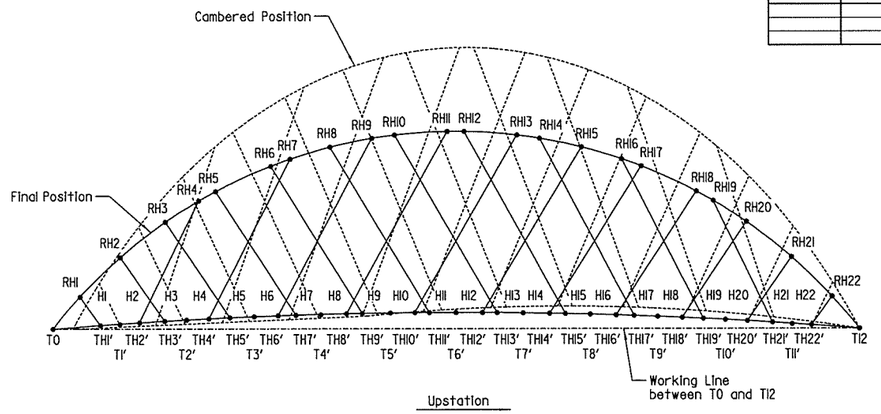
(1) 07292 TIED ARCH CAMBER DIAGRAM 54389



ELEVATION - SPAN 4



CAMBER DIAGRAM - SPAN 4

LEGEND:

TH(n)′ Indicates Cambered Hanger Work Point along CL Tie Girder.*

RH(n) Indicates Hanger Work Point along CL Arch Rib.

H(n) Indicates Hanger Member.

T(n)′ Indicates Cambered Tie Girder Panel Point along CL Tie Girder.

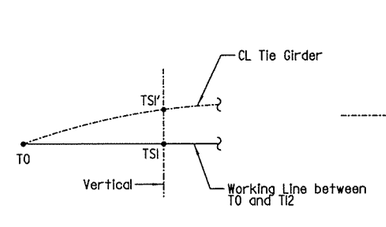
TS(n)′ Indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.

RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.

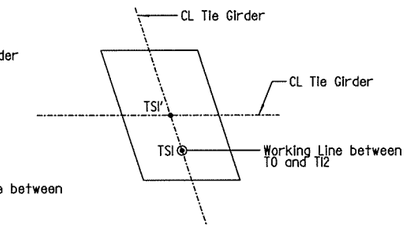
UL(n) Indicates Upper Lateral Bracing Work Point.

LEFT ARCH RIB CAMBER - SPAN 4

WORK POINT	FINAL TIED ARCH POSITION			ARCH GEOMETRY																	
	LEFT ARCH			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	-44.000	0.732	0.012	0.084	0.708	-0.012	0.120	-0.108	0.000	0.000	0.132	0.000	0.012	-219.878	0.000	-43.982
RS1	-209.144	12.438	-39.959	0.552	0.180	0.060	0.516	0.228	-0.012	0.420	-0.468	0.012	0.096	0.036	0.000	-209.012	12.436	-39.954
RH1	-205.188	16.609	-38.603	0.516	0.228	0.048	0.480	0.276	-0.048	0.600	-0.636	0.012	0.096	0.048	0.000	-205.047	16.602	-38.602
UL1	-194.164	27.361	-35.110	0.468	0.324	0.036	0.408	0.372	-0.012	1.092	-1.140	0.024	0.084	0.060	0.000	-193.993	27.329	-35.106
RH2	-183.095	37.028	-31.969	0.408	0.420	0.036	0.348	0.456	0.060	1.524	-1.644	0.024	0.072	0.084	0.012	-182.899	36.971	-31.958
RS2	-172.091	45.670	-29.161	0.372	0.504	0.048	0.312	0.528	0.108	1.884	-2.088	0.012	0.072	0.096	0.012	-171.871	45.590	-29.146
UL2	-163.749	51.651	-27.218	0.348	0.576	0.048	0.276	0.600	0.132	2.052	-2.328	0.000	0.060	0.108	0.012	-163.521	51.564	-27.202
RH3	-158.366	55.271	-26.041	0.324	0.624	0.060	0.264	0.636	0.144	2.124	-2.424	-0.012	0.048	0.120	0.012	-158.136	55.184	-26.024
RH4	-140.207	66.221	-22.484	0.288	0.768	0.060	0.240	0.756	0.108	2.028	-2.256	-0.012	0.048	0.144	0.012	-139.990	66.172	-22.470
UL3	-135.948	68.527	-21.734	0.276	0.792	0.060	0.240	0.780	0.096	1.944	-2.112	-0.012	0.048	0.144	0.012	-135.739	68.494	-21.721
RH5	-131.032	71.075	-20.906	0.276	0.828	0.048	0.240	0.804	0.096	1.836	-1.896	0.000	0.048	0.144	0.012	-130.832	71.065	-20.893
RS3	-126.639	73.250	-20.200	0.276	0.852	0.048	0.240	0.828	0.084	1.728	-1.668	0.000	0.048	0.156	0.012	-126.448	73.264	-20.188
UL4	-112.687	79.553	-18.152	0.276	0.912	0.048	0.252	0.888	0.084	1.308	-0.744	0.012	0.048	0.168	0.012	-112.530	79.655	-18.139
RH6	-101.105	84.124	-16.667	0.264	0.984	0.060	0.240	0.960	0.096	0.948	0.144	0.036	0.048	0.180	0.012	-100.980	84.313	-16.650
RH7	-90.446	87.830	-15.462	0.276	1.032	0.060	0.252	1.008	0.108	0.672	0.960	0.036	0.048	0.192	0.012	-90.342	88.096	-15.444
UL5	-85.597	89.363	-14.964	0.276	1.056	0.060	0.252	1.020	0.108	0.552	1.308	0.036	0.048	0.192	0.012	-85.503	89.661	-14.946
RS4	-76.458	92.001	-14.107	0.288	1.080	0.060	0.264	1.032	0.108	0.372	1.956	0.048	0.048	0.192	0.012	-76.377	92.356	-14.088
RH8	-68.568	94.021	-13.451	0.288	1.116	0.060	0.276	1.056	0.108	0.240	2.472	0.048	0.048	0.192	0.012	-68.497	94.424	-13.432
UL6	-57.583	96.446	-12.663	0.300	1.152	0.060	0.288	1.092	0.096	0.096	3.144	0.060	0.060	0.216	0.012	-57.521	96.913	-12.644
RH9	-45.725	98.572	-11.972	0.312	1.188	0.060	0.312	1.116	0.108	-0.024	3.744	0.072	0.060	0.216	0.012	-45.670	99.094	-11.951
RS5	-41.296	99.237	-11.756	0.324	1.200	0.060	0.312	1.128	0.108	-0.048	3.936	0.072	0.060	0.216	0.012	-41.242	99.777	-11.735
RH10	-33.361	100.256	-11.425	0.336	1.212	0.060	0.324	1.140	0.108	-0.084	4.236	0.084	0.072	0.216	0.012	-33.307	100.823	-11.403
UL7	-28.948	100.727	-11.272	0.336	1.212	0.060	0.336	1.140	0.108	-0.096	4.380	0.084	0.072	0.216	0.012	-28.894	101.306	-11.250
RS6	-10.446	101.973	-10.867	0.372	1.236	0.060	0.360	1.152	0.108	-0.132	4.764	0.096	0.072	0.216	0.012	-10.390	102.587	-10.844
RH11	-4.646	102.123	-10.818	0.384	1.248	0.072	0.372	1.176	0.108	-0.132	4.812	0.096	0.072	0.228	0.012	-4.587	102.745	-10.794
UL8	0.000	102.159	-10.806	0.384	1.248	0.072	0.372	1.176	0.108	-0.132	4.824	0.096	0.084	0.228	0.012	0.059	102.782	-10.782
RH12	4.646	102.123	-10.818	0.396	1.248	0.072	0.396	1.176	0.108	-0.132	4.812	0.096	0.084	0.228	0.012	4.707	102.745	-10.794
RS7	10.446	101.973	-10.867	0.408	1.236	0.060	0.408	1.152	0.108	-0.132	4.764	0.084	0.084	0.216	0.012	10.510	102.587	-10.845
UL9	28.948	100.727	-11.272	0.432	1.212	0.060	0.432	1.140	0.108	-0.168	4.380	0.084	0.084	0.216	0.012	29.013	101.306	-11.250
RH13	33.361	100.256	-11.425	0.444	1.212	0.060	0.444	1.140	0.108	-0.180	4.236	0.072	0.084	0.216	0.012	33.427	100.823	-11.404
RS8	41.296	99.237	-11.756	0.456	1.200	0.060	0.456	1.128	0.108	-0.216	3.936	0.072	0.084	0.216	0.012	41.361	99.777	-11.735
RH14	45.725	98.572	-11.972	0.456	1.188	0.060	0.456	1.116	0.108	-0.252	3.744	0.072	0.084	0.216	0.012	45.787	99.094	-11.951
UL10	57.583	96.446	-12.663	0.480	1.152	0.060	0.480	1.092	0.108	-0.360	3.144	0.060	0.096	0.216	0.012	57.641	96.913	-12.643
RH15	68.568	94.021	-13.451	0.492	1.116	0.060	0.492	1.056	0.108	-0.504	2.472	0.048	0.096	0.192	0.012	68.616	94.424	-13.432
RS9	76.458	92.001	-14.107	0.492	1.080	0.060	0.504	1.032	0.108	-0.636	1.956	0.048	0.096	0.192	0.012	76.496	92.356	-14.088
UL11	85.597	89.363	-14.964	0.504	1.056	0.060	0.516	1.020	0.108	-0.828	1.308	0.048	0.096	0.192	0.012	85.621	89.661	-14.945
RH16	90.446	87.830	-15.462	0.504	1.032	0.060	0.516	1.008	0.108	-0.936	0.960	0.048	0.096	0.192	0.012	90.461	88.096	-15.443
RH17	101.105	84.124	-16.667	0.516	0.984	0.060	0.528	0.960	0.108	-1.224	0.144	0.036	0.096	0.180	0.012	101.098	84.313	-16.649
UL12	112.687	79.553	-18.152	0.504	0.912	0.048	0.516	0.888	0.084	-1.572	-0.744	0.024	0.096	0.168	0.012	112.649	79.655	-18.138
RS10	126.639	73.250	-20.200	0.504	0.852	0.048	0.528	0.828	0.084	-1.980	-1.668	0.000	0.096	0.156	0.012	126.568	73.264	-20.188
RH18	131.032	71.075	-20.906	0.504	0.828	0.048	0.528	0.804	0.096	-2.088	-1.896	0.000	0.096	0.144	0.012	130.952	71.065	-20.893
UL13	135.948	68.527	-21.734	0.504	0.792	0.060	0.528	0.780	0.096	-2.196	-2.112	0.000	0.096	0.144	0.012	135.859	68.494	-21.720
RH19	140.207	66.221	-22.484	0.492	0.768	0.060	0.516	0.756	0.108	-2.268	-2.256	0.000	0.096	0.144	0.012	140.110	66.172	-22.469
RH20	158.366	55.271	-26.041	0.456	0.624	0.060	0.504	0.636	0.144	-2.352	-2.424	0.000	0.096	0.120	0.036	158.258	55.184	-26.021
UL14	163.749	51.651	-27.218	0.432	0.576	0.060	0.492	0.600	0.144	-2.292	-2.328	0.000	0.096	0.108	0.036	163.643	51.564	-27.198
RS11	172.091	45.670	-29.161	0.408	0.504	0.048	0.456	0.528	0.108	-2.100	-2.088	0.012	0.084	0.096	0.012	171.995	45.590	-29.146
RH21	183.095	37.028	-31.969	0.360	0.420	0.036	0.420	0.456	0.060	-1.752	-1.644	0.036	0.084	0.084	0.012	183.021	36.971	-31.957
UL15	194.164	27.361	-35.110	0.312	0.324	0.036	0.348	0.372	-0.012	-1.308	-1.140	0.036	0.060	0.060	0.000	194.115	27.329	-35.105
RH22	205.188	16.609	-38.603	0.264	0.228	0.048	0.288	0.276	-0.048	-0.828	-0.636	0.024	0.048	0.048	0.000	205.169	16.602	-38.601
RS12	209.144	12.438	-39.959	0.228	0.180	0.060	0.252	0.228	-0.024	-0.636	-0.468	0.012	0.048	0.036	0.000	209.135	12.436	-39.955
T12	220.000	0.000	-44.000	0.048	0.012	0.084	0.048	-0.012	0.120	-0.120	0.000	0.000	0.012	0.000	0.012	219.999	0.000	-43.982



ELEVATION



SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

*TH(n)′ hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NATALIE MCCOMBS No. 15778

5-29-14

BRIDGE ENGINEER

SHEET 1 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlS46.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54389

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REVISED DATE:

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				JOB NO.		061275	185	505
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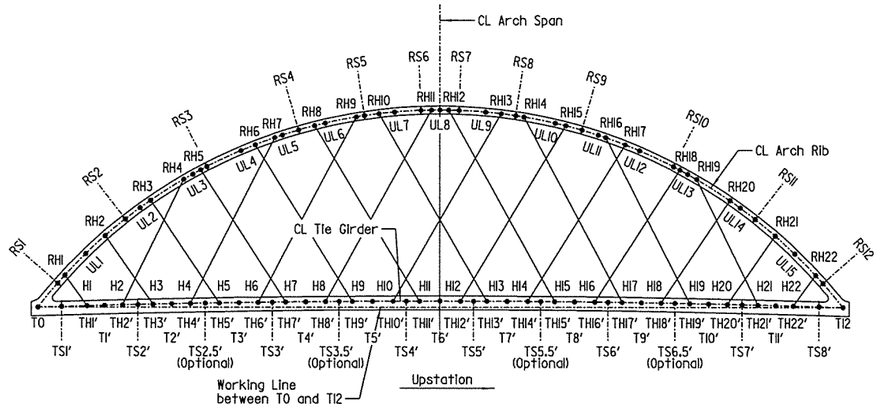
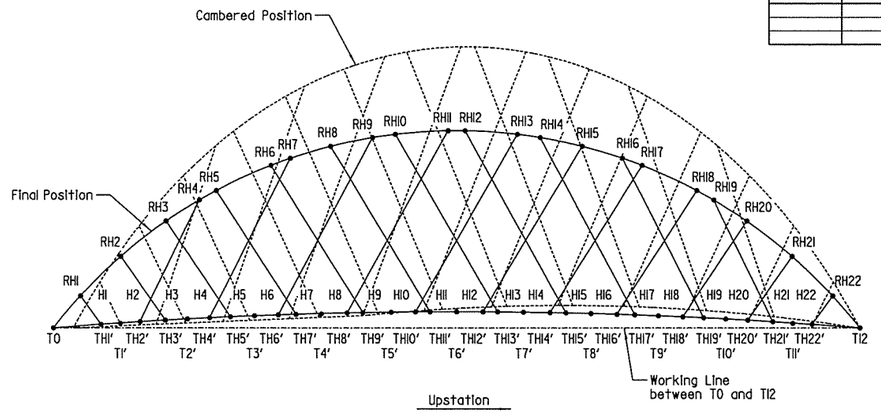


ELEVATION - SPAN 4



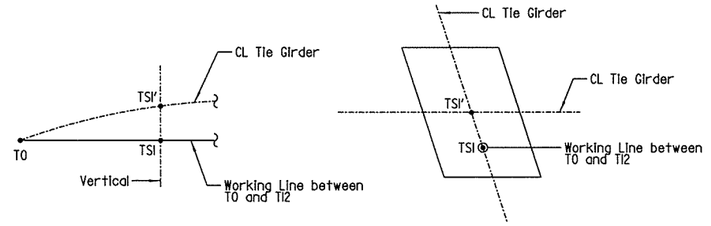
CAMBER DIAGRAM - SPAN 4

LEGEND:

- TH(n)′ indicates Cambered Hanger Work Point along CL Tie Girder.*
- RH(n) indicates Hanger Work Point along CL Arch Rib.
- H(n) indicates Hanger Member.
- T(n)′ indicates Cambered Tie Girder Panel Point along CL Tie Girder.
- TS(n)′ indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.
- RS(n) indicates Arch Rib Splice & Work Point along CL Arch Rib.
- UL(n) indicates Upper Lateral Bracing Work Point.

LEFT TIE GIRDER CAMBER - SPAN 4

WORK POINT	FINAL TIED ARCH POSITION			TIE GIRDER GEOMETRY															
	LEFT TIE GIRDER			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	-44.000	0.732	0.012	0.084	0.708	-0.012	0.120	-0.108	0.000	0.000	0.132	0.000	0.012	-219.878	0.000	-43.982
TS1′	-206.999	0.184	-43.940	0.732	0.276	0.060	0.708	0.228	0.132	-0.108	-0.540	0.000	0.132	0.036	0.024	-206.877	0.184	-43.922
TH1′	-192.498	0.387	-43.874	0.708	0.516	0.048	0.696	0.528	0.108	-0.108	-1.140	0.000	0.132	0.096	0.024	-192.379	0.387	-43.859
T1′	-183.331	0.508	-43.835	0.708	0.624	0.036	0.696	0.744	0.084	-0.108	-1.500	0.000	0.132	0.132	0.024	-183.212	0.508	-43.823
TH2′	-174.164	0.624	-43.797	0.696	0.744	0.036	0.684	0.924	0.072	-0.108	-1.836	0.000	0.132	0.168	0.012	-174.047	0.624	-43.787
TS2′	-164.996	0.733	-43.762	0.684	0.876	0.036	0.672	1.092	0.072	-0.108	-2.160	0.000	0.132	0.192	0.024	-164.881	0.733	-43.751
TH3′	-155.829	0.837	-43.728	0.672	0.996	0.036	0.660	1.248	0.084	-0.108	-2.472	0.000	0.132	0.228	0.024	-155.716	0.837	-43.716
T2′	-146.662	0.934	-43.696	0.660	1.116	0.036	0.636	1.380	0.084	-0.108	-2.736	0.000	0.132	0.240	0.024	-146.552	0.934	-43.684
TH4′	-137.495	1.026	-43.667	0.636	1.188	0.036	0.624	1.512	0.084	-0.108	-2.976	0.000	0.120	0.276	0.024	-137.389	1.026	-43.655
TS2.5′	-128.328	1.112	-43.639	0.624	1.284	0.036	0.612	1.608	0.084	-0.108	-3.180	0.000	0.120	0.288	0.024	-128.224	1.112	-43.627
TH5′	-119.161	1.192	-43.613	0.612	1.356	0.036	0.600	1.704	0.084	-0.108	-3.372	0.000	0.120	0.312	0.024	-119.059	1.192	-43.601
T3′	-109.994	1.266	-43.589	0.588	1.416	0.036	0.588	1.800	0.096	-0.108	-3.540	0.000	0.120	0.324	0.024	-109.895	1.266	-43.576
TH6′	-100.827	1.334	-43.566	0.576	1.488	0.036	0.564	1.872	0.096	-0.108	-3.696	0.000	0.120	0.336	0.024	-100.731	1.334	-43.553
TS3′	-91.660	1.397	-43.546	0.552	1.548	0.036	0.540	1.932	0.096	-0.108	-3.840	0.000	0.108	0.360	0.024	-91.569	1.397	-43.533
TH7′	-82.493	1.453	-43.528	0.540	1.608	0.036	0.528	1.992	0.096	-0.108	-3.960	0.000	0.096	0.360	0.024	-82.405	1.453	-43.515
T4′	-73.326	1.503	-43.512	0.528	1.644	0.036	0.516	2.052	0.096	-0.108	-4.068	0.000	0.096	0.372	0.024	-73.240	1.503	-43.499
TH8′	-64.160	1.548	-43.497	0.504	1.692	0.036	0.504	2.088	0.084	-0.108	-4.164	0.000	0.096	0.384	0.024	-64.077	1.548	-43.485
TS3.5′	-54.992	1.587	-43.484	0.492	1.728	0.036	0.480	2.136	0.084	-0.108	-4.248	0.000	0.096	0.384	0.024	-54.912	1.587	-43.472
TH9′	-45.825	1.619	-43.474	0.468	1.764	0.036	0.456	2.160	0.084	-0.108	-4.308	0.000	0.084	0.384	0.024	-45.750	1.619	-43.462
T5′	-36.659	1.646	-43.465	0.456	1.752	0.036	0.444	2.184	0.084	-0.108	-4.344	0.000	0.084	0.408	0.024	-36.586	1.646	-43.453
TH10′	-27.492	1.667	-43.458	0.432	1.764	0.036	0.432	2.196	0.084	-0.108	-4.368	0.000	0.084	0.408	0.024	-27.422	1.667	-43.446
TS4′	-18.325	1.682	-43.453	0.420	1.776	0.036	0.420	2.196	0.096	-0.108	-4.380	0.000	0.084	0.408	0.024	-18.257	1.682	-43.440
TH11′	-9.159	1.691	-43.450	0.408	1.788	0.036	0.408	2.196	0.096	-0.108	-4.392	0.000	0.084	0.408	0.024	-9.093	1.691	-43.437
T6′	0.008	1.695	-43.449	0.384	1.776	0.036	0.372	2.208	0.096	-0.108	-4.392	0.000	0.084	0.408	0.024	0.069	1.695	-43.436
TH12′	9.175	1.692	-43.450	0.372	1.788	0.036	0.360	2.196	0.096	-0.108	-4.392	0.000	0.072	0.408	0.024	9.233	1.692	-43.437
TS5′	18.341	1.683	-43.453	0.360	1.776	0.036	0.348	2.196	0.096	-0.108	-4.380	0.000	0.072	0.408	0.024	18.397	1.683	-43.440
TH13′	27.508	1.669	-43.458	0.336	1.764	0.036	0.336	2.196	0.084	-0.108	-4.368	0.000	0.060	0.408	0.024	27.560	1.669	-43.446
T7′	36.675	1.648	-43.464	0.324	1.752	0.036	0.324	2.184	0.084	-0.108	-4.344	0.000	0.060	0.408	0.024	36.725	1.648	-43.452
TH14′	45.841	1.622	-43.473	0.300	1.752	0.036	0.312	2.160	0.084	-0.108	-4.308	0.000	0.060	0.396	0.024	45.888	1.622	-43.461
TS5.5′	55.008	1.590	-43.483	0.288	1.728	0.036	0.288	2.136	0.084	-0.108	-4.248	0.000	0.048	0.384	0.024	55.051	1.590	-43.471
TH15′	64.175	1.552	-43.496	0.276	1.692	0.036	0.264	2.088	0.084	-0.108	-4.164	0.000	0.048	0.384	0.024	64.215	1.552	-43.484
T8′	73.340	1.508	-43.510	0.252	1.644	0.036	0.252	2.052	0.096	-0.108	-4.068	0.000	0.048	0.372	0.024	73.377	1.508	-43.497
TH16′	82.507	1.458	-43.526	0.240	1.608	0.036	0.240	1.992	0.096	-0.108	-3.960	0.000	0.048	0.360	0.024	82.542	1.458	-43.513
TS6′	91.674	1.402	-43.545	0.216	1.536	0.036	0.228	1.944	0.096	-0.108	-3.840	0.000	0.048	0.360	0.024	91.706	1.402	-43.532
TH17′	100.839	1.340	-43.565	0.204	1.488	0.036	0.192	1.872	0.096	-0.108	-3.696	0.000	0.036	0.336	0.024	100.866	1.340	-43.552
T9′	110.006	1.272	-43.587	0.192	1.428	0.036	0.180	1.800	0.096	-0.108	-3.552	0.000	0.036	0.324	0.024	110.031	1.272	-43.574
TH18′	119.173	1.199	-43.610	0.168	1.356	0.036	0.168	1.704	0.096	-0.108	-3.372	0.000	0.036	0.312	0.024	119.195	1.199	-43.597
TS6.5′	128.338	1.119	-43.636	0.156	1.284	0.036	0.156	1.608	0.096	-0.108	-3.180	0.000	0.036	0.288	0.024	128.358	1.119	-43.623
TH19′	137.505	1.034	-43.664	0.132	1.188	0.036	0.144	1.512	0.084	-0.108	-2.976	0.000	0.036	0.276	0.024	137.522	1.034	-43.652
T10′	146.672	0.943	-43.694	0.120	1.092	0.036	0.120	1.392	0.084	-0.108	-2.736	0.000	0.024	0.252	0.024	146.685	0.943	-43.682
TH20′	155.837	0.846	-43.725	0.108	0.996	0.036	0.096	1.248	0.084	-0.108	-2.472	0.000	0.012	0.228	0.024	155.846	0.846	-43.713
TS7′	165.004	0.743	-43.759	0.084	0.888	0.036	0.084	1.092	0.072	-0.108	-2.172	0.000	0.012	0.192	0.024	165.010	0.743	-43.748
TH21′	174.170	0.634	-43.794	0.084	0.744	0.036	0.084	0.924	0.084	-0.108	-1.836	0.000	0.012	0.168	0.024	174.176	0.634	-43.782
T11′	183.336	0.519	-43.831	0.072	0.624	0.036	0.072	0.744	0.084	-0.108	-1.500	0.000	0.012	0.132	0.024	183.340	0.519	-43.819
TH22′	192.502	0.398	-43.871	0.060	0.516	0.048	0.060	0.528	0.108	-0.120	-1.140	0.000	0.012	0.096	0.024	192.503	0.398	-43.856
TS8′	207.001	0.195	-43.937	0.048	0.264	0.060	0.060	0.228	0.144	-0.120	-0.540	0.000	0.012	0.048	0.024	207.001	0.195	-43.918
T12	220.000	0.000	-44.000	0.048	0.012	0.084	0.048	-0.012	0.120	-0.120	0.000	0.000	0.012	0.000	0.012	219.999	0.000	-43.982



ELEVATION SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

* TH(n)′ hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

SHEET 2 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlS47.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54390

wgregory 5/29/2014 2:34:31PM
WORKSPACE: ##WORKSPACE##
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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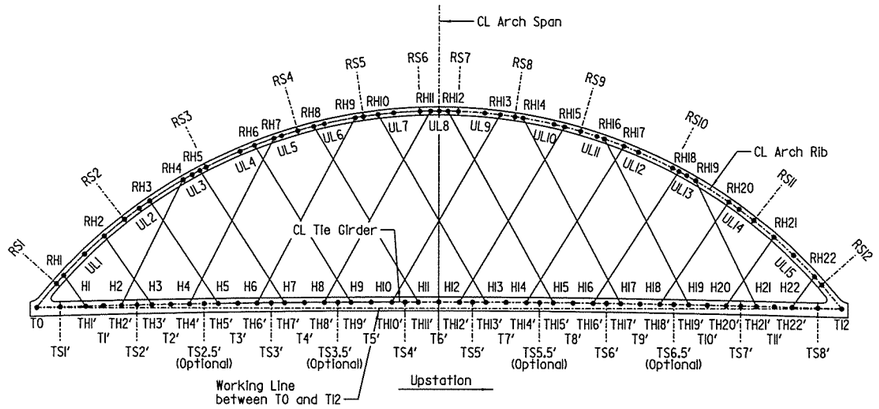
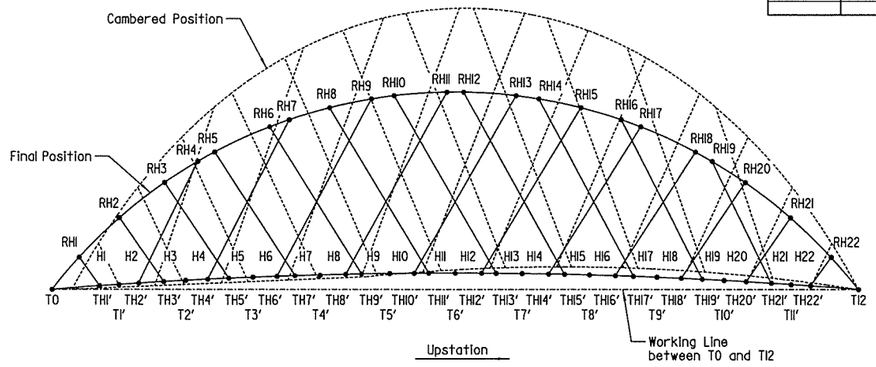
				JOB NO.		061275	186	505
				(1) 07292		TIED ARCH CAMBER DIAGRAM		54391



ELEVATION - SPAN 4



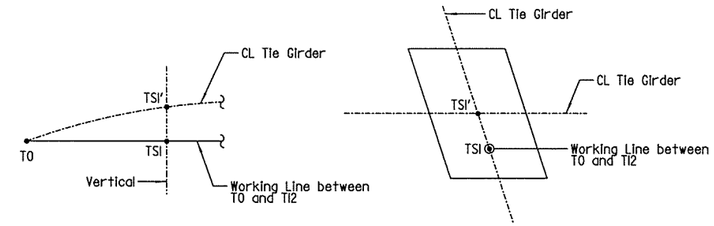
CAMBER DIAGRAM - SPAN 4

LEGEND:

- TH(n)' Indicates Cambered Hanger Work Point along CL Tie Girder.*
- RH(n) Indicates Hanger Work Point along CL Arch Rib.
- H(n) Indicates Hanger Member.
- T(n)' Indicates Cambered Tie Girder Panel Point along CL Tie Girder.
- TS(n)' Indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.
- RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.
- UL(n) Indicates Upper Lateral Bracing Work Point.

RIGHT ARCH RIB CAMBER - SPAN 4

WORK POINT	FINAL TIED ARCH POSITION			ARCH GEOMETRY														
	RIGHT ARCH			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	44.000	0.732	0.012	0.000	0.720	-0.012	0.036	-0.108	0.000	0.000	0.144	0.000	0.000	-219.876	0.000	44.003
RS1	-209.144	12.438	39.959	0.552	0.180	0.024	0.516	0.240	0.180	0.432	-0.480	-0.012	0.096	0.048	0.036	-209.011	12.437	39.978
RH1	-205.188	16.609	38.603	0.516	0.228	0.024	0.468	0.288	0.204	0.624	-0.648	-0.012	0.096	0.060	0.036	-205.046	16.603	38.624
UL1	-194.164	27.361	35.110	0.456	0.324	0.048	0.408	0.396	0.180	1.104	-1.152	-0.024	0.084	0.084	0.036	-193.993	27.332	35.130
RH2	-183.095	37.028	31.969	0.408	0.420	0.036	0.336	0.480	0.108	1.512	-1.620	-0.036	0.060	0.096	0.012	-182.902	36.976	31.979
RS2	-172.091	45.670	29.161	0.372	0.504	0.036	0.312	0.540	0.060	1.836	-2.028	-0.024	0.060	0.120	0.012	-171.876	45.598	29.168
UL2	-163.749	51.651	27.218	0.336	0.576	0.024	0.276	0.612	0.024	2.004	-2.244	0.000	0.048	0.132	0.000	-163.527	51.574	27.222
RH3	-158.366	55.271	26.041	0.324	0.624	0.024	0.252	0.660	0.024	2.052	-2.316	0.000	0.048	0.132	0.000	-158.143	55.196	26.045
RH4	-140.207	66.221	22.484	0.288	0.768	0.024	0.240	0.780	0.060	1.932	-2.112	0.000	0.048	0.168	0.000	-139.998	66.188	22.491
UL3	-135.948	68.527	21.734	0.276	0.792	0.024	0.240	0.804	0.060	1.860	-1.968	0.000	0.048	0.168	0.012	-135.746	68.510	21.742
RH5	-131.032	71.075	20.906	0.276	0.828	0.024	0.240	0.840	0.072	1.752	-1.752	0.000	0.048	0.168	0.012	-130.839	71.082	20.915
RS3	-126.639	73.250	20.200	0.276	0.852	0.024	0.240	0.852	0.072	1.632	-1.536	0.000	0.048	0.180	0.012	-126.456	73.279	20.209
UL4	-112.687	79.553	18.152	0.276	0.924	0.036	0.240	0.912	0.072	1.224	-0.624	0.000	0.048	0.192	0.012	-112.538	79.670	18.162
RH6	-101.105	84.124	16.667	0.264	0.996	0.024	0.240	0.984	0.060	0.888	0.228	0.012	0.048	0.204	0.000	-100.985	84.325	16.675
RH7	-90.446	87.830	15.462	0.264	1.044	0.024	0.240	1.032	0.048	0.624	1.008	0.024	0.048	0.216	0.000	-90.348	88.105	15.470
UL5	-85.597	89.363	14.964	0.276	1.056	0.024	0.252	1.032	0.048	0.516	1.344	0.036	0.048	0.216	0.000	-85.506	89.667	14.973
RS4	-76.458	92.001	14.107	0.276	1.092	0.012	0.264	1.056	0.048	0.348	1.956	0.048	0.048	0.216	0.000	-76.380	92.361	14.116
RH8	-68.568	94.021	13.451	0.288	1.116	0.012	0.264	1.092	0.048	0.216	2.460	0.060	0.048	0.228	0.000	-68.500	94.429	13.461
UL6	-57.583	96.446	12.663	0.300	1.152	0.012	0.276	1.104	0.048	0.072	3.084	0.072	0.048	0.240	0.000	-57.525	96.911	12.674
RH9	-45.725	98.572	11.972	0.312	1.188	0.012	0.312	1.140	0.048	-0.024	3.672	0.084	0.060	0.240	0.000	-45.670	99.092	11.984
RS5	-41.296	99.237	11.756	0.324	1.200	0.012	0.312	1.152	0.048	-0.048	3.852	0.084	0.060	0.240	0.000	-41.242	99.774	11.768
RH10	-33.361	100.256	11.425	0.336	1.212	0.012	0.324	1.152	0.048	-0.084	4.128	0.096	0.060	0.252	0.000	-33.308	100.818	11.438
UL7	-28.948	100.727	11.272	0.336	1.224	0.012	0.336	1.152	0.048	-0.108	4.272	0.096	0.060	0.252	0.000	-28.896	101.302	11.285
RS6	-10.446	101.973	10.867	0.372	1.236	0.012	0.360	1.176	0.048	-0.132	4.644	0.096	0.072	0.252	0.000	-10.390	102.582	10.880
RH11	-4.646	102.123	10.818	0.384	1.248	0.012	0.372	1.188	0.048	-0.132	4.692	0.096	0.072	0.252	0.000	-4.587	102.738	10.831
UL8	0.000	102.159	10.806	0.384	1.248	0.012	0.372	1.200	0.036	-0.132	4.692	0.096	0.084	0.252	0.000	0.059	102.775	10.818
RH12	4.646	102.123	10.818	0.396	1.248	0.012	0.396	1.188	0.048	-0.132	4.692	0.096	0.084	0.252	0.000	4.707	102.738	10.831
RS7	10.446	101.973	10.867	0.408	1.236	0.012	0.408	1.176	0.048	-0.132	4.644	0.096	0.084	0.252	0.000	10.510	102.582	10.880
UL9	28.948	100.727	11.272	0.432	1.224	0.012	0.432	1.152	0.048	-0.156	4.272	0.096	0.084	0.252	0.000	29.014	101.302	11.285
RH13	33.361	100.256	11.425	0.444	1.212	0.012	0.444	1.152	0.048	-0.180	4.128	0.096	0.084	0.252	0.000	33.427	100.818	11.438
RS8	41.296	99.237	11.756	0.456	1.200	0.012	0.456	1.152	0.048	-0.216	3.852	0.084	0.096	0.240	0.000	41.362	99.774	11.768
RH14	45.725	98.572	11.972	0.468	1.188	0.012	0.456	1.140	0.048	-0.240	3.672	0.084	0.096	0.240	0.000	45.790	99.092	11.984
UL10	57.583	96.446	12.663	0.480	1.152	0.012	0.480	1.104	0.060	-0.348	3.084	0.072	0.096	0.240	0.000	57.642	96.911	12.675
RH15	68.568	94.021	13.451	0.492	1.116	0.012	0.504	1.092	0.060	-0.492	2.460	0.060	0.096	0.228	0.000	68.618	94.429	13.462
RS9	76.458	92.001	14.107	0.492	1.092	0.024	0.504	1.056	0.060	-0.612	1.956	0.048	0.096	0.216	0.000	76.498	92.361	14.118
UL11	85.597	89.363	14.964	0.504	1.056	0.024	0.516	1.032	0.060	-0.792	1.344	0.036	0.096	0.216	0.000	85.624	89.667	14.974
RH16	90.446	87.830	15.462	0.504	1.044	0.024	0.528	1.032	0.060	-0.900	1.008	0.024	0.096	0.216	0.000	90.465	88.105	15.471
RH17	101.105	84.124	16.667	0.516	0.996	0.024	0.528	0.984	0.060	-1.164	0.228	0.012	0.120	0.204	0.012	101.105	84.325	16.676
UL12	112.687	79.553	18.152	0.504	0.924	0.036	0.528	0.912	0.072	-1.500	-0.624	0.012	0.108	0.192	0.012	112.657	79.670	18.163
RS10	126.639	73.250	20.200	0.504	0.852	0.024	0.528	0.852	0.072	-1.908	-1.536	0.012	0.120	0.180	0.012	126.576	73.279	20.210
RH18	131.032	71.075	20.906	0.504	0.828	0.024	0.528	0.840	0.072	-2.016	-1.752	0.012	0.120	0.168	0.012	130.960	71.082	20.916
UL13	135.948	68.527	21.734	0.504	0.792	0.024	0.528	0.804	0.072	-2.124	-1.968	0.012	0.120	0.168	0.012	135.867	68.510	21.744
RH19	140.207	66.221	22.484	0.492	0.768	0.024	0.528	0.780	0.060	-2.196	-2.112	0.012	0.108	0.168	0.012	140.118	66.188	22.493
RH20	158.366	55.271	26.041	0.456	0.624	0.024	0.504	0.660	0.024	-2.292	-2.316	0.000	0.096	0.132	0.000	158.263	55.196	26.045
UL14	163.749	51.651	27.218	0.432	0.576	0.024	0.492	0.612	0.024	-2.244	-2.244	0.000	0.096	0.132	0.000	163.647	51.574	27.222
RS11	172.091	45.670	29.161	0.408	0.504	0.036	0.456	0.540	0.060	-2.076	-2.028	-0.012	0.096	0.120	0.012	171.998	45.598	29.169
RH21	183.095	37.028	31.969	0.372	0.420	0.036	0.420	0.480	0.108	-1.740	-1.620	-0.024	0.084	0.096	0.012	183.023	36.976	31.980
UL15	194.164	27.361	35.110	0.312	0.324	0.048	0.360	0.396	0.180	-1.320	-1.152	-0.024	0.072	0.084	0.036	194.116	27.332	35.130
RH22	205.188	16.609	38.603	0.264	0.228	0.024	0.288	0.288	0.216	-0.840	-0.648	-0.012	0.060	0.060	0.036	205.169	16.603	38.625
RS12	209.144	12.438	39.959	0.228	0.180	0.024	0.252	0.240	0.192	-0.660	-0.480	-0.012	0.048	0.048	0.036	209.133	12.437	39.979
T12	220.000	0.000	44.000	0.048	0.012	0.000	0.048	-0.012	0.036	-0.120	0.000	0.000	0.012	0.000	0.000	219.999	0.000	44.003



ELEVATION SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

* TH(n)' hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NATALIE MCCOMBS No. 15778

5-29-14

BRIDGE ENGINEER

SHEET 3 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlS48.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54391

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WORKSPACE: **WORKSPACE**
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REVISED DATE:

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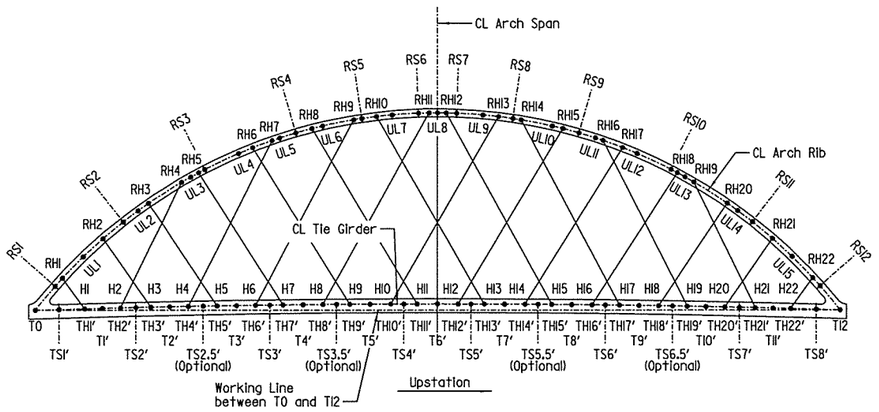
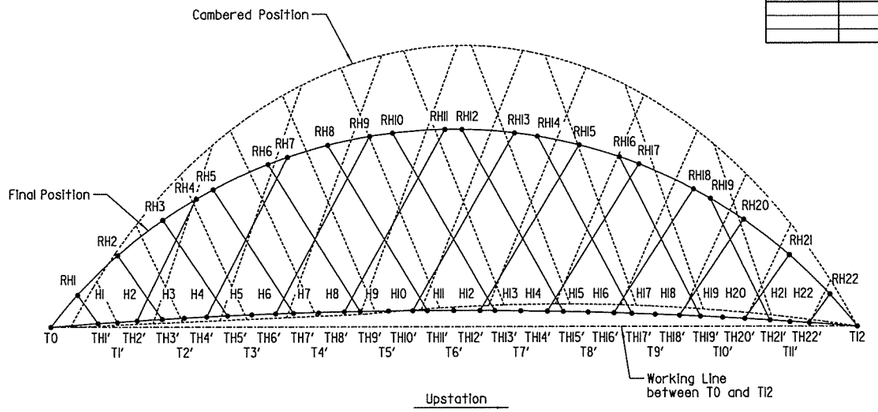
(1) 07292 TIED ARCH CAMBER DIAGRAM 54392



ELEVATION - SPAN 4



CAMBER DIAGRAM - SPAN 4

LEGEND:

TH(n)′ indicates Cambered Hanger Work Point along CL Tie Girder.*

RH(n) indicates Hanger Work Point along CL Arch Rib.

H(n) indicates Hanger Member.

T(n)′ indicates Cambered Tie Girder Panel Point along CL Tie Girder.

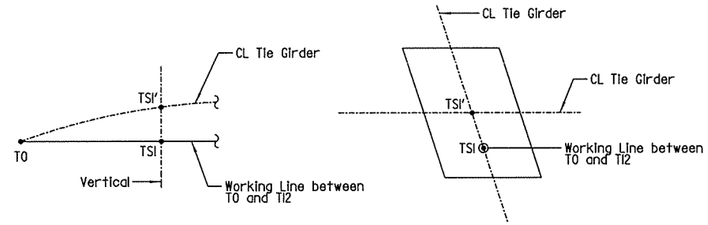
TS(n)′ indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.

RS(n) indicates Arch Rib Splice & Work Point along CL Arch Rib.

UL(n) indicates Upper Lateral Bracing Work Point.

RIGHT TIE GIRDER CAMBER - SPAN 4

WORK POINT	FINAL TIED ARCH POSITION			TIE GIRDER GEOMETRY															
	RIGHT TIE GIRDER			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	44.000	0.732	0.012	0.000	0.720	-0.012	0.036	-0.108	0.000	0.000	0.144	0.000	0.000	-219.876	0.000	44.003
TS1′	-206.999	0.184	43.940	0.732	0.276	0.024	0.708	0.240	0.024	-0.108	-0.564	0.000	0.144	0.048	0.000	-206.876	0.184	43.944
TH1′	-192.498	0.387	43.874	0.720	0.504	0.036	0.696	0.552	0.072	-0.108	-1.176	0.000	0.132	0.120	0.012	-192.378	0.387	43.884
T1′	-183.331	0.508	43.835	0.708	0.612	0.048	0.696	0.768	0.084	-0.108	-1.548	0.000	0.132	0.168	0.012	-183.212	0.508	43.847
TH2′	-174.164	0.624	43.797	0.696	0.756	0.048	0.684	0.948	0.096	-0.108	-1.908	0.000	0.132	0.204	0.024	-174.047	0.624	43.811
TS2′	-164.996	0.733	43.762	0.684	0.888	0.060	0.684	1.128	0.108	-0.108	-2.256	0.000	0.132	0.240	0.024	-164.880	0.733	43.778
TH3′	-155.829	0.837	43.728	0.672	0.996	0.048	0.672	1.296	0.108	-0.108	-2.568	0.000	0.132	0.276	0.024	-155.715	0.837	43.743
T2′	-146.662	0.934	43.696	0.660	1.092	0.048	0.648	1.440	0.108	-0.108	-2.844	0.000	0.132	0.312	0.024	-146.551	0.934	43.711
TH4′	-137.495	1.026	43.667	0.636	1.188	0.048	0.624	1.560	0.108	-0.108	-3.084	0.000	0.132	0.336	0.024	-137.388	1.026	43.682
TS2.5′	-128.328	1.112	43.639	0.624	1.272	0.048	0.612	1.668	0.108	-0.108	-3.300	0.000	0.120	0.360	0.036	-128.224	1.112	43.655
TH5′	-119.161	1.192	43.613	0.612	1.344	0.048	0.600	1.764	0.108	-0.108	-3.492	0.000	0.120	0.384	0.036	-119.059	1.192	43.629
T3′	-109.994	1.266	43.589	0.588	1.392	0.048	0.588	1.872	0.108	-0.108	-3.672	0.000	0.120	0.408	0.036	-109.895	1.266	43.605
TH6′	-100.827	1.334	43.566	0.576	1.488	0.048	0.564	1.932	0.108	-0.108	-3.840	0.000	0.120	0.420	0.036	-100.731	1.334	43.582
TS3′	-91.660	1.397	43.546	0.552	1.536	0.048	0.540	2.004	0.108	-0.108	-3.972	0.000	0.120	0.432	0.036	-91.568	1.397	43.562
TH7′	-82.493	1.453	43.528	0.540	1.596	0.048	0.528	2.064	0.108	-0.108	-4.104	0.000	0.096	0.444	0.036	-82.405	1.453	43.544
T4′	-73.326	1.503	43.512	0.528	1.620	0.048	0.516	2.136	0.108	-0.108	-4.212	0.000	0.096	0.456	0.036	-73.240	1.503	43.528
TH8′	-64.160	1.548	43.497	0.504	1.680	0.060	0.504	2.172	0.120	-0.108	-4.320	0.000	0.096	0.468	0.036	-64.077	1.548	43.515
TS3.5′	-54.992	1.587	43.484	0.492	1.716	0.060	0.480	2.208	0.120	-0.108	-4.404	0.000	0.096	0.480	0.036	-54.912	1.587	43.502
TH9′	-45.825	1.619	43.474	0.468	1.728	0.060	0.456	2.244	0.144	-0.108	-4.464	0.000	0.096	0.492	0.036	-45.749	1.619	43.494
T5′	-36.659	1.646	43.465	0.456	1.752	0.060	0.444	2.256	0.144	-0.108	-4.500	0.000	0.084	0.492	0.036	-36.586	1.646	43.485
TH10′	-27.492	1.667	43.458	0.444	1.764	0.060	0.432	2.268	0.132	-0.108	-4.524	0.000	0.084	0.492	0.036	-27.421	1.667	43.477
TS4′	-18.325	1.682	43.453	0.420	1.776	0.060	0.420	2.268	0.120	-0.108	-4.536	0.000	0.084	0.492	0.036	-18.257	1.682	43.471
TH11′	-9.159	1.691	43.450	0.408	1.788	0.060	0.408	2.268	0.120	-0.108	-4.548	0.000	0.084	0.492	0.036	-9.093	1.691	43.468
T6′	0.008	1.695	43.449	0.384	1.776	0.048	0.384	2.280	0.120	-0.108	-4.548	0.000	0.084	0.492	0.036	0.070	1.695	43.466
TH12′	9.175	1.692	43.450	0.372	1.788	0.060	0.360	2.268	0.120	-0.108	-4.548	0.000	0.072	0.492	0.036	9.233	1.692	43.468
TS5′	18.341	1.683	43.453	0.360	1.776	0.060	0.348	2.268	0.120	-0.108	-4.536	0.000	0.072	0.492	0.036	18.397	1.683	43.471
TH13′	27.508	1.669	43.458	0.336	1.776	0.060	0.336	2.256	0.132	-0.108	-4.524	0.000	0.072	0.492	0.036	27.561	1.669	43.477
T7′	36.675	1.648	43.464	0.324	1.752	0.060	0.324	2.256	0.144	-0.108	-4.500	0.000	0.060	0.492	0.036	36.725	1.648	43.484
TH14′	45.841	1.622	43.473	0.300	1.728	0.060	0.312	2.244	0.144	-0.108	-4.464	0.000	0.060	0.492	0.036	45.888	1.622	43.493
TS5.5′	55.008	1.590	43.483	0.288	1.728	0.060	0.288	2.196	0.132	-0.108	-4.392	0.000	0.048	0.468	0.036	55.051	1.590	43.502
TH15′	64.175	1.552	43.496	0.276	1.668	0.060	0.264	2.172	0.120	-0.108	-4.308	0.000	0.048	0.468	0.036	64.215	1.552	43.514
T8′	73.340	1.508	43.510	0.252	1.620	0.048	0.252	2.136	0.120	-0.108	-4.212	0.000	0.048	0.456	0.036	73.377	1.508	43.527
TH16′	82.507	1.458	43.526	0.240	1.584	0.048	0.240	2.064	0.108	-0.108	-4.092	0.000	0.048	0.444	0.036	82.542	1.458	43.542
TS6′	91.674	1.402	43.545	0.216	1.548	0.048	0.228	2.004	0.108	-0.108	-3.972	0.000	0.048	0.420	0.036	91.706	1.402	43.561
TH17′	100.839	1.340	43.565	0.204	1.476	0.048	0.204	1.932	0.108	-0.108	-3.828	0.000	0.036	0.420	0.036	100.867	1.340	43.581
T9′	110.006	1.272	43.587	0.192	1.392	0.048	0.180	1.872	0.108	-0.108	-3.672	0.000	0.036	0.408	0.036	110.031	1.272	43.603
TH18′	119.173	1.199	43.610	0.168	1.356	0.048	0.168	1.764	0.108	-0.108	-3.492	0.000	0.036	0.372	0.036	119.195	1.199	43.626
TS6.5′	128.338	1.119	43.636	0.156	1.272	0.048	0.156	1.656	0.108	-0.108	-3.288	0.000	0.036	0.360	0.036	128.358	1.119	43.652
TH19′	137.505	1.034	43.664	0.144	1.176	0.048	0.144	1.560	0.108	-0.108	-3.072	0.000	0.036	0.336	0.036	137.523	1.034	43.680
T10′	146.672	0.943	43.694	0.120	1.092	0.048	0.120	1.440	0.108	-0.120	-2.832	0.000	0.024	0.300	0.036	146.684	0.943	43.710
TH20′	155.837	0.846	43.725	0.108	0.996	0.048	0.108	1.284	0.108	-0.120	-2.556	0.000	0.024	0.276	0.036	155.847	0.846	43.741
TS7′	165.004	0.743	43.759	0.084	0.876	0.060	0.084	1.128	0.108	-0.120	-2.244	0.000	0.012	0.240	0.036	165.009	0.743	43.776
TH21′	174.170	0.634	43.794	0.084	0.744	0.048	0.084	0.948	0.108	-0.120	-1.896	0.000	0.012	0.204	0.024	174.175	0.634	43.809
T11′	183.336	0.519	43.831	0.072	0.624	0.048	0.072	0.756	0.084	-0.120	-1.548	0.000	0.012	0.168	0.024	183.339	0.519	43.844
TH22′	192.502	0.398	43.871	0.060	0.516	0.036	0.072	0.540	0.072	-0.120	-1.176	0.000	0.012	0.120	0.012	192.504	0.398	43.881
TS8′	207.001	0.195	43.937	0.048	0.288	0.024	0.060	0.228	0.024	-0.120	-0.564	0.000	0.012	0.048	0.000	207.001	0.195	43.941
T12	220.000	0.000	44.000	0.048	0.012	0.000	0.048	-0.012	0.036	-0.120	0.000	0.000	0.012	0.000	0.000	219.999	0.000	44.003



ELEVATION SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

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*TH(n)′ hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

SHEET 4 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275x1S49.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54392

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REVISED DATE:

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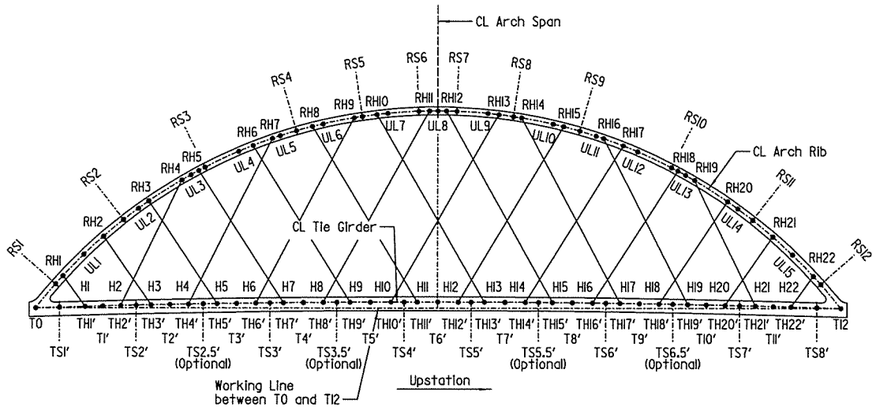
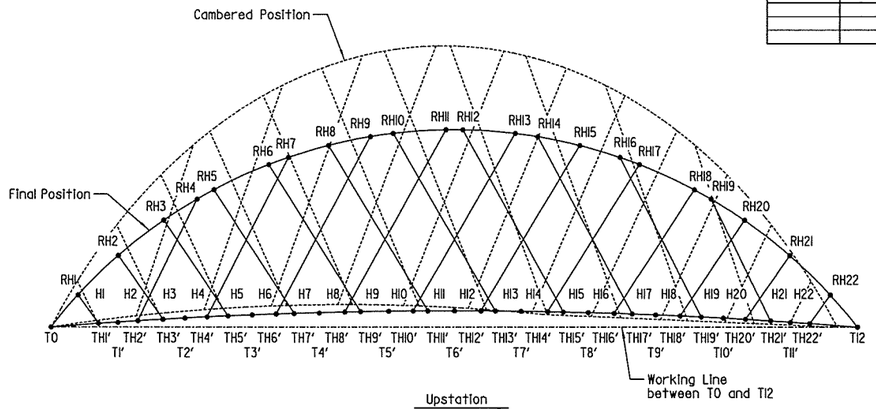




LEGEND:

TH(n)′ Indicates Cambered Hanger Work Point along CL Tie Girder. ✱

RH(n) Indicates Hanger Work Point along CL Arch Rib.

H(n) Indicates Hanger Member.

T(n)′ Indicates Cambered Tie Girder Panel Point along CL Tie Girder.

TS(n)′ Indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.

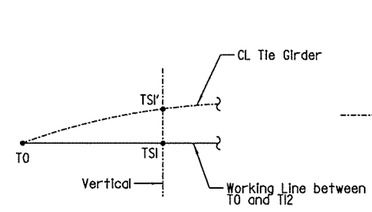
RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.

UL(n) Indicates Upper Lateral Bracing Work Point.

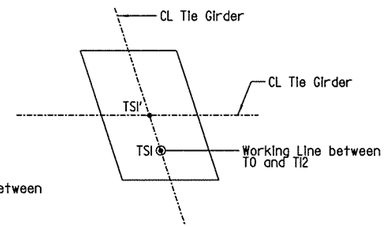
CAMBER DIAGRAM - SPAN 5

LEFT ARCH RIB CAMBER - SPAN 5

WORK POINT	FINAL TIED ARCH POSITION LEFT ARCH			ARCH GEOMETRY STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	-44.000	-0.048	0.012	0.084	-0.048	-0.012	0.120	0.120	0.000	0.000	-0.012	0.000	0.012	-219.999	0.000	-43.982
RS1	-209.144	12.438	-39.959	-0.228	0.180	0.060	-0.252	0.228	-0.024	0.636	-0.468	0.012	-0.048	0.036	0.000	-209.135	12.436	-39.955
RH1	-205.188	16.609	-38.603	-0.264	0.228	0.048	-0.288	0.276	-0.048	0.828	-0.636	0.024	-0.048	0.048	0.000	-205.169	16.602	-38.601
UL1	-194.164	27.361	-35.110	-0.312	0.324	0.036	-0.348	0.372	-0.012	1.308	-1.140	0.036	-0.060	0.060	0.000	-194.115	27.329	-35.105
RH2	-183.095	37.028	-31.969	-0.360	0.420	0.036	-0.420	0.456	0.060	1.752	-1.644	0.036	-0.084	0.084	0.012	-183.021	36.971	-31.957
RS2	-172.091	45.670	-29.161	-0.408	0.504	0.048	-0.456	0.528	0.108	2.100	-2.088	0.012	-0.084	0.096	0.012	-171.995	45.590	-29.146
UL2	-163.749	51.651	-27.218	-0.432	0.576	0.060	-0.492	0.600	0.144	2.292	-2.328	0.000	-0.096	0.108	0.036	-163.643	51.564	-27.198
RH3	-158.366	55.271	-26.041	-0.456	0.624	0.060	-0.504	0.636	0.144	2.352	-2.424	0.000	-0.096	0.120	0.036	-158.258	55.184	-26.021
RH4	-140.207	66.221	-22.484	-0.492	0.768	0.060	-0.516	0.756	0.108	2.268	-2.256	0.000	-0.096	0.144	0.012	-140.110	66.172	-22.469
UL3	-135.948	68.527	-21.734	-0.504	0.792	0.060	-0.528	0.780	0.096	2.196	-2.112	0.000	-0.096	0.144	0.012	-135.859	68.494	-21.720
RH5	-131.032	71.075	-20.906	-0.504	0.828	0.048	-0.528	0.804	0.096	2.088	-1.896	0.000	-0.096	0.144	0.012	-130.952	71.065	-20.893
RS3	-126.639	73.250	-20.200	-0.504	0.852	0.048	-0.528	0.828	0.084	1.980	-1.668	0.000	-0.096	0.156	0.012	-126.568	73.264	-20.188
UL4	-112.687	79.553	-18.152	-0.504	0.912	0.048	-0.516	0.888	0.084	1.572	-0.744	0.024	-0.096	0.168	0.012	-112.649	79.655	-18.138
RH6	-101.105	84.124	-16.667	-0.516	0.984	0.060	-0.528	0.960	0.108	1.224	0.144	0.036	-0.096	0.180	0.012	-101.098	84.313	-16.649
RH7	-90.446	87.830	-15.462	-0.504	1.032	0.060	-0.516	1.008	0.108	0.936	0.960	0.048	-0.096	0.192	0.012	-90.461	88.096	-15.443
UL5	-85.597	89.363	-14.964	-0.504	1.056	0.060	-0.516	1.020	0.108	0.828	1.308	0.048	-0.096	0.192	0.012	-85.621	89.661	-14.945
RS4	-76.458	92.001	-14.107	-0.492	1.080	0.060	-0.504	1.032	0.108	0.636	1.956	0.048	-0.096	0.192	0.012	-76.496	92.356	-14.088
RH8	-68.568	94.021	-13.451	-0.492	1.116	0.060	-0.492	1.056	0.108	0.504	2.472	0.048	-0.096	0.192	0.012	-68.616	94.424	-13.432
UL6	-57.583	96.446	-12.663	-0.480	1.152	0.060	-0.480	1.092	0.108	0.360	3.144	0.060	-0.096	0.216	0.012	-57.641	96.913	-12.643
RH9	-45.725	98.572	-11.972	-0.456	1.188	0.060	-0.456	1.116	0.108	0.252	3.744	0.072	-0.084	0.216	0.012	-45.787	99.094	-11.951
RS5	-41.296	99.237	-11.756	-0.456	1.200	0.060	-0.456	1.128	0.108	0.216	3.936	0.072	-0.084	0.216	0.012	-41.361	99.777	-11.735
RH10	-33.361	100.256	-11.425	-0.444	1.212	0.060	-0.444	1.140	0.108	0.180	4.236	0.072	-0.084	0.216	0.012	-33.427	100.823	-11.404
UL7	-28.948	100.727	-11.272	-0.432	1.212	0.060	-0.432	1.140	0.108	0.168	4.380	0.084	-0.084	0.216	0.012	-29.013	101.306	-11.250
RS6	-10.446	101.973	-10.867	-0.408	1.236	0.060	-0.408	1.152	0.108	0.132	4.764	0.084	-0.084	0.216	0.012	-10.510	102.587	-10.845
RH11	-4.646	102.123	-10.818	-0.396	1.248	0.072	-0.396	1.176	0.108	0.132	4.812	0.096	-0.084	0.228	0.012	-4.707	102.745	-10.794
UL8	0.000	102.159	-10.806	-0.384	1.248	0.072	-0.372	1.176	0.108	0.132	4.824	0.096	-0.084	0.228	0.012	-0.059	102.782	-10.782
RH12	4.646	102.123	-10.818	-0.384	1.248	0.072	-0.372	1.176	0.108	0.132	4.812	0.096	-0.072	0.228	0.012	4.587	102.745	-10.794
RS7	10.446	101.973	-10.867	-0.372	1.236	0.060	-0.360	1.152	0.108	0.132	4.764	0.096	-0.072	0.216	0.012	10.390	102.587	-10.844
UL9	28.948	100.727	-11.272	-0.336	1.212	0.060	-0.336	1.140	0.108	0.096	4.380	0.084	-0.072	0.216	0.012	28.894	101.306	-11.250
RH13	33.361	100.256	-11.425	-0.336	1.212	0.060	-0.324	1.140	0.108	0.084	4.236	0.084	-0.072	0.216	0.012	33.307	100.823	-11.403
RS8	41.296	99.237	-11.756	-0.324	1.200	0.060	-0.312	1.128	0.108	0.048	3.936	0.072	-0.060	0.216	0.012	41.242	99.777	-11.735
RH14	45.725	98.572	-11.972	-0.312	1.188	0.060	-0.312	1.116	0.108	0.024	3.744	0.072	-0.060	0.216	0.012	45.670	99.094	-11.951
UL10	57.583	96.446	-12.663	-0.300	1.152	0.060	-0.288	1.092	0.096	-0.096	3.144	0.060	-0.060	0.216	0.012	57.521	96.913	-12.644
RH15	68.568	94.021	-13.451	-0.288	1.116	0.060	-0.276	1.056	0.108	-0.240	2.472	0.048	-0.048	0.192	0.012	68.497	94.424	-13.432
RS9	76.458	92.001	-14.107	-0.288	1.080	0.060	-0.264	1.032	0.108	-0.372	1.956	0.048	-0.048	0.192	0.012	76.377	92.356	-14.088
UL11	85.597	89.363	-14.964	-0.276	1.056	0.060	-0.252	1.020	0.108	-0.552	1.308	0.036	-0.048	0.192	0.012	85.503	89.661	-14.946
RH16	90.446	87.830	-15.462	-0.276	1.032	0.060	-0.252	1.008	0.108	-0.672	0.960	0.036	-0.048	0.192	0.012	90.342	88.096	-15.444
RH17	101.105	84.124	-16.667	-0.264	0.984	0.060	-0.240	0.960	0.096	-0.948	0.144	0.036	-0.048	0.180	0.012	100.980	84.313	-16.650
UL12	112.687	79.553	-18.152	-0.276	0.912	0.048	-0.252	0.888	0.084	-1.308	-0.744	0.012	-0.048	0.168	0.012	112.530	79.655	-18.139
RS10	126.639	73.250	-20.200	-0.276	0.852	0.048	-0.240	0.828	0.084	-1.728	-1.668	0.000	-0.048	0.156	0.012	126.448	73.264	-20.188
RH18	131.032	71.075	-20.906	-0.276	0.828	0.048	-0.240	0.804	0.096	-1.836	-1.896	0.000	-0.048	0.144	0.012	130.832	71.065	-20.893
UL13	135.948	68.527	-21.734	-0.276	0.792	0.060	-0.240	0.780	0.096	-1.944	-2.112	-0.012	-0.048	0.144	0.012	135.739	68.494	-21.721
RH19	140.207	66.221	-22.484	-0.288	0.768	0.060	-0.240	0.756	0.108	-2.028	-2.256	-0.012	-0.048	0.144	0.012	139.990	66.172	-22.470
RH20	158.366	55.271	-26.041	-0.324	0.624	0.060	-0.264	0.636	0.144	-2.124	-2.424	-0.012	-0.048	0.120	0.012	158.136	55.184	-26.024
UL14	163.749	51.651	-27.218	-0.348	0.576	0.048	-0.276	0.600	0.132	-2.052	-2.328	0.000	-0.060	0.108	0.012	163.521	51.564	-27.202
RS11	172.091	45.670	-29.161	-0.372	0.504	0.048	-0.312	0.528	0.108	-1.884	-2.088	0.012	-0.072	0.096	0.012	171.871	45.590	-29.146
RH21	183.095	37.028	-31.969	-0.408	0.420	0.036	-0.348	0.456	0.060	-1.524	-1.644	0.024	-0.072	0.084	0.012	182.899	36.971	-31.958
UL15	194.164	27.361	-35.110	-0.468	0.324	0.036	-0.408	0.372	-0.012	-1.092	-1.140	0.024	-0.084	0.060	0.000	193.993	27.329	-35.106
RH22	205.188	16.609	-38.603	-0.516	0.228	0.048	-0.480	0.276	-0.048	-0.600	-0.636	0.012	-0.096	0.048	0.000	205.047	16.602	-38.602
RS12	209.144	12.438	-39.959	-0.552	0.180	0.060	-0.516	0.228	-0.012	-0.420	-0.468	0.012	-0.096	0.036	0.000	209.012	12.436	-39.954
T12	220.000	0.000	-44.000	-0.732	0.012	0.084	-0.708	-0.012	0.120	0.108	0.000	0.000	-0.132	0.000	0.012	219.878	0.000	-43.982



ELEVATION



SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

✱ TH(n)′ hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

SHEET 5 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS 5-29-14 BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlS50.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014
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wgregory 5/29/2014 2:34:40 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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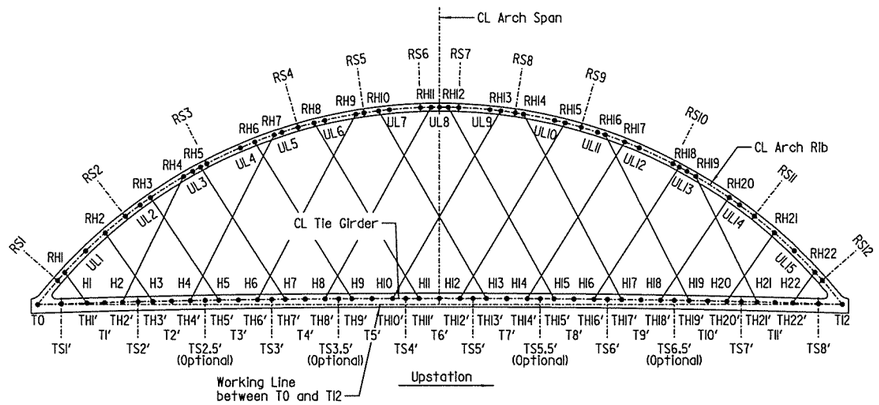
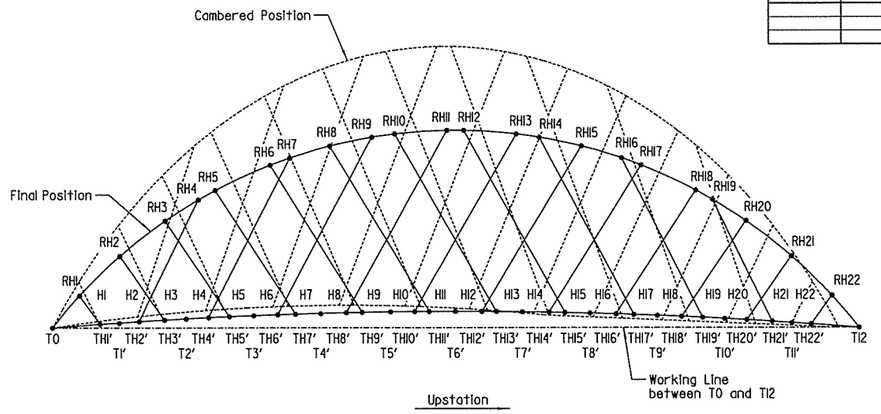
				JOB NO.		061275	189	505
				① 07292		TIED ARCH CAMBER DIAGRAM		54394



ELEVATION - SPAN 5



CAMBER DIAGRAM - SPAN 5

LEGEND:

TH(n)' indicates Cambered Hanger Work Point along CL Tie Girder.*

RH(n) indicates Hanger Work Point along CL Arch Rib.

H(n) indicates Hanger Member.

T(n)' indicates Cambered Tie Girder Panel Point along CL Tie Girder.

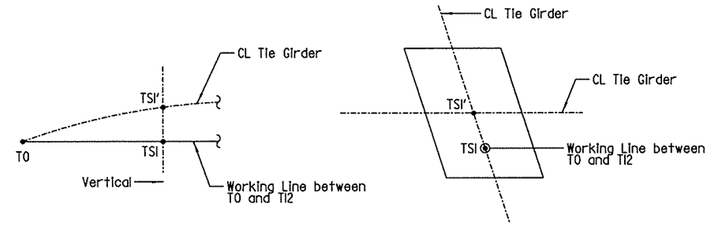
TS(n)' indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.

RS(n) indicates Arch Rib Splice & Work Point along CL Arch Rib.

UL(n) indicates Upper Lateral Bracing Work Point.

LEFT TIE GIRDER CAMBER - SPAN 5

WORK POINT	FINAL TIED ARCH POSITION			TIE GIRDER GEOMETRY																
	LEFT TIE GIRDER			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	-44.000	-0.048	0.012	0.084	-0.048	-0.012	0.120	0.120	0.000	0.000	-0.012	0.000	0.012	-219.999	0.000	-43.982
TS1'	-207.004	0.165	-43.947	-0.048	0.264	0.060	-0.060	0.228	0.144	0.120	-0.540	0.000	-0.012	0.048	0.024	-207.004	0.165	-43.928
TH1'	-192.508	0.334	-43.891	-0.060	0.516	0.048	-0.060	0.528	0.108	0.120	-1.140	0.000	-0.012	0.096	0.024	-192.509	0.334	-43.876
T1'	-183.344	0.434	-43.859	-0.072	0.624	0.036	-0.072	0.744	0.084	0.108	-1.500	0.000	-0.012	0.132	0.024	-183.348	0.434	-43.847
TH2'	-174.180	0.527	-43.829	-0.084	0.744	0.036	-0.084	0.924	0.084	0.108	-1.836	0.000	-0.012	0.168	0.024	-174.186	0.527	-43.817
TS2'	-165.015	0.615	-43.800	-0.084	0.888	0.036	-0.084	1.092	0.072	0.108	-2.172	0.000	-0.012	0.192	0.024	-165.021	0.615	-43.789
TH3'	-155.850	0.697	-43.773	-0.108	0.996	0.036	-0.096	1.248	0.084	0.108	-2.472	0.000	-0.012	0.228	0.024	-155.859	0.697	-43.761
T2'	-146.686	0.773	-43.749	-0.120	1.092	0.036	-0.120	1.392	0.084	0.108	-2.736	0.000	-0.024	0.252	0.024	-146.699	0.773	-43.737
TH4'	-137.521	0.843	-43.726	-0.132	1.188	0.036	-0.144	1.512	0.084	0.108	-2.976	0.000	-0.036	0.276	0.024	-137.538	0.843	-43.714
TS2.5'	-128.355	0.907	-43.705	-0.156	1.284	0.036	-0.156	1.608	0.096	0.108	-3.180	0.000	-0.036	0.288	0.024	-128.375	0.907	-43.692
TH5'	-119.191	0.966	-43.686	-0.168	1.356	0.036	-0.168	1.704	0.096	0.108	-3.372	0.000	-0.036	0.312	0.024	-119.213	0.966	-43.673
T3'	-110.025	1.018	-43.669	-0.192	1.428	0.036	-0.180	1.800	0.096	0.108	-3.552	0.000	-0.036	0.324	0.024	-110.050	1.018	-43.656
TH6'	-100.859	1.065	-43.654	-0.204	1.488	0.036	-0.192	1.872	0.096	0.108	-3.696	0.000	-0.036	0.336	0.024	-100.886	1.065	-43.641
TS3'	-91.694	1.105	-43.641	-0.216	1.536	0.036	-0.228	1.944	0.096	0.108	-3.840	0.000	-0.048	0.360	0.024	-91.726	1.105	-43.628
TH7'	-82.528	1.140	-43.630	-0.240	1.608	0.036	-0.240	1.992	0.096	0.108	-3.960	0.000	-0.048	0.360	0.024	-82.563	1.140	-43.617
T4'	-73.362	1.169	-43.620	-0.252	1.644	0.036	-0.252	2.052	0.096	0.108	-4.068	0.000	-0.048	0.372	0.024	-73.399	1.169	-43.607
TH8'	-64.196	1.192	-43.613	-0.276	1.692	0.036	-0.264	2.088	0.084	0.108	-4.164	0.000	-0.048	0.384	0.024	-64.236	1.192	-43.601
TS3.5'	-55.030	1.209	-43.607	-0.288	1.728	0.036	-0.288	2.136	0.084	0.108	-4.248	0.000	-0.048	0.384	0.024	-55.073	1.209	-43.595
TH9'	-45.863	1.220	-43.604	-0.300	1.752	0.036	-0.312	2.160	0.084	0.108	-4.308	0.000	-0.060	0.396	0.024	-45.910	1.220	-43.592
T5'	-36.697	1.225	-43.602	-0.324	1.752	0.036	-0.324	2.184	0.084	0.108	-4.344	0.000	-0.060	0.408	0.024	-36.747	1.225	-43.590
TH10'	-27.530	1.224	-43.602	-0.336	1.764	0.036	-0.336	2.196	0.084	0.108	-4.368	0.000	-0.060	0.408	0.024	-27.582	1.224	-43.590
TS4'	-18.363	1.217	-43.604	-0.360	1.776	0.036	-0.348	2.196	0.096	0.108	-4.380	0.000	-0.072	0.408	0.024	-18.419	1.217	-43.591
TH11'	-9.196	1.205	-43.608	-0.372	1.788	0.036	-0.360	2.196	0.096	0.108	-4.392	0.000	-0.072	0.408	0.024	-9.254	1.205	-43.595
T6'	-0.029	1.187	-43.614	-0.384	1.776	0.036	-0.372	2.208	0.096	0.108	-4.392	0.000	-0.084	0.408	0.024	-0.090	1.187	-43.601
TH12'	9.139	1.162	-43.622	-0.408	1.788	0.036	-0.408	2.196	0.096	0.108	-4.392	0.000	-0.084	0.408	0.024	9.073	1.162	-43.609
TS5'	18.305	1.132	-43.632	-0.420	1.776	0.036	-0.420	2.196	0.096	0.108	-4.380	0.000	-0.084	0.408	0.024	18.237	1.132	-43.619
TH13'	27.473	1.096	-43.644	-0.432	1.764	0.036	-0.432	2.196	0.084	0.108	-4.368	0.000	-0.084	0.408	0.024	27.403	1.096	-43.632
T7'	36.641	1.054	-43.657	-0.456	1.752	0.036	-0.444	2.184	0.084	0.108	-4.344	0.000	-0.084	0.408	0.024	36.568	1.054	-43.645
TH14'	45.808	1.006	-43.673	-0.468	1.764	0.036	-0.456	2.160	0.084	0.108	-4.308	0.000	-0.084	0.384	0.024	45.733	1.006	-43.661
TS5.5'	54.977	0.953	-43.690	-0.492	1.728	0.036	-0.480	2.136	0.084	0.108	-4.248	0.000	-0.096	0.384	0.024	54.897	0.953	-43.678
TH15'	64.145	0.900	-43.707	-0.504	1.692	0.036	-0.504	2.088	0.084	0.108	-4.164	0.000	-0.096	0.384	0.024	64.062	0.900	-43.695
T8'	73.312	0.847	-43.725	-0.528	1.644	0.036	-0.516	2.052	0.096	0.108	-4.068	0.000	-0.096	0.372	0.024	73.226	0.847	-43.712
TH16'	82.481	0.794	-43.742	-0.540	1.608	0.036	-0.528	1.992	0.096	0.108	-3.960	0.000	-0.096	0.360	0.024	82.393	0.794	-43.729
TS6'	91.649	0.741	-43.759	-0.552	1.548	0.036	-0.540	1.932	0.096	0.108	-3.840	0.000	-0.108	0.360	0.024	91.558	0.741	-43.746
TH17'	100.816	0.689	-43.776	-0.576	1.488	0.036	-0.564	1.872	0.096	0.108	-3.696	0.000	-0.120	0.336	0.024	100.720	0.689	-43.763
T9'	109.984	0.636	-43.793	-0.588	1.416	0.036	-0.588	1.800	0.096	0.108	-3.540	0.000	-0.120	0.324	0.024	109.885	0.636	-43.780
TH18'	119.153	0.583	-43.811	-0.612	1.356	0.036	-0.600	1.704	0.084	0.108	-3.372	0.000	-0.120	0.312	0.024	119.051	0.583	-43.799
TS6.5'	128.320	0.530	-43.828	-0.624	1.284	0.036	-0.612	1.608	0.084	0.108	-3.180	0.000	-0.120	0.288	0.024	128.216	0.530	-43.816
TH19'	137.488	0.477	-43.845	-0.636	1.188	0.036	-0.624	1.512	0.084	0.108	-2.976	0.000	-0.120	0.276	0.024	137.382	0.477	-43.833
T10'	146.657	0.424	-43.862	-0.660	1.116	0.036	-0.636	1.380	0.084	0.108	-2.736	0.000	-0.132	0.240	0.024	146.547	0.424	-43.850
TH20'	155.824	0.371	-43.880	-0.672	0.996	0.036	-0.660	1.248	0.084	0.108	-2.472	0.000	-0.132	0.228	0.024	155.711	0.371	-43.868
TS7'	164.992	0.318	-43.897	-0.684	0.876	0.036	-0.672	1.092	0.072	0.108	-2.160	0.000	-0.132	0.192	0.024	164.877	0.318	-43.886
TH21'	174.161	0.265	-43.914	-0.696	0.744	0.036	-0.684	0.924	0.072	0.108	-1.836	0.000	-0.132	0.168	0.012	174.044	0.265	-43.904
T11'	183.328	0.212	-43.931	-0.708	0.624	0.036	-0.696	0.744	0.084	0.108	-1.500	0.000	-0.132	0.132	0.024	183.209	0.212	-43.919
TH22'	192.496	0.159	-43.948	-0.708	0.516	0.048	-0.696	0.528	0.108	0.108	-1.140	0.000	-0.132	0.096	0.024	192.377	0.159	-43.933
TS8'	206.998	0.075	-43.976	-0.732	0.276	0.060	-0.708	0.228	0.132	0.108	-0.540	0.000	-0.132	0.036	0.024	206.876	0.075	-43.958
T12	220.000	0.000	-44.000	-0.732	0.012	0.084	-0.708	-0.012	0.120	0.108	0.000	0.000	-0.132	0.000	0.012	219.878	0.000	-43.982



ELEVATION SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

* TH(n)' hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

SHEET 6 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

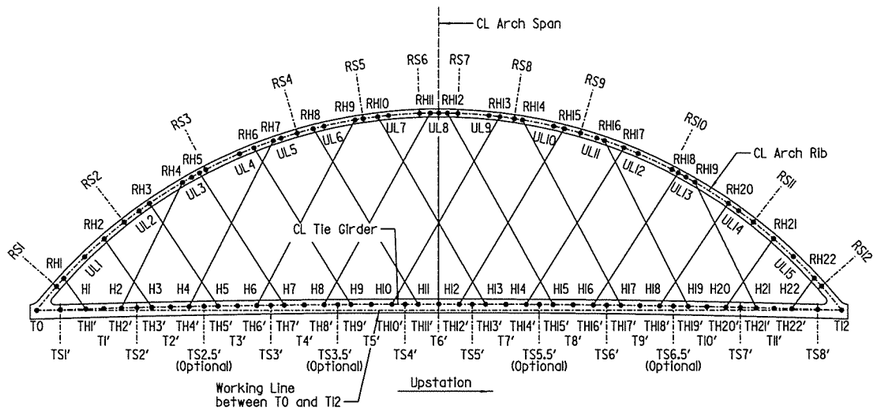
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NATALIE MCCOMBS No. 15778
5-29-14
BRIDGE ENGINEER

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlSS1.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014

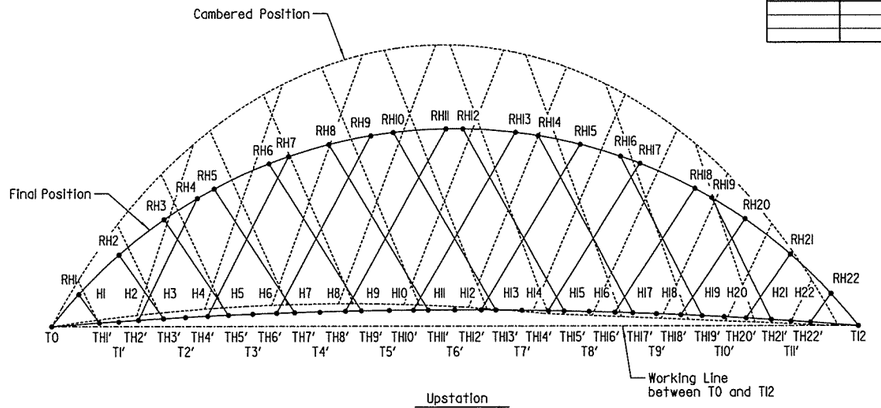
BRIDGE NO. 07292 DRAWING NO. 54394

wgregory 5/29/2014 2:34:44 PM
WORKSPACE: ##WORKSPACE##
N:\STOMS\Projects\Roadway\Plans\Drawings\ZPLOT_80288.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	190	505
				① 07292		TIED ARCH CAMBER DIAGRAM		54395



ELEVATION - SPAN 5



CAMBER DIAGRAM - SPAN 5

LEGEND:

TH(n)′ indicates Cambered Hanger Work Point along CL Tie Girder.*

RH(n) indicates Hanger Work Point along CL Arch Rib.

H(n) indicates Hanger Member.

T(n)′ Indicates Cambered Tie Girder Panel Point along CL Tie Girder.

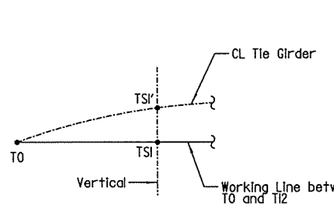
TS(n)′ Indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.

RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.

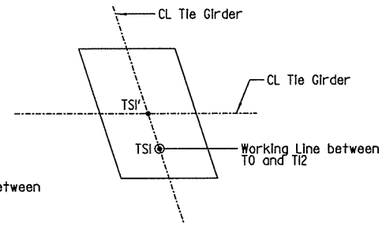
UL(n) indicates Upper Lateral Bracing Work Point.

RIGHT ARCH RIB CAMBER - SPAN 5

WORK POINT	FINAL TIED ARCH POSITION			ARCH GEOMETRY																
	RIGHT ARCH			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSITION		
	X (FT)	Y (FT)	Z (FT)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	Δ X (IN)	Δ Y (IN)	Δ Z (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	44.000	-0.048	0.012	0.000	-0.048	-0.012	0.036	0.120	0.000	0.000	-0.012	0.000	0.000	-219.999	0.000	44.003
RS1	-209.144	12.438	39.959	-0.228	0.180	0.024	-0.252	0.240	0.192	0.660	-0.480	-0.012	-0.048	0.048	0.036	-209.133	12.437	39.979
RH1	-205.188	16.609	38.603	-0.264	0.228	0.024	-0.288	0.288	0.216	0.840	-0.648	-0.012	-0.060	0.060	0.036	-205.169	16.603	38.625
UL1	-194.164	27.361	35.110	-0.312	0.324	0.048	-0.360	0.396	0.180	1.320	-1.152	-0.024	-0.072	0.084	0.036	-194.116	27.332	35.130
RH2	-183.095	37.028	31.969	-0.372	0.420	0.036	-0.420	0.480	0.108	1.740	-1.620	-0.024	-0.084	0.096	0.012	-183.023	36.976	31.980
RS2	-172.091	45.670	29.161	-0.408	0.504	0.036	-0.456	0.540	0.060	2.076	-2.028	-0.012	-0.096	0.120	0.012	-171.998	45.598	29.169
UL2	-163.749	51.651	27.218	-0.432	0.576	0.024	-0.492	0.612	0.024	2.244	-2.244	0.000	-0.096	0.132	0.000	-163.647	51.574	27.222
RH3	-158.366	55.271	26.041	-0.456	0.624	0.024	-0.504	0.660	0.024	2.292	-2.316	0.000	-0.096	0.132	0.000	-158.263	55.196	26.045
RH4	-140.207	66.221	22.484	-0.492	0.768	0.024	-0.528	0.780	0.060	2.196	-2.112	0.012	-0.108	0.168	0.012	-140.118	66.188	22.493
UL3	-135.948	68.527	21.734	-0.504	0.792	0.024	-0.528	0.804	0.072	2.124	-1.968	0.012	-0.120	0.168	0.012	-135.867	68.510	21.744
RH5	-131.032	71.075	20.906	-0.504	0.828	0.024	-0.528	0.840	0.072	2.016	-1.752	0.012	-0.120	0.168	0.012	-130.960	71.082	20.916
RS3	-126.639	73.250	20.200	-0.504	0.852	0.024	-0.528	0.852	0.072	1.908	-1.536	0.012	-0.120	0.180	0.012	-126.576	73.279	20.210
UL4	-112.687	79.553	18.152	-0.504	0.924	0.036	-0.528	0.912	0.072	1.500	-0.624	0.012	-0.108	0.192	0.012	-112.657	79.670	18.163
RH6	-101.105	84.124	16.667	-0.516	0.996	0.024	-0.528	0.984	0.060	1.164	0.228	0.012	-0.120	0.204	0.012	-101.105	84.325	16.676
RH7	-90.446	87.830	15.462	-0.504	1.044	0.024	-0.528	1.032	0.060	0.900	1.008	0.024	-0.096	0.216	0.000	-90.465	88.105	15.471
UL5	-85.597	89.363	14.964	-0.504	1.056	0.024	-0.516	1.032	0.060	0.792	1.344	0.036	-0.096	0.216	0.000	-85.624	89.667	14.974
RS4	-76.458	92.001	14.107	-0.492	1.092	0.024	-0.504	1.056	0.060	0.612	1.956	0.048	-0.096	0.216	0.000	-76.498	92.361	14.118
RH8	-68.568	94.021	13.451	-0.492	1.116	0.012	-0.504	1.092	0.060	0.492	2.460	0.060	-0.096	0.228	0.000	-68.618	94.429	13.462
UL6	-57.583	96.446	12.663	-0.480	1.152	0.012	-0.480	1.104	0.060	0.348	3.084	0.072	-0.096	0.240	0.000	-57.642	96.911	12.675
RH9	-45.725	98.572	11.972	-0.468	1.188	0.012	-0.456	1.140	0.048	0.240	3.672	0.084	-0.096	0.240	0.000	-45.790	99.092	11.984
RS5	-41.296	99.237	11.756	-0.456	1.200	0.012	-0.456	1.152	0.048	0.216	3.852	0.084	-0.096	0.240	0.000	-41.362	99.774	11.768
RH10	-33.361	100.256	11.425	-0.444	1.212	0.012	-0.444	1.152	0.048	0.180	4.128	0.096	-0.084	0.252	0.000	-33.427	100.818	11.438
UL7	-28.948	100.727	11.272	-0.432	1.224	0.012	-0.432	1.152	0.048	0.156	4.272	0.096	-0.084	0.252	0.000	-29.014	101.302	11.285
RS6	-10.446	101.973	10.867	-0.408	1.236	0.012	-0.408	1.176	0.048	0.132	4.644	0.096	-0.084	0.252	0.000	-10.510	102.582	10.880
RH11	-4.646	102.123	10.818	-0.396	1.248	0.012	-0.396	1.188	0.048	0.132	4.692	0.096	-0.084	0.252	0.000	-4.707	102.738	10.831
UL8	0.000	102.159	10.806	-0.384	1.248	0.012	-0.372	1.200	0.036	0.132	4.692	0.096	-0.084	0.252	0.000	-0.059	102.775	10.818
RH12	4.646	102.123	10.818	-0.384	1.248	0.012	-0.372	1.188	0.048	0.132	4.692	0.096	-0.072	0.252	0.000	4.587	102.738	10.831
RS7	10.446	101.973	10.867	-0.372	1.236	0.012	-0.360	1.176	0.048	0.132	4.644	0.096	-0.072	0.252	0.000	10.390	102.582	10.880
UL9	28.948	100.727	11.272	-0.336	1.224	0.012	-0.336	1.152	0.048	0.108	4.272	0.096	-0.060	0.252	0.000	28.896	101.302	11.285
RH13	33.361	100.256	11.425	-0.336	1.212	0.012	-0.324	1.152	0.048	0.084	4.128	0.096	-0.060	0.252	0.000	33.308	100.818	11.438
RS8	41.296	99.237	11.756	-0.324	1.200	0.012	-0.312	1.152	0.048	0.048	3.852	0.084	-0.060	0.240	0.000	41.242	99.774	11.768
RH14	45.725	98.572	11.972	-0.312	1.188	0.012	-0.312	1.140	0.048	0.024	3.672	0.084	-0.060	0.240	0.000	45.670	99.092	11.984
UL10	57.583	96.446	12.663	-0.300	1.152	0.012	-0.276	1.104	0.048	-0.072	3.084	0.072	-0.048	0.240	0.000	57.525	96.911	12.674
RH15	68.568	94.021	13.451	-0.288	1.116	0.012	-0.264	1.092	0.048	-0.216	2.460	0.060	-0.048	0.228	0.000	68.500	94.429	13.461
RS9	76.458	92.001	14.107	-0.276	1.092	0.012	-0.264	1.056	0.048	-0.348	1.956	0.048	-0.048	0.216	0.000	76.380	92.361	14.116
UL11	85.597	89.363	14.964	-0.276	1.056	0.024	-0.252	1.032	0.048	-0.516	1.344	0.036	-0.048	0.216	0.000	85.506	89.667	14.973
RH16	90.446	87.830	15.462	-0.264	1.044	0.024	-0.240	1.032	0.048	-0.624	1.008	0.024	-0.048	0.216	0.000	90.348	88.105	15.470
RH17	101.105	84.124	16.667	-0.264	0.996	0.024	-0.240	0.984	0.060	-0.888	0.228	0.012	-0.048	0.204	0.000	100.985	84.325	16.675
UL12	112.687	79.553	18.152	-0.276	0.924	0.036	-0.240	0.912	0.072	-1.224	-0.624	0.000	-0.048	0.192	0.012	112.538	79.670	18.162
RS10	126.639	73.250	20.200	-0.276	0.852	0.024	-0.240	0.852	0.072	-1.632	-1.536	0.000	-0.048	0.180	0.012	126.456	73.279	20.209
RH18	131.032	71.075	20.906	-0.276	0.828	0.024	-0.240	0.840	0.072	-1.752	-1.752	0.000	-0.048	0.168	0.012	130.839	71.082	20.915
UL13	135.948	68.527	21.734	-0.276	0.792	0.024	-0.240	0.804	0.060	-1.860	-1.968	0.000	-0.048	0.168	0.012	135.746	68.510	21.742
RH19	140.207	66.221	22.484	-0.288	0.768	0.024	-0.240	0.780	0.060	-1.932	-2.112	0.000	-0.048	0.168	0.000	139.998	66.188	22.491
RH20	158.366	55.271	26.041	-0.324	0.624	0.024	-0.252	0.660	0.024	-2.052	-2.316	0.000	-0.048	0.132	0.000	158.143	55.196	26.045
UL14	163.749	51.651	27.218	-0.336	0.576	0.024	-0.276	0.612	0.024	-2.004	-2.244	0.000	-0.048	0.132	0.000	163.527	51.574	27.222
RS11	172.091	45.670	29.161	-0.372	0.504	0.036	-0.312	0.540	0.060	-1.836	-2.028	-0.024	-0.060	0.120	0.012	171.876	45.598	29.168
RH21	183.095	37.028	31.969	-0.408	0.420	0.036	-0.336	0.480	0.108	-1.512	-1.620	-0.036	-0.060	0.096	0.012	182.902	36.976	31.979
UL15	194.164	27.361	35.110	-0.456	0.324	0.048	-0.408	0.396	0.180	-1.104	-1.152	-0.024	-0.084	0.084	0.036	193.993	27.332	35.130
RH22	205.188	16.609	38.603	-0.516	0.228	0.024	-0.468	0.288	0.204	-0.624	-0.648	-0.012	-0.096	0.060	0.036	205.046	16.603	38.624
RS12	209.144	12.438	39.959	-0.552	0.180	0.024	-0.516	0.240	0.180	-0.432	-0.480	-0.012	-0.096	0.048	0.036	209.011	12.437	39.978
T12	220.000	0.000	44.000	-0.732	0.012	0.000	-0.720	-0.012	0.036	0.108	0.000	0.000	-0.144	0.000	0.000	219.876	0.000	44.003



ELEVATION



SECTION

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ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

* TH(n)′ hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

SHEET 7 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275xlS52.DGN
CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54395

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REVISED DATE:

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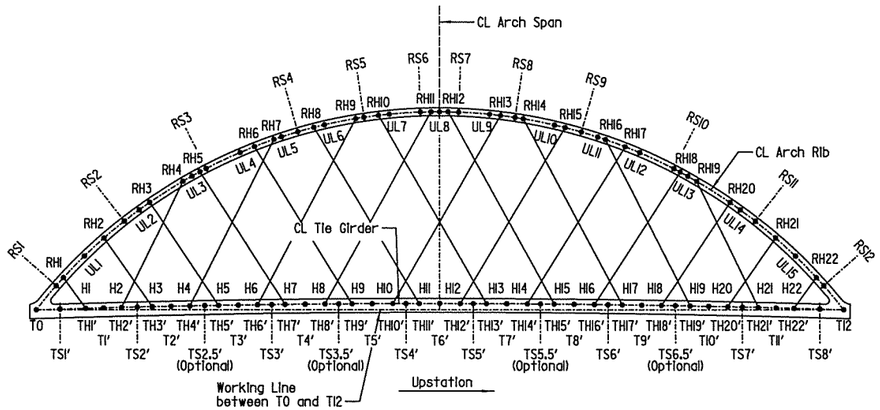
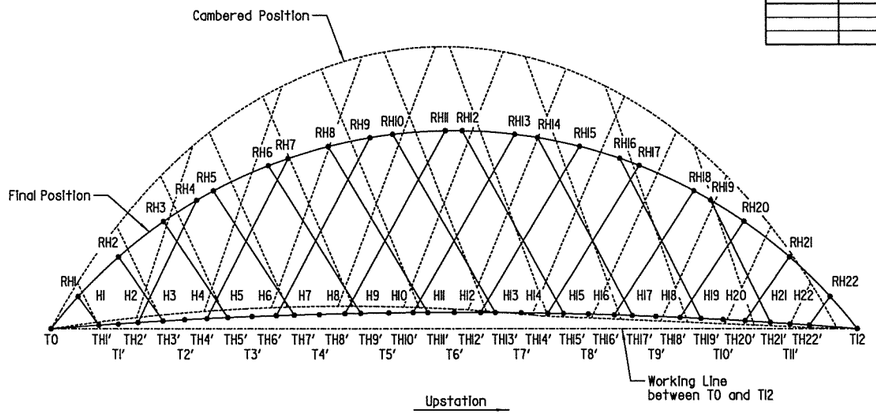
				JOB NO.		061275	191	505
				① 07292	TIED ARCH CAMBER DIAGRAM			54396



ELEVATION - SPAN 5



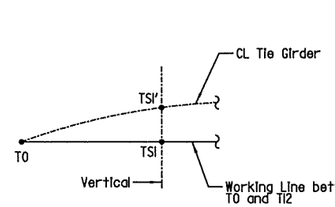
CAMBER DIAGRAM - SPAN 5

LEGEND:

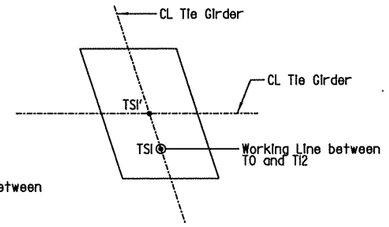
- TH(n)' Indicates Cambered Hanger Work Point along CL Tie Girder. *
- RH(n) Indicates Hanger Work Point along CL Arch Rib.
- H(n) Indicates Hanger Member.
- T(n)' Indicates Cambered Tie Girder Panel Point along CL Tie Girder.
- TS(n)' Indicates Cambered Tie Girder Splice & Work Point along CL Tie Girder.
- RS(n) Indicates Arch Rib Splice & Work Point along CL Arch Rib.
- UL(n) Indicates Upper Lateral Bracing Work Point.

RIGHT TIE GIRDER CAMBER - SPAN 5

WORK POINT	FINAL TIED ARCH POSITION			TIE GIRDER GEOMETRY														
	RIGHT TIE GIRDER			STEEL DEAD LOAD			SLAB DEAD LOAD			HP			BARRIERS & UTILITIES DEAD LOAD			TOTAL CAMBERED POSTION		
	X (FT)	Y (FT)	Z (FT)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	ΔX (IN)	ΔY (IN)	ΔZ (IN)	X (FT)	Y (FT)	Z (FT)
T0	-220.000	0.000	44.000	-0.048	0.012	0.000	-0.048	-0.012	0.036	0.120	0.000	0.000	-0.012	0.000	0.000	-219.999	0.000	44.003
TS1'	-207.004	0.165	43.947	-0.048	0.288	0.024	-0.060	0.228	0.024	0.120	-0.564	0.000	-0.012	0.048	0.000	-207.004	0.165	43.951
TH1'	-192.508	0.334	43.891	-0.060	0.516	0.036	-0.072	0.540	0.072	0.120	-1.176	0.000	-0.012	0.120	0.012	-192.510	0.334	43.901
T1'	-183.344	0.434	43.859	-0.072	0.624	0.048	-0.072	0.756	0.084	0.120	-1.548	0.000	-0.012	0.168	0.024	-183.347	0.434	43.872
TH2'	-174.180	0.527	43.829	-0.084	0.744	0.048	-0.084	0.948	0.108	0.120	-1.896	0.000	-0.012	0.204	0.024	-174.185	0.527	43.844
TS2'	-165.015	0.615	43.800	-0.084	0.876	0.060	-0.084	1.128	0.108	0.120	-2.244	0.000	-0.012	0.240	0.036	-165.020	0.615	43.817
TH3'	-155.850	0.697	43.773	-0.108	0.996	0.048	-0.108	1.284	0.108	0.120	-2.556	0.000	-0.024	0.276	0.036	-155.860	0.697	43.789
T2'	-146.686	0.773	43.749	-0.120	1.092	0.048	-0.120	1.440	0.108	0.120	-2.832	0.000	-0.024	0.300	0.036	-146.698	0.773	43.765
TH4'	-137.521	0.843	43.726	-0.144	1.176	0.048	-0.144	1.560	0.108	0.108	-3.072	0.000	-0.036	0.336	0.036	-137.539	0.843	43.742
TS2.5'	-128.355	0.907	43.705	-0.156	1.272	0.048	-0.156	1.656	0.108	0.108	-3.288	0.000	-0.036	0.360	0.036	-128.375	0.907	43.721
TH5'	-119.191	0.966	43.686	-0.168	1.356	0.048	-0.168	1.764	0.108	0.108	-3.492	0.000	-0.036	0.372	0.036	-119.213	0.966	43.702
T3'	-110.025	1.018	43.669	-0.192	1.392	0.048	-0.180	1.872	0.108	0.108	-3.672	0.000	-0.036	0.408	0.036	-110.050	1.018	43.685
TH6'	-100.859	1.065	43.654	-0.204	1.476	0.048	-0.204	1.932	0.108	0.108	-3.828	0.000	-0.036	0.420	0.036	-100.887	1.065	43.670
TS3'	-91.694	1.105	43.641	-0.216	1.548	0.048	-0.228	2.004	0.108	0.108	-3.972	0.000	-0.048	0.420	0.036	-91.726	1.105	43.657
TH7'	-82.528	1.140	43.630	-0.240	1.584	0.048	-0.240	2.064	0.108	0.108	-4.092	0.000	-0.048	0.444	0.036	-82.563	1.140	43.646
T4'	-73.362	1.169	43.620	-0.252	1.620	0.048	-0.252	2.136	0.120	0.108	-4.212	0.000	-0.048	0.456	0.036	-73.399	1.169	43.637
TH8'	-64.196	1.192	43.613	-0.276	1.668	0.060	-0.264	2.172	0.120	0.108	-4.308	0.000	-0.048	0.468	0.036	-64.236	1.192	43.631
TS3.5'	-55.030	1.209	43.607	-0.288	1.728	0.060	-0.288	2.196	0.132	0.108	-4.392	0.000	-0.048	0.468	0.036	-55.073	1.209	43.626
TH9'	-45.863	1.220	43.604	-0.300	1.728	0.060	-0.312	2.244	0.144	0.108	-4.464	0.000	-0.060	0.492	0.036	-45.910	1.220	43.624
T5'	-36.697	1.225	43.602	-0.324	1.752	0.060	-0.324	2.256	0.144	0.108	-4.500	0.000	-0.060	0.492	0.036	-36.747	1.225	43.622
TH10'	-27.530	1.224	43.602	-0.336	1.776	0.060	-0.336	2.256	0.132	0.108	-4.524	0.000	-0.072	0.492	0.036	-27.583	1.224	43.621
TS4'	-18.363	1.217	43.604	-0.360	1.776	0.060	-0.348	2.268	0.120	0.108	-4.536	0.000	-0.072	0.492	0.036	-18.419	1.217	43.622
TH11'	-9.196	1.205	43.608	-0.372	1.788	0.060	-0.360	2.268	0.120	0.108	-4.548	0.000	-0.072	0.492	0.036	-9.254	1.205	43.626
T6'	-0.029	1.187	43.614	-0.384	1.776	0.048	-0.384	2.280	0.120	0.108	-4.548	0.000	-0.084	0.492	0.036	-0.091	1.187	43.631
TH12'	9.139	1.162	43.622	-0.408	1.788	0.060	-0.408	2.268	0.120	0.108	-4.548	0.000	-0.084	0.492	0.036	9.073	1.162	43.640
TS5'	18.305	1.132	43.632	-0.420	1.776	0.060	-0.420	2.268	0.120	0.108	-4.536	0.000	-0.084	0.492	0.036	18.237	1.132	43.650
TH13'	27.473	1.096	43.644	-0.444	1.764	0.060	-0.432	2.268	0.132	0.108	-4.524	0.000	-0.084	0.492	0.036	27.402	1.096	43.663
T7'	36.641	1.054	43.657	-0.456	1.752	0.060	-0.444	2.256	0.144	0.108	-4.500	0.000	-0.084	0.492	0.036	36.568	1.054	43.677
TH14'	45.808	1.006	43.673	-0.468	1.728	0.060	-0.456	2.244	0.144	0.108	-4.464	0.000	-0.096	0.492	0.036	45.732	1.006	43.693
TS5.5'	54.977	0.953	43.690	-0.492	1.716	0.060	-0.480	2.208	0.120	0.108	-4.404	0.000	-0.096	0.480	0.036	54.897	0.953	43.708
TH15'	64.145	0.900	43.707	-0.504	1.680	0.060	-0.504	2.172	0.120	0.108	-4.320	0.000	-0.096	0.468	0.036	64.062	0.900	43.725
T8'	73.312	0.847	43.725	-0.528	1.620	0.048	-0.516	2.136	0.108	0.108	-4.212	0.000	-0.096	0.456	0.036	73.226	0.847	43.741
TH16'	82.481	0.794	43.742	-0.540	1.596	0.048	-0.528	2.064	0.108	0.108	-4.104	0.000	-0.096	0.444	0.036	82.393	0.794	43.758
TS6'	91.649	0.741	43.759	-0.552	1.536	0.048	-0.540	2.004	0.108	0.108	-3.972	0.000	-0.120	0.432	0.036	91.557	0.741	43.775
TH17'	100.816	0.689	43.776	-0.576	1.488	0.048	-0.564	1.932	0.108	0.108	-3.840	0.000	-0.120	0.420	0.036	100.720	0.689	43.792
T9'	109.984	0.636	43.793	-0.588	1.392	0.048	-0.588	1.872	0.108	0.108	-3.672	0.000	-0.120	0.408	0.036	109.885	0.636	43.809
TH18'	119.153	0.583	43.811	-0.612	1.344	0.048	-0.600	1.764	0.108	0.108	-3.492	0.000	-0.120	0.384	0.036	119.051	0.583	43.827
TS6.5'	128.320	0.530	43.828	-0.624	1.272	0.048	-0.612	1.668	0.108	0.108	-3.300	0.000	-0.120	0.360	0.036	128.216	0.530	43.844
TH19'	137.488	0.477	43.845	-0.636	1.188	0.048	-0.624	1.560	0.108	0.108	-3.084	0.000	-0.132	0.336	0.024	137.381	0.477	43.860
T10'	146.657	0.424	43.862	-0.660	1.092	0.048	-0.648	1.440	0.108	0.108	-2.844	0.000	-0.132	0.312	0.024	146.546	0.424	43.877
TH20'	155.824	0.371	43.880	-0.672	0.996	0.048	-0.672	1.296	0.108	0.108	-2.568	0.000	-0.132	0.276	0.024	155.710	0.371	43.895
TS7'	164.992	0.318	43.897	-0.684	0.888	0.060	-0.684	1.128	0.108	0.108	-2.256	0.000	-0.132	0.240	0.024	164.876	0.318	43.913
TH21'	174.161	0.265	43.914	-0.696	0.756	0.048	-0.684	0.948	0.096	0.108	-1.908	0.000	-0.132	0.204	0.024	174.044	0.265	43.928
T11'	183.328	0.212	43.931	-0.708	0.612	0.048	-0.696	0.768	0.084	0.108	-1.548	0.000	-0.132	0.168	0.012	183.209	0.212	43.943
TH22'	192.496	0.159	43.948	-0.720	0.504	0.036	-0.696	0.552	0.072	0.108	-1.176	0.000	-0.132	0.120	0.012	192.376	0.159	43.958
TS8'	206.998	0.075	43.976	-0.732	0.276	0.024	-0.708	0.240	0.024	0.108	-0.564	0.000	-0.144	0.048	0.000	206.875	0.075	43.980
T12	220.000	0.000	44.000	-0.732	0.012	0.000	-0.720	-0.012	0.036	0.108	0.000	0.000	-0.144	0.000	0.000	219.876	0.000	44.003



ELEVATION



SECTION

SCHEMATIC REPRESENTATION OF TIE GIRDER CAMBERED COORDINATES

Notes:

Camber tables are based on dead loads, not including the future wearing surface (FWS), and not adjusted for erection construction sequence.

"Steel Dead Load" ordinates represent the amount of deflection due to all structural steel.

"Slab Dead Load" ordinates represent the amount of deflection due to the slab and the stay-in-place forms.

"HP" ordinates represent the amount of deflection due to the hanger pre-tension forces.

"Barriers & Utilities Dead Load" ordinates represent the amount of deflection due to barriers and utilities (waterline and lights).

See Dwg. No. 54432 for additional notes and Arch fabrication and erection details.

ΔX, ΔY, ΔZ indicate a change in Cambered Position. A positive value indicates a change in the positive direction in the Local Coordinate System.

See General Notes on Dwg. No. 54381 for further explanation of cambered coordinates.

* TH(n)' hanger points are representative for Tie Girder cambered coordinates and are not intended for geometric representation of the hanger angles and locations with respect to the Tie Girder. See Dwg. 54387 for hanger geometry.

SHEET 8 OF 8
TIED ARCH CAMBER DIAGRAM
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NATALIE MCCOMBS No. 15778
6-16-14
BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: AEC DATE: MAY 2014 SCALE: NONE
DESIGNED BY: AEC DATE: MAY 2014
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				JOB NO.		061275	192	505
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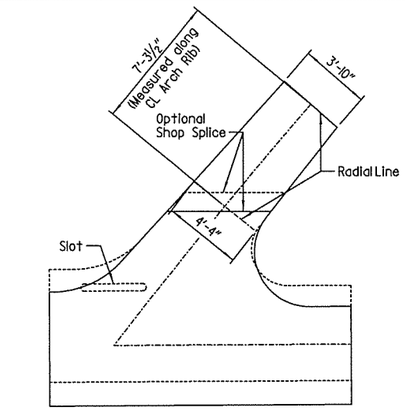
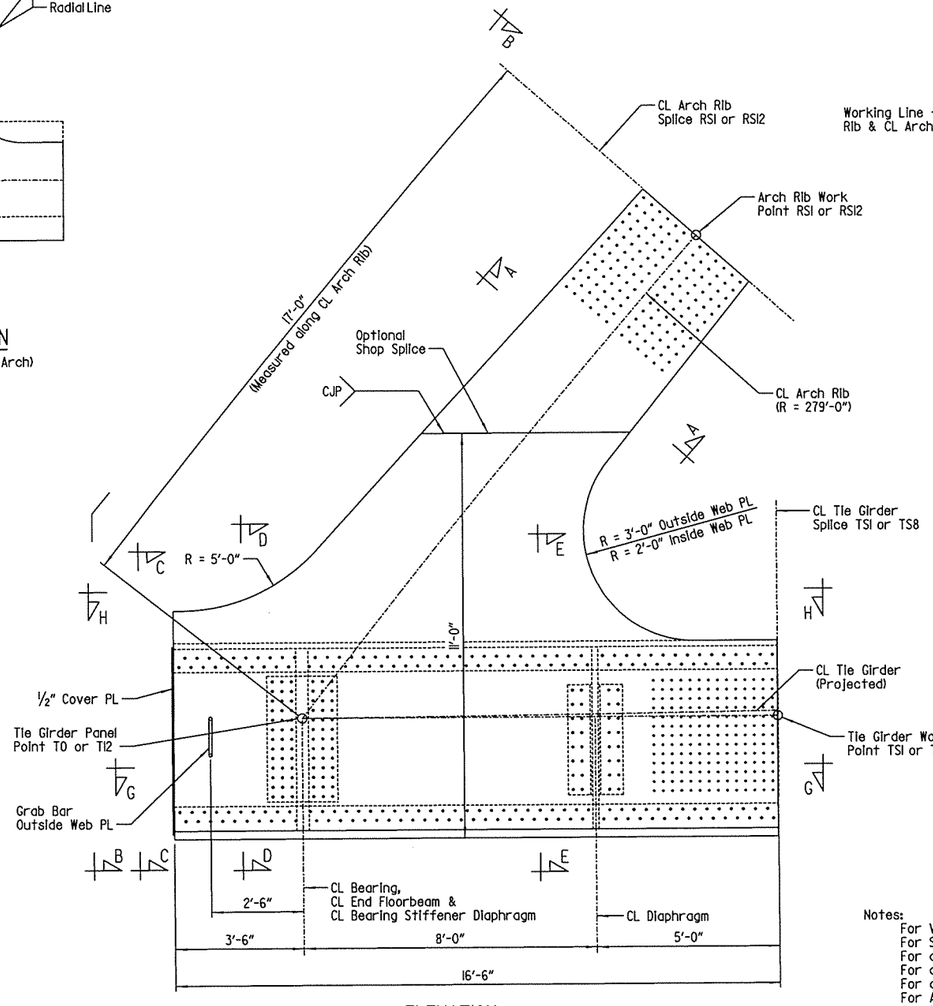


----- Inside Web Plate
—— Outside Web Plate

WEB PLATE ELEVATION

(View shown in the plane of the Arch)
Scale: 1/4" = 1'-0"



ELEVATION

(View shown in the plane of the Arch Outside Web PL shown)
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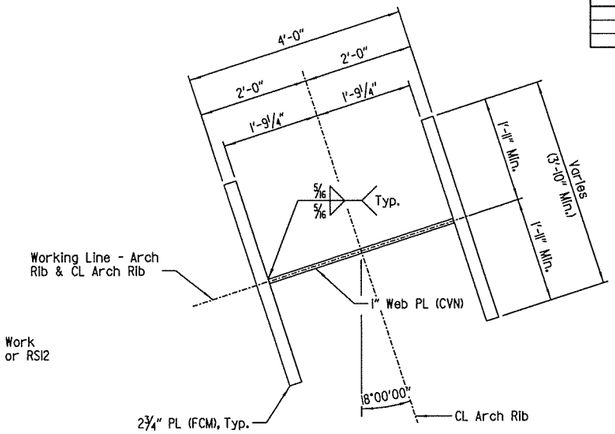

SECTION A-A

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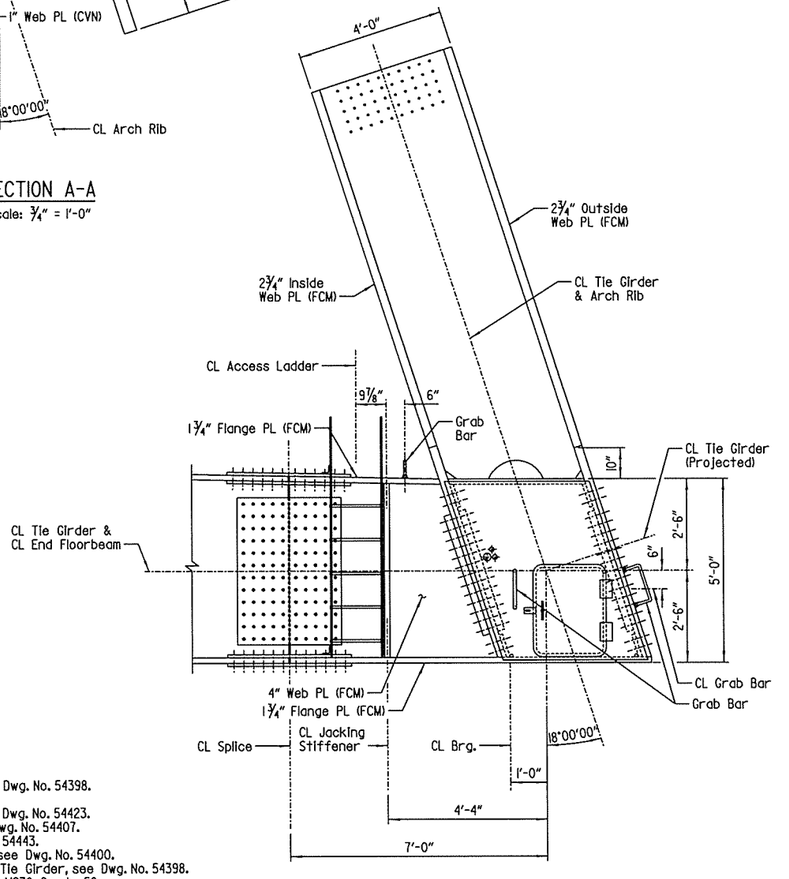
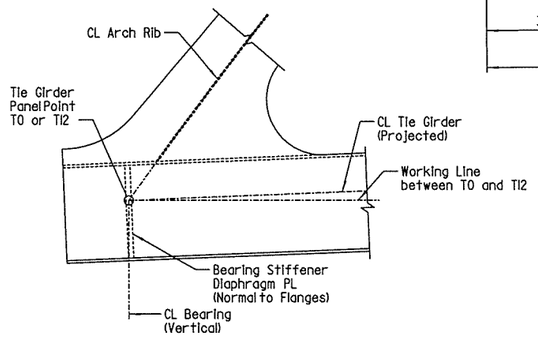


VIEW B-B

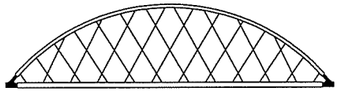
Scale: ½" = 1'-0"



BEARING STIFFENER DIAPHRAGM PL ORIENTATION

Scale: ¼" = 1'-0"

Notes:
For View C-C and Sections D-D & E-E, see Dwg. No. 54398.
For Sections G-G & H-H, see Dwg. No. 54399.
For details of Tie Girder Field Splice, see Dwg. No. 54423.
For details of Arch Rib Field Splice, see Dwg. No. 54407.
For details of End Floorbeam, see Dwg. No. 54443.
For Access Ladder and Grab Bar Details, see Dwg. No. 54400.
For Typical Conn. Plate Bolt Spacing Along Tie Girder, see Dwg. No. 54398.
All Structural Steel shall conform to AASHTO M270 Grade 50.
The bolted contact surfaces shall meet Class B surface preparation.
Plates designated as (FCM) shall meet the fracture critical material testing requirements specified in the Arch General Notes.
Plates designated as (CVN) shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
All bolts are 1" ø H.S. Bolts, unless otherwise noted.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF TIED ARCH END
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S54.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54397

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REVISED DATE:

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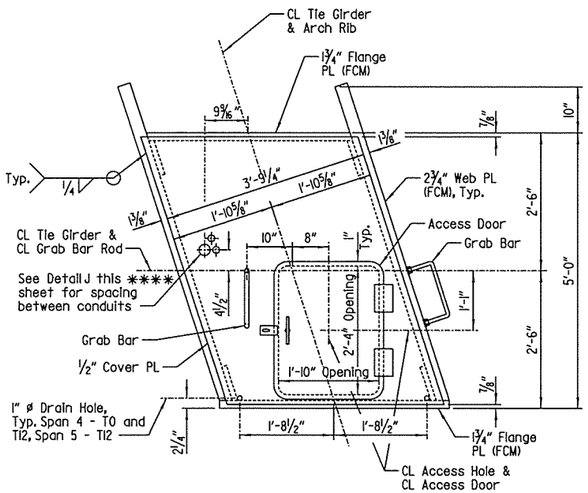
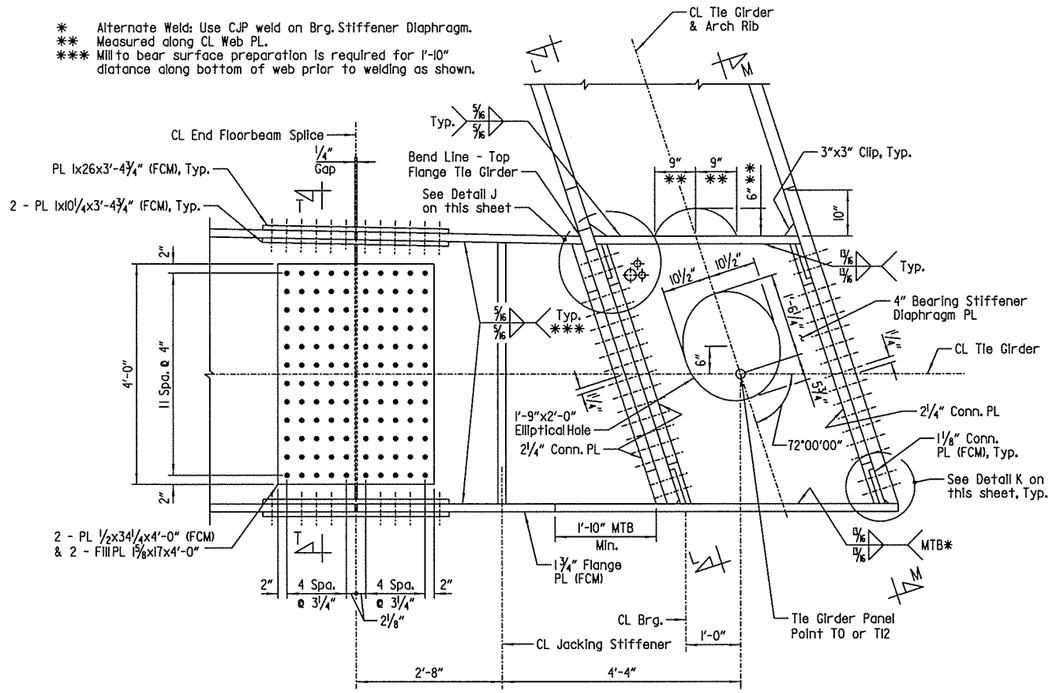
				6	ARK.			
				JOB NO.		061275	193	505
				(1)	07292	TIED ARCH END		54398

* Alternate Weld: Use CJP weld on Brg. Stiffener Diaphragm.
** Measured along CL Web PL.
*** Mill to bear surface preparation is required for 1'-10" distance along bottom of web prior to welding as shown.



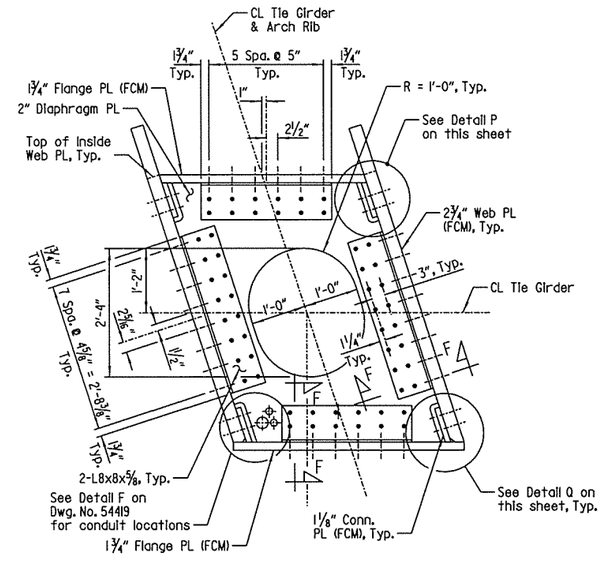
VIEW C-C

Scale: ¾" = 1'-0"
(Drainage details not shown for clarity.)



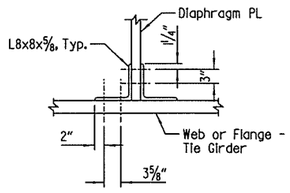
SECTION D-D

Scale: ¾" = 1'-0"
(Access Ladder not shown for clarity.)



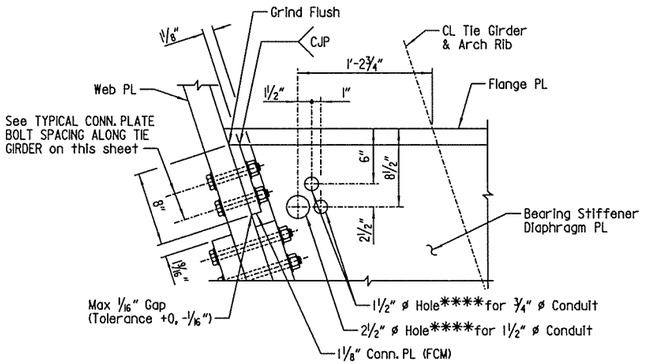
SECTION E-E

Scale: ¾" = 1'-0"



SECTION F-F

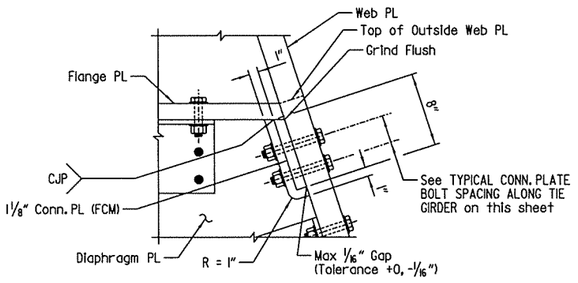
Scale: ¾" = 1'-0"



**** Three conduit locations are shown. All three conduits are not needed at every location. Coordinate conduit with Electrical Drawings. Conduit holes not needed at exterior locations shall not be cut or shall be sealed and water tight.

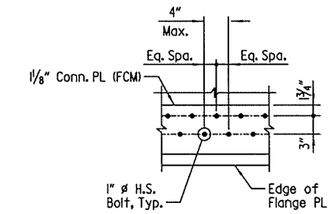
DETAIL J

Scale: 1½" = 1'-0"



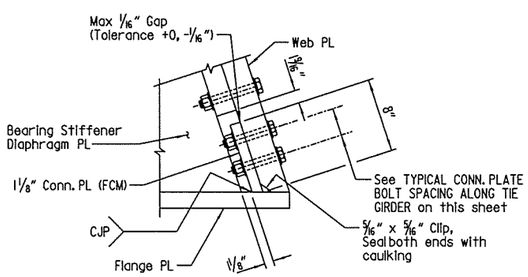
DETAIL P

Scale: 1½" = 1'-0"



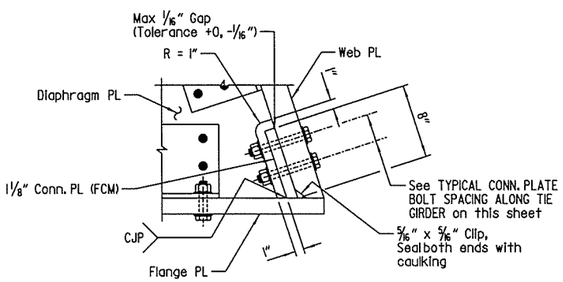
TYPICAL CONN. PLATE BOLT SPACING ALONG TIE GIRDER

Scale: 1" = 1'-0"



DETAIL K

Scale: 1½" = 1'-0"



DETAIL Q

Scale: 1½" = 1'-0"

Notes:
For locations of View C-C, Sections D-D and E-E & additional notes, see Dwg. No. 54397.
For Sections L-L, M-M & T-T, see Dwg. No. 54400.
For Access Door and Grab Bar Details, see Dwg. No. 54400.
For Drainage Details, see Dwg. No. /bo32a/.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF TIED ARCH END
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S55.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54398

wgregory 5/29/2014 2:34:57 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		061275	194	505
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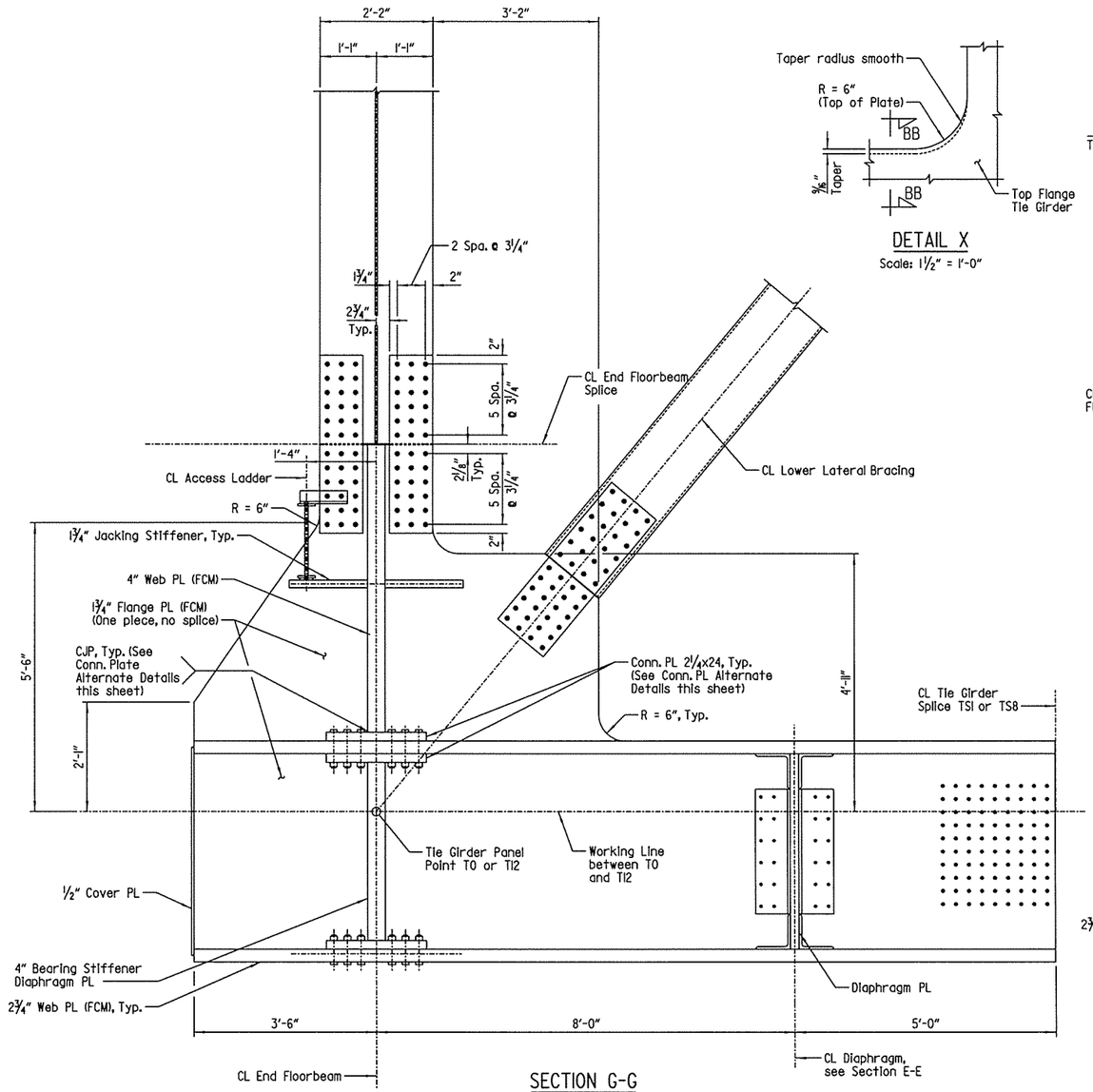
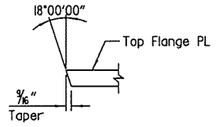


SECTION G-G

Scale: ¾" = 1'-0"
(Tab plates not shown for clarity)

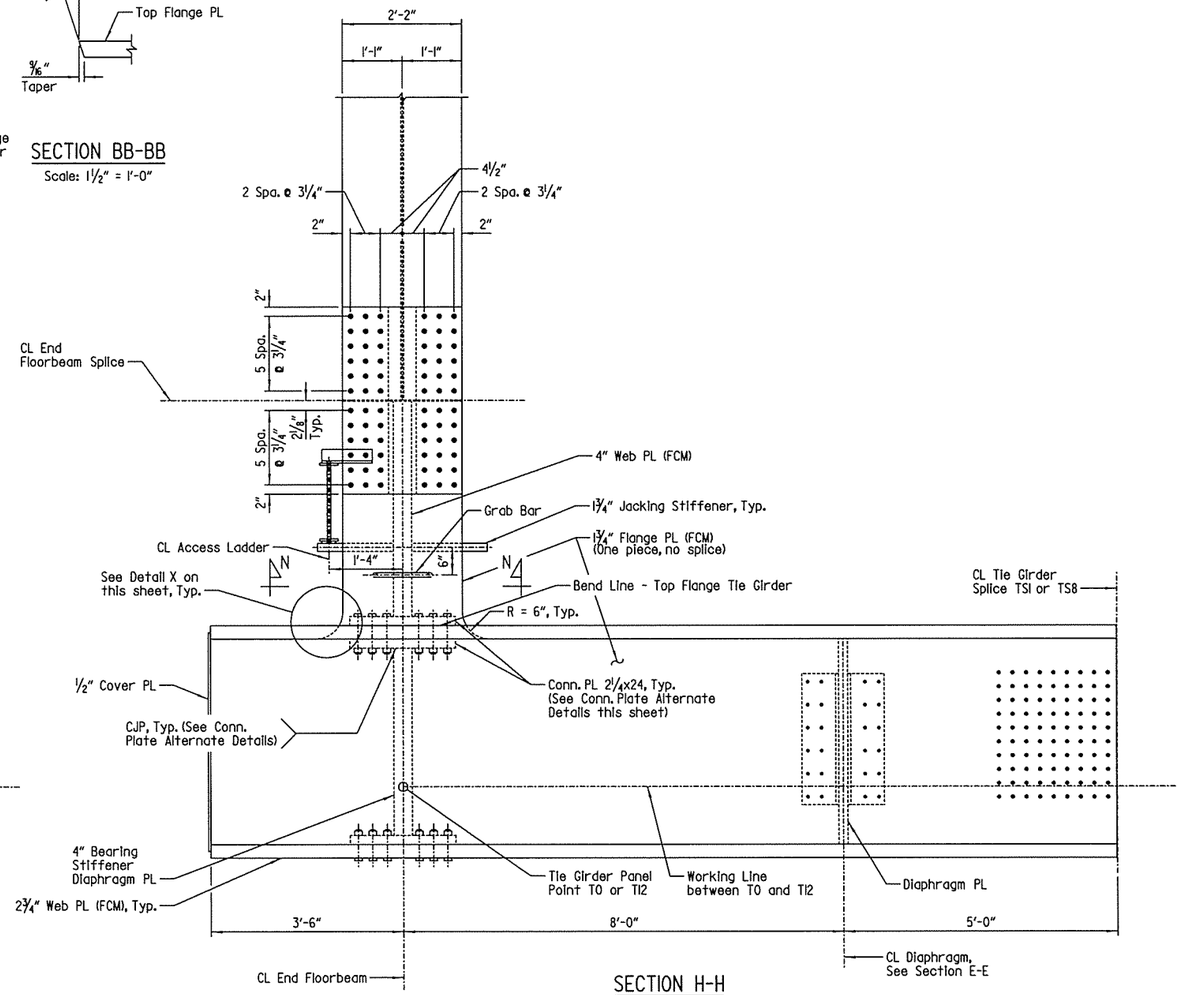
DETAIL X

Scale: 1½" = 1'-0"



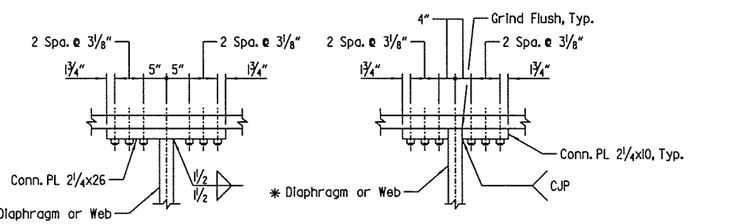
SECTION BB-BB

Scale: 1½" = 1'-0"



SECTION H-H

Scale: ¾" = 1'-0"
(Tab plates not shown for clarity)



CONN. PL ALTERNATE DETAILS

Scale: 1½" = 1'-0"

* Shop drawings of diaphragm and web plate for alternate detailneed to include clip in plate to avoid 1⅛" Conn. PLs.

Notes:
For locations of Sections G-G & H-H and additional notes, see Dwg. No. 54397.
For Section N-N, see Dwg. No. 54400.
For Lower Lateral Bracing Details, see Dwg. Nos. 54449 and 54450.
For Access Ladder and Grab Bar Deatils, see Dwg. No. 54400.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF TIED ARCH END
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S56.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
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BRIDGE NO. 07292 DRAWING NO. 54399

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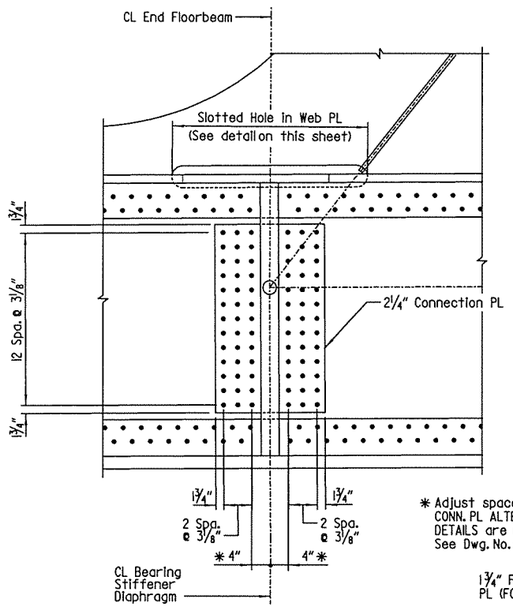
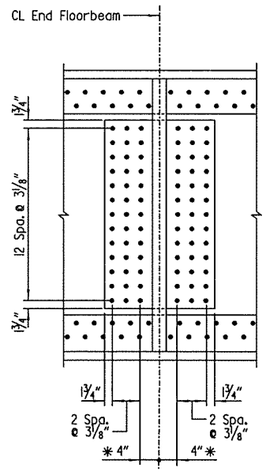
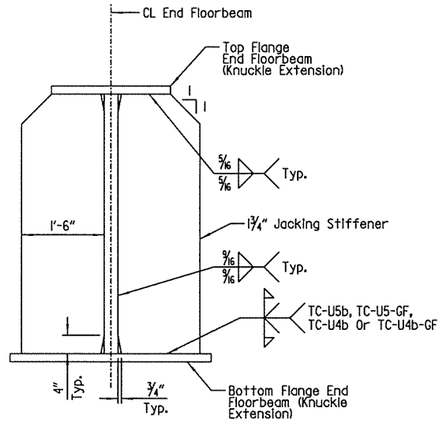


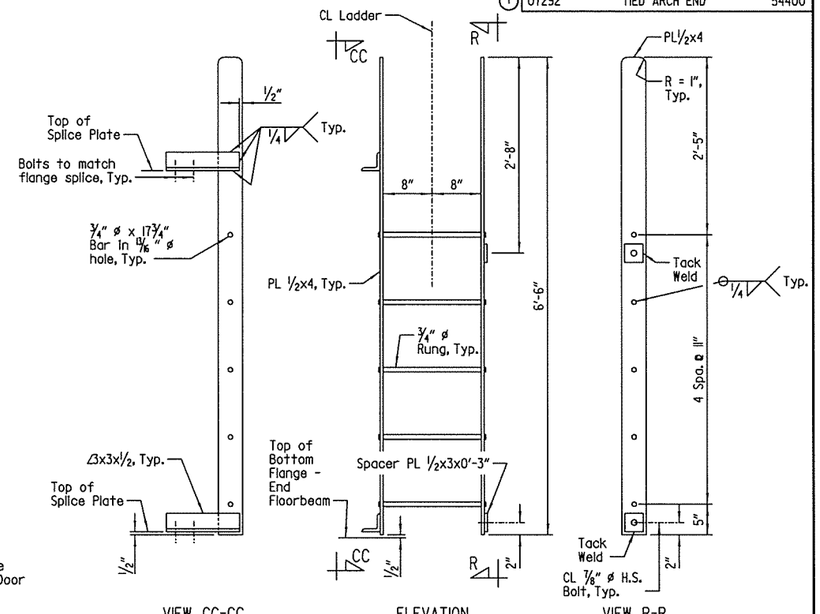
SECTION L-L
Scale: ¾" = 1'-0"



SECTION M-M
Scale: ¾" = 1'-0"



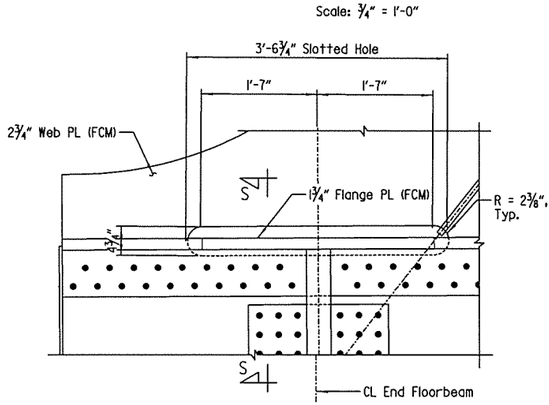
SECTION N-N
Scale: ¾" = 1'-0"



VIEW CC-CC | ELEVATION | VIEW R-R

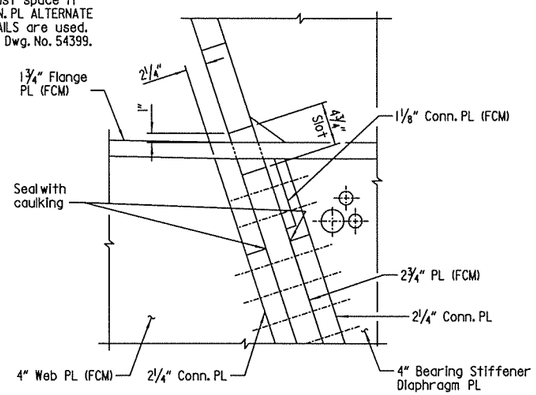
ACCESS LADDER
Scale: 1" = 1'-0"

Notes:
For locations of Sections L-L, M-M & T-T, see Dwg. No. 54398.
For additional notes, see Dwg. No. 54397.

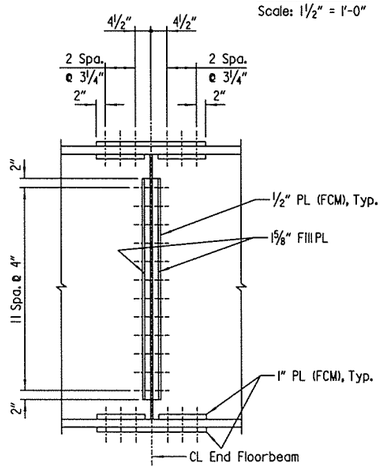


ELEVATION - SLOTTED HOLE IN WEB
Scale: 1" = 1'-0"

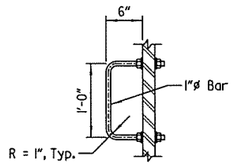
* Adjust space if CONN. PL ALTERNATE DETAILS are used. See Dwg. No. 54399.



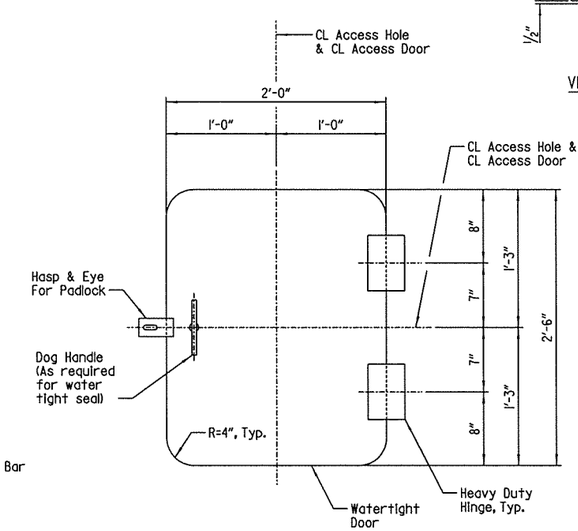
SECTION S-S
Scale: 1½" = 1'-0"



SECTION T-T
Scale: ¾" = 1'-0"



GRAB BAR DETAIL
Scale: 1" = 1'-0"



ACCESS DOOR DETAIL
Scale: 1½" = 1'-0"

Access Door Notes:
All stainless steel shall meet the requirements of AISI 304.
All costs associated with materials fabrication and installation of the access doors shall be subsidiary to "Structural Steel in Arch Spans (M270, Gr. 50)".
All door hardware including latches, hinges and fasteners shall be stainless steel.
All contact surfaces between stainless steel and structural steel shall be isolated with isolating bearing washers or pads where necessary.
Provide watertight access door assembly. The conceptual access door shown is based on a marine grade door assembly. Actual door assembly shall be approved by the Engineer. Door shall include a locking system that may utilize a hasp and eye for a padlock or lockset built into the door. The door and frame assembly may be constructed from stainless steel, mild steel or aluminum. Door assembly shall match color of arch tie girder. Install access door assembly per manufacturer's recommendations.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF TIED ARCH END
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1 S57.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54400

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REVISED DATE:

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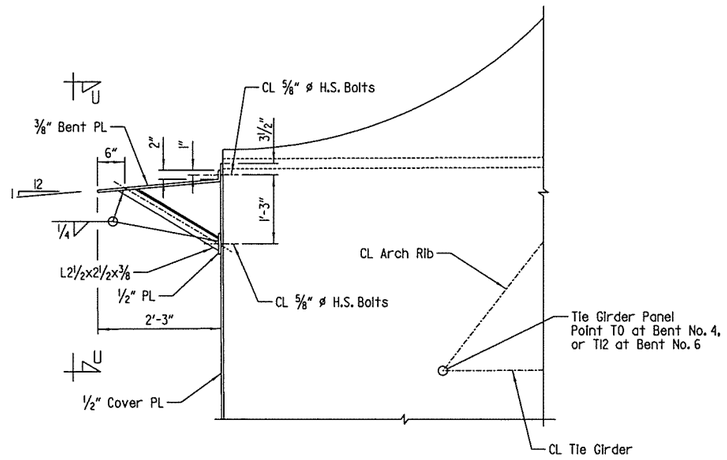
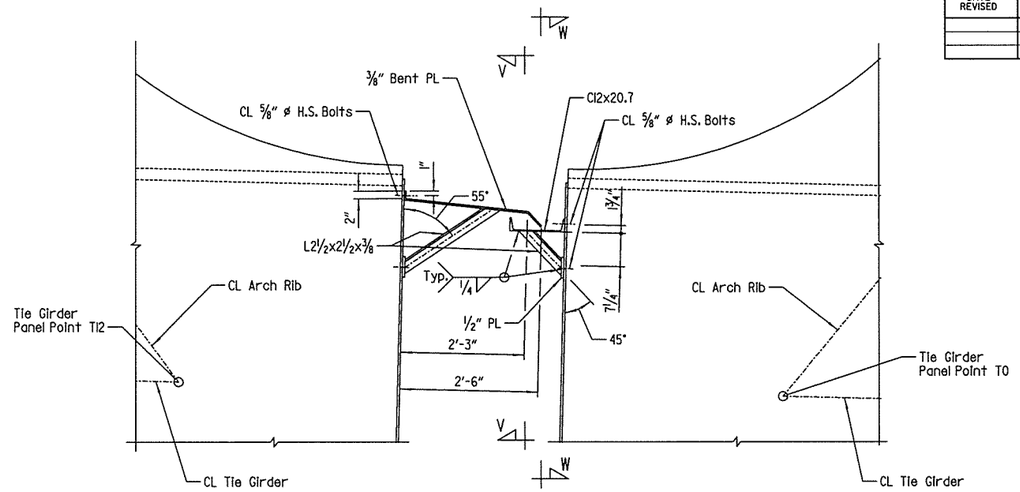


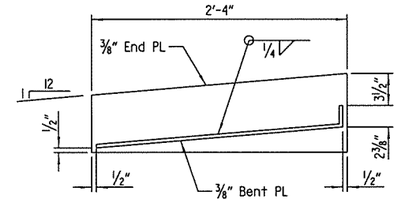
DRAINAGE DETAIL AT TIED ARCH END - BENT NOS. 4 & 6

Scale: 3/4" = 1'-0"



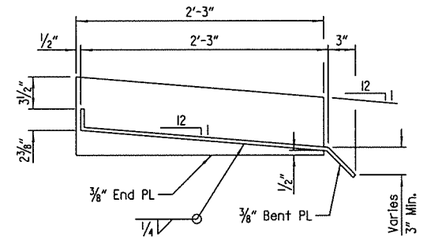
DRAINAGE DETAIL AT TIED ARCH END - BENT NO. 5

Scale: 3/4" = 1'-0"



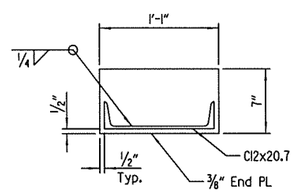
SECTION Y-Y

Scale: 1 1/2" = 1'-0"



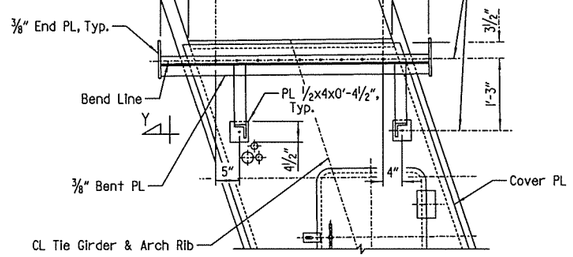
SECTION Z-Z

Scale: 1 1/2" = 1'-0"



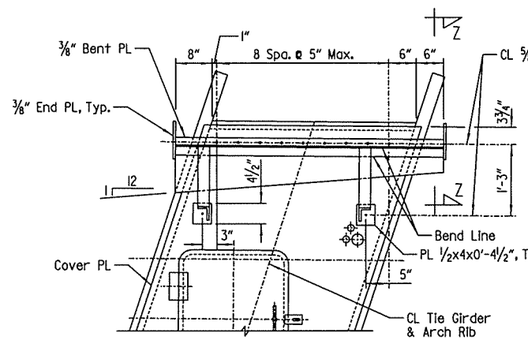
SECTION AA-AA

Scale: 1 1/2" = 1'-0"



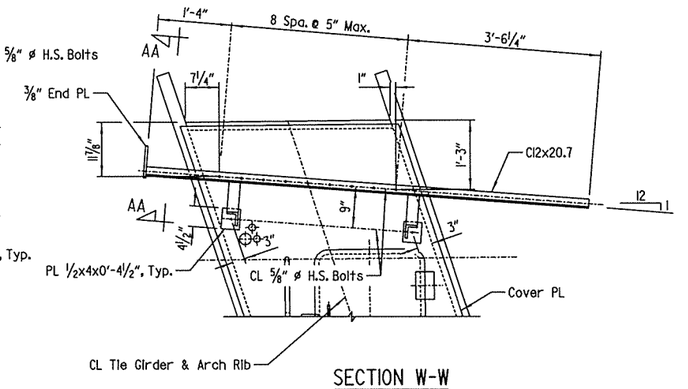
VIEW U-U

Scale: 3/4" = 1'-0"



VIEW V-V

Scale: 3/4" = 1'-0"
(C12x20.7 not shown for clarity)



SECTION W-W

Scale: 3/4" = 1'-0"

Notes:

All steel for Drainage Detail at Tied Arch Ends shall meet the requirements of AASHTO M270, Grade 36, but shall be paid for at the bid unit price for "Structural Steel in Arch Spans (M270, Gr. 50)".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF TIED ARCH END
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275xlS58.DGN
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DESIGNED BY: KDG DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54401

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REVISED DATE:

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				6	ARK.			
				JOB NO.		061275	197	505
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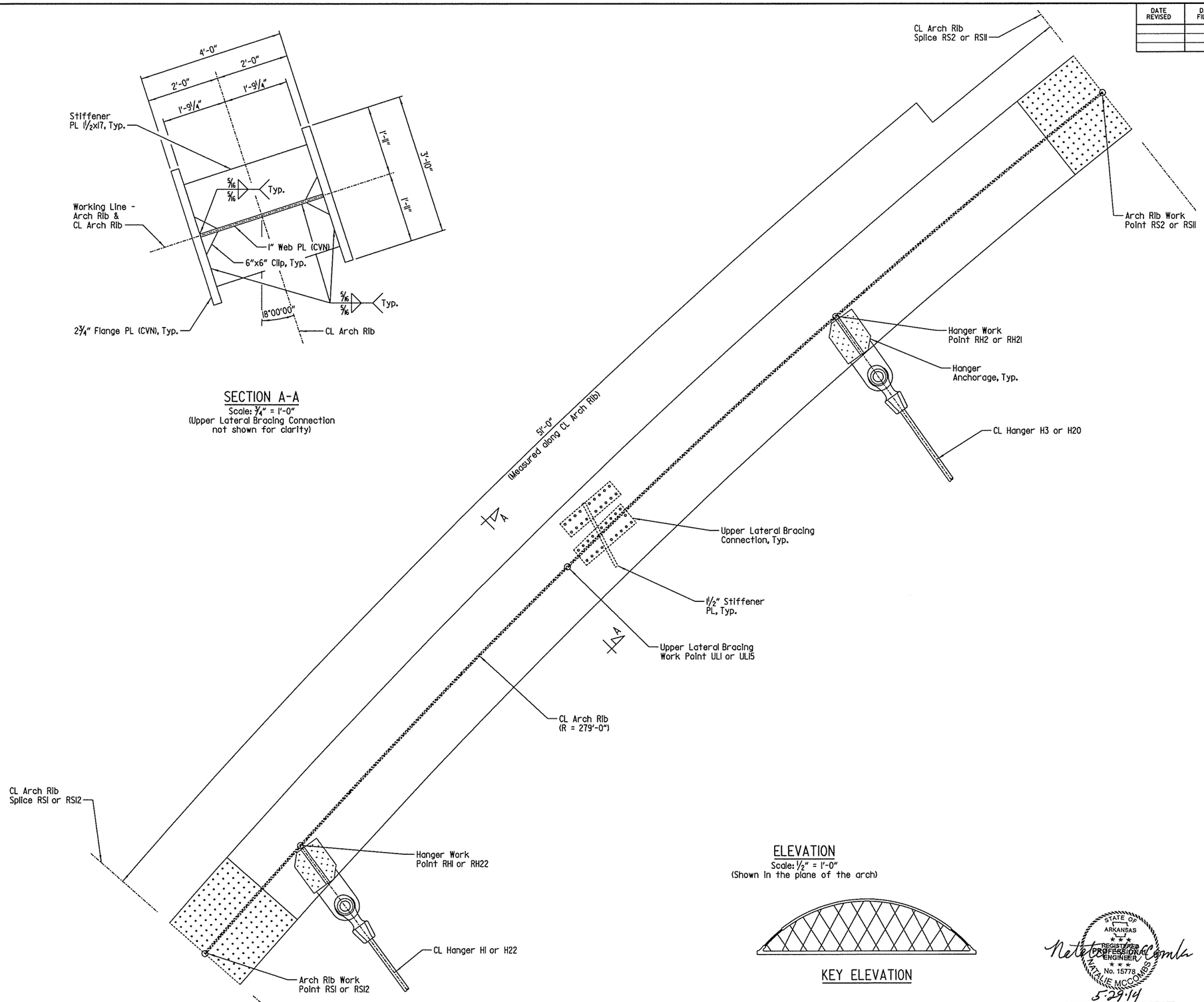
SECTION A-A
Scale: ¾" = 1'-0"
(Upper Lateral Bracing Connection not shown for clarity)



ELEVATION
Scale: ½" = 1'-0"
(Shown in the plane of the arch)

KEY ELEVATION

Notes:
For Arch Rib, Upper Lateral Bracing and Hanger geometry, see Dwg. Nos. 54385 thru 54388.
For details of Arch Rib Field Splices, see Dwg. Nos. 54407 thru 54409.
For details of Upper Lateral Bracing, see Dwg. Nos. 54410 thru 54413.
Structural steel for Arch Rib flange plates, web plates and stiffener plates shall comform to AASHTO M270, Grade 50. Plates designated as (CVN) shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
For details of Hanger Anchorage, see Dwg. Nos. 54426 & 54428.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF TIED ARCH RIB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEU DATE: MAY 2014 FILENAME: B061275x1S59.DGN
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DESIGNED BY: SJL DATE: APR. 2014
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				JOB NO.		061275	198	505
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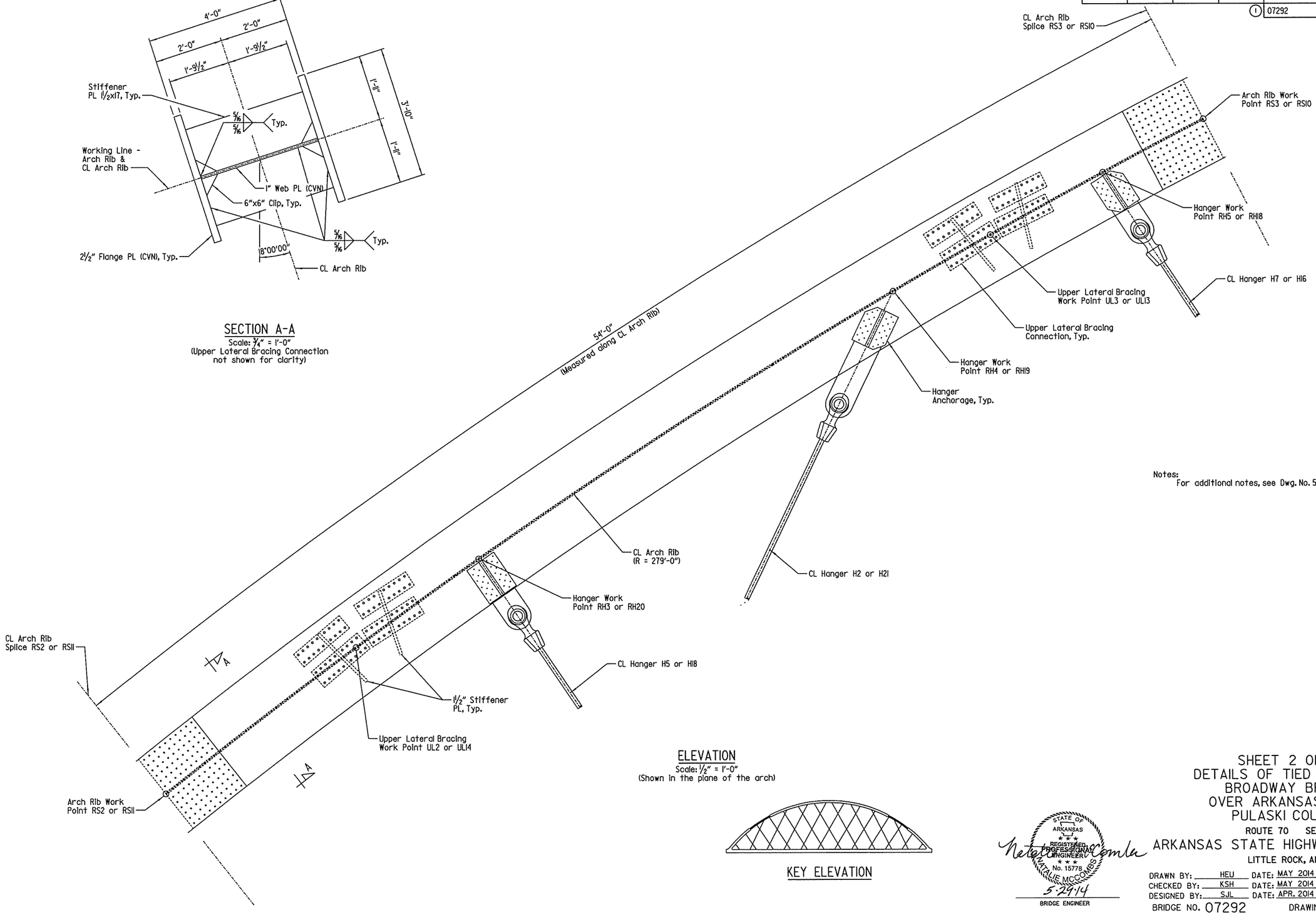
SECTION A-A
Scale: ¾" = 1'-0"
(Upper Lateral Bracing Connection not shown for clarity)



ELEVATION
Scale: ½" = 1'-0"
(Shown in the plane of the arch)

KEY ELEVATION

Notes:
For additional notes, see Dwg. No. 54402.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF TIED ARCH RIB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: KSH DATE: MAY 2014 SCALE: AS SHOWN
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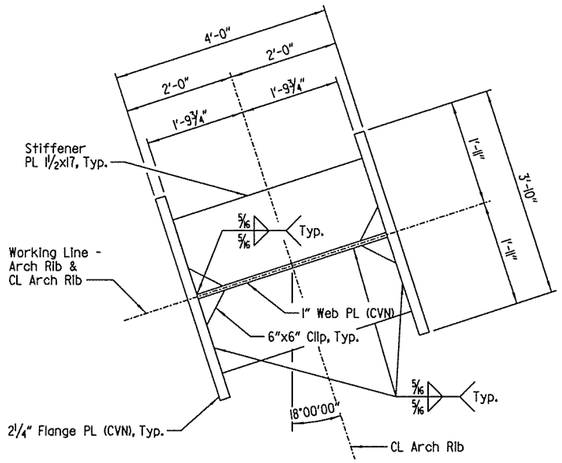

SECTION A-A
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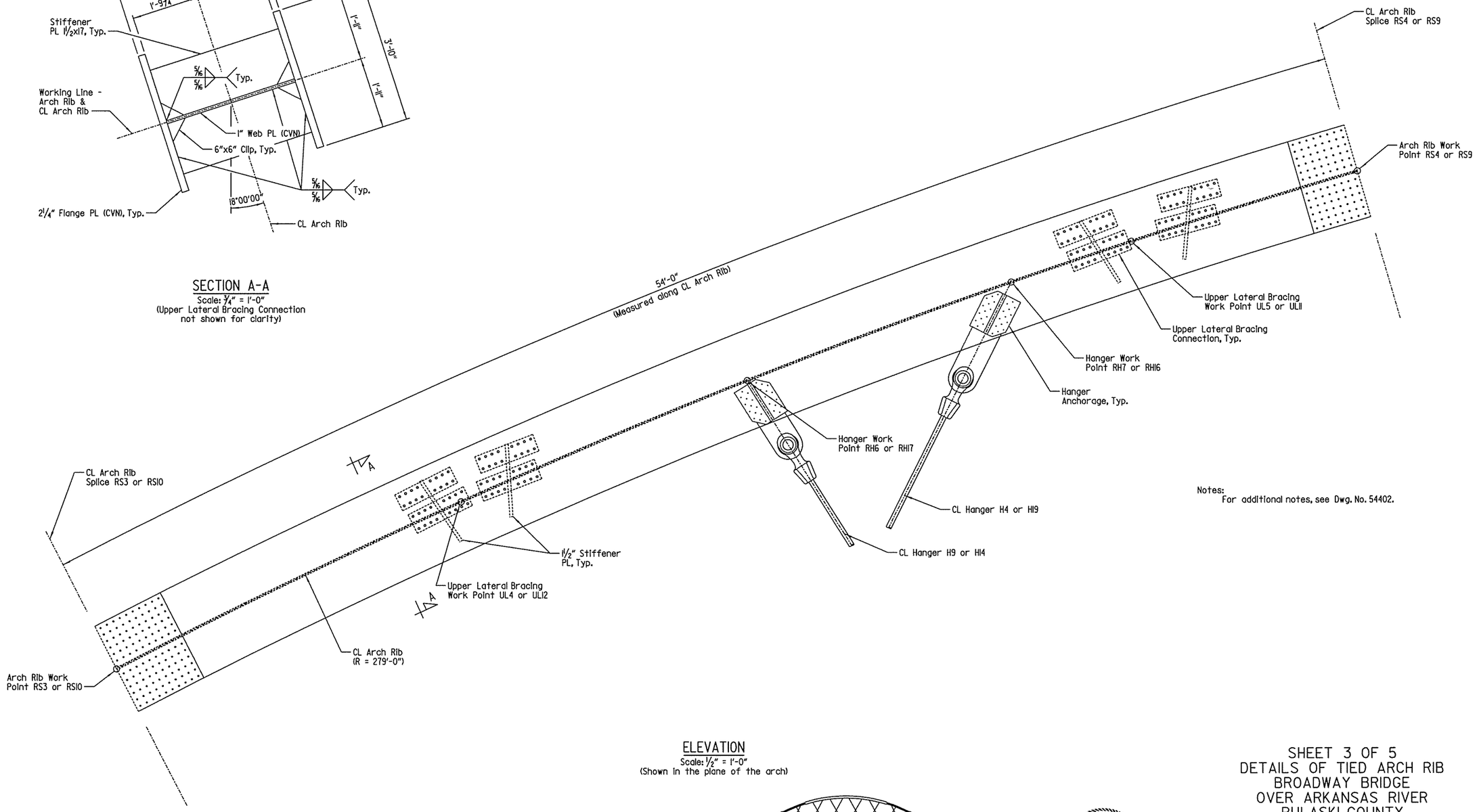
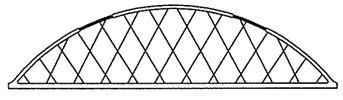
(Upper Lateral Bracing Connection not shown for clarity)



ELEVATION
Scale: ½" = 1'-0"
(Shown in the plane of the arch)

Notes:
For additional notes, see Dwg. No. 54402.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF TIED ARCH RIB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: KSH DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: SJL DATE: APR. 2014
BRIDGE NO. 07292 DRAWING NO. 54404

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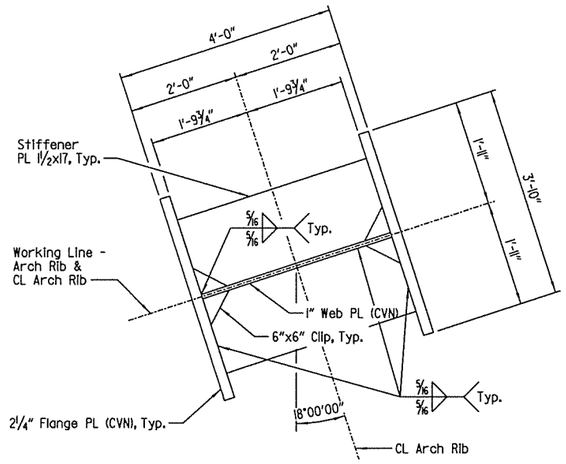
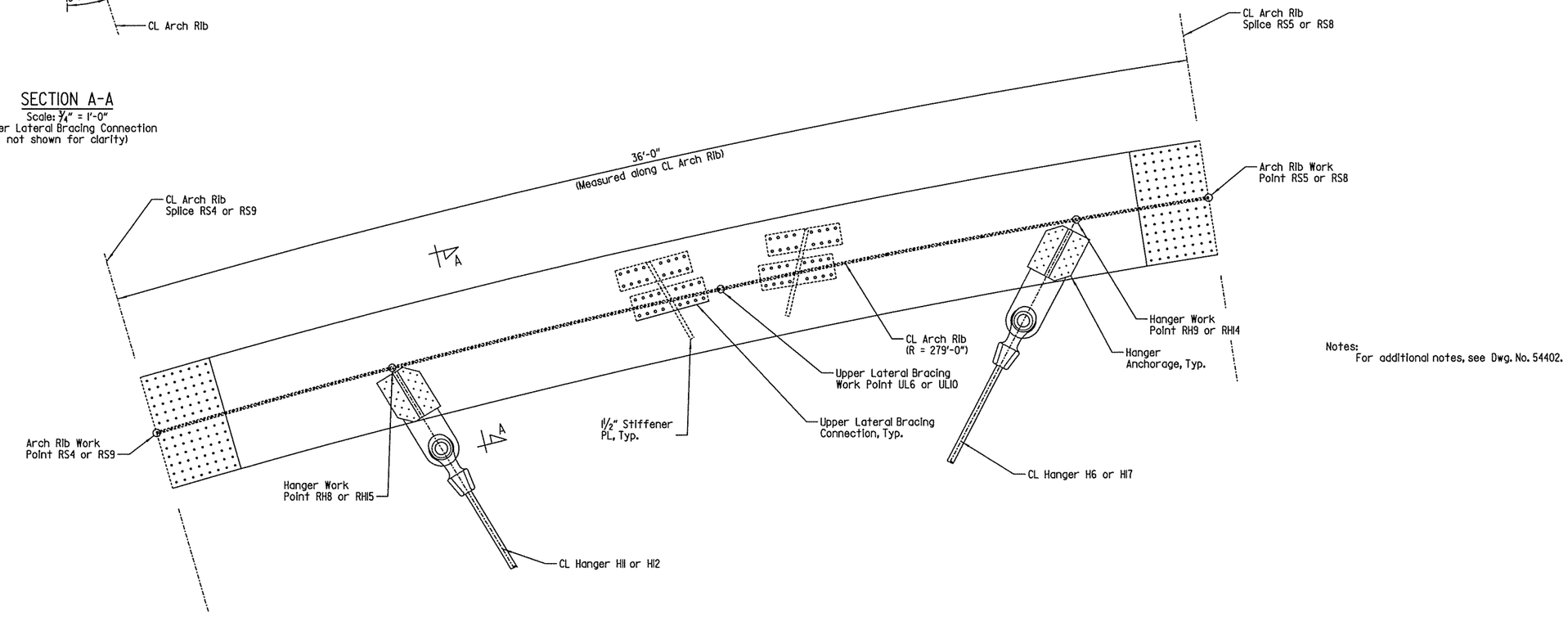


SECTION A-A

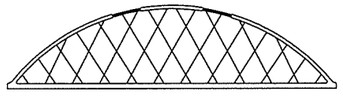
Scale: ¾" = 1'-0"
(Upper Lateral Bracing Connection not shown for clarity)



ELEVATION

Scale: ½" = 1'-0"
(Shown in the plane of the arch)

Notes:
For additional notes, see Dwg. No. 54402.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF TIED ARCH RIB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEU DATE: MAY 2014 FILENAME: B061275xlS62.DGN
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BRIDGE NO. 07292 DRAWING NO. 54405

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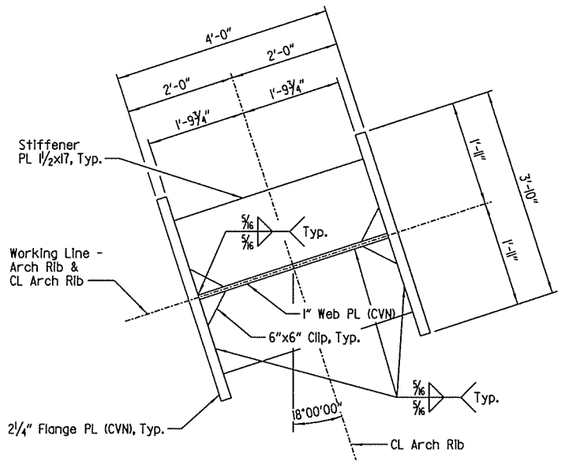

SECTION A-A
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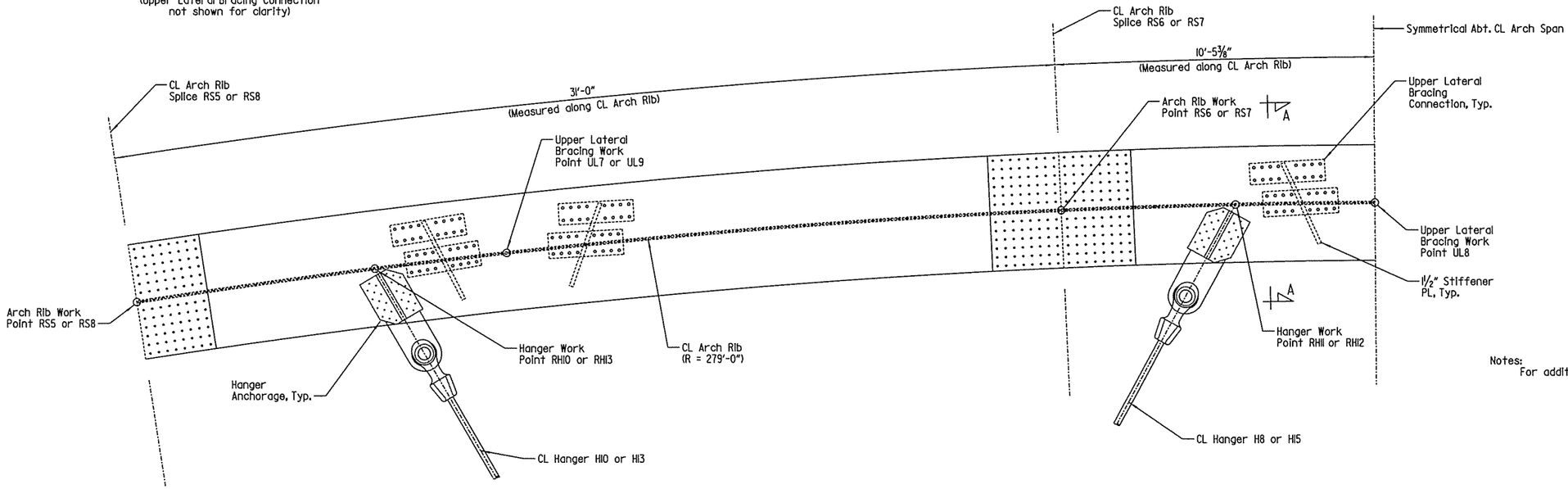
(Upper Lateral Bracing Connection not shown for clarity)



Notes:
For additional notes, see Dwg. No. 54402.

ELEVATION
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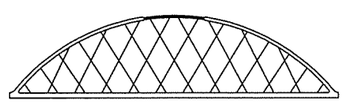
(Shown in the plane of the arch)



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF TIED ARCH RIB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEU DATE: MAY 2014 FILENAME: B061275xlS63.DGN
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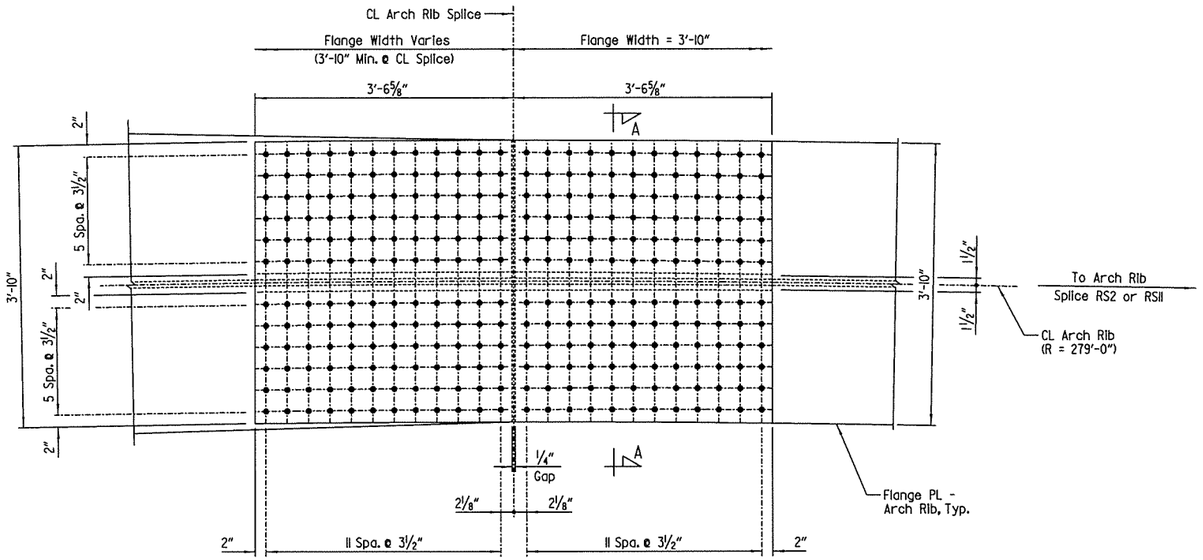
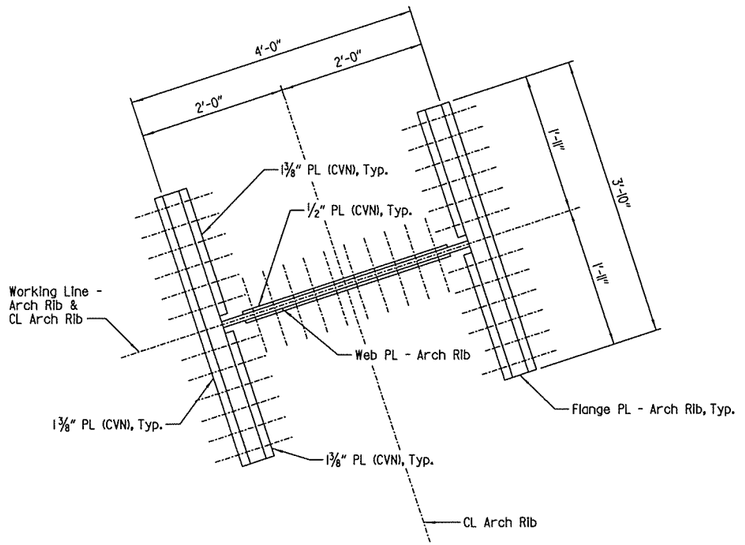
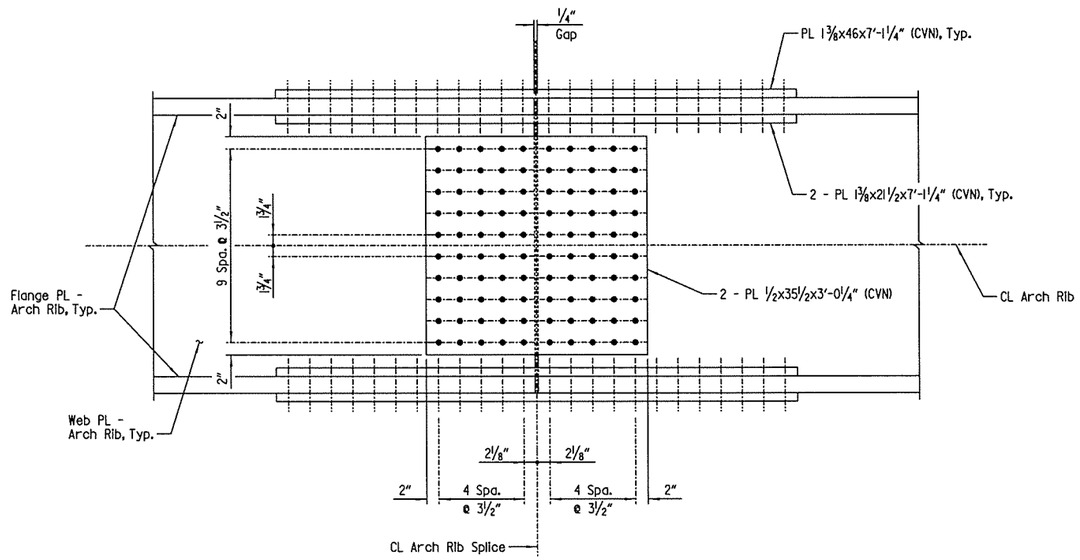


ELEVATION - ARCH RIB FLANGE SPLICE RS1 AND RS12



SECTION A-A



PLAN - ARCH RIB WEB SPLICE RS1 AND RS12

Notes:
For locations of Arch Rib Field Splices, see Dwg. No. 54388.
All Arch Rib Field Splice plates and Fill plates shall conform to AASHTO M270, Grade 50. Plates designated as (CVN) shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
All bolts for Arch Rib Field Splices shall be 1" ø high strength bolts.
The bolted connection contact surfaces shall meet Class B surface preparation at all Arch Rib Field Splices.
For details of Tied Arch Rib, see Dwg. Nos. 54402 thru 54406.
All splices are symmetrical about CL splice, unless noted otherwise.

SHEET 1 OF 3
DETAILS OF ARCH RIB FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEU DATE: MAY 2014 FILENAME: B061275x1S64.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: 1" = 1'-0"
DESIGNED BY: SJL DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54407

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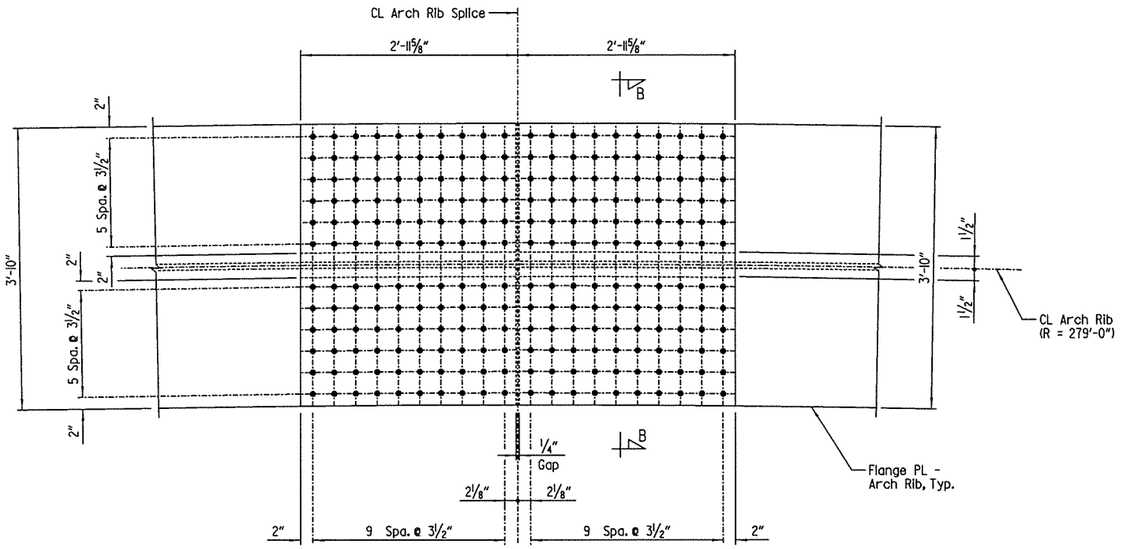
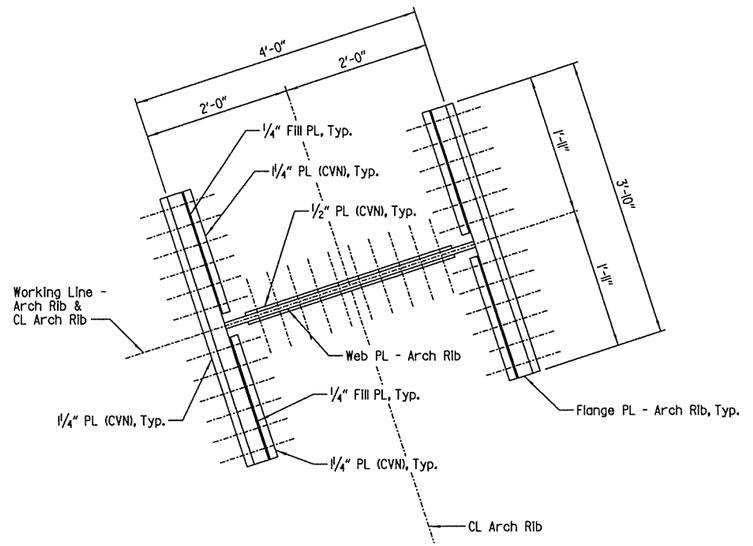
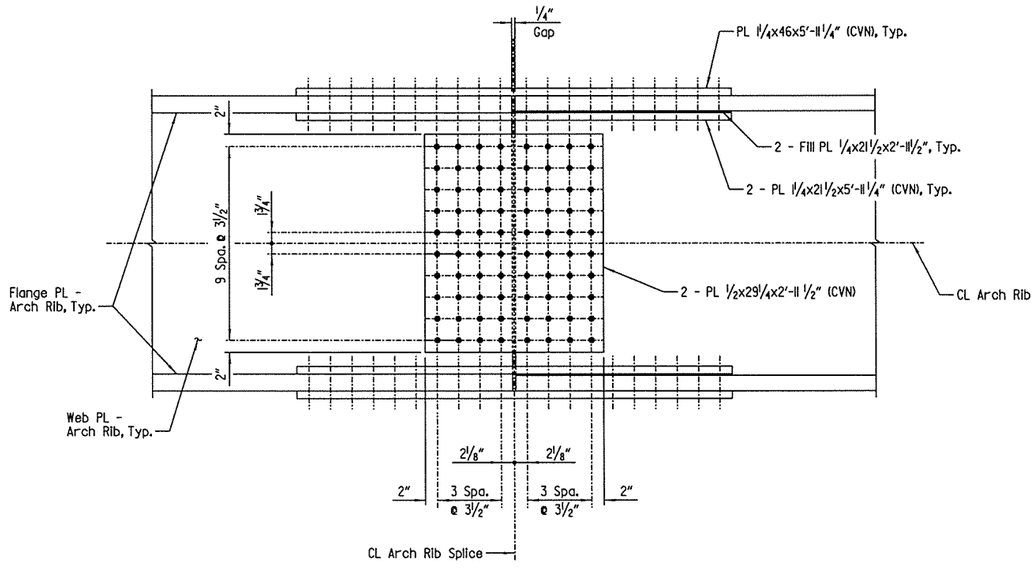


ELEVATION - ARCH RIB FLANGE SPLICE RS2, RS3, RSIO AND RSII



SECTION B-B



PLAN - ARCH RIB WEB SPLICE RS2, RS3, RSIO AND RSII

Note:
For additional notes, see Dwg. No. 54407.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF ARCH RIB FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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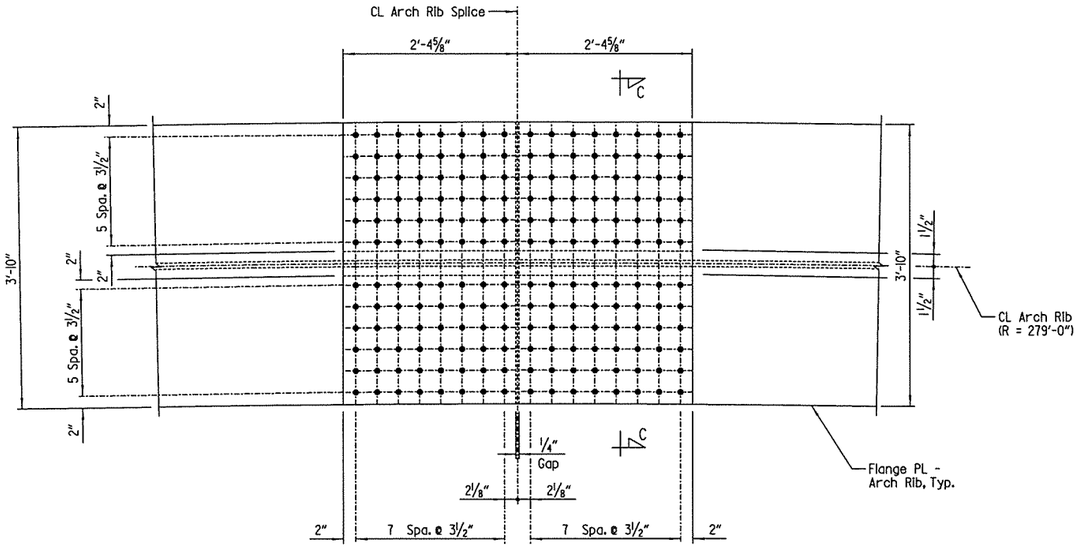
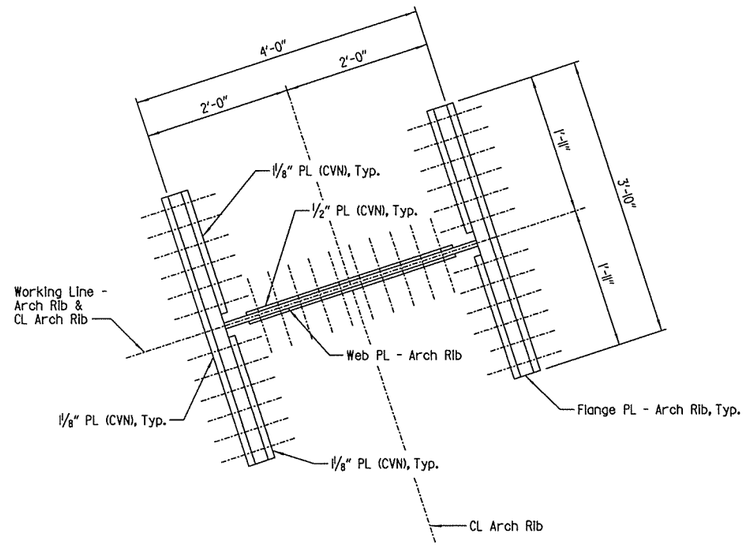
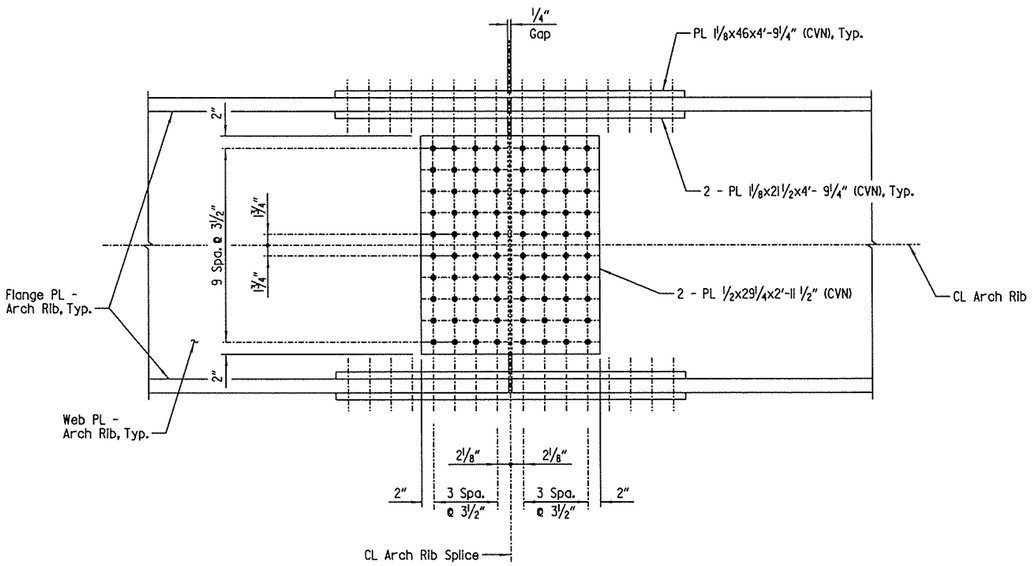


ELEVATION - ARCH RIB FLANGE SPLICE RS4 THRU RS9



SECTION C-C



PLAN - ARCH RIB WEB SPLICE RS4 THRU RS9

Note:
For additional notes, see Dwg. No. 54407.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF ARCH RIB FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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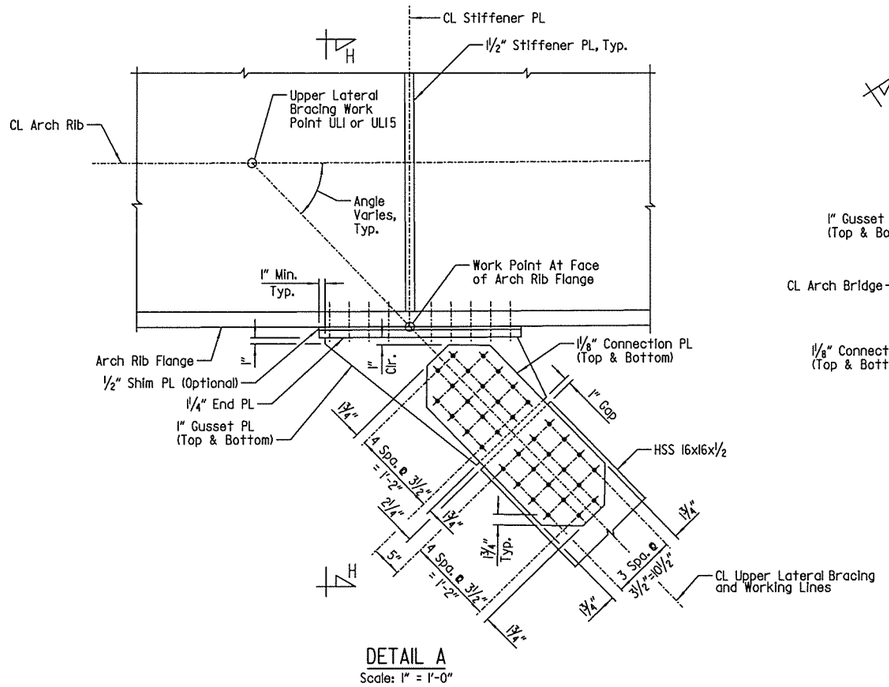

DETAIL A
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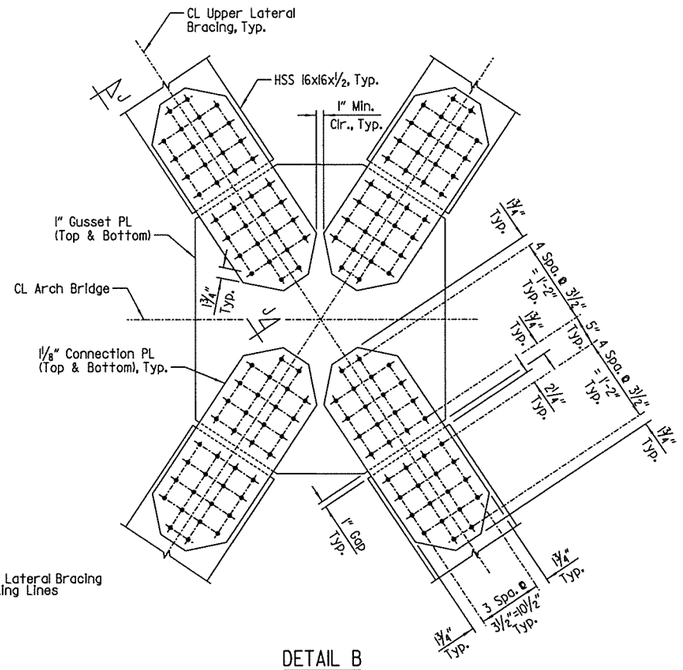

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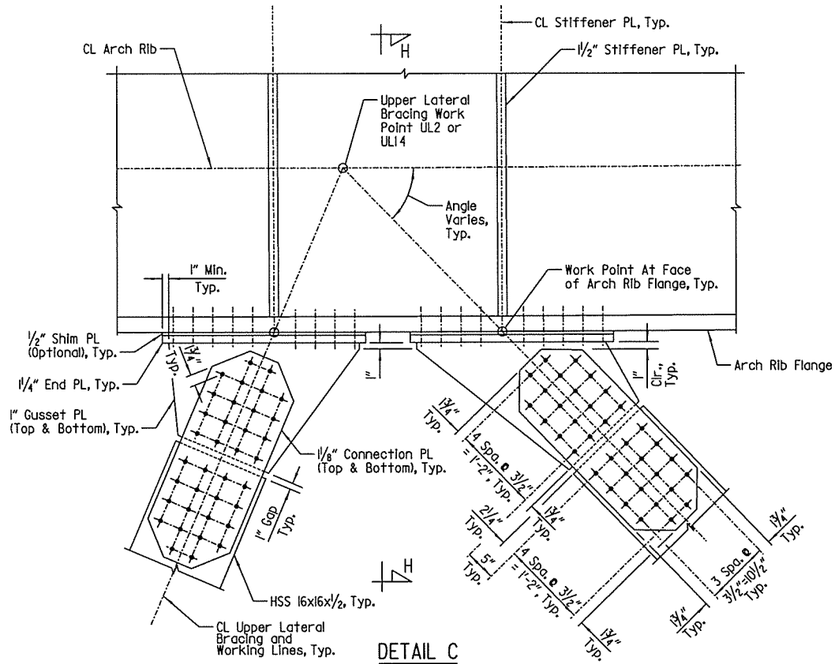

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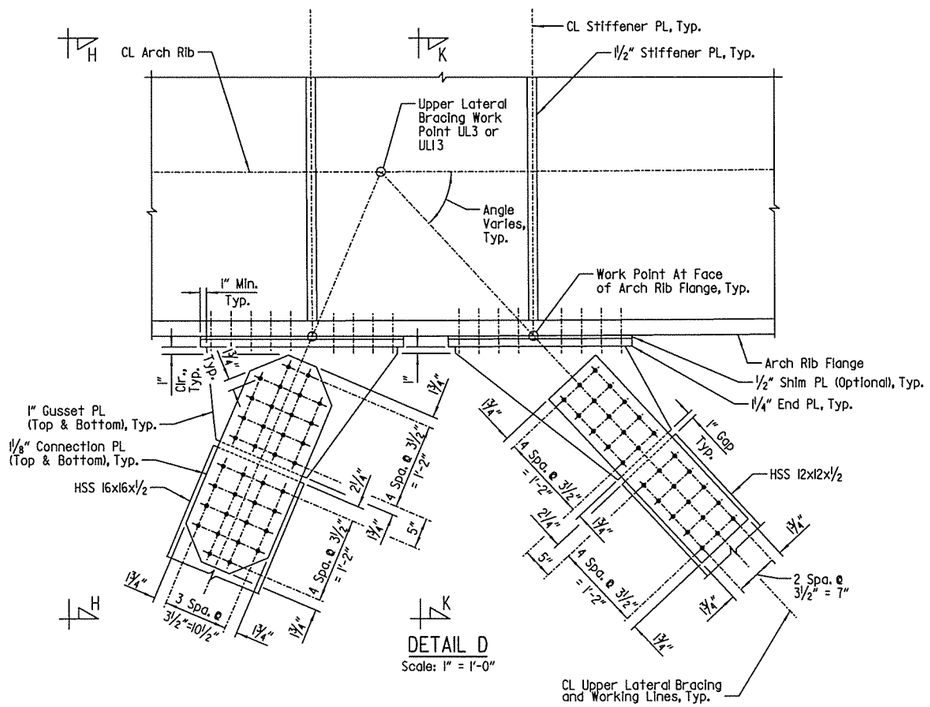

DETAIL D
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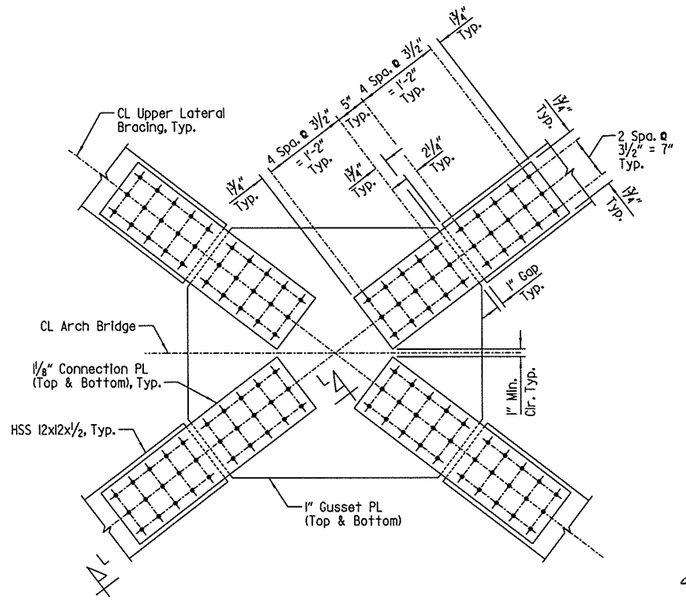

DETAIL E
Scale: 1" = 1'-0"

Notes:
For locations of Details A, B, C, D & E see Dwg. No. 54386.
For Sections H-H, J-J, K-K & L-L, see Dwg. No. 54411.
For geometry of upper lateral bracing, see Dwg. Nos. 54386 & 54388.
HSS members shall conform to the requirements of ASTM A500, Grade C (minimum yield strength = 50 ksi), but shall be paid for at the bid unit price for "STRUCTURAL STEEL IN ARCH SPANS, (M270, GR. 50)."
Structural steel for Gusset Plates, End Plates, Connection Plates, and Optional Shim Plates shall conform to AASHTO M270, Grade 50.
All bolts shall be 1" ø high-strength bolts, unless noted otherwise.
If optional shim plates are not used, adjustments to lateral bracing members and connections shall be submitted with the shop drawings.

SHEET 1 OF 4
DETAILS OF UPPER LATERAL BRACING
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
NATALIE MCCOMBS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
5-29-14
BRIDGE ENGINEER

DRAWN BY: SWS DATE: MAY 2014 FILENAME: B061275x1S67.DGN
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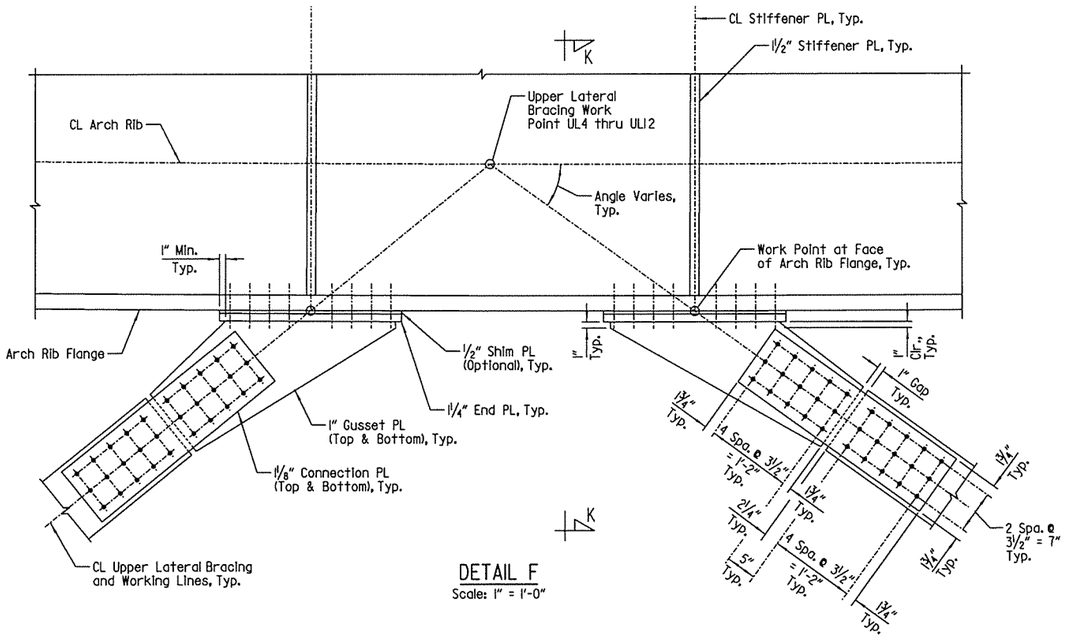

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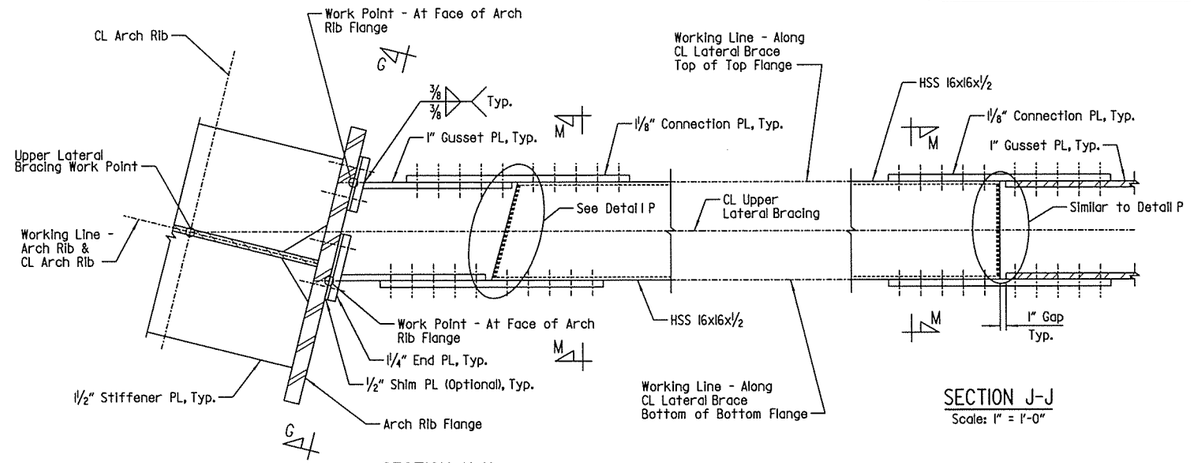

SECTION H-H
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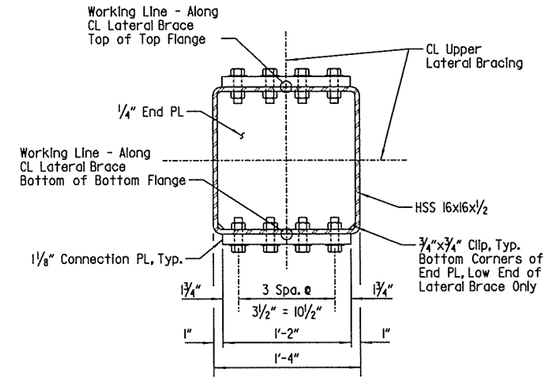
SECTION J-J
Scale: 1" = 1'-0"



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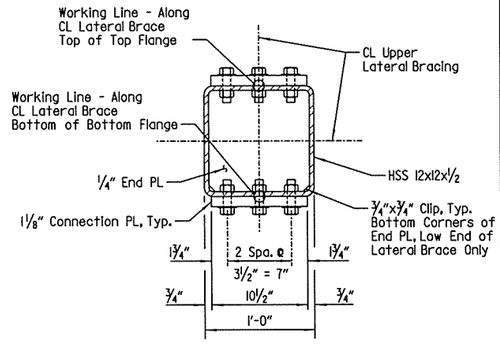

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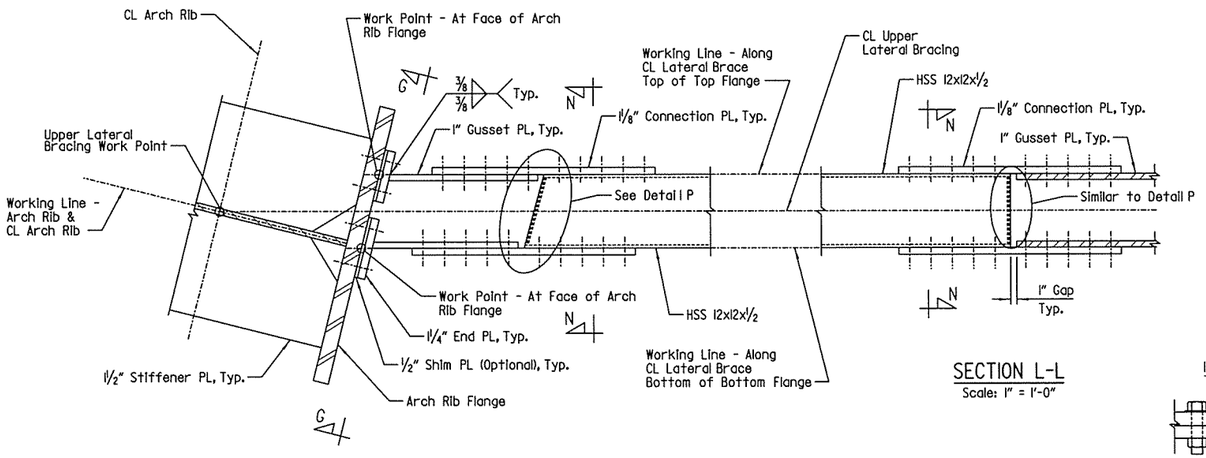

SECTION K-K
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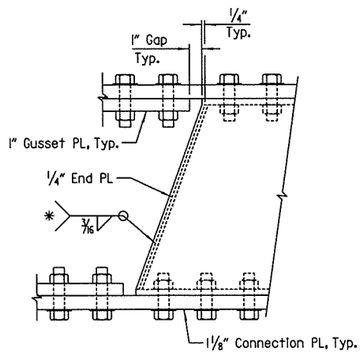
SECTION L-L
Scale: 1" = 1'-0"



DETAIL P
Scale: 2" = 1'-0"

* Shop bolt connection plates to HSS and inspect before sealing ¼" end plate to HSS.

Notes:
For location of Detail F, see Dwg. No. 54386.
For locations of Sections H-H, J-J K-K & L-L, see Dwg. No. 54410.
For Section G-G, see Dwg. Nos. 54412 & 54413.
For additional notes, see Dwg. No. 54410.

SHEET 2 OF 4
DETAILS OF UPPER LATERAL BRACING
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: SWS DATE: MAY 2014 FILENAME: B061275xlS68.DGN
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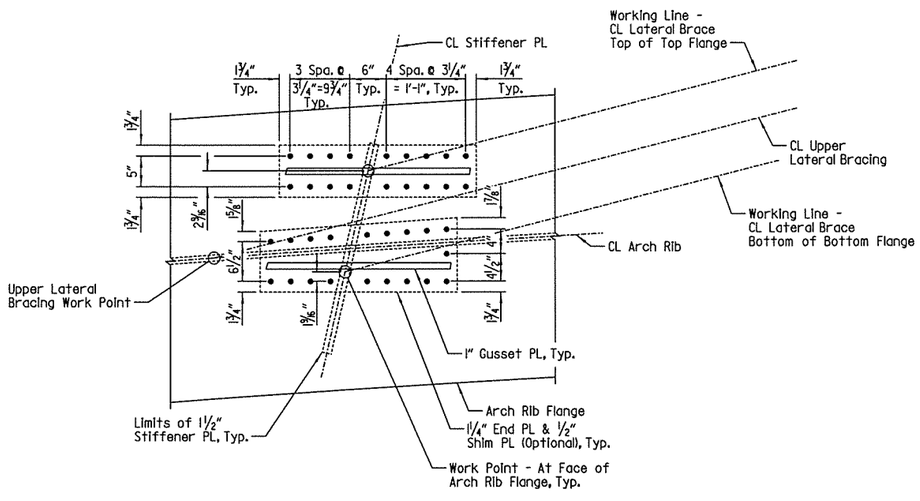
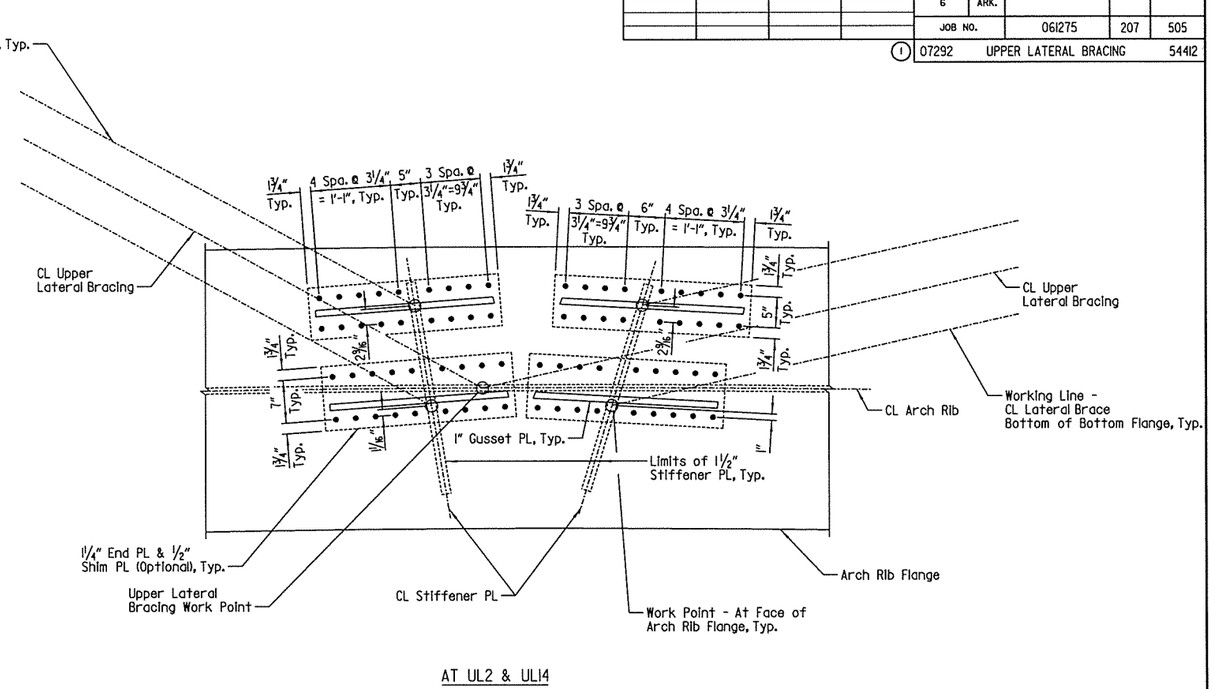
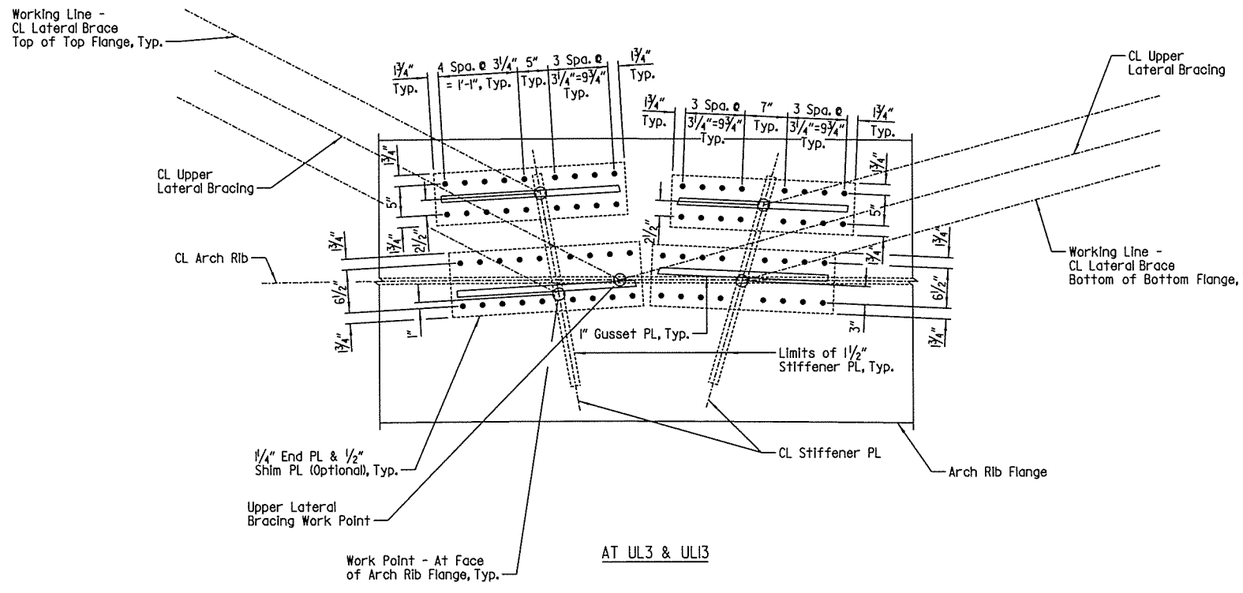


AT UL1 & UL15



AT UL2 & UL14



AT UL3 & UL13

SECTION G-G

Notes:
For locations of Section G-G, see Dwg. No. 54411.
For additional Section G-G details, see Dwg. No. 54413.
For additional notes, see Dwg. No. 54410.

SHEET 3 OF 4
DETAILS OF UPPER LATERAL BRACING
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

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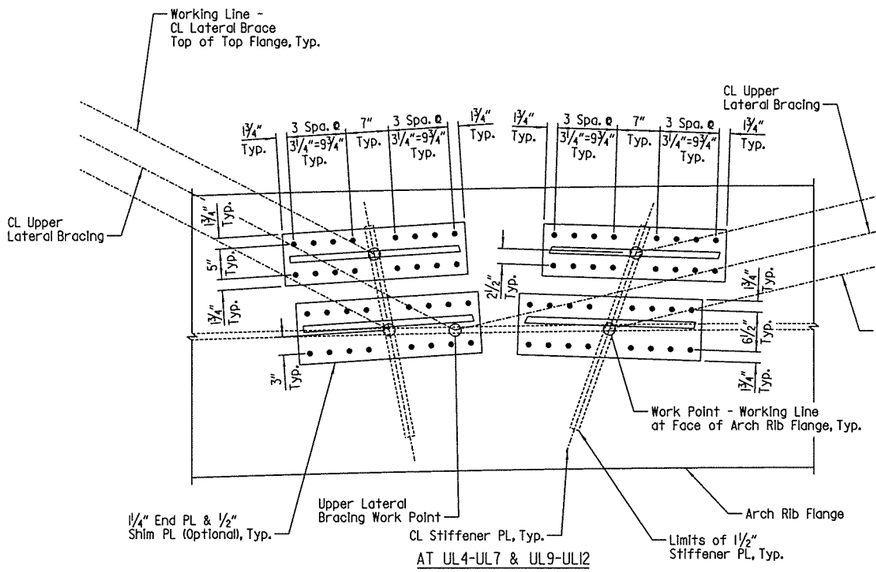
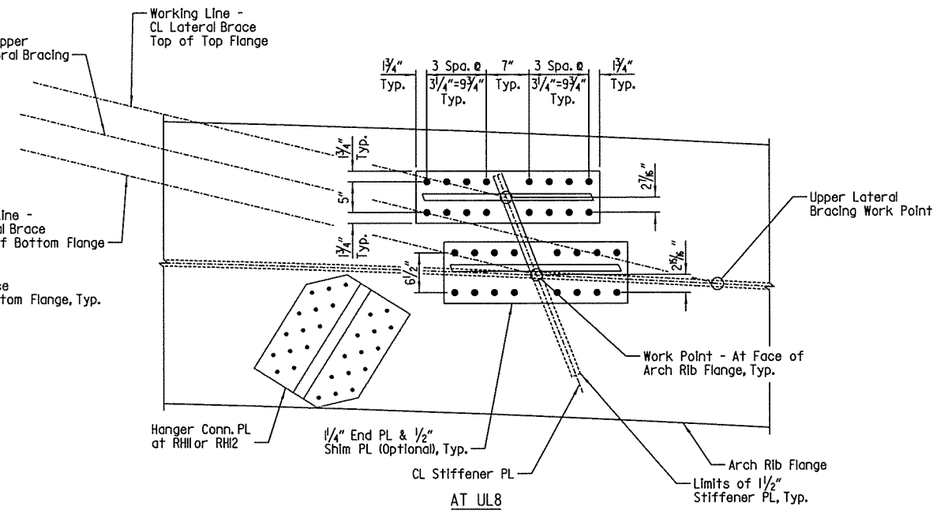


AT UL4-UL7 & UL9-UL12



AT UL8

SECTION G-G

Notes:
For locations of Section G-G, see Dwg. No. 54411.
For additional Section G-G details, see Dwg. No. 54412.
For Hanger Connection Plate details, see Dwg. No. 54428.
For additional notes, see Dwg. No. 54410.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF UPPER LATERAL BRACING
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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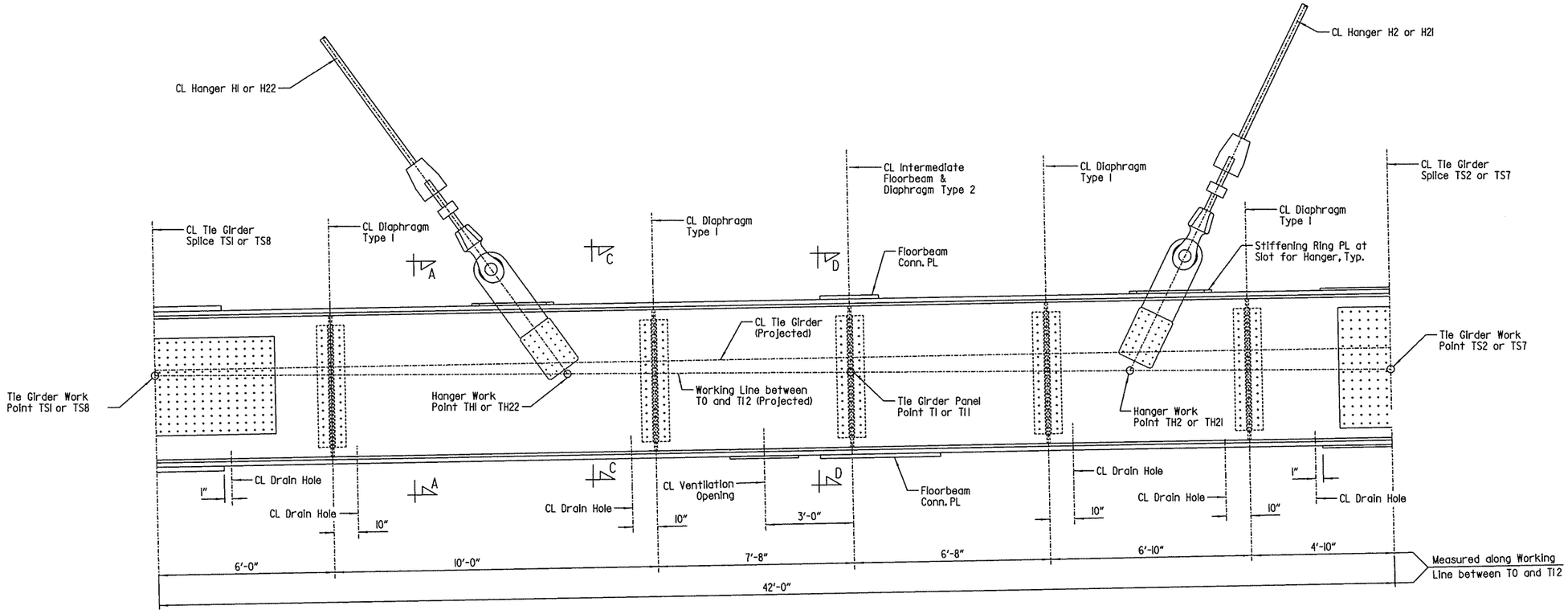
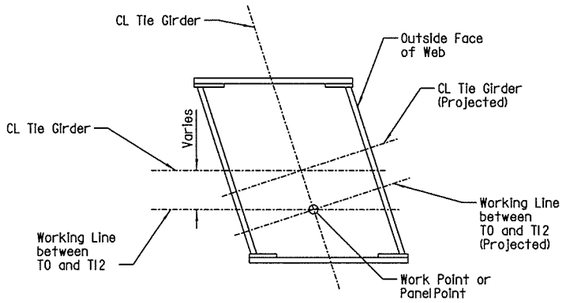
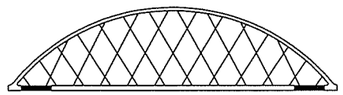


ELEVATION

(Shown along Outside Face of Web)
(Waterline Support Bracket on Inside Face of Web not shown for clarity. For details, see Waterline Support Details.)



TYPICAL TIE GIRDER SECTION NOMENCLATURE



KEY ELEVATION

Notes:
For Sections A-A, C-C, & D-D and additional notes, see Dwg. No. 54419.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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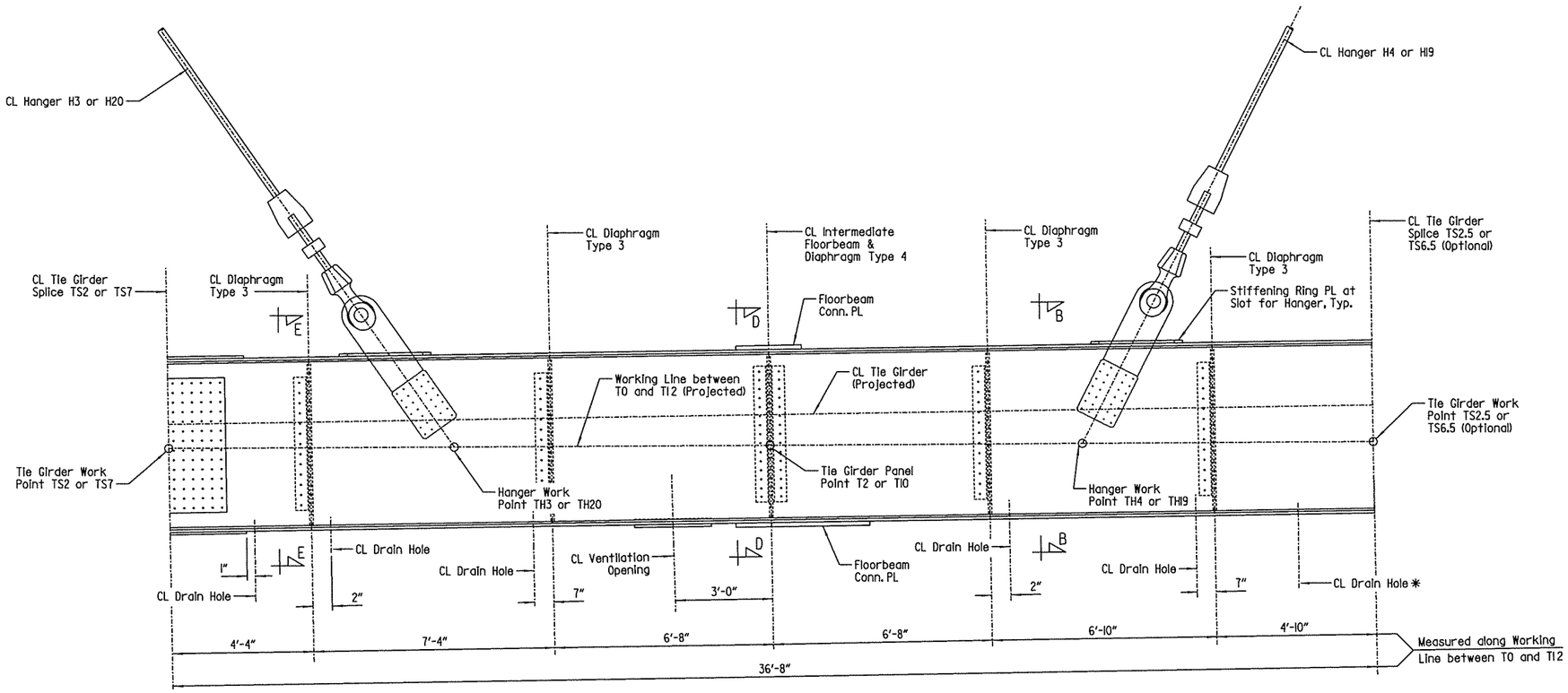
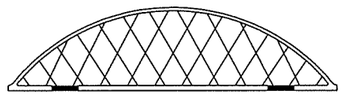


ELEVATION

(Shown along Outside Face of Web)
(Waterline Support Bracket on Inside Face of Web not shown for clarity. For details, see Waterline Support Details.)

* Drain Holes are not required at these locations if Optional Splices are not used. Place Drain Hole 1" from edge of bottom flange splice plate similar to other splice locations.

Notes:
For Sections B-B, D-D, & E-E and additional notes, see Dwg. No. 54419.
For Typical Tie Girder Section Nomenclature, see Dwg. No. 54414.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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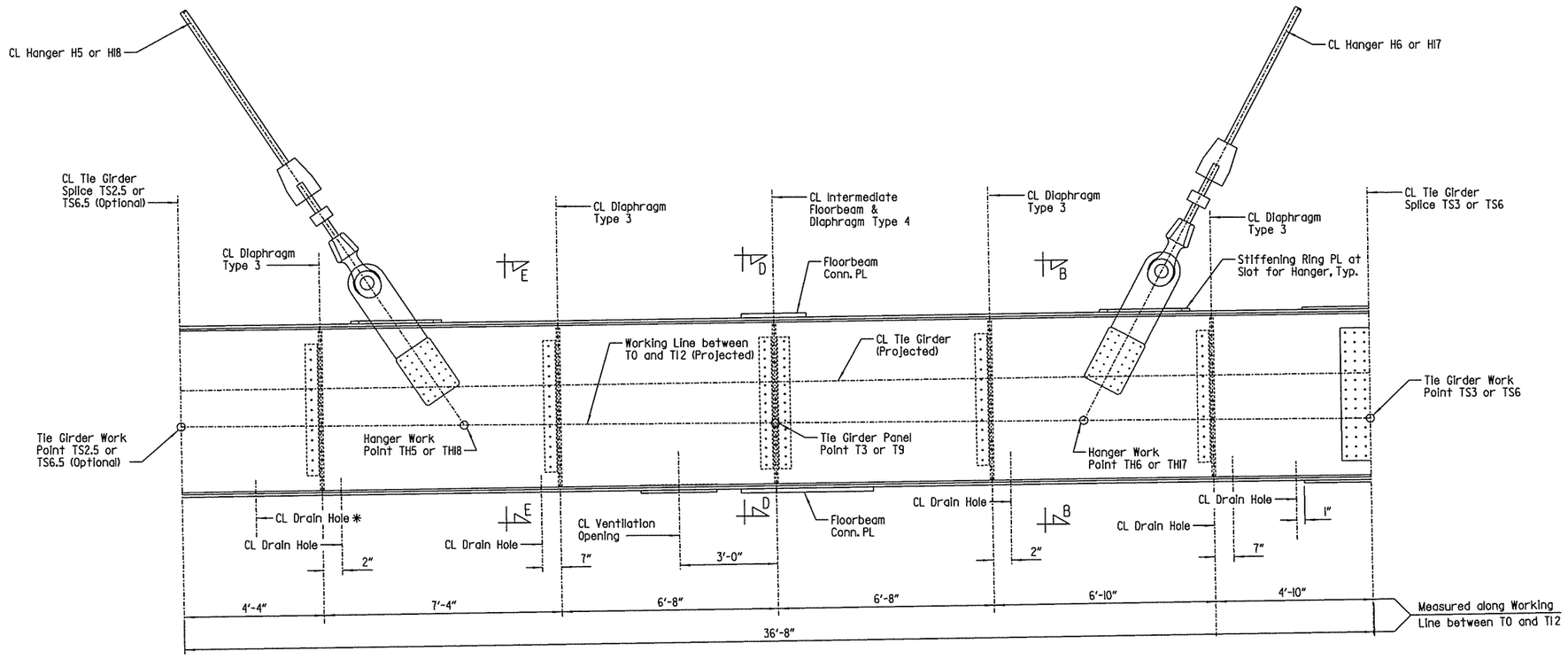
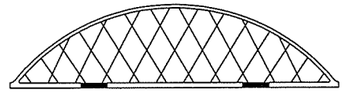


ELEVATION

(Shown along Outside Face of Web)
(Waterline Support Bracket on Inside Face of Web not shown for clarity. For details, see Waterline Support Details.)

* Drain Holes are not required at these locations if Optional Splices are not used. Place Drain Hole 1" from edge of bottom flange splice plate similar to other splice locations.



KEY ELEVATION

Notes:
For Sections B-B, D-D, & E-E and additional notes, see Dwg. No. 54419.
For Typical Tie Girder Section Nomenclature, see Dwg. No. 54414.

SHEET 3 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275x1S73.DGN
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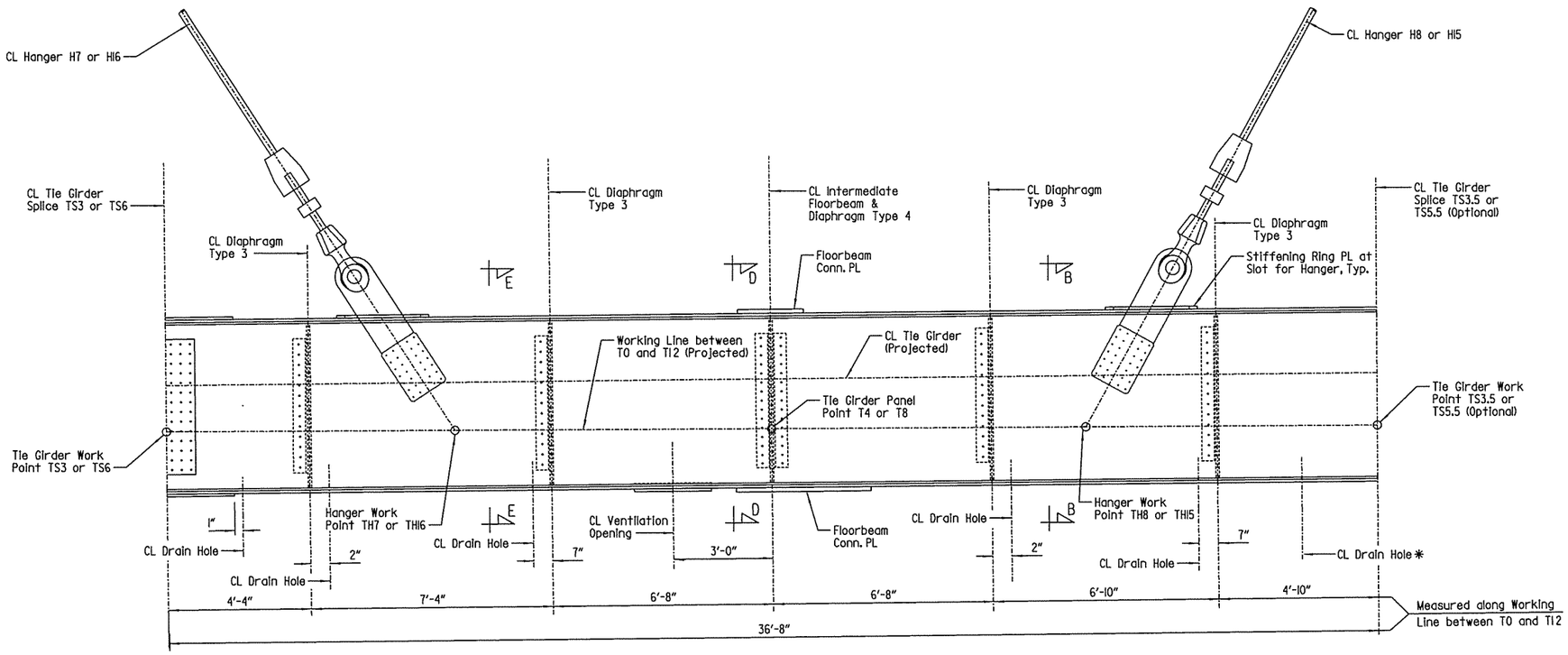
(1) 07292		TIE GIRDER		54417

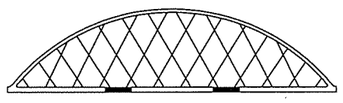


ELEVATION

(Shown along Outside Face of Web)
(Waterline Support Bracket on Inside Face of Web not shown for clarity. For details, see Waterline Support Details.)

* Drain Holes are not required at these locations if Optional Splices are not used. Place Drain Hole 1" from edge of bottom flange splice plate similar to other splice locations.

Notes:
For Sections B-B, D-D, & E-E and additional notes, see Dwg. No. 54419.
For Typical Tie Girder Section Nomenclature, see Dwg. No. 54414.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

SHEET 4 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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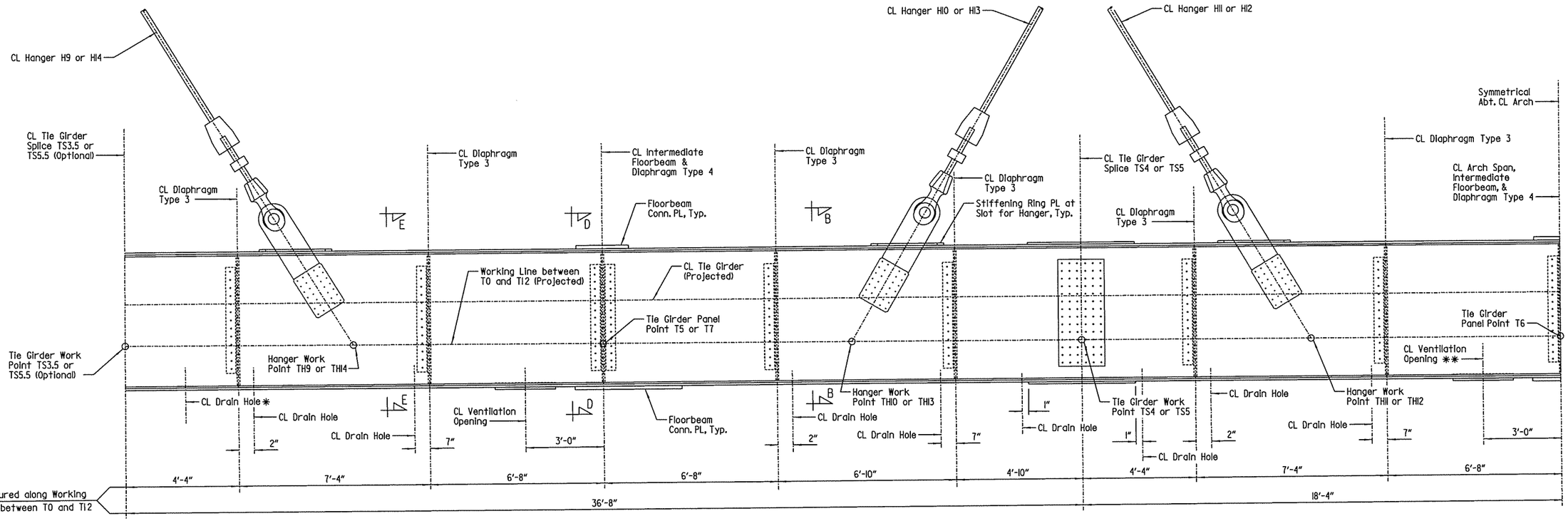


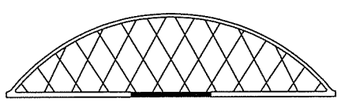
ELEVATION

(Shown along Outside Face of Web)
(Waterline Support Bracket on inside Face of Web not shown for clarity. For details, see Waterline Support Details.)

* Drain Holes are not required at these locations if Optional Splices are not used. Place Drain Hole 1" from edge of bottom flange splice plate similar to other splice locations.

** Between T5 & T6 only.
Omit between T6 & T7.

Notes:
For Sections B-B, D-D, & E-E and additional notes, see Dwg. No. 54419.
For Typical Tie Girder Section Nomenclature, see Dwg. No. 54414.



KEY ELEVATION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 5 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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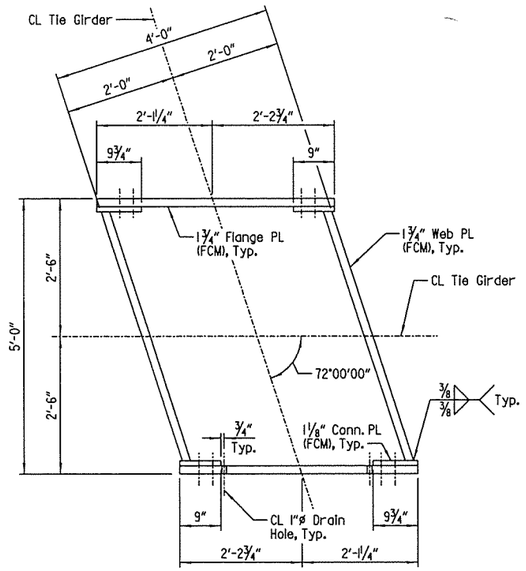

SECTION A-A
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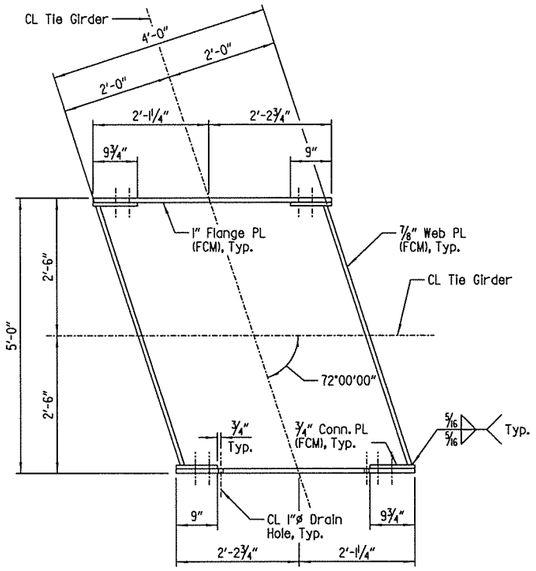

SECTION B-B
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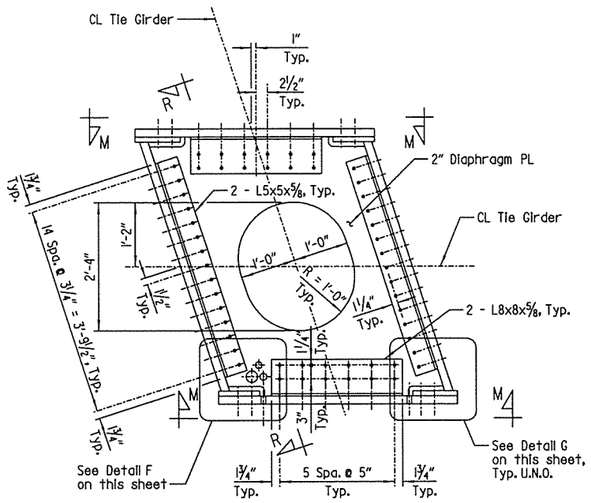

SECTION C-C
(Diaphragm Type 1)
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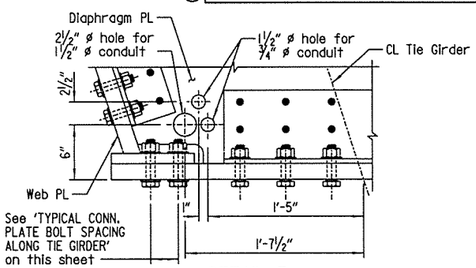
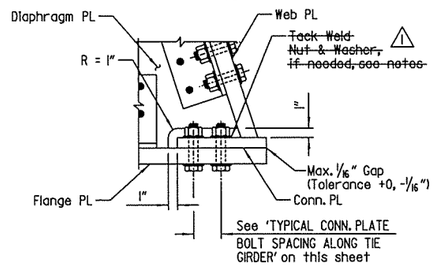
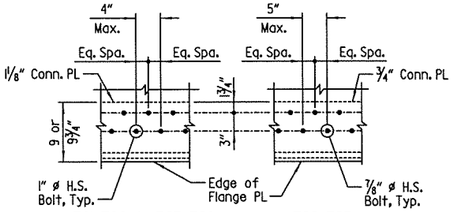


DETAIL F
(Floorbeam to Tie Girder Connection not shown for Type 2 or Type 4 Diaphragms)
Scale: 1½" = 1'-0"



DETAIL G
Scale: 1½" = 1'-0"



TS1-TS2 & TS7-TS8 TS2-TS7

TYPICAL CONN. PLATE BOLT SPACING ALONG TIE GIRDER
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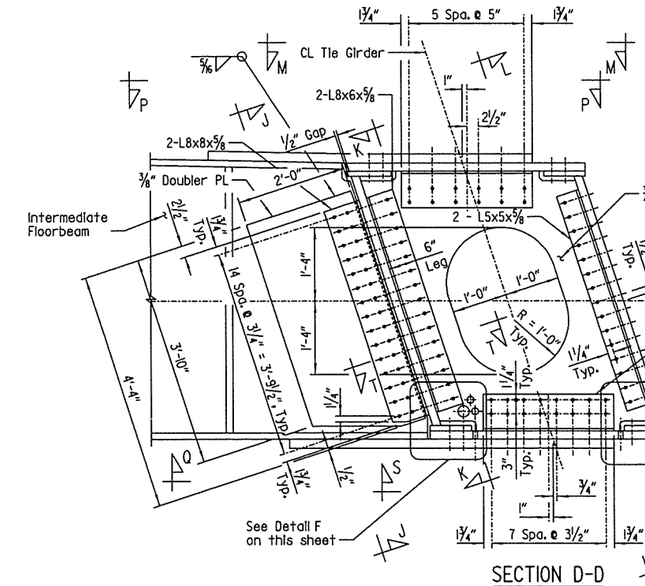

SECTION D-D
(Diaphragm Types 2 & 4)
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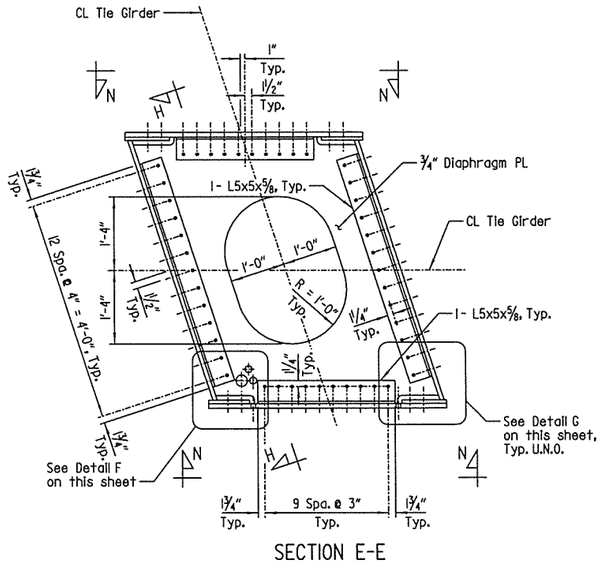

SECTION E-E
(Diaphragm Type 3)
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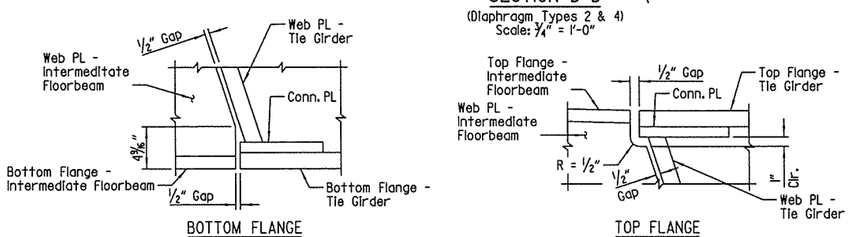

INTERMEDIATE FLOORBEAM END COPING DETAIL
(Floorbeam to Tie Girder Connection Plates not shown)
Scale: 1½" = 1'-0"

Notes:
For Sections H-H thru L-L, R-R & T-T and Views M-M, N-N & S-S see Dwg. No. 54420.
For Views P-P & Q-Q, see Dwg. No. 54421.
For locations of Sections A-A thru E-E, see Dwg. Nos. 54414 thru 54418.
For details of Tie Girder Field Splices, see Dwg. Nos. 54423 thru 54425.
For details of Hanger Connections, see Dwg. Nos. 54426, 54429 & 54430.
For details of Ventilation Openings, see Dwg. No. 54422.
Structural steel for all Tie Girder components shall conform to AASHTO M270, Grade 50.
Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.
Thickness shown for Tie Girder Web to Flange connection plate is the final thickness of the plate after grinding of the plates (if needed) is done after welding.
All bolts are 1"ø High Strength Bolts, unless otherwise noted.
All bolted connection contact surfaces shall meet Class B surface preparation.
1 ~~Tack welding of nut and washer is allowed only for the first bolt line of the two corners where the angle (located inside the Tie Girder) between Tie Girder web and flange plate is 72 degrees.~~

1 Tack weld eliminated. NAM 7-9-14

SHEET 6 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
7-9-14
BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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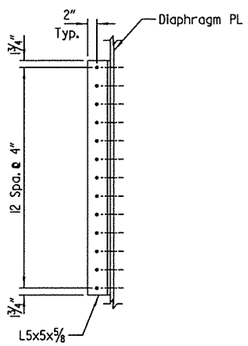

SECTION H-H
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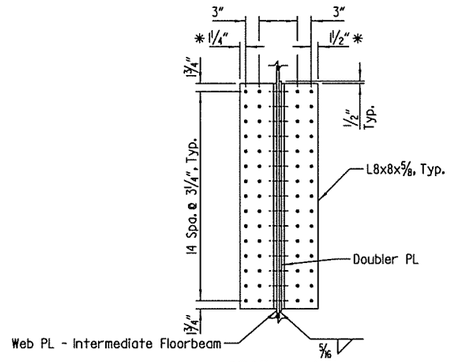
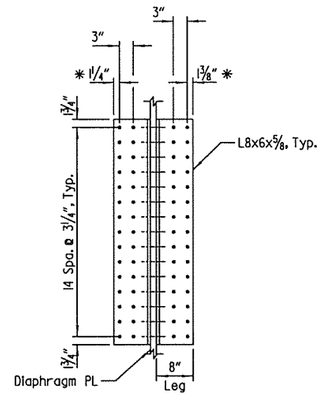
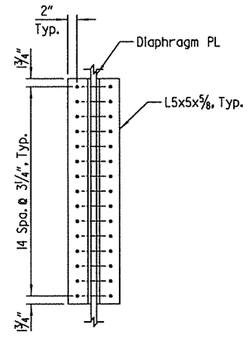


SECTION J-J
Scale: ¾"=1'-0"

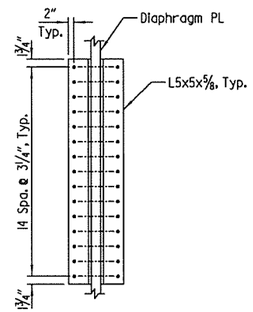


SECTION K-K
Scale: ¾"=1'-0"

* Bolt spacing allows for Doubler Plate on floorbeam



SECTION L-L
Scale: ¾"=1'-0"



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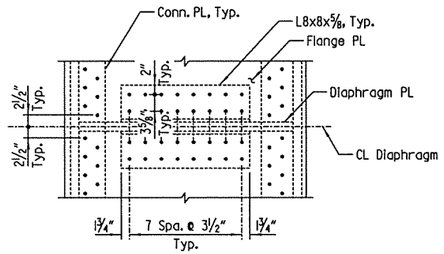
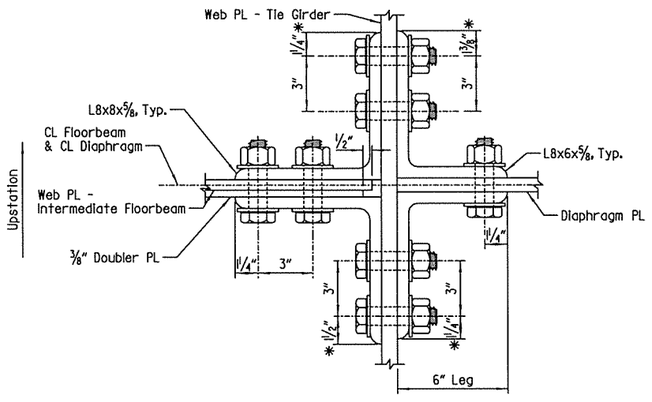
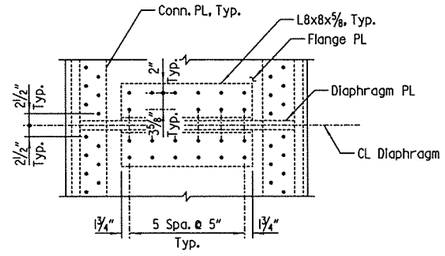


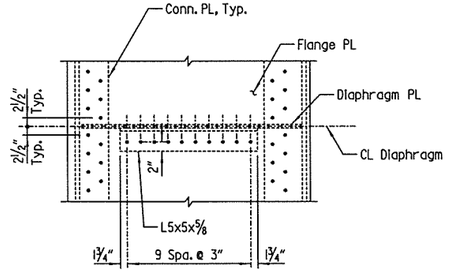
VIEW S-S
Scale: ¾"=1'-0"
(Floorbeam to Tie Girder Connection Plate not shown for Type 2 and Type 4 Diaphragms)



SECTION T-T
Scale: 3"=1'-0"



VIEW M-M
Scale: ¾"=1'-0"
(Floorbeam to Tie Girder Connection Plate not shown for Type 2 and Type 4 Diaphragms)



VIEW N-N
Scale: ¾"=1'-0"
(Top Flange shown, Bottom Flange Similar)

Notes:
For locations of Sections H-H thru L-L, R-R & T-T and Views M-M, N-N & S-S, see Dwg. No. 54419.
All bolts shall be 1" ø H.S. Bolts, unless otherwise noted.
For additional notes, see Dwg. No. 54419.

SHEET 7 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275xlS77.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54420

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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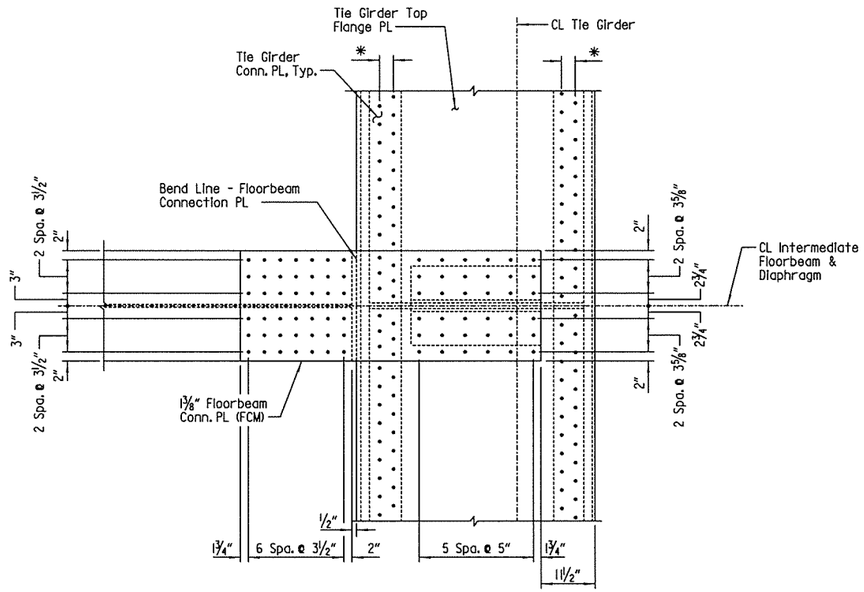
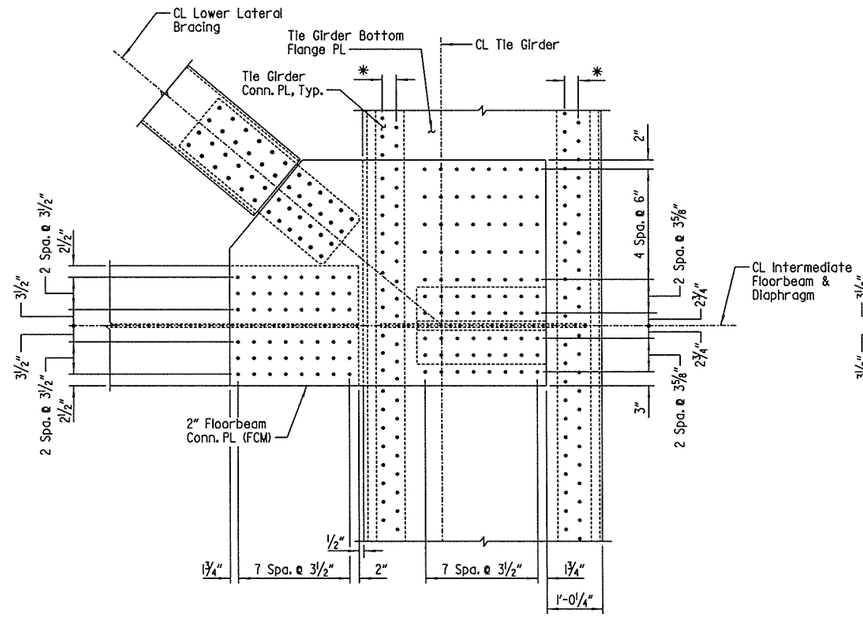
				JOB NO.		061275	216	505
				(1) 07292		TIE GIRDER		54421



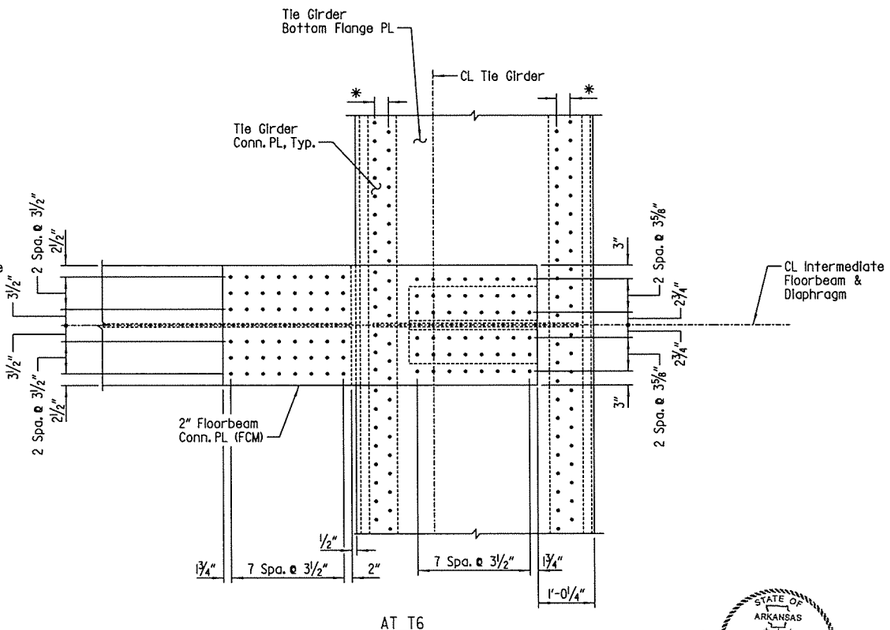
AT T1- T11

VIEW P-P



AT T1 - T5 & T7 - T11

VIEW Q-Q



AT T6

* See "TYPICAL CONN. PLATE BOLT SPACING ALONG TIE GIRDER" detail on Dwg. No. 54419.

Notes:
For locations of Views P-P & Q-Q, see Dwg. No. 54419.
All bolts shall be 1" ø high strength bolts, unless noted otherwise.
For additional notes, see Dwg. No. 54419.
For Lower Lateral Bracing details, see Dwg. Nos. 54449 & 54450.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

SHEET 8 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275xlS78.DGN
CHECKED BY: KDG DATE: MAY 2014 SCALE: ¾" = 1'-0"
DESIGNED BY: SJL DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54421

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REVISED DATE:

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				JOB NO.		061275	217	505
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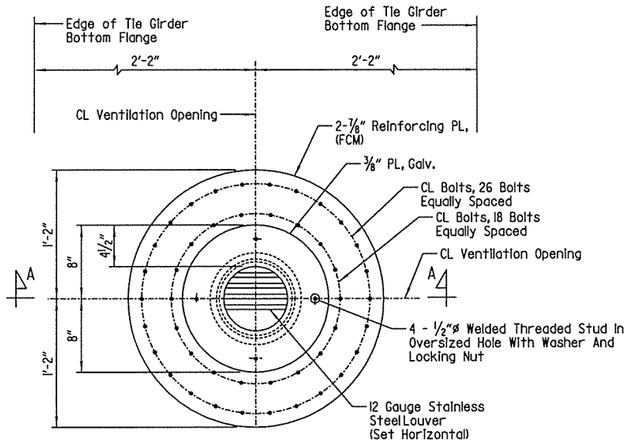
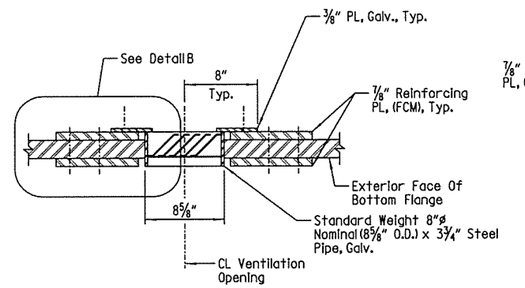
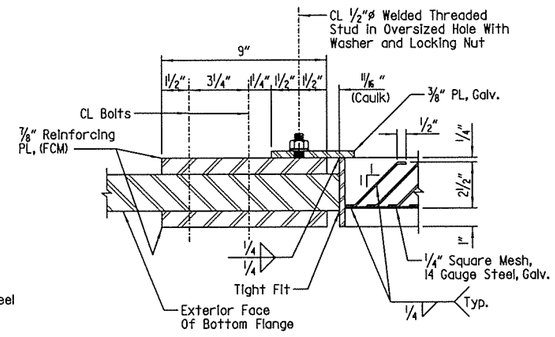


PLAN - INSIDE TIE GIRDER
Scale: 1 1/2" = 1'-0"



SECTION A-A
Scale: 1 1/2" = 1'-0"



DETAIL B
Scale: 3" = 1'-0"

TIE GIRDER VENTILATION OPENING DETAILS

Notes:
All structural steel shall conform to AASHTO M270 Grade 50, unless noted otherwise.
Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.
Ventilation pipe, mesh, and 3/8" galvanized plate shall meet the requirements of AASHTO M270 Gr. 36.
All cost associated with fabrication and installation of ventilation shall be subsidiary to the bid item "Structural Steel In Arch Spans (M270, Gr. 50)".
For locations of ventilation holes, see Dwg. Nos. 54414 to 54418.
All bolts shall be 7/8"ø high strength bolts, unless noted otherwise.
The bolted connection contact surfaces shall meet Class B surface preparation requirements.
Galvanizing shall be in accordance with AASHTO M232 or M298.
All stainless steel shall meet the requirements of AISI Type 304.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 9 OF 9
DETAILS OF TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S79.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: NAM DATE: MAY 2014
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REVISED DATE:

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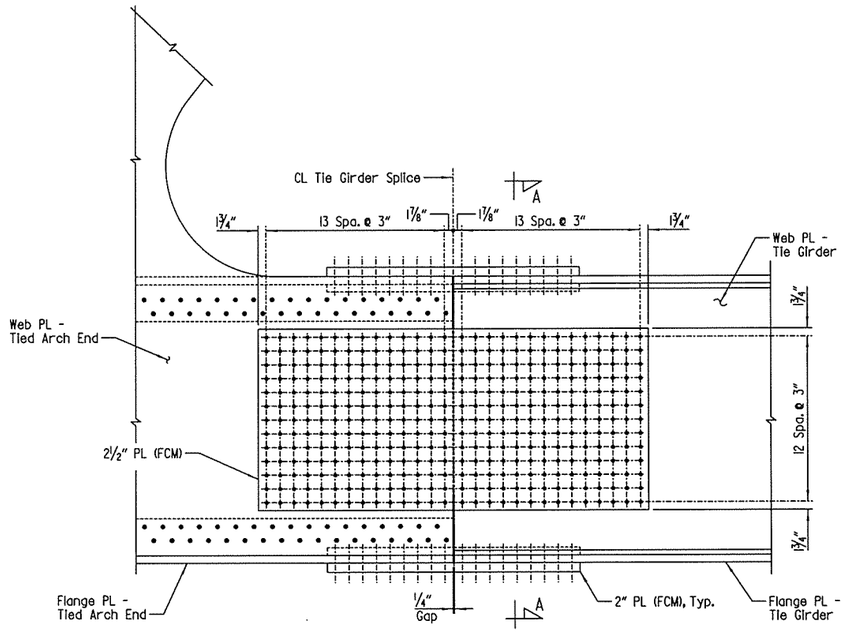
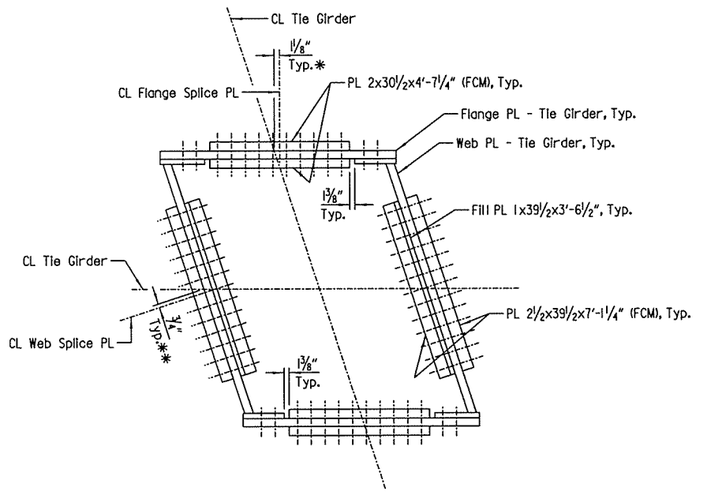


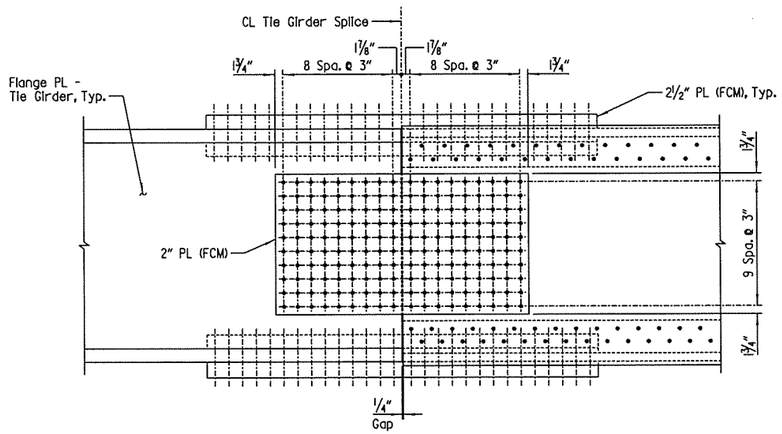
ELEVATION - TIE GIRDER WEB SPLICE TS1 AND TS8
(Shown in the plane of the Arch)



SECTION A-A

* CL Flange Splice PL to intersection of CL Tie Girder and outside face of Tie Girder Flange.

** CL Web Splice PL to intersection of CL Tie Girder and outside face of Tie Girder Web.



PLAN - TIE GIRDER FLANGE SPLICE TS1 AND TS8

Notes:
All structural steel shall conform to AASHTO M270 Grade 50. Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.
The bolted connection contact surfaces shall meet Class B surface preparation at all Tie Girder field splices.
All splice bolts shall be 1"ø high strength bolts, unless otherwise noted.
For Details of Tie Girder, see Dwg. Nos. 54414 thru 54422.
For Details of Tied Arch End, see Dwg. Nos. 54397 thru 54401.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF TIE GIRDER FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1 S80.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: ¾" = 1'-0"
DESIGNED BY: AEC DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54423

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REVISED DATE:

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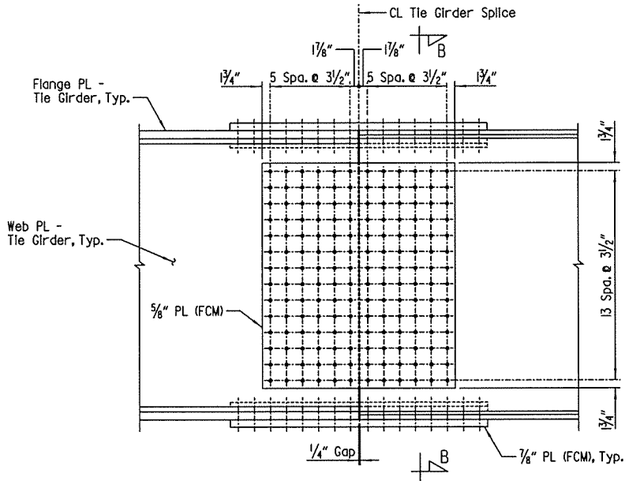
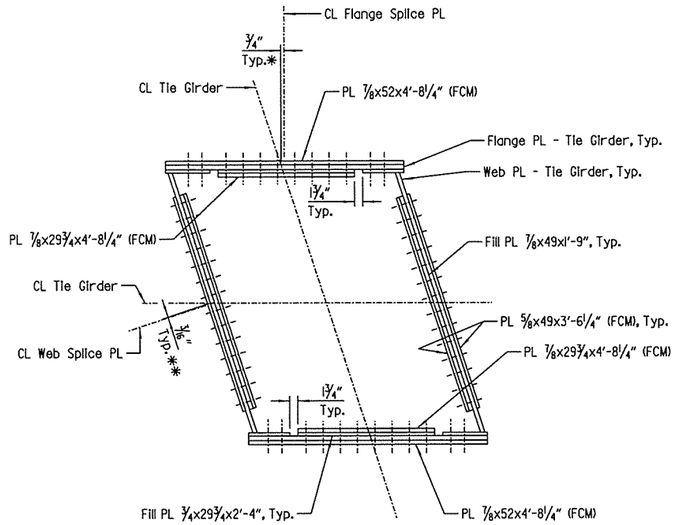


ELEVATION - TIE GIRDER WEB SPLICE TS2 AND TS7

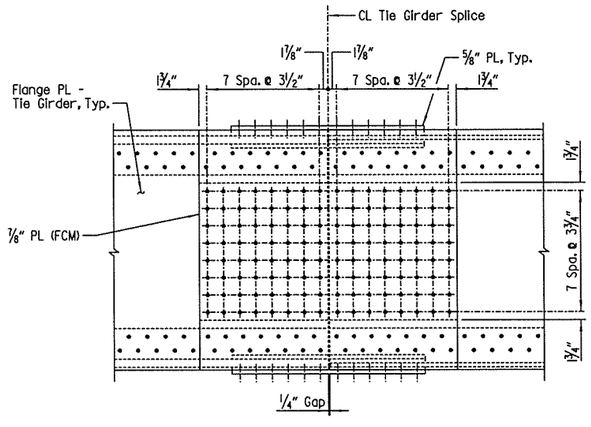
(Shown in the plane of the Arch)



SECTION B-B

* CL Flange Splice PL to Intersection of CL Tie Girder and outside face of Tie Girder Flange.

** CL Web Splice PL to Intersection of CL Tie Girder and outside face of Tie Girder Web.



PLAN - TIE GIRDER FLANGE SPLICE TS2 AND TS7

Note:
For additional notes, see Dwg. No. 54423.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF TIE GIRDER FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S81.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: 3/4" = 1'-0"
DESIGNED BY: AEC DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54424

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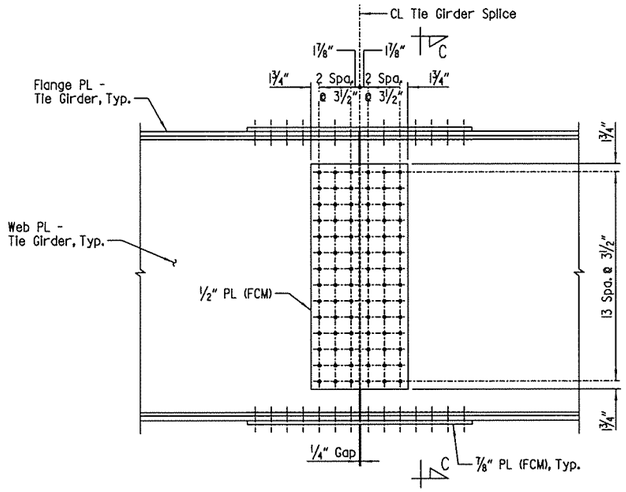
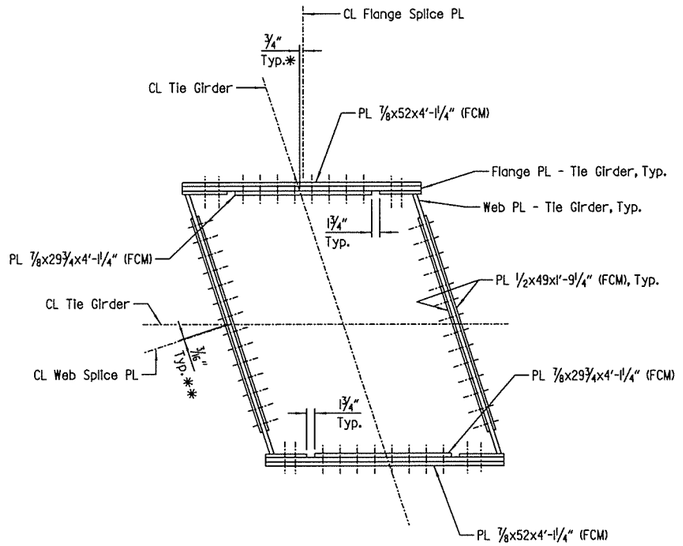


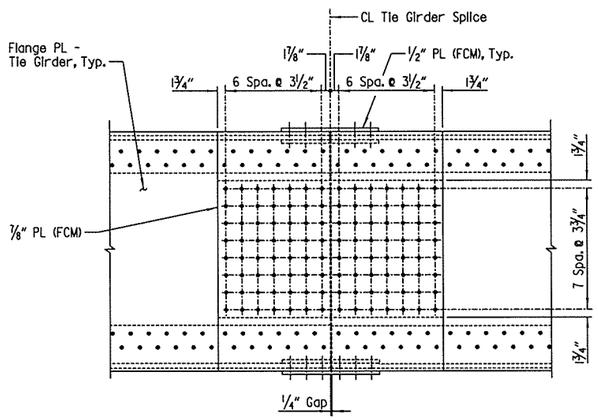
ELEVATION - TIE GIRDER WEB SPLICE TS2.5 THRU TS6.5
(Shown in the plane of the Arch)



SECTION C-C

* CL Flange Splice PL to intersection of CL Tie Girder and outside face of Tie Girder Flange.

** CL Web Splice PL to intersection of CL Tie Girder and outside face of Tie Girder Web.



PLAN - TIE GIRDER FLANGE SPLICE TS2.5 THRU TS6.5

Note:
For additional notes, see Dwg. No. 54423.

SHEET 3 OF 3
DETAILS OF TIE GIRDER FIELD SPLICE
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275x1S82.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: ¾" = 1'-0"
DESIGNED BY: AEC DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54425

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REVISED DATE:

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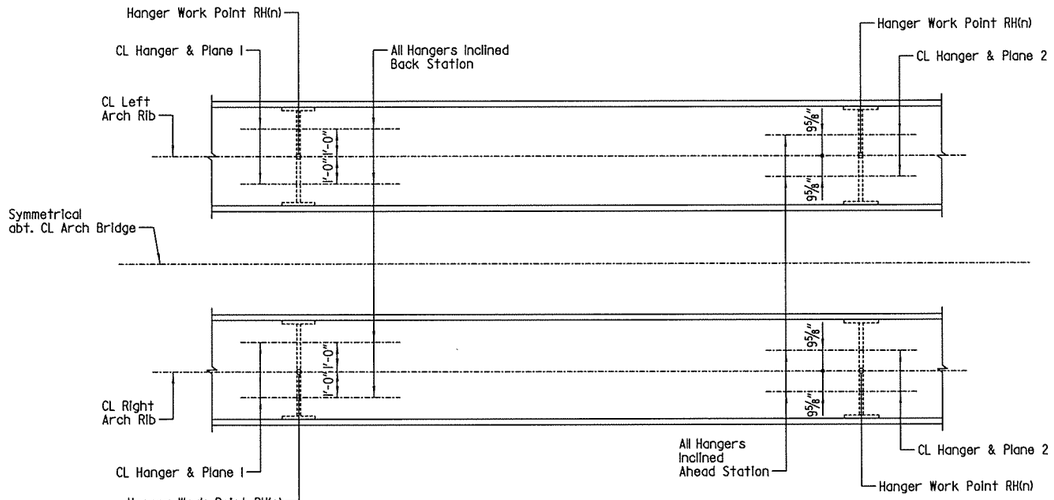
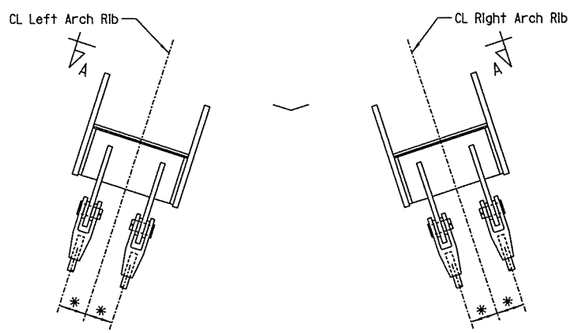


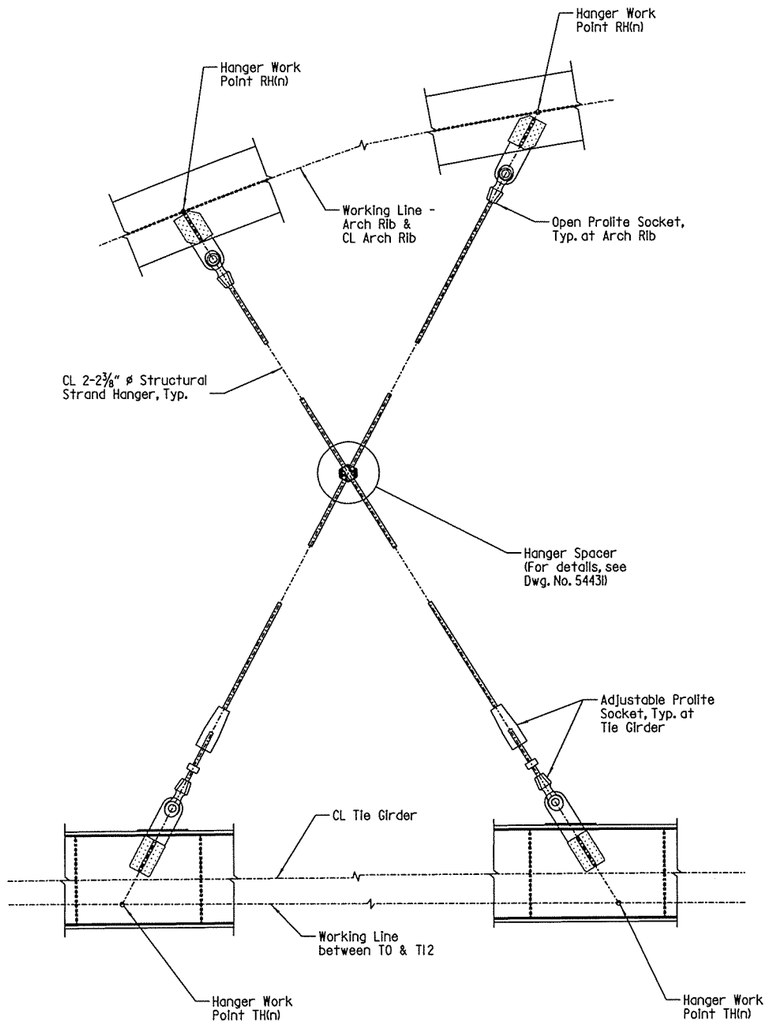
Hanger Eccentricity Note:
Plane 1 defines the vertical plane of hangers offset 1'-0" from CL Arch Rib. Plane 2 defines the vertical plane of hangers offset 9⅝" from CL Arch Rib.

VIEW A-A
TYPICAL HANGER ECCENTRICITY
No Scale



SECTION THRU ARCH RIB
No Scale

*9⅝" or 1'-0"
See View A-A



ELEVATION - HANGER
Scale: ¼" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF HANGER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KNB DATE: MAY 2014 FILENAME: B061275xlS83.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: AEC DATE: APR. 2014
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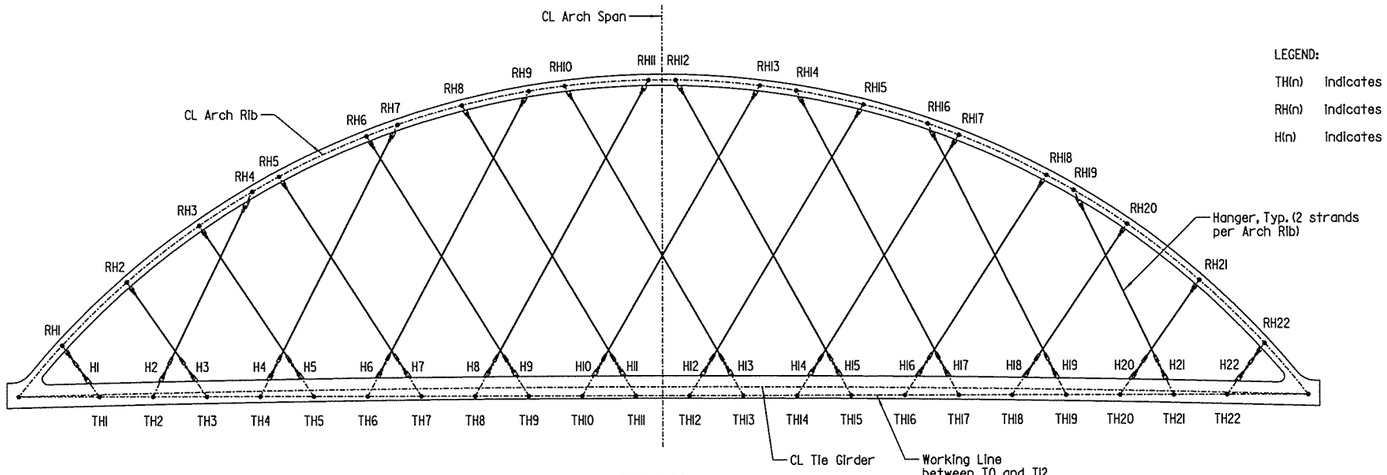

ELEVATION
Scale: 1" = 25'

LEGEND:

TH(n) Indicates Hanger Work Point along Working Line between T0 and T12.

RH(n) Indicates Hanger Work Point along CL Arch Rib.

H(n) Indicates Hanger Member.

LEFT HANGER FORCE SCHEDULE

HANGER	STRUCTURAL STRAND DIAMETER (INCHES)	NO. STRANDS REQUIRED (PER ARCH RIB)	GROSS METALLIC AREA (SQ. INCHES)	DEAD LOAD (KIPS)	HANGER PRETENSION (KIPS)	MAXIMUM SERVICE LOAD (KIPS)	MINIMUM SERVICE LOAD (KIPS)	MAXIMUM FACTORED DESIGN LOAD (KIPS)	MINIMUM FACTORED DESIGN LOAD (KIPS)	HANGER INCLINATION
H1	2 3/8	2	3.38	112	16	188	117	263	78	BACK
H2	2 3/8	2	3.38	95	-6	198	53	301	20	AHEAD
H3	2 3/8	2	3.38	231	29	379	251	532	169	BACK
H4	2 3/8	2	3.38	129	12	277	95	412	52	AHEAD
H5	2 3/8	2	3.38	225	-36	309	182	441	99	BACK
H6	2 3/8	2	3.38	144	29	309	130	454	88	AHEAD
H7	2 3/8	2	3.38	210	-37	294	162	426	102	BACK
H8	2 3/8	2	3.38	153	9	292	129	431	89	AHEAD
H9	2 3/8	2	3.38	192	32	346	204	498	163	BACK
H10	2 3/8	2	3.38	161	-19	265	115	395	83	AHEAD
H11	2 3/8	2	3.38	176	-6	289	150	424	121	BACK
H12	2 3/8	2	3.38	175	-6	291	144	425	105	AHEAD
H13	2 3/8	2	3.38	162	-20	267	115	394	82	BACK
H14	2 3/8	2	3.38	192	33	352	199	499	135	AHEAD
H15	2 3/8	2	3.38	154	8	295	123	430	88	BACK
H16	2 3/8	2	3.38	210	-36	300	157	427	75	AHEAD
H17	2 3/8	2	3.38	144	28	312	125	453	87	BACK
H18	2 3/8	2	3.38	223	-35	314	177	442	76	AHEAD
H19	2 3/8	2	3.38	129	11	281	88	411	50	BACK
H20	2 3/8	2	3.38	229	31	383	248	534	152	AHEAD
H21	2 3/8	2	3.38	96	-7	203	45	300	17	BACK
H22	2 3/8	2	3.38	111	15	190	113	263	65	AHEAD

RIGHT HANGER FORCE SCHEDULE

HANGER	STRUCTURAL STRAND DIAMETER (INCHES)	NO. STRANDS REQUIRED (PER ARCH RIB)	GROSS METALLIC AREA (SQ. INCHES)	DEAD LOAD (KIPS)	HANGER PRETENSION (KIPS)	MAXIMUM SERVICE LOAD (KIPS)	MINIMUM SERVICE LOAD (KIPS)	MAXIMUM FACTORED DESIGN LOAD (KIPS)	MINIMUM FACTORED DESIGN LOAD (KIPS)	HANGER INCLINATION
H1	2 3/8	2	3.38	116	11	190	118	266	77	BACK
H2	2 3/8	2	3.38	101	1	212	65	321	31	AHEAD
H3	2 3/8	2	3.38	241	29	391	262	549	174	BACK
H4	2 3/8	2	3.38	136	10	284	101	423	57	AHEAD
H5	2 3/8	2	3.38	234	-34	321	193	457	107	BACK
H6	2 3/8	2	3.38	150	27	317	136	465	94	AHEAD
H7	2 3/8	2	3.38	219	-35	304	173	440	112	BACK
H8	2 3/8	2	3.38	161	7	300	136	442	96	AHEAD
H9	2 3/8	2	3.38	201	33	356	214	511	171	BACK
H10	2 3/8	2	3.38	170	-20	273	123	406	91	AHEAD
H11	2 3/8	2	3.38	183	-6	298	159	436	129	BACK
H12	2 3/8	2	3.38	184	-6	300	153	437	111	AHEAD
H13	2 3/8	2	3.38	169	-18	276	124	406	91	BACK
H14	2 3/8	2	3.38	201	32	361	208	511	141	AHEAD
H15	2 3/8	2	3.38	161	9	304	131	442	96	BACK
H16	2 3/8	2	3.38	221	-37	309	167	441	85	AHEAD
H17	2 3/8	2	3.38	150	28	321	131	465	93	BACK
H18	2 3/8	2	3.38	234	-35	326	187	458	82	AHEAD
H19	2 3/8	2	3.38	136	11	289	94	422	56	BACK
H20	2 3/8	2	3.38	241	31	397	258	552	156	AHEAD
H21	2 3/8	2	3.38	99	-1	215	54	317	26	BACK
H22	2 3/8	2	3.38	116	11	193	114	267	64	AHEAD

Dead Load does not include future wearing surface or future utility bank.
Gross Metallic Area is shown for one strand (2 strands per hanger).
Loads shown in table are per hanger (2 strands per hanger).

Notes:
Hangers shall be zinc coated structural strand that conforms to the requirements of ASTM A586 with Grade 2 wire and a Class C coating throughout.
For additional information, see "Structural Hangers" special provisions.
For Hanger Geometry, see Dwg. No. 54387.
Hanger inclination indicates the hanger slopes either ahead station along the Tie Girder or back station along the Tie Girder.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF HANGER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: FWG DATE: MAY 2014 FILENAME: B061275x1S84.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: AEC DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54427

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REVISED DATE:

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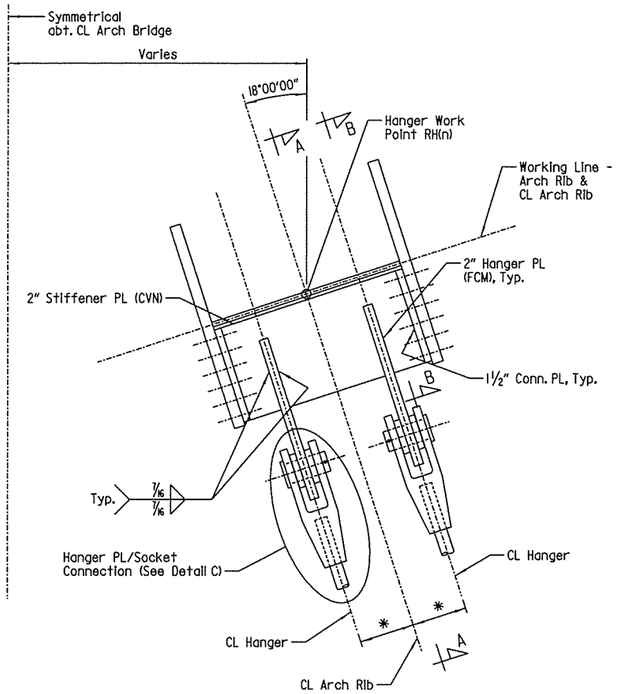
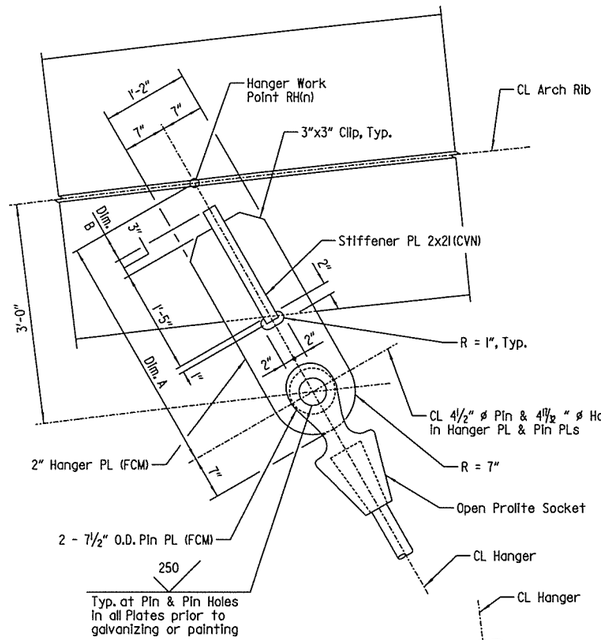
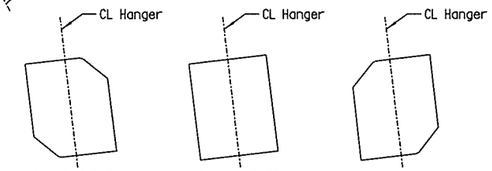


* Varies (9⅝" or 1'-0")
(See Dwg. No. 54426)

SECTION THRU ARCH RIB
Scale: ¾" = 1'-0"



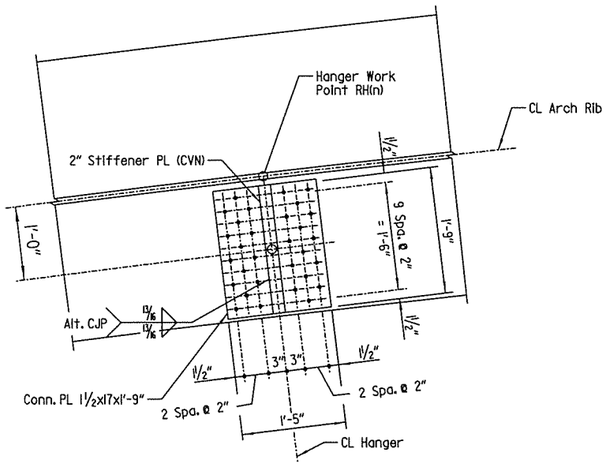
SECTION A-A
Scale: 1" = 1'-0"
(Conn. PL not shown for clarity)



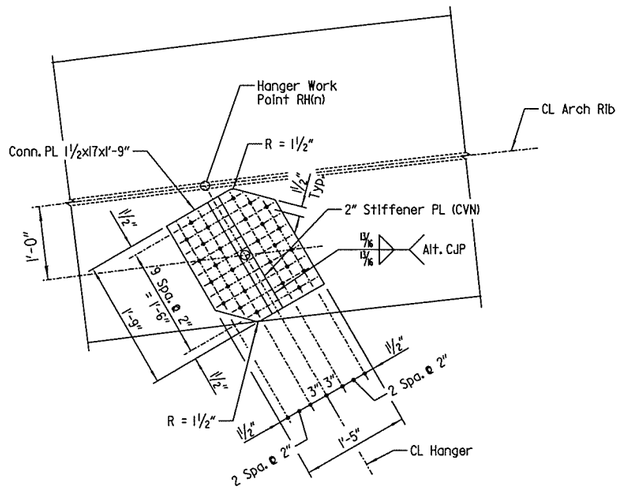
RH5,RH6,RH8, RH10,RH12,RH14, RH16,RH19,RH21 & RH22

RH3 & RH20

RH1,RH2,RH4, RH7,RH9,RH11, RH13,RH15,RH17 & RH18

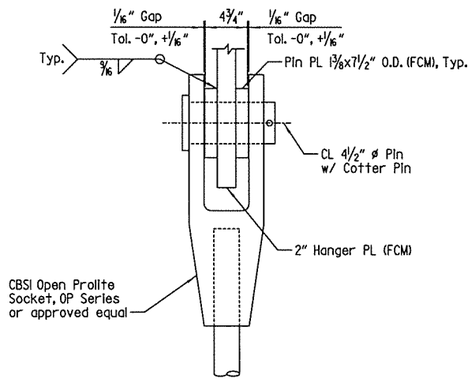


AT RH3 & RH20



TYPICAL
(Shown for RH10, others similar unless noted otherwise)

SECTION B-B
Scale: 1" = 1'-0"



DETAIL C
Scale: 1½" = 1'-0"

TABLE OF DIMENSIONS		
HANGER	DIM. A	DIM. B
H1	3'-0¾"	1¾"
H2	5'-5⅞"	11⅞"
H3	3'-0⅞"	1⅞"
H4	4'-4⅛"	6¾"
H5	3'-0"	1½"
H6	3'-9½"	4⅝"
H7	3'-0⅛"	1⅛"
H8	3'-5⅝"	3⅜"
H9	3'-0⅝"	1⅛"
H10	3'-3⅜"	2⅛"
H11	3'-1⅝"	2⅛"
H12	3'-1⅝"	2⅛"
H13	3'-3⅜"	2⅛"
H14	3'-0⅝"	1⅛"
H15	3'-5⅝"	3⅜"
H16	3'-0⅛"	1⅛"
H17	3'-9½"	4⅝"
H18	3'-0"	1½"
H19	4'-4⅛"	6¾"
H20	3'-0⅞"	1⅞"
H21	5'-5⅞"	11⅞"
H22	3'-0¾"	1¾"

LEGEND:

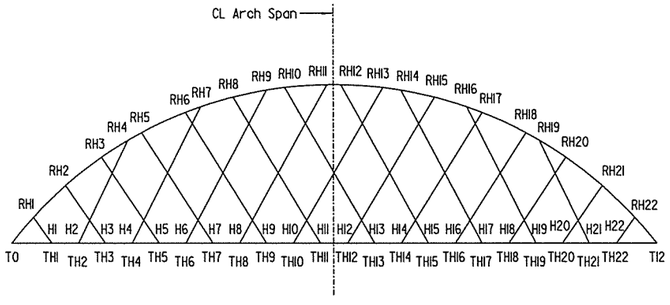
TH(n) Indicates Hanger Work Point along Working Line between T0 and T12.

RH(n) Indicates Hanger Work Point along CL Arch Rib.

H(n) Indicates Hanger Member.

T(n) Indicates Tie Girder Panel Point along Working Line between T0 and T12.

CONNECTION PLATE ORIENTATION



KEY ELEVATION
Scale: 1"=50'-0"

Notes:

All structural steel shall conform to AASHTO M270 Grade 50. Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the "Arch General Notes". Plates designated as (CVN) shall meet the Charpy V-Notch Material testing requirements specified in the "Arch General Notes".

All bolts shall be ⅞"ø high strength bolts, unless otherwise noted.

The bolted connection contact surfaces shall meet Class B surface preparation for Hanger Anchorages.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE McCOMBS
5-29-14
BRIDGE ENGINEER

DETAILS OF HANGER ANCHORAGE AT ARCH RIB BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KNB DATE: MAY 2014 FILENAME: B061275x1S85.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: JMB DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54428

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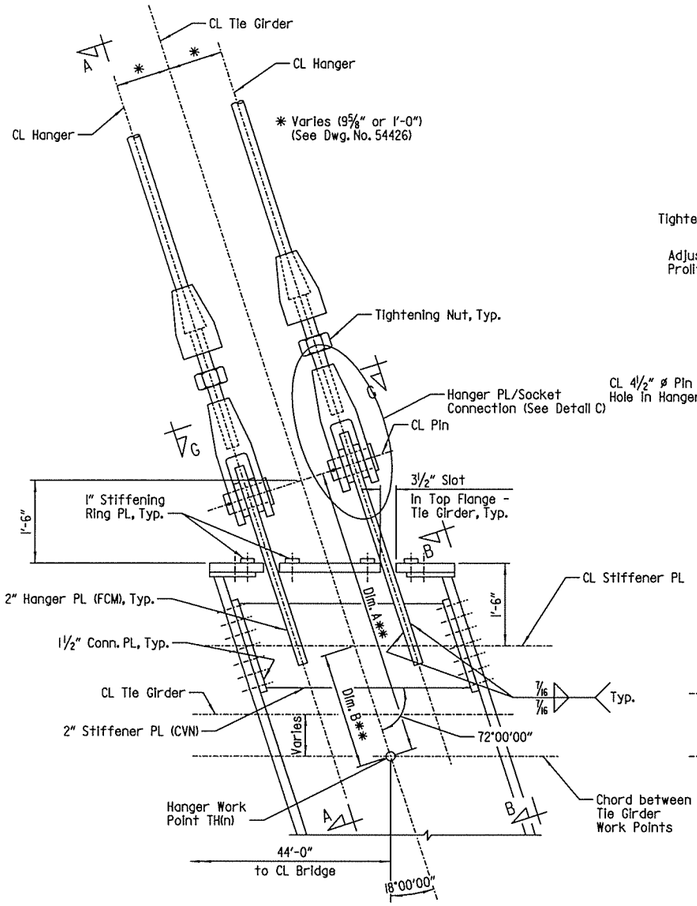
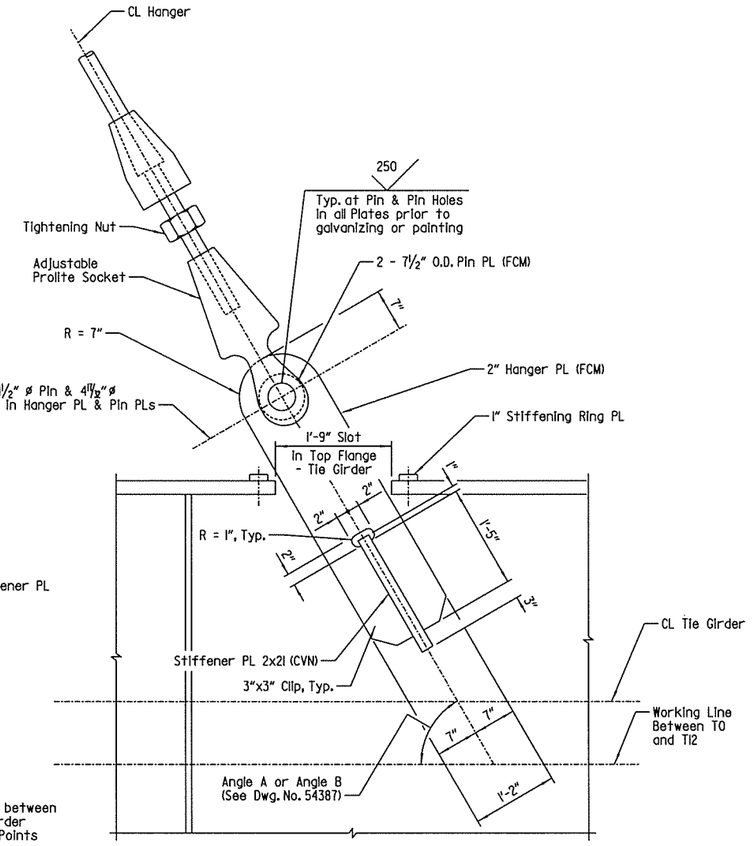


** Dimension measured along line between TH(n) and RH(n). See Table of Dimensions.

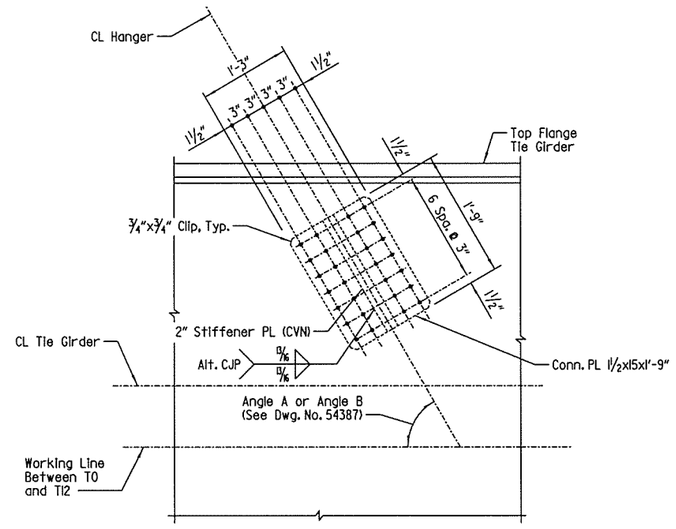
SECTION THRU TIE GIRDER

Scale: ¾" = 1'-0"



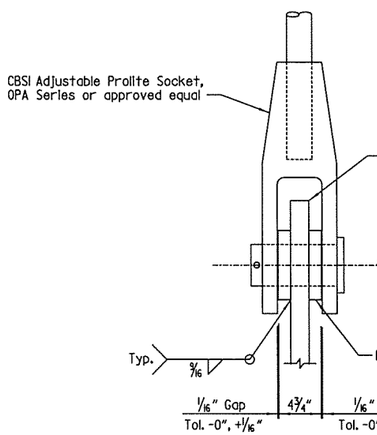
SECTION A-A

Scale: 1" = 1'-0"
(Conn. PL not shown for clarity)



VIEW B-B

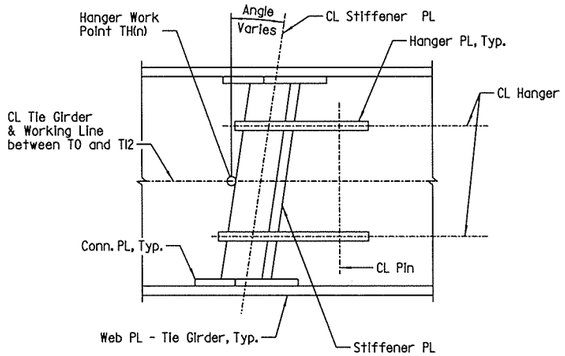
Scale: 1" = 1'-0"



DETAIL C

Scale: 1½" = 1'-0"

TABLE OF DIMENSIONS				
	SPAN 4		SPAN 5	
HANGER	DIM. A	DIM. B	DIM. A	DIM. B
H1	5'-7 11/16"	1'-9 3/8"	5'-7"	1'-8 5/8"
H2	5'-5 1/4"	1'-10 7/8"	5'-3 7/8"	1'-9 15/16"
H3	6'-1 7/8"	2'-4"	5'-11 7/8"	2'-2"
H4	5'-11 1/2"	2'-4 15/16"	5'-8 7/8"	2'-2 3/16"
H5	6'-6 1/2"	2'-9 1/8"	6'-3 1/4"	2'-5 5/16"
H6	6'-4 1/2"	2'-9 5/16"	6'-0 5/16"	2'-5 5/16"
H7	6'-9 11/16"	3'-0 3/4"	6'-5 1/8"	2'-8 1/8"
H8	6'-8 3/16"	3'-0 5/16"	6'-3"	2'-7 11/16"
H9	6'-11 3/8"	3'-2 7/8"	6'-5 5/8"	2'-9"
H10	6'-10 5/8"	3'-2 7/8"	6'-4 1/16"	2'-8 3/8"
H11	6'-11 13/16"	3'-3 5/16"	6'-4 11/16"	2'-8 1/2"
H12	6'-11 7/16"	3'-3 5/16"	6'-3 11/16"	2'-7 3/4"
H13	6'-10 11/16"	3'-2 7/8"	6'-2 1/16"	2'-6 5/8"
H14	6'-11 7/16"	3'-2 5/16"	6'-2 5/16"	2'-5 3/4"
H15	6'-8 1/4"	3'-0 7/8"	5'-10 5/16"	2'-3 1/2"
H16	6'-9 3/4"	3'-0 11/16"	5'-11 11/16"	2'-2 7/8"
H17	6'-4 5/8"	2'-9 5/16"	5'-7 3/16"	2'-0 3/16"
H18	6'-6 7/8"	2'-9 1/4"	5'-9 7/16"	2'-0"
H19	5'-11 5/8"	2'-4 7/16"	5'-3 9/16"	1'-9"
H20	6'-2"	2'-4 3/16"	5'-7"	1'-9"
H21	5'-5 7/16"	1'-11 1/16"	5'-0"	1'-5 15/16"
H22	5'-7 7/8"	1'-9 5/16"	5'-4 9/16"	1'-6"



VIEW G-G

Scale: ¾" = 1'-0"
(Tie Girder top flange plate not shown for clarity.)

Note:
For additional notes, see Dwg. No. 54428.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF HANGER ANCHORAGE AT TIE GIRDER BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KNB DATE: MAY 2014 FILENAME: B061275x1S86.DGN
CHECKED BY: NAM DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: JMB DATE: APR. 2014

BRIDGE NO. 07292 DRAWING NO. 54429

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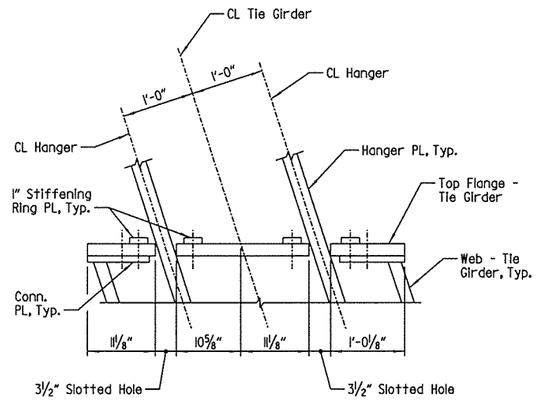
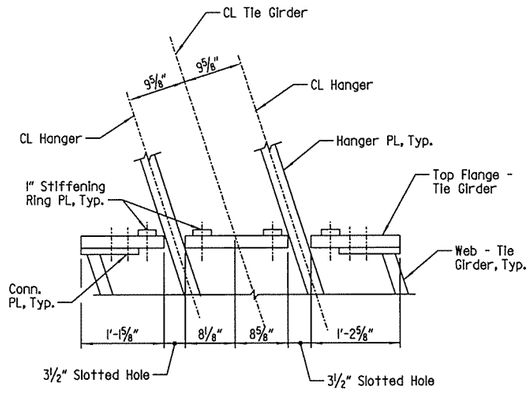


SECTION D-D



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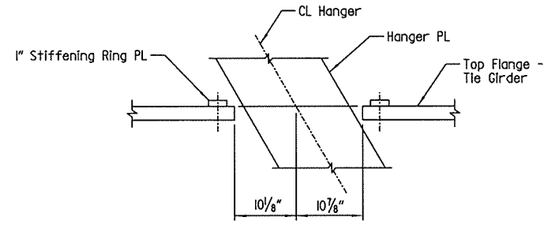

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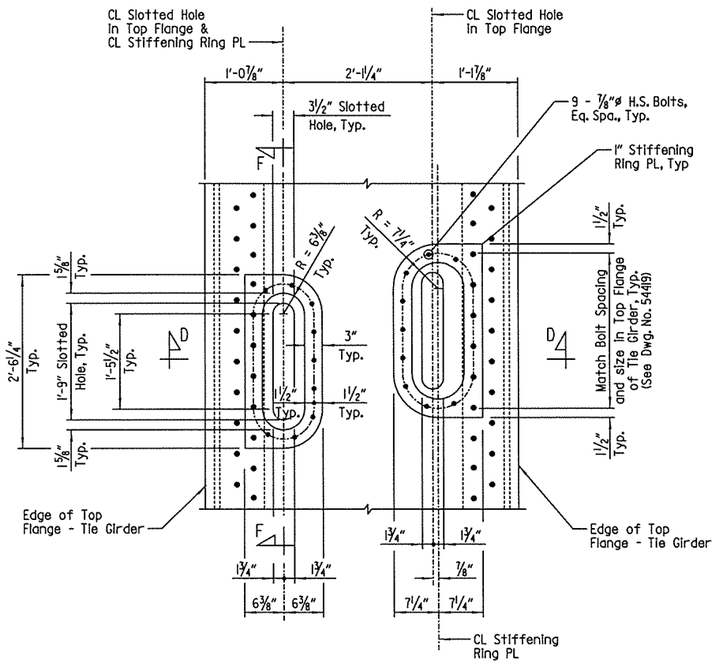
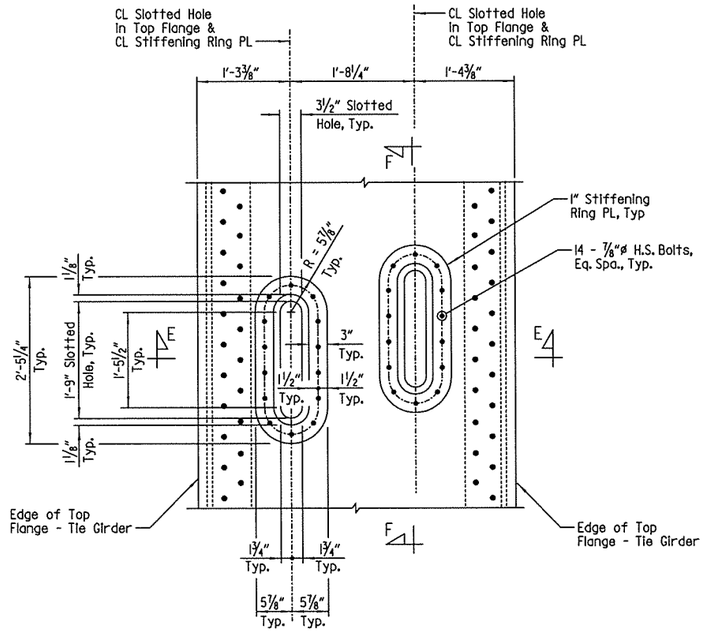


PLAN - HANGER SLOTS AT PLANE 1



PLAN - HANGER SLOTS AT PLANE 2

Note:
For additional notes, see Dwg. No. 54428.

SHEET 2 OF 2
DETAILS OF HANGER ANCHORAGE
AT TIE GIRDER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

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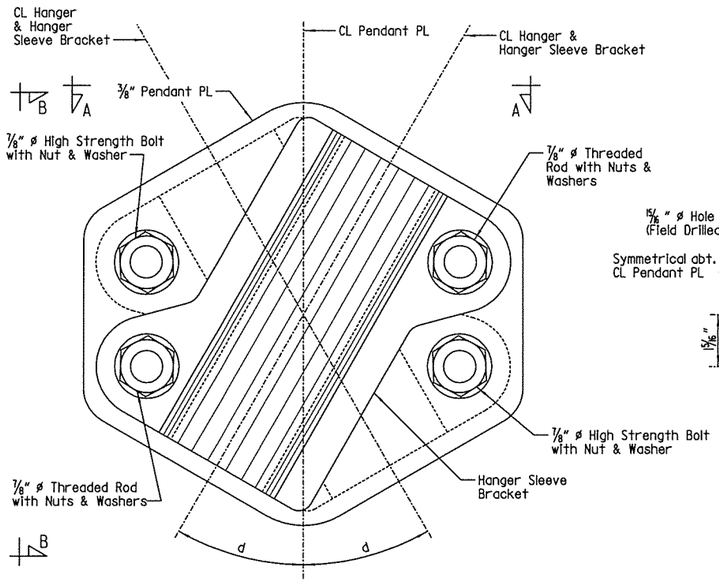

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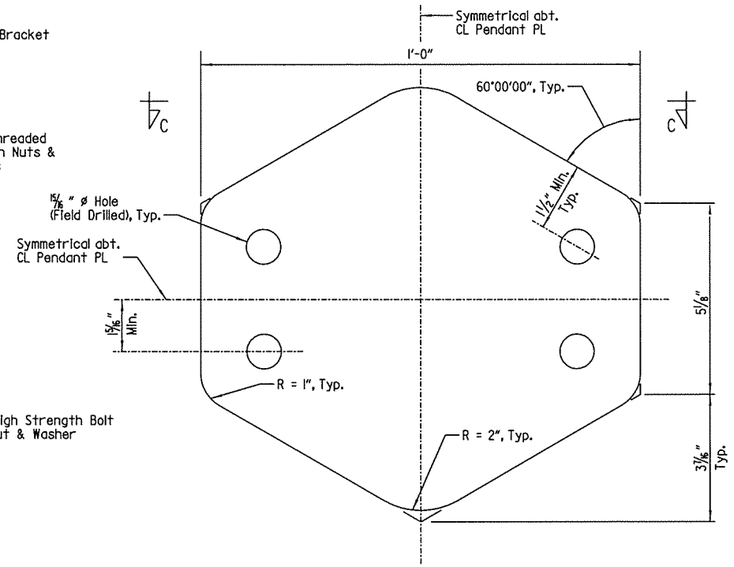

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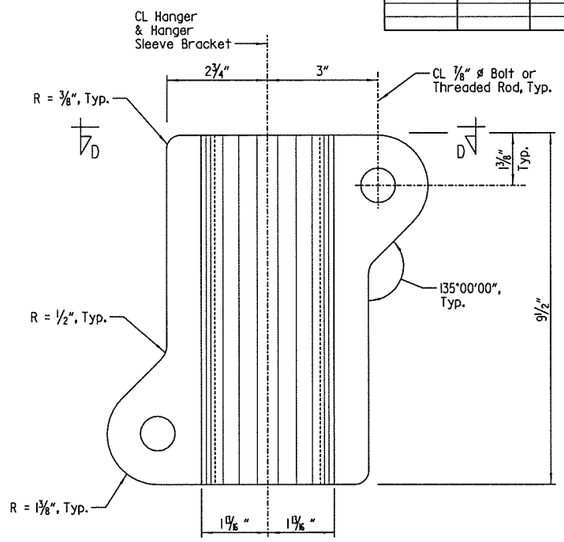

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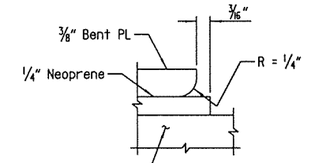

SECTION E-E
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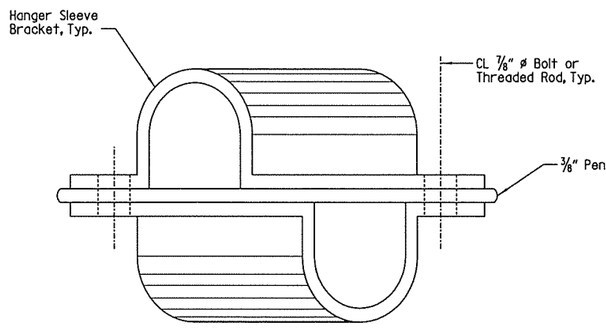
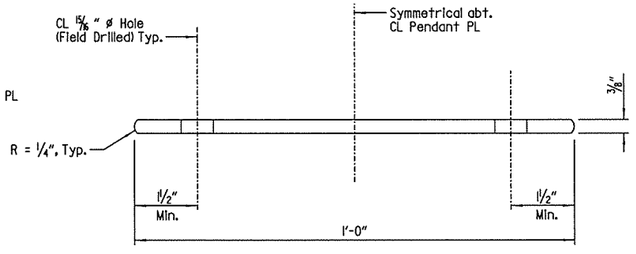
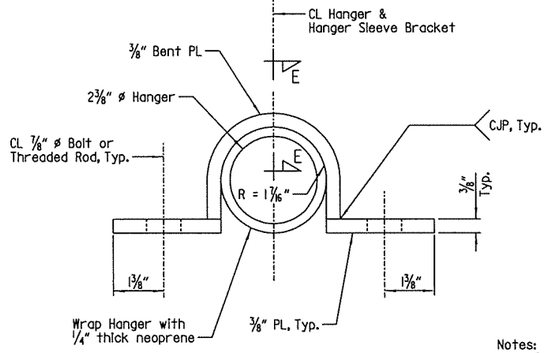


VIEW A-A



VIEW C-C



VIEW D-D

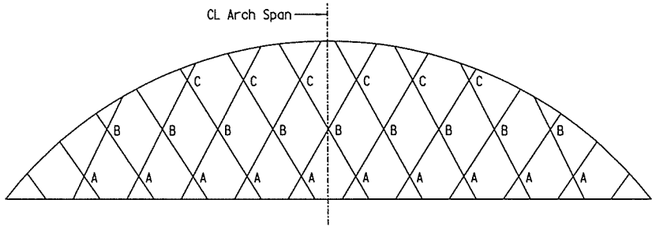
Notes:
For Hanger Geometry, see Dwg. No. 54387.
Pendant plate and hanger sleeve bracket shall conform to AASHTO M270 Grade 36.
Pendant plate, hanger sleeve bracket, threaded rods, bolts, nuts, and washers shall be galvanized in conformance with AASHTO M232.
Hanger spacer details shown are for nominal hanger diameter. Actual fit-up shall be verified by Contractor and required changes shall be submitted with shop drawings for approval.
After both hangers have been fully tensioned per the special provision, the hanger spacer bolts shall be fully tightened.
Hanger spacers shall be subsidiary to the pay item "Structural Hangers".

ASSEMBLY - HANGER SPACER
Scale: 6"=1'-0"

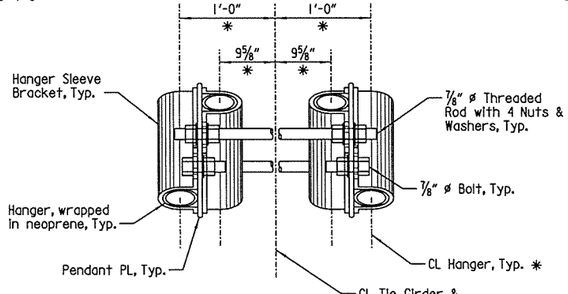
PENDANT PLATE
Scale: 6"=1'-0"

HANGER SLEEVE BRACKET
Scale: 6"=1'-0"

HANGER CONNECTION ANGLE TABLE (d)	
LOCATION	DEGREES
A	30.5
B	30.0
C	29.5



KEY ELEVATION - HANGER SPACER
Scale: 1"=50'-0"



SECTION B-B
(Looking Back Station)

FINAL ASSEMBLY
No Scale

* Dimension at Hanger Work Point, see Dwg. No. 54426.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

DETAILS OF HANGER SPACER
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CEM DATE: AUG. 2013 FILENAME: B061275xlS88.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54431

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REVISED DATE:

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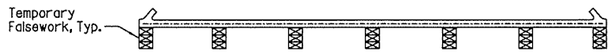
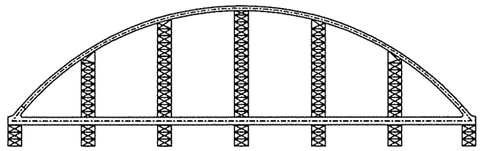
				6	ARK.			
				JOB NO.		061275	227	505
				(1) 07292		ARCH ERECTION		54432



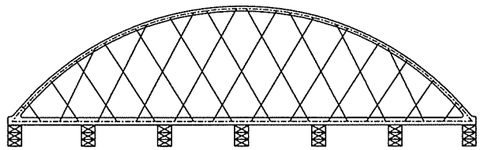
1. Erect falsework at the locations and to the dimensions shown in the approved erection submittals.
2. Assemble tie girders on falsework.
3. Erect steel floor system between tie girders.

STAGE 1



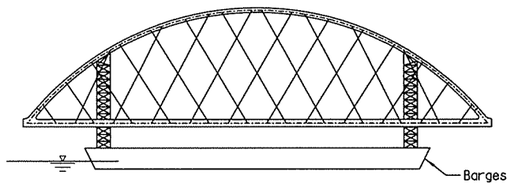
1. Erect arch ribs on temporary vertical supports.
2. Install permanent and temporary (as needed) lateral bracing between arch ribs for stability and geometry control.

STAGE 2



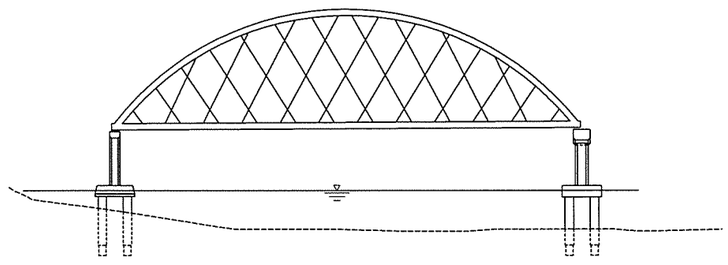
1. Remove temporary vertical arch supports.
2. Install and tension hangers.

STAGE 3



1. Prepare for bridge float in.

STAGE 4



1. Float in structure and lower onto bearing devices.
2. Remove temporary lifting supports and temporary lateral bracing.
3. Install slab, concrete parapets, metal handrail and expansion joints.
4. Perform final hanger adjustment and tension verification.
5. Adjust bearings to neutral position as identified on Dwg. No. 54383. For the suggested jacking procedure, see Dwg. No. 54384.

STAGE 5

SUGGESTED ARCH ERECTION SEQUENCE

(Span 4 shown, similar sequence for Span 5)

BRIDGE CONSTRUCTION NOTES:

Temporary falsework structures used for bridge construction shall not be located in the navigation channel. Potential obstacles should be identified with on-site inspection and resolved prior to bid.

The bridge shall ultimately be positioned in the location as detailed in the plans. It is anticipated that in-place construction may not be feasible. Therefore, it is anticipated that bridge erection may occur off-site followed by barge transportation to bridge site and erection into the final position.

SUGGESTED ERECTION SEQUENCE NOTES:

The erection sequence shown is not represented as being the complete step-by-step procedure and is included for information only. The Contractor shall determine the complete erection sequence and equipment required for erection of the bridge.

Whether the Contractor proposes an alternate sequence or one similar to that shown on this drawing, the Contractor shall prepare a detailed erection submittal, in accordance with Special Provision, "Erection of Tied Arch Spans." The Contractor's proposed erection procedure calculations, detailed drawings and temporary works shop drawings shall be submitted to the Engineer for review as part of the shop drawings. All calculations and drawings shall be sealed by a Professional Engineer licensed in the State of Arkansas.

The Contractor shall be responsible for the erection sequence in its entirety. The Contractor's bid shall be based upon the erection sequence proposed by the Contractor.

For Stringer to Floorbeam connection bolting requirements, see Dwg. Nos. 54445 and 54446.

For Slab Placement Sequence, see Dwg. Nos. 54437 and 54438.

ARCH RIB AND TIE GIRDER ERECTION AND LAYDOWN NOTES:

Arch rib and tie girder camber data is shown on Dwg. Nos. 54389 thru 54396. The deflections, camber and laydown dimensions shown in the plans shall be verified by the Contractor.

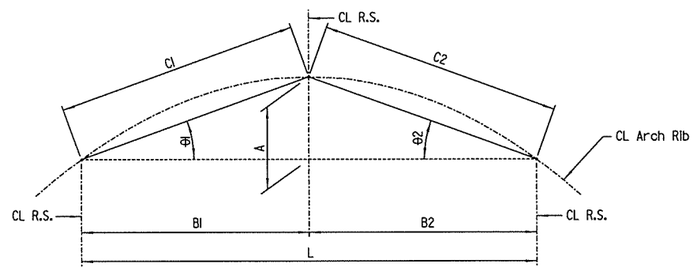
The arch rib geometry shall be verified and field splices fitted by progressive member assembly in accordance with the standard specifications. See table of ARCH RIB LAYDOWN DIMENSIONS.

The tie girder lengths shall be verified by progressive member assembly in accordance with the standard specifications.

BRIDGE TRANSPORTATION NOTES:

The Contractor shall prepare calculations verifying that the bridge components are adequate for loading and temporary support conditions during erection and transportation operations. Calculations involving the erection and transportation operations shall be sealed by a Professional Engineer licensed in the State of Arkansas and shall be submitted to the Engineer for review.

Notes:
For additional information, see "Erection of Tied Arch Spans" special provision.
R.S. Denotes Rib Splice.



ARCH RIB LAYDOWN DIMENSIONS
UNITS: FEET, DEGREES

RIB SECTION	C1	Θ1	C2	Θ2	A	B1	B2	L
RS1 to RS3	50.930	5.548	53.916	5.240	4.924	50.691	53.691	104.382
RS2 to RS4	53.916	5.547	53.915	5.548	5.212	53.663	53.662	107.326
RS3 to RS5	53.915	3.700	35.976	5.549	3.479	53.803	35.807	89.610
RS4 to RS6	35.976	3.184	30.984	3.697	1.998	35.920	30.920	66.840
RS5 to RS7	30.984	2.147	20.892	3.186	1.161	30.962	20.860	51.822
RS6 to RS8	20.892	3.186	30.984	2.147	1.161	20.860	30.962	51.822
RS7 to RS9	30.984	3.697	35.976	3.184	1.998	30.920	35.920	66.840
RS8 to RS10	35.976	5.549	53.915	3.700	3.479	35.807	53.803	89.610
RS9 to RS11	53.915	5.548	53.916	5.547	5.212	53.662	53.663	107.326
RS10 to RS12	53.916	5.240	50.930	5.548	4.924	53.691	50.691	104.382

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

ARCH FABRICATION AND ERECTION
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DAL DATE: MAY 2014 FILENAME: B061275x1S89.DGN
CHECKED BY: STH DATE: MAY 2014 SCALE: NONE
DESIGNED BY: NAM DATE: MAY 2014

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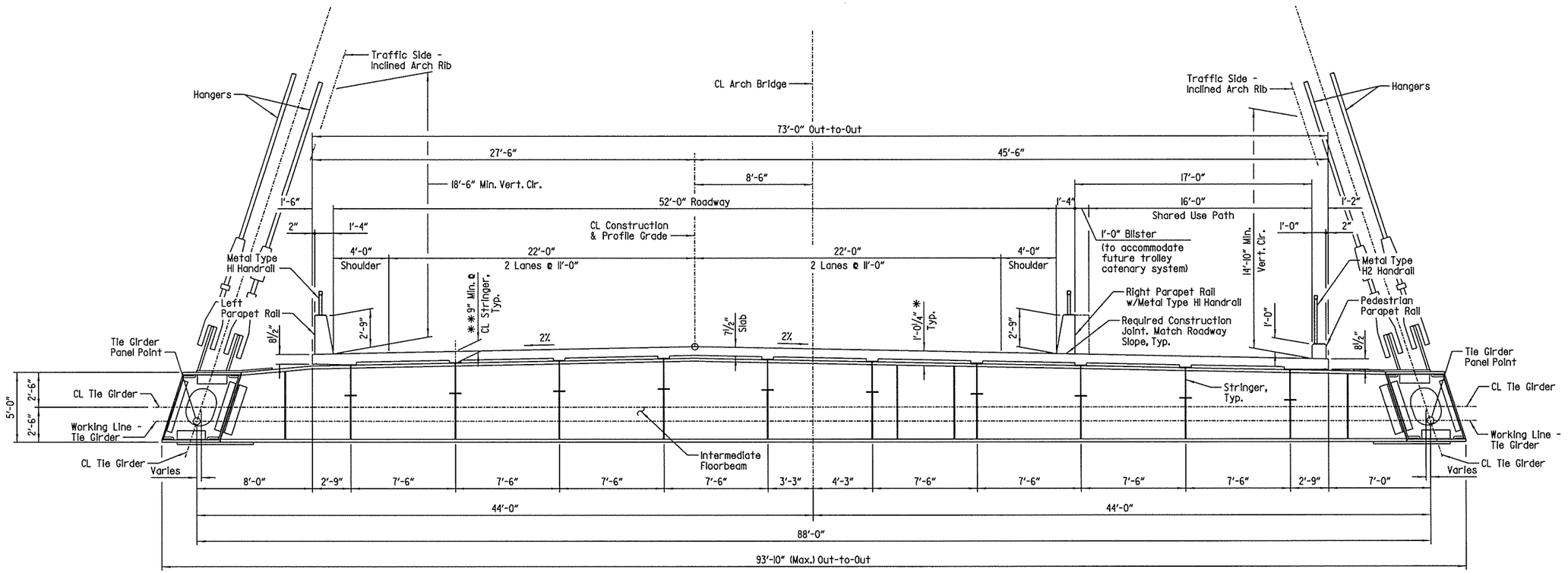

TYPICAL SECTION
(Looking Upstation)

* Distance from top of slab to top of floorbeam web.

** Nominal dimension measured from top of slab to top of stringer top flange at CL floorbeam. Dimension varies between floorbeams.

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

DETAILS OF TIED ARCH UNIT - TYPICAL SECTION BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: FWG DATE: MAR. 2014 FILENAME: B061275x1S90.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: 1/4"=1'-0"
DESIGNED BY: KDG DATE: MAR. 2014

BRIDGE NO. 07292 DRAWING NO. 54433

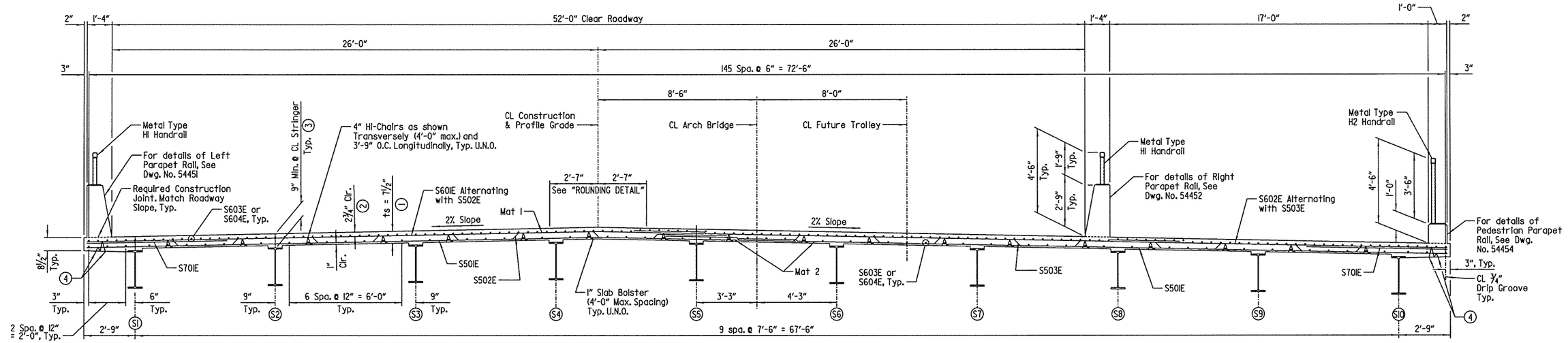
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	229	505
				(1) 07292		SECTION THRU SLAB		54434

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on this sheet.

(2) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on this sheet.

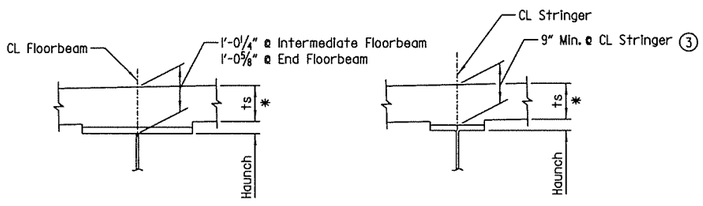
(3) Minimum haunch depth occurs at centerline stringer to floorbeam connection locations. Haunch thickness varies between floorbeams. Thickness shown is from top of slab to top of stringer top flange.

(4) 2 3/8" Slab Bolster and 5 7/8" HI-Chairs in slab overhang shall be set to maintain 2 1/4" clear cover to the top transverse bars. Space as shown transversely (4'-0" max.) & 3'-9" O.C. longitudinally.



TYPICAL ROADWAY SECTION

(Looking Upstation)
Scale: 3/8"=1'-0"



Note: t_s = Slab Thickness as shown on "TYPICAL ROADWAY SECTION."

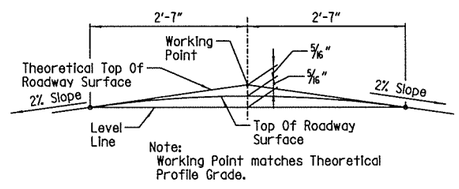
* Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the stringer top flange contacts the bottom reinforcing steel; maximum over stringer - stringer top flange thickness plus 2 1/8"; maximum over intermediate floorbeam - 5 3/8" (including the thickness of the top flange); maximum over end floorbeam - 5 7/8" (including the thickness of the top flange). No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



Note: Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

No Scale

Notes:
All bars designated with an E suffix are to be epoxy coated.
Horizontal dimensions shown are measured perpendicular to CL Construction.
For "BARLIST", see Dwg. No. 54441.
Diaphragms not shown for clarity.
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only.
For details of Class 3 Textured Coating Finish to be applied to parapet rail surfaces, see SP JOB 061275 "TEXTURED COATING FINISH".

SLAB REINFORCING:

Transverse: S601E lapped with S602E @ 12" O.C. - Mat 1 — Alternate
S502E lapped with S503E @ 12" O.C. - Mat 1 and 2 — Alternate
S701E in left and right overhang spa. with S601E and S602E @ 12" O.C. - Mat 1
S501E lapped with S501E @ 12" O.C. - Mat 2

Longitudinal: S603E and S604E as shown in "TYPICAL ROADWAY SECTION".

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF TIED ARCH UNIT - SECTIONS THRU SLAB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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DESIGNED BY: TIO DATE: AUG. 2013

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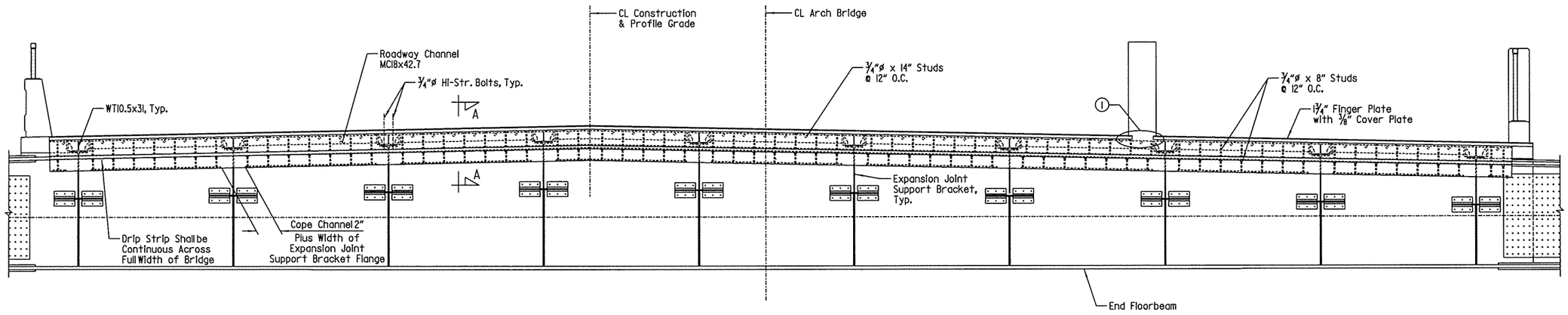
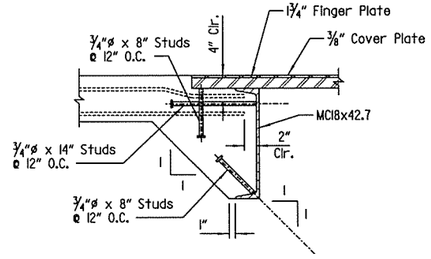


TYPICAL SECTION THRU JOINT AT BENT NOS. 4 & 6

(View at Bent 4 Shown)
(View at Bent 6 Similar)
Scale: ⅜" = 1'-0"

(1) Clip Top Flange Of Roadway Channel & Omit Studs As Required Under Parapet Rail.

BENT NOS. 4 AND 6 EXPANSION DEVICE:
Roadway channel - MC18x42.7
Channel connection - WT 10.5x31
Finger Joint - 5" Movement.
Detail device ⅛" high and provide ¼" shims using 2 - 1/16" plates and 1- ⅛" plate.



SECTION A-A

Scale: 1" = 1'-0"

Notes:
For details and notes for finger joint, see Dwg. Nos. 54495 thru 54498.
For details of Expansion Joint Support Bracket, see Dwg. Nos. 54445 and 54446.

SHEET 2 OF 3
DETAILS OF TIED ARCH UNIT -
SECTIONS THRU SLAB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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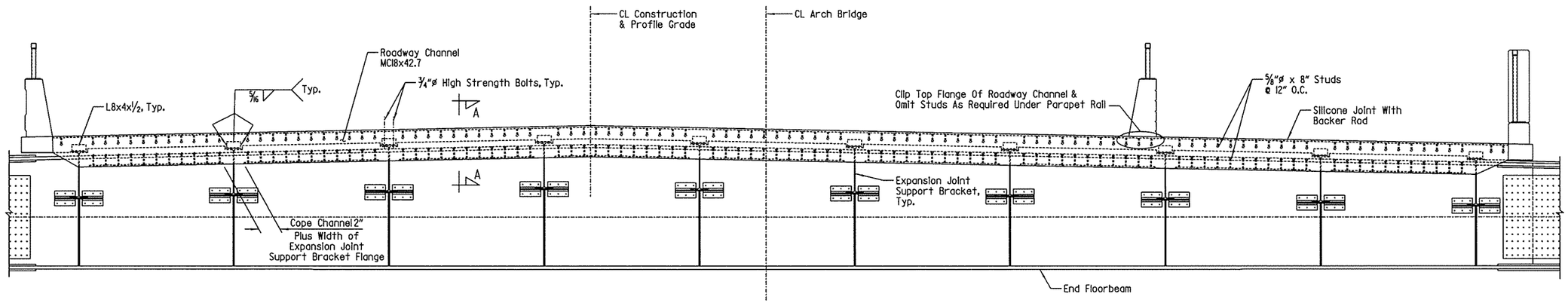
6	ARK.			
JOB NO.		061275	231	505

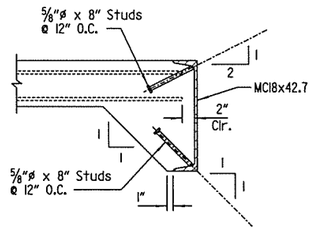
1	07292	SECTION THRU SLAB	54436



TYPICAL SECTION THRU JOINT AT BENT NO. 5

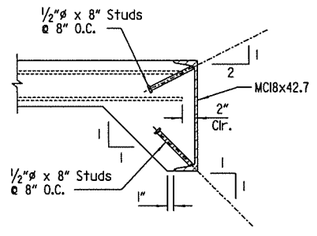
(Span 4 shown, Span 5 similar)
(Diaphragms between Expansion Joint Support Brackets not shown)
Scale: 3/8" = 1'-0"

BENT NO. 5 EXPANSION DEVICE:
Roadway channel - MC18x42.7
Connection angles - L8x4x1/2
Detail device 1/8" high and provide 1/4" shims using 2 - 1/16" plates and 1 - 1/8" plate.



SECTION A-A

Scale: 1" = 1'-0"



As an alternate to 5/8"ø studs, 1/2"ø x 8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of structural steel.

DETAIL OF ALTERNATE ANCHORS

Scale: 1" = 1'-0"

Notes:
For details and notes for poured silicone joint, see Dwg. No. 54455.
For details of Expansion Joint Support Bracket, see Dwg. Nos. 54445 & 54446.

SHEET 3 OF 3
DETAILS OF TIED ARCH UNIT - SECTIONS THRU SLAB
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NATALIE MCCOMBS No. 15778
5-29-14
BRIDGE ENGINEER

DRAWN BY: SWS DATE: APR. 2014 FILENAME: B061275xlS93.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: JUL. 2013
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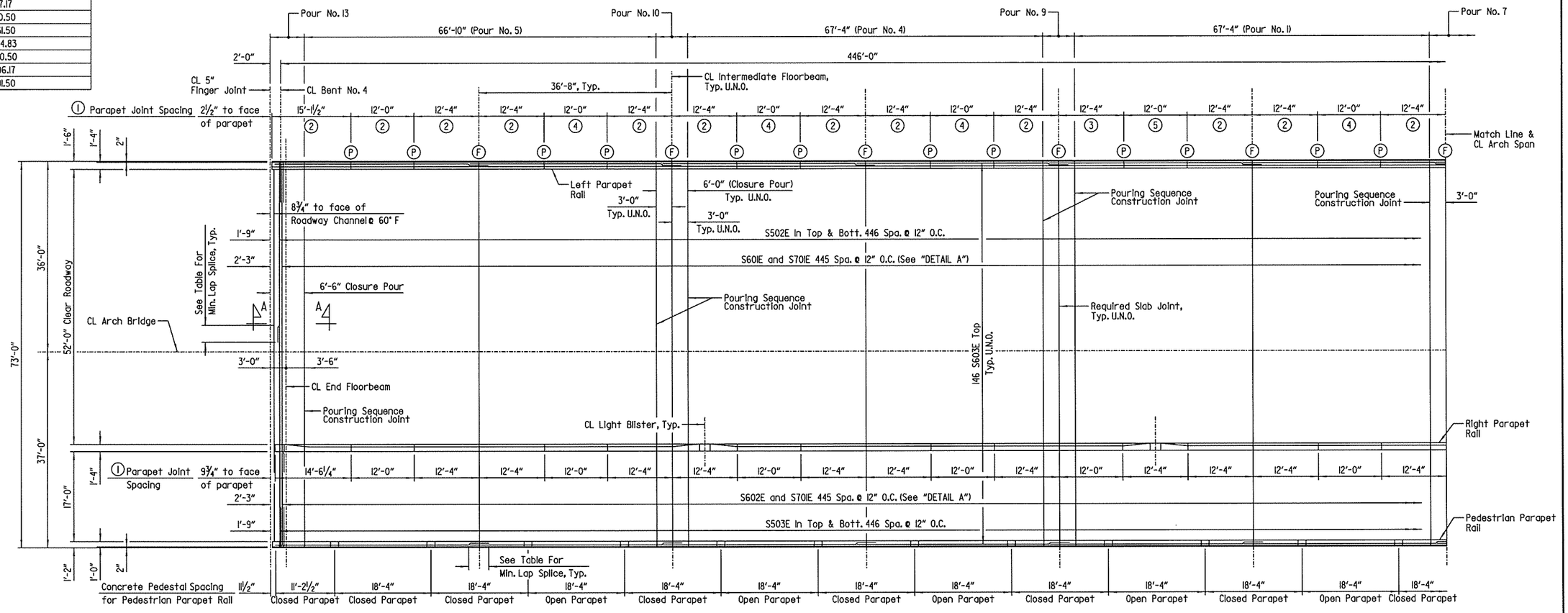
6	ARK.			
JOB NO.		061275	232	505
(1) 07292		SLAB PLAN		54437

LIGHT BLISTER LOCATIONS
108+60.50
109+45.83
110+31.50
111+17.17
111+90.50
112+61.50
113+34.83
114+20.50
115+06.17
115+91.50

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from the top of slab. Parapet joint spacing and designation shown is for both the left and right parapet rails.



PART SLAB PLAN

(Mat 1 Span 4 shown, Span 5 symmetric abt. CL Bent No. 5)
Scale: 1" = 10'

(2) Closed Left Parapet Rail
Closed Right Parapet Rail

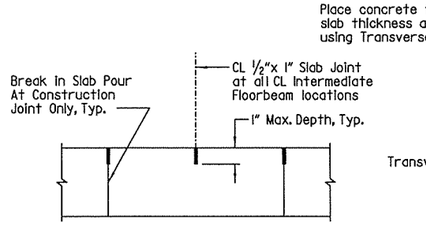
(3) Closed Left Parapet Rail
Open Right Parapet Rail

(4) Open Left Parapet Rail
Open Right Parapet Rail

(5) Open Left Parapet Rail
Closed Right Parapet Rail

MINIMUM LAP SPLICE	
#5 Bar	3'-3"
#6 Bar	3'-10"

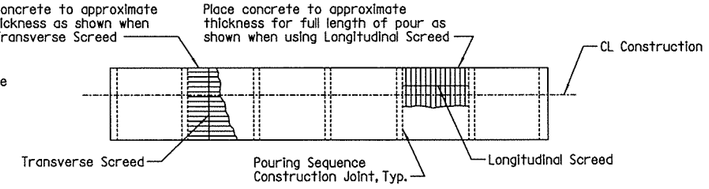
Notes:
For General Notes, see Dwg. Nos. 54381 and 54382.
For Parapet Reinforcing, see Dwg. Nos. 54451 thru 54454.
For Finger Joint Details, see Dwg. Nos. 54495 thru 54498.
For Details of Conduit Placed in Parapet Rail, see Dwg. Nos. 54452 and 54453.
For details of the Light Blister, see "PARAPET TRANSITION ELEVATION" on Dwg. No. 54453.
For Section A-A, see Dwg. No. 54438.
Dimensions and spacing shown are horizontal dimensions.



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) and 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

No Scale

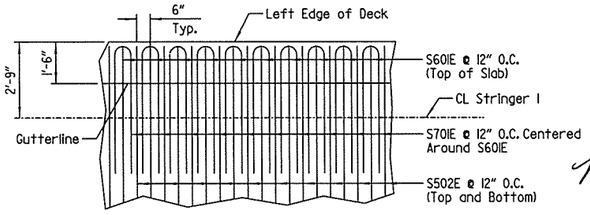


CONCRETE PLACEMENT PROCEDURE

No Scale

CONSTRUCTION SEQUENCE

1. Cast slab pours 1-6.
2. Tighten bolts at slotted stringer to floorbeam connections.
3. Cast closure pours 7-13.



DETAIL A

(Shown for Left Edge of Deck only, Right Edge of Deck similar)
Scale: ⅜"=1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF TIED ARCH UNIT - SLAB PLAN
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275x1S94.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: TIO DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54437

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REVISED DATE:

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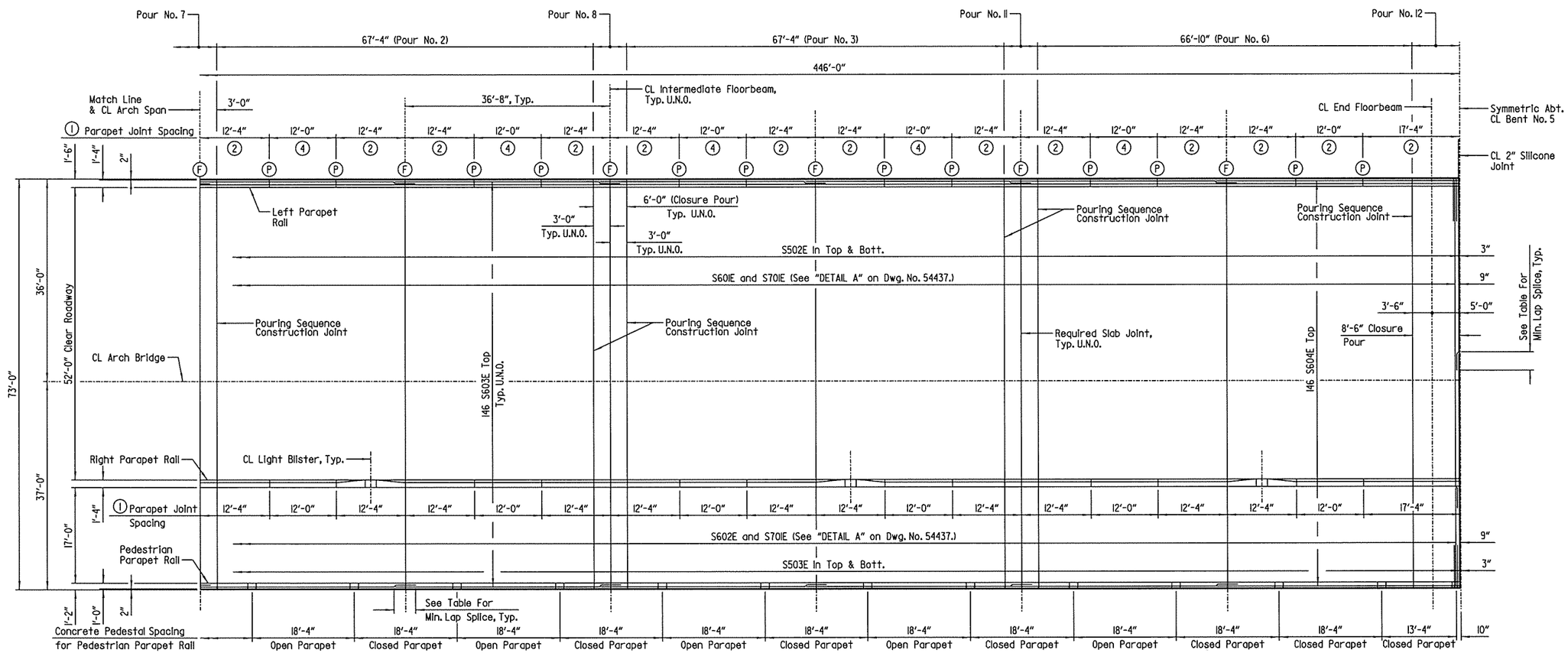
				6	ARK.			
				JOB NO.		061275	233	505
				(I) 07292		SLAB PLAN		54438

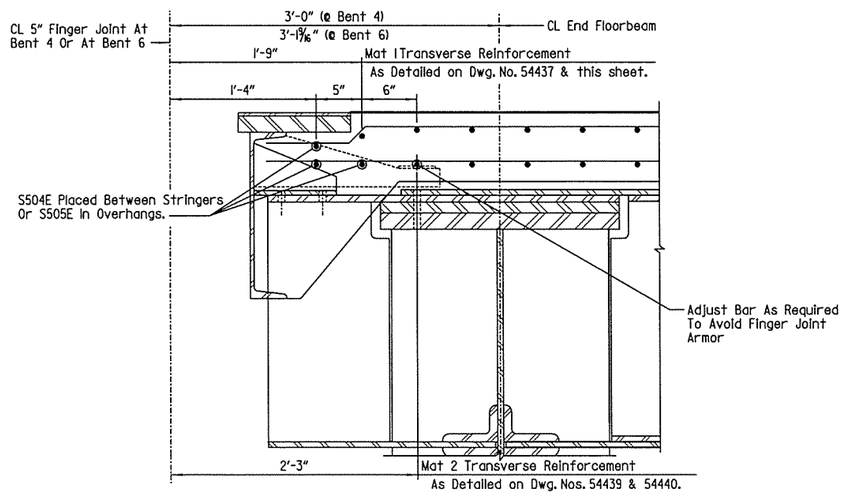
(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from the top of slab. Parapet joint spacing and designation shown is for both the left and right parapet rails.



PART SLAB PLAN

(Mat I Span 4 shown, Span 5 symmetric abt. CL Bent No. 5)
Scale: 1" = 10'

MINIMUM LAP SPLICE	
#5 Bar	3'-3"
#6 Bar	3'-10"



SECTION A-A

Scale: 1½" = 1'-0"

(2) Closed Left Parapet Rail
Closed Right Parapet Rail

(4) Open Left Parapet Rail
Open Right Parapet Rail

Notes:
For General Notes, see Dwg. Nos. 54381 and 54382.
For Parapet Reinforcing, see Dwg. Nos. 54451 thru 54454.
For Silicone Joint Details, see Dwg. No. 54455.
For Details of Conduit Placed In Parapet Rail, see Dwg. No. 54452 and 54453.
For details of the Light Blister, see "PARAPET TRANSITION ELEVATION" on Dwg. No. 54453.
For location of Section A-A, see Dwg. No. 54437.
For "CONCRETE PLACEMENT PROCEDURE", see Dwg. No. 54437.
Dimensions and spacing shown are horizontal dimensions.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF TIED ARCH UNIT - SLAB PLAN
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275xlS95.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: TIO DATE: AUG. 2013
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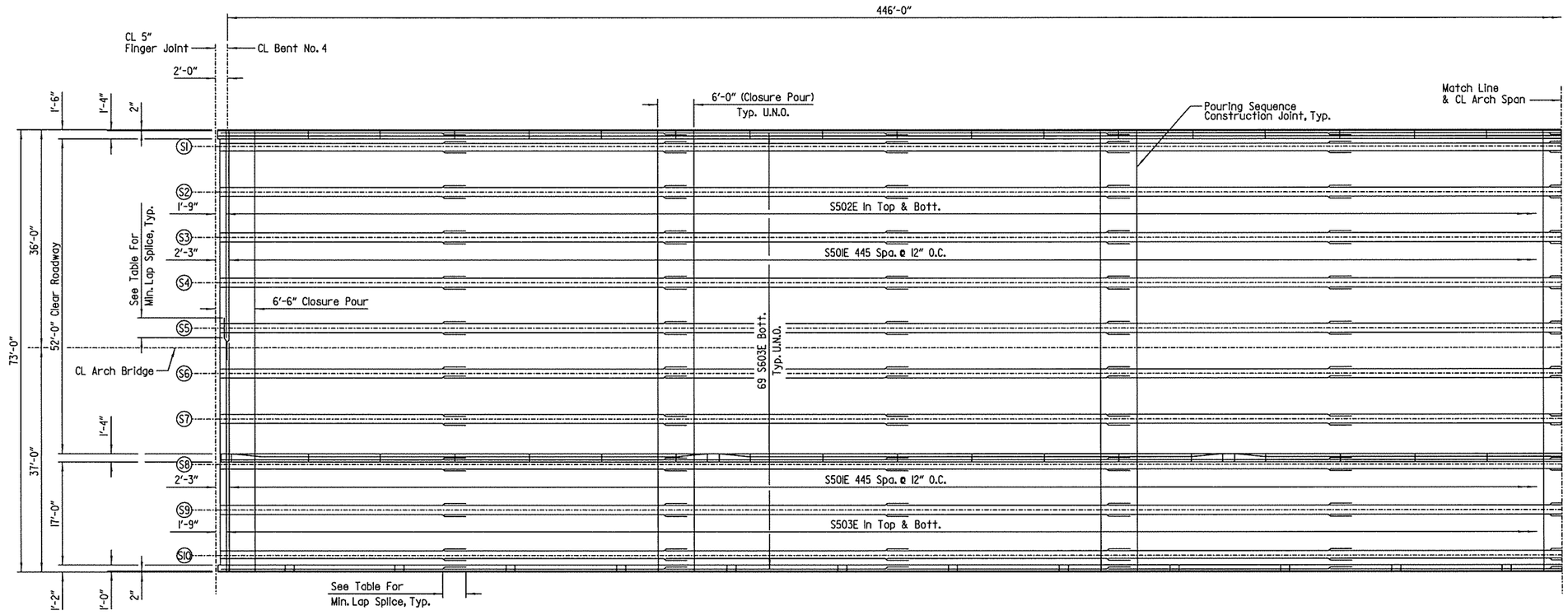

PART SLAB PLAN

(Mat 2 Span 4 shown, Span 5 symmetric abt. CL Bent No. 5)
Scale: 1" = 10'

MINIMUM LAP SPLICE	
#5 Bar	3'-3"
#6 Bar	3'-10"

Notes:
For General Notes, see Dwg. Nos. 54381 and 54382.
For Parapet Reinforcing, see Dwg. Nos. 54451 thru 54454.
For Finger Joint Details, see Dwg. Nos. 54495 thru 54498.
For Details of Conduit Placed In Parapet Rail, see Dwg. Nos. 54452 and 54453.
For details of the Light Blister, see "PARAPET TRANSITION ELEVATION" on Dwg. No. 54453.
Dimensions and spacing shown are horizontal dimensions.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF TIED ARCH UNIT -
SLAB PLAN
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275xlS96.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: TIO DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54439

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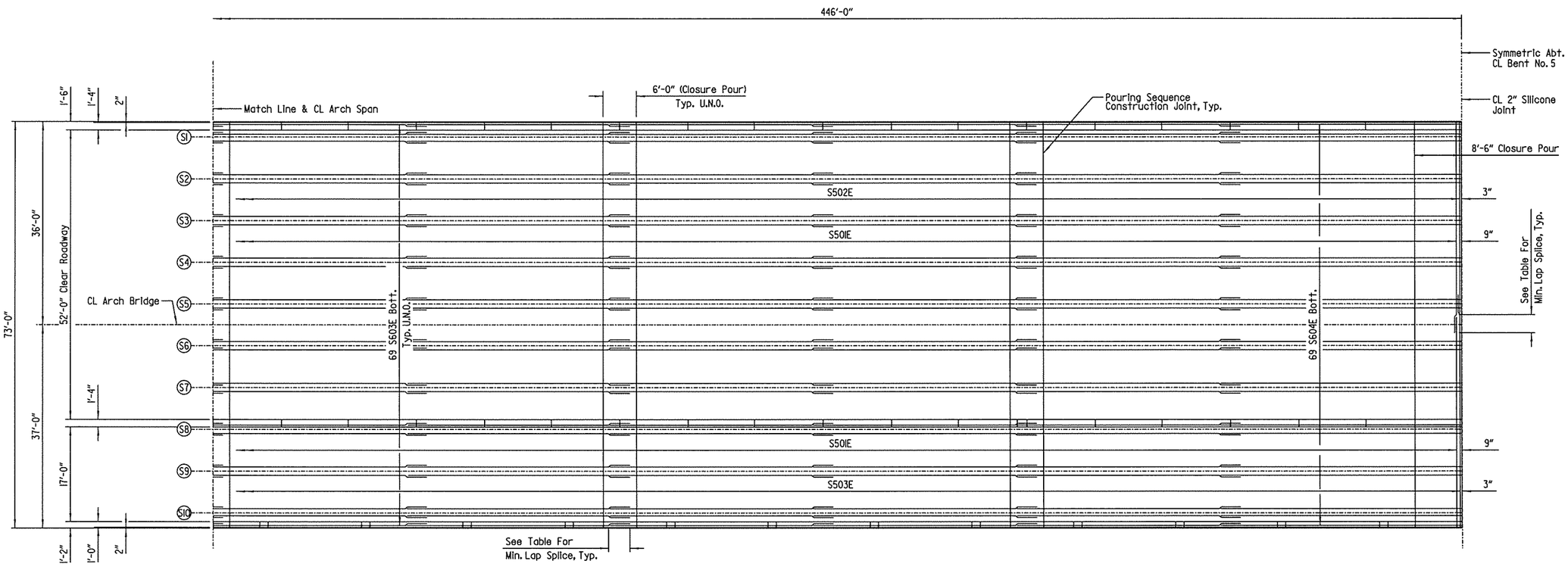

PART SLAB PLAN

(Mat 2 Span 4 shown, symmetric abt. CL Bent No. 5)
Scale: 1" = 10'

MINIMUM LAP SPLICE	
#5 Bar	3'-3"
#6 Bar	3'-10"

Notes:
For General Notes, see Dwg. Nos. 54381 and 54382.
For Parapet Reinforcing, see Dwg. Nos. 54451 thru 54454.
For Silicone Joint Details, see Dwg. No. 54455.
For Details of Conduit Placed in Parapet Rail, see Dwg. Nos. 54452 and 54453.
For details of the Light Blister, see "PARAPET TRANSITION ELEVATION" on Dwg. No. 54453.
Dimensions and spacing shown are horizontal dimensions.

SHEET 4 OF 4
DETAILS OF TIED ARCH UNIT - SLAB PLAN
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275x1S97.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: TIO DATE: AUG. 2013

BRIDGE NO. 07292 DRAWING NO. 54440

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				6	ARK.			
				JOB NO.		061275	236	505
				(1) 07292		BILL OF REINFORCING		54441

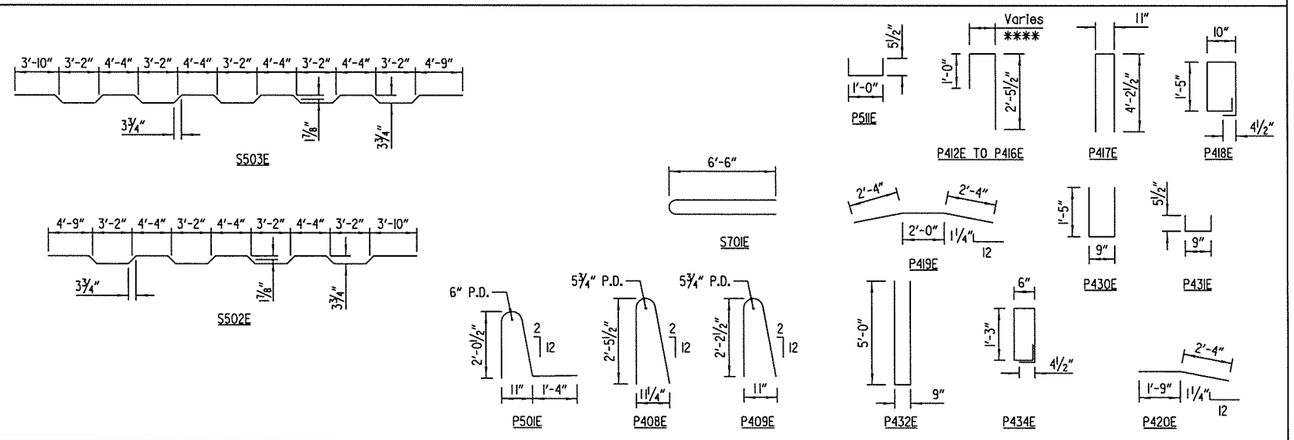
BAR LIST *			
MARK	NO. REQ'D	LENGTH	P.D.
S501E	892	38'-0"	Str.
S502E	447	35'-2"	3¾"
S503E	447	42'-11"	3¾"
S504E	27	6'-2"	Str.
S505E	6	1'-11"	Str.
S601E	446	58'-7"	Str.
S602E	446	18'-0"	Str.
S603E	2365	40'-6"	Str.
S604E	215	43'-6"	Str.
S701E	892	13'-4"	5¼"

* Barlist shown is quantified for one span, span 4. Span 5 is symmetric abt. CL Bent No. 5.

BAR LIST *			
MARK	NO. REQ'D	LENGTH	P.D.
P401E	6	14'-9"	Str.
P402E	72	11'-8"	Str.
P403E	132	12'-0"	Str.
P404E	8	39'-1"	Str.
P405E	80	36'-4"	Str.
P406E	6	16'-11"	Str.
P407E	16	21'-11"	Str.
P408E	1599	5'-3"	5¾"
P409E	160	4'-9"	5¾"
P412E To P416E	11 Each	4'-1" To 4'-3"	2"
P417E	24	9'-2"	2"
P418E	18	4'-10"	2"
P419E	10	6'-8"	3"
P420E	2	4'-1"	3"
P430E	745	3'-5"	2"
P431E	80	1'-6"	2"
P432E	78	10'-7"	2"
P433E	48	39'-8"	Str.
P434E	104	3'-10"	2"
P501E	800	5'-10"	6"
** P510E	1598	2'-0"	Str.
*** P511E	799	1'-8"	3¾"

** Threaded One End
*** Threaded with Mechanical Couplers both ends.

BAR BENDING DIAGRAM



NOTES:
Dimensions of bars are out-to-out.
Bar designations ending with "E" indicate epoxy coated bars.

**** Dimension varies from 9" (P412E) To 11½" (P416E).

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DETAILS OF TIED ARCH UNIT - REINFORCING STEEL BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275xlS98.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: TIO DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54441

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REVISED DATE:

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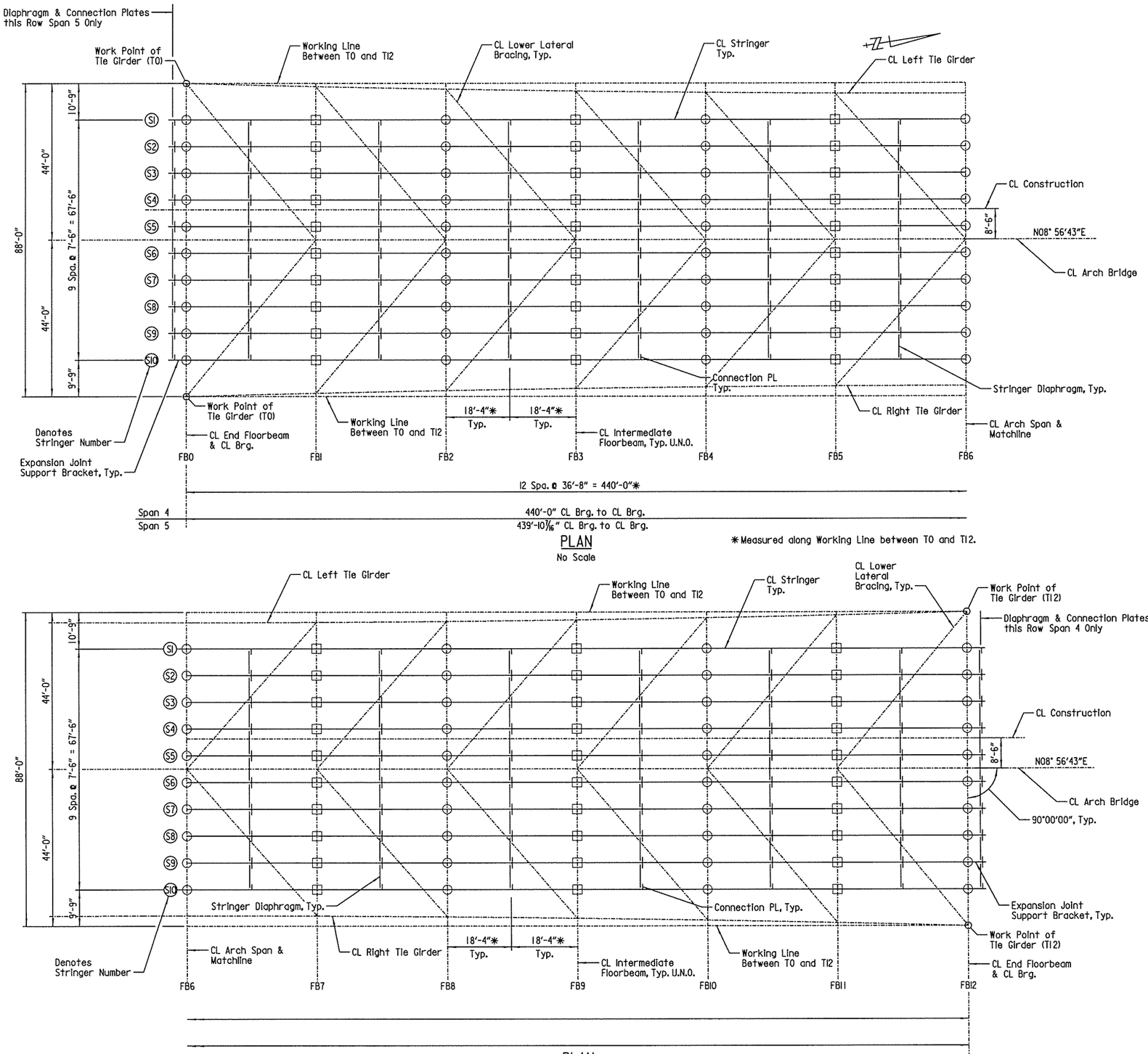

PLAN
No Scale

*Measured along Working Line between T0 and T12.

PLAN
No Scale

Stringer to Floorbeam Connection Legend:

□ - Denotes Fixed Connection

○ - Denotes Slotted Connection

Notes:

For Typical Cross Section of Tied Arch Unit, see Dwg. No. 54433.
For Floorbeam Details, see Dwg. Nos. 54443 thru 54444.
For Lower Lateral Bracing Details, see Dwg. Nos. 54449 thru 54450.
For Stringer Details, see Dwg. Nos. 54445 thru 54447.
For Stringer Diaphragm Details and Connection Plate Details, see Dwg. No. 54447.
For Tie Girder Details, see Dwg. Nos. 54414 thru 54422.
For Expansion Joint Support Bracket Details, See Dwg. No. 54446.
Stringer webs shall be placed vertical.
Floorbeam flanges shall be placed parallel to profile grade. Floorbeam webs are perpendicular to local tangents.
Dimensions are measured horizontally along CL Members unless noted otherwise.
For locations and details of waterline supports attached to Stringer 10 and Right Tie Girder see Dwg. Nos. 54624 thru 54633.

DETAILS OF TIED ARCH UNIT - FRAMING PLAN BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275xlS99.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: MAR. 2014

BRIDGE NO. 07292 DRAWING NO. 54442

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REVISED DATE:

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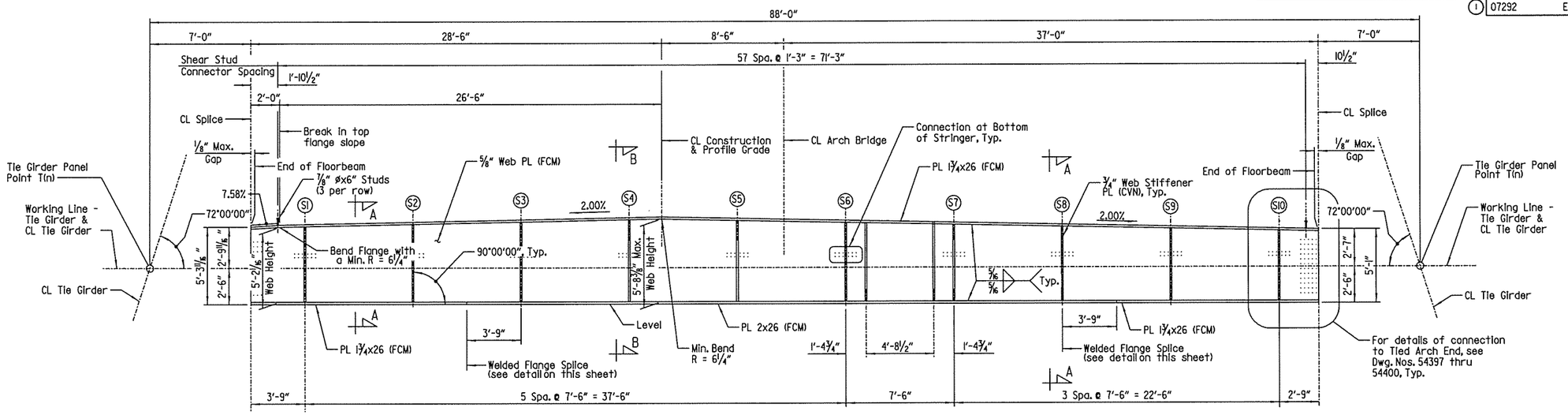
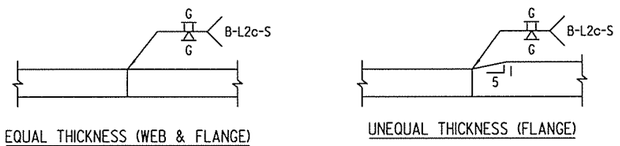


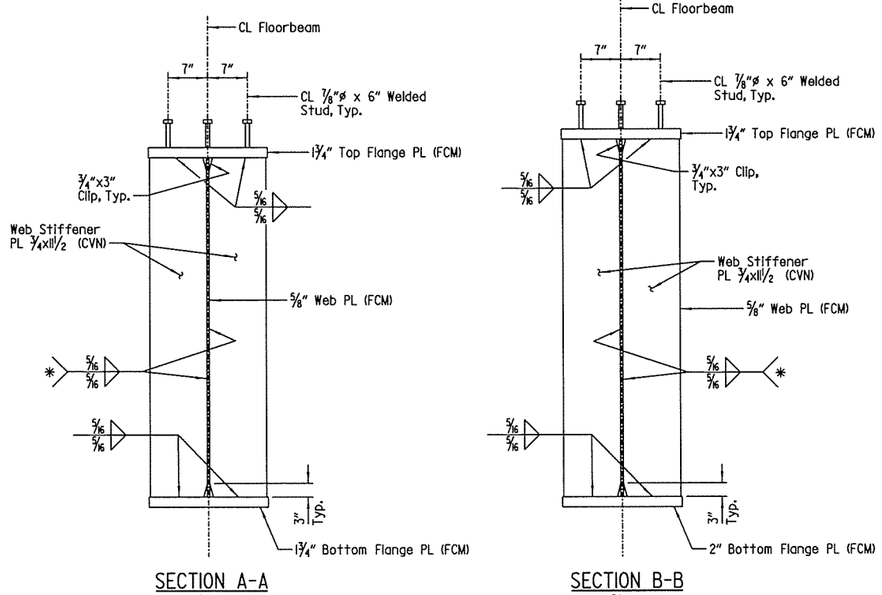
ELEVATION - END FLOORBEAM

Scale: ¼" = 1'-0"

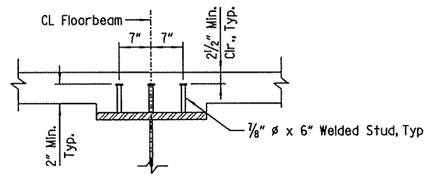


DETAILS OF WELDED SPLICES

No Scale



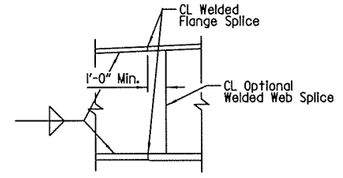
* Stop weld ¼" to 1" from end of clip in stiffener.



SHEAR CONNECTOR DETAIL

No Scale

Stud shear connectors shown shall be ⅞"øx6" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.



WELDED SHOP WEB SPLICE

No Scale

Notes:
Top flange at crown shall be bent with a minimum 6¼" radius.
All structural steel in End Floorbeam shall conform to AASHTO M270, Grade 50.
Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.
Class B surface preparation required at End Floorbeam to Tied Arch End field splice.
See Dwg. No. 54448 for camber.
See Dwg. No. 54442 for Framing Plan.
See Dwg. No. 54446 for stringer connection.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMMAS
5-29-14
BRIDGE ENGINEER

DETAILS OF TIED ARCH UNIT - END FLOORBEAM BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: MAY 2014 FILENAME: B061275x1S100.DGN
CHECKED BY: KSH DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KSH DATE: APR. 2014

BRIDGE NO. 07292 DRAWING NO. 54443

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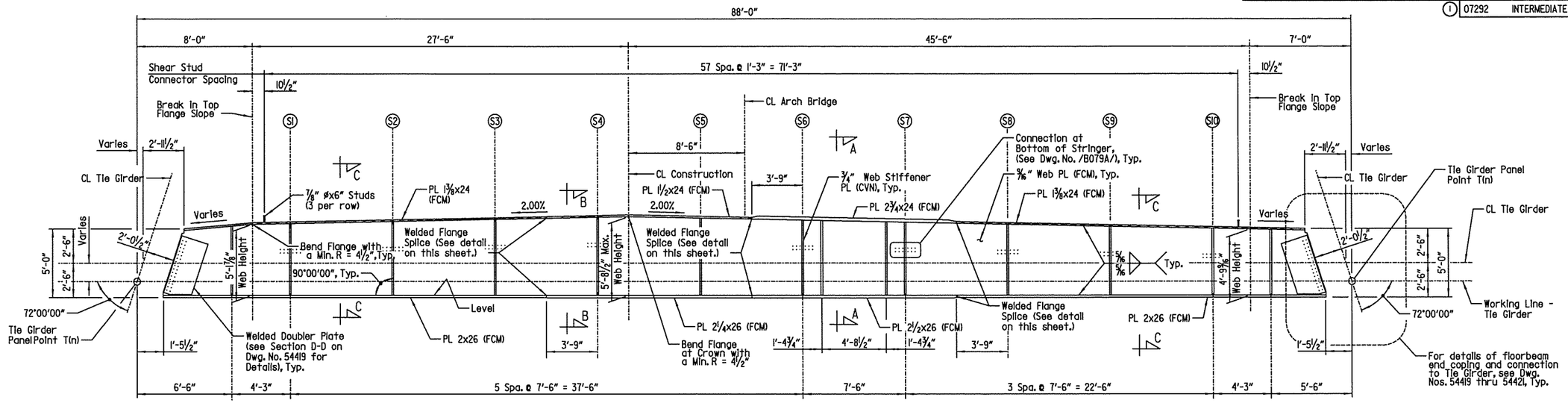
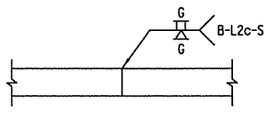
				6	ARK.			
				JOB NO.		061275	239	505

(1) 07292 INTERMEDIATE FLOORBEAM 54444

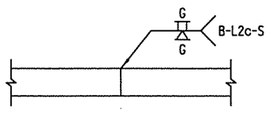


ELEVATION - INTERMEDIATE FLOORBEAM

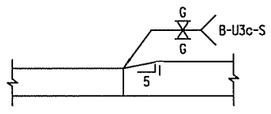
Scale: 1/4" = 1'-0"



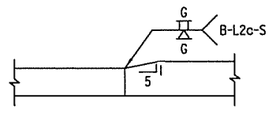
EQUAL THICKNESS (FLANGE)
(Use for Flanges < or = 2" thick)



EQUAL THICKNESS (WEB)



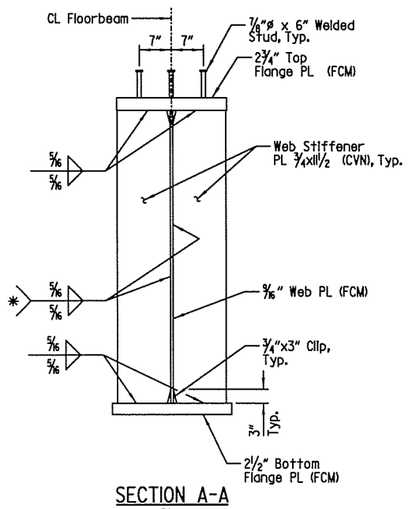
UNEQUAL THICKNESS (FLANGE)
(Use for Flanges >2" thick)



UNEQUAL THICKNESS (FLANGE)
(Use for Flanges < or = 2" thick)

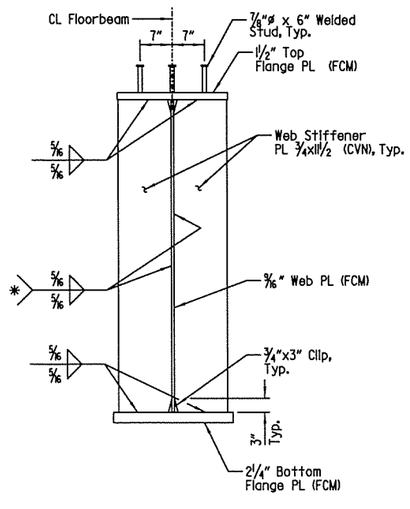
DETAILS OF WELDED SPLICES

No Scale



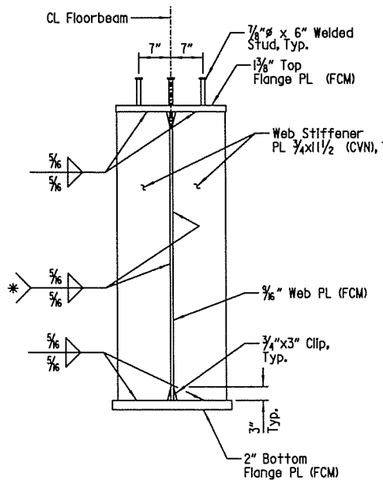
SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

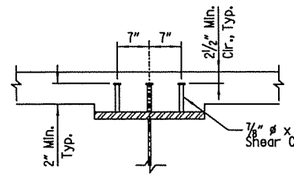
Scale: ¾" = 1'-0"



SECTION C-C

Scale: ¾" = 1'-0"

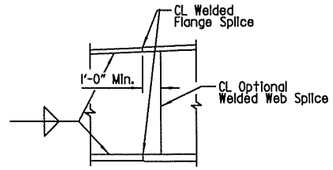
* Stop weld 1/4" to 1" from end of clip in stiffener.



SHEAR CONNECTOR DETAIL

Scale: ¾"=1'-0"

Stud shear connectors shown shall be 7/8"ø x6" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the manufacturer. ¾"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.



WELDED SHOP WEB SPLICE

No Scale

Notes:

Structural steel shall conform to AASHTO M270 Grade 50. Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.

Floorbeams shall be cambered to compensate for Dead Load deflection. Member ends shall be sloped to match Tie Girder in the No Dead Load condition.

For Floorbeam Camber and Deflections, see Dwg. No. 54448.
For "FRAMING PLAN", see Dwg. No. 54442.
For Stringer Details, See Dwg. Nos. 54445 thru 54447.
For Lower Lateral Bracing Details, see Dwg. Nos. 54449 and 54450.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS 6-16-14

BRIDGE ENGINEER

DETAILS OF TIED ARCH UNIT - INTERMEDIATE FLOORBEAM BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: MAY 2014 FILENAME: B061275xl SIOI.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: SJL DATE: APR. 2014

BRIDGE NO. 07292 DRAWING NO. 54444

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REVISED DATE:

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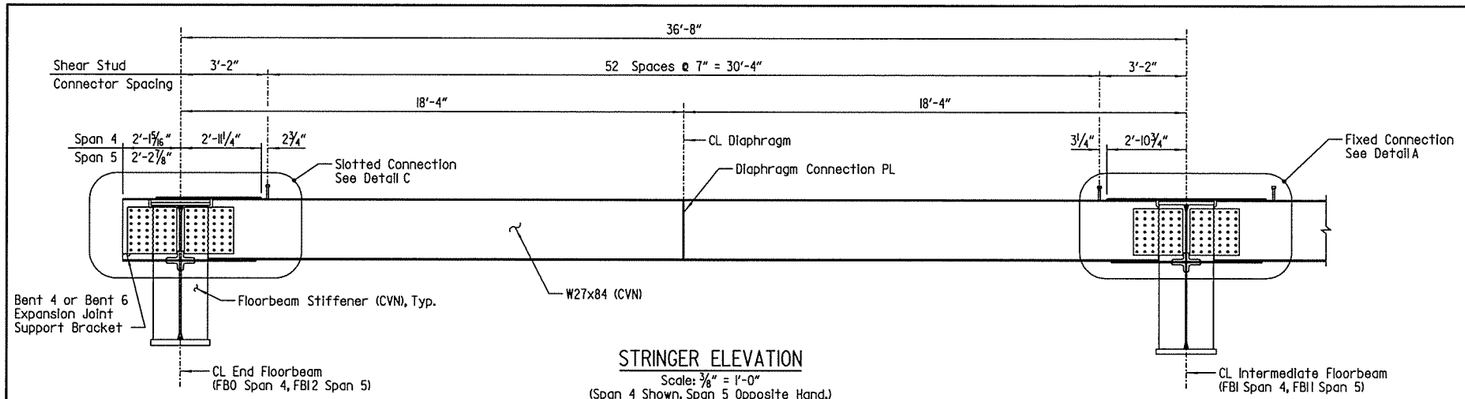
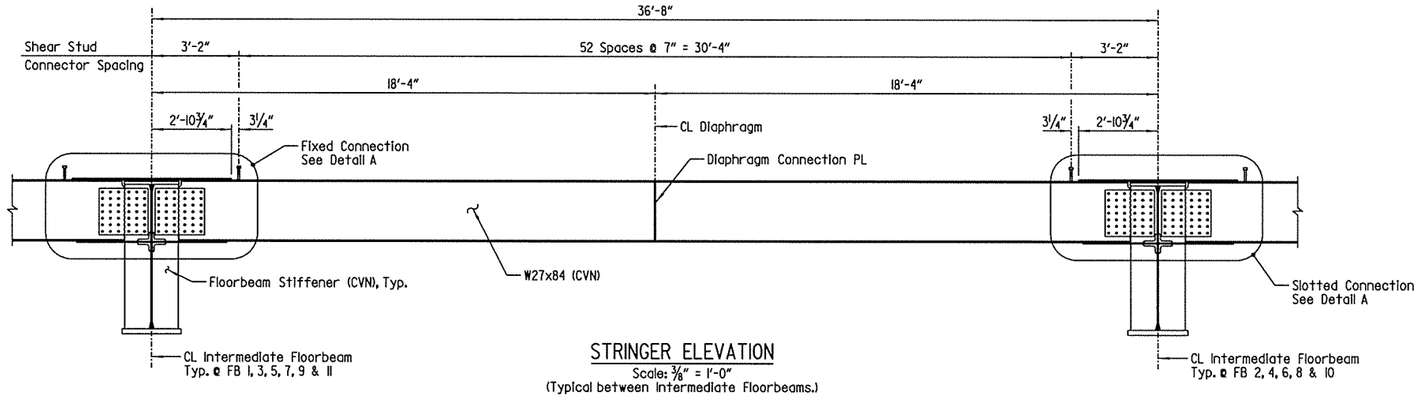
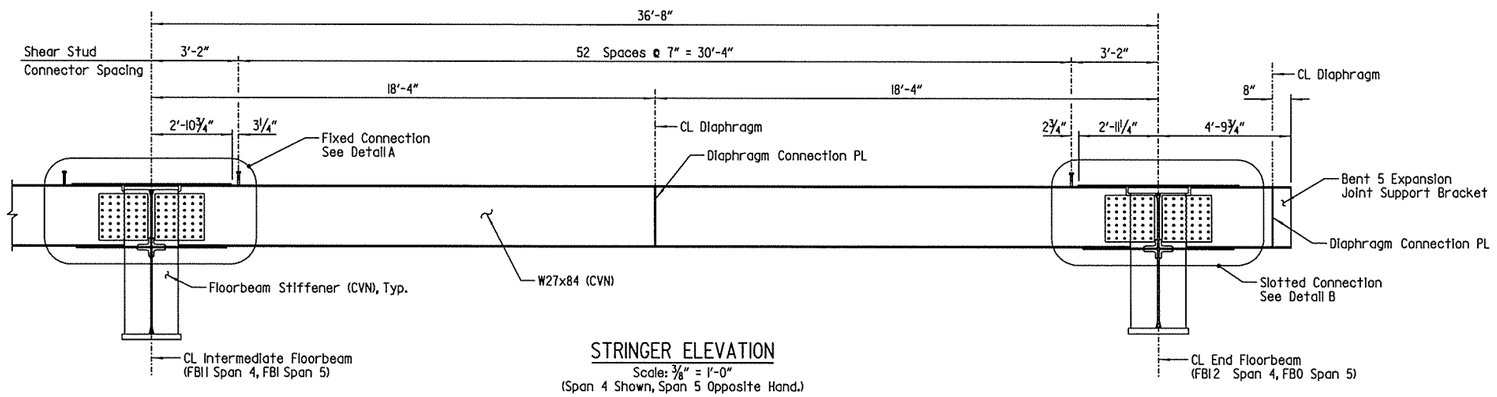
				JOB NO.		061275	240	505
				(1) 07292		STRINGERS		54445



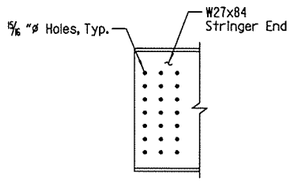
STRINGER ELEVATION
Scale: 3/8" = 1'-0"
(Span 4 Shown, Span 5 Opposite Hand.)



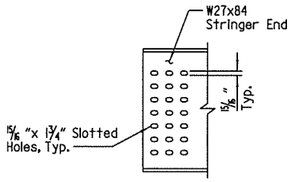
STRINGER ELEVATION
Scale: 3/8" = 1'-0"
(Typical between intermediate Floorbeams.)



STRINGER ELEVATION
Scale: 3/8" = 1'-0"
(Span 4 Shown, Span 5 Opposite Hand.)

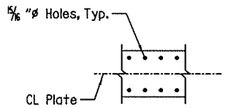


STRINGER END ELEVATION AT FIXED CONNECTION
Scale: 3/4" = 1'-0"

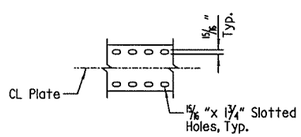


STRINGER END ELEVATION AT SLOTTED CONNECTION
Scale: 3/4" = 1'-0"

Notes:
Use standard 15/16 "ø holes for 7/8"ø bolts on stringer webs at connections denoted as "Fixed".
Use 15/16 "x 1 3/4" slotted holes for 7/8"ø bolts on stringer webs at connections denoted as "Slotted".
Bolt holes in web connection plates, Floorbeam stiffener plates and expansion joint support brackets shall be 15/16 "ø holes for 7/8"ø bolts.

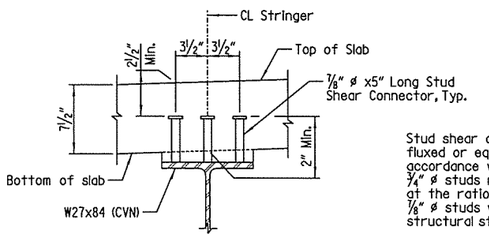


PART PLAN FLANGE CONNECTION PL AT FIXED CONNECTION
Scale: 3/4" = 1'-0"



PART PLAN FLANGE CONNECTION PL AT SLOTTED CONNECTION
Scale: 3/4" = 1'-0"

Notes:
Use standard 15/16 "ø holes for 7/8"ø bolts on all flange connection plates at connections denoted as "Fixed".
Use 15/16 "x 1 3/4" slotted holes for 7/8"ø bolts on all flange connection plates at connections denoted as "Slotted".
Bolt holes in stringer flanges, floorbeam flanges and expansion joint support brackets shall be 15/16 "ø holes for 7/8"ø bolts.
Top flange connection PL shown, bottom flange connection PL similar.



SHEAR CONNECTOR DETAIL
Scale: 1 1/2" = 1'-0"

Stud shear connectors shown shall be granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4" ø studs may be used in place of the 7/8" ø studs shown, at the ratio of 1.361- 3/4" ø studs in place of one 7/8" ø stud. 7/8" ø studs will be used as basis for measurement of structural steel in shear connectors.

Notes:
All dimensions on Stringer Elevations are measured along CL Stringers and along Working Line between T0 and T12.
All structural steel shall conform to AASHTO M270, Grade 50.
All Steel designated as (CVN) shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
For Details A, B and C, see Dwg. No. 54446.
For "FRAMING PLAN" and stringer to floorbeam connection type layout, see Dwg. No. 54442.
For "SECTION THRU INTERMEDIATE DIAPHRAGMS", Diaphragm Connection Plate details, Diaphragm details, and Stringer Dead Load Deflections, see Dwg. No. 54447.
For details of Expansion Joint Support Bracket, see Dwg. No. 54446.
For End Floorbeam Details, see Dwg. No. 54443.
For Intermediate Floorbeam Details, see Dwg. No. 54444.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF TIED ARCH UNIT - STRINGERS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275x1 SI02.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: MAR. 2014
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REVISED DATE:

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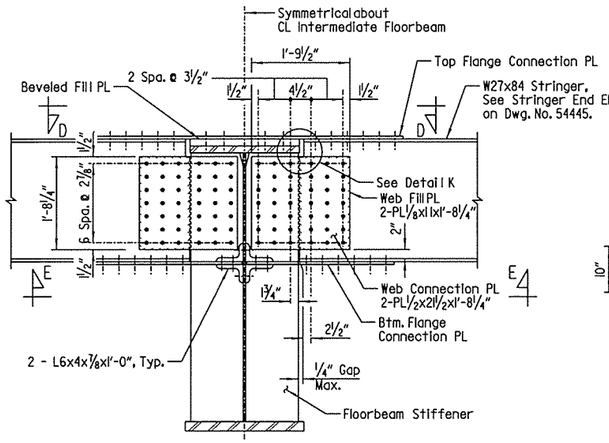
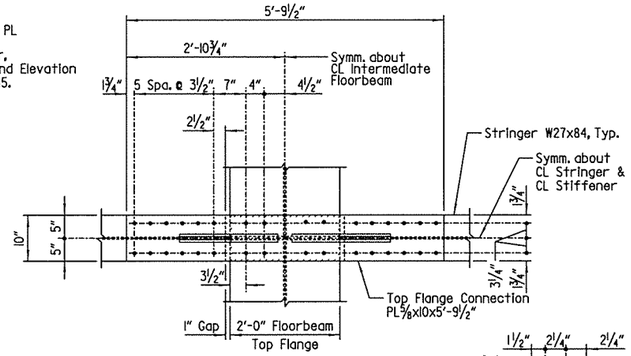
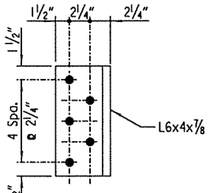


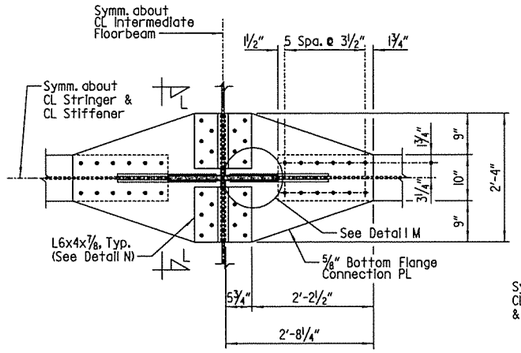
DETAIL A
Scale: ¾" = 1'-0"



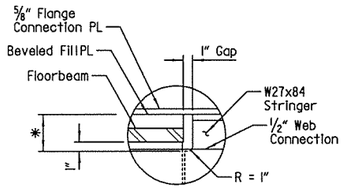
VIEW D-D
Scale: ¾" = 1'-0"



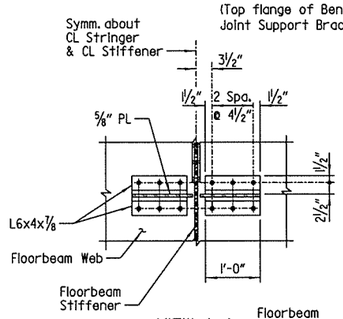
DETAIL N
Scale: 1½" = 1'-0"



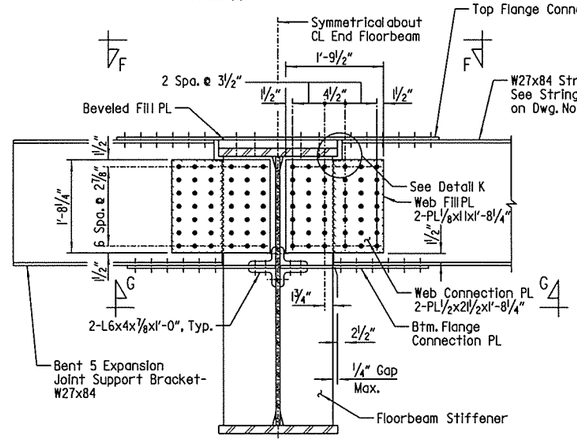
SECTION E-E
Scale: ¾" = 1'-0"



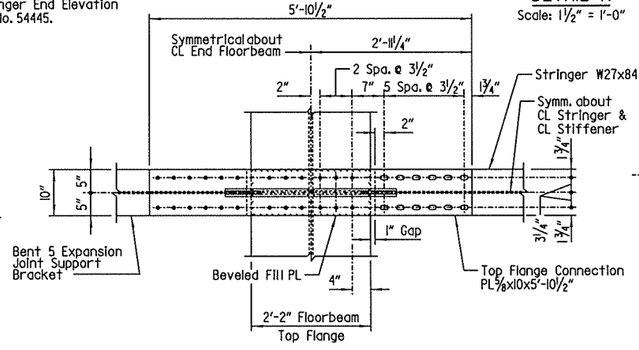
DETAIL K
Scale: 1½" = 1'-0"
(Top flange of Bent 4 or Bent 6 Expansion Joint Support Bracket not shown, see Detail C)



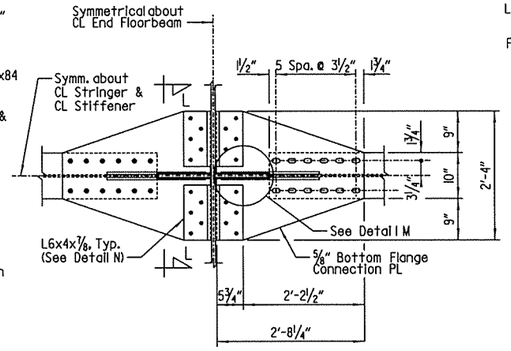
VIEW L-L
Scale: ¾" = 1'-0"



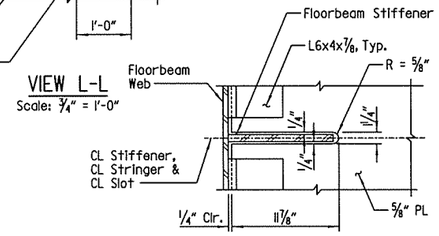
DETAIL B
Scale: ¾" = 1'-0"



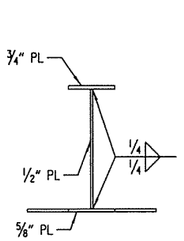
VIEW F-F
Scale: ¾" = 1'-0"



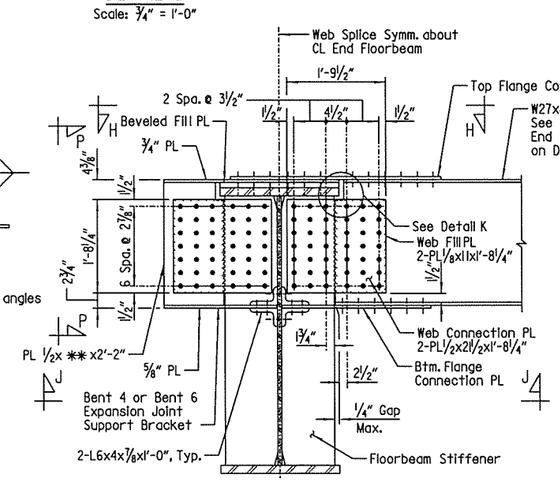
SECTION G-G
Scale: ¾" = 1'-0"



DETAIL M
Scale: 1½" = 1'-0"

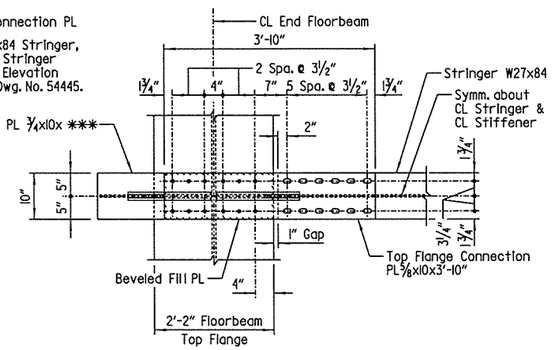


VIEW P-P
(Connection plates and angles not shown.)
Scale: ¾" = 1'-0"



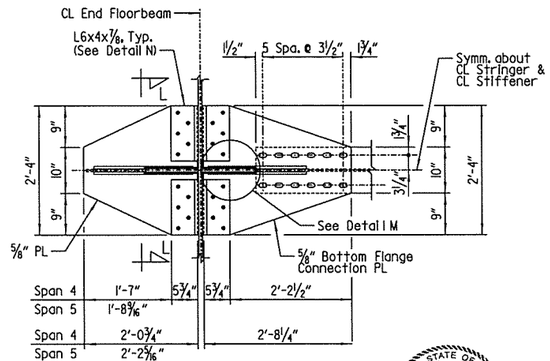
** 13¾ (Span 4)
14⅛ (Span 5)

DETAIL C
Scale: ¾" = 1'-0"



*** 3'-2⅝" (Span 4)
3'-3⅜" (Span 5)

VIEW H-H
Scale: ¾" = 1'-0"



SECTION J-J
Scale: ¾" = 1'-0"

Notes:
For locations of Details A, B & C and additional notes, see Dwg. No. 54445.
All structural steel shall conform to AASHTO M270, Grade 50.
All bolts in the stringer to floorbeam connections shall be ⅞"ø high strength bolts.
All bolted connection contact surfaces shall meet Class B surface preparation.
All steel shapes and plates detailed on this sheet shall be designated as (CVN) and shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
For Beveled Fill Plate details, see Dwg. No. 54447.
For Floorbeam Stiffener details, see Dwg. Nos. 54443 & 54444.

NOTE:
BOLTS IN SLOTTED CONNECTION SHALL BE FINGER TIGHT UNTIL SLAB POUR NOS. 1 THRU 6 ARE COMPLETE. ALL BOLTS SHALL BE FULLY TIGHTENED PRIOR TO SLAB CLOSURE POUR NOS. 7 THRU 13. SEE DWG. NOS. 54437 AND 54438.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF TIED ARCH UNIT - STRINGERS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: TKT DATE: APR. 2014 FILENAME: B061275x1S103.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: JMB DATE: APR. 2014

BRIDGE NO. 07292 DRAWING NO. 54446

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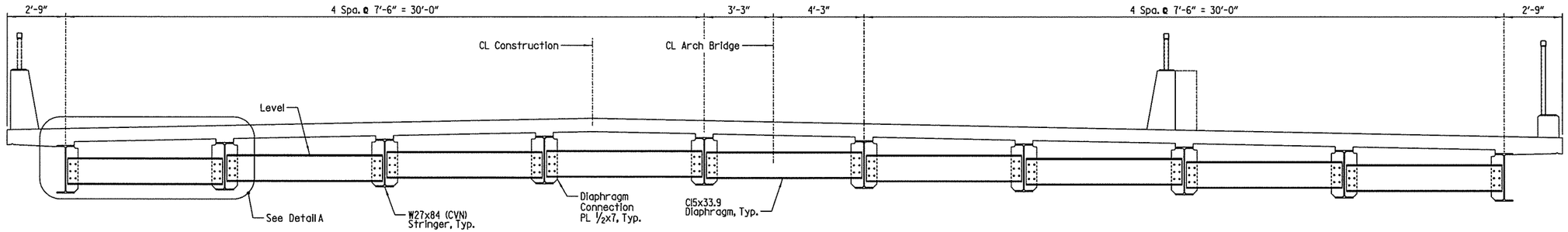
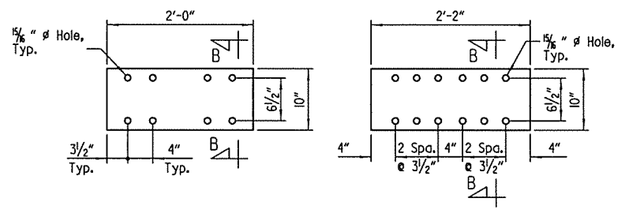


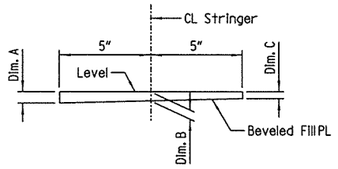
SECTION THRU INTERMEDIATE DIAPHRAGMS

(Shown at center of floorbeam span)
Scale: 3/8" = 1'-0"



INTERMEDIATE FLOORBEAM

END FLOORBEAM

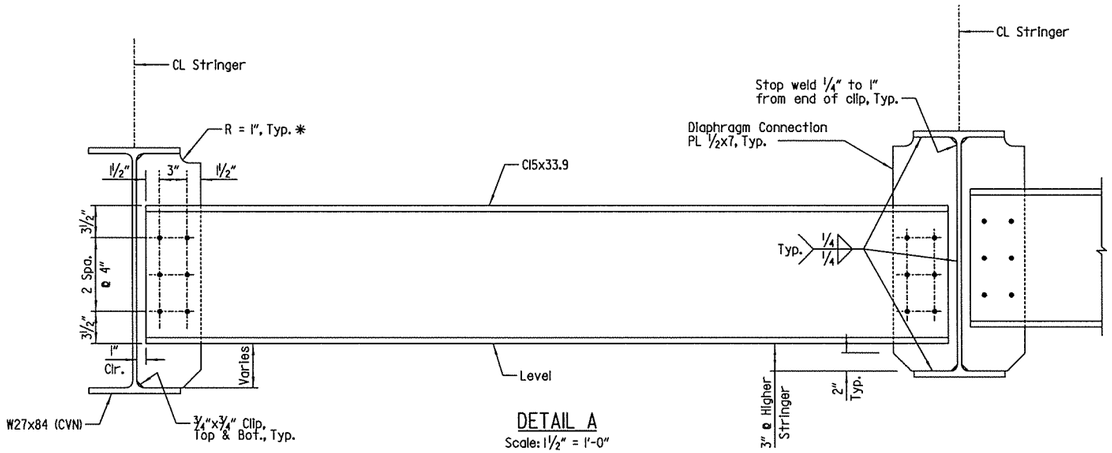


SECTION B-B

(Stringers S1-S4 shown; Stringers S5-S10 opposite hand.)
Scale: 3" = 1'-0"

BEVELED FILL PLATE DETAIL

Scale: 1" = 1'-0"



DETAIL A

Scale: 1½" = 1'-0"

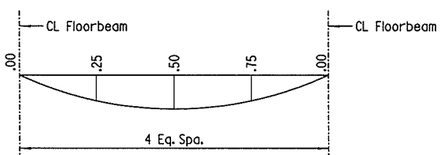
* If permanent steel bridge deck froms are used, the fabricator shall clip the plate as necessary to accommodate deck form support.

Notes:
All structural steel shall conform to AASHTO M270, Grade 50.
All bolts shall be ⅞"ø high strength bolts.
Bolt holes in the diaphragms may be 1⅛"ø oversize holes. Bolt holes in the diaphragm connection plates shall be standard 15/16"ø holes.
Diaphragms shall be detailed, fabricated, and installed such that stringer webs are theoretically vertical or plumb in the steel dead load condition.
For location of diaphragms, see the "FRAMING PLAN" on Dwg. No. 54442.

TABLE OF DIMENSIONS									
STRINGER	INTERMEDIATE FLOORBEAM			END FLOORBEAM @ BENT 5			END FLOORBEAM @ BENT 4 & 6		
	A	B	C	A	B	C	A	B	C
1-3 & 8-10	2"	1⅞"	1¾"	2"	1⅞"	1¾"	1¼"	1⅛"	1"
4-5	1⅞"	1¼"	1⅝"	2"	1⅞"	1¾"	1¼"	1⅛"	1"
6-7	⅝"	½"	⅜"	2"	1⅞"	1¾"	1¼"	1⅛"	1"

Note:
Stringers are not cambered and shall be fabricated with Natural Mill Camber up. Deflections shown are from a chord from centerline floorbeam to centerline floorbeam. Negative sign (-) indicates point below chord.

TABLE OF DEAD LOAD DEFLECTIONS - STRINGERS (INCHES)						
	Exterior Stringer (S1, S10)			Interior Stringer (S2 to S9)		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
.00	0.000	0.000	0.000	0.000	0.000	0.000
.25	-0.006	-0.055	-0.058	-0.006	-0.063	-0.065
.50	-0.010	-0.093	-0.098	-0.010	-0.108	-0.112
.75	-0.006	-0.055	-0.058	-0.006	-0.063	-0.065
.00	0.000	0.000	0.000	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM - STRINGERS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF TIED ARCH UNIT - STRINGERS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CAT DATE: APR. 2014 FILENAME: B061275x1 S104.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: MAR. 2014

BRIDGE NO. 07292 DRAWING NO. 54447

workspace
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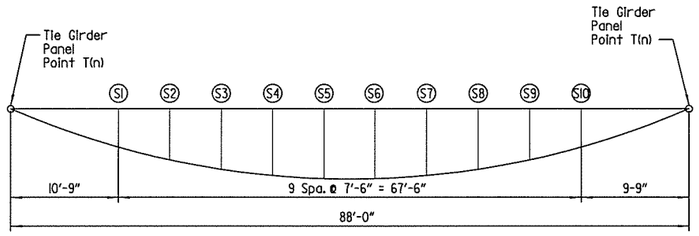
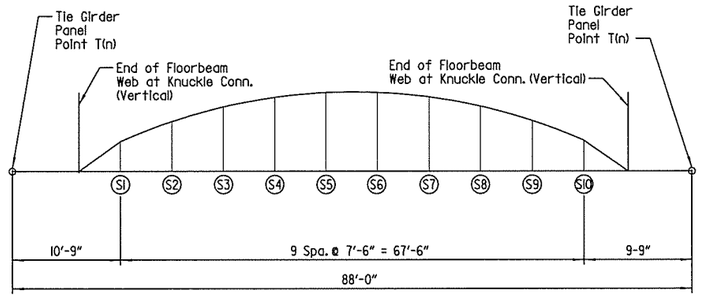
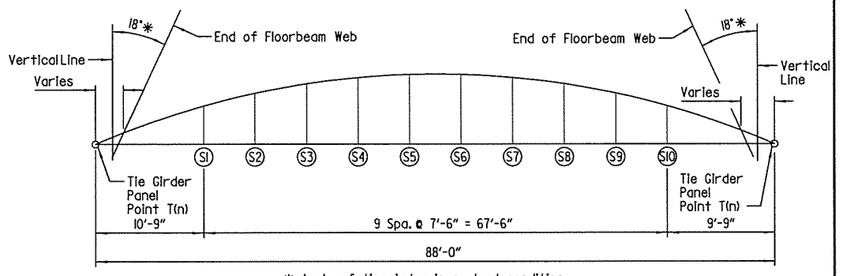
				(1) 07292		FLOORBEAM CAMBER		54448



DEAD LOAD DEFLECTION DIAGRAM - FLOORBEAMS FB0 THRU FB12



CAMBER DIAGRAM - END FLOORBEAMS FB0 & FB12



* Angle of tie girder in no load condition.

CAMBER DIAGRAM - INTERMEDIATE FLOORBEAMS FB1 THRU FB11

TABLE OF DEAD LOAD DEFLECTIONS - FLOORBEAMS FB0 THRU FB4, FB8 THRU FB12 (INCHES)

Floorbeam No.	End Floorbeams FB0 & FB12					Intermediate Floorbeams FB1 & FB11					Intermediate Floorbeams FB2 & FB10					Intermediate Floorbeams FB3 & FB9					Intermediate Floorbeams FB4 & FB8				
Point of Deflection	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total
Tie Girder Panel Point T(n)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S1	-0.024	0.012	-0.168	-0.024	-0.204	-0.090	0.000	-0.444	-0.066	-0.600	-0.132	0.006	-0.570	-0.096	-0.792	-0.192	0.018	-0.624	-0.108	-0.906	-0.132	0.024	-0.648	-0.108	-0.864
S2	-0.048	0.012	-0.276	-0.042	-0.354	-0.162	0.012	-0.732	-0.114	-0.996	-0.228	0.012	-0.918	-0.162	-1.296	-0.300	0.030	-1.008	-0.168	-1.446	-0.240	0.036	-1.020	-0.180	-1.404
S3	-0.072	0.024	-0.378	-0.048	-0.474	-0.210	0.012	-0.966	-0.144	-1.308	-0.300	0.012	-1.182	-0.198	-1.668	-0.372	0.042	-1.308	-0.216	-1.854	-0.324	0.048	-1.320	-0.228	-1.824
S4	-0.084	0.024	-0.444	-0.072	-0.576	-0.258	0.018	-1.128	-0.180	-1.548	-0.348	0.024	-1.368	-0.234	-1.926	-0.432	0.054	-1.500	-0.264	-2.142	-0.372	0.060	-1.524	-0.264	-2.100
S5	-0.096	0.024	-0.480	-0.072	-0.624	-0.270	0.024	-1.200	-0.204	-1.650	-0.372	0.024	-1.464	-0.246	-2.058	-0.456	0.066	-1.596	-0.288	-2.274	-0.396	0.072	-1.620	-0.288	-2.232
S6	-0.096	0.024	-0.480	-0.072	-0.624	-0.270	0.024	-1.200	-0.204	-1.650	-0.372	0.036	-1.446	-0.270	-2.052	-0.456	0.078	-1.584	-0.288	-2.250	-0.396	0.084	-1.608	-0.300	-2.220
S7	-0.084	0.024	-0.444	-0.072	-0.576	-0.246	0.030	-1.116	-0.204	-1.536	-0.348	0.042	-1.356	-0.252	-1.914	-0.420	0.084	-1.500	-0.288	-2.124	-0.372	0.096	-1.512	-0.288	-2.076
S8	-0.060	0.018	-0.378	-0.054	-0.474	-0.210	0.036	-0.960	-0.180	-1.314	-0.300	0.054	-1.188	-0.234	-1.668	-0.372	0.096	-1.308	-0.264	-1.848	-0.324	0.108	-1.344	-0.276	-1.836
S9	-0.036	0.012	-0.270	-0.042	-0.336	-0.150	0.042	-0.720	-0.144	-0.972	-0.228	0.066	-0.924	-0.198	-1.284	-0.294	0.102	-1.020	-0.228	-1.440	-0.240	0.120	-1.044	-0.240	-1.404
S10	-0.012	0.012	-0.156	-0.018	-0.174	-0.084	0.042	-0.432	-0.096	-0.570	-0.132	0.078	-0.576	-0.144	-0.774	-0.192	0.114	-0.636	-0.168	-0.882	-0.132	0.132	-0.660	-0.180	-0.840
Tie Girder Panel Point T(n)	0.000	0.000	0.000	0.000	0.000	0.006	0.048	-0.018	-0.036	0.000	0.012	0.102	-0.054	-0.060	0.000	0.030	0.126	-0.072	-0.084	0.000	0.024	0.144	-0.084	-0.084	0.000

TABLE OF DEAD LOAD DEFLECTIONS - FLOORBEAMS FB5 THRU FB7 (INCHES)

Floorbeam No.	Intermediate Floorbeams FB5 & FB7					Intermediate Floorbeam FB6				
Point of Deflection	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total	Structural Steel Dead Load	HP	Slab Dead Load	Barriers & Utilities Dead Load	Total
Tie Girder Panel Point T(n)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S1	-0.144	0.018	-0.624	-0.096	-0.846	-0.168	0.024	-0.624	-0.096	-0.864
S2	-0.252	0.030	-0.984	-0.156	-1.362	-0.276	0.048	-1.008	-0.168	-1.404
S3	-0.336	0.042	-1.284	-0.216	-1.794	-0.360	0.060	-1.296	-0.216	-1.812
S4	-0.384	0.060	-1.476	-0.252	-2.052	-0.420	0.072	-1.512	-0.264	-2.124
S5	-0.408	0.072	-1.572	-0.264	-2.172	-0.444	0.096	-1.608	-0.276	-2.232
S6	-0.408	0.084	-1.572	-0.288	-2.184	-0.444	0.108	-1.596	-0.288	-2.220
S7	-0.384	0.096	-1.476	-0.288	-2.052	-0.420	0.120	-1.500	-0.288	-2.088
S8	-0.336	0.108	-1.308	-0.252	-1.788	-0.360	0.132	-1.320	-0.276	-1.824
S9	-0.252	0.120	-1.020	-0.228	-1.380	-0.276	0.144	-1.032	-0.228	-1.392
S10	-0.144	0.138	-0.648	-0.162	-0.816	-0.168	0.144	-0.648	-0.180	-0.852
Tie Girder Panel Point T(n)	0.000	0.156	-0.072	-0.084	0.000	0.000	0.156	-0.072	-0.084	0.000

TABLE OF CAMBER - FLOORBEAMS FB0 THRU FB12 (INCHES)

Floorbeam No.	End Floorbeams FB0 & FB12	Intermediate Floorbeams FB1 & FB11	Intermediate Floorbeams FB2 & FB10	Intermediate Floorbeams FB3 & FB9	Intermediate Floorbeams FB4 & FB8	Intermediate Floorbeams FB5 & FB7	Intermediate Floorbeam FB6
Point of Camber	Total Camber	Total Camber	Total Camber	Total Camber	Total Camber	Total Camber	Total Camber
Tie Girder Panel Point T(n)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S1	0.204	0.600	0.792	0.906	0.864	0.846	0.864
S2	0.354	0.996	1.296	1.446	1.404	1.362	1.404
S3	0.474	1.308	1.668	1.854	1.824	1.794	1.812
S4	0.576	1.548	1.926	2.142	2.100	2.052	2.124
S5	0.624	1.650	2.058	2.274	2.232	2.172	2.232
S6	0.624	1.650	2.052	2.250	2.220	2.184	2.220
S7	0.576	1.536	1.914	2.124	2.076	2.052	2.088
S8	0.474	1.314	1.668	1.848	1.836	1.788	1.824
S9	0.336	0.972	1.284	1.440	1.404	1.380	1.392
S10	0.174	0.570	0.774	0.882	0.840	0.816	0.852
Tie Girder Panel Point T(n)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes:

Floorbeams shall be cambered to compensate for Total Dead Load Deflection in the final condition as indicated in the camber diagram. Member ends shall be sloped to match tie girder in the no dead load condition.

Camber for Dead Load Deflection +/- 1/8" tolerance. Deflections shown are from a chord from Tie Girder Panel Point T(n) to Tie Girder Panel Point T(n).

A negative deflection value indicates downward deflection. A positive camber value indicates upward camber.

HP ordinates represent the amount of deflection due to the hanger pre-tension forces.

Structural Steel Dead Load includes only the deflection due to steel members.

Slab Dead Load includes deflection due to the weight of the deck and SIP forms.

Barriers & Utilities Dead Load includes deflection due to the weight of the barriers and utilities (waterline and lights) present upon completion of the bridge.

Axial camber can be calculated using the Tie Girder Camber Points (T(n)') on Dwg. Nos. 54390, 54392, 54394 & 54396.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14

BRIDGE ENGINEER

DETAILS OF TIED ARCH UNIT - FLOORBEAM CAMBER/DEFLECTIONS BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: FWG DATE: MAY 2014 FILENAME: B061275x1 SI05.DGN

CHECKED BY: JBT DATE: MAY 2014 SCALE: NONE

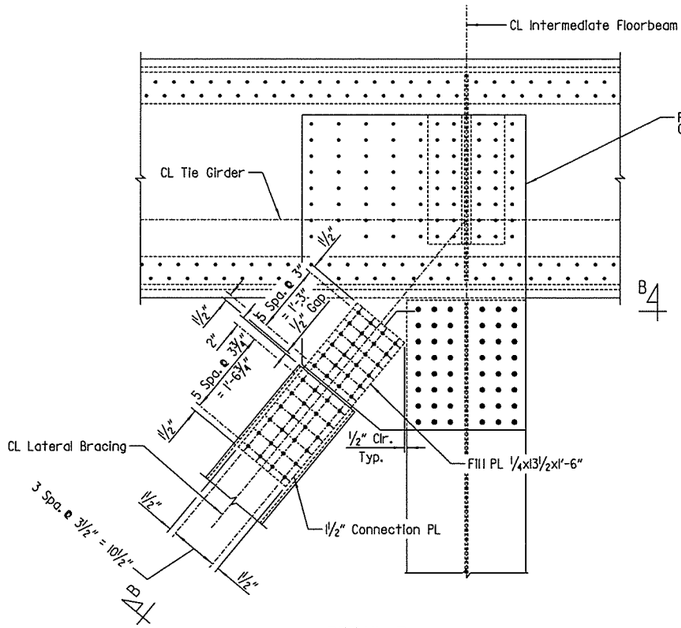
DESIGNED BY: KSH DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54448

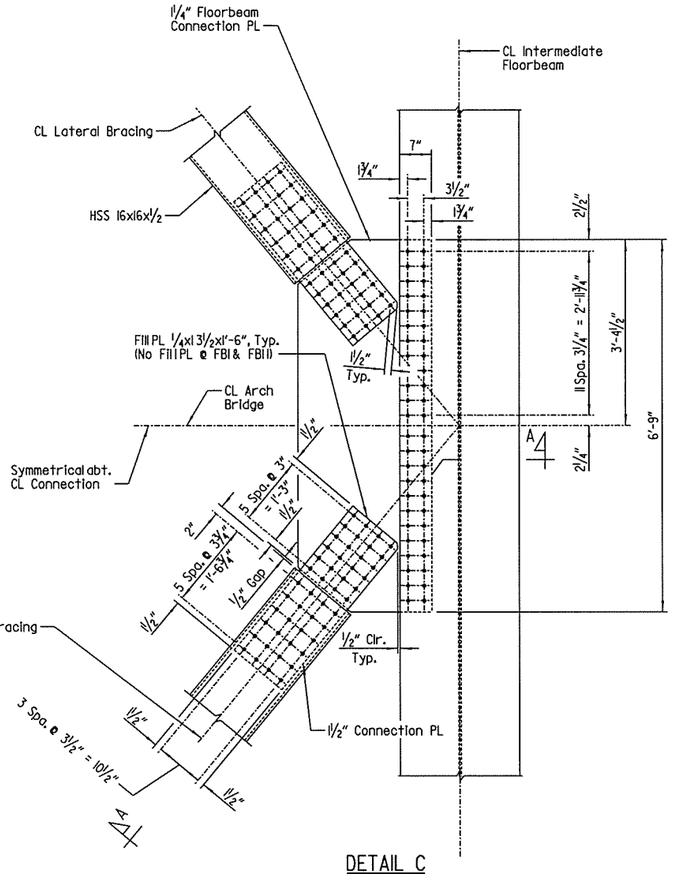
wgregory 5/29/2014 2:37:43 PM
WORKSPACE: ##WORKSPACE##
N:\STUDIES\Bridges\Broadway\Plans\Drawings\ZPLOT_B080C.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

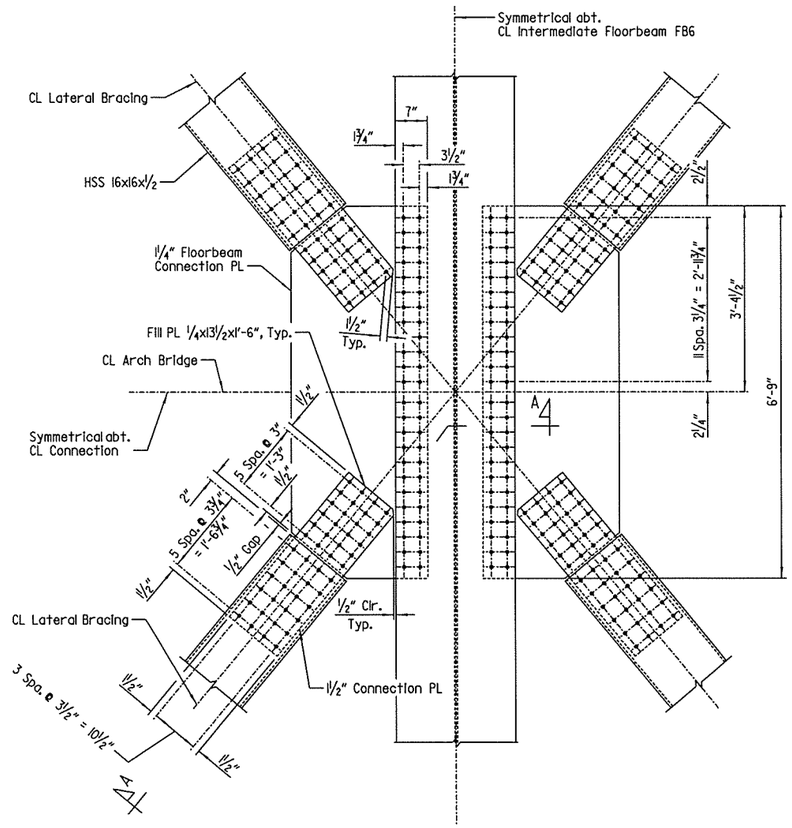
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	244	505
(1) 07292	LOWER LATERAL BRACING			54449



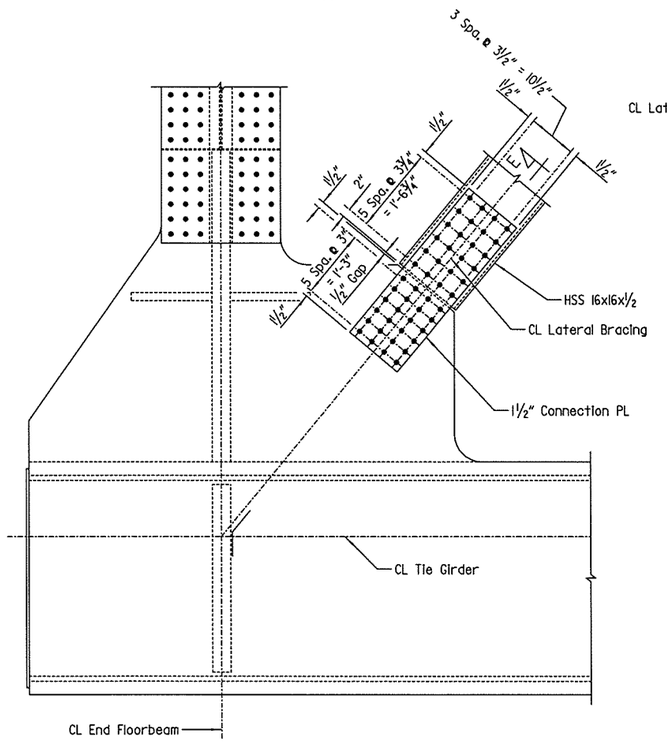
DETAIL B
(Looking at Bottom of Bottom Flange)
Scale: 3/4" = 1'-0"



DETAIL C
(Looking at Bottom of Bottom Flange)
Scale: 3/4" = 1'-0"



DETAIL D
(Looking at Bottom of Bottom Flange)
Scale: 3/4" = 1'-0"



DETAIL A
(Looking at Bottom of Bottom Flange)
Scale: 3/4" = 1'-0"

Notes:

For location of Details A, B, C and D, see Dwg. No. 54386.

For Sections A-A, B-B, and E-E, see Dwg. No. 54450.

HSS members shall conform to the requirements of ASTM A500, Grade C (minimum yield strength= 50 ksi), but shall be paid for at the bid unit price for "STRUCTURAL STEEL IN ARCH SPANS (M270, Gr. 50)."

Structural steel shall be AASHTO M270 Grade 50, unless noted otherwise.

Plates designated as (FCM) shall meet the Fracture Critical Material testing requirements specified in the Arch General Notes.

All bolts shall be 1" ø High Strength Bolts, unless otherwise noted.

All bolted connection contat surfaces shall meet Class B surface preparation.

For bolt sizes and spacing at Tie Girder and Floorbeam, see Dwg. No. 54421.

For lateral bracing connection to Tied Arch End, see Dwg. Nos. 54399 & 54400.

For Floorbeam Connection Plate details at intermediate floorbeam to tie girder connections see Dwg. Nos. 54419 thru 54421.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF TIED ARCH UNIT - LOWER LATERAL BRACING BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: FWG DATE: MAY 2014 FILENAME: B061275x1 SI06.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: APR. 2014

BRIDGE NO. 07292 DRAWING NO. 54449

wgregory 5/29/2014 2:37:46 PM
WORKSPACE: ##WORKSPACE##
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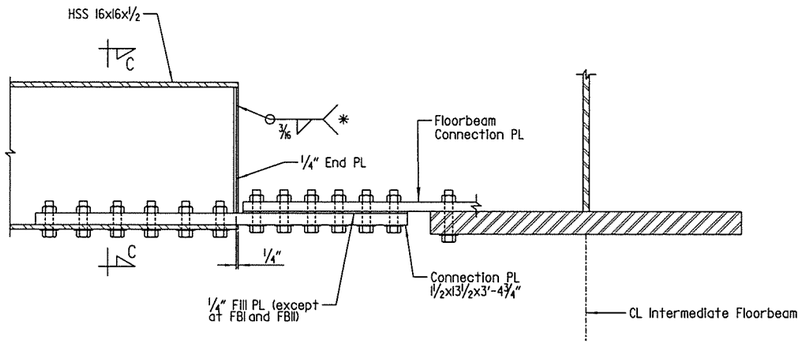
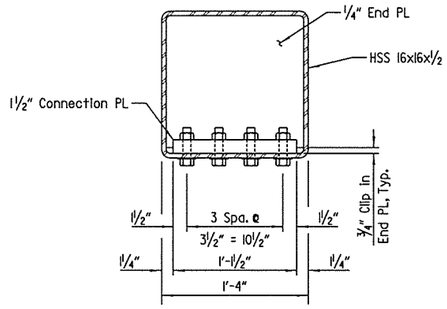
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	245	505
				(1) 07292		LOWER LATERAL BRACING		54450

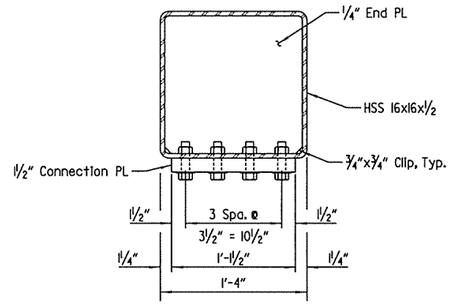
* Shop bolt connection plate to HSS and inspect before sealing 1/4" end plate to HSS 16x16x1/2.



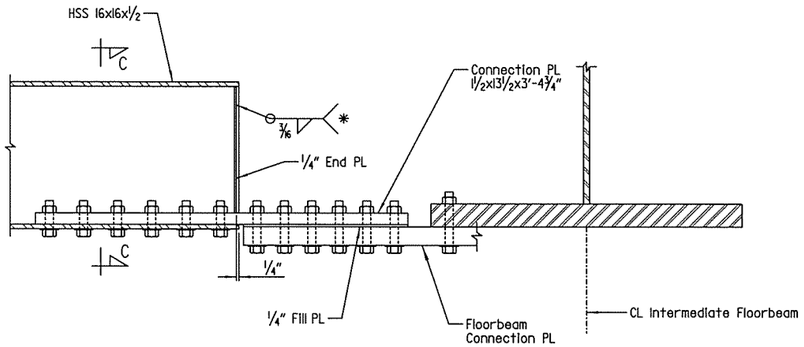
SECTION A-A
Scale: 1 1/2" = 1'-0"



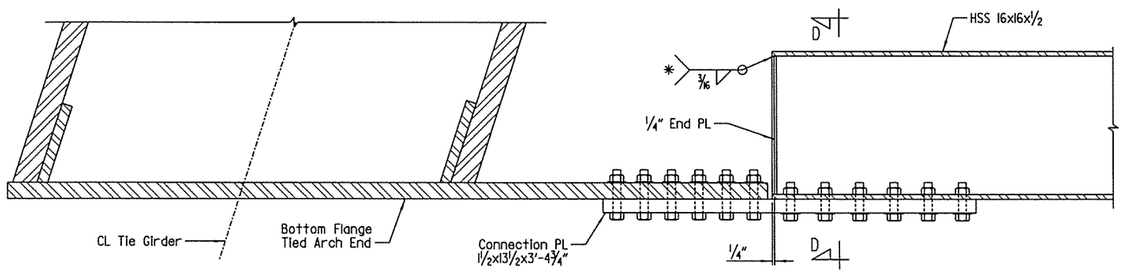
SECTION C-C
Scale: 1 1/2" = 1'-0"



SECTION D-D
Scale: 1 1/2" = 1'-0"



SECTION B-B
Scale: 1 1/2" = 1'-0"



SECTION E-E
Scale: 1 1/2" = 1'-0"

Notes:
For location of Sections A-A, B-B and E-E see Dwg. No. 54449.
For additional notes see Dwg. No. 54449.

SHEET 2 OF 2
DETAILS OF TIED ARCH UNIT - LOWER LATERAL BRACING
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5.29.14
BRIDGE ENGINEER

DRAWN BY: FWG DATE: APR. 2014 FILENAME: B061275xlSI07.DGN
CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: APR. 2014
BRIDGE NO. 07292 DRAWING NO. 54450

wgregory 5/29/2014 2:37:49 PM
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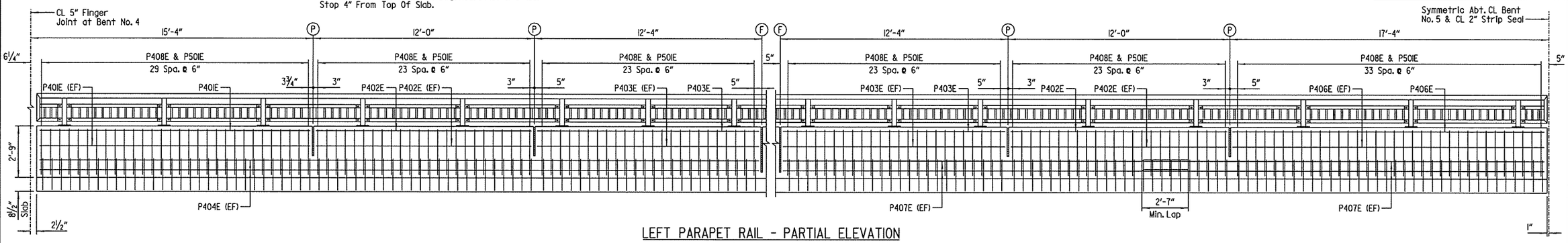
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	246	505
				(1) 07292		PARAPET DETAILS		54451

(P) CL Partial-Depth Parapet Joint (1/4" To 1" Max.) As Shown on Slab Plans on Dwg. Nos. 54437 & 54438. Stop 1'-2" From Top Of Slab.

(F) CL Full-Depth Parapet Joint (1/4" To 1" Max.) As Shown on Slab Plans on Dwg. Nos. 54437 & 54438. Stop 4" From Top Of Slab.



LEFT PARAPET RAIL - PARTIAL ELEVATION

(Span 4 shown, Span 5 symmetric Abt. CL Bent 5)
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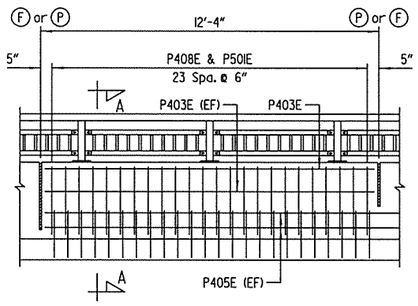
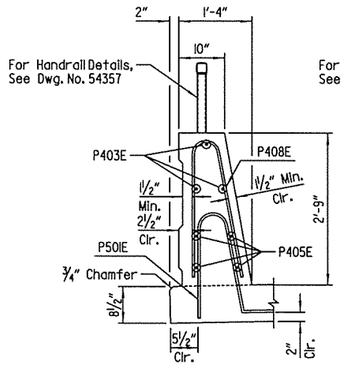


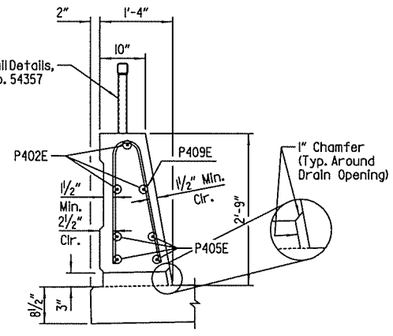
TYPICAL CLOSED LEFT PARAPET RAIL

Scale: 3/8"=1'-0"



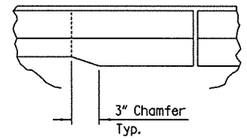
SECTION A-A

Scale: 3/4"=1'-0"



SECTION B-B

Scale: 3/4"=1'-0"

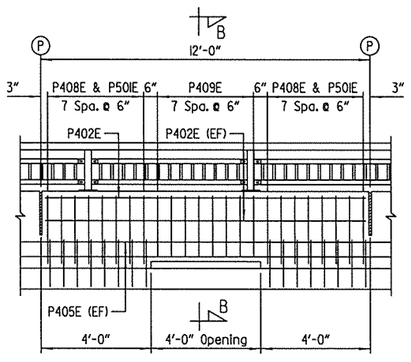


PLAN OF RAIL POST CHAMFER

(Typ. for Open Drain Panels Only)
No Scale

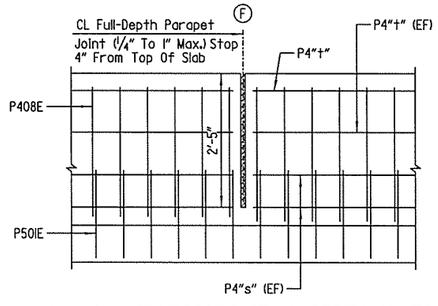
TABLE OF PARAPET VARIABLES			
PANEL LENGTH	PANEL TYPE	"s"	"t"
12'-0"•	Closed	04E	02E
12'-0"••	Closed	07E	02E
12'-0"	Open	05E	02E
12'-4•	Closed	04E	03E
12'-4"••	Closed	07E	03E
12'-4"	Closed	05E	03E
15'-4"	Closed	04E	01E
17'-4"	Closed	07E	06E

• Panel Near Bent No. 4 shown on "LEFT PARAPET RAIL - PARTIAL ELEVATION".
•• Panel Near Bent No. 5 shown on "LEFT PARAPET RAIL - PARTIAL ELEVATION".



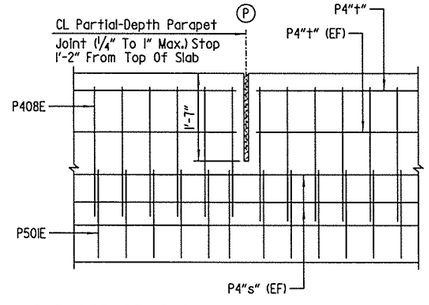
TYPICAL OPEN LEFT PARAPET RAIL

Scale: 3/8"=1'-0"



PARAPET REINFORCING (FULL DEPTH JOINTS)

Scale: 3/4"=1'-0"



PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

Scale: 3/4"=1'-0"

Notes:
For Panel Enhancement Detail, see Dwg. No. 54360.
For Railing Details, see Dwg. No. 54357.
For Joint and drain locations, see Dwg. Nos. 54437 and 54438.

SHEET 1 OF 4
DETAILS OF TIED ARCH UNIT - PARAPET DETAILS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: DAL DATE: AUG. 13 FILENAME: B061275xl SI08.DGN
CHECKED BY: JAM DATE: AUG. 13 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: AUG. 13
BRIDGE NO. 07292 DRAWING NO. 54451

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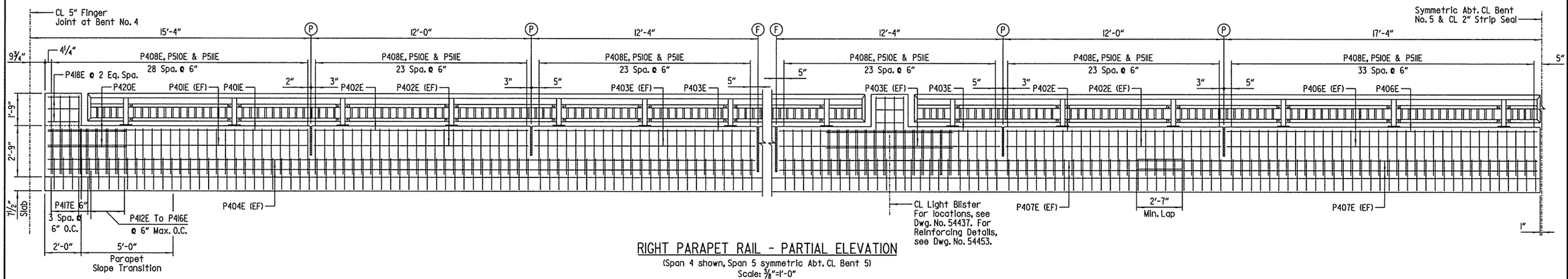


RIGHT PARAPET RAIL - PARTIAL ELEVATION

(Span 4 shown, Span 5 symmetric Abt. CL Bent 5)
Scale: ⅜"=1'-0"

TYPICAL CLOSED RIGHT PARAPET RAIL

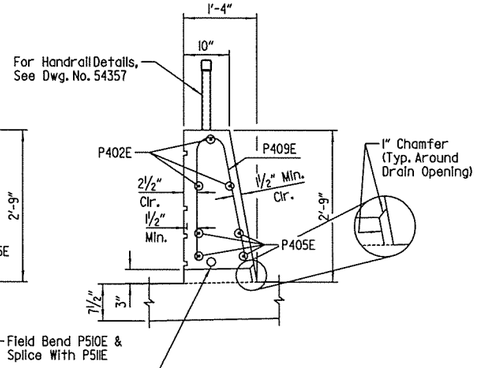
Scale: ⅜"=1'-0"

(P) CL Partial-Depth Parapet Joint (¼" To 1" Max.) As Shown on Slab Plans on Dwg. Nos. 54437 & 54438. Stop 1'-2" From Top Of Slab.

(F) CL Full-Depth Parapet Joint (¼" To 1" Max.) As Shown on Slab Plans on Dwg. Nos. 54437 & 54438. Stop 4" From Top Of Slab.

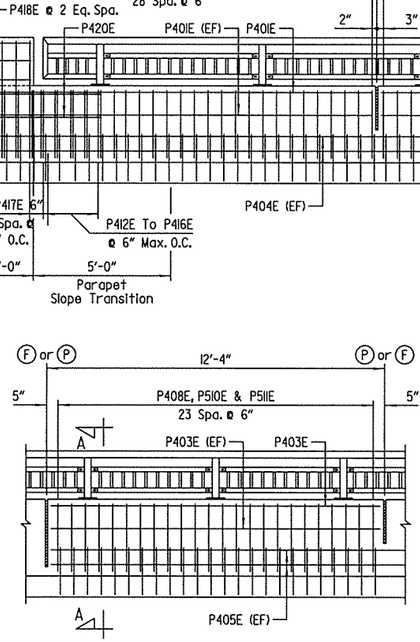
SECTION A-A

Scale: ¾"=1'-0"



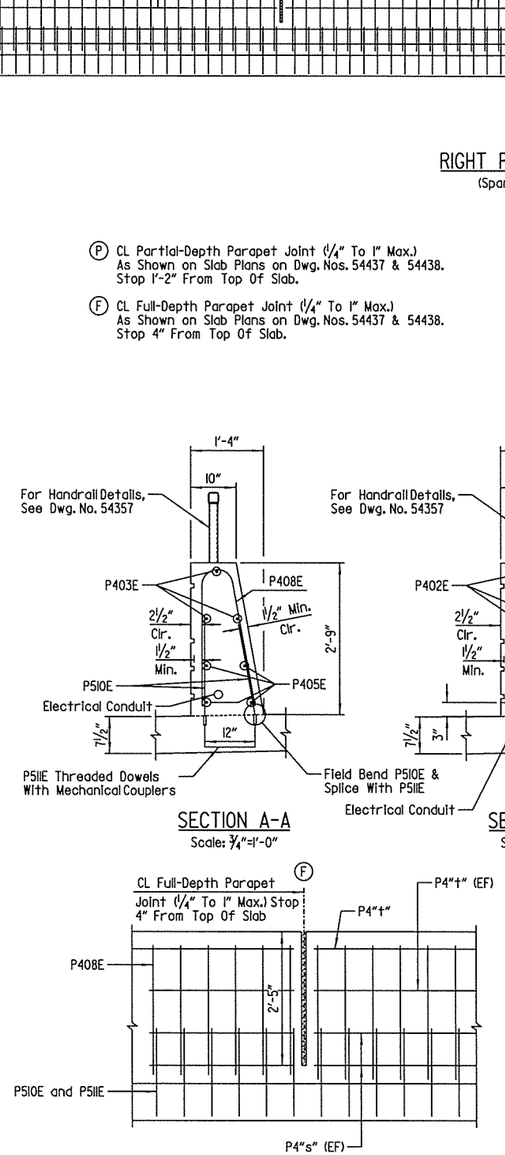
SECTION B-B

Scale: ¾"=1'-0"



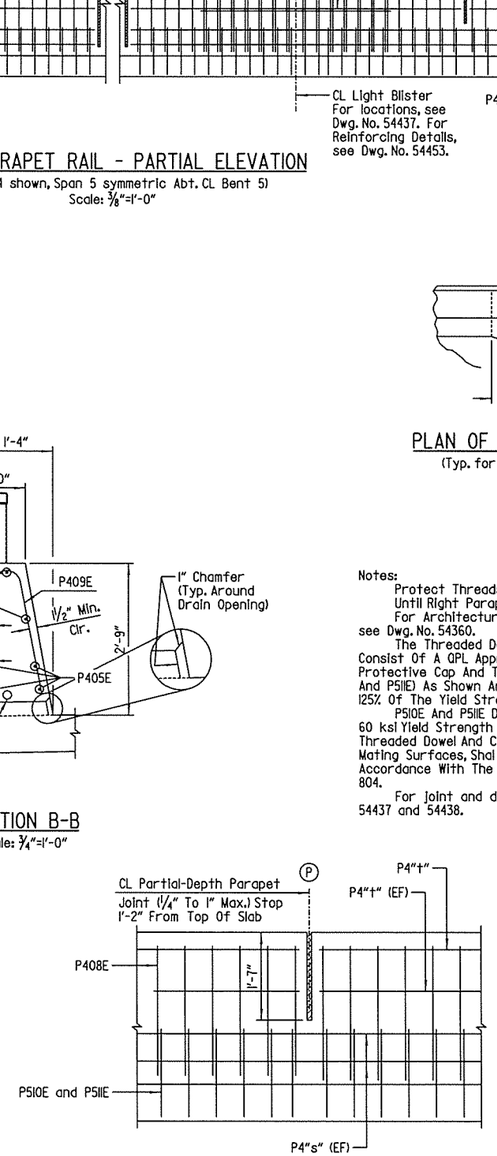
TYPICAL OPEN RIGHT PARAPET RAIL

Scale: ⅜"=1'-0"



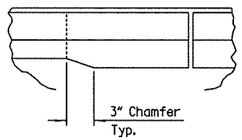
PARAPET REINFORCING (FULL DEPTH JOINTS)

Scale: ¾"=1'-0"



PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

Scale: ¾"=1'-0"



PLAN OF RAIL POST CHAMFER

(Typ. for Open Drain Panels Only)
No Scale

Notes:

Protect Threads In Couplers Until Right Parapet Is Constructed. For Architectural Finish Elevation - Right Parapet, see Dwg. No. 54360.

The Threaded Dowel And Coupler Assembly Shall Consist Of A QPL Approved Mechanical Splice With Protective Cap And Threaded Dowel Bars (P510E And P511E) As Shown And Shall Develop At Least 125% Of The Yield Strength Of The Dowel Bars.

P510E And P511E Dowel Bars Shall Be a Minimum 60 ksi Yield Strength And Threaded As Required. Threaded Dowel And Coupler Assembly, Except Mating Surfaces, Shall Be Epoxy Coated In Accordance With The Requirements Of Section 804.

For joint and drain locations, see Dwg. Nos. 54437 and 54438.

TABLE OF PARAPET VARIABLES			
PANEL LENGTH	PANEL TYPE	"s"	"t"
12'-0"•	Closed	04E	02E
12'-0"••	Closed	07E	02E
12'-0"	Open	05E	02E
12'-4•	Closed	04E	03E
12'-4"••	Closed	07E	03E
12'-4"	Closed	05E	03E
15'-4"	Closed	04E	01E
17'-4"	Closed	07E	06E

• Panel Near Bent No. 4 shown on "RIGHT PARAPET RAIL PARTIAL ELEVATION".
•• Panel Near Bent No. 5 shown on "RIGHT PARAPET RAIL PARTIAL ELEVATION".

SHEET 2 OF 4
DETAILS OF TIED ARCH UNIT - PARAPET DETAILS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE McCOMBS
5.29.14
BRIDGE ENGINEER

DRAWN BY: DAL DATE: AUG. 2013 FILENAME: B061275x1 S109.DGN
CHECKED BY: JAM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54452

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REVISED DATE:

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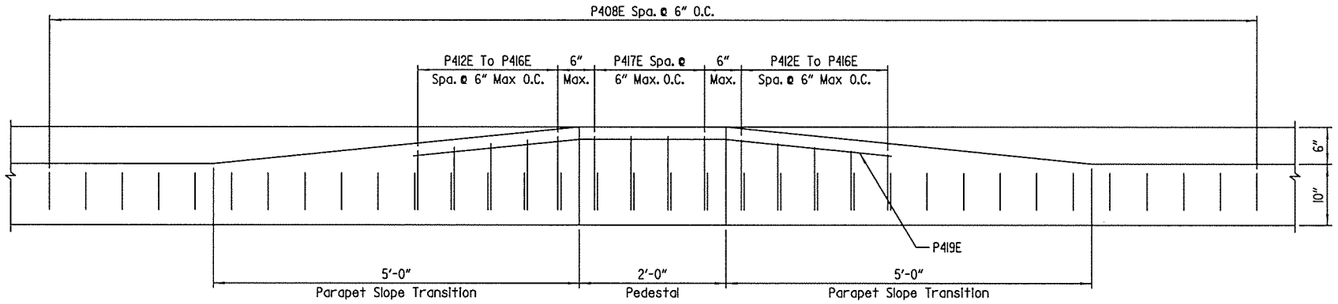
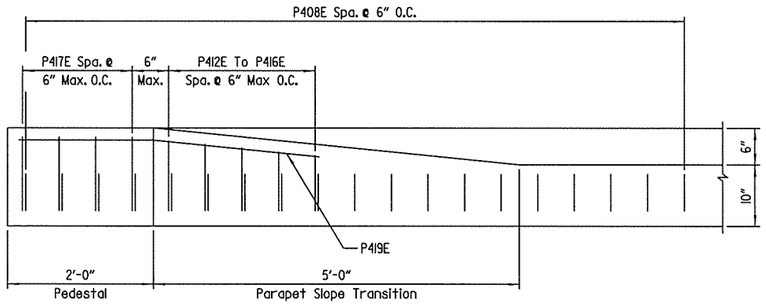


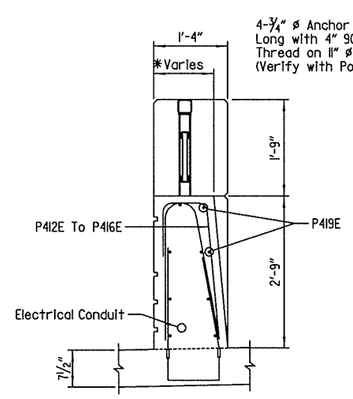
PARAPET TRANSITION PLAN - RIGHT PARAPET

(At Light Blister locations)
Scale: 1" = 1'-0"



PARAPET TRANSITION PLAN - RIGHT PARAPET

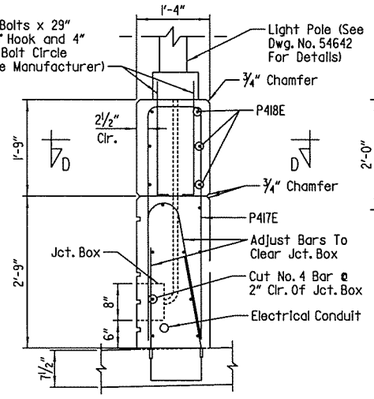
(At Light Blister location near Finger Joint)
Scale: 1" = 1'-0"



* Width varies from 10" To 1'-4"

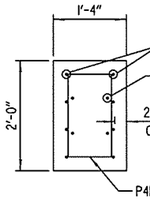
SECTION B-B

Scale: ¾" = 1'-0"



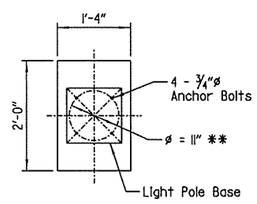
SECTION C-C

Scale: ¾" = 1'-0"



SECTION D-D

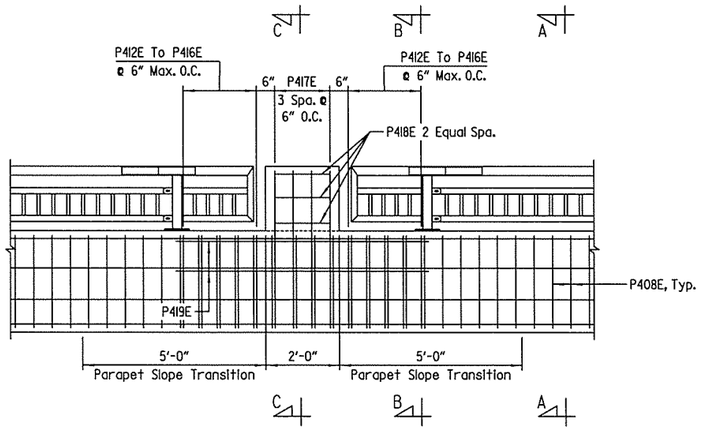
Scale: ¾" = 1'-0"



LIGHT POLE PEDESTAL PLAN

Scale: ¾" = 1'-0"

** Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.



PARAPET TRANSITION ELEVATION - RIGHT PARPAET

Scale: ½" = 1'-0"

Notes:

For Architectural Finish Elevation Details, see Dwg. No. 54360.
For Railing Detail, see Dwg. No. 54357.
For Section A-A, see Dwg. No. 54452.
Protect threads in couplers until right parapet is constructed.

The threaded dowel and coupler assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars (P510E and P511E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

P510E and P511E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

SHEET 3 OF 4
DETAILS OF TIED ARCH UNIT -
PARAPET DETAILS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 15778
NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: DAL DATE: AUG. 13 FILENAME: B061275xl S110.DGN
CHECKED BY: JAM DATE: AUG. 13 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: AUG. 13

BRIDGE NO. 07292 DRAWING NO. 54453

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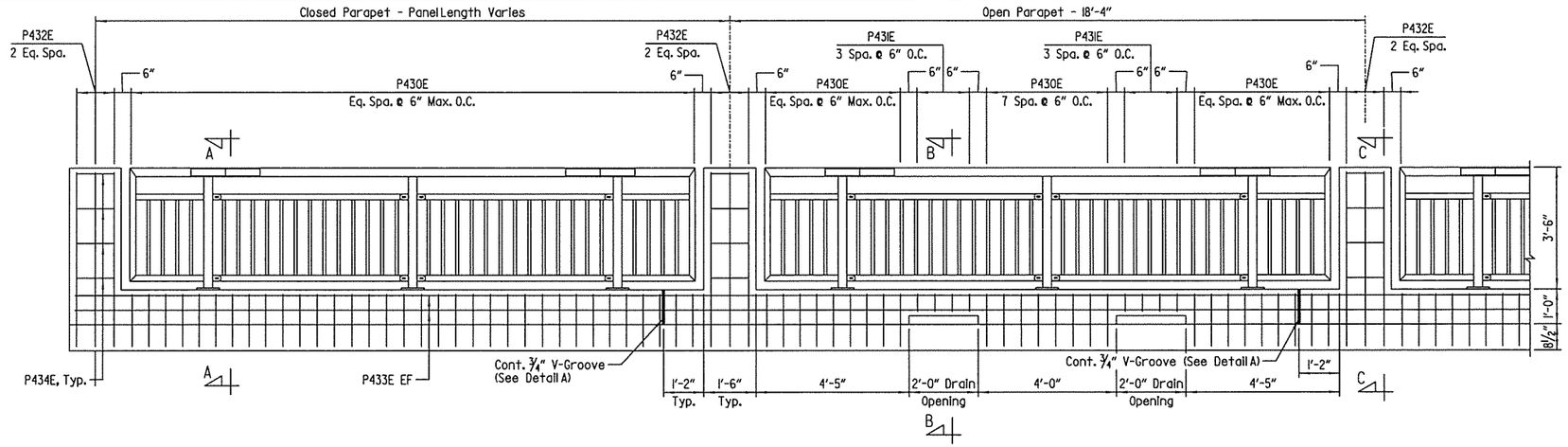
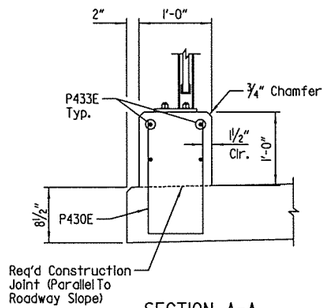


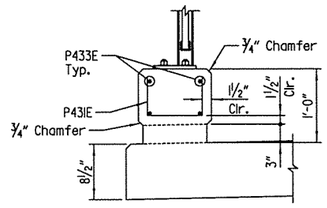
PEDESTRIAN PARAPET RAIL ELEVATION

Scale: ½" = 1'-0"



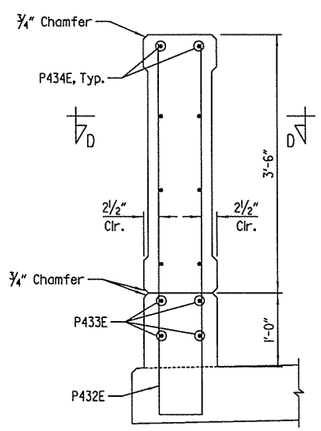
SECTION A-A

Scale: 1" = 1'-0"



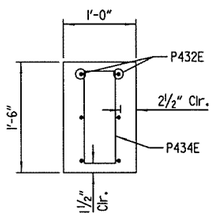
SECTION B-B

Scale: 1" = 1'-0"



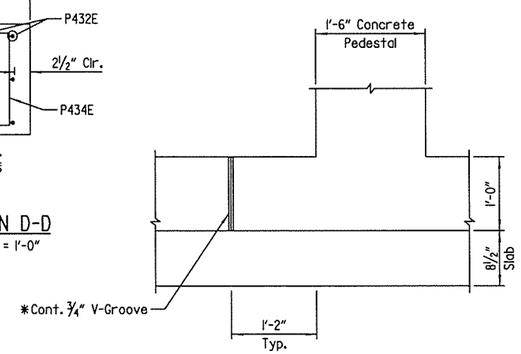
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

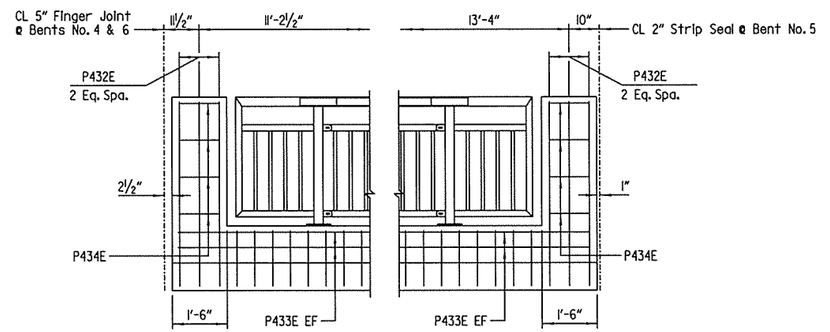
Scale: 1" = 1'-0"



DETAIL A

Scale: 1" = 1'-0"

* NOTE:
¾" V-Groove shall be continous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.



PEDESTRIAN PARAPET RAIL ELEVATION - AT EXPANSION JOINTS

Scale: ½" = 1'-0"

Notes:
For Pedestal Enhancement Detail, see Dwg. No. 54360.
For Railing Detail, see Dwg. No. 54359.

SHEET 4 OF 4
DETAILS OF TIED ARCH UNIT -
PARAPET DETAILS
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: DAL DATE: AUG. 13 FILENAME: B061275xlSIII.DGN
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DESIGNED BY: KDG DATE: AUG. 13
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REVISED DATE:

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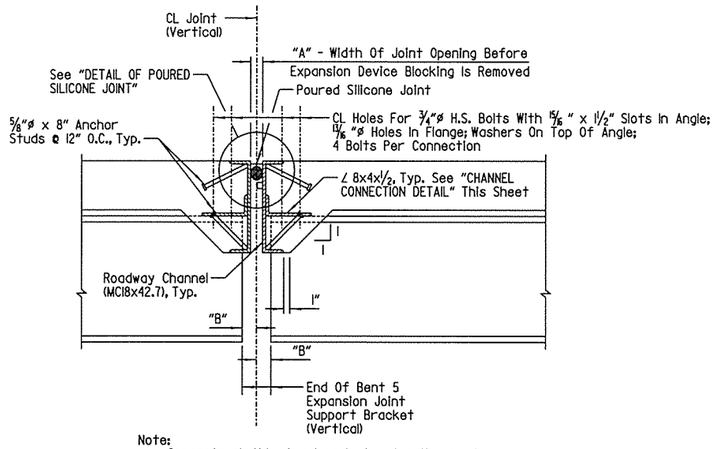
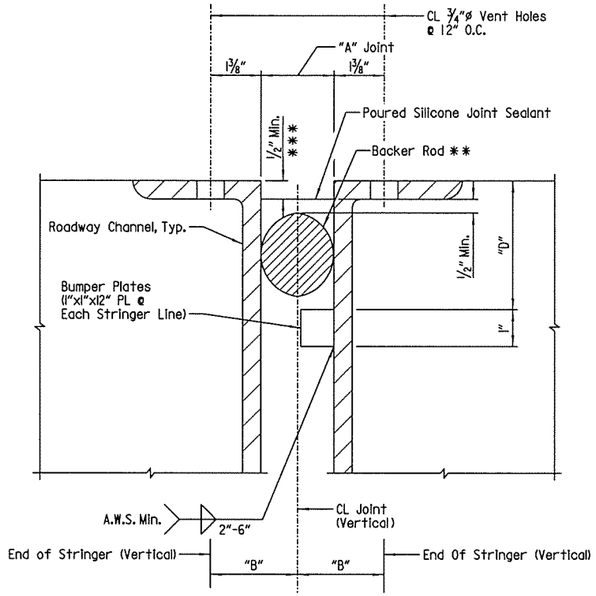


Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

SECTION THRU SILICONE JOINT

Note: Section Taken Normal To CL Joint
No Scale

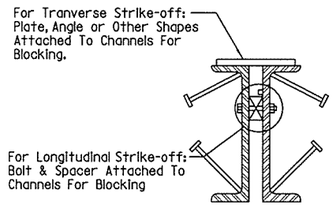


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

No Scale

One of two different blocking systems is required depending on the type of span finishing machine that is used.



Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. The blocking shall not be removed until the slab on one side of the joint is composite. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

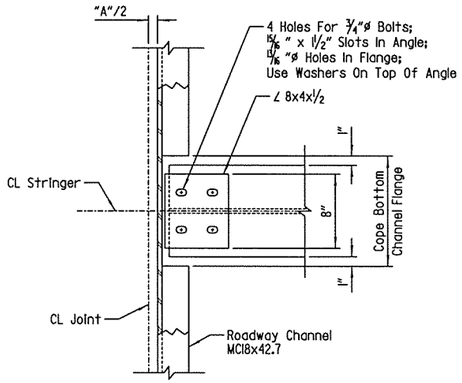
No Scale

SILICONE JOINT DATA					
"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2"	2"	2"	2 1/4"±	4 1/2"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

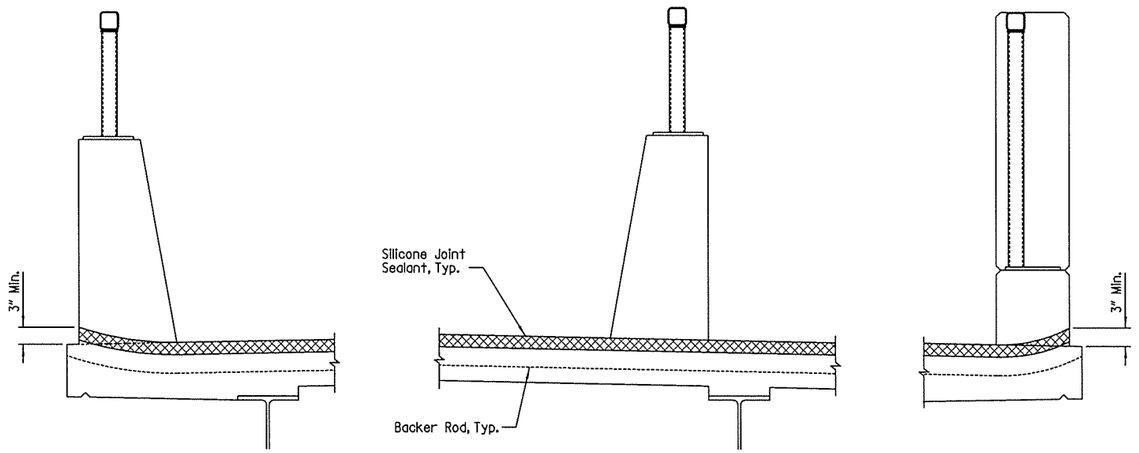
Notes:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

** Backer Rod Notes:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.
Except as noted, do not install more backer rod than can be sealed in the same day.
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



CHANNEL CONNECTION DETAIL

No Scale



JOINT SEAL PLACEMENT AT CURB

No Scale

Notes:
All structural steel shall be AASHTO M270 Grade 50. Steel completely embedded in concrete need not be painted.
All structural steel shall be paid for as "STRUCTURAL STEEL IN ARCH SPANS (M270, Gr. 50)".
For Bent 5 Expansion Joint Support Bracket Details, see Dwg. Nos. 54445 and 54446.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS

5-29-14
BRIDGE ENGINEER

DETAILS OF EXPANSION JOINT - BENT NO. 5
BROADWAY BRIDGE
OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JBT DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: JUL. 2013

BRIDGE NO. 07292 DRAWING NO. 54455

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REVISED DATE:

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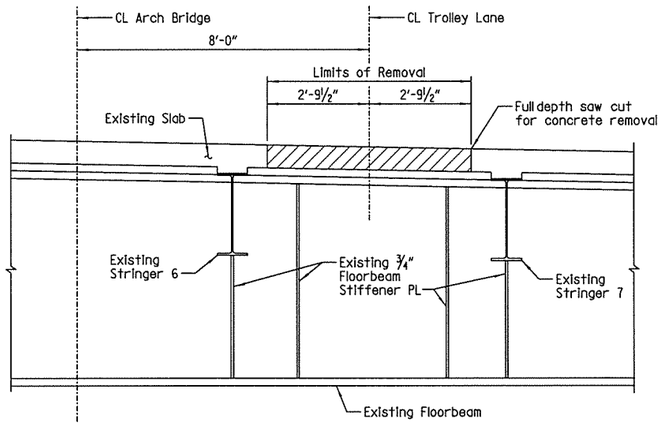
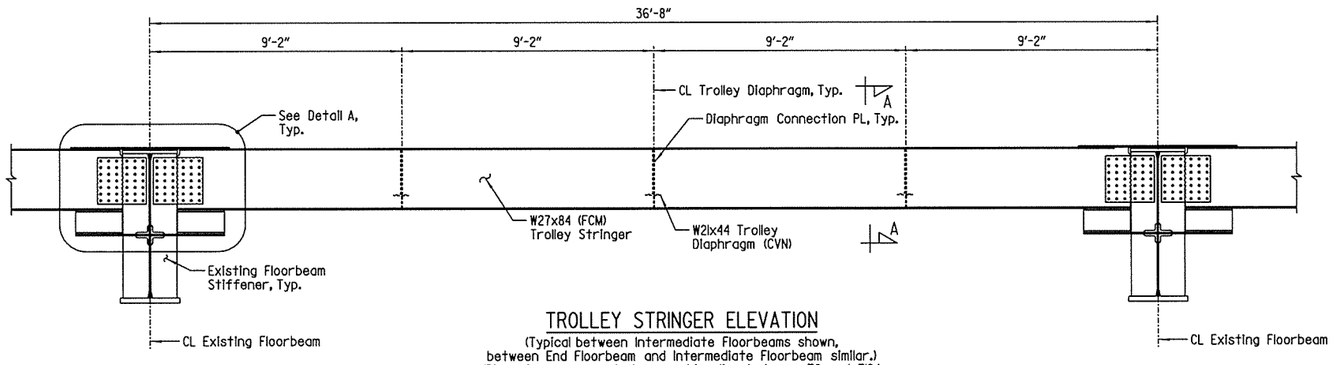


Removal Notes:
Remove slab to the limits shown.
Remove diaphragm between stringers 6 and 7.
Remove shear studs from top flange of floorbeam as needed to clear rail.

REMOVAL LIMITS

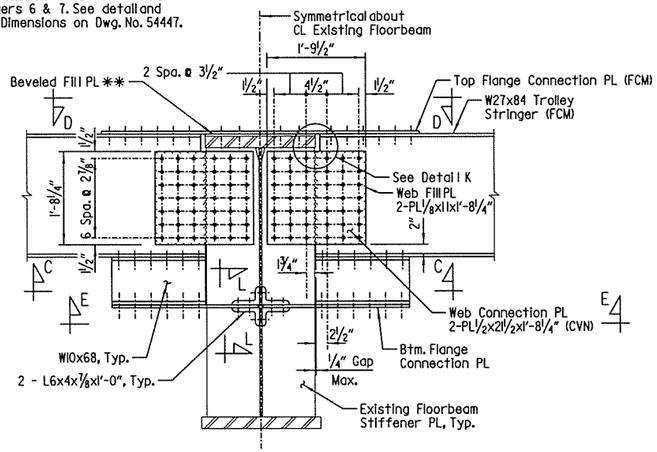
Scale: ½" = 1'-0"



TROLLEY STRINGER ELEVATION

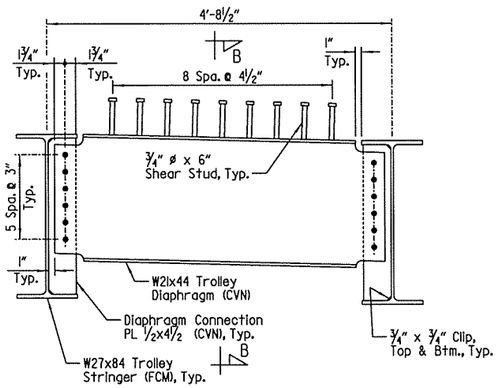
(Typical between intermediate Floorbeams shown, between End Floorbeam and Intermediate Floorbeam similar.)
(Dimensions measured along working line between T0 and T12.)
Scale: ⅜"=1'-0"

** Match dimensions of Beveled Fill PL at stringers 6 & 7. See detail and Table of Dimensions on Dwg. No. 54447.



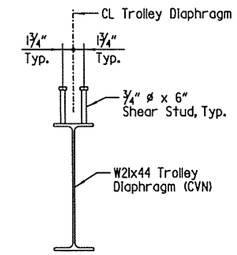
DETAIL A*

Scale: ¾" = 1'-0"



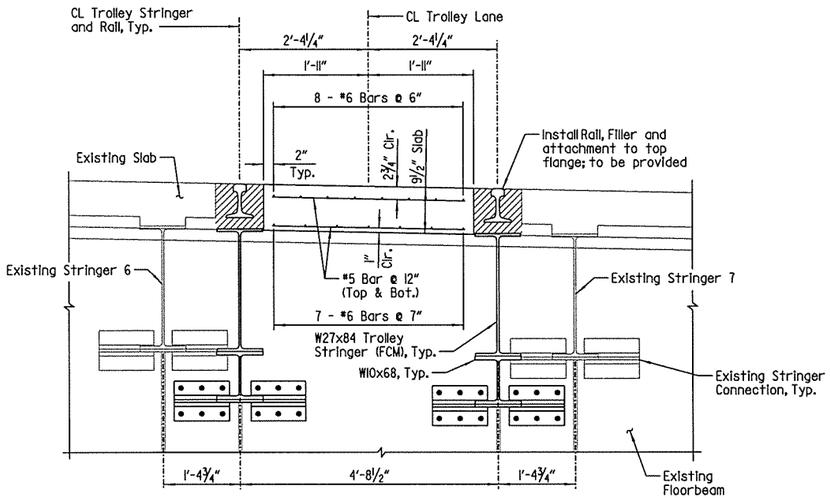
SECTION A-A

Scale: 1" = 1'-0"



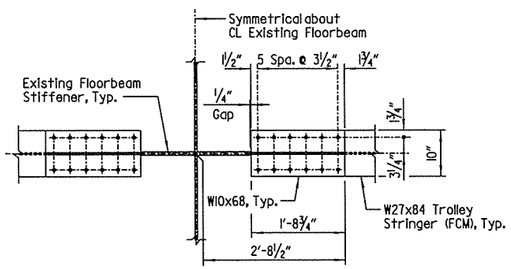
SECTION B-B

Scale: 1" = 1'-0"



TYPICAL SECTION

Scale: ¾" = 1'-0"



SECTION C-C

Scale: ¾" = 1'-0"

FUTURE TROLLEY MODIFICATIONS:
All information shown on this sheet is not included as part of this contract.
See Arch General Notes for additional information.

* Intermediate Floorbeam connection shown. For End Floorbeam at Bent 5, see Detail B on Dwg. No. 54446 and add a W10x68 between stringer bottom flange and btm. flange connection PL, similar to Detail A on this sheet. For End Floorbeams at Bents 4 and 6, see Detail C on Dwg. No. 54446 and increase the web height of the expansion jt. support bracket to clear existing connections.

Notes:
For Sections D-D & E-E, View L-L and Detail K, see Dwg. No. 54446.
Field drill all holes in existing floorbeams and stiffeners.
All structural steel shall conform to AASHTO M270, Gr. 50.
Steel designated as (FCM) shall meet the fracture critical material testing requirements specified in the Arch General Notes.
Steel designated as (CVN) shall meet the Charpy V-Notch material testing requirements specified in the Arch General Notes.
All bolts shall be ⅞" ø High Strength Bolts in 15/16" ø holes.

FUTURE TROLLEY MODIFICATIONS - TIED ARCH UNIT BROADWAY BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 15778 NATALIE MCCOMBS
5-29-14
BRIDGE ENGINEER

DRAWN BY: SWS DATE: MAY 2014 FILENAME: B061275xlSII3.DGN
CHECKED BY: JMB DATE: MAY 2014 SCALE: AS SHOWN
DESIGNED BY: KDG DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54456

wgregory 5/29/2014 2:38:08 PM
\\ORKSPACE\ \\WORKSPACE\\
N:\STAGE\Bridges\Broadway\Plans\Drawings\ZPLOT_B120.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	252	505
				(1) 07292		426'-0" PL GIRDER UNIT		54474

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to mee slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) Measured to theoretical top of roadway surface. See "ROUNDING DETAIL".

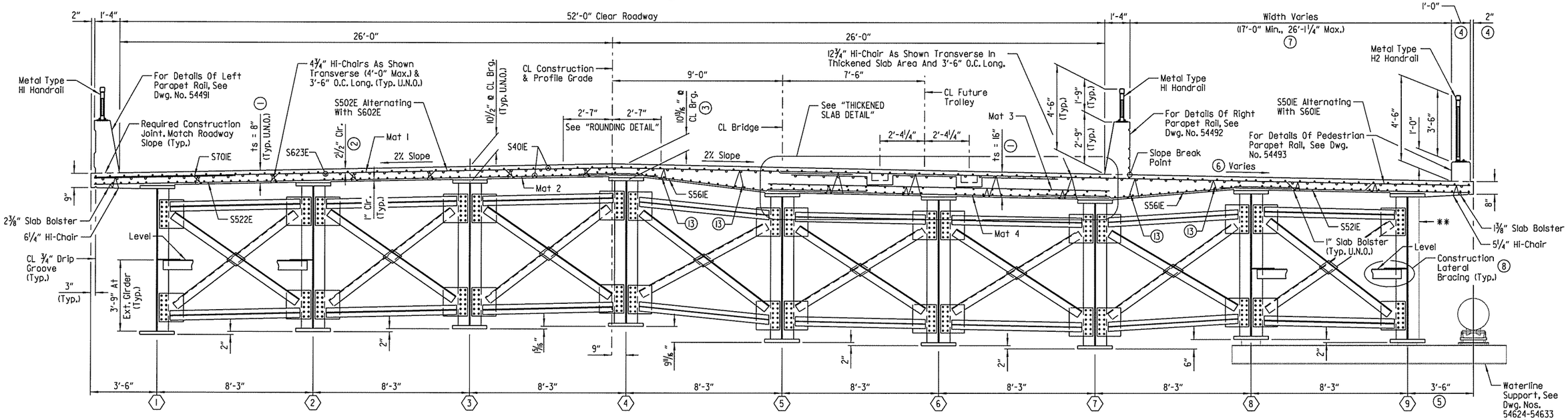
(4) Measured perpendicular or radial to right edge of deck. See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 54477 for limits of pedestrian parapet rail.

(5) See Dwg. Nos. 54485-54488 for details and limits of support members under extended overhang. See "DETAIL B" on Dwg. No. 54479 for additional reinforcement in extended overhang.

(6) For cross slope transition details, see "DECK TRANSITION - SPAN 7" on Dwg. No. 54485.

(7) Width varies near North Shared Use Ramp connection. See "DECK TRANSITION - SPAN 7" on Dwg. No. 54485.

(8) See "PART FRAMING PLAN" on Dwg. Nos. 54480 & 54481 for locations.

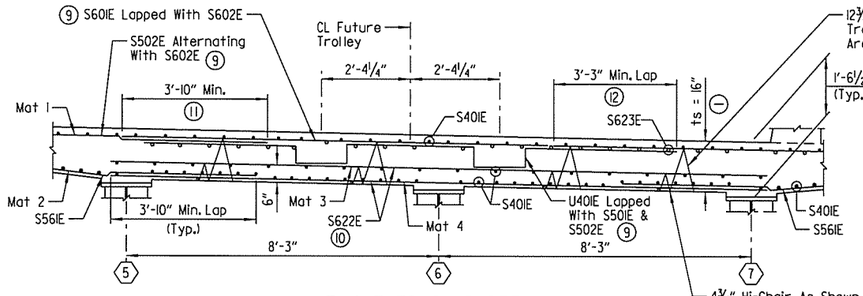


TYPICAL ROADWAY SECTION

Looking Forward
Scale: 3/8" = 1'-0"

** Additional stiffener required at waterline support locations period, See Dwg. No. 54480 for details.

NOTE:
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only. For details of Class 3 Textured Coating Finish to be applied to parapet rail surfaces in accordance with SP JOB 061275 "TEXTURED COATING FINISH".



THICKENED SLAB DETAIL

1/2" = 1'-0"

(9) See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. Nos. 54476 & 54477 for Mat 1 transverse bar designations.

(10) Center over Girder 6 as shown.

(11) Minimum lap shown for S602E lapped with S601E (left side only)

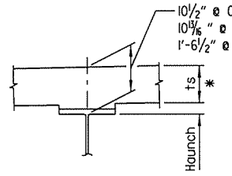
(12) Minimum lap shown for S501E & S502E lapped with U40IE (typ. both sides)

(13) Height of hi-chairs in slab transition areas shall be set as necessary to maintain 2 1/2" clear cover to top transverse bars. Space as shown transverse (4'-0" max.) & 3'-6" O.C. long.

SLAB REINFORCING:

Transverse: S501E (bent up over girders) lapped with U40IE lapped with S502E (bent up over girders) @ 14" O.C. - Mat 1 — Alternate
S601E lapped with S602E @ 14" O.C. - Mat 1
S521E lapped with S561E @ 14" O.C. - Mat 2
S561E lapped with S522E @ 14" O.C. - Mat 2
S70IE in left overhang spa. with S602E - Mat 1
S622E @ 7" O.C. - Mats 3 & 4

Longitudinal: S40IE as shown in "TYPICAL ROADWAY SECTION" & "THICKENED SLAB DETAIL" - Mats 1, 2, 3 & 4
S623E as shown over Int. support - Mat 1



Note: t_s = Slab Thickness as shown on "TYPICAL ROADWAY SECTION".

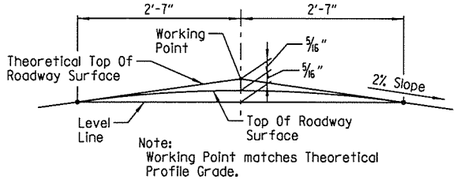
* Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 3/4". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



Note: Working Point matches Theoretical Profile Grade.

ROUNDING DETAIL

No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

NOTE:
For "TYPICAL SECTION THRU JOINT AT BENT 6 AH." & "TYPICAL SECTION THRU JOINT AT BENT 8", see Dwg. No. 54475.

For "BAR LIST", see Dwg. No. 54354.

For "GENERAL NOTES", see Dwg. No. 54489.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVEN R. YANCEY
BRIDGE ENGINEER

SHEET 1 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

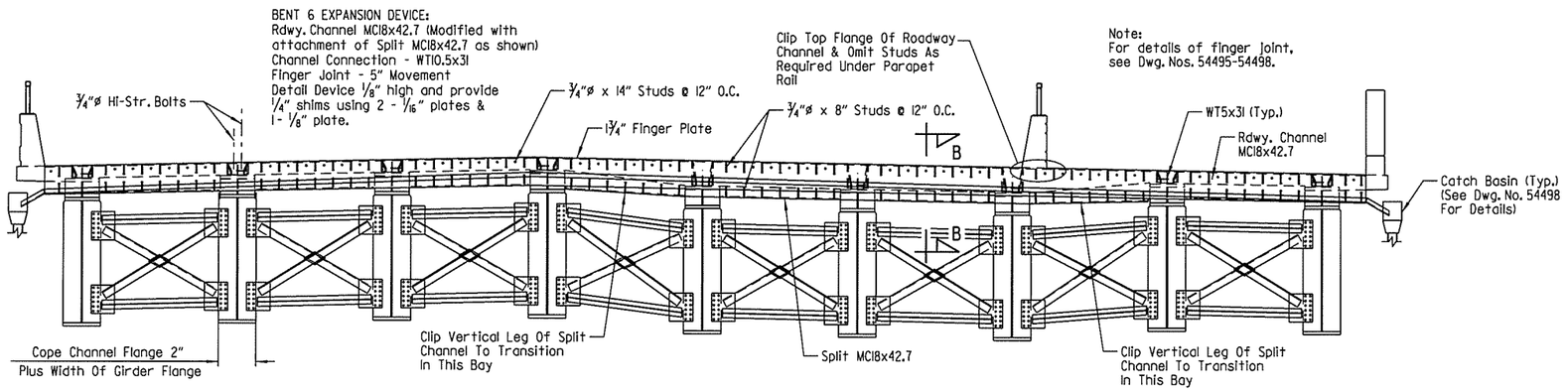
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275x1_S114.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54474

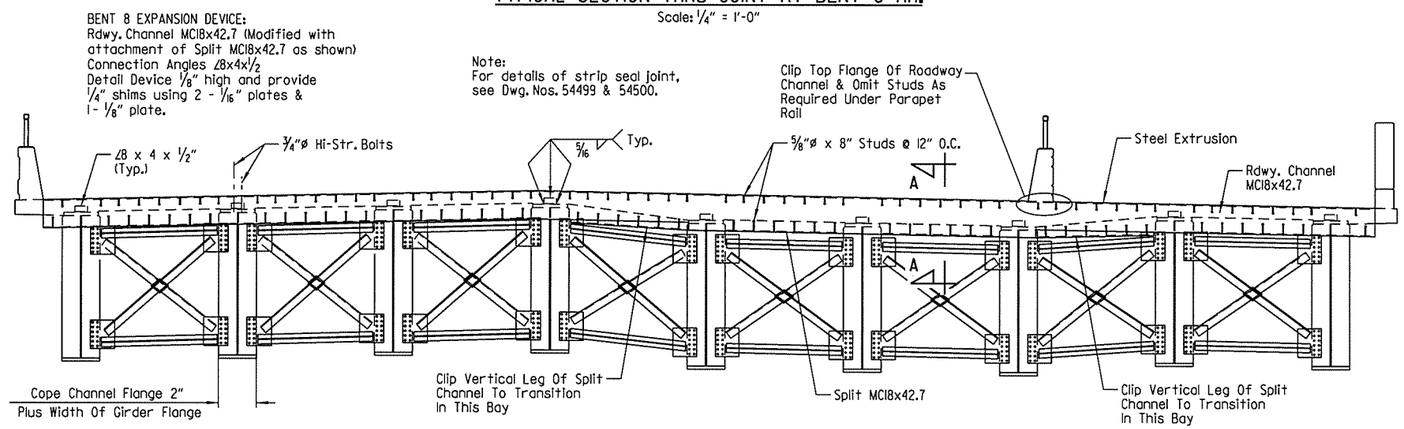
REVISED DATE:
SRYancey 5/29/2014 4:36:31PM
WORKSPACE: AHTD Bridge
L:\ZDW\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S133 (Spans 6 & 7 Typ Section).dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	253	505
				(1) 07292		426'-0" PL GIRDER UNIT		54475



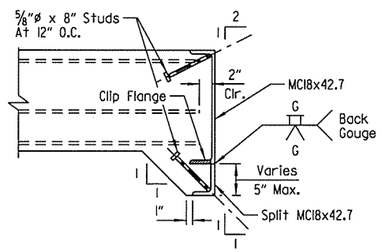
TYPICAL SECTION THRU JOINT AT BENT 6 AH.

Scale: 1/4" = 1'-0"



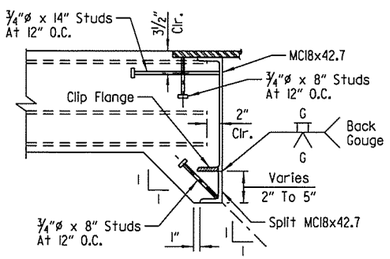
TYPICAL SECTION THRU JOINT AT BENT 8

Scale: 1/4" = 1'-0"



SECTION A-A

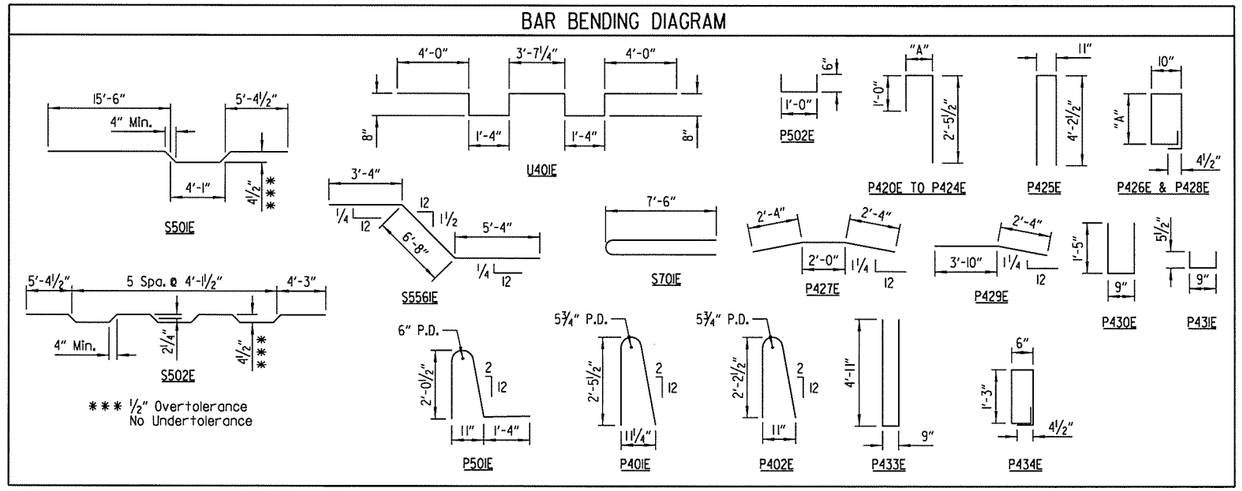
Scale: 1" = 1'-0"



SECTION B-B

Scale: 1" = 1'-0"

BAR BENDING DIAGRAM



BAR LIST			
MARK	NO. REQ'D	LENGTH	P.D.
S401E	3096	38'-0"	Str.
S501E	300	25'-6"	3"
S502E	365	40'-11"	3"
S503E To S512E	2 Each	25'-1" To 27'-3"	Str.
S513E To S520E	2 Each	27'-9" To 33'-4"	Str.
S521E	299	13'-3"	Str.
S522E	364	29'-9"	Str.
S523E To S532E	2 Each	25'-1" To 27'-3"	Str.
S533E To S540E	2 Each	27'-9" To 33'-4"	Str.
S541E	29	33'-1"	Str.
S542E To S551E	2 Each	13'-3" To 15'-8"	Str.
S552E To S559E	2 Each	16'-2" To 21'-10"	Str.
S560E	29	21'-2"	Str.
S561E	728	15'-4"	3"
S562E To S577E	4 Each	22'-8" To 39'-4"	Str.
S578E	29	33'-1"	Str.
S601E	300	36'-6"	Str.
S602E	365	40'-2"	Str.
S603E To S612E	2 Each	36'-6" To 38'-11"	Str.
S613E To S620E	2 Each	39'-5" To 45'-0"	Str.
S621E	29	44'-5"	Str.
S622E	1458	18'-0"	Str.
S623E	264	47'-6"	Str.
S701E	364	15'-4"	5 1/4"
U401E	365	16'-3"	3"

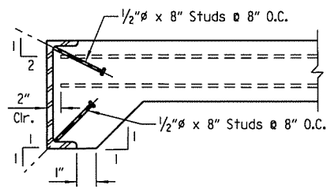
BAR LIST				
MARK	NO. REQ'D	LENGTH	"A"	P.D.
P401E	1578	5'-4"		5 3/4"
P402E	128	4'-9 1/2"		5 3/4"
P403E	56	5'-8"		Str.
P404E	28	11'-0"		Str.
P405E	14	13'-0"		Str.
P406E	14	15'-0"		Str.
P407E	308	16'-6"		Str.
P420E To P424E	11 Each	4'-0 1/2" To 4'-3"	9" To 11 1/2"	2"
P425E	28	9'-2"		2"
P426E	15	4'-10"	1'-5"	2"
P427E	10	6'-8"		2"
P428E	3	8'-10"	3'-5"	2"
P429E	2	6'-2"		2"
P430E	661	3'-3"		2"
P431E	48	1'-6"		2"
P432E	78	10'-3"		2"
P433E	48	36'-4"		Str.
P434E	104	3'-10"		2"
P501E	804	5'-9 1/2"		6"
* P502E	766	1'-9"		3 1/4"
** P503E	1532	2'-0"		Str.

* Threaded Bar with Mechanical Couplers

** Threaded Bar

NOTES:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.



DETAIL OF ALTERNATE ANCHORS

No Scale

Note:
As an alternate to 5/8"ø studs, 1/2"ø x 8" studs spaced as shown may be used at Bent 8. Use weight of 5/8"ø stud as basis of measurement of structural steel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 2 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

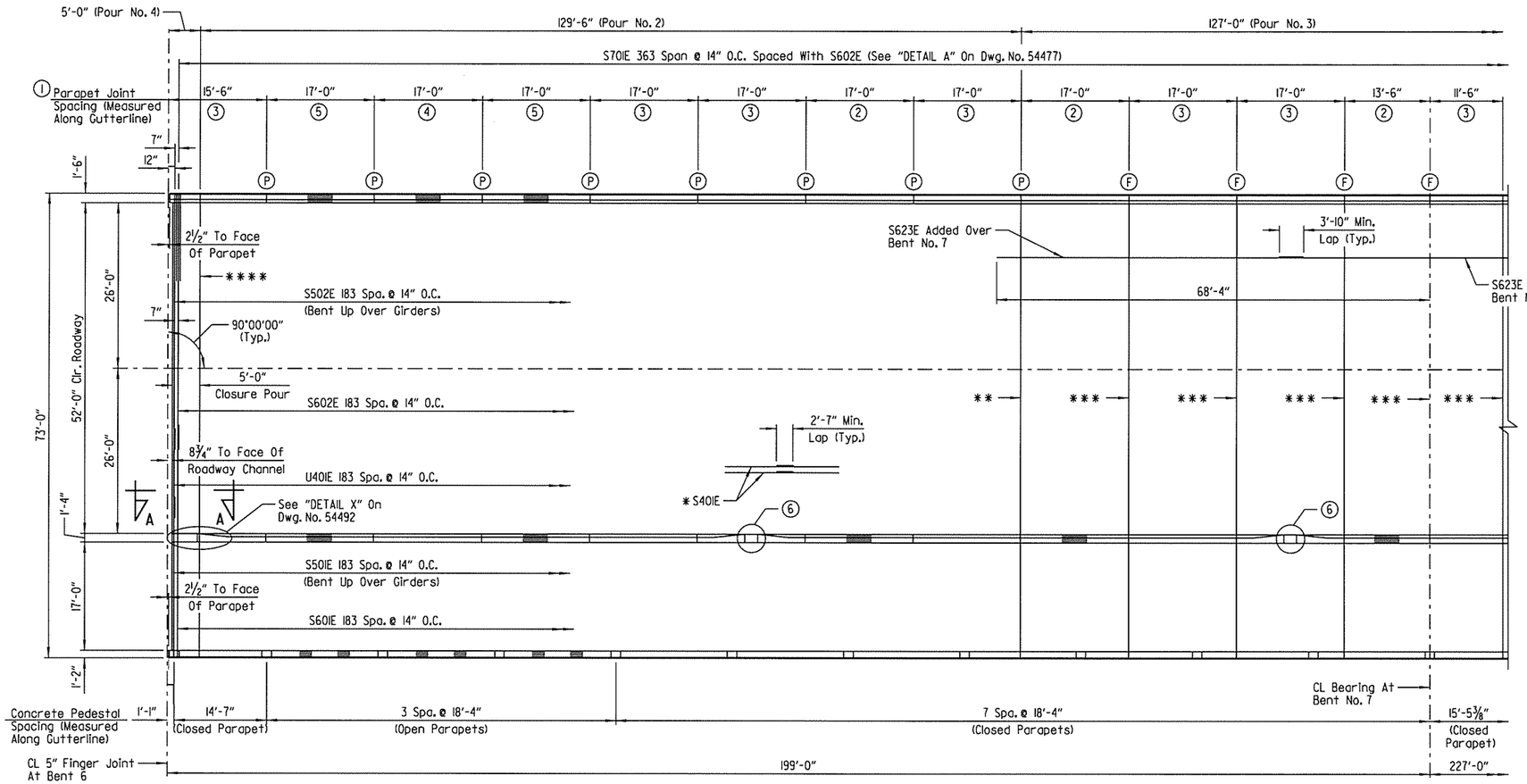
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275x1_SI15.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54475

SRYancey 5/29/2014 4:36:32 PM
WORKSPACE: AHTD Bridge
L:\I2DINIOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI34 (Spans 6 & 7 Typ Section2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	254	505
				(1) 07292		426'-0" PL GIRDER UNIT		54476

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.



* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 54474 for placement

** Pouring Sequence Construction Joint

*** Required Slab Joint

**** Pouring Sequence Construction Joint, Closure Pours at the finger joints shall be made after all incremental pours on the unit have been placed. 48 hours shall elapse between the last incremental pour and the closure pours.

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

(2) Closed Left Parapet Rail
Open Right Parapet Rail

(3) Closed Left Parapet Rail
Closed Right Parapet Rail

(4) Open Left Parapet Rail
Closed Right Parapet Rail

(5) Open Left Parapet Rail
Open Right Parapet Rail

(6) Light Pole Pedestal (See Dwg. No. 54492 For Parapet Transition Details And see Dwg. No. 54642 for Light Pole Details)

NOTE:
For "BAR LIST" & "BAR BENDING DIAGRAM" See Dwg. No. 54475.

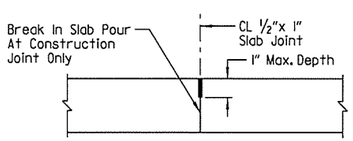
REINFORCING PLAN & POURING SEQUENCE

(Mat No. 1)
Scale: 1/12" = 1'-0"

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet and pedestrian parapet rail. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

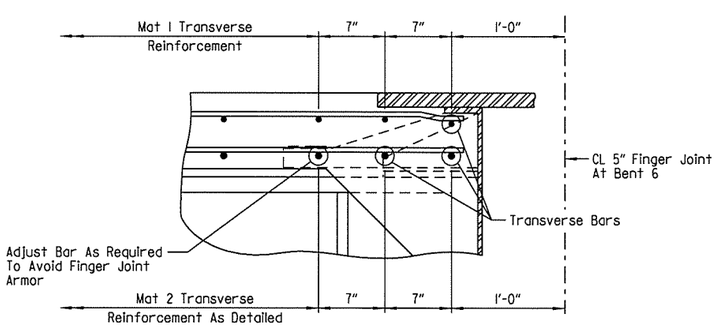
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

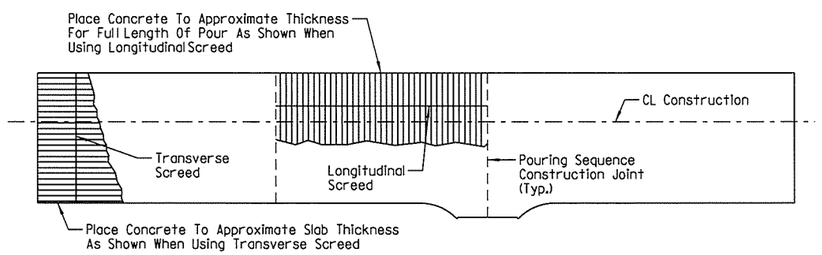
SLAB JOINT DETAIL

No Scale



SECTION A-A

Scale: 1½" = 1'-0"



CONCRETE PLACEMENT PROCEDURE

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 3 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APRIL 2013 FILENAME: B061275x1_SI16.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APRIL 2013

BRIDGE NO. 07292 DRAWING NO. 54476

SRYancey 5/29/2014 4:36:33 PM
WORKSPACE: AHTD Bridge
L:\20IN\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1.SI35 (Spans 6 & 7 Slab - Mat 1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	255	505
				(1) 07292		426'-0" PL GIRDER UNIT		54477

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

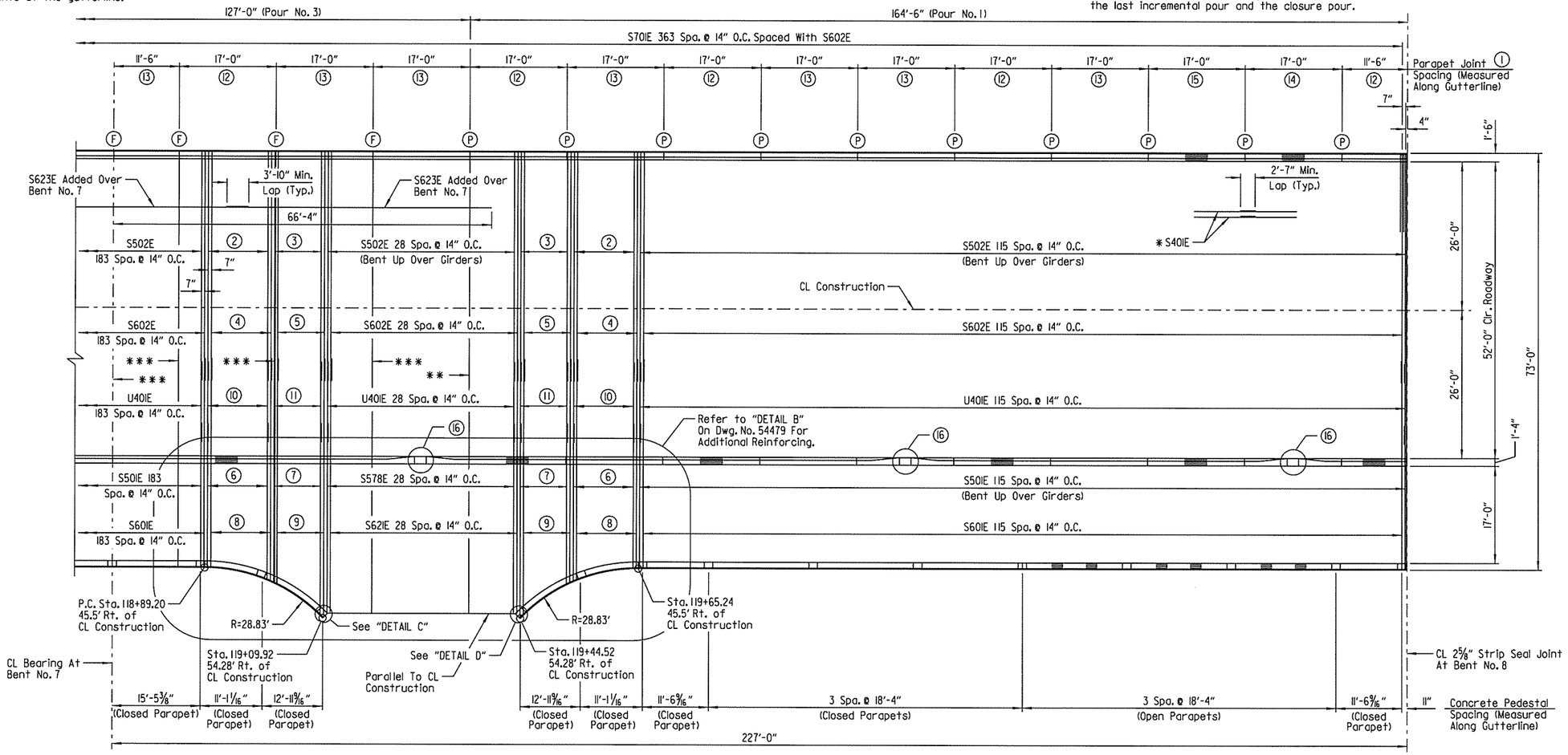
NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 54474 for placement

** Pouring Sequence Construction Joint

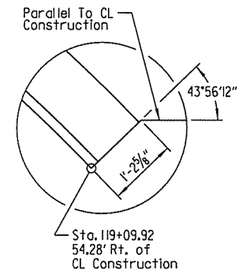
*** Required Slab Joint

**** Closure pour at the finger joint shall be made after all incremental pours on the unit have been placed. 48 hours shall elapse between the last incremental pour and the closure pour.



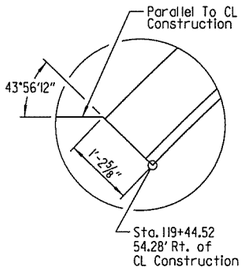
REINFORCING PLAN & POURING SEQUENCE

(Mat No. 1)
Scale: 1/32 " = 1'-0"



DETAIL C

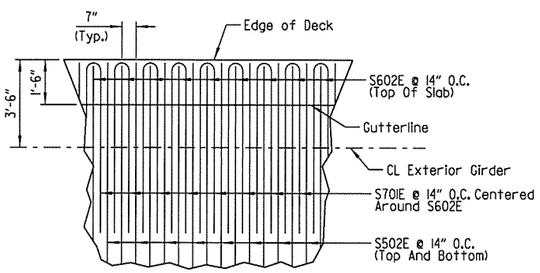
Scale: 3/4" = 1'-0"



DETAIL D

Scale: 3/4" = 1'-0"

NOTE:
For "BAR LIST" & "BAR BENDING DIAGRAM" See Dwg. No. 54475.



DETAIL A

No Scale

(2) S502E 9 Spa. @ 14" O.C. (Bent Up Over Girders)
(3) S502E 7 Spa. @ 14" O.C. (Bent Up Over Girders)
(4) S602E 9 Spa. @ 14" O.C.
(5) S602E 7 Spa. @ 14" O.C.
(6) S503E To S512E 9 Spa. @ 14" O.C.
(7) S513E To S520E 7 Spa. @ 14" O.C.
(8) S603E To S612E 9 Spa. @ 14" O.C.
(9) S613E To S620E 7 Spa. @ 14" O.C.
(10) U401E 9 Spa. @ 14" O.C.
(11) U401E 7 Spa. @ 14" O.C.
(12) Closed Left Parapet Rail Open Right Parapet Rail
(13) Closed Left Parapet Rail Closed Right Parapet Rail
(14) Open Left Parapet Rail Closed Right Parapet Rail
(15) Open Left Parapet Rail Open Right Parapet Rail
(16) Light Support Pedestal (See Dwg. No. 54492 For Parapet Transition Details And see Dwg. No. 54642 for Light Pole Details)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SEAN R. YANCEY
5-30-14
BRIDGE ENGINEER

SHEET 4 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

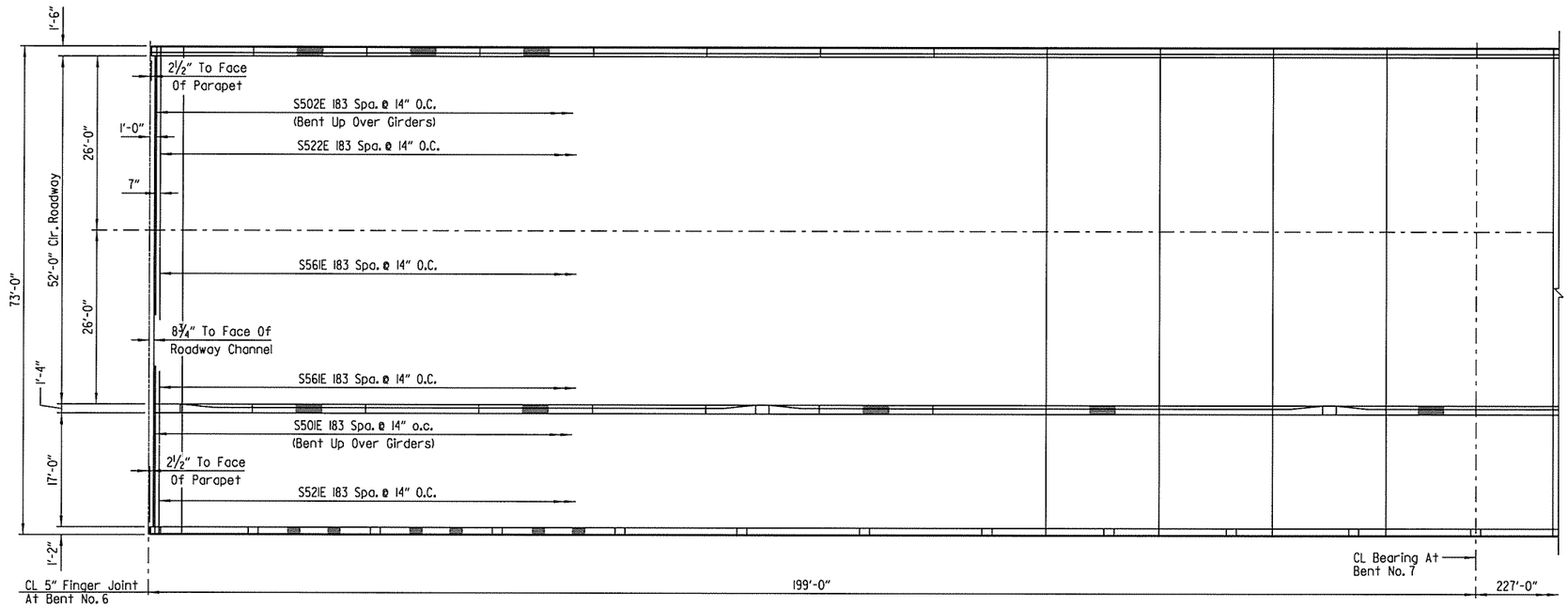
DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x1_SI17.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013

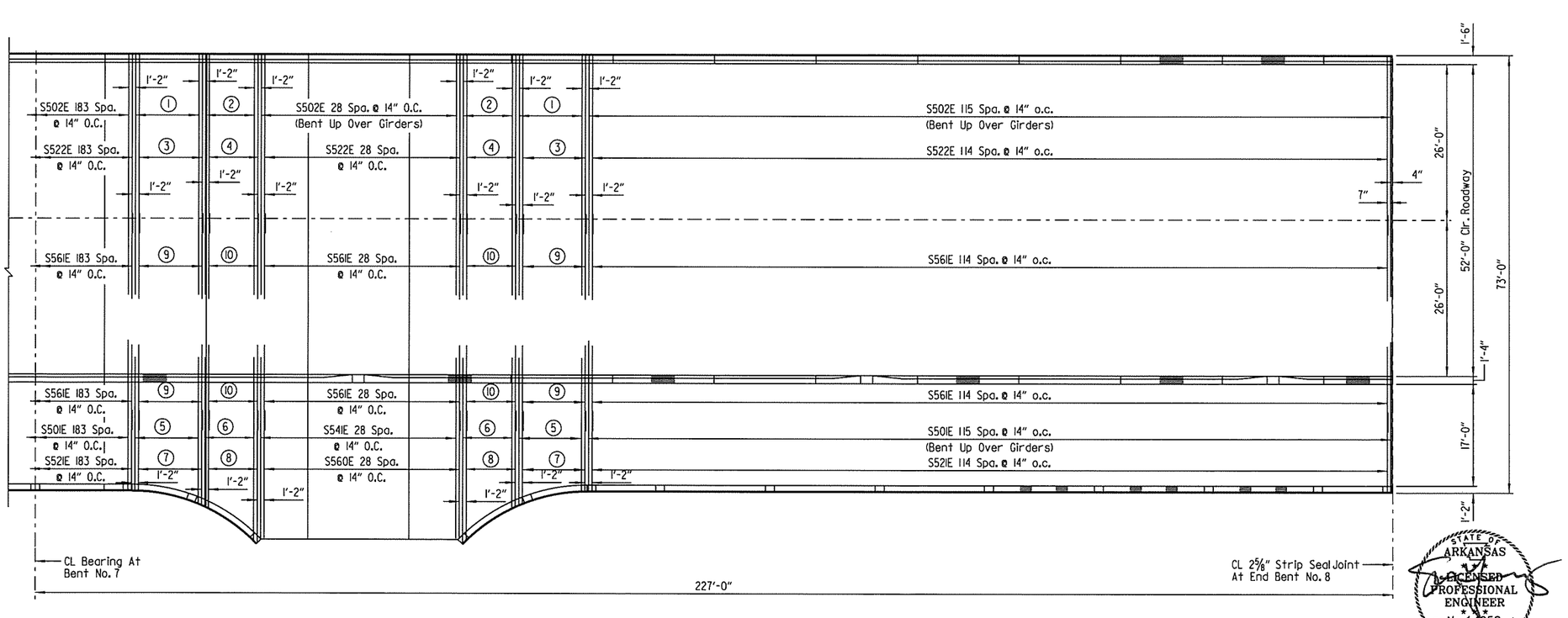
BRIDGE NO. 07292 DRAWING NO. 54477

SRYancey 5/29/2014 4:36:33 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOBD - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI36 (Spans 6 & 7 Slab 2 - Mat 1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	256	505
① 07292		426'-0" PL GIRDER UNIT		54478





REINFORCING PLAN
(Mat No. 2)
Scale: 3/32 " = 1'-0"

① S502E 9 Spa. @ 14" O.C. (Bent Up Over Girders)
② S502E 7 Spa. @ 14" O.C. (Bent Up Over Girders)
③ S522E 9 Spa. @ 14" O.C.
④ S522E 7 Spa. @ 14" O.C.
⑤ S523E To S532E 9 Spa. @ 14" O.C.
⑥ S533E To S540E 7 Spa. @ 14" O.C.
⑦ S542E To S551E 9 Spa. @ 14" O.C.
⑧ S552E To S559E 7 Spa. @ 14" O.C.
⑨ S561E 9 Spa. @ 14" O.C.
⑩ S561E 7 Spa. @ 14" O.C.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 5 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

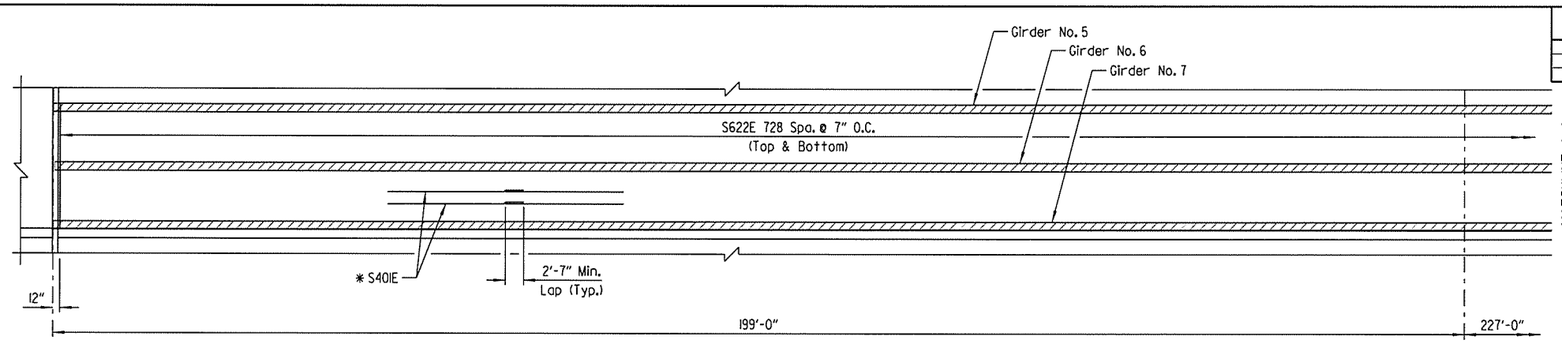
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

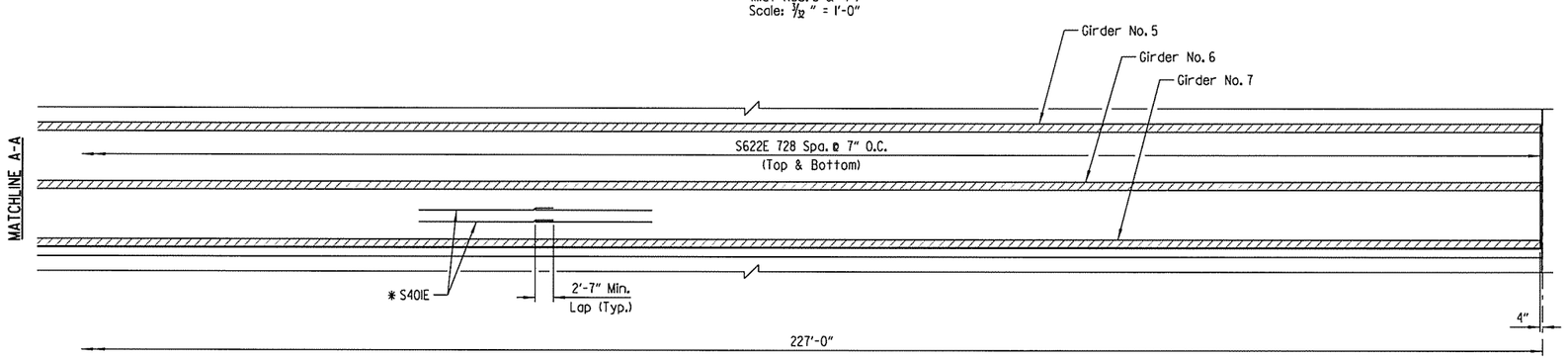
DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_SI18.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APRIL 2013
BRIDGE NO. 07292 DRAWING NO. 54478

SRYancey 5/29/2014 4:36:34 PM
WORKSPACE: AHTD Bridge
L:\ZDM\M07080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI37 (Spans 6 & 7 Slab - Mat 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	257	505
				(1) 07292		426'-0" PL GIRDER UNIT		54479

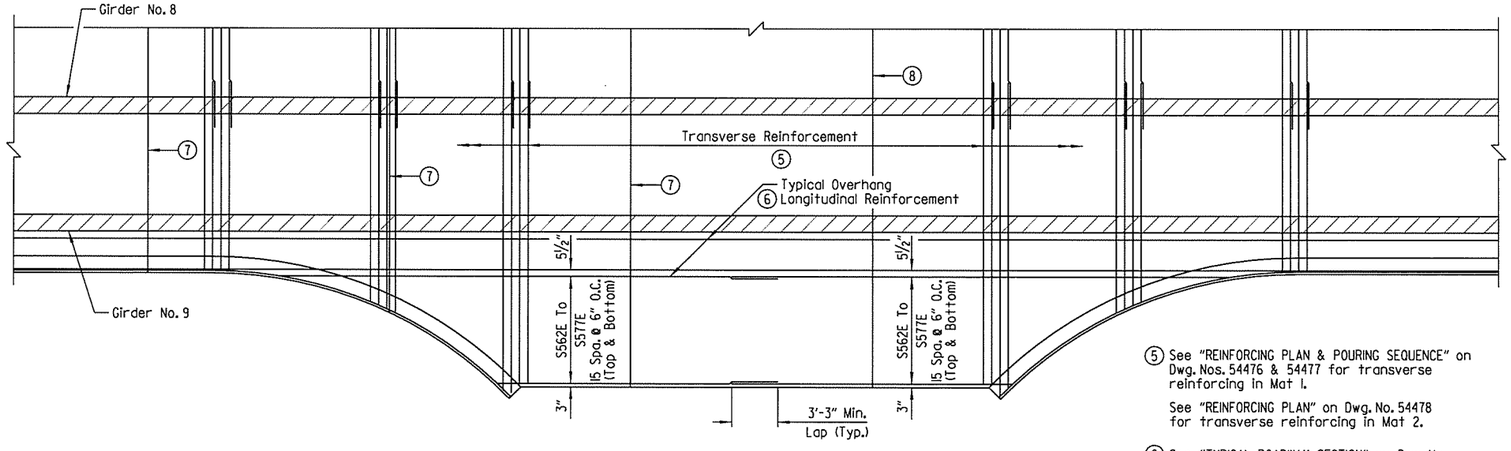


REINFORCING PLAN
(Mat Nos. 3 & 4)
Scale: 1/12" = 1'-0"



REINFORCING PLAN
(Mat Nos. 3 & 4)
Scale: 1/12" = 1'-0"

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 54474 for placement



DETAIL B
Showing Additional Reinforcing At Extended Overhang
Scale: 3/16" = 1'-0"

(5) See "REINFORCING PLAN & POURING SEQUENCE" on Dwg. Nos. 54476 & 54477 for transverse reinforcing in Mat 1.
See "REINFORCING PLAN" on Dwg. No. 54478 for transverse reinforcing in Mat 2.

(6) See "TYPICAL ROADWAY SECTION" on Dwg. No. 54474.

(7) Required Slab Joint

(8) Pouring Sequence Construction Joint

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YATES
BRIDGE ENGINEER

SHEET 6 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x1_SI19.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54479

SRYancey 5/29/2014 4:36:34 PM
WORKSPACE: AHTD Bridge
L:\20IN\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI38 (Spans 6 & 7 Slab - Mat 3 & 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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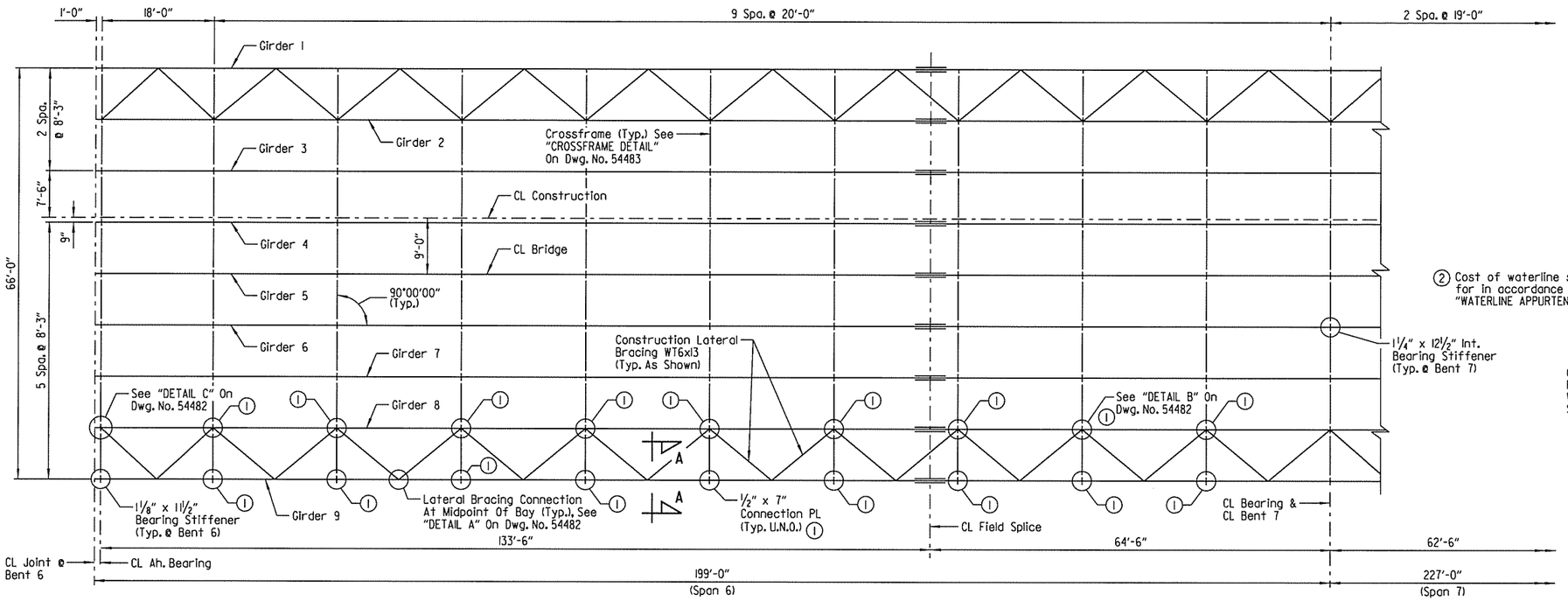
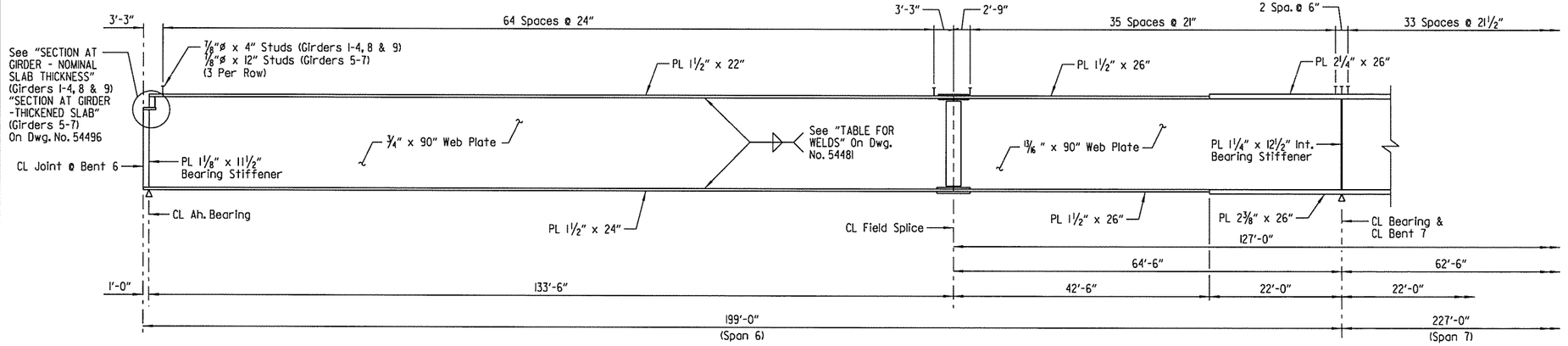
				JOB NO.		061275	258	505
				(1) 07292		426'-0" PL GIRDER UNIT		54480



PART FRAMING PLAN

Scale: 1/32 " = 1'-0"

(1) Additional Stiffener (Girder 9 only) and ⅞"ø holes to be provided in the bottom flange for waterline support connection. See Dwg. Nos. 54624-54633 for waterline support details.



PART GIRDER ELEVATION

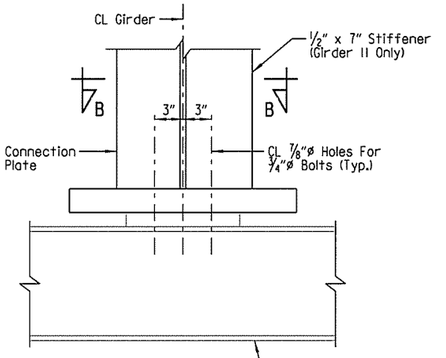
No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

NOTE:
For "CONNECTION PLATE DETAIL" and bearing stiffener details, see Dwg. No. 54483.

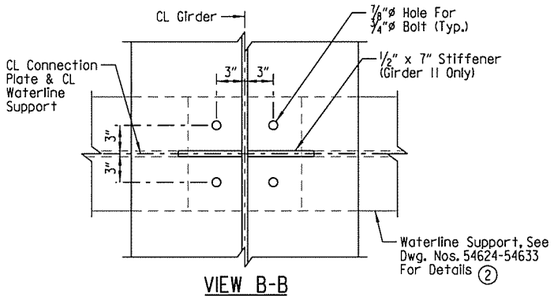
For "GENERAL NOTES", see Dwg. No. 54354.



(2) Cost of waterline support shall be paid for in accordance with SP JOB 061275 "WATERLINE APPURTENANCES".

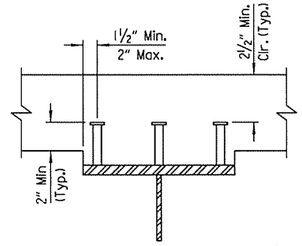
VIEW A-A

No Scale



VIEW B-B

No Scale



Stud shear connectors shown shall be ⅞"ø x 4" long (Girders 1-4, 8 & 9) and ⅞"ø x 12" long (Girders 5-7), granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361- ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 7 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

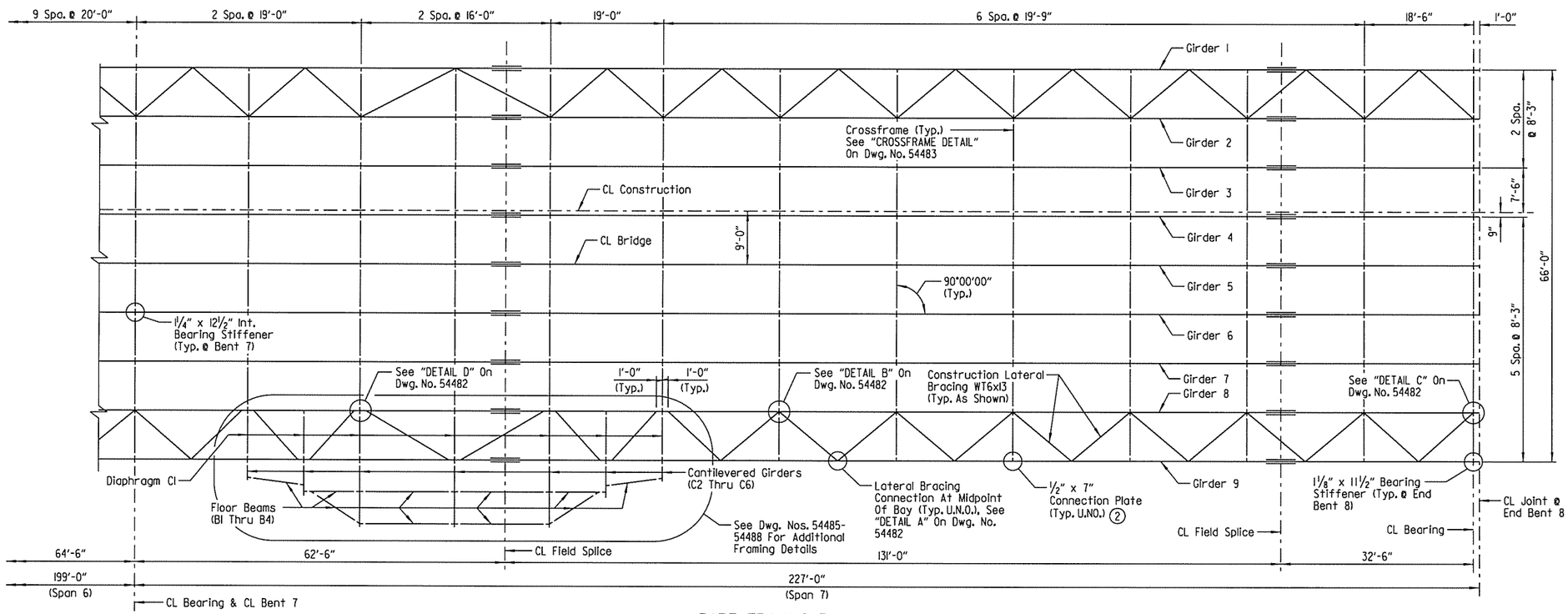
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275xl_SI20.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54480

SRYancey 5/29/2014 4:36:35 PM
WORKSPACE: AHTD Bridge
L:\20II\I0I080 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI39 (Spans 6 & 7 Framing).dgn
REVISED DATE:

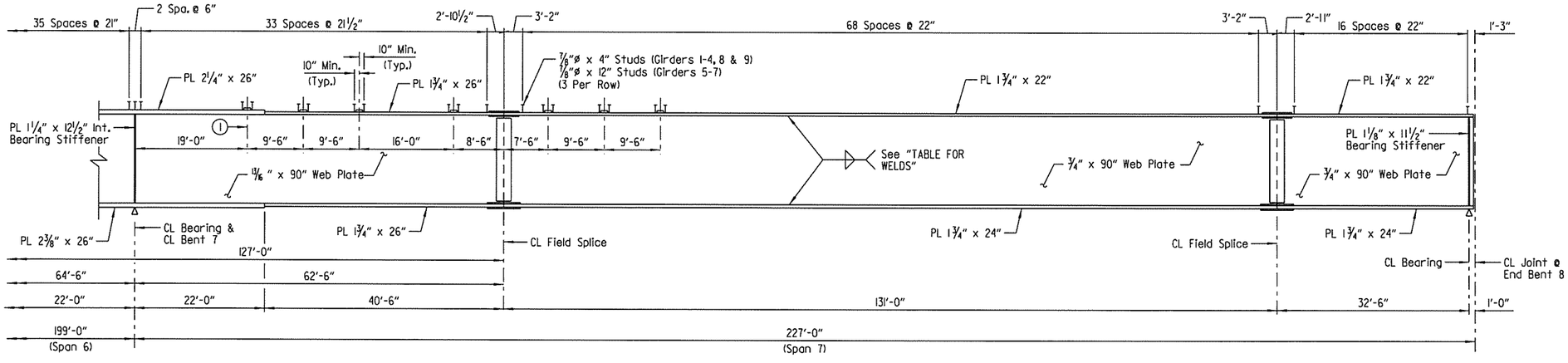
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	259	505
				(1) 07292		426'-0" PL GIRDER UNIT		54481



PART FRAMING PLAN

Scale: 3/32 " = 1'-0"

(2) For connection plate sizes for Diaphragm C1 & cantilevered Girders C2 thru C6, see Dwg. No. 54486.



PART GIRDER ELEVATION

No Scale

NOTE:
For "CONNECTION PLATE DETAIL" and bearing stiffener details, see Dwg. No. 54483.

For "GENERAL NOTES", see Dwg. No. 54354.

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

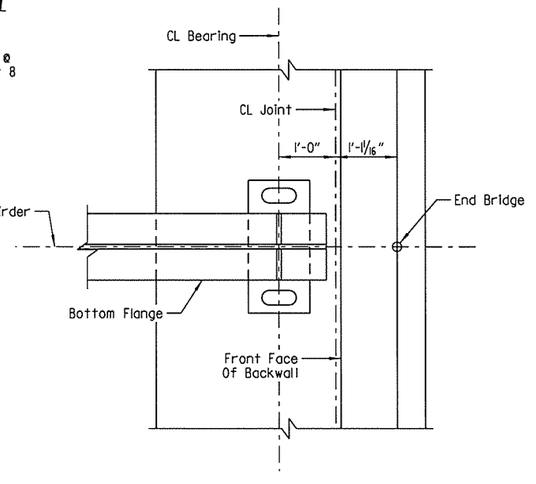
NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

LEGEND

U.N.O. = Unless Noted Otherwise

(1) CL top flange splice plate for cantilevered girder and Diaphragm C1, as detailed on Dwg. No. 54487. Locations shown are for Girder 9 Only. Provide gap in shear studs to clear splice plate at these locations.

For Girder 9 only, bolt holes in girder top flange are required for the cantilevered girder and Diaphragm C1 splice plate connections. See "SPLICE DETAILS" On Dwg. No. 54487.



BEARING PLAN AT END BENT 8

No Scale

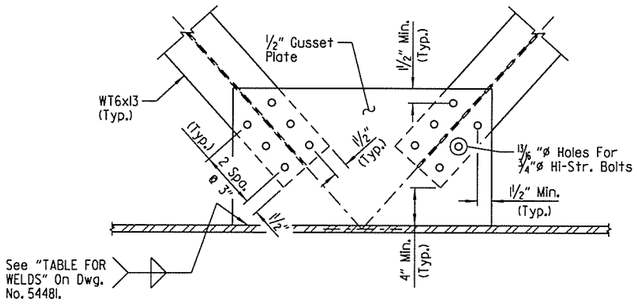
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14058 SETH R. YANCEY
BRIDGE ENGINEER

SHEET 8 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275x1_S121.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54481

SRYancey 5/29/2014 4:36:36 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_S140 (Spans 6 & 7 Framing 2 of 2).dgn
REVISED DATE:

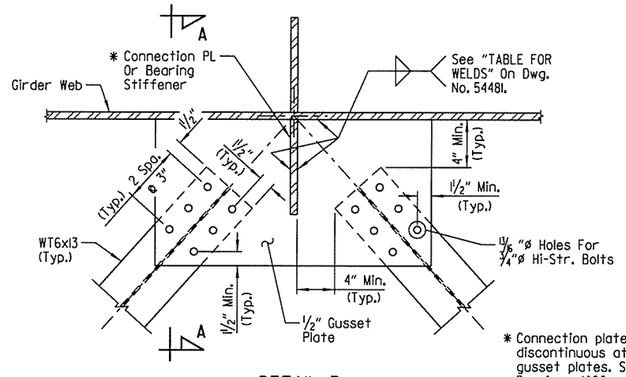
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	260	505
				(1) 07292		426'-0" PL GIRDER UNIT		54482



DETAIL A

Scale: 1½" = 1'-0"

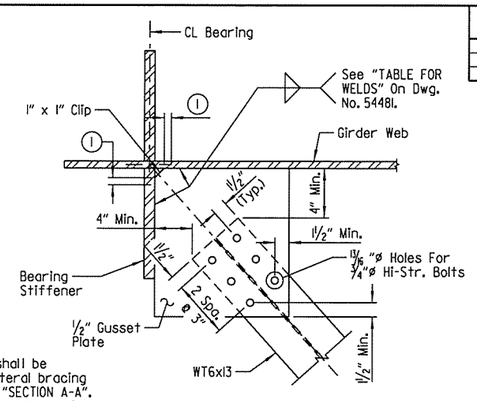
Note:
At the Contractor's option, 13/16 "ø holes may be field drilled in one end of each WT6x13 member.



DETAIL B

Scale: 1½" = 1'-0"

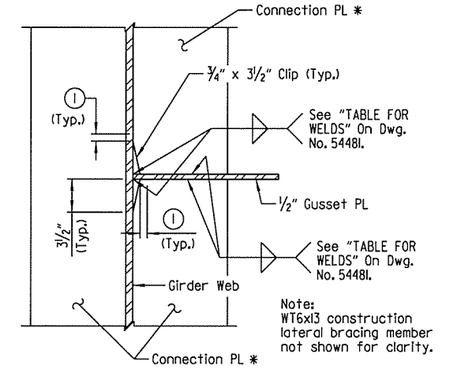
* Connection plates shall be discontinuous at lateral bracing gusset plates. See "SECTION A-A". Bearing stiffeners shall remain continuous and gusset plate slotted as required.



DETAIL C

Scale: 1½" = 1'-0"

(1) Stop Weld ¼" To 1" From End Of Clip

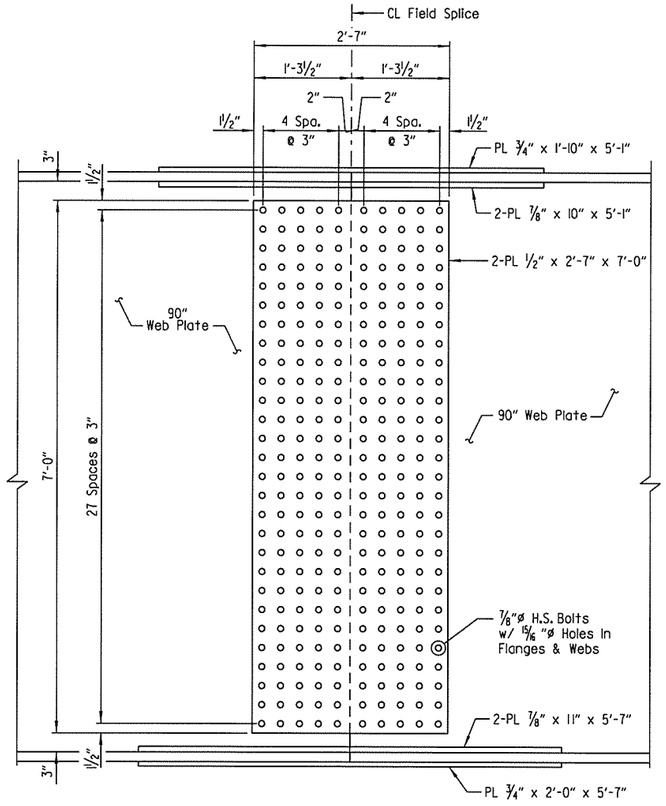


Note:
WT6x13 construction lateral bracing member not shown for clarity.

SECTION A-A

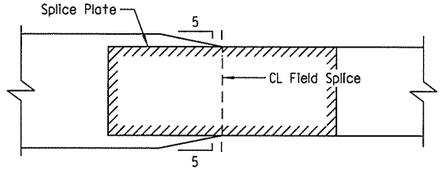
Scale: 1½" = 1'-0"

Note:
See "PART FRAMING PLAN" on Dwg. Nos. 54480 & 54481 for locations of construction lateral bracing.



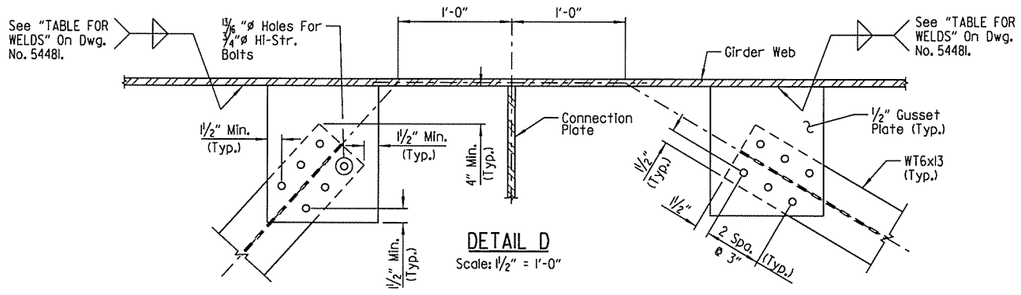
ELEVATION OF FIELD SPLICE

Scale: 1" = 1'-0"



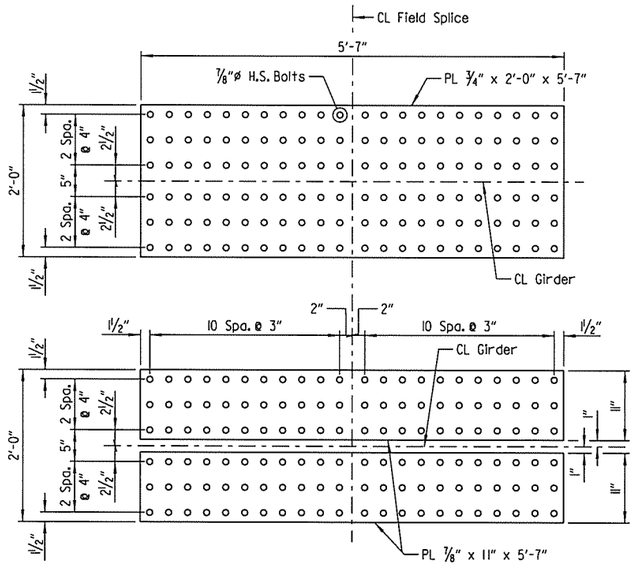
DETAIL OF BOTTOM FLANGE TRANSITION

No Scale



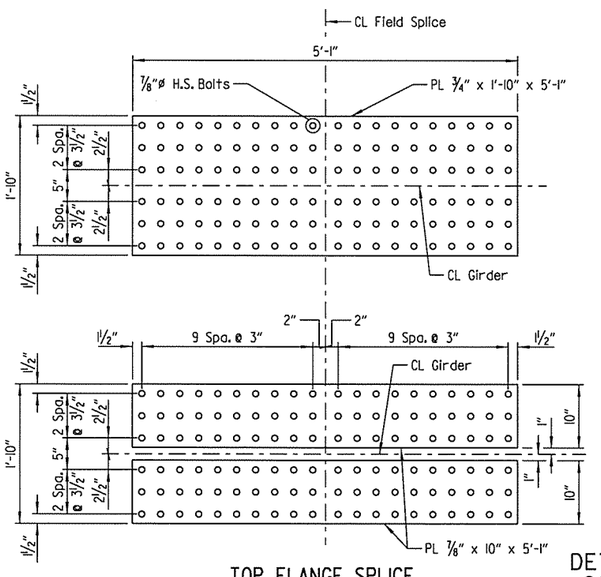
DETAIL D

Scale: 1½" = 1'-0"



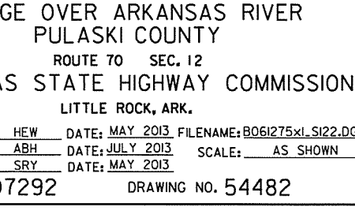
BOTTOM FLANGE SPLICE

Scale: 1" = 1'-0"



TOP FLANGE SPLICE

Scale: 1" = 1'-0"



DETAILS OF WELDED SPLICES

No Scale

SPLICE NOTES:

All field splice bolts shall be ⅞"ø H.S. bolts.

All holes for splice bolts shall be 15/16 "ø.

All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 9 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275xl_SI22.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54482

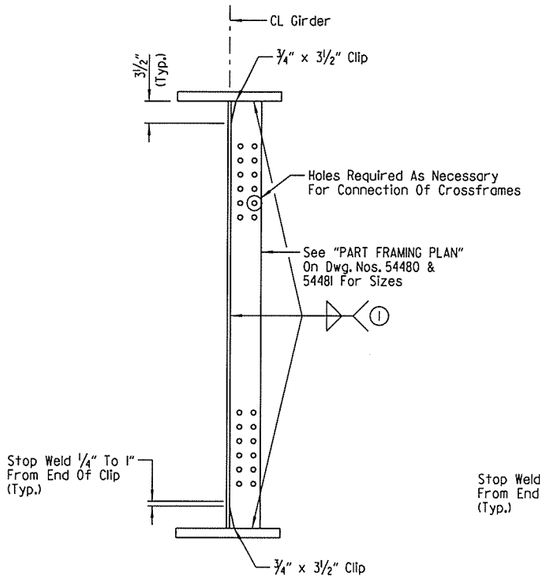
SRYancey 5/29/2014 4:36:37 PM
WORKSPACE: AHTD Bridge
L:\ZDATA\BDIT08D - Broadway Bridge over the Arkansas River\Drawings\B061275xl.SHI(Spans 6 & 7 Splice).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	261	505
				① 07292		426'-0" PL GIRDER UNIT		54483

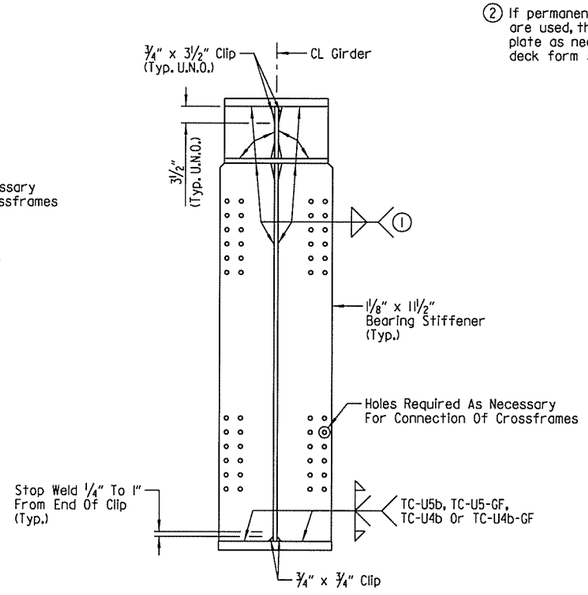
① See "TABLE FOR WELDS" on Dwg. No. 54481 for min. weld size.

② If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

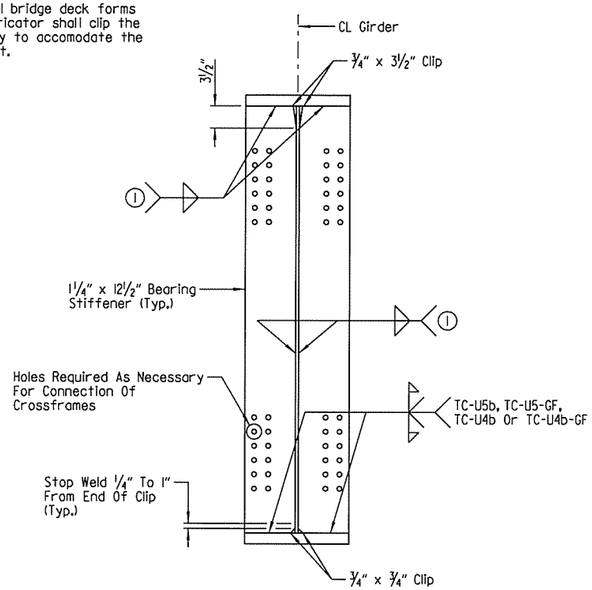
NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final positions.



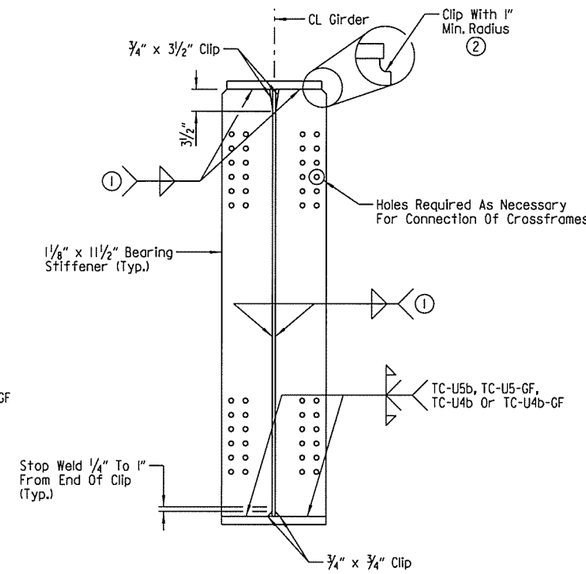
CONNECTION PLATE DETAIL
No Scale



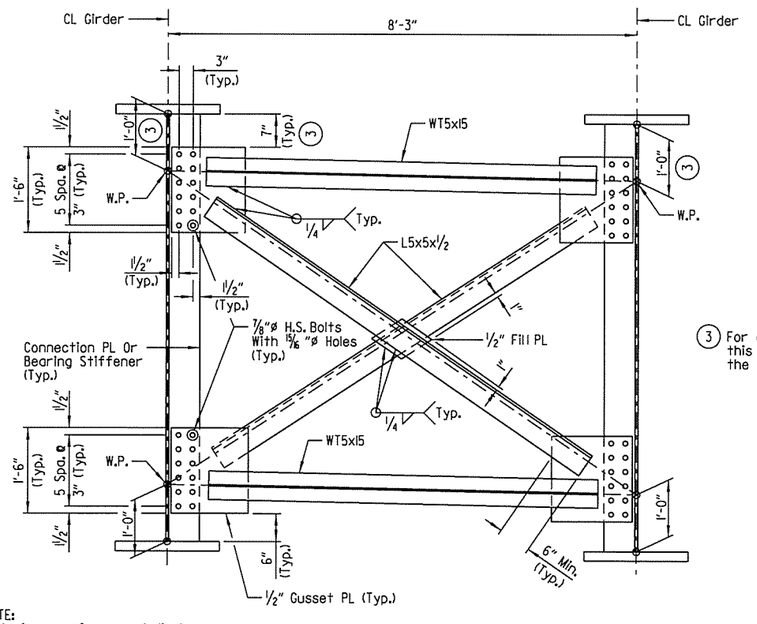
BENT 6 AH. BEARING STIFFENER DETAIL
No Scale



BENT 7 BEARING STIFFENER DETAIL
No Scale



BENT 8 BEARING STIFFENER DETAIL
No Scale



NOTE:
Bolts in crossframe and diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.71.

CROSSFRAME DETAIL
Scale: ¾" = 1'-0"

③ For end crossframes at Bent 6, this dimension is measured from the top of the bearing stiffener.

LEGEND
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 10 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

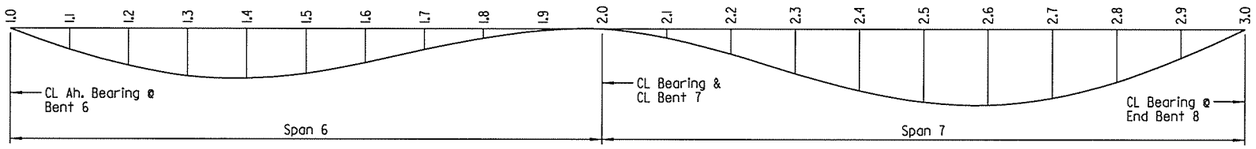
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2013 FILENAME: B061275x1_SI23.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: APR. 2013

BRIDGE NO. 07292 DRAWING NO. 54483

SRYancey 5/29/2014 4:36:38 PM
WORKSPACE: AHTD Bridge
L:\ZONE\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI42 (Spans 6 & 7 Cross-Frames).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	262	505
				① 07292		426'-0" PL GIRDER UNIT		54484



DEAD LOAD DEFLECTION DIAGRAM

No Scale

NOTE:

Camber for dead load deflection plus vertical curve +/- 1/4" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline. Corrections for vertical curve and deck transition (Girders 8 & 9) are not included. Negative sign (-) indicates point above chord.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

SPAN	Girder No.	Girder 1			Girder 2			Girder 3			Girder 4			Girder 5			Girder 6		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *
SPAN 6	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.364	0.954	1.024	0.362	1.050	1.126	0.359	1.149	1.231	0.355	1.247	1.337	0.350	1.322	1.426	0.345	1.333	1.458
	1.2	0.661	1.732	1.860	0.656	1.909	2.047	0.650	2.091	2.240	0.642	2.269	2.434	0.634	2.400	2.590	0.624	2.416	2.647
	1.3	0.842	2.209	2.373	0.835	2.439	2.616	0.827	2.675	2.867	0.816	2.902	3.115	0.805	3.065	3.311	0.791	3.078	3.379
	1.4	0.884	2.328	2.502	0.876	2.575	2.764	0.867	2.828	3.033	0.855	3.070	3.298	0.840	3.239	3.505	0.823	3.242	3.571
	1.5	0.791	2.093	2.252	0.783	2.320	2.493	0.772	2.552	2.741	0.760	2.775	2.987	0.744	2.927	3.176	0.725	2.918	3.230
	1.6	0.588	1.573	1.695	0.580	1.748	1.882	0.570	1.928	2.076	0.558	2.103	2.270	0.543	2.221	2.422	0.524	2.198	2.454
	1.7	0.328	0.901	0.974	0.321	1.007	1.089	0.312	1.118	1.210	0.302	1.228	1.335	0.289	1.300	1.433	0.272	1.267	1.443
	1.8	0.084	0.267	0.293	0.079	0.307	0.338	0.073	0.350	0.387	0.066	0.396	0.442	0.056	0.422	0.484	0.042	0.386	0.476
	1.9	-0.050	-0.096	-0.100	-0.053	-0.096	-0.098	-0.056	-0.096	-0.096	-0.060	-0.095	-0.090	-0.065	-0.099	-0.087	-0.073	-0.126	-0.102
	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SPAN 7	2.1	0.321	0.764	0.826	0.324	0.821	0.882	0.328	0.879	0.937	0.333	0.940	0.994	0.339	1.002	1.049	0.349	1.059	1.095
	2.2	0.839	2.024	2.197	0.846	2.185	2.354	0.854	2.349	2.512	0.863	2.519	2.674	0.876	2.681	2.823	0.896	2.809	2.932
	2.3	1.416	3.437	3.734	1.426	3.721	4.012	1.437	4.011	4.294	1.450	4.304	4.575	1.468	4.573	4.827	1.497	4.772	5.002
	2.4	1.908	4.653	5.058	1.921	5.048	5.445	1.934	5.451	5.838	1.950	5.851	6.224	1.973	6.209	6.563	2.007	6.463	6.790
	2.5	2.213	5.411	5.883	2.227	5.880	6.343	2.241	6.335	6.808	2.259	6.825	7.264	2.284	7.239	7.658	2.319	7.523	7.915
	2.6	2.267	5.553	6.039	2.281	6.039	6.516	2.295	6.532	6.998	2.312	7.018	7.471	2.336	7.444	7.879	2.370	7.728	8.139
	2.7	2.042	5.008	5.446	2.053	5.447	5.878	2.066	5.894	6.316	2.081	6.337	6.747	2.102	6.725	7.120	2.130	6.975	7.350
	2.8	1.549	3.803	4.136	1.558	4.136	4.463	1.567	4.475	4.796	1.578	4.815	5.128	1.593	5.115	5.417	1.613	5.303	5.591
	2.9	0.839	2.062	2.243	0.844	2.241	2.419	0.849	2.425	2.599	0.855	2.611	2.781	0.863	2.777	2.941	0.873	2.879	3.036
	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SPAN	Girder No.	Girder 7			Girder 8			Girder 9		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet + Waterline *
SPAN 6	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.340	1.264	1.423	0.334	1.130	1.338	0.327	0.973	1.243
	1.2	0.613	2.286	2.581	0.601	2.041	2.427	0.588	1.749	2.284
	1.3	0.775	2.903	3.290	0.758	2.578	3.087	0.738	2.189	2.847
	1.4	0.804	3.039	3.465	0.782	2.670	3.234	0.757	2.228	2.960
	1.5	0.703	2.705	3.115	0.677	2.329	2.877	0.649	1.881	2.598
	1.6	0.501	1.996	2.340	0.473	1.649	2.118	0.443	1.239	1.861
	1.7	0.250	1.096	1.340	0.223	0.811	1.154	0.194	0.477	0.942
	1.8	0.025	0.264	0.399	0.002	0.067	0.266	-0.023	-0.164	0.116
	1.9	-0.083	-0.187	-0.143	-0.097	-0.283	-0.210	-0.113	-0.396	-0.286
	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SPAN 7	2.1	0.364	1.115	1.135	0.384	1.193	1.191	0.408	1.301	1.274
	2.2	0.925	2.907	3.003	0.967	3.026	3.087	1.014	3.195	3.217
	2.3	1.538	4.900	5.096	1.594	5.016	5.171	1.658	5.171	5.281
	2.4	2.054	6.603	6.894	2.115	6.681	6.930	2.184	6.755	6.959
	2.5	2.366	7.654	8.012	2.423	7.673	7.991	2.487	7.654	7.930
	2.6	2.412	7.834	8.215	2.460	7.800	8.146	2.513	7.707	8.017
	2.7	2.164	7.051	7.402	2.204	6.985	7.309	2.245	6.858	7.154
	2.8	1.638	5.348	5.619	1.666	5.277	5.530	1.694	5.157	5.390
	2.9	0.886	2.898	3.046	0.900	2.851	2.990	0.915	2.778	2.907
	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

* Includes waterline and steel required for waterline supports

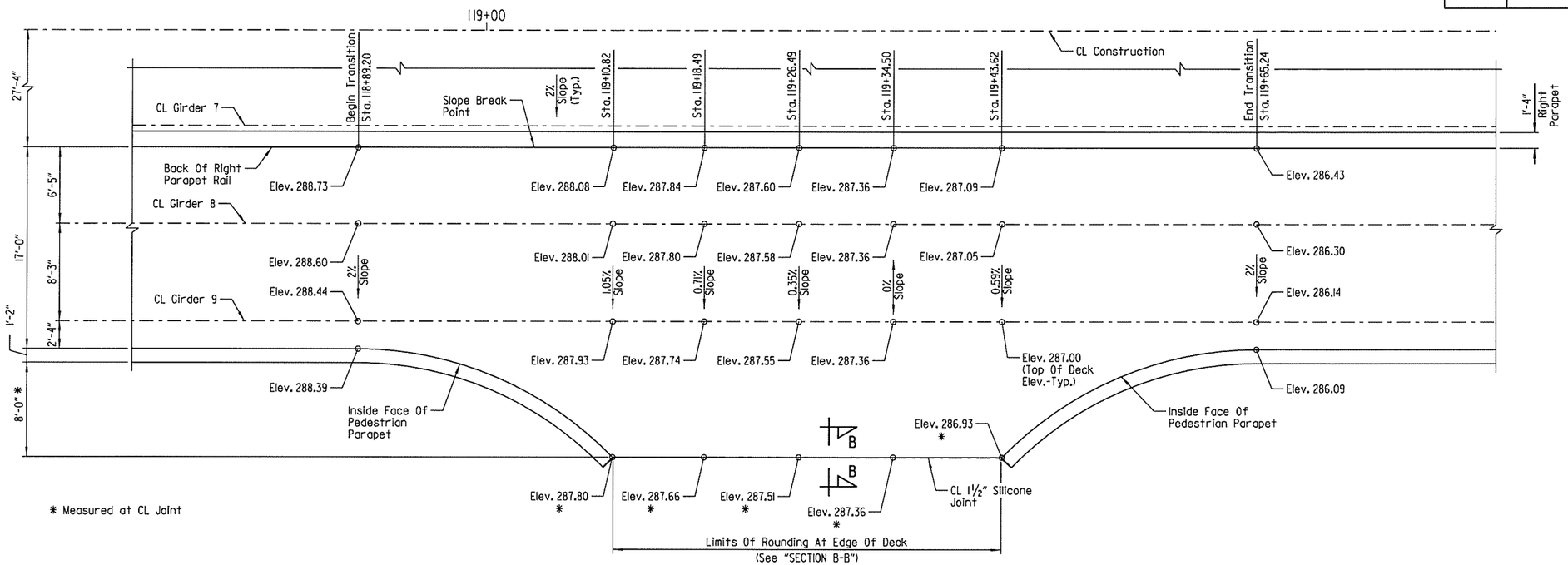
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 11 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x1_SI24.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54484

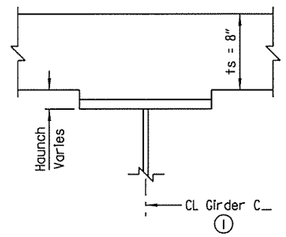
SRYancey 5/29/2014 4:36:38 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI43 (Spans 6 & 7 Deflections).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	263	505
				① 07292		426'-0" PL GIRDER UNIT		54485



DECK TRANSITION DETAIL - SPAN 7

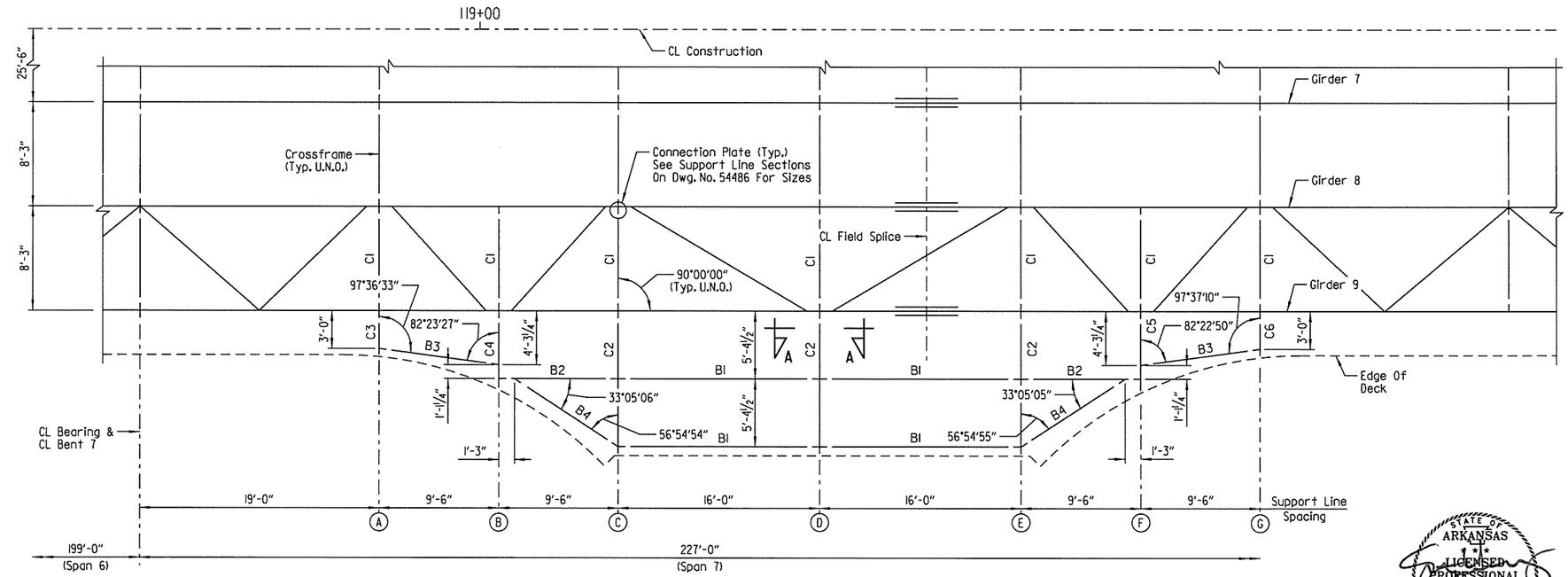
Scale: 3/16" = 1'-0"



SECTION A-A

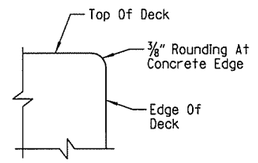
(Showing Deck Thickness In Extended Overhang)
Scale: 1½" = 1'-0"

① See "PART FRAMING PLAN - SPAN 7".



PART FRAMING PLAN - SPAN 7

Scale: 3/16" = 1'-0"



SECTION B-B

Scale: 6" = 1'-0"

NOTE:
For sections at Support Lines A - G, see Dwg. No. 54486.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14038
STEVE R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 12 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

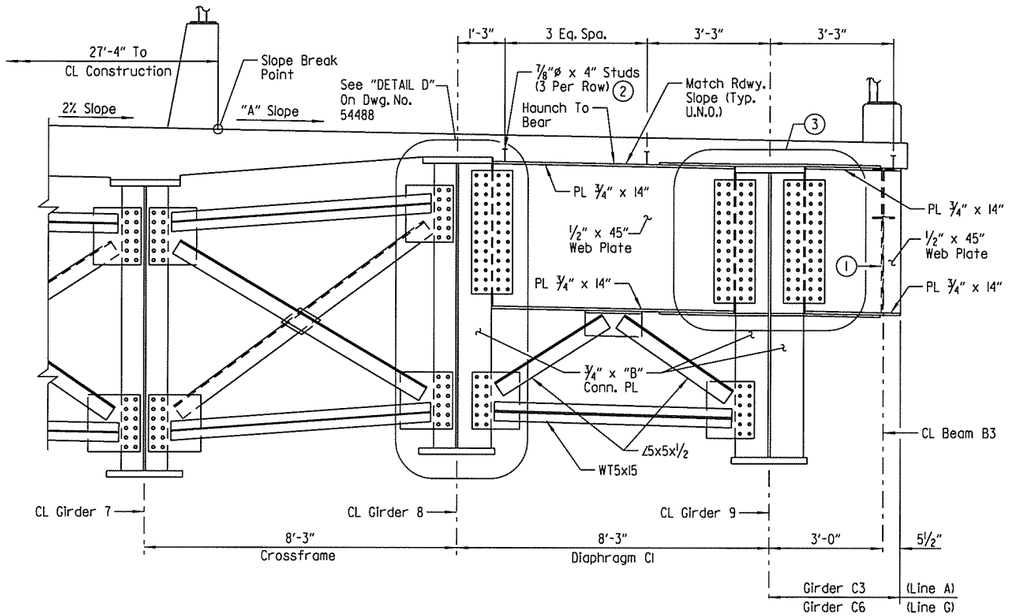
DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275xl_SI25.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54485

SRYancey 5/29/2014 4:36:39 PM
WORKSPACE: AHTD Bridge
L:\BDM\MDT080 Broadway Bridge over the Arkansas River\Drawings\B061275xl.SI44 (Spans 6 & 7 Ped Framing).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

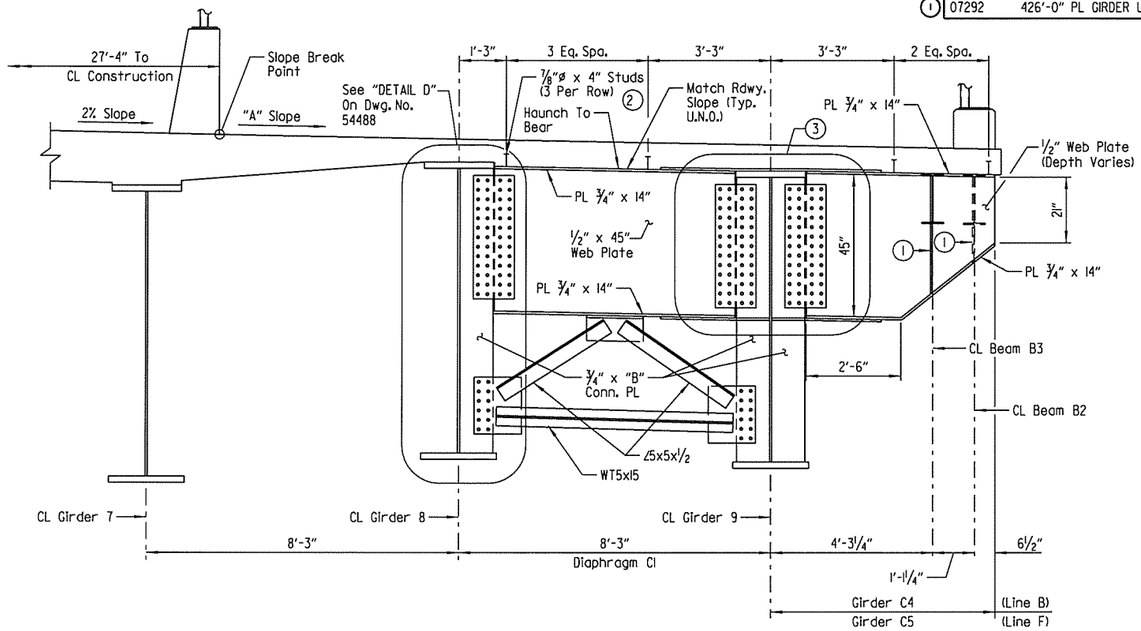
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	264	505
① 07292		426'-0" PL GIRDER UNIT		54486



SECTION AT SUPPORT LINES A & G

Looking Forward

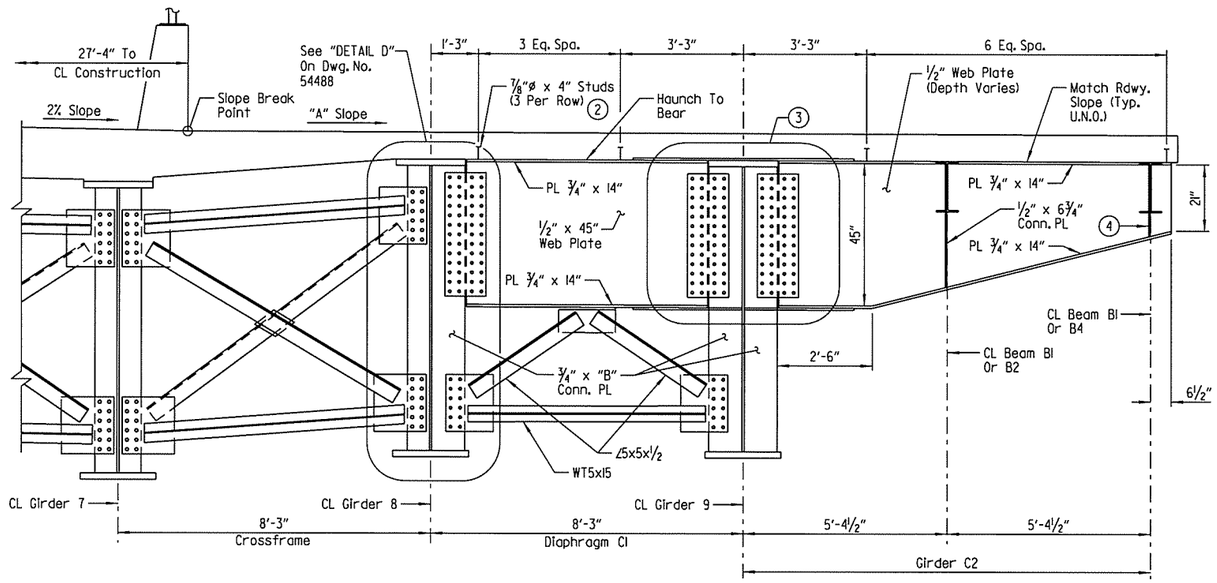
Scale: 1/2" = 1'-0"



SECTION AT SUPPORT LINES B & F

Looking Forward

Scale: 1/2" = 1'-0"



SECTION AT SUPPORT LINES C, D & E

Looking Forward

Scale: 1/2" = 1'-0"

TABLE OF SUPPORT LINE VARIABLES			
Support Line	Station	"A"	"B"
A	118+92.00	1.88%	12 5/8"
B	119+01.50	1.46%	12 5/8"
C	119+11.00	1.04%	12 5/8"
D	119+27.00	0.33%	12 5/8"
E	119+43.00	0.55%	10 5/8"
F	119+52.50	1.17%	10 5/8"
G	119+62.00	1.79%	10 5/8"

LEGEND

U.N.O. = Unless Noted Otherwise

(1) 1/2" x 6 3/4" Connection PL

(2) See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54480

(3) See "SPLICE DETAILS" On Dwg. No. 54487

(4) 1/2" x 6 3/4" Connection PL for connection of Beam B1.
1/2" x 8" Connection PL for connection of Beam B4.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. YANCEY
BRIDGE ENGINEER

SHEET 13 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

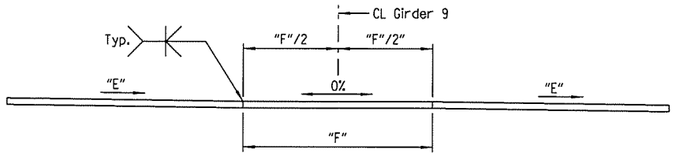
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAY 2013 FILENAME: B061275x1_SI26.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013

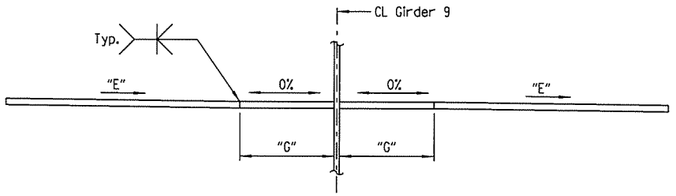
BRIDGE NO. 07292 DRAWING NO. 54486

SRYancey 5/29/2014 4:36:40 PM
WORKSPACE: AHTD Bridge
L:\ROW\NDIT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI45 (Spans 6 & 7 Ped Sections).dgn
REVISED DATE:

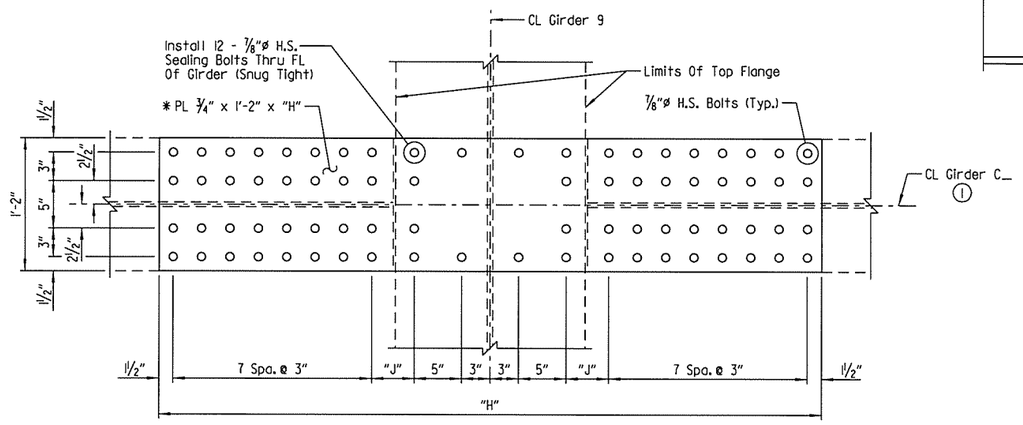
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	265	505
				(1) 07292		426'-0" PL GIRDER UNIT		54487



TOP FLANGE SPLICE PLATE DETAIL

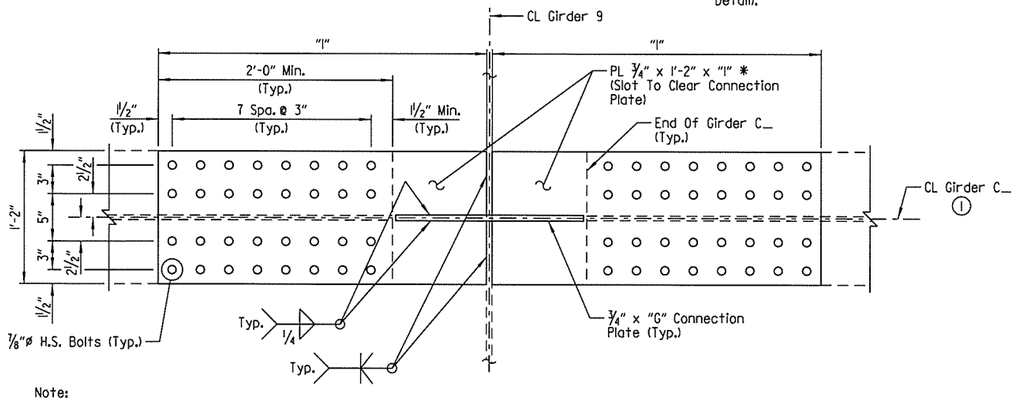


BOTTOM FLANGE SPLICE PLATE DETAIL



TOP FLANGE SPLICE PLATE

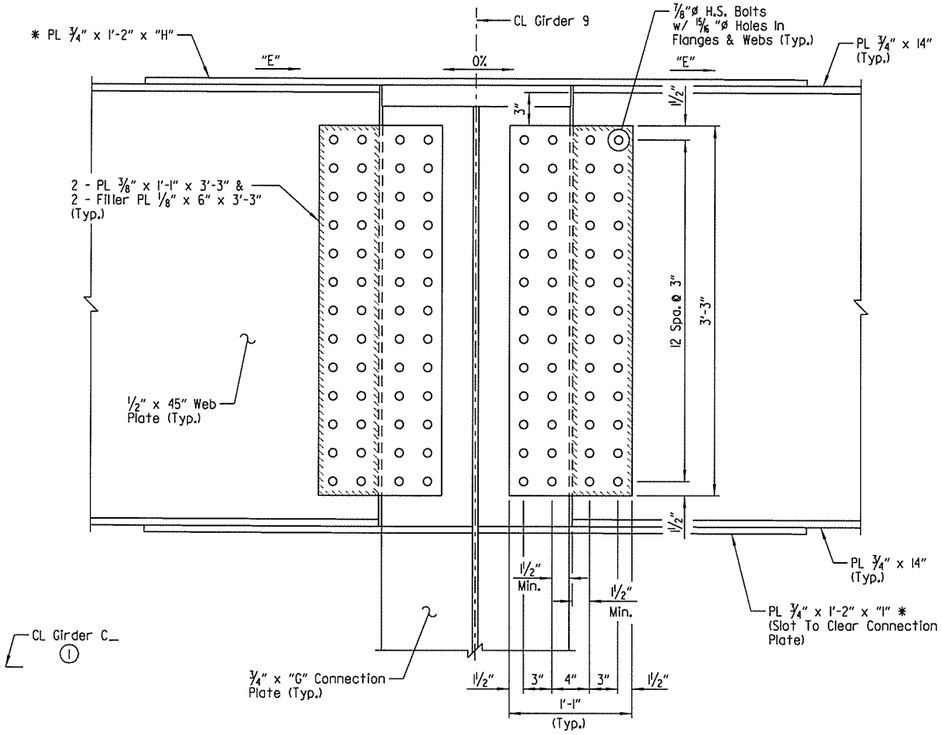
* Flange splice plates shall be fabricated to accomodate break in cross slope (See Detail).



Note:
Web splice plates omitted for clarity.

BOTTOM FLANGE SPLICE PLATES

SPLICE DETAILS
Scale: 1 1/2" = 1'-0"



WEB SPLICE PLATES

TABLE OF SUPPORT LINE VARIABLES						
Support Line	"E"	"F"	"G"	"H"	"I"	"J"
A	1.88%	2'-2"	12 5/8"	6'-3"	3'-1 1/8"	7"
B	1.46%					
C	1.04%					
D	0.33%					
E	0.55%	1'-10"	10 5/8"	5'-11"	2'-11 1/8"	5"
F	1.17%					
G	1.79%					

(1) See "PART FRAMING PLAN - SPAN 7" On Dwg. No. 54485

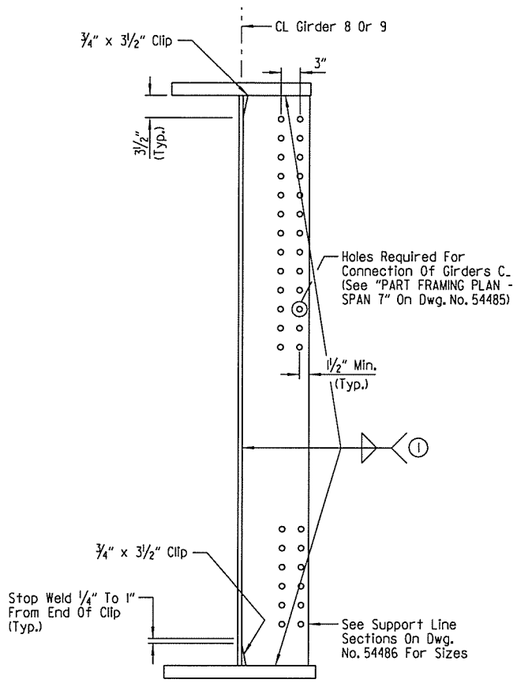
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 14 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

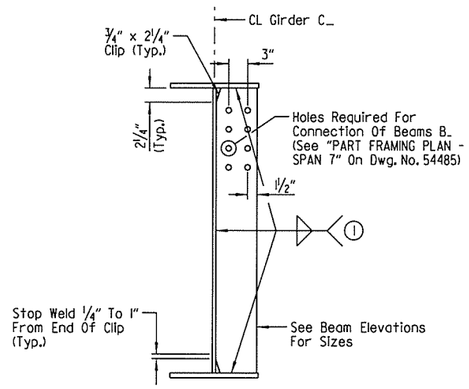
DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x1_SI27.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54487

SRYancey 5/29/2014 4:36:40 PM
WORKSPACE: AHTD Bridge
L:\CON\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1.SI46 (Spans 6 & 7 Pad Splice 1 of 2).dgn
REVISED DATE:

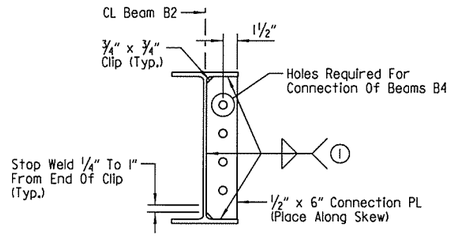
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	266	505
				① 07292		426'-0" PL GIRDER UNIT		54488



FOR GIRDERS C1 THRU C6
Scale: 1" = 1'-0"



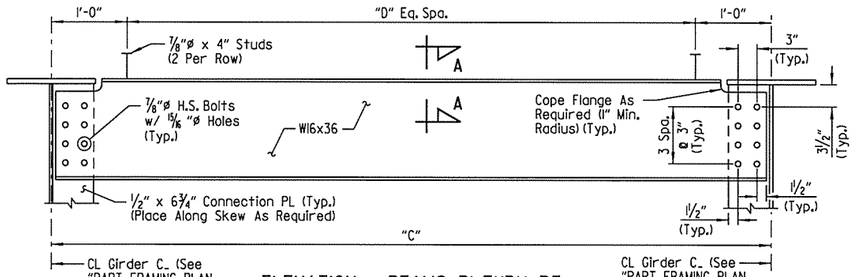
FOR BEAMS B1 THRU B4
Scale: 1" = 1'-0"



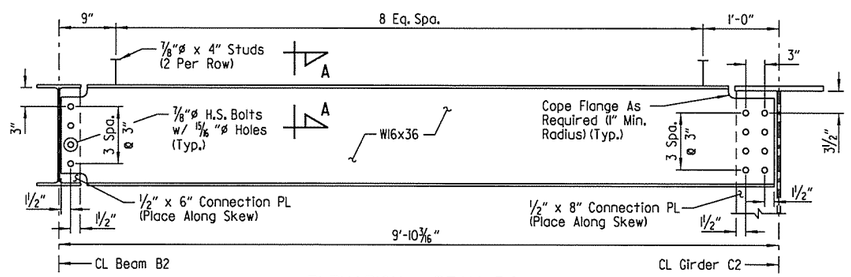
FOR BEAM B4
Scale: 1½" = 1'-0"

① See "TABLE FOR WELDS" on Dwg. No. 54481 for min. weld size.

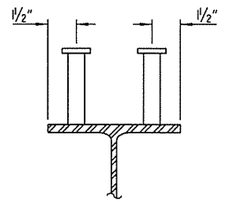
CONNECTION PLATE DETAILS



ELEVATION - BEAMS B1 THRU B3
All Horizontal Dimensions Measured Along CL Beam
No Scale



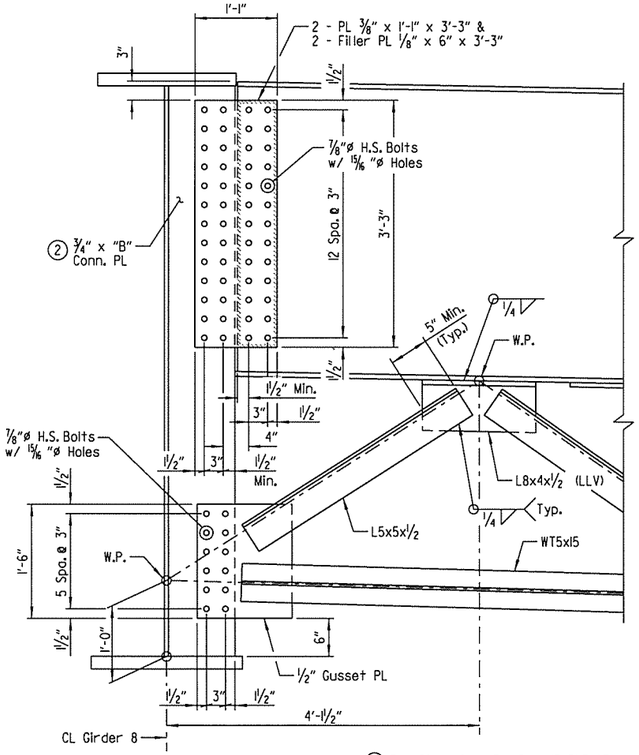
ELEVATION - BEAM B4
All Horizontal Dimensions Measured Along CL Beam
No Scale



SECTION A-A
No Scale

Stud shear connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

TABLE OF BEAM VARIABLES		
Beam	"C"	"D"
B1	16'-0"	14
B2	9'-6"	8
B3	9'-7"	8



② For Dimension "B", See "TABLE OF SUPPORT LINE VARIABLES" On Dwg. No. 54486.

DETAIL D
Scale: 1" = 1'-0"

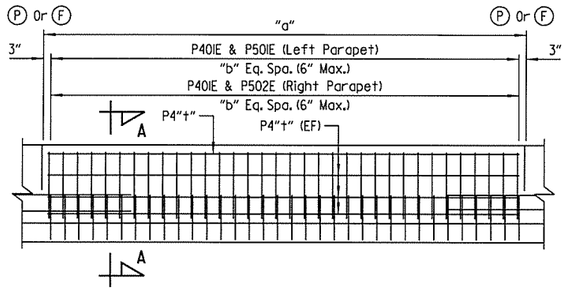
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SEATH B. YANCEY
BRIDGE ENGINEER

SHEET 15 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: MAY 2013 FILENAME: B061275x1_SI28.DGN
CHECKED BY: ABH DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54488

SRYancey 5/29/2014 4:36:41 PM
WORKSPACE: AHTD Bridge
L:\ROW\MDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI47 (Spans 6 & 7 Pad Splice 2 of 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	267	505
				(1) 07292		426'-0" PL GIRDER UNIT		54491

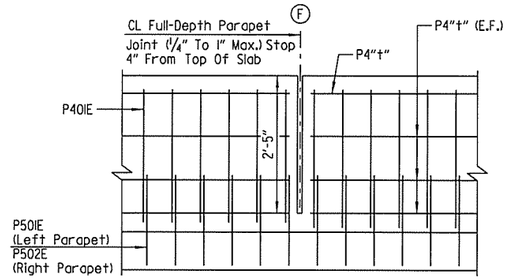


TYPICAL CLOSED PARAPET RAIL ELEVATION

(Looking At Front Face)
Scale: 3/8" = 1'-0"

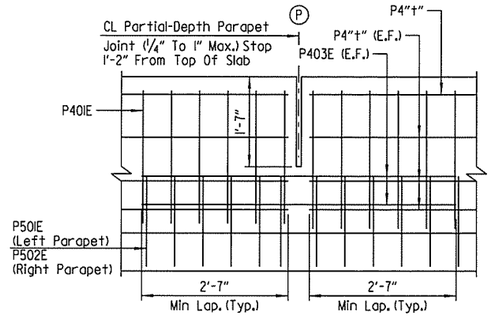
(P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg Nos. 54476 & 54477, stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg Nos. 54476 & 54477, stop 4" from top of slab.



PARAPET REINFORCING (FULL DEPTH JOINTS)

Scale: 3/4" = 1'-0"

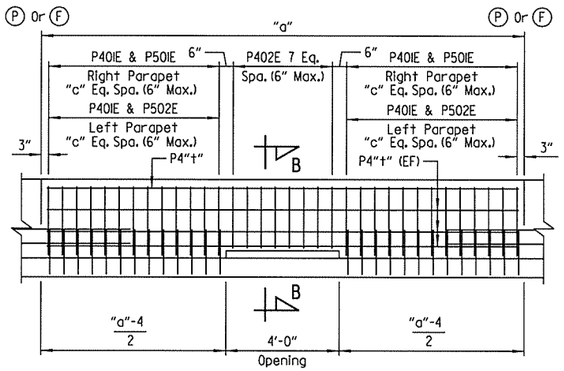


PARAPET REINFORCING (PARTIAL DEPTH JOINTS)

Scale: 3/4" = 1'-0"

TABLE OF PARAPET VARIABLES

PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET
"a"	"t"	"b"	"c"
11'-6"	04E	22	7
13'-6"	05E	26	9
15'-6"	06E	30	11
17'-0"	07E	33	12

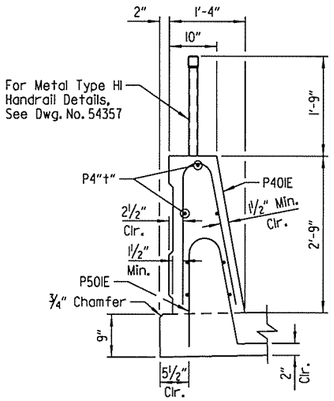


TYPICAL OPEN PARAPET RAIL ELEVATION

(Looking At Front Face)
Scale: 3/8" = 1'-0"

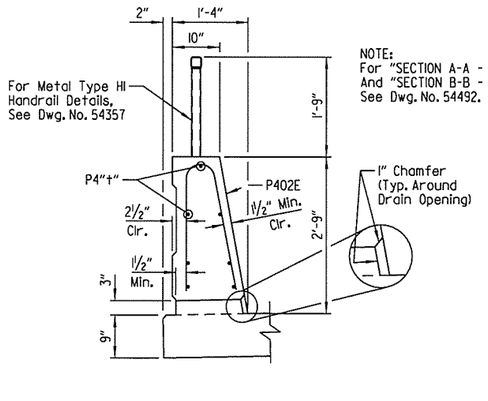
NOTE:
For "PANEL ENHANCEMENT DETAIL - LEFT PARAPET", See Dwg. No. 54360.

For "DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL - LEFT PARAPET", See Dwg. No. 54360.



SECTION A-A - LEFT PARAPET

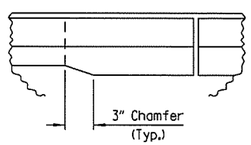
Scale: 3/4" = 1'-0"



SECTION B-B - LEFT PARAPET

(At Open Drains)
Scale: 3/4" = 1'-0"

NOTE:
For "SECTION A-A - RIGHT PARAPET" And "SECTION B-B - RIGHT PARAPET" See Dwg. No. 54492.



PLAN OF RAIL POST CHAMFER

(Typ. for Open Drain Panels Only)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-29-14

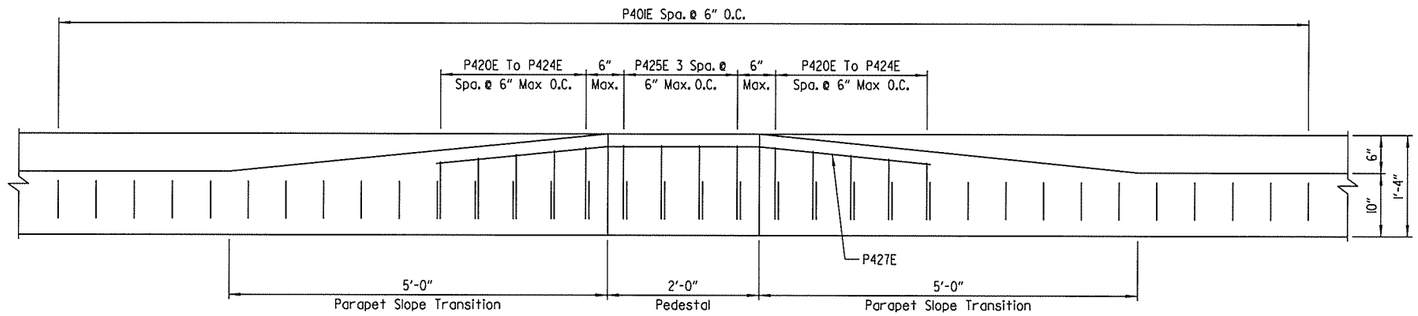
BRIDGE ENGINEER

SHEET 16 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_SI29.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: APR. 2013
BRIDGE NO. 07292 DRAWING NO. 54491

SRYancey 5/29/2014 4:36:41 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI50 (Spans 6 & 7 Parapet).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	268	505
				(1) 07292		426'-0" PL GIRDER UNIT		54492

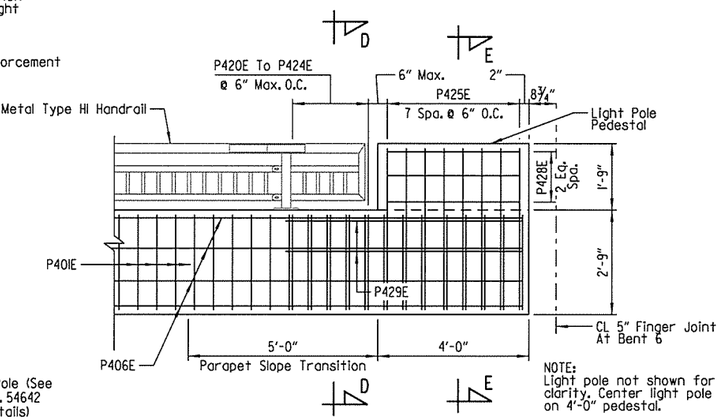


TYPICAL PARAPET TRANSITION PLAN - RIGHT PARAPET

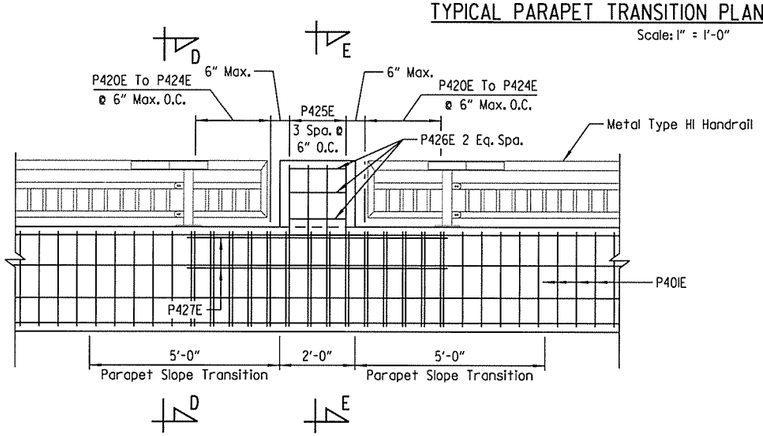
Scale: 1" = 1'-0"

NOTE:
Right parapet shall be widened by increasing top width from 10" to 1'-4" over 5'-0" transition length on each side of light pedestal.

NOTE:
For typical parapet reinforcement details, see Dwg. No. 54491.

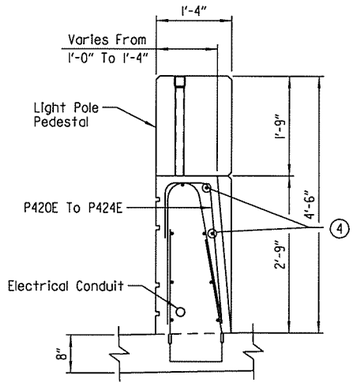


NOTE:
Light pole not shown for clarity. Center light pole on 4'-0" pedestal.



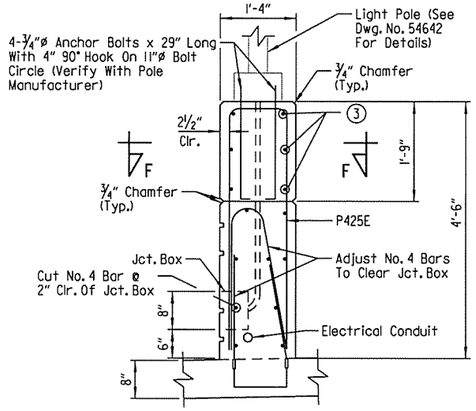
TYPICAL PARAPET TRANSITION ELEVATION - RIGHT PARAPET

Scale: ½" = 1'-0"



SECTION D-D

Scale: ¾" = 1'-0"



3 P426E (Typ.), P428E At "DETAIL X"

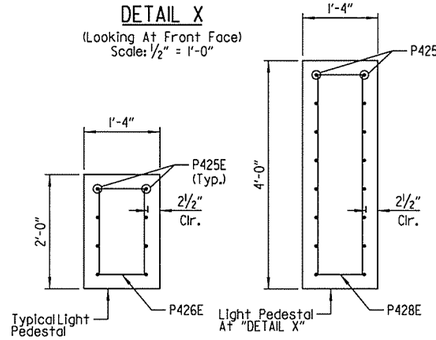
4 P427E (Typ.), P429E At "DETAIL X"

SECTION E-E

Scale: ¾" = 1'-0"

DETAIL X

(Looking At Front Face)
Scale: ½" = 1'-0"



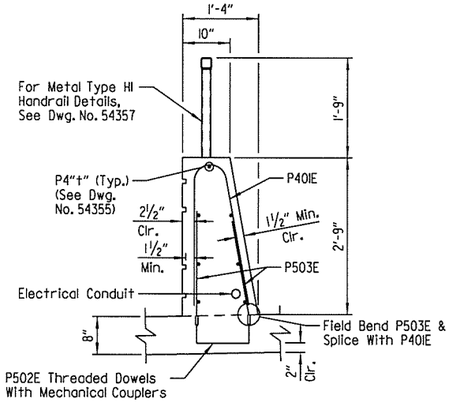
SECTION F-F

Scale: ¾" = 1'-0"

NOTE:
Protect threads in couplers until right parapet is constructed.

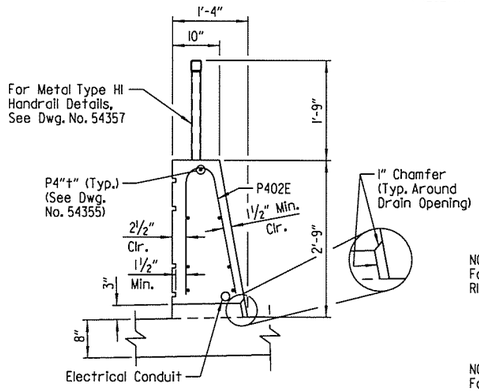
NOTE:
The threaded dowel and coupler assembly shall consist of a OPL approved mechanical splice with protective cap and threaded dowel bars (P502E and P503E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

P502E and P503E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. Threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



SECTION A-A - RIGHT PARAPET

Scale: ¾" = 1'-0"

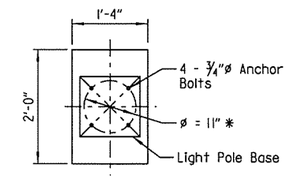


SECTION B-B - RIGHT PARAPET

(At Open Drains)
Scale: ¾" = 1'-0"

NOTE:
For "ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET, See Dwg. No. 54360.

NOTE:
For "TYPICAL CLOSED PARAPET RAIL ELEVATION" And "TYPICAL OPEN PARAPET RAIL ELEVATION", See Dwg. No. 54491.



LIGHT POLE PEDESTAL PLAN

Scale: ¾" = 1'-0"

*Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 17 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

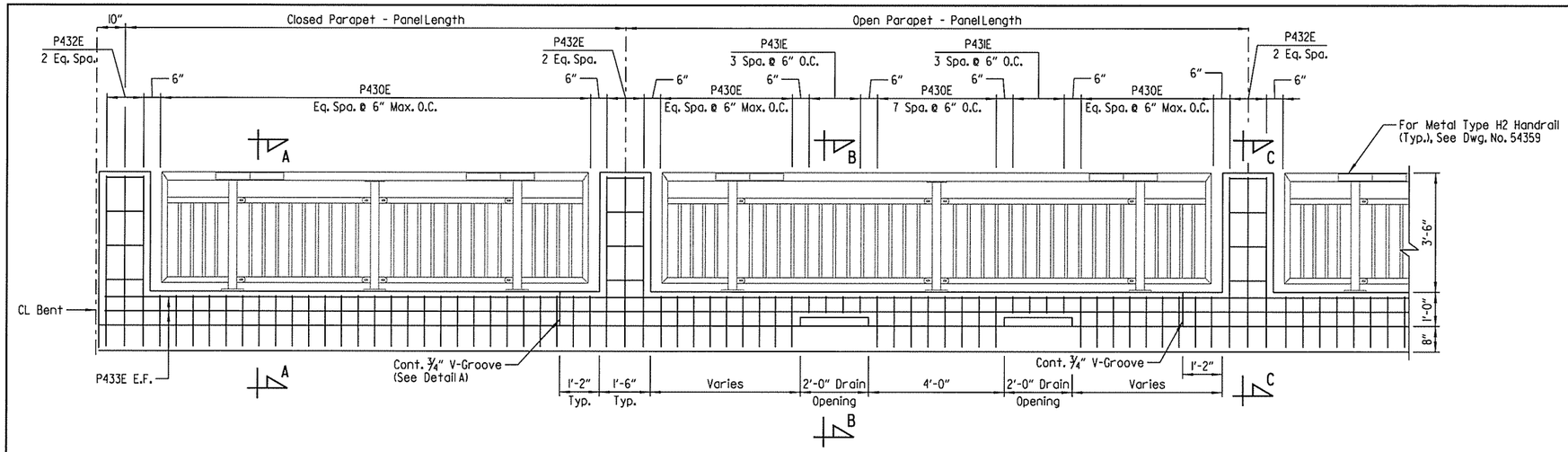
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x1_SI30.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54492

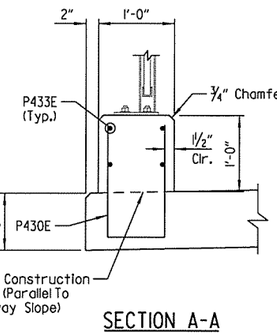
SRYancey 5/29/2014 4:36:42 PM
WORKSPACE: AHTD Bridge
L:\20INWOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI51(Spans 6 & 7 Rt Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	269	505
				① 07292		426'-0" PL GIRDER UNIT		54493



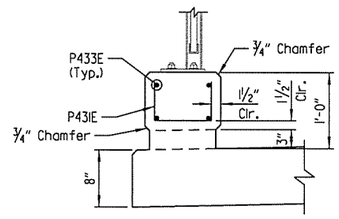
PEDESTRIAN PARAPET RAIL ELEVATION

Scale: ½" = 1'-0"



SECTION A-A

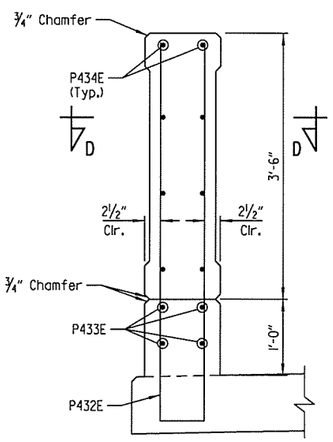
Scale: 1" = 1'-0"



SECTION B-B

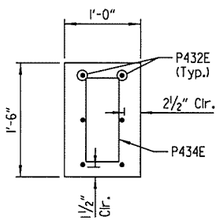
Scale: 1" = 1'-0"

NOTE:
For "PEDESTAL ENHANCEMENT DETAILS", See Dwg. No. 54360.



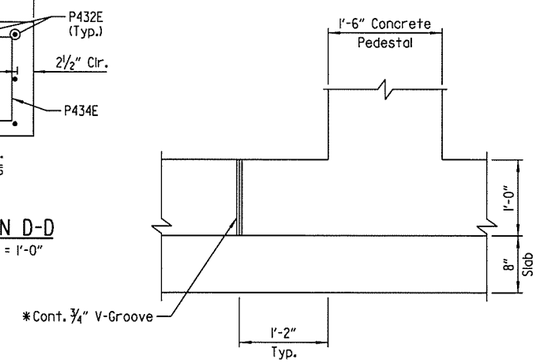
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

Scale: 1" = 1'-0"



DETAIL A

Scale: 1" = 1'-0"

* NOTE:
¾" V-Groove shall be continous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

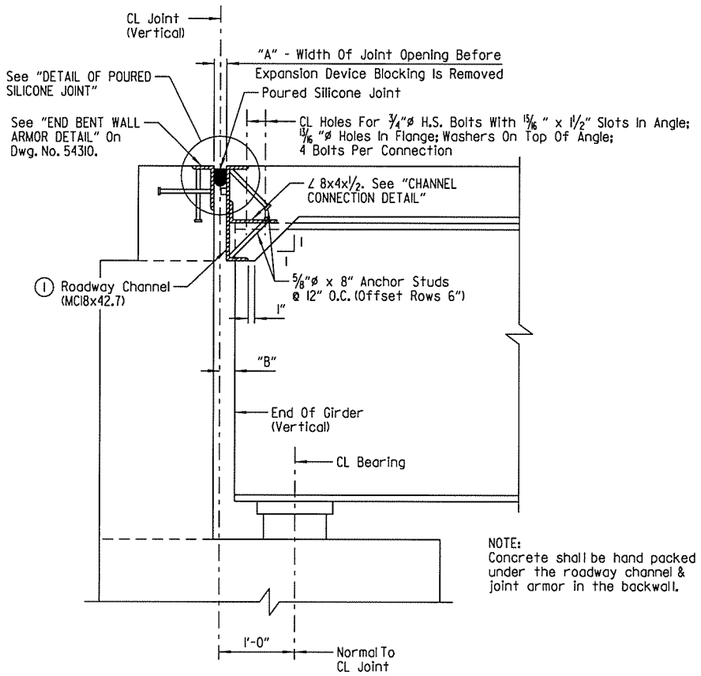
BRIDGE ENGINEER

SHEET 18 OF 18
DETAILS OF 426'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275xl_SI31.DGN
CHECKED BY: AJK DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 54493

SRYancey 5/29/2014 4:36:43 PM
WORKSPACE: AHTD Bridge
L:\ECON\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI52 (Spans 6 & 7 Ped Parapet).dgn
REVISED DATE:

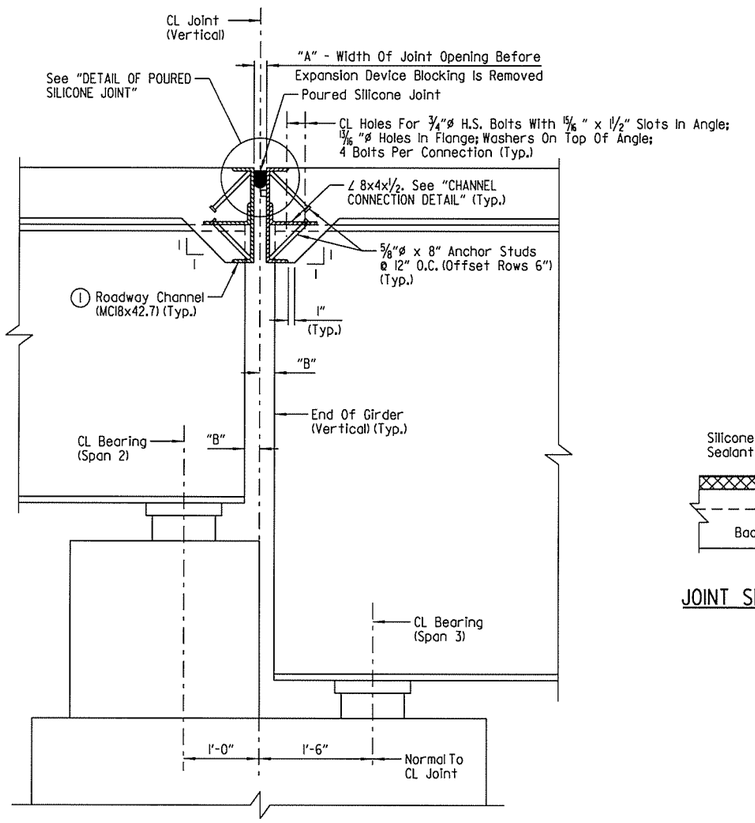
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	270	505
				① 07292		JOINT DETAILS		54494



NOTE:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

SECTION THRU SILICONE JOINT AT BENT 1

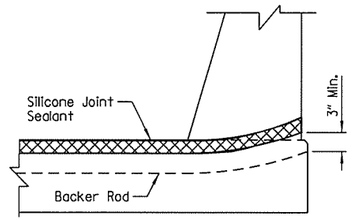
Note: Section Taken Normal To CL Joint
No Scale



SECTION THRU SILICONE JOINT AT BENT 3

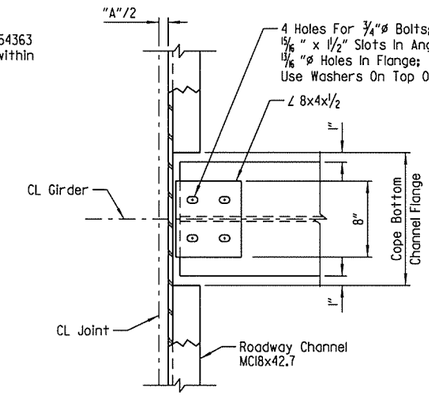
Note: Section Taken Normal To CL Joint
No Scale

⑴ See "SECTION A-A" on Dwg. Nos. 54343 & 54363 for modifications to Roadway Channel within thickened slab area.



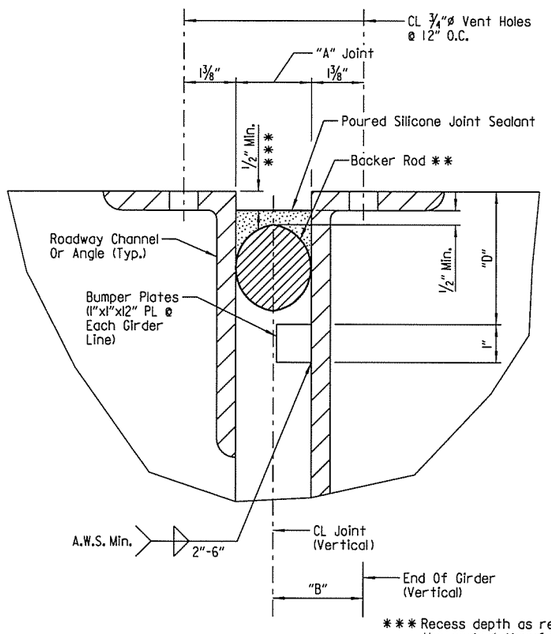
JOINT SEAL PLACEMENT AT CURB

No Scale



CHANNEL CONNECTION DETAIL

No Scale

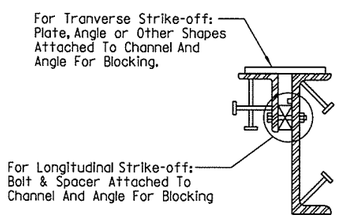


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

No Scale

One of two different blocking systems is required depending on the type of span finishing machine that is used.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale

NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENT (BEGIN BRIDGE):

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

SILICONE JOINT DATA

"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 3/16"	2"	1 13/16"	2¼"±	4½"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF POURED SILICONE JOINT BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

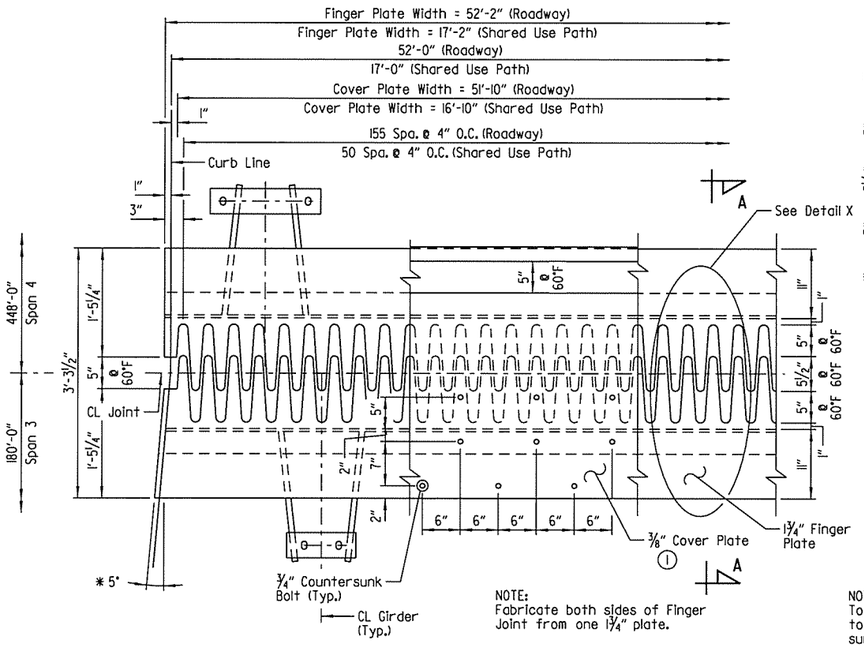
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275xl_SI32.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013

BRIDGE NO. 07292 DRAWING NO. 54494

SRYancey 5/29/2014 4:36:43 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI53 (Gen Silicone Jt. Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	271	505
				① 07292		JOINT DETAILS		54495

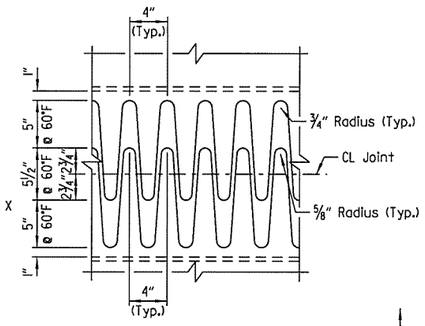


* Omit 5" bevel on Shared Use Path expansion plate

EXPANSION PLATE DETAIL - BENT 4

Scale: 1" = 1'-0"

NOTE:
Fabricate both sides of Finger Joint from one 1 3/4" plate.

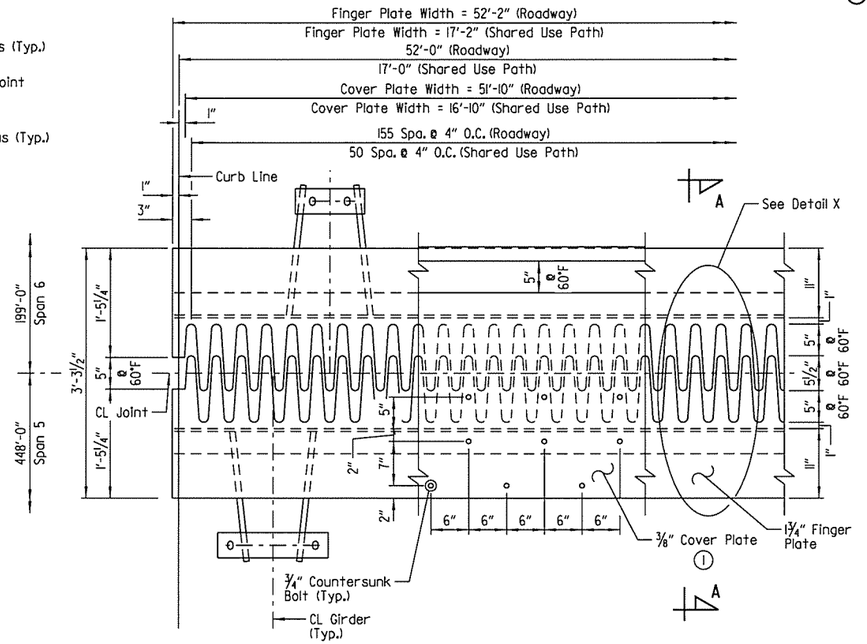


DETAIL X

No Scale

NOTE:
Top of expansion joints shall conform to the profile grade of the roadway surfaces. Dimensions shown are at 60°F.

NOTE:
For "SECTION AT GIRDER - NOMINAL SLAB THINCKNESS" and "SECTION AT GIRDER - THICKENED SLAB", see Dwg. No. 54496.



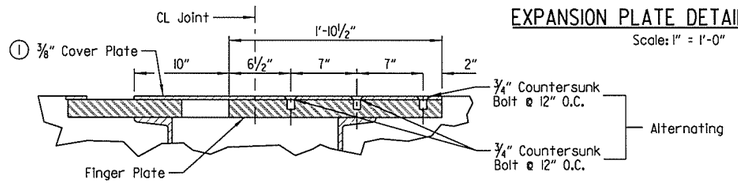
EXPANSION PLATE DETAIL - BENT 6

Scale: 1" = 1'-0"

Joint Width At 24 Hour Average Temperature Of:			
	40°F	60°F	80°F
BENT 4	6"	5"	4"
BENT 6	6"	5"	4"

NOTE:
Finger joint shall be set and adjusted for grade before closure pours are made. Set joint width by interpolating from table.

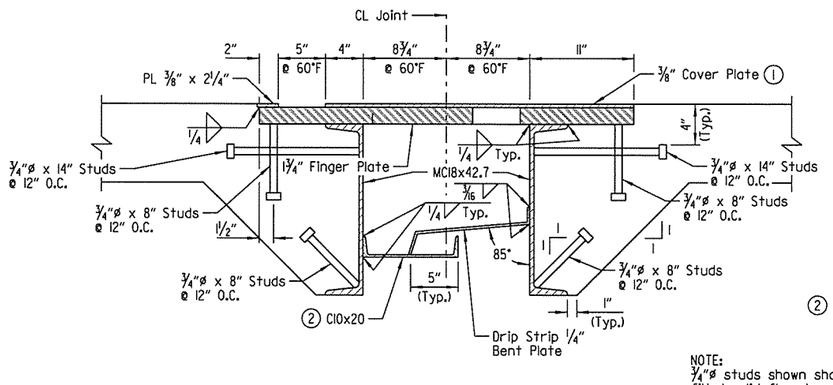
① The 3/8" cover plate shall be fabricated using a Patterned Floor Plate and shall be galvanized in accordance with AASHTO M232, Class C or ASTM B695, Class 50.



COVER PLATE CONNECTION DETAIL

Scale: 1 1/2" = 1'-0"

NOTE:
Drill and tap finger plate to accept countersunk bolts.

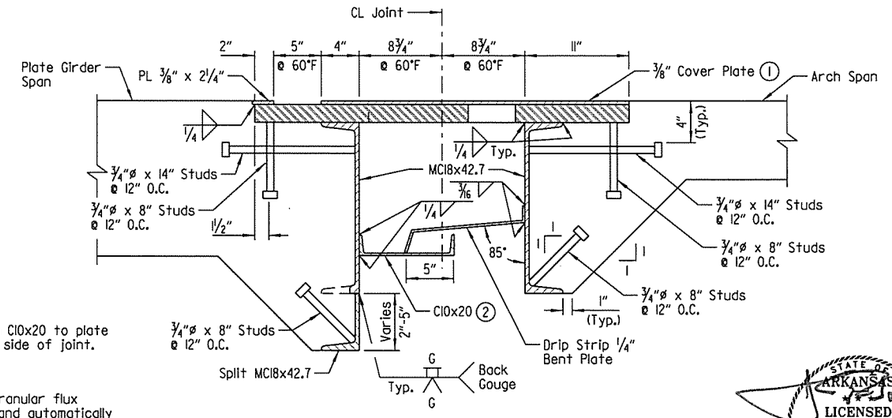


SECTION A-A - NOMINAL SLAB THICKNESS

Scale: 1 1/2" = 1'-0"

NOTE:
3/4"ø studs shown shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the channel in accordance with recommendations of the manufacturer.

② Attach C10x20 to plate girder side of joint.



SECTION A-A - THICKENED SLAB

Scale: 1 1/2" = 1'-0"

GENERAL NOTES

EXPANSION FINGER JOINT: The expansion device shall provide a movement of 5".

All structural steel shall be AASHTO M270, Grade 50 unless otherwise noted. Structural steel completely embedded in concrete need not be painted.

Structural steel attached to plate girder spans shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural steel attached to Arch spans shall be paid for as "STRUCTURAL STEEL IN ARCH SPANS (M270, GR. 50)".

Details of the proposed slider plate assembly shall be submitted to and approved by the Engineer prior to fabrication of the structural steel at the expansion device.

All exposed surfaces, except the cover plate, parapet slider plates, and downspout steel and supporting members, are to be cleaned and painted in accordance with Section 638. The parapet slider plates are to be cleaned and painted in accordance with Section 807 and shall match the Texture Coating color as specified in SP JOB 061275 "TEXTURE COATING FINISH" for parapet rails. All painting shall be paid for under the pay item "PAINTING STRUCTURAL STEEL". The cover plate and downspout steel and supporting members shall be galvanized in accordance with AASHTO M232, Class C or ASTM B695, Class 50.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF FINGER JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: AUG. 2013 FILENAME: B061275x1_SI33.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54495

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L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x1.SI54 (Gen Finger Jt. Dtls).dgn
REVISED DATE:

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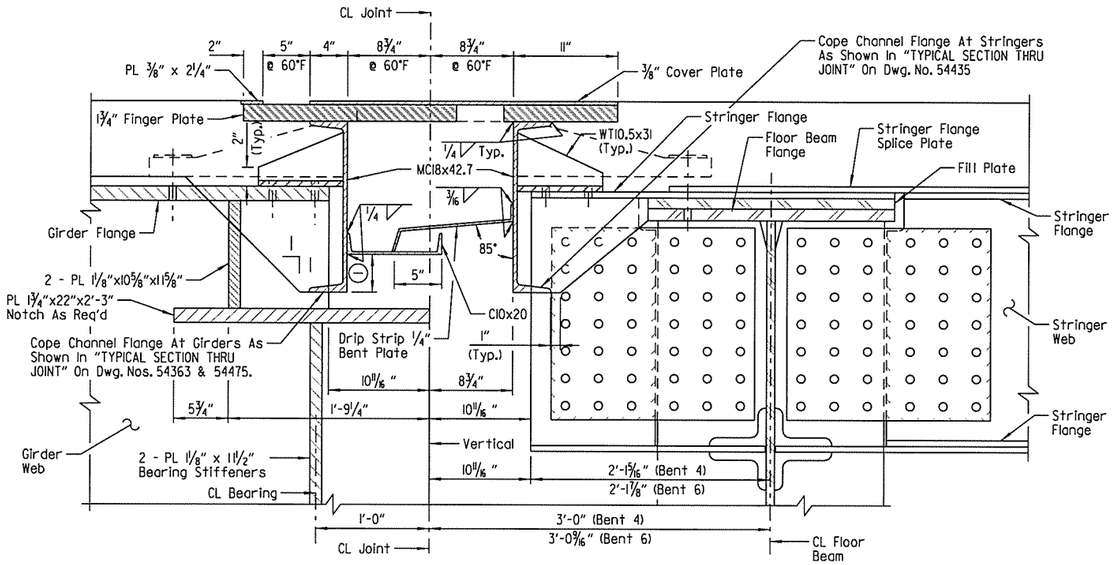
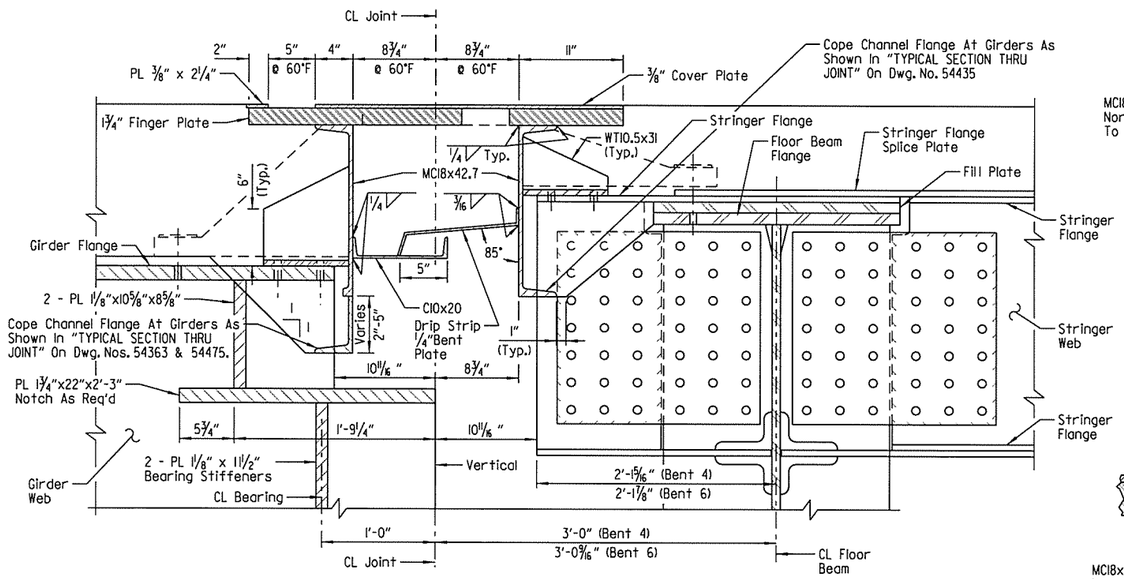
				JOB NO.		061275	272	505
				① 07292		JOINT DETAILS		54496



SECTION AT GIRDER - NOMINAL SLAB THICKNESS

Scale: 1½" = 1'-0"



SECTION AT GIRDER - THICKENED SLAB

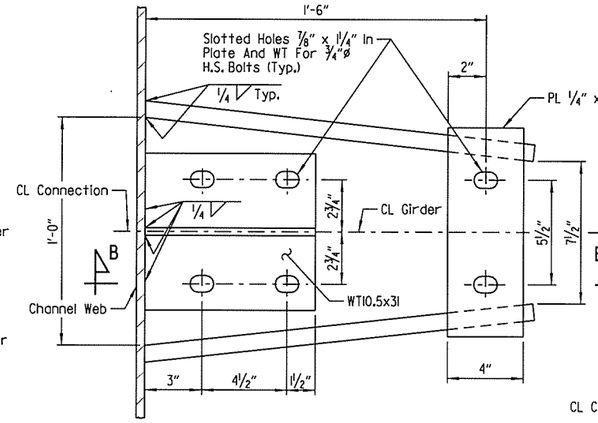
Showing Thickened Slab Section In Plate Girder Spans
Scale: 1½" = 1'-0"

① Varies - 5⅝" at CL Construction to ½" at end of channel near gutter

NOTE:
Drip Strip and channel shall be located on the expansion device to provide maximum slope for runoff.

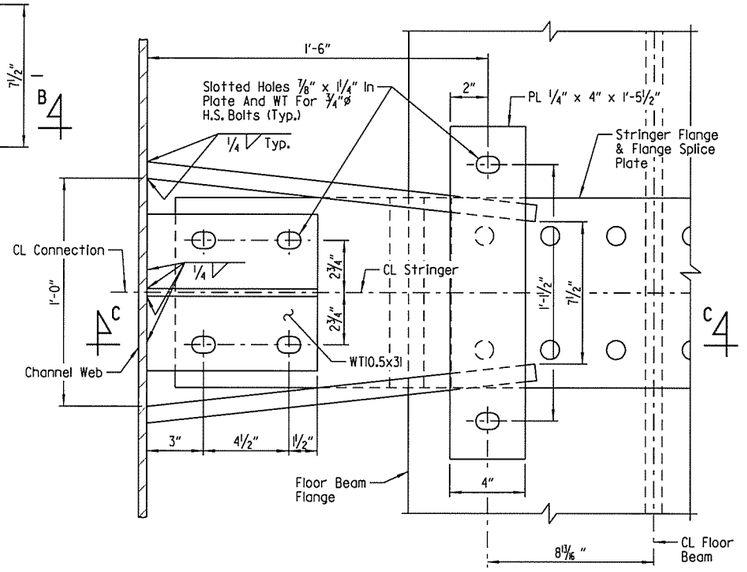
NOTE:
For expansion plate details, see Dwg. No 54495.

NOTE:
All structural steel in finger joints shall be M270, Gr. 50.



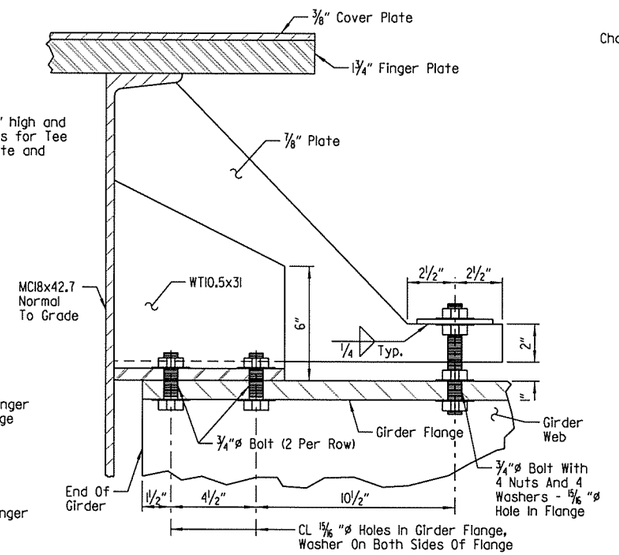
PLAN OF CONNECTION TO PLATE GIRDER

Scale: 3" = 1'-0"



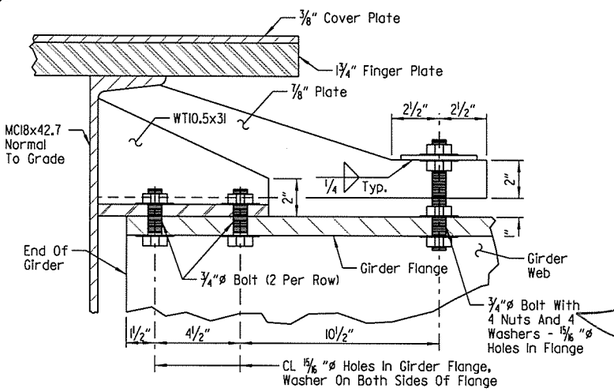
PLAN OF CONNECTION TO ARCH SPAN STRINGER

Scale: 3" = 1'-0"



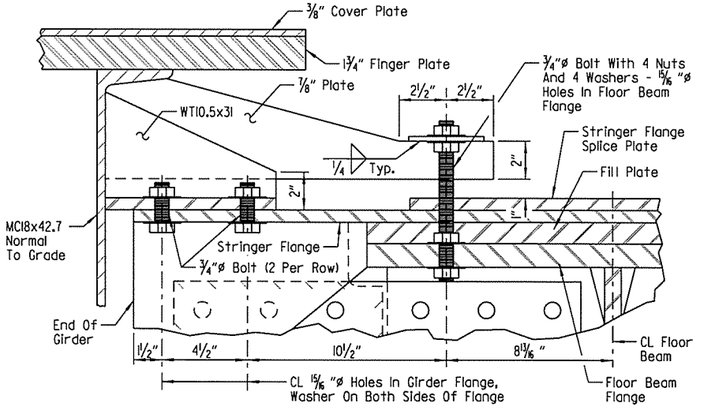
SECTION B-B - THICKENED SLAB

Scale: 3" = 1'-0"



SECTION B-B - NOMINAL SLAB THICKNESS

Scale: 3" = 1'-0"



SECTION C-C

Scale: 3" = 1'-0"

STATE OF ARKANSAS 14234 LICENSED PROFESSIONAL ENGINEER No.8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF FINGER JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: AUG. 2013 FILENAME: B061275xl_SI34.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: AUG. 2013

BRIDGE NO. 07292 DRAWING NO. 54496

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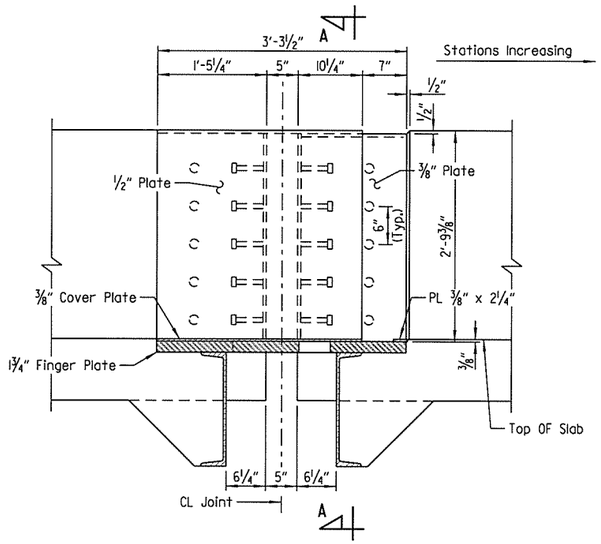
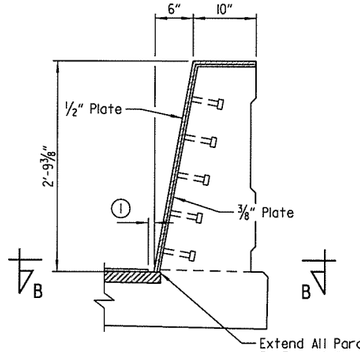
WORKSPACE: AHTD Bridge
L:\ROW\NORTH60 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI55 (Gen Finger Jt. Dtls 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	273	505
				① 07292		JOINT DETAILS		54497

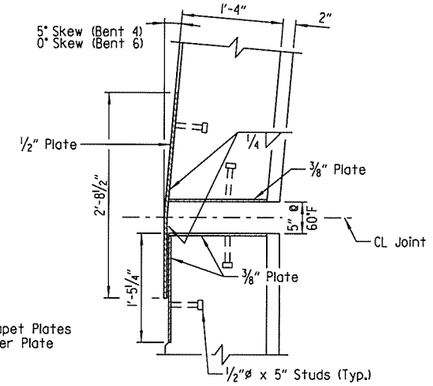


SLIDER PLATE DETAIL - LEFT PARAPET RAIL
Scale: 1" = 1'-0"



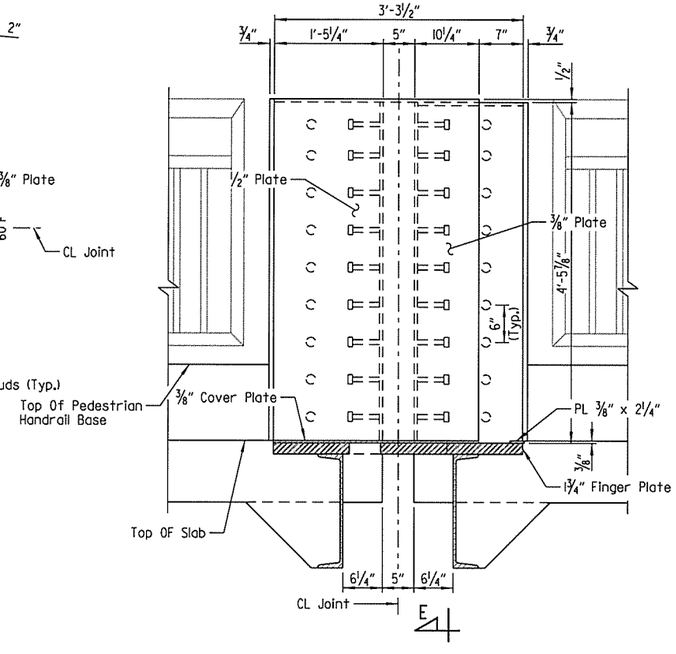
SECTION A-A
Scale: 1" = 1'-0"

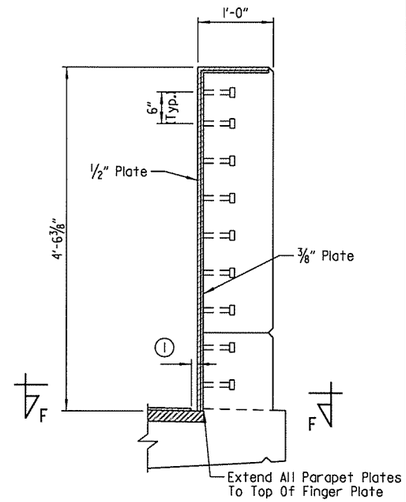
NOTE:
Fabricate slider plate assembly to match skew angle at inside face of parapet (Bent 4 Only).



SECTION B-B
Scale: 1" = 1'-0"

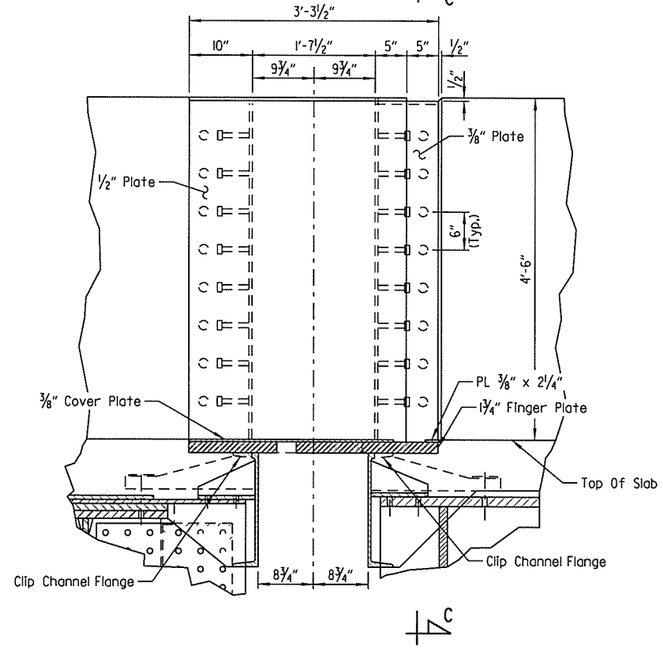
① Cover plate shall terminate 1" prior to gutterline.



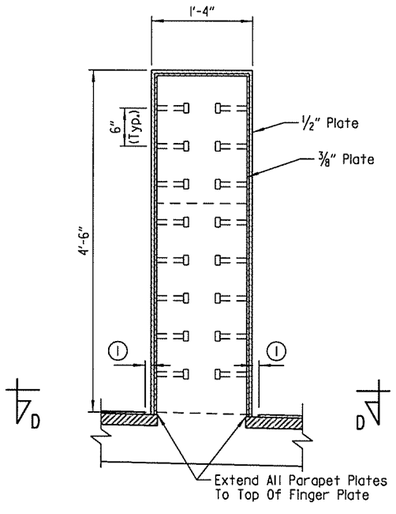


SECTION E-E
Scale: 1" = 1'-0"

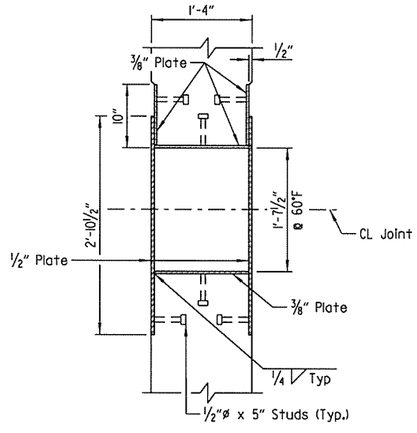
SLIDER PLATE DETAIL - PEDESTRIAN PARAPET RAIL
Scale: 1" = 1'-0"



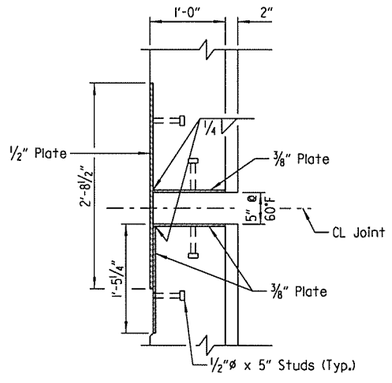
SLIDER PLATE DETAIL - RIGHT PARAPET RAIL
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"



SECTION D-D
Scale: 1" = 1'-0"



SECTION F-F
Scale: 1" = 1'-0"

NOTES:
½"ø studs shown shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the slider plates in accordance with recommendations of the manufacturer.

All structural steel in finger joints shall be M270 Gr. 50.

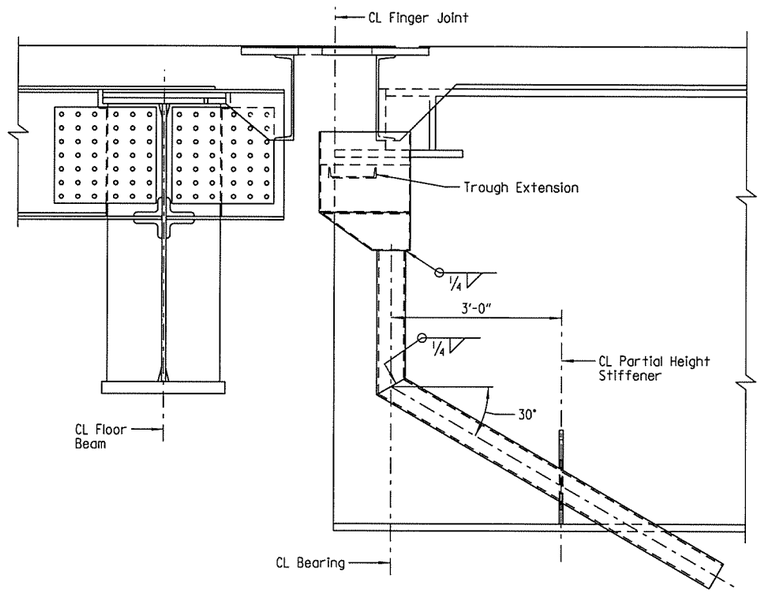
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF FINGER JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: AUG. 2013 FILENAME: B061275xl_SI35.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54497

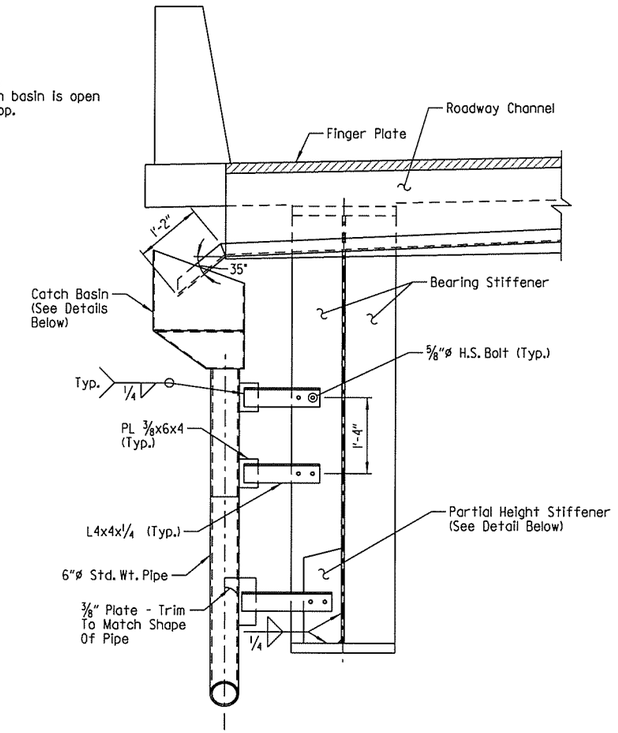
SRYancey 5/29/2014 4:36:46 PM
WORKSPACE: AHTD Bridge
L:\CONSULT\08 - Broadway Bridge over the Arkansas River\Drawings\B061275xl_SI35 (Gen Finger Jt. Dtls 3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	274	505
				(1) 07292		JOINT DETAILS		54498

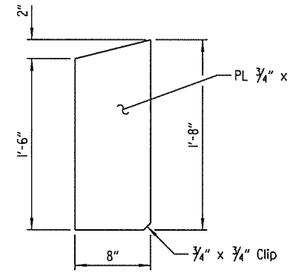


ELEVATION AT DOWNSPOUT
Scale: 3/4" = 1'-0"

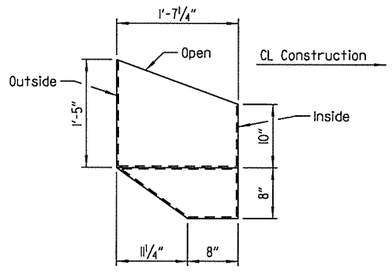
NOTE:
Catch basin is open on top.



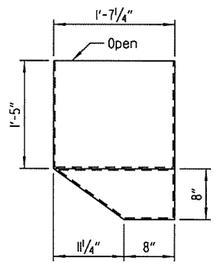
SECTION NEAR DOWNSPOUT
Scale: 3/4" = 1'-0"



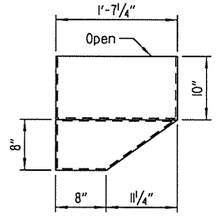
PARTIAL HEIGHT STIFFENER DETAIL
Scale: 1 1/2" = 1'-0"



FRONT ELEVATION

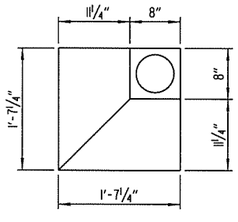


SIDE ELEVATION
(Outside)



SIDE ELEVATION
(Inside)

CATCH BASIN DETAILS
Scale: 1" = 1'-0"



PLAN

NOTES:
Steel used for catch basin shall be 1/4" thick.

Material for catch basin and supports may be A36 steel.

Standard Weight Pipe shall be ASTM A53.

All material shall be hot dip galvanized per AASHTO M232, Class C or ASTM B695, Class 50.

LEGEND
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF FINGER JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: AUG. 2013 FILENAME: B061275x1_SI36.DGN
CHECKED BY: DRG DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54498

SRYancey 5/29/2014 4:36:47 PM
WORKSPACE: AHTD Bridge
L:\ZOM\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI57 (Gen Finger Jt. Dtls 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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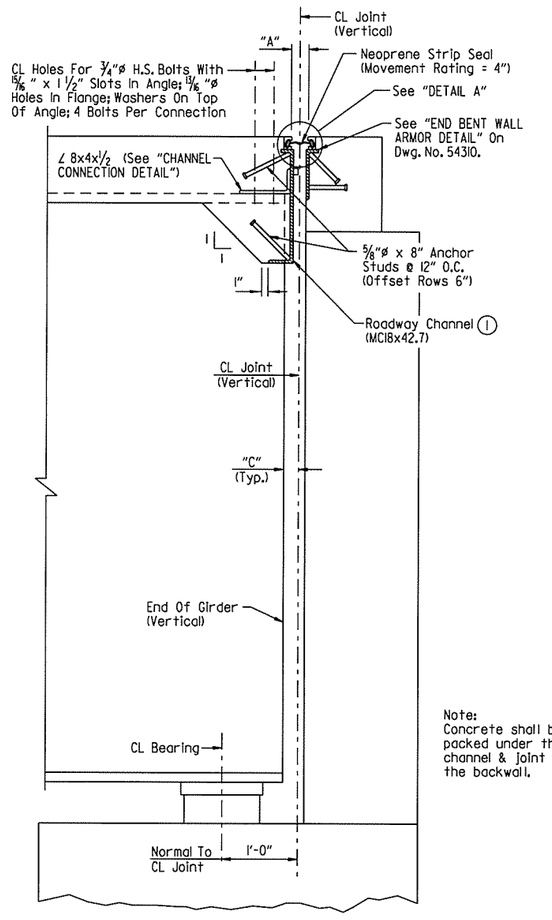
				JOB NO.		061275	275	505
				(1) 07292		JOINT DETAILS		54499



Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

SECTION THRU JOINT AT END BENT 8

Note: Section Taken Normal To CL Joint
No Scale

GENERAL NOTES

EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 4" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

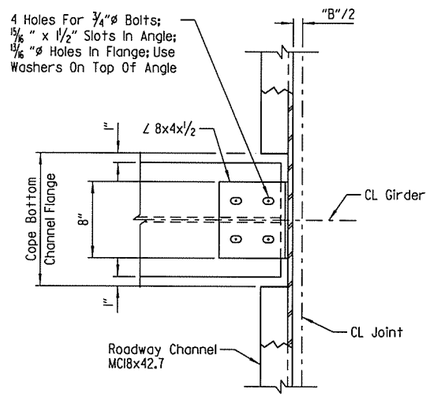
All structural steel shall be AASHTO M270, Grade 50 unless otherwise noted. Structural steel completely embedded in concrete need not be painted.

All structural steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Section 809.

Details of the proposed slider plate assembly shall be submitted to and approved by the Engineer prior to fabrication of the structural steel at the expansion device.

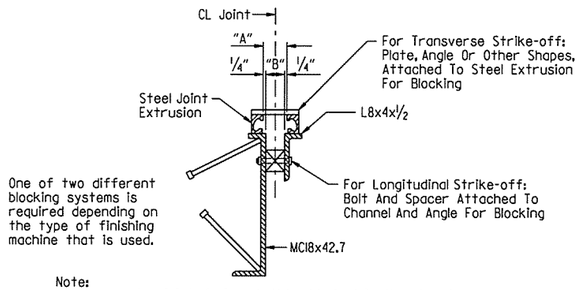
All exposed surfaces, except the parapet slider plates, are to be cleaned and painted in accordance with Section 638. The parapet slider plates are to be cleaned and painted in accordance with Section 807 and shall match the Texture Coating color as specified in SP JOB 061275 "TEXTURE COATING FINISH" for parapet rails. All painting shall be paid for under the pay item "PAINTING STRUCTURAL STEEL".

(1) See "SECTION A-A" on Dwg. No. 54475 for modifications to Roadway Channel within thickened slab area.



CHANNEL CONNECTION DETAIL

No Scale



Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F, and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

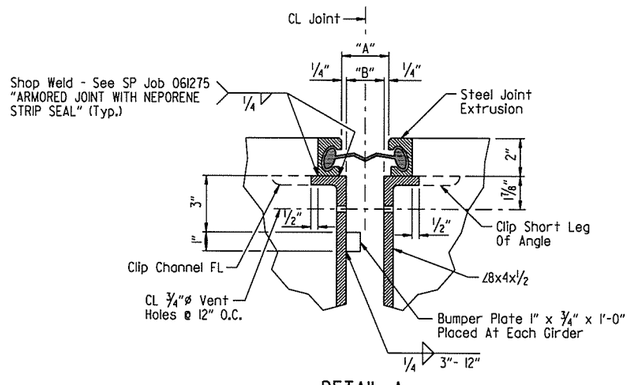
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.



DETAIL A

Scale: 3" = 1'-0"

STRIP SEAL JOINT DATA

Bent No.	Movement Rating (inch)	"A" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of:			"B" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of:			"C" Perpendicular To Joint At 24 Hour Average Temperature Of 60°F
		40°F	60°F	80°F	40°F	60°F	80°F	
8	4"	3"	2⅝"	2¼"	2½"	2⅛"	1¾"	2⅜"

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F min. and 80°F max. Interpolation of the table may be necessary. The temperature limitations of the lubricant-adhesive Manufacturer shall be observed.

NOTE:
For additional strip seal joint details, see Dwg. No. 54500.

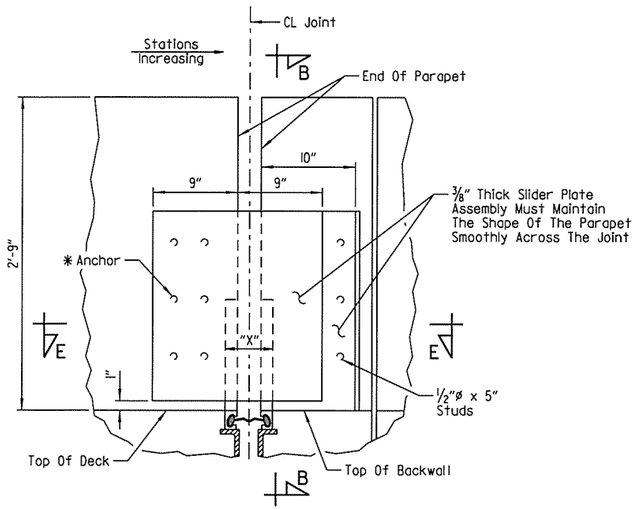
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8677
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF STRIP SEAL JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

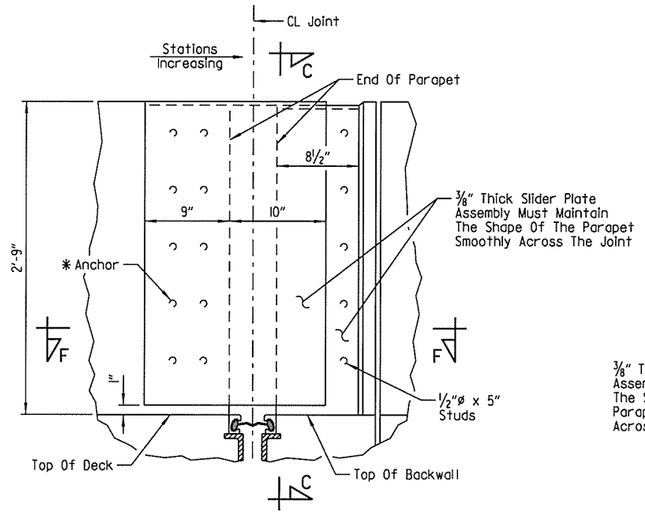
DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x1_SI37.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07292 DRAWING NO. 54499

SRYancey 5/29/2014 4:36:53 PM
WORKSPACE: AHTD Bridge
L:\BDN\MOT60 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_SI58 (Gen Strip Seal Jt. Dtls-1).dgn
REVISED DATE:

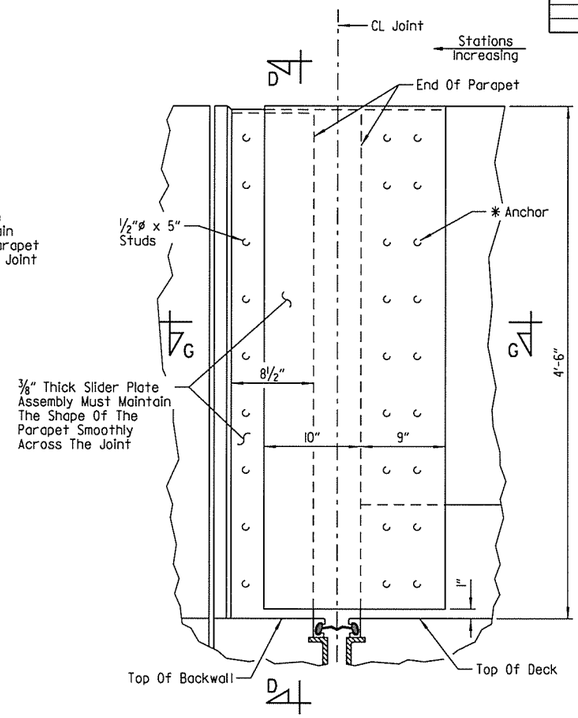
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	276	505
				(1) 07292		JOINT DETAILS		54500



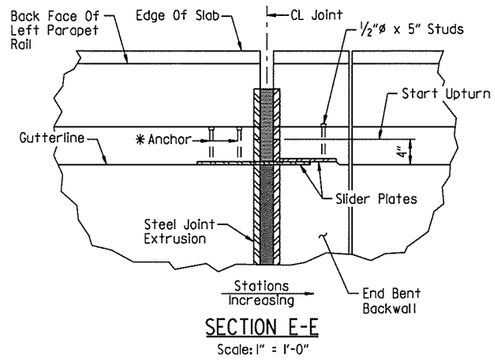
DETAIL OF NEOPRENE SEAL
AT LEFT PARAPET GUTTERLINE
No Scale



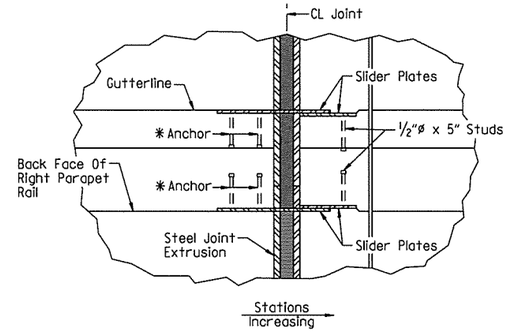
DETAIL OF NEOPRENE SEAL
AT RIGHT PARAPET GUTTERLINE
No Scale



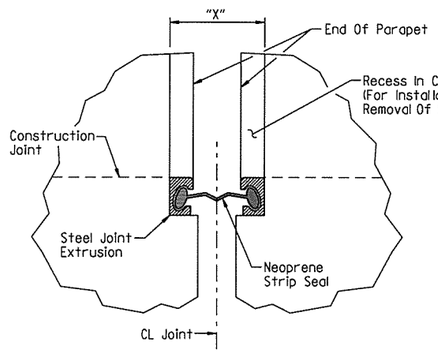
DETAIL OF NEOPRENE SEAL
AT PEDESTRIAN PARAPET GUTTERLINE
No Scale



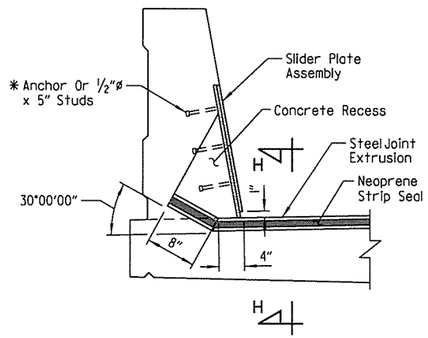
SECTION E-E
Scale: 1" = 1'-0"



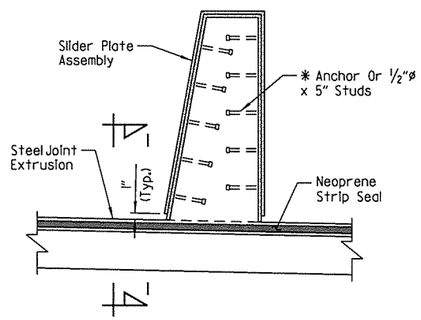
SECTION F-F
Scale: 1" = 1'-0"



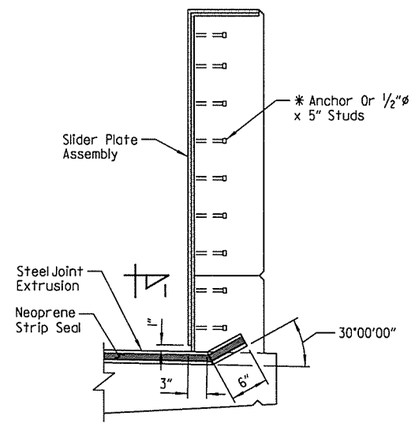
SECTION H-H
Scale: 3" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"



SECTION D-D
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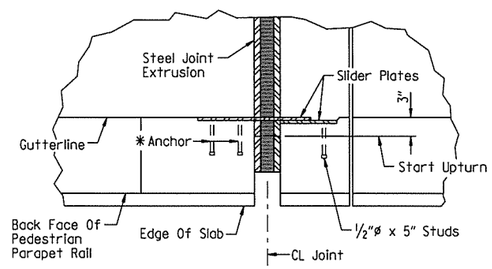
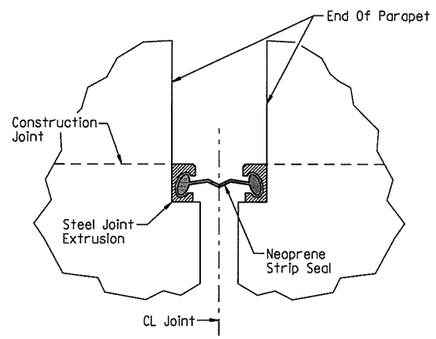


SECTION G-G
Scale: 1" = 1'-0"



SECTION I-I
Scale: 3" = 1'-0"

Note:
Dimension "X" equals the width of the recess in parapet at gutterline to allow for removal or repair of joint.

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Method of installation and fabrication shall be determined by the Manufacturer.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF STRIP SEAL JOINT
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x1_SI38.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 07292 DRAWING NO. 54500

SRYancey 5/29/2014 4:36:54 PM
WORKSPACE: AHTD Bridge
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REVISED DATE:

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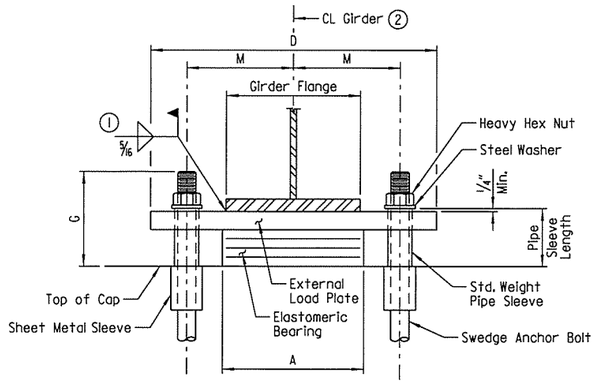
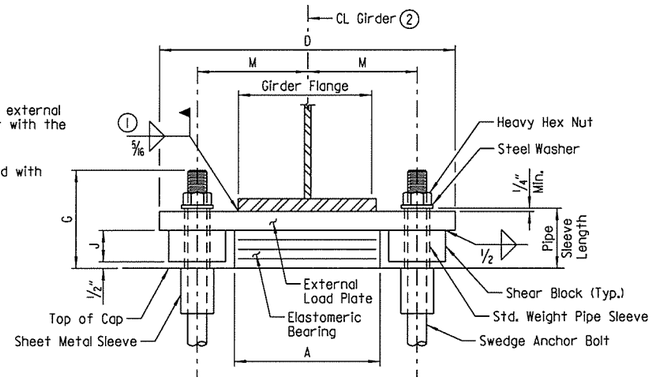
				6	ARK.			
				JOB NO.		061275	277	505
				(1)	07292	ELASTOMERIC BEARINGS		5450I

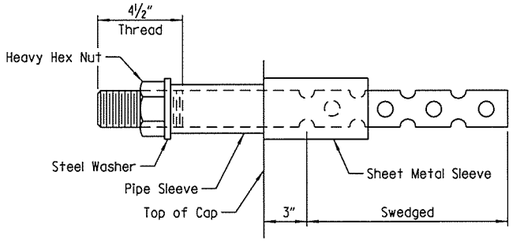


FRONT VIEW - AT BENT NOS. 3 BK. & 4 BK.

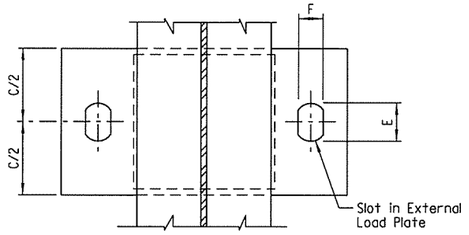
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.

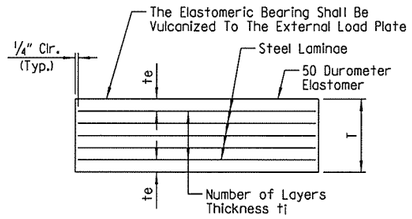




ANCHOR BOLT DETAIL

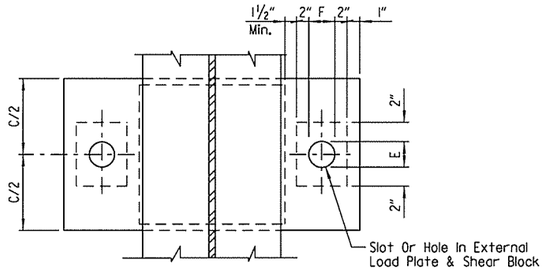


PLAN VIEW - AT BENT NOS. 3 BK. & 4 BK.

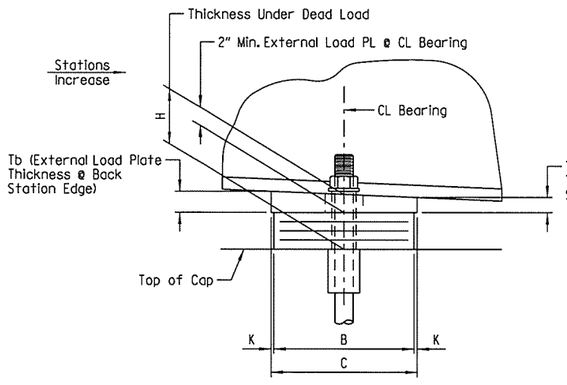


t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_i = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_i

ELASTOMERIC BEARING



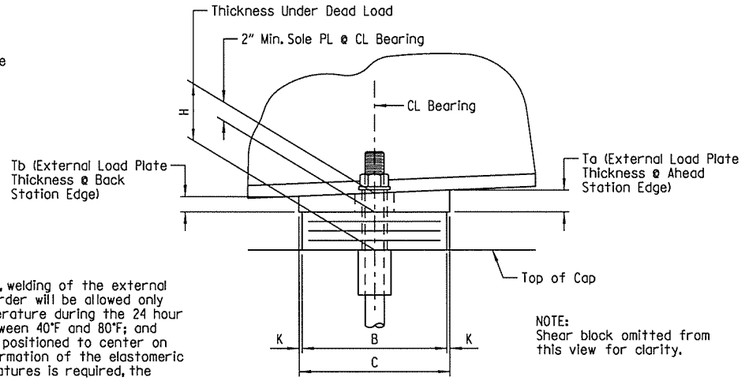
PLAN VIEW - AT BENT NOS. 1, 2, 3 AH, 6 AH, 7 & 8



SIDE VIEW - AT BENT NOS. 3 BK. & 4 BK.

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - AT BENT NOS. 1, 2, 3 AH, 6 AH, 7 & 8

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	Elastomeric Pad								External Load Plate									Anchor Bolt				
Bent No(s).	Girder				G	H	A	B	N	t_i	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b	Anchor Bolt ** (Dia. x L)	Grade	Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
1	All	Exp.	9	150.0	10"	6¾"	18"	9"	7	½"	¼"	8 @ 12 Ga.	4 13/16"	11"	37¼"	5¼"	3⅛"	4¼"	1"	14 1/16"	2.15"	1.85"	2" x 38"	55	2½" x 7"	4" x 30"	3¾"
2	All	Fixed	9	525.0	8 11/16"	4 15/16"	22"	14"	4	½"	¼"	5 @ 12 Ga.	3"	11"	42½"	3¾"	3¾"	2½"	½"	16⅜"	2.23"	1.77"	2½" x 42"	105	3" x 5 5/16"	4" x 30"	4½"
3 Bk.	All	Exp.	12	188.0	10"	6¾"	18"	9"	7	½"	¼"	8 @ 12 Ga.	4 13/16"	10"	30½"	5½"	3⅛"	-	½"	12"	2.11"	1.89"	2" x 43"	55	2½" x 7"	4" x 24"	3¾"
3 Ah.	All	Fixed	15	372.0	8 7/16"	4 15/16"	24"	11"	4	½"	¼"	5 @ 12 Ga.	3"	12"	43¼"	3⅛"	3⅛"	2½"	½"	17 1/16"	2.13"	1.87"	2¼" x 39"	55	2½" x 5 5/16"	4" x 30"	4"
4 Bk.	All	Exp.	11	323.0	10 7/16"	6 3/16"	24"	10"	6	½"	¼"	7 @ 12 Ga.	4¼"	11"	38"	6¾"	3¾"	-	½"	15½"	2.10"	1.90"	2¾" x 51"	55	3" x 6 7/16"	5" x 40"	5"
6 Ah.	All	Exp.	9	237.0	11⅛"	7⅜"	24"	10"	8	½"	¼"	9 @ 12 Ga.	5 5/16"	13"	44½"	7"	3¾"	5"	1½"	17⅜"	1.83"	2.17"	2½" x 49"	55	3" x 7 5/8"	4" x 40"	4½"
7	All	Fixed	9	814.0	8 5/8"	4⅜"	26"	19"	3	½"	¼"	4 @ 12 Ga.	2 7/16"	20"	46½"	3¾"	3¾"	2"	½"	18⅜"	1.70"	2.30"	2¾" x 45"	105	3" x 4 5/8"	5" x 30"	5"
8	All	Exp.	9	286.0	11⅛"	7⅜"	24"	10"	8	½"	¼"	9 @ 12 Ga.	5 5/16"	13"	44½"	7¼"	3¾"	5"	1½"	17⅜"	1.80"	2.20"	2½" x 44"	55	3" x 7 5/8"	4" x 30"	4½"

* Maximum Design Load = Service Load ** Supplementary Requirement S1 is waived for Grade 105 Anchor Bolts.

GENERAL NOTES

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50)".

Elastomeric bearings shall conform to Section 808 and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

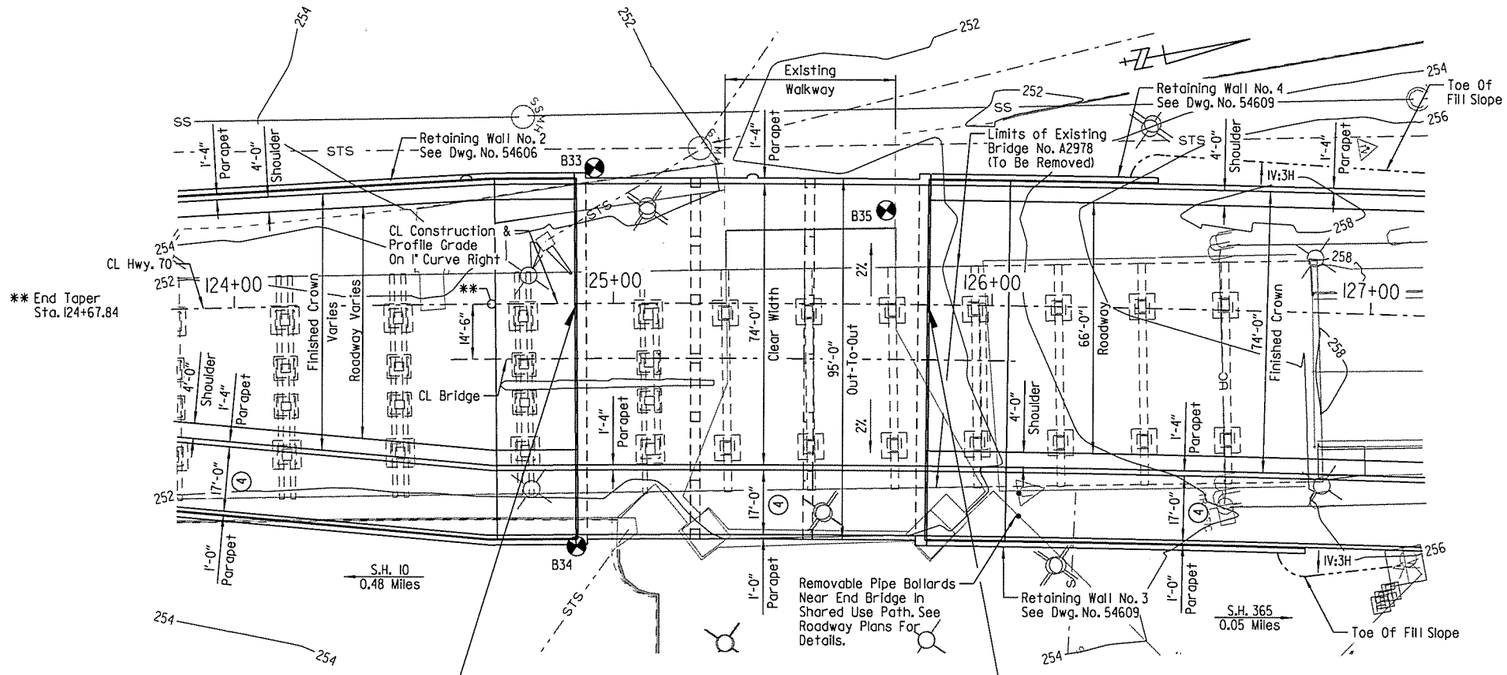
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x1_E1.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAY 2013
BRIDGE NO. 07292 DRAWING NO. 5450I

SRYancey 5/29/2014 4:36:54 PM
WORKSPACE: AHTD Bridge
L:\x20IN\I07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x1_E1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	278	505
				(1) 07293		LAYOUT		54502

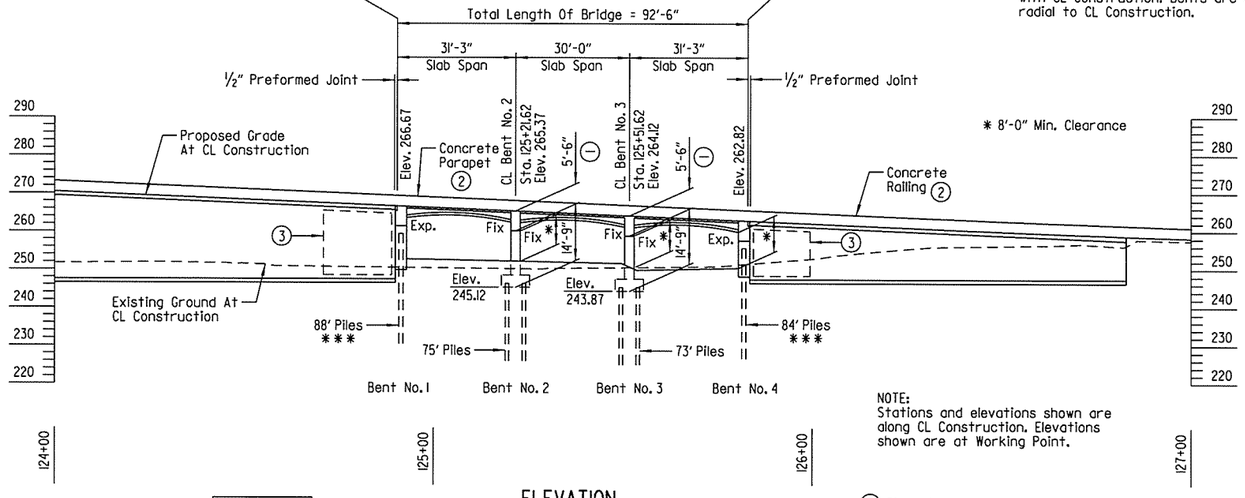
NOTE:
Use Type Special Approach Slab at each end of bridge. See details on Dwg. No. 54522.



PLAN

NOTE:
Except as shown in taper, all transverse dimensions are along lines radial to CL Construction.

NOTE:
Longitudinal lines are along arcs concentric with CL Construction. Bents are on lines radial to CL Construction.

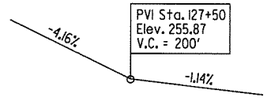


ELEVATION

NOTE:
Stations and elevations shown are along CL Construction. Elevations shown are at Working Point.

LEGEND

SS = Sanitary Sewer
STS = Storm Sewer
UC = Underground Cable
W = Water Line



VERTICAL CURVE DATA

Highway 70
(Profile Grade Along CL Construction)

HORIZONTAL CURVE DATA

Hwy. 70 CL Construction
PI = 125+77.52
Δ = 3°58'52" Rt.
D = 1°00'00"
T = 199.13'
L = 398.11'
R = 5729.58'
e = N.C.

(1) Dimension taken from top of deck at CL Construction to top of bent cap

(2) Concrete parapet with Metal Type HI Handrail (both sides of roadway), Metal Type H2 Handrail (east side of shared use path)

(3) Wire face MSE Wall required behind end bents to serve as a pressure relief wall. Maintain a 4" gap between end bent & wire face wall (see end bent details).

(4) 16'-0" Shared Use Path plus 1'-0" allowance for blister to accomodate future trolley catenary system.

GENERAL NOTES - BRIDGE OVER PEDESTRIAN WALKWAY

BENCH MARK: PN: 915, PD: 50. IN BASE, ST: 129+31.76 OF: 36.79' RT. ZC: 255.07

OPERATIONAL CATEGORY: ESSENTIAL

STEEL PILING: Piling for Bent Nos. 1 - 4 shall be HP 14x73 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 370 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. The Contractor shall use approved steel H-Pile driving points on all piles.

*** Piling in Bent Nos. 1 & 4 shall be driven no sooner than 30 days after embankment construction is complete.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 110,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1 - 4.

DETAIL DRAWINGS:	DRAWING NOS:
End Bents	54504-54506
Intermediate Bents	54507-54508
Architectural Finishes	54509-54510
92'-6" Cont. Concrete Slab Unit	54511-54521
Type Special Approach Slab	54522
Steel Piling	55020

For "PROJECT GENERAL NOTES", see Dwg. No. 54292.

FOR R/W DATA, SEE ROADWAY PLANS

NOTE:
For "SOIL BORING PROFILE", See Dwg. No. 54503.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-29-14
BRIDGE ENGINEER

LAYOUT OF BRIDGE OVER PEDESTRIAN WALKWAY ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F) PULASKI COUNTY

ROUTE 70 SEC. 12

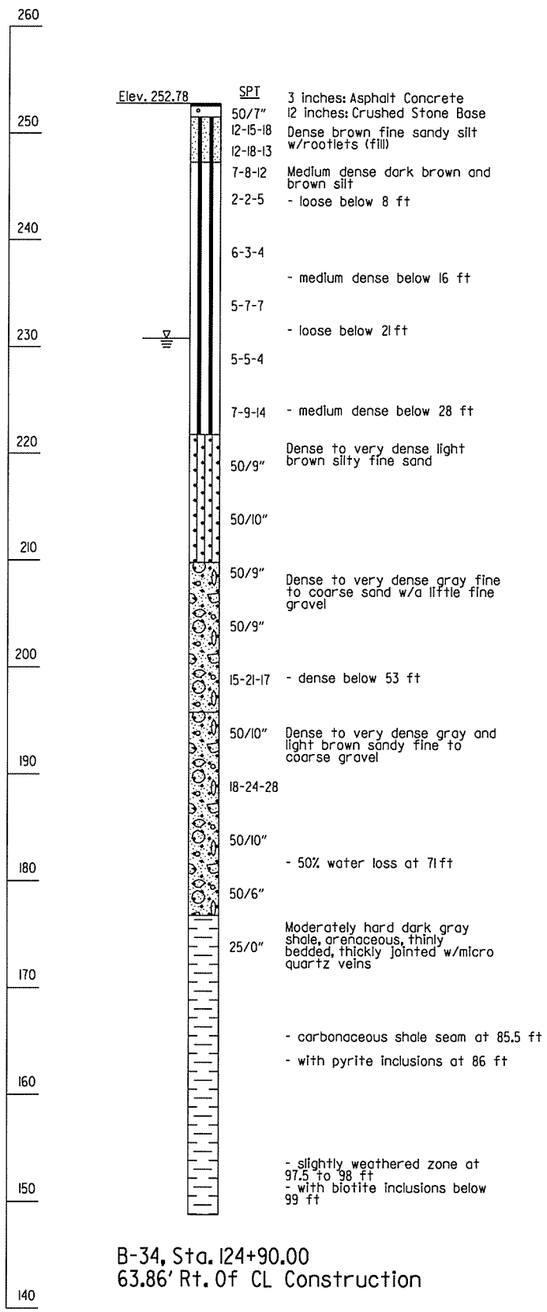
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

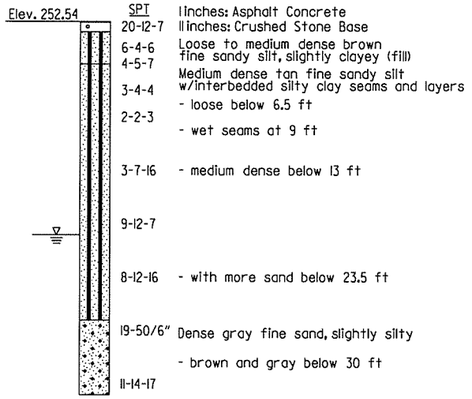
DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x2_LI.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07293 DRAWING NO. 54502

SRYancey 5/29/2014 4:41:27 PM
WORKSPACE: AHTD Bridge
L:\ZION\ROUTE80 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_LI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	279	505
				(1) 07293		SOIL BORING PROFILE		54503



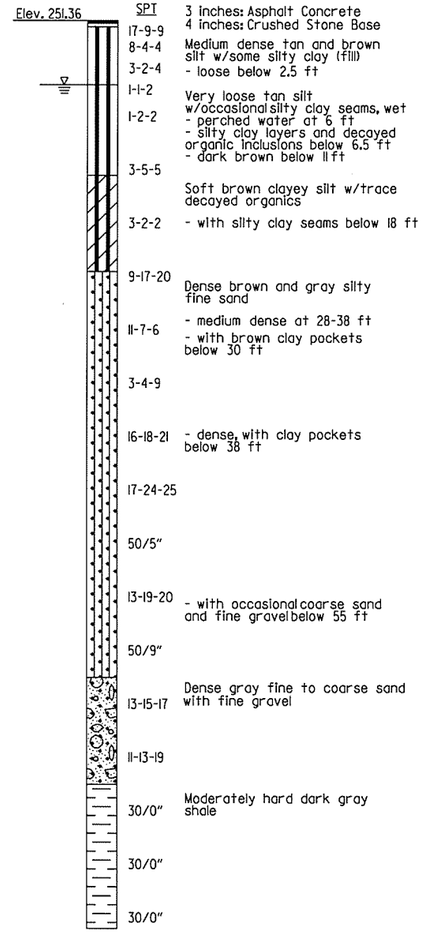
B-34, Sta. 124+90.00
63.86' Rt. Of CL Construction



B-33, Sta. 124+95.14
35.72' Lt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.



B-35, Sta. 125+71.71
24.72' Rt. Of CL Construction

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL
BRIDGE ENGINEER

SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER PEDESTRIAN WALKWAY
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

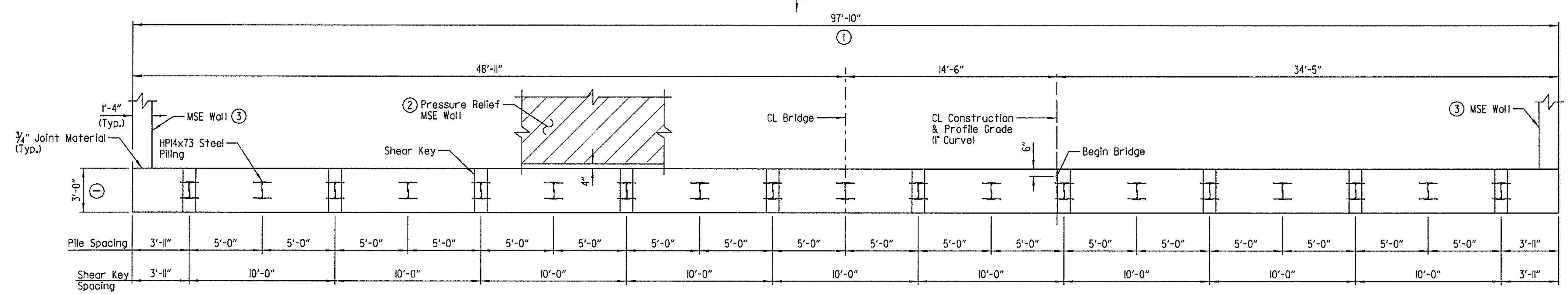
DRAWN BY: CWT DATE: AUG. 2013 FILENAME: B061275x2_L2.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: AUG. 2013

BRIDGE NO. 07293 DRAWING NO. 54503

SRYancey 5/29/2014 4:48:28 PM
WORKSPACE: AHTD Bridge
L:\2DWGS\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_L2 (Boring Log).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	280	505
				(1) 07293		END BENT DETAILS		54504

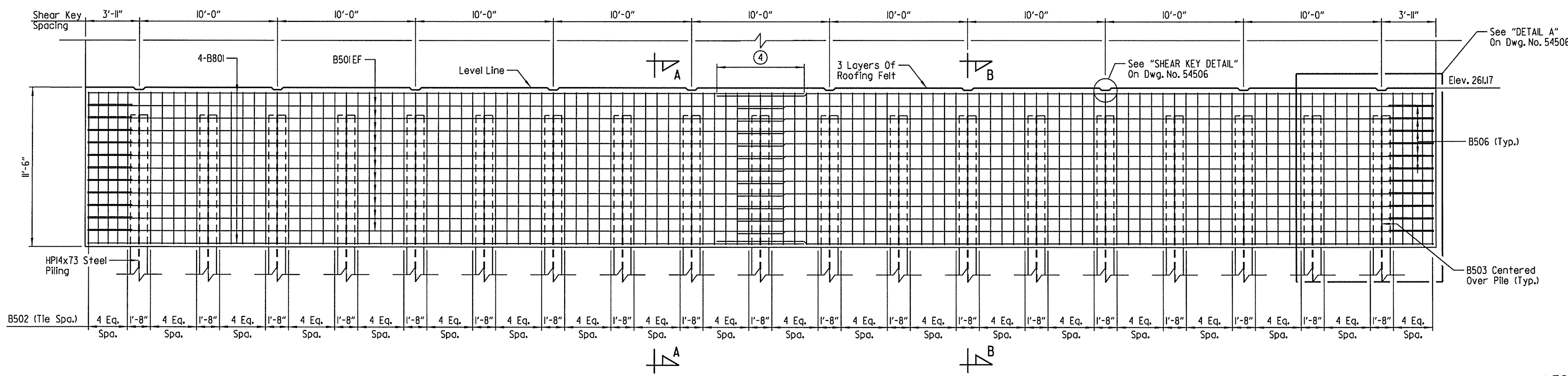
(1) Nominal dimension at top of cap shown. Abutment cap dimensions vary near bottom of abutment per "ARCHITECTURAL FINISH DETAILS" on Dwg. Nos. 54509-54510.



PLAN - END BENT 1

Scale: 1/4" = 1'-0"

(4) B801 - 6'-4" Min. Lap Splice
B501 - 3'-3" Min. Lap Splice



ELEVATION - END BENT 1

Looking Back
Scale: 1/4" = 1'-0"

LEGEND

EF = Each Face

(2) A 4" gap shall be maintained in between the wire face MSE wall (pressure relief wall) and End Bent 1. A compressible material shall be provided between the completed wire face MSE Wall and the end bent. Payment for the compressible material shall not be measured separately but shall be considered subsidiary to the item "Class S Concrete - Bridge".

(3) For MSE Wall details, see Dwg. No. 54609.

SRYancey 5/29/2014 4:41:29 PM
WORKSPACE: AHTD Bridge
L:\2011\10IT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B1(End Bent 1).dgn
REVISED DATE:

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

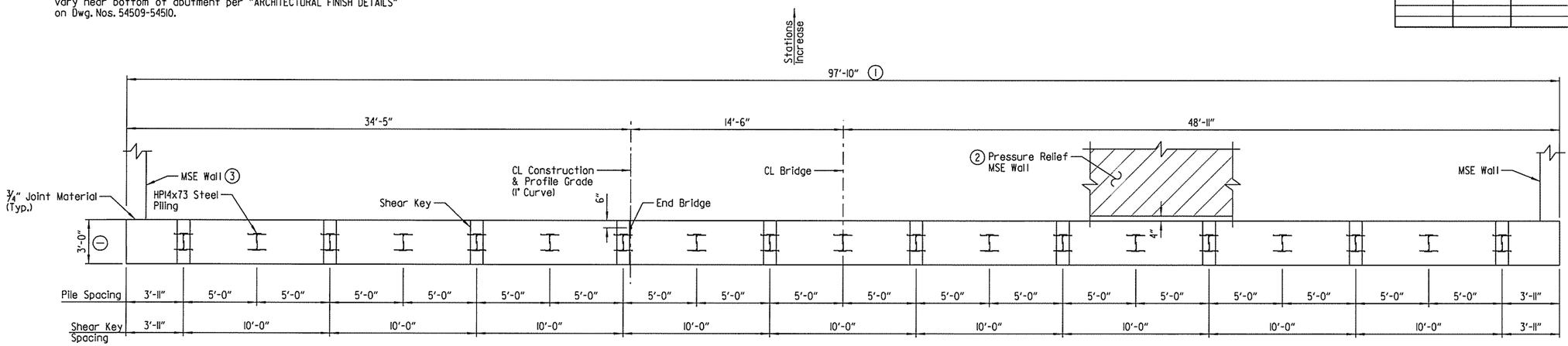
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275x2_B1.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54504

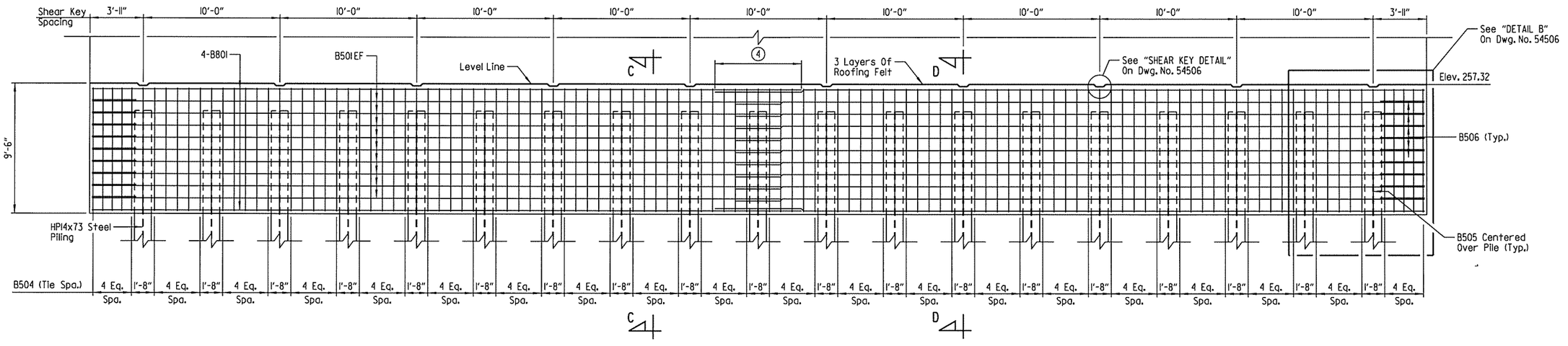
(1) Nominal dimension at top of cap shown. Abutment cap dimensions vary near bottom of abutment per "ARCHITECTURAL FINISH DETAILS" on Dwg. Nos. 54509-54510.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	281	505
				(1) 07293		END BENT DETAILS		54505



PLAN - END BENT 4
Scale: ¼" = 1'-0"

(4) B801 - 6'-4" Min. Lap Splice
B501 - 3'-3" Min. Lap Splice



ELEVATION - END BENT 4
Looking Ahead
Scale: ¼" = 1'-0"

(2) A 4" gap shall be maintained in between the wire face MSE wall (pressure relief wall) and End Bent 4. A compressible material shall be provided between the completed wire face MSE Wall and the end bent. Payment for the compressible material shall not be measured separately but shall be considered subsidiary to the item "Class S Concrete - Bridge".

(3) For MSE Wall details, see Dwg. No. 54609.

LEGEND
EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

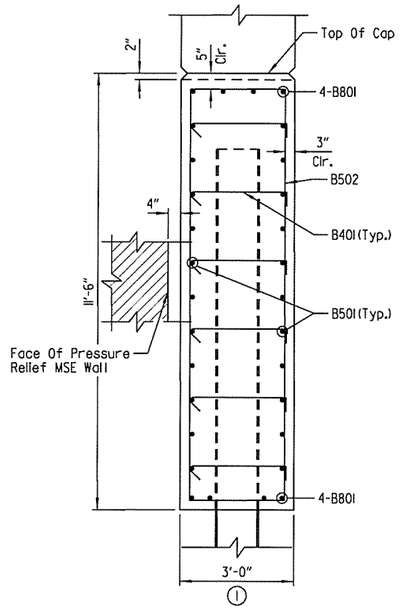
SHEET 2 OF 3
DETAILS OF END BENTS
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275x2_B2.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54505

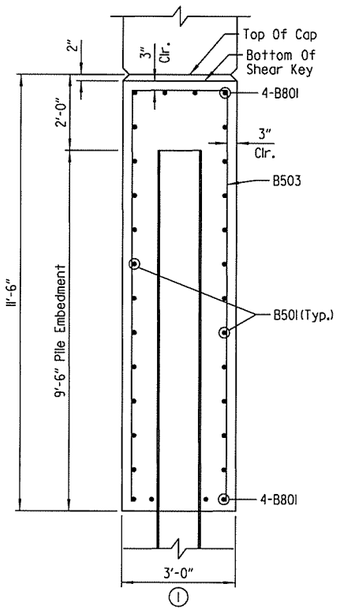
SRYancey 5/29/2014 4:41:29 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B2 (End Bent 4).dgn
REVISED DATE:

(1) Nominal dimension at top of cap shown. Abutment cap dimensions vary near bottom of abutment per "ARCHITECTURAL FINISH DETAILS" on Dwg. Nos. 54509-54510.

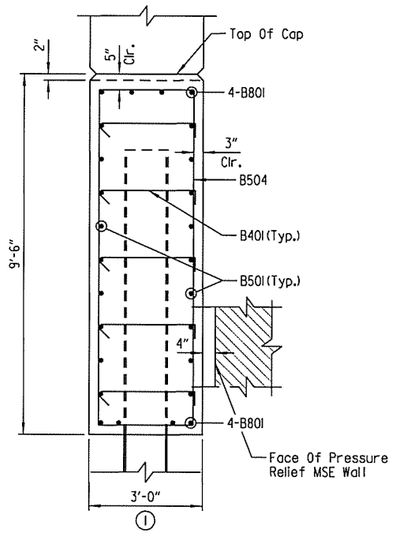
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	282	505
				(1) 07293		END BENT DETAILS		54506



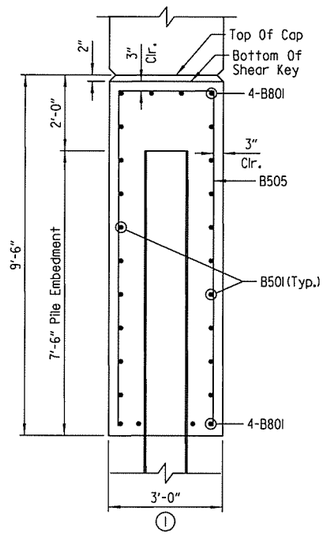
SECTION A-A
Scale: ½" = 1'-0"



SECTION B-B
Scale: ½" = 1'-0"



SECTION C-C
Scale: ½" = 1'-0"



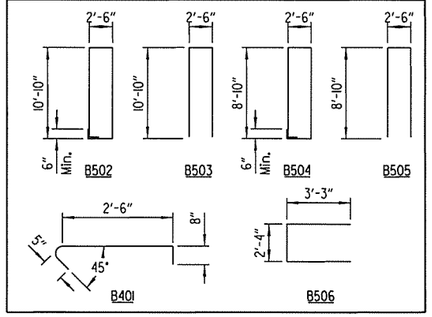
SECTION D-D
Scale: ½" = 1'-0"

NOTE:
Number of common bars shown is for one end bent.

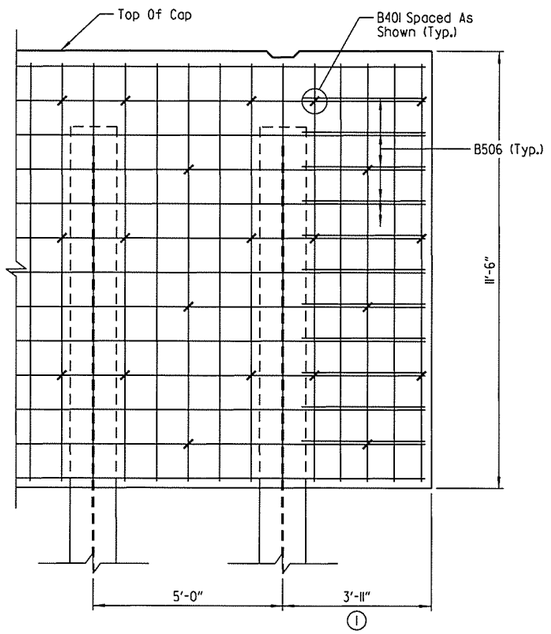
	MARK	NO. REQ'D	LENGTH	P.D.
COMMON BARS	B801	16	51'-10"	Str.
BENT 1	B401	180	3'-7"	3"
	B501	44	50'-4"	Str.
	B502	100	27'-2"	2½"
	B503	19	24'-0"	2½"
	B506	22	8'-8"	2½"
BENT 4	B401	160	3'-7"	3"
	B501	36	50'-4"	Str.
	B504	100	23'-2"	2½"
	B505	19	20'-0"	2½"
	B506	18	8'-8"	2½"

BAR LIST - BENT NOS. 1 & 4

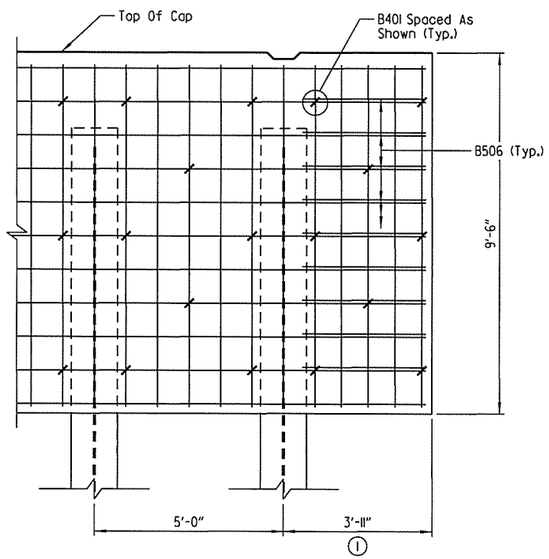
BAR BENDING DIAGRAM - BENT NOS. 1 & 4



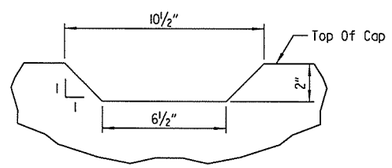
NOTE:
Dimensions of bars are out-to-out.



DETAIL A
(Bent 1)
Scale: ½" = 1'-0"



DETIAL B
(Bent 4)
Scale: ½" = 1'-0"



SHEAR KEY DETAIL
Scale: 3" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry.
All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Gr. 60.

All piles shall be HP14x73 (AASHTO M270, Gr. 50).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-29-14
BRIDGE ENGINEER

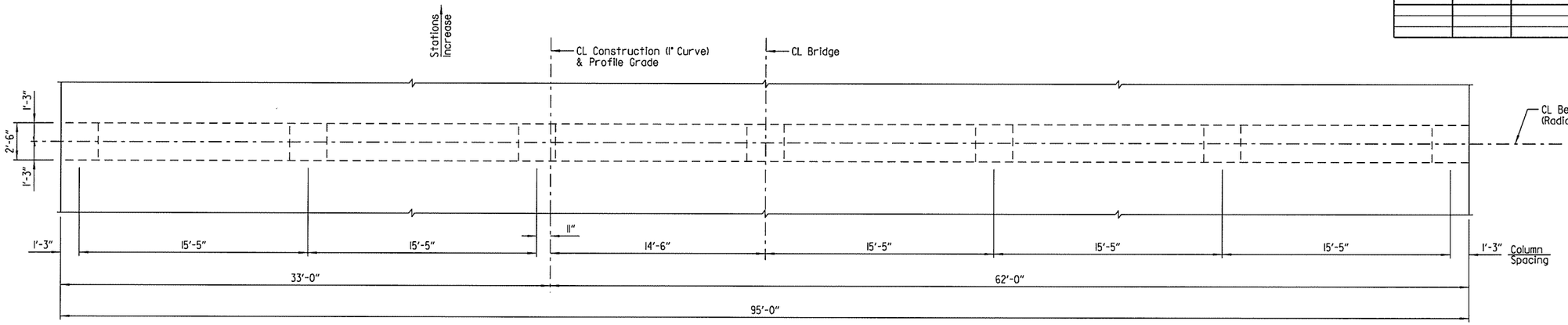
SHEET 3 OF 3
DETAILS OF END BENTS
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275x2_B3.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54506

SRYancey 5/29/2014 4:41:30 PM
WORKSPACE: AHTD Bridge
L:\2DRAWDTGBD - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B3 (End Bent Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	283	505
① 07293		INT. BENT DETAILS		54507

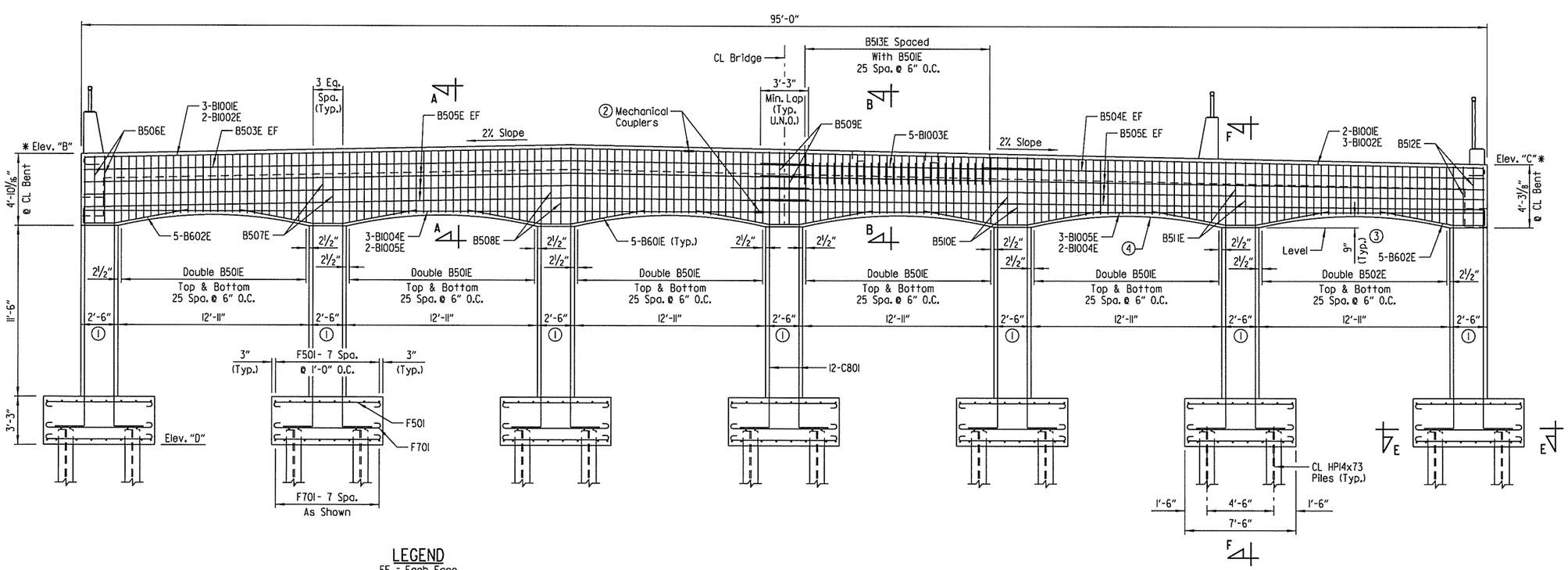


PLAN - BENT NOS. 2 & 3
Scale: 1/4" = 1'-0"

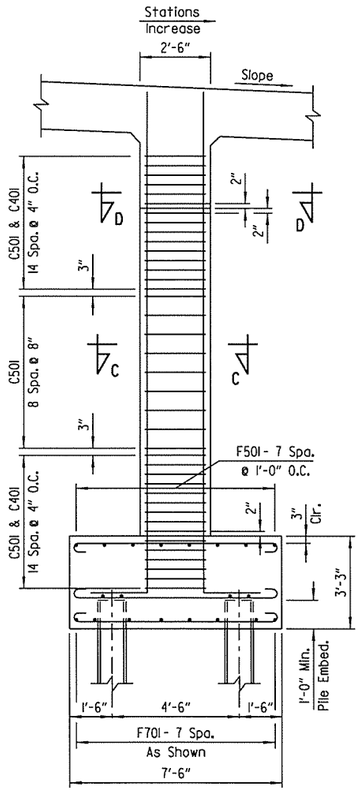
* TABLE OF ELEVATIONS

	"A"	"B"	"C"	"D"
Bent No. 2	265.37	264.71	264.13	245.12
Bent No. 3	264.12	263.46	262.88	243.87

* Elevations shown are measured along CL Bent. Dimensions shown are measured along radial line at CL Bent.



ELEVATION - BENT NOS. 2 & 3
(Looking Forward)
Scale: 1/4" = 1'-0"



SECTION F-F
Scale: 3/8" = 1'-0"

LEGEND
EF = Each Face
U.N.O. = Unless Noted Otherwise

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "SECTION D-D", "SECTION E-E", "BAR LIST" & "BAR BENDING DIAGRAM", See Dwg. No. 54508.

GENERAL NOTES

Concrete in bent caps shall be Class S "AE" with a minimum 28 day compressive strength fc'=4000 psi.

Concrete in columns and footings shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. All concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Gr. 60 (Yield Strength = 60,000 psi) except as noted otherwise.

For additional information, see Layout.

A Class 3 Texture Coating Finish shall be applied to bridge surfaces as specified in SP JOB 061275 "TEXTURE COATING FINISH" and in accordance with Subsection 802.19.

① Normal dimension of column shown. Column size varies near bottom of column. See ARCHITECTURAL FINISH DETAILS On Dwg. Nos. 54509-54510.

② Mechanical Couplers required to splice top and bottom reinforcing. The coupler assembly shall consist of a QPL Approved Mechanical splice and shall develop at least 125% of the yield strength of the bar. Cost of the Mechanical Couplers shall be considered subsidiary to the item "Reinforcing Steel".

③ See Dwg. No. 54509 for details.

④ 28' Radius

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

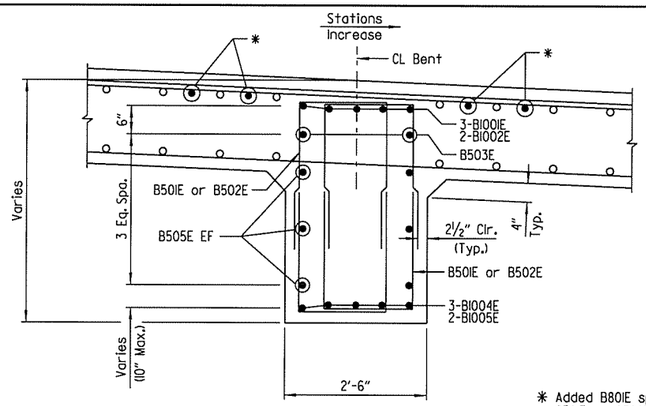
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x2_B4.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JULY 2013

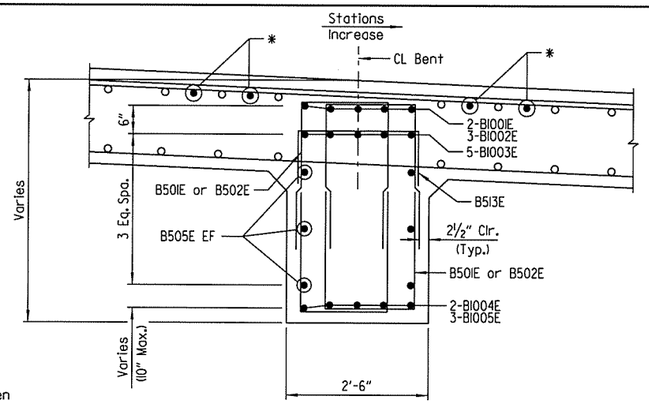
BRIDGE NO. 07293 DRAWING NO. 54507

SRYancey 5/29/2014 4:41:30 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\MOTDOT - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	284	505
				(1) 07293		INT. BENT DETAILS		54508

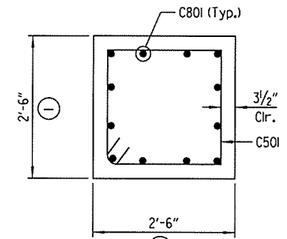


SECTION A-A
Scale: ¾" = 1'-0"

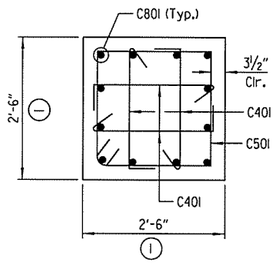


SECTION B-B
Scale: ¾" = 1'-0"

* Added B801E spaced between S501E or S502E

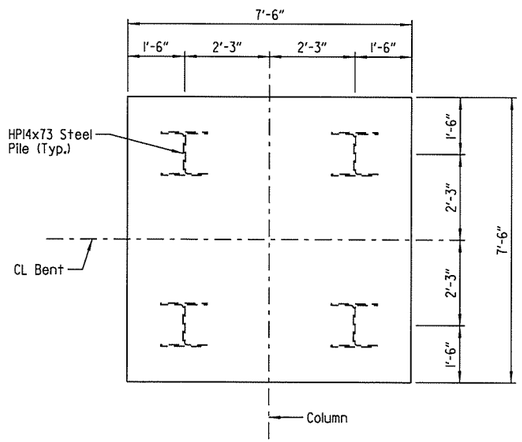


SECTION C-C
Scale: ¾" = 1'-0"



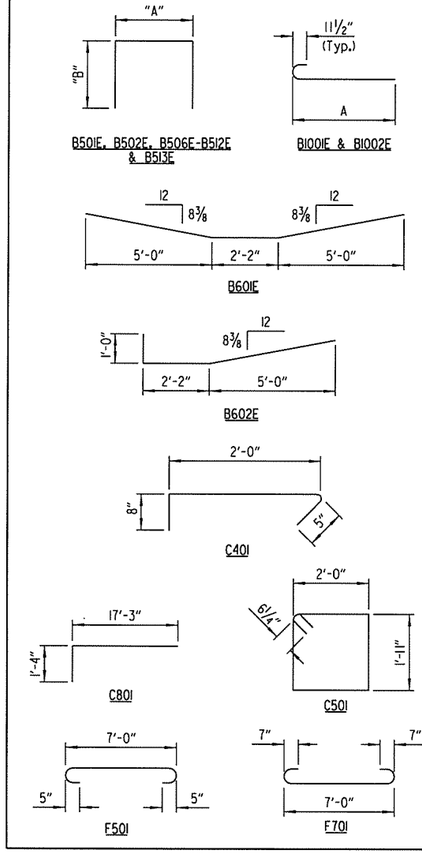
SECTION D-D
Scale: ¾" = 1'-0"

(1) Normal dimension of column shown. Column size varies near bottom of column. See ARCHITECTURAL FINISH DETAILS On Dwg. No. 54509.



SECTION E-E
Scale: ½" = 1'-0"

BAR BENDING DIAGRAM



BAR LIST (PER BENT)

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
	B501E	520	8'-5"	1'-7"	3'-6"	2½"
	B502E	104	7'-7"	1'-7"	3'-1"	2½"
	B503E	2	49'-0"			Str.
	B504E	2	33'-7"			Str.
	B505E	12	49'-0"			Str.
	B506E	2	10'-5"	2'-1"	4'-3"	2½"
	B507E	2	11'-1"	2'-1"	4'-7"	2½"
	B508E	2	11'-9"	2'-1"	4'-11"	2½"
	B509E	2	11'-1"	2'-1"	4'-7"	2½"
	B510E	2	10'-5"	2'-1"	4'-3"	2½"
	B511E	2	9'-9"	2'-1"	3'-11"	2½"
	B512E	2	9'-1"	2'-1"	3'-7"	2½"
	B513E	26	6'-11"	2'-1"	2'-6"	2½"
	B601E	25	12'-2"			4½"
	B602E	10	8'-0"			4½"
(2)	B801E	8	50'-5"			Str.
(3)	BI001E	5	41'-1"	39'-8"		10"
(3)	BI002E	5	56'-5"	55'-0"		10"
	BI003E	5	18'-8"			Str.
(3)	BI004E	5	45'-6"			Str.
(3)	BI005E	5	49'-0"			Str.
	C401	840	3'-1"			3"
	C501	273	8'-4"			3¾"
	C801	84	18'-5"			6"
	F501	112	8'-2"			3¾"
	F701	168	8'-8"			5¼"

NOTES:
Dimensions Of Bars Are Out-To-Out.

Bar Designations Ending With "E" Indicates Epoxy Coated Bars.

(2) Include 6'-11" lap splice @ CL Bridge.

(3) Ends threaded for mechanical couplers. Bar length includes the length of the mechanical coupler. The actual length of engagement into the mechanical coupler shall be determined by the mechanical coupler manufacturer, and the length of the bars shall be adjusted accordingly.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8817 JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12

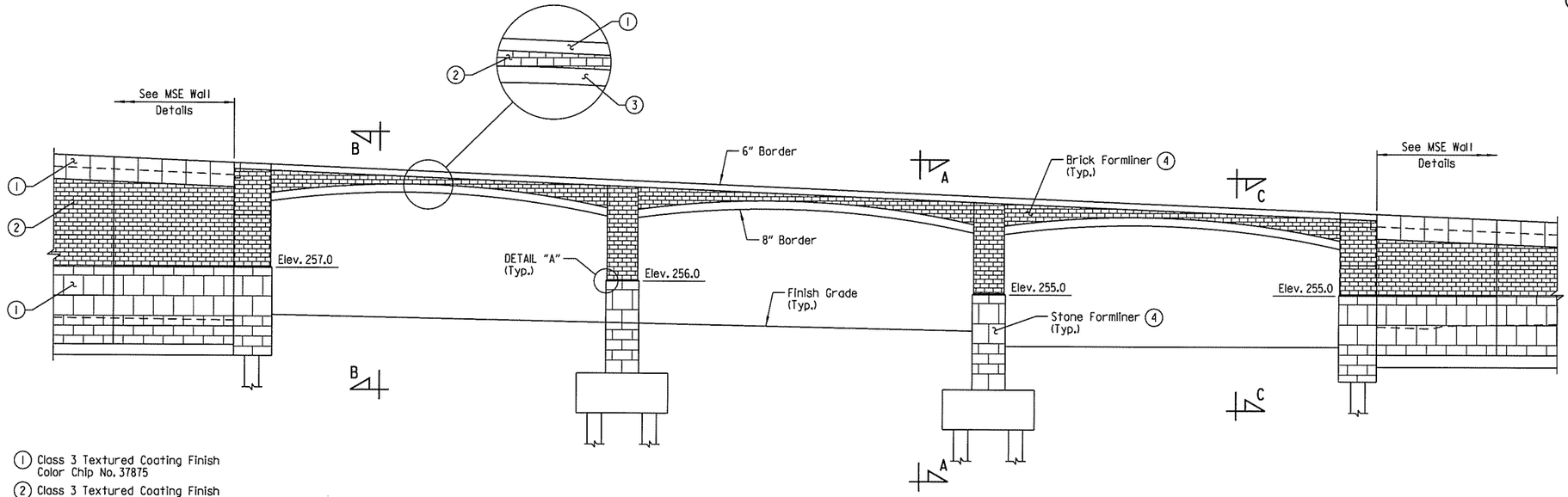
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x2_B5.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54508

SRYancey 5/29/2014 4:41:31 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B5.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	285	505
(1) 07293		ARCHITECTURAL FINISHES		54509



(1) Class 3 Textured Coating Finish Color Chip No. 37875

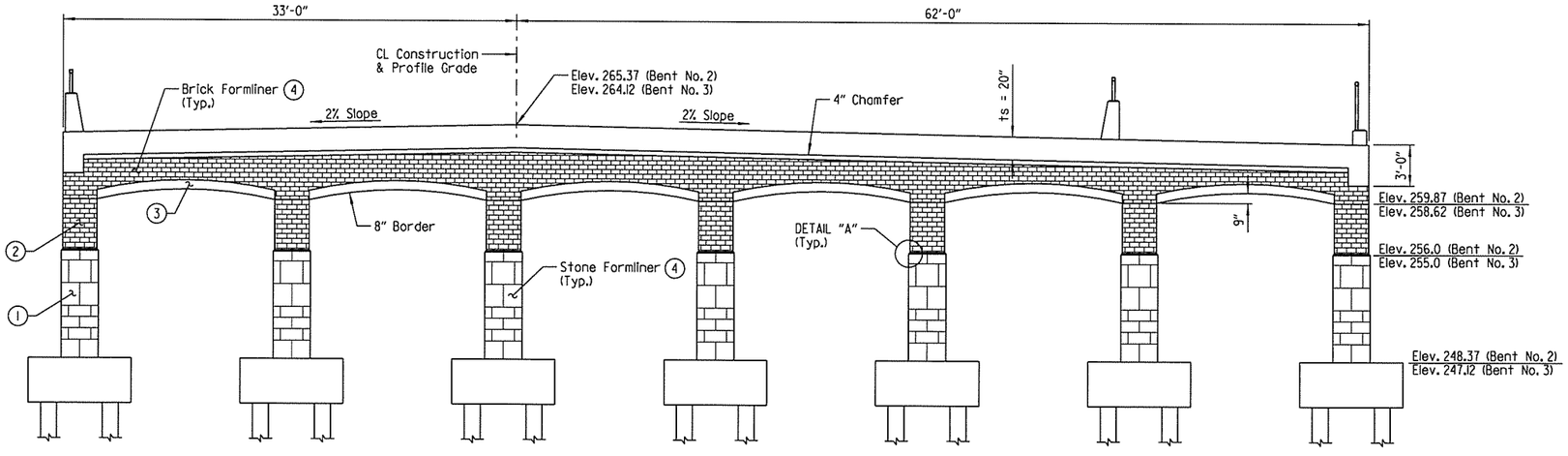
(2) Class 3 Textured Coating Finish Color Chip No. 30109

(3) Class 3 Textured Coating Finish Color Chip No. 37855

(4) See MSE Wall Details On Dwg. No. 54622 For Formliner Details.

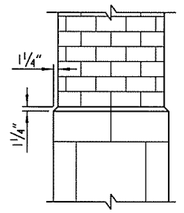
ELEVATION VIEW

Showing Architectural Finish
(East Elevation Shown, West Elevation Similar)
Scale: 3/16" = 1'-0"



ELEVATION A-A

(Looking Forward)
Scale: 3/16" = 1'-0"



DETAIL A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-29-14

BRIDGE ENGINEER

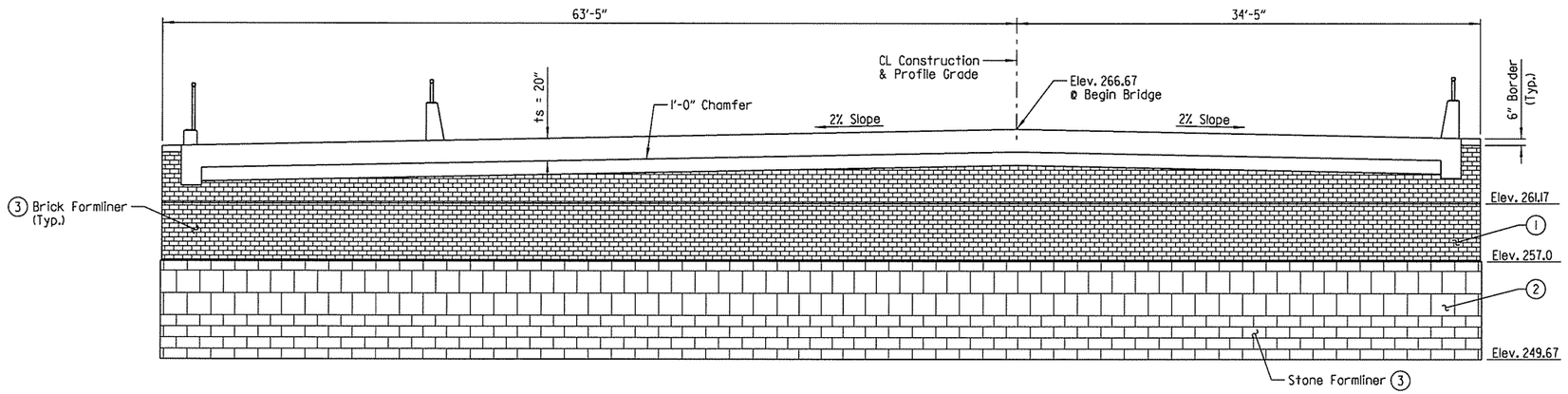
SHEET 1 OF 2
ARCHITECTURAL FINISHES
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x2_B6.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54509

SRYancey 5/29/2014 4:41:32 PM
WORKSPACE: AHTD Bridge
L:\CON\MDT\BD Broadway Bridge over the Arkansas River\Drawings\B061275x2_B6 (Architecturall.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	286	505

(1)	07293	ARCHITECTURAL FINISHES	54510

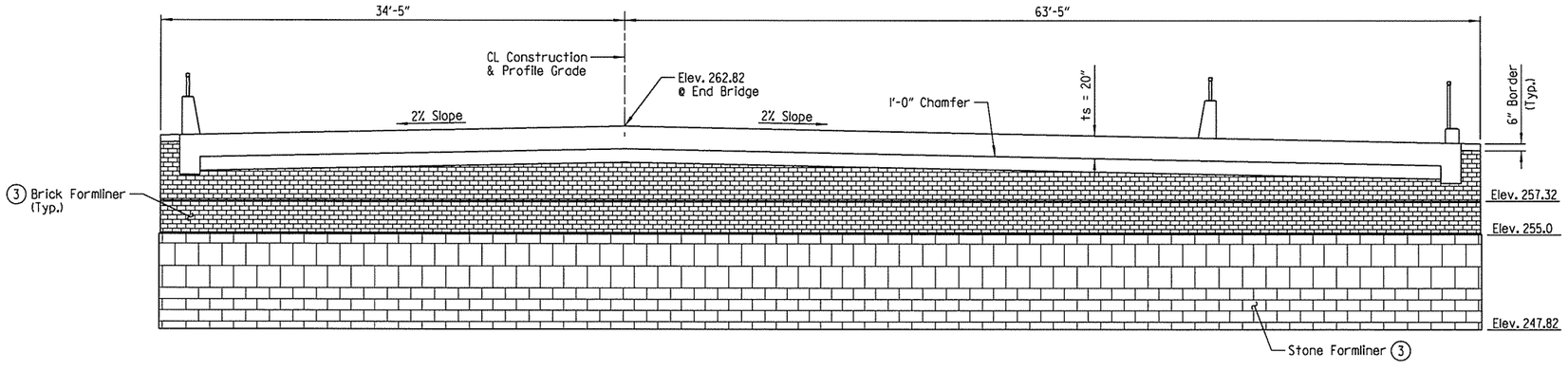


ELEVATION B-B
(Looking Back)
Scale: 3/16" = 1'-0"

(1) Class 3 Textured Coating Finish Color Chip No. 30109

(2) Class 3 Textured Coating Finish Color Chip No. 37875

(3) See MSE Wall Details On Dwg. No. 54622 For Formliner Details



ELEVATION C-C
(Looking Forward)
Scale: 3/16" = 1'-0"

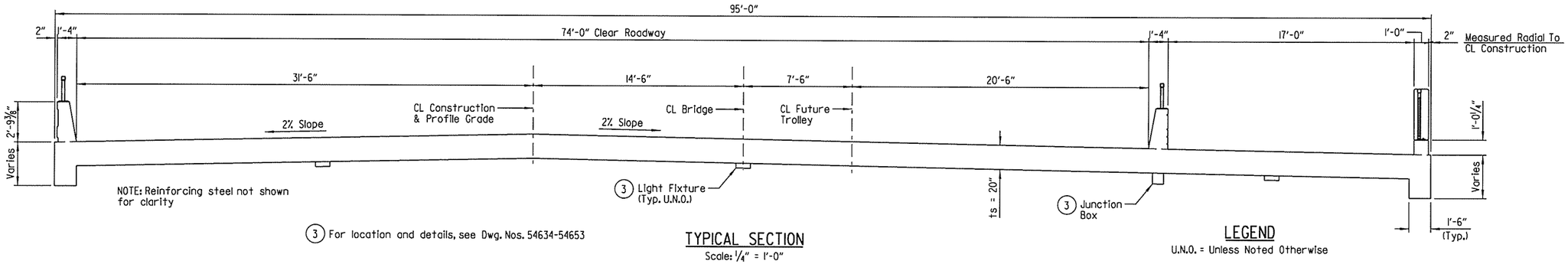
SRYancey 5/29/2014 4:41:33 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOR - Broadway Bridge over the Arkansas River\Drawings\B061275x2_B7 (Architectural-2).dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
ARCHITECTURAL FINISHES
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x2_B7.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54510

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	287	505
				① 07293		92'-6" CONCRETE SLAB UNIT		54511



③ For location and details, see Dwg. Nos. 54634-54653

TYPICAL SECTION

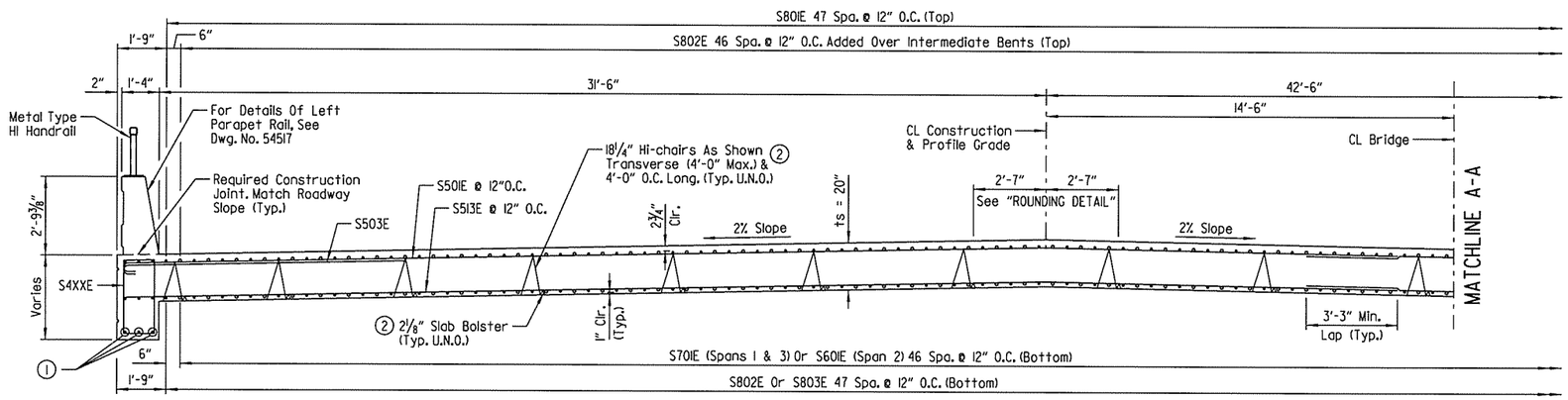
Scale: 1/4" = 1'-0"

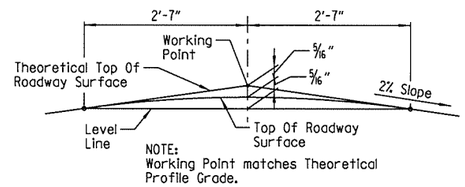
LEGEND

U.N.O. = Unless Noted Otherwise

① 3-S90IE (Top) (Typ.)
3-S902E (Bottom) (Typ.)

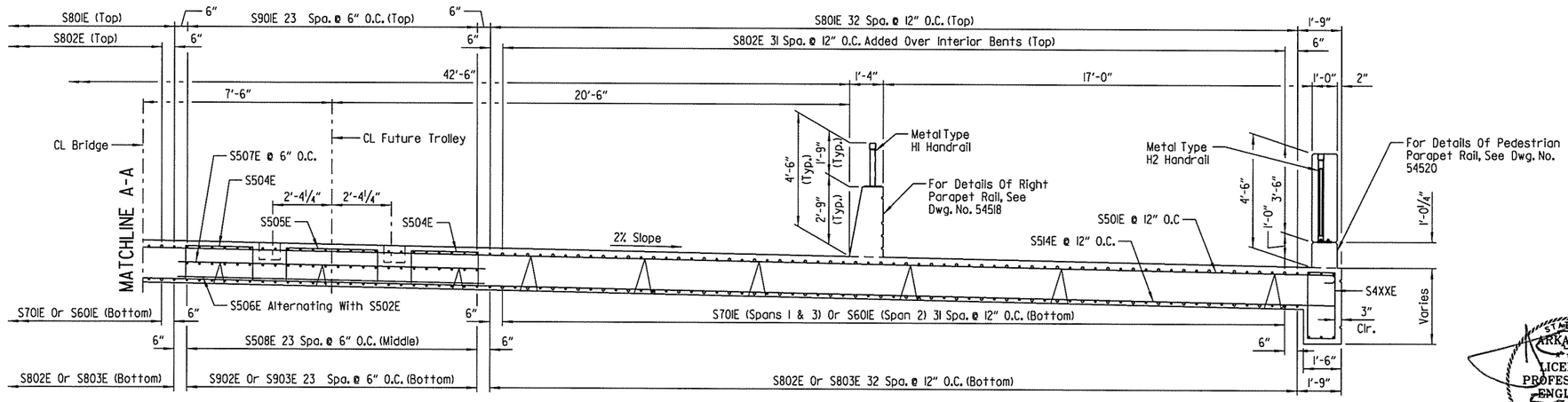
② Size and spacing shall be sufficient to support reinforment under all construction activities without deforming.





ROUNDING DETAIL

No Scale



TYPICAL SECTION DETAILS

Scale: 3/8" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 1 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

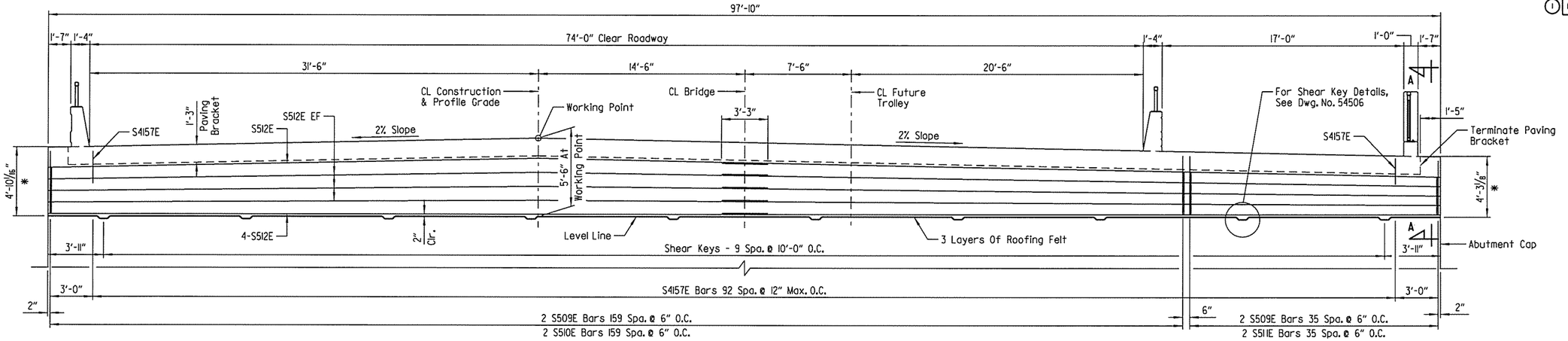
DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_SI.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JUNE 2013
BRIDGE NO. 07293 DRAWING NO. 54511

SRYancey 5/29/2014 4:41:34 PM
WORKSPACE: AHTD Bridge
L:\2013\061080 Broadway Bridge over the Arkansas River\Drawings\B061275x2_SI(Typ Section).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	288	505
				(1) 07293		92'-6" CONCRETE SLAB UNIT		54512

* Measured from top of slab to top of abutment cap at edge of paving bracket.

NOTE:
Slab reinforcing steel not shown for clarity.

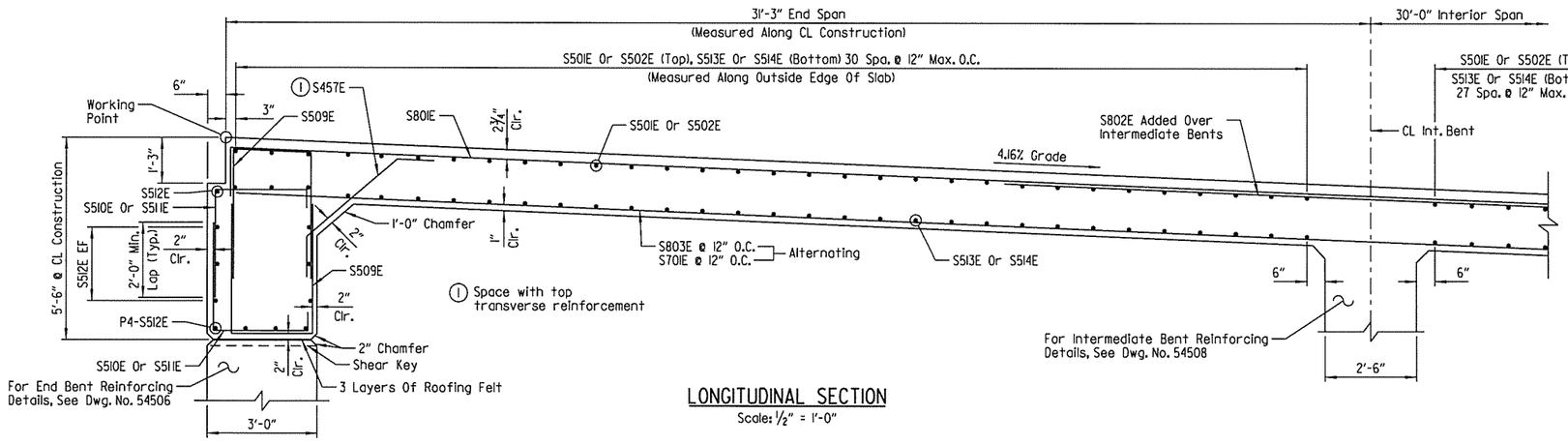


LEGEND

EF = Each Face
PGL = Profile Grade Line

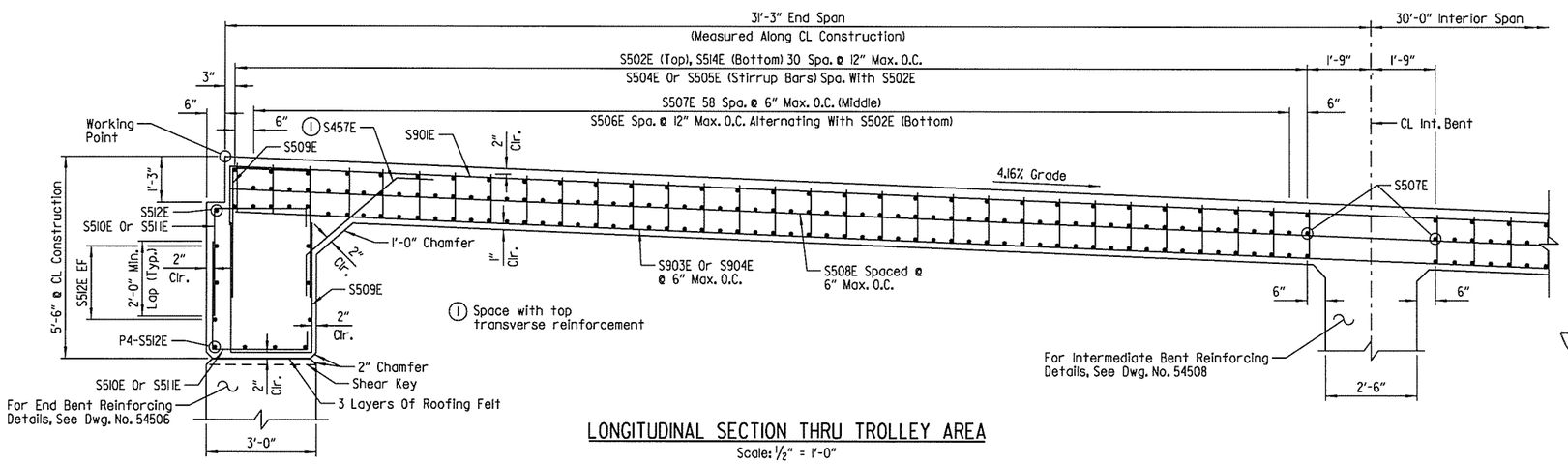
ELEVATION OF END DIAPHRAGM

(End Bent 4 Shown, End Bent 1 Similar)
Scale: 1/4" = 1'-0"



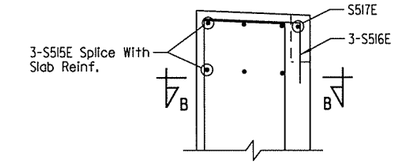
LONGITUDINAL SECTION

Scale: 1/2" = 1'-0"



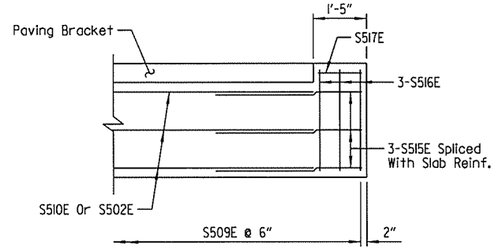
LONGITUDINAL SECTION THRU TROLLEY AREA

Scale: 1/2" = 1'-0"



SECTION A-A

Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

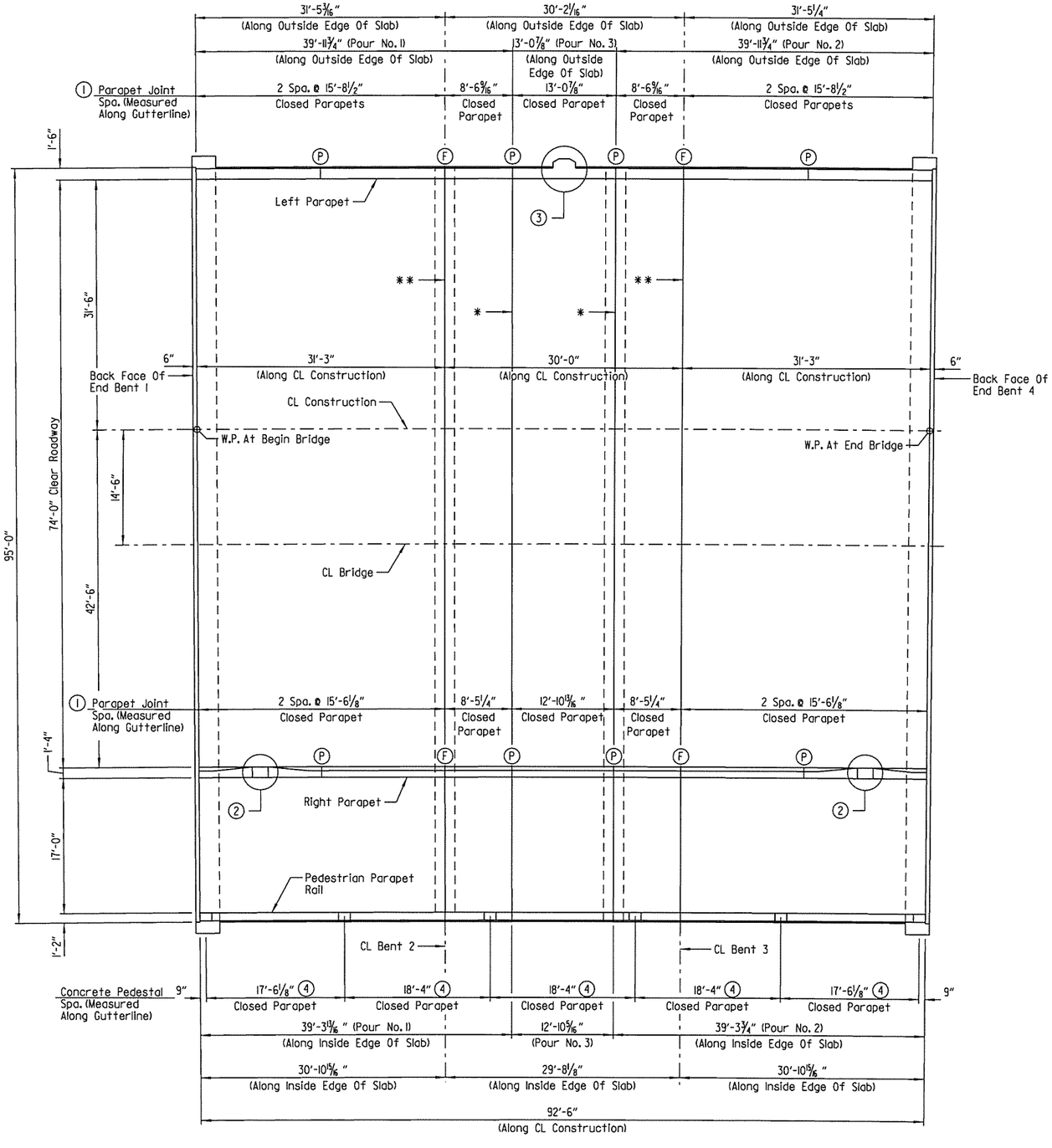
DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_S2.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JUNE 2013
BRIDGE NO. 07293 DRAWING NO. 54512

SRYancey 5/29/2014 4:41:35 PM
WORKSPACE: AHTD Bridge
L:\v20#\0107080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S2 (Typ Section 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	289	505
				(1) 07293		92'-6" CONCRETE SLAB UNIT		54513

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.



PARAPET SPACING & POURING SEQUENCE
Scale: 1/8" = 1'-0"

* Pouring Sequence Construction Joint

** Required Slab Joint

(2) Light Pole Pedestal (see Dwg. No. 54518 for parapet transition details)

(3) Concrete Light Pole Support (See Dwg. No. 54518 for details)

(4) Concrete pedestal joint spacing measured to CL of concrete pedestals

NOTES:
See Dwg. Nos. 54517-54518 for parapet reinforcing details.

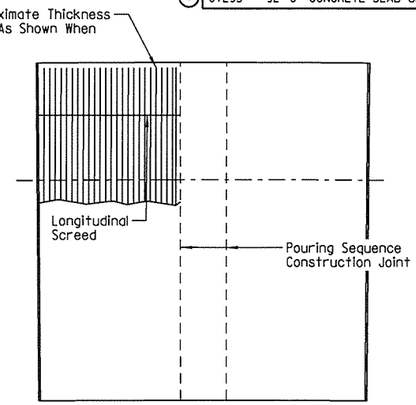
See Dwg. No. 54520 for pedestrian parapet rail and concrete pedestal details

See Dwg. No. 54514 for top reinforcing details.

See Dwg. No. 54515 for bottom reinforcing details.

All longitudinal lines shall be placed on curves concentric with CL Construction (1°00'00" curve).

All transverse lines are radial to CL Construction in between working points.

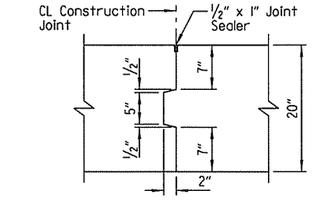


CONCRETE PLACEMENT PROCEDURE
No Scale

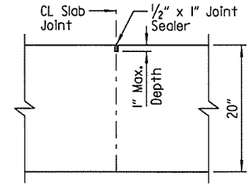
NOTE:
Contractor shall pour the slab unit in sections according to the pouring sequence shown. No part of the falsework for the entire unit shall be removed until all of the concrete in the complete bridge deck slab has been placed and cured. 72 hours shall elapse between the end of a pour and the start of the adjacent pour.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

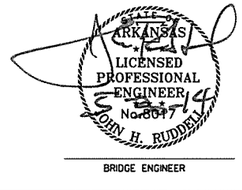


POURING SEQUENCE CONSTRUCTION JOINT DETAIL
Scale: 1" = 1'-0"



SLAB JOINT DETAIL
Scale: 1" = 1'-0"

The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.



BRIDGE ENGINEER

SHEET 3 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_S3.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JUNE 2013

BRIDGE NO. 07293 DRAWING NO. 54513

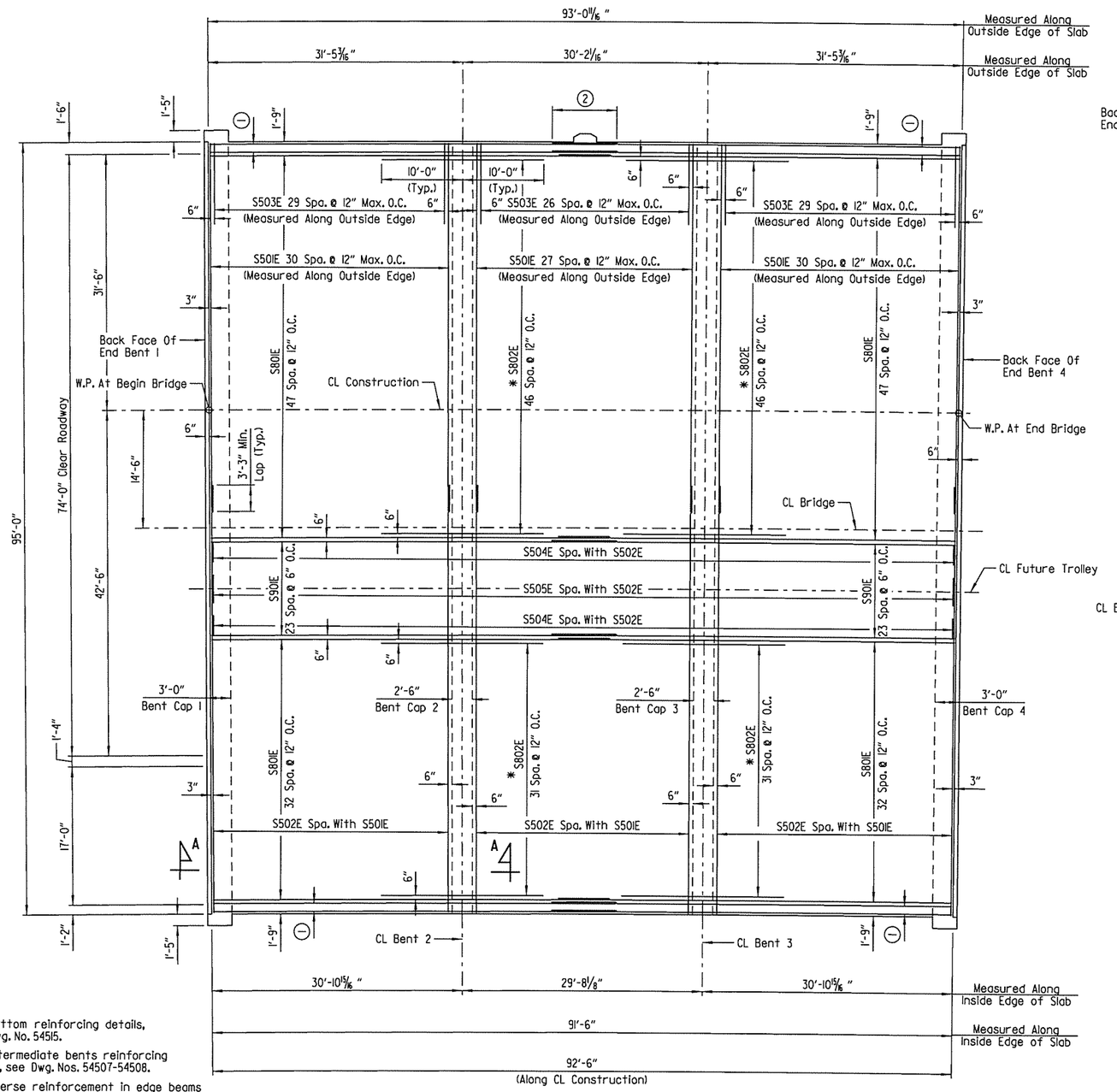
SRYancey 5/29/2014 4:41:35 PM
WORKSPACE: AHTD Bridge
L:\ZDWGNOTDOD - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S3 (Slab Plan 1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	290	505
				(1) 07293		92'-6" CONCRETE SLAB UNIT		54514

(1) 3 - S90IE bars placed in edge beam, see Dwg. No. 54516 for details

(2) S90IE - 8'-0" Min. Lap Splice
S80IE - 6'-4" Min. Lap Splice

* S802E: 20'-0" long bar centered over intermediate bent



NOTES:
For bottom reinforcing details, see Dwg. No. 54515.

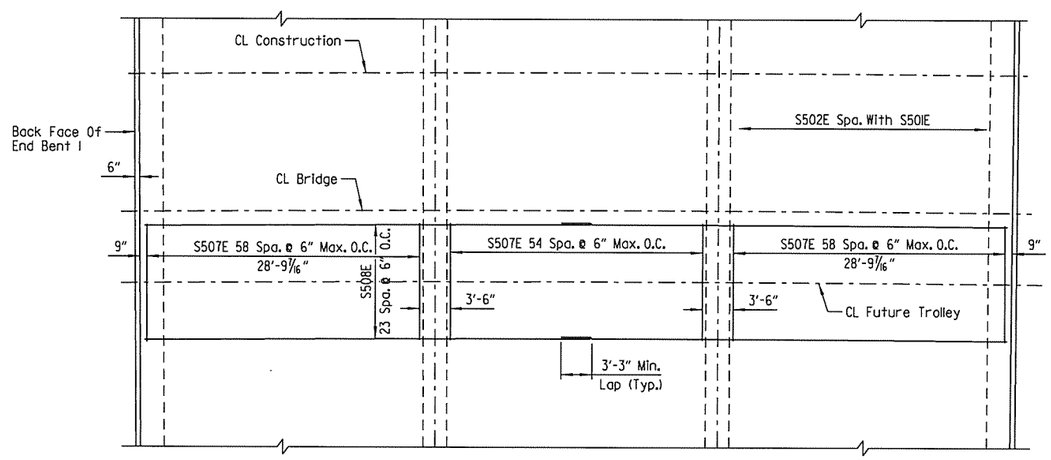
For intermediate bents reinforcing details, see Dwg. Nos. 54507-54508.

Transverse reinforcement in edge beams not shown for clarity, see Dwg. No. 54516 for details.

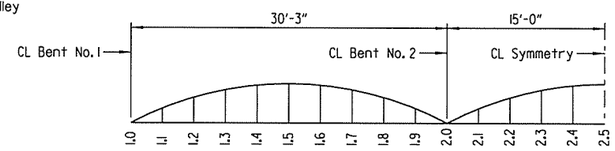
All longitudinal lines and longitudinal slab reinforcing steel shall be placed on curves concentric with CL Construction (1°00'00" curve).

All transverse lines and transverse reinforcing steel are radial to CL Construction in between working points.

REINFORCING PLAN
(Top Reinforcement)
Scale: 1/8" = 1'-0"



PART REINFORCING PLAN
(Showing Added Bars In Trolley Area)
Scale: 1/8" = 1'-0"



DEAD LOAD CAMBER DIAGRAM

NOTE:
Tolerance +1/4" for camber and vertical alignment. Camber shown is from a chord from centerline bent to centerline bent. Vertical alignment correction are not included.

DEAD LOAD DEFLECTION	
POINT	TOTAL DEFLECTION
1.0	0"
1.1	1/8"
1.2	5/16"
1.3	3/8"
1.4	7/16"
1.5	7/16"
1.6	3/8"
1.7	5/16"
1.8	3/16"
1.9	1/8"
2.0	0"
2.1	0"
2.2	0"
2.3	0"
2.4	0"
2.5	0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

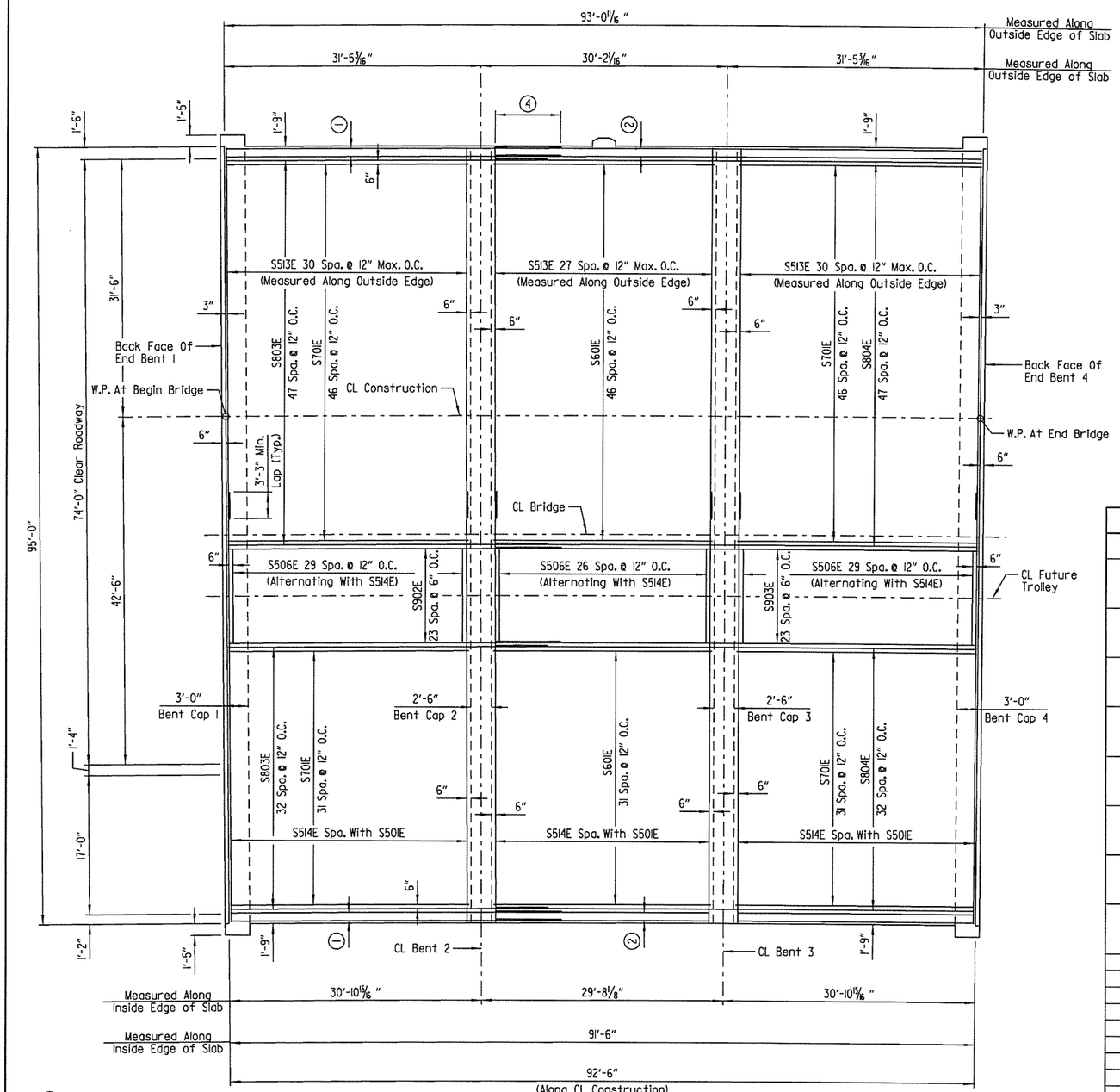
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_S4.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JUNE 2013
BRIDGE NO. 07293 DRAWING NO. 54514

SRYancey 5/29/2014 4:41:36 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTDOT - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S4 (Slab Plan 2 Top Bars).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	291	505
				①	07293	92'-6" CONCRETE SLAB UNIT		54515

NOTE:
For top reinforcing details, see Dwg. No. 54514.



REINFORCING PLAN
(Bottom Reinforcement)
Scale: 1/8" = 1'-0"

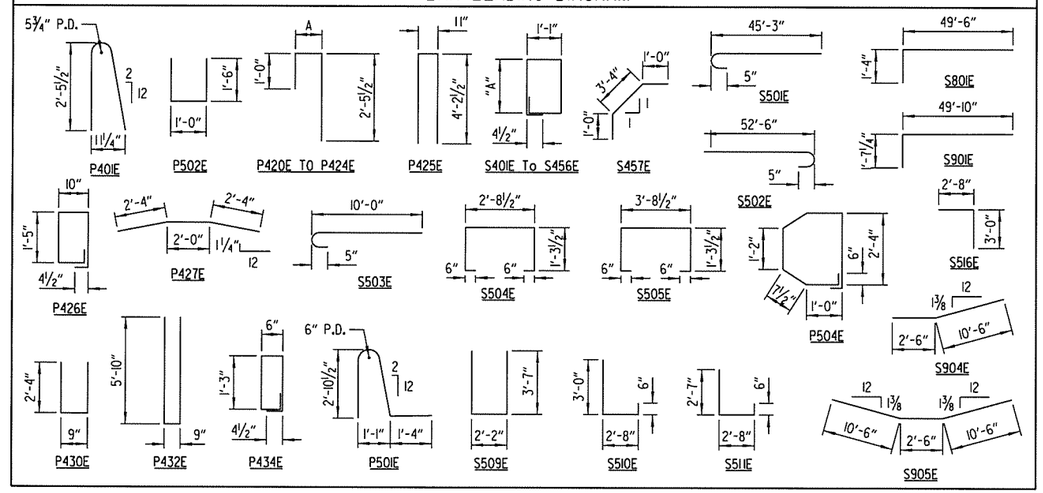
① 3 - S902E bars placed in edge beam, see Dwg. No. 54516 for details.

② 3 - S903E bars placed in edge beam, see Dwg. No. 54516 for details.

③ One end threaded for mechanical coupler. Length of bar does not include any additional length for engagement into mechanical coupler. The actual length of bar engagement into the mechanical coupler shall be determined by the mechanical coupler manufacturer, and the length of the bar shall be adjusted accordingly.

④ S9XXE - 8'-0" Min. Lap Splice
S8XXE - 6'-4" Min. Lap Splice

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	P.D.
S401E To S408E	3 Each	7'-7" To 5'-9"	2'-6 1/2" To 1'-7 1/2"	2"
S409E To S416E	3 Each	5'-7" To 5'-2"	1'-6 1/2" To 1'-4"	2"
S417E To S422E	3 Each	5'-3" To 6'-0"	1'-4 1/2" To 1'-9"	2"
S423E To S428E	3 Each	6'-1" To 7'-7"	1'-9 1/2" To 2'-6 1/2"	2"
S429E To S436E	3 Each	8'-9" To 6'-11"	3'-1 1/2" To 2'-2 1/2"	2"
S437E To S444E	3 Each	6'-9" To 6'-4"	2'-1 1/2" To 1'-11"	2"
S445E To S450E	3 Each	6'-5" To 7'-2"	1'-11 1/2" To 2'-4"	2"
S451E To S456E	3 Each	7'-3" To 8'-9"	2'-4 1/2" To 3'-1 1/2"	2"
S457E	186	5'-4"		3"
S501E	90	45'-10"		3 3/4"
S502E	90	53'-1"		3 3/4"
S503E	87	10'-7"		3 3/4"
S504E	180	5'-10"		2 1/2"
S505E	90	6'-10"		2 1/2"
S506E	87	12'-0"		Str.
S507E	173	12'-0"		Str.
S508E	48	47'-8"		Str.
S509E	784	9'-1"		2 1/2"
S510E	640	6'-0"		2 1/2"
S511E	144	5'-7"		2 1/2"
S512E	44	50'-5"		Str.
S513E	90	45'-3"		Str.
S514E	90	52'-6"		Str.

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S515E	24	4'-0"	Str.
S516E	12	5'-7"	2"
S517E	4	1'-1"	Str.
S601E	79	27'-0"	Str.
S701E	158	29'-6"	Str.
S801E	162	50'-8"	6"
S802E	158	20'-0"	Str.
S803E	81	39'-4"	Str.
S804E	81	59'-8"	Str.
S901E	60	51'-2"	9"
S902E	30	41'-1"	Str.
S903E	30	59'-8"	Str.
S904E	12	13'-0"	9"
S905E	12	23'-6"	9"

NOTE:
Bar designations ending with "E" indicate epoxy coated bars.

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	P.D.
P401E	372	5'-3"		5 3/4"
P403E	32	5'-8"		Str.
P404E	14	8'-1"		Str.
P405E	14	8'-2 1/2"		Str.
P406E	7	12'-7"		Str.
P407E	7	12'-9"		Str.
P408E	28	15'-2"		Str.
P409E	28	15'-4 1/2"		Str.
P420E To P424E	4 Each	4'-0 1/2" To 4'-3"	9" To 11 1/2"	2"
P425E	8	9'-2"		2"
P426E	6	4'-10"		2"
P427E	4	6'-8"		2"
P430E	166	5'-3"		2"
P432E	18	12'-3"		2"
P433E	12	32'-2"		Str.
P434E	24	3'-10"		2"
P501E	188	7'-3"		3 3/4"
P502E	184	3'-9 1/2"		2 1/2"
③ P503E	368	2'-0"		Str.
P504E	7	7'-6 1/2"		2 1/2"
P505E	6	2'-5"		Str.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
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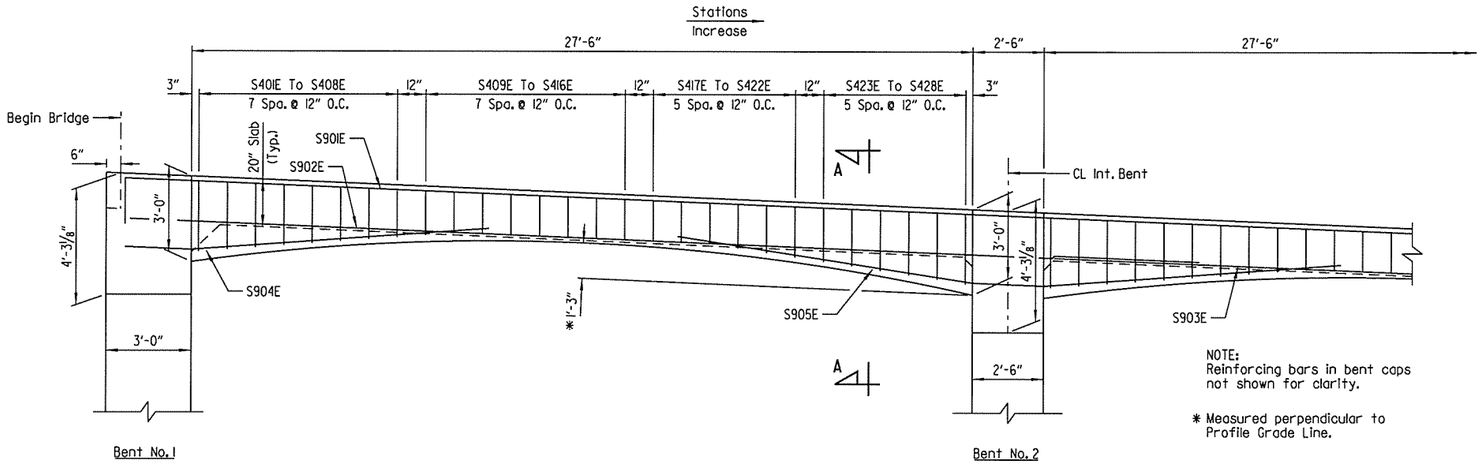
SHEET 5 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_S5.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JUNE 2013
BRIDGE NO. 07293 DRAWING NO. 54515

SRYancey 5/29/2014 4:41:37 PM
WORKSPACE: ANTD
LAYOUT(MODTOOL): Bridge
REVISED DATE:
S:\Bridge Design\Projects\B061275x2.55 (Slab Plan 3 Btm Bars).dgn over the Arkansas River\Drawings\

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	292	505
				①	07293	92'-6" CONCRETE SLAB UNIT		54516

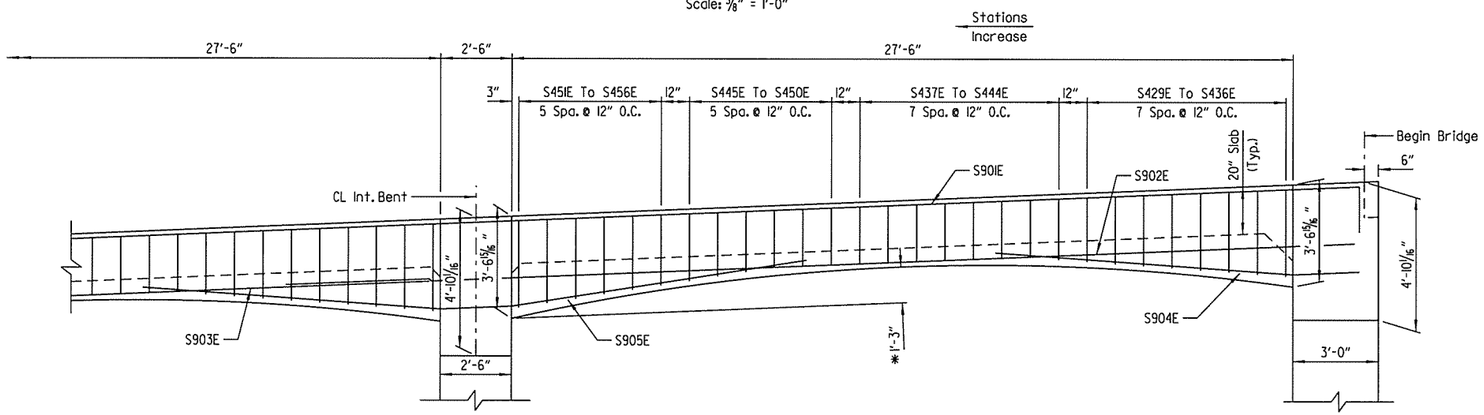


NOTE:
Reinforcing bars in bent caps not shown for clarity.

* Measured perpendicular to Profile Grade Line.

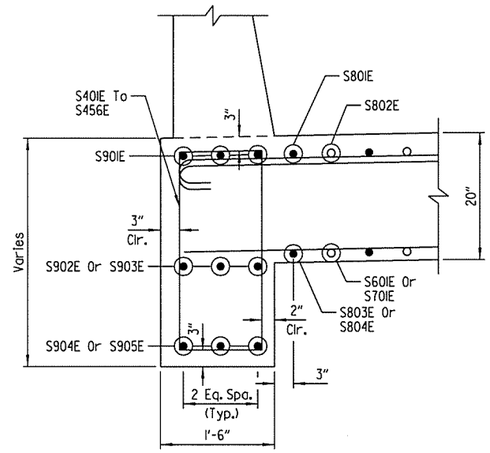
SLAB EDGE BEAM ELEVATION - EAST SIDE OF SLAB

Span 1 Shown, Spans 2 & 3 Similar
Scale: 1/8" = 1'-0"



SLAB EDGE BEAM ELEVATION - WEST SIDE OF SLAB

Span 1 Shown, Spans 2 & 3 Similar
Scale: 1/8" = 1'-0"



SECTION A-A

Scale: 1" = 1'-0"

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

In the shared use path area, the concrete deck shall be given a broomed finish in accordance with Subsection 802.19 for Class 6 Broomed Finish. In all other areas, the concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STATE OF ARKANSAS
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SHEET 6 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JULY 2013 FILENAME: B061275x2_S6.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JHR DATE: JULY 2013
BRIDGE NO. 07293 DRAWING NO. 54516

SRYancey 5/29/2014 4:41:37 PM
WORKSPACE: AHTD Bridge
L:\2DWG\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S6 (Turndown Elev).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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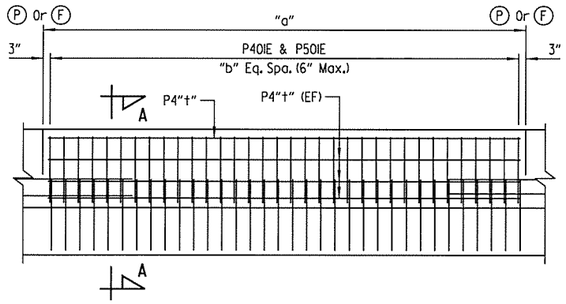
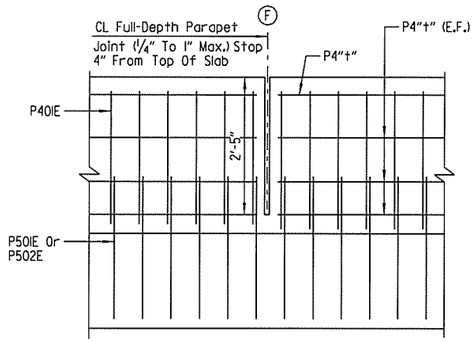
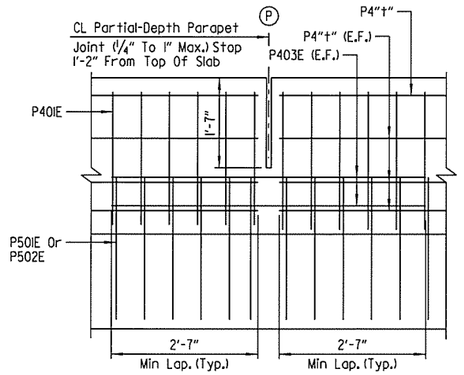
				JOB NO.		061275	293	505
				(1) 07293	92'-6" CONCRETE SLAB UNIT			54517



ELEVATION - LEFT PARAPET RAIL
Scale: 3/8" = 1'-0"



PARAPET REINFORCING (FULL DEPTH JOINTS)
Scale: 3/4" = 1'-0"

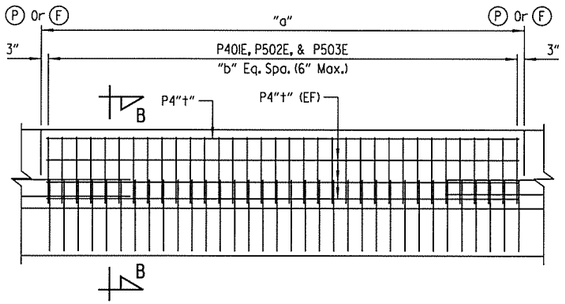


PARAPET REINFORCING (PARTIAL DEPTH JOINTS)
Scale: 3/4" = 1'-0"

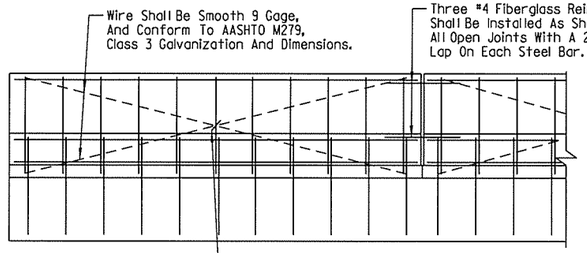
TABLE OF PARAPET VARIABLES		
PANEL LENGTH		CLOSED PARAPET
"a"	"t"	"b"
8'-5 1/4"	04E	16
8'-6 3/16"	05E	16
12'-10 1/16"	06E	25
13'-0 7/8"	07E	25
15'-6 1/8"	08E	30
15'-8 1/2"	09E	31

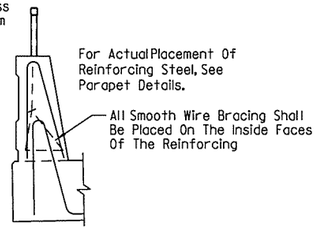
(P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on slab plans on Dwg No. 54513. Stop 1'-2" from top of slab.

(F) CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on slab plans on Dwg No. 54513. Stop 4" from top of slab.



ELEVATION - RIGHT PARAPET RAIL
Scale: 3/8" = 1'-0"



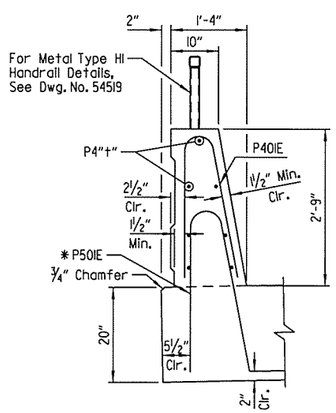


All Panels Shall Be Braced As Shown To Prevent Racking. All Open Joints Shall Be Sawed As Soon As Practical To A Minimum Width Of 1/4". To Control Cracking Before Sawing All Joints Must Be Grooved Before The Concrete Is Set. Sawing Of The Joints Must Be Controlled So It Will Follow The Grooved Joint.

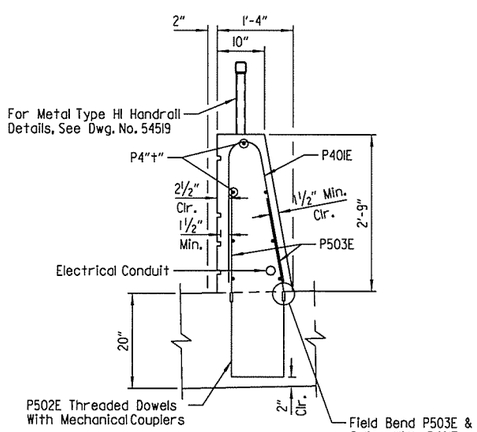
The Extruded Parapet Shall Conform To The Horizontal And Vertical Lines Shown On The Plans Or As Directed By The Engineer And Shall Present A Smooth, Uniform Appearance And Texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale

VIEW SHOWING LOCATION OF NAME PLATE
Scale: 3/4" = 1'-0"

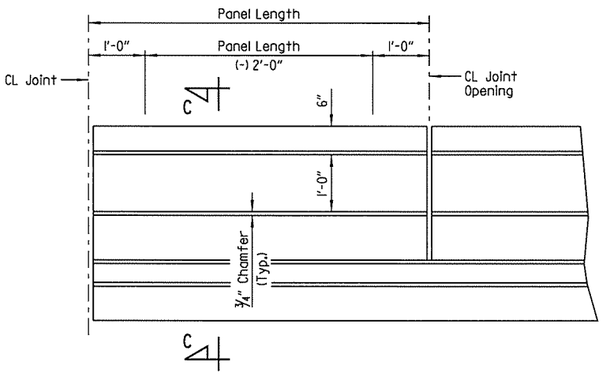


SECTION A-A
Scale: 3/4" = 1'-0"

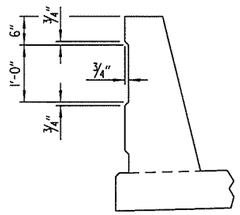


SECTION B-B
Scale: 3/4" = 1'-0"

NOTE:
For "ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET", see Dwg. No. 54518.



PANEL ENHANCEMENT DETAIL - LEFT PARAPET
Scale: 3/4" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
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SHEET 7 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x2_S7.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SFH DATE: APR. 2013
BRIDGE NO. 07293 DRAWING NO. 54517

SRYancey 5/29/2014 4:41:38 PM
WORKSITE: AHTD Bridge
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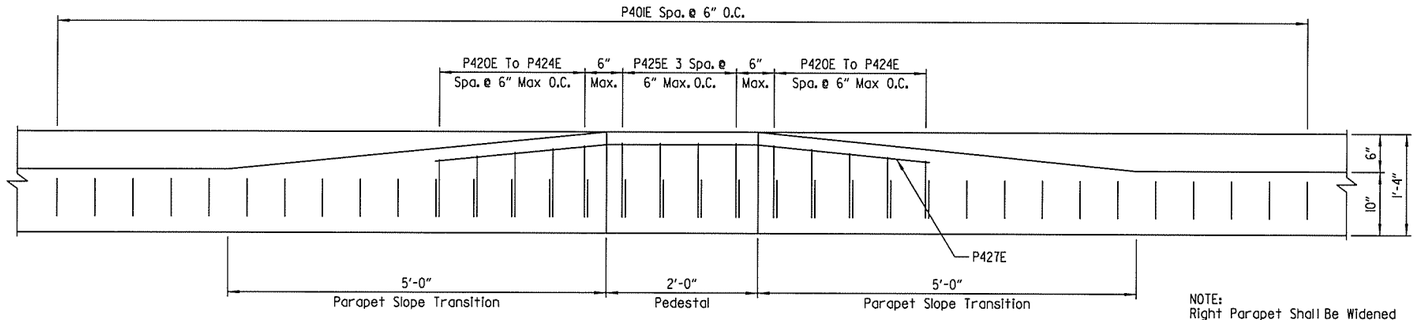
REVISED DATE:

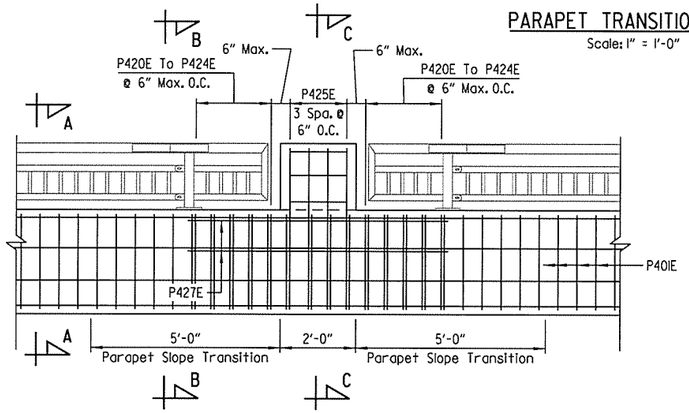
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	294	505
				(1) 07293		92'-6" CONCRETE SLAB UNIT		54518



PARAPET TRANSITION PLAN

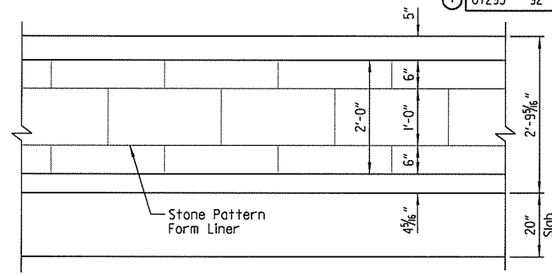
Scale: 1" = 1'-0"

NOTE:
Right Parapet Shall Be Widened By Increasing Top Width From 10" To 1'-4" Over 5'-0" Transition Length On Each Side Of Light Pedestal.



PARAPET TRANSITION ELEVATION

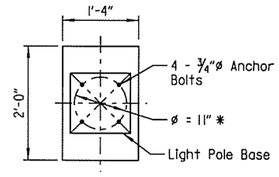
Scale: ½" = 1'-0"



ARCHITECTURAL FINISH ELEVATION - RIGHT PARAPET

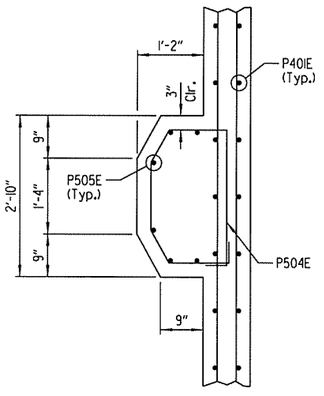
(Showing Outside Face Of Parapet)
Scale: ¾" = 1'-0"

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.



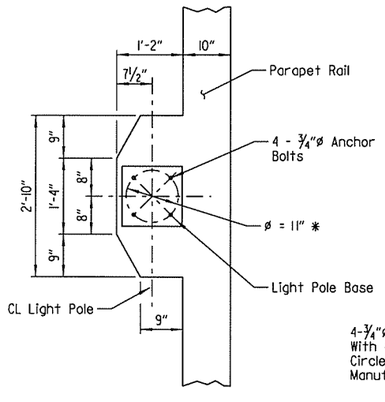
PLAN - LIGHT POLE PEDESTAL

Scale: ¾" = 1'-0"



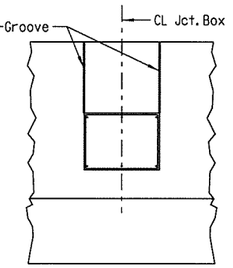
SECTION F-F

Scale: ¾" = 1'-0"



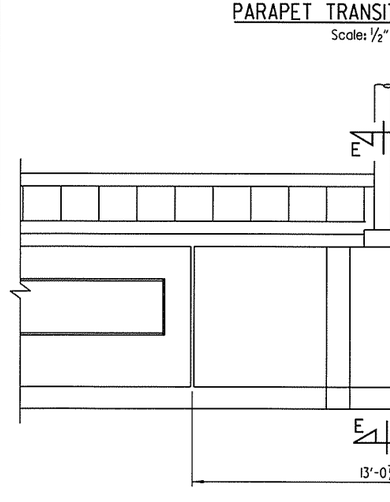
PLAN - CONCRETE LIGHT POLE SUPPORT

(For Locations See Sheet No. 54513)
Scale: ¾" = 1'-0"



VIEW H-H

No Scale



ELEVATION SHOWING CONCRETE LIGHT POLE SUPPORT

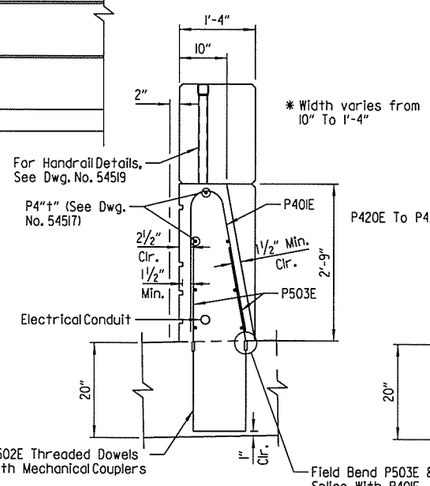
(For Locations See Dwg. No. 54513)
No Scale

NOTE:
Protect threads in couplers until right parapet is constructed.

Note:
The threaded dowel and coupler assembly shall consist of a qpl approved mechanical splice with protective cap and threaded dowel bars (P502E and P503E) as shown and shall develop at least 125% of the yield strength of the dowel bars.

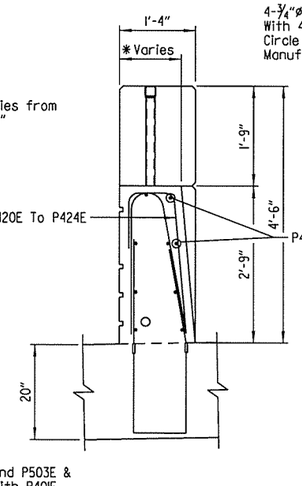
P502E and P503E dowel bars shall be a minimum 60 ksi yield strength and threaded as required. threaded dowel and coupler assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of section 804.

* Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.



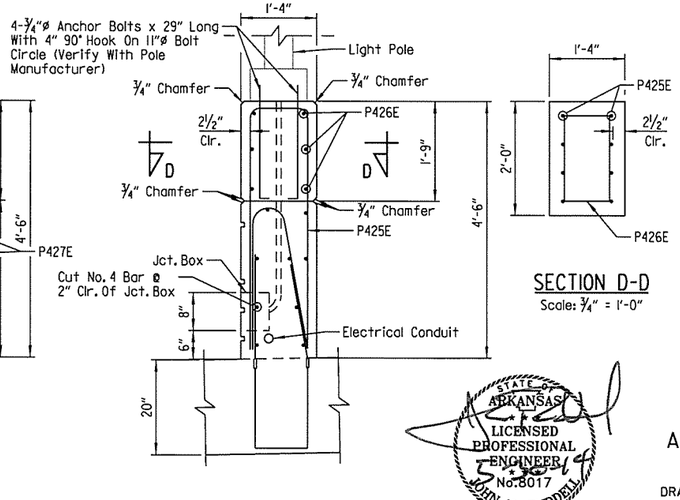
SECTION A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"

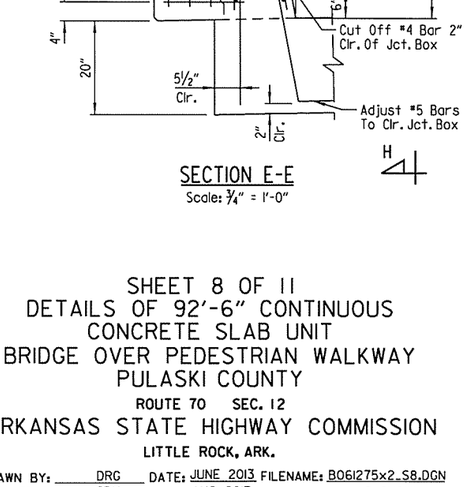


SECTION C-C

Scale: ¾" = 1'-0"

SECTION D-D

Scale: ¾" = 1'-0"



SECTION E-E

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
JOHN H. RUDDELL
LICENSED PROFESSIONAL ENGINEER
No. 8017

BRIDGE ENGINEER

SHEET 8 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

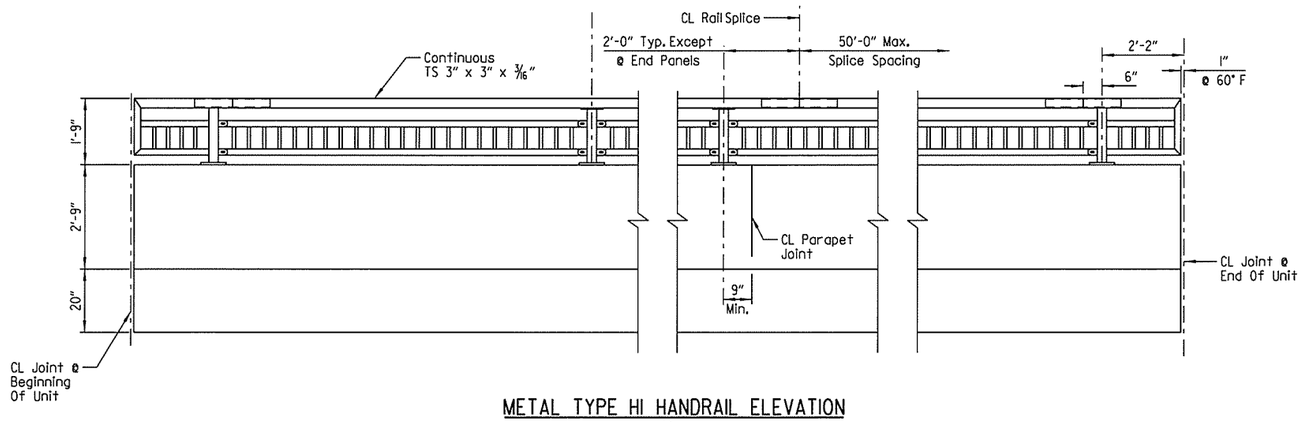
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x2_S8.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2013
BRIDGE NO. 07293 DRAWING NO. 54518

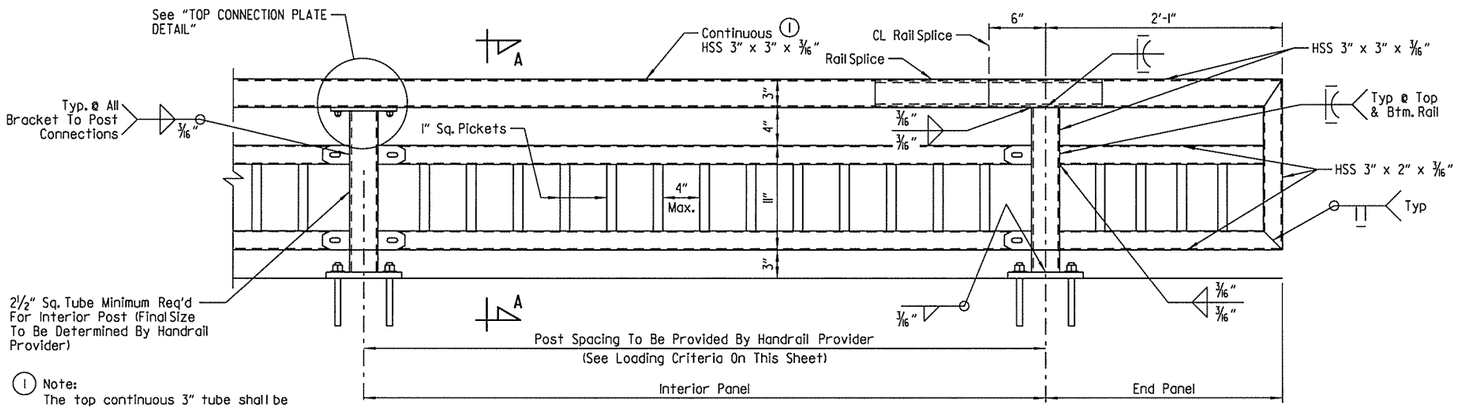
SRYancey 5/29/2014 4:41:39 PM
WORKSPACE: ANTD Bridge
L:\ZONMONTGO - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S8 (Rt Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	295	505
				(1) 07293	92'-6" CONCRETE SLAB UNIT			54519



METAL TYPE HI HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"



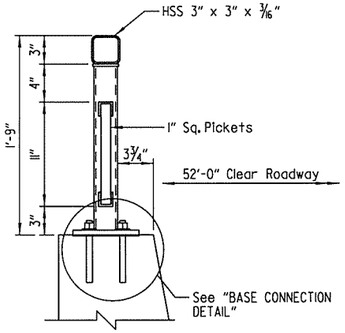
(1) Note:
The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

TYPICAL INTERIOR AND END PANEL DETAILS

Scale: 1 1/2" = 1'-0"

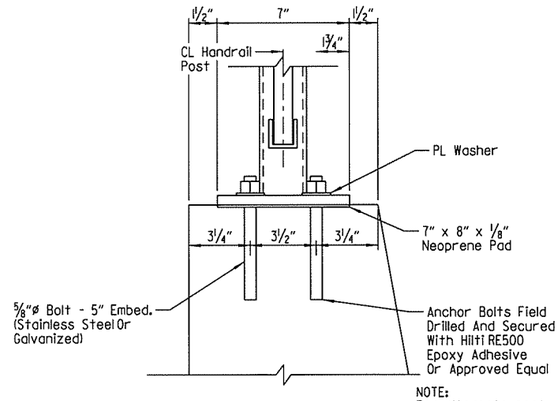
NOTE:
All Posts Shall Be Set Perpindicular To Top Of Parapet

NOTE:
For general notes regarding metal handrail, see Dwg. No. 54357.



SECTION A-A

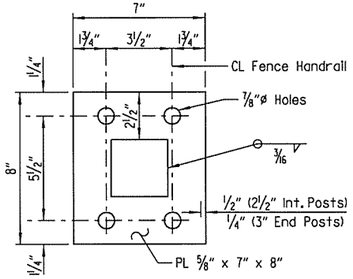
Scale: 1 1/2" = 1'-0"



NOTE:
For alternate post anchor details, see Dwg. No. 54357.

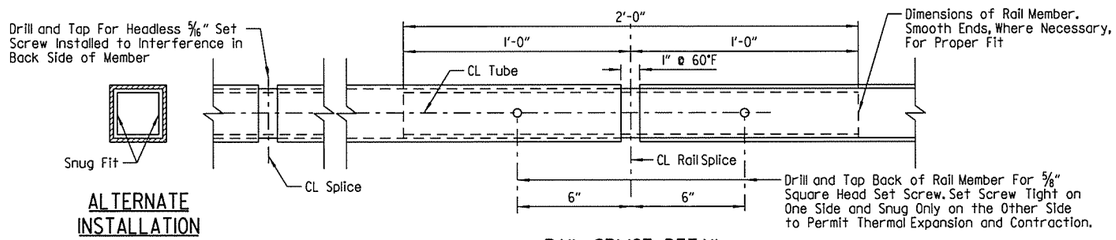
BASE CONNECTION DETAIL

Scale: 3" = 1'-0"



BASE PLATE DETAIL

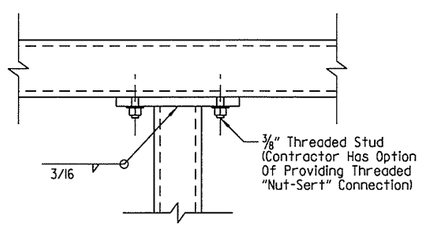
Scale: 3" = 1'-0"



ALTERNATE INSTALLATION

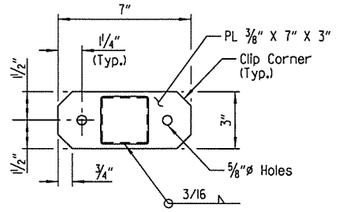
RAIL SPLICE DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION PLATE DETAIL

Scale: 3" = 1'-0"

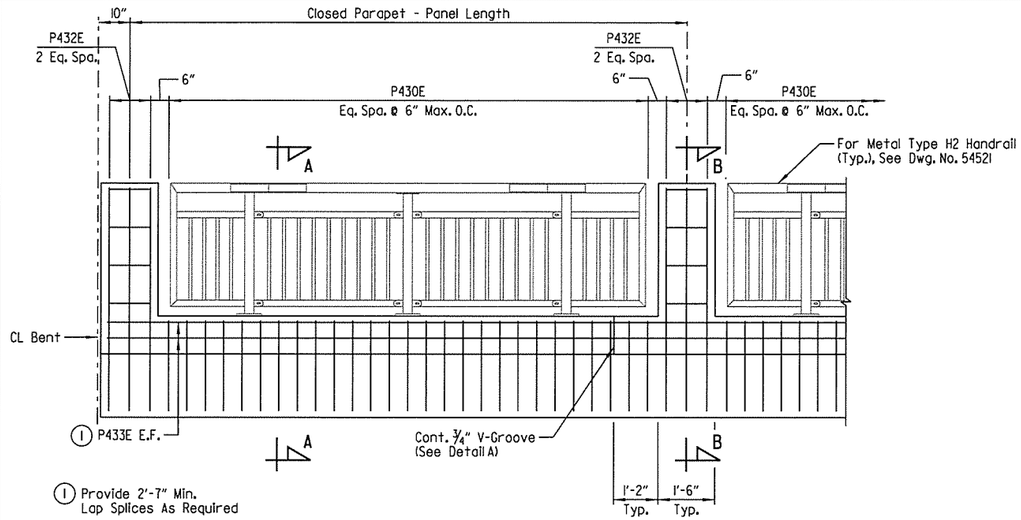
SRYancey 5/29/2014 4:41:39 PM
WORKSPACE: AHTD Bridge
L:\ROW\NORTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x2.S9 (Parapet Rail).dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 9 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT
BRIDGE OVER PEDESTRIAN WALKWAY
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

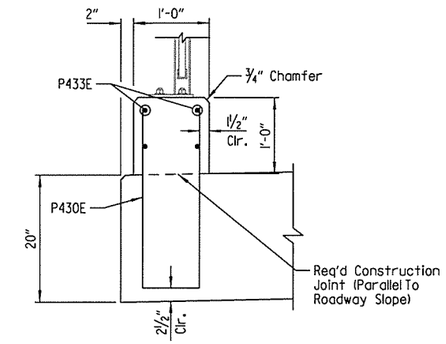
DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x2_S9.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 07293 DRAWING NO. 54519

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	296	505
				①	07293	92'-6" CONCRETE SLAB UNIT		54520



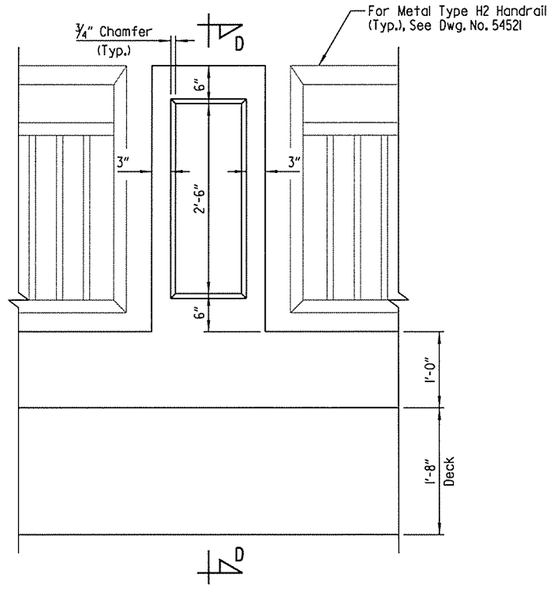
PEDESTRIAN PARAPET RAIL ELEVATION

Scale: 1/2" = 1'-0"



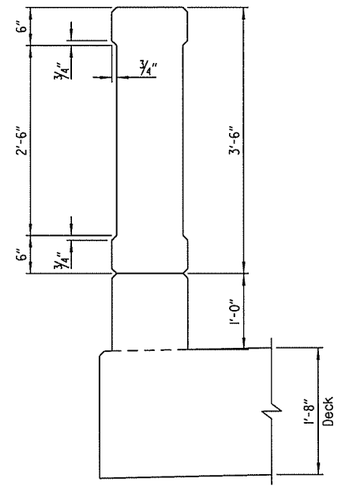
SECTION A-A

Scale: 1" = 1'-0"



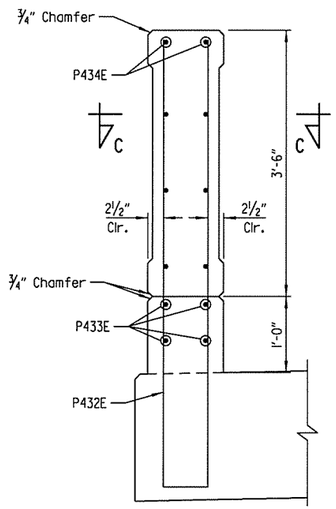
PEDESTAL ENHANCEMENT DETAIL

Scale: 1" = 1'-0"



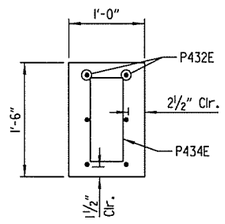
SECTION D-D

Scale: 1" = 1'-0"



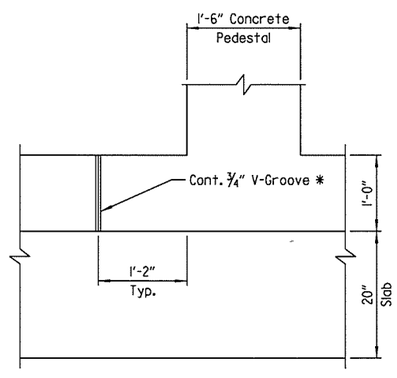
SECTION B-B

Scale: 1" = 1'-0"



SECTION C-C

Scale: 1" = 1'-0"



DETAIL A

Scale: 1" = 1'-0"

* NOTE:
3/4" V-Groove shall be continous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 10 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

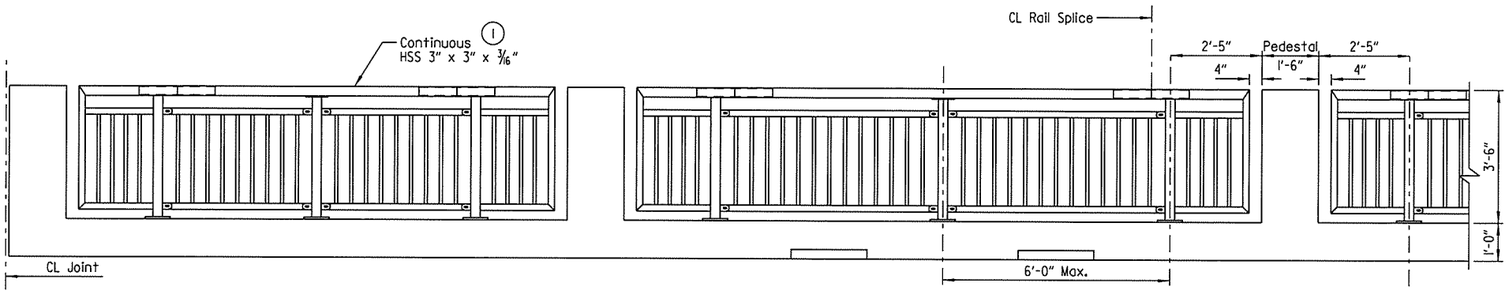
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x2_S10.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 07293 DRAWING NO. 54520

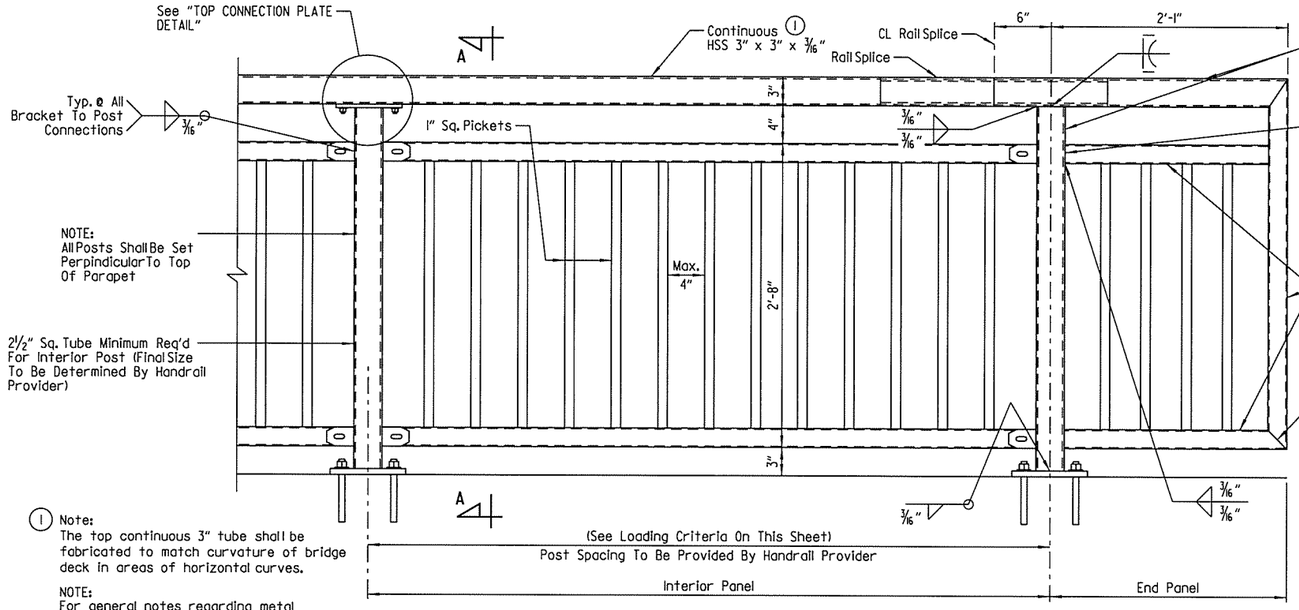
SRYancey 5/29/2014 4:41:40 PM
WORKSPACE: AHTD Bridge
L:\ZON\MDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_S10 (Ped Parapet).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	297	505
				①	07293	92'-6" CONCRETE SLAB UNIT		54521



METAL TYPE H2 HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"

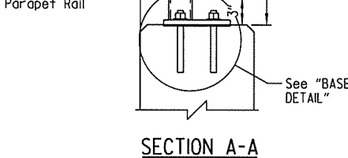


① Note:
The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

NOTE:
For general notes regarding metal handrail, see Dwg. No. 54357.

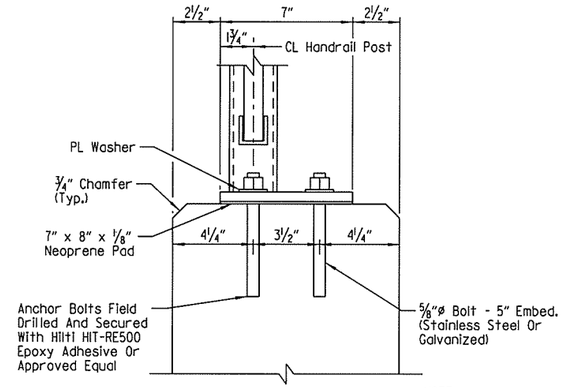
TYPICAL INTERIOR AND END PANELS

Scale: 1 1/2" = 1'-0"



SECTION A-A

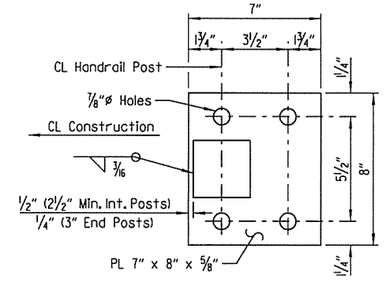
Scale: 1 1/2" = 1'-0"



BASE CONNECTION DETAIL

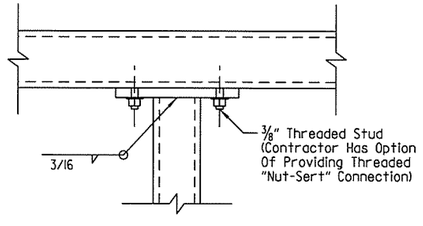
Scale: 3" = 1'-0"

NOTE:
For alternate post anchor details, see Dwg. No. 54357.



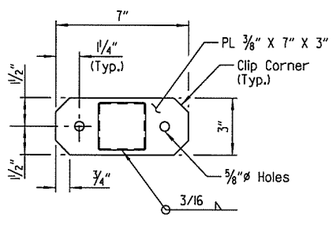
BASE PLATE DETAIL

Scale: 3" = 1'-0"



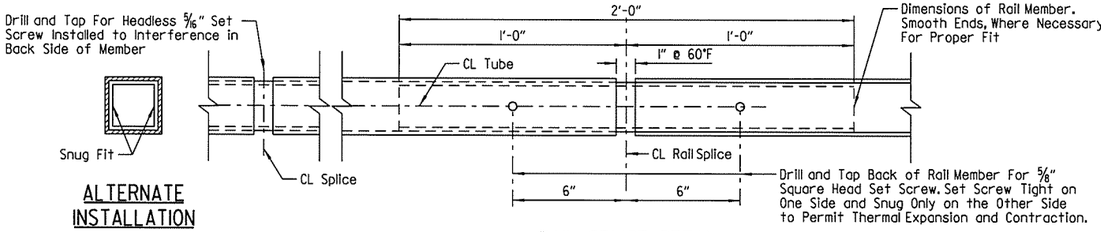
TOP CONNECTION DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION PLATE DETAIL

Scale: 3" = 1'-0"



ALTERNATE INSTALLATION

RAIL SPLICE DETAIL

Scale: 3" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 11 OF 11
DETAILS OF 92'-6" CONTINUOUS CONCRETE SLAB UNIT BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

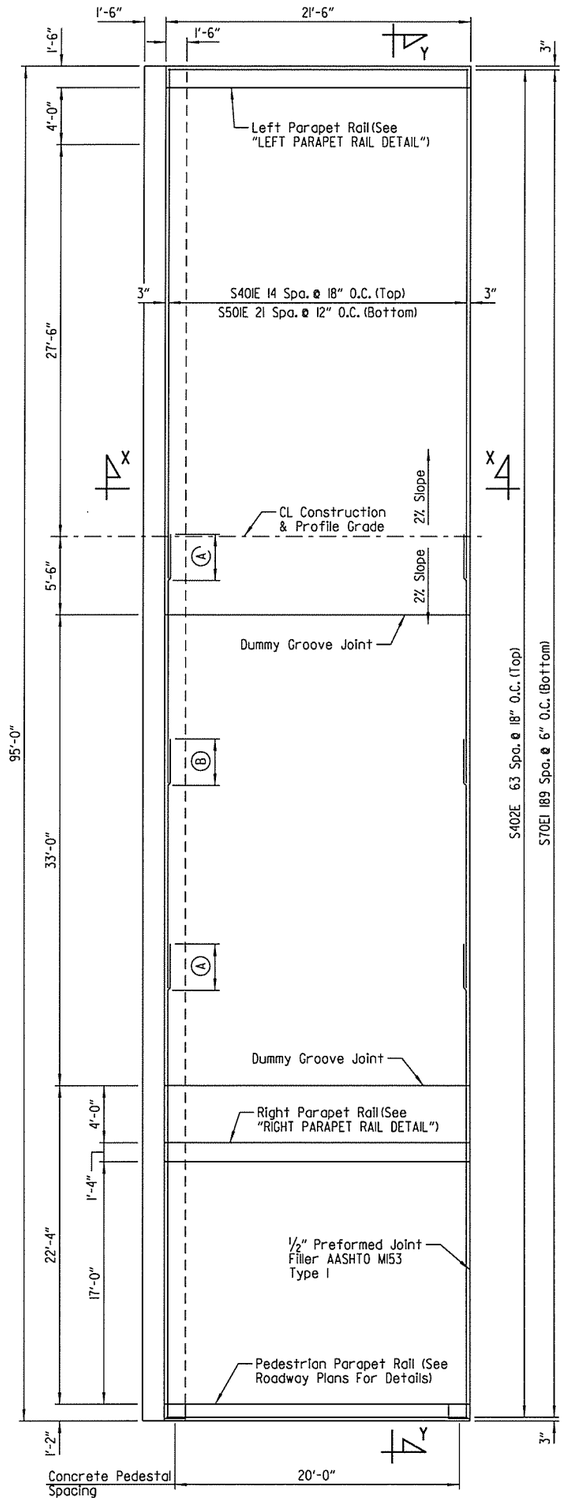
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRC DATE: MAY 2013 FILENAME: B061275x2_SII.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRC DATE: MAY 2013
BRIDGE NO. 07293 DRAWING NO. 54521

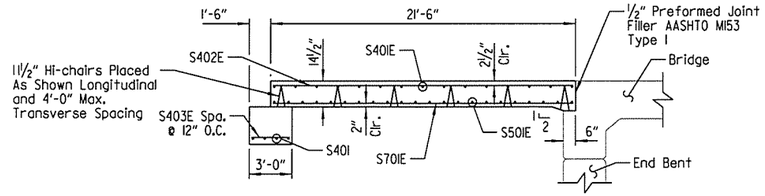
SRYancey 5/29/2014 4:41:41 PM
W:\ROADWAY\ Hwy 70 & Bridge
LX:\DGN\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275x2_SII(Ped Rail).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	298	505
				(1) 07293		APPROACH SLAB		54522



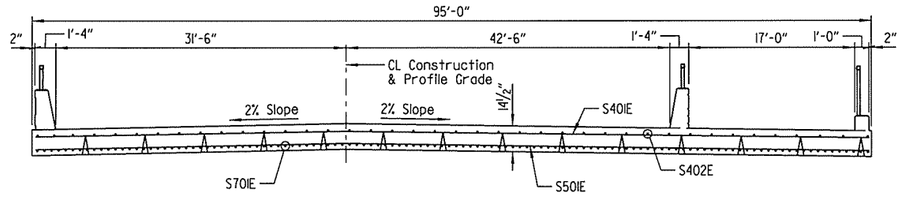
PLAN - APPROACH SLAB TO BENT 1

(Approach Slab To Bent 4 Symetrical By 180° Rotation)
Scale: 3/16" = 1'-0"



SECTION X-X

No Scale



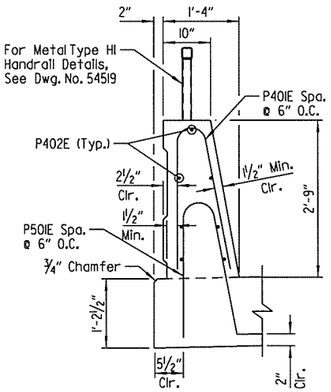
SECTION Y-Y

No Scale

(A) 2'-7" Min. Lap (S401E-Top)
(B) 3'-3" Min. Lap (S501E-Bottom)

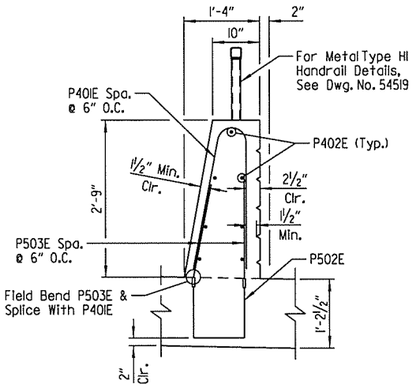
NOTE:
Surface finish for Approach Slabs shall match that used on the bridge deck.

For additional parapet details, see Dwg. Nos. 54517-54518.



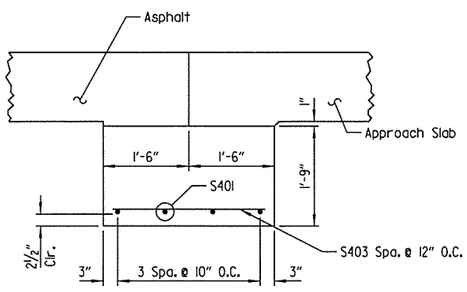
LEFT PARAPET RAIL DETAIL

Scale: 3/4" = 1'-0"



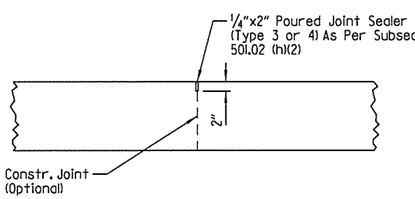
RIGHT PARAPET RAIL DETAIL

Scale: 3/4" = 1'-0"



DETAILS OF SUPPORT AT EXPANSION JOINT

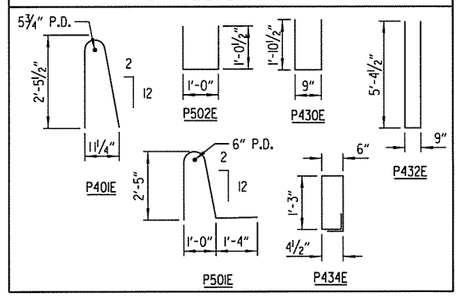
Scale: 3/4" = 1'-0"



DETAILS OF DUMMY GROOVED JOINT

Scale: 3/4" = 1'-0"

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

SLAB BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S401E	57	33'-4"	Str.
S402E	64	21'-2"	Str.
S403E	95	2'-8"	Str.
S501E	44	49'-0"	Str.
S701E	190	21'-2"	Str.

PARAPET BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
P401E	86	5'-3"	5 3/4"
P402E	14	21'-2"	Str.
P430E	43	4'-4"	2"
P432E	6	11'-4"	2"
P433E	4	21'-2"	Str.
P434E	8	3'-10"	2"
P501E	43	6'-4"	3 3/4"
P502E	43	2'-10 1/2"	2 1/2"
P503E	86	2'-0"	Str.

NOTE:
Number of bars shown is for one approach slab.

Bar designations ending with "E" indicates epoxy coated bars.

TABLE OF QUANTITIES

Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
14,151	116

NOTE:
Quantities for one approach slab.

GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Approach slab will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB BRIDGE OVER PEDESTRIAN WALKWAY PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x2_SI2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JULY 2013

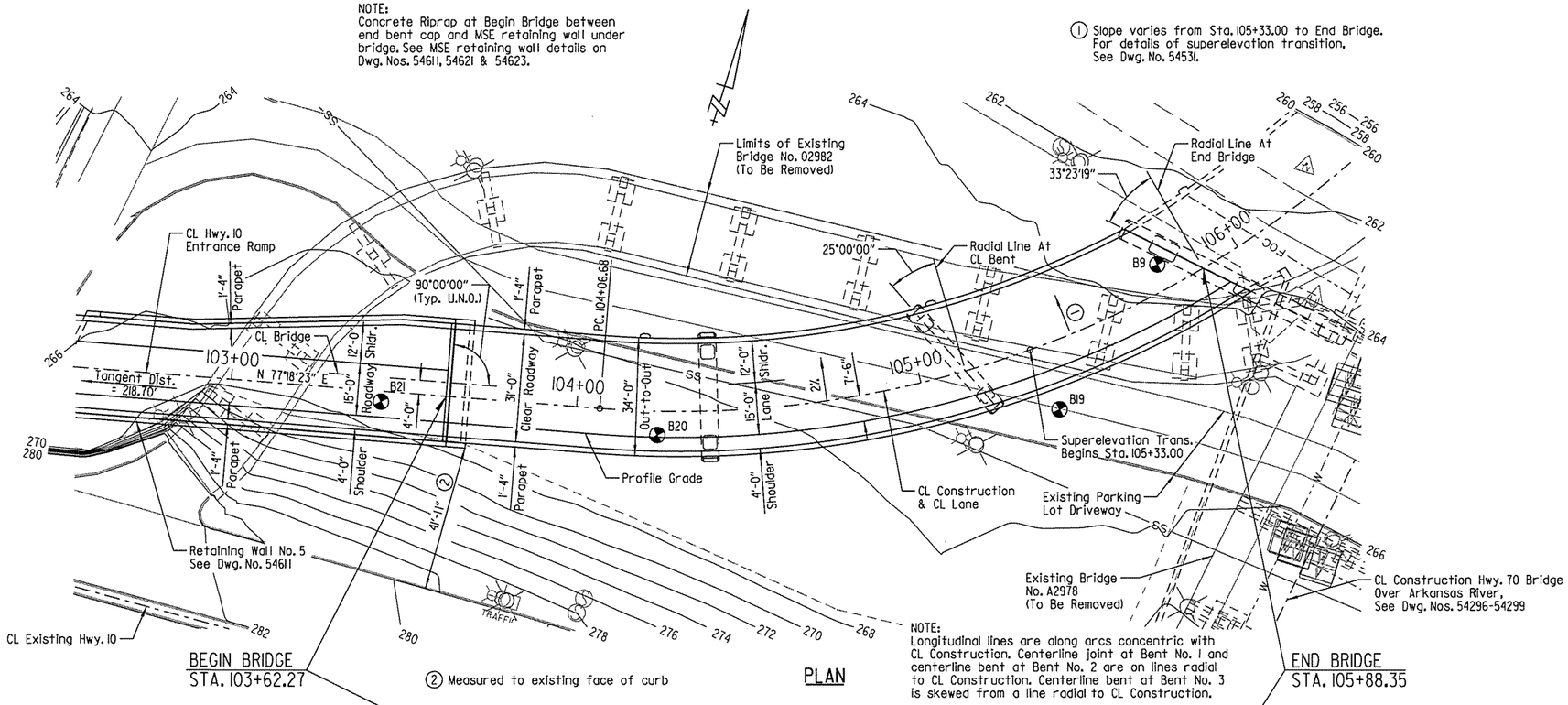
BRIDGE NO. 07293 DRAWING NO. 54522

SRYancey 5/29/2014 4:41PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\ROUTINE\080 - Broadway Bridge over the Arkansas River\Drawings\B061275x2_SI2 (Approach Slab).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	299	505
				① 07294		LAYOUT		54523

NOTE:
Concrete Riprap at Begin Bridge between end bent cap and MSE retaining wall under bridge. See MSE retaining wall details on Dwg. Nos. 54611, 54621 & 54623.

① Slope varies from Sta. 105+33.00 to End Bridge. For details of superelevation transition, See Dwg. No. 54531.



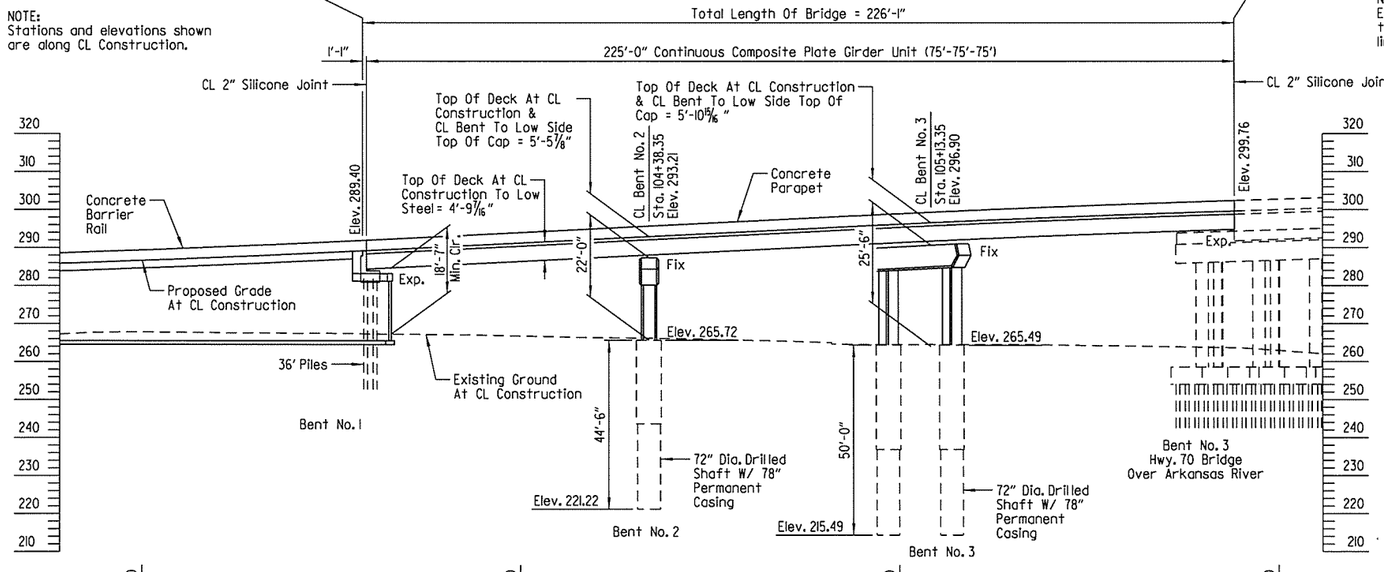
② Measured to existing face of curb

PLAN

NOTE:
Longitudinal lines are along arcs concentric with CL Construction. Centerline joint at Bent No. 1 and centerline bent at Bent No. 2 are on lines radial to CL Construction. Centerline bent at Bent No. 3 is skewed from a line radial to CL Construction.

NOTE:
Except as shown in tangent, all transverse dimensions are along lines radial to CL Construction.

NOTE:
Stations and elevations shown are along CL Construction.



ELEVATION

LEGEND

FOC = Fiber Optic Cable
SS = Sanitary Sewer
W = Water Line
U.N.O = Unless Noted Otherwise

GENERAL NOTES - HWY. 10 ENTRANCE RAMP

BENCH MARK: PN: 905, PD: SO. IN D.I., ST: 104+85.78 OF: 929.03' RT. ZC: 258.65

OPERATIONAL CATEGERY: OTHER

STEEL PILING: Piling for Bent No. 1 shall be HP 12x53 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. The Contractor shall use approved steel H-Pile driving points on all piles. Piling in Bent No. 1 shall be driven per the requirements on Dwg. No. 54292.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 55,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent No. 1.

DETAIL DRAWINGS:	DRAWING NOS:
End Bent	54525-54526
Intermediate Bents	54527-54529
225' Cont. Comp. Plate Girder Unit	54530-54539
Elastomeric Bearings	54540
Steel Piling	55020
Concrete Riprap	55002

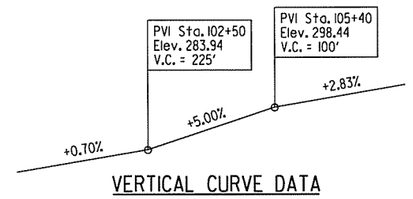
For "PROJECT GENERAL NOTES", see Dwg. No. 54292.

DRILLED SHAFTS: All drilled shafts shall be founded to the minimum rock penetrations and tip elevations as shown on the plans. No adjustment in Plan Tip Elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP JOB 061275 "DRILLED SHAFT FOUNDATIONS". Any casing used as a means for construction of the drilled shafts, such as to prevent caving, to exclude groundwater, or to provide shoring, shall not extend below top of competent rock. The Contractor must obtain approval from the Engineer for any deviation from this requirement.

CROSSHOLE SONIC LOGGING: Nondestructive testing shall be performed on each drilled shaft in accordance with SP JOB 061275 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS".

FOR R/W DATA, SEE ROADWAY PLANS

NOTE:
For "SOIL BORING PROFILE", see Dwg. No. 54524.



VERTICAL CURVE DATA

Hwy. 10 Entrance Ramp
(Profile Grade 7.5' Right of CL Construction)

HORIZONTAL CURVE DATA

Hwy. 10 Entrance Ramp
CL Construction

PI = 106+08.81
Δ = 68°21'41" Lt.
D = 19°15'00"
T = 202.13'
L = 355.12'
R = 297.64'
e = N.C.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

LAYOUT OF BRIDGE
HWY. 10 ENTRANCE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

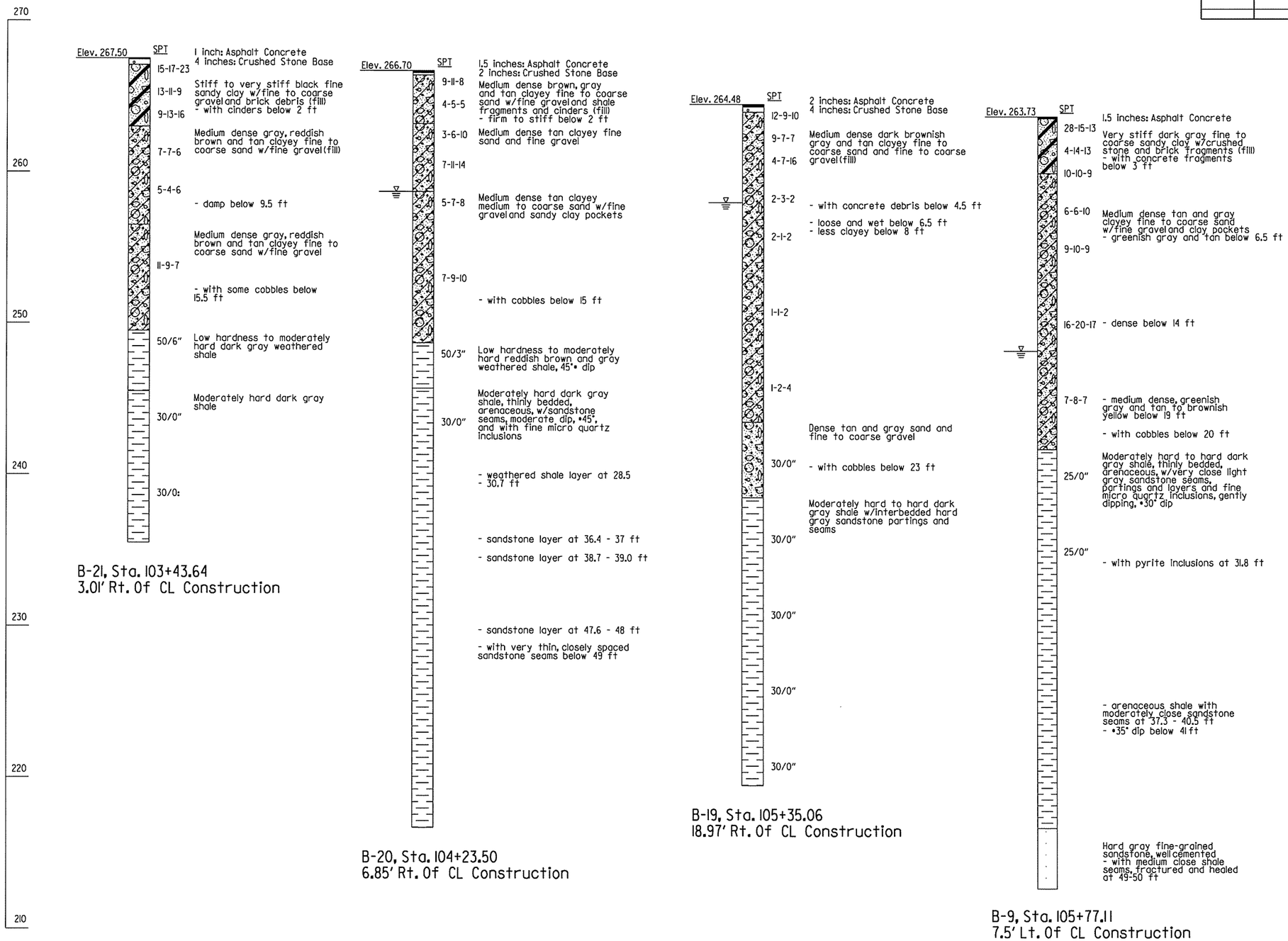
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x3_LI.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07294 DRAWING NO. 54523

SRYancey 5/29/2014 4:42:55 PM
WORKSPACE: AHTD Bridge
L:\x20\NHOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x3_LI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	300	505
				(1)	07294	SOIL BORING PROFILE		54524



NOTES:
Stationing and offsets shown are along Hwy. 10 Entrance Ramp CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SOIL BORING PROFILE
LAYOUT OF BRIDGE
HWY. 10 ENTRANCE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

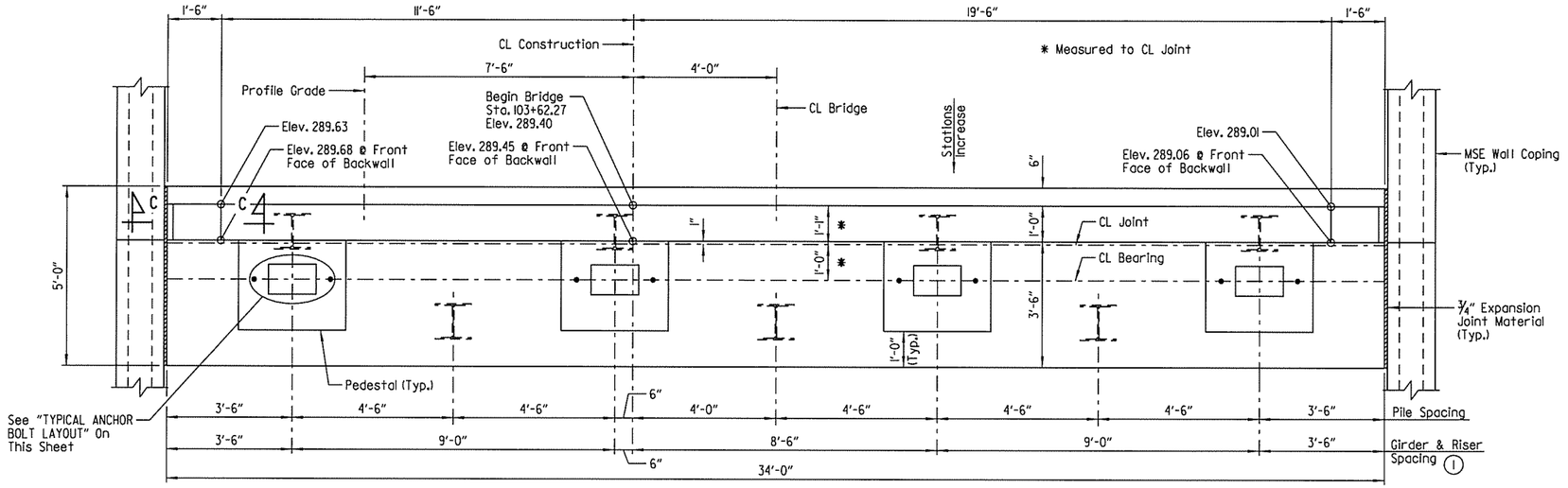
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2013 FILENAME: B061275x3_L2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: AUG. 2013

BRIDGE NO. 07294 DRAWING NO. 54524

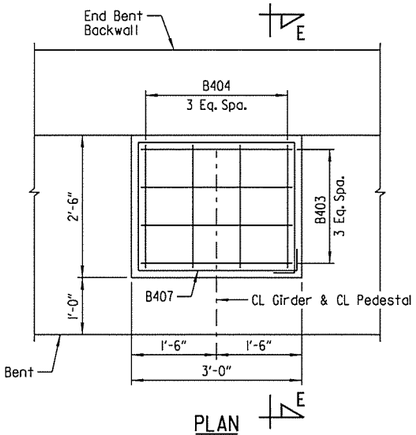
SRYancey 5/29/2014 4:42:56 PM
WORKSPACE: AHTD Bridge
L:\ZONE\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_L2 (Boring Log).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	301	505
				① 07294		END BENT DETAILS		54525



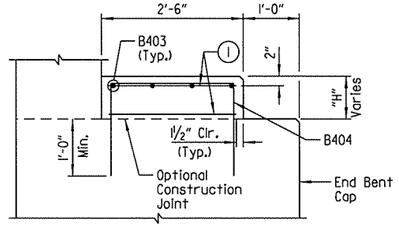
PLAN
(Looking Back)
Scale: ½" = 1'-0"

① Riser spacing measured to CL riser, see "PEDESTAL DETAIL" On this sheet.



PLAN

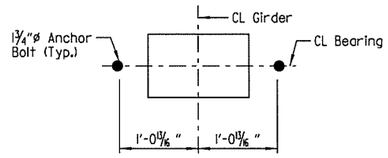
① 1-B407 when "H" = 4" to 9"
2-B407 Spa. @ 6" when "H" = 9" to 10½"



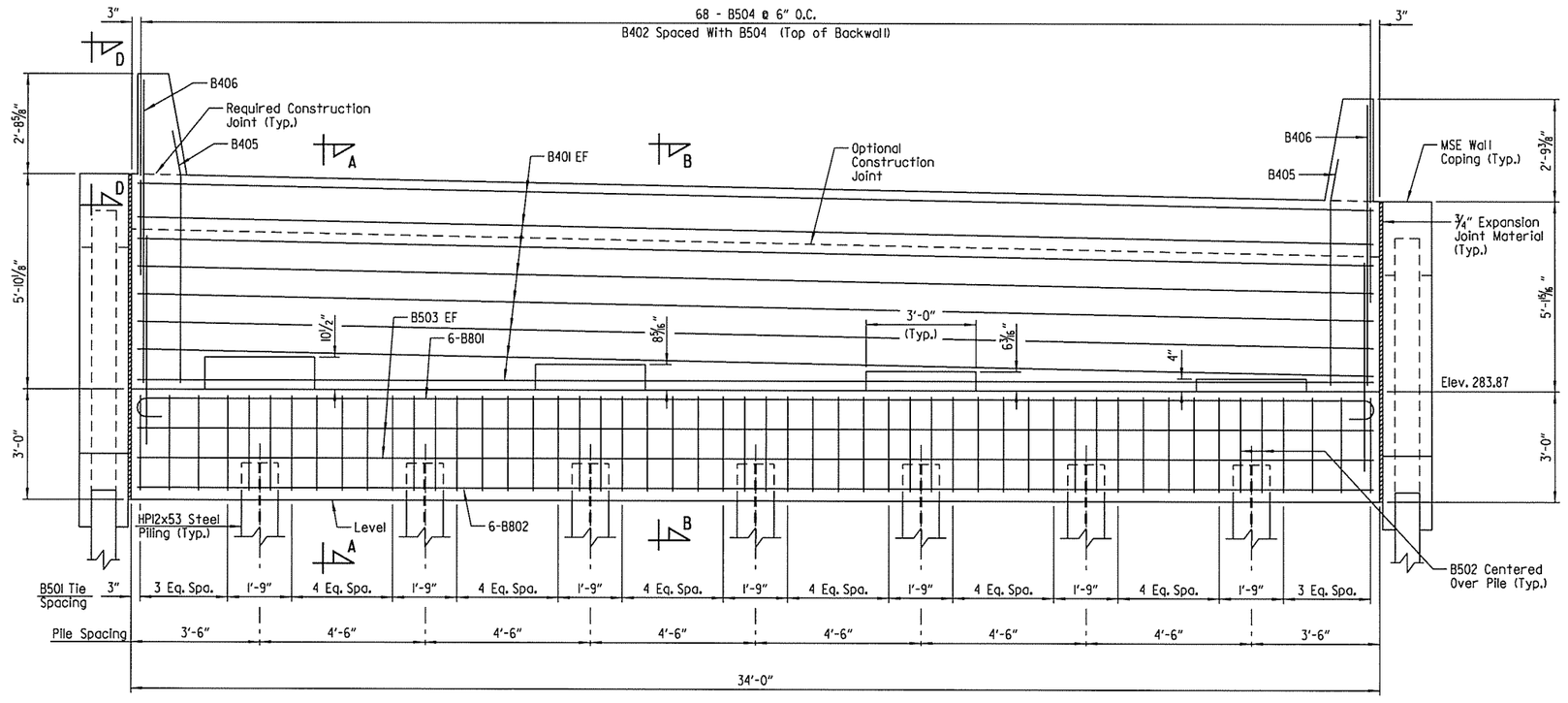
SECTION E-E

PEDESTAL DETAIL
Scale: ¾" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54540.



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"



ELEVATION
(Looking Back)
Scale: 1"=2" = 1'-0"

LEGEND
EF = Each Face

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C", "VIEW D-D", "GENERAL NOTES", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54526.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENT NO. 1
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

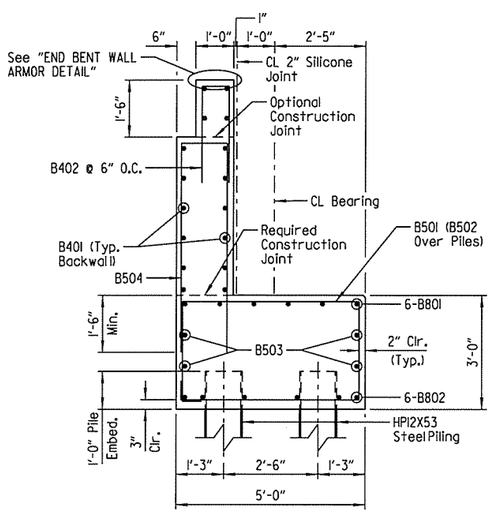
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x3_B1.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54525

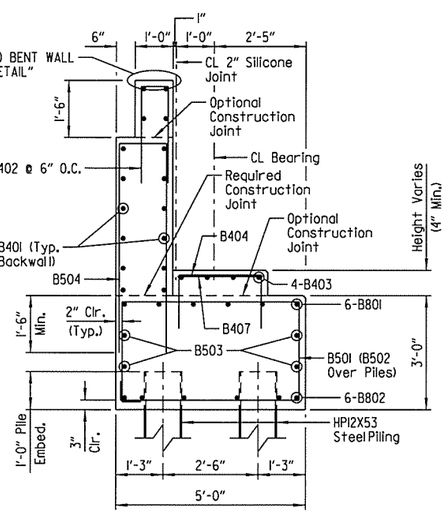
SRYancey 5/29/2014 4:42:57 PM
WORKSPACE: AHTD Bridge
L:\ZDIN\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x3_B1\End Bent No.1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	302	505
				(1) 07294		END BENT DETAILS		54526



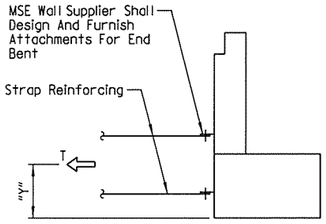
SECTION A-A

Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 1/2" = 1'-0"



END BENT STRAP DETAIL

No Scale

T = Resultant Force required to be resisted by strap reinforcing.

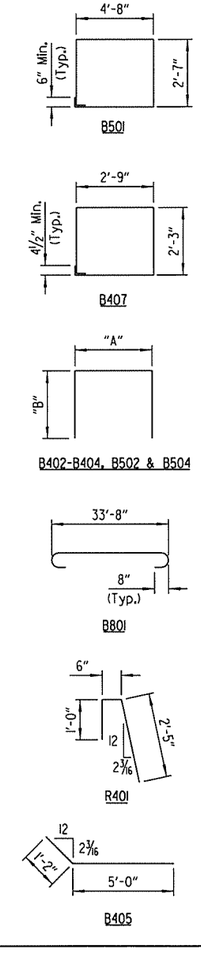
Y = Centroid of strap reinforcing.

LIMIT STATE	T	Y
	Kips/Ft	Ft
Service	3.3	4.0
Strength	5.1	
Extreme	4.3	

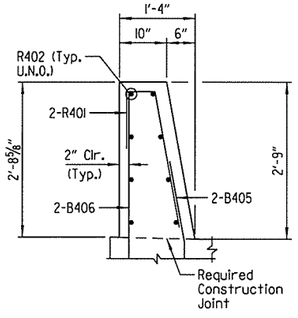
BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	16	33'-8"			Str.
B402	68	5'-8"	8"	2'-7"	2"
B403	16	6'-0"	2'-8"	1'-9"	2"
B404	16	5'-6"	2'-2"	1'-9"	2"
B405	4	6'-2"			2"
B406	4	7'-6"			Str.
B407	5	10'-4"			2"
B501	38	15'-0"			2 1/2"
B502	14	9'-7 1/2"	4'-8"	2'-7"	2 1/2"
B503	4	33'-8"			Str.
B504	68	12'-5 1/2"	1'-2"	5'-9"	2 1/2"
B801	6	35'-6"			6"
B802	6	33'-8"			Str.
R401	4	3'-9"			2"
R402	16	8"			Str.

BAR BENDING DIAGRAM

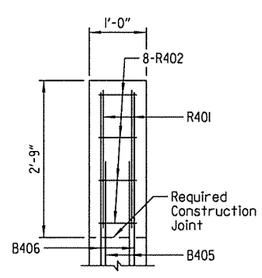


NOTE:
Dimensions of bars are out-to-out.



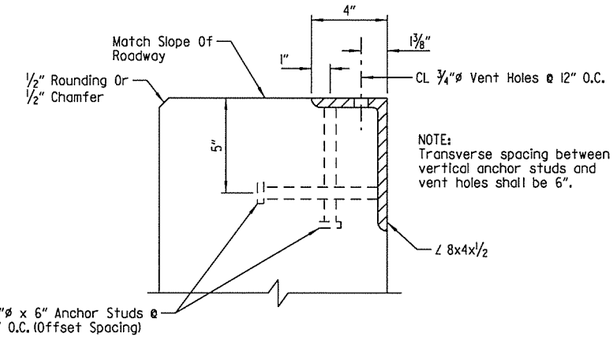
SECTION C-C

Scale: 3/4" = 1'-0"



VIEW D-D

Scale: 3/4" = 1'-0"



END BENT WALL ARMOR DETAIL

No Scale

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638. Cleaning and painting will be paid for under the item "PAINTING STRUCTURAL STEEL".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Class 2 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

NOTE:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 54539 for additional information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 20417
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENT NO. 1
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.

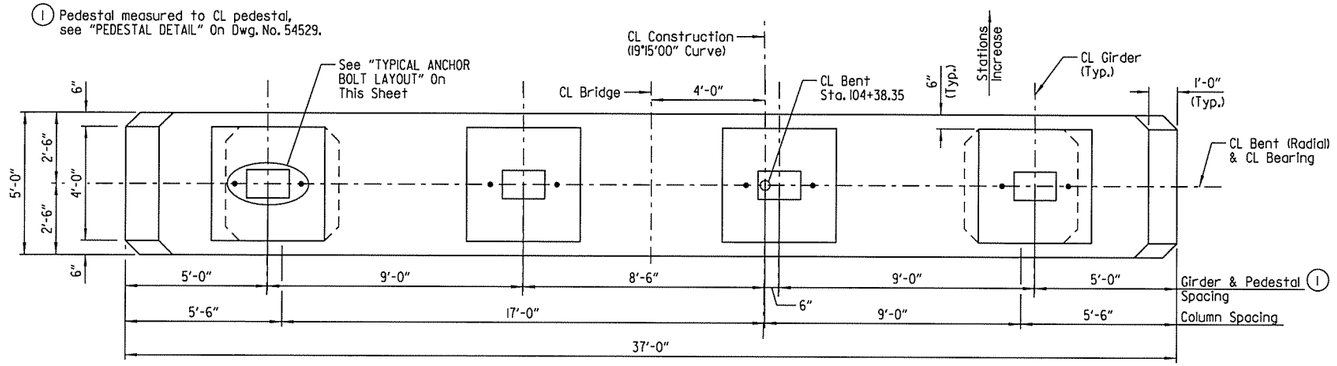
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x3_B2.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54526

SRYancey 5/29/2014 4:42:58 PM
WORKSPACE: AHTD Bridge
L:\20IN\IN0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_B2 (End Bent No.1 Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	303	505
				(1) 07294		INT. BENT DETAILS		54527

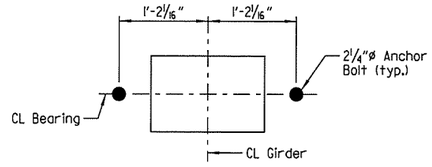
(1) Pedestal measured to CL pedestal, see "PEDESTAL DETAIL" On Dwg. No. 54529.



PLAN - BENT NO. 2

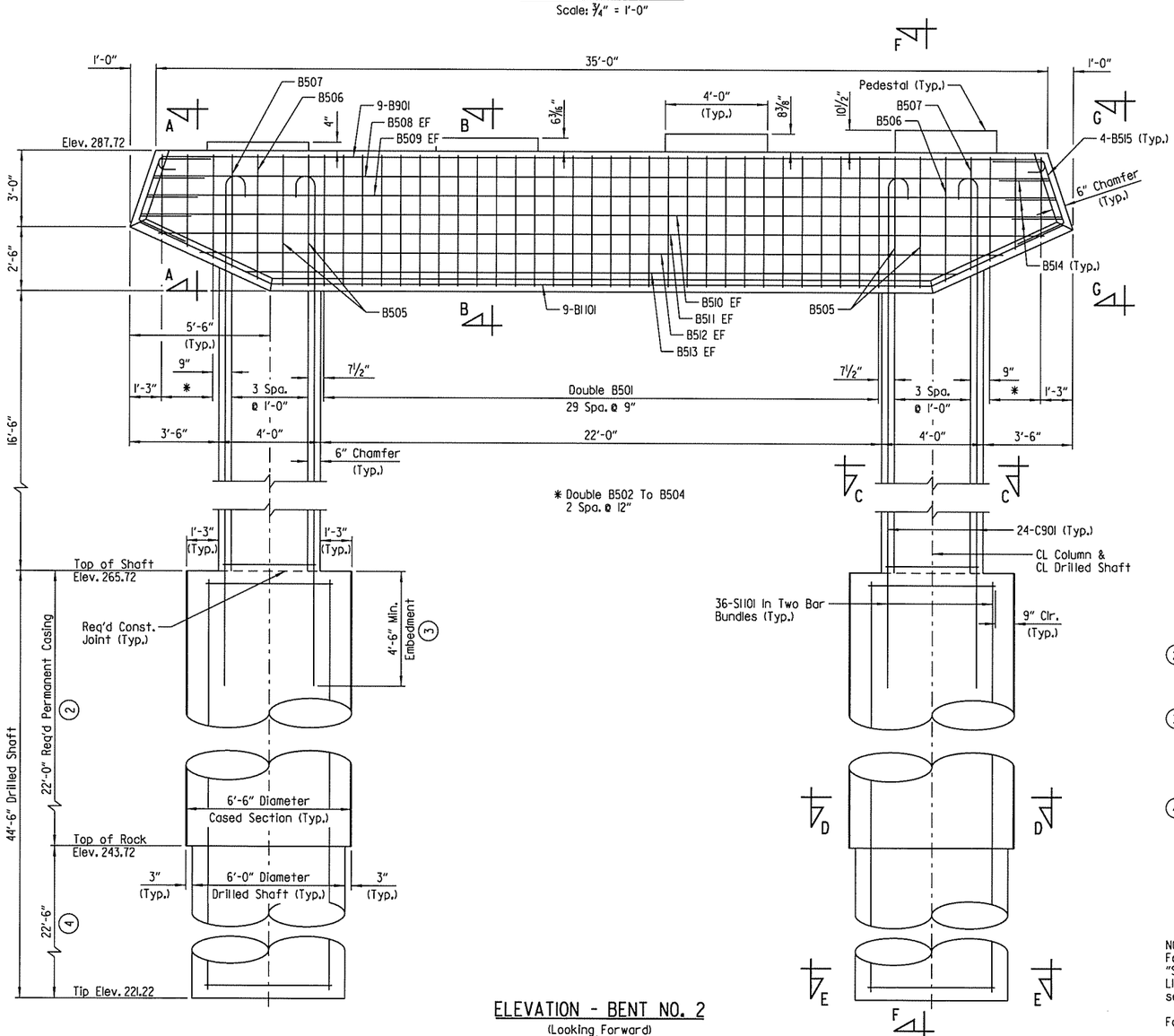
Scale: 3/4" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54540.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"



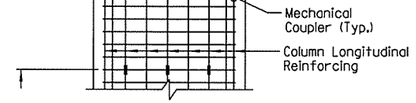
ELEVATION - BENT NO. 2

(Looking Forward)
Scale: 3/4" = 1'-0"

Adjacent Mechanical Couplers Shall Be Staggered A Min. Of 2'-0" Or The Length Of The Mechanical Coupler, Whichever Is Greater

Mechanical coupler assembly in the columns shall consist of a QPL approved mechanical splice, and shall maintain the clearances shown. Their payment shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)". The couplers shall develop at least 125% of the specified yield strength of the bar.

The bars shall be assembled as shown in "OPTIONAL MECHANICAL SPLICE DETAIL" within Splice Zone A only. No more than one mechanical coupler per bar shall be permitted. Not more than alternate bars shall be spliced at a given section.



OPTIONAL MECHANICAL SPLICE DETAIL

Scale: 1/2" = 1'-0"

LEGEND

EF = Each Face

NOTE:
Lap splices in column longitudinal reinforcement shall not be allowed.

(2) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB 061275 "DRILLED SHAFT FOUNDATION". Permanent casing shall not extend below top of competent rock.

(3) The column reinforcing cage, consisting of bars C501, C502 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

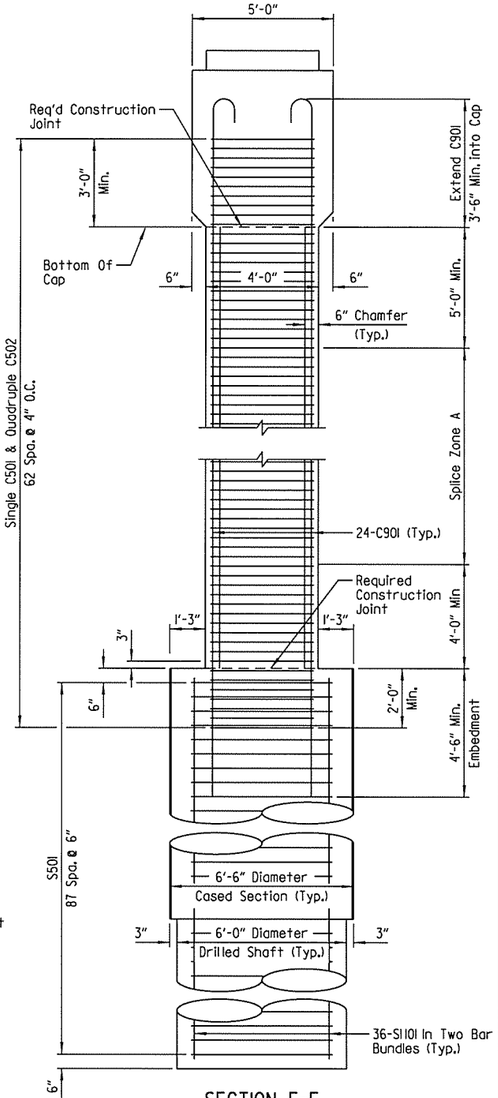
(4) Minimum penetration into competent rock below permanent casing.

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C" "SECTION D-D", "SECTION E-E", "VIEW G-G", "BAR LIST - BENT NO. 2" & "BAR BENDING DIAGRAM", see Dwg. No. 54529.

For "GENERAL NOTES", see Dwg. No. 54528.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

BRIDGE ENGINEER



SECTION F-F

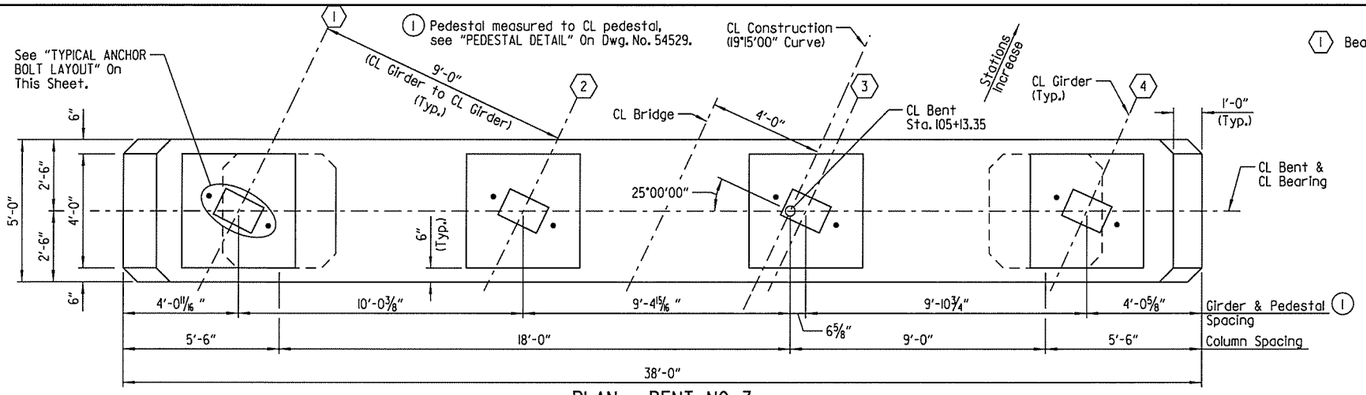
(Reinforcing In Cap Not Shown For Clarity)
Scale: 3/4" = 1'-0"

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENTS
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x3_B3.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54527

SRYancey 5/29/2014 4:42:58 PM
WORKSPACE: AHTD Bridge
L:\200\101080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_B3 Int. Bent No. 2i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	304	505
				(1) 07294		INT. BENT DETAILS		54528

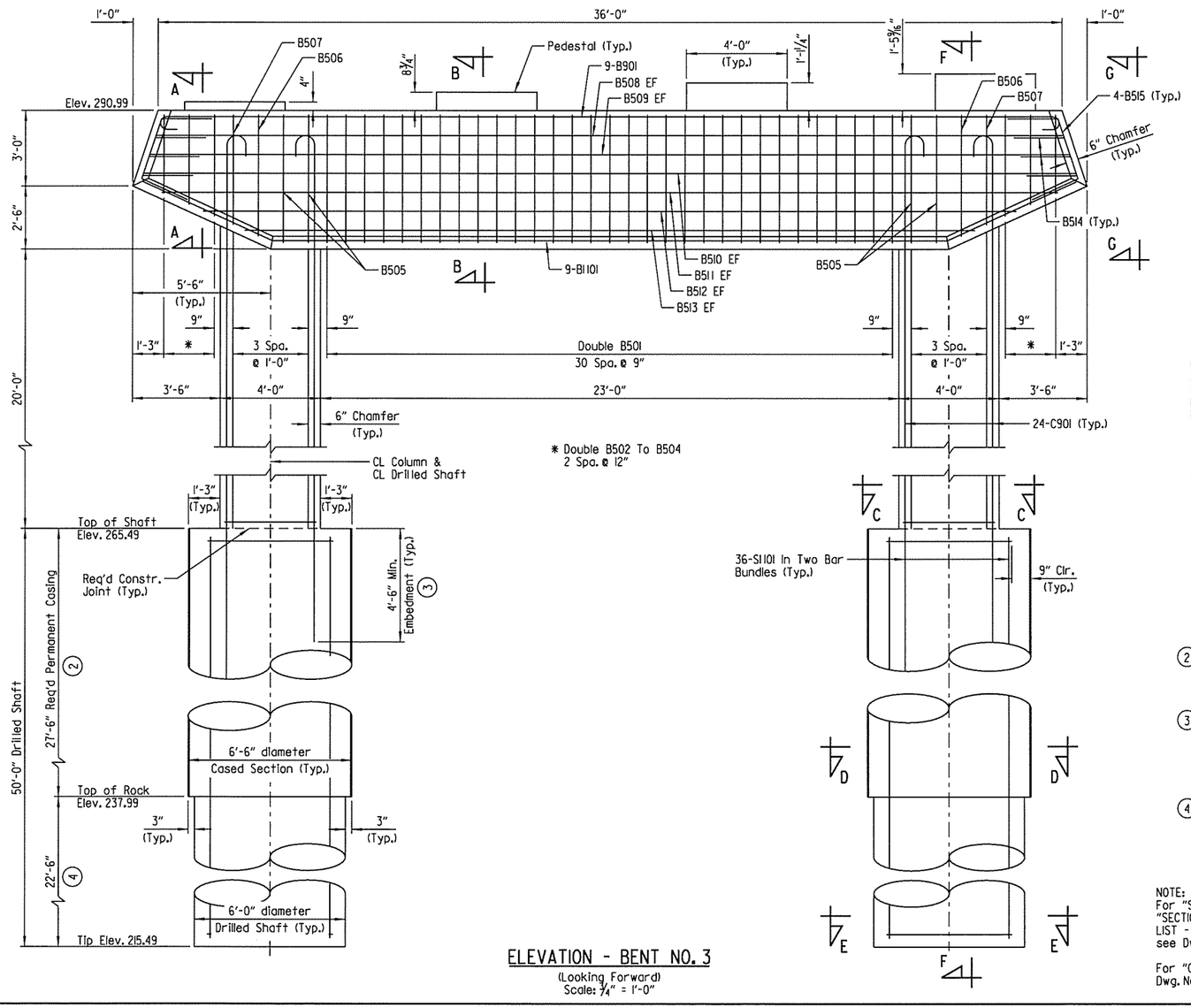


PLAN - BENT NO. 3

Scale: 3/4" = 1'-0"

LEGEND

EF = Each Face

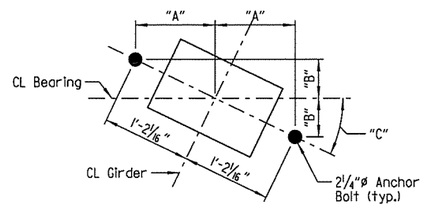


* Double B502 To B504
2 Spa. @ 12"

ELEVATION - BENT NO. 3

(Looking Forward)
Scale: 3/4" = 1'-0"

NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54540.



TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

TABLE OF VARIABLES			
BEAM NO.	"A"	"B"	"C"
1	1'-0 9/16"	6 5/16"	26°40'51"
2	1'-0 11/16"	6 1/8"	25°47'17"
3	1'-0 3/4"	5 15/16"	24°57'19"
4	1'-0 15/16"	5 3/4"	24°10'35"

NOTE:
Lap splices in column longitudinal reinforcement shall not be allowed.

GENERAL NOTES

Concrete in the cap and column shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 061275 "Drilled Shaft Foundations". All exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

Concrete and reinforcing steel in drilled shafts will not be paid for directly but will be included in the unit prices of the drilled shaft items.

For construction methods, materials, measurement and payment of drilled shafts, see SP JOB 061275 "DRILLED SHAFT FOUNDATIONS".

(2) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See SP JOB 061275 "DRILLED SHAFT FOUNDATION". Permanent casing shall not extend below top of competent rock.

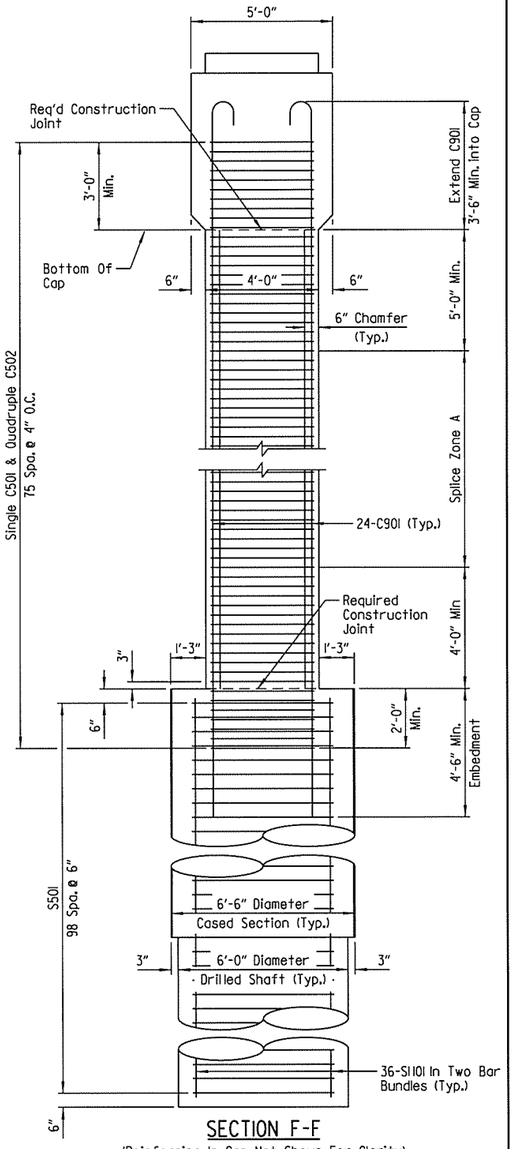
(3) The column reinforcing cage, consisting of bars C501, C502 & C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

(4) Minimum penetration into competent rock below permanent casing.

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION C-C" "SECTION D-D", "SECTION E-E", "VIEW G-G", "BAR LIST - BENT NO. 3" & "BAR BENDING DIAGRAM", see Dwg. No. 54529.

For "OPTIONAL MECHANICAL SPLICE DETAIL", see Dwg. No. 54527.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8077
JOHN H. RUDDELL
BRIDGE ENGINEER



SECTION F-F

(Reinforcing In Cap Not Shown For Clarity)
Scale: 3/4" = 1'-0"

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENTS
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2013 FILENAME: B061275x3_B4.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: MAR. 2013

BRIDGE NO. 07294 DRAWING NO. 54528

SRYancey 5/29/2014 4:42:59 PM
WORKSPACE: AHTD Bridge
L:\20IN\IN0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_B4 (Int. Bent No. 3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	305	505
				(1) 07294		INT. BENT DETAILS		54529

BAR LIST - BENT NO. 2

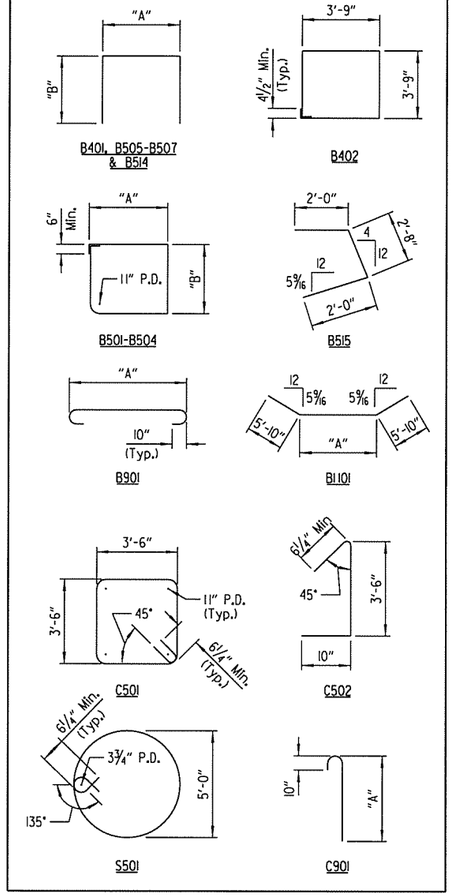
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	40	8'-4"	3'-8"	2'-5"	2"
B402	5	15'-4"			2"
B501	60	16'-5"	2'-11"	5'-1"	2½", 11"
B502 To B504	4 Each	14'-5" To 12'-5"	2'-11"	4'-1" To 3'-1"	2½", 11"
B505	4	14'-6"	4'-6"	5'-1"	2½"
B506	2	14'-0"	4'-6"	4'-10"	2½"
B507	2	13'-2"	4'-6"	4'-5"	2½"
B508	2	35'-1"			Str.
B509	2	35'-7"			Str.
B510	2	36'-1"			Str.
B511	2	34'-9"			Str.
B512	2	31'-6"			Str.
B513	2	27'-11"			Str.
B514	6	8'-3"	4'-5"	2'-0"	2½"
B515	8	6'-8"			2½"
B901	9	37'-0"	34'-6"		9"
B1101	9	37'-6"	25'-10"		10"
C501	126	14'-8"			3¾", 11"
C502	504	4'-9"			3¾"
C901	48	26'-11"	25'-8"		9"
(1) S501	176	17'-3"			3¾"
(1) S1101	72	44'-0"			Str.

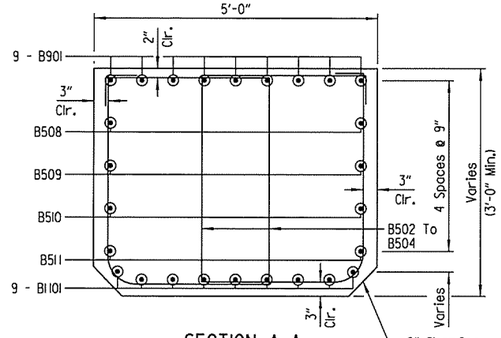
BAR LIST - BENT NO. 3

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	40	8'-4"	3'-8"	2'-5"	2"
B402	7	15'-4"			2"
B501	62	16'-5"	2'-11"	5'-1"	2½", 11"
B502 To B504	4 Each	14'-5" To 12'-5"	2'-11"	4'-1" To 3'-1"	2½", 11"
B505	4	14'-6"	4'-6"	5'-1"	2½"
B506	2	14'-0"	4'-6"	4'-10"	2½"
B507	2	13'-2"	4'-6"	4'-5"	2½"
B508	2	36'-1"			Str.
B509	2	36'-7"			Str.
B510	2	37'-1"			Str.
B511	2	35'-9"			Str.
B512	2	32'-6"			Str.
B513	2	28'-11"			Str.
B514	6	8'-3"	4'-5"	2'-0"	2½"
B515	8	6'-8"			2½"
B901	9	38'-0"	35'-6"		9"
B1101	9	38'-6"	26'-10"		10"
C501	152	14'-8"			3¾", 11"
C502	608	4'-9"			3¾"
C901	48	30'-3"	29'-0"		9"
(1) S501	198	17'-3"			3¾"
(1) S1101	72	49'-6"			Str.

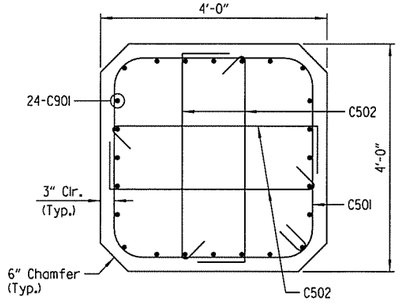
(1) Non-pay Item - Subsidiary to SP JOB 061275 "DRILLED SHAFT FOUNDATIONS".

BAR BENDING DIAGRAM

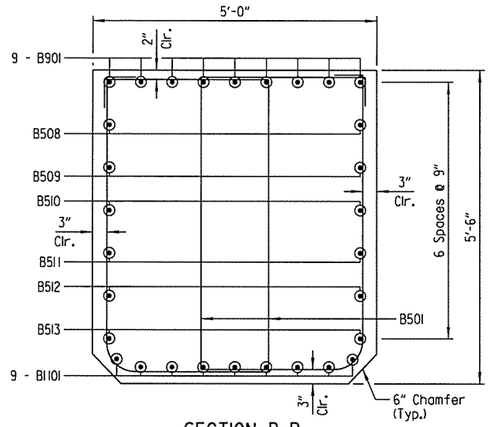




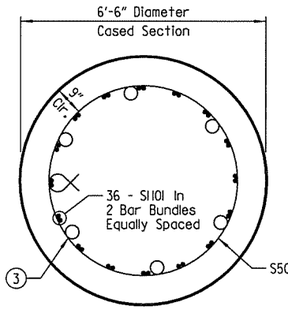
SECTION A-A
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"



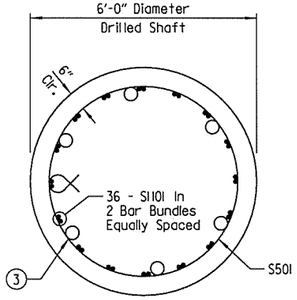
SECTION C-C
Scale: ¾" = 1'-0"



SECTION B-B
(Pedestal Not Shown For Clarity)
Scale: ¾" = 1'-0"



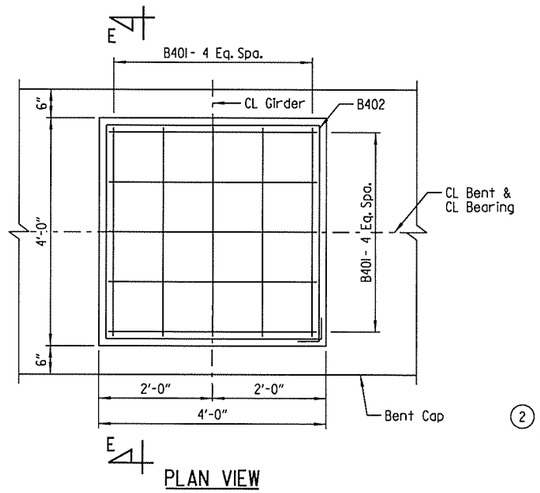
SECTION D-D
Scale: ½" = 1'-0"



SECTION E-E
Scale: ½" = 1'-0"

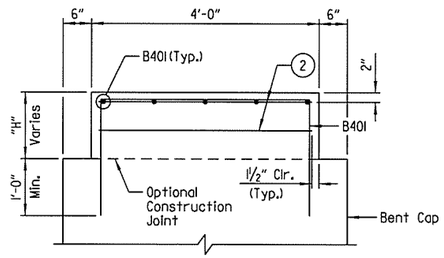
(3) 6 - 2" Min. Dia. Schedule 40 steel piles equally spaced. See SP JOB 061275 "NONDESTRUCTIVE TESTING OF DRILLED SHAFTS".

For "GENERAL NOTES", See Dwg. No. 54528.



PLAN VIEW

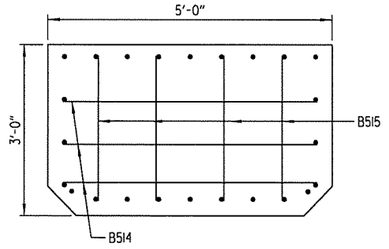
NOTE:
For height of each pedestal, see "ELEVATION - BENT NO. 2" On Dwg. No. 54527 or "ELEVATION - BENT NO. 3" On Dwg. No. 54528.



(2) 1-B402 when "H" = 4" to 9"
2-B402 Spa. @ 6" when "H" = 9" to 1'-3"
3-B403 Spa. @ 6" when "H" = 1'-3" to 1'-5⅜"

SECTION E-E

PEDESTAL DETAIL
Scale: ¾" = 1'-0"



VIEW G-G
(Showing End Cap Reinforcing)
Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8677
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENTS
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

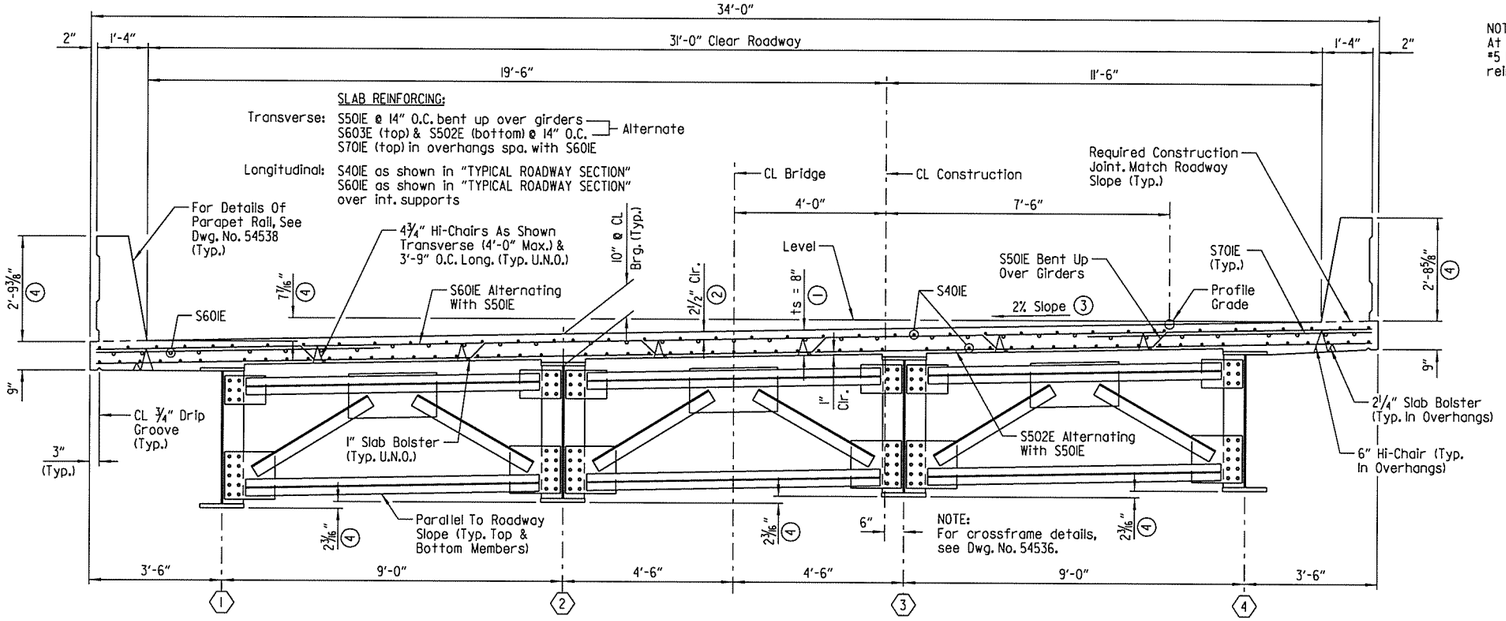
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x3_B5.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54529

SRYancey 5/29/2014 4:42:59 PM
WORKSPACE: AHTD Bridge
L:\CAD\MIDTOBD Broadway Bridge over the Arkansas River\Drawings\B061275x3_B5 (Int. Bent Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	306	505
				(1) 07294		225'-0" PL GIRDER UNIT		54530



NOTE:
Class 2 Protective Surface Treatment shall be applied to the roadway surface only. Class 3 Textured Coating Finish shall be applied to parapet rail surfaces in accordance with SP JOB 061275 "TEXTURED COATING FINISH".

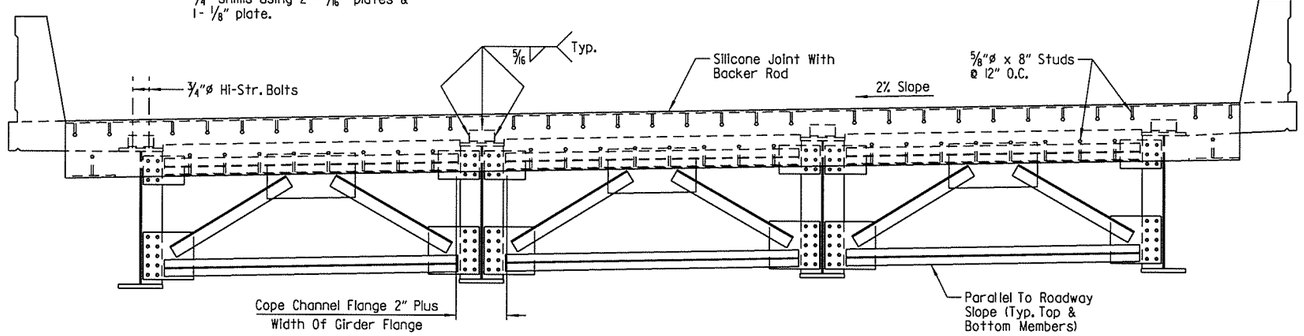
TYPICAL ROADWAY SECTION

(Looking Forward)
Scale: ½" = 1'-0"

NOTE:
Crossframes shall be installed as girders are erected. All bolts in crossframes shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Connection Angles ∠8x4x½
Detail Device ⅛" high and provide ¼" shims using 2 - 1/16" plates & 1- ⅛" plate.

NOTE:
For details of poured silicone joint, see Dwg. No. 54539.



TYPICAL SECTION THRU JOINT AT BEGIN BRIDGE

(Looking Forward)
Scale: ½" = 1'-0"

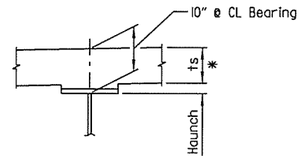
(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) Cross slope varies near End Bridge. See "SUPERELEVATION TRANSITION DETAILS" and "DECK TRANSITION NEAR END BRIDGE" on Dwg. No. 54531.

(4) Dimension varies in superelevation transition area near End Bridge.

NOTE:
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S501E. Payment for reinforcing will be based on the weight of bar S501E.



NOTE: t_s = Slab Thickness as shown on "TYPICAL ROADWAY SECTION"

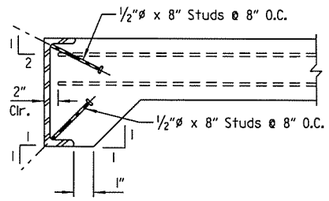
* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 ¼". No increase in concrete and structural steel quantities will be made to maintain tolerances.

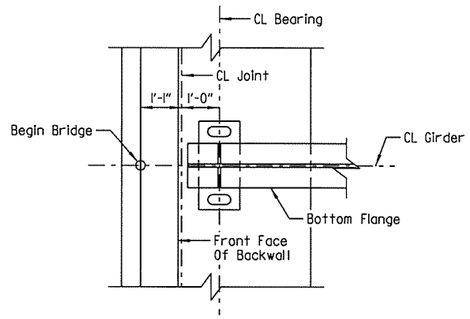
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



DETAIL OF ALTERNATE ANCHORS

No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.



BEARING PLAN AT BEGIN BRIDGE

No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

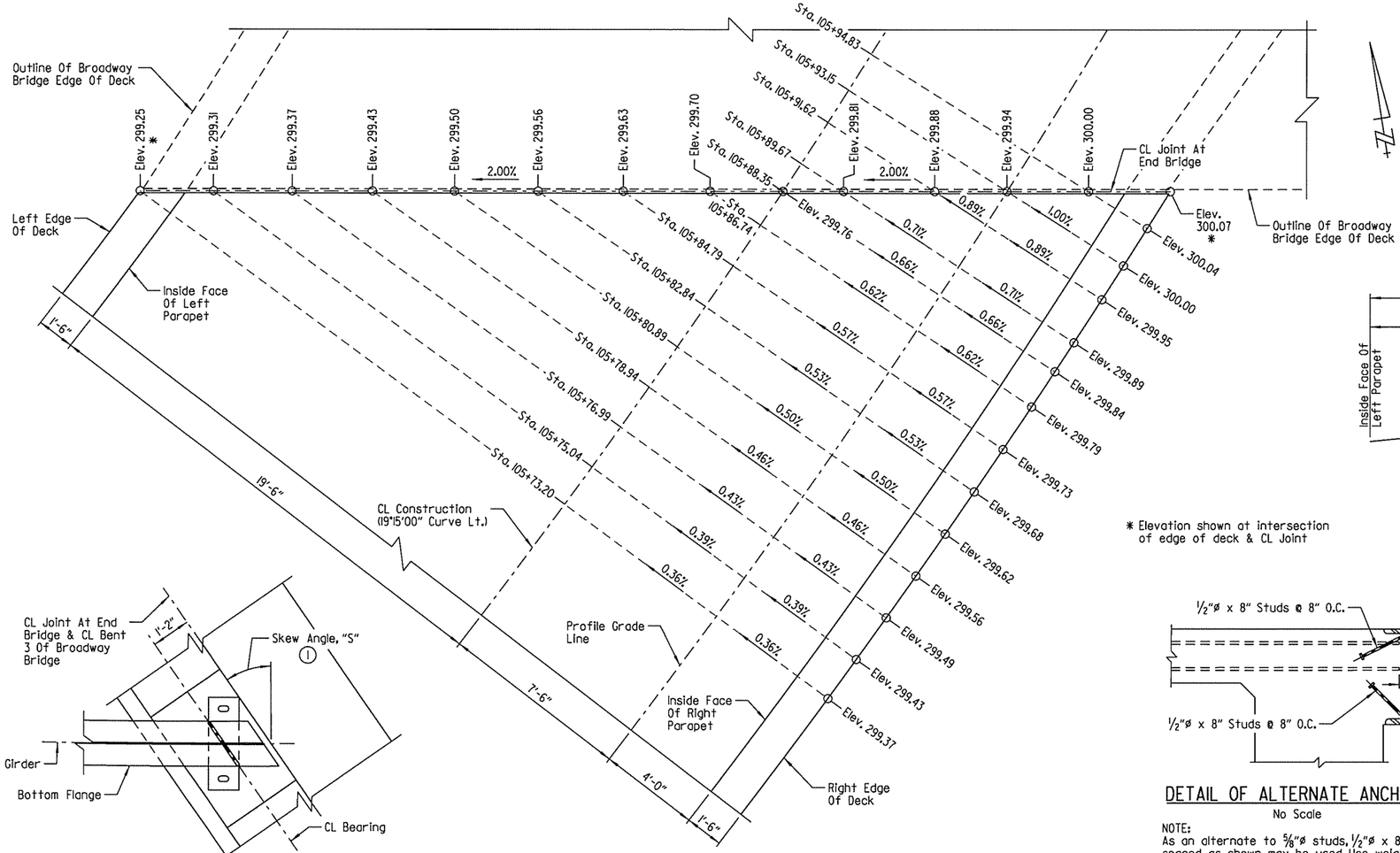
SHEET 1 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

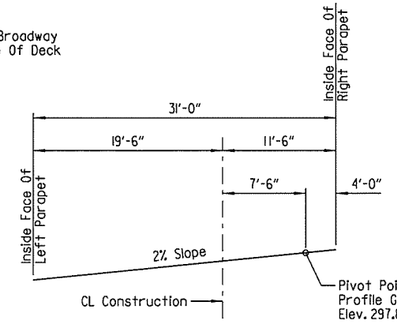
DRAWN BY: ABH DATE: JUNE 2013 FILENAME: B061275x3_S1.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUNE 2013
BRIDGE NO. 07294 DRAWING NO. 54530

SRYancey 5/29/2014 4:43:00 PM
WORKSPACE: AHTD Bridge
L:\ZDN\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S1(Typ Section).dgn
REVISED DATE:

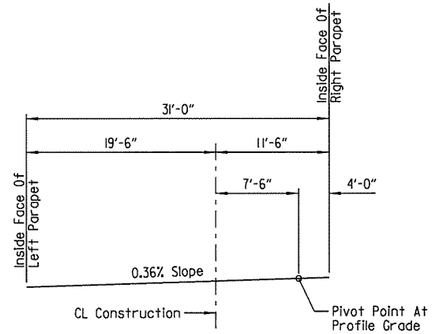
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	307	505
				(1) 07294		225'-0" PL GIRDER UNIT		54531



* Elevation shown at intersection of edge of deck & CL Joint



Sta. 105+33.00
(Superelev. Transition Begins)
Looking Forward

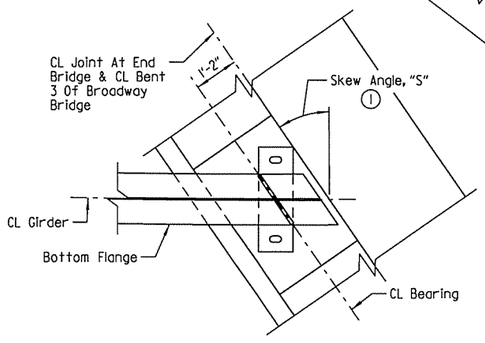


Sta. 105+73.20
Looking Forward

NOTE:
For superelevation transition details beyond Sta. 105+73.20, see "DECK TRANSITION NEAR END BRIDGE".

SUPERELEVATION TRANSITION DETAILS

No Scale



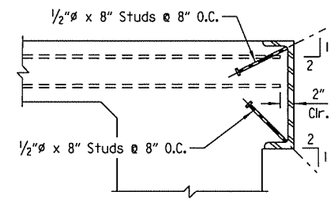
BEARING PLAN AT END BRIDGE

No Scale

(1) Angle varies among girders. For Angle "S", see "TABLE OF VARIABLES" on Dwg. No. 54534.

DECK TRANSITION NEAR END BRIDGE

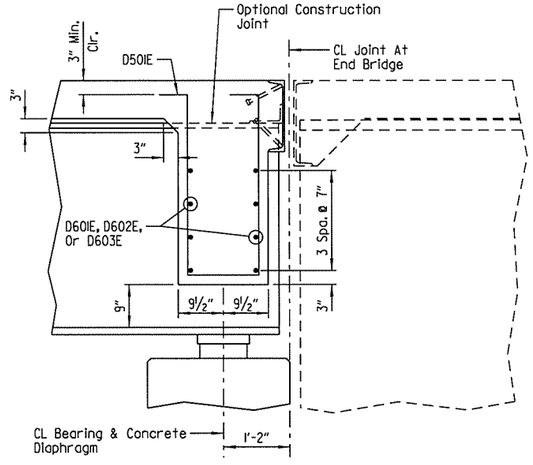
Scale: 3/8" = 1'-0"



DETAIL OF ALTERNATE ANCHORS

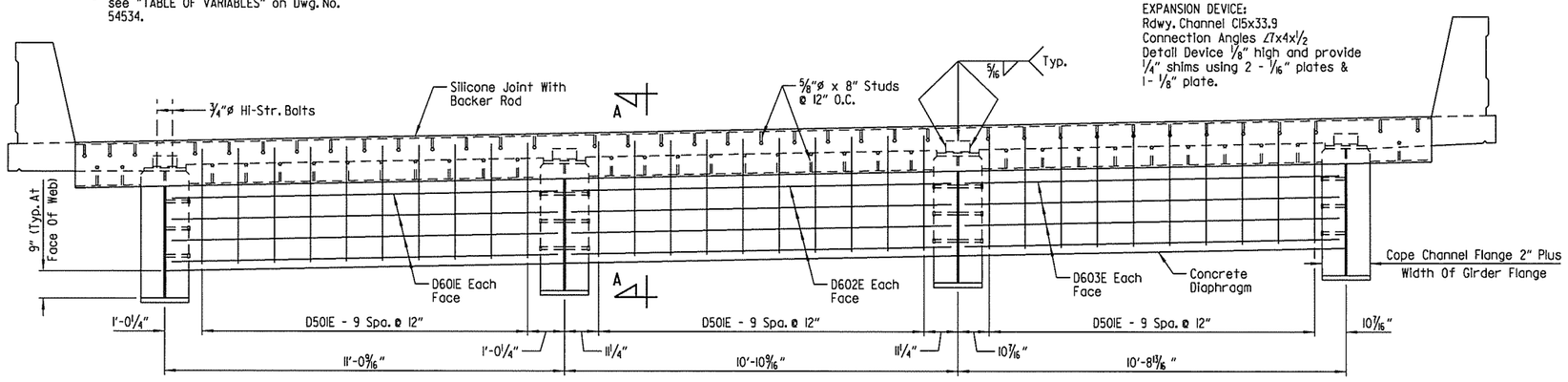
No Scale

NOTE:
As an alternate to 5/8"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of structural steel.



SECTION A-A

(Section Taken Normal To Conc. Diaphragm)
Scale: ¾" = 1'-0"



EXPANSION DEVICE:
Rdwy. Channel C15x33.9
Connection Angles ∠7x4x½
Detail Device ⅛" high and provide ¼" shims using 2 - 1/16" plates & 1 - ⅛" plate.

TYPICAL SECTION NEAR JOINT AT END BRIDGE

(Looking Forward)
(Horizontal Dimensions Shown Measured Along CL Concrete Diaphragm)
No Scale

NOTE:
For details of poured silicone joint, see Dwg. No. 54539.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/23/14
BRIDGE ENGINEER

SHEET 2 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 10 ENTRANCE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JUNE 2013 FILENAME: B061275x3_S2.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUNE 2013

BRIDGE NO. 07294 DRAWING NO. 54531

SRYancey 5/29/2014 4:43:01PM
WORKSPACE: AHTD Bridge
L:\2DIN\M0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S2 (Typ Section-2).dgn
REVISED DATE:

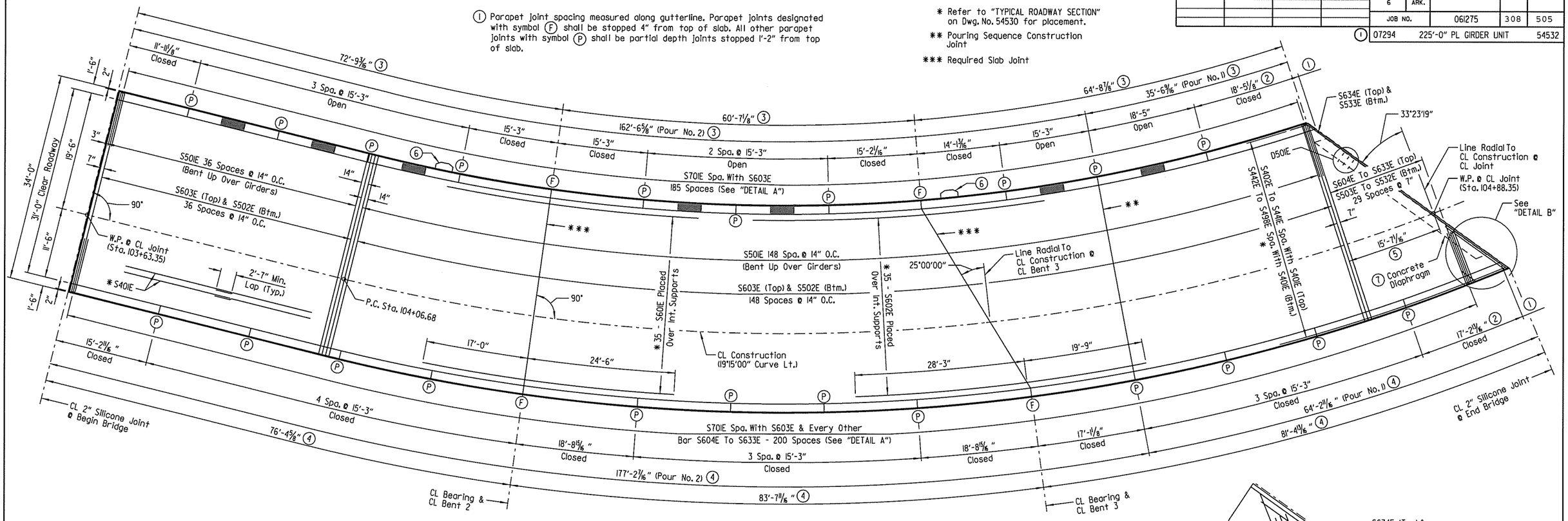
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	308	505
				(1) 07294		225'-0" PL GIRDER UNIT		54532

(1) Parapet joint spacing measured along gutterline. Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to "TYPICAL ROADWAY SECTION" on Dwg. No. 54530 for placement.

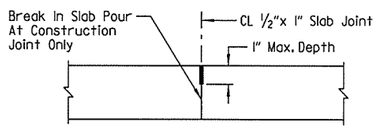
** Pouring Sequence Construction Joint

*** Required Slab Joint



REINFORCING PLAN & POURING SEQUENCE

Scale: 1/8" = 1'-0"



The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

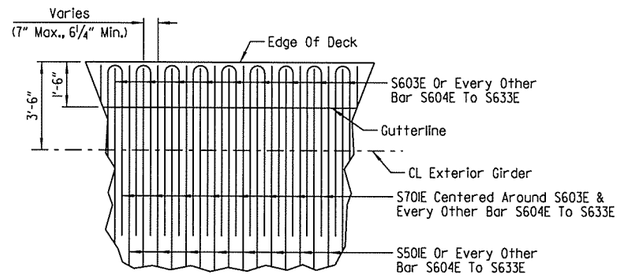
SLAB JOINT DETAIL

No Scale

NOTES:
Unless noted otherwise, spacing shown for all transverse reinforcing is measured along right edge of slab. Beyond the P.C. Station, all transverse reinforcing shall be placed on lines radial to CL Construction.

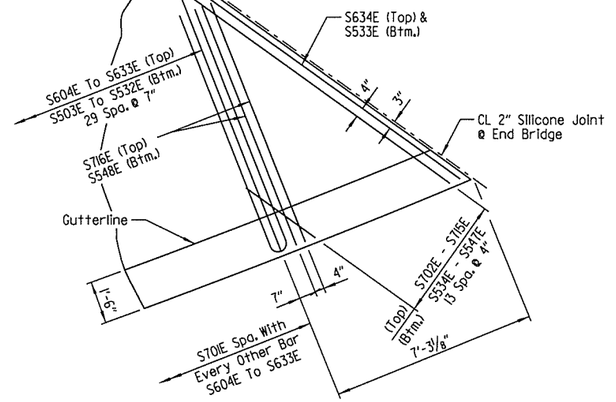
Beyond the P.C. Station, all longitudinal lines and longitudinal slab reinforcing shall be placed along curves concentric with CL Construction (19°15'00" curve).

Unless noted otherwise, all transverse lines shown beyond the P.C. Station are radial to CL Construction.



DETAIL A

(Showing Top Reinforcing Only)
No Scale



DETAIL B

Scale: 3/8" = 1'-0"

NOTE:
Pours with the same number may be placed simultaneously or separately. All pours must be placed in the order shown. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

(2) Measured to intersection of gutterline and CL Joint

(3) Measured along left edge of slab

(4) Measured along right edge of slab

(5) Measured along CL Construction

(6) Light Pole Support Pedestal (See Dwg. No. 54533 for details and locations)

(7) See Dwg. No. 54531 for concrete diaphragm details.

NOTE:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

NOTE:
See Dwg. No. 54538 for parapet reinforcing details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 3 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x3_S3.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 07294 DRAWING NO. 54532

SRTancey 5/29/2014 4:43:02 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S3 (Slab Plan).dgn
REVISED DATE:

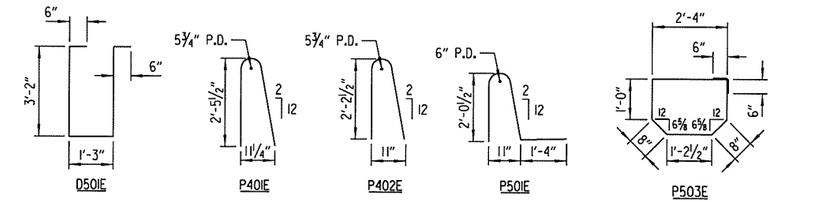
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	309	505
① 07294		225'-0" PL GIRDER UNIT		54533

BAR LIST

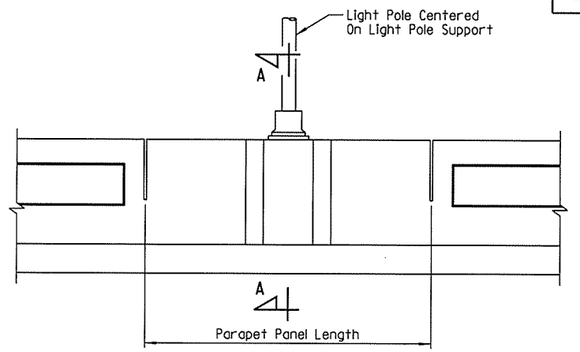
MARK	NO. REQ'D	LENGTH	P.D.
S401E	582	36'-2"	Str.
S402E To S441E	1 Each	3'-0" To 39'-8"	Str.
S442E To S498E	1 Each	3'-0" To 39'-8"	Str.
S501E	186	34'-3½"	3"
S502E	186	33'-8"	Str.
S503E To S532E	1 Each	10'-7" To 33'-3"	Str.
S533E	1	40'-8"	Str.
S534E To S547E	1 Each	3'-0" To 12'-0"	Str.
S548E	2	9'-0"	Str.
S601E	35	41'-6"	Str.
S602E	35	48'-0"	Str.
S603E	186	33'-6"	Str.
S604E To S633E	1 Each	10'-7" To 33'-3"	Str.
S634E	1	40'-8"	Str.
S701E	388	18'-3"	5¼"
S702E To S715E	1 Each	3'-0" To 12'-0"	Str.
S716E	2	9'-0"	Str.
D501E	30	8'-2"	2½"
D601E	8	10'-8"	Str.
D602E	8	10'-6"	Str.
D603E	8	10'-4½"	Str.
P401E	844	5'-4"	5¾"
P402E	56	4'-9½"	5¾"
P403E	88	6'-4"	Str.
P404E	133	14'-10"	Str.
P405E	7	11'-6"	Str.
P406E	7	14'-9"	Str.
P407E	7	13'-8"	Str.
P408E	7	18'-0"	Str.
P409E	7	17'-4"	Str.
P410E	14	18'-4"	Str.
P411E	7	16'-8"	Str.
P412E	7	17'-3½"	Str.
P501E	844	5'-9½"	6"
P502E	14	2'-4½"	Str.
P503E	14	7'-4½"	2½"

BAR BENDING DIAGRAMS



NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.



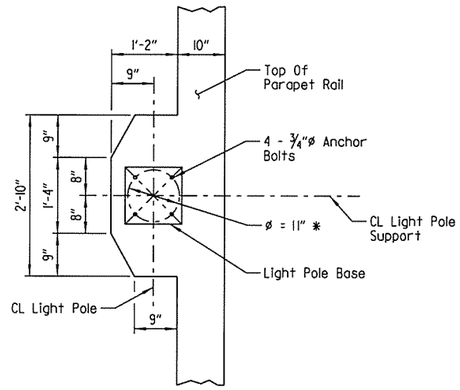
ELEVATION SHOWING LIGHT POLE SUPPORT PEDESTAL

(For Locations, See Dwg. No. 54532)
No Scale

NOTE:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

LIGHT POLE SUPPORT LOCATION	
Station	Location
104+19.04	Left
105+08.67	Left

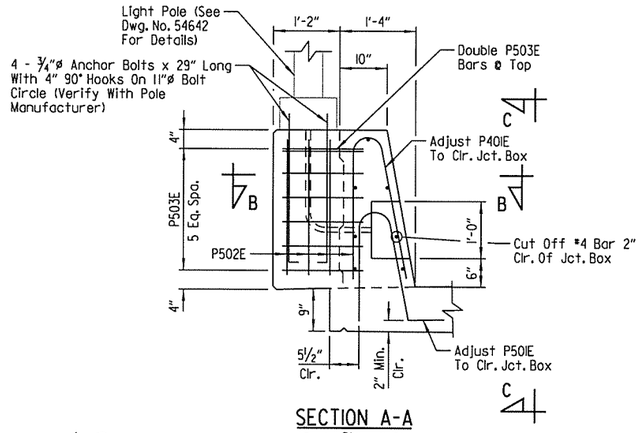
NOTE:
Stations shown are to CL Light Pole Support.



PLAN - LIGHT POLE SUPPORT PEDESTAL

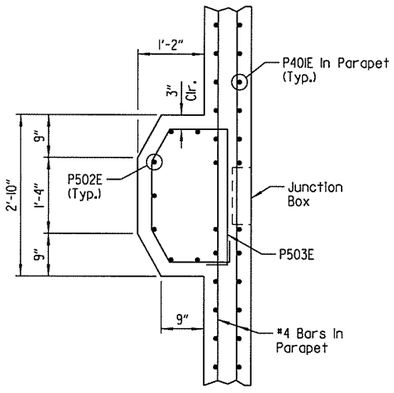
(For Locations See Dwg. No. 54532)
Scale: ¾" = 1'-0"

* Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.



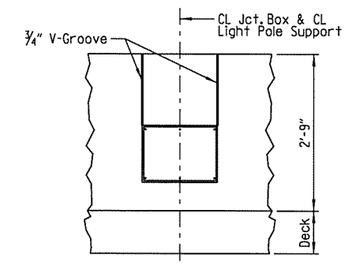
SECTION A-A

Scale: ¾" = 1'-0"



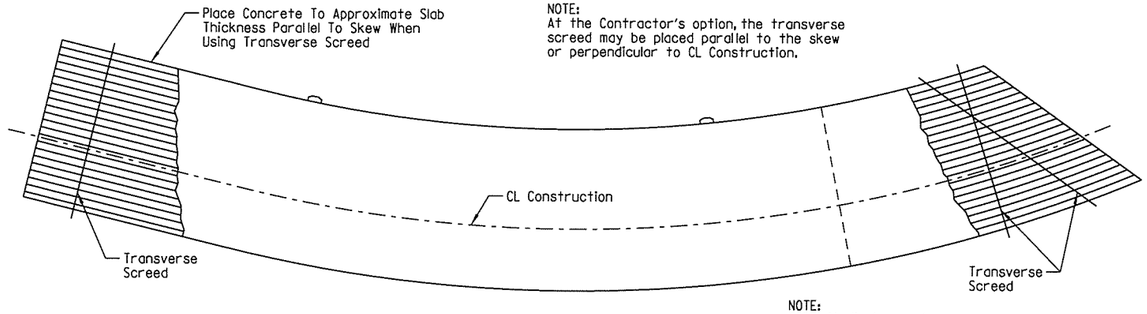
SECTION B-B

Scale: ¾" = 1'-0"



VIEW C-C

No Scale



NOTE:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Construction.

NOTE:
A longitudinal screed will not be allowed.

CONCRETE PLACEMENT PROCEDURE

No Scale

NOTE:
For electrical details, see Dwg. Nos. 54634-54653.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER
5/29/14

SHEET 4 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 10 ENTRANCE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x3_S4.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

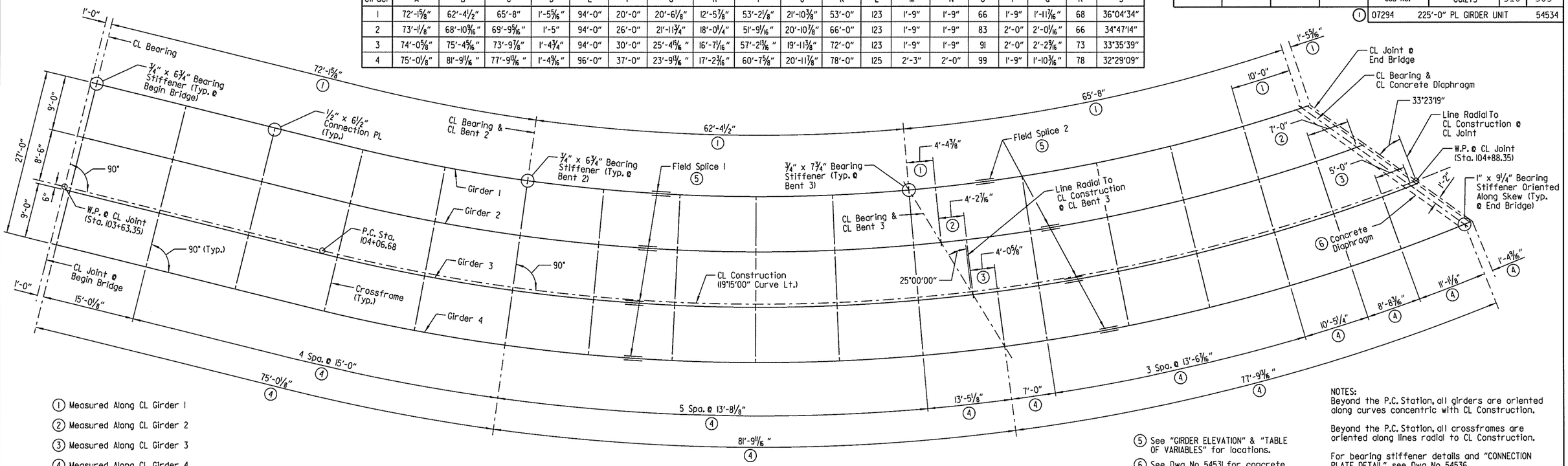
BRIDGE NO. 07294 DRAWING NO. 54533

SRYancey 5/29/2014 4:43:02 PM
WORKSPACE: MTD Bridge
L:\BDM\MD\MTD Broadway Bridge over the Arkansas River\Drawings\B061275x3_S4 (Bar List).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	310	505
				(1) 07294		225'-0" PL GIRDER UNIT		54534

TABLE OF VARIABLES

Girder	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	"P"	"Q"	"R"	"S"
1	72'-1 5/8"	62'-4 1/2"	65'-8"	1'-5 5/16"	94'-0"	20'-0"	20'-6 1/8"	12'-5 7/8"	53'-2 1/8"	21'-10 3/8"	53'-0"	123	1'-9"	1'-9"	66	1'-9"	1'-11 7/16"	68	36°04'34"
2	73'-1 1/8"	68'-10 9/16"	69'-9 5/16"	1'-5"	94'-0"	26'-0"	21'-11 3/4"	18'-0 1/4"	51'-9 1/16"	20'-10 7/8"	66'-0"	123	1'-9"	1'-9"	83	2'-0"	2'-0 1/16"	66	34°47'14"
3	74'-0 5/8"	75'-4 5/16"	73'-9 7/8"	1'-4 3/4"	94'-0"	30'-0"	25'-4 5/16"	16'-7 1/16"	57'-2 13/16"	19'-11 3/8"	72'-0"	123	1'-9"	1'-9"	91	2'-0"	2'-2 3/16"	73	33°35'39"
4	75'-0 1/8"	81'-9 11/16"	77'-9 11/16"	1'-4 9/16"	96'-0"	37'-0"	23'-9 11/16"	17'-2 3/16"	60'-7 5/8"	20'-11 7/8"	78'-0"	125	2'-3"	2'-0"	99	1'-9"	1'-10 3/16"	78	32°29'09"



FRAMING PLAN
Scale: 1/8" = 1'-0"

(1) Measured Along CL Girder 1
(2) Measured Along CL Girder 2
(3) Measured Along CL Girder 3
(4) Measured Along CL Girder 4

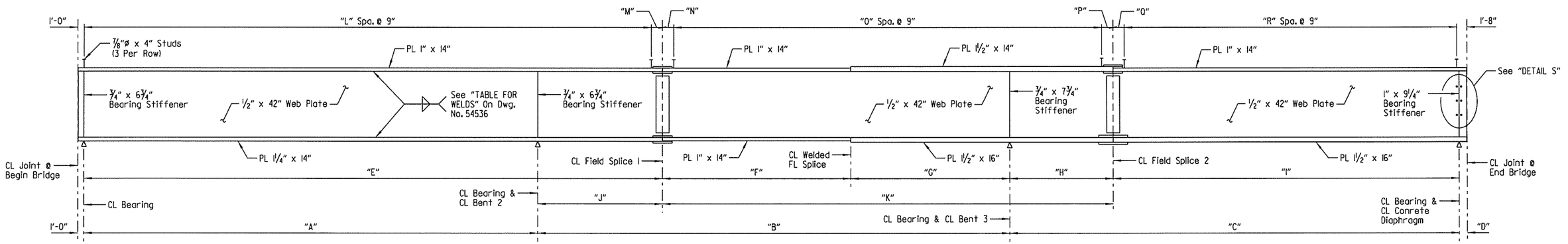
(5) See "GIRDER ELEVATION" & "TABLE OF VARIABLES" for locations.
(6) See Dwg. No. 54531 for concrete diaphragm details.

NOTES:
Beyond the P.C. Station, all girders are oriented along curves concentric with CL Construction.

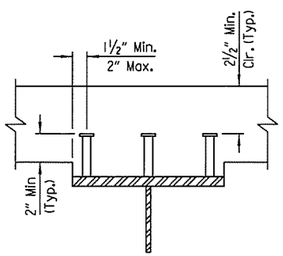
Beyond the P.C. Station, all crossframes are oriented along lines radial to CL Construction.

For bearing stiffener details and "CONNECTION PLATE DETAIL", see Dwg. No. 54536.

For crossframe details and connections, see Dwg. No. 54536.

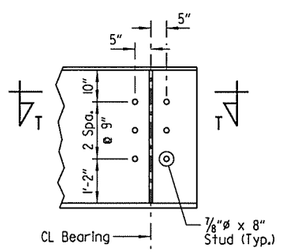


GIRDER ELEVATION
(Dimensions measured along CL Girder)
No Scale

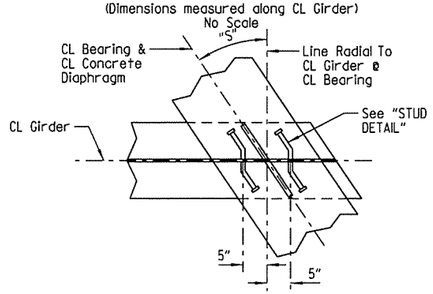


Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

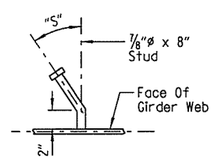
SHEAR CONNECTOR DETAIL
No Scale



DETAIL S
Scale: 1/2" = 1'-0"



SECTION T-T
No Scale



STUD DETAIL
No Scale

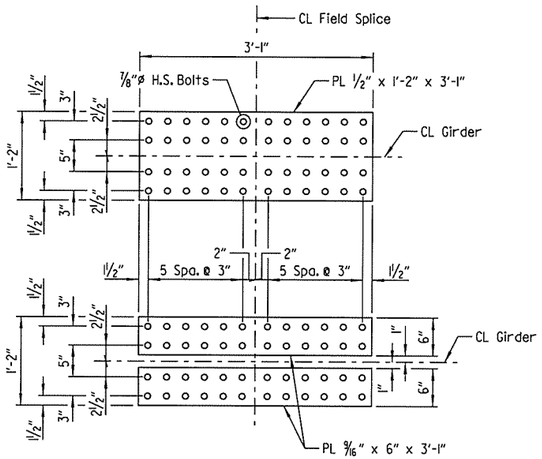
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 5 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x3_S5.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54534

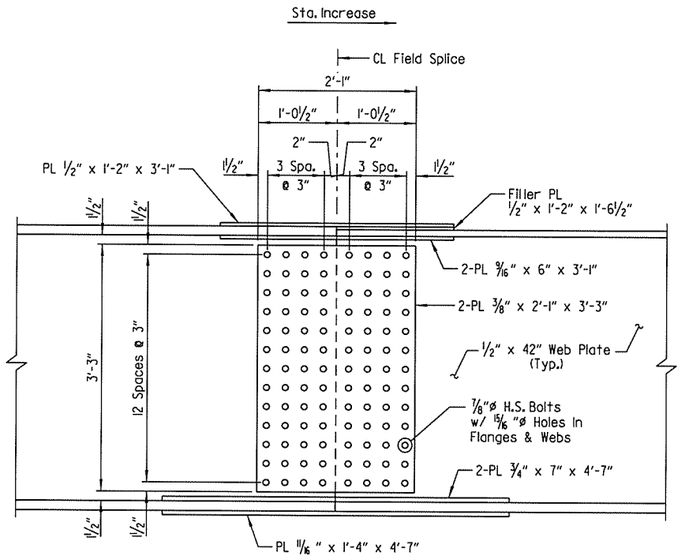
SRYancey 5/29/2014 4:43:03 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOT08D - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S5 (Framing Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	311	505
				(1) 07294		225'-0" PL GIRDER UNIT		54535



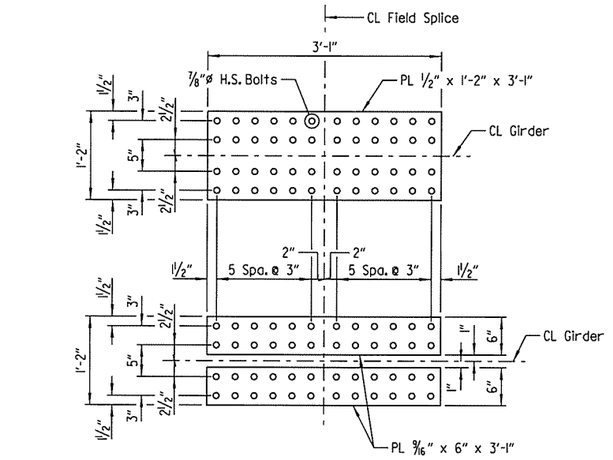
TOP & BOTTOM FLANGE SPLICE - FIELD SPLICE 1

Scale: 1" = 1'-0"



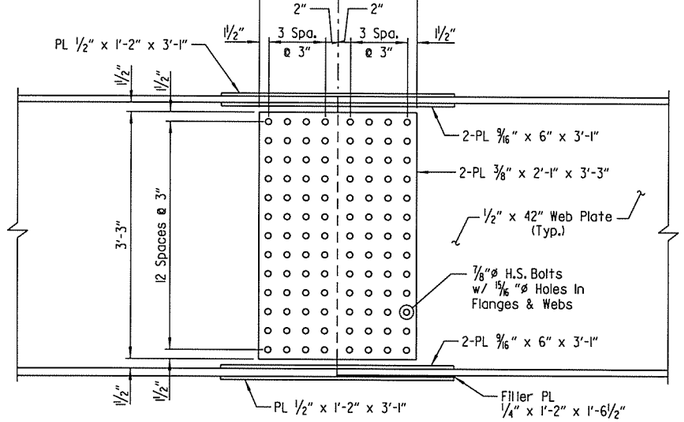
ELEVATION OF FIELD SPLICE 2

Scale: 1" = 1'-0"



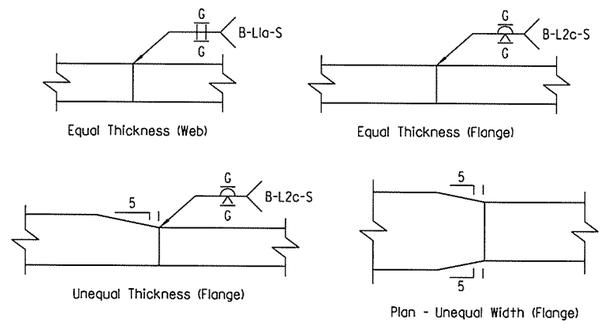
TOP FLANGE SPLICE - FIELD SPLICE 2

Scale: 1" = 1'-0"



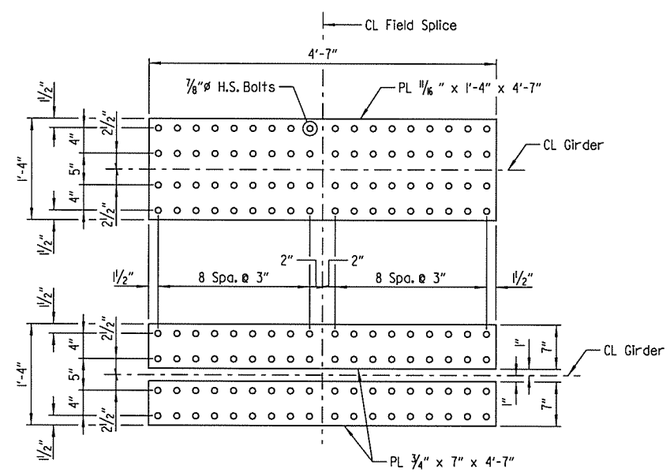
ELEVATION OF FIELD SPLICE 1

Scale: 1" = 1'-0"



DETAILS OF WELDED SPLICES

No Scale



BOTTOM FLANGE SPLICE - FIELD SPLICE 2

Scale: 1" = 1'-0"

NOTES:

All field splice bolts shall be 7/8"ø H.S. bolts.

All holes for splice bolts shall be 15/16 "ø.

All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 6 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

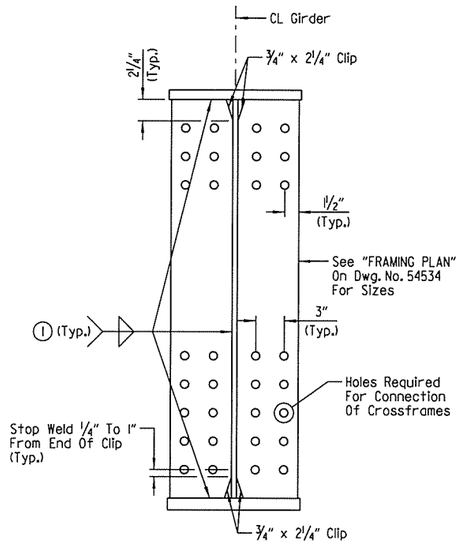
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_S6.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 07294 DRAWING NO. 54535

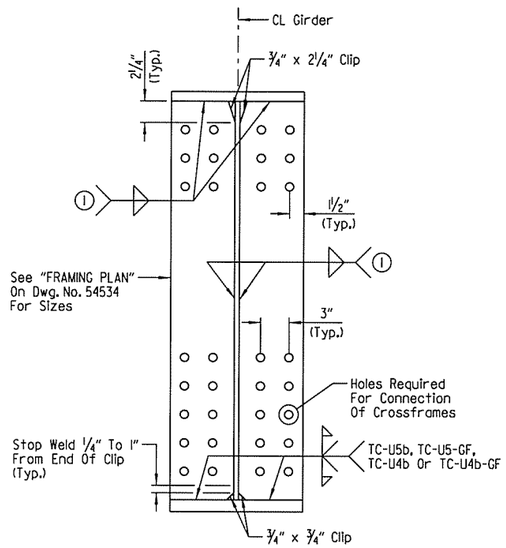
SRYancey 5/29/2014 4:43:04 PM
WORKSPACE: ARTD Bridge
L:\ROW\ARTD80 Broadway Bridge over the Arkansas River\Drawings\B061275x3_S6 (Splice Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	312	505
				(1) 07294		225'-0" PL GIRDER UNIT		54536



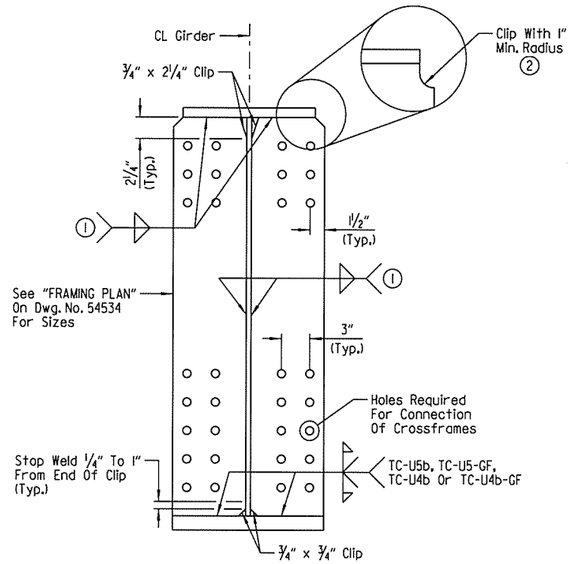
CONNECTION PLATE DETAIL

Scale: 1½" = 1'-0"



BEARING STIFFENER DETAIL - BENTS 1 & 2

Scale: 1" = 1'-0"



BEARING STIFFENER DETAIL - BENT 3 & END BRIDGE

Scale: 1" = 1'-0"

(1) See "TABLE FOR WELDS" for min. weld size.

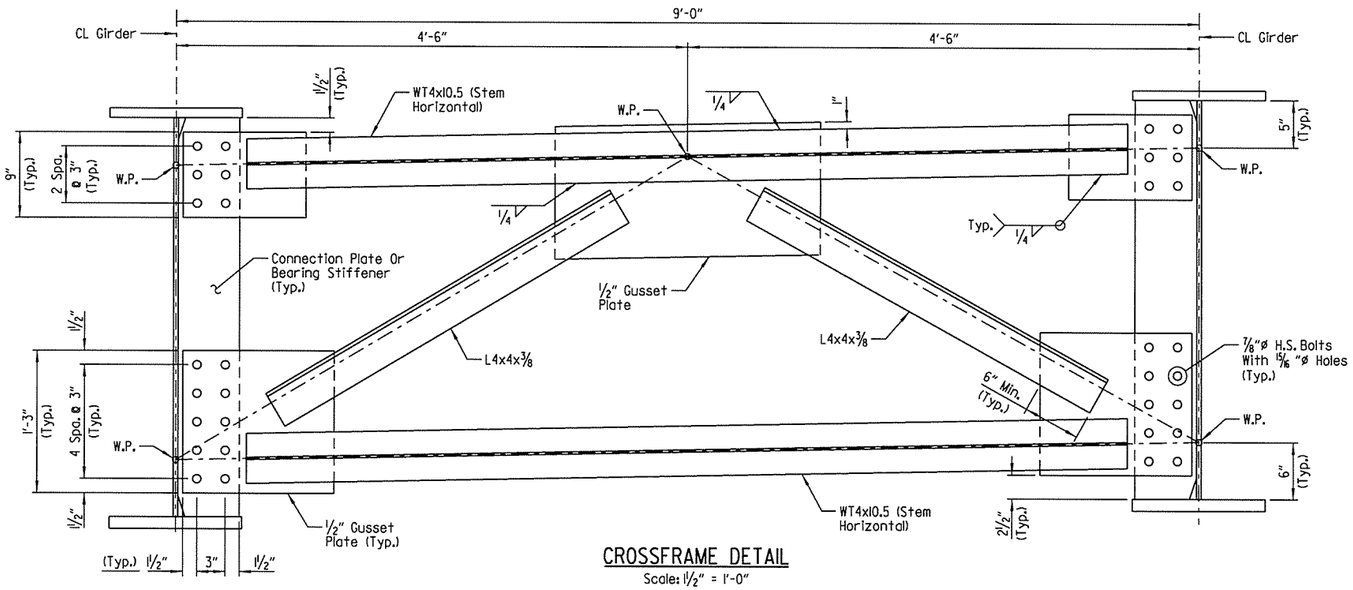
(2) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

NOTE:
Bolt holes not required for bearing stiffeners located on outer side of exterior girders. Bolt holes not required for any bearing stiffeners located at End Bridge.

NOTE:
Bolts in crossframe connections shall be properly installed and tightened in accordance with Subsection 807.71.

NOTE:
Connection plates at exterior girders are required on only one side of web. See "FRAMING PLAN" on Dwg. No. 54534.

NOTE:
Bearing Stiffeners shall be fabricated to be plumb in their final positions.



CROSSFRAME DETAIL

Scale: 1½" = 1'-0"

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS
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No. 14498
ADAM B. HALL
5-28-14
BRIDGE ENGINEER

SHEET 7 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT HWY. 10 ENTRANCE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_S7.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 07294 DRAWING NO. 54536

SRYancey 5/29/2014 4:43:04 PM
WORKSPACE: AHTD Bridge
L:\ZDATA\07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S7 (SteelDetails).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	313	505
				(1) 07294		225'-0" PL GIRDER UNIT		54537

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsubsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. See "PROJECT GENERAL NOTES" for paint color and Federal Standard Color Chip No. All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Drawing No. 54540 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girder webs, flanges of plate girders, splice plates, crossframes and connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method. All Quality Control (Q. C.) testing is at the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. No intermediate stiffeners are to be placed on the outside of the exterior girders except as noted. All bearing stiffeners shall be fabricated to be plumb in their final positions.

Crossframes shall be installed as girders are erected. All bolts in crossframes and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

Field connections shall be bolted with high-strength bolts and shall be ⅞"ø bolts unless otherwise noted. Open holes shall be 15/16 "ø unless otherwise noted. Holes for ⅞"ø high-strength bolts may be 1 1/16"ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

All contact surfaces between plates at field splices shall be free of oil, rust or scale before assembly.

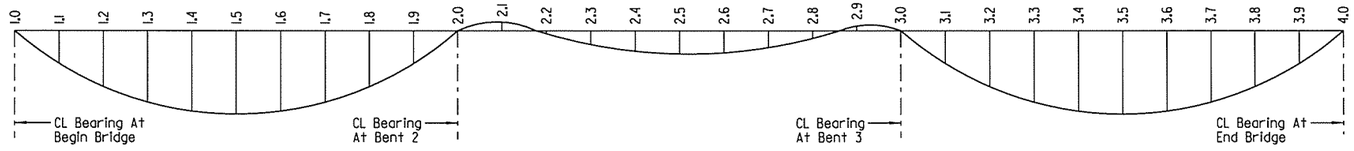
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

SPAN	Girder No.	Girder 1			Girder 2			Girder 3			Girder 4		
	Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
SPAN 1	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.1	0.06	0.30	0.34	0.06	0.30	0.33	0.06	0.29	0.32	0.05	0.27	0.30
	1.2	0.11	0.57	0.63	0.11	0.56	0.62	0.11	0.53	0.59	0.10	0.50	0.56
	1.3	0.15	0.76	0.85	0.15	0.74	0.83	0.14	0.72	0.80	0.13	0.67	0.75
	1.4	0.17	0.86	0.96	0.17	0.85	0.94	0.16	0.82	0.91	0.15	0.77	0.86
	1.5	0.17	0.87	0.97	0.17	0.85	0.95	0.16	0.83	0.92	0.15	0.78	0.87
	1.6	0.16	0.79	0.88	0.16	0.77	0.86	0.15	0.76	0.84	0.14	0.72	0.80
	1.7	0.13	0.63	0.70	0.13	0.62	0.69	0.12	0.61	0.69	0.11	0.58	0.65
	1.8	0.08	0.39	0.43	0.08	0.39	0.43	0.08	0.39	0.44	0.07	0.38	0.42
	1.9	0.03	0.14	0.16	0.03	0.15	0.17	0.03	0.16	0.17	0.03	0.16	0.18
SPAN 2	2.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.1	-0.01	-0.05	-0.05	-0.01	-0.06	-0.06	-0.02	-0.07	-0.08	-0.02	-0.08	-0.09
	2.2	0.00	0.02	0.03	-0.01	-0.03	-0.02	-0.01	-0.07	-0.07	-0.02	-0.09	-0.10
	2.3	0.01	0.11	0.14	0.00	0.03	0.05	-0.01	-0.04	-0.03	-0.02	-0.08	-0.09
	2.4	0.02	0.19	0.23	0.01	0.07	0.09	0.00	-0.01	0.00	-0.02	-0.07	-0.07
	2.5	0.02	0.19	0.23	0.01	0.08	0.11	0.00	0.01	0.02	-0.01	-0.05	-0.05
	2.6	0.01	0.15	0.18	0.01	0.07	0.08	0.00	0.00	0.01	-0.01	-0.05	-0.05
	2.7	0.00	0.06	0.08	0.00	0.02	0.03	-0.01	-0.03	-0.02	-0.01	-0.06	-0.06
	2.8	-0.01	-0.02	-0.01	-0.01	-0.03	-0.03	-0.01	-0.05	-0.05	-0.01	-0.06	-0.06
	2.9	-0.02	-0.07	-0.07	-0.01	-0.05	-0.05	-0.01	-0.05	-0.05	-0.01	-0.05	-0.05
SPAN 3	3.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.1	0.04	0.17	0.19	0.03	0.13	0.15	0.02	0.11	0.12	0.02	0.09	0.10
	3.2	0.10	0.41	0.46	0.07	0.32	0.36	0.06	0.26	0.29	0.05	0.21	0.24
	3.3	0.15	0.66	0.73	0.12	0.52	0.57	0.09	0.42	0.46	0.07	0.32	0.36
	3.4	0.20	0.88	0.97	0.15	0.69	0.76	0.12	0.54	0.60	0.09	0.42	0.47
	3.5	0.23	1.02	1.13	0.17	0.78	0.86	0.14	0.62	0.69	0.10	0.47	0.52
	3.6	0.23	1.02	1.13	0.18	0.79	0.88	0.14	0.62	0.69	0.10	0.48	0.53
	3.7	0.20	0.90	1.00	0.15	0.70	0.77	0.12	0.56	0.62	0.09	0.42	0.46
	3.8	0.15	0.68	0.75	0.12	0.52	0.58	0.09	0.41	0.46	0.07	0.31	0.35
	3.9	0.08	0.37	0.41	0.06	0.28	0.31	0.05	0.22	0.25	0.04	0.17	0.19
	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



DEAD LOAD DEFLECTION

No Scale

NOTE:

Camber for dead load deflection plus vertical curve +/- ¼" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing. Corrections for vertical curve and deck transitions are not included. Negative sign (-) indicates point above chord.

ERECTION OF STRUCTURAL STEEL:

The erection of the structural steel shall be performed according to a plan permitting the steel to be erected plumb with bolts tightened while the steel is as close as possible to the no-load condition, so that the bolt holes can be aligned. This requirement may necessitate the use of large capacity cranes, temporary shoring or jacking frames.

The Contractor shall submit to the Engineer for informational and record purposes details of falsework construction in accordance with Subsection 807.64.

The Contractor shall ensure that girders are stable throughout the erection process. The Contractor will be responsible for providing temporary bracing or stiffening devices to accomodate handling stresses in individual members or segments of the structure during erection.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

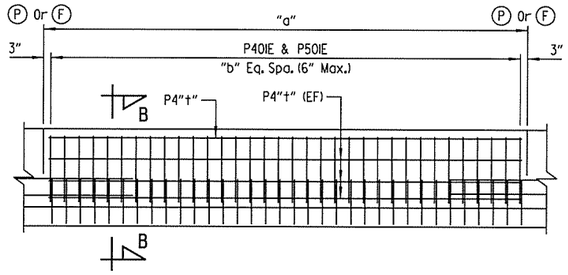
SHEET 8 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_S8.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54537

SRYancey 5/29/2014 4:43:05 PM
WORKSPACE: AHTD Bridge
L:\2DIN\IOTBD - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S8 (Super Notes).dgn
REVISED DATE:

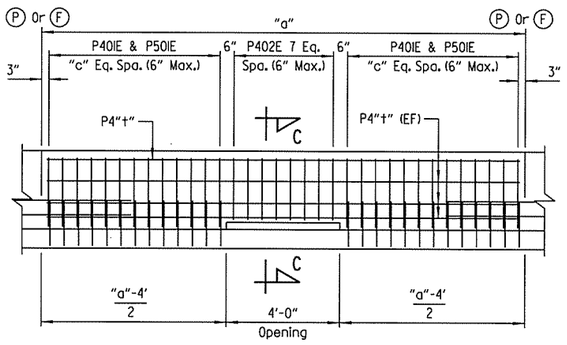
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	314	505
				(1)	07294	225'-0" PL GIRDER UNIT		54538



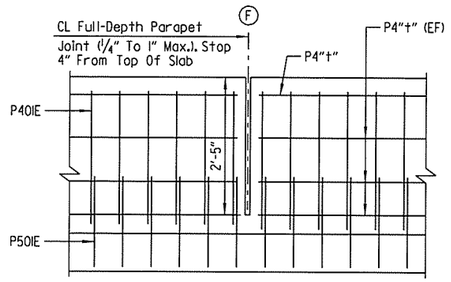
VIEW A-A (TYP. CLOSED PARAPET RAIL)
Scale: 3/8" = 1'-0"

(P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg No. 54532. Stop 1'-2" from top of slab.

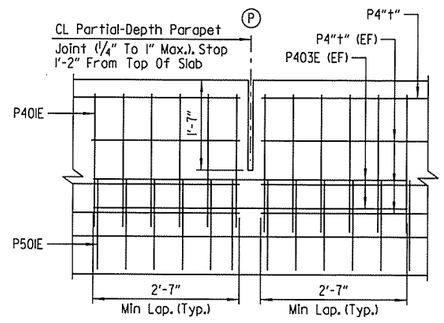
(F) CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN & POURING SEQUENCE" on Dwg No. 54532. Stop 4" from top of slab.



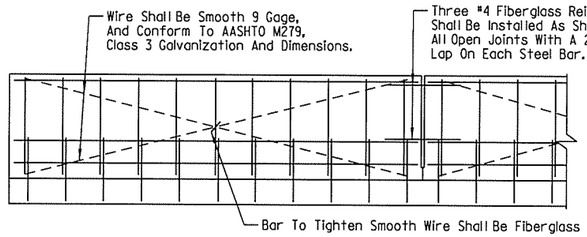
VIEW A-A (TYP. OPEN PARAPET RAIL)
Scale: 3/8" = 1'-0"

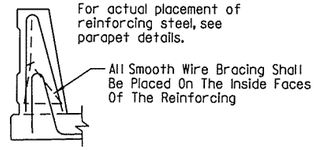


PARAPET REINFORCING (FULL DEPTH JOINTS)
Scale: 3/4" = 1'-0"



PARAPET REINFORCING (PARTIAL DEPTH JOINTS)
Scale: 3/4" = 1'-0"



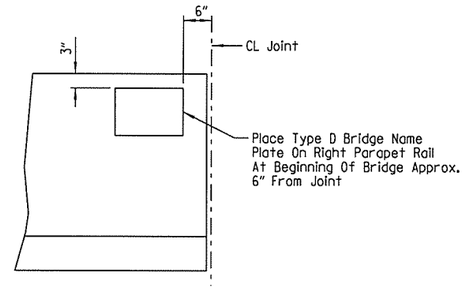


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale

TABLE OF PARAPET VARIABLES			
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET
"a"	"+"	"b"	"c"
15'-3"	04E	30	11
11'-11 1/8"	05E	23	-
15'-2 1/16"	06E	30	-
14'-1 3/16"	07E	28	-
18'-5"	08E	-	14
18'-5 1/8"	09E	36	-
15'-2 11/16"	04E	30	-
18'-8 15/16"	10E	37	-
17'-1 1/8"	11E	34	-
17'-2 13/16"	12E	34	-



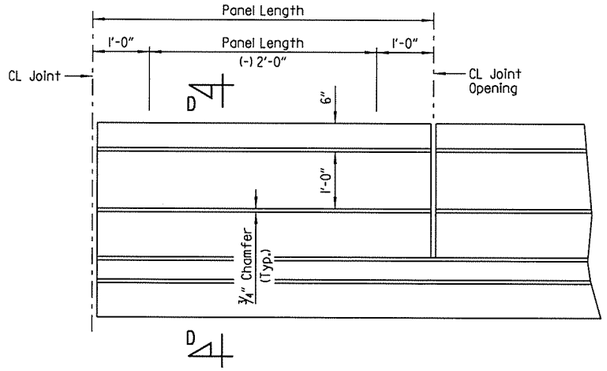
VIEW SHOWING LOCATION OF NAME PLATE
Scale: 3/4" = 1'-0"

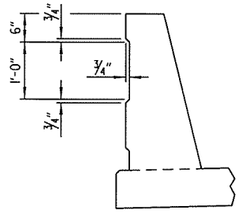
GENERAL NOTES

CONCRETE:
All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

REINFORCING STEEL:
All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

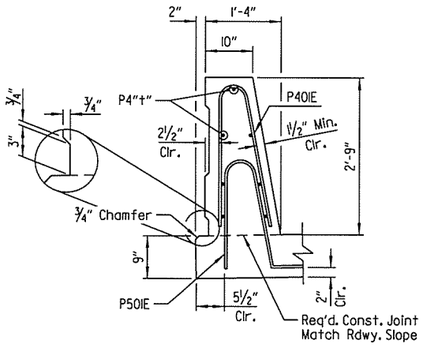
NOTE:
For bar bending details, see Dwg. No. 54533.



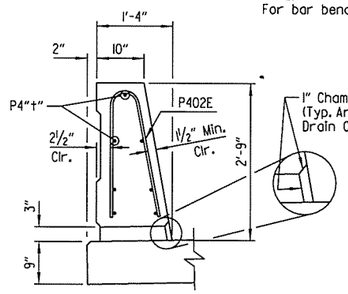


SECTION D-D
Scale: 3/4" = 1'-0"

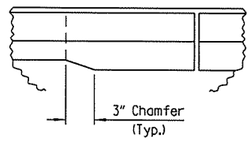
PANEL ENHANCEMENT DETAIL - LEFT PARAPET
Scale: 3/4" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"



SECTION C-C
(At Open Drains)
Scale: 3/4" = 1'-0"



PLAN OF RAIL POST CHAMFER
(Typ. for Open Drain Panels Only)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 9 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_S9.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54538

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WORKSPACE: AHTD Bridge
L:\ZDRIVE\DTGBD - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S9 (Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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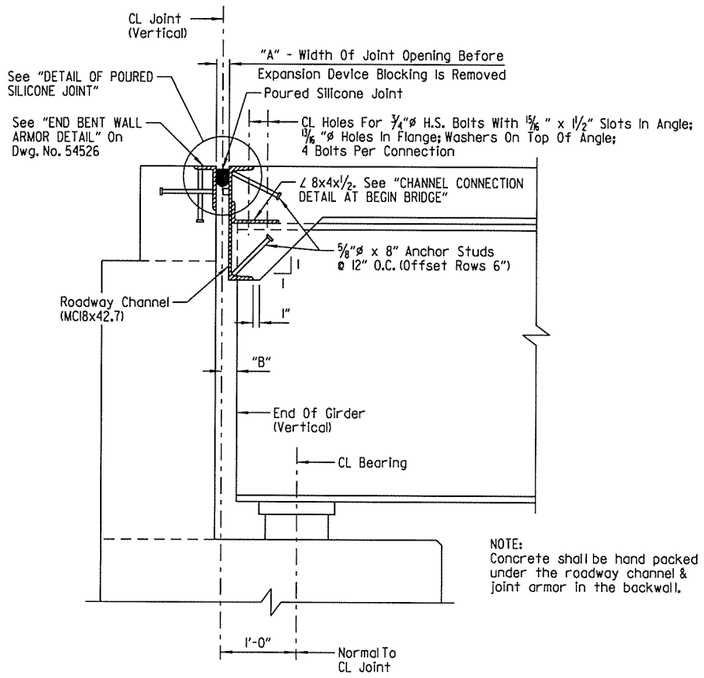
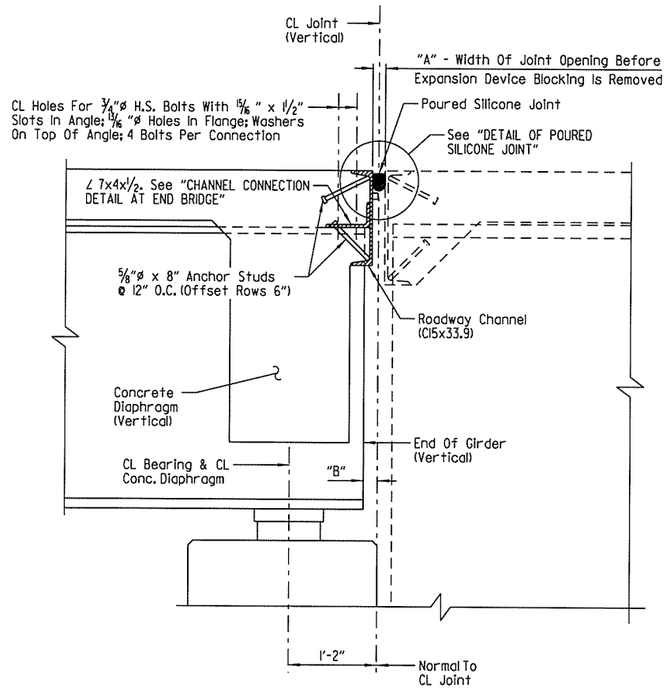
				JOB NO.		061275	315	505
				(1)	07294	225'-0" PL GIRDER UNIT		54539



SECTION THRU SILICONE JOINT AT BEGIN BRIDGE

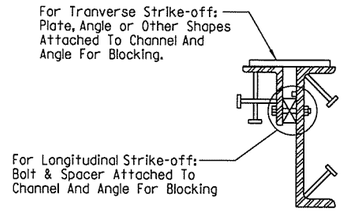
Note: Section Taken Normal To CL Joint
No Scale



SECTION THRU SILICONE JOINT AT END BRIDGE

Note: Section Taken Normal To CL Joint
No Scale

One of two different blocking systems is required depending on the type of span finishing machine that is used.



NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

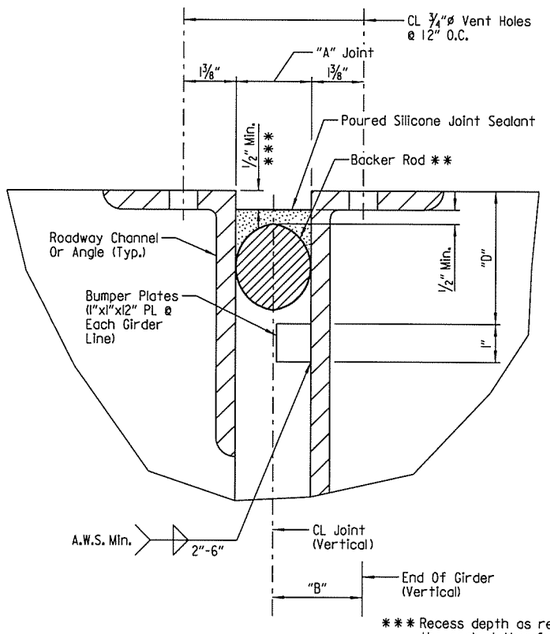
The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale

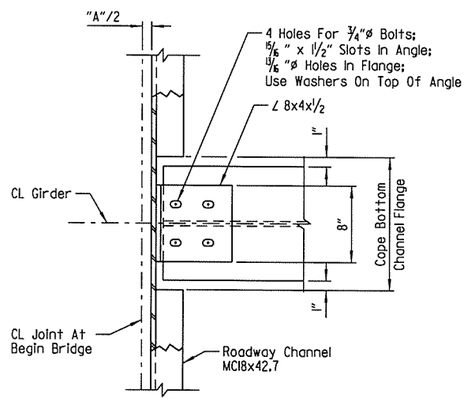


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

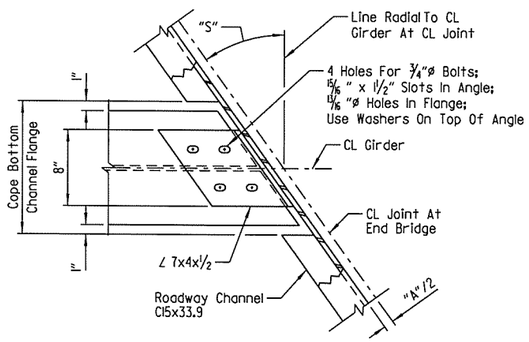
No Scale

GIRDER SKEW, "S"				
Girder	1	2	3	4
"S"	35°46'53"	34°30'22"	33°19'31"	32°13'42"



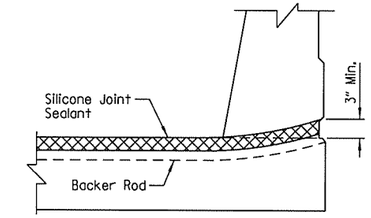
CHANNEL CONNECTION DETAIL AT BEGIN BRIDGE

No Scale



CHANNEL CONNECTION DETAIL AT END BRIDGE

No Scale



JOINT SEAL PLACEMENT AT CURB

No Scale

SILICONE JOINT DATA					
"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 3/16"	2"	1 13/16"	2 1/4"±	4 1/2"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 10 OF 10
DETAILS OF 225'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_S10.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54539

SPTarcey 5/29/2014 4:43:06 PM
WORKSPACE_AHTD_Bridge
L:\CDN\MDI\DGN - Broadway Bridge over the Arkansas River\Drawings\B061275x3_S10 (Silicone Jt. Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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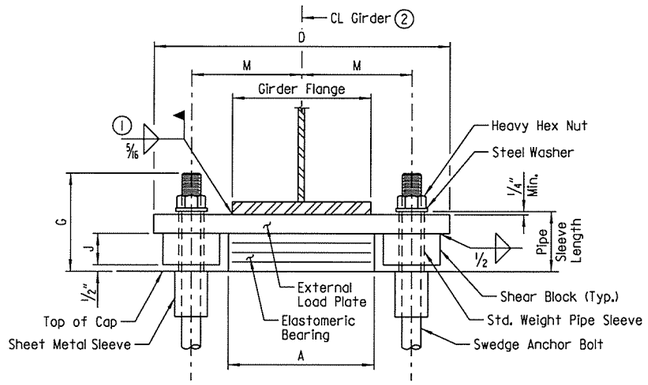
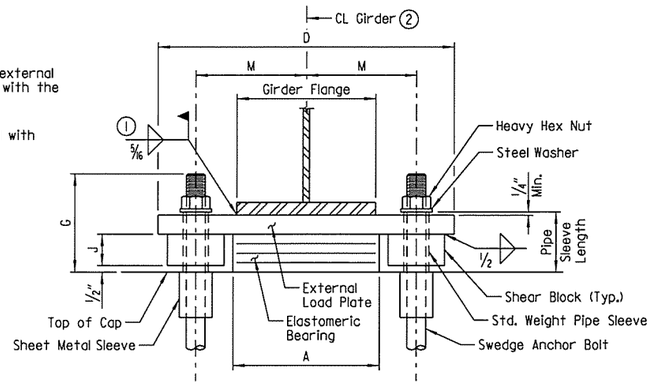
				JOB NO.		061275	316	505
				①	07294	ELASTOMERIC BEARINGS		54540



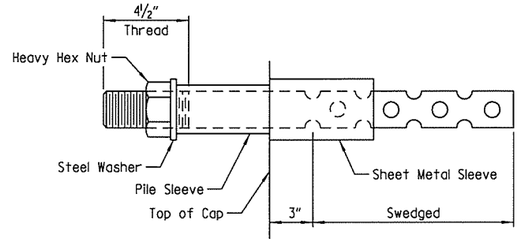
FRONT VIEW - EXPANSION BEARING

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

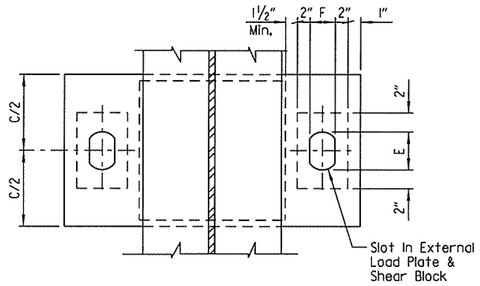
② Centerline elastomeric pad shall be aligned with CL Girder.



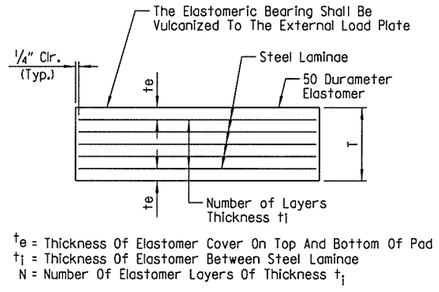
FRONT VIEW - FIXED BEARING



ANCHOR BOLT DETAIL

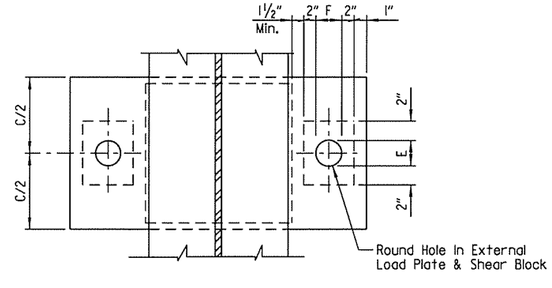


PLAN VIEW - EXPANSION BEARING



t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_i = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_i

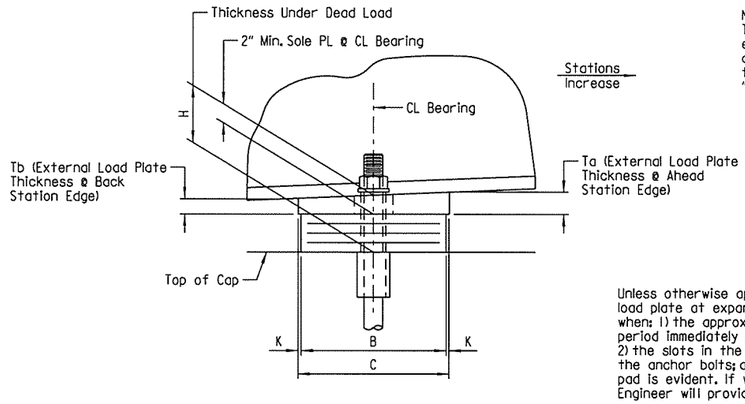
ELASTOMERIC BEARING



PLAN VIEW - FIXED BEARING

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

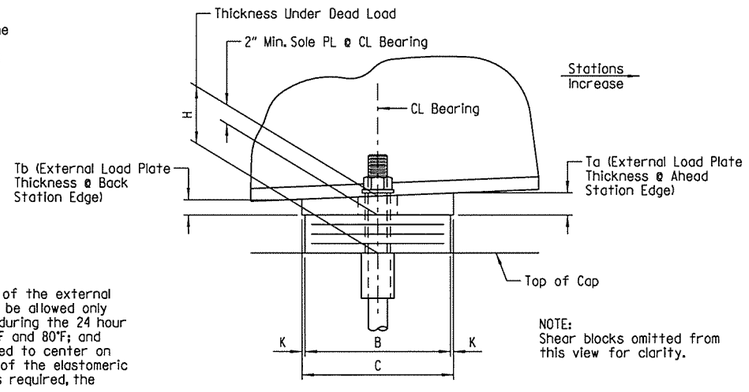
If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50)".



SIDE VIEW - EXPANSION BEARING

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



NOTE:
Shear blocks omitted from this view for clarity.

SIDE VIEW - FIXED BEARING

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	G	H	Elastomeric Pad							External Load Plate									Anchor Bolt				
																							Anchor Bolt		Pipe Sleeve Size	Sheet Metal Sleeve Size	Steel Washer Size
Bent No(s).	Girder No.						A	B	N	t_i	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b	(Dia. x L)	Grade	(Dia. x L)	(Dia. x L)	(O.D.)
1	All	Exp.	4	118.0	9 3/16"	6 3/16"	16"	10"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	11"	34 1/4"	4 1/2"	2 5/8"	3 3/4"	1/2"	12 11/16"	2.28"	1.73"	1 3/4" x 31"	55	2" x 6 7/16"	4" x 15"	3 3/8"
2	All	Fix	4	254.0	7 7/8"	4 3/8"	18"	12"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	13"	37 1/4"	3 1/8"	3 1/8"	2"	1/2"	14 1/16"	2.33"	1.68"	2 1/4" x 35"	55	2 1/2" x 4 5/8"	4" x 15"	4"
3	All	Fix	4	282.0	7 7/8"	4 3/8"	18"	12"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	13"	37 1/4"	3 1/8"	3 1/8"	2"	1/2"	14 1/16"	2.29"	1.71"	2 1/4" x 37"	55	2 1/2" x 4 5/8"	4" x 22"	4"
**	All	Exp.	4	133.0	9 3/16"	6 3/16"	16"	10"	6	1/2"	1/4"	7 @ 12 Ga.	4 1/4"	11"	34 1/4"	4 1/2"	2 5/8"	3 3/4"	1/2"	12 11/16"	2.16"	1.84"	1 3/4" x 31"	55	2" x 6 7/16"	4" x 27"	3 3/8"

* Maximum Design Load = Service Load
** Bent 3 of Broadway Bridge (Back Bearing Line)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
HWY. 10 ENTRANCE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x3_El.DGN
CHECKED BY: BWS DATE: JULY 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013
BRIDGE NO. 07294 DRAWING NO. 54540

5/29/2014 4:43:07 PM
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WORKSPACE: AHTD Bridge
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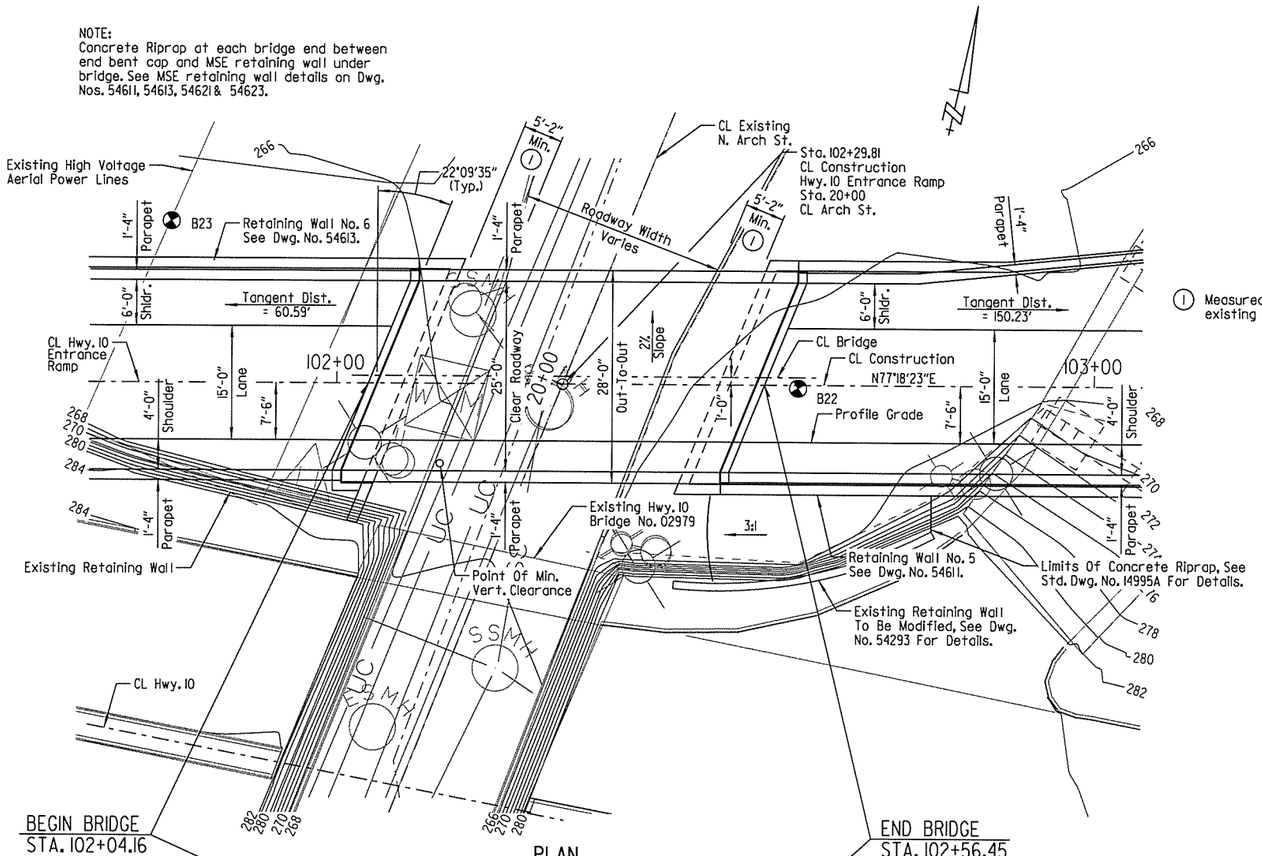
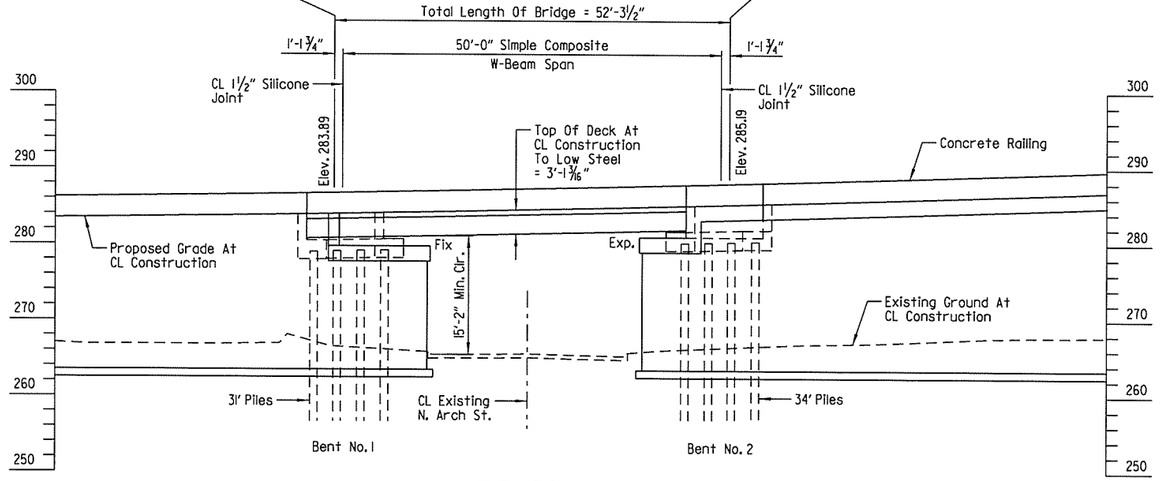
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	317	505
				① 07295		LAYOUT		54541

NOTE:
Concrete Riprap at each bridge end between end bent cap and MSE retaining wall under bridge. See MSE retaining wall details on Dwg. Nos. 54611, 54613, 54621 & 54623.



① Measured to face of existing curb.



LEGEND
SS = Sanitary Sewer
STS = Storm Sewer
UC = Underground Cable
W = Water Line
U.N.O. = Unless Noted Otherwise

NOTE:
Stations and elevations shown are along CL Construction.

GENERAL NOTES - BRIDGE OVER ARCH ST.

BENCH MARK: PN: 905, PD: SQ. IN D.I., ST: 104+85.78 OF: 929.03' RT. ZC: 258.65

OPERATIONAL CATEGORY: OTHER

STEEL PILING: Piling for Bent Nos. 1 and 2 shall be HP 12x53 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. The Contractor shall use approved steel H-Pile driving points on all piles. Piling in Bent Nos. 1 & 2 shall be driven per the requirements on Dwg. No. 54292.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

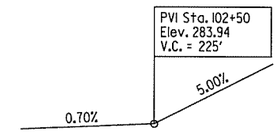
DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 55,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1 and 2.

DETAIL DRAWINGS:	DRAWING NOS:
End Bents	54543-54545
50'-0" Simple Composite W-Beam Span	54546-54551
Elastomeric Bearings	54552
Steel Piling	55020
Concrete Riprap	55002

For "PROJECT GENERAL NOTES", See Dwg. No. 54292

FOR R/W DATA, SEE ROADWAY PLANS

NOTE:
For "SOIL BORING PROFILE", see Dwg. No. 54542.



VERTICAL CURVE DATA

Hwy. 10 Entrance Ramp
(Profile Grade 7.5' Right Of CL Construction)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

LAYOUT OF BRIDGE OVER ARCH STREET ARKANSAS RIVER STR. & APPRS. (BROADWAY) (LR/NLR) (F) PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x4_LI.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: 1" = 10'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 07295 DRAWING NO. 54541

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REVISED DATE:

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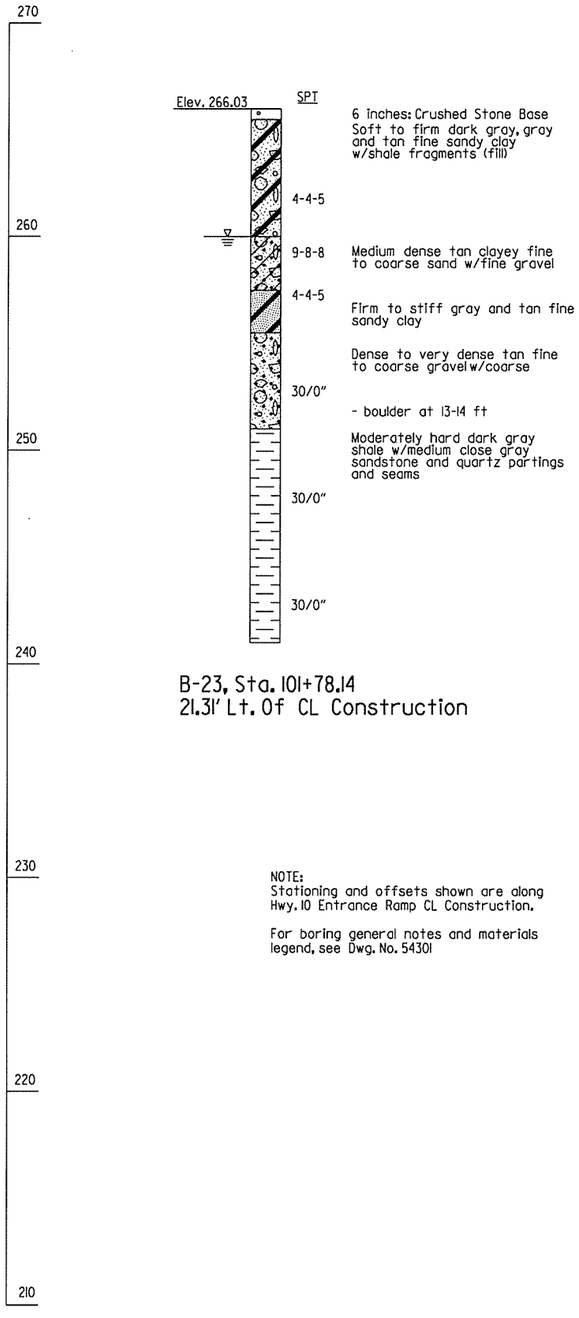
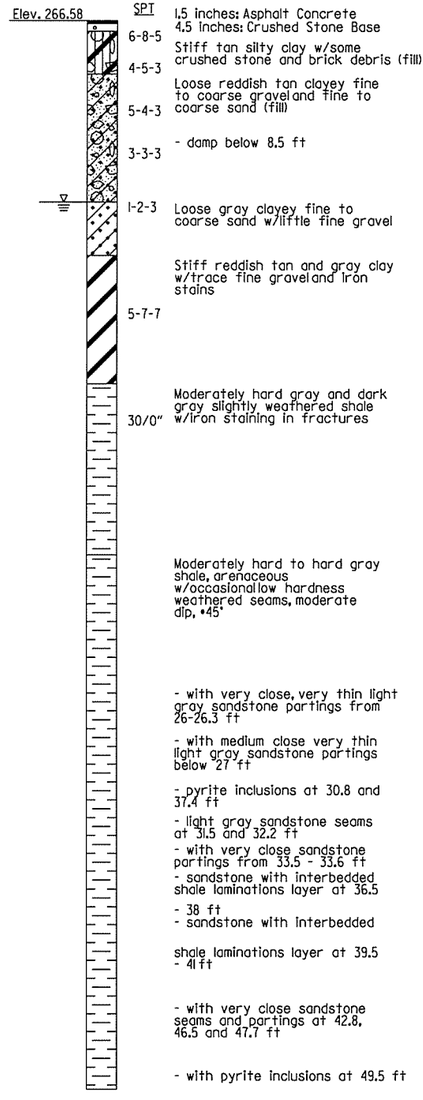
				6	ARK.			
				JOB NO.		061275	318	505
				(1) 07295		SOIL BORING PROFILE		54542



B-23, Sta. 101+78.14
21.31' Lt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 10 Entrance Ramp CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301



B-22, Sta. 102+60.86
0.39' Rt. Of CL Construction

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SOIL BORING PROFILE
LAYOUT OF BRIDGE
OVER ARCH STREET
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

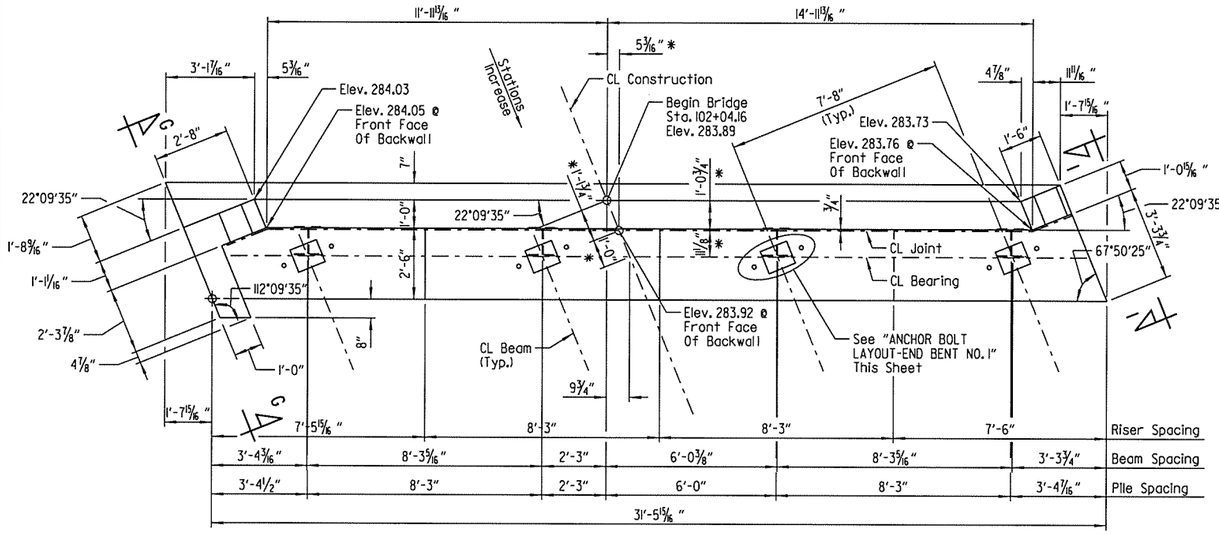
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2013 FILENAME: B061275x4_L2.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: AUG. 2013
BRIDGE NO. 07295 DRAWING NO. 54542

SRYancey 5/29/2014 4:43:49 PM
WORKSPACE: AHTD Bridge
L:\120\NIO\TO80 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_L2 (Boring Log).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	319	505
				(1) 07295		END BENT DETAILS		54543

* Measured to CL Joint



PLAN - END BENT NO. 1

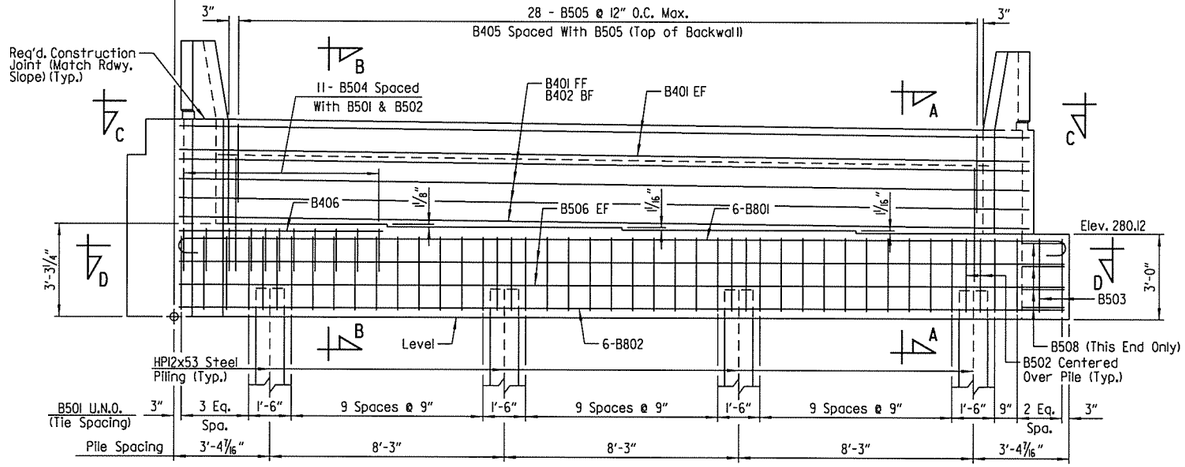
Scale: 3/8" = 1'-0"

PLAN - END BENT NO. 2

Scale: 3/8" = 1'-0"

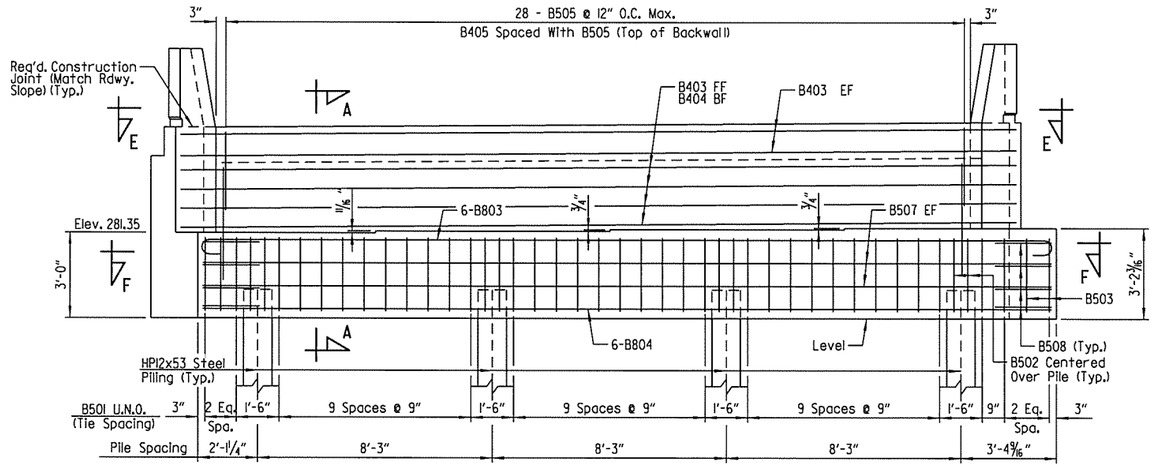
LEGEND

EF = Each Face
BF = Back Face
FF = Front Face
U.N.O. = Unless Noted Otherwise



ELEVATION - END BENT NO. 1

Scale: 3/8" = 1'-0"



ELEVATION - END BENT NO. 2

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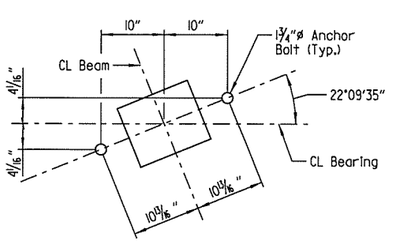
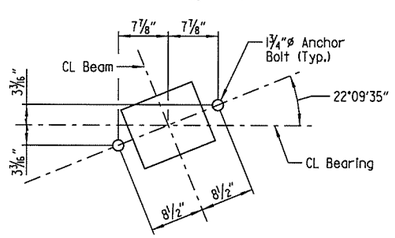


ANCHOR BOLT LAYOUT - END BENT NO. 1

Scale: 1" = 1'-0"



ANCHOR BOLT LAYOUT - END BENT NO. 2

Scale: 1" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638. Cleaning and painting will be paid for under the item "PAINTING STRUCTURAL STEEL".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Class 2 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

NOTES:
For "SECTION A-A" Thru "SECTION F-F", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54544.

For "VIEW G-G" Thru "VIEW I-I", see Dwg. No. 54545.

For details of elastomeric bearing pads, see Dwg. No. 54552.

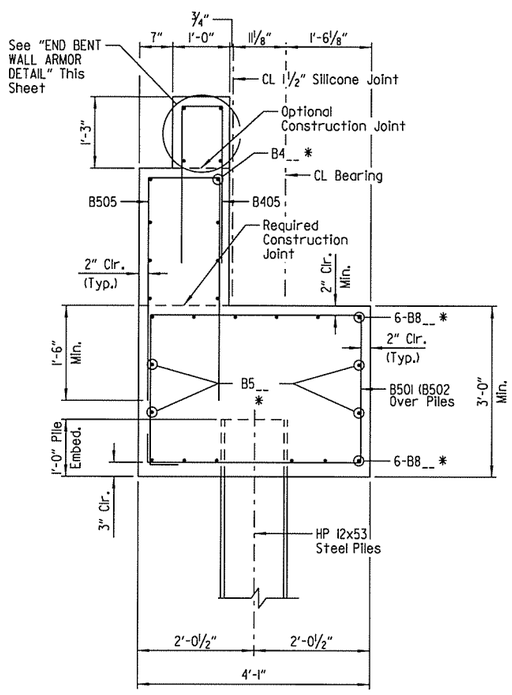
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

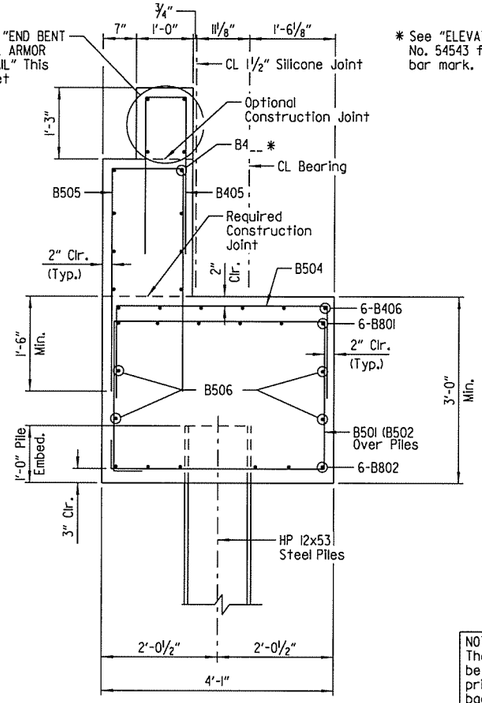
DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275x4_BI.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: JUNE 2013
BRIDGE NO. 07295 DRAWING NO. 54543

SRYancey 5/29/2014 4:43:50 PM
WORKSPACE: AHTD Bridge
L:\Z0IN\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_BI\End Bent Plan & Elevation.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	320	505
				(1) 07295		END BENT DETAILS		54544

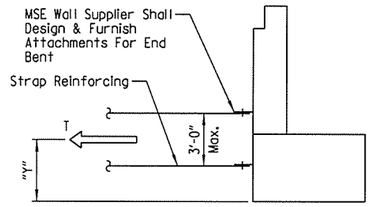


SECTION A-A
Scale: 3/4" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"

* See "ELEVATION" on Dwg. No. 54543 for correct bar mark.



T = Resultant Force Required To Be Resisted By Strap Reinforcing

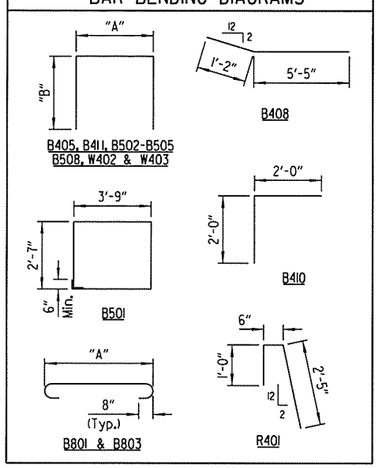
Y = Centroid Of Strap Reinforcing

LIMIT STATE	T	Y
	Kips/Ft.	Ft.
SERVICE	4.7	3
STRENGTH	7.2	
EXTREME I	1.6	

END BENT STRAP DETAIL
Scale: None

NOTE:
The backwall above the required construction joint shall not be poured until the beams are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 54551 for additional information.

BAR BENDING DIAGRAMS

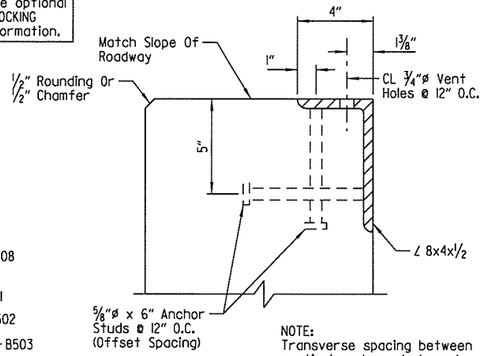


NOTE:
Dimensions of bars in bending diagrams are out-to-out.

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B405	28	5'-8"	8"	2'-7"	2"
	B407	4	7'-10"			Str.
	B408	4	6'-5"			2"
	B502	8	8'-9"	3'-9"	2'-7"	2 1/2"
	B503	4	5'-5"	2'-7"	1'-6"	2 1/2"
	B505	28	8'-9"	1'-3"	3'-10"	2 1/2"
	R401	4	3'-9"			2"
	R402	16	9"			Str.
END BENT NO. 1	B401	8	30'-10"			Str.
	B402	4	31'-2"			Str.
	B406	6	7'-2"			Str.
	B409	5	4'-0"			Str.
	B410	7	4'-0"			2"
	B501	36	13'-2"			2 1/2"
	B504	11	7'-7"	3'-9"	2'-0"	2 1/2"
	B506	4	31'-2"			Str.
	B508	4	6'-10"	4'-0"	1'-6"	2 1/2"
	B801	6	33'-0"	31'-2"		6"
	B802	6	31'-2"			Str.
	W401	14	4'-9"			Str.
	W402	7	11'-0"	8"	5'-4"	2"
	W403	4	3'-3"			Str.
	W404	5	5'-8"	8"	2'-7"	2"
END BENT NO. 2	B403	8	29'-8"			Str.
	B404	4	29'-11"			Str.
	B409	3	4'-0"			Str.
	B411	3	4-10"	2'-0"	1'-6"	2"
	B501	35	13'-2"			2 1/2"
	B507	4	29'-11"			Str.
	B508	8	6'-10"	4'-0"	1'-6"	2 1/2"
	B803	6	31'-9"	29'-11"		6"
	B804	6	29'-11"			Str.

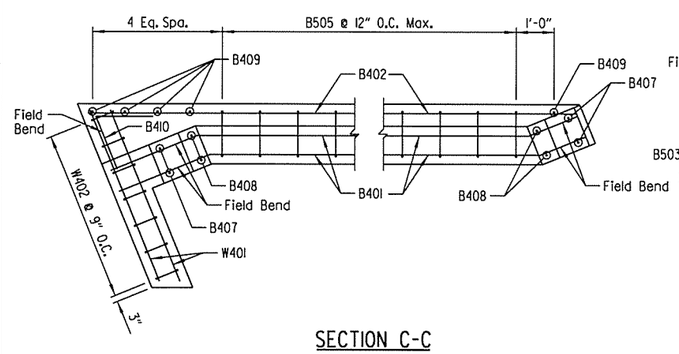
NOTE:
Number of common bars shown is for one end bent only.



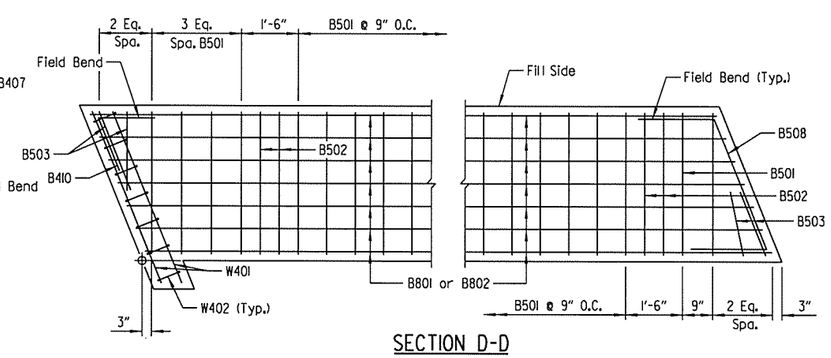
NOTE:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

END BENT WALL ARMOR DETAIL
Scale: None

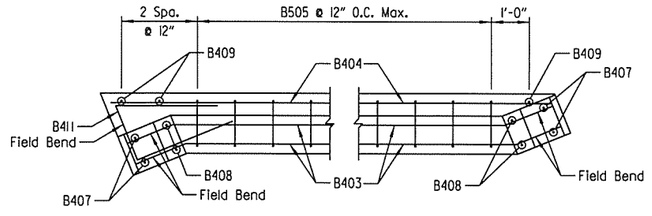
NOTE:
Concrete shall be hand packed under the joint armor in the backwall.



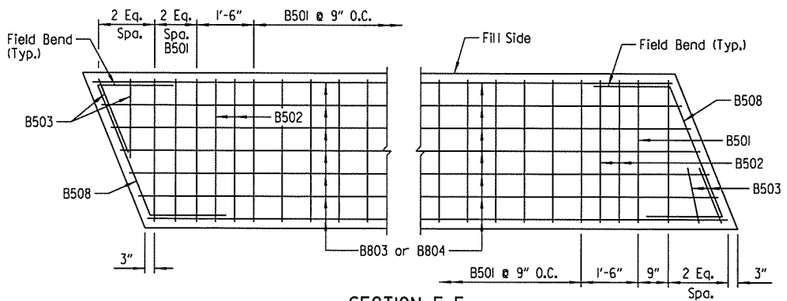
SECTION C-C
Scale: 1/2" = 1'-0"



SECTION D-D
Scale: 1/2" = 1'-0"



SECTION E-E
Scale: 1/2" = 1'-0"



SECTION F-F
Scale: 1/2" = 1'-0"

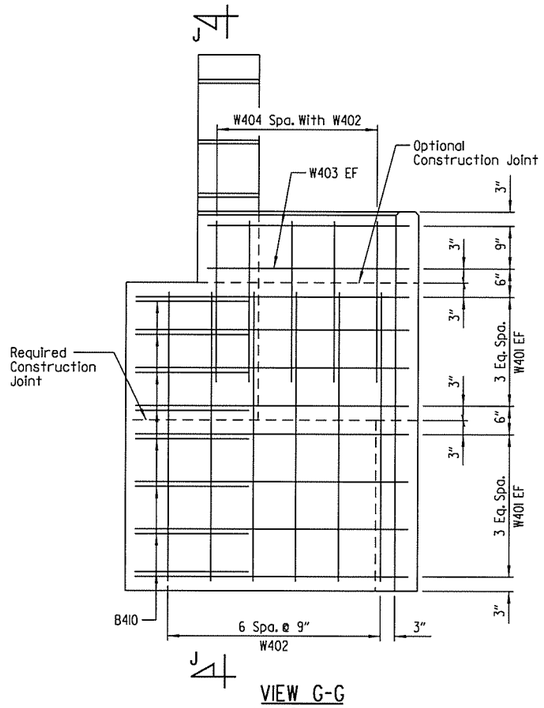
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENTS
BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

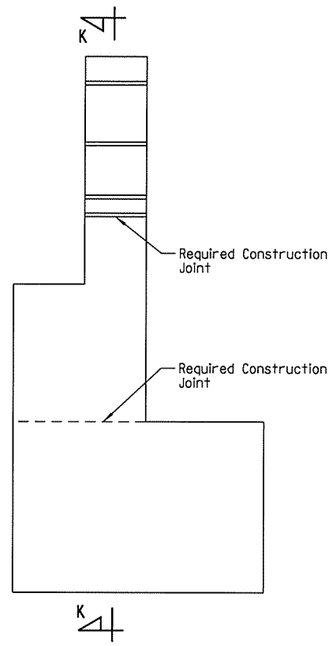
DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275x4_B2.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: JUNE 2013
BRIDGE NO. 07295 DRAWING NO. 54544

SRYancey 5/29/2014 4:43:51 PM
WORKSPACE: AHTD Bridge
L:\ZDII\101080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_B2 (End Bent Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	321	505
				(1) 07295		END BENT DETAILS		54545

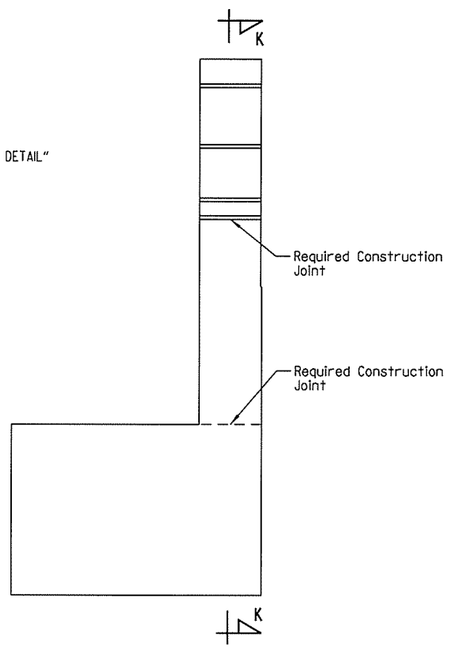


VIEW G-G
Scale: 3/4" = 1'-0"



VIEW H-H
Scale: 3/4" = 1'-0"

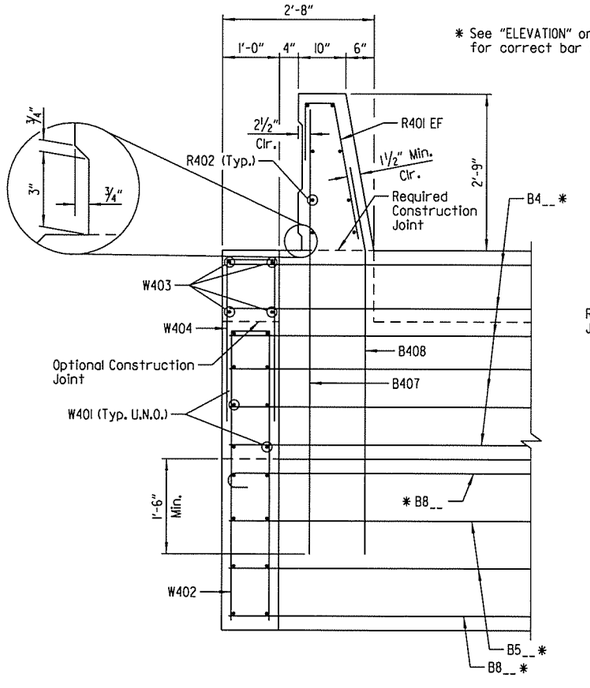
NOTE:
For "PANEL ENHANCEMENT DETAIL" see Dwg. No. 54550



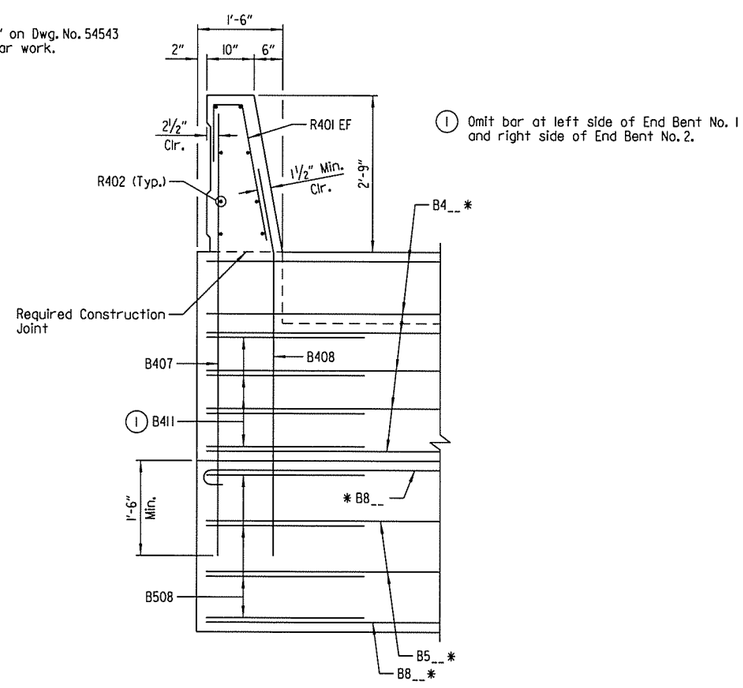
VIEW I-I
Scale: 3/4" = 1'-0"

LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise



SECTION J-J
Scale: 3/4" = 1'-0"



(1) Omit bar at left side of End Bent No. 1 and right side of End Bent No. 2.

SECTION K-K
Scale: 3/4" = 1'-0"

SRYancey 5/29/2014 4:43:51 PM
WORKSPACE: AHTD Bridge
L:\20IN\I07080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_B3 (End Bent Details2).dgn
REVISED DATE:

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS
BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275x4_B3.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: JUNE 2013
BRIDGE NO. 07295 DRAWING NO. 54545

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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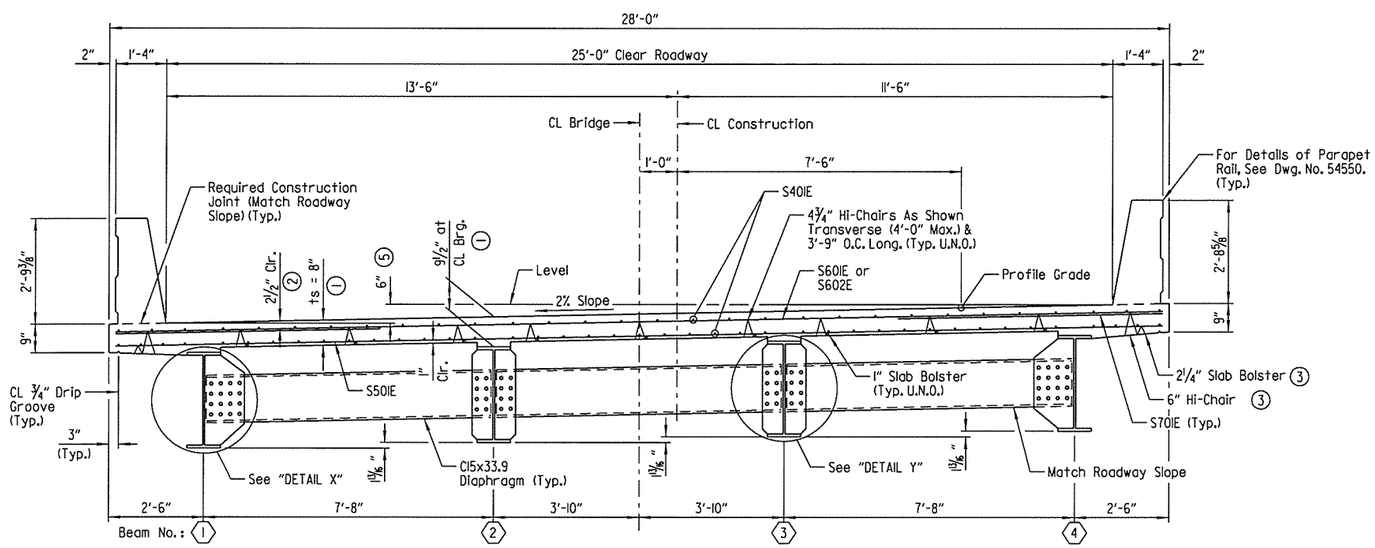
				JOB NO.		061275	322	505
				(1) 07295		50'-0" W-BEAM SPAN		54546

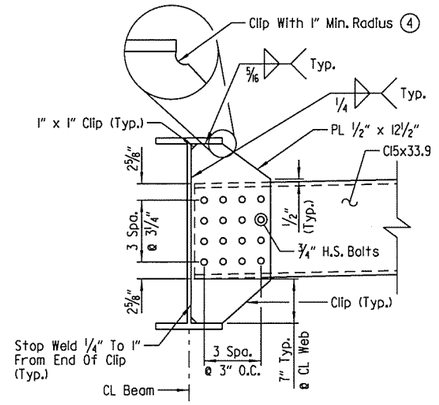


NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

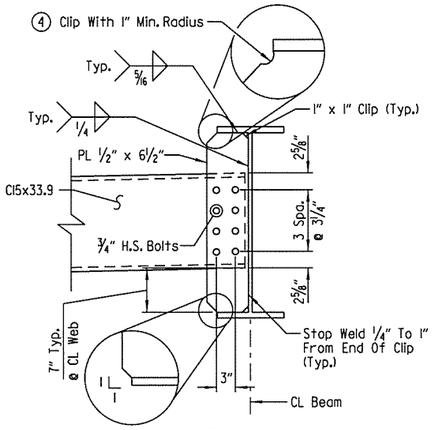
TYPICAL ROADWAY SECTION
(Looking Forward)
Scale: ½" = 1'-0"

NOTE:
Class 2 Protective Surface Treatment shall be applied to the clear roadway surface only. Class 3 Texture Coating Finish shall be applied to parapet rail surfaces, in accordance with SP JOB 061275 "TEXTURED COATING FINISH".

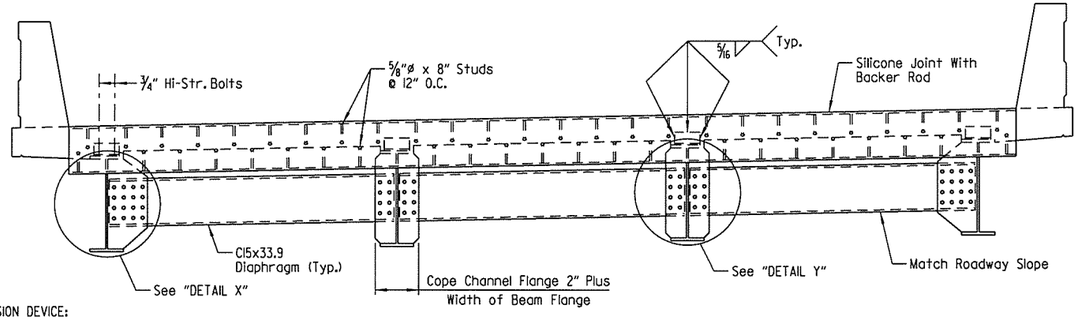
NOTE:
For details of poured silicone joint, See Dwg. No. 54551.



DETAIL X
Scale: 1" = 1'-0"



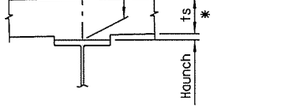
DETAIL Y
Scale: 1" = 1'-0"



EXPANSION DEVICE:
Rdwy. C15x33.9
Conn. ∠8"x4"x½"
Detail Device ⅞" high and provide ¼" shims using 2 - 1/16" and 1 - ⅛" plates.

TYPICAL SECTION AT CL JOINT
(Looking Forward)
Scale: ½" = 1'-0"

SLAB REINFORCING:
Transverse: S50IE @ 7" O.C. bottom
S60IE @ 14" O.C. top — Alternate
S602E @ 14" O.C. top —
S70IE @ 14" O.C. top at gutterline (both sides)
See "DETAIL A" on Dwg. No. 54547
Longitudinal: S40IE as shown

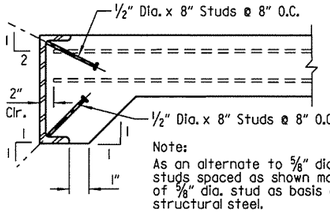


Note: t_S = Slab Thickness as shown on "TYPICAL ROADWAY SECTION".
* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

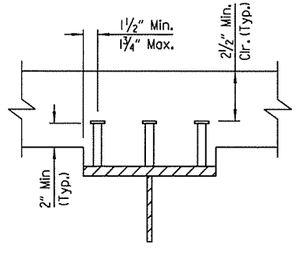
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - 1 ¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



Note:
As an alternate to ⅝" dia. studs, ½" dia. x 8" studs spaced as shown may be used. Use weight of ⅝" dia. stud as basis of measurement of structural steel.

DETAIL OF ALTERNATE ANCHORS
No Scale



Stud Shear Connectors Shown Shall Be ⅞" Dia. x 4" Long, Granular Flux Filled, Solid Fluxed Or Equal, And Automatically End Welded To The Flange In Accordance With The Recommendations Of The Manufacturer. ¾" Dia. Studs May Be Used In Place Of The ⅞" Dia. Studs Shown, At The Ratio Of 1.361 - ¾" Dia. Studs In Place Of One ⅞" Dia. Stud. ⅞" Dia. Studs Will Be Used As Basis For Measurement Of Structural Steel In Shear Connectors.

SHEAR CONNECTOR DETAIL
No Scale

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".
(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".
(3) Typ. In Overhangs
(4) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.
(5) Measured Gutterline to Gutterline

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No.8017

BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN BRIDGE OVER ARCH STREET PULASKI COUNTY

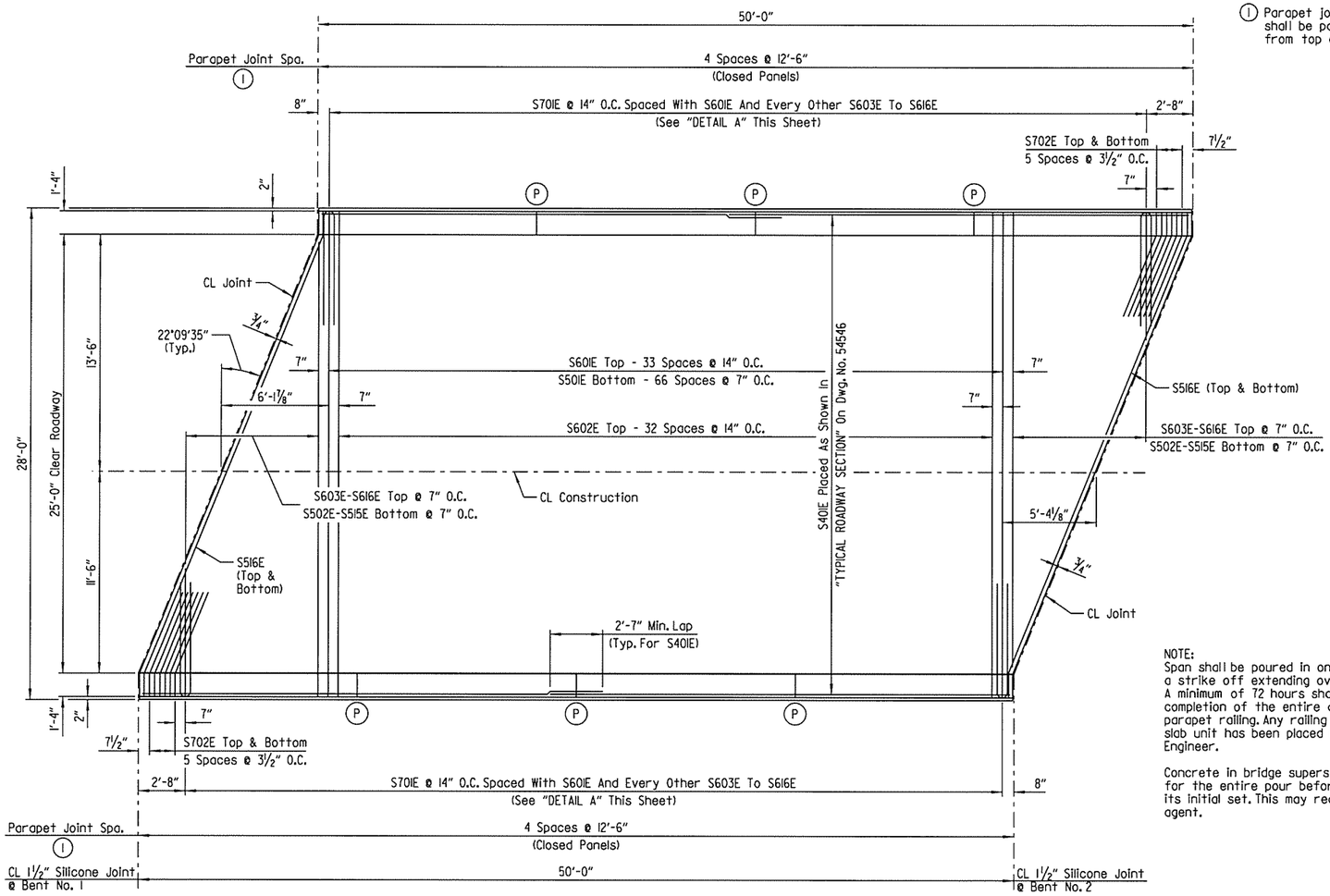
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_SI.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54546

SRYancey 5/29/2014 4:43:52 PM
WORKSPACE: AHTD Bridge
L:\ZDM\MDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_SI\TypicalSection1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	323	505
				(1) 07295		50'-0" W-BEAM SPAN		54547

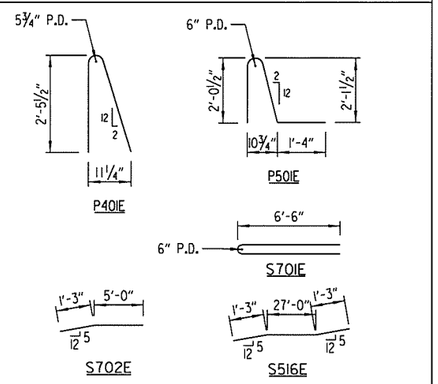


(1) Parapet joints designated with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

NOTE:
Span shall be poured in one continuous operation with a strike off extending over the entire span length. A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

BENDING DIAGRAM

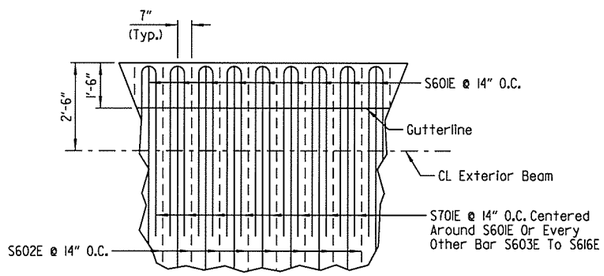


BAR LIST

Mark	No. Req'd.	Length	Pin. Dia.
S401E	142	26'-1"	Str.
S501E	67	27'-8"	Str.
S502E To S515E	2 Each	7'-3" To 25'-11"	Str.
S516E	4	29'-6"	3¾"
S601E	34	27'-6"	Str.
S602E	33	27'-8"	Str.
S603E To S616E	2 Each	7'-3" To 25'-11"	Str.
S701E	82	13'-3"	6"
S702E	24	6'-3"	5¼"
P401E	200	5'-4"	5¾"
P402E	56	12'-2"	Str.
P403E	24	5'-8"	Str.
P501E	200	5'-9½"	2½"

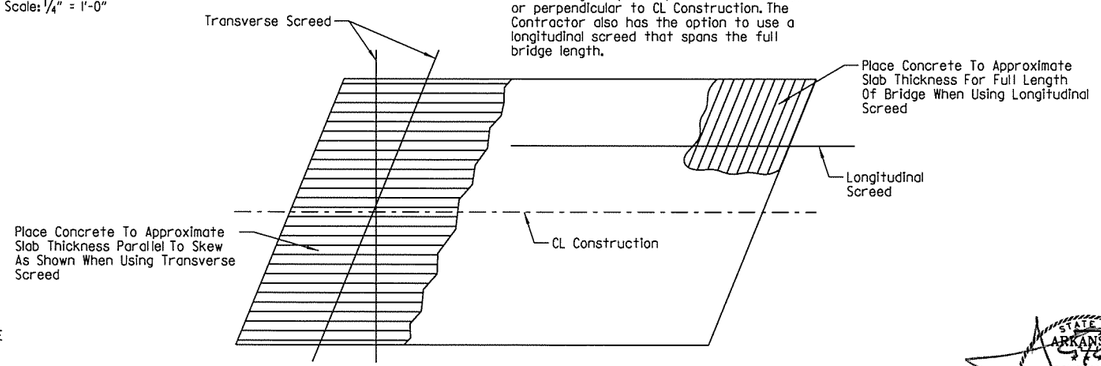
NOTES:
Dimensions of bars are out-to-out.
Bar designations ending with "E" indicate epoxy coated bars.

REINFORCING PLAN
Scale: ¼" = 1'-0"



DETAIL A
No Scale

NOTE:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Construction. The Contractor also has the option to use a longitudinal screed that spans the full bridge length.



CONCRETE PLACEMENT PROCEDURE
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.

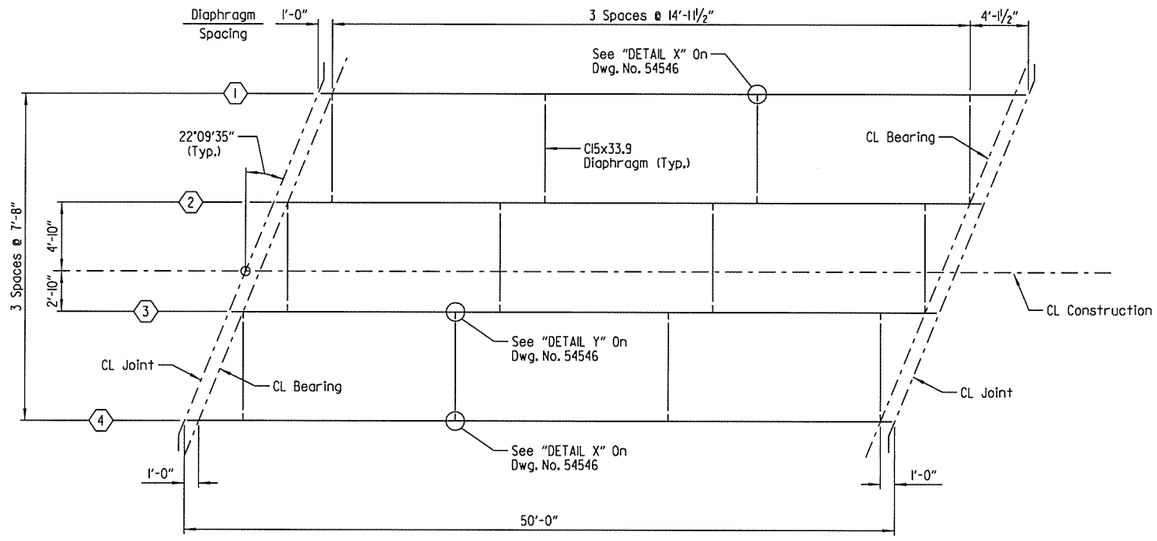
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_S2.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54547

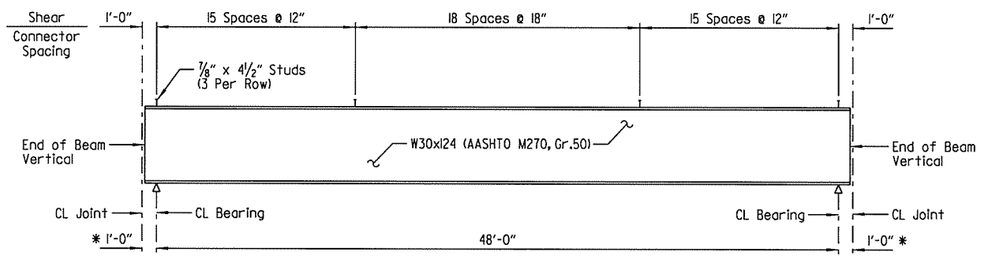
SRYancey 5/29/2014 4:43:52 PM
WORKSPACE: AHTD Bridge
L:\2DWGS\07060 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_S2 (Slab Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	324	505
(1) 07295		50'-0" W-BEAM SPAN		54548



FRAMING PLAN
Scale: 3/16" = 1'-0"



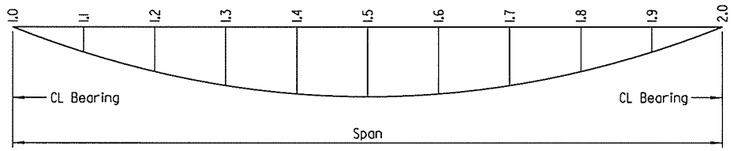
TYPICAL BEAM ELEVATION
No Scale

* Measured along CL Beam

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTES: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

TABLE OF DEAD LOAD DEFLECTIONS (Inch)			
Point Of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
1.0	0.00	0.00	0.00
1.1	0.04	0.24	0.27
1.2	0.08	0.45	0.51
1.3	0.11	0.62	0.70
1.4	0.12	0.73	0.82
1.5	0.13	0.77	0.86
1.6	0.12	0.73	0.82
1.7	0.11	0.62	0.70
1.8	0.08	0.45	0.51
1.9	0.04	0.24	0.27
2.0	0.00	0.00	0.00



DEAD LOAD DEFLECTIONS DIAGRAM
No Scale

NOTE:
Chamber for dead load deflection plus vertical curve +/- ¼" tolerance.
Deflections shown are along CL Beam from a chord from centerline bearing to centerline bearing. Vertical curve corrections are not included.
Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN
BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_S3.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54548

SRYancey 5/29/2014 4:43:53 PM
WORKSPACE: AHTD Bridge
L:\2DIN\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x4_S3 (Framing Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	325	505
① 07295		50'-0" W-BEAM SPAN		54549

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsubsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. If longitudinal strike-off is used a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 unless otherwise noted and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Grade 36 unless otherwise noted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. See Drawing No. 54552 for cleaning requirements of external load plates on elastomeric bearings.

All Structural Steel except galvanized members and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. See "PROJECT GENERAL NOTES" for paint color and Federal Standard Color Chip Number.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

All beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All beams shall be blocked in their true positions in the shop with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the beams in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for ¾"ø high-strength bolts my be ⅞"ø if a washer is supplied for use under both the nut and head of the bolt.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts wil l be paid for at the contract unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".

SRYancey 5/29/2014 4:43:53 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_S4 (Str. Notes).dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN BRIDGE OVER ARCH STREET PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_S4.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54549

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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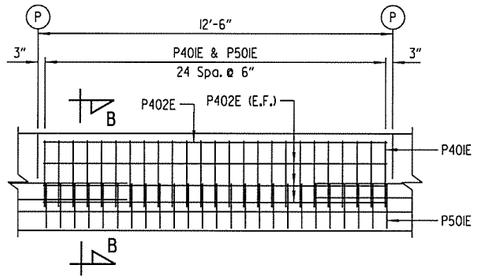
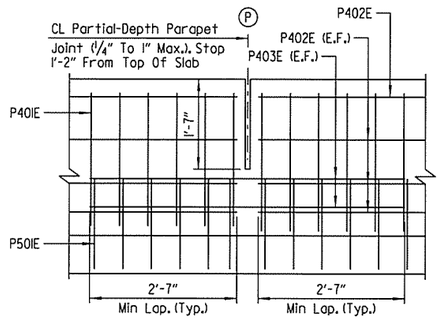
				JOB NO.		061275	326	505
				(1) 07295		50'-0" W-BEAM SPAN		54550

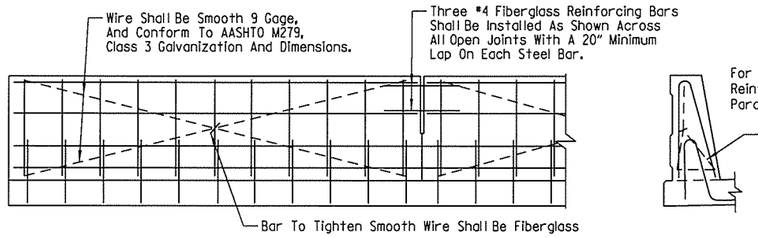


TYP. CLOSED PARAPET RAIL ELEVATION
Scale: 3/8" = 1'-0"

(P) CL Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown on "Reinforcing Plan" on Dwg No. 54547. Stop 1'-2" from top of slab.



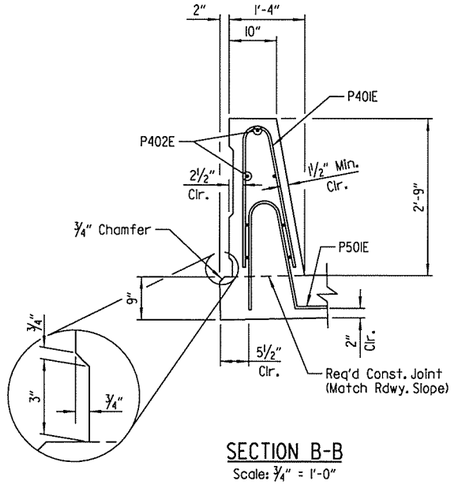
PARAPET REINFORCING (PARTIAL DEPTH JOINTS)
Scale: 3/4" = 1'-0"



All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

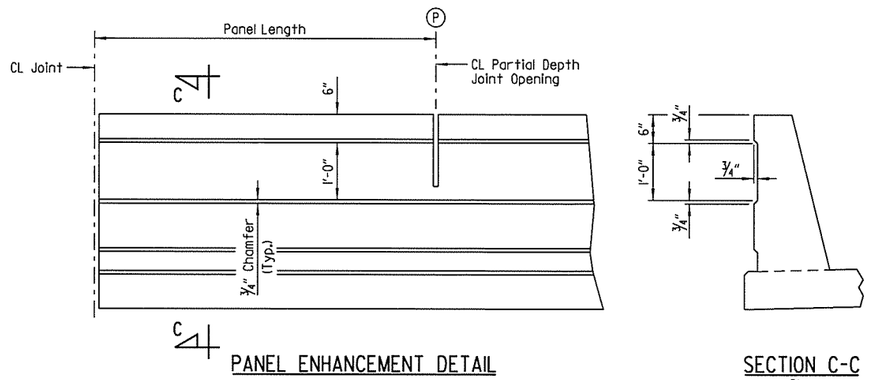
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale



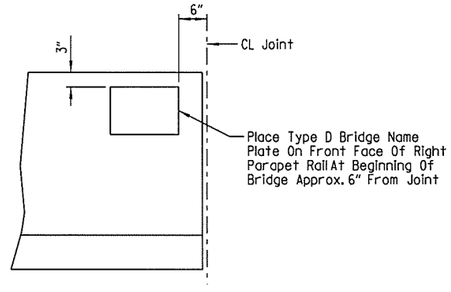
SECTION B-B
Scale: 3/4" = 1'-0"

NOTE:
For Bar Bending Details, see Dwg. No. 54547.



PANEL ENHANCEMENT DETAIL
No Scale

SECTION C-C
Scale: 3/4" = 1'-0"



VIEW SHOWING LOCATION OF NAME PLATE
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN BRIDGE OVER ARCH STREET PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_S5.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54550

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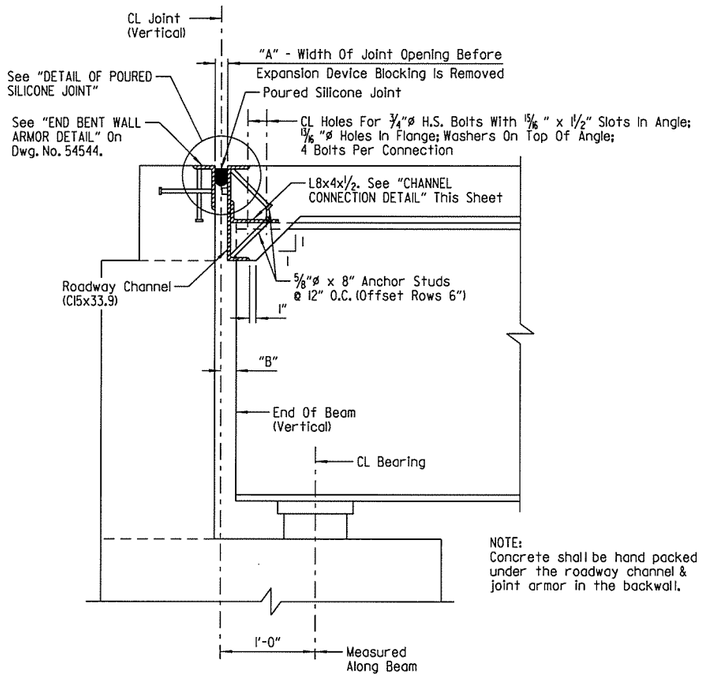
WORKSPACE: AHTD Bridge
L:\ZDRIVE\B061080 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_S5 (Parapet).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	327	505
				(1) 07295		50'-0" W-BEAM SPAN		54551



SECTION THRU SILICONE JOINT

Note: Section Taken Normal To CL Joint
No Scale

SILICONE JOINT DATA					
"A" Width Perpendicular To Joint At 24 Hour Average Temperature* Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
1 9/16"	1½"	1 1/16"	2"±	4"	1" x ¾"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

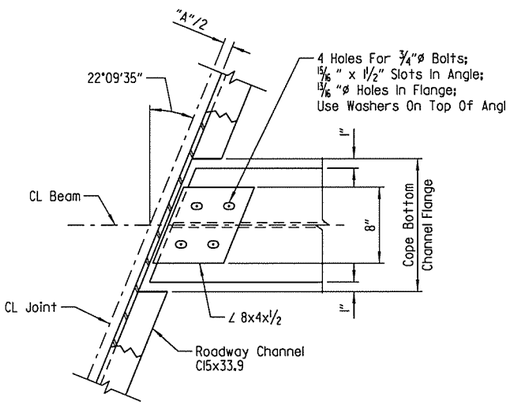
NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

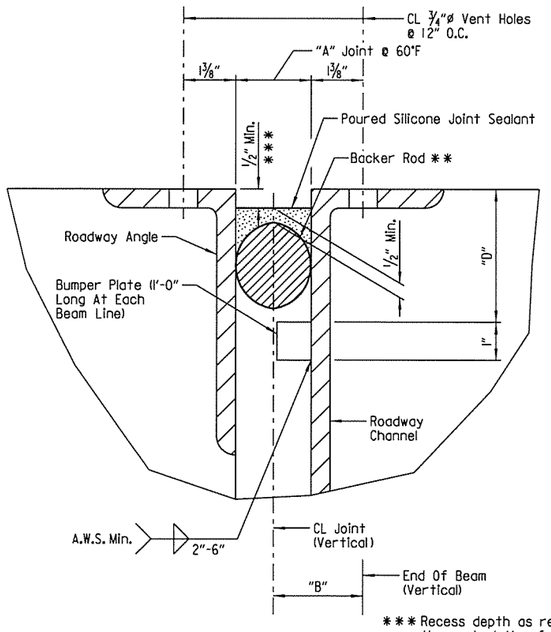
Except as noted, do not install more backer rod that can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



CHANNEL CONNECTION DETAIL

No Scale

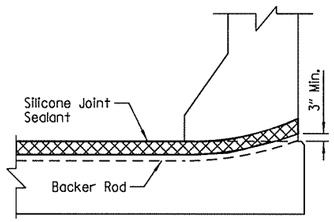


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT

No Scale

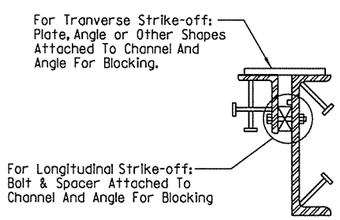
NOTE:
Dimension "D" shall conform to the recommendations of the sealant manufacturer as approved by the Bridge Engineer.



JOINT SEAL PLACEMENT AT CURB

No Scale

One of two different blocking systems is required depending on the type of span finishing machine that is used.



NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.
Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 50'-0" SIMPLE COMPOSITE W-BEAM SPAN BRIDGE OVER ARCH STREET PULASKI COUNTY

ROUTE SEC.

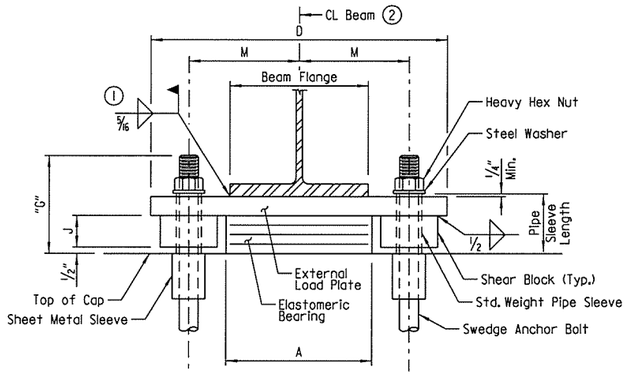
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2013 FILENAME: B061275x4_S6.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS NOTED
DESIGNED BY: BWS DATE: MAY 2013
BRIDGE NO. 07295 DRAWING NO. 54551

SRYancey 5/29/2014 4:43:55 PM
WORKSPACE: AHTD Bridge
L:\20IN\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x4_S6 (Joint Dtls).dgn
REVISED DATE:

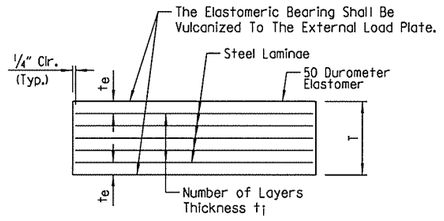
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	328	505
				① 07295		ELASTOMERIC BEARINGS		54552



FRONT VIEW - AT BENT NO. 1

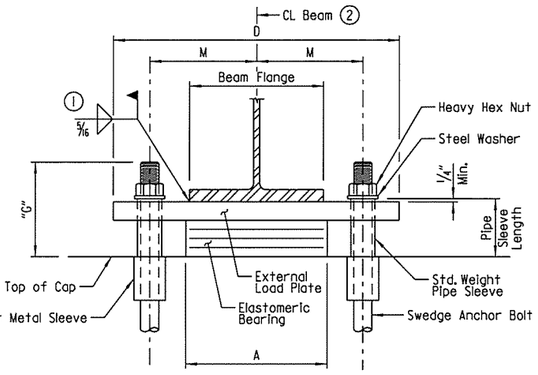
① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam flange before welding begins.

② Centerline elastomeric pad shall be aligned with centerline beam.

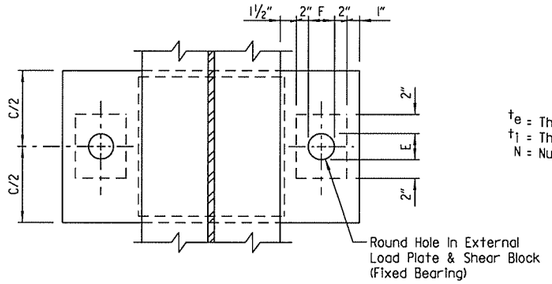


t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_1 = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_1

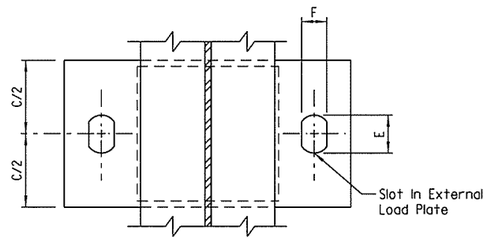
ELASTOMERIC BEARING



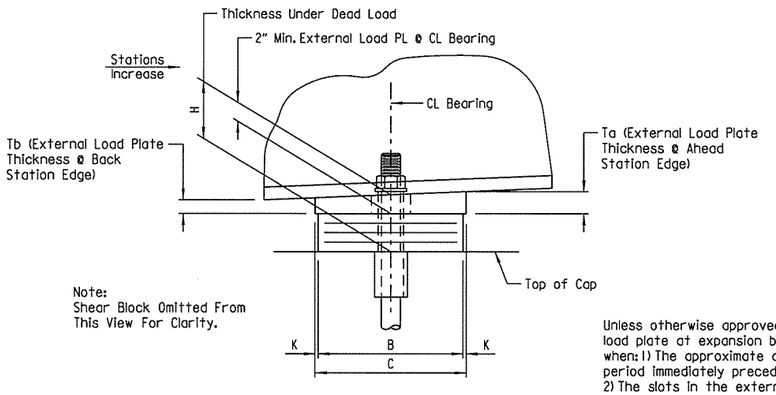
FRONT VIEW - AT BENT NO. 2



PLAN VIEW - AT BENT NO. 1

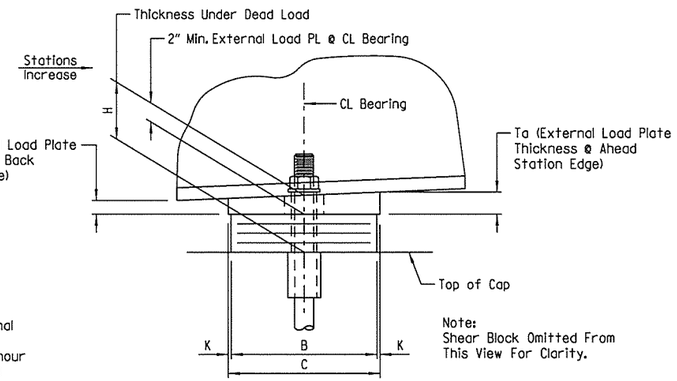


PLAN VIEW - AT BENT NO. 2

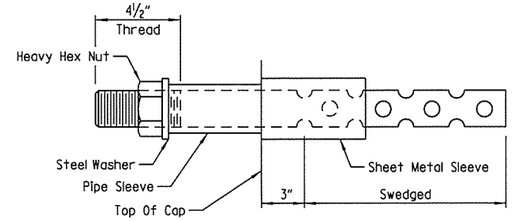


SIDE VIEW - AT BENT NO. 1

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



SIDE VIEW - AT BENT NO. 2



ANCHOR BOLT DETAIL

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50)".

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (Kips)	G	H	Elastomeric Pad						External Load Plate									Anchor Bolt				
																						Anchor Bolt		Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
Bent No.(s)	Beam Or Girder No.						A	B	N	t_1	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b	(Dia. x L)	Grade			
1	All	Fixed	4	100.0	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	30 1/4"	2 5/8"	2 5/8"	1 7/8"	1/2"	10 13/16"	2.11"	1.89"	1 3/4" x 28"	55	2" x 4 5/8"	4" x 8"	3 3/8"
2	All	Exp.	4	100.0	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	23"	3 5/8"	2 5/8"	-	1/2"	8 1/2"	2.16"	1.84"	1 3/4" x 28"	55	2" x 4 5/8"	4" x 8"	3 3/8"

* Maximum Design Load = Service I Limit State

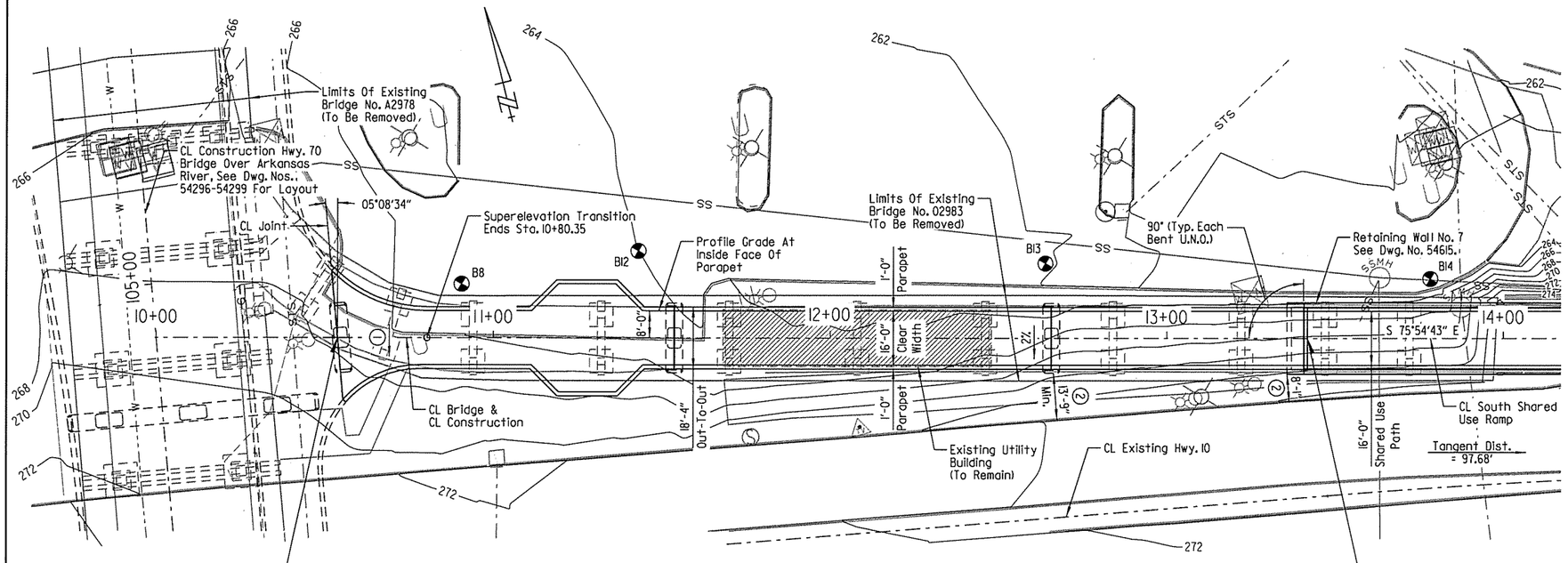
STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
BRIDGE OVER ARCH STREET
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275x4_EI.DGN
CHECKED BY: RLW DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: BWS DATE: JUNE 2013
BRIDGE NO. 07295 DRAWING NO. 54552

SRYancey 5/29/2014 4:43:55 PM
WORKSPACE_AHTD Bridge
L:\2DWG\061060 - Broadway Bridge over the Arkansas River\Drawings\B061275x4_EI(Bearing Dtls.).dgn
REVISED DATE:

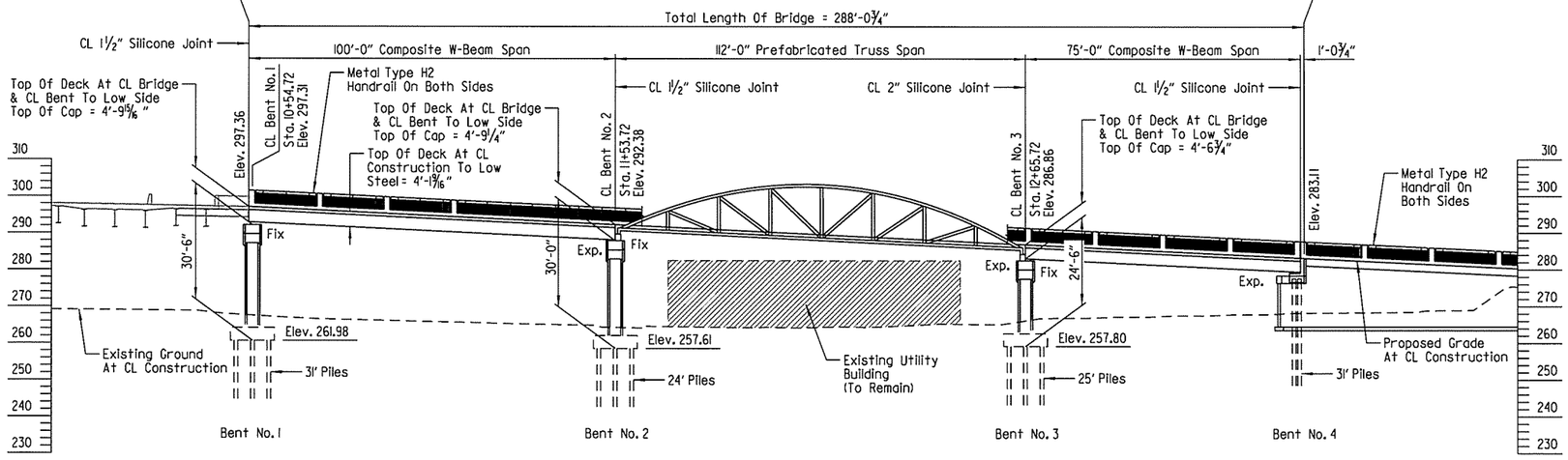
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	329	505
				①	04927	LAYOUT		54553



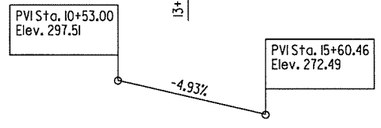
① Slope varies from Sta. 10+53.72 to Sta. 10+80.35. For details of superelevation transition, see Dwg. No. 54561.
② Measured to existing face of curb

PLAN

NOTE:
Concrete Riprap at End Bridge between end bent cap and MSE retaining wall under bridge. See MSE retaining wall details on Dwg. Nos. 54615, 54621 & 54623.



ELEVATION



VERTICAL PROFILE
South Shared Use Ramp
(Profile Grade 8' Lt. of CL Construction)

GENERAL NOTES - SOUTH SHARED USE RAMP

BENCH MARK: PN: 903, PD: SO. IN CONCRETE, ST: 106+02.71 OF: 72.14' RT. ZC: 263.39
Station & Offset taken from CL Construction Hwy. 70 Bridge Over Arkansas River

OPERATIONAL CATEGORY: OTHER

STEEL PILING: Piling for Bent Nos. 1 - 4 shall be HP 12x53 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. The Contractor shall use approved steel H-Pile driving points on all piles. Piling in Bent No. 4 shall be driven per the requirements on Dwg. No. 54292.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 55,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1 - 4.

PREBORING: Preboring is required for Bent Nos. 1 - 3 to obtain a minimum embedment of 10 feet below material designated as shale on the boring logs. Prebored holes shall be 6 inches greater than the cross sectional dimension of the pile. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After pile driving is complete, the prebored holes shall be backfilled with Class S Concrete to the top of the rock and the remaining length of the prebored holes shall be backfilled with an approved non-shrink grout or other approved material completely filling the voids. The cost of preboring, temporary casings, and backfill will be included in the item "PREBORING".

DETAIL DRAWINGS:	DRAWING NOS:
Intermediate Bents	54555-54557
End Bent	54558-54559
100' Simple Comp. W-Beam Span	54560-54566
112' Prefabricated Simple Truss Span	54567
75' Simple Comp. W-Beam Span	54568-54570
General Superstructure Details	54571-54573
Joint Details	54574
Elastomeric Bearings	54575
Steel Piling	55020
Concrete Riprap	55002

For "PROJECT GENERAL NOTES", see Dwg. No. 54292.

FOR R/W DATA, SEE ROADWAY PLANS

NOTE:
For "SOIL BORING PROFILE", see Dwg. No. 54554.

LEGEND

G = Gas Line
SS = Sanitary Sewer
STS = Storm Sewer
W = Water Line
U.N.O. = Unless Noted Otherwise

NOTE:
Stations and elevations shown are along CL Construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

LAYOUT OF BRIDGE
SOUTH SHARED USE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

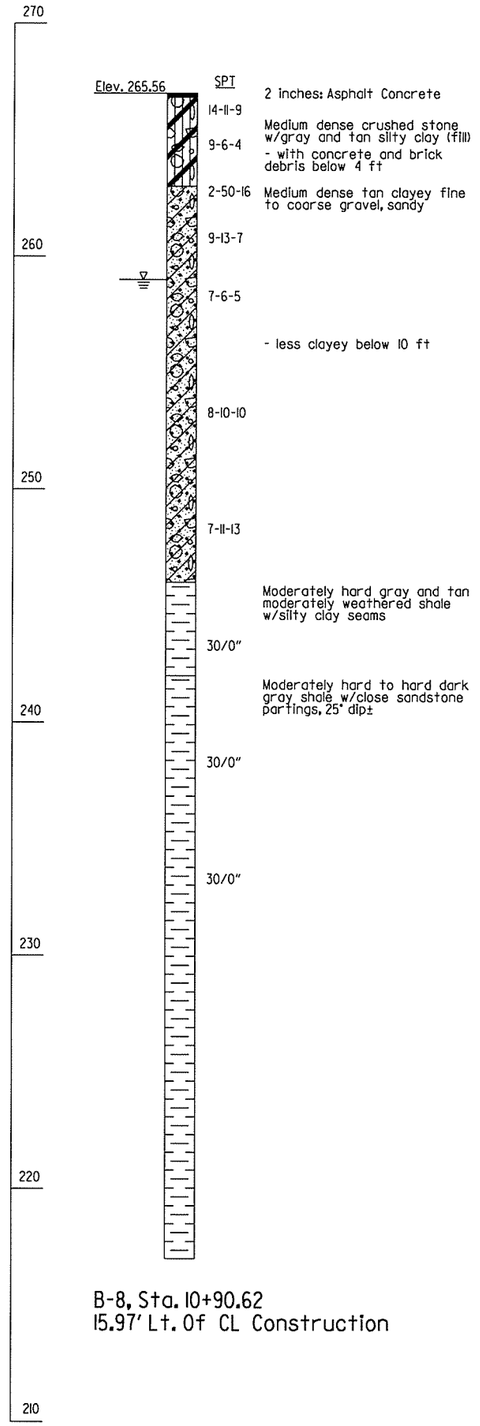
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

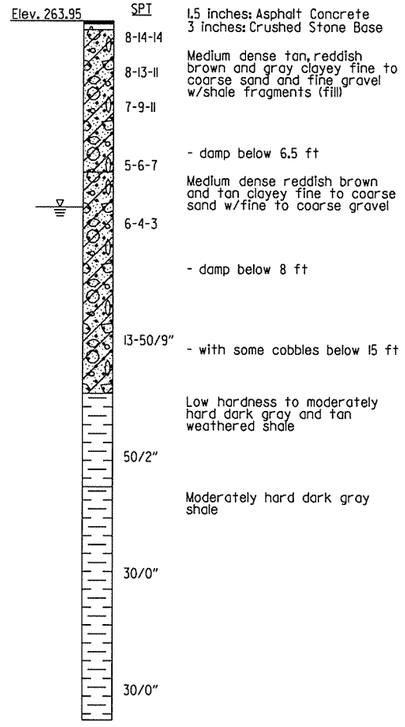
DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061276x5_LI.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 04927 DRAWING NO. 54553

SRYancey 5/29/2014 4:44:53 PM
WORKGROUP: AHTD Bridge
L:\2013\061276D - Broadway Bridge over the Arkansas River\Drawings\B061275x5_LI(Layout & Notes).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	330	505
				(1) 04927		SOIL BORING PROFILE		54554



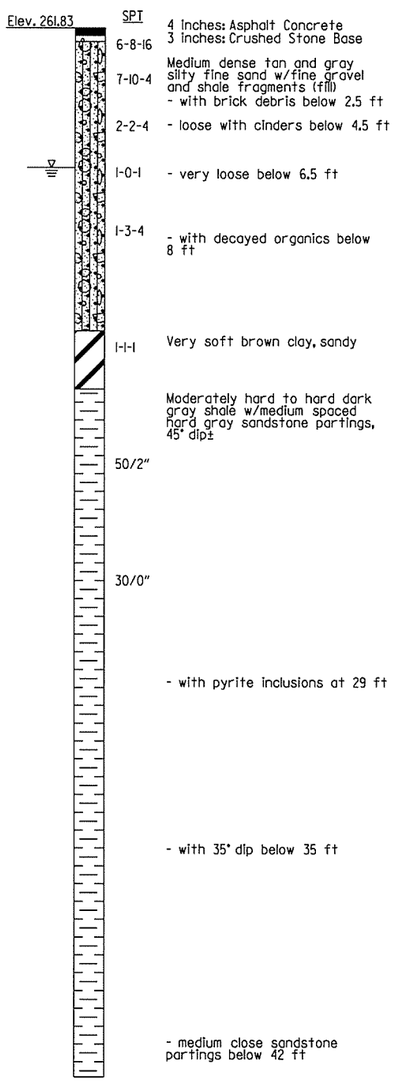
B-8, Sta. 10+90.62
15.97' Lt. Of CL Construction



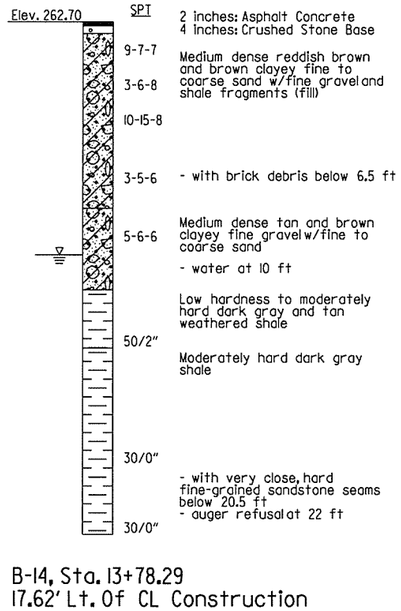
B-12, Sta. 11+43.05
25.76' Lt. Of CL Construction

NOTE:
Stationing and offsets shown are along South Shared Use Ramp CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.



B-13, Sta. 12+63.93
22.16' Lt. Of CL Construction



B-14, Sta. 13+78.29
17.62' Lt. Of CL Construction

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
NO. 8017
BRIDGE ENGINEER

SOIL BORING PROFILE
LAYOUT OF BRIDGE
SOUTH SHARED USE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

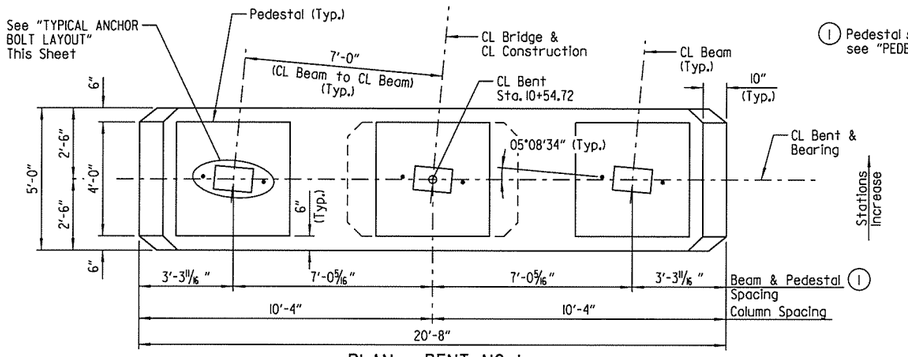
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x5_L2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54554

SRYancey 5/29/2014 4:44:54 PM
WORKSPACE: AHTD Bridge
L:\BDW\MOT\BD Broadway Bridge over the Arkansas River\Drawings\B061275x5_L2 (Boring Log).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	331	505
				(1) 04927		INT. BENT DETAILS		54555



PLAN - BENT NO. 1

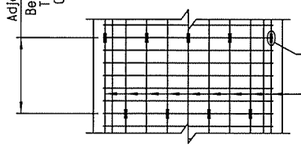
Scale: 3/8" = 1'-0"

(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On This Sheet.

Adjacent Mechanical Couplers Shall Be Staggered A Min. Of 2'-0" Or The Length Of The Mechanical Coupler, Whichever Is Greater

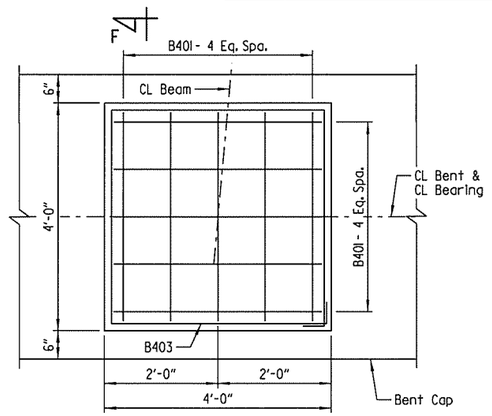
Mechanical coupler assembly in the columns shall consist of a QPL approved mechanical splice, and shall maintain the clearances shown. Their payment shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)". The couplers shall develop at least 125% of the specified yield strength of the bar.

The bars shall be assembled as shown in "OPTIONAL MECHANICAL SPLICE DETAIL" within Splice Zone A only. No more than one mechanical coupler per bar shall be permitted. Not more than alternate bars shall be spliced at a given section.

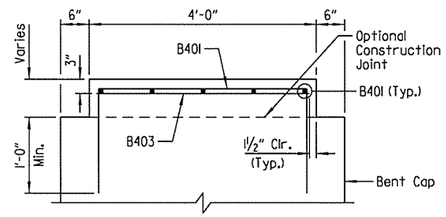


OPTIONAL MECHANICAL SPLICE DETAIL

Scale: 1/2" = 1'-0"



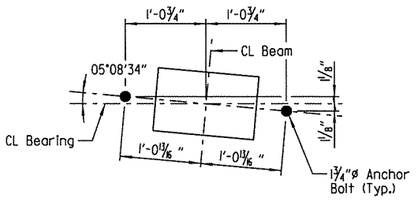
PLAN VIEW



SECTION F-F

PEDESTAL DETAIL

(Bent No. 1)
Scale: 3/4" = 1'-0"

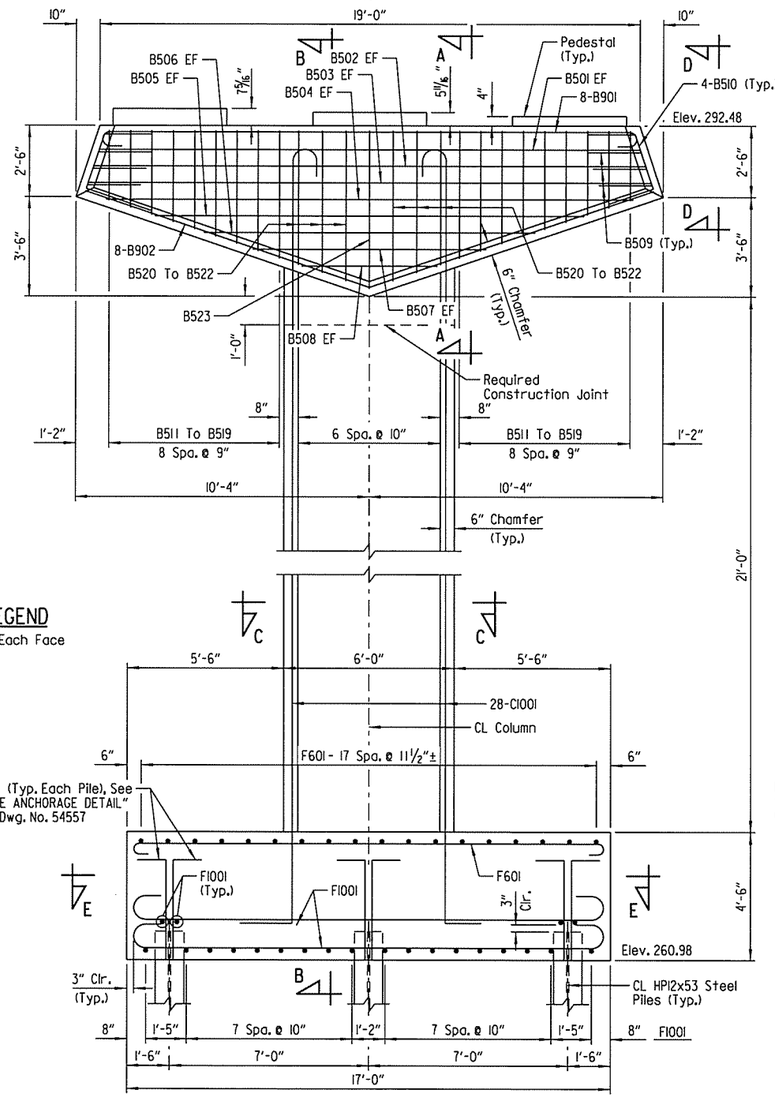


TYPICAL ANCHOR BOLT LAYOUT

(Bent No. 1)
Scale: 1" = 1'-0"

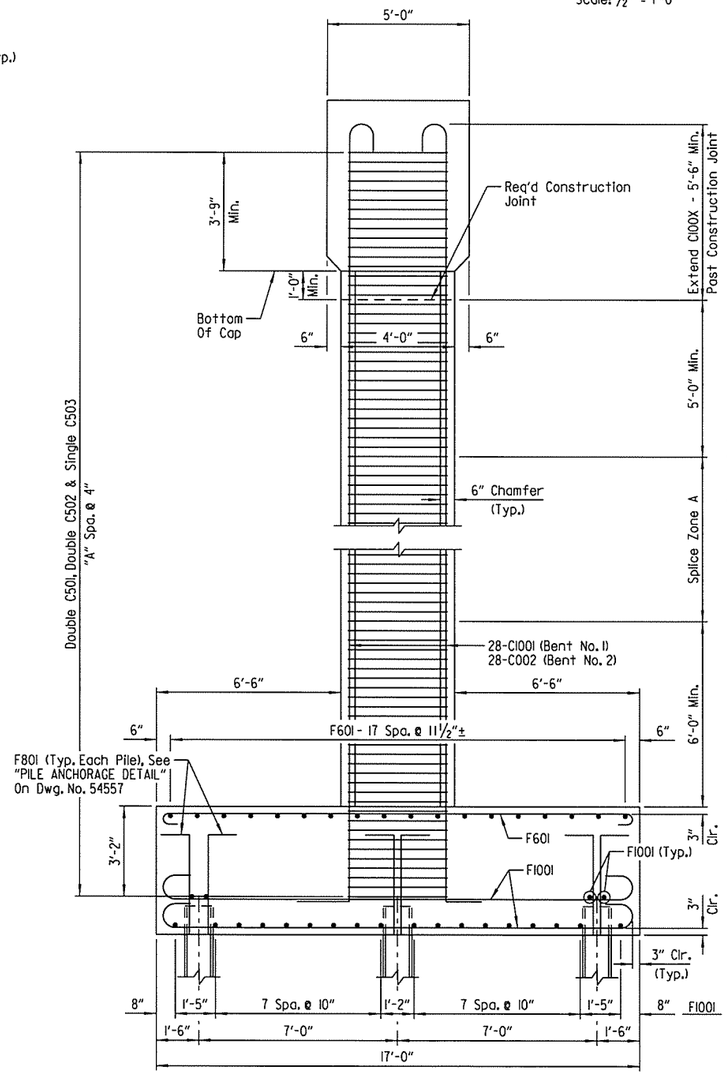
NOTE:
Lap splices in column reinforcing shall not be allowed.

TABLE OF VARIABLES	
BENT NO.	"A"
1	85
2	80



ELEVATION - BENT NO. 1

(Looking Forward)
Scale: 3/8" = 1'-0"



SECTION B-B

(Bent Nos. 1 & 2)
(Pedestals And Reinforcing In Cap Not Shown For Clarity)
Scale: 3/8" = 1'-0"

Note:
For "SECTION A-A", "SECTION C-C", "VIEW D-D" & "SECTION E-E", See Dwg. No. 54556.

For "BAR LIST", "BAR BENDING DIAGRAM" & "GENERAL NOTES, See Dwg. No. 54557.

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENTS
SOUTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

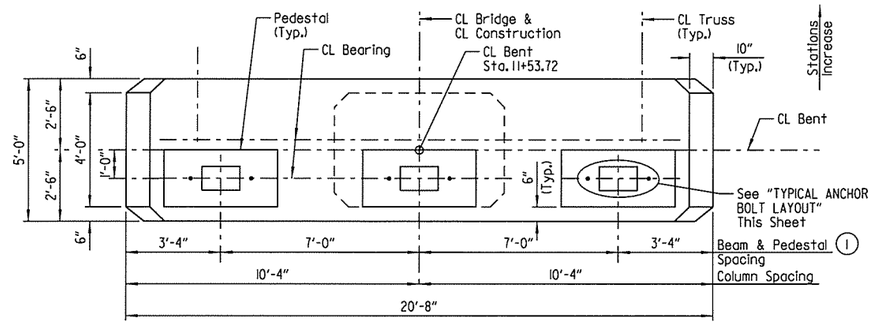
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x5_BI.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54555

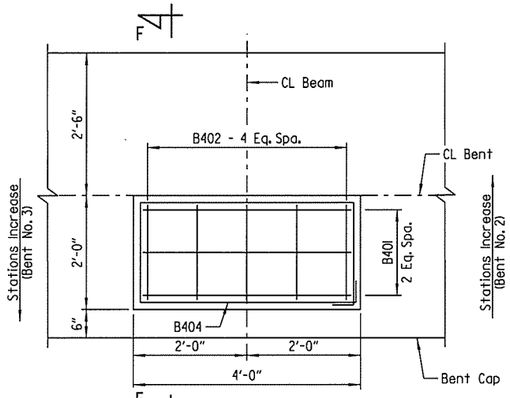
SRYancey 5/29/2014 4:44:55 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTDOT - Broadway Bridge over the Arkansas River\Drawings\B061275x5_BI\Int. Bent No. 1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	332	505
				(1) 04927		INT. BENT DETAILS		54556

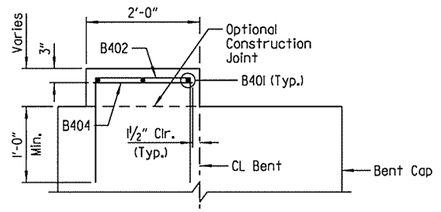


(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On This Sheet.

PLAN - BENT NO. 2
Scale: 3/8" = 1'-0"

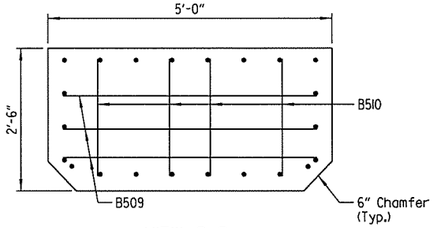


PLAN VIEW

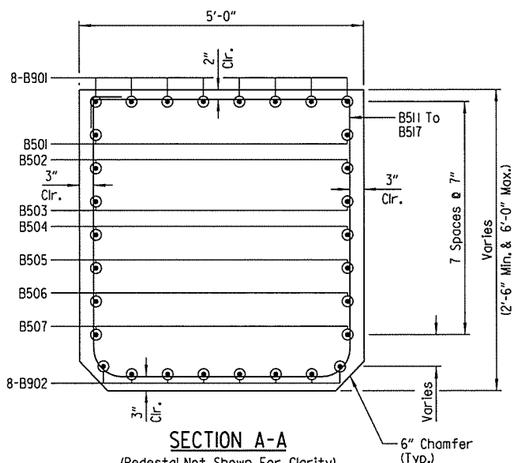


SECTION F-F

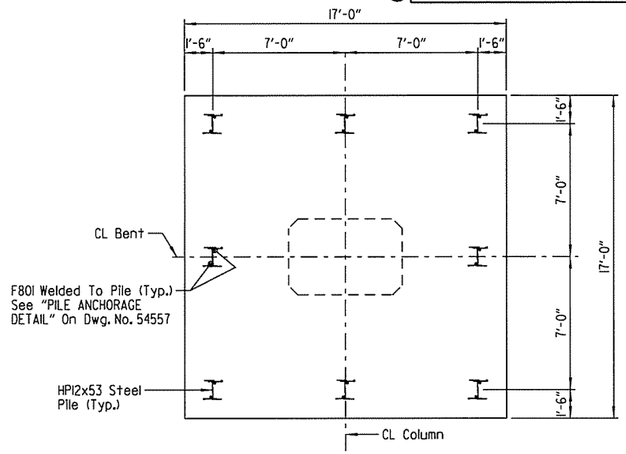
PEDESTAL DETAIL
(Bent Nos. 2 & 3)
Scale: 3/4" = 1'-0"



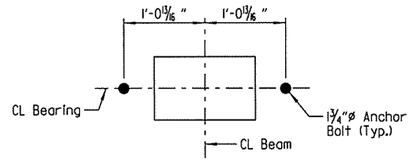
VIEW D-D
(Showing End Cap Reinforcing)
Scale: 3/4" = 1'-0"



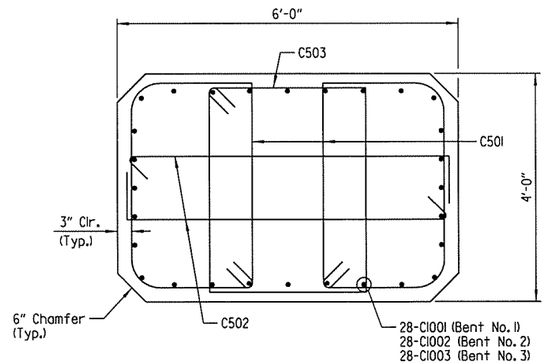
SECTION A-A
(Pedestal Not Shown For Clarity)
Scale: 3/4" = 1'-0"



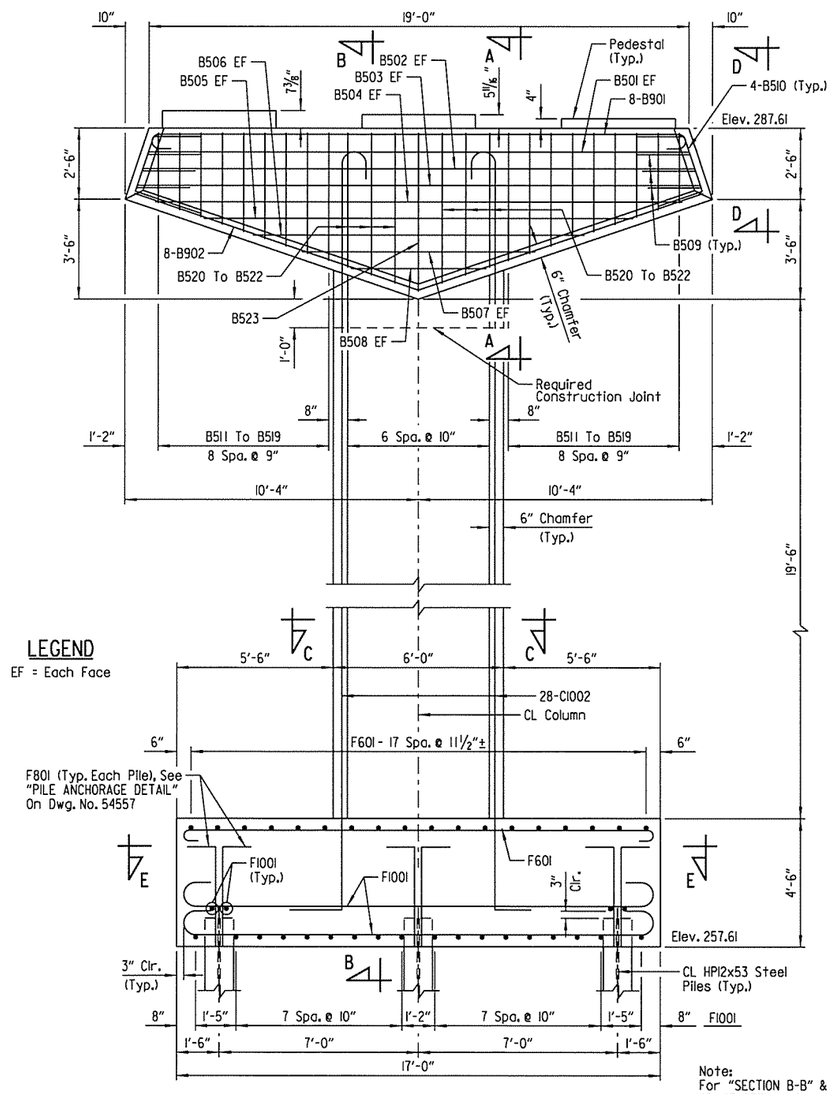
SECTION E-E
Scale: 1/4" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
(Bent Nos. 2 & 3)
Scale: 1" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"



ELEVATION - BENT NO. 2
(Looking Forward)
Scale: 3/8" = 1'-0"

Note:
For "SECTION B-B" & "OPTIONAL MECHANICAL SPLICE DETAIL", See Dwg. No. 54555.

For "BAR LIST", "BAR BENDING DIAGRAM" & "GENERAL NOTES, See Dwg. No. 54557.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8814
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENTS
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

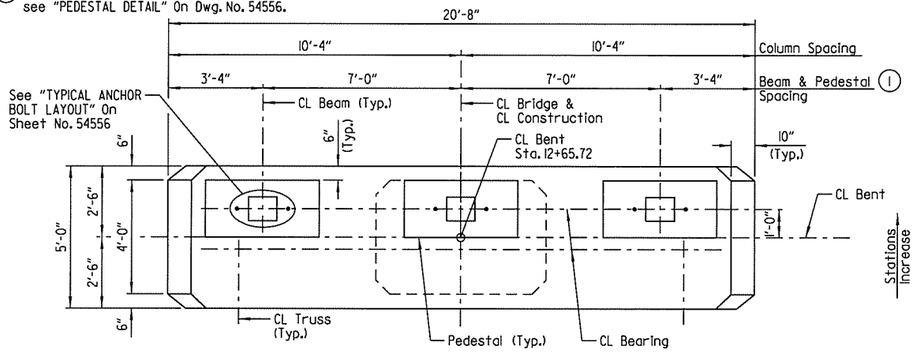
DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061276x5_B2.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54556

SRYancey 5/29/2014 4:44:56 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\DOTDGN - Broadway Bridge over the Arkansas River\Drawings\B061275x5_B2 (Int. Bent No. 2).dgn
REVISED DATE:

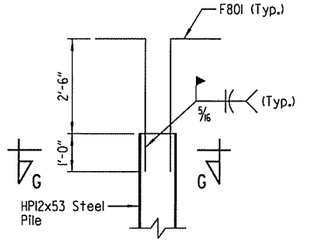
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	333	505
				(1) 04927		INT. BENT DETAILS		54557

(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On Dwg. No. 54556.



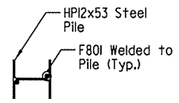
PLAN - BENT NO. 3

Scale: 3/8" = 1'-0"



PILE ANCHORAGE DETAIL

No Scale



SECTION G-G

No Scale

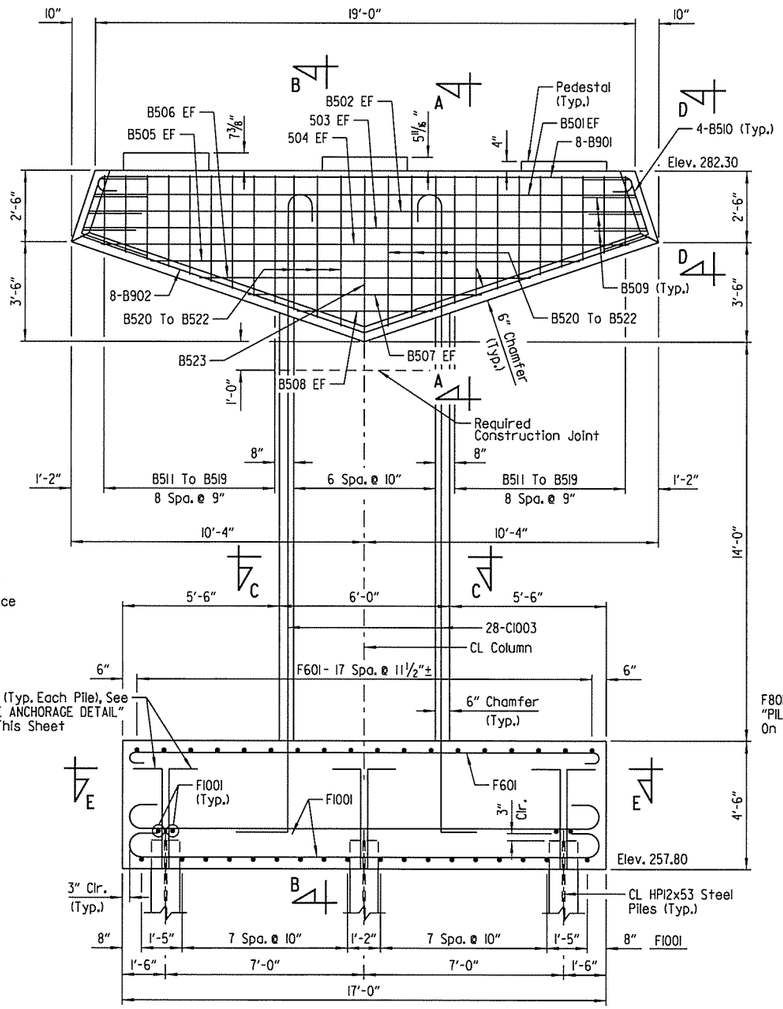
GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

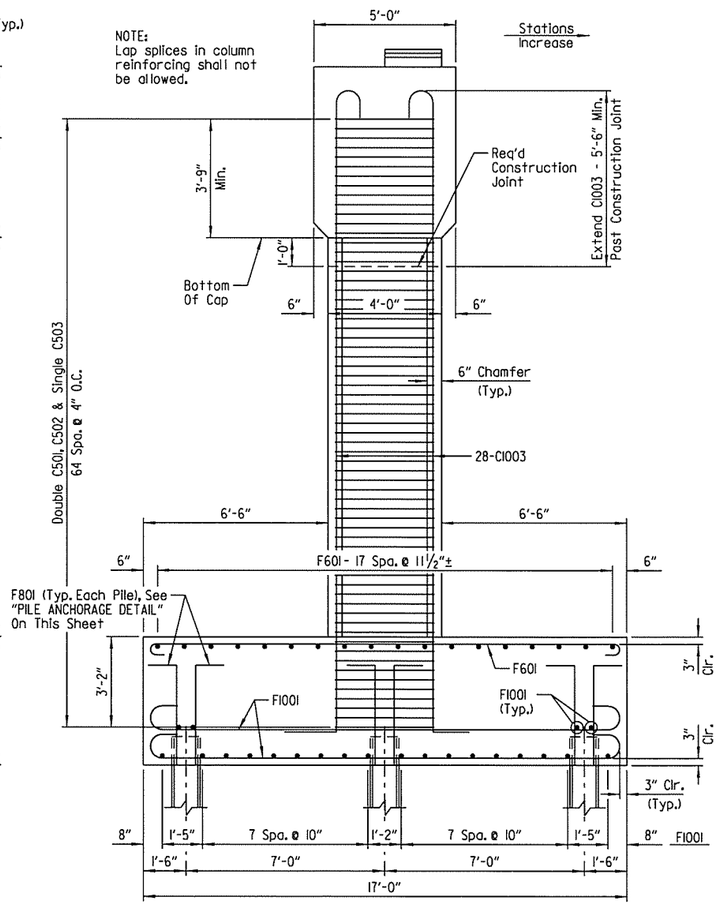


ELEVATION - BENT NO. 3

(Looking Forward)
Scale: 3/8" = 1'-0"

Note:
For "SECTION A-A", "SECTION C-C", "VIEW D-D", & "SECTION E-E", See Dwg. No. 54556.

NOTE:
Lap splices in column reinforcing shall not be allowed.



SECTION B-B

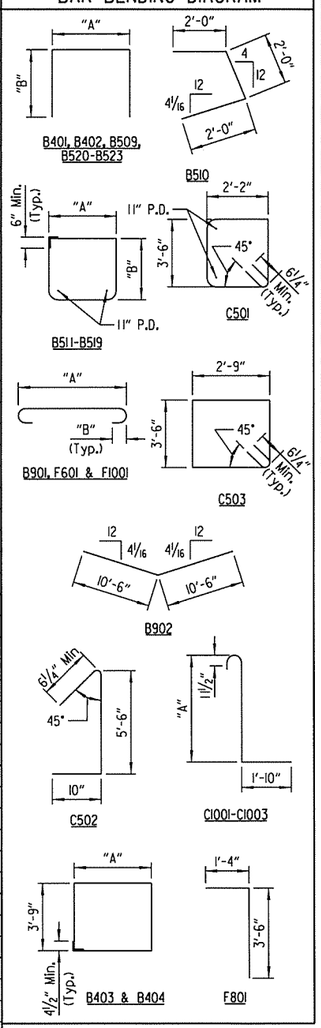
(Bent No. 3)
(Reinforcing In Cap Not Shown For Clarity)
Scale: 3/8" = 1'-0"

BAR LIST

	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B501	2	18'-10"			Str.
	B502	2	19'-2"			Str.
	B503	2	19'-7"			Str.
	B504	2	18'-6"			Str.
	B505	2	15'-1"			Str.
	B506	2	11'-8"			Str.
	B507	2	8'-2"			Str.
	B508	2	4'-9"			Str.
	B509	6	8'-2 1/2"	4'-5"	2'-0"	2 1/2"
	B510	8	6'-0"			2 1/2"
	B511 To B519	2 Each	14'-6" To 18'-6"	4'-6"	2'-5" To 4'-6"	2 1/2", 11"
	B520 To B522	2 Each	13'-7 1/2" To 14'-9 1/2"	4'-6"	4'-8" To 5'-3"	2 1/2"
	B523	1	15'-6 1/2"	4'-6"	5'-7"	2 1/2"
	B901	8	21'-1"	18'-7"	10"	9"
	B902	8	21'-0"			9"
	F601	36	17'-10"	16'-6"	6"	4 1/2"
(2)	F801	16	4'-7 1/2"			6"
	F1001	44	19'-4"	16'-6"	11 1/2"	10"
BENT NO. 1	B401	30	7'-2"	3'-8"	1'-10"	2"
	B403	3	15'-4"	3'-9"		2"
	C501	172	12'-0"			3 3/4", 11"
	C502	172	6'-10"			3 3/4"
	C503	86	13'-2"			3 3/4"
	C1001	28	32'-6"	29'-6"		10"
BENT NO. 2	B401	9	7'-2"	3'-8"	1'-10"	2"
	B402	15	5'-2"	1'-8"	1'-10"	2"
	B404	3	11'-4"	1'-9"		2"
	C501	162	12'-0"			3 3/4", 11"
	C502	162	6'-10"			3 3/4"
	C503	81	13'-2"			3 3/4"
	C1002	28	31'-0"	28'-0"		10"
BENT NO. 3	B401	9	7'-2"	3'-8"	1'-10"	2"
	B402	15	5'-2"	1'-8"	1'-10"	2"
	B404	3	11'-4"	1'-9"		2"
	C501	130	12'-0"			3 3/4", 11"
	C502	130	6'-10"			3 3/4"
	C503	65	13'-2"			3 3/4"
	C1003	28	25'-6"	22'-6"		10"

NOTE:
Number of common bars are for one bent only.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

(2) F801 bars must be a weldable grade meeting the requirements of ASTM A706 (Grade 60).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENTS
SOUTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x5.B3.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54557

SRYancey 5/29/2014 4:44:56 PM
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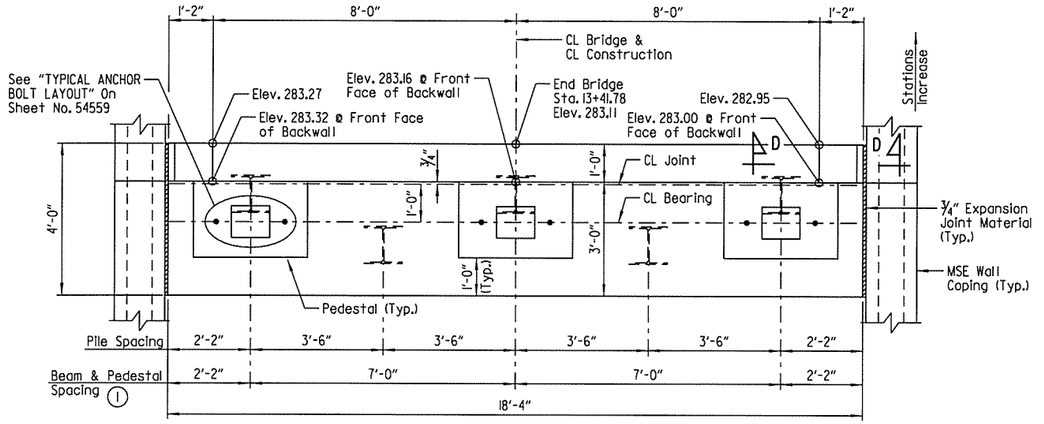
REVISED DATE:

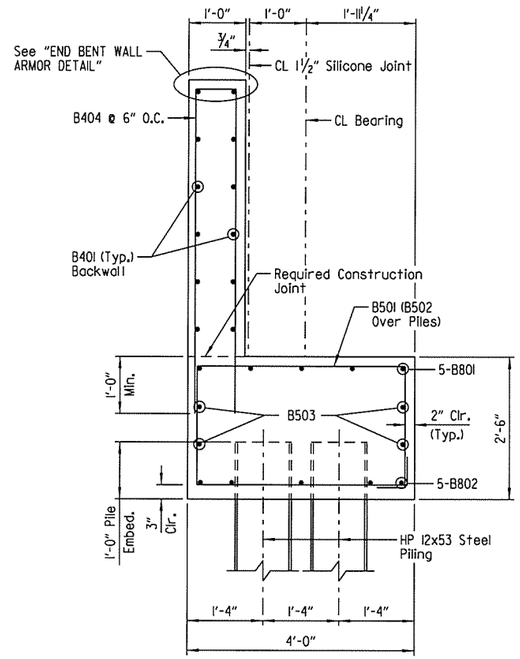
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	334	505
				(1) 04927		END BENT DETAILS		54558



PLAN

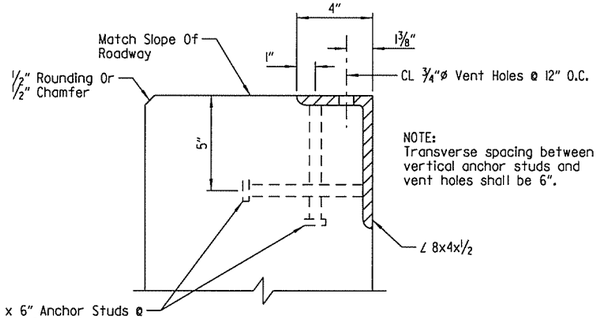
Scale: 1/2" = 1'-0"

(1) Pedestal spacing measured to CL riser, see "PEDESTAL DETAIL" On Dwg. No. 54559



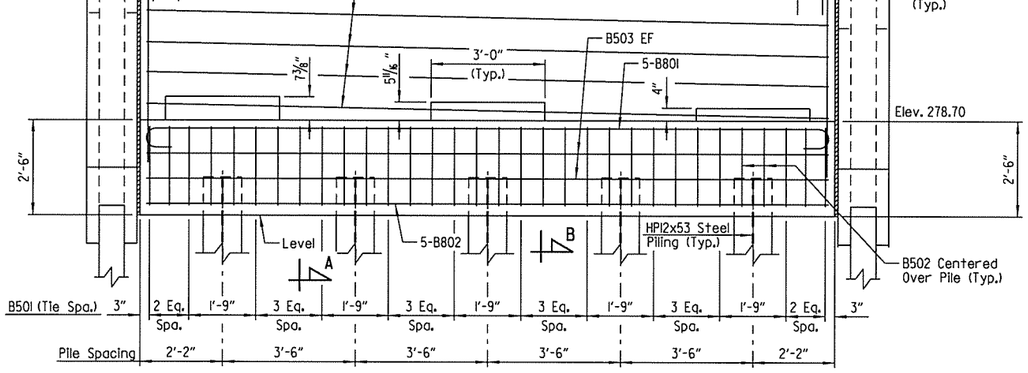
SECTION A-A

Scale: 3/4" = 1'-0"



END BENT WALL ARMOR DETAIL

No Scale

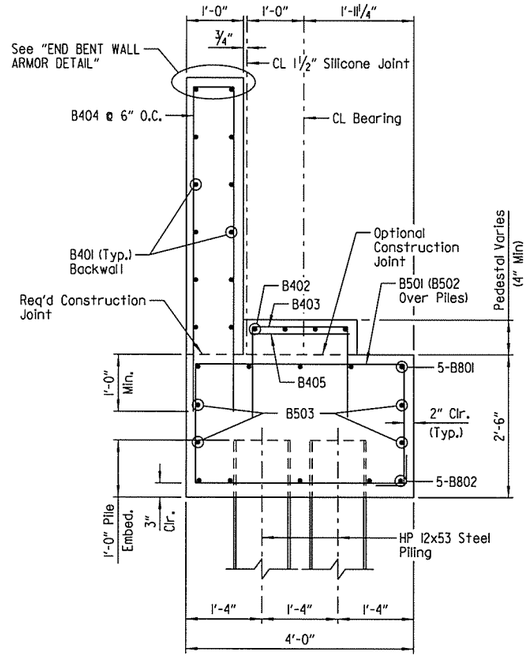


ELEVATION

(Looking Forward)
Scale: 1/2" = 1'-0"

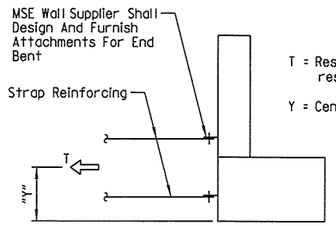
LEGEND

EF = Each Face



SECTION B-B

Scale: 3/4" = 1'-0"



T = Resultant Force required to be resisted by strap reinforcing.

Y = Centroid of strap reinforcing.

LIMIT STATE	T	Y
	Kips/Ft	Ft
Service	3.1	3.5
Strength	4.7	
Extreme	3.4	

END BENT STRAP DETAIL

No Scale

NOTE:
For "SECTION D-D", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54559.

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638. Cleaning and painting will be paid for under the item "PAINTING STRUCTURAL STEEL".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENT NO. 4
SOUTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x5_B4.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54558

SRYancey 5/29/2014 4:44:57 PM
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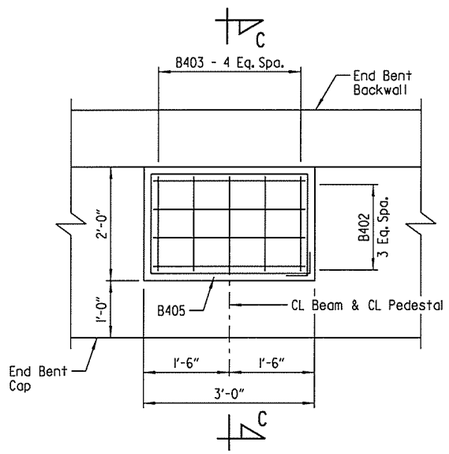
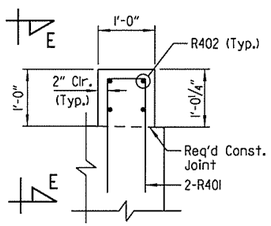
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x5_B4 (End Bent No. 4).dgn
REVISED DATE:

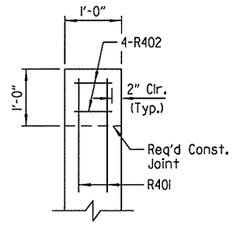
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	335	505
				① 04927		END BENT DETAILS		54559



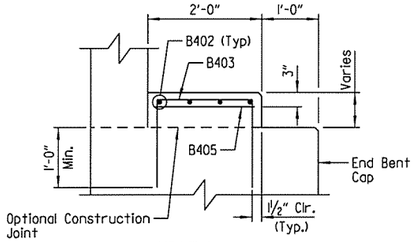
PLAN VIEW



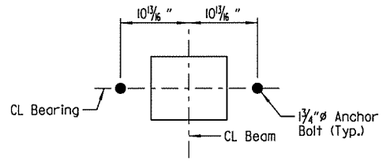
SECTION D-D
Scale: ¾" = 1'-0"



VIEW E-E
Scale: ¾" = 1'-0"



SECTION C-C



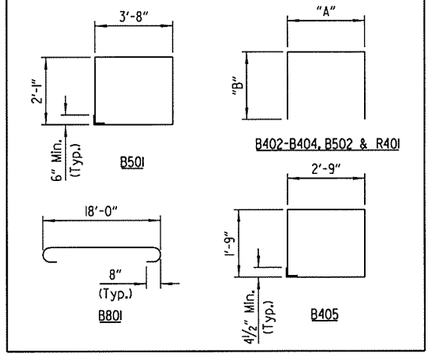
TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

PEDESTAL DETAIL
Scale: ¾" = 1'-0"

BAR LIST

MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	12	18'-0"			Str.
B402	12	5'-8"	2'-8"	1'-7"	2"
B403	15	4'-8"	1'-8"	1'-7"	2"
B404	38	12'-0"	8"	5'-9"	2"
B405	3	9'-4"			2"
B501	22	12'-0"			2½"
B502	10	7'-7½"	3'-8"	2'-1"	2½"
B503	4	18'-0"			Str.
B801	5	19'-10"			6"
B802	5	18'-0"			Str.
R401	4	5'-3½"	10"	2'-4"	2"
R402	8	8"			Str.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENT NO. 4
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x5_B5.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013
BRIDGE NO. 04927 DRAWING NO. 54559

SRYancey 5/29/2014 4:44:58 PM
WORKSPACE: AHTD Bridge
L:\20IN\I0TO80 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_B5 (End Bent No. 4 Details).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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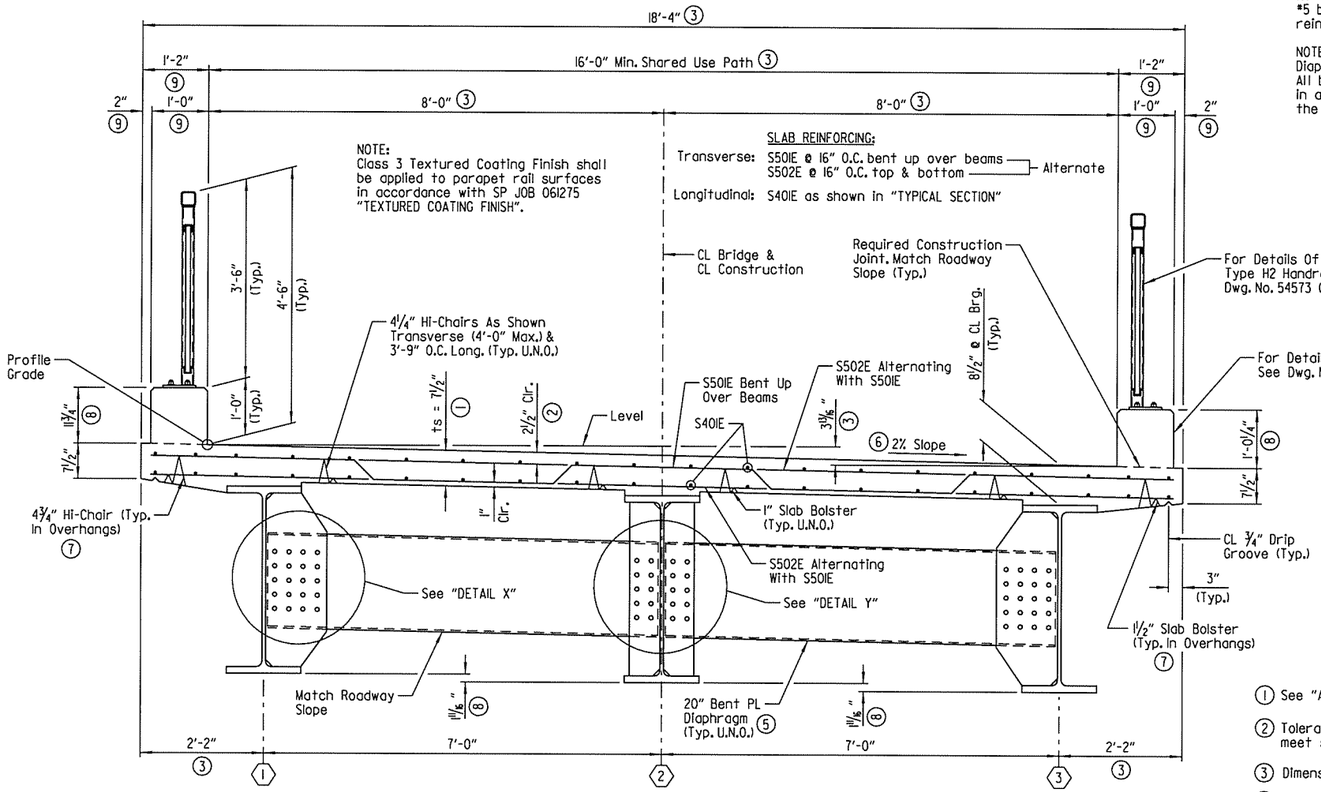
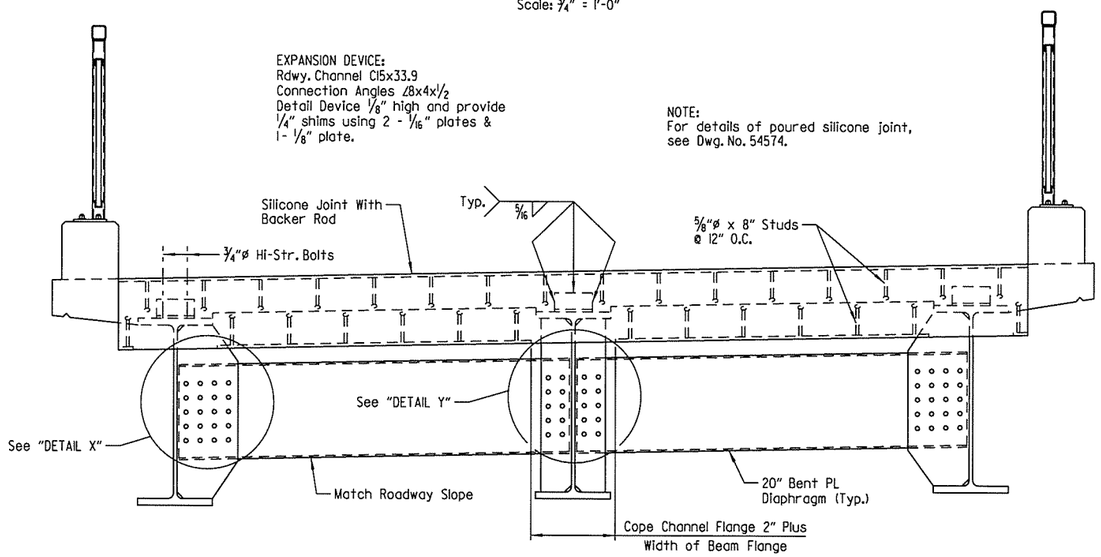
				JOB NO.		061275	336	505
				(1) 04927		100'-0" W-BEAM SPAN		54560



TYPICAL SECTION
(Looking Forward)
Scale: ¾" = 1'-0"



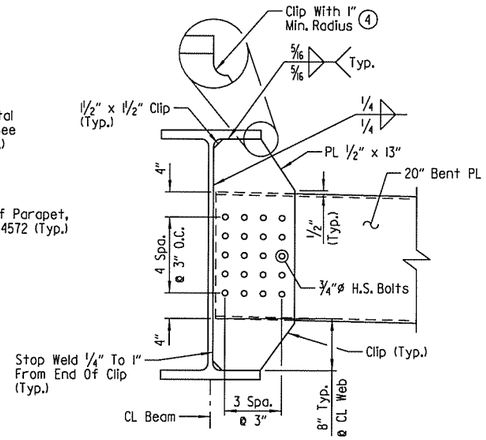
TYPICAL SECTION THRU JOINT AT BENT 2
(Looking Back)
Scale: ¾" = 1'-0"

NOTE:
Roadway channel, connection angles, and other joint armor not required for poured silicone joint at Begin Bridge.

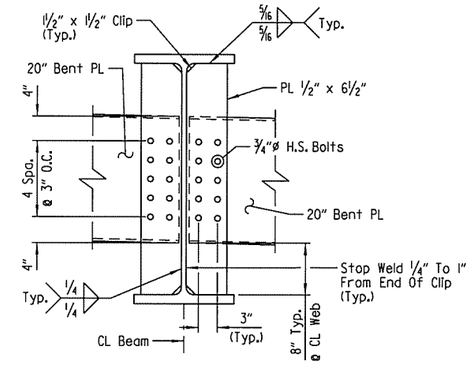
LEGEND
U.N.O. = Unless Noted Otherwise

NOTE:
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S501E. Payment for reinforcing will be based on the weight of bar S501E.

NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.



DETAIL X
Scale: 1" = 1'-0"



DETAIL Y
Scale: 1" = 1'-0"

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) Dimension varies near Begin Bridge and in observation deck area.

(4) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

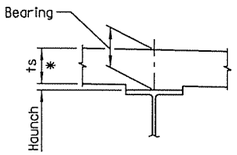
(5) See "FRAMING PLAN" on Dwg. No. 54563 for 20" Bent PL locations.

(6) Cross slope varies near Begin Bridge. See "SUPERELEVATION TRANSITION AT BEGIN BRIDGE" & "DECK TRANSITION DETAIL" on Dwg. No. 54561.

(7) Number and height of hi-chairs and slab bolsters shall be adjusted as necessary in regions of extended overhangs (near Begin Bridge and in observation deck area) to maintain 4'-0" maximum spacing and transverse reinforcement clearance requirements.

(8) Typical for constant 2% cross-slope in deck. Varies in areas of superelevation transition near Begin Bridge.

(9) Measured perpendicular or radial to edge of deck



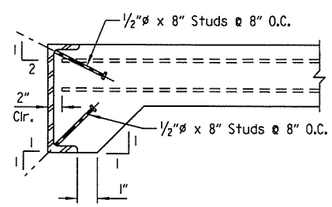
Note: t_s = Slab Thickness as shown on "TYPICAL SECTION"

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

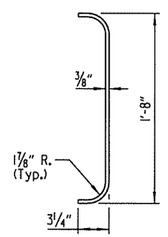
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



DETAIL OF ALTERNATE ANCHORS
No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.



BENT PLATE DETAIL
Scale: 1½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

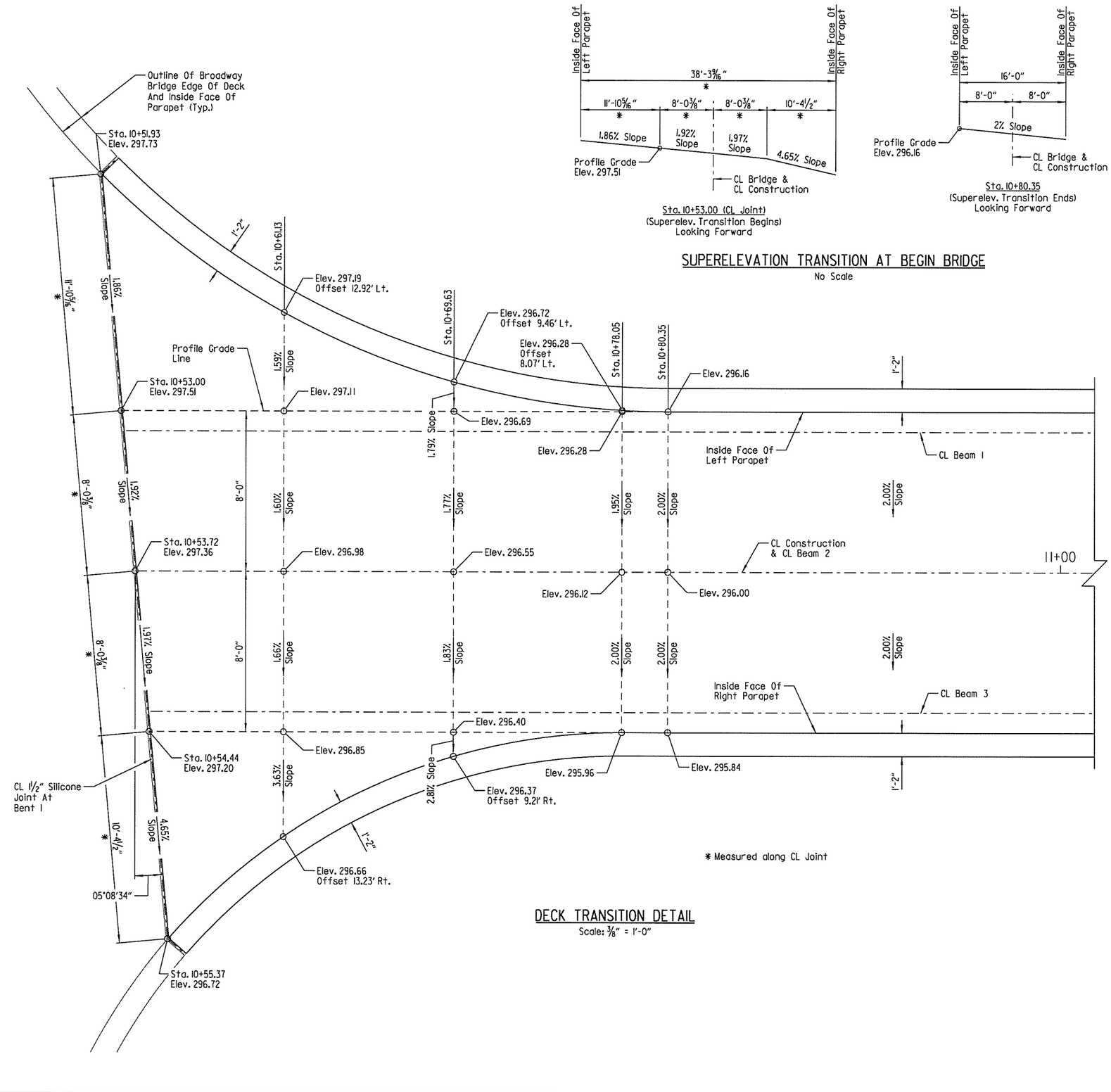
SHEET 1 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JUN. 2013 FILENAME: B061275x5_S1.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUN. 2013
BRIDGE NO. 04927 DRAWING NO. 54560

SRYancey 5/29/2014 4:44:59 PM
WORKSPACE: AHTD Bridge
L:\x20IN\I0TOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x5.S1100' Typ. Sec1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	337	505
				(1) 04927		100'-0" W-BEAM SPAN		54561



* Measured along CL Joint

DECK TRANSITION DETAIL

Scale: ⅜" = 1'-0"

Sta. 10+53.00 (CL Joint)
(Superelev. Transition Begins)
Looking Forward

Sta. 10+80.35
(Superelev. Transition Ends)
Looking Forward

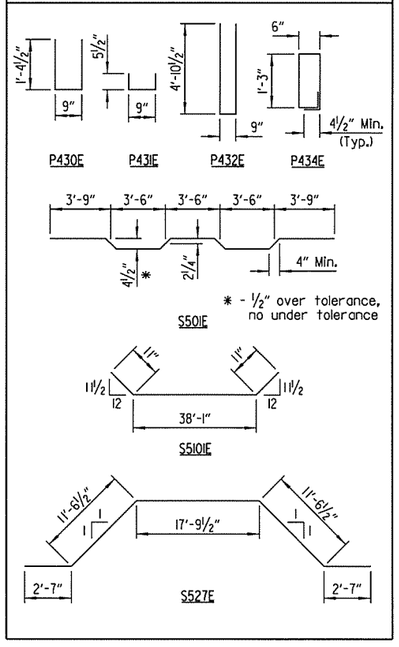
SUPERELEVATION TRANSITION AT BEGIN BRIDGE

No Scale

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
P430E	396	3'-4"	2"
P431E	32	1'-6"	2"
P432E	24	10'-4"	2"
P433E	16	32'-8"	Str.
P434E	32	3'-10"	2"
P435E	4	8'-10"	Str.
P436E	4	8'-7"	Str.
P437E	16	10'-11"	Str.
P438E	4	16'-9"	Str.
P439E	4	17'-4"	Str.
S401E	120	35'-3"	Str.
S402E	2	2'-1½"	Str.
S403E	2	3'-2½"	Str.
S404E	2	4'-4½"	Str.
S405E	2	5'-8"	Str.
S406E	2	7'-1"	Str.
S407E	2	8'-8½"	Str.
S408E	2	10'-6½"	Str.
S409E	2	12'-8"	Str.
S410E	2	15'-3½"	Str.
S411E	2	18'-10½"	Str.
S412E	2	15'-11½"	Str.
S413E	2	12'-9"	Str.
S414E	2	10'-4½"	Str.
S415E	2	8'-4½"	Str.
S416E	2	6'-8½"	Str.
S417E	2	5'-2½"	Str.
S418E	2	3'-10½"	Str.
S419E	2	2'-8"	Str.
S420E	2	30'-8½"	Str.
S421E	2	24'-9"	Str.
S501E	31	18'-5"	3"
S502E	64	18'-0"	Str.
S503E To S514E	4 Each	19'-3½" To 33'-11½"	Str.
S515E	52	34'-0"	Str.
S516E To S526E	4 Each	19'-4" To 32'-8"	Str.
S527E	4	46'-0½"	3"
S528E To S546E	2 Each	14'-6" To 17'-1"	Str.
S547E To S561E	2 Each	17'-4" To 22'-9½"	Str.
S562E To S580E	2 Each	6'-10" To 9'-4½"	Str.
S581E To S595E	2 Each	9'-8" To 16'-7½"	Str.
S596E To S5100E	2 Each	8'-6" To 35'-8½"	Str.
S5101E	2	39'-11"	3"

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

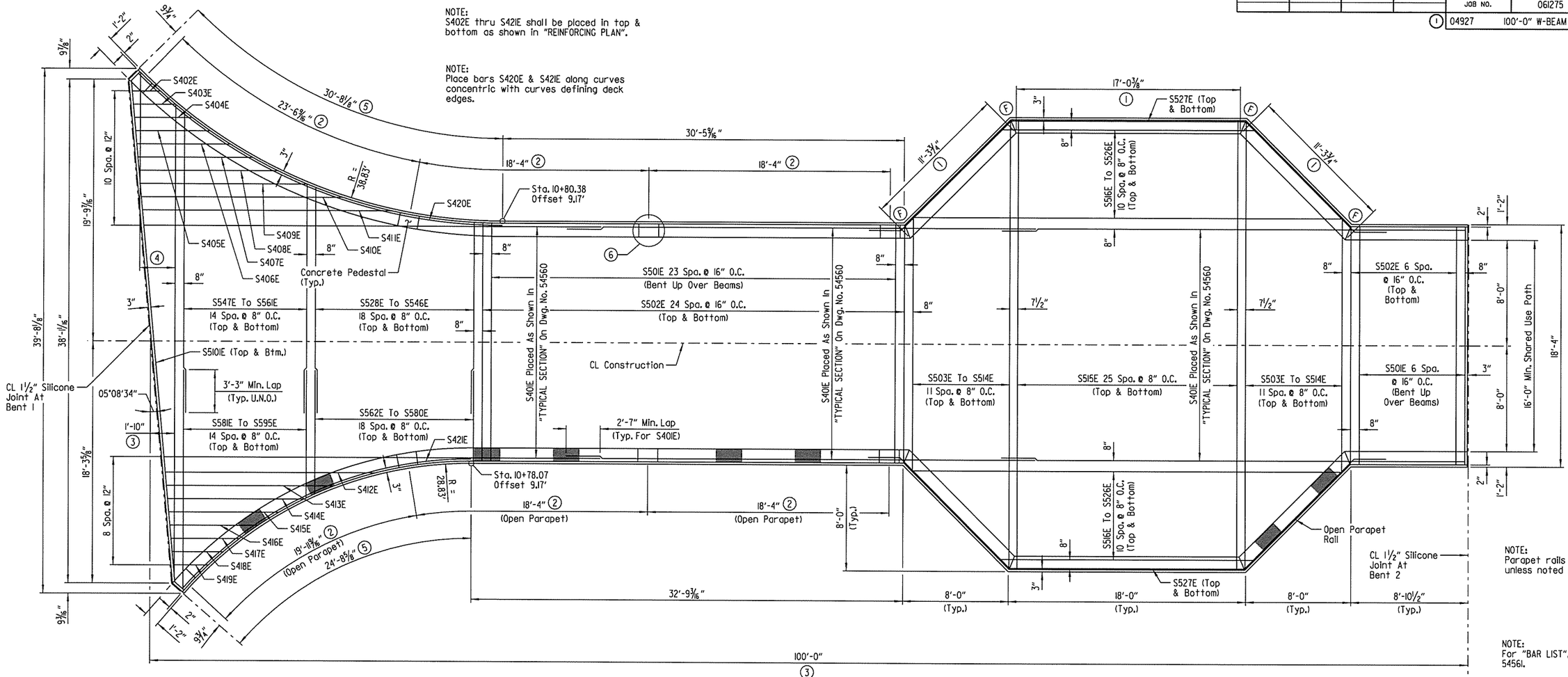
DRAWN BY: ABH DATE: JUN. 2013 FILENAME: B061275x5_S2.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUN. 2013
BRIDGE NO. 04927 DRAWING NO. 54561

SRYancey 5/29/2014 4:44:59 PM
WORKSPACE: AHTD Bridge
L:\ZONING\0080 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S2 100' Typ. Sec.-21.dgn
REVISED DATE:

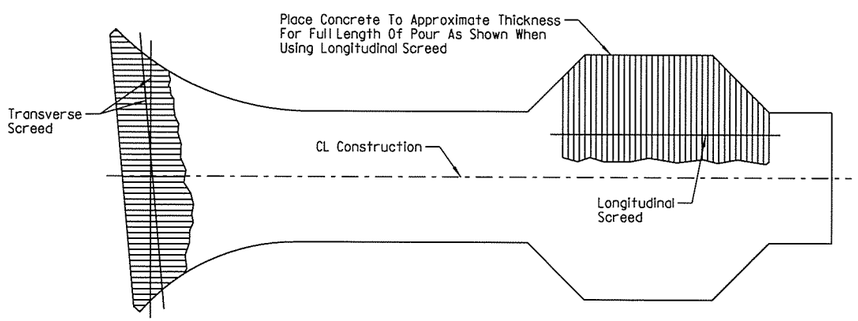
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	338	505
				(1) 04927		100'-0" W-BEAM SPAN		54562

NOTE:
S402E thru S421E shall be placed in top & bottom as shown in "REINFORCING PLAN".

NOTE:
Place bars S420E & S421E along curves concentric with curves defining deck edges.

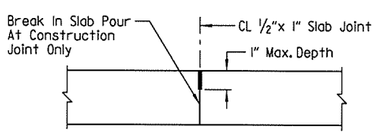


REINFORCING PLAN
Scale: ¼" = 1'-0"



NOTE:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Construction.

CONCRETE PLACEMENT PROCEDURE
No Scale



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. Slab joints shall be placed at all pouring sequence construction joints. The joint sealer shall extend across the deck from gutterline to gutterline.

OPTIONAL SLAB JOINT DETAIL
No Scale

LEGEND
U.N.O. = Unless Noted Otherwise

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. For construction joint details, see "OPTIONAL SLAB JOINT DETAIL". A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

(1) Parapet joint spacing measured along gutterline (typ. both sides). Parapet joints designated with symbol (F) shall be stopped 4" from top of slab.

(2) Concrete pedestal spacing measured along gutterline

(3) Measured to intersection of CL Joint & CL Construction

(4) S596E To S5100E 4 Spa. @ 8" O.C. (Top & Bottom)

(5) Measured along edge of deck

(6) Light Pole Pedestal, see Dwg. No. 54572 for details.

NOTE:
Parapet rails are closed unless noted otherwise.

NOTE:
For "BAR LIST", see Dwg. No. 54561.

SHEET 3 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

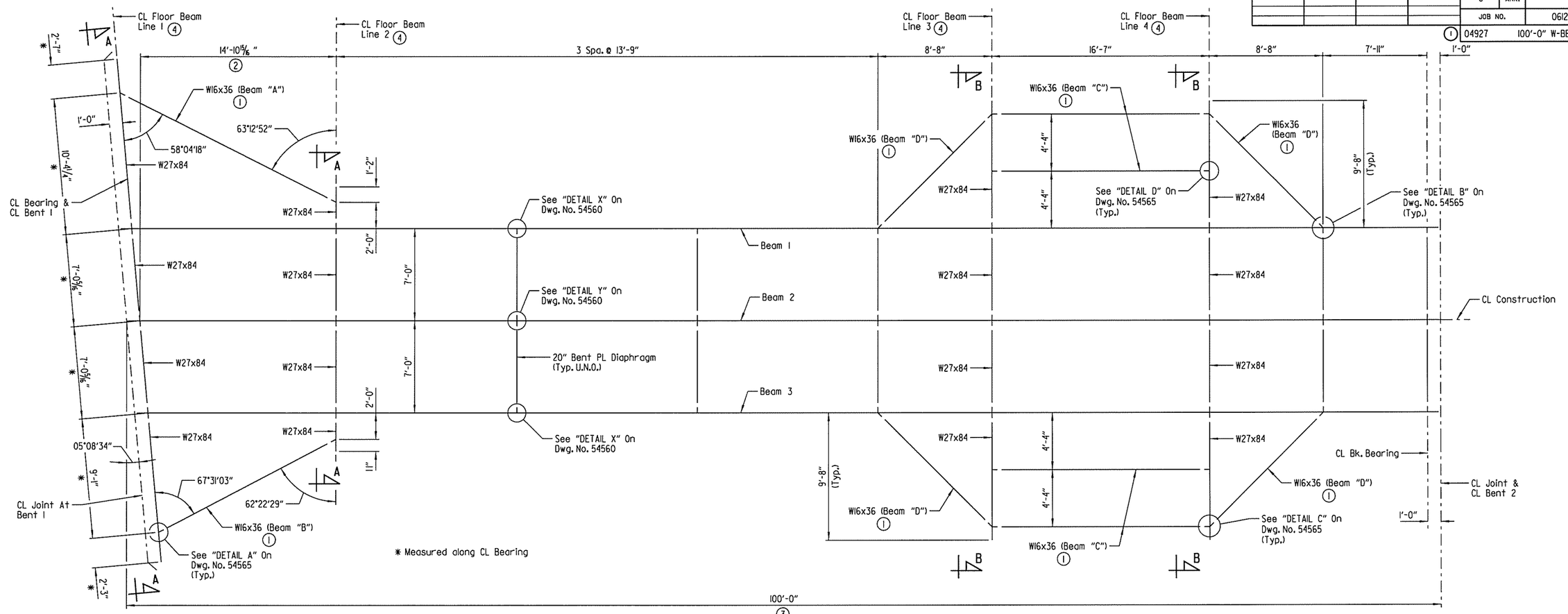
DRAWN BY: ABH DATE: JUN. 2013 FILENAME: B061275x5_S3.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUN. 2013

BRIDGE NO. 04927 DRAWING NO. 54562

SRTarcey 5/29/2014 4:45:00 PM
WORKSPACE: AHTD Bridge
L:\ROW\WOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S3 100' Slab Plan1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

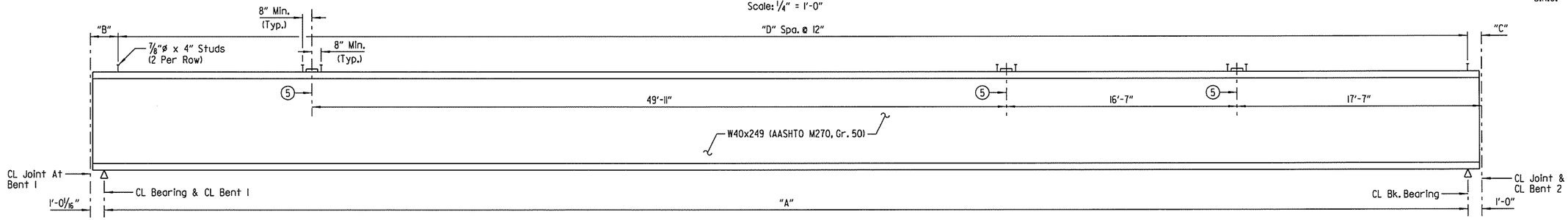
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	339	505
① 04927		100'-0" W-BEAM SPAN		54563



* Measured along CL Bearing

FRAMING PLAN

Scale: 1/4" = 1'-0"



BEAM ELEVATION

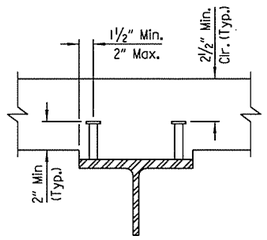
(Beams 1, 2 & 3)
No Scale

LEGEND

U.N.O. = Unless Noted Otherwise

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



SHEAR CONNECTOR DETAIL

No Scale

Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

TABLE OF BEAM VARIABLES				
Beam	"A"	"B"	"C"	"D"
1	98'-7 1/2"	1'-7 9/16"	1'-0"	98
2	97'-11 5/16"	1'-0"	1'-0"	98
3	97'-4 3/8"	1'-8"	8 7/16"	97

① See Dwg. No. 54565 for shear stud spacing & "TABLE OF VARIABLES" for Beam "A", Beam "B", Beam "C" & Beam "D".

② Measured to intersection of CL Construction & CL Bearing

③ Measured to intersection of CL Construction & CL Joint

④ For "SECTION A-A", "SECTION B-B" & floor beam details for each support line, see Dwg. No. 54564.

⑤ CL top flange splice plate for W27x84 floor beam, as detailed on Dwg. Nos. 54564-54565. Locations shown are for beams 1 & 3 only. Provide gap in shear studs to clear splice plate at these locations.

Bolt holes in top flange of beams 1 & 3 are required for W27x84 splice plate connections. See "FLOOR BEAM SPLICE DETAIL" on Dwg. No. 54565.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

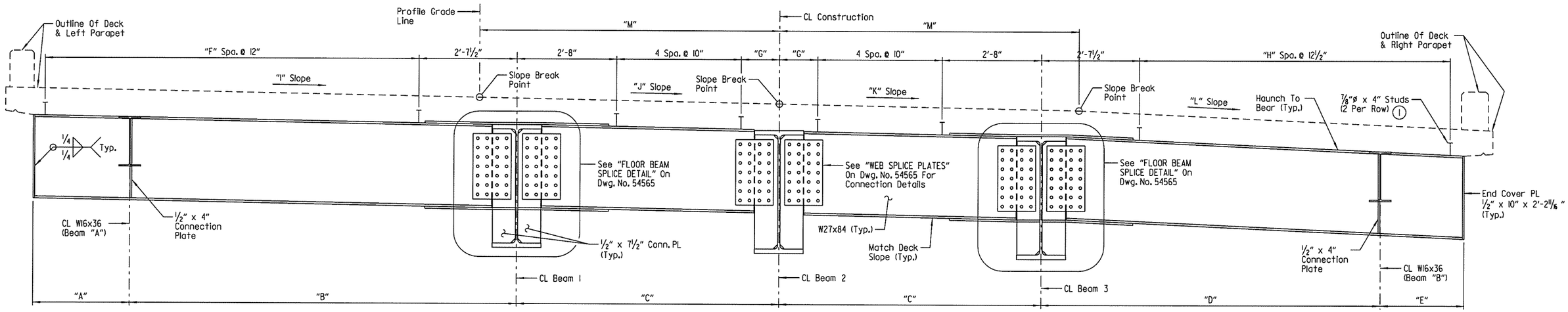
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JUNE 2013 FILENAME: B061275x5_S4.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUNE 2013
BRIDGE NO. 04927 DRAWING NO. 54563

SRYancey 5/29/2014 4:45:01 PM
WORKSPACE: AHTD Bridge
L:\X2DWGMDT08D - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S4 (100' Framing).dgn
REVISED DATE:

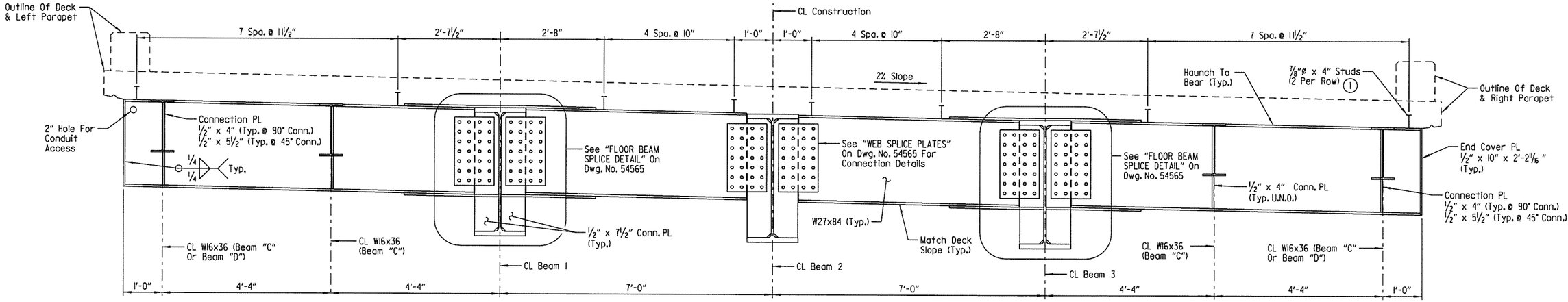
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	340	505
				(1) 04927		100'-0" W-BEAM SPAN		54564

(1) See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54563



SECTION A-A

(Elevation Of Floor Beam Lines 1 & 2)
(Dimensions shown measured along length of W27x84)
Scale: ¾" = 1'-0"



SECTION B-B

(Elevation Of Floor Beam Lines 3 & 4)
(Dimensions shown measured along length of W27x84)
Scale: ¾" = 1'-0"

TABLE OF VARIABLES FOR SECTION A-A													
Floor Beam Line	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"
1	2'-7"	10'-4¼"	7'-0⅝"	9'-1"	2'-3"	10	1'-0⅝"	8	1.86%	1.92%	1.97%	4.65%	8'-0⅜"
2	1'-2"	2'-0"	7'-0"	2'-0"	11"	0	1'-0"	0	1.79%	1.77%	1.83%	2.81%	8'-0"

NOTE:
See "FRAMING PLAN" on Dwg. No. 54563 for location of Floor Beam Lines 1, 2, 3 & 4.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

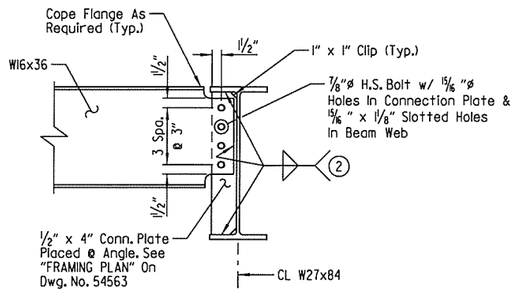
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JUNE 2013 FILENAME: B061275x5_S5.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUNE 2013
BRIDGE NO. 04927 DRAWING NO. 54564

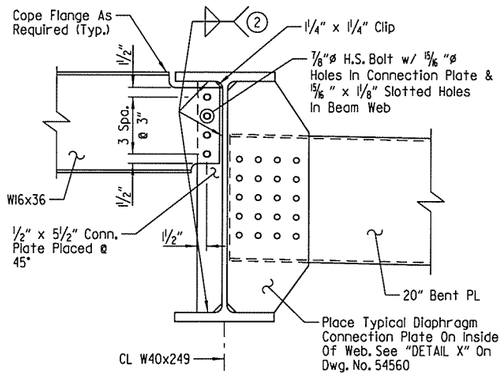
SRYancey 5/29/2014 4:45:01 PM
WORKING\Proj. AHTD Bridge
LAYOUT\NOT060 Broadway Bridge over the Arkansas River\Drawings\B061275x5_S5 100' SteelDtls1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	341	505
				(1) 04927		100'-0" W-BEAM SPAN		54565



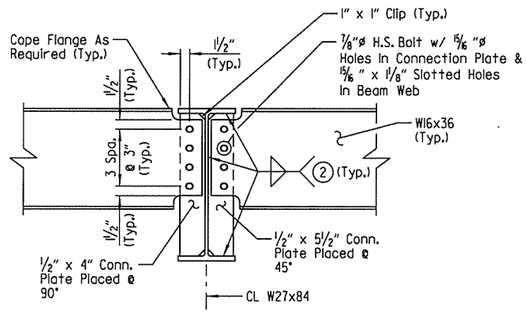
DETAIL A

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale



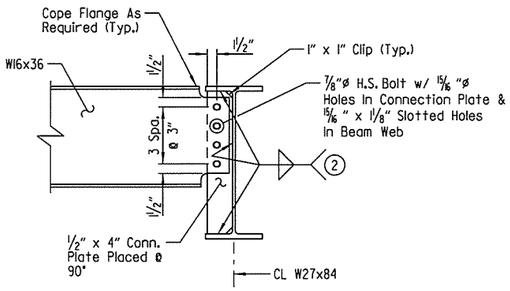
DETAIL B

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale



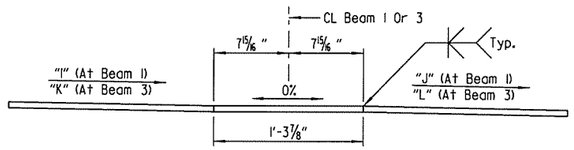
DETAIL C

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale



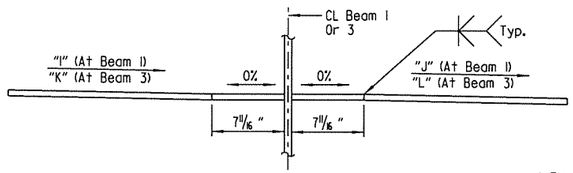
DETAIL D

No Scale



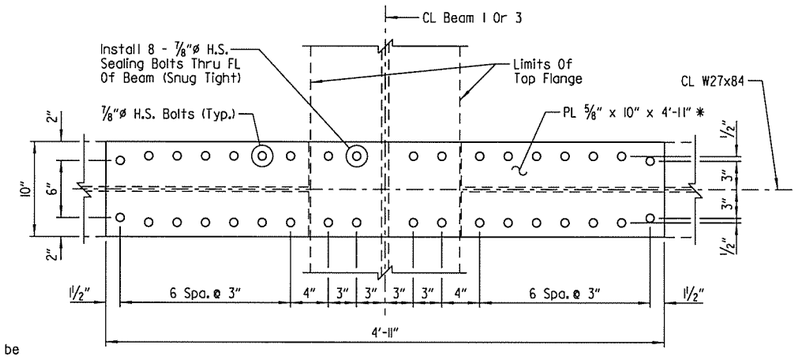
TOP FLANGE SPLICE PLATE DETAIL

(Looking Forward)



BOTTOM FLANGE SPLICE PLATE DETAIL

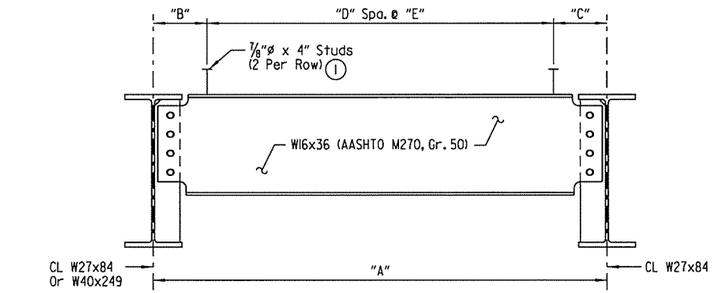
(Looking Forward)



TOP FLANGE SPLICE PLATE

(Web splice plates omitted for clarity.)

* Flange splice plates shall be fabricated to accomodate break in cross slope (See Detail).



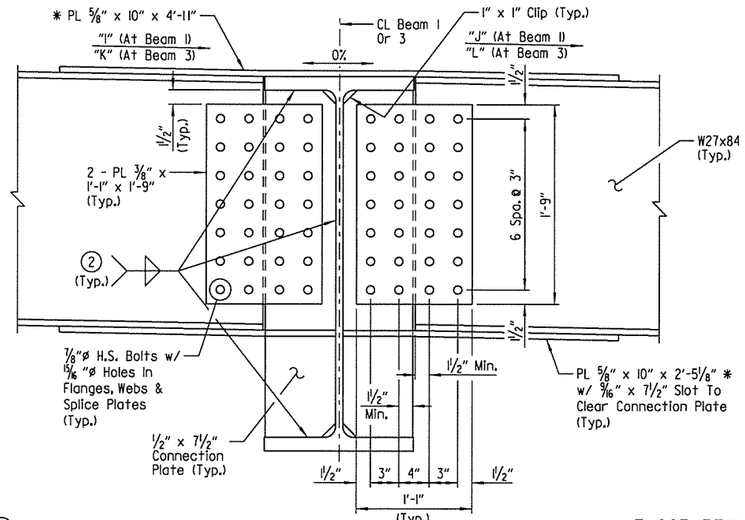
W16X36 BEAM ELEVATION

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale

TABLE OF VARIABLES					
Beam	"A"	"B"	"C"	"D"	"E"
"A"	18'-5 3/16"	11 1/16"	10 3/8"	16	12½"
"B"	15'-2 3/16"	9 5/16 "	10½"	12	13½"
"C"	16'-7"	9½"	9½"	15	12"
"D"	12'-3 3/16"	1'-5½"	1'-0 9/16"	9	13"

NOTE:
See "FRAMING PLAN" on Dwg. No. 54563 for location of Beams "A", "B", "C" & "D".

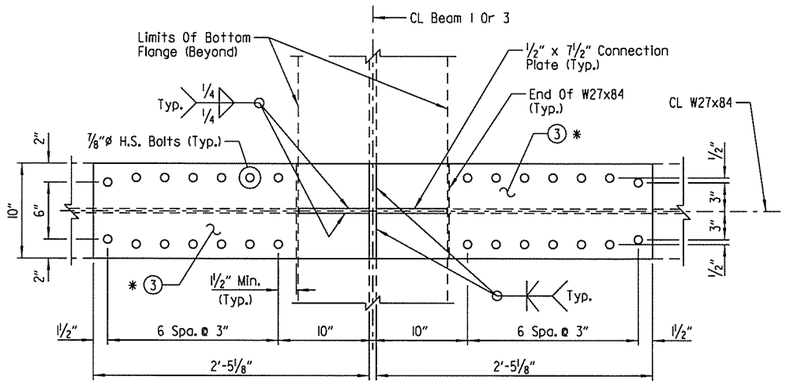
① See "SHEAR CONNECTOR DETAIL" on Dwg. No. 54563.



② See "TABLE FOR WELDS" on Dwg. No. 54563 for size. Stop weld ¼" to 1" from end of clips.

WEB SPLICE PLATES

(Looking Forward)



BOTTOM FLANGE SPLICE PLATE

③ PL 5/8" x 10" x 2'-5⅛" w/ 9/16" x 7½" Slot To Clear Connection Plate

FLOOR BEAM SPLICE DETAIL

Scale: 1½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/29/14
BRIDGE ENGINEER

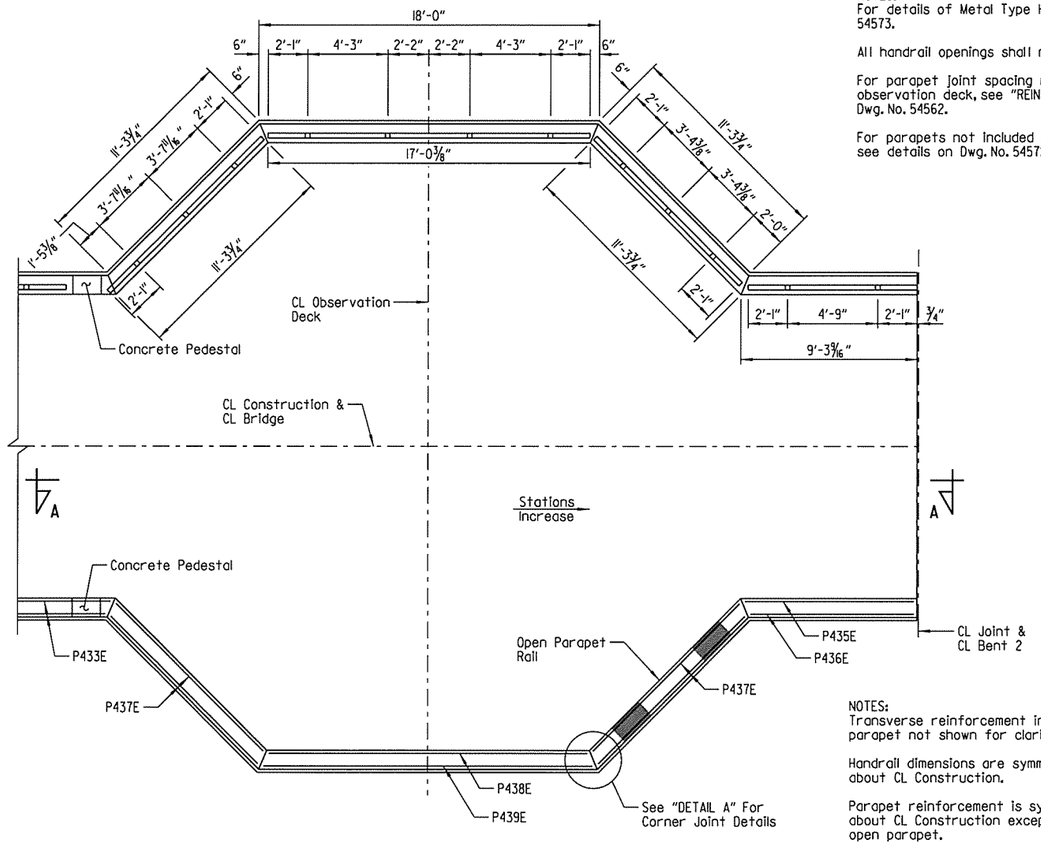
SHEET 6 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JUNE 2013 FILENAME: B061275x5_S6.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUNE 2013
BRIDGE NO. 04927 DRAWING NO. 54565

SRVarcasy 5/29/2014 4:45:02 PM
WORKGROUP: ANTD 2009
L:\v20\NV00T060 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S6 100' SteelDtls-2i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	342	505
				① 04927		100'-0" W-BEAM SPAN		54566



NOTES:
For details of Metal Type H2 Handrail, see Dwg. No. 54573.

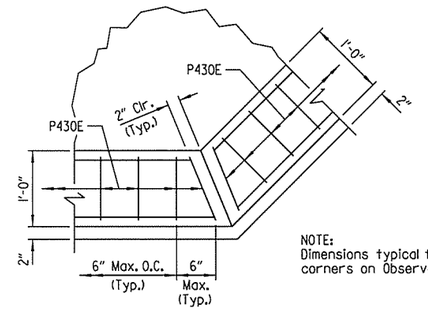
All handrail openings shall maintain a 4" max. spacing.

For parapet joint spacing not located on the observation deck, see "REINFORCING PLAN" on Dwg. No. 54562.

For parapets not included on the observation deck, see details on Dwg. No. 54572.

PARAPET DETAIL AT OBSERVATION DECK

(Top Half Showing Handrail Details)
(Bottom Half Showing Reinforcing Details)
Scale: 1/4" = 1'-0"



NOTE:
Dimensions typical for all corners on Observation Deck.

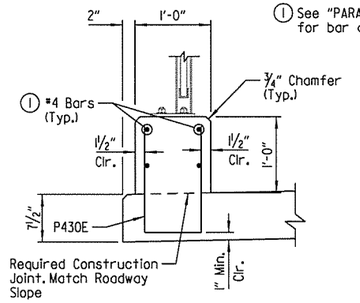
DETAIL A

Scale: 1" = 1'-0"

NOTES:
Transverse reinforcement in parapet not shown for clarity.

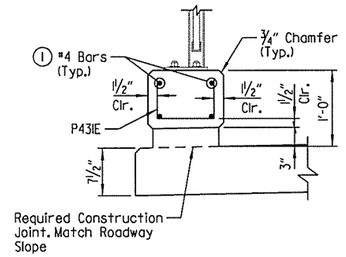
Handrail dimensions are symmetrical about CL Construction.

Parapet reinforcement is symmetrical about CL Construction except at open parapet.



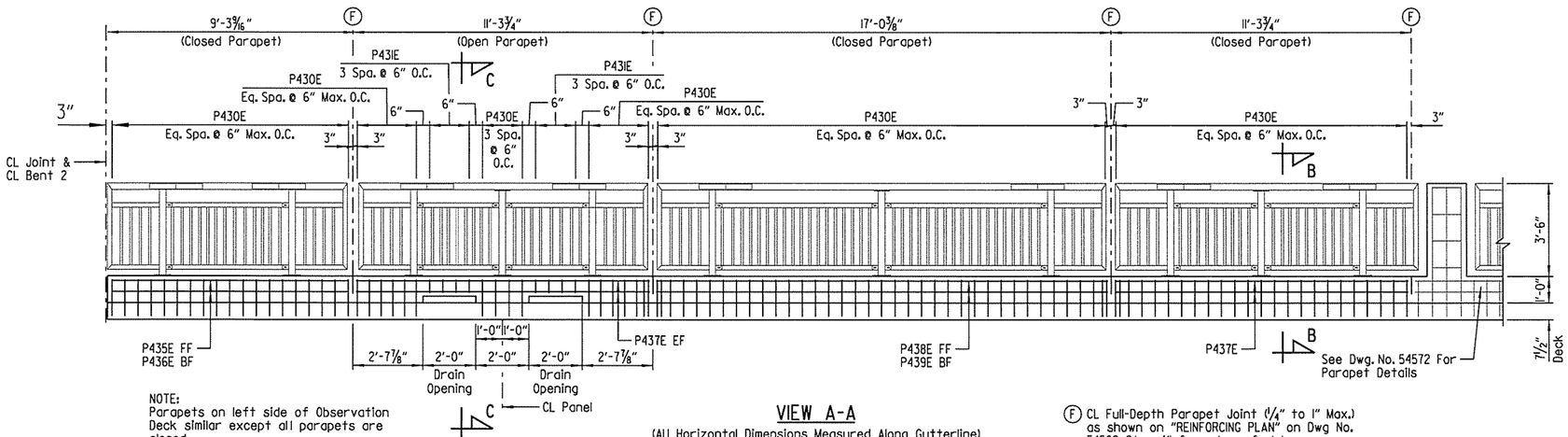
SECTION B-B

Scale: 1" = 1'-0"



SECTION C-C

Scale: 1" = 1'-0"



NOTE:
Parapets on left side of Observation Deck similar except all parapets are closed.

VIEW A-A

(All Horizontal Dimensions Measured Along Gutterline)
(Looking At Front Face)
Scale: 3/8" = 1'-0"

(F) CL Full-Depth Parapet Joint (1/4" to 1" Max.) as shown on "REINFORCING PLAN" on Dwg No. 54562. Stop 4" from top of slab.

LEGEND

EF = Each Face
FF = Front Face
BF = Back Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

SHEET 7 OF 7
DETAILS OF 100'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

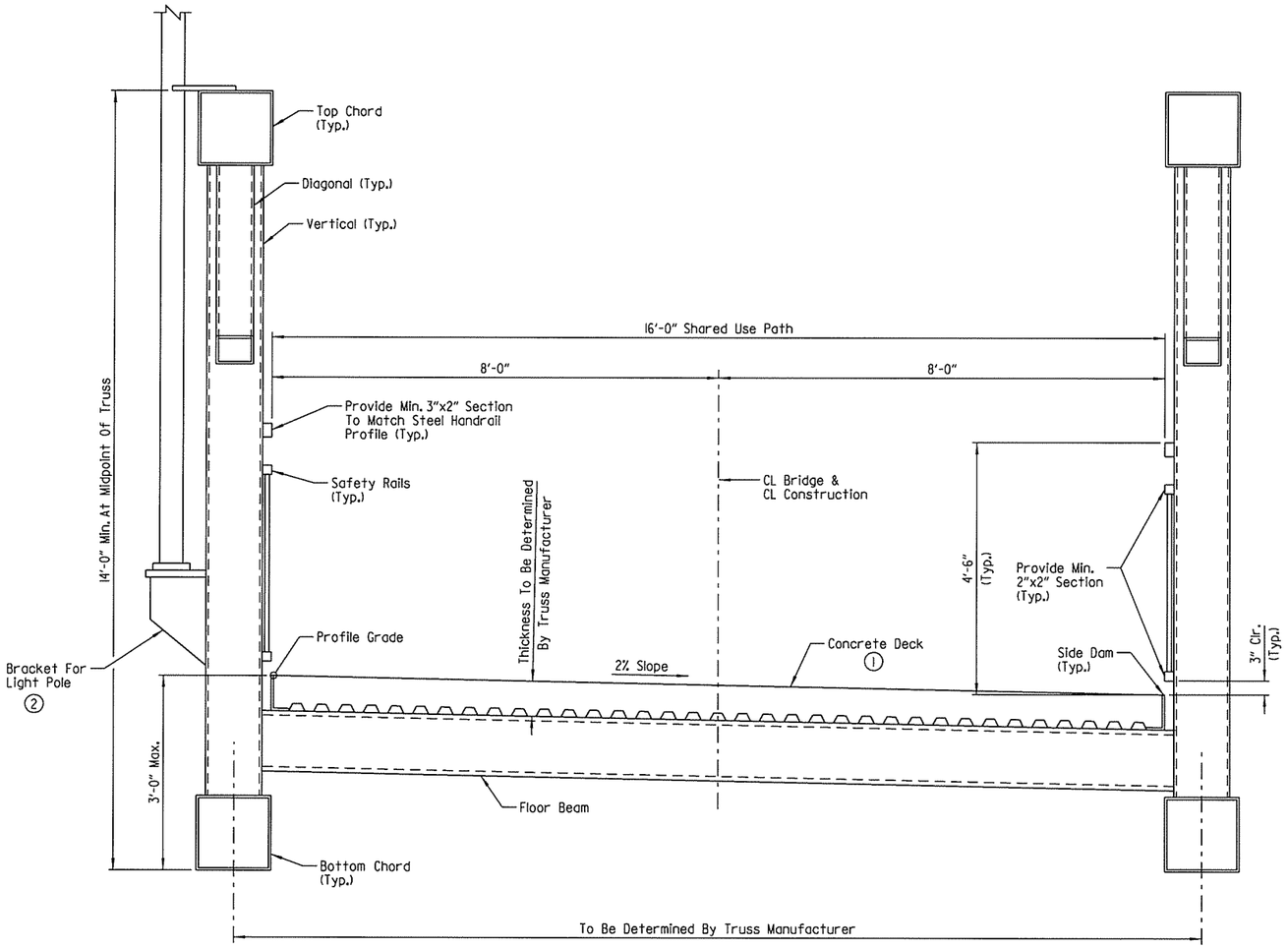
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUN. 2013 FILENAME: B061275x5_S7.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JUN. 2013

BRIDGE NO. 04927 DRAWING NO. 54566

SRYancey 5/29/2014 4:45:03 PM
WORKSPACE: AHTD Bridge
L:\2DWGS\TOBD - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S7 100' SpecialParapet & RailDtls1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	343	505
				① 04927		112'-0" PREFAB. TRUSS SPAN		54567



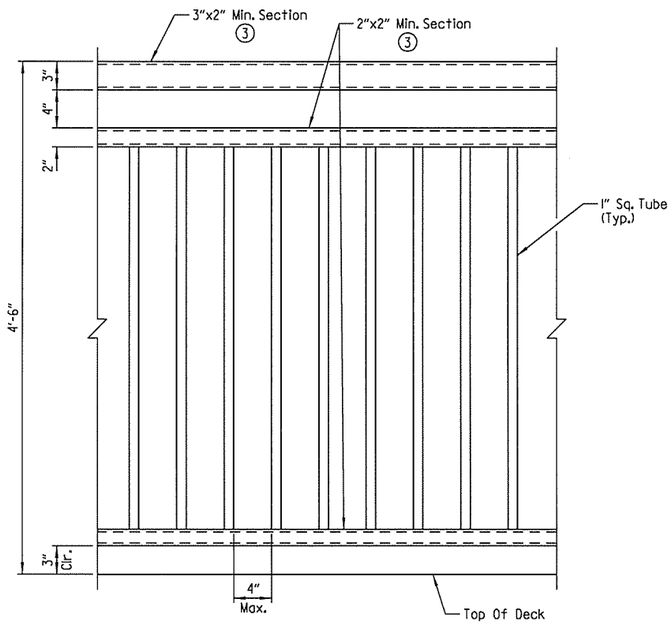
TYPICAL SECTION
(Looking Forward)
No Scale

① Concrete deck to be designed by Prefabricated Truss Supplier. Cost of deck shall be considered subsidiary to the item "PREFABRICATED STEEL TRUSS".

② Prefabricated Truss Supplier shall be responsible for designing and attachment for supporting light poles. See electrical sheets for lighting details.

ANCHOR BOLT DESIGN FORCES		
LOCATION	LONGITUDINAL	TRANSVERSE
Fixed	94%	48%
Expansion	0%	48%

NOTE:
Anchor bolts shall be designed in accordance with SP JOB 061275 "PREFABRICATED STEEL TRUSS". Forces are reported as a percentage of the total dead loads. Force percentages were increased by a factor of 2 to include the AHTD provision to use 50% of anchor bolt strength.



HANDRAIL ELEVATION
Scale: 1½" = 1'-0"

③ The sections shown match approximate dimensions of steel handrail on adjacent spans. The Truss Manufacturer shall design the handrail member to accomodate the handrail design loadings shown on Dwg. No. 54573.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF 112'-0" PREFABRICATED SIMPLE TRUSS SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

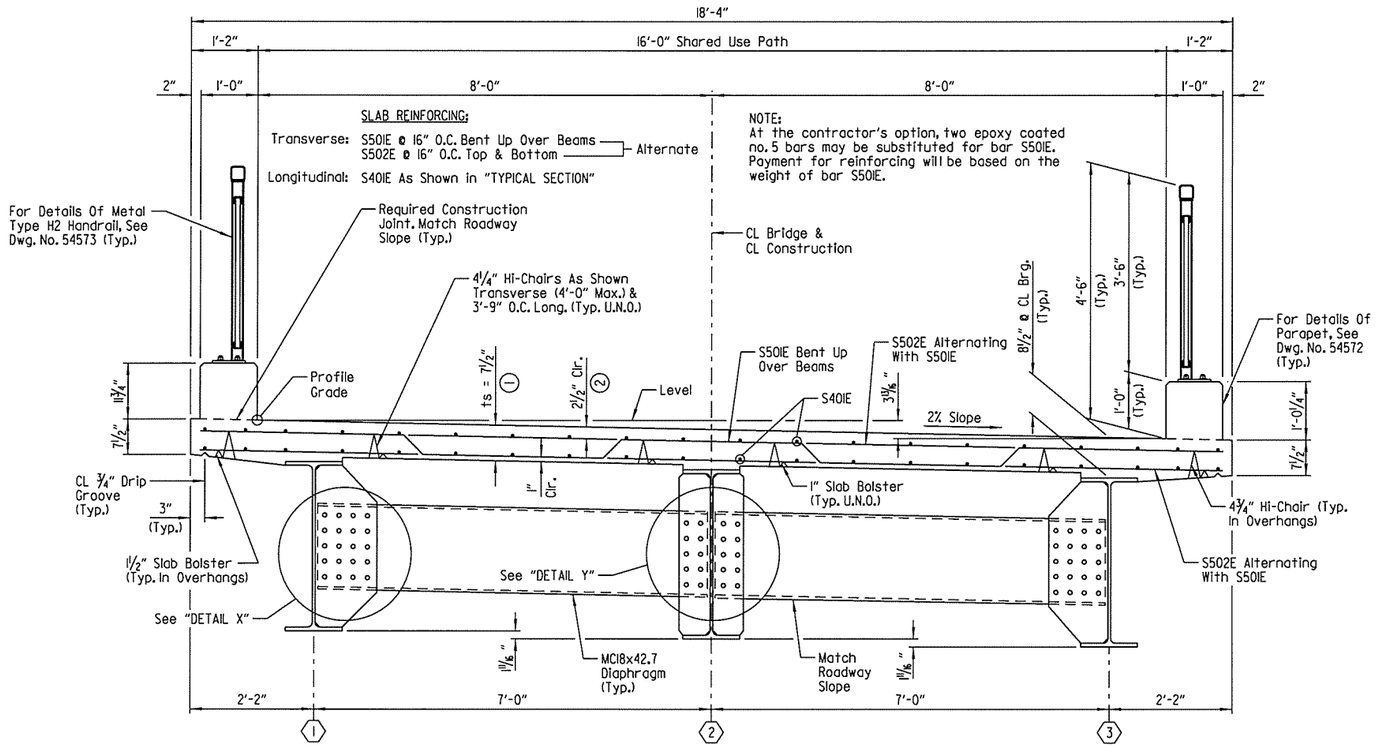
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x5_S8.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2013

BRIDGE NO. 04927 DRAWING NO. 54567

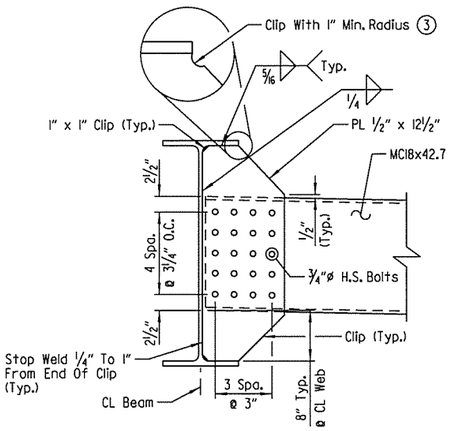
SRYancey 5/29/2014 4:45:03 PM
WORKSPACE: AHTD Bridge
L:\ENGN\0TOOO - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S8 112' PreFab Truss1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	344	505
				(1) 04927		75'-0" W-BEAM SPAN		54568

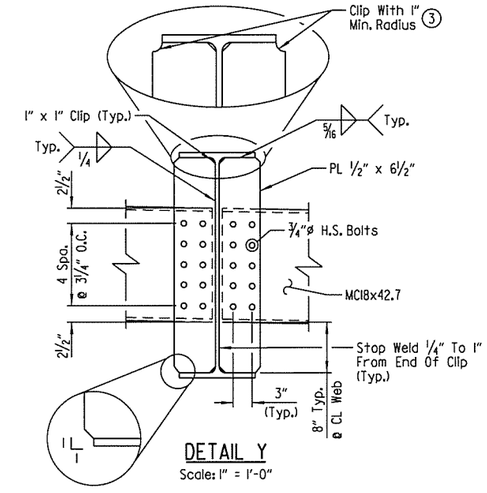


TYPICAL SECTION
(Looking Forward)
Scale: ¾" = 1'-0"

NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck unless otherwise noted.



DETAIL X
Scale: 1" = 1'-0"



DETAIL Y
Scale: 1" = 1'-0"

NOTE:
Class 3 Textured Coating Finish to be applied to parapet rail surfaces in accordance with SP JOB 061275 "TEXTURED COATING FINISH".

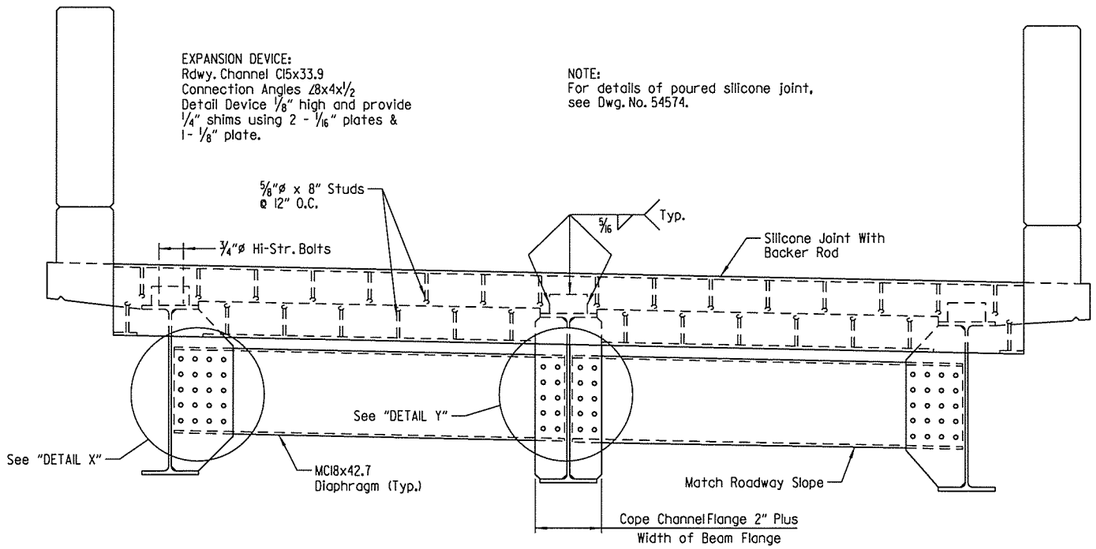
(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

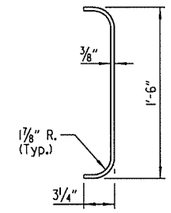
NOTE:
For details of poured silicone joint, see Dwg. No. 54574.

EXPANSION DEVICE:
Rdwy. Channel C15x33.9
Connection Angles ∠8x4x½
Detail Device ⅛" high and provide ¼" shims using 2 - 1/16" plates & 1- ⅛" plate.



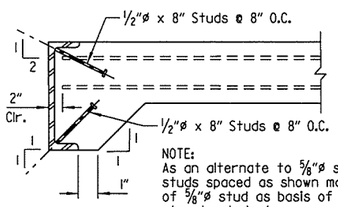
LEGEND
U.N.O. = Unless Noted Otherwise

TYPICAL SECTION THRU JOINT
(Looking Forward)
Scale: ¾" = 1'-0"



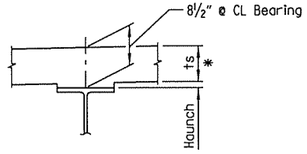
ALTERNATE BENT PLATE DETAIL
Scale: 1½" = 1'-0"

NOTE:
Contractor may elect to fabricate a bent plate diaphragm as shown in lieu of the MC18x42.7 diaphragm. Cost to construct bent plate diaphragm shall be at the Contractor's expense.



NOTE:
As an alternate to 5/8"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of structural steel.

DETAIL OF ALTERNATE ANCHORS
No Scale



Note: t_S = Slab Thickness as shown on "TYPICAL SECTION"

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 ¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x5_S9.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

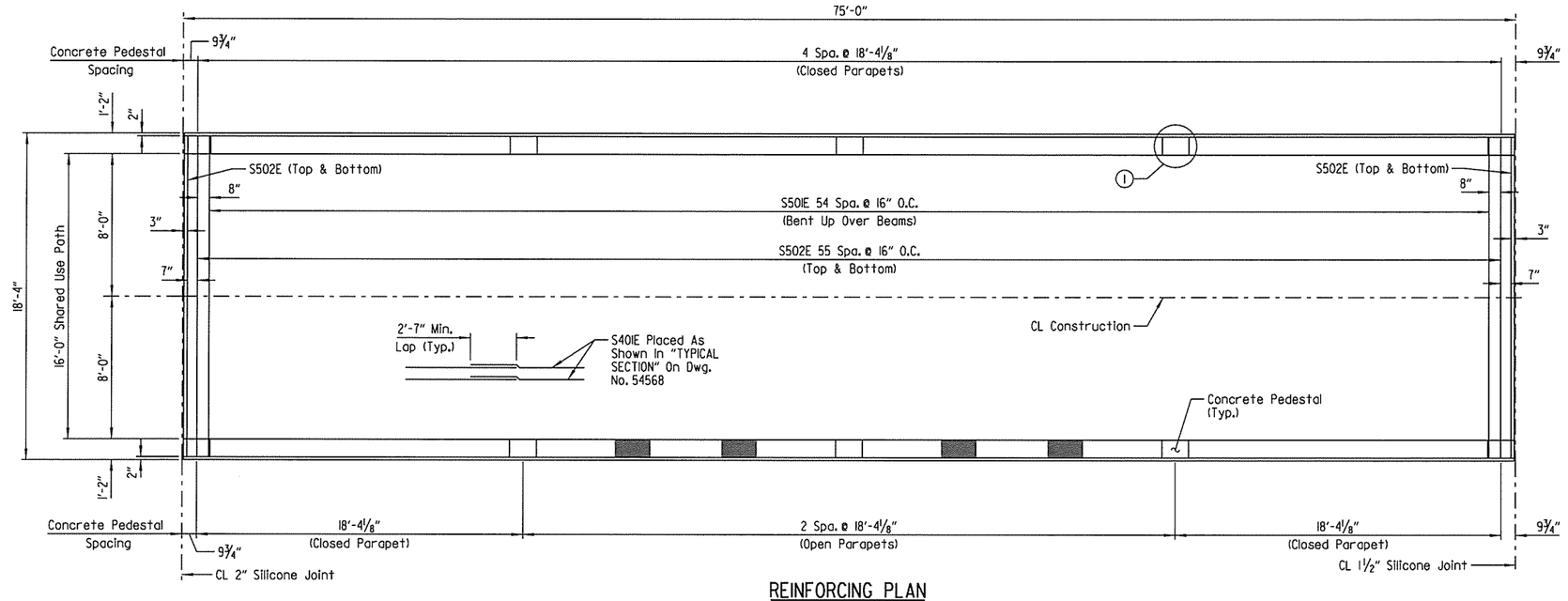
BRIDGE NO. 04927 DRAWING NO. 54568

SRYancey 5/29/2014 4:45:04 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S9 (75' Typ Section).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	345	505
① 04927		75'-0" W-BEAM SPAN		54569

① Light Pole Pedestal, see Dwg. No. 54572 for details.



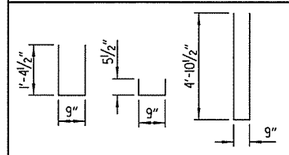
REINFORCING PLAN
Scale: ¼" = 1'-0"

NOTE:
Concrete pedestal spacing shown is measured to the centerline of each concrete pedestal.

BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.
S401E	80	38'-7"	Str.
S501E	55	18'-5"	3"
S502E	116	18'-0"	Str.
P430E	256	3'-4"	2"
P431E	16	1'-6"	2"
P432E	30	10'-4"	2"
P433E	16	38'-7"	Str.
P434E	40	3'-10"	2"

BAR BENDING DIAGRAM



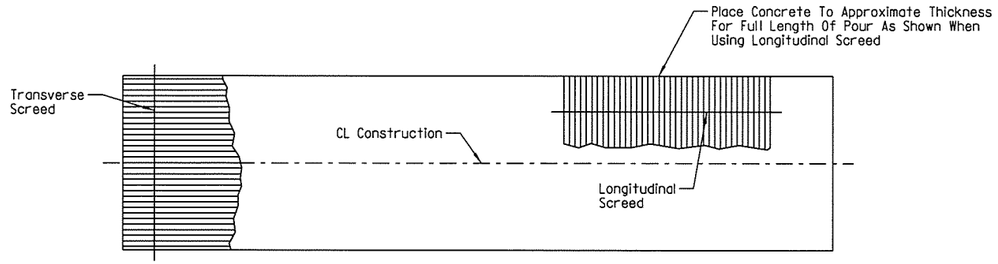
* - ½" over tolerance, no under tolerance

NOTE:
Dimensions of bars are out-to-out.

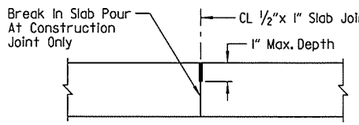
Bar designations ending with "E" indicate epoxy coated bars.

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. For construction joint details, see "OPTIONAL SLAB JOINT DETAIL". A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.



CONCRETE PLACEMENT PROCEDURE
No Scale



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. Slab joints shall be placed at all pouring sequence construction joints. The joint sealer shall extend across the deck from gutterline to gutterline.

OPTIONAL SLAB JOINT DETAIL
No Scale

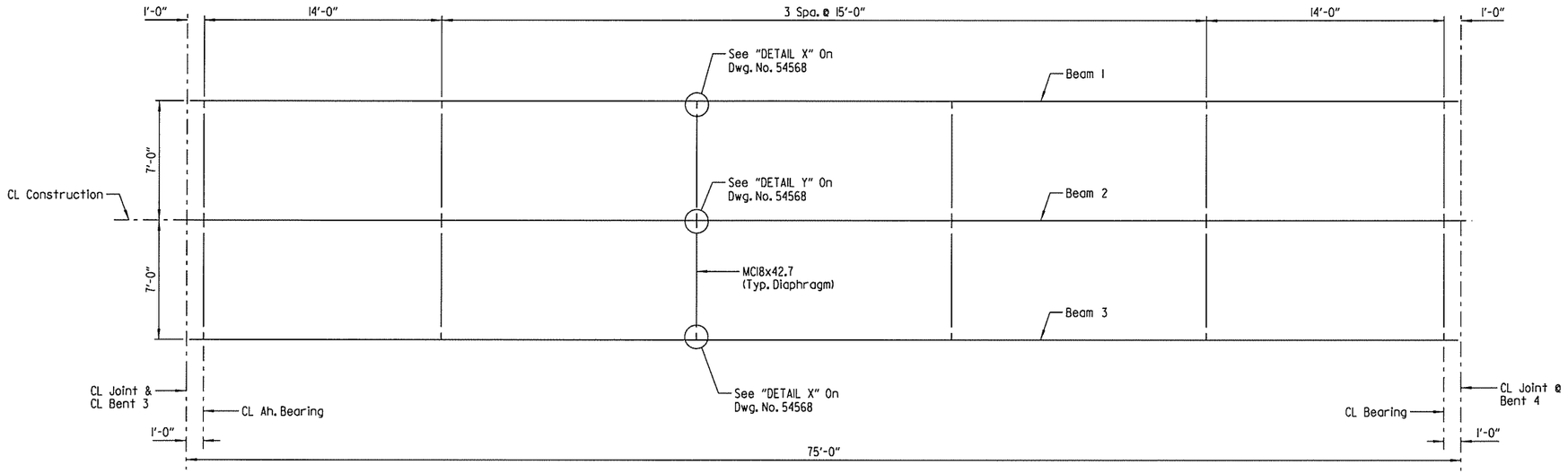
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

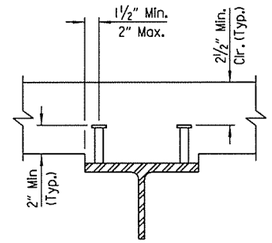
DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x5.S10.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 04927 DRAWING NO. 54569

SRYancey 5/29/2014 4:45:04 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOD - Broadway Bridge over the Arkansas River\Drawings\B061275x5.S10 (75' Slab Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	346	505
				(1) 04927		75'-0" W-BEAM SPAN		54570

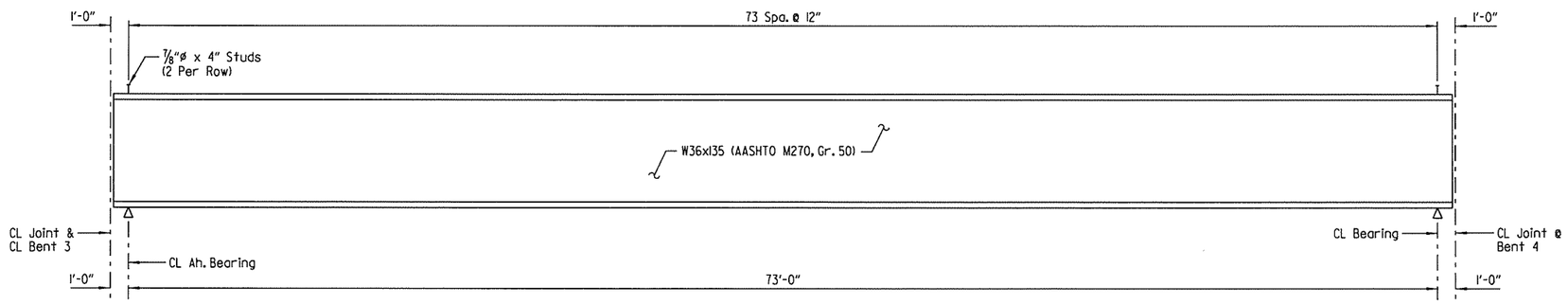


FRAMING PLAN
Scale: 1/4" = 1'-0"



SHEAR CONNECTOR DETAIL
No Scale

Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.



BEAM ELEVATION
(Beams 1, 2 & 3)
No Scale

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTE:
For "GENERAL NOTES", see Dwg. No. 54571.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x5_SII.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 04927 DRAWING NO. 54570

SRYancey 5/29/2014 4:45:05 PM
WORKSPACE: AHTD Bridge
L:\CON\NOT\080 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_SII(75' Framing Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	347	505
				①	04927	GENERAL SPAN DETAILS		54571

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a broomed finish in accordance with Subsection 802.19 for Class 6 Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. See "PROJECT GENERAL NOTES" for paint color and Federal Standard Color Chip No. All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Drawing No. 54575 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All beams, including W27x84 and W16x36 members, and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All beams shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the beams in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

All connection plates shall be fabricated normal to the top flange and on the side of the beam web as indicated on the framing plan.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

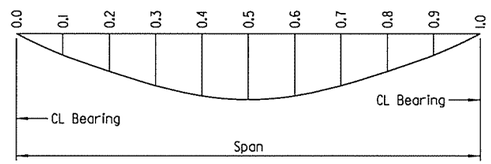
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Open holes shall be 13/16 "ø unless otherwise noted. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts wil l be paid for at the contract unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".



DEAD LOAD DEFLECTION DIAGRAM

No Scale

NOTE:
Camber for dead load deflection plus vertical curve +/- ¼" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing. Corrections for vertical curve and deck transitions are not included. Negative sign (-) indicates point above chord.

TABLE OF DEAD LOAD DEFLECTIONS - 100'-0" SPAN

Beam No.	All Beams		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.000	0.000	0.000
0.1	0.372	1.237	1.349
0.2	0.704	2.344	2.556
0.3	0.966	3.219	3.509
0.4	1.134	3.787	4.127
0.5	1.197	4.001	4.358
0.6	1.146	3.838	4.178
0.7	0.983	3.299	3.589
0.8	0.721	2.422	2.634
0.9	0.382	1.285	1.397
1.0	0.000	0.000	0.000

TABLE OF DEAD LOAD DEFLECTIONS - 75'-0" SPAN

Beam No.	Beams 1 & 3			Beam 2		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.000	0.000	0.000	0.000	0.000	0.000
0.1	0.138	0.616	0.695	0.138	0.726	0.800
0.2	0.261	1.165	1.315	0.261	1.373	1.514
0.3	0.357	1.596	1.802	0.357	1.880	2.073
0.4	0.418	1.869	2.110	0.418	2.202	2.428
0.5	0.439	1.963	2.216	0.439	2.313	2.550
0.6	0.418	1.869	2.110	0.418	2.202	2.428
0.7	0.357	1.596	1.802	0.357	1.880	2.073
0.8	0.261	1.165	1.315	0.261	1.373	1.514
0.9	0.138	0.616	0.695	0.138	0.726	0.800
1.0	0.000	0.000	0.000	0.000	0.000	0.000

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
5/28/14
BRIDGE ENGINEER

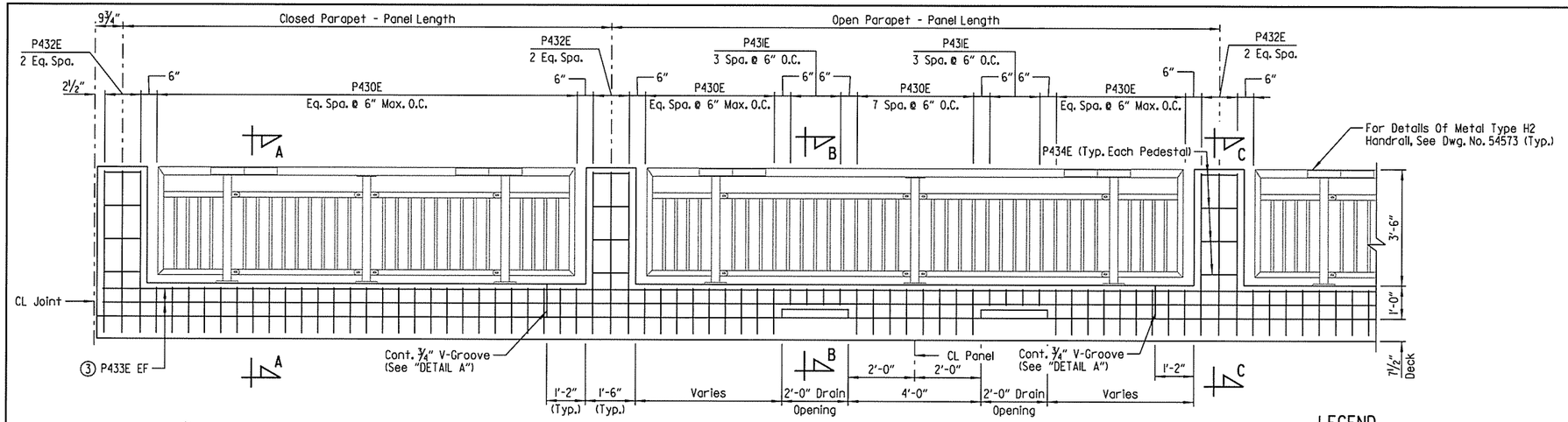
SHEET 1 OF 3
GENERAL SUPERSTRUCTURE DETAILS
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x5_S12.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04927 DRAWING NO. 54571

SRYancey 5/29/2014 4:45:05 PM
WORKSPACE: AHTD Bridge
L:\ROW\HOT\BD Broadway Bridge over the Arkansas River\Drawings\B061275x5_S12 (Gen Super Notes).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	348	505
				(1) 04927		GENERAL SPAN DETAILS		54572



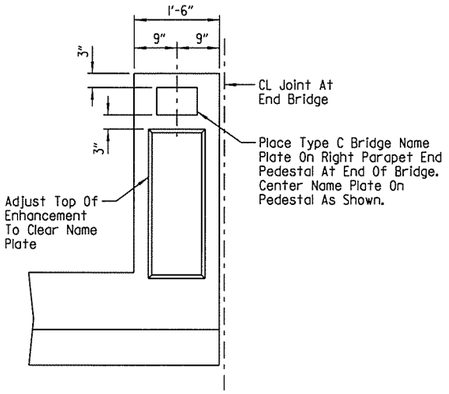
(3) Provide 2'-7" Lap Splices As Required.

PARAPET ELEVATION

Scale: ½" = 1'-0"

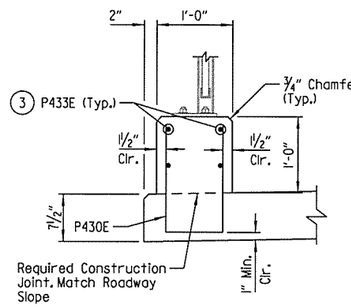
LEGEND

U.N.O. = Unless Noted Otherwise



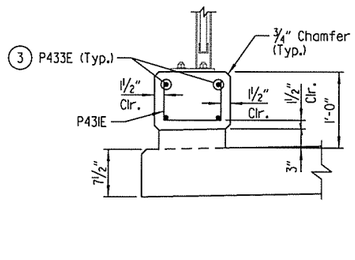
VIEW SHOWING LOCATION OF NAME PLATE

Scale: ¾" = 1'-0"



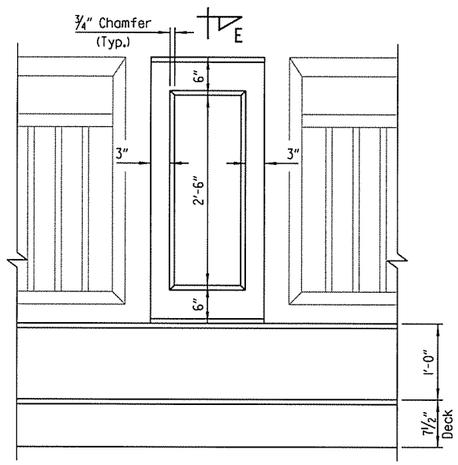
SECTION A-A

Scale: 1" = 1'-0"



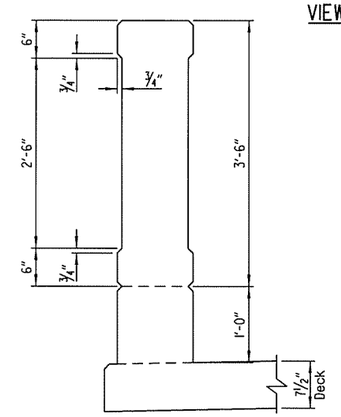
SECTION B-B

Scale: 1" = 1'-0"



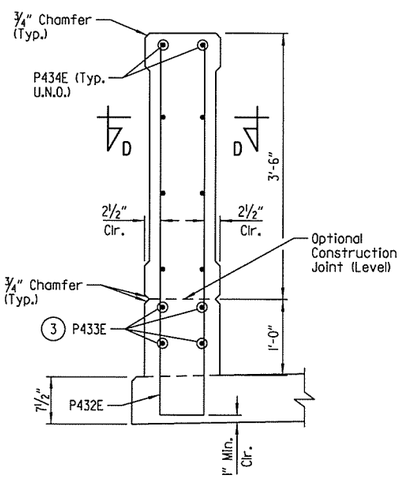
PEDESTAL ENHANCEMENT DETAIL

Scale: 1" = 1'-0"



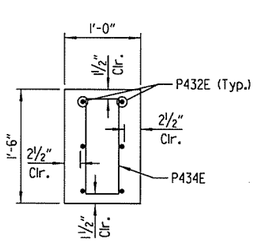
SECTION E-E

Scale: 1" = 1'-0"



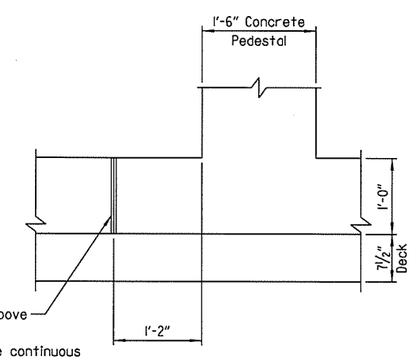
SECTION C-C

Scale: 1" = 1'-0"



SECTION D-D

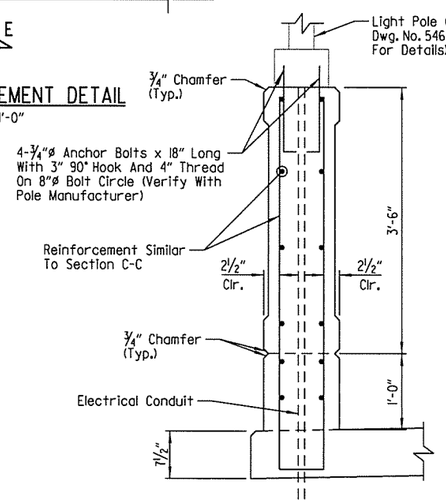
Scale: 1" = 1'-0"



(1) ¾" V-Groove shall be continuous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

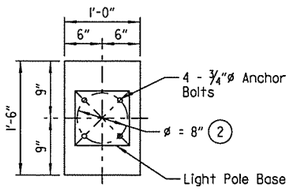
DETAIL A

Scale: 1" = 1'-0"



LIGHT POLE PEDESTAL SECTION

Scale: 1" = 1'-0"



LIGHT POLE PEDESTAL PLAN

Scale: 1" = 1'-0"

(2) Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.

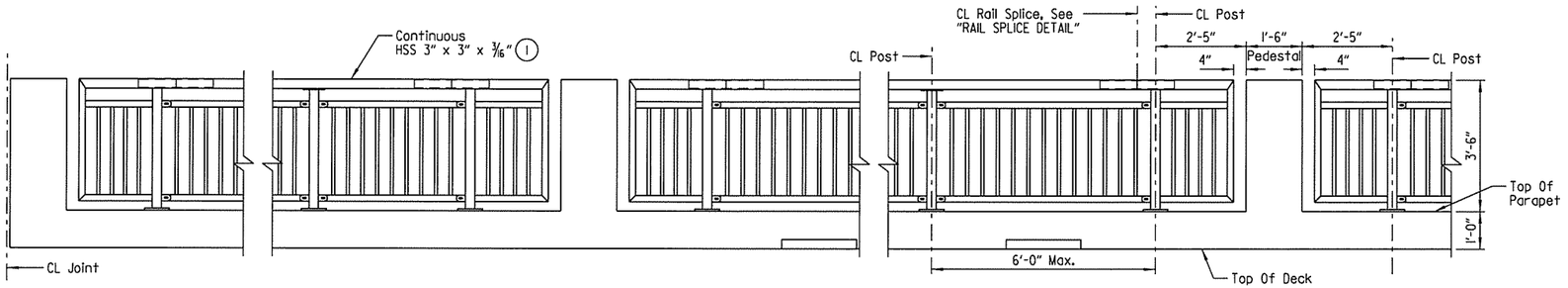
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
GENERAL SUPERSTRUCTURE DETAILS
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x5_S13.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 04927 DRAWING NO. 54572

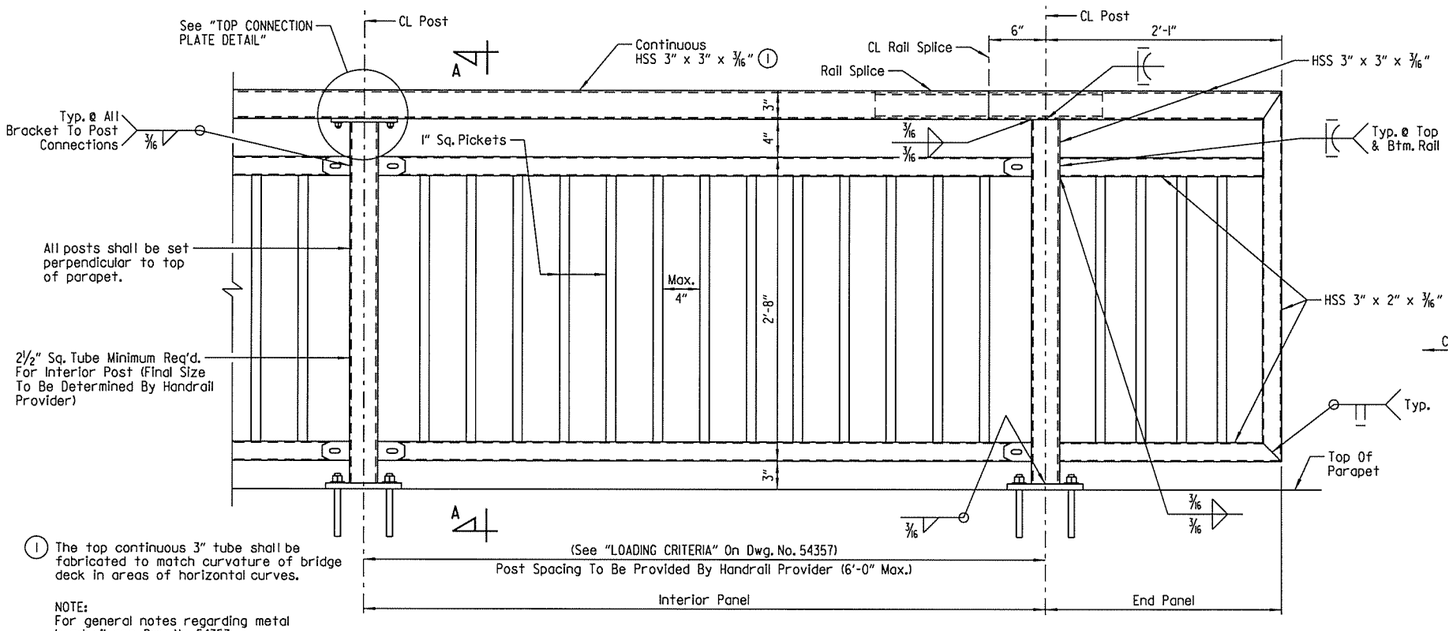
SRYancey 5/29/2014 4:45:06 PM
WORKSPACE: AHTD Bridge
L:\ROW\DGN\06 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_S13 (Gen Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	349	505
				(1)	04927	GENERAL SPAN DETAILS		54573



METAL TYPE H2 HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"

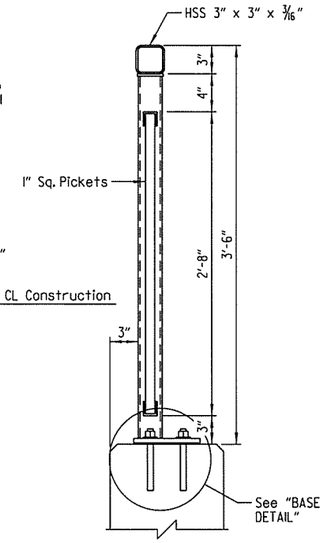


(1) The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

NOTE:
For general notes regarding metal handrail, see Dwg. No. 54357.

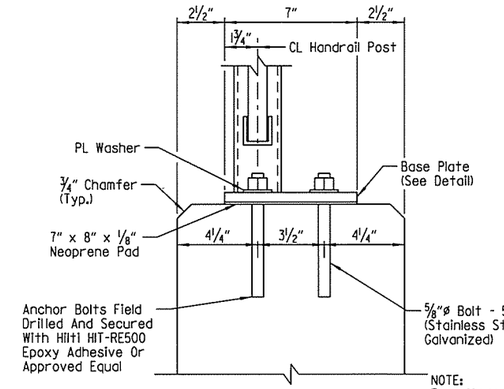
TYPICAL INTERIOR AND END PANELS

Scale: 1 1/2" = 1'-0"



SECTION A-A

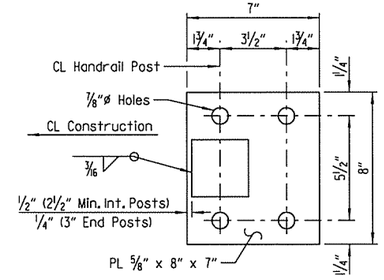
Scale: 1 1/2" = 1'-0"



NOTE:
For alternate post anchor details, see Dwg. No. 54357.

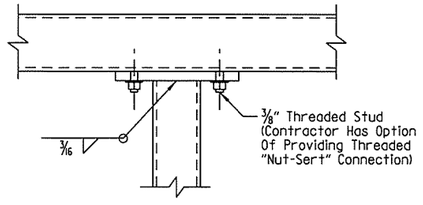
BASE CONNECTION DETAIL

Scale: 3" = 1'-0"



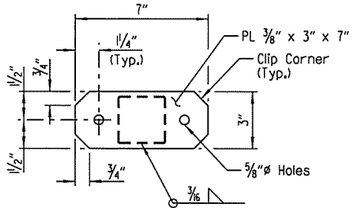
BASE PLATE DETAIL

Scale: 3" = 1'-0"



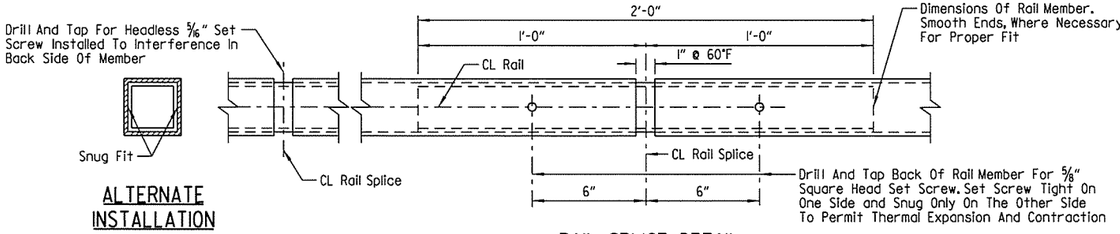
TOP CONNECTION DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION PLATE DETAIL

Scale: 3" = 1'-0"



ALTERNATE INSTALLATION

RAIL SPLICE DETAIL

Scale: 3" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8817
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
GENERAL SUPERSTRUCTURE DETAILS
SOUTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

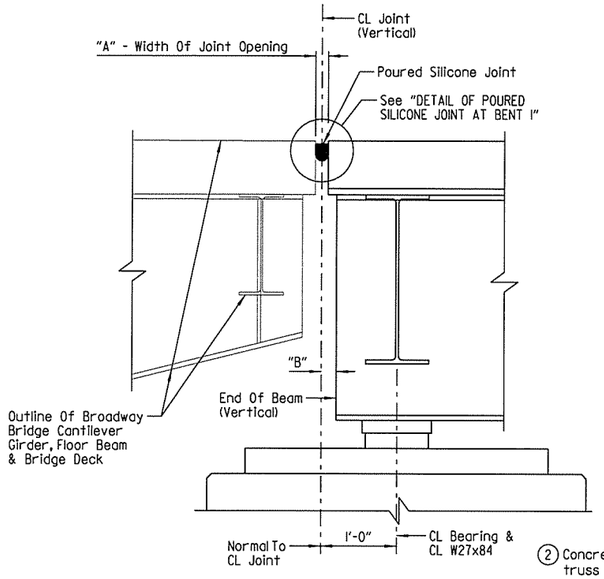
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x5_SI4.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

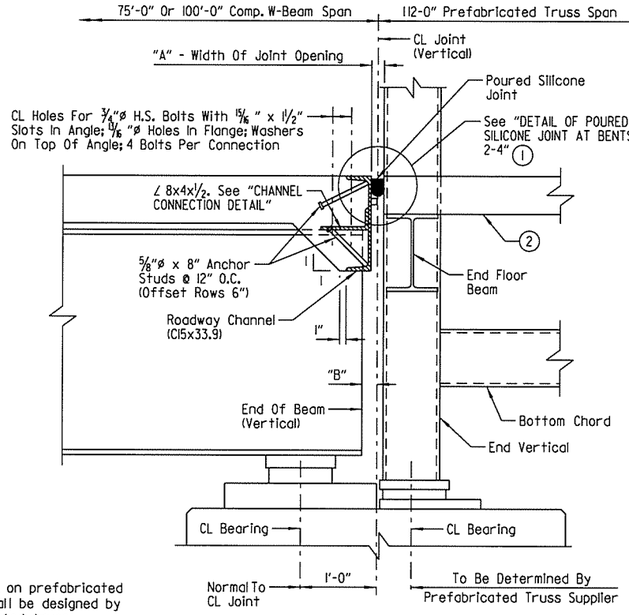
BRIDGE NO. 04927 DRAWING NO. 54573

SRYancey 5/29/2014 4:45:07 PM
WORKSPACE: AHTD Bridge
L:\20INWOTDBO - Broadway Bridge over the Arkansas River\Drawings\B061275x5_SI4 (Gen RailDtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	350	505
				(1) 04927		JOINT DETAILS		54574

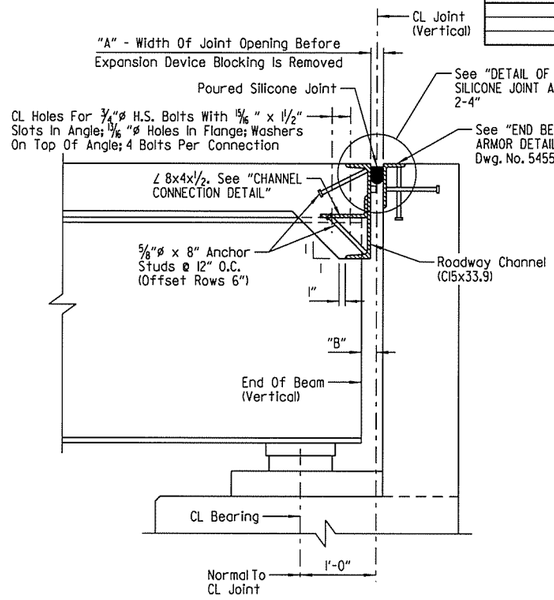


SECTION THRU SILICONE JOINT AT BENT 1
(Section Taken Normal To CL Joint)
No Scale



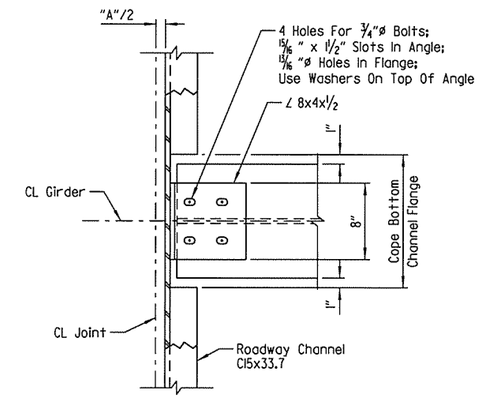
(2) Concrete deck on prefabricated truss span shall be designed by the prefabricated truss supplier. Cost of this deck shall be considered subsidiary to the item "PREFABRICATED STEEL TRUSS".

SECTION THRU SILICONE JOINT AT BENTS 2 & 3
(Section Taken Normal To CL Joint)
No Scale

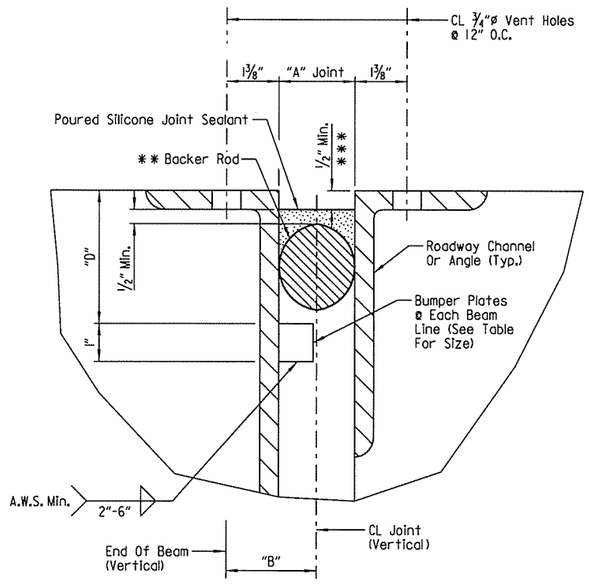


SECTION THRU SILICONE JOINT AT BENT 4
(Section Taken Normal To CL Joint)
No Scale

NOTE:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.



CHANNEL CONNECTION DETAIL
No Scale

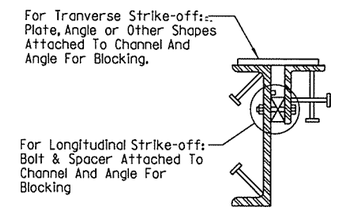


*** Recess depth as recommended by the sealant Manufacturer.

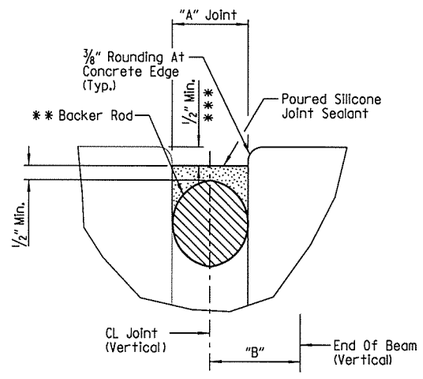
DETAIL OF POURED SILICONE JOINT AT BENTS 2-4
No Scale

(1) For poured silicone joint at Bents 2 & 3, omit roadway channel on prefabricated truss span side of joint.

One of two different blocking systems is required depending on the type of span finishing machine that is used.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE
No Scale



DETAIL OF POURED SILICONE JOINT AT BENT 1
No Scale

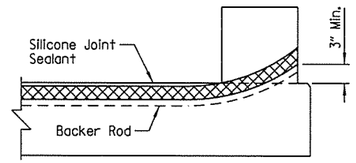
NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENT (END BRIDGE):

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.



JOINT SEAL PLACEMENT AT CURB
No Scale

NOTE:
Shop drawings for prefabricated truss span shall fully illustrate expansion joint details.

SILICONE JOINT DATA

Bent No(s).	"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of: 40°F	60°F	80°F	"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
1	1 1/2"	1 1/2"	1 1/2"	2"±	4"	1" x 3/4" x 12"
2 & 4	1 5/8"	1 1/2"	1 3/8"	2"±	4"	1" x 3/4" x 12"
3	2 3/16"	2"	1 13/16"	2 1/4"±	4 1/2"	1" x 1" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod than can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

DETAILS OF POURED SILICONE JOINT SOUTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

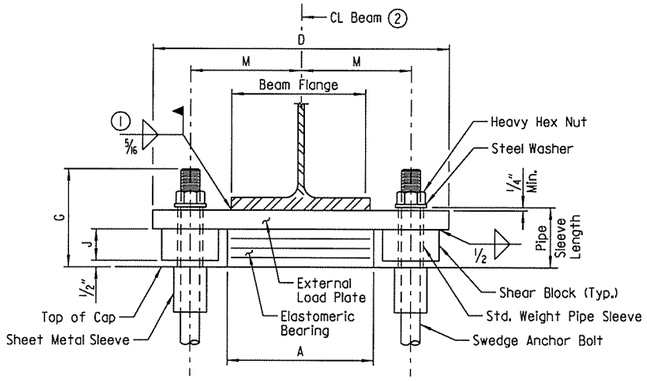
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B061275x5_SI5.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 04927 DRAWING NO. 54574

SRYancey 5/29/2014 4:45:07 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x5_SI5 (Gen Silicone Jt. Dtls).dgn
REVISED DATE:

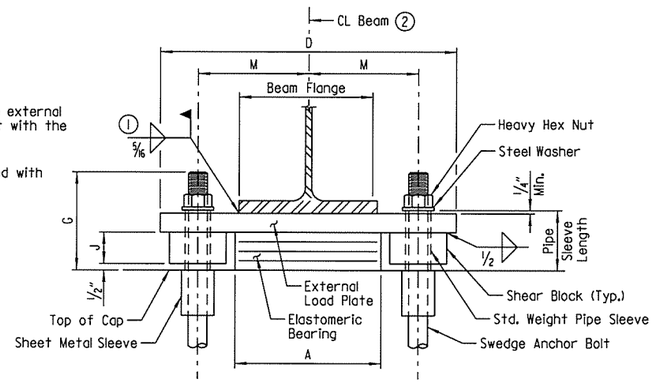
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	351	505
				①	04927	ELASTOMERIC BEARINGS		54575



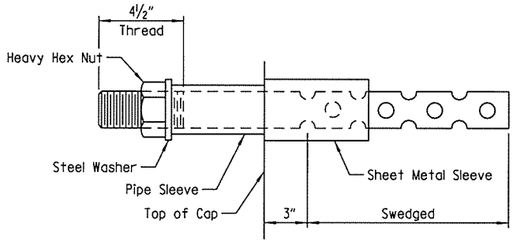
FRONT VIEW - EXPANSION BEARING

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam flange before welding begins.

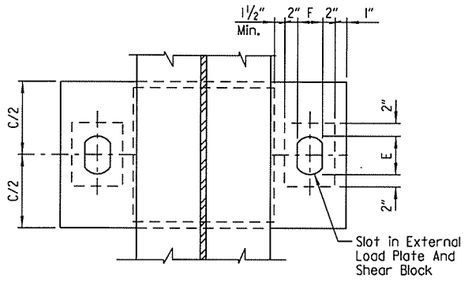
② Centerline elastomeric pad shall be aligned with centerline beam.



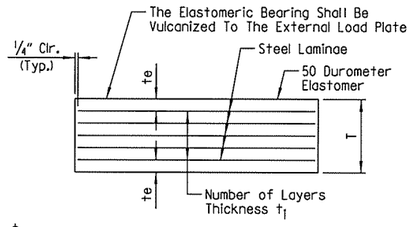
FRONT VIEW - FIXED BEARING



ANCHOR BOLT DETAIL

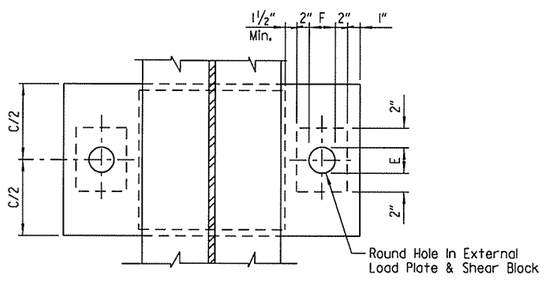


PLAN VIEW - EXPANSION BEARING



t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_l = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_l

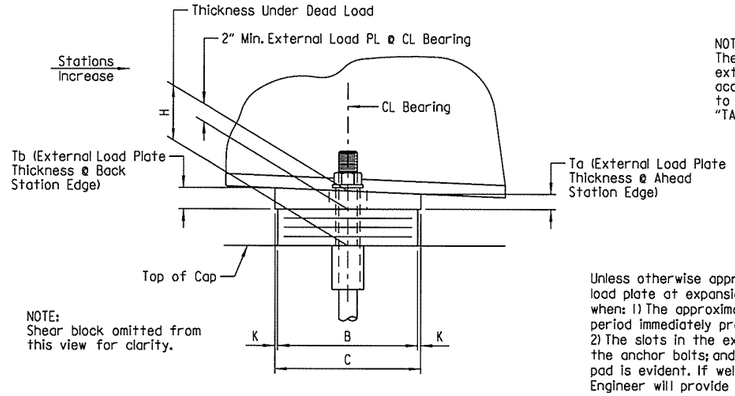
ELASTOMERIC BEARING



PLAN VIEW - FIXED BEARING

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50)".

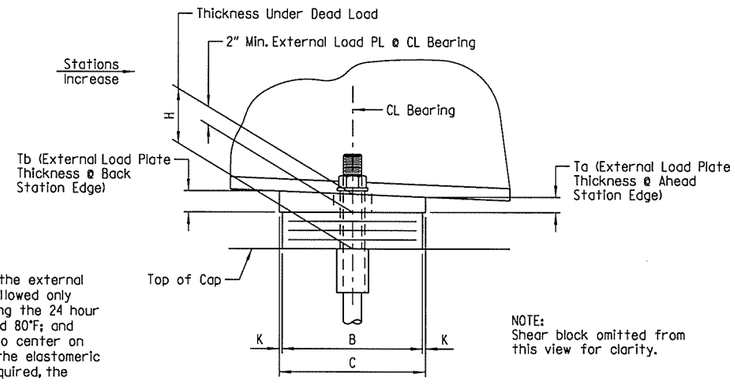


NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - EXPANSION BEARING

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - FIXED BEARING

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (kips)	G	H	Elastomeric Pad						External Load Plate									Anchor Bolt					
																						Anchor Bolt		Pipe Sleeve Size	Sheet Metal Sleeve Size	Steel Washer Size
Bent No(s).	Beam No.						A	B	N	t_l	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b	(Dia. x L)	Grade	(Dia. x L)	(Dia. x L)	(O.D.)
1	All	Fixed	3	115.2	7 3/8"	4 3/8"	16"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	34 1/4"	2 5/8"	2 5/8"	2"	1/2"	12 13/16"	1.73"	2.27"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
2 Bk	All	Exp.	3	115.2	7 3/8"	4 3/8"	16"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	34 1/4"	4 1/4"	2 5/8"	2"	1/2"	12 13/16"	1.73"	2.27"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 13/16"	1.73"	2.27"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 13/16"	1.73"	2.27"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"

* Maximum Design Load = Service Load

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
SOUTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JULY 2013 FILENAME: B061275x5_EI.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JULY 2013
BRIDGE NO. 04927 DRAWING NO. 54575

SRYancey 5/29/2014 4:45:08 PM
WORKSPACE: ANTD Bridge
L:\ZDRIVE\DOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x5_EI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	352	505
				① 04926		LAYOUT		54576

Limits Of Existing Bridge No. A2978 (To Be Removed)
Limits Of Concrete Riprap See "RIPRAP DETAIL" On Dwg. No. 54298
Existing Roadway
CL Existing Hwy. 100
02°00'00"
CL Of Joint
Superelevation Transition Ends Sta. 10+75.71
90° (Typ. Each Bent U.N.O.)
B42
Tangent Dist. = 15.29'
Retaining Wall No. 8 See Dwg. No. 54617.
PC Sta. 15+19.88
1'-0" Parapet
16'-0" Clear Width
18'-4" Out-To-Out
1'-0" Parapet
19'-6" Min. ②
9'-4" Min. ②
8'-0"
2%
B38A
B49
CL Bridge & CL Construction
B39A
Profile Grade At Inside Face Of Parapet
CL Of Levee
IV:3H
45°
B40
Toe Of Fill Slope
16'-0" Shared Use Path
Limits of Concrete Riprap. See Std. Dwg. No. 14995A For Details
CL North Shared Use Ramp
CL Construction Hwy. 70 Bridge Over Arkansas River, See Dwg. Nos. 54296-54299 For Layout
S 83°03'17" E
10+00
11+00
12+00
13+00
14+00
15+00
16+00
119+00

PLAN

BEGIN BRIDGE
STA. 10+53.53

END BRIDGE
STA. 15+04.59

FOR R/W DATA, SEE ROADWAY PLANS

NOTES:
For "GENERAL NOTES - NORTH SHARED USE RAMP" & "SPECIAL NOTES FOR EXCAVATION NEAR LEVEE", see Dwg. No. 54577.

For "SOIL BORING PROFILE", see Dwg. No. 54578.

① Slope varies from Sta. 10+53.53 to Sta. 10+75.71. See "SUPERELEVATION TRANSITION AT BEGIN BRIDGE" and "DECK TRANSITION DETAIL" on Dwg. No. 54585 for details.

② Measured to existing face of curb

HORIZONTAL CURVE DATA

North Shared Use Ramp
CL Construction
PI = 15+63.83
Δ = 29°01'39" Rt.
D = 33°45'00"
T = 43.95'
L = 86.01'
e = N.C.
R = 169.77'

Total Length Of Bridge = 451'-0¾"

CL Bent No. 1 Sta. 10+54.53 Elev. 287.46

CL 1½" Silicone Joint
1'-0"
75'-0" Composite W-Beam Span (Span 1)
75'-0" Composite W-Beam Span (Span 2)
75'-0" Composite W-Beam Span (Span 3)
75'-0" Composite W-Beam Span (Span 4)
75'-0" Composite W-Beam Span (Span 5)
75'-0" Composite W-Beam Span (Span 6)
1'-0¾"

CL Bent No. 2 Sta. 11+28.53 Elev. 283.97
CL Bent No. 3 Sta. 12+03.53 Elev. 280.45
CL Bent No. 4 Sta. 12+78.53 Elev. 276.33
CL Bent No. 5 Sta. 13+53.53 Elev. 273.42
CL Bent No. 6 Sta. 14+28.53 Elev. 269.90
Elev. 266.33

Top Of Deck At CL Constr. & CL Bent To Low Side Top Of Cap = 4'-6¼"
Top Of Deck At CL Constr. & CL Bent To Low Side Top Of Cap = 4'-6⅛"
Top Of Deck At CL Constr. & CL Bent To Low Side Top Of Cap = 4'-6¾"
Top Of Deck At CL Construction To Low Steel = 3'-9¾"
Metal Type H2 Handrail On Both Sides
Slope Intercept Sta. 15+16.00 Elev. 265.80

Fix
Exp.
34'-0"
31'-0"
27'-6"
24'-0"
20'-6"
16'-6"
7' Fence And Security Gate (Both Sides)
Top Of Levee
Existing Ground At CL Construction
Concrete Riprap
Proposed Grade At CL Construction

Elev. 248.94 — 75' Piles
Elev. 248.39 — 75' Piles
Elev. 248.39 — 75' Piles
Elev. 248.37 — 75' Piles
Elev. 248.36 — 75' Piles
Elev. 248.84 — 75' Piles
* 85' Piles

Bent No. 1
Bent No. 2
Bent No. 3
Bent No. 4
Bent No. 5
Bent No. 6
Bent No. 7

* See "GENERAL NOTES - NORTH SHARED USE RAMP" on Dwg. No. 54577 for pile driving restrictions.

NOTE:
Stations and elevations shown are along CL Construction.

ELEVATION

PVI Sta. 10+53.25
Elev. 287.66
-4.69%
PVI Sta. 16+25.00
Elev. 260.84
V.C. = 50'
-5.00%

VERTICAL PROFILE
North Shared Use Ramp
(Profile Grade 8' Rt. of CL Construction)

LEGEND

FOC = Fiber Optic Cable
SS = Sanitary Sewer
STS = Storm Sewer
W = Water Line
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
NORTH SHARED USE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x6_LI.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: SRY DATE: JAN. 2013
BRIDGE NO. 04926 DRAWING NO. 54576

SRYancey 5/29/2014 4:45:51 PM
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L:\20R\MRTD80 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_LI\Layout1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	353	505
				(1) 04926		LAYOUT		54577

GENERAL NOTES - NORTH SHARED USE RAMP

BENCH MARK: PN: 913, PD: SO. IN CONCRETE, ST: 117+68.35 OF: 1626.70' RT. ZC: 248.76
Station and Offset taken from CL Construction Hwy. 70 Bridge over Arkansas River

OPERATIONAL CATEGORY: OTHER

STEEL PILING: Piling for Bent Nos. 1 - 7 shall be HP 12x53 steel piles (Grade 50) and shall be driven to a minimum ultimate bearing capacity of 230 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. The Contractor shall use approved steel H-Pile driving points on all piles.

Pile casings shall be used for all piling at Bent No. 7. Piling shall be driven through the open casings no sooner than 30 days after embankment construction is completed to the final ramp section for not less than 100 feet from the centerline of the pile-supported end bent. Pile driving shall not start until approval is given by the Engineer.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No payment will be made for cut-off or build up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as test piles.

PILE CASING: Pile casings at Bent No. 7 shall be used for all piling and shall be installed prior to embankment construction. Piling shall extend from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 6" greater than the cross sectional dimension of the pile. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12X53)".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 70,000 ft. lbs. per blow will be required to obtain the ultimate bearing capacity at Bent Nos. 1 - 7.

DETAIL DRAWINGS:	DRAWING NOS:
Intermediate Bents	54579-54581
End Bent	54582-54583
75' Simple Comp. W-Beam Span (Span 1)	54584-54590
75' Simple Comp. W-Beam Span (Span 2)	54591-54595
75' Simple Comp. W-Beam Span (Spans 3-6)	54596-54598
General Superstructure Details	54599-54601
Joint Details	54602
Elastomeric Bearings	54603
Steel Piling	55020
Concrete Riprap	55002

For "PROJECT GENERAL NOTES", see Dwg. No. 54292.

SPECIAL NOTES FOR EXCAVATION NEAR LEVEE

1. A probable sequence of construction for Bent Nos. 1 through 7 is to install temporary sheet piling around the planned excavation, excavate to the bottom of new footing, drive planned piles for support of the new footing, place footing and column concrete, and finally remove the temporary sheet piling.

2. Flowable fill can be used to backfill the excavation to 3 feet below existing grade. Compacted lean or fat clay fill (minimum liquid limit of 40 and maximum liquid limit of 55) shall then be used to restore the excavation to match the existing adjacent grade.

   As an alternative to backfilling the excavation with flowable fill, compacted lean or fat clay fill having a minimum liquid limit of 40 and maximum liquid limit of 55 can be used to restore the entire excavation. The Contractor shall design and construct safe sloping side walls from the bottom to the top of the excavation prior to removing the temporary sheet pile. The fill shall be placed by benching the new fill into the sloped excavation. Minimum bench width shall be sized to accommodate construction equipment.

3. A stockpile of clay backfill material shall be kept near Bent Nos. 1 through 7 in case the Arkansas River is forecasted to rise. If the predicted river stage is planned to reach an elevation of 5 feet below the bottom of the footing excavations at Bent Nos. 1 through 7, preparation for backfilling the excavations shall occur. When the river level reaches 5 feet below the bottom of the footing excavations, immediate backfilling of the excavations is required. The nearest upstream and downstream river gauges shall be periodically checked to monitor changes in the river level and used to estimate the river levels at the site.

4. Where backfill material consists of clay (CL/CH), the clay shall be compacted to a minimum of 95% of the maximum dry density at a moisture content ranging from -1% to +3% of the optimum moisture content as determined by the Standard Proctor (ASTM D698).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
NORTH SHARED USE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2013 FILENAME: B061275x6_L2.DGN
CHECKED BY: ABH DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JAN. 2013

BRIDGE NO. 04926 DRAWING NO. 54577

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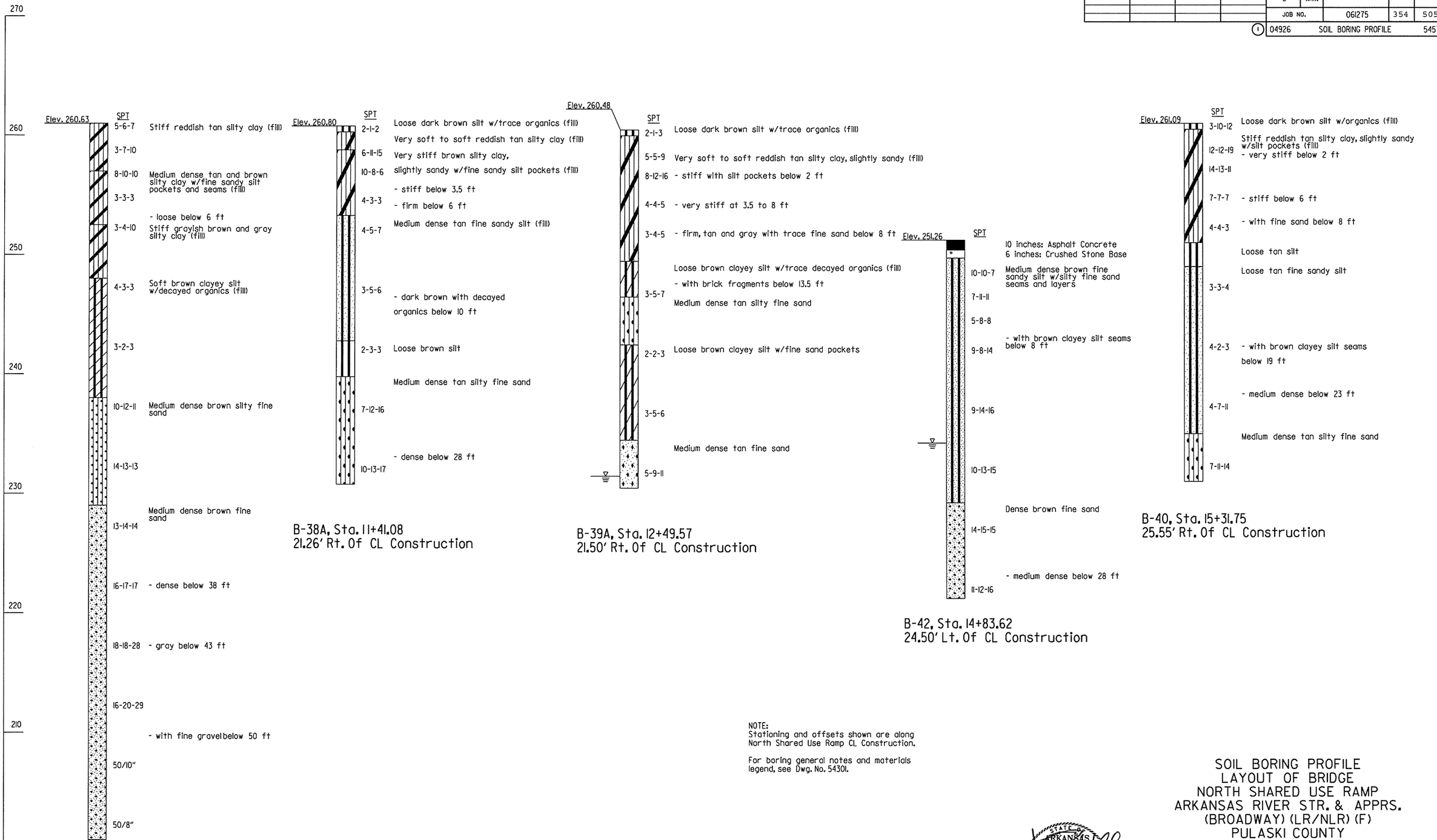
WORKGROUP: AHTD Bridge
L:\2DRAWINGS\B061275x6_L2 (Gen Notes).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	354	505
				(1) 04926		SOIL BORING PROFILE		54578



NOTE:
Stationing and offsets shown are along North Shared Use Ramp CL Construction.

For boring general notes and materials legend, see Dwg. No. 54301.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SOIL BORING PROFILE
LAYOUT OF BRIDGE
NORTH SHARED USE RAMP
ARKANSAS RIVER STR. & APPRS.
(BROADWAY) (LR/NLR) (F)
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2013 FILENAME: B061275x6_L3.DGN
CHECKED BY: SRY DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: JHR DATE: AUG. 2013
BRIDGE NO. 04926 DRAWING NO. 54578

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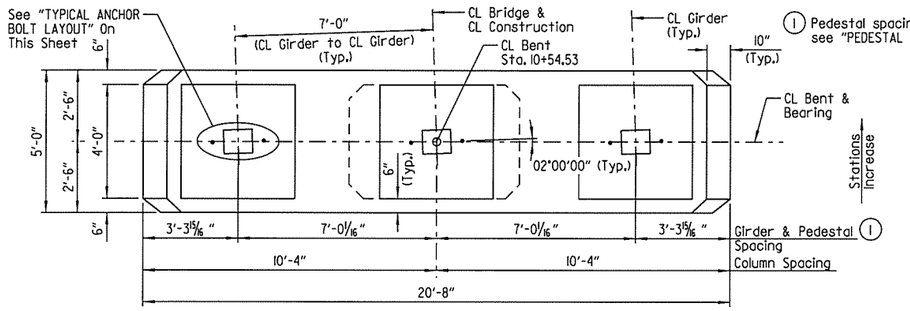
WORKSPACE: AHTD Bridge
L:\ZONINDT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_L3 (Boring Log).dgn
REVISED DATE:

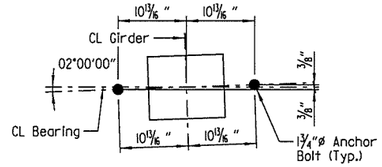
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	355	505
				(1)	04926	INT. BENT DETAILS		54579



(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On This Sheet.

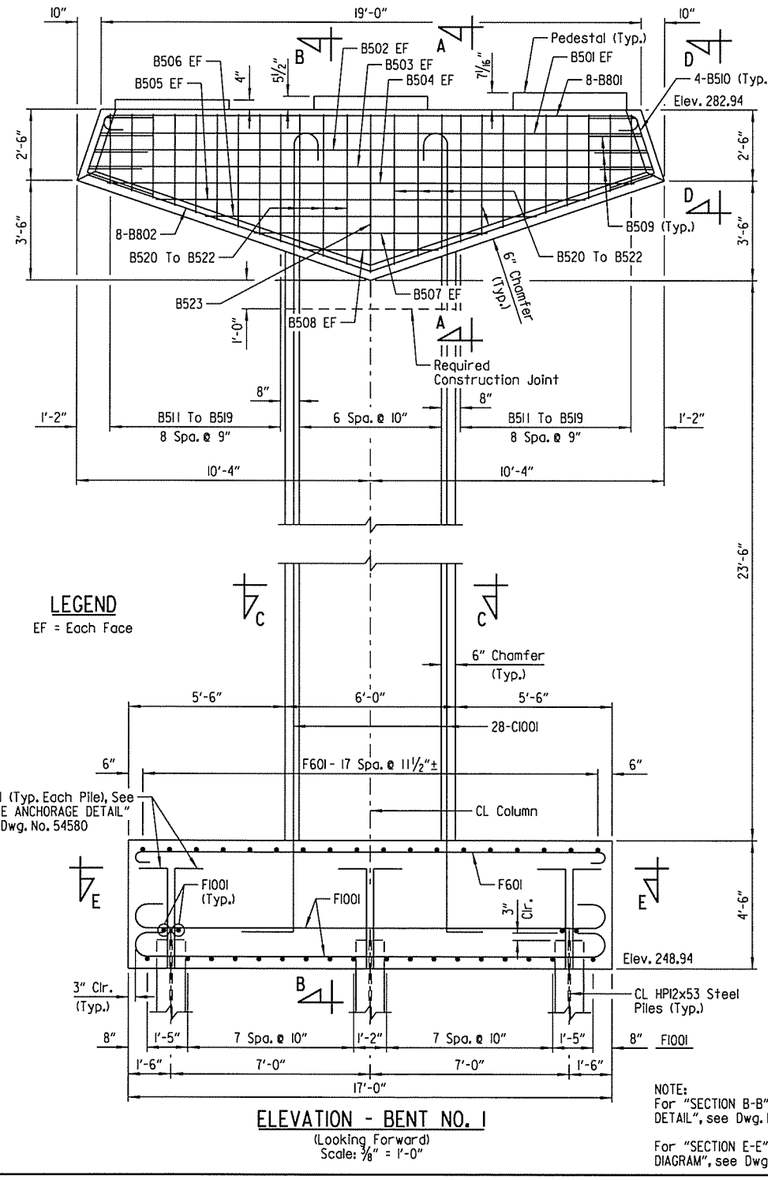
PLAN

Scale: 3/8" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

(Bent No. 1)
Scale: 1" = 1'-0"

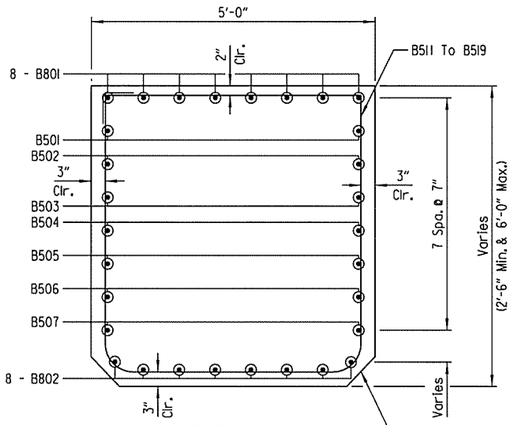


ELEVATION - BENT NO. 1

(Looking Forward)
Scale: 3/8" = 1'-0"

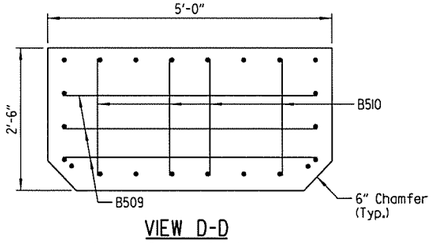
NOTE:
For "SECTION B-B" & "OPTIONAL MECHANICAL SPLICE DETAIL", see Dwg. No. 54580.

For "SECTION E-E", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54581.



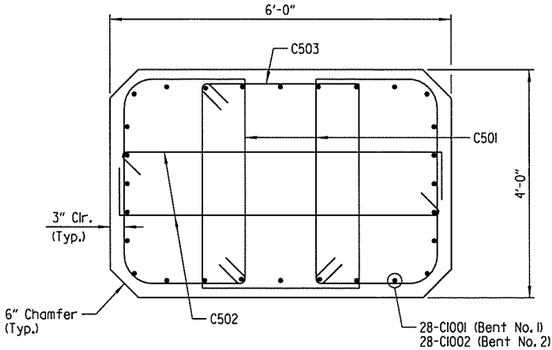
SECTION A-A

(Pedestal Not Shown For Clarity)
Scale: 3/4" = 1'-0"



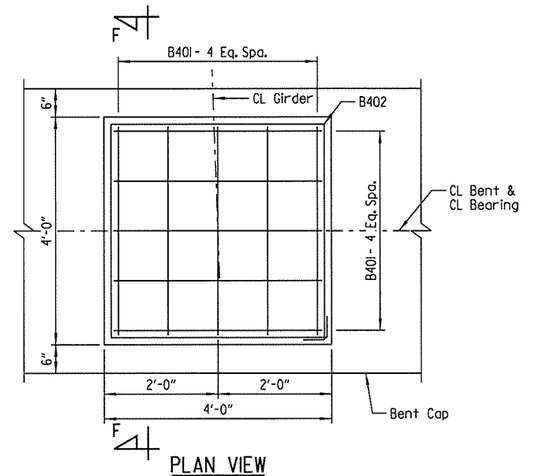
VIEW D-D

(Showing End Cap Reinforcing)
Scale: 3/4" = 1'-0"

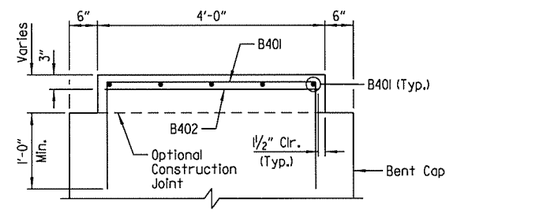


SECTION C-C

Scale: 3/4" = 1'-0"



PLAN VIEW



SECTION F-F

PEDESTAL DETAIL

(Bent No. 1)
Scale: 3/4" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and allexposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A Gr. 60 (Yield Strength = 60,000 psi) except as noted otherwise.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENTS
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

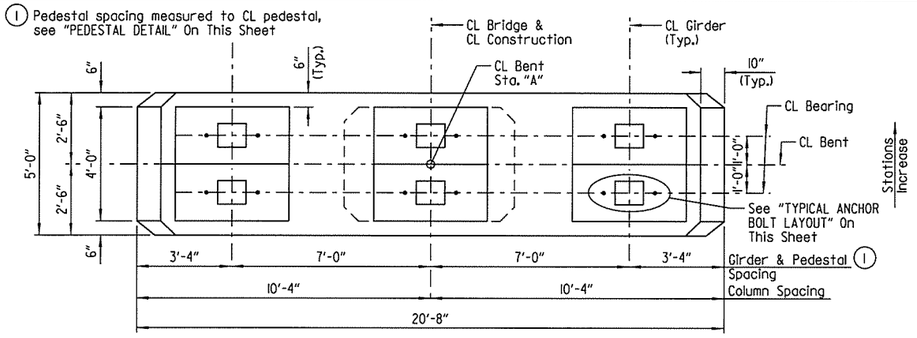
DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x6_B1.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04926 DRAWING NO. 54579

SRYancey 5/29/2014 4:45:53 PM
WORKSPACE: AHTD Bridge
L:\x20INWIOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x6_B1Int. Bent No. 1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	356	505
				(1) 04926		INT. BENT DETAILS		54580

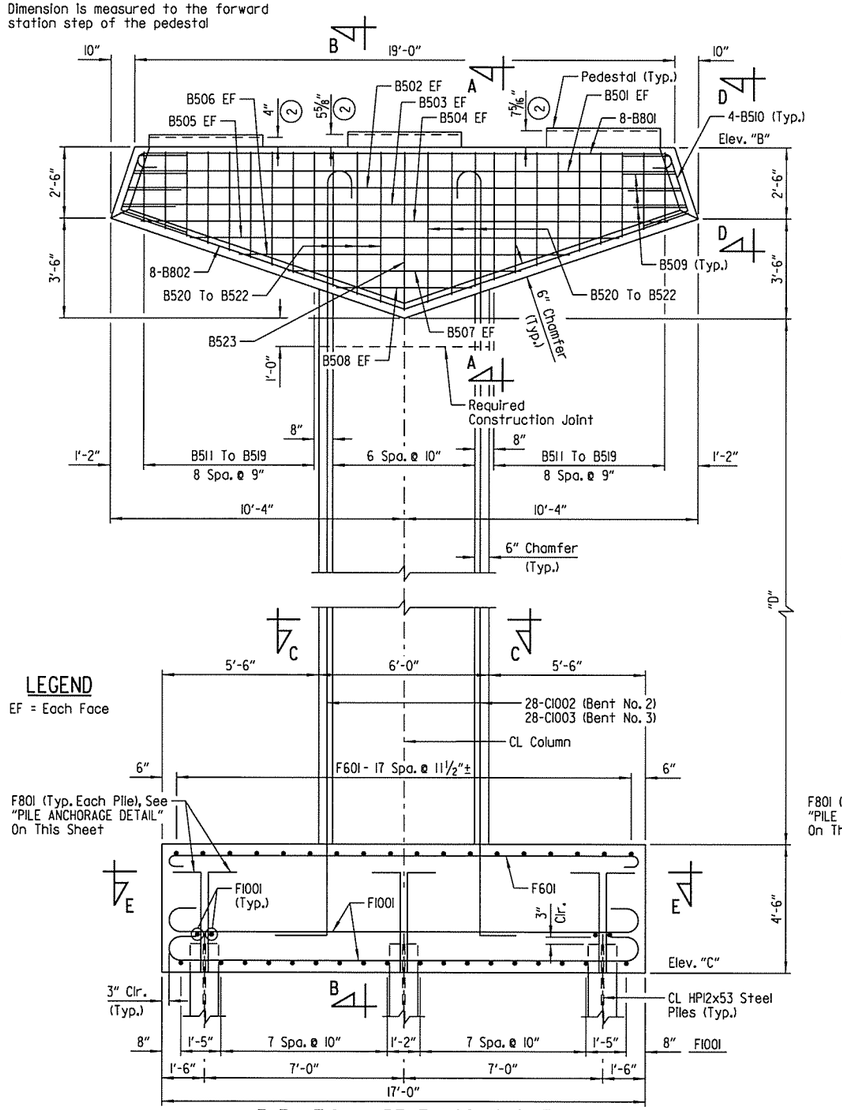
(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On This Sheet



PLAN - BENT NOS. 2 & 3

Scale: 3/8" = 1'-0"

(2) Dimension is measured to the forward station step of the pedestal



ELEVATION - BENT NOS. 2 & 3

(Looking Forward)
Scale: 3/8" = 1'-0"

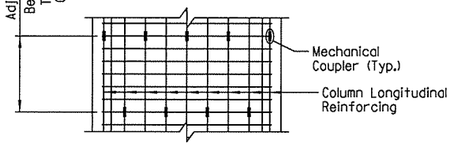
LEGEND

EF = Each Face

Adjacent Mechanical Couplers Shall Be Staggered A Min. Of 2'-0" Or The Length Of The Mechanical Coupler, Whichever Is Greater

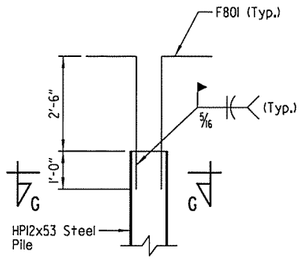
Mechanical coupler assembly in the columns shall consist of a QPL approved mechanical splice, and shall maintain the clearances shown. Their payment shall be subsidiary to the item "REINFORCING STEEL-BRIDGE (GRADE 60)". The couplers shall develop at least 125% of the specified yield strength of the bar.

The bars shall be assembled as shown in "OPTIONAL MECHANICAL SPLICE DETAIL" within Splice Zone A only. No more than one mechanical coupler per bar shall be permitted. Not more than alternate bars shall be spliced at a given section.



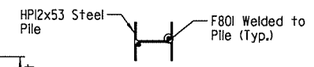
OPTIONAL MECHANICAL SPLICE DETAIL

Scale: ½" = 1'-0"



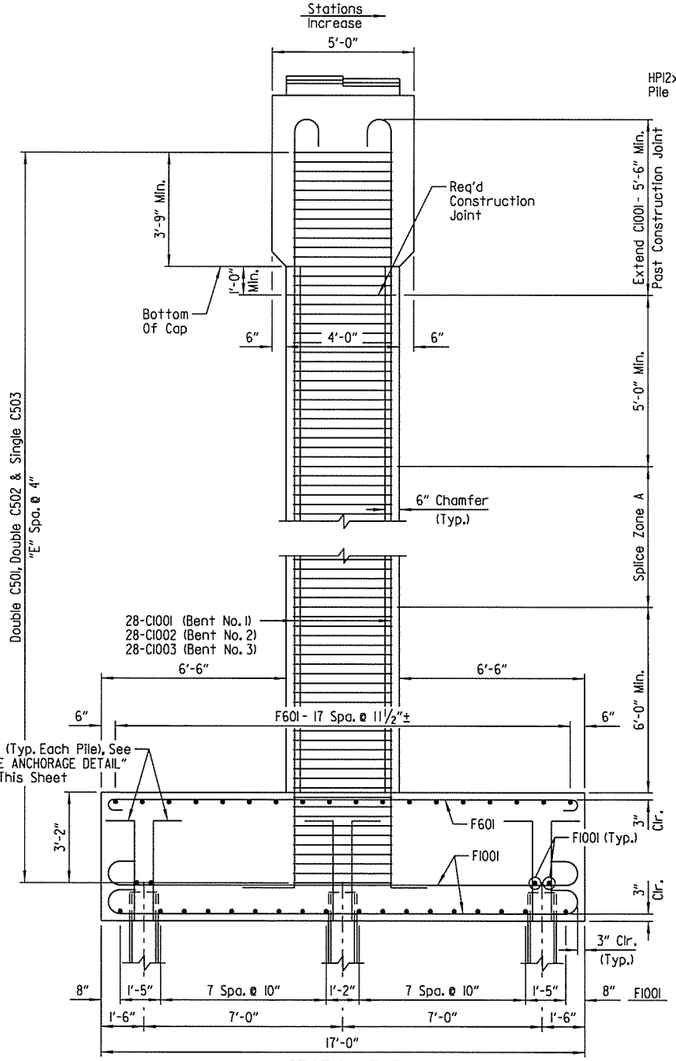
PILE ANCHORAGE DETAIL

No Scale



SECTION G-G

No Scale



SECTION B-B

(Bent Nos. 1-3)
(Reinforcing In Cap Not Shown For Clarity)
Scale: 3/8" = 1'-0"

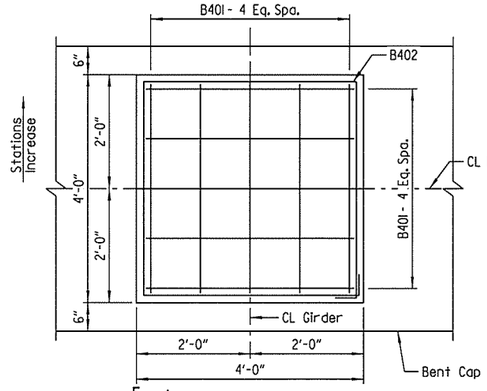
TABLE OF VARIABLES	
BENT NO.	"E"
1	92
2	83
3	73

TABLE OF VARIABLES				
BENT NO.	"A"	"B"	"C"	"D"
2	11+28.53	279.39	248.39	20'-6"
3	12+03.53	275.89	248.39	17'-0"

Note:
For "SECTION A-A", "SECTION C-C", "VIEW D-D" & "GENERAL NOTES", See Dwg. No. 54579.

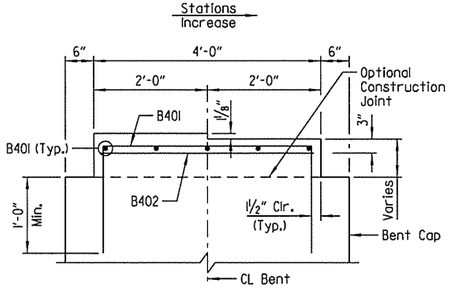
For "BAR LIST", "BAR BENDING DIAPHRAGM" & "SECTION E-E", See Dwg. No. 54581.

F



F

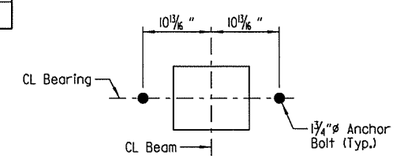
PLAN VIEW



SECTION F-F

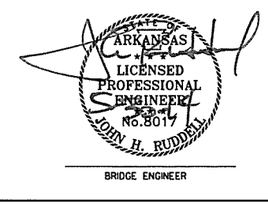
PEDESTAL DETAIL

(Bent Nos. 2-6)
Scale: ¾" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

(Bent Nos. 2-6)
Scale: 1" = 1'-0"



BRIDGE ENGINEER

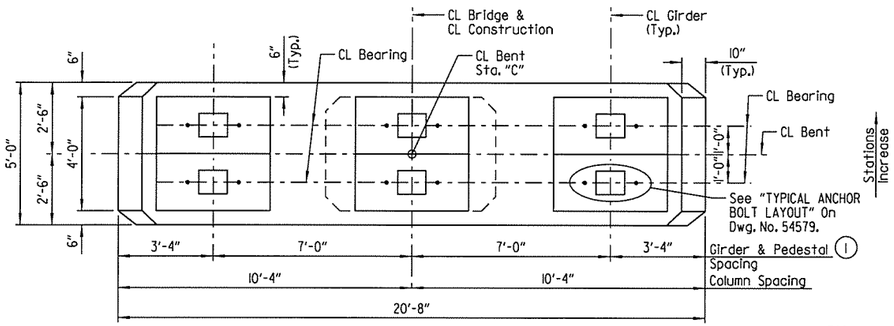
SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENTS
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x6_B2.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013
BRIDGE NO. 04926 DRAWING NO. 54580

SRYancey 5/29/2014 4:45:54 PM
WORKSPACE: AHTD Bridge
L:\ZDRAWDTD80 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_B2 (Int. Bent No. 2 & 3).dgn
REVISED DATE:

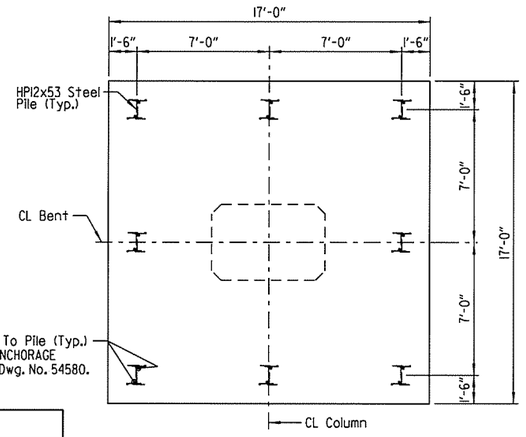
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	357	505

(1) 04926 INT. BENT DETAILS 5458I



PLAN - BENT NOS. 4-6

Scale: 3/8" = 1'-0"



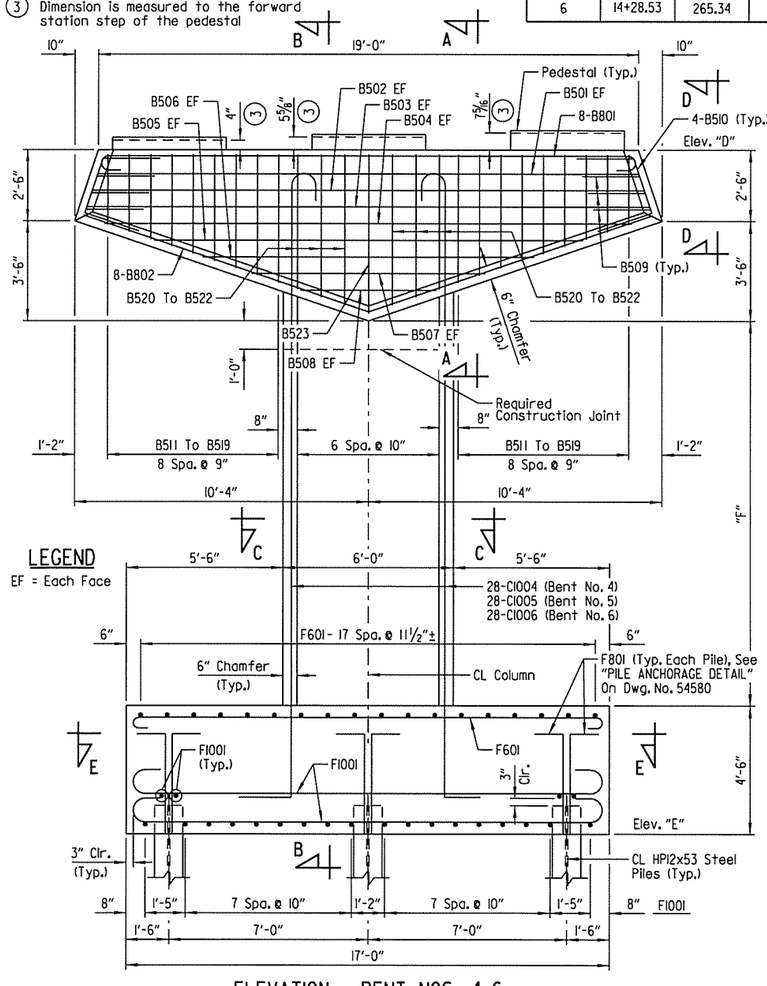
SECTION E-E

Scale: 1/4" = 1'-0"

(1) Pedestal spacing measured to CL pedestal, see "PEDESTAL DETAIL" On Dwg. No. 54579.

TABLE OF VARIABLES					
BENT NO.	"C"	"D"	"E"	"F"	"G"
4	12+78.53	272.37	248.37	13'-6"	62
5	13+53.53	268.86	248.36	10'-0"	52
6	14+28.53	265.34	248.84	6'-0"	40

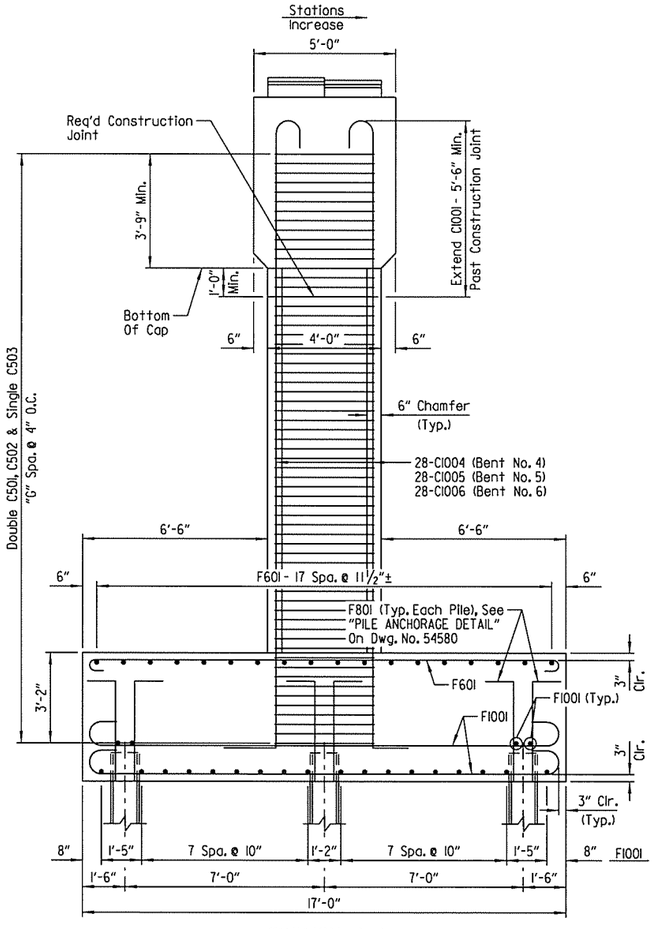
(3) Dimension is measured to the forward station step of the pedestal



ELEVATION - BENT NOS. 4-6

(Looking Forward)
Scale: 3/8" = 1'-0"

NOTE:
For "SECTION A-A", "SECTION C-C", "VIEW D-D" & "GENERAL NOTES", see Dwg. No. 54579.



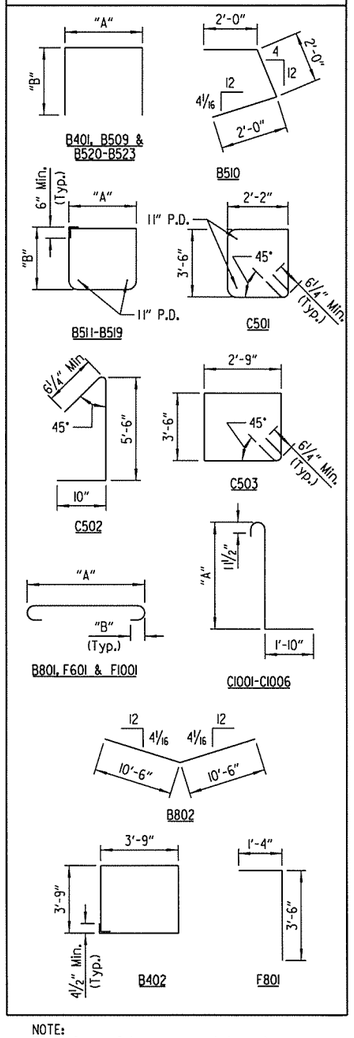
SECTION B-B

(Reinforcing In Cap Not Shown For Clarity)
(Bent Nos. 4-6)
Scale: 3/8" = 1'-0"

BAR LIST						
	MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
COMMON BARS	B40I	30	7'-2"	3'-8"	1'-10"	2"
	B402	3	15'-4"			2"
	B50I	2	18'-10"			Str.
	B502	2	19'-2"			Str.
	B503	2	19'-7"			Str.
	B504	2	18'-6"			Str.
	B505	2	15'-1"			Str.
	B506	2	11'-8"			Str.
	B507	2	8'-2"			Str.
	B508	2	4'-9"			Str.
	B509	6	8'-2 1/2"	4'-5"	2'-0"	2 1/2"
	B5I0	8	6'-0"			2 1/2"
	B5II To B5I9	2 Each	14'-6" To 18'-6"	4'-6"	2'-5" To 4'-6"	2 1/2", II"
	B520 To B522	2 Each	13'-7 1/2" To 14'-9 1/2"	4'-6"	4'-8" To 5'-3"	2 1/2"
	B523	1	15'-6 1/2"	4'-6"	5'-7"	2 1/2"
	B80I	8	20'-5"	18'-7"	8"	6"
	B802	8	21'-0"			6"
	F60I	36	17'-10"	16'-6"	6"	4 1/2"
(2)	F80I	16	4'-7 1/2"			6"
	F100I	44	19'-4"	16'-6"	11 1/2"	10"
BENT NO. 1	C50I	186	12'-0"			3 3/4", II"
	C502	186	6'-10"			3 3/4"
	C503	93	13'-2"			3 3/4"
	C100I	28	35'-3"	32'-3"		10"
BENT NO. 2	C50I	168	12'-0"			3 3/4", II"
	C502	168	6'-10"			3 3/4"
	C503	84	13'-2"			3 3/4"
	C1002	28	32'-3"	29'-3"		10"
BENT NO. 3	C50I	148	12'-0"			3 3/4", II"
	C502	148	6'-10"			3 3/4"
	C503	74	13'-2"			3 3/4"
	C1003	28	28'-9"	25'-9"		10"
BENT NO. 4	C50I	126	12'-0"			3 3/4", II"
	C502	126	6'-10"			3 3/4"
	C503	63	13'-2"			3 3/4"
	C1004	28	25'-3"	22'-3"		10"
BENT NO. 5	C50I	106	12'-0"			3 3/4", II"
	C502	106	6'-10"			3 3/4"
	C503	53	13'-2"			3 3/4"
	C1005	28	21'-9"	18'-9"		10"
BENT NO. 6	C50I	82	12'-0"			3 3/4", II"
	C502	82	6'-10"			3 3/4"
	C503	41	13'-2"			3 3/4"
	C1006	28	17'-9"	14'-9"		10"

NOTE:
Common bar numbers are for one bent only.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

(2) F80I bars must be a weldable grade meeting the requirements of ASTM A706 (Grade 60).

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENTS
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

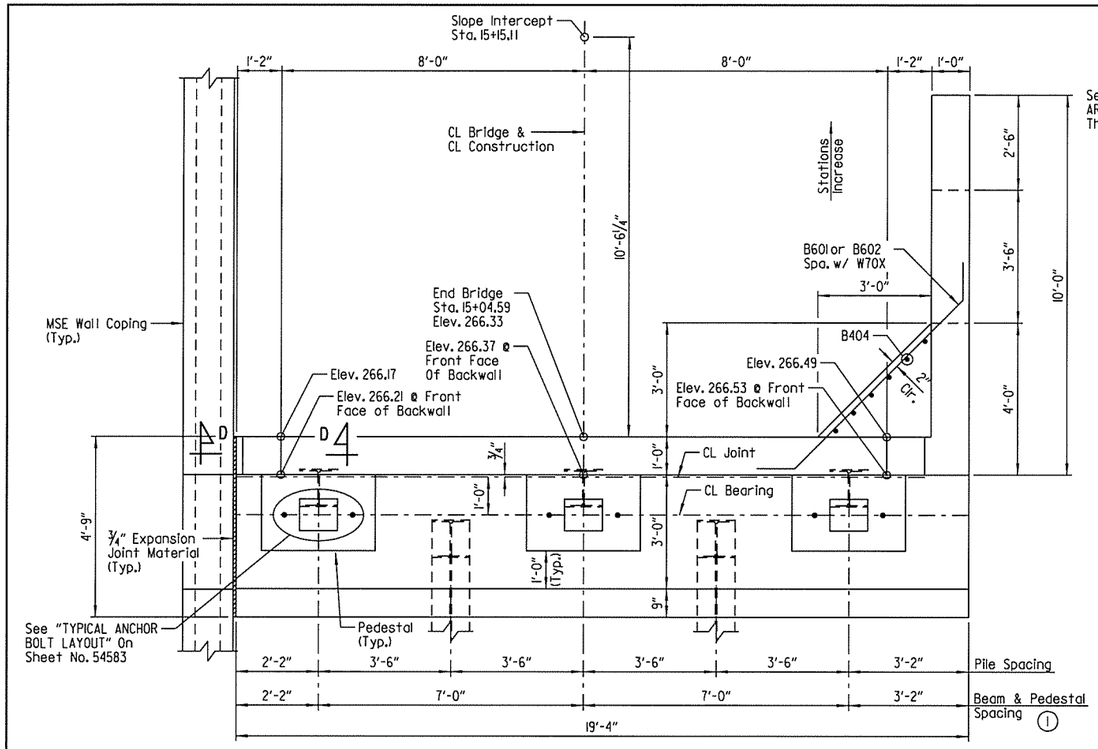
BRIDGE ENGINEER

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x6_B3.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04926 DRAWING NO. 54581

SRTarcey 5/29/2014 4:45:55 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x6_B3 (Int. Bent No. 4-6).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	358	505
				(1) 04926		END BENT DETAILS		54582



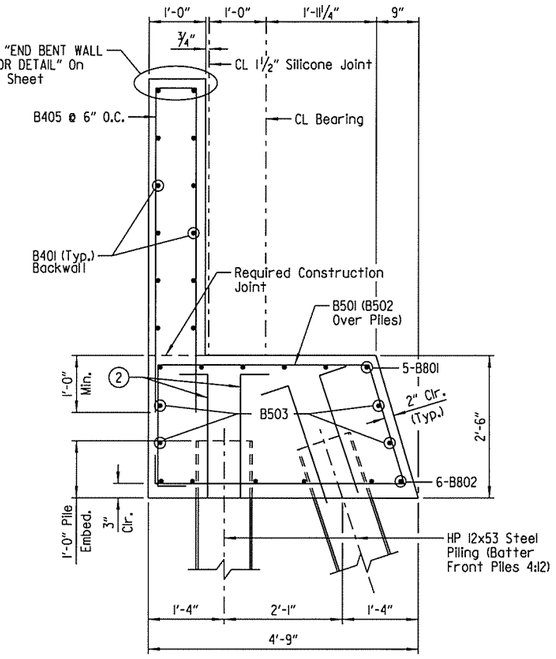
LEGEND

EF = Each Face

PLAN

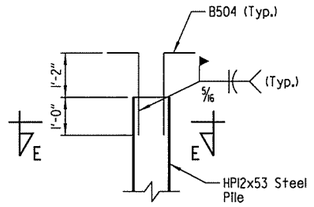
Scale: ½" = 1'-0"

(1) Pedestal spacing measured to CL riser, see "PEDESTAL DETAIL" On Dwg. No. 54583.



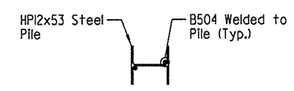
SECTION A-A

Scale: ¾" = 1'-0"



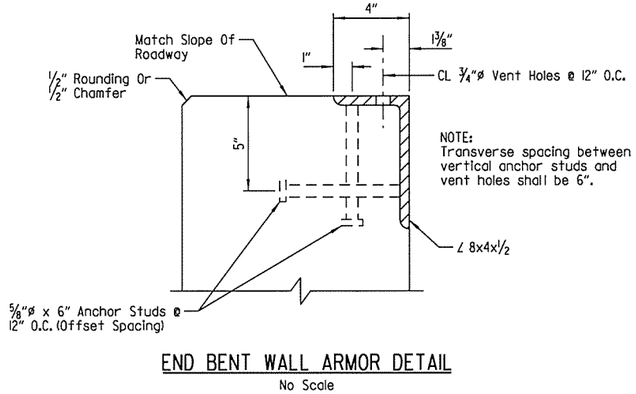
PILE ANCHORAGE DETAIL

No Scale



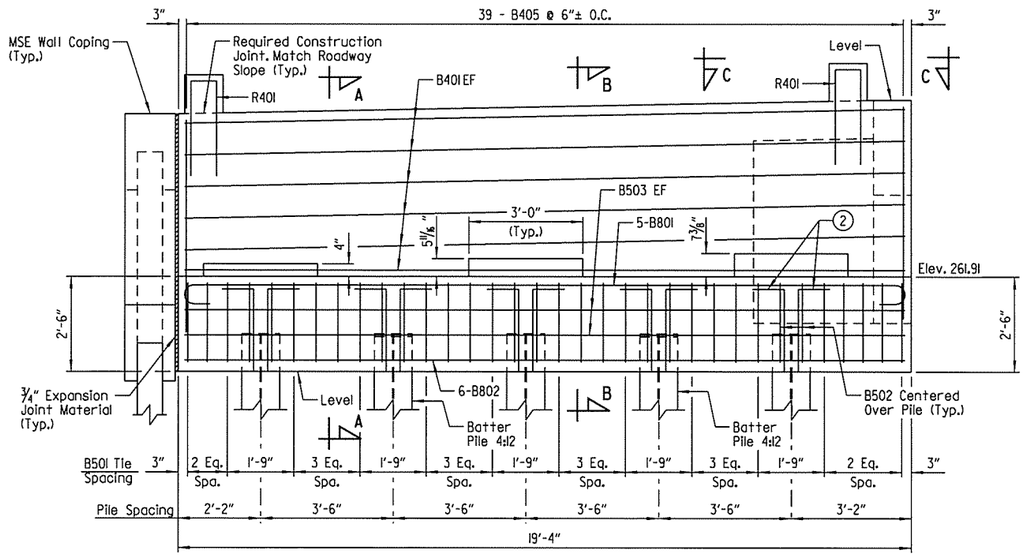
SECTION E-E

No Scale



END BENT WALL ARMOR DETAIL

No Scale



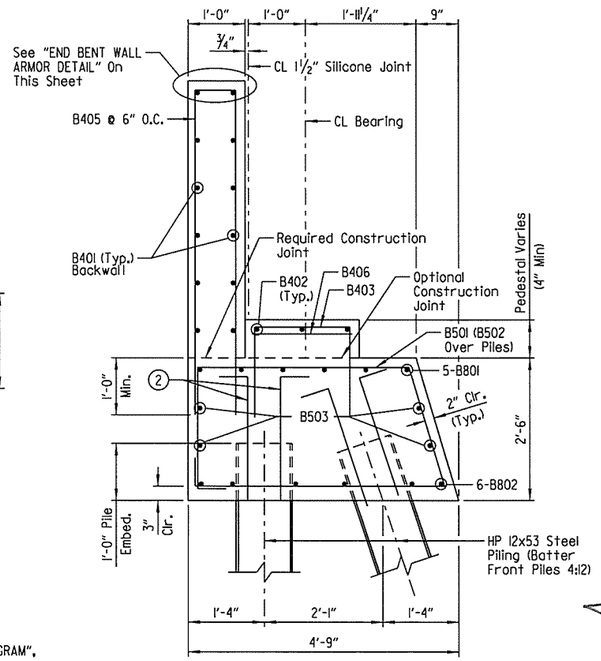
ELEVATION

(Looking Forward)
Scale: ½" = 1'-0"

(2) B504 (Typ. Each Pile) See "PILE ANCHORAGE DETAIL" On This Sheet

NOTE:
For "VIEW C-C", "BAR LIST" & "BAR BENDING DIAGRAM", see Dwg. No. 54583.

For Details of Wing and Rail, see Dwg. No. 54583.



SECTION B-B

Scale: ¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry.
All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

All piles shall be HP12x53 (AASHTO M270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place.

Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 638. Cleaning and painting will be paid for under the item "PAINTING STRUCTURAL STEEL".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

Class 3 Textured Coating Finish shall be applied in accordance with SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF END BENT NO. 7
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

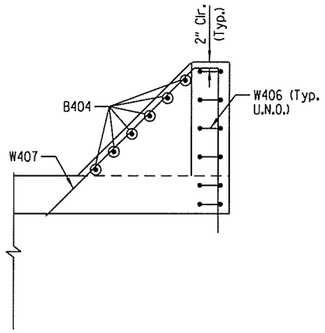
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x6..B4.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013

BRIDGE NO. 04926 DRAWING NO. 54582

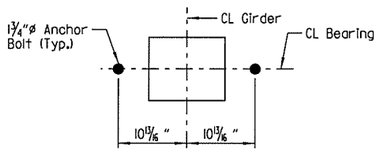
SRYancey 5/29/2014 4:45:55 PM
WORKSPACE: AHTD Bridge
L:\2DRAW\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6-B4 (End Bent No. 7).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	359	505
				① 04926		END BENT DETAILS		54583

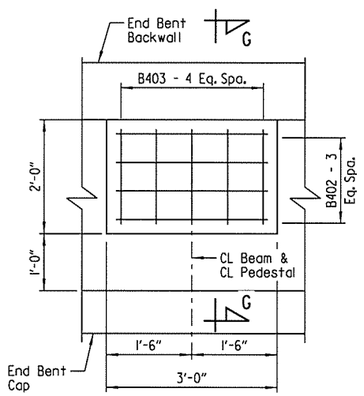


SECTION F-F
Scale: ½" = 1'-0"

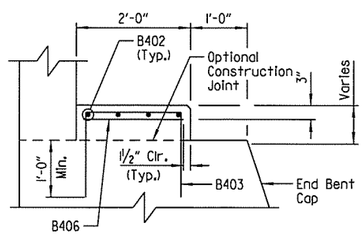
NOTE:
For "DETAILS OF ELASTOMERIC BEARINGS", see Dwg. No. 54603.



TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

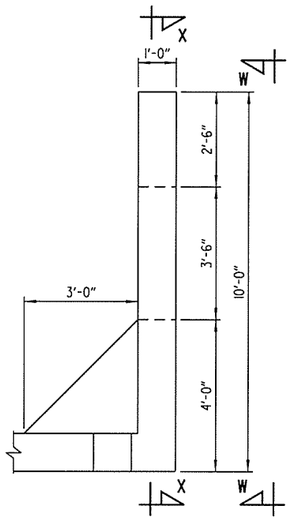


PLAN VIEW

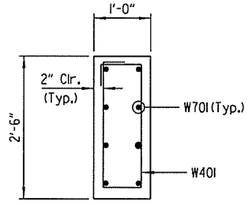


SECTION G-G

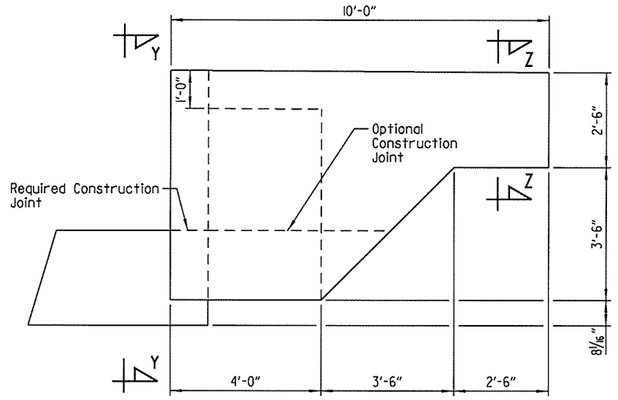
PEDESTAL DETAIL
Scale: ¾" = 1'-0"



PLAN OF WING
Scale: ½" = 1'-0"

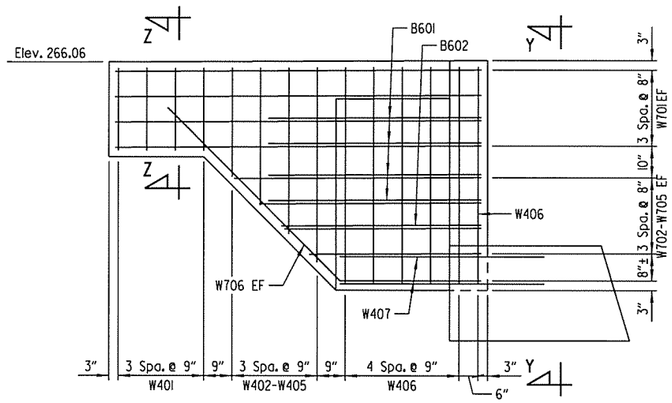


SECTION Z-Z
Scale: ¾" = 1'-0"



LEGEND
U.N.O. = Unless Noted Otherwise
EF = Each Face

VIEW W-W
Scale: ½" = 1'-0"



SECTION X-X
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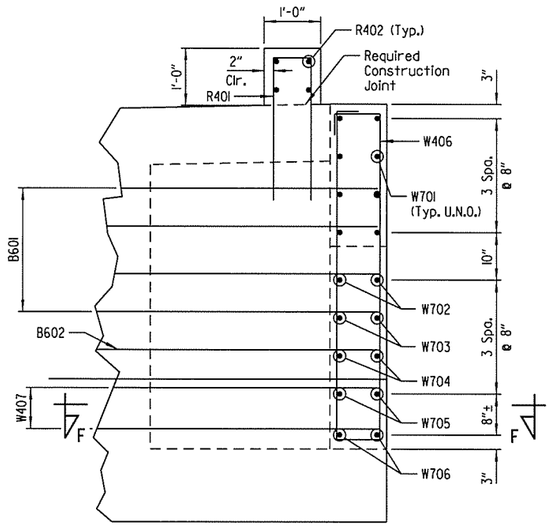
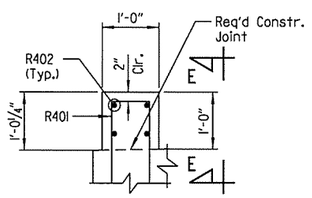
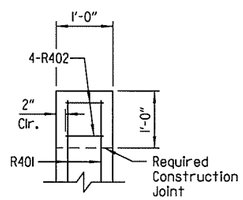


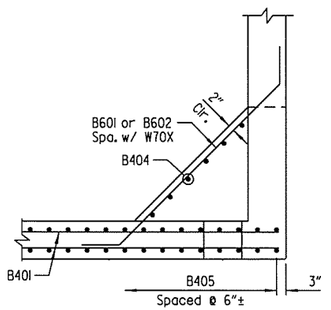
VIEW Y-Y
Scale: ¾" = 1'-0"



SECTION D-D
Scale: ¾" = 1'-0"



VIEW E-E
Scale: ¾" = 1'-0"

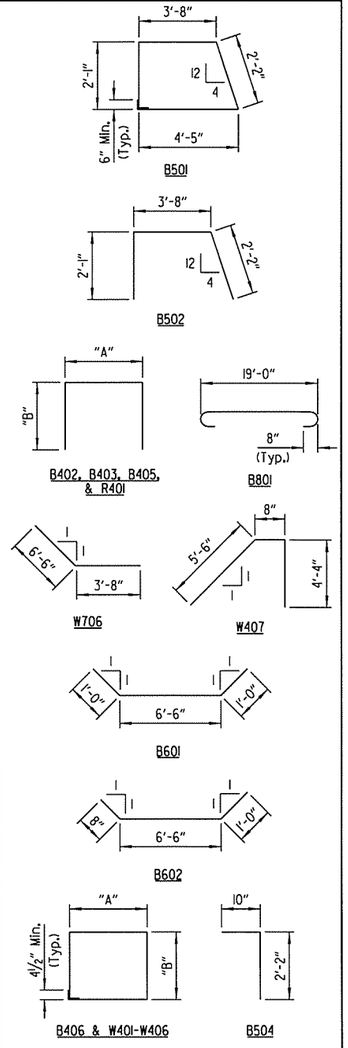


VIEW C-C
Scale: ½" = 1'-0"

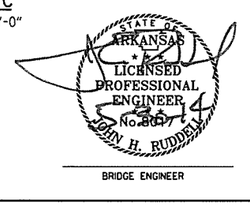
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	12	19'-0"			Str.
B402	12	5'-8"	2'-8"	1'-7"	2"
B403	15	4'-8"	1'-8"	1'-7"	2"
B404	6	5'-1"			Str.
B405	39	11'-8"	8"	5'-7"	2"
B406	3	9'-4"	1'-9"	2'-9"	2"
B501	22	12'-10"			2½"
B502	10	7'-8½"			2½"
B503	4	19'-0"			Str.
① B504	10	2'-11"			2½"
B601	4	8'-6"			4½"
B602	1	8'-2"			4½"
B801	5	20'-10"			6"
B802	6	19'-0"			Str.
R401	4	5'-6"	8"	2'-6"	2"
R402	4	8"			Str.
W401	4	6'-0"	8"	2'-2"	2"
W402 To W405	1 Each	7'-4" To 12'-0"	8"	2'-10" To 5'-2"	2"
W406	6	13'-0"	8"	5'-8"	2"
W407	2	10'-5"			2"
W701	8	9'-8"			Str.
W702 To W705	2 Each	6'-6" To 4'-6"			Str.
W706	2	10'-2"			5¼"

① B504 bars must be a weldable grade meeting the requirements of ASTM A706 (Grade 60).

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.



BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF END BENT NO. 7
NORTH SHARED USE RAMP
PULASKI COUNTY

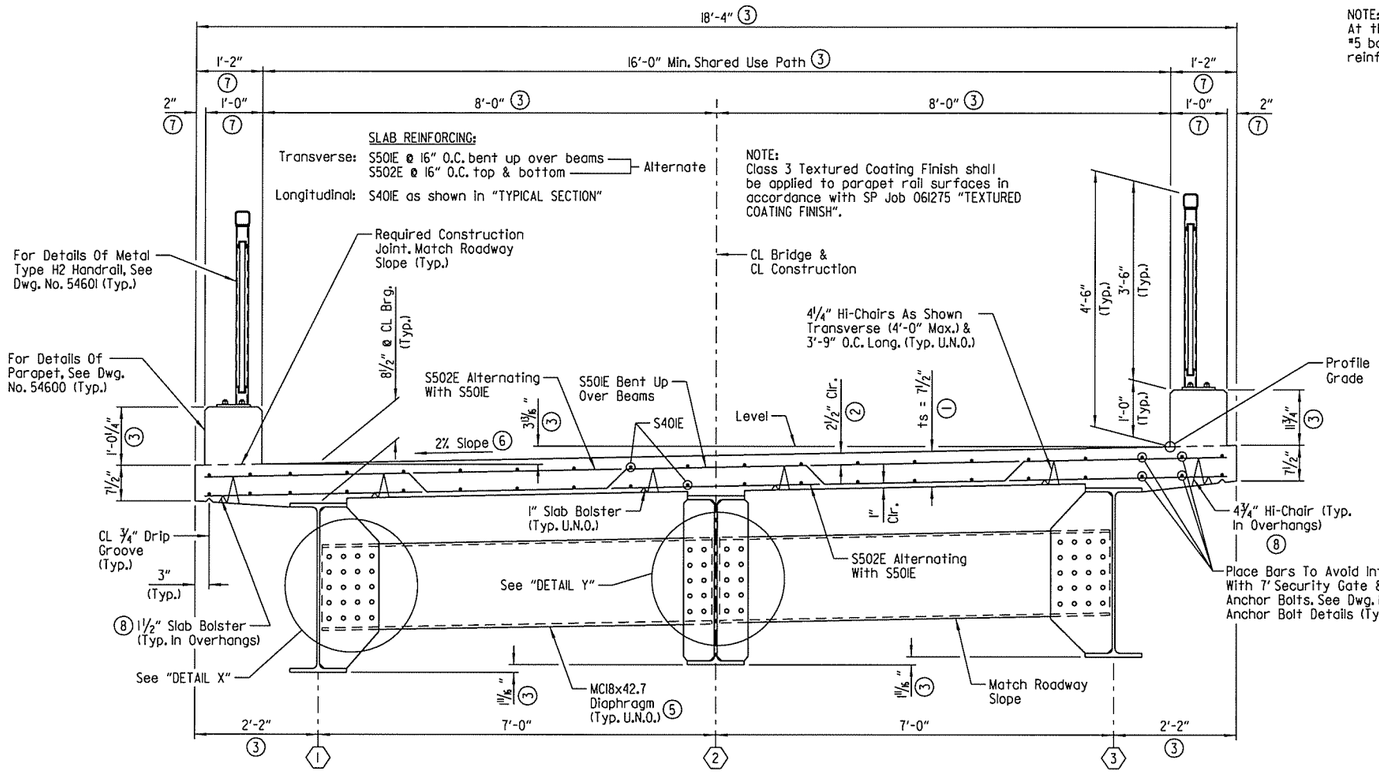
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2013 FILENAME: B061275x6_B5.DGN
CHECKED BY: WMM DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2013
BRIDGE NO. 04926 DRAWING NO. 54583

SRYancey 5/29/2014 4:45:56 PM
WORKSPACE: AHTD Bridge
L:\ROADWAY\BRIDGE\DGN\B061275x6_B5 (End Bent No. 7 Details).dgn
REVISED DATE:

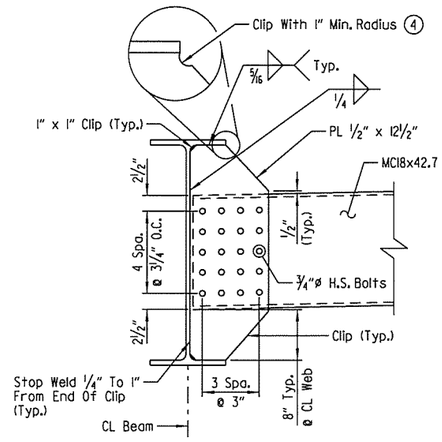
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	360	505
				(1) 04926		75'-0" W-BEAM SPAN (SPAN I)		54584



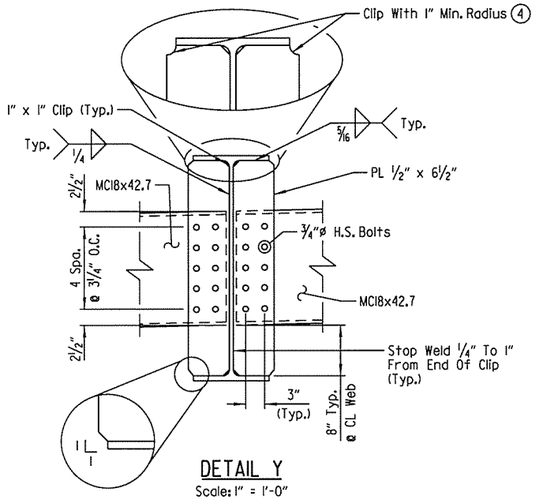
TYPICAL SECTION
(Looking Forward)
Scale: ¾" = 1'-0"

NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.11 prior to pouring the concrete deck unless otherwise noted.

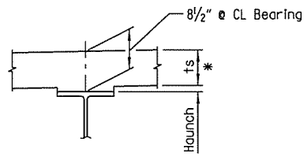
NOTE:
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S501E. Payment for reinforcing will be based on the weight of bar S501E.



DETAIL X
Scale: 1" = 1'-0"



DETAIL Y
Scale: 1" = 1'-0"



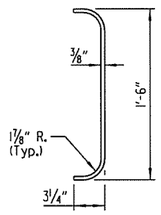
Note: t_s = Slab Thickness as shown on "TYPICAL SECTION"

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



NOTE:
Contractor may elect to fabricate a bent plate diaphragm as shown in lieu of the MCI8x42.7 diaphragm. Cost to construct bent plate diaphragm shall be at the Contractor's expense.

ALTERNATE BENT PLATE DETAIL
Scale: 1½" = 1'-0"

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) Dimension varies in superelevation transition area near Begin Bridge.

(4) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

(5) See "FRAMING PLAN" on Dwg. No. 54587 for MCI8x42.7 locations.

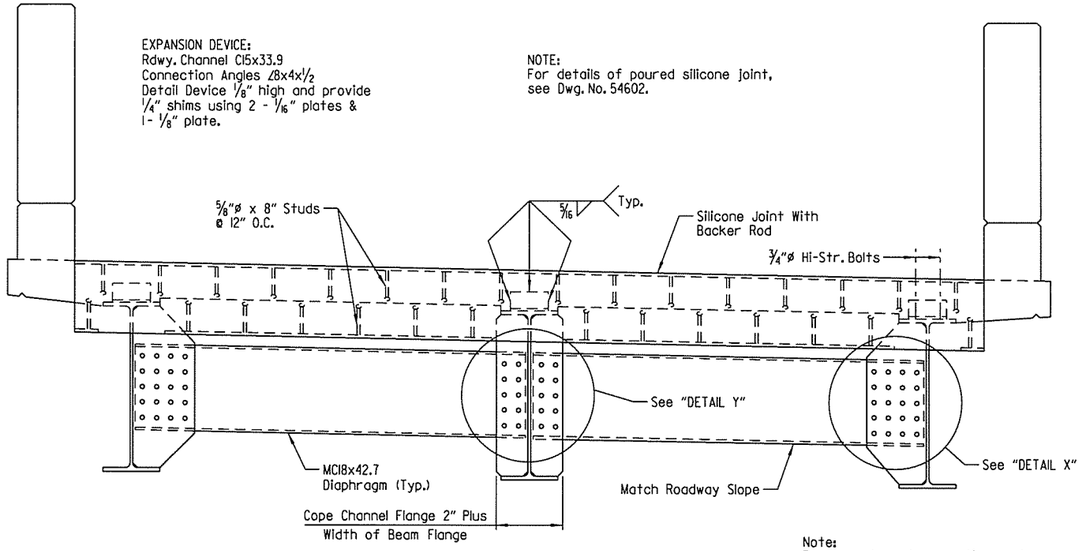
(6) Cross slope varies near Begin Bridge. See "SUPERELEVATION TRANSITION AT BEGIN BRIDGE" and "DECK TRANSITION DETAIL" on Dwg. No. 54585.

(7) Measured perpendicular or radial to edge of deck.

(8) Number and height of hi-chairs and slab bolsters shall be adjusted as necessary in regions of extended overhangs (near Begin Bridge) to maintain 4'-0" maximum spacing and transverse reinforcement clearance requirements.

EXPANSION DEVICE:
Rdwy. Channel C15x33.9
Connection Angles L8x4x½
Detail Device ⅛" high and provide ¼" shims using 2 - 1/16" plates & 1 - ⅛" plate.

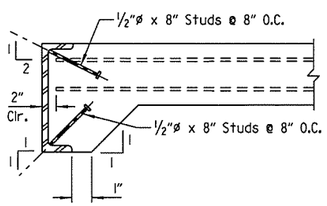
NOTE:
For details of poured silicone joint, see Dwg. No. 54602.



TYPICAL SECTION THRU JOINT AT BENT 2
(Looking Back)
Scale: ¾" = 1'-0"

Note:
Roadway channel, connection angles, and other joint armor not required for poured silicone joint at Begin Bridge.

LEGEND
U.N.O. = Unless Noted Otherwise



DETAIL OF ALTERNATE ANCHORS
No Scale

Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8077
JOHN H. RUDDELL
5-29-14

BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 1) NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

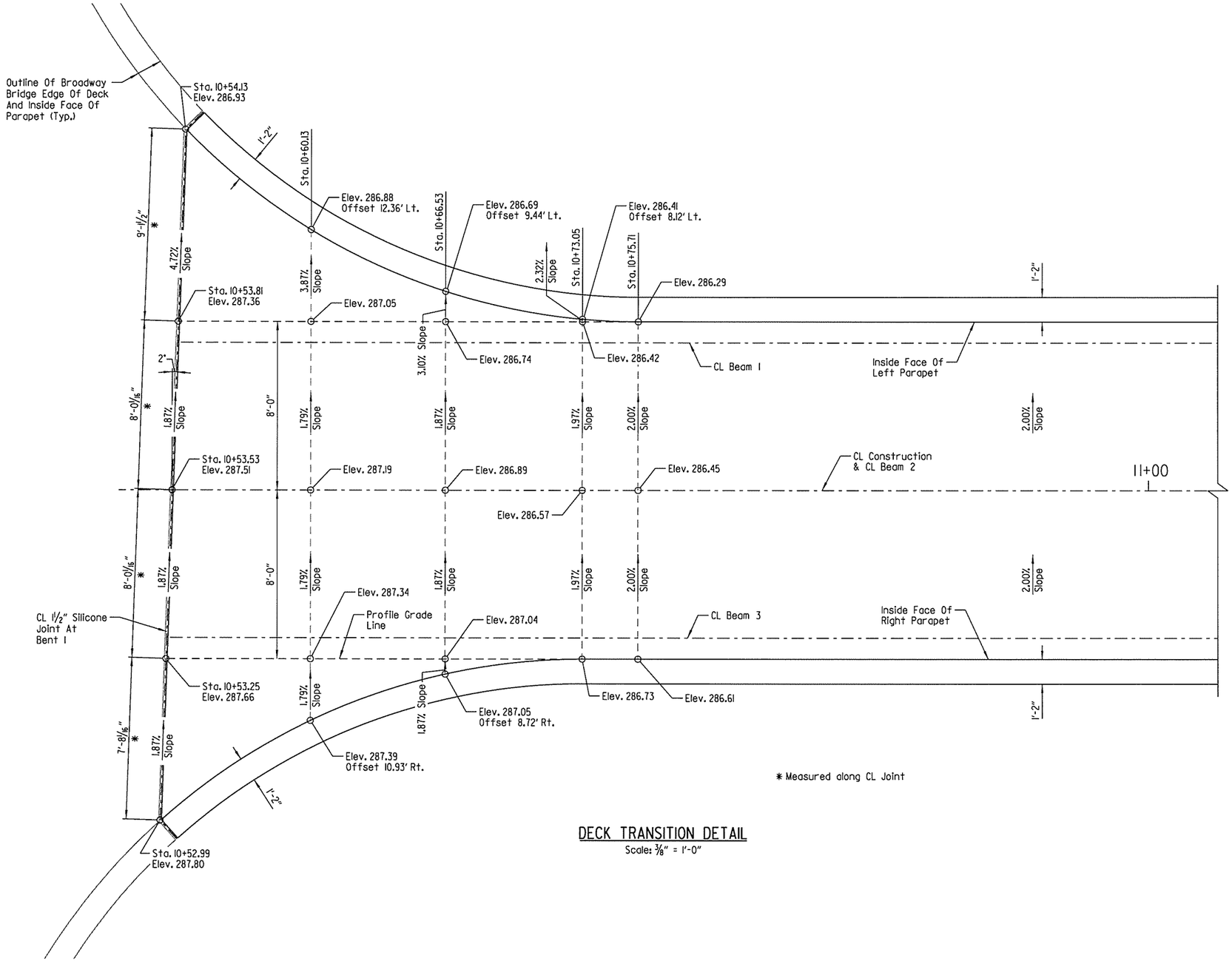
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S1.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54584

SRYancey 5/29/2014 4:45:57 PM
WORKSPACE: AHTD Bridge
L:\20NOV10TO80 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S1(Span 1 Typ Section).dgn
REVISED DATE:

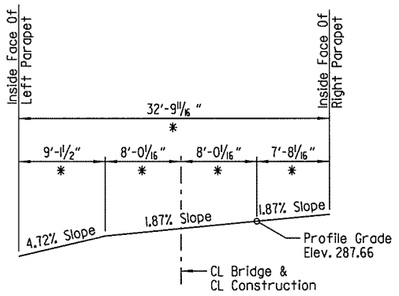
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	361	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 1)			54585



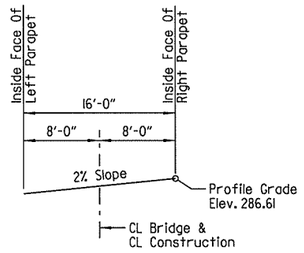
* Measured along CL Joint

DECK TRANSITION DETAIL

Scale: 3/8" = 1'-0"



Sta. 10+53.53 (CL Joint)
(Superelev. Transition Begins)
Looking Forward



Sta. 10+75.71
(Superelev. Transition Ends)
Looking Forward

SUPERELEVATION TRANSITION AT BEGIN BRIDGE

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 1) NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

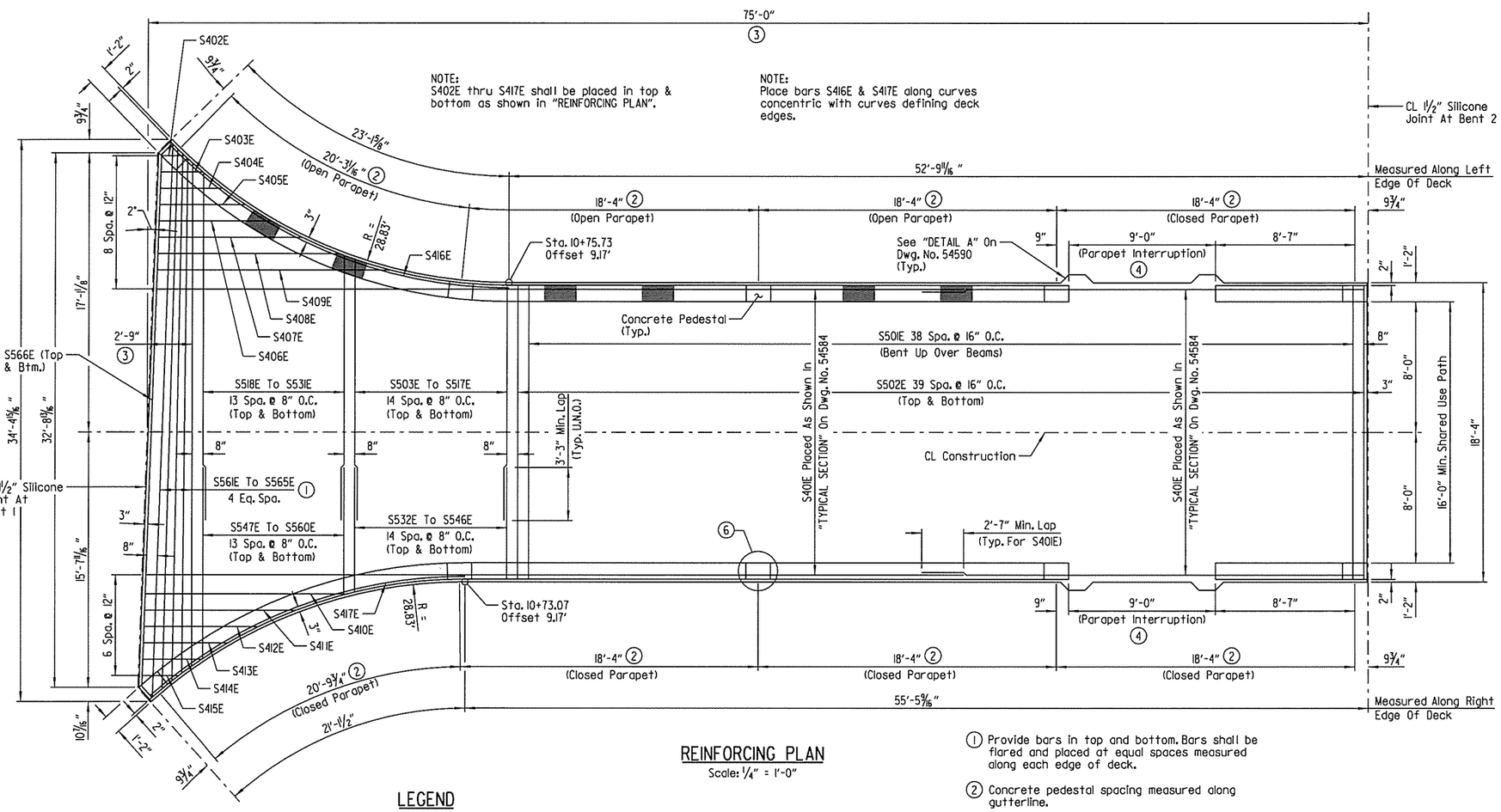
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S2.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54585

SRYancey 5/29/2014 4:45:57 PM
WORKSPACE: AHTD Bridge
L:\2DWN\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S2 (Span 1 Typ Section-2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	362	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN I)			54586



REINFORCING PLAN

Scale: ¼" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise

(1) Provide bars in top and bottom. Bars shall be flared and placed at equal spaces measured along each edge of deck.

(2) Concrete pedestal spacing measured along gutterline.

(3) Measured to intersection of CL Joint & CL Construction.

(4) Parapet interrupted for installation of 7'-0" fixed fence and 7'-0" security gate. See Dwg. Nos. 54589 & 54590 for details.

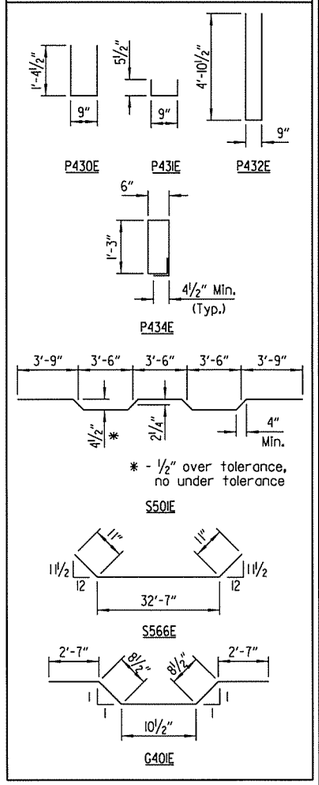
(5) See "DETAIL A" on Dwg. No. 54590 for placement.

(6) Light Pole Pedestal, see Dwg. No. 54600 for details.

BAR LIST

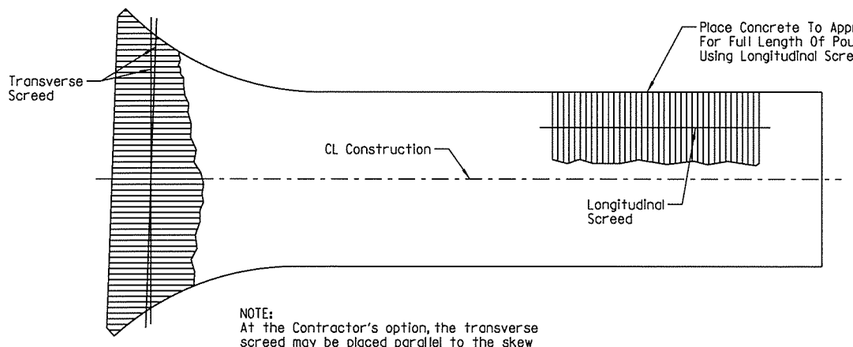
MARK	NO. REQ'D	LENGTH	P.D.
P430E	221	3'-4"	2"
P431E	24	1'-6"	2"
P432E	30	10'-4"	2"
P433E	16	31'-2"	Str.
P434E	40	3'-10"	2"
P435E	8	9'-0"	Str.
S401E	80	38'-9"	Str.
S402E	2	1'-5½"	Str.
S403E	2	2'-7"	Str.
S404E	2	3'-10½"	Str.
S405E	2	5'-3½"	Str.
S406E	2	6'-11"	Str.
S407E	2	8'-10"	Str.
S408E	2	11'-2½"	Str.
S409E	2	14'-4½"	Str.
S410E	2	12'-5"	Str.
S411E	2	9'-3½"	Str.
S412E	2	7'-0½"	Str.
S413E	2	5'-2"	Str.
S414E	2	3'-7½"	Str.
S415E	2	2'-3"	Str.
S416E	2	23'-2"	Str.
S417E	2	21'-1½"	Str.
S501E	39	18'-5"	3"
S502E	80	18'-0"	Str.
S503E To S517E	2 Each	14'-5" To 16'-0"	Str.
S518E To S531E	2 Each	16'-3" To 21'-4"	Str.
S532E To S546E	2 Each	6'-10" To 7'-8"	Str.
S547E To S560E	2 Each	7'-10" To 11'-8½"	Str.
S561E To S565E	2 Each	30'-9½" To 33'-10½"	Str.
S566E	2	34'-5"	3"
(5) G401E	8	7'-5½"	3"
(5) G402E	16	3'-1"	Str.

BAR BENDING DIAGRAM



NOTE:
Dimensions of bars are out-to-out.

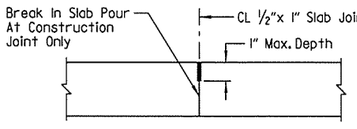
Bar designations ending with "E" indicate epoxy coated bars.



NOTE:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Construction.

CONCRETE PLACEMENT PROCEDURE

No Scale



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. Slab joints shall be placed at all pouring sequence construction joints. The joint sealer shall extend across the deck from gutterline to gutterline.

OPTIONAL SLAB JOINT DETAIL

No Scale

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. For construction joint details, see "OPTIONAL SLAB JOINT DETAIL". A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5/29/14

BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN I) NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

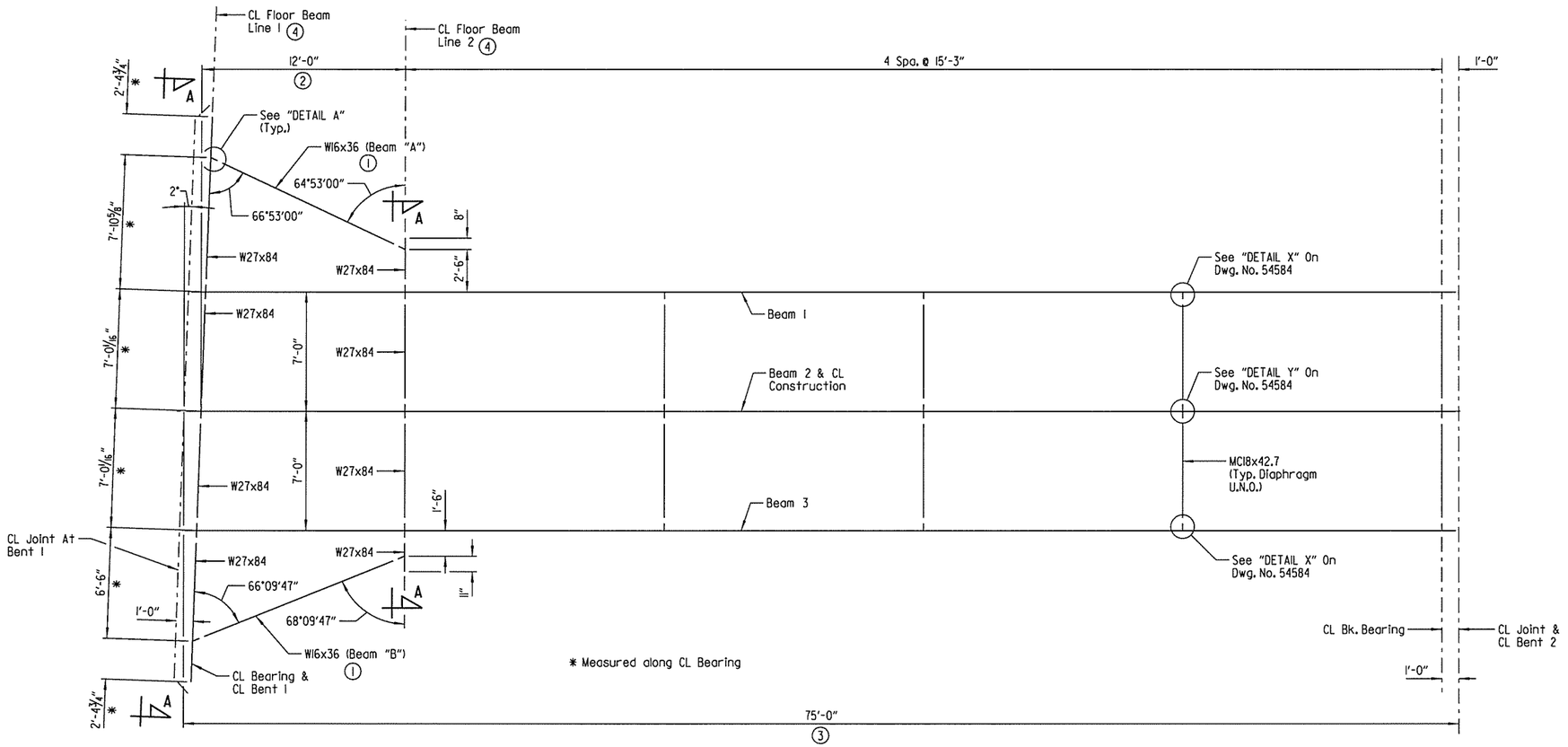
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S3.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

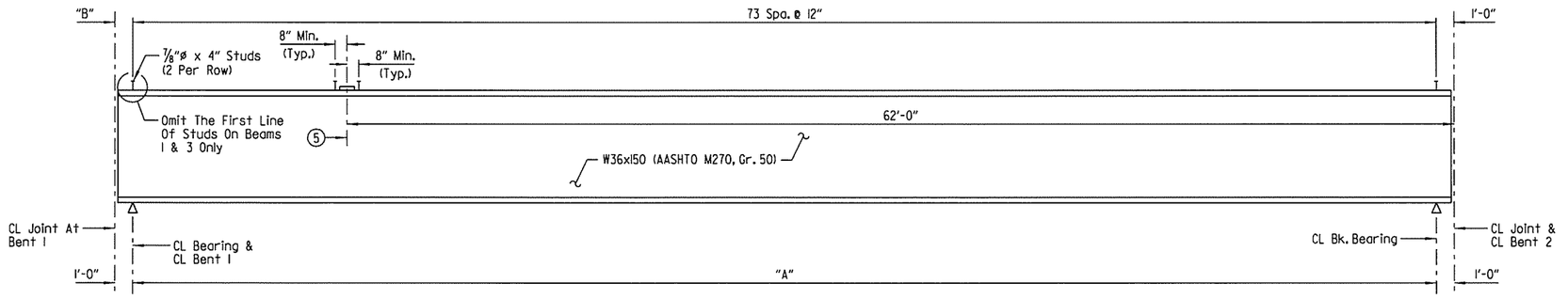
BRIDGE NO. 04926 DRAWING NO. 54586

SRYancey 5/29/2014 4:45:58 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S3 (Span I Slab Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	363	505
				(1)	04926	75'-0" W-BEAM SPAN (SPAN 1)		54587



FRAMING PLAN
Scale: 1/4" = 1'-0"



BEAM ELEVATION
(Beams 1, 2 & 3)
No Scale

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

(1) See Dwg. No. 54588 for shear stud spacing & "TABLE OF W16x33 VARIABLES" for Beam "A" & Beam "B"

(2) Measured to intersection of CL Construction & CL Bearing

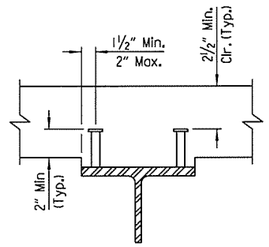
(3) Measured to intersection of CL Construction & CL Joint

(4) For "SECTION A-A" & floor beam details for each support line, see Dwg. No. 54588.

(5) CL top flange splice plate for W27x84 floor beam, as detailed on Dwg. No. 54588. Location shown is for beams 1 & 3 only. Provide gap in shear studs to clear splice plate at this location.

Bolt holes in top flange of beams 1 & 3 are required for W27x84 splice plate connections. See "FLOOR BEAM SPLICE DETAIL" on Dwg. No. 54588.

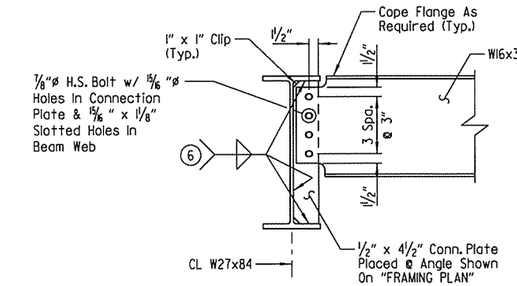
TABLE OF BEAM VARIABLES		
Beam	"A"	"B"
1	72'-9 1/16"	9 1/16"
2	73'-0"	1'-0"
3	73'-2 15/16"	1'-2 15/16"



Stud shear connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL
No Scale

(6) See "TABLE FOR WELDS" for size. Stop weld ¼" to 1" from end of connection plate clips.



DETAIL A
(All Horizontal Dimensions Measured Along CL W16x36)
No Scale

LEGEND
U.N.O. = Unless Noted Otherwise

NOTE:
For "GENERAL NOTES", See Dwg. No. 54599.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 1) NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

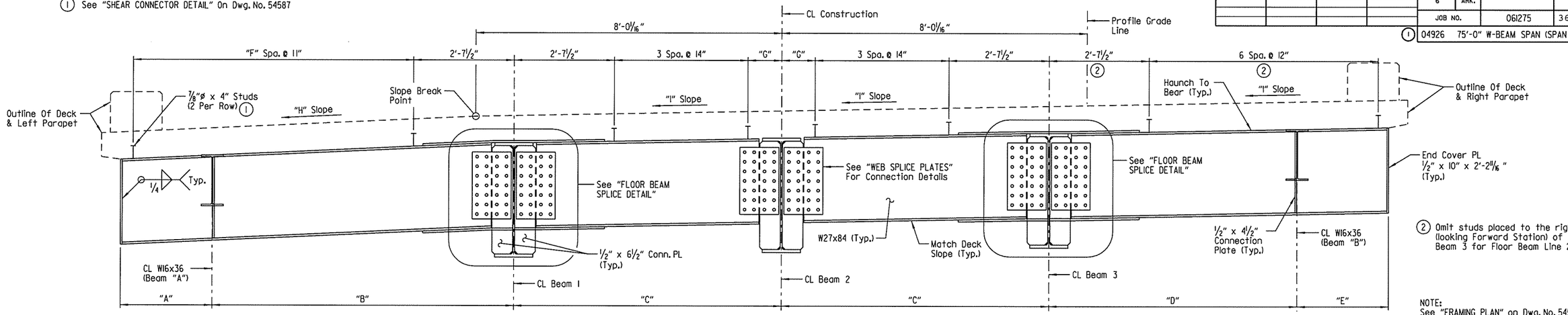
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S4.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54587

SRYancey 5/29/2014 4:45:59 PM
WORKSPACE: AHTD Bridge
L:\120\WIOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S4 (Span 1Framing).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	364	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 1)			54588

(1) See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54587

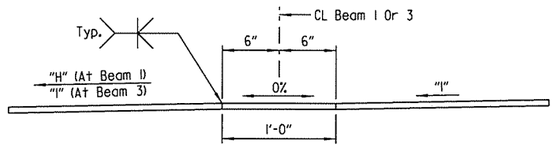


(2) Omit studs placed to the right (looking Forward Station) of CL Beam 3 for Floor Beam Line 2.

NOTE:
See "FRAMING PLAN" on Dwg. No. 54587 for location of Floor Beam Line 1 & Floor Beam Line 2.

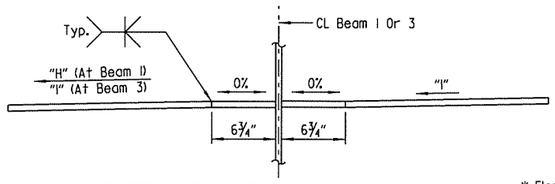
SECTION A-A

(Elevation Of Floor Beam Line)
(Slopes & Dimensions shown measured along length of W27x84)
Scale: 3/4" = 1'-0"



TOP FLANGE SPLICE PLATE DETAIL

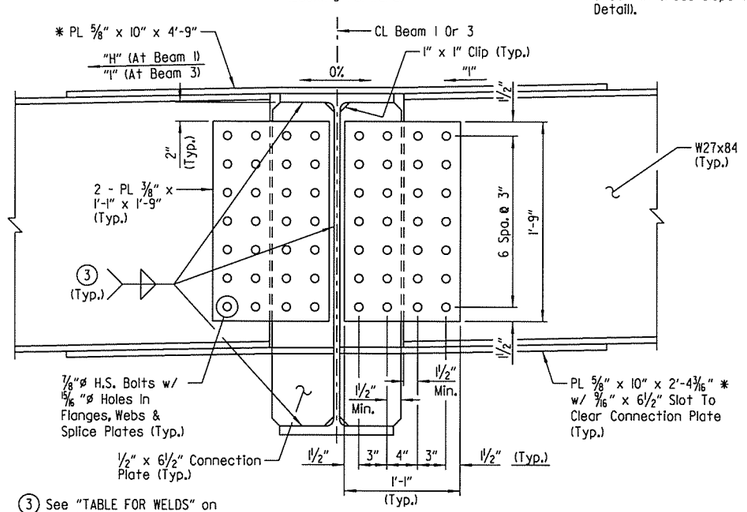
(Looking Forward)



BOTTOM FLANGE SPLICE PLATE DETAIL

(Looking Forward)

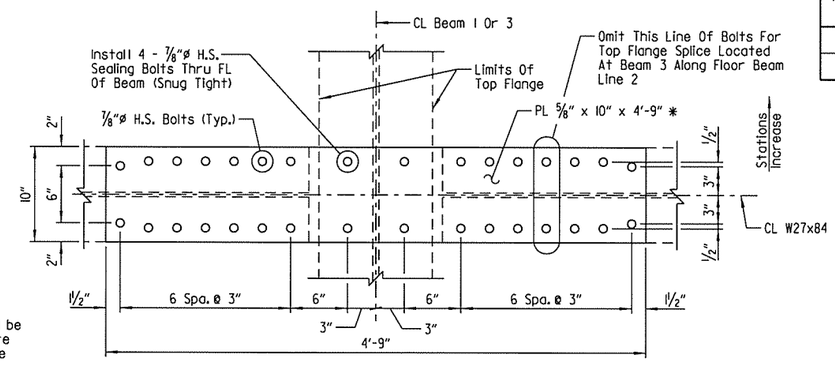
* Flange splice plates shall be fabricated to accomodate break in cross slope (See Detail).



(3) See "TABLE FOR WELDS" on Dwg. No. 54587 for size. Stop weld 1/4" to 1" from end of clips.

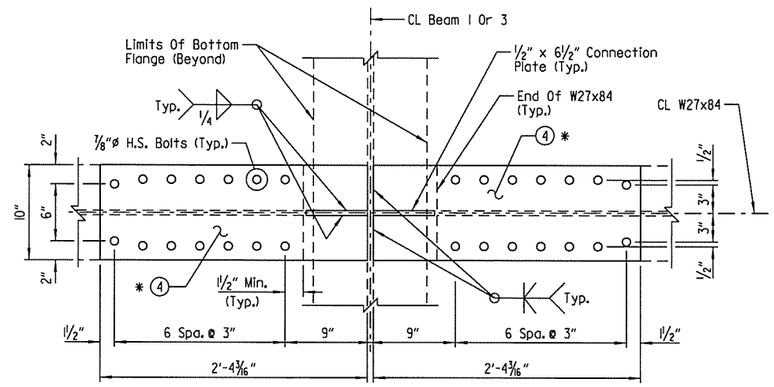
WEB SPLICE PLATES

(Looking Forward)



TOP FLANGE SPLICE PLATE

(Web Splice Plates Omitted For Clarity)



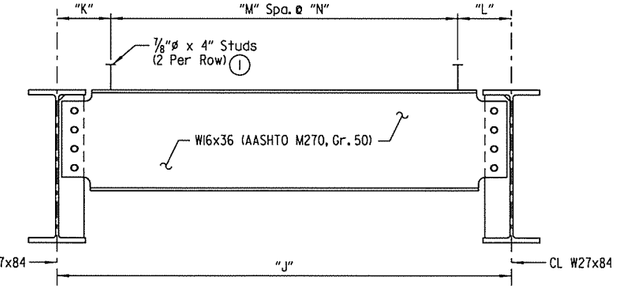
BOTTOM FLANGE SPLICE PLATE

(4) PL 5/8" x 10" x 2'-4 3/16" w/ 7/8" x 6 1/2" Slot To Clear Connection Plate

FLOOR BEAM SPLICE DETAIL

Scale: 1 1/2" = 1'-0"

TABLE OF FLOOR BEAM LINE (W27X84) VARIABLES									
Floor Beam Line	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"
1	2'-4 3/4"	7'-10 5/8"	7'-0 1/16"	6'-6"	2'-4 3/4"	8	10 3/16"	4.72%	1.87%
2	8"	2'-6"	7'-0"	1'-6"	11"	0	10 1/2"	3.10%	1.87%



W16X36 BEAM ELEVATION

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale

TABLE OF W16X36 VARIABLES					
Beam	"J"	"K"	"L"	"M"	"N"
"A"	12'-8 1/8"	10 1/8"	10"	11	12"
"B"	13'-5 3/16"	10 1/2"	10 11/16"	10	14"

NOTE:
See "FRAMING PLAN" on Dwg. No. 54587 for location of Beam "A" & Beam "B".

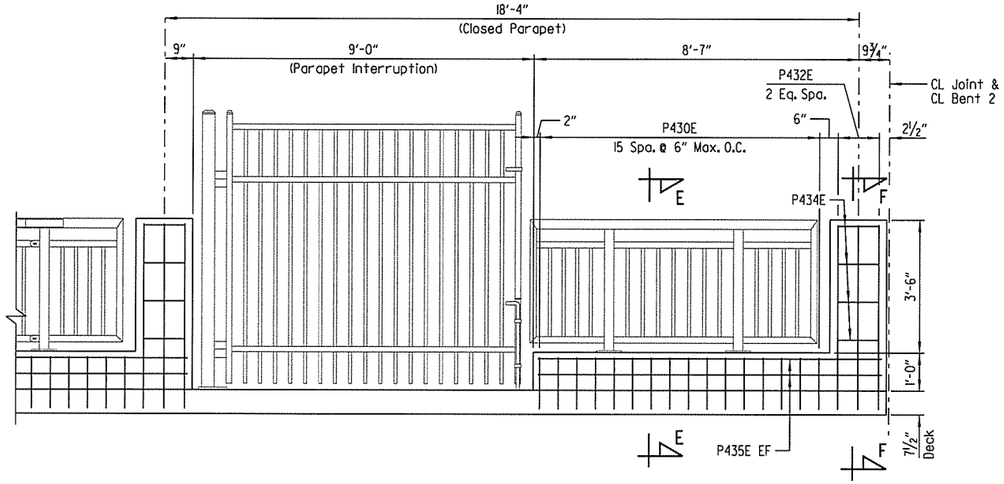
SHEET 5 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 1)
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S5.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54588

SRYancey 5/29/2014 4:45:59 PM
WORKSPACE: AHTD Bridge
L:\2DMODELS - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S5 (Span 1SteelDtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	365	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 1)			54589



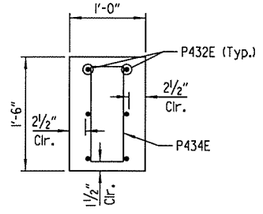
PARAPET INTERRUPTION ELEVATION

Scale: ½" = 1'-0"

NOTE:
For typical pedestrian parapet details, see Dwg. No. 54600.

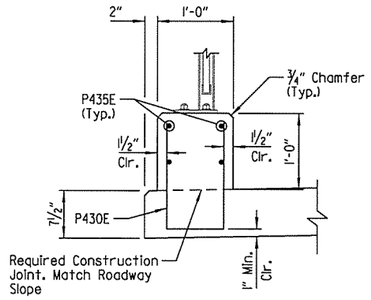
LEGEND

U.N.O. = Unless Noted Otherwise



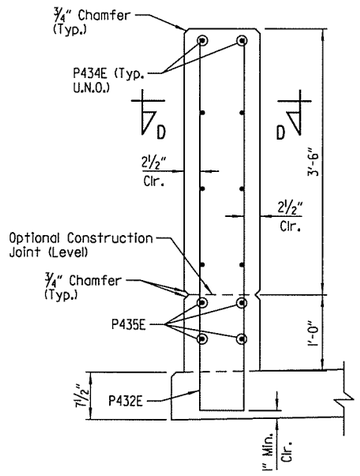
SECTION D-D

Scale: 1" = 1'-0"



SECTION E-E

Scale: 1" = 1'-0"



SECTION F-F

Scale: 1" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 75'-0" SIMPLE
COMPOSITE W-BEAM SPAN (SPAN 1)
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x6_S6.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54589

SRYancey 5/29/2014 4:46:00 PM
WORKSPACE: AHTD Bridge
L:\201\WOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S6 (Span 1Special Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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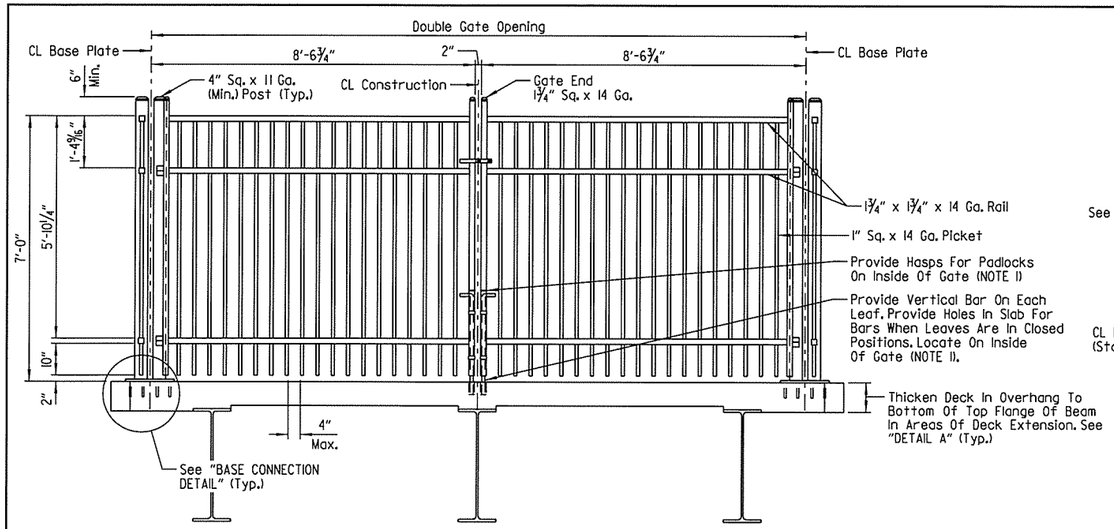
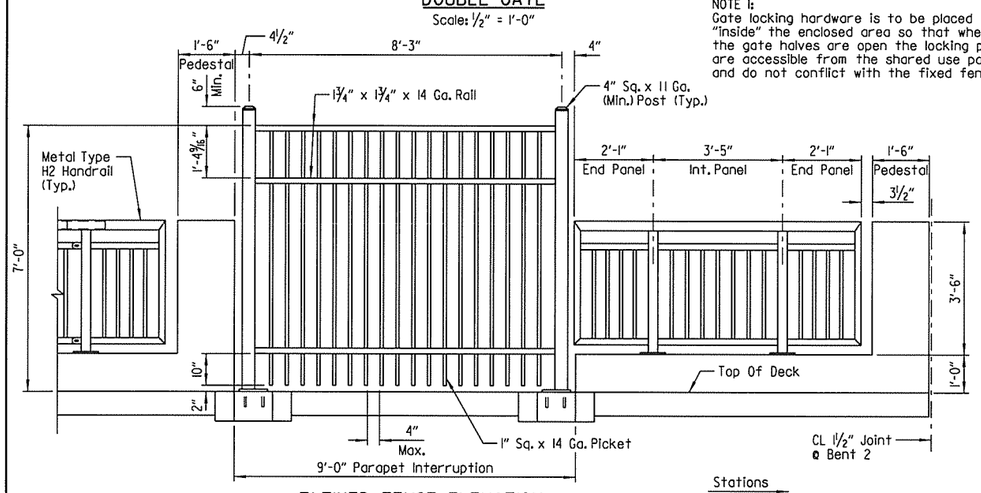
				JOB NO.		061275	366	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 1)			54590



DOUBLE GATE

Scale: ½" = 1'-0"

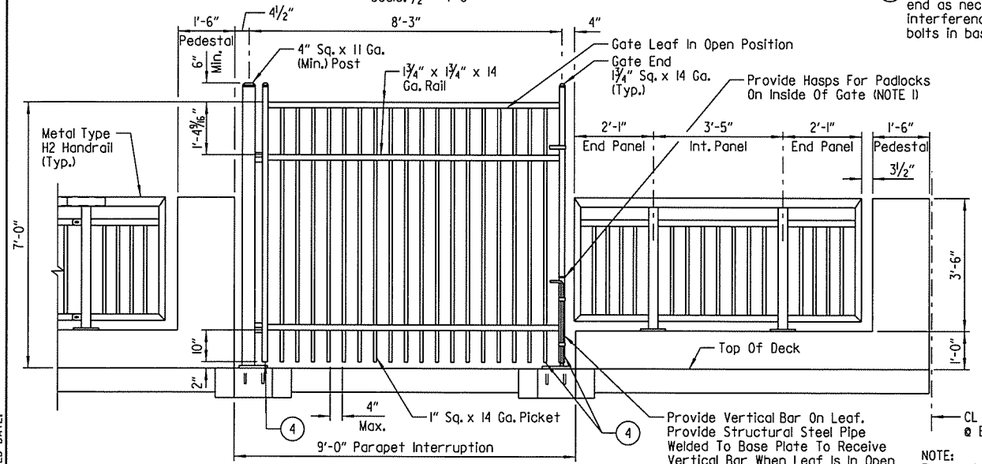
NOTE 1:
Gate locking hardware is to be placed "inside" the enclosed area so that when the gate halves are open the locking pins are accessible from the shared use path and do not conflict with the fixed fence.



7' FIXED FENCE ELEVATION

Scale: ½" = 1'-0"

Stations Increase

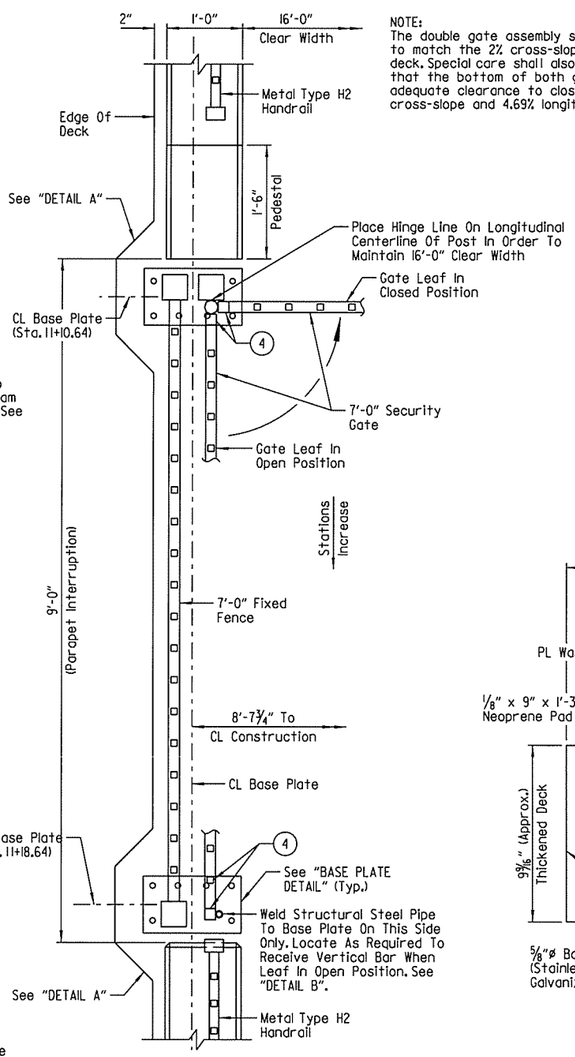


7' SECURITY GATE ELEVATION

Scale: ½" = 1'-0"

Provide Vertical Bar On Leaf. Provide Structural Steel Pipe Welded To Base Plate To Receive Vertical Bar When Leaf Is In Open Position. Locate On Inside Of Gate (NOTE 1).

NOTE:
For additional details of Metal Type H2 Handrail, see Dwg. No. 54601.



GATE HINGE DETAIL

Scale: 1" = 1'-0"

NOTE:
The double gate assembly shall be fabricated to match the 2% cross-slope of the bridge deck. Special care shall also be given to ensure that the bottom of both gate halves have adequate clearance to close given the 2% cross-slope and 4.69% longitudinal grade.

MATERIALS FOR 7'-0" FENCE & SECURITY GATE

The 7'-0" fixed fence and security gate shall be designed, fabricated, and painted in accordance with SP JOB 061275 "STEEL FENCE AND SECURITY GATE".

The 7'-0" fixed fence and security gates shall be similar and equal in all respects to the Aegis II Classic Series as manufactured by Ameristar Fence Products, Inc., Tulsa, Oklahoma, or approved equal, with 4" sq. x 11 ga. (min.) posts, 1" sq. x 14 ga. pickets and 1¾" rails.

Maximum horizontal clear openings shall be 4 inches.

Materials used in the fabrication of the fixed fence and security gate shall be in accordance with the material requirements on Dwg. No. 54357.

Shop drawings showing details of the 7'-0" fixed fence and security gates, including design calculations, shall be submitted and approval secured before fabrication begins.

LOADING CRITERIA

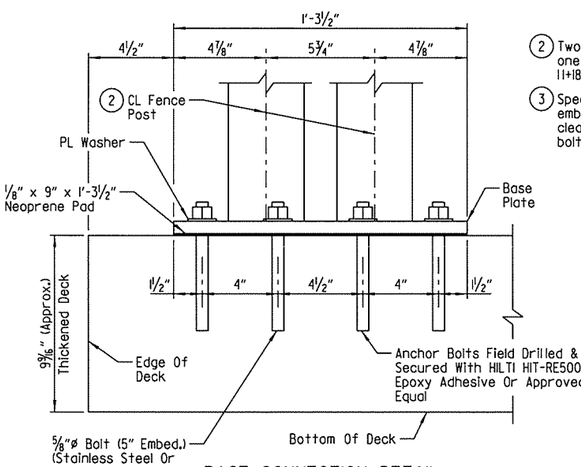
1. All horizontal members shall be designed for a uniform loading of 50 pounds per foot applied vertically and horizontally plus a concentrated load of 200 pounds applied in any direction at the top of the horizontal member. All loadings shall be applied simultaneously.
2. All rail posts shall be designed for a transverse load (in kips) equal to 0.20 + 0.050L, where L is equal to the post spacing (in feet).

DETAIL A

Scale: 1" = 1'-0"

(1) See Dwg. No. 54586 for "BAR LIST" & "BAR BENDING DIAGRAM".

(4) Modify picket and/or gate end as necessary to avoid interference with anchor bolts in base plate.

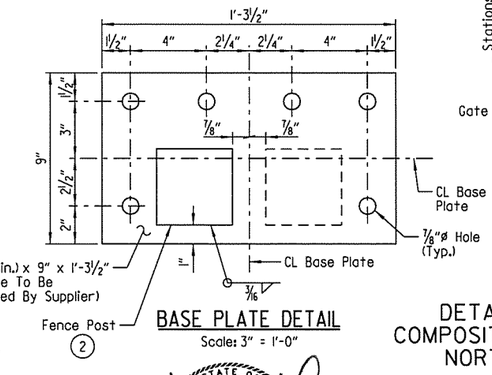


BASE CONNECTION DETAIL

Scale: 3" = 1'-0"

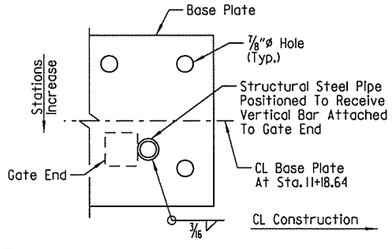
(2) Two fence posts shown in detail. Only one required for base plates at Sta. 11+18.64. See "GATE HINGE DETAIL".

(3) Special care shall be given to ensure embedment depth results in a minimum clearance no less than 3" from end of bolt to bottom of deck.



BASE PLATE DETAIL

Scale: 3" = 1'-0"



DETAIL B

Scale: 3" = 1'-0"

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LICENSED PROFESSIONAL ENGINEER
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SHEET 7 OF 7
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 1) NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

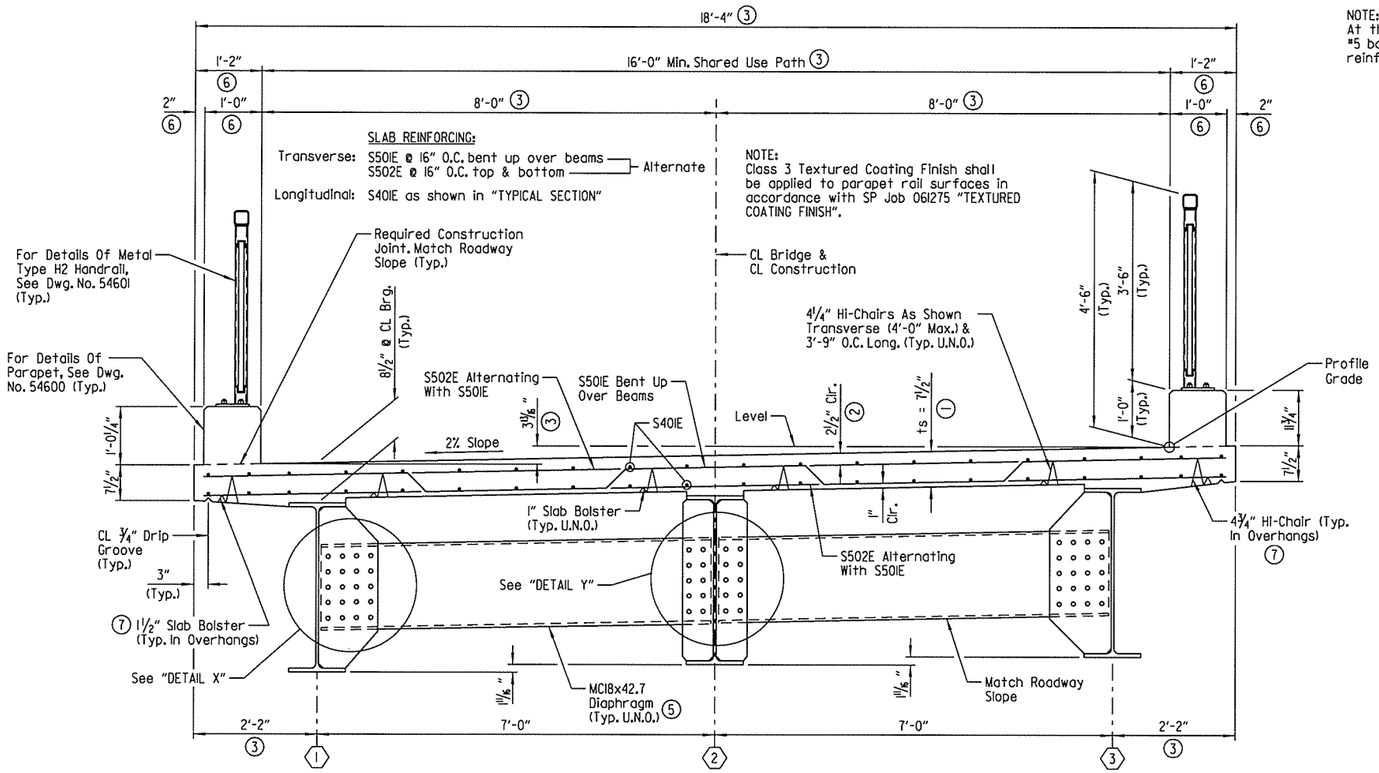
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2013 FILENAME: B061275x6_S7.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54590

SRYancey 5/29/2014 4:46:01 PM
WORKSPACE: AHTD Bridge
L:\ZGN\GIT0080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S7 (Span 1Special Fence Dtls).dgn
REVISED DATE:

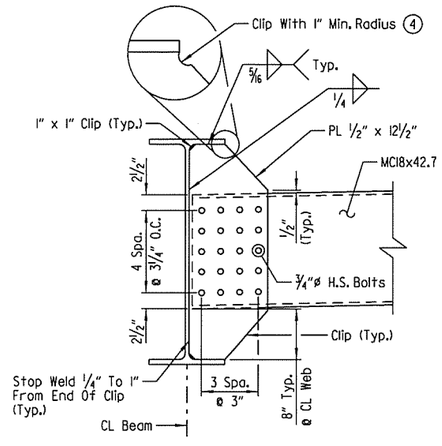
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	367	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 2)			54591



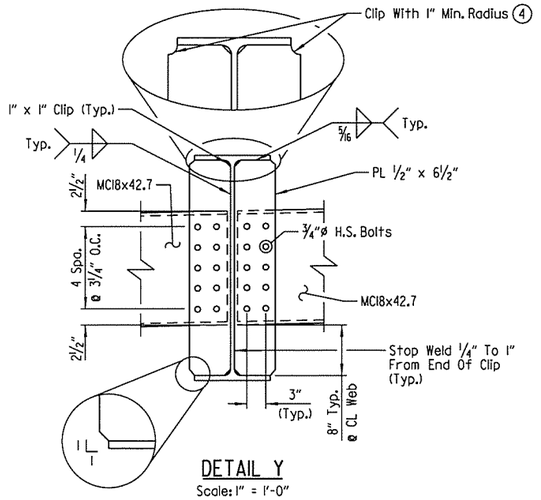
TYPICAL SECTION
(Looking Forward)
Scale: ¾" = 1'-0"

NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

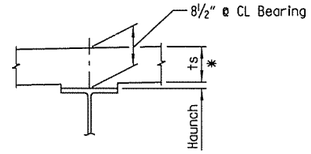
NOTE:
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for Bar S501E. Payment for reinforcing will be based on the weight of bar S501E.



DETAIL X
Scale: 1" = 1'-0"



DETAIL Y
Scale: 1" = 1'-0"



Note: t_S = Slab Thickness as shown on "TYPICAL SECTION"

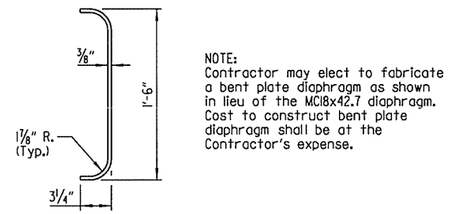
* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



NOTE:
Contractor may elect to fabricate a bent plate diaphragm as shown in lieu of the MC18x42.7 diaphragm. Cost to construct bent plate diaphragm shall be at the Contractor's expense.

ALTERNATE BENT PLATE DETAIL

Scale: 1½" = 1'-0"

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to mee slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

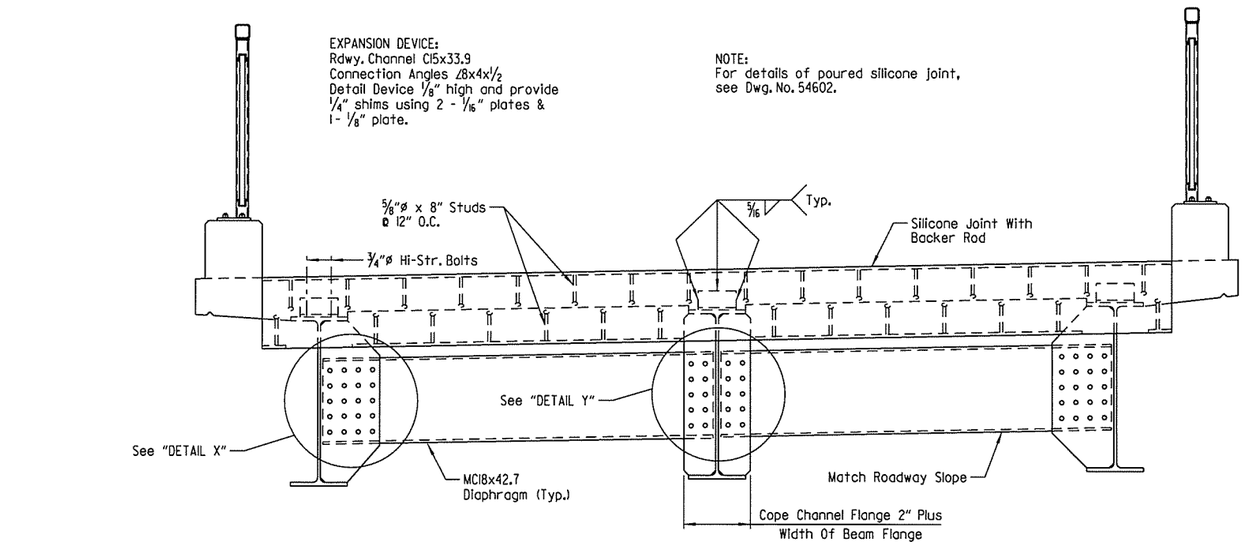
(3) Dimension varies in observation deck area.

(4) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.

(5) See "FRAMING PLAN" on Dwg. No. 54593 for MC18x42.7 locations.

(6) Measured perpendicular or radial to edge of deck.

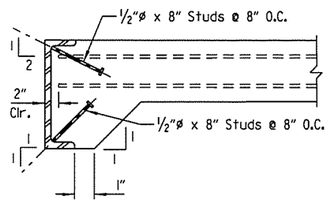
(7) Number and height of hi-chairs and slab bolsters shall be adjusted as necessary in regions of extended overhangs (in observation deck area) to maintain 4'-0" maximum spacing and transverse reinforcement clearance requirements.



TYPICAL SECTION THRU JOINT AT BENT 2
(Looking Forward)
Scale: ¾" = 1'-0"

LEGEND

U.N.O. = Unless Noted Otherwise



DETAIL OF ALTERNATE ANCHORS

No Scale

Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 2) NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

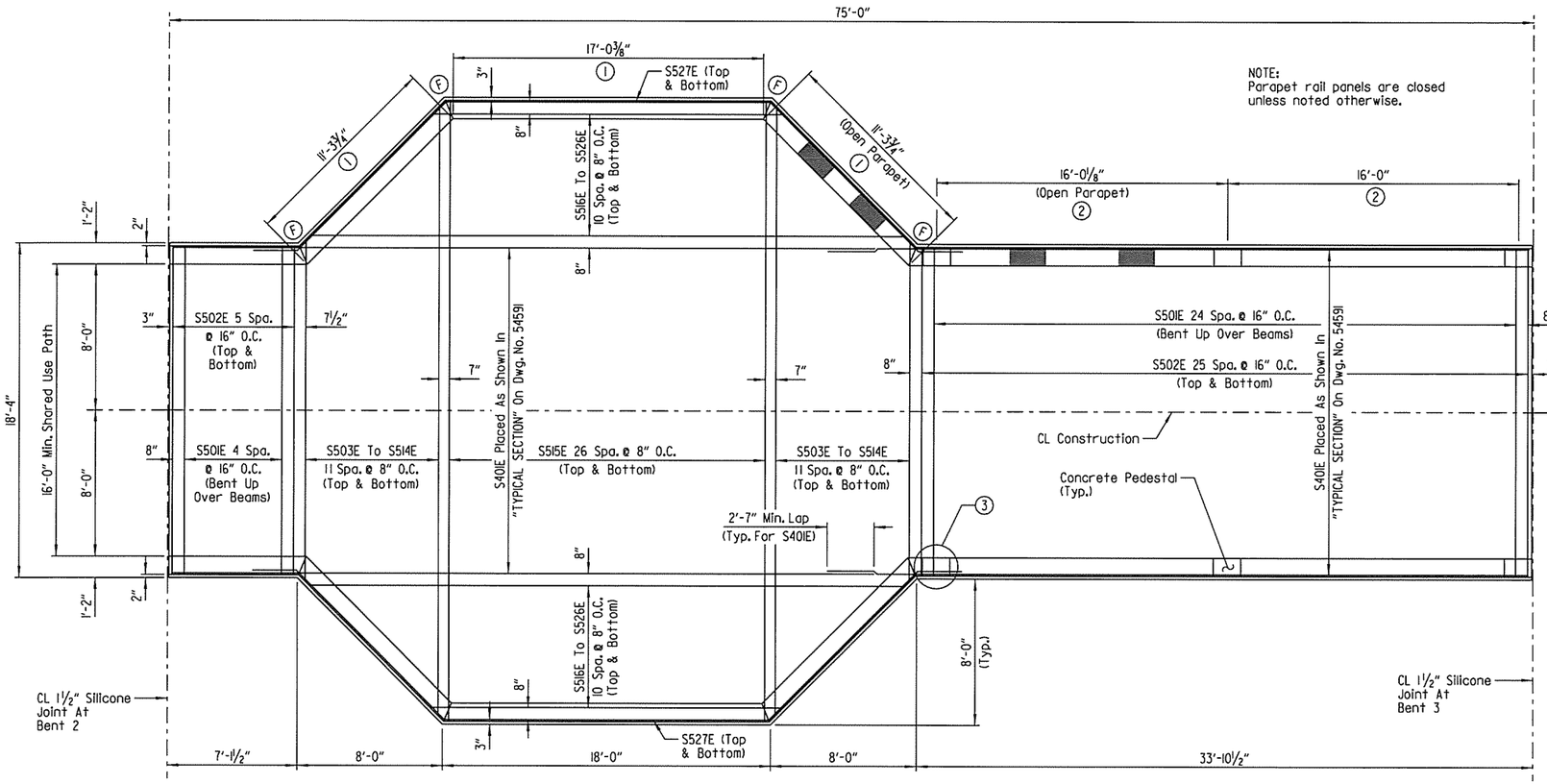
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S8.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54591

SRYancey 5/29/2014 4:46:01 PM
WORKSPACE: AHTD Bridge
L:\ZDATA\DOTDBO - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S8 (Span 2 Typ Section).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	368	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 2)			54592



REINFORCING PLAN
Scale: 1/4" = 1'-0"

(1) Parapet joint spacing measured along gutterline (typ. both sides). Parapet joints designated with symbol (F) shall be stopped 4" from top of slab.

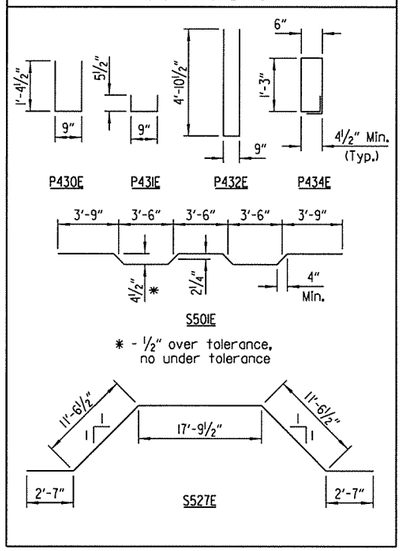
(2) Concrete pedestal spacing measured along gutterline (typ. both sides)

(3) Light Pole Pedestal, see Dwg. No. 54600 for details.

BAR LIST

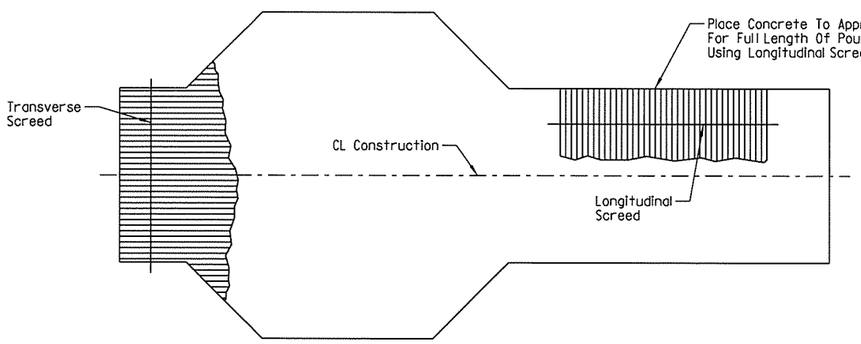
MARK	NO. REQ'D	LENGTH	P.D.
P430E	303	3'-4"	2"
P431E	16	1'-6"	2"
P432E	18	10'-4"	2"
P433E	4	33'-10"	Str.
P434E	24	3'-10"	2"
P435E	4	33'-7"	Str.
P436E	4	7'-1"	Str.
P437E	4	6'-10"	Str.
P438E	16	10'-11"	Str.
P439E	4	16'-9"	Str.
P440E	4	17'-4"	Str.
S401E	80	38'-7"	Str.
S501E	30	18'-5"	3"
S502E	64	18'-0"	Str.
S503E To S514E	4 Each	18'-8" To 33'-2"	Str.
S515E	54	34'-0"	Str.
S516E To S526E	4 Each	19'-4" To 32'-8"	Str.
S527E	4	46'-0 1/2"	3"

BAR BENDING DIAGRAM

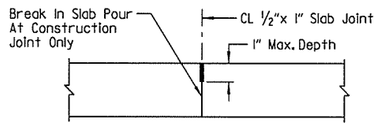


NOTE:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.



CONCRETE PLACEMENT PROCEDURE
No Scale



The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. Slab joints shall be placed at all pouring sequence construction joints. The joint sealer shall extend across the deck from gutterline to gutterline.

OPTIONAL SLAB JOINT DETAIL
No Scale

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. For construction joint details, see "OPTIONAL SLAB JOINT DETAIL". A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 2) NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

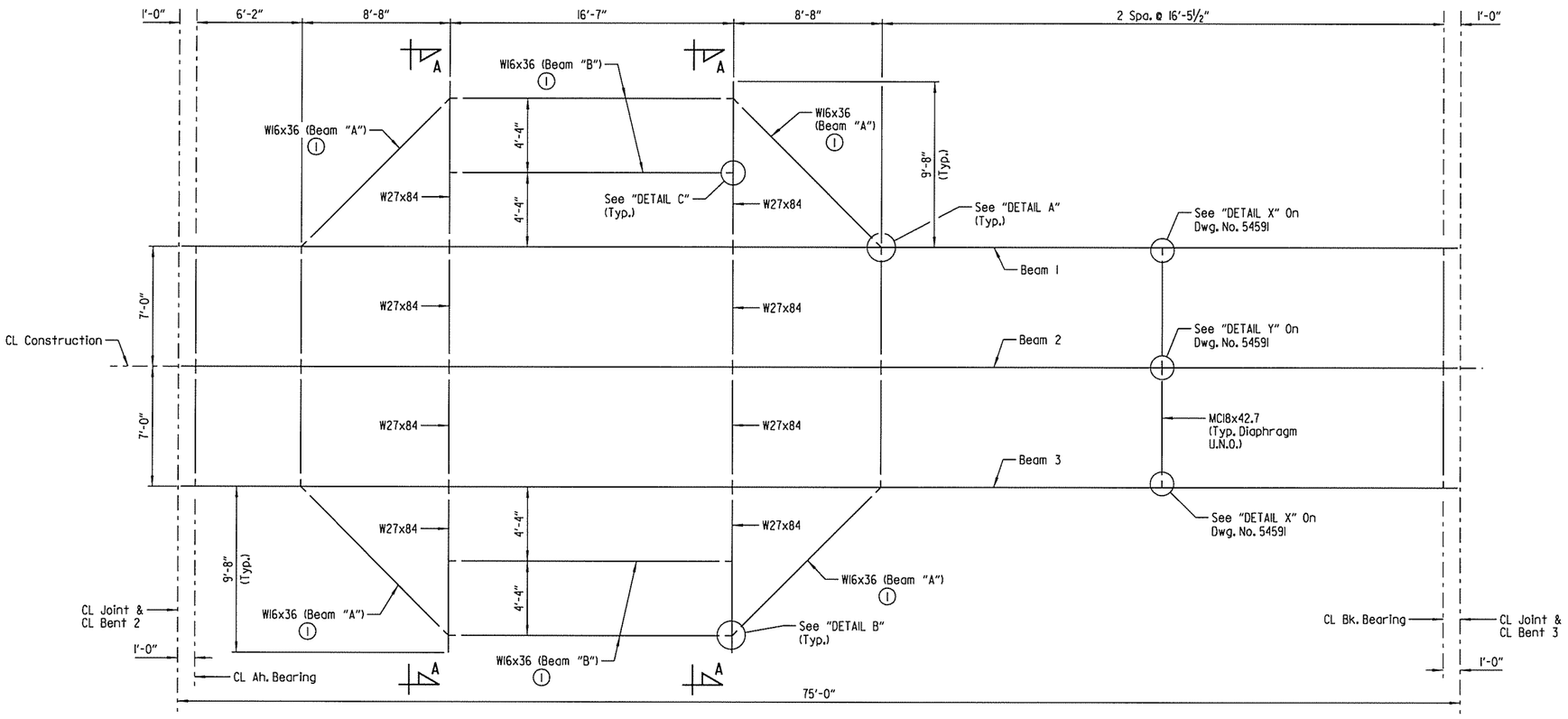
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S9.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

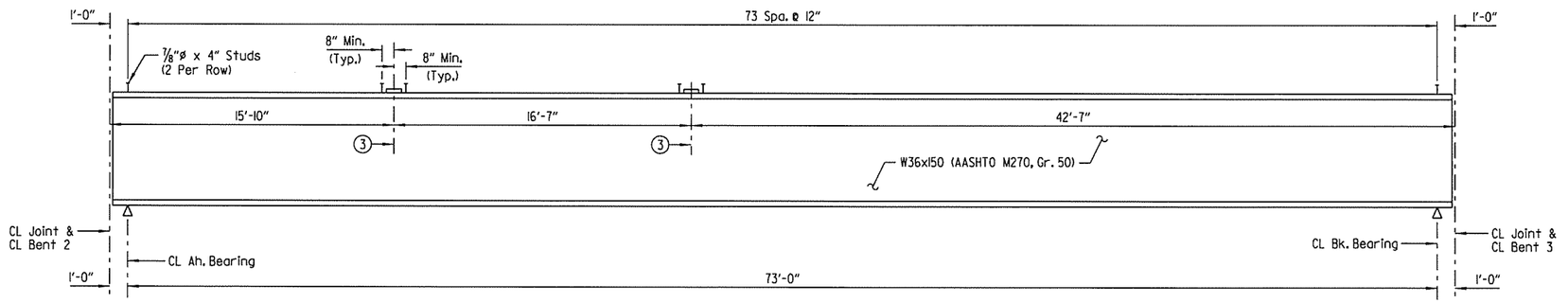
BRIDGE NO. 04926 DRAWING NO. 54592

SRTancey 5/29/2014 4:46:02 PM
WORKSPACE: AHTD Bridge
L:\Z0IN\001080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S9 (Span 2 Slab Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	369	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 2)			54593



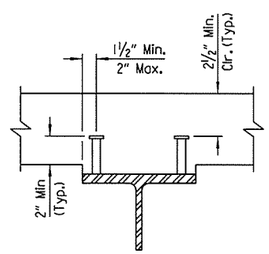
FRAMING PLAN
Scale: ¼" = 1'-0"



BEAM ELEVATION
(Beams 1, 2 & 3)
No Scale

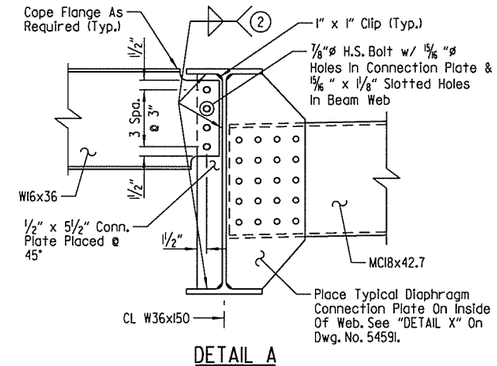
NOTE:
For "SECTION A-A", see Dwg. No. 54594.

LEGEND
U.N.O. = Unless Noted Otherwise

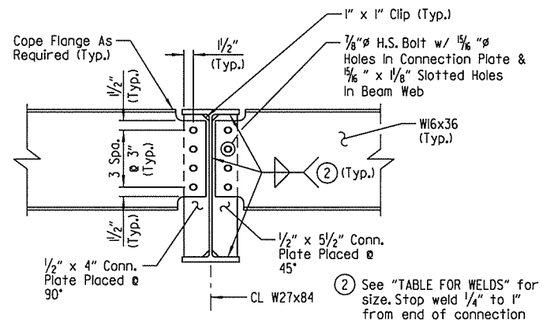


SHEAR CONNECTOR DETAIL
No Scale

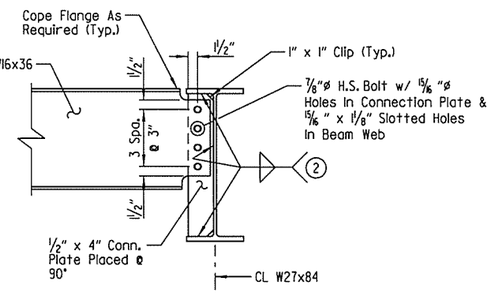
Stud shear connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.



DETAIL A
(All Horizontal Dimensions Measured Along CL W16x36)
No Scale



DETAIL B
(All Horizontal Dimensions Measured Along CL W16x36)
No Scale



DETAIL C
No Scale

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

(1) See Dwg. No. 54594 for shear stud spacing & "TABLE OF VARIABLES" for Beam "A" & Beam "B"

(3) CL top flange splice plate for W27x84 floor beam, as detailed on Dwg. No. 54594. Locations shown are for beams 1 & 3 only. provide gap in shear studs to clear splice plate at these locations.

Bolt holes in top flange of beams 1 & 3 are required for W27x84 splice plate connections. See "FLOOR BEAM SPLICE DETAIL" on Dwg. No. 54594.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8817
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 2) NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

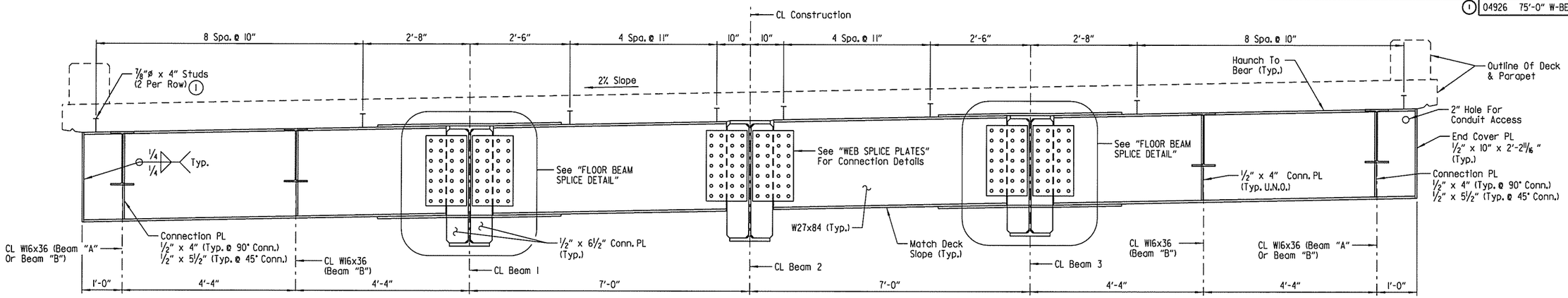
DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_SIO.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54593

SRYancey 5/29/2014 4:46:03 PM
WORKSPACE\ AHTD Bridge
L:\ROW\MOTOBO Broadway Bridge over the Arkansas River\Drawings\B061275x6_SIO (Span 2 Framing).dgn
REVISED DATE:

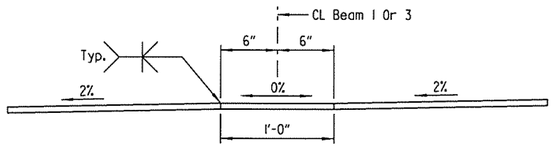
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	370	505
				(1) 04926	75'-0" W-BEAM SPAN (SPAN 2)			54594

(1) See "SHEAR CONNECTOR DETAIL" On Dwg. No. 54593

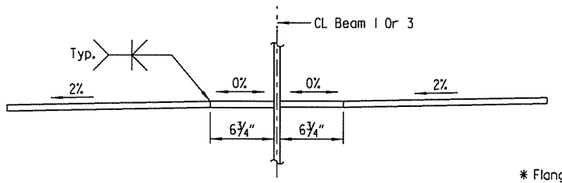


SECTION A-A

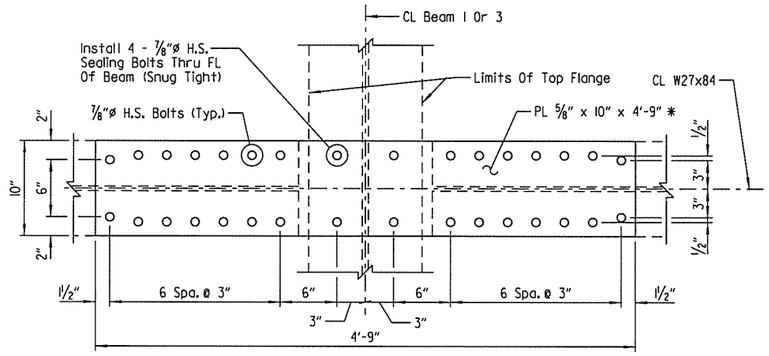
Scale: 3/4" = 1'-0"



TOP FLANGE SPLICE PLATE DETAIL



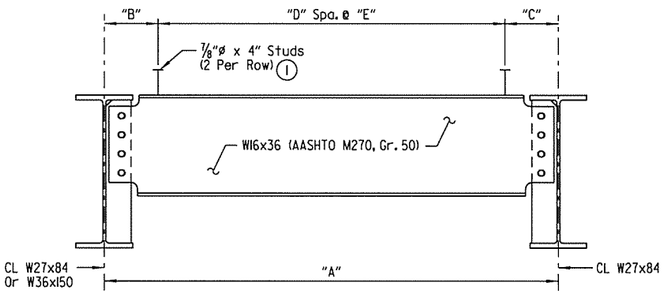
BOTTOM FLANGE SPLICE PLATE DETAIL



TOP FLANGE SPLICE PLATE

(Web splice plates omitted for clarity)

* Flange splice plates shall be fabricated to accomodate break in cross slope (See Detail).

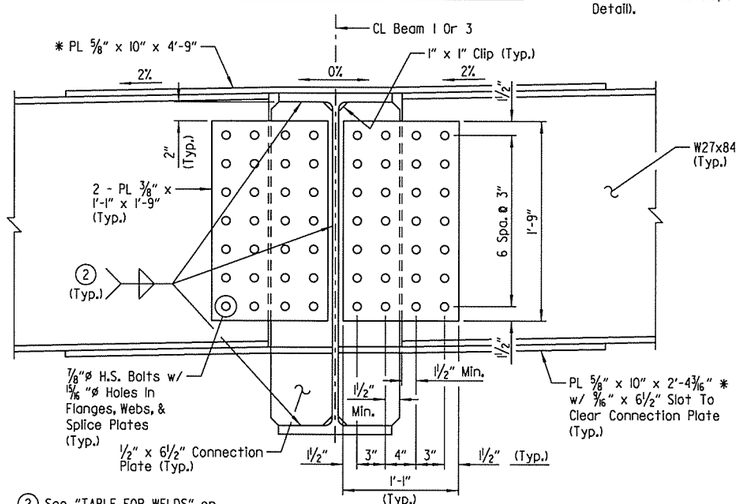


W16X36 BEAM ELEVATION

(All Horizontal Dimensions Measured Along CL W16x36)
No Scale

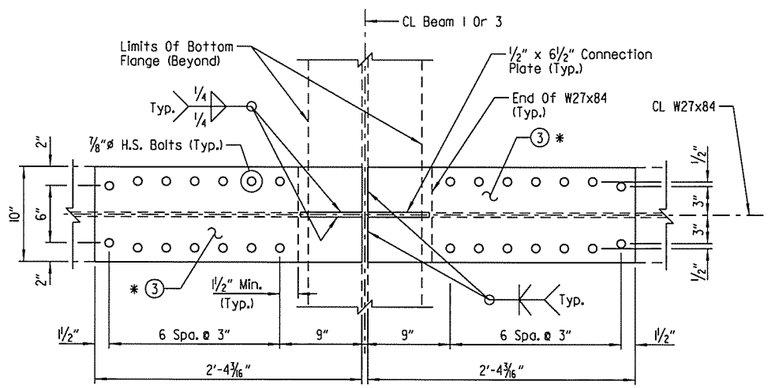
TABLE OF VARIABLES					
Beam	"A"	"B"	"C"	"D"	"E"
"A"	12'-3 3/16"	1'-5 1/2"	1'-0 9/16"	9	13"
"B"	16'-7"	9 1/2"	9 1/2"	15	12"

NOTE:
See "FRAMING PLAN" on Dwg. No. 54593 for location of Beams "A" & Beams "B".



(2) See "TABLE FOR WELDS" on Dwg. No. 54593 for size. Stop weld 1/4" to 1" from end of clips.

WEB SPLICE PLATES



BOTTOM FLANGE SPLICE PLATE

(3) PL 5/8" x 10" x 2'-4 3/16" w/ 9/16" x 6 1/2" Slot To Clear Connection Plate

FLOOR BEAM SPLICE DETAIL

Scale: 1 1/2" = 1'-0"

SHEET 4 OF 5
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 2)
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

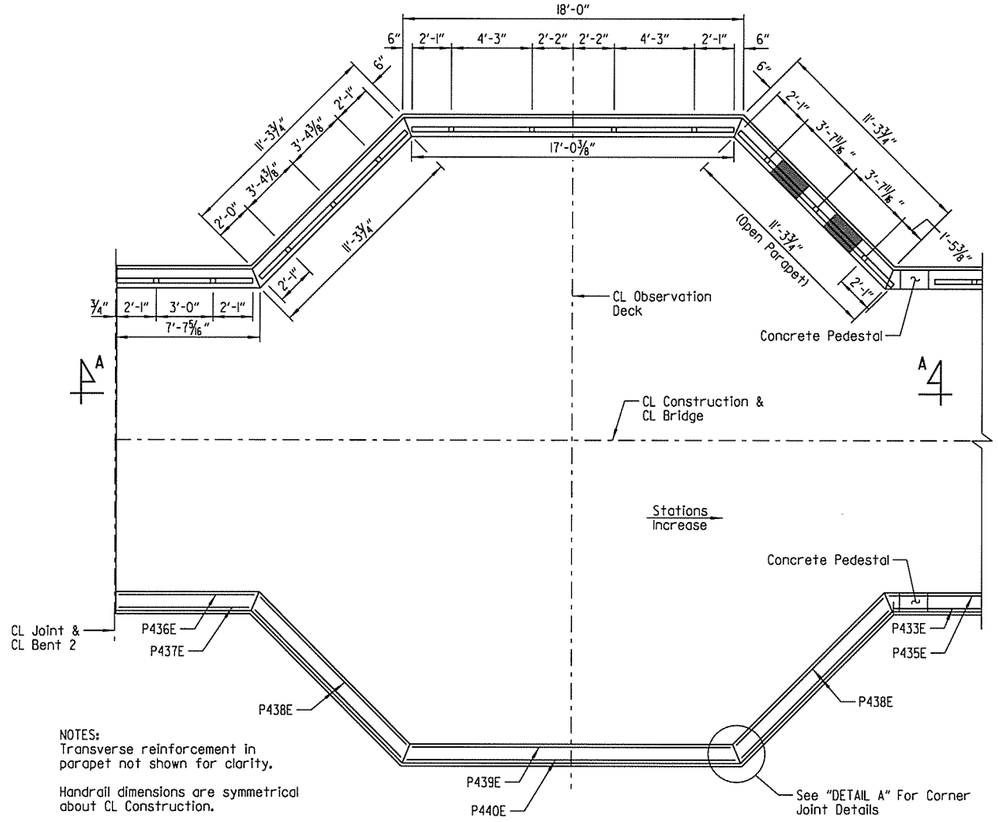
STATE OF ARKANSAS JOHN H. RUDDELL LICENSED PROFESSIONAL ENGINEER No. 8017

BRIDGE ENGINEER

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_SII.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54594

SRYancey 5/29/2014 4:46:03 PM
WORKSPACE: AHTD Bridge
L:\ZGN\MDIT080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_SII(Span 2 Steel)Dtsl.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	371	505
				① 04926	75'-0" W-BEAM SPAN (SPAN 2)			54595



NOTES:
Transverse reinforcement in parapet not shown for clarity.

Handrail dimensions are symmetrical about CL Construction.

Parapet reinforcement is symmetrical about CL Contruction except at open parapets.

NOTES:
For details of Metal Type 2 Handrail, see Dwg. No. 54601.

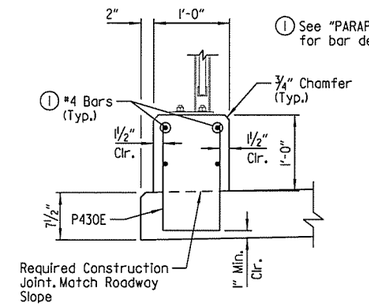
All handrail openings shall maintain a 4" max. spacing.

For parapet spacings not located on the observation deck, see "REINFORCING PLAN" on Dwg. No. 54592.

For parapets not included on the observation deck, see details on Dwg. No. 54600.

PARAPET DETAIL AT OBSERVATION DECK

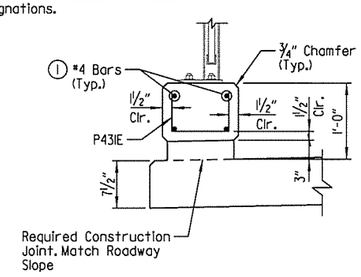
(Top Half Showing Handrail Details)
(Bottom Half Showing Reinforcing Details)
Scale: ¼" = 1'-0"



① See "PARAPET DETAIL AT OBSERVATION DECK" for bar designations.

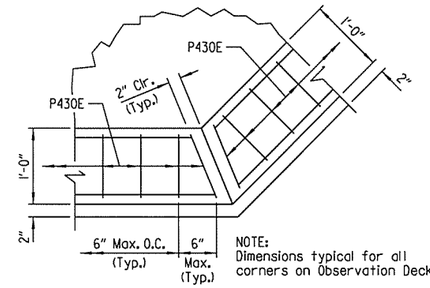
SECTION B-B

Scale: 1" = 1'-0"



SECTION C-C

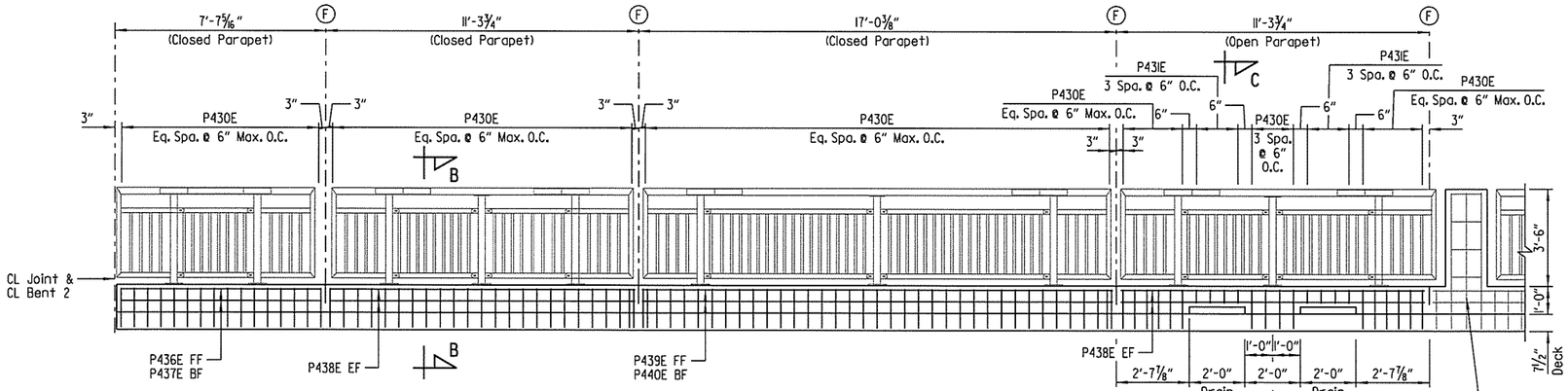
Scale: 1" = 1'-0"



NOTE:
Dimensions typical for all corners on Observation Deck.

DETAIL A

Scale: 1" = 1'-0"



Ⓕ CL Full-Depth Parapet Joint (¼" to 1" Max.) as shown on "REINFORCING PLAN" on Dwg No. 54592. Stop 4" from top of slab.

VIEW A-A

(All Horizontal Dimensions Measured Along Gutterline)
(Looking At Front Face)
Scale: ⅜" = 1'-0"

See Dwg. No. 54600 For Parapet Details

NOTE:
Parapet reinforcement on right side of Observation Deck similar except all parapets are closed.

LEGEND

EF = Each Face
BF = Back Face
FF = Front Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPAN 2) NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

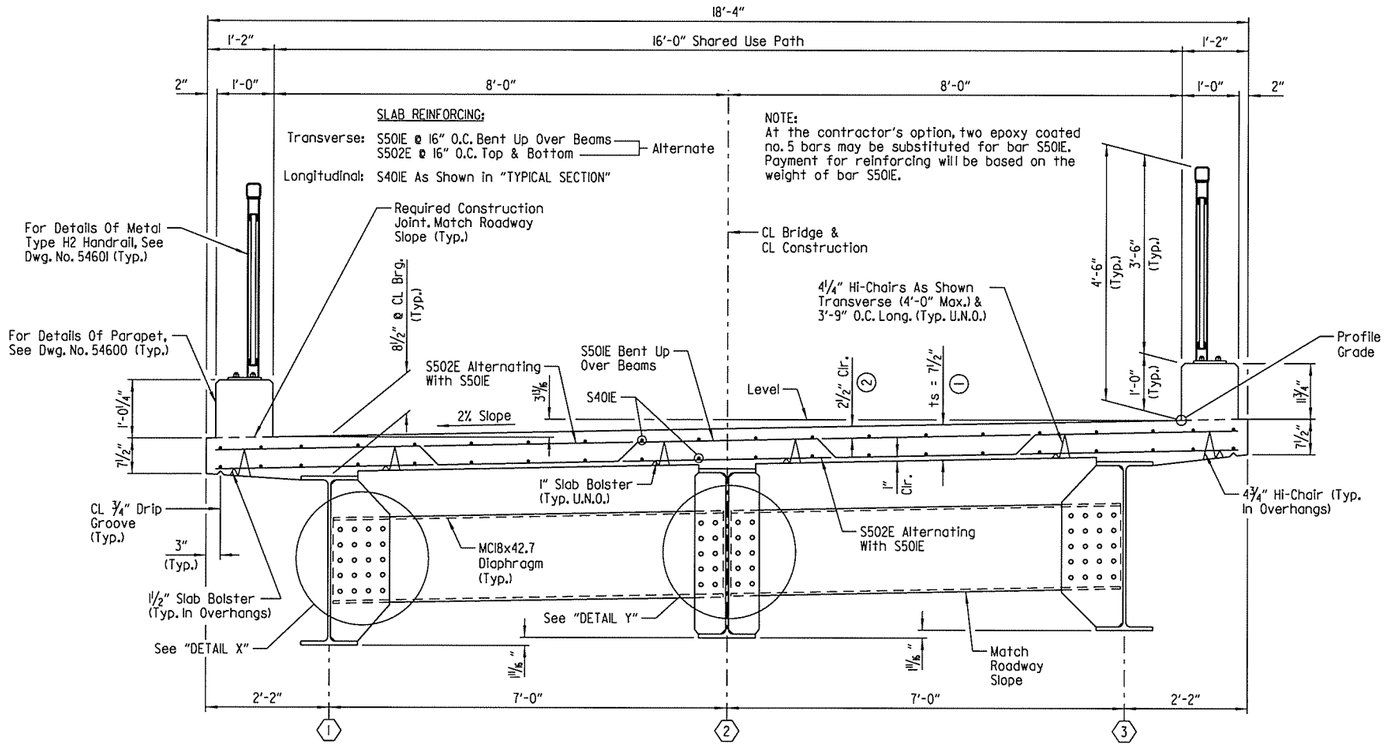
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x6_SI2.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2013

BRIDGE NO. 04926 DRAWING NO. 54595

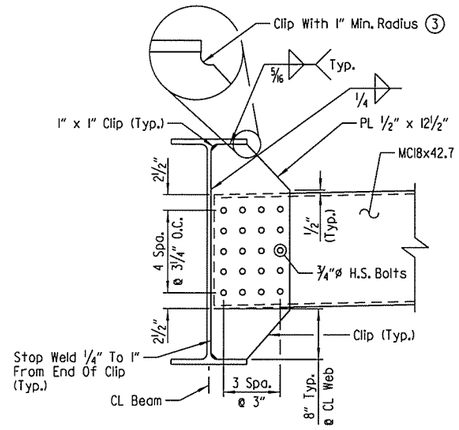
SRYancey 5/29/2014 4:46:04 PM
WORKSPACE: AHTD Bridge
L:\ROADWAY\B061275x6_SI2 (Span 2 Special)\Parapet & RailDtls.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	372	505
				(1) 04926 75'-0" W-BEAM SPAN (SPANS 3-6) 54596				

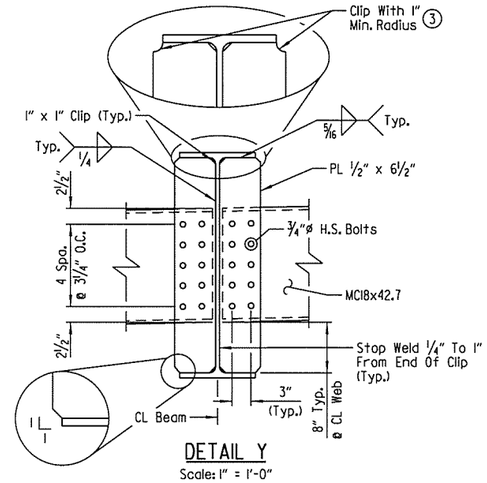


NOTE:
Diaphragms shall be installed as beams are erected. All bolts in diaphragms shall be installed and tightened in accordance with subsection 807.11 prior to pouring the concrete deck unless otherwise noted.

TYPICAL SECTION
(Looking Forward)
Scale: ¾" = 1'-0"



DETAIL X
Scale: 1" = 1'-0"



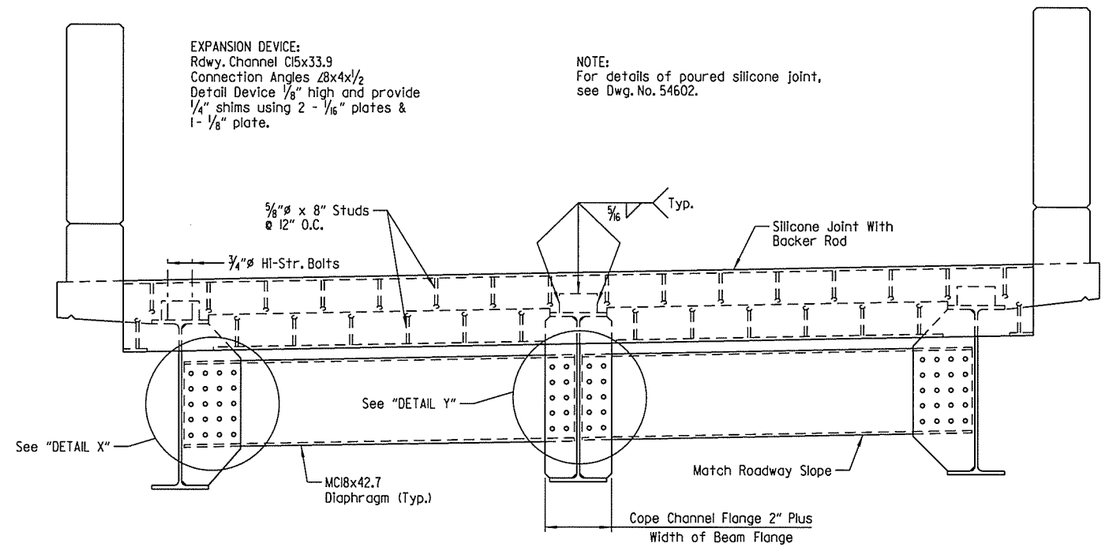
DETAIL Y
Scale: 1" = 1'-0"

NOTE:
For details of Class 3 Textured Coating Finish to be applied to parapet rail surface in accordance with SP Job 061275 "TEXTURED COATING FINISH".

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

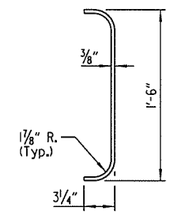
(2) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

(3) If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.



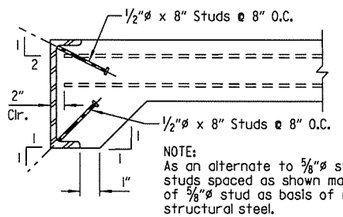
LEGEND
U.N.O. = Unless Noted Otherwise

TYPICAL SECTION THRU JOINT
(Looking Forward)
Scale: ¾" = 1'-0"



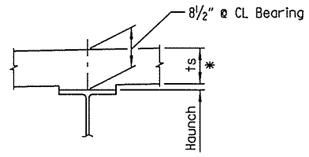
ALTERNATE BENT PLATE DETAIL
Scale: 1½" = 1'-0"

NOTE:
Contractor may elect to fabricate a bent plate diaphragm as shown in lieu of the MC18x42.7 diaphragm. Cost to construct bent plate diaphragm shall be at the Contractor's expense.



NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

DETAIL OF ALTERNATE ANCHORS
No Scale



Note: t_S = Slab Thickness as shown on "TYPICAL SECTION"

* Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: minimum - occurs when the top flange contacts the bottom reinforcing steel; maximum - top flange thickness plus 1 ¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPANS 3-6) NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

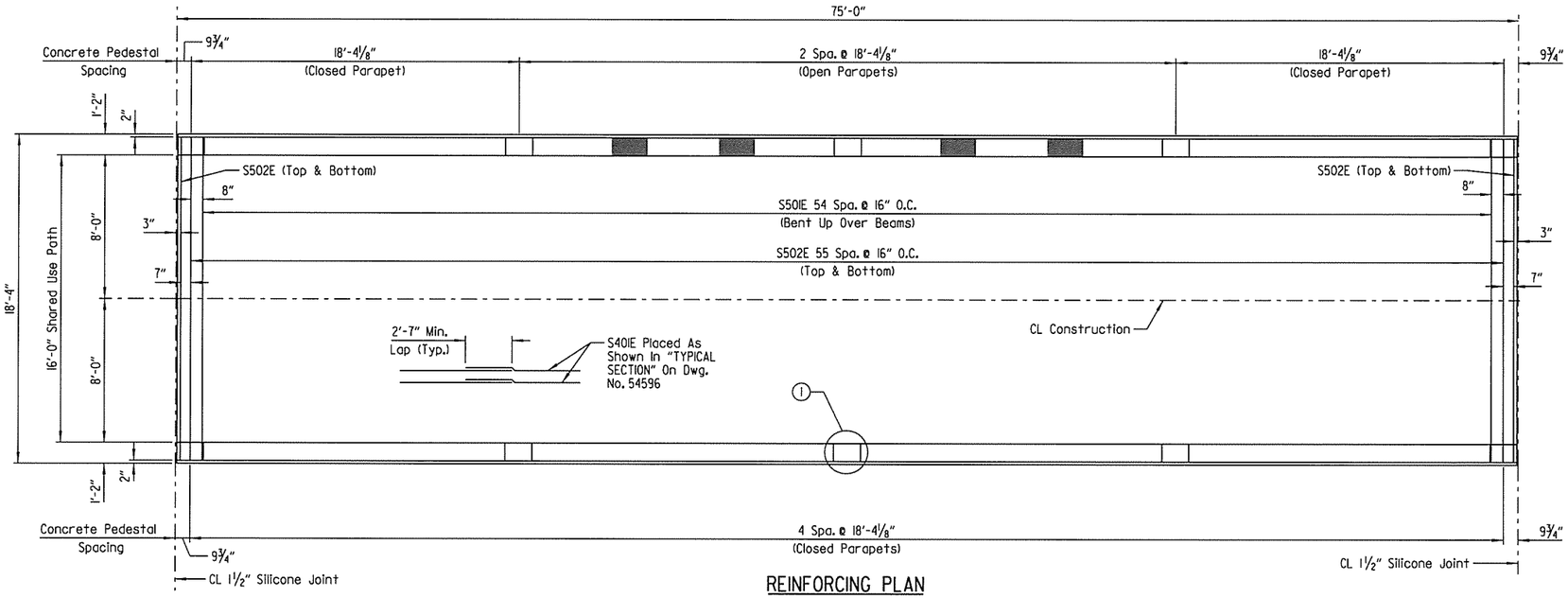
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x6_S13.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54596

SRYancey 5/29/2014 4:46:05 PM
WORKSPACE: AHTD Bridge
L:\V2DWKDOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S13 (Spans 3-6 Typ Section).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	373	505
				(1) 04926 75'-0" W-BEAM SPAN (SPANS 3-6) 54597				



REINFORCING PLAN
Scale: ¼" = 1'-0"

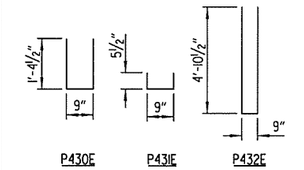
BAR LIST			
MARK	NO. REQ'D	LENGTH	P.D.
S401E	80	38'-7"	Str.
S501E	55	18'-5"	3"
S502E	116	18'-0"	Str.
P430E	256	3'-4"	2"
P431E	16	1'-6"	2"
P432E	30	10'-4"	2"
P433E	16	38'-7"	Str.
P434E	40	3'-10"	2"

NOTE:
Number of bars shown is for one 75'-0" span.

Dimensions of bars are out-to-out.

Bars designation ending with "E" indicate epoxy coated bars.

BAR BENDING DIAGRAM



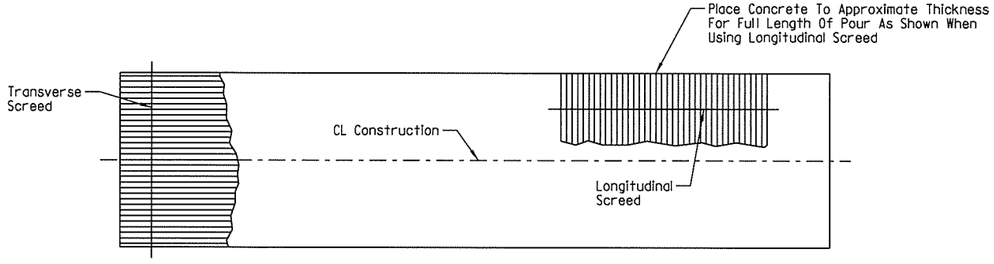
* - ½" over tolerance, no under tolerance

NOTE:
Concrete pedestal spacing shown is measured to the centerline of each concrete pedestal.

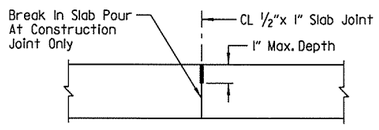
(1) Light Pole Pedestal, see Dwg. No. 54600 for details.

NOTE:
Span may be poured in increments with the center one-third to one-half span length poured first, after which, not less than 72 hours shall elapse before pouring the end sections. End sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours. For construction joint details, see "OPTIONAL SLAB JOINT DETAIL". A minimum of 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.



CONCRETE PLACEMENT PROCEDURE
No Scale



The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02 (H) And 501.05 (J). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. Slab joints shall be placed at all pouring sequence construction joints. The joint sealer shall extend across the deck from gutterline to gutterline.

OPTIONAL SLAB JOINT DETAIL
No Scale

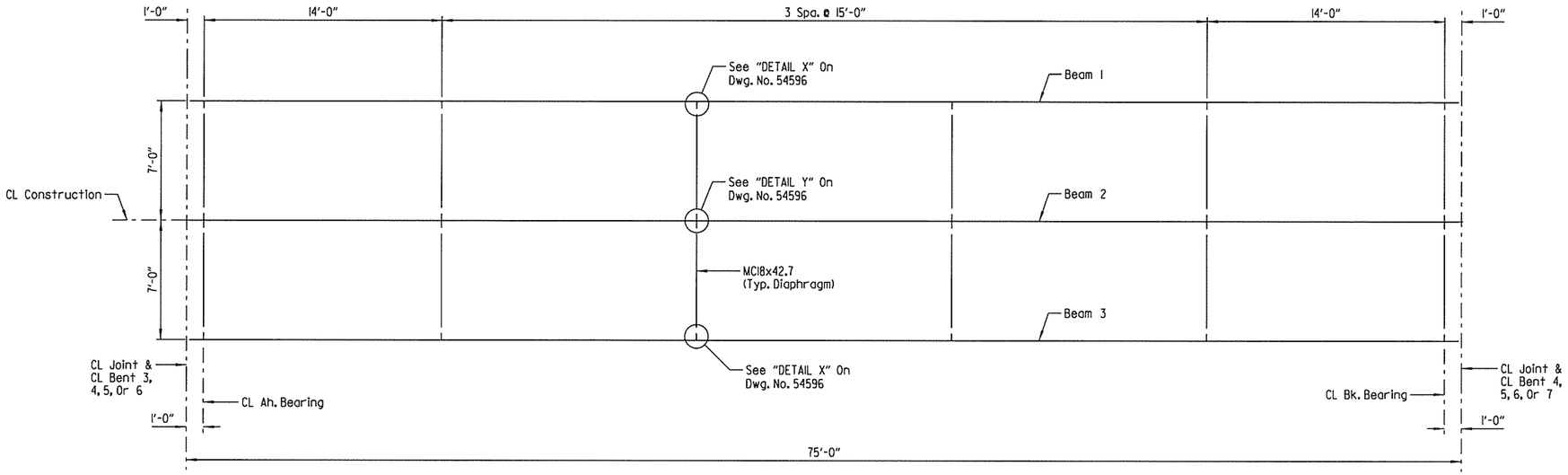
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPANS 3-6)
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

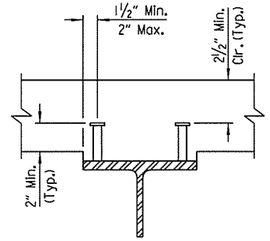
DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x6_S14.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54597

SRYancey 5/29/2014 4:46:05 PM
WORKSPACE: AHTD Bridge
L:\ROW\HDTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S14 (Spans 3-6 Slab Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	374	505
				(1)	04926 75'-0" W-BEAM SPAN (SPANS 3-6)			54598

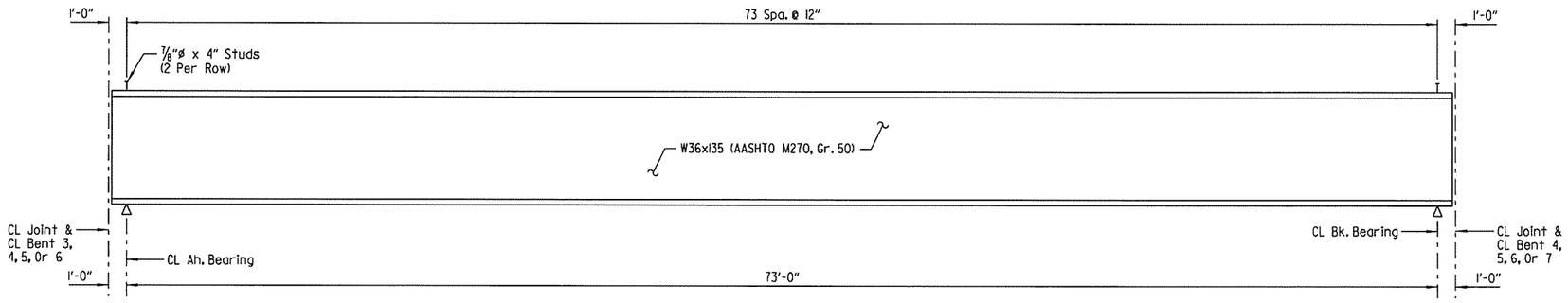


FRAMING PLAN
Scale: 1/4" = 1'-0"



SHEAR CONNECTOR DETAIL
No Scale

Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.



BEAM ELEVATION
(Beams 1, 2 & 3)
No Scale

NOTE:
For "GENERAL NOTES", see Dwg. No. 54599.

TABLE FOR WELDS		
Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF 75'-0" SIMPLE COMPOSITE W-BEAM SPAN (SPANS 3-6)
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x6_S15.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54598

SRYancey 5/29/2014 4:46:06 PM
WORKSPACE: AHTD Bridge
L:\ZDWINDTOBD - Broadway Bridge over the Arkansas River\Drawings\B061275x6_S15 (Spans 3-6 Framing Plan).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	375	505
				(1) 04926		GENERAL SPAN DETAILS		54599

GENERAL NOTES

CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a broomed finish in accordance with Subsection 802.19 for Class 6 Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. See "PROJECT GENERAL NOTES" for paint color and Federal Standard Color Chip No. All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270 Gr. 36 unless otherwise noted. See Drawing No. 54603 for cleaning requirements of external load plates on elastomeric bearings.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with Subsection 807.04, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All beams, including W27x84 and W16x36 members, and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Material specifications and locations of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All beams shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the beams in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

All connection plates shall be fabricated normal to the top flange and on the side of the beam web as indicated on the framing plan.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

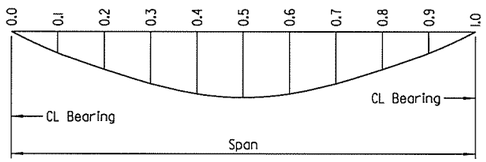
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Open holes shall be 13/16 "ø unless otherwise noted. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)".



DEAD LOAD DEFLECTION DIAGRAM

No Scale

NOTE:
Camber for dead load deflection plus vertical curve +/- ¼" tolerance. Deflections shown are from a chord from Centerline Bearing to Centerline Bearing. Corrections for vertical curve and deck transitions are not included. Negative sign (-) indicates point above chord.

TABLE OF DEAD LOAD DEFLECTIONS - SPAN 1

Beam No.	All Beams		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.000	0.000	0.000
0.1	0.140	0.613	0.675
0.2	0.263	1.159	1.276
0.3	0.359	1.582	1.742
0.4	0.419	1.848	2.036
0.5	0.438	1.937	2.134
0.6	0.416	1.841	2.028
0.7	0.354	1.569	1.729
0.8	0.258	1.146	1.263
0.9	0.136	0.604	0.666
1.0	0.000	0.000	0.000

TABLE OF DEAD LOAD DEFLECTIONS - SPAN 2

Beam No.	All Beams		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.000	0.000	0.000
0.1	0.193	0.831	0.893
0.2	0.365	1.568	1.685
0.3	0.497	2.137	2.297
0.4	0.578	2.487	2.675
0.5	0.603	2.591	2.788
0.6	0.568	2.444	2.632
0.7	0.481	2.069	2.229
0.8	0.349	1.501	1.618
0.9	0.183	0.789	0.851
1.0	0.000	0.000	0.000

TABLE OF DEAD LOAD DEFLECTIONS - SPANS 3 THRU 6

Beam No.	Beams 1 & 3			Beam 2		
Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet
0.0	0.000	0.000	0.000	0.000	0.000	0.000
0.1	0.138	0.616	0.695	0.138	0.726	0.800
0.2	0.261	1.165	1.315	0.261	1.373	1.514
0.3	0.357	1.596	1.802	0.357	1.880	2.073
0.4	0.418	1.869	2.110	0.418	2.202	2.428
0.5	0.439	1.963	2.216	0.439	2.313	2.550
0.6	0.418	1.869	2.110	0.418	2.202	2.428
0.7	0.357	1.596	1.802	0.357	1.880	2.073
0.8	0.261	1.165	1.315	0.261	1.373	1.514
0.9	0.138	0.616	0.695	0.138	0.726	0.800
1.0	0.000	0.000	0.000	0.000	0.000	0.000

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

SHEET 1 OF 3
GENERAL SUPERSTRUCTURE DETAILS
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: MAY 2013 FILENAME: B061275x6_S16.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54599

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	376	505
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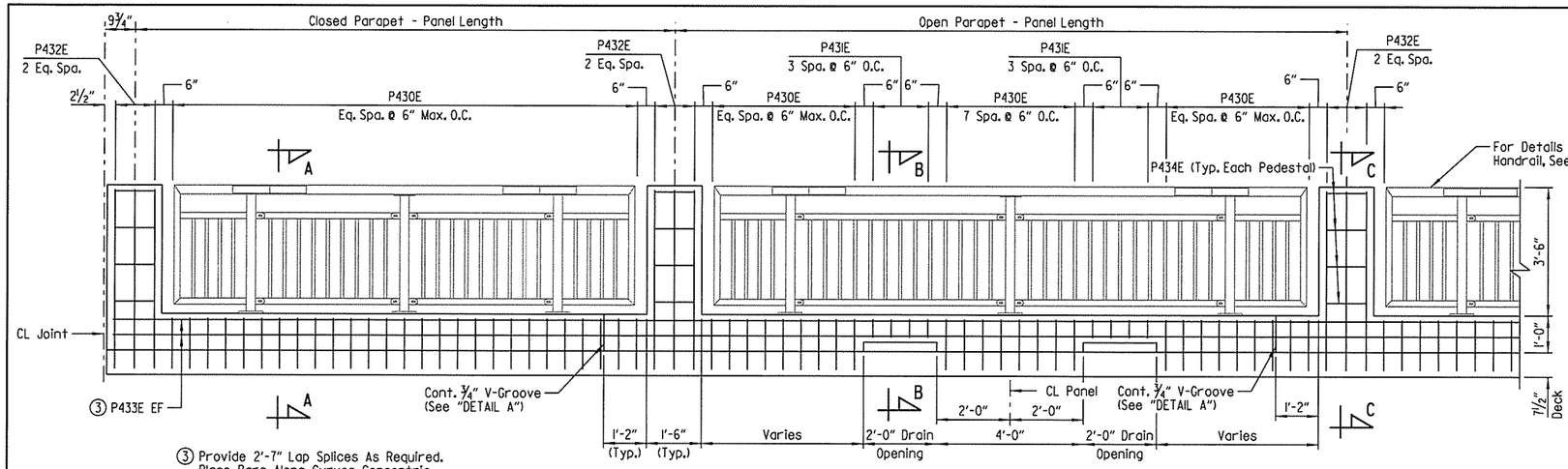
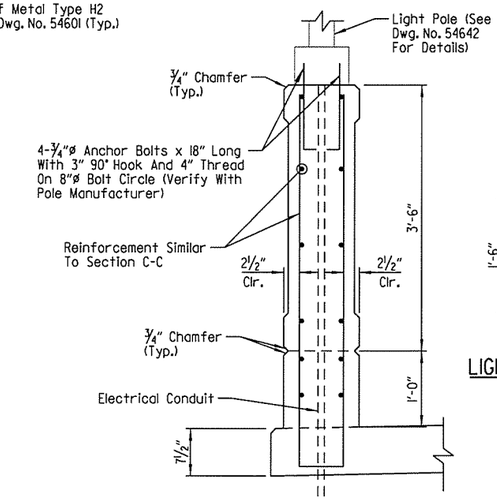


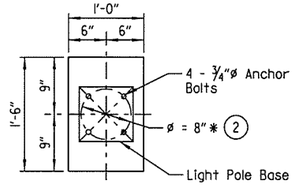
(3) Provide 2'-7" Lap Splices As Required. Place Bars Along Curves Concentric With Curves Defining Deck Edges. See Dwg. No. 54586.

PARAPET ELEVATION
Scale: ½" = 1'-0"

LEGEND
U.N.O. = Unless Noted Otherwise

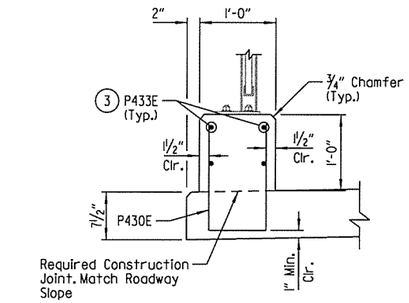


LIGHT POLE PEDESTAL SECTION
Scale: 1" = 1'-0"

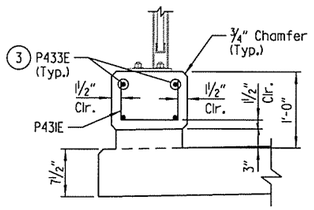


LIGHT POLE PEDESTAL PLAN
Scale: 1" = 1'-0"

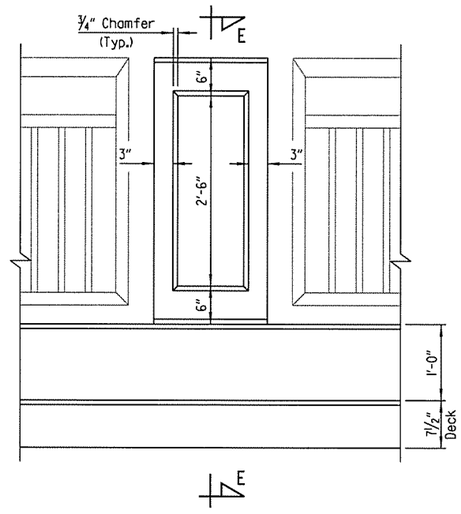
(2) Contractor shall verify the bolt circle diameter matches the light pole base prior to installing anchor bolts. The light pole base shall not hang over the face of the light standard support.



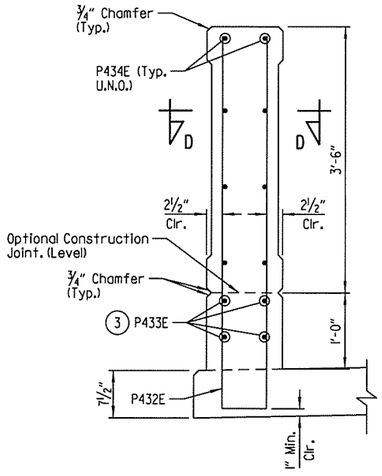
SECTION A-A
Scale: 1" = 1'-0"



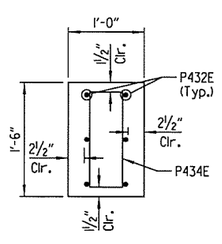
SECTION B-B
Scale: 1" = 1'-0"



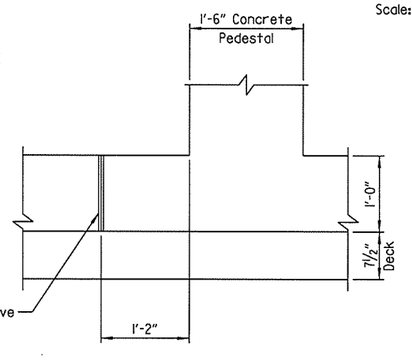
PEDESTAL ENHANCEMENT DETAIL
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"

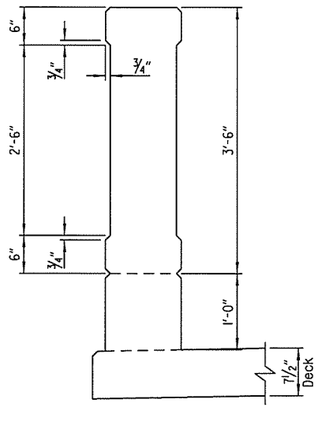


SECTION D-D
Scale: 1" = 1'-0"

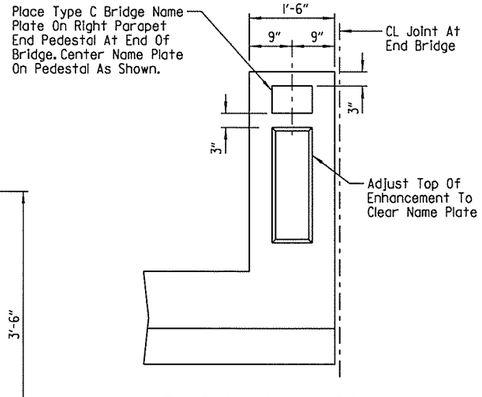


(1) NOTE: ¾" V-Groove shall be continuous on inside face, top, & outside face of parapet. One V-Groove joint shall be placed at each parapet panel.

DETAIL A
Scale: 1" = 1'-0"



SECTION E-E
Scale: 1" = 1'-0"



VIEW SHOWING LOCATION OF NAME PLATE
Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 3
GENERAL SUPERSTRUCTURE DETAILS
NORTH SHARED USE RAMP
PULASKI COUNTY
ROUTE SEC.

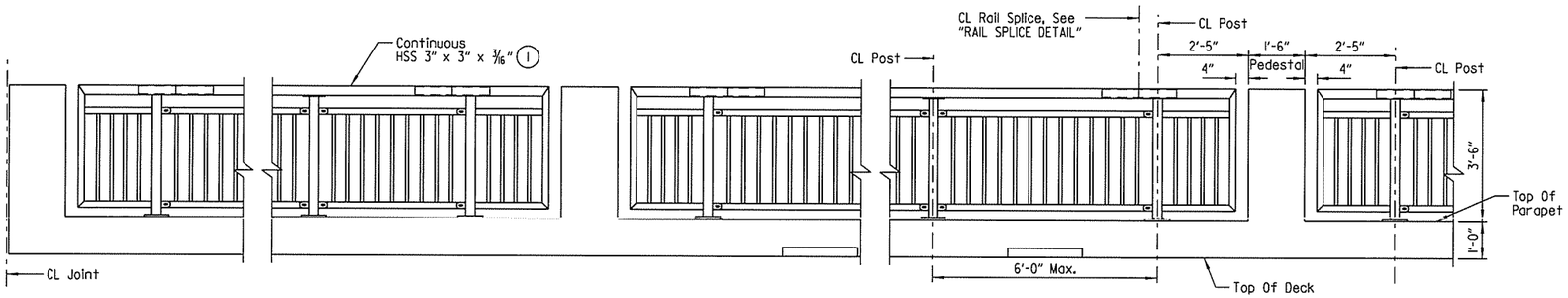
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: JUNE 2013 FILENAME: B061275x6_SI7.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013

BRIDGE NO. 04926 DRAWING NO. 54600

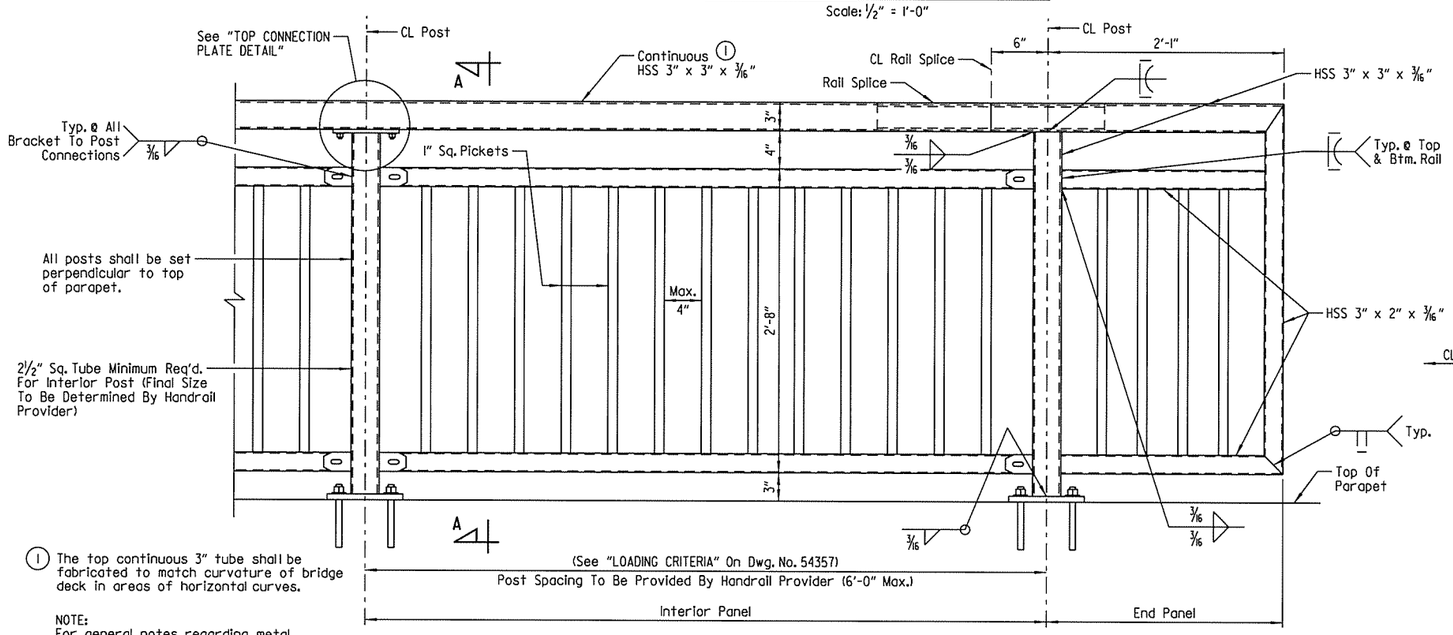
SRYancey 5/29/2014 4:46:07 PM
WORKSPACE: AHTD Bridge
L:\ZDWG\801080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_SI7 (Gen Parapet Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	377	505
				(1)	04926	GENERAL SPAN DETAILS		54601



METAL TYPE H2 HANDRAIL ELEVATION

Scale: 1/2" = 1'-0"

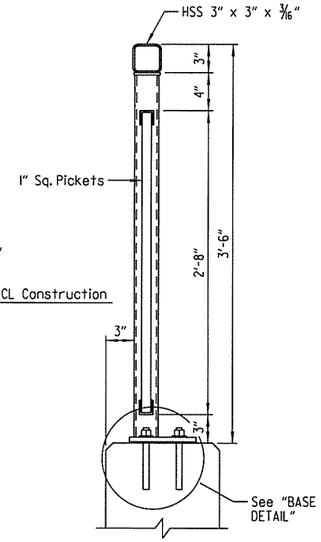


(1) The top continuous 3" tube shall be fabricated to match curvature of bridge deck in areas of horizontal curves.

NOTE:
For general notes regarding metal handrail, see Dwg. No. 54357.

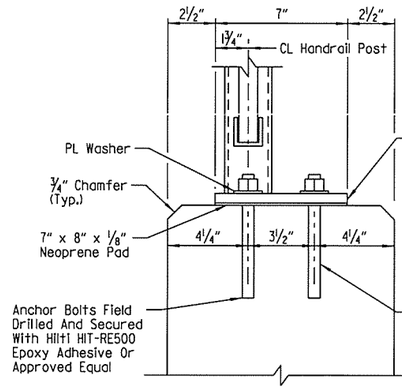
TYPICAL INTERIOR AND END PANELS

Scale: 1 1/2" = 1'-0"



SECTION A-A

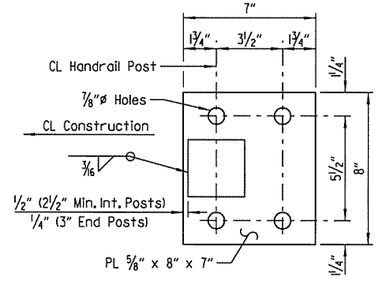
Scale: 1 1/2" = 1'-0"



NOTE:
For alternate post anchor details, see Dwg. No. 54357.

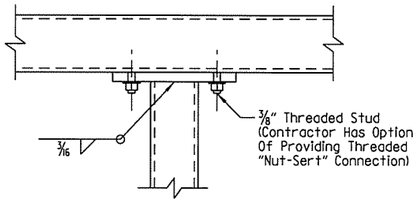
BASE CONNECTION DETAIL

Scale: 3" = 1'-0"



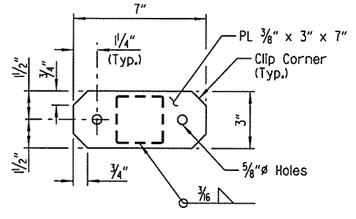
BASE PLATE DETAIL

Scale: 3" = 1'-0"



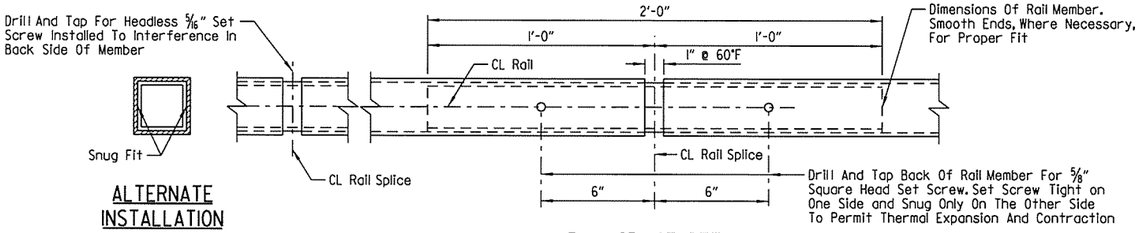
TOP CONNECTION DETAIL

Scale: 3" = 1'-0"



TOP CONNECTION PLATE DETAIL

Scale: 3" = 1'-0"



ALTERNATE INSTALLATION

RAIL SPLICE DETAIL

Scale: 3" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8871
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 3 OF 3
GENERAL SUPERSTRUCTURE DETAILS
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

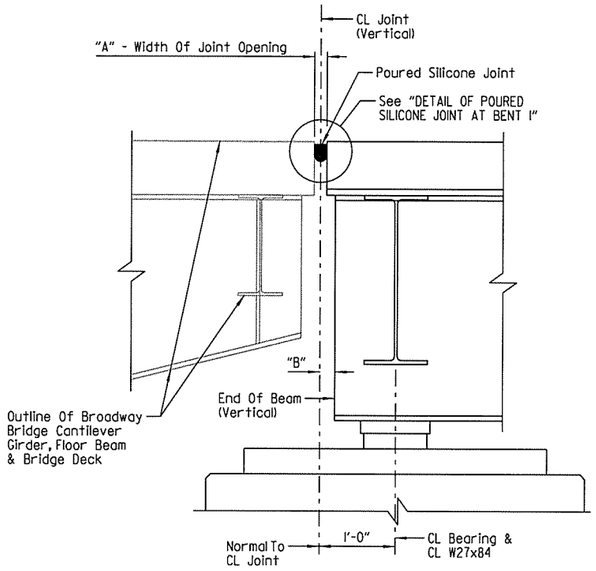
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: MAY 2013 FILENAME: B061275x6_S18.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: MAY 2013
BRIDGE NO. 04926 DRAWING NO. 54601

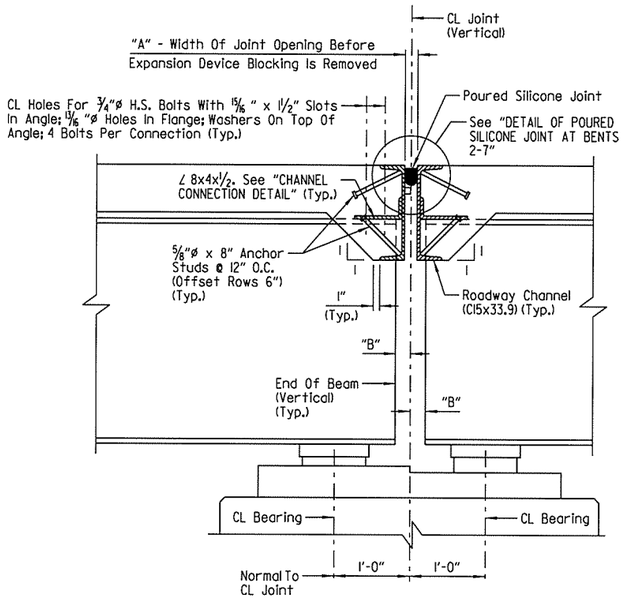
SRYancey 5/29/2014 4:46:08 PM
WORKGROUP: AHTD Bridge
L:\X2DWINGTON\Broadway Bridge over the Arkansas River\Drawings\B061275x6_S18 (Gen Rail Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	378	505
				(1)	04926	JOINT DETAILS		54602



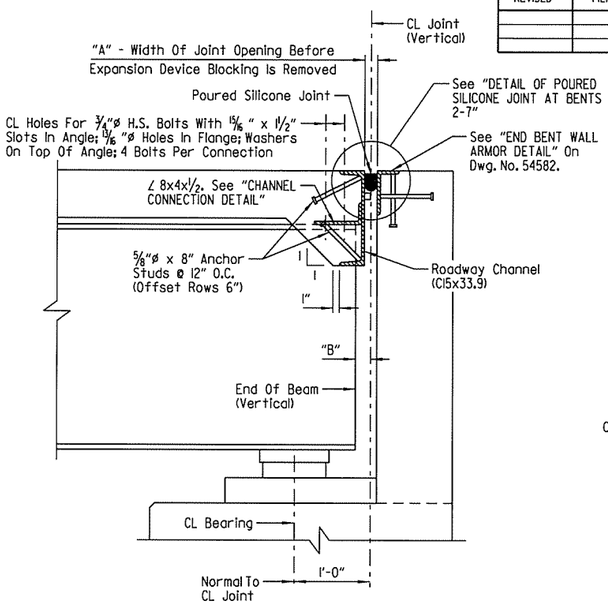
SECTION THRU SILICONE JOINT AT BENT 1

(Section Taken Normal To CL Joint)
No Scale



SECTION THRU SILICONE JOINT AT BENTS 2-6

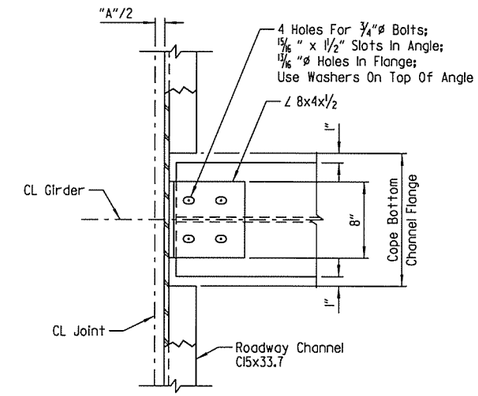
(Section Taken Normal To CL Joint)
No Scale



SECTION THRU SILICONE JOINT AT BENT 7

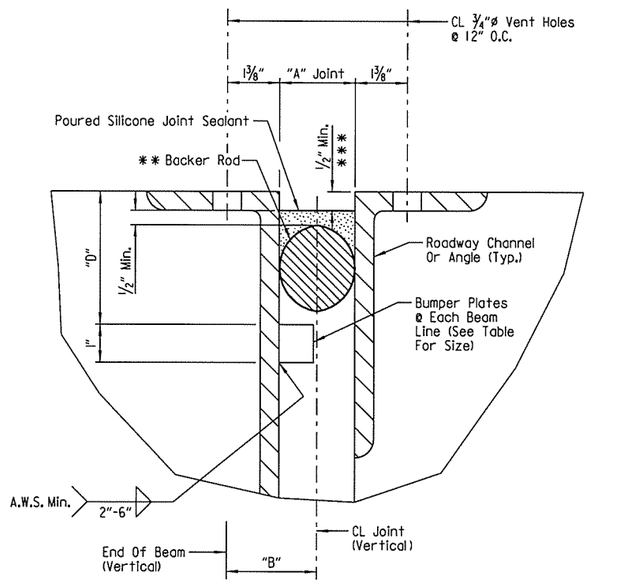
(Section Taken Normal To CL Joint)
No Scale

NOTE:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.



CHANNEL CONNECTION DETAIL

No Scale

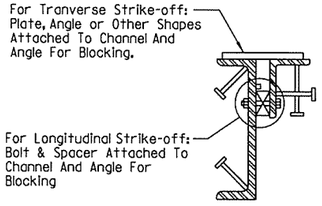


*** Recess depth as recommended by the sealant Manufacturer.

DETAIL OF POURED SILICONE JOINT AT BENTS 2-7

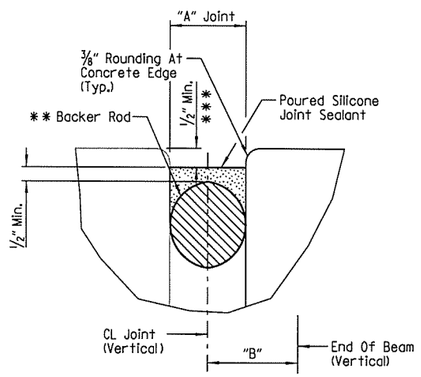
No Scale

One of two different blocking systems is required depending on the type of span finishing machine that is used.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale



DETAIL OF POURED SILICONE JOINT AT BENT 1

No Scale

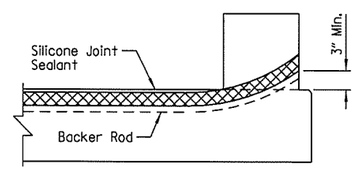
NOTE:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension "A" shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENT (END BRIDGE):

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.



JOINT SEAL PLACEMENT AT CURB

No Scale

SILICONE JOINT DATA

Bent No(s).	"A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
	40°F	60°F	80°F			
1	1 1/2"	1 1/2"	1 1/2"	2"±	4"	None
2-7	1 5/8"	1 1/2"	1 3/8"	2"±	4"	1" x 3/4" x 12"

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

** BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod than can be sealed in the same day.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14498
ADAM B. HALL
BRIDGE ENGINEER

DETAILS OF POURED SILICONE JOINT NORTH SHARED USE RAMP PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

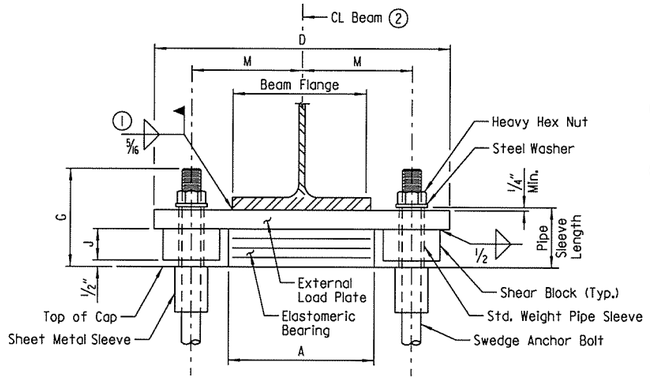
LITTLE ROCK, ARK.

DRAWN BY: ABH DATE: JULY 2013 FILENAME: B06I275x6_S19.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: JULY 2013

BRIDGE NO. 04926 DRAWING NO. 54602

SRYancey 5/29/2014 4:46:09 PM
WORKSPACE: AHTD Bridge
LIVEDIRECTORY: Broadway Bridge over the Arkansas River\Drawings\B06I275x6_S19 (Gen Silicone Jt. Dtls).dgn
REVISED DATE:

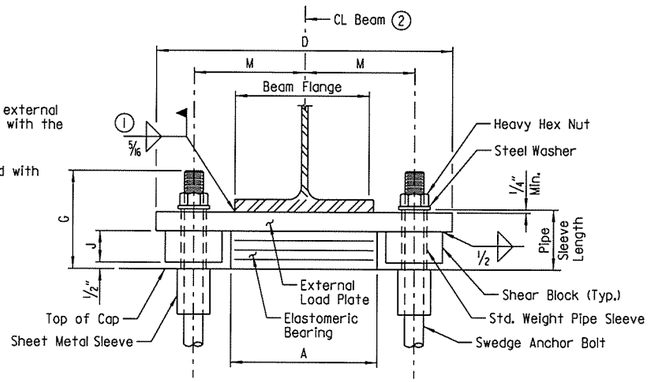
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	379	505
				①	04926	ELASTOMERIC BEARINGS		54603



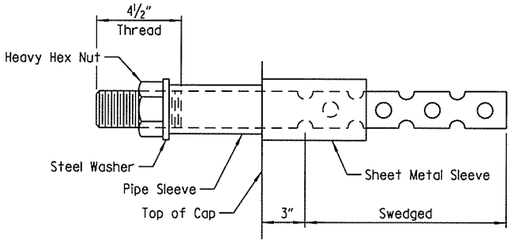
FRONT VIEW - EXPANSION BEARING

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam flange before welding begins.

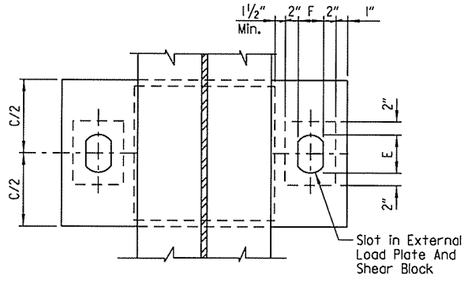
② Centerline elastomeric pad shall be aligned with centerline beam.



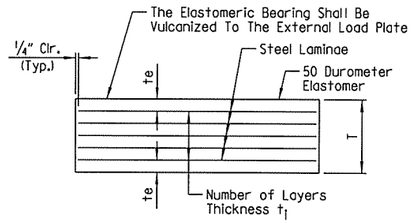
FRONT VIEW - FIXED BEARING



ANCHOR BOLT DETAIL

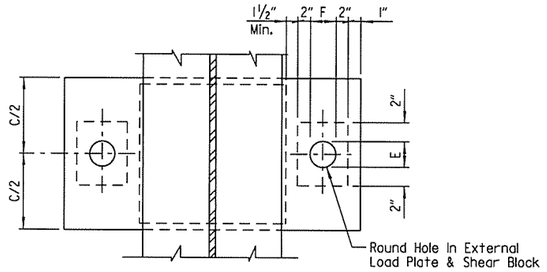


PLAN VIEW - EXPANSION BEARING

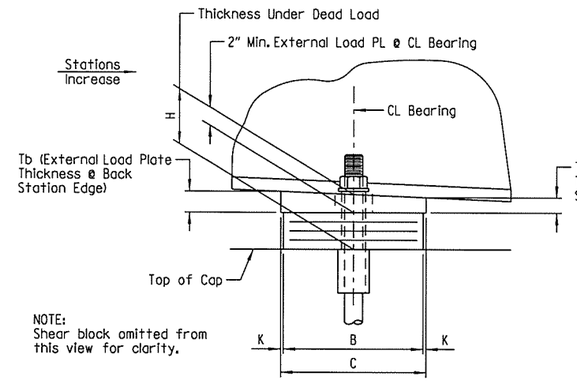


t_e = Thickness Of Elastomer Cover On Top And Bottom Of Pad
t_i = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness t_i

ELASTOMERIC BEARING



PLAN VIEW - FIXED BEARING

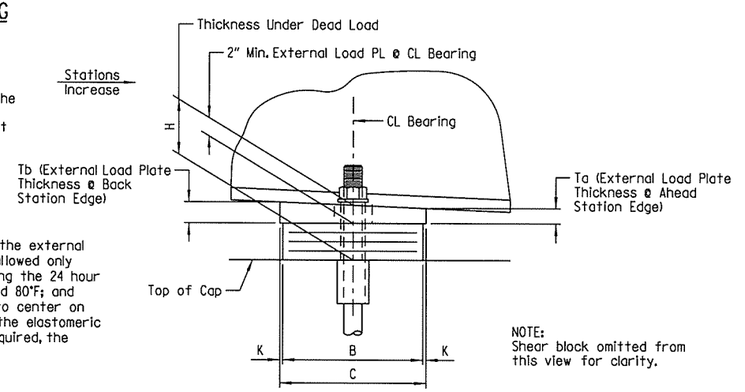


NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - EXPANSION BEARING

NOTE:
The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in "TABLE OF FABRICATOR VARIABLES".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



NOTE:
Shear block omitted from this view for clarity.

SIDE VIEW - FIXED BEARING

TABLE OF FABRICATOR VARIABLES

Location		Bearing Type	No. Of Bearings Each Bent	* Maximum Design Load (kips)	G	H	Elastomeric Pad						External Load Plate									Anchor Bolt		Pipe Sleeve Size (Dia. x L)	Sheet Metal Sleeve Size (Dia. x L)	Steel Washer Size (O.D.)
																						(Dia. x L)	Grade			
Bent No(s).	Beam Or Girder No.						A	B	N	t_i	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b				
1	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
2 Bk	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
2 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Bk	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
3 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4 Bk	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
4 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
5 Bk	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
5 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
6 Bk	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
6 Ah	All	Fixed	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	2 5/8"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"
7	All	Exp.	3	82.3	7 3/8"	4 3/8"	12"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	30 1/4"	4"	2 5/8"	2"	1/2"	10 11/16"	1.74"	2.26"	1 3/4" x 29"	55	2" x 4 5/8"	4" x 12"	3 3/8"

* Maximum Design Load = Service Load

NOTE:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50)".

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Section 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
NORTH SHARED USE RAMP
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

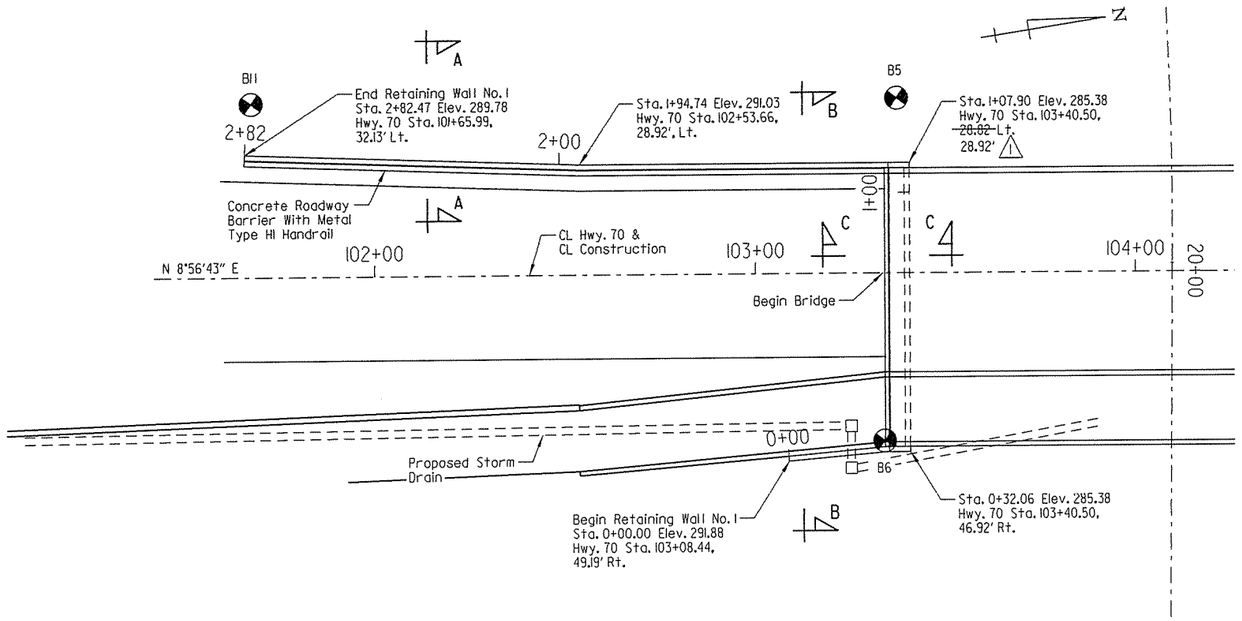
DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275x6_EI.DGN
CHECKED BY: JES DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JUNE 2013

BRIDGE NO. 04926 DRAWING NO. 54603

SRYancey 5/29/2014 4:46:09 PM
WORKSPACE: AHTD Bridge
L:\2011\011080 - Broadway Bridge over the Arkansas River\Drawings\B061275x6_EI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	380	505
(1)	RET. WALL DETAILS			54604

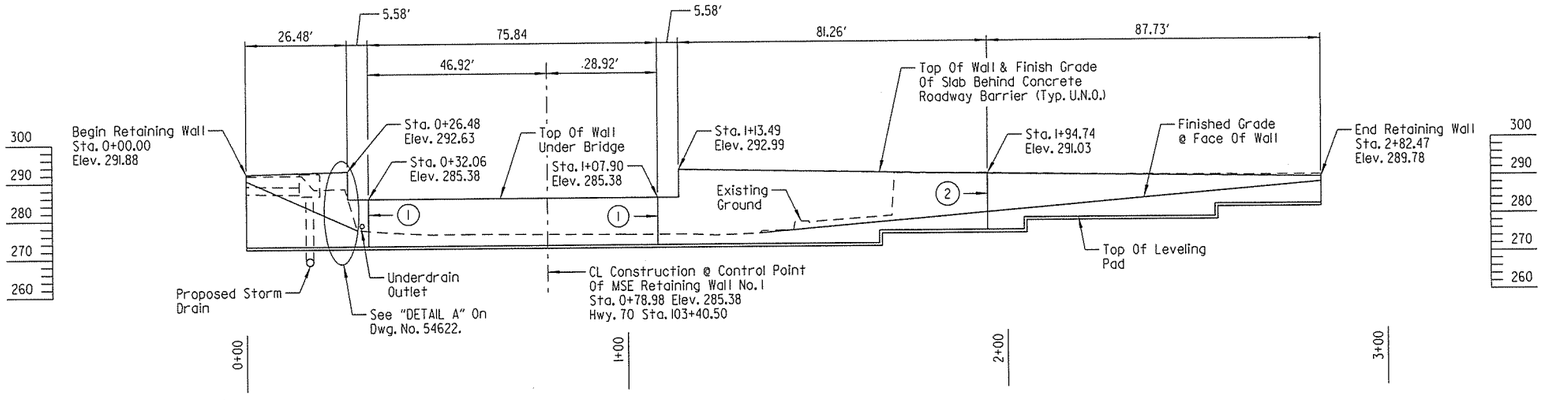


PLAN

⚠1 RETAINING WALL ELEVATIONS		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	291.88	290.22
0+25.00	292.59	279.01
0+50.00	285.38	275.88
0+75.00	285.38	275.88
1+00.00	285.38	275.70
1+25.00	292.67	275.37
1+50.00	292.01	277.06
1+75.00	291.44	279.20
2+00.00	290.93	281.35
2+25.00	290.49	283.49
2+50.00	290.13	285.63
2+75.00	289.84	287.77
2+82.47	289.78	288.42

NOTE:
Stationing is Along Retaining Wall Profile Grade.

⚠1 Added "RETAINING WALL ELEVATIONS". Revised Wall Offset.
SRY 8-27-14



ELEVATION
(Looking At Front Face)

(1) 90° Break

(2) 2°06' Break

LEGEND
U.N.O. = Unless Noted Otherwise

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION A-A", "SECTION B-B" and "SECTION C-C" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Hwy. 70 to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 1" see Dwg. No. 54605.

RETAINING WALL NO. 1

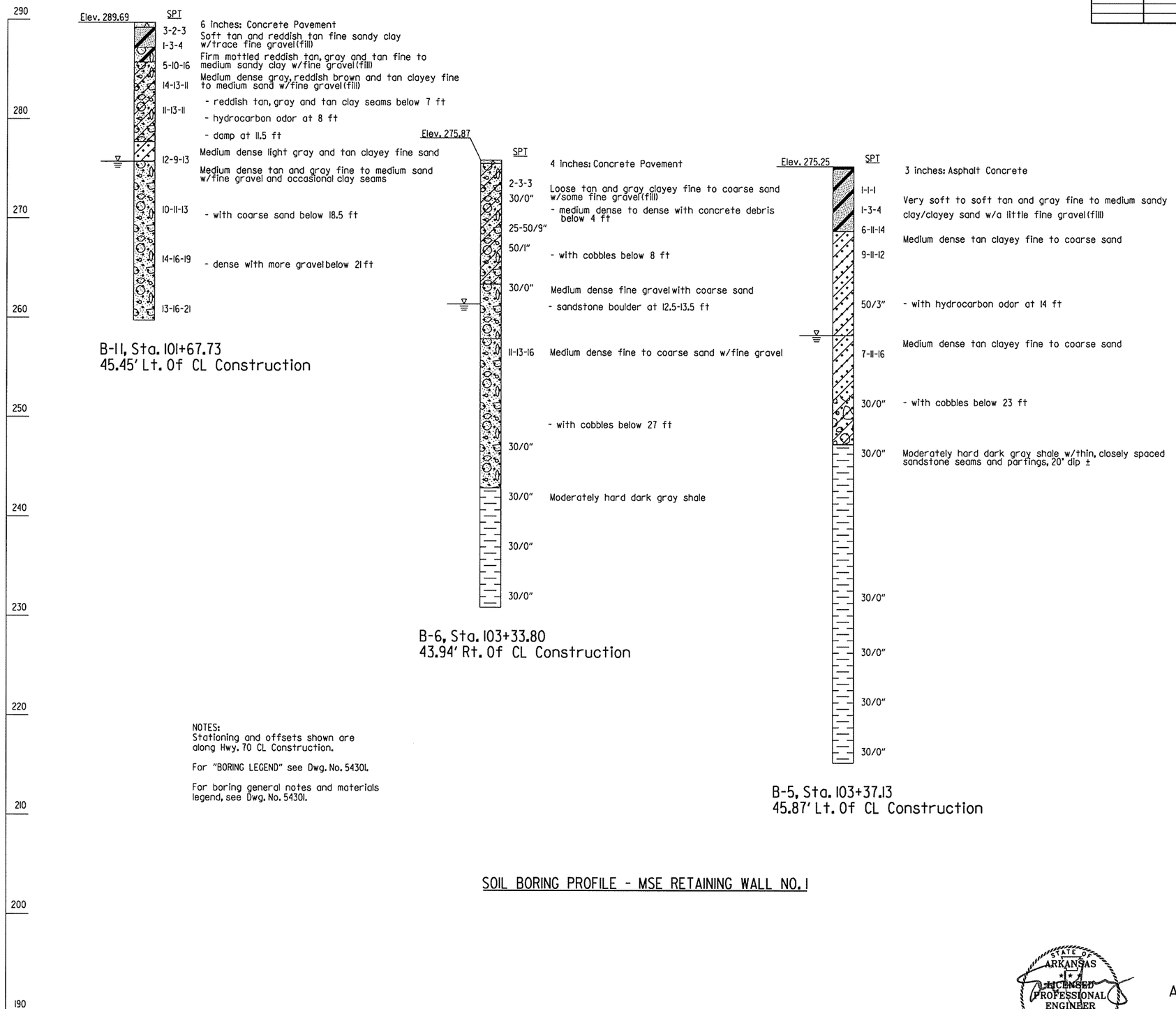
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH B. HENCY
8/28/14
BRIDGE ENGINEER

SHEET 1 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: JUNE 2013 FILENAME: B061275_W1.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54604

SRYancey 08/29/2014 15:23:21
WORKSPACE: AHTD Bridge
\\gltdc0\201\101\7080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W1\MSE Wall1.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	381	505
				①		RET. WALL DETAILS		54605



NOTES:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NO. 1

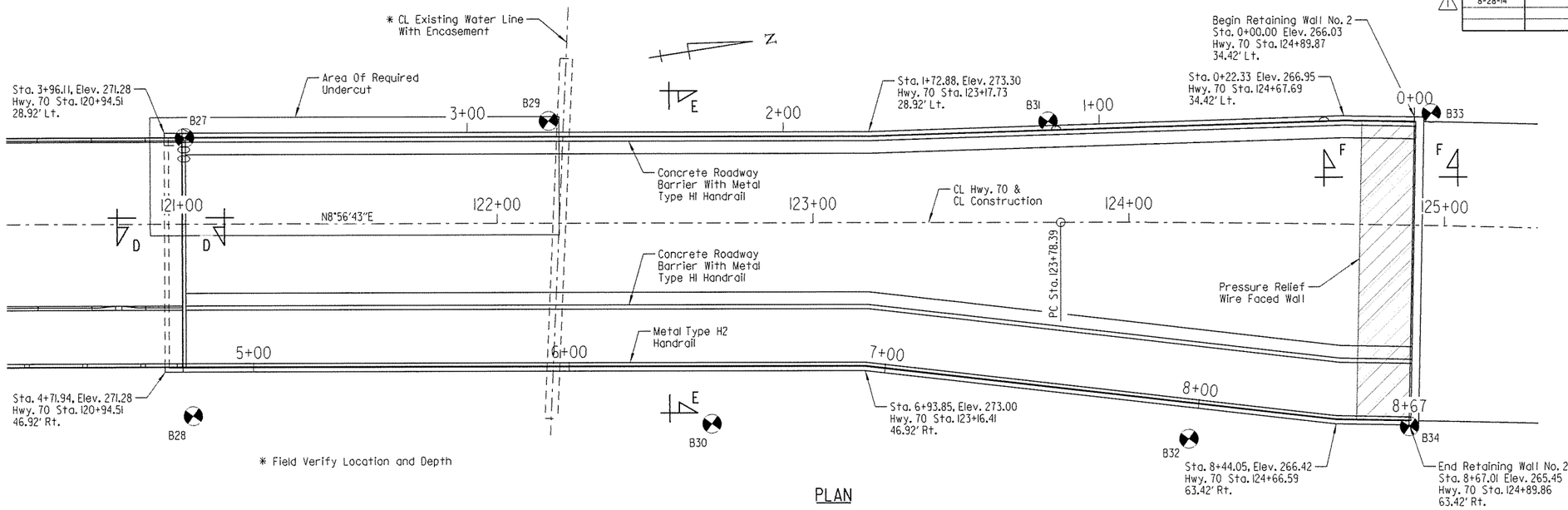
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 2 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

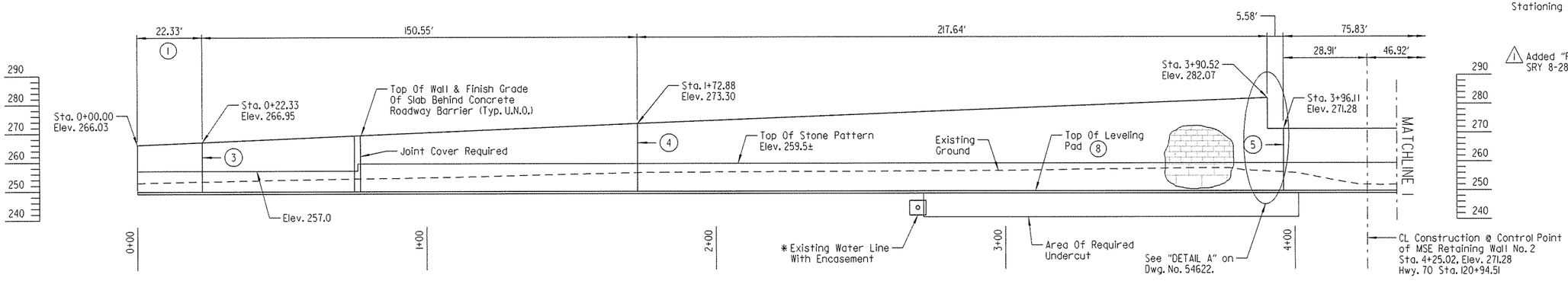
DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54605

SRYancey 5/29/2014 6:38:58 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_W2 (Boring Log 1).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1 8-28-14				6	ARK.			
				JOB NO.		061275	382	505
				1		RET. WALL DETAILS		54606



PLAN



ELEVATION
(Looking At Front Face)

RETAINING WALL ELEVATIONS		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	266.03	252.84
0+25.00	267.06	253.35
0+50.00	268.25	253.87
0+75.00	269.17	254.22
1+00.00	270.23	254.61
1+25.00	271.28	255.13
1+50.00	272.33	255.76
1+75.00	273.39	256.31
2+00.00	274.43	256.50
2+25.00	275.47	256.57
2+50.00	276.50	256.58
2+75.00	277.55	256.75
3+00.00	278.59	256.87
3+25.00	279.60	257.25
3+50.00	280.57	257.54
3+75.00	281.51	252.72
4+00.00	271.28	256.01
4+25.00	271.28	251.95

RETAINING WALL ELEVATIONS		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
4+50.00	271.28	252.41
4+75.00	271.28	253.91
5+00.00	280.89	252.73
5+25.00	279.94	252.74
5+50.00	278.96	252.73
5+75.00	277.94	252.62
6+00.00	276.90	252.78
6+25.00	275.86	252.36
6+50.00	274.82	252.30
6+75.00	273.78	252.29
7+00.00	272.73	252.22
7+25.00	271.64	252.60
7+50.00	270.55	253.13
7+75.00	269.45	253.37
8+00.00	268.35	252.81
8+25.00	267.25	252.77
8+50.00	266.17	252.73
8+67.01	265.45	252.57

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

1 Added "RETAINING WALL ELEVATIONS". SRY 8-28-14

HORIZONTAL CURVE DATA

Hwy. 70 CL Construction
PI = 125+77.52
Δ = 3°58'52" Rt.
D = 1°00'00"
T = 199.13'
L = 398.11'
R = 5729.58'
e = N.C.

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION D-D", "SECTION E-E" and SECTION F-F" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Hwy. 70 to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 2" see Dwg. Nos. 54607-54608.

LEGEND
U.N.O. = Unless Noted Otherwise

RETAINING WALL NO. 2

1. R = 5763.99'
2. R = 5666.16'
3. 2°43'13" Break Measured from tangent line
4. 1°49'37" Break
5. 90° Break
6. 6°33'55" Break
7. 5°40'57" Break Measured from tangent line
8. Leveling Pad elevation along west wall shall match leveling pad elevation along east wall as a minimum.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12058
SCOTT R. YANCEY
BRIDGE ENGINEER

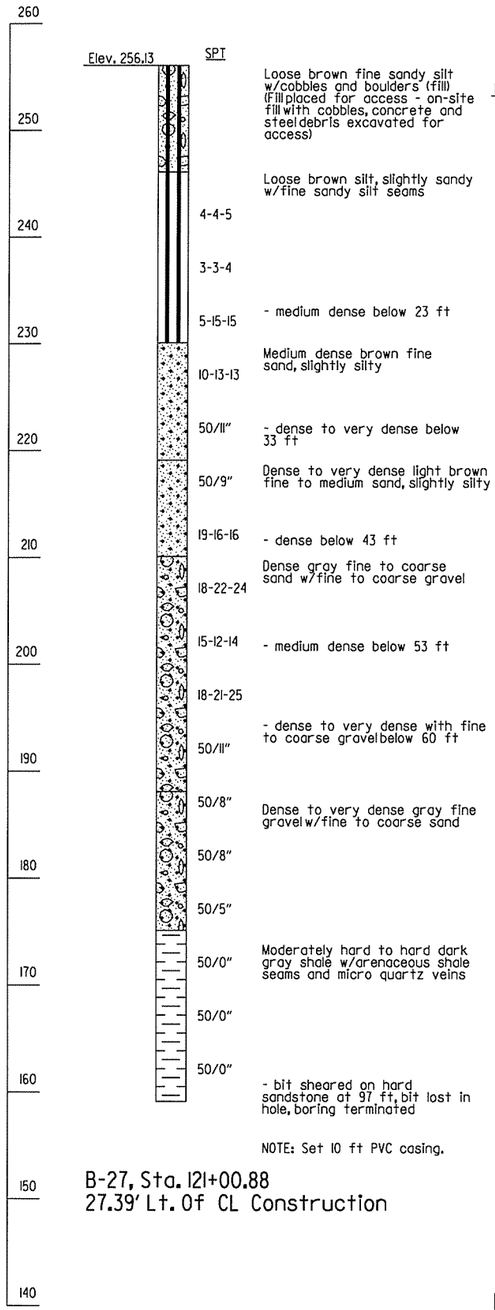
SHEET 3 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W3.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54606

SRYancey 08/29/2014 15:23:26
WORKSPACE: AHTD Bridge
\\ahtdGOV\DGN\B061275 - Broadway Bridge over the Arkansas River\Drawings\B061275_W3 MSE Wall21.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	383	505
				①		RET. WALL DETAILS		54607



Elev. 256.13

SPT	
	Loose brown fine sandy silt w/cobbles and boulders (fill) (Fill placed for access - on-site fill with cobbles, concrete and steel debris excavated for access)
	Loose brown silt, slightly sandy w/fine sandy silt seams
4-4-5	
3-3-4	
5-15-15	- medium dense below 23 ft
	Medium dense brown fine sand, slightly silty
10-13-13	
50/11"	- dense to very dense below 33 ft
50/9"	Dense to very dense light brown fine to medium sand, slightly silty
19-16-16	- dense below 43 ft
	Dense gray fine to coarse sand w/fine to coarse gravel
18-22-24	
15-12-14	- medium dense below 53 ft
18-21-25	
	- dense to very dense with fine to coarse gravel below 60 ft
50/11"	
50/8"	Dense to very dense gray fine gravel w/fine to coarse sand
50/8"	
50/5"	
50/0"	Moderately hard to hard dark gray shale w/arenaceous shale seams and micro quartz veins
50/0"	
50/0"	
	- bit sheared on hard sandstone at 97 ft, bit lost in hole, boring terminated

NOTE: Set 10 ft PVC casing.

B-27, Sta. 121+00.88
27.39' Lt. Of CL Construction

Elev. 253.34

SPT	
50/8"	3 inches: Asphalt Concrete; 9 inches: Crushed Stone Base
50/7"	Dense brown silty fine to coarse sand w/fine to coarse gravel (fill)
8-6-5	
7-3-2	Medium dense dark brown and brown fine sandy silt
2-3-3	- loose below 6.5 ft - with silty clay seams and layers from 9-16 ft
5-4-3	
4-4-4	
	Dense brown silty fine sand
50/11"	
18-23-23	Dense to very dense brown fine sand, slightly silty
18-50/9"	
22-50/9"	
12-25-28	Dense light brown and brown fine to coarse sand w/fine gravel
18-27-27	
18-24-24	
	Dense light brown fine to coarse gravel and fine to coarse sand
50/11"	
50/9"	
50/9"	
50/7"	
	Low hardness dark gray weathered shale
	Moderately hard to hard dark gray shale w/quartz inclusions and close carbonaceous shale seams, flat and thinly bedded - 25% water loss at 84 ft
	- gently dipping at 95 ft and increasing dip with depth
	- fold at 100 ft - fold at 101 ft - fold at 102.5 ft - steeply dipping at 102.5 to 109 ft

B-28, Sta. 121+03.29
60.95' Rt. Of CL Construction

Elev. 256.35

SPT	
18-50/8"	3 inches: Asphalt Concrete 21 inches: Crushed Stone Base
11-10-11	Stiff brown fine sandy clay w/crushed stone fragments (fill)
9-11-14	Medium dense brown fine sandy silt (fill)
12-24-25	- medium dense to dense below 6 ft - with some clay, concrete fragments and wood debris at 6.5 ft
9-11-14	Medium dense brown silt, slightly sandy
10-12-12	
9-11-16	
12-14-20	Dense brown and gray silty fine sand
10-13-16	
14-15-17	

B-29, Sta. 122+16.28
32.47' Lt. Of CL Construction

Elev. 253.71

SPT	
50/9"	3 inches: Asphalt Concrete 15 inches: Crushed Stone Base (fill)
50/9"	Very stiff dark brown and brown clayey silt, slightly sandy
5-6-7	Medium dense brown silt, slightly sandy w/silty clay pockets and seams
5-6-7	
3-4-4	
	- loose below 8.5 ft
4-5-5	
9-12-14	Medium dense brown fine sand, slightly silty
11-16-16	
	- dense below 23 ft
18-20-25	
16-23-28	

B-30, Sta. 122+67.80
63.77' Rt. Of CL Construction

NOTES:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NO. 2

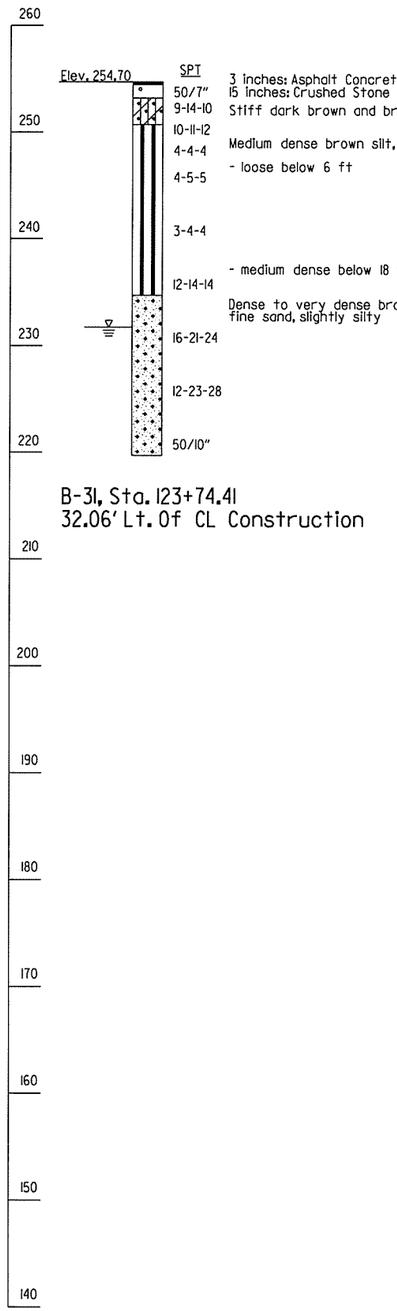
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVE R. YANCEY
5-30-14
BRIDGE ENGINEER

SHEET 4 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W4.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54607

SRYancey 5/29/2014 6:38:59 PM
WORKSPACE: AHTD Bridge
L:\20IN\IDOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W4 (Boring Log 2).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	384	505
				①		RET. WALL DETAILS		54608



Elev. 254.70

SPT	
50/7"	3 inches: Asphalt Concrete
9-14-10	15 inches: Crushed Stone Base
10-11-12	Stiff dark brown and brown clayey silt w/some fine sand (fill)
4-4-4	Medium dense brown silt, slightly sandy
4-5-5	- loose below 6 ft
3-4-4	
12-14-14	- medium dense below 18 ft
16-21-24	Dense to very dense brown fine sand, slightly silty
12-23-28	
50/10"	

B-31, Sta. 123+74.41
32.06' Lt. Of CL Construction

Elev. 253.01

SPT	
50/7"	3 inches: Asphalt Concrete
50/8"	9 inches: Crushed Stone Base
4-4-5	Dense to very dense dark brown and brown fine sandy silt (fill)
2-4-2	Firm brown silty clay w/ trace rootlets
4-4-2	Loose brown silt, slightly sandy
2-3-4	
9-12-14	Medium dense brown silty fine sand
12-14-16	- dense below 23 ft
4-7-9	- medium dense at 28.5 ft
11-15-17	

B-32, Sta. 124+19.13
68.63' Rt. Of CL Construction

Elev. 252.78

SPT	
50/7"	3 inches: Asphalt Concrete
12-15-18	12 inches: Crushed Stone Base
12-18-13	Dense brown fine sandy silt w/rootlets (fill)
7-8-12	Medium dense dark brown and brown silt
2-2-5	- loose below 8 ft
6-3-4	
5-7-7	- medium dense below 16 ft
5-5-4	- loose below 21 ft
7-9-14	- medium dense below 28 ft
50/9"	Dense to very dense light brown silty fine sand
50/10"	
50/9"	Dense to very dense gray fine to coarse sand w/a little fine gravel
50/9"	
15-21-17	- dense below 53 ft
50/10"	Dense to very dense gray and light brown sandy fine to coarse gravel
18-24-28	
50/10"	- 50% water loss at 71 ft
50/6"	
25/0"	Moderately hard dark gray shale, arenaceous, thinly bedded, thickly jointed w/micro quartz veins
	- carbonaceous shale seam at 85.5 ft
	- with pyrite inclusions at 86 ft
	- slightly weathered zone at 97.5 to 98 ft
	- with biotite inclusions below 99 ft

B-34, Sta. 124+90.00
63.86' Rt. Of CL Construction

Elev. 252.54

SPT	
20-12-7	1 inches: Asphalt Concrete
6-4-6	11 inches: Crushed Stone Base
4-5-7	Loose to medium dense brown fine sandy silt, slightly clayey (fill)
3-4-4	Medium dense tan fine sandy silt w/interbedded silty clay seams and layers
2-2-3	- loose below 6.5 ft
	- wet seams at 9 ft
3-7-16	- medium dense below 13 ft
9-12-7	
8-12-16	- with more sand below 23.5 ft
19-50/6"	Dense gray fine sand, slightly silty
11-14-17	- brown and gray below 30 ft

B-33, Sta. 124+95.14
35.72' Lt. Of CL Construction

NOTES:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NO. 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

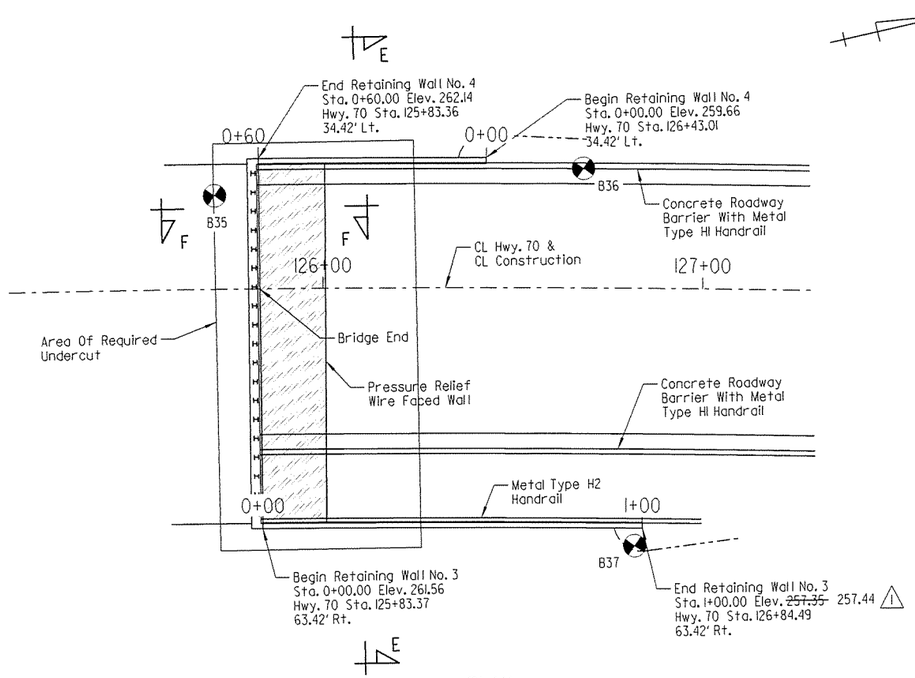
SHEET 5 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W5.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54608

SRYancey 5/29/2014 6:39:00 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W5 (Boring Log 2b).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	385	505
RET. WALL DETAILS				54609



PLAN

HORIZONTAL CURVE DATA

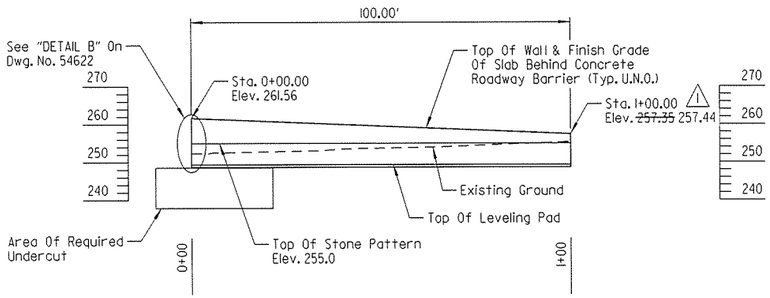
Hwy. 70 CL Construction

PI = 125+77.52
△ = 3°58'52" Rt.
D = 1°00'00"
T = 199.13'
L = 398.11'
R = 5729.58'
e = N.C.

⚠1 Added "RETAINING WALL NO. 3 ELEVATIONS".
Added "RETAINING WALL NO. 4 ELEVATIONS".
Revised Wall Elevations. SRY 8-28-14

LEGEND

U.N.O. = Unless Noted Otherwise



ELEVATION - WALL NO. 3

(Looking At Front Face)

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION E-E" and "SECTION F-F" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Hwy. 70 to ControlPoint of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

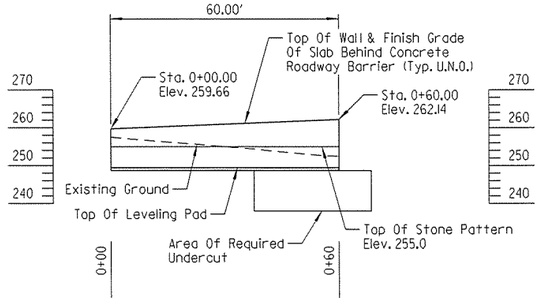
For "SOIL BORING PROFILE - MSE RETAINING WALL NOS. 3 & 4" see Dwg. No. 54610.

⚠1 RETAINING WALL NO. 3 ELEVATIONS

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	261.56	252.40
0+25.00	260.51	253.06
0+50.00	259.46	253.70
0+75.00	258.40	254.37
1+00.00	257.44	255.33

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

RETAINING WALL NOS. 3 & 4



ELEVATION - WALL NO. 4

(Looking At Front Face)

⚠1 RETAINING WALL NO. 4 ELEVATIONS

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	259.66	257.74
0+25.00	260.70	254.38
0+50.00	261.73	252.30
0+60.00	262.14	251.74

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
8-28-14
BRIDGE ENGINEER

SHEET 6 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY

ROUTE SEC.

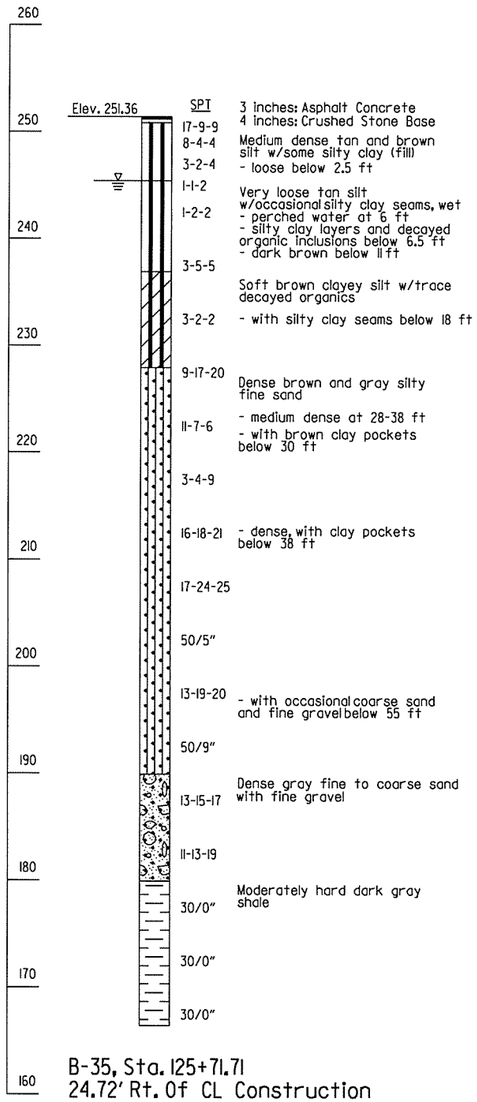
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

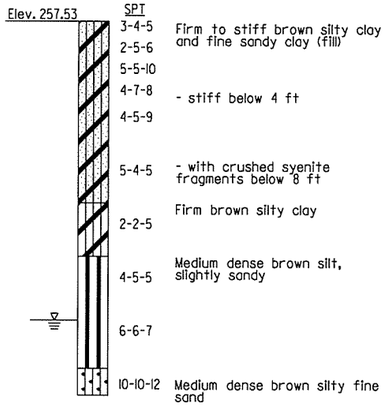
DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W6.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54609

SRYancey 08/29/2014 15:23:28
WORKSPACE: AHTD Bridge
\\ahtdc01\ZON10\1080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W6 MSE Wall 3 & 4.dgn
REVISED DATE:

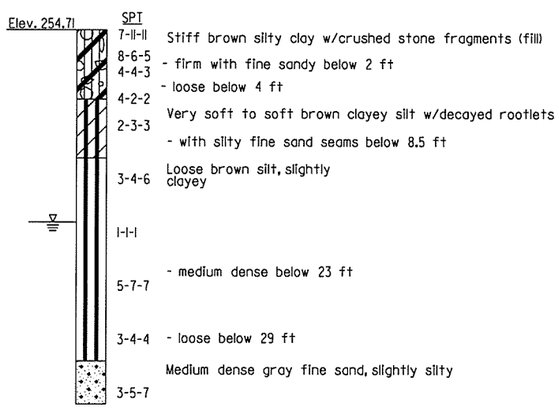
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	386	505
				(1)		RET. WALL DETAILS		54610



B-35, Sta. 125+71.71
24.72' Rt. Of CL Construction



B-36, Sta. 126+68.49
31.59' Lt. Of CL Construction



B-37, Sta. 126+82.46
68.03' Rt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 70 CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NOS. 3 & 4

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

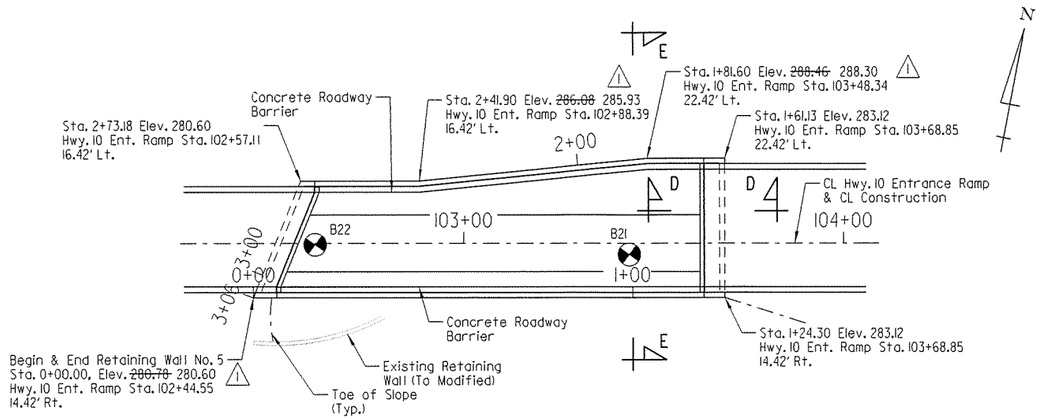
SHEET 7 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W7.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54610

SRYancey 5/29/2014 6:39:01 PM
WORKSPACE: AHTD Bridge
L:\ROW\HOT\060 Broadway Bridge over the Arkansas River\Drawings\B061275_W7 (Boring Log 3).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
1 8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	387	505
(1)	RET. WALL DETAILS			54611



PLAN

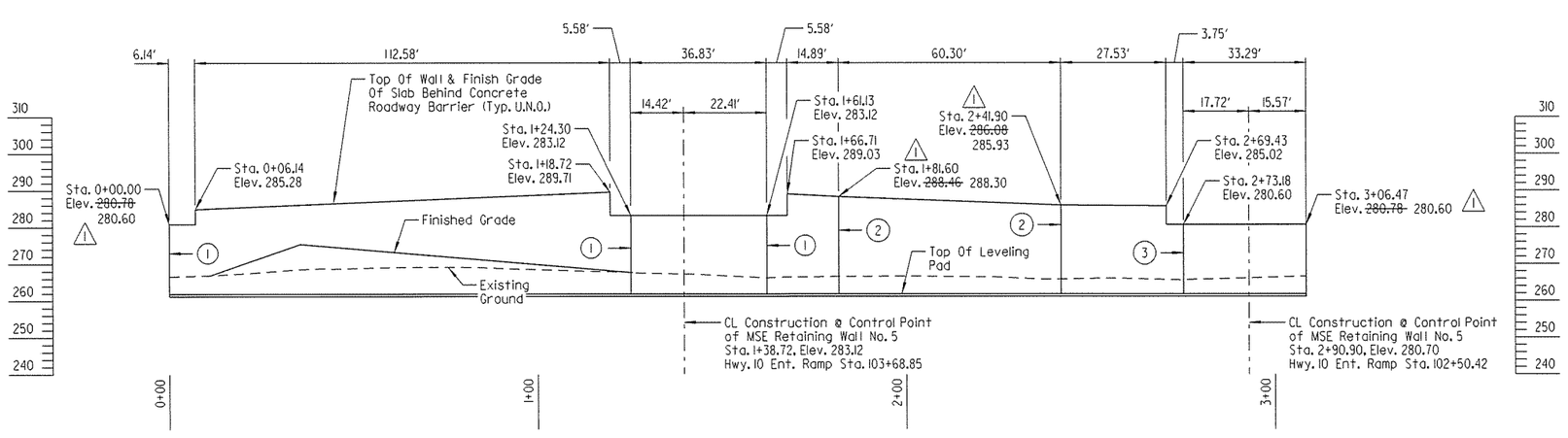
⚠1 RETAINING WALL ELEVATIONS

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	280.78	266.57
0+25.00	285.85	272.80
0+50.00	286.72	273.00
0+75.00	287.70	271.94
1+00.00	288.81	269.78
1+25.00	283.12	267.65
1+50.00	283.12	266.76
1+75.00	288.62	266.53
2+00.00	287.51	266.68
2+25.00	286.52	266.39
2+50.00	285.65	266.01
2+75.00	280.60	265.64
3+00.00	280.60	266.35
3+06.47	280.60	266.57

NOTES:
Stationing Is Along Retaining Wall Profile Grade.

Finished Grade Elevation Controlled By Existing Ground.

⚠1 Added "RETAINING WALL ELEVATIONS", Revised Wall Elevations.
SRY 8-28-14



ELEVATION
(Looking At Front Face)

(1) 112°09'35" Break
(2) 5°47'22" Break
(3) 67°50'25" Break

LEGEND
U.N.O. = Unless Noted Otherwise

RETAINING WALL NO. 5

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION D-D" and "SECTION E-E" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Hwy. 10 Ent. Ramp to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 5" see Dwg. No. 54612.

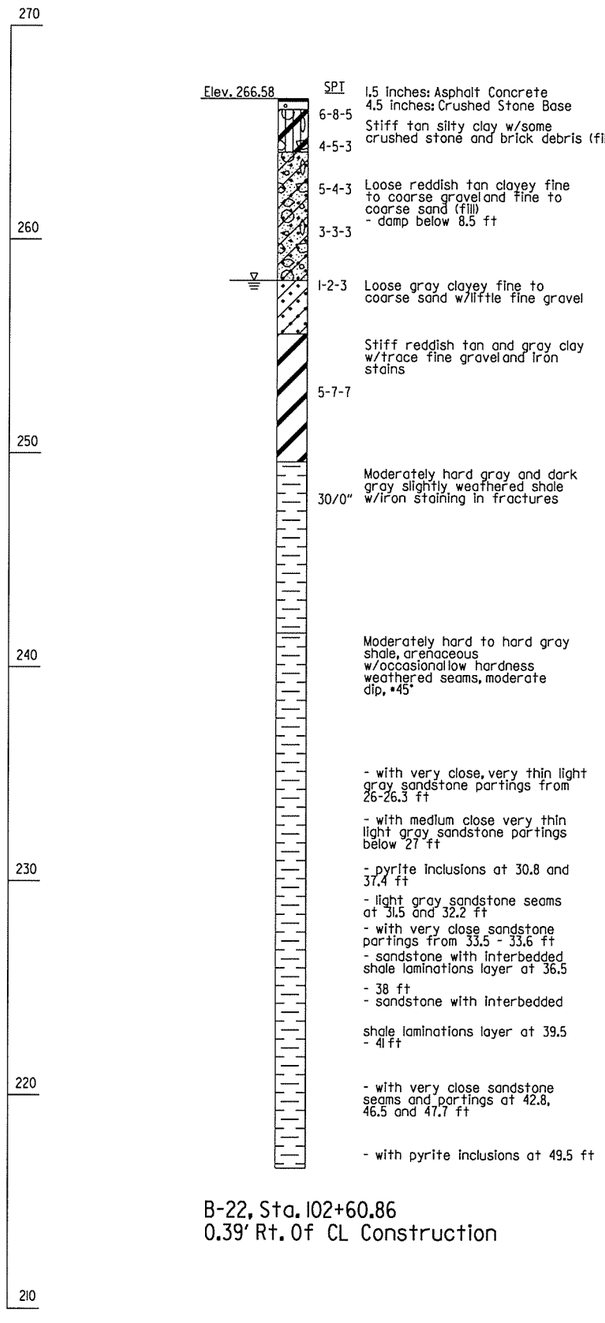
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEPHEN R. YANCEY
BRIDGE ENGINEER

SHEET 8 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W8.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54611

SRYancey 08/29/2014 15:23:32
WORKSPACE: AHTD Bridge
\\gltdc0\20in\l07080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W8 (MSE Wall5).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	388	505
				(1)		RET. WALL DETAILS		54612



Elev. 266.58

SPT	
	1.5 inches: Asphalt Concrete 4.5 inches: Crushed Stone Base
6-8-5	Stiff tan silty clay w/some crushed stone and brick debris (fill)
4-5-3	
5-4-3	Loose reddish tan clayey fine to coarse gravel and fine to coarse sand (fill) - damp below 8.5 ft
3-3-3	
1-2-3	Loose gray clayey fine to coarse sand w/little fine gravel
	Stiff reddish tan and gray clay w/trace fine gravel and iron stains
5-7-7	
	Moderately hard gray and dark gray slightly weathered shale w/iron staining in fractures
30/0"	
	Moderately hard to hard gray shale, arenaceous w/occasional low hardness weathered seams, moderate dip, ±45°
	- with very close, very thin light gray sandstone partings from 26-26.3 ft
	- with medium close very thin light gray sandstone partings below 27 ft
	- pyrite inclusions at 30.8 and 37.4 ft
	- light gray sandstone seams at 31.5 and 32.2 ft
	- with very close sandstone partings from 33.5 - 33.6 ft
	- sandstone with interbedded shale laminations layer at 36.5
	- 38 ft - sandstone with interbedded
	shale laminations layer at 39.5 - 41 ft
	- with very close sandstone seams and partings at 42.8, 46.5 and 47.7 ft
	- with pyrite inclusions at 49.5 ft

B-22, Sta. 102+60.86
0.39' Rt. Of CL Construction

Elev. 267.50

SPT	
	1 inch: Asphalt Concrete 4 inches: Crushed Stone Base
15-17-23	Stiff to very stiff black fine sandy clay w/fine to coarse gravel and brick debris (fill) - with cinders below 2 ft
13-11-9	
9-13-16	
7-7-6	Medium dense gray, reddish brown and tan clayey fine to coarse sand w/fine gravel (fill)
5-4-6	- damp below 9.5 ft
	Medium dense gray, reddish brown and tan clayey fine to coarse sand w/fine gravel
11-9-7	
	- with some cobbles below 15.5 ft
50/6"	Low hardness to moderately hard dark gray weathered shale
	Moderately hard dark gray shale
30/0"	
30/0:	

B-21, Sta. 103+43.64
3.01' Rt. Of CL Construction

NOTE:
Stationing and offsets shown are along Hwy. 10 Entrance Ramp CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NO. 5

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5-30-14
BRIDGE ENGINEER

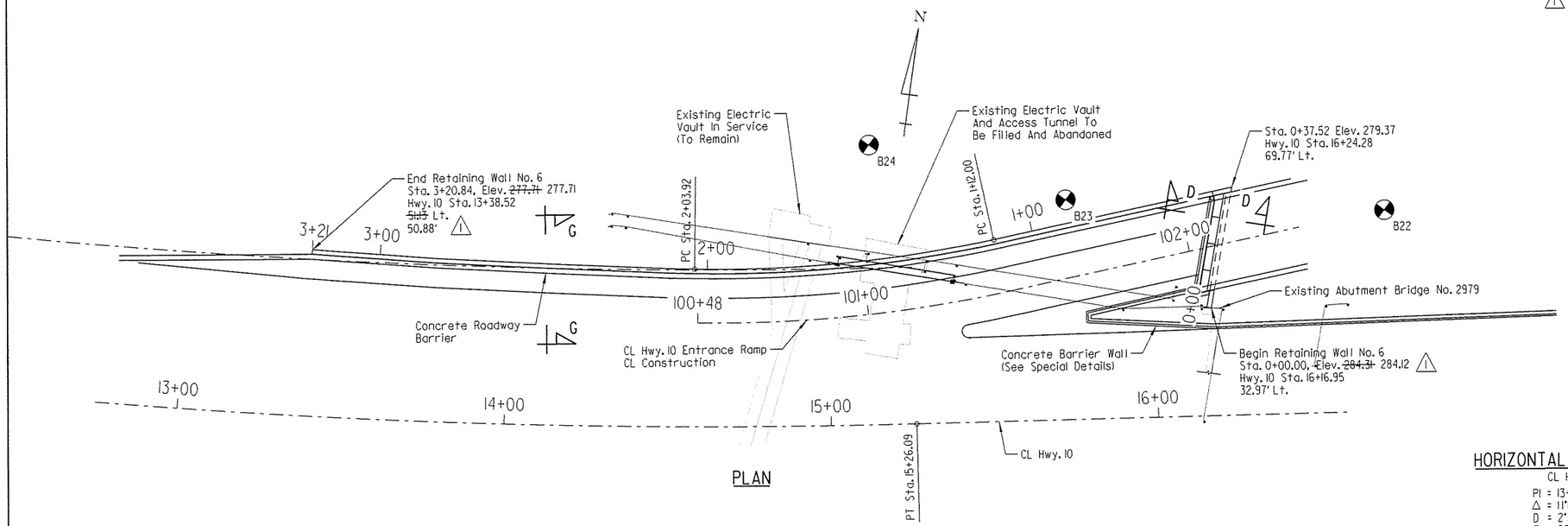
SHEET 9 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W9.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54612

SRYancey 5/29/2014 6:39:02 PM
WORKSPACE: ANTID Bridge
L:\DOM\MOT060 - Broadway Bridge over the Arkansas River\Drawings\B061275_W9 (Boring Log 4).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	389	505
RET. WALL DETAILS				54613



PLAN

HORIZONTAL CURVE DATA

CL Hwy. 10

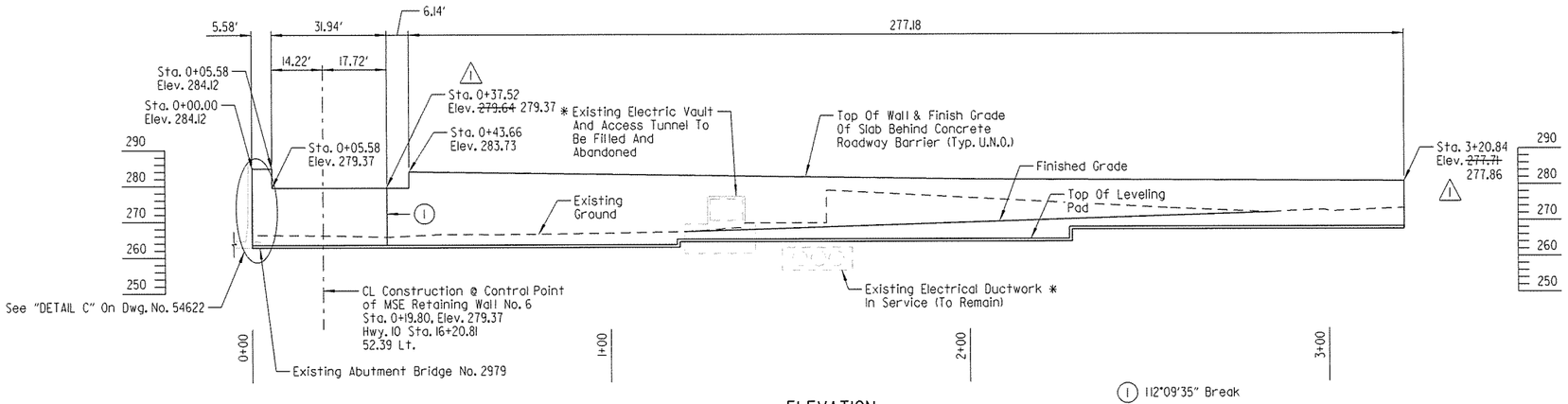
PI = 13+01.93
Δ = 11°14'40" Lt.
D = 2°30'00"
T = 225.61'
L = 499.78'
R = 2291.83'
e = N.C.

⚠1 RETAINING WALL ELEVATIONS

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	284.12	266.26
0+25.00	279.37	265.98
0+50.00	283.60	266.33
0+75.00	283.16	266.39
1+00.00	282.85	266.70
1+25.00	282.74	267.18
1+50.00	282.40	267.98
1+75.00	281.75	268.78
2+00.00	281.01	269.58
2+25.00	280.19	270.38
2+50.00	279.41	271.17
2+75.00	278.58	271.97
3+00.00	278.12	272.51
3+20.84	277.86	273.40

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

⚠1 Added "RETAINING WALL ELEVATIONS", Revised Wall Offset And Elevations. SRY 8-28-14



ELEVATION
(Looking At Front Face)

* Elevations of existing structures to be field verified.

LEGEND

U.N.O. = Unless Noted Otherwise

RETAINING WALL NO. 6

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION D-D" and "SECTION C-C" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Hwy. 10 to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 6" see Dwg. No. 54614.

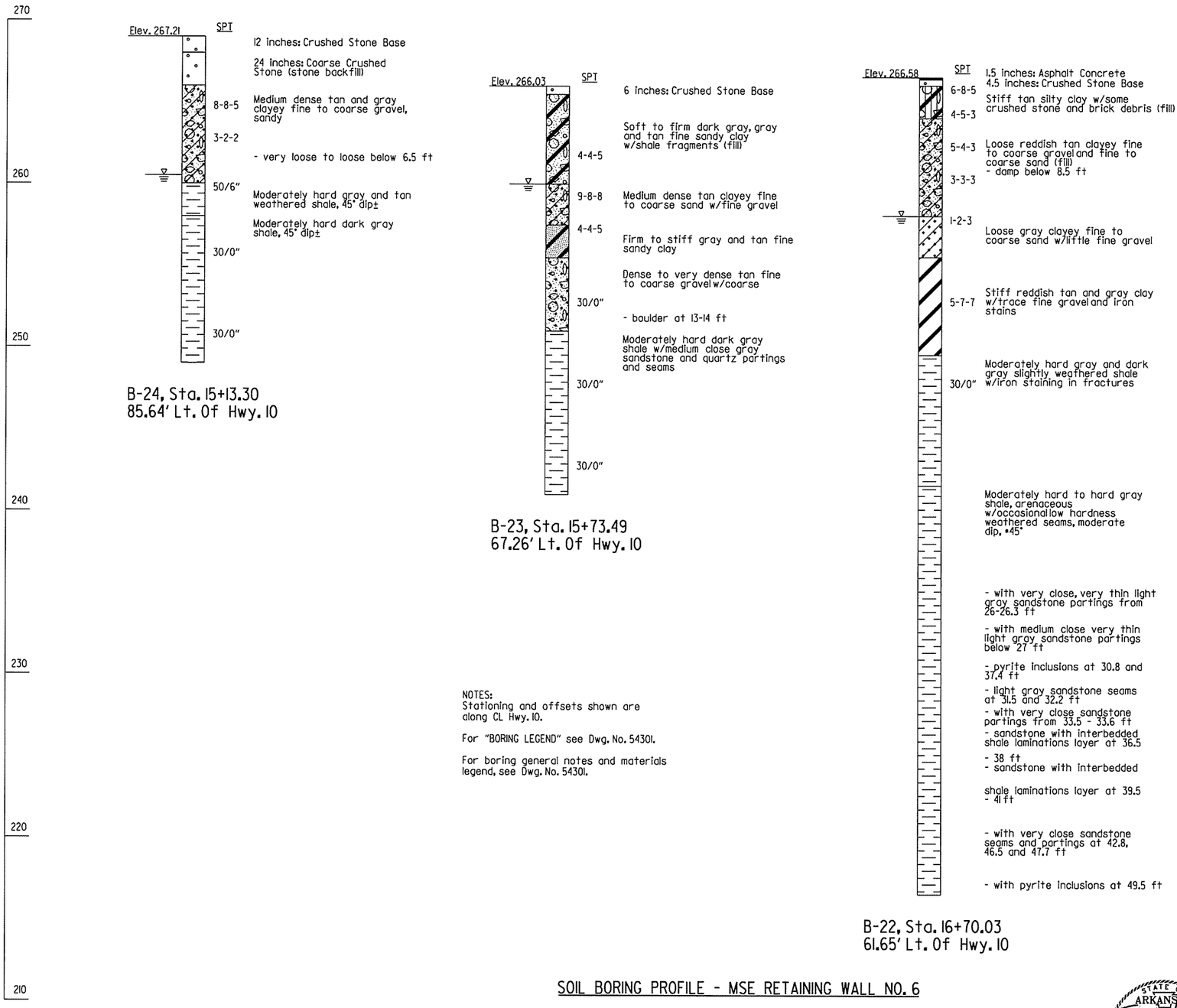
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
BRIDGE ENGINEER

SHEET 10 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W10.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54613

SRYancey 08/29/2014 15:23:38
WORKSPACE: AHTD Bridge
\\gltdc01\201\101080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W10 MSE Wall 6.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	390	505
				(1)		RET. WALL DETAILS		54614



NOTES:
Stationing and offsets shown are along CL Hwy. 10.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NO. 6

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

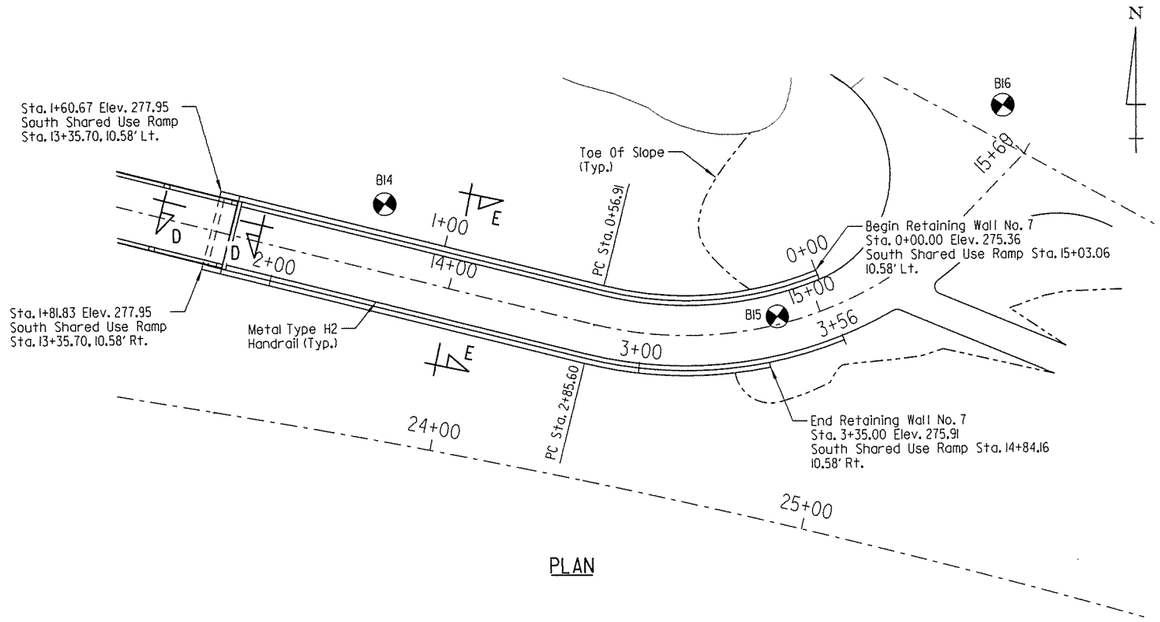
SHEET 11 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_W11.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54614

SRYancey 5/29/2014 6:39:04 PM
WORKSPACE: AHTD Bridge
L:\CDI\MOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_W11Boring Log 51.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	391	505
①		RET. WALL DETAILS		54615



PLAN

HORIZONTAL CURVE DATA

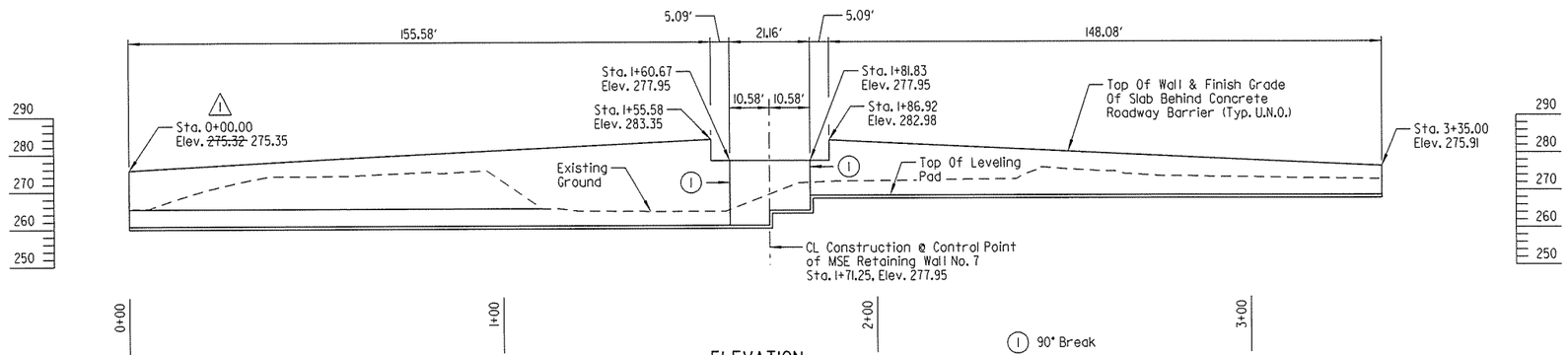
CL South Shared Use Ramp

PI = 14+98.03
Δ = 60°27'11" Lt.
D = 57°00'00"
T = 58.57'
L = 106.06'
PC = 14+39.46
PT = 15+45.52
e = N.C.
LS = N/A

RETAINING WALL ⚠1 ELEVATIONS

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	275.35	265.37
0+25.00	276.73	265.25
0+50.00	278.10	265.26
0+75.00	279.38	265.27
1+00.00	280.61	265.27
1+25.00	281.84	265.41
1+50.00	283.06	265.46
1+75.00	277.95	269.50
2+00.00	282.33	272.52
2+25.00	281.10	272.97
2+50.00	279.86	274.89
2+75.00	278.63	273.19
3+00.00	277.40	272.96
3+25.00	276.17	273.01
3+35.00	275.91	272.70

NOTE:
Stationing Is Along Retaining Wall Profile Grade.



ELEVATION
(Looking At Front Face)

LEGEND

U.N.O. = Unless Noted Otherwise

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION D-D" and "SECTION E-E" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL South Shared Use Ramp to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 7" see Dwg. No. 54616.

RETAINING WALL NO. 7

⚠1 Added "RETAINING WALL ELEVATIONS", Revised Wall Elevations.
SRY 8-28-14

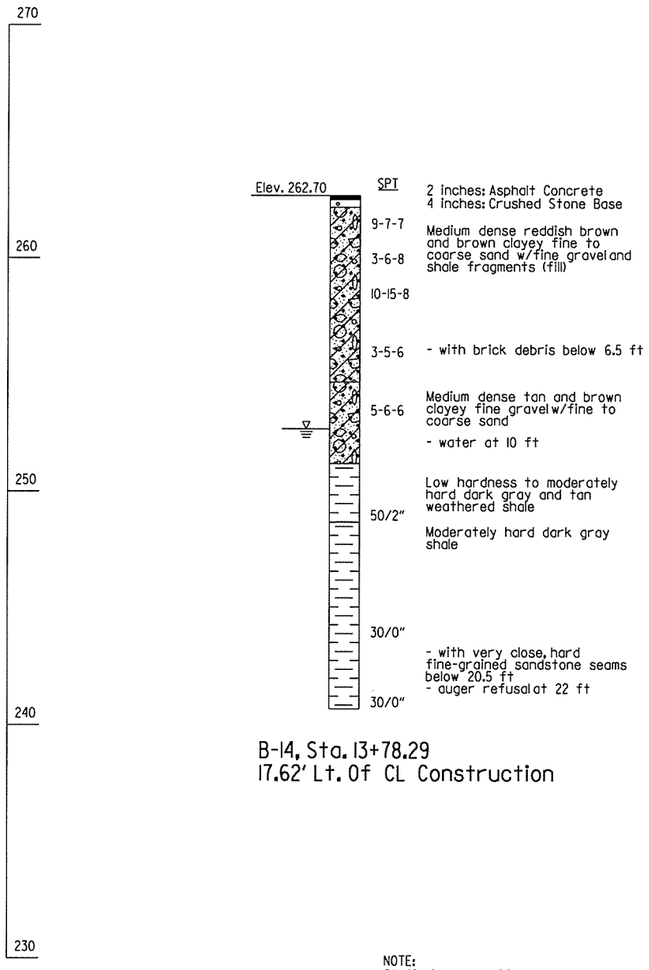
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVEN R. YANCEY
8/28/14
BRIDGE ENGINEER

SHEET 12 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_WI2.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54615

SRYancey 08/29/2014 15:23:43
WORKSPACE: AHTD Bridge
\\gltdc01\201\101080 - Broadway Bridge over the Arkansas River\Drawings\B061275_WI2 (MSE Wall 7).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	392	505
				①	RET. WALL DETAILS			54616



Elev. 262.70

SPT	
	2 inches: Asphalt Concrete 4 inches: Crushed Stone Base
9-7-7	Medium dense reddish brown and brown clayey fine to coarse sand w/fine gravel and shale fragments (fill)
3-6-8	
10-15-8	
3-5-6	- with brick debris below 6.5 ft
5-6-6	Medium dense tan and brown clayey fine gravel w/fine to coarse sand - water at 10 ft
50/2"	Low hardness to moderately hard dark gray and tan weathered shale
	Moderately hard dark gray shale
30/0"	
	- with very close, hard fine-grained sandstone seams below 20.5 ft - auger refusal at 22 ft
30/0"	

B-14, Sta. 13+78.29
17.62' Lt. Of CL Construction

Elev. 265.80

SPT	
1-4-4	Very loose tan silt w/organics (fill)
30/0"	Stiff dark brown and tan silty clay w/gravel (fill)

NOTE: Boring terminated at 2 ft on concrete.

B-15, Sta. 14+88.65
2.13' Lt. Of CL Construction

Elev. 261.59

SPT	
6-9-11	Loose brown silt w/organics (fill)
11-19-22	Medium dense tan, gray and dark brown shale fragments, crushed stone and cinders (fill) - dense with fine sand and
50/5"	brick debris below 2.5 ft - clayey at 3.5 ft
15-15-12	- medium dense below 6.5 ft - with sandstone fragments below 7 ft
6-8-15	
	Low hardness gray, tan and dark gray weathered shale
30/0"	Moderately hard dark gray shale w/very close hard gray sandstone seams
30/0"	
	- auger refusal on hard sandstone at 22 ft

B-16, Sta. 15+89.04
8.59' Lt. Of CL Construction
Arkansas River Trail

SOIL BORING PROFILE - MSE RETAINING WALL NO. 7

NOTE:
Stationing and offsets shown are along South Shared Use Ramp CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/28/14
BRIDGE ENGINEER

SHEET 13 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

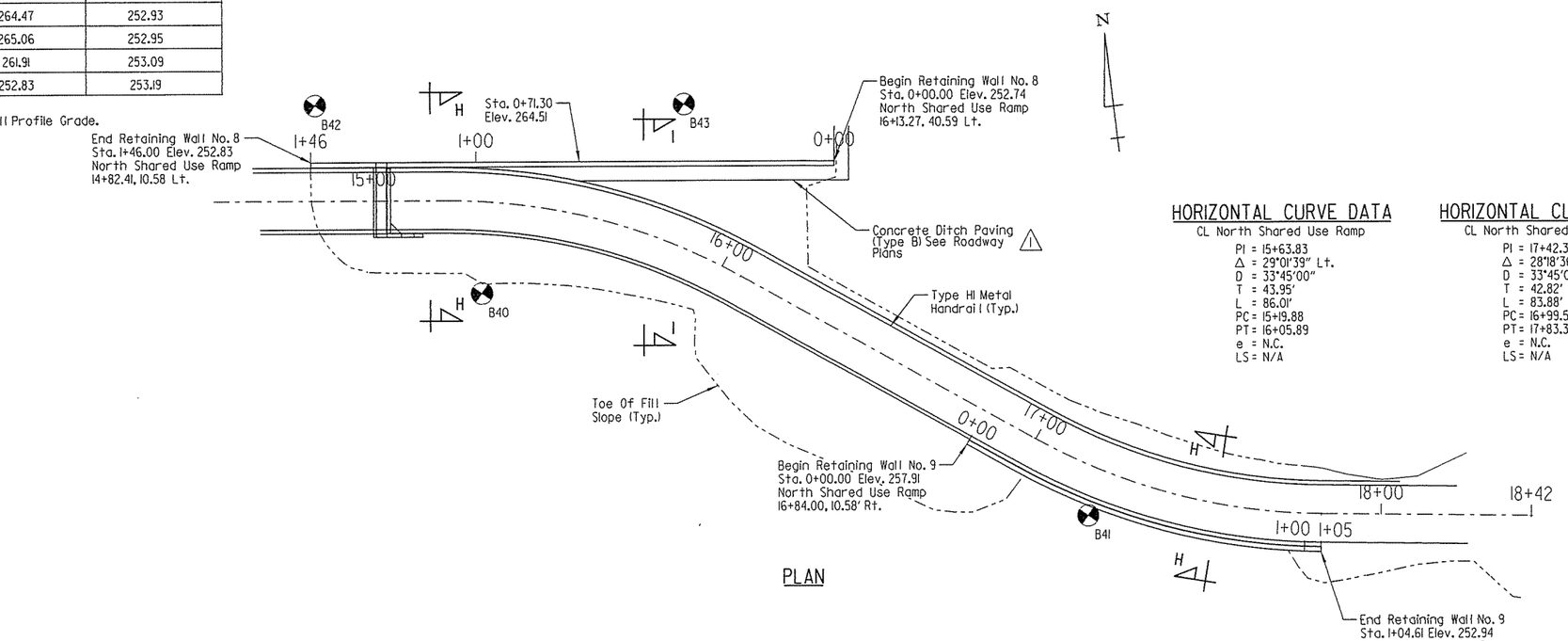
DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_WI3.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54616

SRYancey 5/29/2014 6:39:05 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_WI3 (Boring Log 6).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-28-14				6	ARK.			
				JOB NO.		061275	393	505
				(1)		RET. WALL DETAILS		54617

RETAINING WALL NO. 8 ELEVATIONS ⚠1		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	252.74	252.79
0+25.00	257.64	252.44
0+50.00	261.75	252.92
0+75.00	264.47	252.93
1+00.00	265.06	252.95
1+25.00	261.91	253.09
1+46.00	252.83	253.19

NOTE:
Stationing Is Along Retaining Wall Profile Grade.



PLAN

HORIZONTAL CURVE DATA
CL North Shared Use Ramp

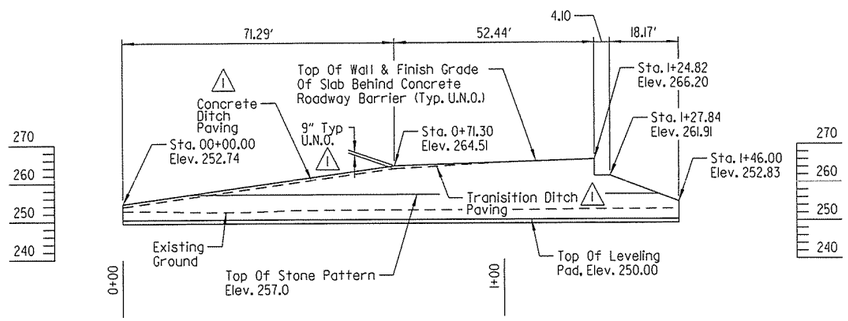
PI = 15+63.83
Δ = 29°01'39" Lt.
D = 33°45'00"
T = 43.95'
L = 86.01'
PC = 15+19.88
PT = 16+05.89
e = N.C.
LS = N/A

HORIZONTAL CURVE DATA
CL North Shared Use Ramp

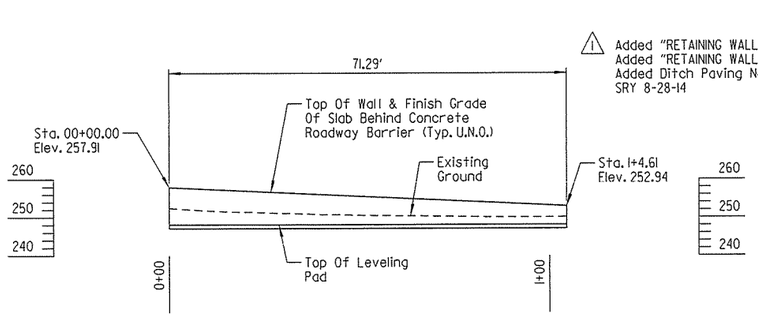
PI = 17+42.31
Δ = 28°18'36" Lt.
D = 33°45'00"
T = 42.82'
L = 83.88'
PC = 16+99.50
PT = 17+83.38
e = N.C.
LS = N/A

RETAINING WALL NO. 9 ELEVATIONS ⚠1		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	257.91	252.40
0+25.00	256.69	251.26
0+50.00	255.51	250.60
0+75.00	254.34	250.27
1+00.00	253.16	250.13
1+04.61	252.94	250.16

NOTE:
Stationing Is Along Retaining Wall Profile Grade.



ELEVATION - WALL NO. 8
(Looking At Front Face)



ELEVATION - WALL NO. 9
(Looking At Front Face)

RETAINING WALL NOS. 8 & 9

LEGEND
U.N.O. = Unless Noted Otherwise

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION H-H" and "SECTION I-I" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL North Shared Use Path to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NO. 8 & 9" see Dwg. No. 54618.

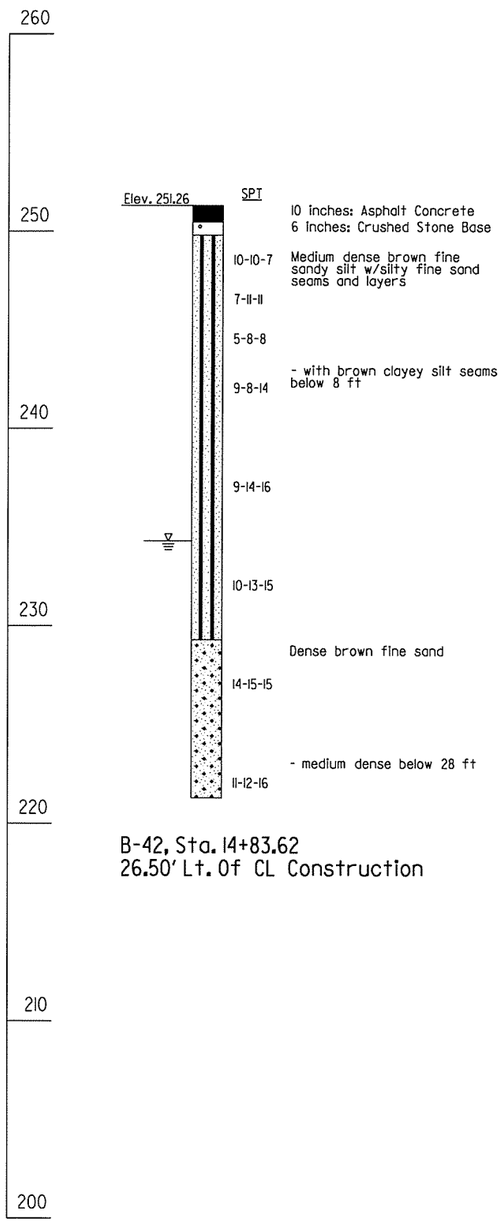
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 14 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

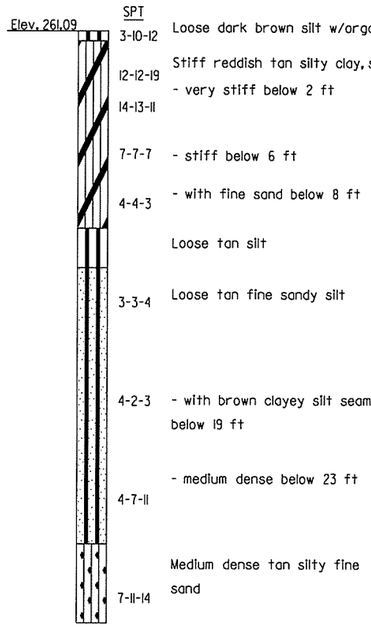
DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275_WI4.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54617

SRYancey 08/29/2014 15:23:46
WORKSPACE: AHTD Bridge
\\gifs001\COM\MOT080 Broadway Bridge over the Arkansas River\Drawings\B061275_WI4 MSE Wall 8 & 9i.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	394	505
				①		RET. WALL DETAILS		54618



B-42, Sta. 14+83.62
26.50' Lt. Of CL Construction

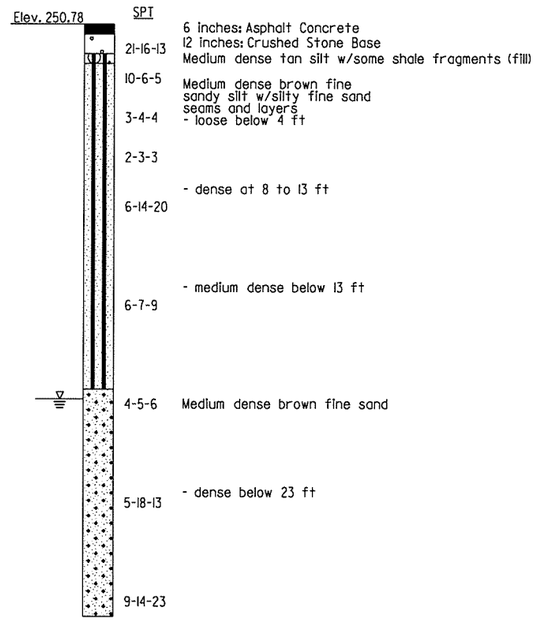


B-40, Sta. 15+31.75
25.55' Rt. Of CL Construction

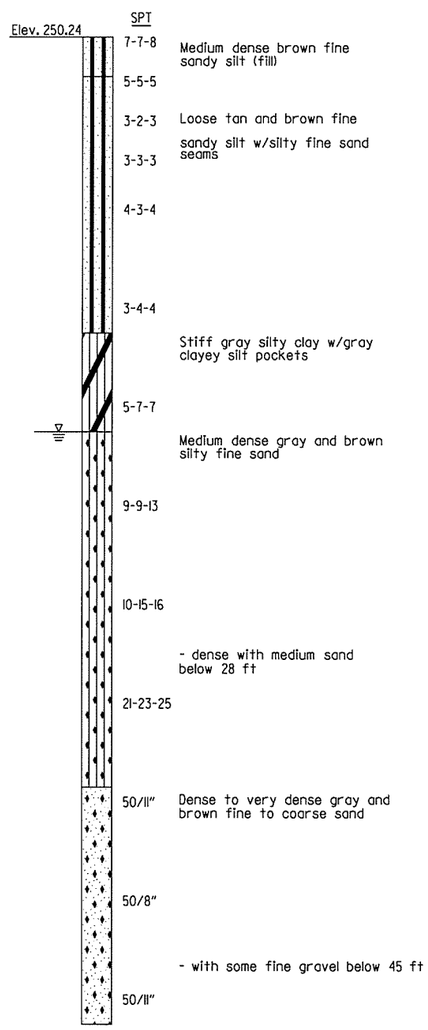
NOTE:
Stationing and offsets shown are along North Shared Use Ramp CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.



B-43, Sta. 15+75.40
37.53' Lt. Of CL Construction



B-41, Sta. 17+21.60
13.09' Rt. Of
CL Construction

SOIL BORING PROFILE - MSE RETAINING WALL NOS. 8 & 9

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
STEVEN R. YANCEY
5/29/14
BRIDGE ENGINEER

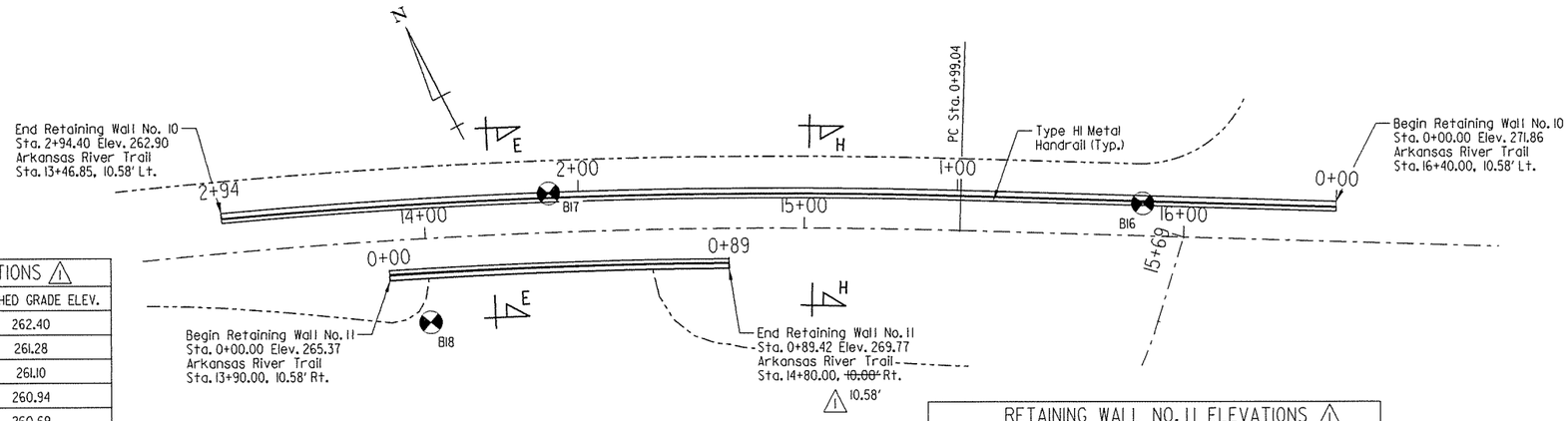
SHEET 15 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_WI5.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54618

SRYancey 5/29/2014 6:39:07 PM
WORKSPACE: AHTD Bridge
L:\20IN\IN0T080 - Broadway Bridge over the Arkansas River\Drawings\B061275_WI5 (Boring Log 7).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-28-14			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061275	395	505
RET. WALL DETAILS				54619



PLAN

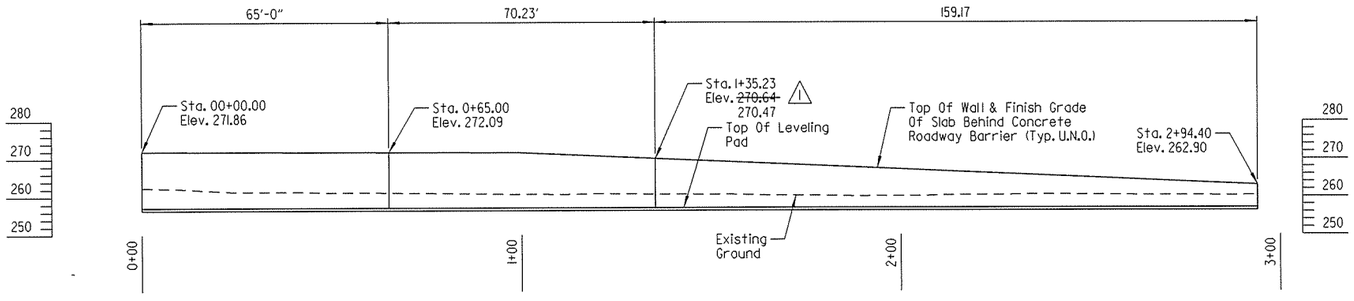
RETAINING WALL NO. 10 ELEVATIONS ⚠1		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	271.86	262.40
0+25.00	272.15	261.28
0+50.00	272.19	261.10
0+75.00	271.98	260.94
1+00.00	271.52	260.69
1+25.00	270.82	260.76
1+50.00	269.87	260.56
1+75.00	268.71	260.26
2+00.00	267.49	260.13
2+25.00	266.27	260.41
2+50.00	265.06	260.48
2+75.00	263.84	260.35
2+94.40	262.90	260.30

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

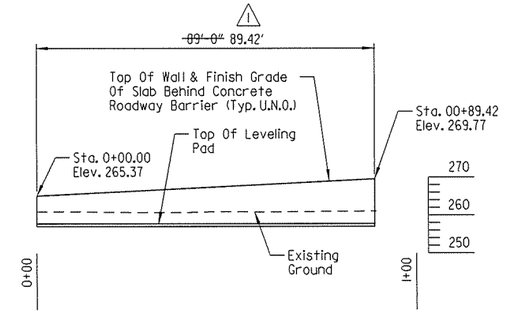
RETAINING WALL NO. 11 ELEVATIONS ⚠1		
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.
0+00.00	265.37	260.91
0+25.00	266.60	260.77
0+50.00	267.84	260.90
0+75.00	269.07	260.95
0+89.42	269.77	261.06

NOTE:
Stationing Is Along Retaining Wall Profile Grade.

⚠1 Added "RETAINING WALL NO. 10 ELEVATIONS", Added "RETAINING WALL NO. 11 ELEVATIONS", Revised Wall Offset And Elevation. SRY 8-28-14



ELEVATION - WALL NO. 10
(Looking At Front Face)



ELEVATION - WALL NO. 11
(Looking At Front Face)

RETAINING WALL NOS. 10 & 11

LEGEND
U.N.O. = Unless Noted Otherwise

NOTES:
For "GENERAL NOTES" and "EMBANKMENT DETAIL" see Dwg. No. 54623.

For "SECTION E-E" and "SECTION H-H" see Dwg. No. 54621.

Elevations shown are at top of MSE Retaining Wall.

Offset dimensions are measured from CL Arkansas River Trail to Control Point of MSE Retaining Wall.

For "MSE RETAINING WALL ENHANCEMENT DETAILS" see Dwg. No. 54622.

For "SOIL BORING PROFILE - MSE RETAINING WALL NOS. 10 & 11" see Dwg. No. 54620.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 16 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_WI6.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: 1"=20'
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54619

SRYancey
08/29/2014 15:23:50
WORKSPACE: AHTD Bridge
\\gltdc01\201N\0T0980 - Broadway Bridge over the Arkansas River\Drawings\B06275_WI6 (MSE Wall10 & 11.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	396	505
				①		RET. WALL DETAILS		54620

Elev. 260.72

SPT	
4-7-11	Loose tan silt w/organics (fill)
6-5-5	Stiff gray, tan and dark brown sandy clay w/shale fragments and crushed stone (fill)
5-7-8	Medium dense brown and dark gray shale fragments w/tan and light gray silty clay (fill)
8-6-6	- wet seam at 7 ft
50/6"	Wood debris (fill)
30/0"	Moderately hard dark gray shale
30/0"	

B-18, Sta. 14+00.16
22.28' Rt. Of CL Construction

Elev. 260.03

SPT	
4-5-5	Loose brown silt w/organics (fill)
9-10-13	Medium dense tan, gray and dark brown shale fragments, crushed stone, cinders, brick debris and some silt (fill)
10-6-6	
9-11-7	- brick fragments at 6.5-7.5 ft
2-3-2	- loose below 9 ft
2-3-3	
6-2-3	Loose tan silt, slightly clayey w/decayed organics
	Decayed organics (wood debris)
4-6-10	
29-50/6"	Moderately hard dark gray, gray and tan weathered shale
30/0"	Moderately hard dark gray shale w/hard gray interbedded sandstone seams
	- auger refusal at 36 ft

B-17, Sta. 14+32.85
10.31' Rt. Of CL Construction

Elev. 261.59

SPT	
6-9-11	Loose brown silt w/organics (fill)
11-19-22	Medium dense tan, gray and dark brown shale fragments, crushed stone and cinders (fill)
50/5"	- dense with fine sand and brick debris below 2.5 ft - clayey at 3.5 ft
15-15-12	- medium dense below 6.5 ft - with sandstone fragments below 7 ft
6-8-15	
	Low hardness gray, tan and dark gray weathered shale
30/0"	Moderately hard dark gray shale w/very close hard gray sandstone seams
30/0"	
	- auger refusal on hard sandstone at 22 ft

B-16, Sta. 15+89.04
8.59' Lt. Of CL Construction

NOTE:
Stationing and offsets shown are along Arkansas River Trail CL Construction.

For "BORING LEGEND" see Dwg. No. 54301.

For boring general notes and materials legend, see Dwg. No. 54301.

SOIL BORING PROFILE - MSE RETAINING WALL NOS. 10 & 11

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 17 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

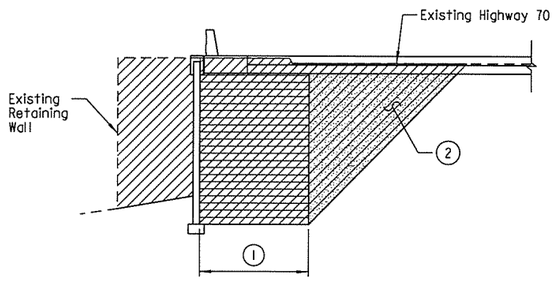
DRAWN BY: CWT DATE: JUNE 2013 FILENAME: B061275_WI7.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54620

SRYancey 5/29/2014 6:39:08 PM
WORKSPACE: AHTD Bridge
L:\2013\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275_WI7 (Boring Log 8).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	397	505
				(1)		RET. WALL DETAILS		54621

(1) Pay Limits Of Select Granular Backfill. See Section Thru Reinforced Zone On Dwg. No. 54623.

(2) Embankment Between Reinforced Zones To Be Paid For As Select Granular Backfill



SECTION A-A
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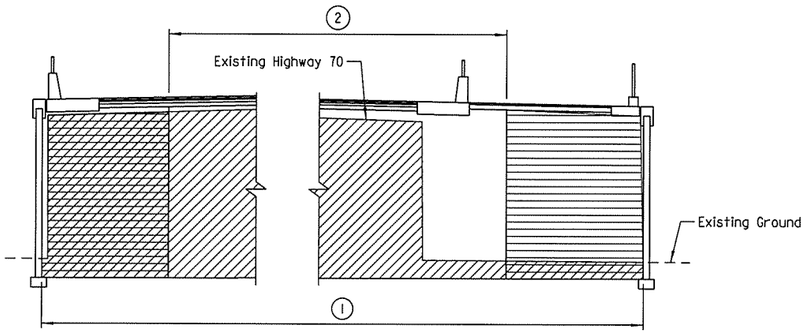

SECTION B-B
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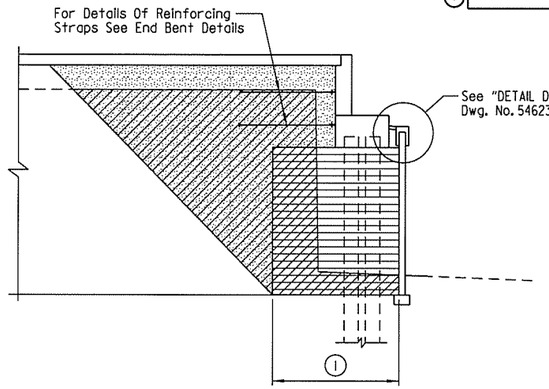

SECTION C-C
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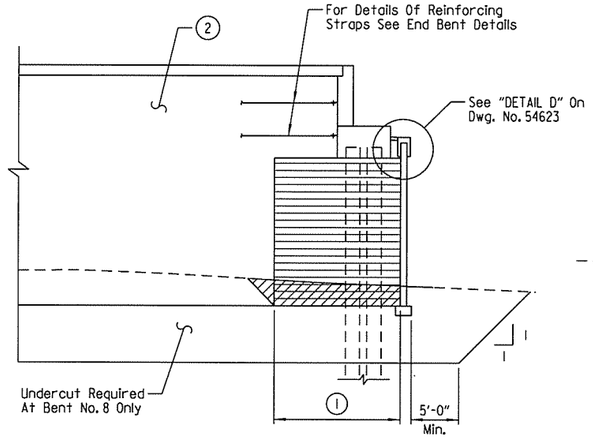
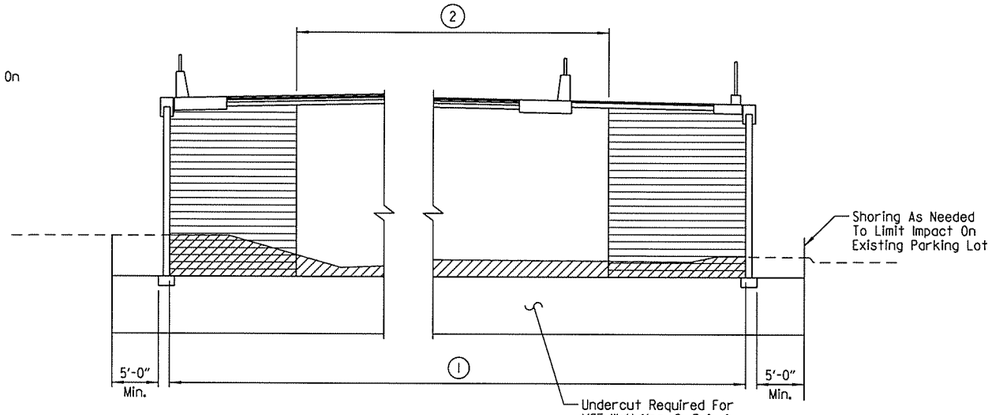


SECTION D-D
No Scale



SECTION E-E
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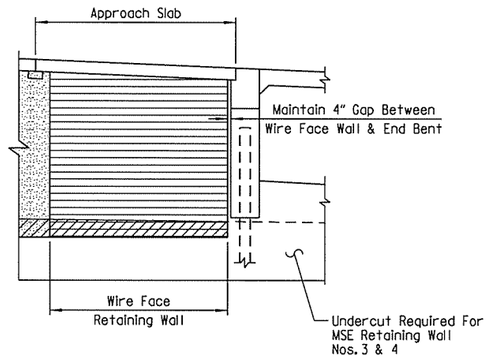
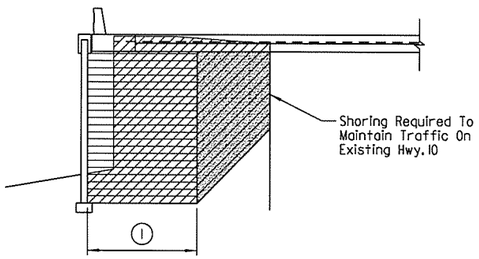
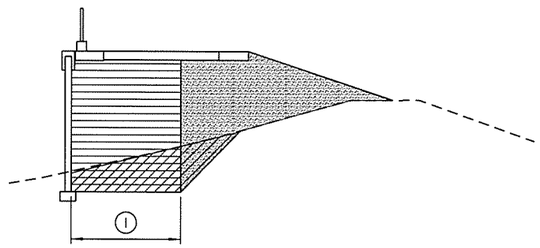


SECTION F-F
No Scale



SECTION G-G
No Scale



SECTION H-H
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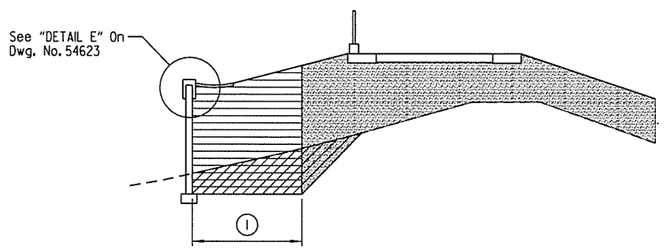


SECTION I-I
No Scale

LEGEND

- Limits Of Reinforcement Zone
- Pay Limit Of Unclassified Excavation
- Limits Of SM-1 Material Behind Reinforcement Zone

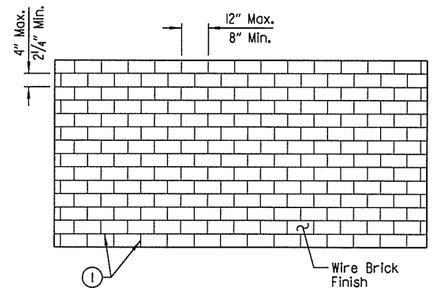
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SCOTT R. YANCEY
BRIDGE ENGINEER

SHEET 18 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275_W18.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54621

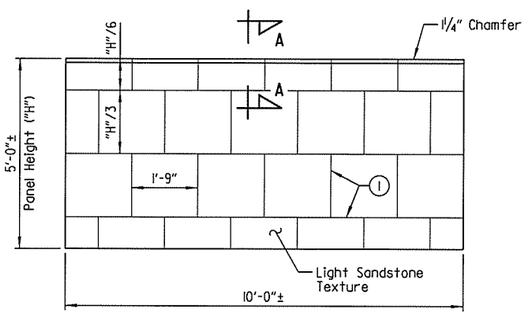
SRYancey 5/29/2014 6:39:09 PM
WORKSPACE: AHTD Bridge
L:\ROW\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_W18 (MSE WallSections).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	398	505
				①		RET. WALL DETAILS		54622

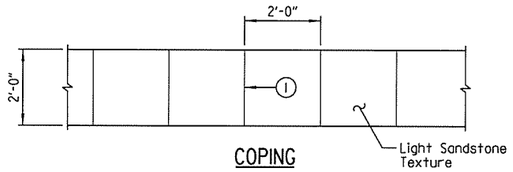


BRICK PANEL

① Provide "Mortal Joint" similar to DETAIL "X"



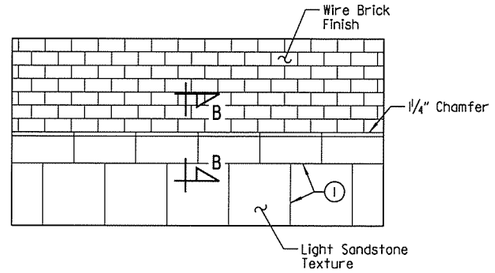
STONE PANEL



COPING

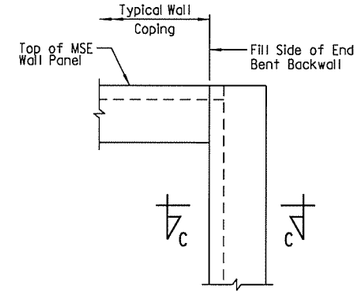
MSE RETAINING WALL ENHANCEMENT DETAILS

No Scale

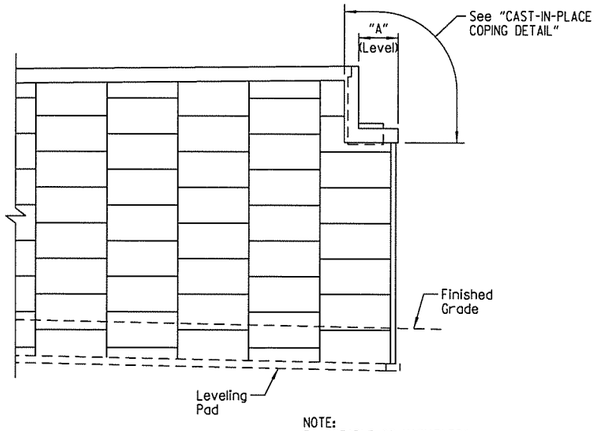


HALF BRICK & HALF STONE

NOTE:
A Class 3 Texture Coating Finish shall be applied to retaining wall surfaces as specified in SP JOB 061275 "TEXTURE COATING FINISH" and in accordance with Subsection 802.19.



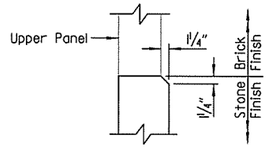
CAST-IN=PLACE COPING DETAIL



NOTE:
For "TABLE OF VARIABLES" See Dwg. No. 54623.

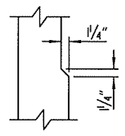
DETAIL A

No Scale



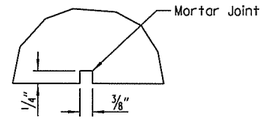
SECTION A-A

No Scale



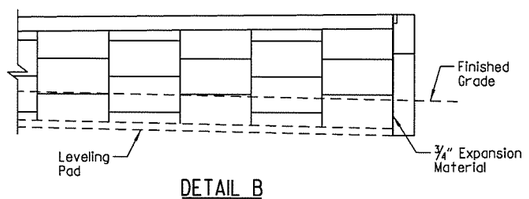
SECTION B-B

No Scale



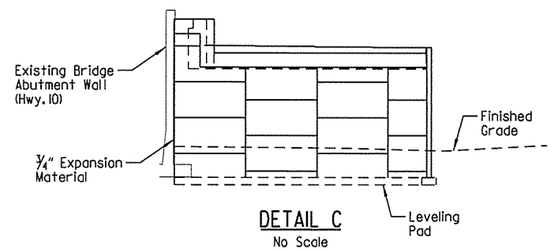
SECTION C-C

No Scale



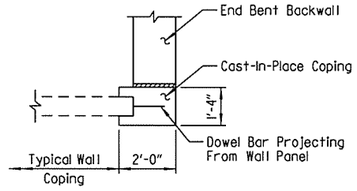
DETAIL B

No Scale



DETAIL C

No Scale



SECTION C-C

Scale: ⅜" = 1'-0"

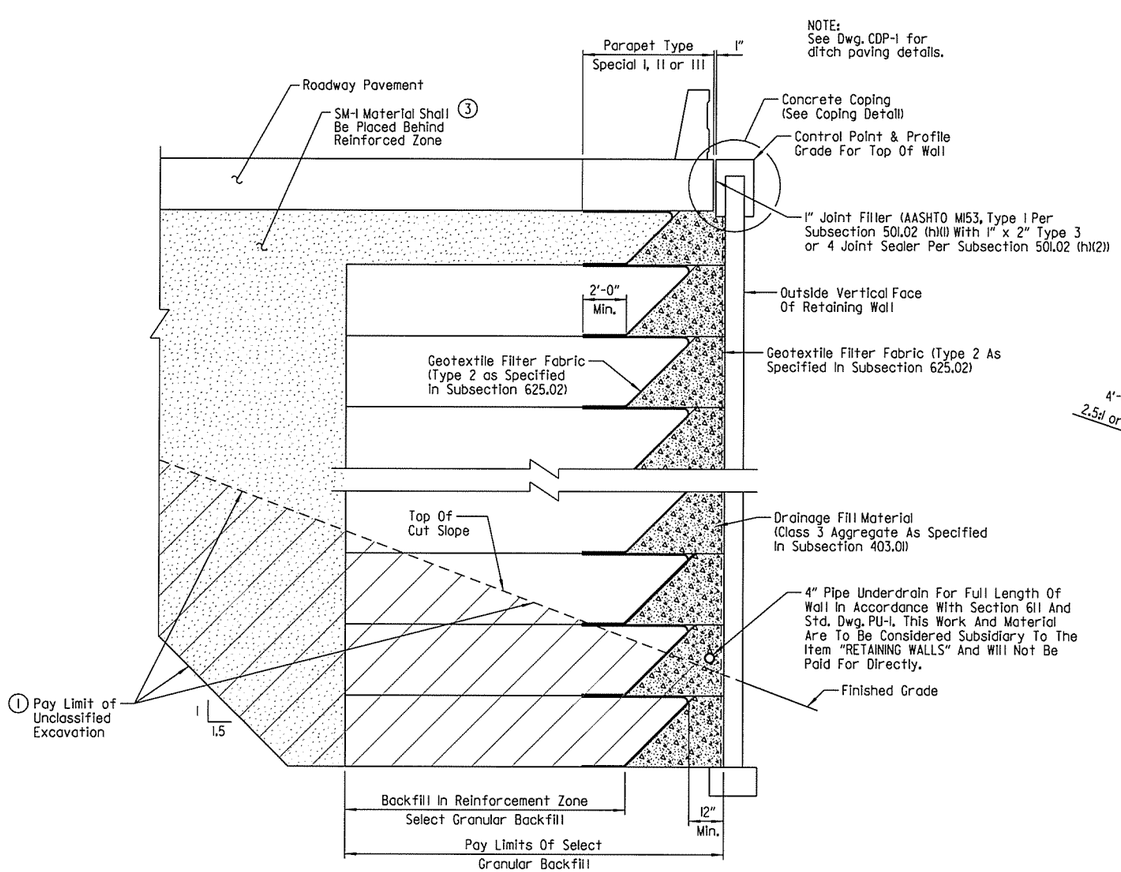
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14058
SETH R. YANCEY
5/30/14
BRIDGE ENGINEER

SHEET 19 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275_W19.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54622

SRYancey 5/29/2014 6:39:10 PM
WORKSPACE: AHTD Bridge
L:\ROW\WDTOBD - Broadway Bridge over the Arkansas River\Drawings\B061275_W19 (Panel Dtls).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	399	505
				(1)		RET. WALL DETAILS		54623



SECTION THRU REINFORCED ZONE

No Scale

TABLE OF VARIABLES		
LOCATION	"A"	"B"
Wall No. 1	5'-7"	4'-7"
Wall No. 2	5'-7"	4'-7"
Wall No. 3		
Wall No. 4		
Wall No. 5	5'-7"	4'-7"
Wall No. 6	4'-7"	4'-1½"
Wall No. 7	4'-7"	4'-1½"
Wall No. 8		
Wall No. 9		
Wall No. 10		
Wall No. 11		

NOTE:
Details for "DETAIL D" and "DETAIL E" not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to "EMBANKMENT DETAIL".

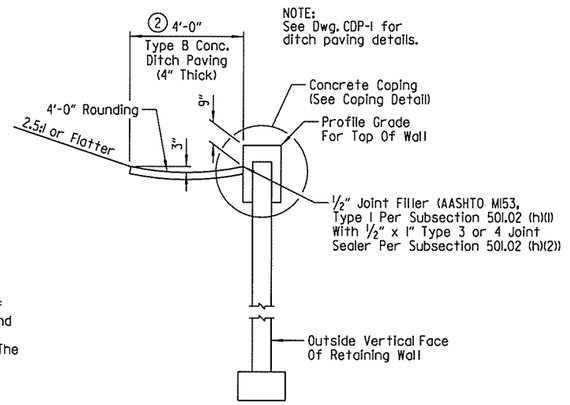
(1) Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 061275 "RETAINING WALLS".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.

(3) Where MSE Walls are constructed back-to-back, the embankment fill between the limits of the reinforced zones, shall be paid for as "SELECT GRANULAR BACKFILL".

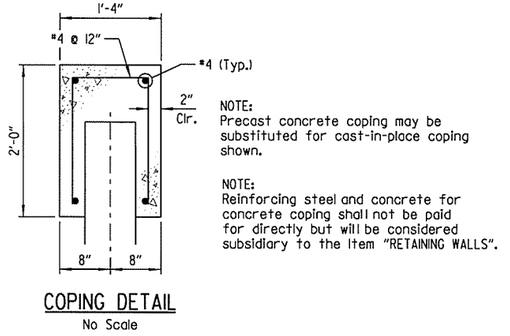
NOTE:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR BACKFILL".

Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)".



DETAIL E

No Scale

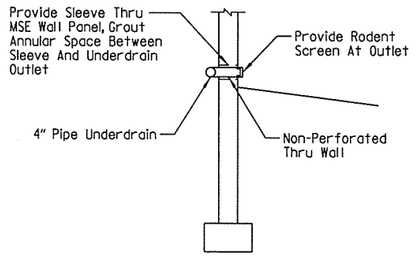


NOTE:
Precast concrete coping may be substituted for cast-in-place coping shown.

NOTE:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".

COPING DETAIL

No Scale



OUTLET DETAIL

No Scale

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012) with 2012 Interim Specifications

SEISMIC PERFORMANCE ZONE: 2 S_{DI} = 0.219 SITE CLASS: D

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 54307-54310, 54504-54506, 54525-54526, 54543-54545, 54558-54559 & 54582-54583 for pile locations.

For ditch paving, see Standard Dwg. No. CDP-1.

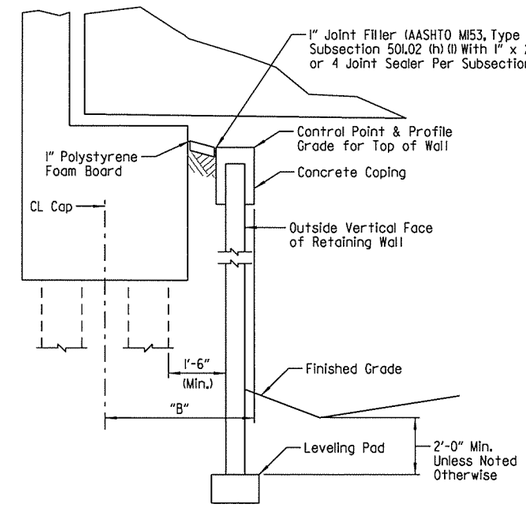
See SP JOB 061275 "RETAINING WALLS" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB 061275 "RETAINING WALLS".

See Dwg. No. 54622 for "MSE RETAINING WALL ENHANCEMENT DETAILS".

A Class 3 Textured Coating Finish shall be applied to surfaces as specified in SP JOB 061275 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.



DETAIL D

No Scale

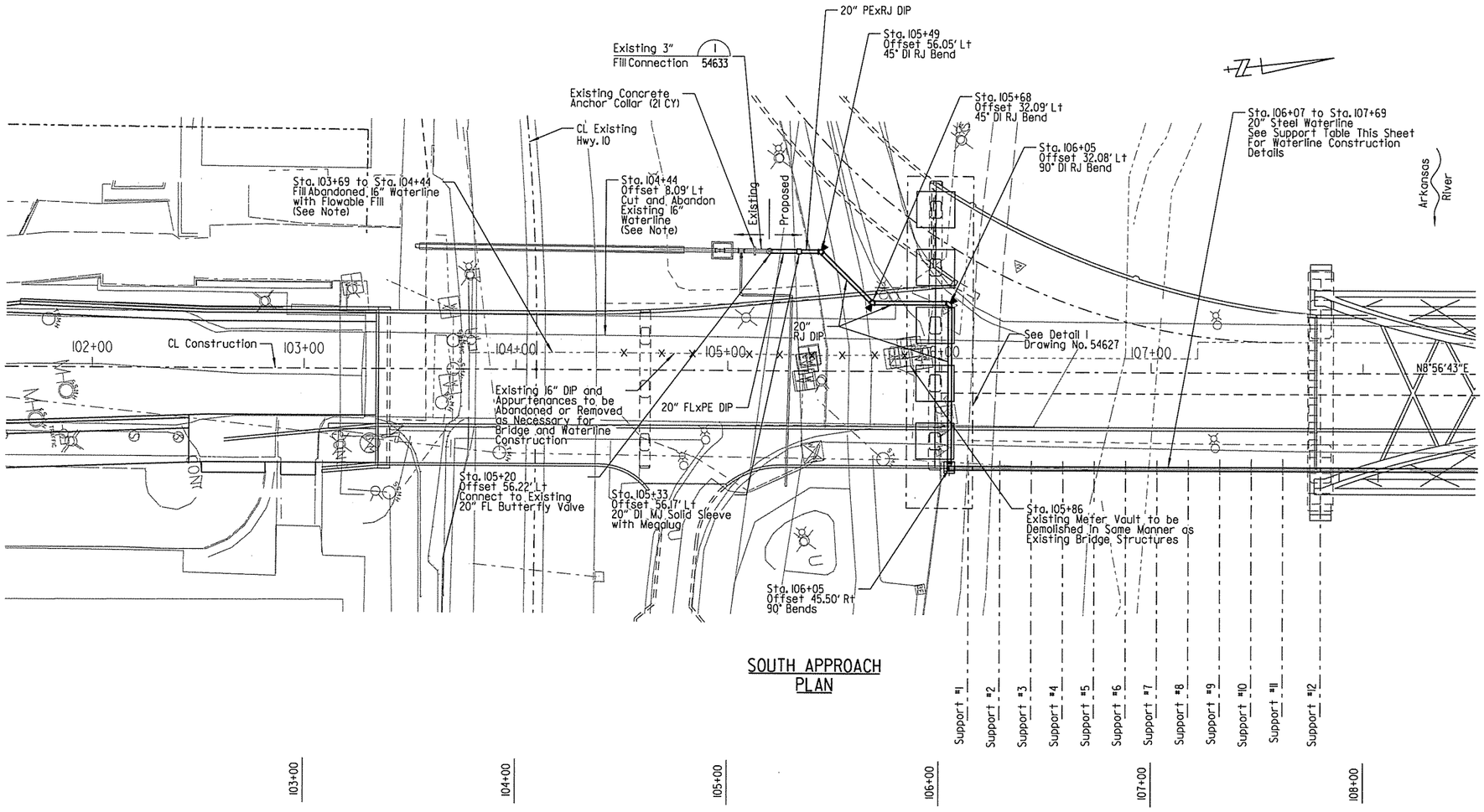
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14038
SETH R. YANCEY
BRIDGE ENGINEER

SHEET 20 OF 20
MSE RETAINING WALL DETAILS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2013 FILENAME: B061275_W20.DGN
CHECKED BY: JHR DATE: AUG. 2013 SCALE: AS SHOWN
DESIGNED BY: SRY DATE: JUNE 2013
BRIDGE NO. DRAWING NO. 54623

SRYancey 5/29/2014 6:39:11 PM
WORKSPACE: AHTD Bridge
L:\ROW\NOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_W20 (Gen. Dtls.).dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	400	505
				(1) 07292		WATERLINE P-P		54624



SOUTH APPROACH
PLAN

Notes:

1. All Flanges to have 125# Bolt Pattern
2. All Retainer Glands Shall be Megalug

ABBREVIATIONS

DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
Rt	RIGHT
Lt	LEFT
FL	FLANGE
RJ	RESTRAINED JOINT
PE	PLAIN END
MJ	MECHANICAL JOINT
CL	CENTERLINE
Sta.	STATION
Typ.	TYPICAL
Deg.	DEGREE
Dia.	DIAMETER
Lb.	POUND
Min.	MINIMUM

Note:
Cutting and Abandonment of the Existing Waterline to be Coordinated With Utility

SUPPORT TABLE

SUPPORT NO.	CONST CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
1	106+13.833	Detail 5/54629	No	2.420"	4.400"
2	106+28.667	Detail 2/54629	Yes	2.420"	4.400"
3	106+43.500	Detail 2/54629	No	2.420"	4.400"
4	106+58.333	Detail 2/54629	Yes	2.420"	4.400"
5	106+73.167	Detail 2/54629	No	2.420"	4.400"
6	106+88.000	Detail 2/54629	Yes	2.420"	4.400"
7	107+02.833	Detail 2/54629	No	2.420"	4.400"
8	107+17.666	Detail 2/54629	Yes	2.420"	4.400"
9	107+32.500	Detail 2/54629	No	2.920"	4.900"
10	107+47.333	Detail 2/54629	Yes	2.920"	4.900"
11	107+62.166	Detail 2/54629	No	2.920"	4.900"
12	107+80.000	Detail 7/54629	No	N/A	N/A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
AARON A. STALLMANN
5/30/2014

SHEET 1 OF 3
WATERLINE
PLAN AND PROFILE
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: VHW DATE: MAY 2014 FILENAME: B061275x1_WL1.DGN
CHECKED BY: AAS DATE: MAY 2014 SCALE: 1" = 30'
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54624

CWThomas 5/29/2014 4:45:01 PM
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REVISED DATE:

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				JOB NO.		061275	401	505
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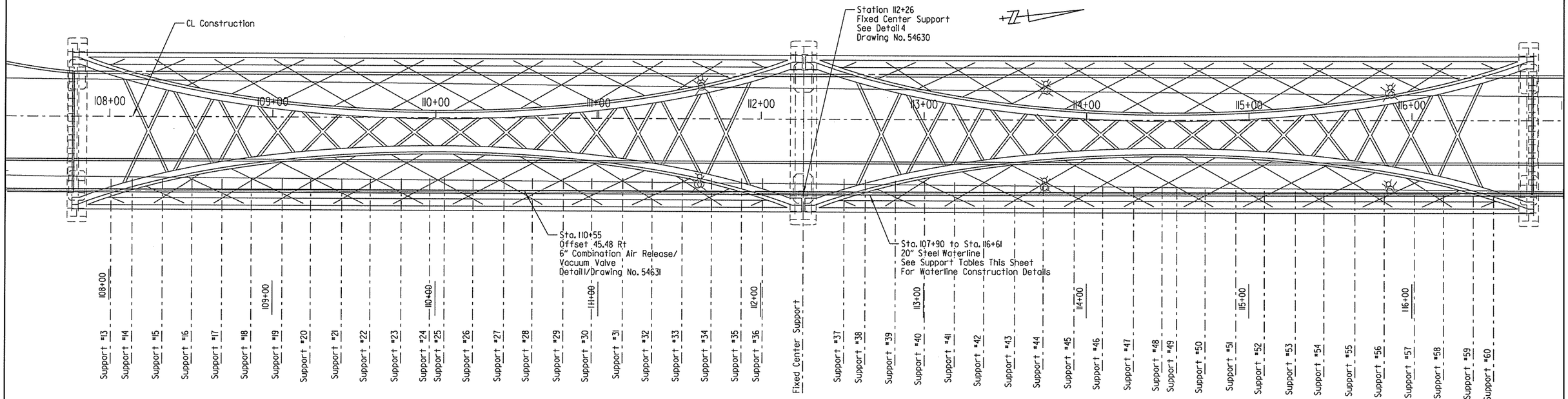


ARCH SPAN
PLAN

SUPPORT TABLE

SUPPORT NO.	CONST CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
13	108+01.00	Detail 2/54630	No	N/A	N/A
14	108+14.00	Detail 2/54630	Yes	N/A	N/A
15	108+32.50	Detail 2/54630	No	N/A	N/A
16	108+50.50	Detail 2/54630	Yes	N/A	N/A
17	108+69.00	Detail 2/54630	No	N/A	N/A
18	108+87.00	Detail 2/54630	Yes	N/A	N/A
19	109+06.00	Detail 2/54630	No	N/A	N/A
20	109+23.50	Detail 2/54630	Yes	N/A	N/A
21	109+42.50	Detail 2/54630	No	N/A	N/A
22	109+60.00	Detail 2/54630	Yes	N/A	N/A
23	109+79.00	Detail 2/54630	No	N/A	N/A
24	109+96.50	Detail 2/54630	Yes	N/A	N/A

SUPPORT TABLE

SUPPORT NO.	CONST CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
25	110+05.50	Detail 2/54630	No	N/A	N/A
26	110+23.00	Detail 2/54630	Yes	N/A	N/A
27	110+42.00	Detail 2/54630	No	N/A	N/A
28	110+59.50	Detail 2/54630	Yes	N/A	N/A
29	110+78.5	Detail 2/54630	No	N/A	N/A
30	110+96.00	Detail 2/54630	Yes	N/A	N/A
31	111+15.00	Detail 2/54630	No	N/A	N/A
32	111+33.00	Detail 2/54630	Yes	N/A	N/A
33	111+51.50	Detail 2/54630	No	N/A	N/A
34	111+69.50	Detail 2/54630	Yes	N/A	N/A
35	111+88.00	Detail 2/54630	No	N/A	N/A
36	112+01.00	Detail 2/54630	Yes	N/A	N/A
Center Support	112+26.00	Detail 4/54630	No	N/A	N/A

SUPPORT TABLE

SUPPORT NO.	CONST CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
37	112+51.00	Detail 2/54630	Yes	N/A	N/A
38	112+64.00	Detail 2/54630	No	N/A	N/A
39	112+82.50	Detail 2/54630	Yes	N/A	N/A
40	113+00.50	Detail 2/54630	No	N/A	N/A
41	113+19.00	Detail 2/54630	Yes	N/A	N/A
42	113+37.00	Detail 2/54630	No	N/A	N/A
43	113+56.00	Detail 2/54630	Yes	N/A	N/A
44	113+73.50	Detail 2/54630	No	N/A	N/A
45	113+92.50	Detail 2/54630	Yes	N/A	N/A
46	114+10.00	Detail 2/54630	No	N/A	N/A
47	114+29.00	Detail 2/54630	Yes	N/A	N/A
48	114+46.50	Detail 2/54630	No	N/A	N/A

SUPPORT TABLE

SUPPORT NO.	CONST CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
49	114+55.50	Detail 2/54630	Yes	N/A	N/A
50	114+73.00	Detail 2/54630	No	N/A	N/A
51	114+92.00	Detail 2/54630	Yes	N/A	N/A
52	115+09.50	Detail 2/54630	No	N/A	N/A
53	115+28.50	Detail 2/54630	Yes	N/A	N/A
54	115+46.00	Detail 2/54630	No	N/A	N/A
55	115+65.00	Detail 2/54630	Yes	N/A	N/A
56	115+83.00	Detail 2/54630	No	N/A	N/A
57	116+01.50	Detail 2/54630	Yes	N/A	N/A
58	116+19.50	Detail 2/54630	No	N/A	N/A
59	116+38.00	Detail 2/54630	Yes	N/A	N/A
60	116+50.50	Detail 2/54630	No	N/A	N/A

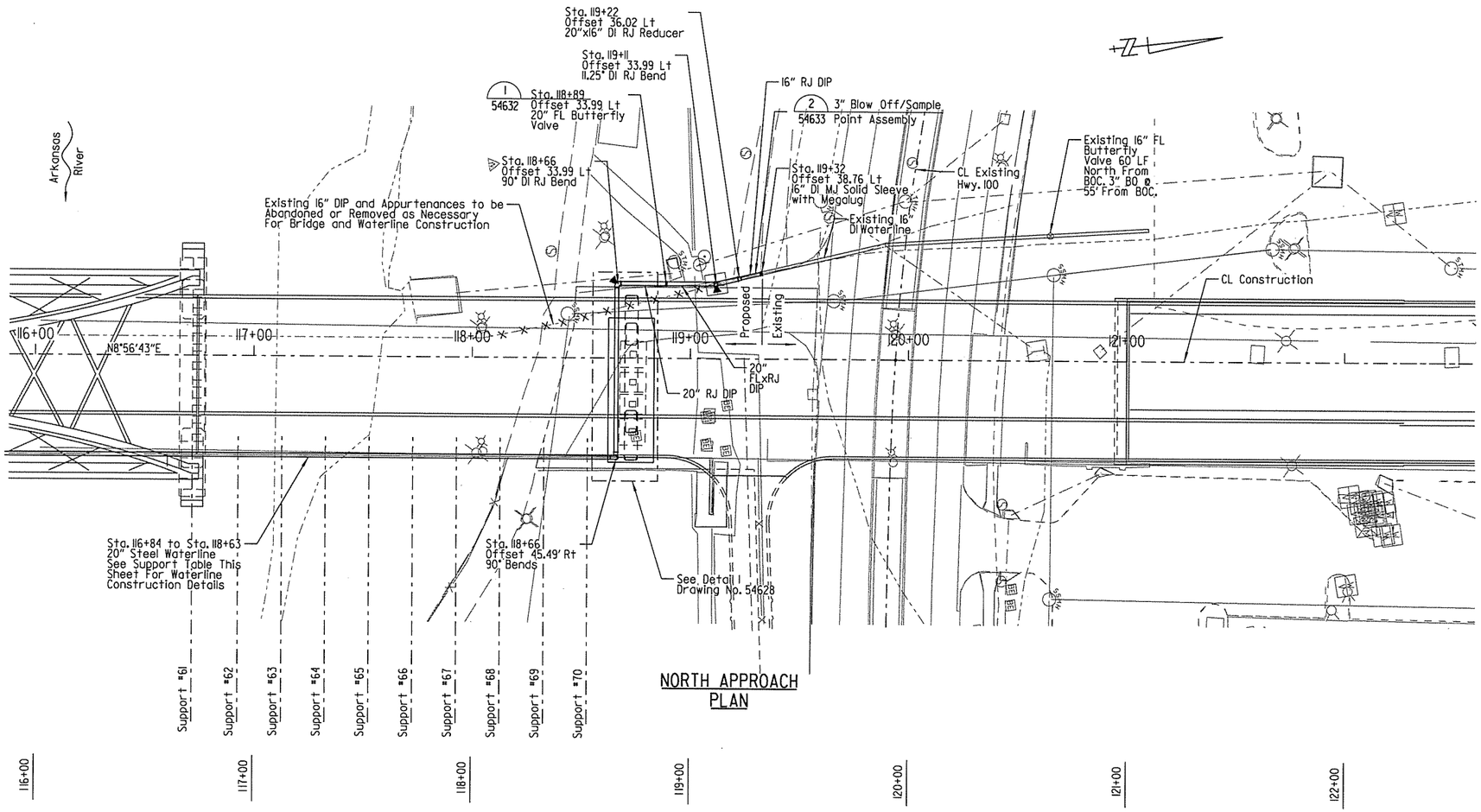
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
AARON A. STALLMANN
5/30/2014

SHEET 2 OF 3
WATERLINE
PLAN AND PROFILE
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: VHW DATE: MAY 2014 FILENAME: B061275xl_WL2.DGN
CHECKED BY: AAS DATE: MAY 2014 SCALE: 1" = 30'
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54625

CWThomas 5/29/2014 4:45:02 PM
WORKSPACE: AHTD Bridge
L:\2014\061080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275xl_WL2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	402	505
				(1) 07292		WATERLINE P-P		54626



SUPPORT TABLE

SUPPORT NO.	CONST. CL STATION	SUPPORT DETAIL	STRAP REQ'D	FILL PLATE THICKNESS	
				EXT. GIRDER	INT. GIRDER
61	116+72.000	Detail 7/54629	Yes	3.420"	5.400"
62	116+93.000	Detail 2/54629	No	3.420"	5.400"
63	117+13.000	Detail 2/54629	Yes	3.420"	5.400"
64	117+33.000	Detail 2/54629	No	3.420"	5.400"
65	117+53.000	Detail 2/54629	Yes	3.420"	5.400"
66	117+73.000	Detail 2/54629	No	3.420"	5.400"
67	117+93.000	Detail 2/54629	Yes	3.420"	5.400"
68	118+13.000	Detail 2/54629	No	3.420"	5.400"
69	118+33.000	Detail 2/54629	Yes	2.545"	4.525"
70	118+53.000	Detail 5/54629	Yes	2.545"	4.525"

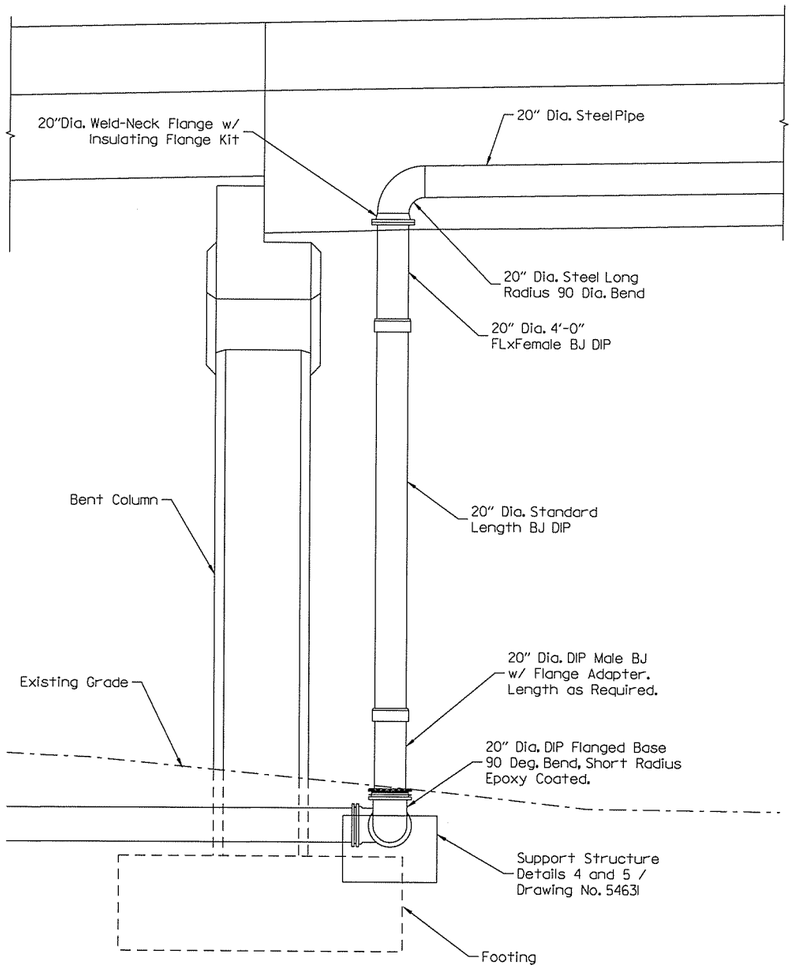
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
AARON A. STALLMANN
5/30/2014

SHEET 3 OF 3
WATERLINE
PLAN AND PROFILE
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: VHW DATE: MAY 2014 FILENAME: B061275xl_WL3.DGN
CHECKED BY: AAS DATE: MAY 2014 SCALE: 1" = 30'
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54626

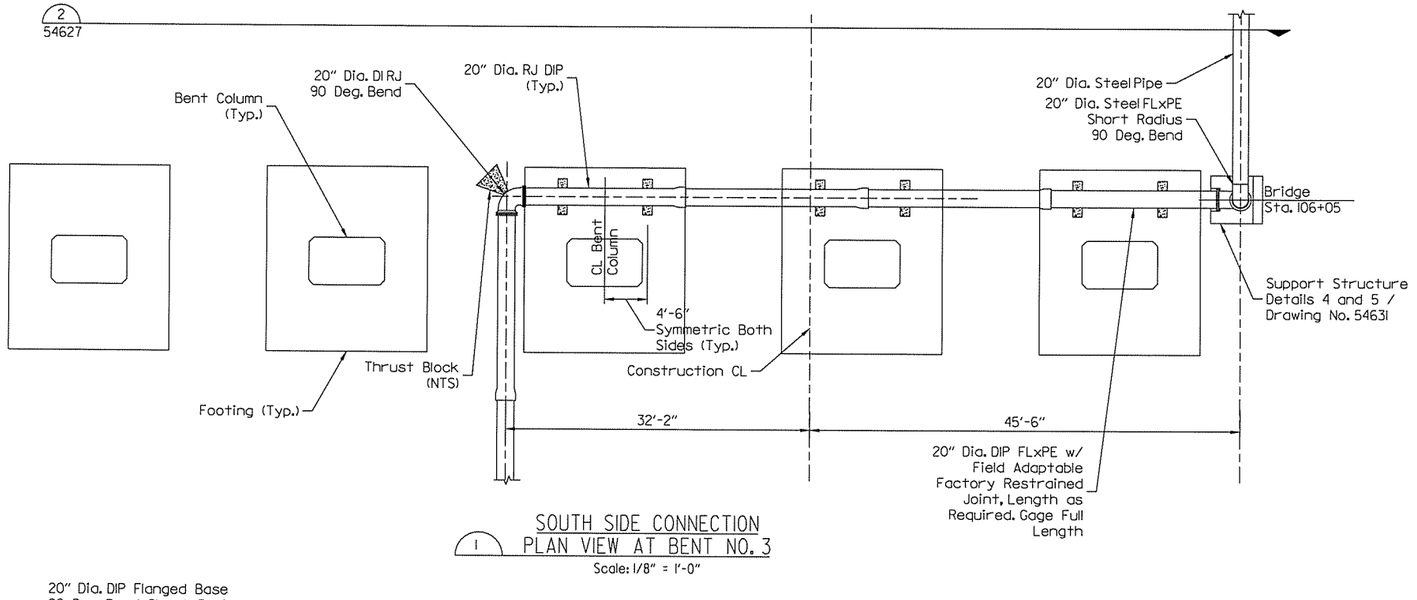
CWThomas
WORKSPACE: AHTD Bridge
L:\COMMON\DGN - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275xl_WL3.dgn
REVISED DATE: 5/29/2014 4:45:03 PM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	403	505
				(1) 07292		S. SIDE CONNECTION DETAILS		54627



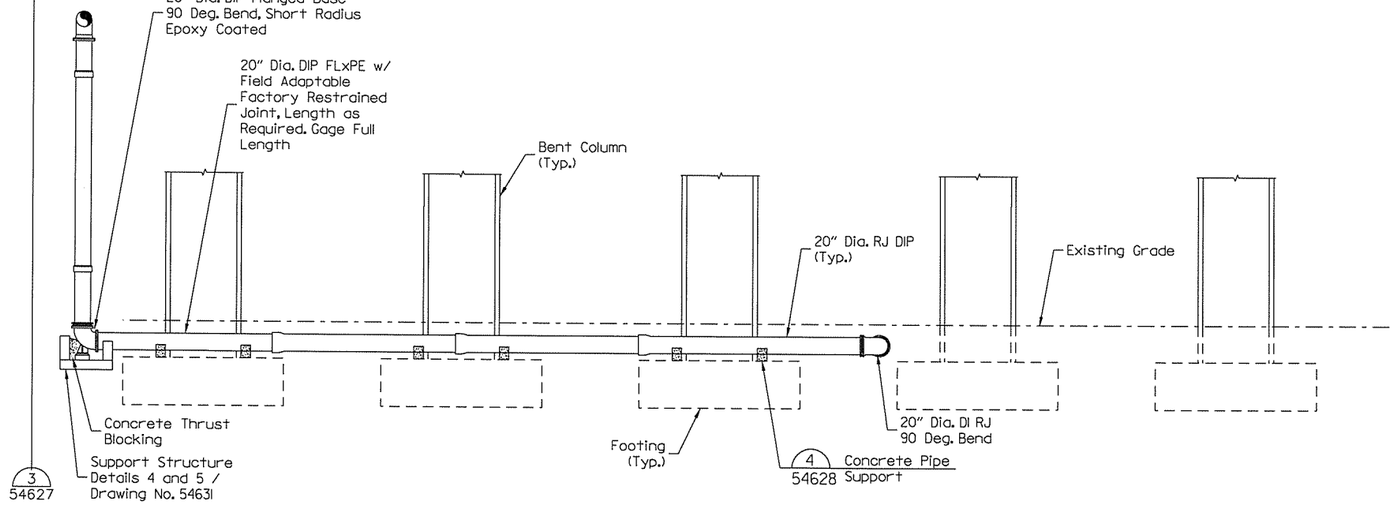
3 SOUTH SIDE EXPANSION CONNECTION DETAIL AT BENT NO. 3

Scale: 1/4" = 1'-0"



1 SOUTH SIDE CONNECTION PLAN VIEW AT BENT NO. 3

Scale: 1/8" = 1'-0"



2 SOUTH SIDE CONNECTION ELEVATION VIEW AT BENT NO. 3

Scale: 1/8" = 1'-0"

General Construction Notes:

1. All buried pipe and fittings shall be installed w/ double wrap of poly-wrap.
2. All pipe not buried shall be painted as per detailed specification.
3. All DIP and fittings shall be restrained joint w/ concrete thrust blocking on buried fittings and bends.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 12388 ALLEN A. STALLMANN

5/30/2014

WATERLINE SOUTH SIDE CONNECTION DETAILS BRIDGE OVER ARKANSAS RIVER PULASKI COUNTY

ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: MAY 2014 FILENAME: B061275xl-WL4.dgn
CHECKED BY: AAS DATE: MAY 2014 SCALE: SHOWN
DESIGNED BY: MDN DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54627

CWThomas 5/29/2014 4:45:06 PM
WORKSPACE: AHTD Bridge
L:\2011\1017080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275xl_WL4.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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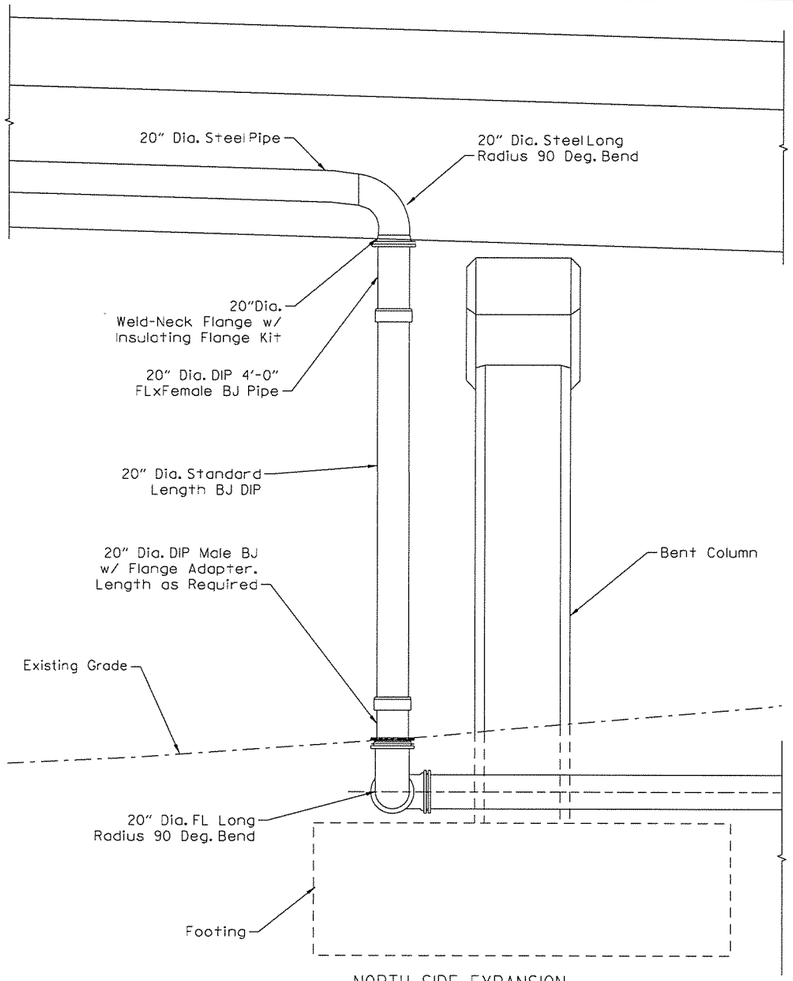
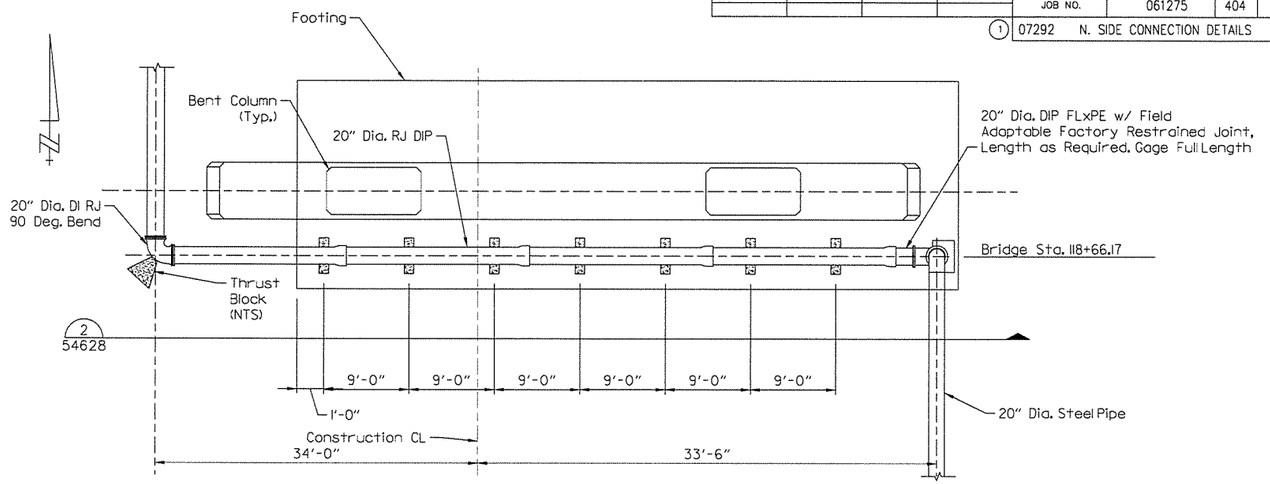
				JOB NO.		061275	404	505
				(1) 07292		N. SIDE CONNECTION DETAILS		54628



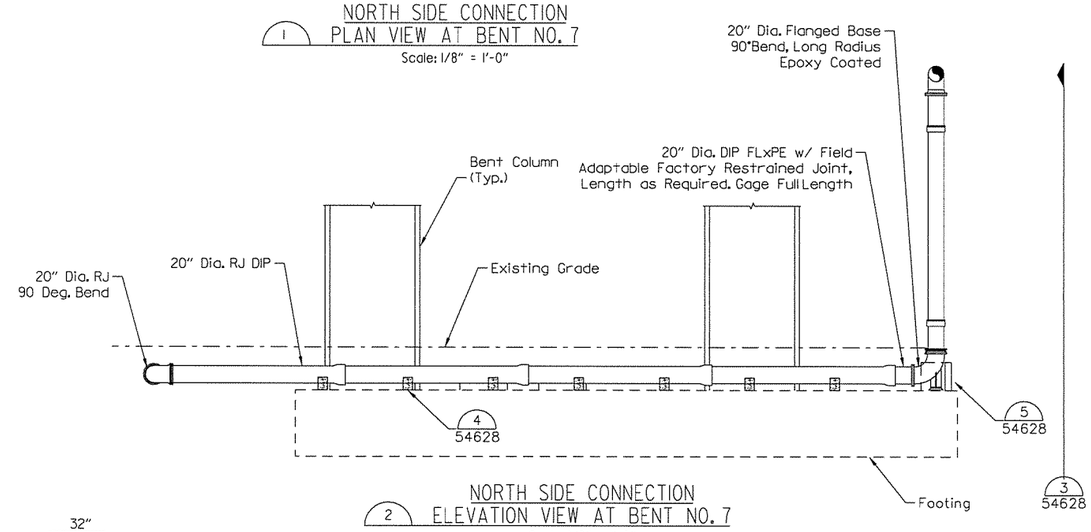
3 NORTH SIDE EXPANSION CONNECTION DETAIL AT BENT NO. 7

Scale: 1/4" = 1'-0"



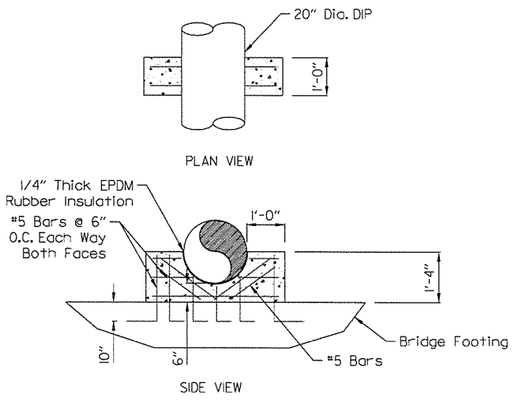
1 NORTH SIDE CONNECTION PLAN VIEW AT BENT NO. 7

Scale: 1/8" = 1'-0"



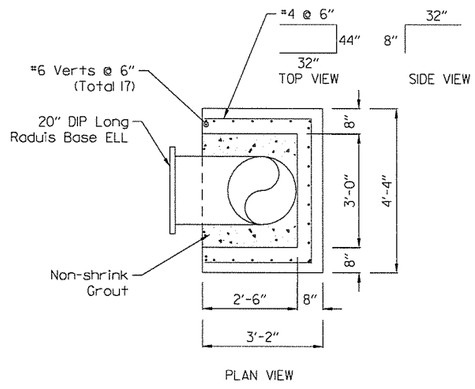
2 NORTH SIDE CONNECTION ELEVATION VIEW AT BENT NO. 7

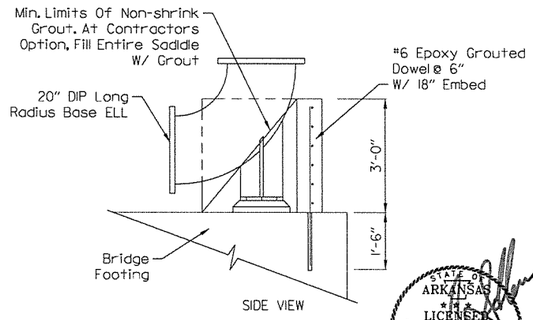
Scale: 1/8" = 1'-0"



4 CONCRETE PIPE SUPPORT DETAIL

Scale: None





5 VERTICAL PIPE SUPPORT DETAIL

Scale: None

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.12388 JOHN A. STALLMANN 5/30/2014

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.15272 KIPP A. MARTIN 5/30/2014

WATERLINE
NORTH SIDE CONNECTION DETAILS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY

ROUTE 70 SEC. 1 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: MAY 2014 FILENAME: B061275x1_WL5.dgn

CHECKED BY: AAS DATE: MAY 2014 SCALE: SHOWN

DESIGNED BY: MDN DATE: MAY 2014

BRIDGE NO. 07292 DRAWING NO. 54628

CWThomas 5/29/2014 4:45:08 PM
WORKSPACE: AHTD Bridge
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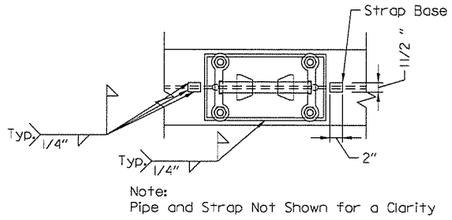
REVISED DATE:

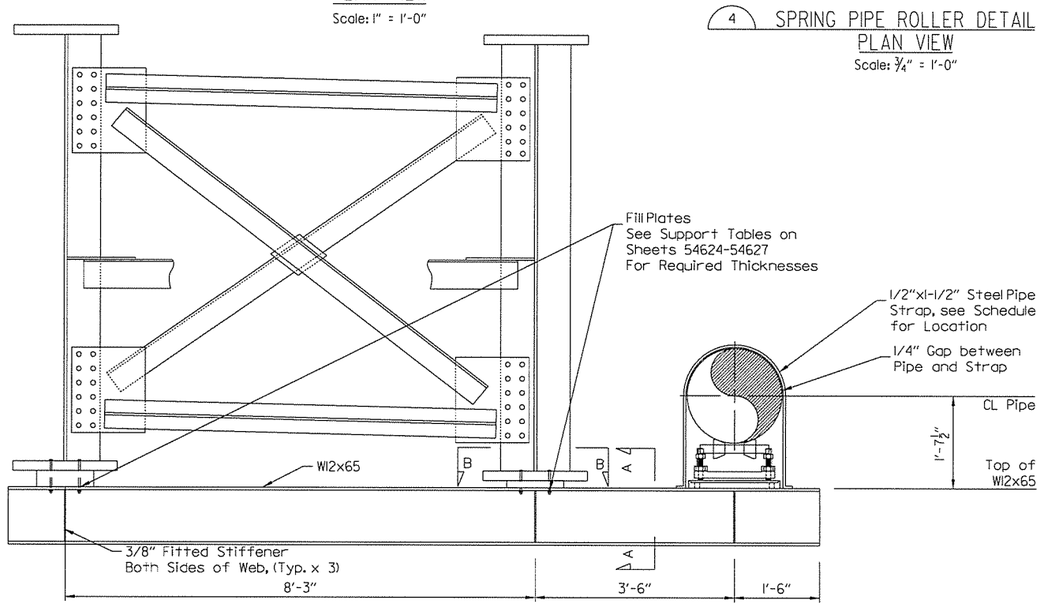
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	405	505
				(1) 07292		WL PIPE SUPPORT DETAILS		54629



Note:
Pipe and Strap Not Shown for a Clarity

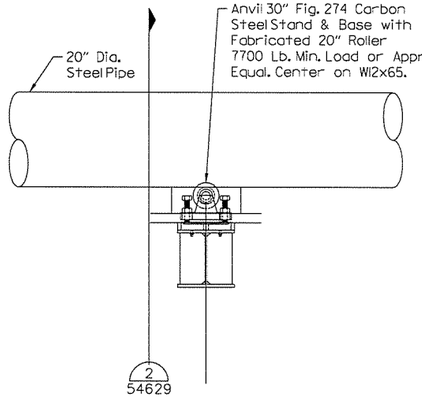
1 STANDARD PIPE ROLLER DETAIL PLAN VIEW

Scale: 1" = 1'-0"



2 STANDARD PIPE ROLLER DETAIL SECTION VIEW

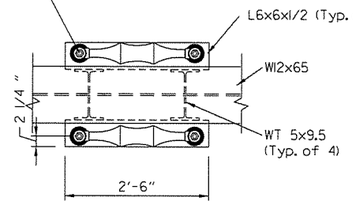
Scale: 3/4" = 1'-0"



3 STANDARD PIPE ROLLER DETAIL ELEVATION VIEW

Scale: 3/4" = 1'-0"

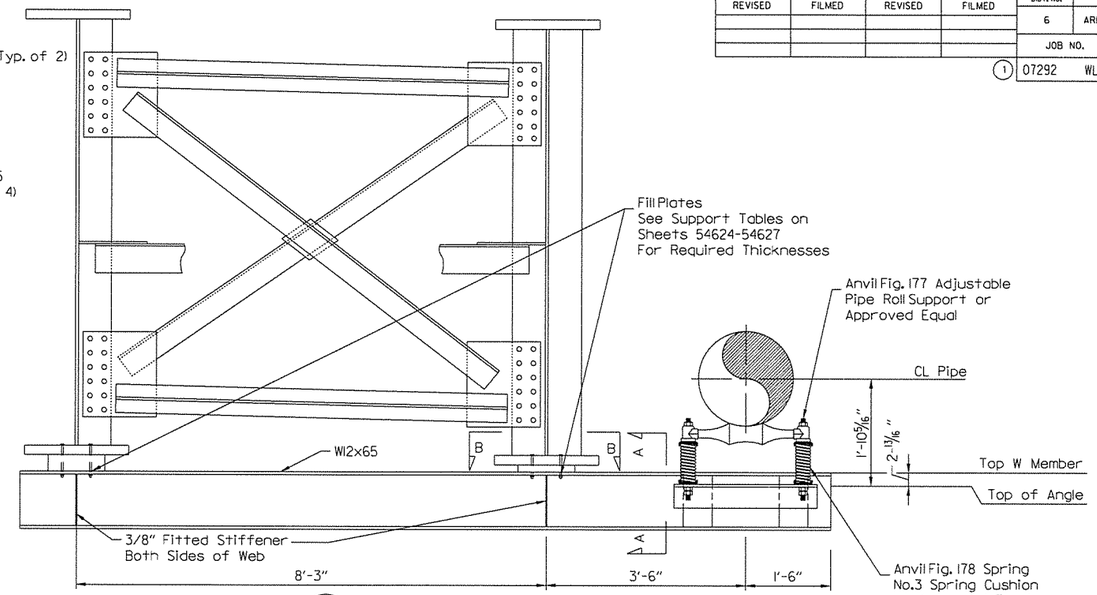
Anvil Fig. 177 Adjustable
Pipe Roll Support or
Approved Equal (Typ. of 2)



NOTE:
PIPE NOT SHOWN FOR CLARITY

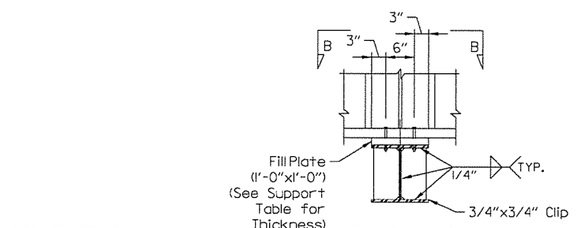
4 SPRING PIPE ROLLER DETAIL PLAN VIEW

Scale: 3/4" = 1'-0"



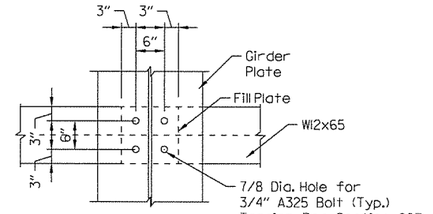
5 SPRING PIPE ROLLER DETAIL SECTION VIEW

Scale: 3/4" = 1'-0"



SECTION A-A

No Scale



SECTION B-B

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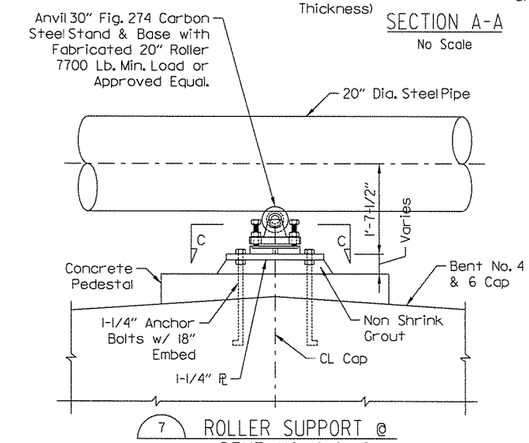
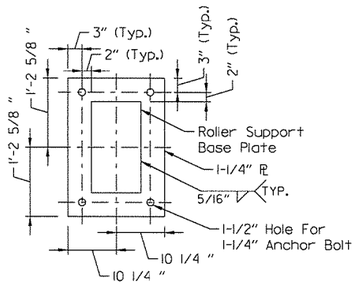


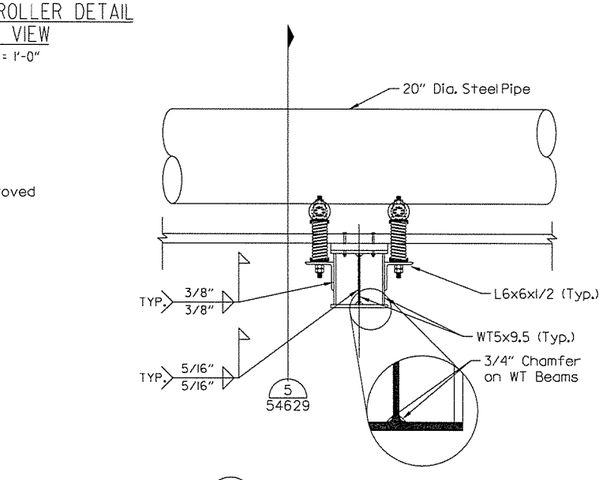
7 ROLLER SUPPORT @ BENT NO. 4 & 6

Scale: 3/4" = 1'-0"



SECTIN C-C

No Scale



6 SPRING PIPE ROLLER DETAIL ELEVATION VIEW

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
LAURA A. STALLMANN
5/30/2014

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15272
KIPPA MARTIN
5/30/2014

SHEET 1 OF 2
WATERLINE
PIPE SUPPORT DETAILS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: MAY 2014 FILENAME: B061275x1_WL6.dgn
CHECKED BY: AAS DATE: MAY 2014 SCALE: SHOWN
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54629

CWThomas 5/29/2014 4:45:09 PM
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REVISED DATE:

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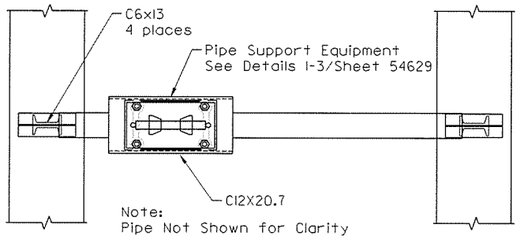
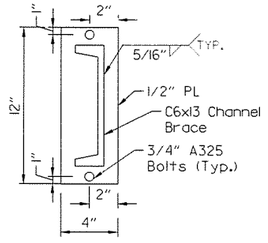
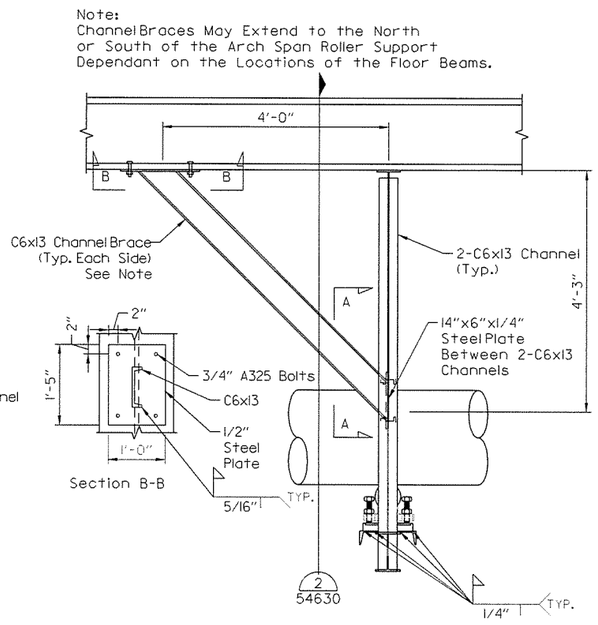
7-9-14				6	ARK.			
				JOB NO.		061275	406	505
				(1) 07292		WL PIPE SUPPORT DETAILS		54630



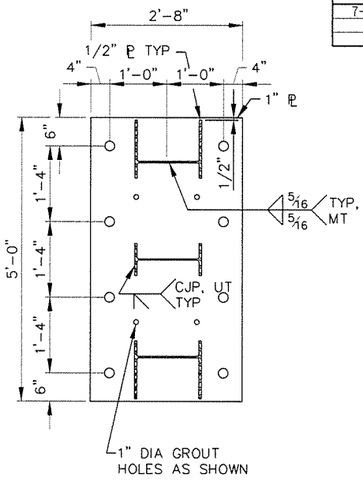
1 / 54630 ARCH SPAN PIPE ROLLER DETAIL
PLAN VIEW
Scale: 3/4" = 1'-0"



Section A-A

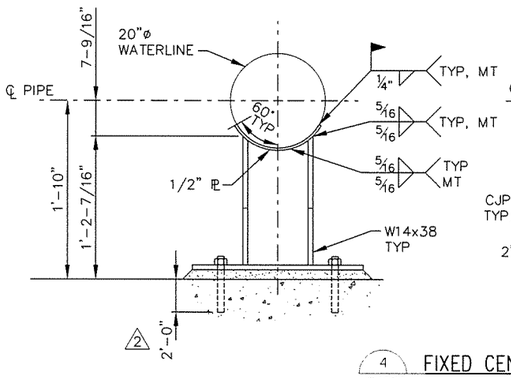


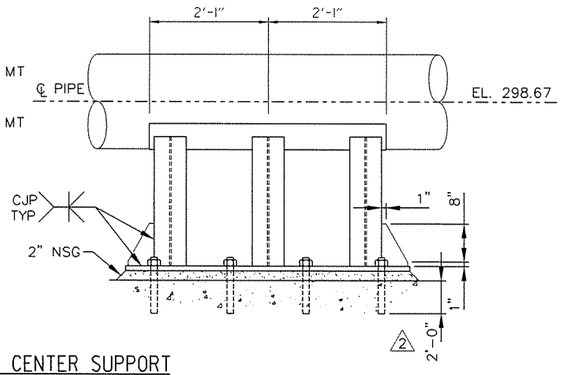
3 / 54630 ARCH SPAN PIPE ROLLER DETAIL
ELEVATION VIEW
Scale: 3/4" = 1'-0"



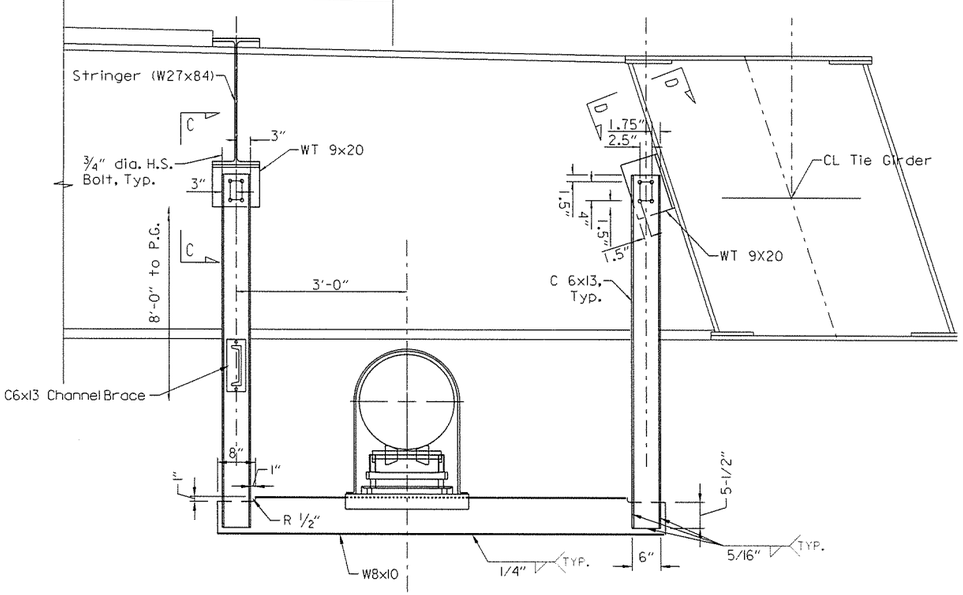
INSTALLATION PROCEDURE FOR WILLIAMS "SPIN-LOCK" ANCHORS:
1. SET PIPE SUPPORT AND LEVEL AS REQUIRED WITH SHIM PLATES.
2. INSTALL NON-SHRINK GROUT UNDER BASE PLATE.
3. AFTER GROUT HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, DRILL ANCHOR HOLES THROUGH BASE PLATE INTO CONCRETE.
4. INSTALL WILLIAMS R1S "SPIN-LOCK" ANCHORS WITH WILLIAMS "KEYHOLE" BEARING PLATES. INITIAL ANCHOR SETTING TORQUE AND FINAL TORQUE SHALL BE 750 FT-LB FOR 1 3/8" DIA ANCHORS.
5. GROUT ANCHOR HOLES THROUGH WILLIAMS "KEYHOLE" BEARING PLATE.

NOTES:
1. PROVIDE ~~(6)~~ 8 2-1/16" DIA HOLES FOR 1 3/8" DIA WILLIAMS R1S "SPIN-LOCK" ANCHORS, 2'-0" EMBEDMENT, TENSIONED TO 65,000 LB. (1)
2. ALTERNATE GROUT HOLE LAYOUT MAY BE PROVIDED, BUT MUST BE APPROVED BY CONTRACTING OFFICER.



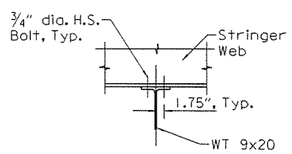


4 / 54630 FIXED CENTER SUPPORT
Scale: NTS

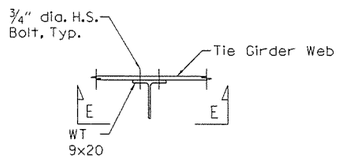


ELEVATION VIEW

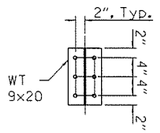
2 / 54630 ARCH SPAN PIPE ROLLER DETAIL
SECTION VIEW
Scale: 3/4" = 1'-0"



Section C-C



Section D-D



Section E-E

1 Corrected typographical error to read 8

2 Added dimension for 2'-0" embedment

AAS 7-9-14

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 15272
KEITH A. MARTIN
7/9/14

SHEET 2 OF 2
WATERLINE
PIPE SUPPORT DETAILS
BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: MAY 2014 FILENAME: B061275x1_WL7.dgn
CHECKED BY: AAS DATE: MAY 2014 SCALE: SHOWN
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54630

CWThomas 7/15/2014 10:38:48 AM
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L:\2011\11017080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275x1_WL7.dgn
REVISED DATE:

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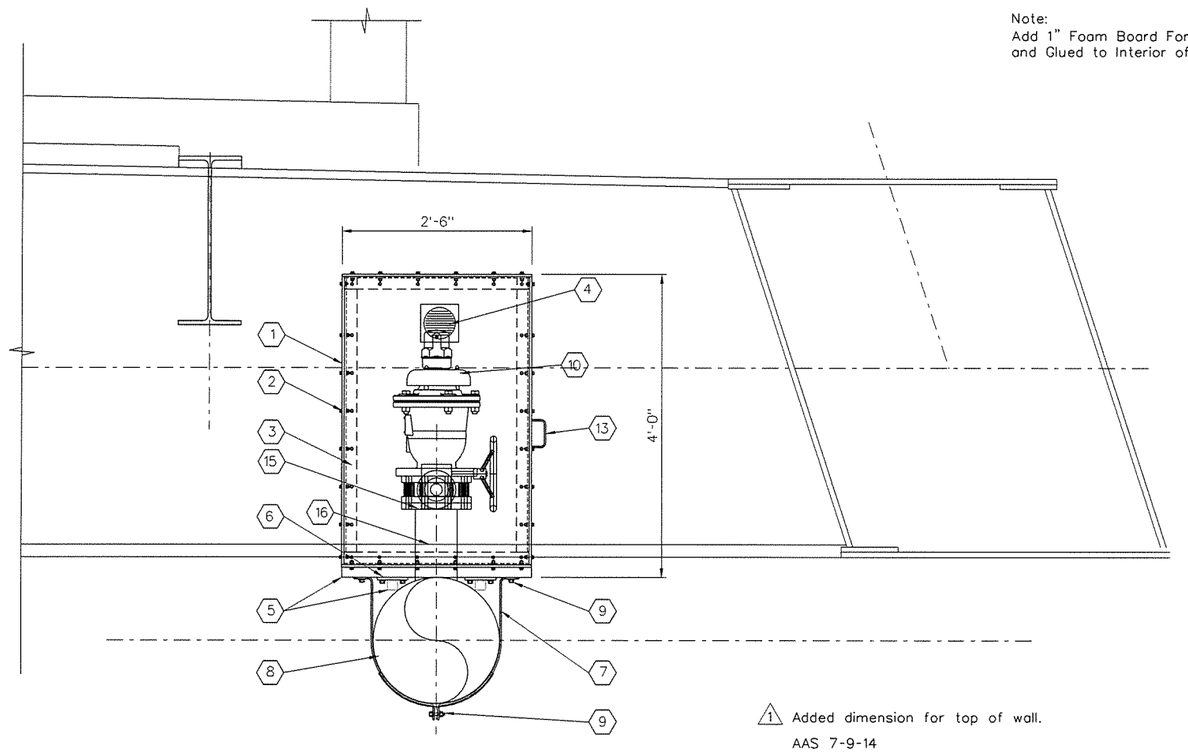
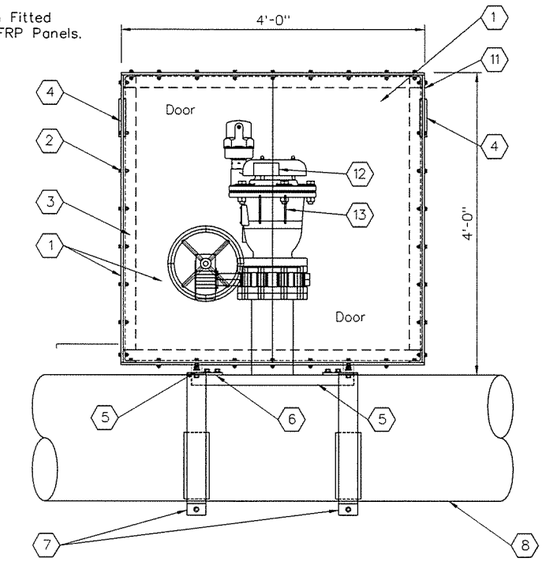
7-9-14				6	ARK.			
				JOB NO.		061275	407	505
				(1)	07292	WATERLINE MISC DETAILS		54631

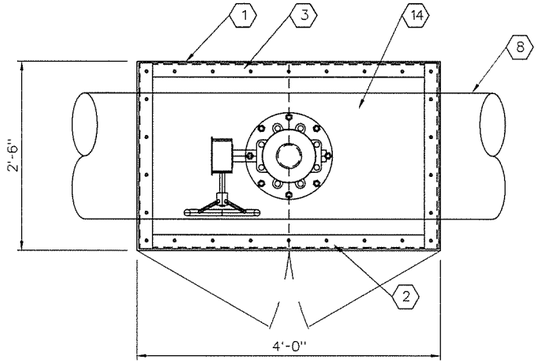
Note:
Add 1" Foam Board Form Fitted and Glued to Interior of FRP Panels.



1 Added dimension for top of wall.
AAS 7-9-14

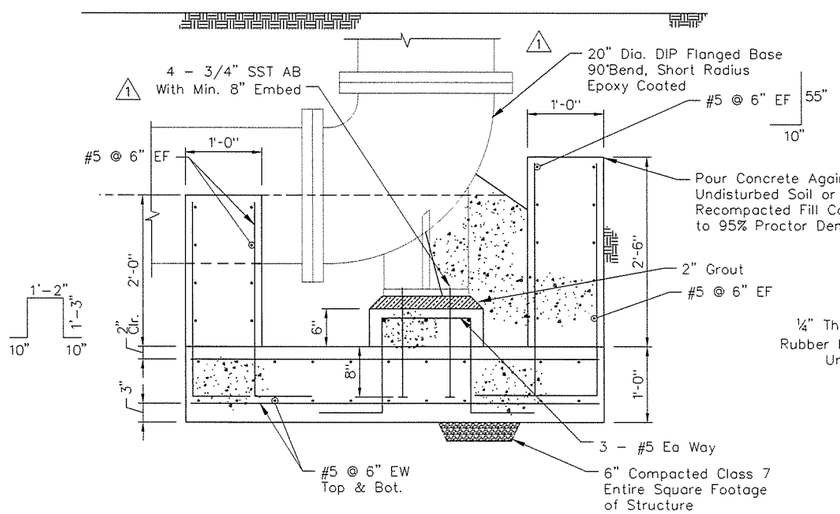


2 6" COMBINATION AIR RELEASE/ VACUUM VALVE ENCLOSURE DETAIL ELEVATION VIEW
Scale: 1" = 1'-0"

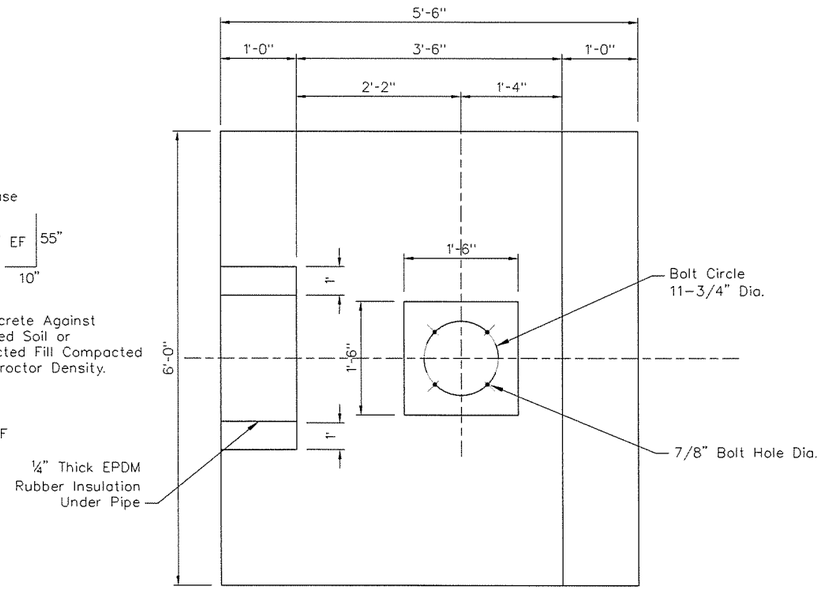


3 6" COMBINATION AIR RELEASE/ VACUUM VALVE ENCLOSURE DETAIL PLAN VIEW
Scale: 1" = 1'-0"

1 6" COMBINATION AIR RELEASE/ VACUUM VALVE ENCLOSURE DETAIL SECTION VIEW
Scale: 1" = 1'-0"



4 SUPPORT STRUCTURE DETAIL SECTION VIEW
Scale: NTS



5 SUPPORT STRUCTURE DETAIL PLAN VIEW
Scale: NTS

Keyed Notes	
1	3/8" FRP Plate. Strongwell Series 525 or Equal
2	1/4" Dia. SST Bolt @ 6" Max.
3	FRP L2x2x1/4 In All Corners, Including Top & Bottom. Strongwell Series 525 or Equal
4	6" Frost Safe 2-Way Damper, Valmatic
5	FRP Preformed Channel. Unistrut F20P-2200 or Equal
6	FRP Channel Connection Plate. Unistrut F20P-2526 or Equal
7	SST Bar 1/4"x3" Fabricated to Match Pipe OD. Place 1/16"x4" Butyl Rubber Gasket Between Bar & Pipe.
8	20" Water Pipe.
9	3/8" Dia. SST. Bolt, Typ.
10	6" Dia. Combination Air/Vacuum Valve.
11	SST. Continuous Hinges
12	SST. Keyed Lock
13	3/8" Dia. SST. Rod Handle, Each Leaf.
14	3/8" FRP Plate. Strongwell Series 525 or Equal. Provide in Two Pieces, Fabricated to Fit Around Relief Valve Piping. Provide Min, Four 1/2" Dia. Drain Holes in Each Section.
15	6" FL Butterfly Valve
16	6" FL Branch w/ 1'-0" Projection

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.12388
AARON A. STALLMANN
7/9/2014

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.15272
KIPP A. MARTIN
7/9/14

SHEET 1 OF 3
WATERLINE
MISCELLANEOUS DETAILS

BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: MAY 2014 FILENAME: B061275x1_WL8.dgn
CHECKED BY: AAS DATE: MAY 2014 SCALE: 1"=1'-0"
DESIGNED BY: MDN DATE: MAY 2014
BRIDGE NO. 07292 DRAWING NO. 54631

vhwhitley 7/15/2014 10:45:25 AM
WORKSPACE: ANTD Bridge
L:\2011\11017080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275x1_WL8.dgn
REVISED DATE:

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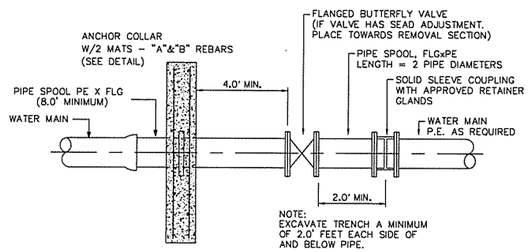
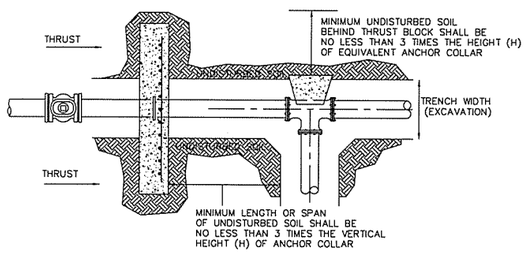
				6	ARK.			
				JOB NO.		061275	408	505
				(1) 07292		WATERLINE MISC DETAILS		54632



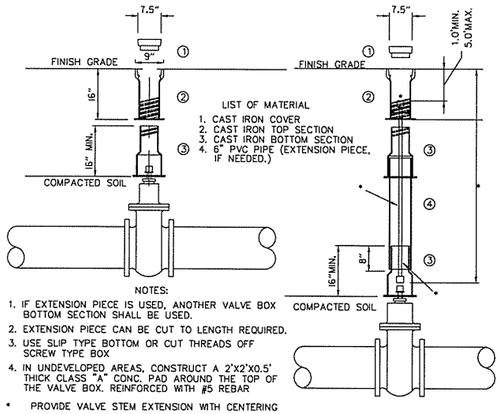
1 TYPICAL BUTTERFLY VALVE INSTALLATION IN STRAIGHT RUN OF PIPE

16" AND LARGER PIPE



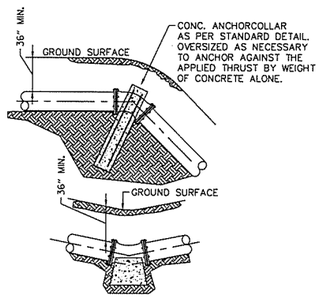
2 MINIMUM UNDISTURBED SOIL BEHIND ANCHOR COLLAR/THRUST BLOCK

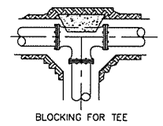
PLAN VIEW

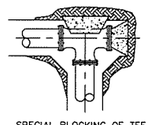


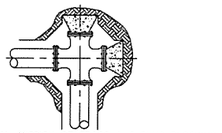
3 VALVE BOX INSTALLATION

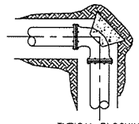
PLAN VIEW

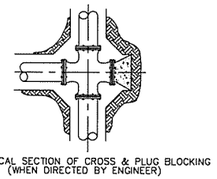


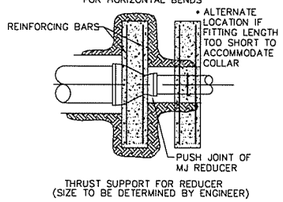












NOTES ON THRUST BLOCKING

1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
2. *WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE OVER JOINTS, THE ENDS OF THE ADJACENT PIPES MUST HAVE A THRUST BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
3. WEIGHT CALCULATIONS TO BE BASED ON THRUST DUE TO STATIC PRESSURE + 50% OR TEST PRESSURE, WHICH EVER IS GREATER. (THRUST = 2AP SIN ϕ WHERE A = AREA OF PIPE P = WATER PRESSURE)
4. WHEN BLOCKING AGAINST PLUG, PLUG SHALL BE COVERED TO PREVENT BONDING OF CONCRETE.
5. WHERE SHEAR BECOMES A PROBLEM PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING.
6. CLEARANCE SHALL BE A MINIMUM OF 6" BETWEEN PIPE AND OBSTRUCTIONS.
7. CLEARANCE ON PIPES BELONGING TO OIL/GAS COMPANIES SHALL BE 18" UNLESS SPECIAL PERMISSION IS GIVEN BY THESE COMPANIES.

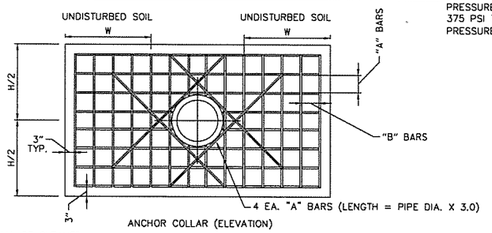
4 STANDARD THRUST BLOCKING

ANCHOR COLLAR SCHEDULE						
PIPE SIZE	* MINIMUM DIMENSIONS *				REINFORCING BARS	
	W	H	T	THRUST COLLAR	"A" BARS	"B" BARS
6"	1.5'	2.0'	1.0'	M.L. RETAINER GLAND	#6 @ 6"	#6 @ 6"
8"	1.5'	2.5'	1.0'	M.L. RETAINER GLAND	#6 @ 6"	#6 @ 6"
12"	2.0'	4.0'	1.5'	M.L. RETAINER GLAND	#6 @ 6"	#6 @ 6"
16"	3.0'	4.5'	1.5'	M.L. RETAINER GLAND	#6 @ 6"	#6 @ 6"
20"	3.5'	5.0'	2.0'	M.L. RETAINER GLAND	#6 @ 6"	#6 @ 6"
24"	4.5'	5.5'	2.0'	M.L. RETAINER GLAND	#7 @ 6"	#7 @ 10"
30"	6.5'	6.0'	2.5'	4.5" X 1.0" WELD-ON	#8 @ 6"	#8 @ 10"
36"	7.5'	7.0'	2.5'	4.7" X 1.0" WELD-ON	#8 @ 6"	#8 @ 10"
42"	8.5'	8.0'	3.0'	5.0" X 1.25" WELD-ON	#8 @ 6"	#8 @ 10"

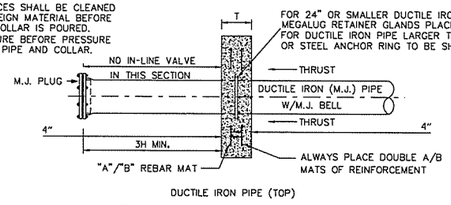
ALL RETAINER GLANDS SHALL BE MEGA-LUG

WELD-ON THRUST RING SHALL BE DUCTILE IRON OR STEEL

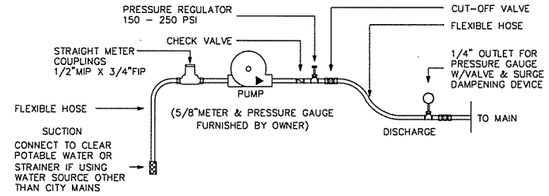
WELD ON THRUST RING SHALL BE DESIGNED FOR 250 PSI WORKING PRESSURE AND 375 PSI TEST PRESSURE.



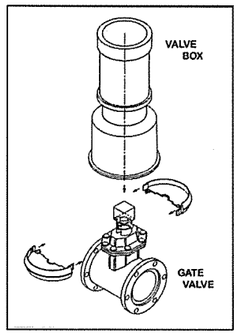
NOTE:
PIPE SURFACES SHALL BE CLEANED OF ALL FOREIGN MATERIAL BEFORE CONCRETE COLLAR IS POURED.
72 HOUR CURE BEFORE PRESSURE APPLIED TO PIPE AND COLLAR.



5 ANCHOR COLLAR DETAIL

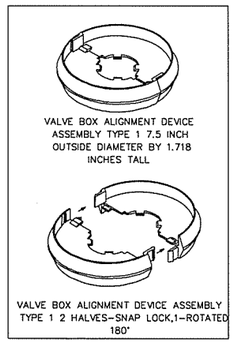


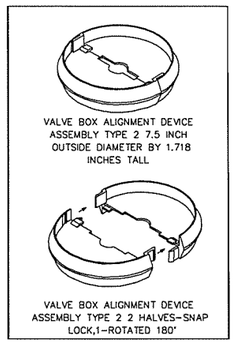
6 BASIC LAYOUT FOR TEST PUMP



BOXLOK

VALVE BOX ALIGNMENT DEVICE TYPE NUMBERS							
Volve Size (inches)	2"	3"	4"	6"	8"	10"	12"
AFC	2	2	2	2	2	1	1
AVK1	1	1	1	1	1	1	1
Clow	2	2	2	2	2	2	1-CLOW
Kennedy	2	2	2	2	2	2	--
M&H	2	2	2	2	2	2	--
Mueller	2	2	2	2	2	2	1
Waterous	1	1	1	1	1	1	--
UP Pipe (Pre 2006)	1	1	1	1	1	1	1
UP Pipe (Post 2006)	2	2	2	2	2	2	2





7 VALVE BOX ALIGNMENT DEVICE DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
ALAN A. STALLMANN

5/30/2014

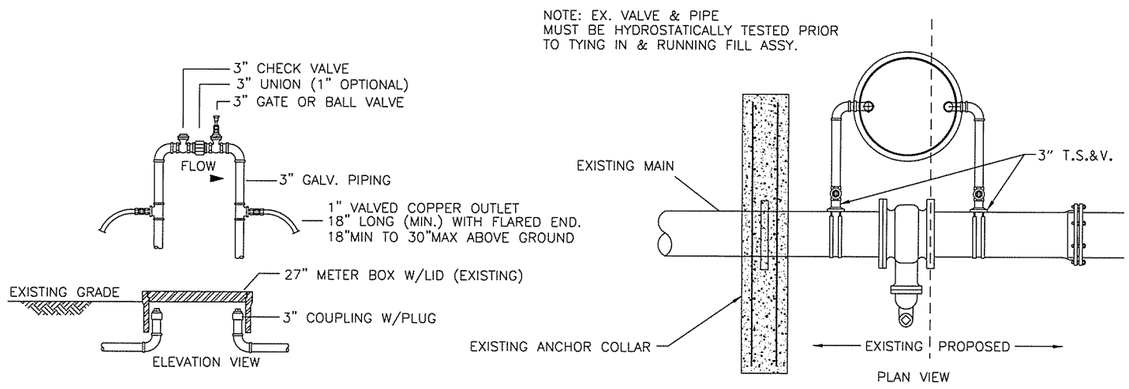
SHEET 2 OF 3
WATERLINE
MISCELLANEOUS DETAILS

BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: AUG. 2013 FILENAME: B061275xl_WL9.dgn
CHECKED BY: AAS DATE: AUG. 2013 SCALE: NOT TO SCALE
DESIGNED BY: MDN DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54632

CWThomas 5/29/2014 4:45:12 PM
WORKSPACE: AHTD Bridge
L:\2011\11017080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275x1_WL9.dgn
REVISED DATE:

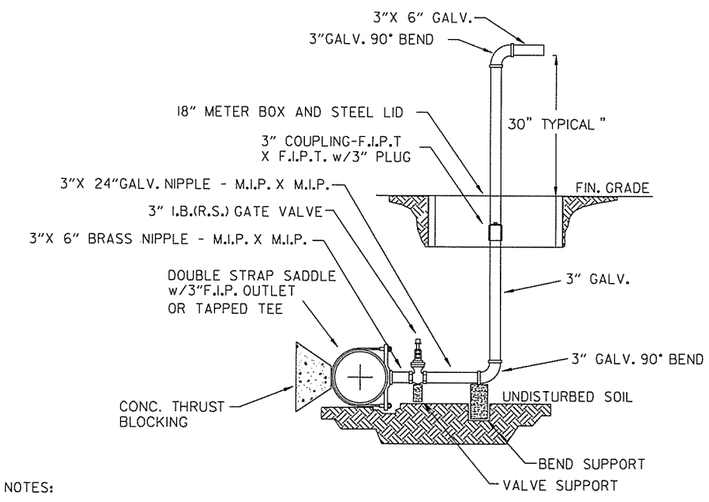
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	409	505
				(1) 07292		WATERLINE MISC DETAILS		54633



NOTES:

1. 3-INCH FILL CONNECTIONS ARE REQUIRED ON ALL MAINS, 36-INCH'S AND LARGER, OR AS DIRECTED BY C.A.W. ENG..
2. FULL SIZE CONNECTIONS WILL BE ALLOWED ONLY WITH WRITTEN APPROVAL OF C.A.W. THESE CONNECTIONS SHALL HAVE A VALVE BOX TO ACCEPT "TYLER 7½", LOCKING LID. VALVES SHALL BE OPERATED BY C.A.W. PERSONNEL ONLY. ALL OTHER CONNECTIONS TO EXISTING FACILITIES SHALL CONTAIN A CHECK VALVE.
3. AFTER APPROVAL OF SAMPLES, CLOSE 3" VALVES, REMOVE FILL ASSEMBLY AND PLUG COUPLINGS.
4. 3" VALVES ON MAIN LINES SHALL BE AS PER C.A.W. STANDARD SPECIFICATION.
5. 1" VALVES SHALL BE BRASS CORPORATION STOPS.

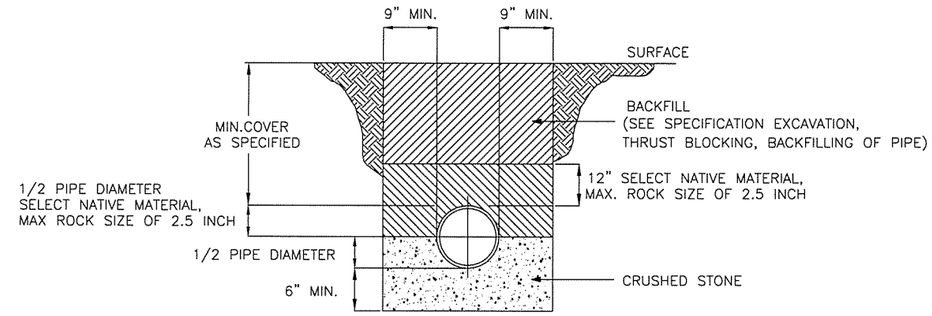
(1) FILL CONNECTION



NOTES:

1. ALL SADDLES, STRAPS AND BOLTS SHALL BE POLYWRAPPED.
2. WHEN TAPPING MAIN USE 2 7/8" BIT.
3. TAPPED TEES MAY BE USED ON CONNECTIONS TO NEW MAINS WHEN APPROVED BY OWNER.
4. ALL THREADED OUTLETS SHALL HAVE A DOUBLE WRAP OF TEFLON TAPE, TEFLON PASTE, OR RECTORSEAL ON THREADS.
5. VALVE BOXES SHALL BE INSTALLED ON ALL BLOW OFF VALVES.
6. RISER PIPE WILL BE PIPED INTO METER BOX AS SHOWN WHEN SPECIFIED.

(2) 3" SIDE BLOW OFF ASSEMBLY/SAMPLE POINT ASSEMBLY



TYPE 4 (MODIFIED) BEDDING

NOTE:
TYPE 4 (MODIFIED)
BEDDING SHALL BE USED
FOR ALL BURIED PIPELINES.

(3) BEDDING & BACKFILL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 12388
AARON A. STALLMANN
5/30/2014

SHEET 3 OF 3
WATERLINE
MISCELLANEOUS DETAILS

BRIDGE OVER ARKANSAS RIVER
PULASKI COUNTY
ROUTE 70 SEC. 12

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWW DATE: AUG. 2013 FILENAME: B061275xl_WL10.dgn
CHECKED BY: AAS DATE: AUG. 2013 SCALE: NOT TO SCALE
DESIGNED BY: MDN DATE: AUG. 2013
BRIDGE NO. 07292 DRAWING NO. 54633

CWThomas
WORKSPACE: AHTD Bridge
L:\2011\11017080 - Broadway Bridge over the Arkansas River\Drawings\WATER\B061275xl_WL10.dgn
5/29/2014 4:45:13 PM
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	410	505
				① 07292-07295, 04926 & 04927		ELEC. LEGEND		54634

ELECTRICAL SYMBOLS LEGEND

INSTALL NEW POLE MOUNTED FIXTURE, REFER TO FIXTURE SCHEDULE ON DRAWING 54642 AND DETAILS ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.

INDUSTRIAL 1'X4' FLUORESCENT LIGHT FIXTURE, REFER TO FIXTURE SCHEDULE ON DRAWING 54642 FOR ADDITIONAL INFORMATION.

EXTERIOR CEILING MOUNTED FIXTURE, REFER TO FIXTURE SCHEDULE ON DRAWING 54642 FOR ADDITIONAL INFORMATION.

JUNCTION BOX, 8"x8"x6" MINIMUM SIZE, MOUNTED TO UNDER SIDE OF BRIDGE STRUCTURE.

CONDUIT & WIRE AS NOTED IN KEYED NOTES AND IN SCHEDULES LOCATED ON DRAWING 54652.

180° RED NAVIGATION LIGHT FIXTURE, SEE DETAILS ON DRAWING 54649 FOR ADDITIONAL INFORMATION.

360° GREEN NAVIGATION LIGHT FIXTURE, SEE DETAILS ON DRAWING 54649 FOR ADDITIONAL INFORMATION.

FAA L-810 BEACON LIGHT FIXTURE, SEE DETAILS ON DRAWING 54646 FOR ADDITIONAL INFORMATION.

RELAY CONTACT, NORMALLY OPEN.

20 AMP DUPLEX RECEPTACLE, MTD. 18" AFF, WITH GROUND WIRE, "GFCI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER, "WP" INDICATES WEATHERPROOF WHILE-IN-USE ENCLOSURE AND COVER, "TR" INDICATES TAMPER-RESISTANT DEVICE.

TRANSFORMER, RATINGS AS SHOWN.

20A/2P — CIRCUIT BREAKER, TRIP RATING SHOWN, 2-POLE UNLESS NOTED OTHERWISE.

SPD — SURGE PROTECTIVE DEVICE WITH INDICATING LIGHTS.

OR — 3/4" x 10' COPPER CLAD GROUND ROD.

BLUNT TIP AIR TERMINAL, MINIMUM 1/2" DIAMETER SOLID COPPER, LENGTH AS REQUIRED FOR TIP TO BE 12" ABOVE NEAREST OBJECT.

S_3 — LIGHT SWITCH, 120V, 20A, 3-WAY, MTD 4'-0" AFF.

ABBREVIATIONS

A	AMP
ABC	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CAPACITY
AM	AMP-METER
ANN	ANNUNCIATOR
AP	AERIAL PRIMARY
AS	AERIAL SECONDARY
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BFI	BLOWN FUSE INDICATOR
BI	BYPASS ISOLATION
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CGRS	PVC COATED GALVANIZED RIGID STEEL
CKT	CIRCUIT
COM	COMMON
CONT	CONTINUOUS
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRI	COLOR RENDERING INDEX
CS	CORD SET
CU	COEFFICIENT OF UTILIZATION
DEB	DIRECT EARTH BURIED
EC	EMPTY OR EMBEDDED CONDUIT
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EL	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
ETM	ELASPED TIME METER
FC	FAN COIL
FDS	FUSED DISCONNECT SWITCH
FOC	FIBER OPTIC CABLE
FVNR	FULL VOLTAGE NON-REVERSING STARTER
FVR	FULL VOLTAGE REVERSING STARTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSEPOWER OR HEAT PUMP
IDS	INTRUSION DETECTION SYSTEM
HR	HOUR
IG	ISOLATED GROUND
ISP	INDIVIDUALLY SHIELDED PAIR
JB	JUNCTION BOX
kVA	KILOVOLT-AMPERE
kVAR	KILOVOLT-AMPERE, REACTIVE
kW	KILOWATT
LA	LIGHTNING ARRESTER
LC	LIGHTING CONTACTOR
LLF	LIGHT LOSS FACTOR
LO	LUGS ONLY
LOR	LOCAL-OFF-REMOTE
LSI	LONG, SHORT, INSTANTANEOUS
LSIG	LONG, SHORT, INSTANTANEOUS, GROUND
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MN	MASS NOTIFICATION
MON	MONACO
MS	MOTOR STARTER
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
NFDS	NON-FUSED DISCONNECT SWITCH
NL	NIGHT LIGHT
OH	OVERHEAD
OHP	OVERHEAD PRIMARY
OHS	OVERHEAD SECONDARY
OL	OVERLOAD
PB	PUSH BUTTON
PEC	PHOTO ELECTRIC CELL
PF	POWER FACTOR
PFCC	POWER FACTOR CORRECTION CAPACITOR
PL	PILOT LIGHT
PMR	PHASE MONITOR RELAY
PNL	PANEL
PTT	PUSH-TO-TEST
PTZ	PAN-TILT-ZOOM
PVC	SCHEDULE 40 POLYVINYL CONDUIT
RECPT	RECEPTACLE
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER STARTER
SA	SURGE ARRESTER
SDBC	SOFT DRAWN BARE COPPER
SE	SERVICE ENTRANCE
SN	SOLID NEUTRAL
SPD	SURGE PROTECTIVE DEVICE
SS	STAINLESS STEEL
STA	STATION
SW	SWITCH
TC	TIME CLOCK
TD	TIME DELAY
TDD	TIME DELAY ON DE-ENERGIZATION
TDE	TIME DELAY ON ENERGIZATION
TEL	TELEPHONE
THD	TOTAL HARMONIC DISTORTION
TMGB	TELECOMMUNICATIONS MAIN GROUND BAR
TGB	TELECOMMUNICATIONS GROUND BAR
TR	TAMPER RESISTANT
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UGP	UNDERGROUND PRIMARY
UGS	UNDERGROUND SECONDARY
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
VA	VOLT-AMP
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT-METER
W	WATT OR WIRE
WAP	WIRELESS ACCESS POINT
WH	WEATHER HEAD
WM	WATT METER
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES:

1. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET BUT NOT BE UTILIZED ON THE PROJECT.
2. LIGHTING LEGEND SHOWS EXAMPLE IDENTIFIERS, REFER TO LIGHT FIXTURE SCHEDULE FOR SPECIFIC REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

ELECTRICAL LEGEND
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_ELI.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54634

SRYancey 5/30/2014 2:27:48 PM
WORKSPACE: AHTD Bridge
L:\ROW\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_ELI.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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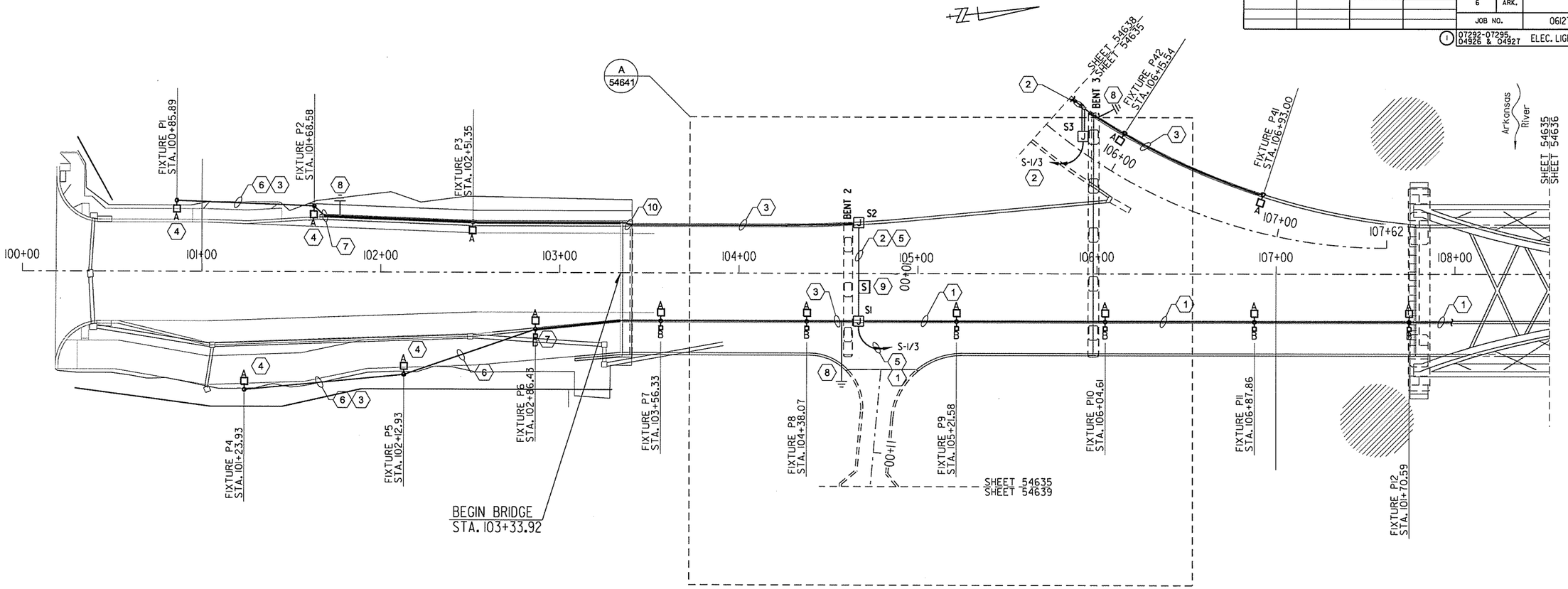
				JOB NO.		061275	411	505
				① 07292-07295, 04926 & 04927		ELEC. LIGHTING		54635



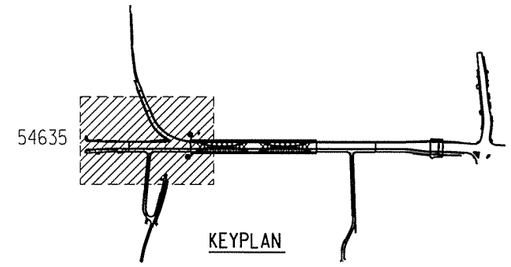
A BRIDGE LIGHTING INSTALLATION PLAN SOUTH
SCALE: 1" = 30'

KEYED NOTES:

1. INSTALL NEW 2#8, 1#8 EG, 1-1/2"C TO PANEL S. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW 2#10, 1#10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
3. INSTALL NEW 2#12, 1#12 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
4. INDEPENDENT POLE BASE FOUNDATION REQUIRED AT THIS LOCATION. SEE DETAIL B, DRAWING 54645 FOR ADDITIONAL INFORMATION.
5. CONDUIT BETWEEN JUNCTION BOXES TO BE SECURED TO FACE OF BENT COLUMNS AND CAPS. CONDUIT EXPOSED ALONG BRIDGE BENT SHALL BE COATED GALVANIZED RIGID STEEL. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING AND DETAIL A ON DRAWING 54647 FOR BENT 2 ELEVATION.
6. CONDUIT INSTALLED BELOW GRADE SHALL BE NON-ENCASED SCHEDULE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACE ONLY.
7. TRANSITION BETWEEN DIRECT BURIED SCHEDULE 40 PVC CONDUIT TO GALVANIZED RIGID STEEL EMBEDDED WITHIN PARAPET. CAP SPARE CONDUIT WATERTIGHT BELOW GRADE.
8. GROUND ROD FOR BRIDGE/HAND RAIL GROUNDING SYSTEM. INSTALL #4/0 AWG COPPER IN 1" GRSC TO CONNECT BETWEEN HANDRAIL GROUNDING CONDUCTORS AND GROUND RODS AND AS INSTRUCTED BY DETAILS ON DRAWING 54643.
9. ELECTRICAL ENCLOSURE "S" AT BENT 2 ACCESSIBLE AT GRADE LEVEL.
10. REFER TO EXPANSION JOINT DETAIL D ON DRAWING 54643, TYPICAL AT ALL EXPANSION JOINTS.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL INSTALL TWO (2) 1-1/2" GRSC IN PARAPET WALLS PER DETAIL B ON DRAWING 54643.



KEYPLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 1 OF 6
BRIDGE LIGHTING
INSTALLATION PLAN
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL2.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 30'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54635

SRYancey 5/30/2014 2:27:49 PM
WORKSPACE: AHTD Bridge
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REVISED DATE:

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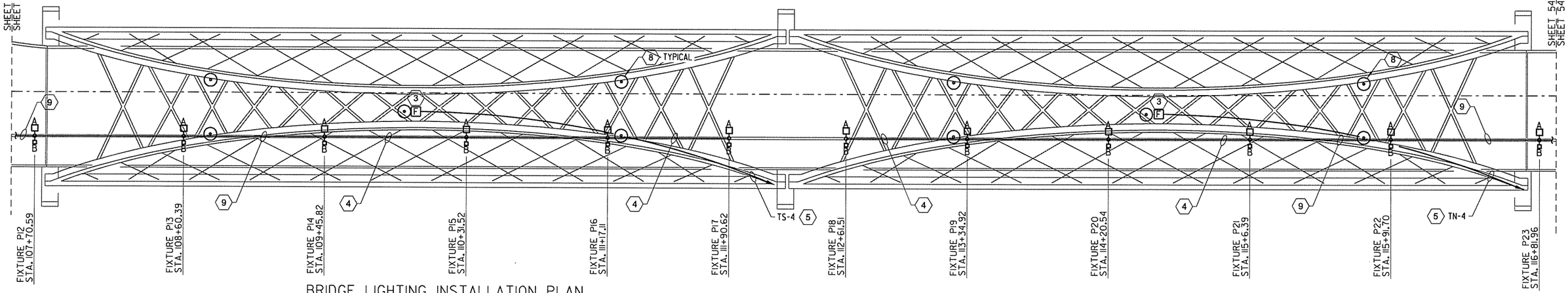
				6	ARK.			
				JOB NO.		061275	412	505
				(1) 07292-07295, 04926 & 04927		ELEC. LIGHTING		54636

Arkansas River

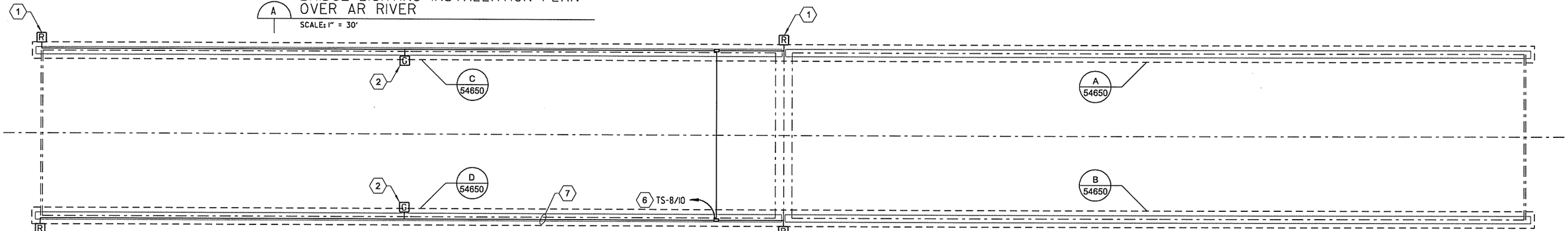
SHEET 54635
SHEET 54636

SHEET 54636
SHEET 54637



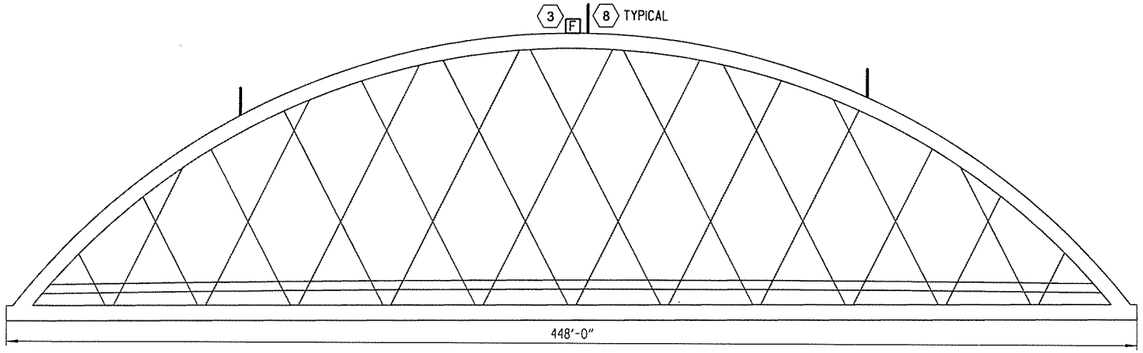
A BRIDGE LIGHTING INSTALLATION PLAN OVER AR RIVER

SCALE: 1" = 30'



B UNDER BRIDGE & TIE GIRDER PLAN

SCALE: 1" = 30'



*REFER TO PLAN VIEW FOR QUANTITY OF BEACONS. ELEVATION VIEW APPLIES TO BOTH ARCHES.

C FAA OBSTRUCTION LIGHTS ELEVATION DETAIL

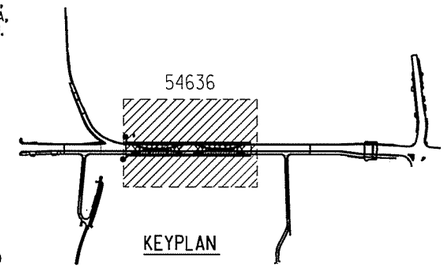
SCALE: 1" = 30'

KEYED NOTES:

1. INSTALL NEW PIER MOUNTED CHANNEL MARGIN RED NAVIGATION LIGHT WITH 180° LENS. REFER TO DETAIL D ON DRAWING 54649 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW WIRE ROPE OPERATED CENTER CHANNEL GREEN NAVIGATION LIGHT WITH 360° LENS. REFER TO DETAIL C ON DRAWING 54649 FOR ADDITIONAL INFORMATION.
3. INSTALL NEW L-810 STEADY BURNING OBSTRUCTION LIGHT. CONTRACTOR SHALL PROVIDE SHOP DRAWING DETAILING INSTALLATION MEANS TO ARCH. REFER TO DETAIL C ON DRAWING 54646
4. INSTALL NEW 2"10, 1"10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
5. INSTALL NEW CIRCUIT FOR FAA LIGHTS. REFER TO MOUNTING DETAIL C ON DRAWING 54646 AND ONE-LINE DIAGRAM (DETAIL A, DRAWING 54651) FOR ADDITIONAL INFORMATION.
6. INSTALL NEW CIRCUIT FOR NAVIGATIONAL LIGHTS. REFER TO MOUNTING DETAILS ON DRAWING 54649, ONE-LINE DIAGRAM (DETAIL A, DRAWING 54651) AND RISER DIAGRAM (DETAIL A, DRAWING 54649) FOR ADDITIONAL INFORMATION.
7. CONDUIT BETWEEN NAVIGATIONAL LIGHTS TO BE SECURED TO THE INTERIOR OF THE INSPECTION TIE GIRDER. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. JUNCTION BOXES SHALL BE NEMA 4X RATED, REFER TO DETAIL D ON DRAWING 54644 FOR MOUNTING. REFER TO NAVIGATIONAL LIGHT DETAILS ON DRAWING 54649 FOR ADDITIONAL INFORMATION.
8. INSTALL NEW BLUNT TIP AIR TERMINAL SECURED TO BRIDGE STRUCTURE WITH APPROVED MOUNTING PLATES. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING MOUNTING PLATES AND CONNECTION DESIGNED BY AN ENGINEER LICENSED IN THE STATE OF ARKANSAS.
9. INSTALL NEW 2"8, 1"8 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL INSTALL TWO (2) 1-1/2" GRSC IN PARAPET WALLS PER DETAIL B ON DRAWING 54643.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 2 OF 6
BRIDGE LIGHTING INSTALLATION PLAN
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL3.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 30'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54636

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WORKSPACE: AHTD Bridge
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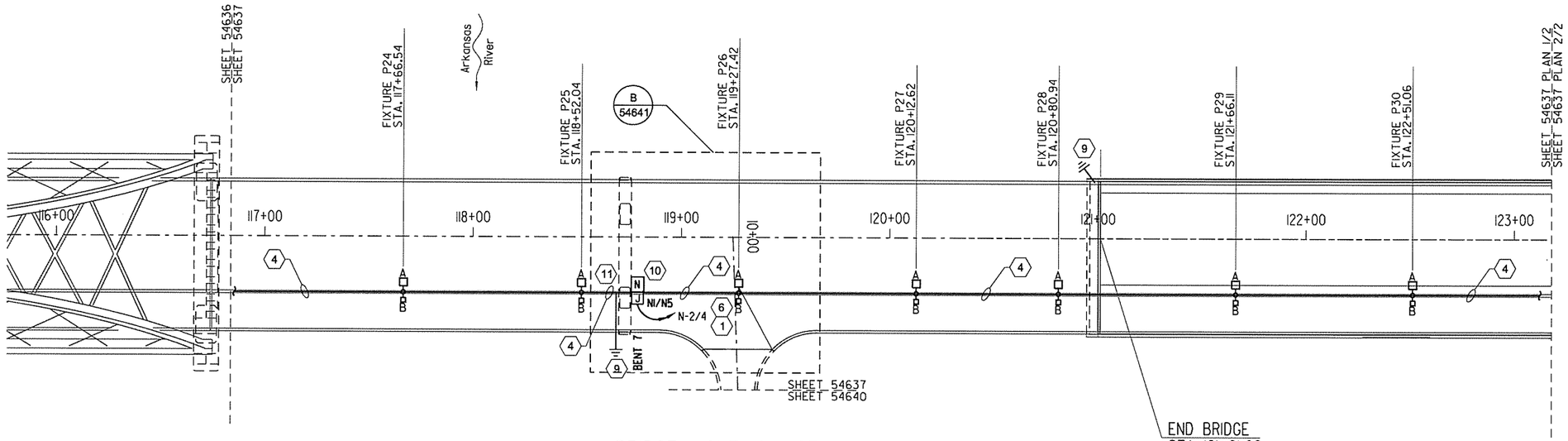
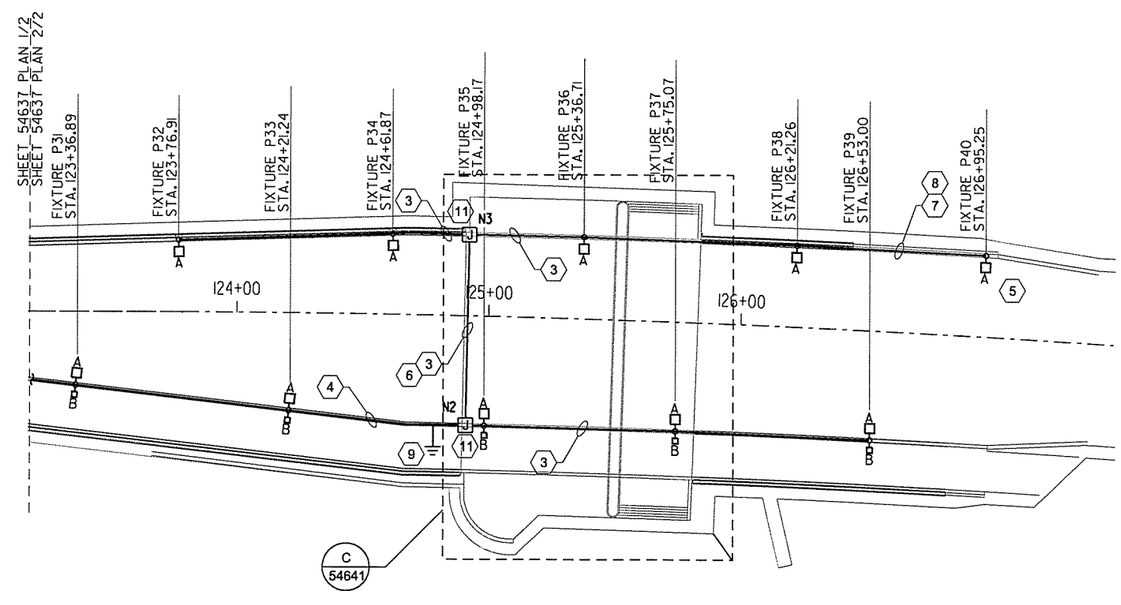
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	413	505
				(1) 07292-07295, 04926 & 04927		ELEC. LIGHTING		54637



A BRIDGE LIGHTING INSTALLATION PLAN NORTH 1/2
SCALE: 1" = 30'



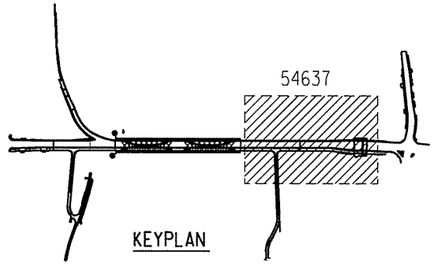
B BRIDGE LIGHTING INSTALLATION PLAN NORTH 2/2
SCALE: 1" = 30'

KEYED NOTES:

1. INSTALL NEW 2#8, 1#8 EG, 1-1/2"C TO PANEL N. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW 2#10, 1#10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
3. INSTALL NEW 2#12, 1#12 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
4. INSTALL NEW 2#8, 1#8 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
5. INDEPENDENT POLE BASE FOUNDATION REQUIRED AT THIS LOCATION. SEE DETAIL B, DRAWING 54645 FOR ADDITIONAL INFORMATION.
6. CONDUIT BETWEEN JUNCTION BOXES TO BE SECURED TO UNDERSIDE OF BRIDGE. CONDUIT EXPOSED ALONG UNDERSIDE OF BRIDGE SHALL BE COATED GALVANIZED RIGID STEEL. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING.
7. CONDUIT INSTALLED BELOW GRADE SHALL BE NON-ENCASED SCHEDULE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACE ONLY.
8. TRANSITION BETWEEN DIRECT BURIED SCHEDULE 40 PVC CONDUIT TO GALVANIZED RIGID STEEL EMBEDDED WITHIN PARAPET.
9. GROUND ROD FOR BRIDGE/HAND RAIL GROUNDING SYSTEM. INSTALL #4/0 AWG COPPER IN 1" GRSC TO CONNECT BETWEEN HANDRAIL GROUNDING CONDUCTORS AND GROUND RODS AND AS INSTRUCTED BY DETAILS ON DRAWING 54643.
10. ELECTRICAL ENCLOSURE "N" AT BENT 7 ACCESSIBLE AT GRADE LEVEL. SEE DETAIL A ON DRAWING 54648.
11. JUNCTION BOX SECURED TO BRIDGE, SEE DETAIL D ON DRAWING 54644.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL INSTALL TWO (2) 1-1/2" GRSC IN PARAPET WALLS PER DETAIL B ON DRAWING 54643.



KEYPLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 3 OF 6
BRIDGE LIGHTING INSTALLATION PLAN
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL4.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 30'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54637

SRYancey 5/30/2014 2:27:50 PM
WORKSPACE: AHTD Bridge
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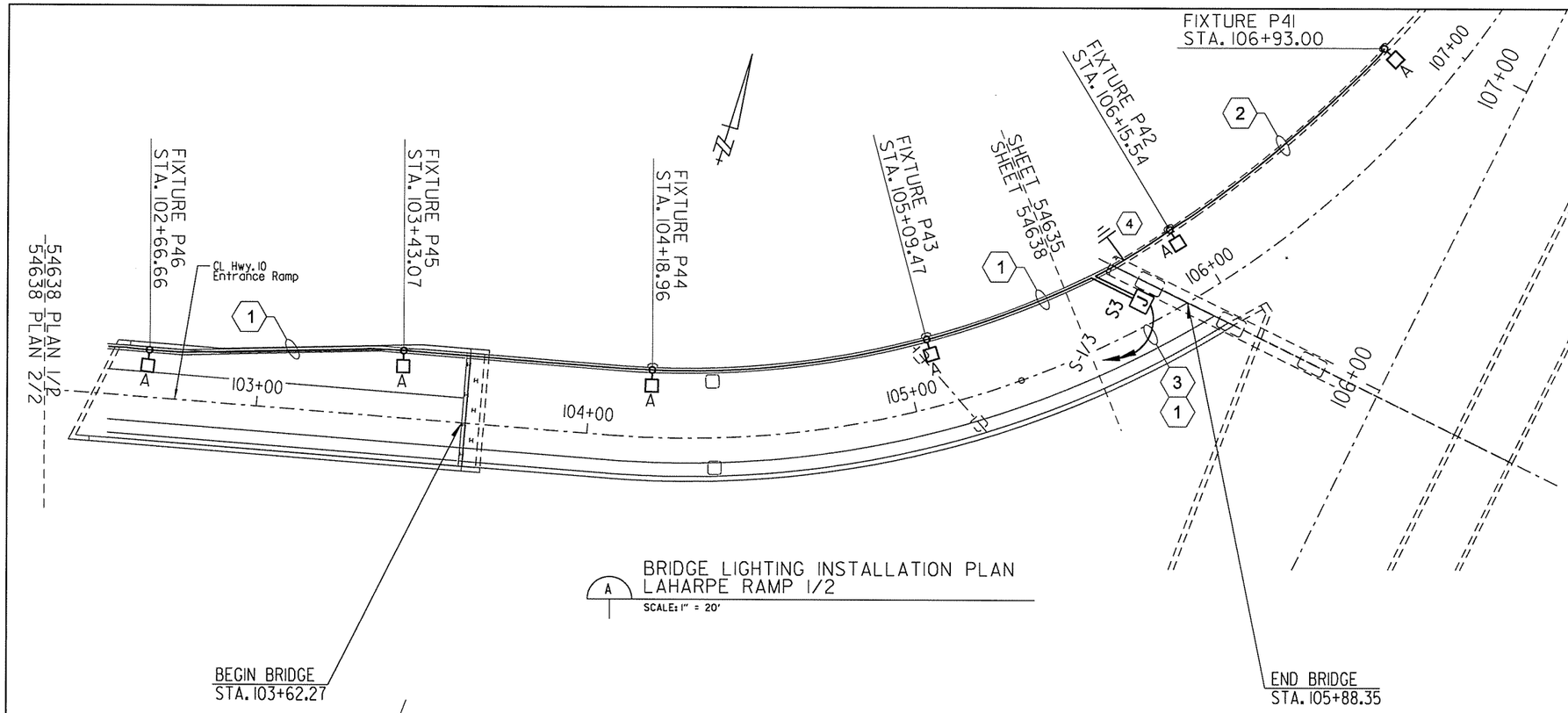
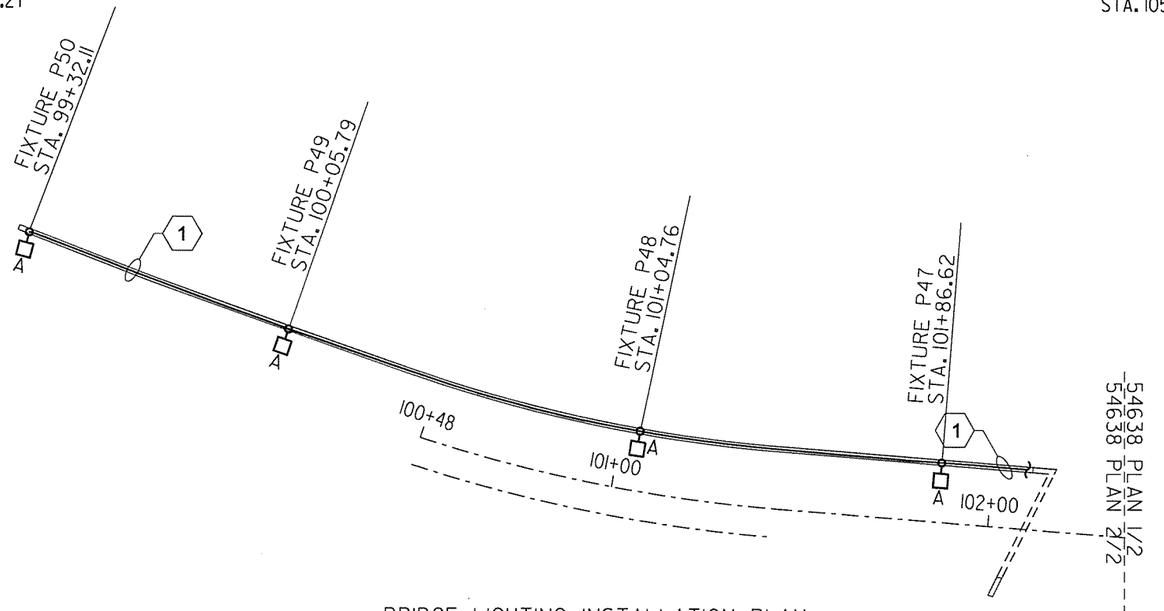
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	414	505
				(1) 07292-07295, 04926 & 04927		ELEC. LIGHTING		54638



BRIDGE LIGHTING INSTALLATION PLAN
LAHARPE RAMP 1/2
A
SCALE: 1" = 20'



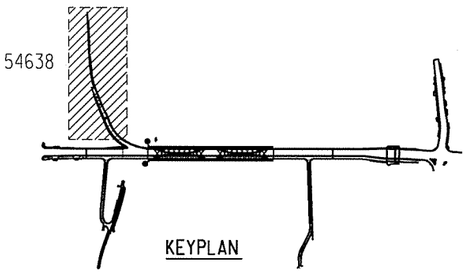
BRIDGE LIGHTING INSTALLATION PLAN
LAHARPE RAMP 2/2
B
SCALE: 1" = 20'

KEYED NOTES:

1. INSTALL NEW 2#10, 1#10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW 2#12, 1#12 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
3. CONDUIT BETWEEN JUNCTION BOXES TO BE SECURED TO UNDERSIDE OF BRIDGE. CONDUIT EXPOSED ALONG UNDERSIDE OF BRIDGE SHALL BE COATED GALVANIZED RIGID STEEL. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING.
4. GROUND ROD FOR BRIDGE/HAND RAIL GROUNDING SYSTEM. INSTALL #4/0 AWG COPPER BETWEEN GROUND RODS AND AS INSTRUCTED BY DETAILS ON DRAWING 54643.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL INSTALL TWO (2) 1-1/2" GRSC IN PARAPET WALLS PER DETAIL B ON DRAWING 54643.



KEYPLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 4 OF 6
BRIDGE LIGHTING
INSTALLATION PLAN
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL5.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54638

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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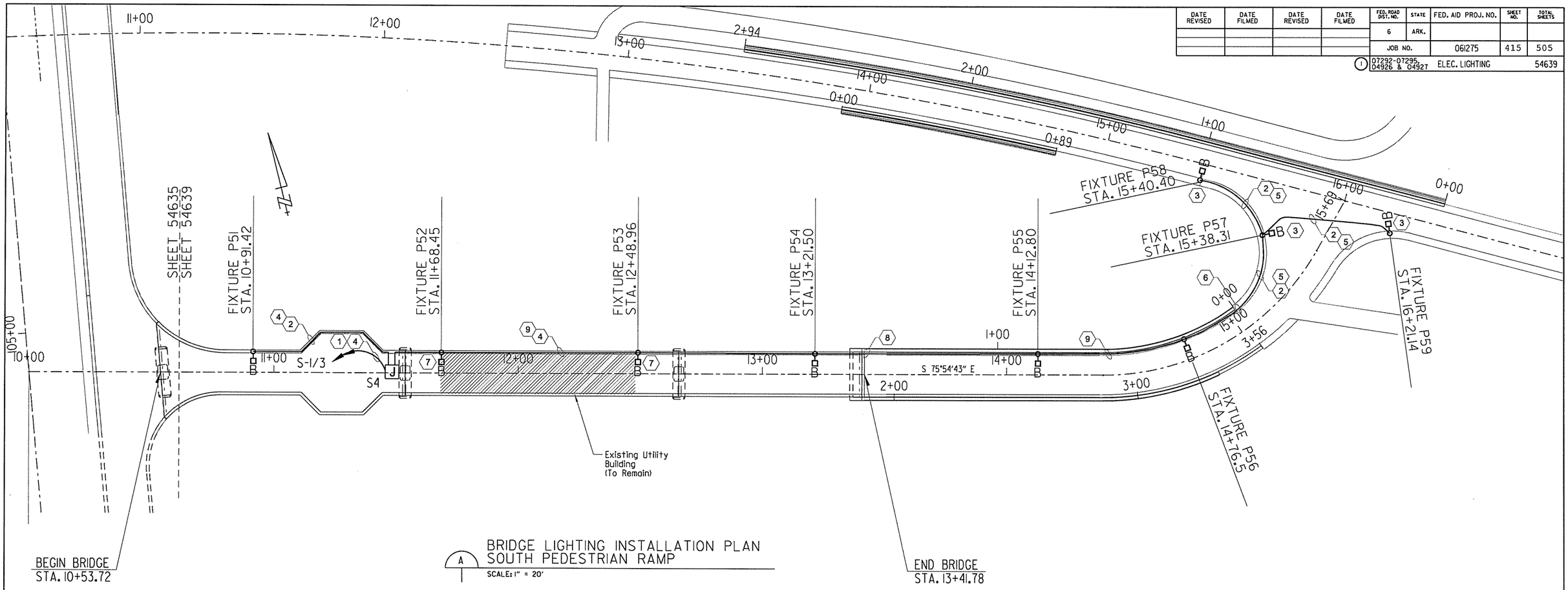
				JOB NO.		061275	415	505
				① 07292-07295, 04926 & 04927		ELEC. LIGHTING		54639



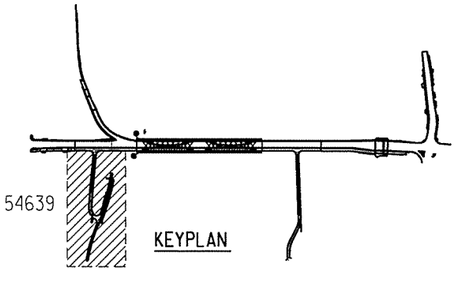
A BRIDGE LIGHTING INSTALLATION PLAN
SOUTH PEDESTRIAN RAMP
SCALE: 1" = 20'

KEYED NOTES:

1. INSTALL NEW 2#8, 1#8 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW 2#12, 1#12 EG, 1"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
3. INDEPENDENT POLE BASE FOUNDATION REQUIRED AT THIS LOCATION. SEE DETAIL B, DRAWING 54645 FOR ADDITIONAL INFORMATION.
4. CONDUIT BETWEEN JUNCTION BOXES AND PEDESTRIAN LIGHTS TO BE SECURED TO UNDERSIDE OF BRIDGE. CONDUIT EXPOSED ALONG UNDERSIDE OF BRIDGE SHALL BE COATED GALVANIZED RIGID STEEL. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING.
5. CONDUIT INSTALLED BELOW GRADE SHALL BE NON-ENCASED SCHEDULE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACE ONLY.
6. TRANSITION BETWEEN DIRECT BURIED SCHEDULE 40 PVC CONDUIT TO GALVANIZED RIGID STEEL EMBEDDED WITHIN PARAPET.
7. TRUSS MOUNTED POLE BASE FOUNDATION REQUIRED, TWO (2) LOCATIONS TOTAL, SEE BRIDGE PLANS FOR DETAILS ON TRUSS AND POLE BASE MOUNTING.
8. TRANSITION BETWEEN EXPOSED COATED GALVANIZED RIGID STEEL CONDUIT SECURED TO UNDERSIDE OF BRIDGE TO GALVANIZED RIGID STEEL EMBEDDED WITHIN PARAPET WALL.
9. INSTALL NEW 2#10, 1#10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C FARMER
5/30/14
BRIDGE ENGINEER

SHEET 5 OF 6
BRIDGE LIGHTING
INSTALLATION PLAN
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL6.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54639

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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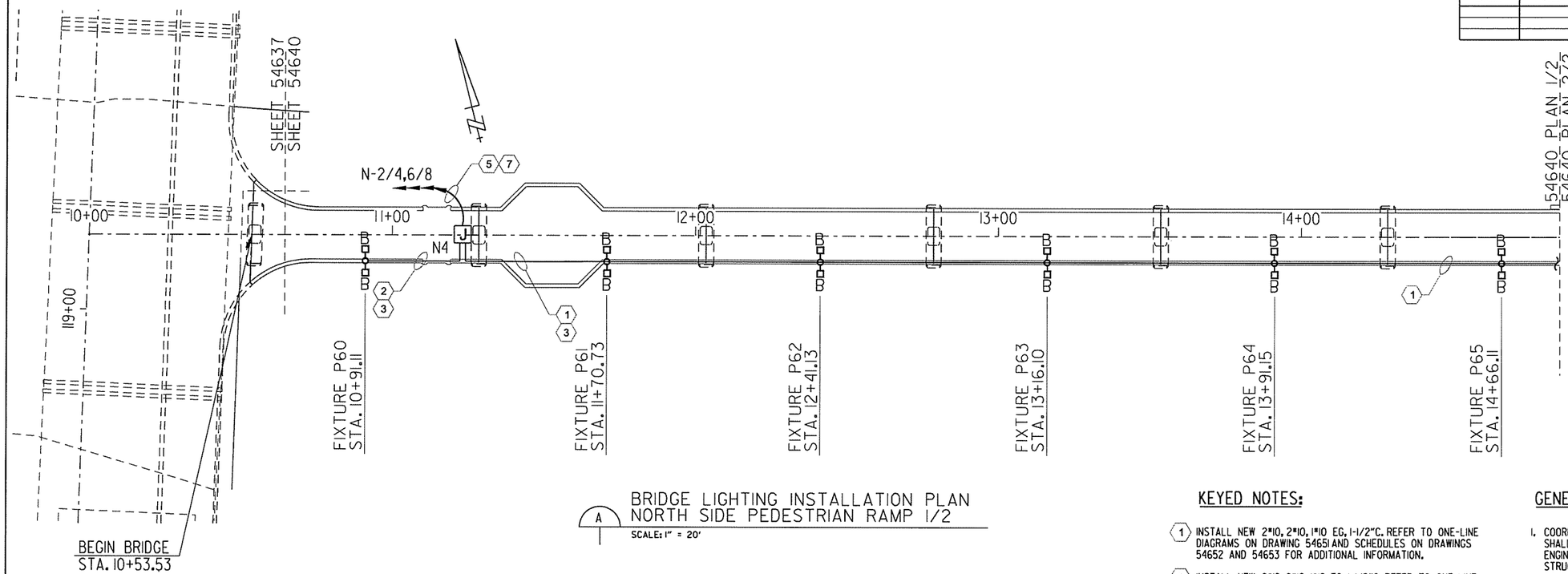
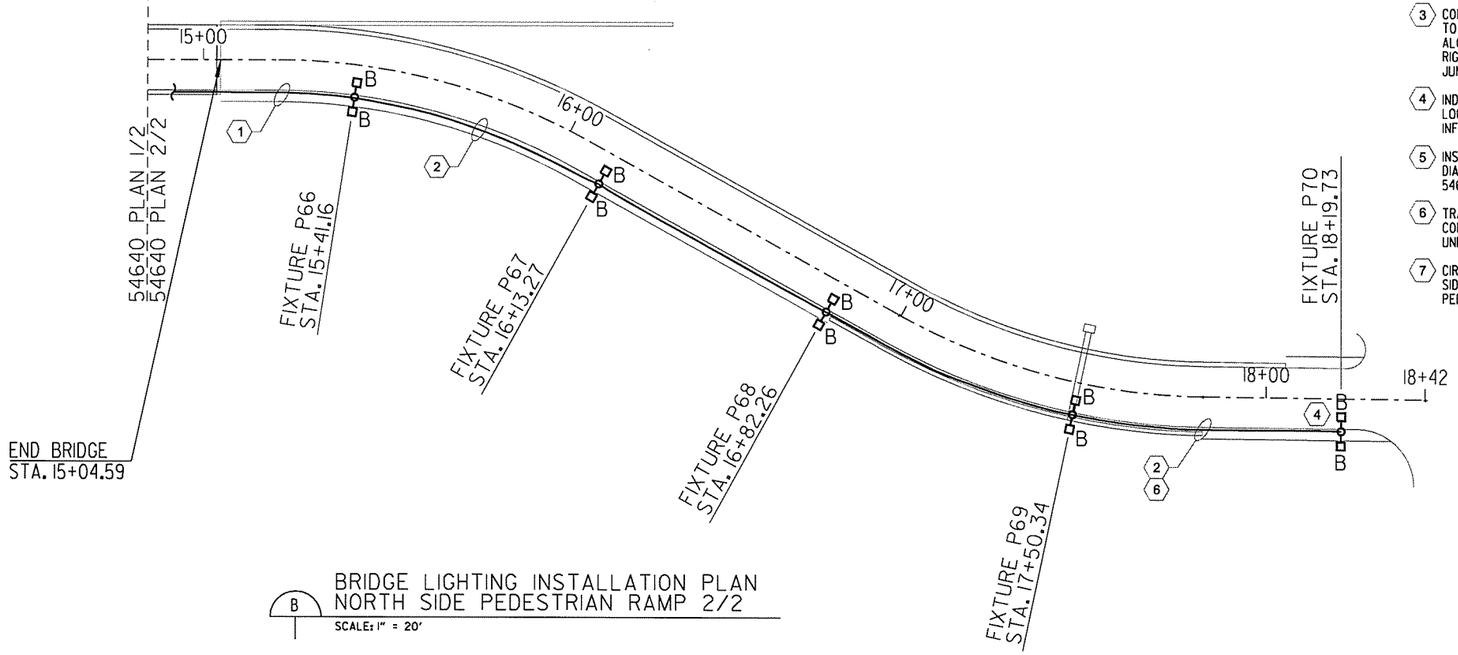
				JOB NO.		061275	416	505
				① 07292-07295, 04926 & 04927		ELEC. LIGHTING		54640



A BRIDGE LIGHTING INSTALLATION PLAN
NORTH SIDE PEDESTRIAN RAMP 1/2
SCALE: 1" = 20'



B BRIDGE LIGHTING INSTALLATION PLAN
NORTH SIDE PEDESTRIAN RAMP 2/2
SCALE: 1" = 20'

KEYED NOTES:

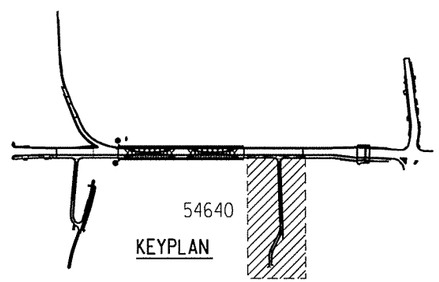
1. INSTALL NEW 2#10, 2#10, 1#10 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
2. INSTALL NEW 2#12, 2#12, 1#12 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
3. CONDUIT BETWEEN JUNCTION BOXES AND PEDESTRIAN LIGHTS TO BE SECURED TO UNDERSIDE OF BRIDGE. CONDUIT EXPOSED ALONG UNDERSIDE OF BRIDGE SHALL BE COATED GALVANIZED RIGID STEEL. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING.
4. INDEPENDENT POLE BASE FOUNDATION REQUIRED AT THIS LOCATION. SEE DETAIL B, DRAWING 54645 FOR ADDITIONAL INFORMATION.
5. INSTALL NEW 2#8, 2#8, 1#8 EG, 1-1/2"C. REFER TO ONE-LINE DIAGRAMS ON DRAWING 54651 AND SCHEDULES ON DRAWINGS 54652 AND 54653 FOR ADDITIONAL INFORMATION.
6. TRANSITION BETWEEN DIRECT BURIED SCHEDULE 40 PVC CONDUIT TO COATED GALVANIZED RIGID STEEL SECURED TO UNDERSIDE OF PEDESTRIAN BRIDGE.
7. CIRCUIT N-6/8 IS TO PROVIDE POWER TO LIGHTING ON SOUTH SIDE OF PEDESTRIAN RAMP, N-2/4 IS FOR LIGHTING THE PEDESTRIAN RAMP ITSELF.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED IN THE PARAPET WALL SHALL BE GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)
4. ADDITIONAL JUNCTION BOXES AND HANDHOLES NOT SHOWN ON PLAN FOR CLARITY. REFER TO DETAILS LOCATED ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION.

CIRCUIT NOTES:

1. CIRCUIT N-2/4 SERVES THE BRIDGE LIGHT FIXTURES.
2. CIRCUIT N-6/8 SERVES THE PARK LIGHT FIXTURES (THOSE FIXTURES FACING OFF THE BRIDGE).



KEYPLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 6 OF 6
BRIDGE LIGHTING INSTALLATION PLAN ARKANSAS RIVER STR. & APPRS PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL7.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54640

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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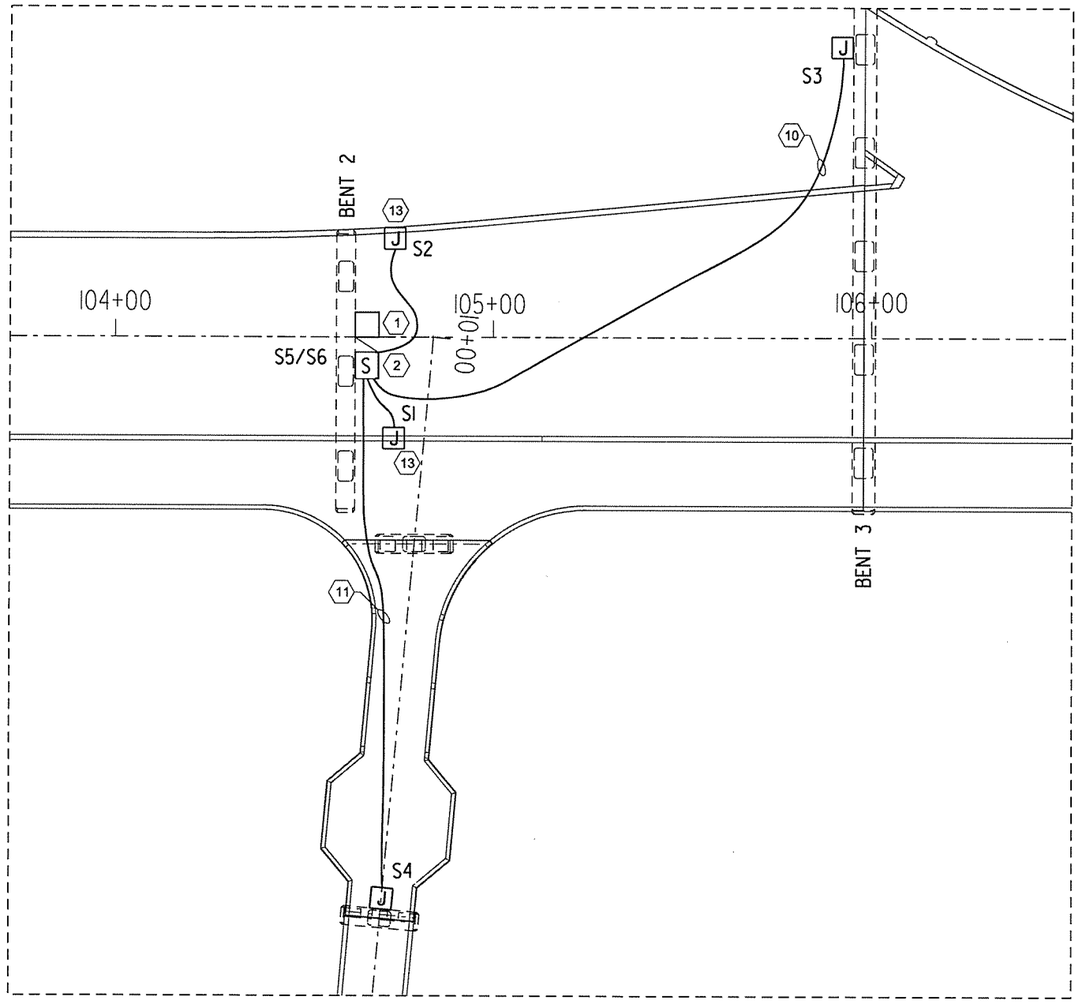
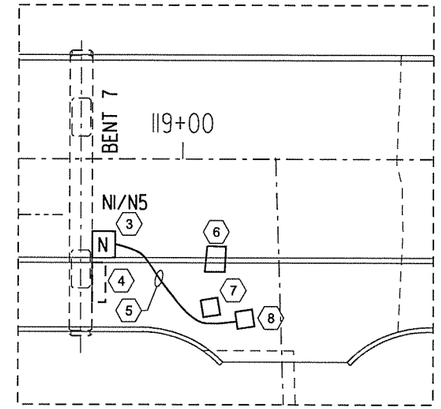
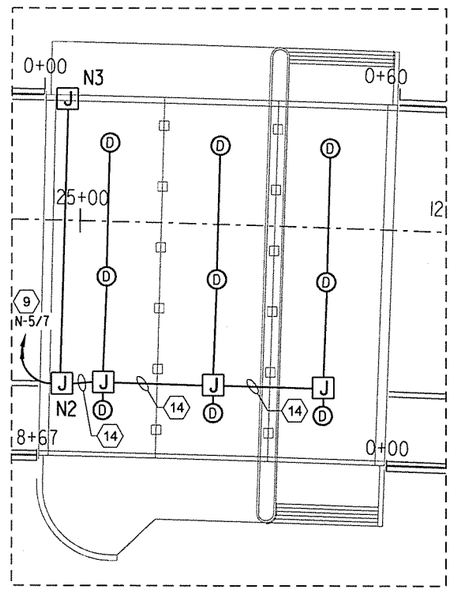
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54641



A SOUTH BRIDGE ELECTRICAL YARD DETAIL
SCALE: 1" = 20'



B NORTH BRIDGE ELECTRICAL YARD DETAIL
SCALE: 1" = 20'



C DICKEY STEPHENS PARK UNDER BRIDGE ACCESS
SCALE: 1" = 20'

KEYED NOTES

1. PROPOSED NEW ENTERGY TRANSFORMER LOCATION.
2. NEW ELECTRICAL ENCLOSURE "S". REFER TO ONE LINE DIAGRAM ON DRAWING 54651 AND DETAIL A ON DRAWING 54647 FOR ADDITIONAL INFORMATION.
3. NEW ELECTRICAL ENCLOSURE "N". REFER TO ONE LINE DIAGRAM ON DRAWING 54651 AND DETAIL A ON DRAWING 54648 FOR ADDITIONAL INFORMATION.
4. RELOCATE EXISTING 120/240V PANEL TO TEMPORARY UNISTRUT RACK AND PAD ADJACENT TO EXISTING RACK. EXTEND EXISTING CIRCUITS TO MAINTAIN EXISTING PUBLIC AREA LIGHTING TO REMAIN IN SERVICE DURING CONSTRUCTION. AFTER BRIDGE COLUMN CONSTRUCTION IS COMPLETE RELOCATE PANEL ADJACENT TO PANEL "N" ON COLUMN AND RECONNECT ALL CIRCUITS.
5. PROPOSED SERVICE TIE IN TO EXISTING ENTERGY TRANSFORMER, TWO FEEDERS REQUIRED.
6. EXISTING ELECTRICAL EQUIPMENT ON UNISTRUT RACK.
7. EXISTING 277/480V TRANSFORMER BY ENTERGY.
8. EXISTING 120/240V TRANSFORMER BY ENTERGY.
9. 2#10, 1#10 EG, 1" CONDUIT TO ENCLOSURE "N". ROUTE CONDUIT FROM JUNCTION BOX TO PARAPET WALL, BACK TO JUNCTION BOX N1.
10. CONDUIT ROUTED UNDERGROUND FROM JUNCTION BOX "S3" TO PANEL "S" LOCATED AT BENT 2 (VIA JUNCTION BOX "S5"). REFER TO DETAIL B ON DRAWING 54647 FOR MOUNTING LOCATION ON BENT 3.
11. CONDUIT ROUTED UNDERGROUND TO SECOND COLUMN ON SOUTH PEDESTRIAN RAMP. ROUTE CONDUIT UP COLUMN AS SHOWN ON DETAIL B, DRAWING 54648.
12. SURFACE MOUNTED JUNCTION BOXES, PROVIDE DROP FROM PARAPET WALL THROUGH SLAB. ROUTE CIRCUIT WITHIN 1/2" CGRSC FROM JUNCTION BOX TO LIGHT FIXTURES AND IN-BETWEEN LIGHT FIXTURES. TYPE D FIXTURES ARE SURFACE MOUNTED WITH 1/2" HUBS FOR CONNECTIONS.
13. CONDUIT ROUTED ABOVE GRADE TO JUNCTION BOX, SEE DETAIL A ON DRAWING 54647.
14. CONDUIT BETWEEN JUNCTION BOXES SHALL BE EMBEDDED WITHIN SLAB.

GENERAL NOTES

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. CONDUIT INSTALLED BELOW GRADE SHALL BE DIRECT BURIED NON-ENCASED SCHEDUE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACES ONLY.
3. CONDUIT EXPOSED ALONG UNDERSIDE OF BRIDGE SHALL BE COATED GALVANIZED RIGID STEEL.
4. REFER TO DETAIL D ON DRAWING 54644 FOR JUNCTION BOX MOUNTING AND ADDITIONAL INFORMATION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

ENLARGED ELECTRICAL PLANS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL8.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 20'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54641

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	418	505
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54642

GENERAL NOTES:

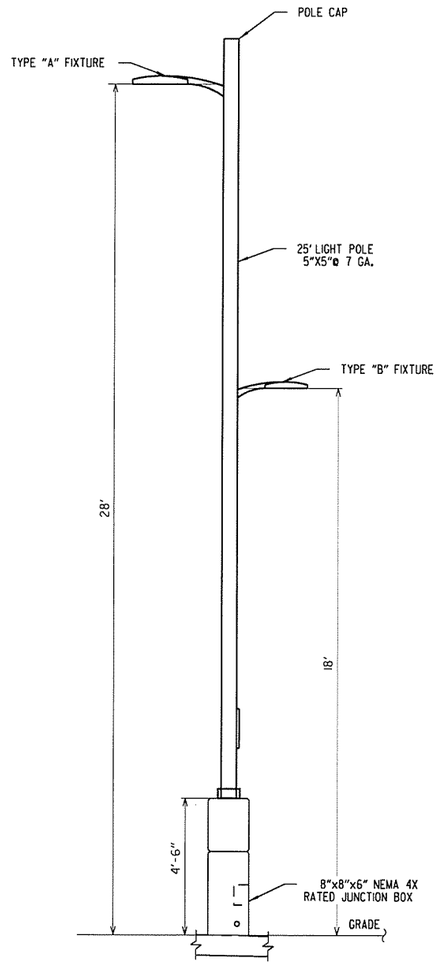
1. INSTALL NEW SQUARE, STRAIGHT, NON-TAPERED, STEEL POLE, ACCESSIBLE GROUNDING PROVISION, BASE COVER, VIBRATION DAMPER, ALL REQUIRED MOUNTING ACCESSORIES, SEE DETAILS FOR SIZE AND GAUGE REQUIREMENTS. INSTALL HANDHOLE WITH CAPTIVE TYPE TAMPER RESISTANT SCREWS FACING THE PEDESTRIAN WALKWAY. HANDHOLE COVER SHALL HAVE SAFETY CHAIN SECURED TO POLE INTERIOR. POLE SHALL BE DESIGNED FOR THE TOTAL EFFECTIVE PROJECTED AREA OF ALL LIGHT FIXTURES AND BASKETS AT A 90 MPH BASIC WIND SPEED WITH 3 SECOND GUST.
2. LIGHT FIXTURE, ARM, AND POLE COLORS SHALL BE COORDINATED AND SELECTED BY THE OWNER AND ENGINEER DURING SHOP DRAWING REVIEW. STEEL POLE SHALL INCLUDE PRE-TREATMENT PROCESSES AND POWDER COAT FINISH TO PREVENT CORROSION. ALL FIXTURES TO BE WET LOCATION RATED.
3. ACCEPTANCE CRITERIA SHALL CONSIST OF THE FOLLOWING:
   A. SUBMIT COMPLETE SHOP DRAWING DATA FOR FIXTURE AND LAMP, INCLUDING IES FILE AND LLF CALCULATION. REFER TO SPECIFICATION 16528 FOR ADDITIONAL REQUIREMENTS.
   B. SUBMIT COMPLETE POINT-BY-POINT PHOTOMETRIC LIGHTING ANALYSIS OF ALL GIVEN AREAS FOR BOTH INITIAL LUMEN AND LLF CALCULATIONS.
   C. LLF DESIGN, LIGHTING ANALYSIS VALUES SHALL MEET OR EXCEED THE ILLUMINATION DESIGN CRITERIA TABLE REQUIREMENTS, NO EXCEPTION.
4. FINAL ACCEPTANCE TESTING PROCEDURE SHALL CONSIST OF THE FOLLOWING:
   A. SUBMIT TEST PROCEDURE FOR REVIEW AND APPROVAL.
   B. CONDUCT MINIMUM 14-DAY FINAL ACCEPTANCE TEST FOR THE COMPLETE LIGHTING SYSTEM. CORRECT MALFUNCTIONING EQUIPMENT AND RETEST, OTHERWISE REMOVE AND REPLACE WITH NEW EQUIPMENT.
   C. REPLACE BURNED OUT AND NOTICEABLY DIM LAMPS AND RETEST.
   D. DURING FINAL ACCEPTANCE TEST PERIOD, TAKE FIELD LIGHT LEVEL MEASUREMENTS ALONG THE ENTIRE STRUCTURE, IN A 10' GRID PATTERN COVERING ALL PAVED AREAS. FIELD LEVEL MEASUREMENTS AND CALCULATIONS SHALL MEET OR EXCEED INITIAL LUMEN DESIGN CALCULATIONS. COORDINATE FIELD WORK WITH OWNER AND ENGINEER.

LIGHT FIXTURE SCHEDULE

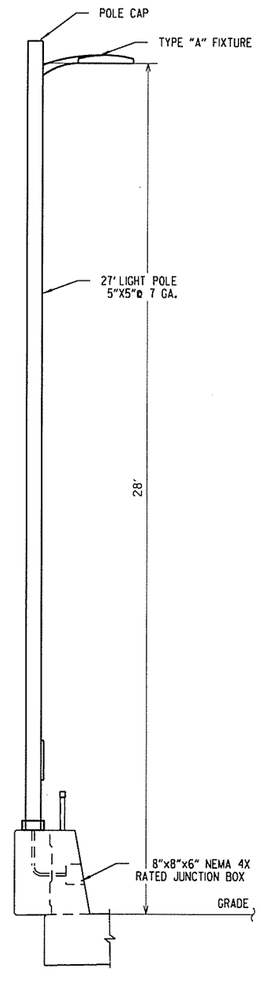
TYPE	DESCRIPTION	MANUFACTURER / CATALOG NUMBER	LAMPS NO.	LAMPS WATTS	LAMPS TYPE	VOLTAGE	REMARKS
A	ROADWAY LIGHT	COOPER LIGHTING / GLEON-AE-4-LED-EI-T3R-AP-530	4	106W	LED	240V	1,2
B	PEDESTRIAN LIGHT	COOPER LIGHTING / GLEON-AE-2-LED-EI-T3R-AP-530	2	54W	LED	240V	1,2
SSS	SQUARE STEEL POLE	COOPER LIGHTING / SSS	N/A	N/A	N/A	N/A	SEE DETAILS THIS SHEET
C	ENCLOSED INDUSTRIAL 1'X4'	COLUMBIA LIGHTING / LUN4-132-EU	1	32W	F32T8	120V	2
D	SURFACE MOUNTED LED	HUBBELL LIGHTING / SCP-36L3-5K-5M-GR W/SCP-CS	36	86W	LED	240V	2
F	FAA OBSTRUCTION LIGHT	FAA APPROVED TYPE L-810 DOUBLE LIGHT UNIT / RED INCANDESCENT LIGHTING SYSTEM	2	(2) 100W	MED. BASE	120V	2
G	CENTER CHANNEL LIGHT	B&B ROADWAY / PL-BM	1	8W	MED. BASE LED	120V	2
R	PIER LIGHT	B&B ROADWAY / CC	1	8W	MED. BASE LED	120V	2

LIGHTING NOTES:

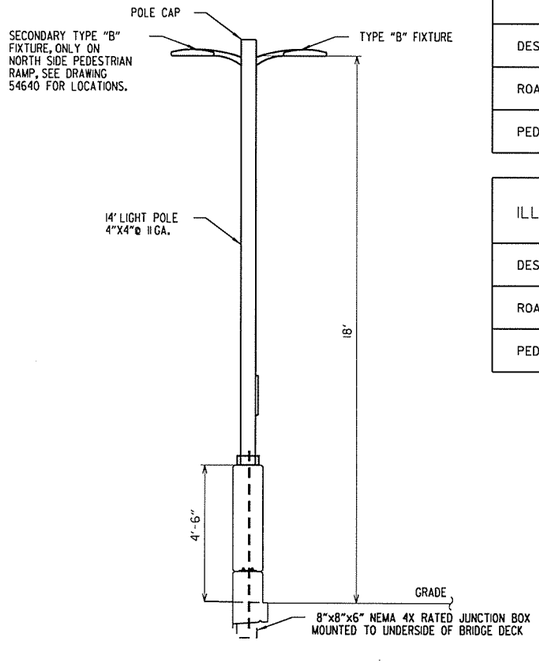
1. FIXTURES/POLES SHALL BE 3G RATED PER ANSI C136.31-2012 VIBRATION STANDARD.
2. PROVIDE FIXTURES LISTED AND LABELED FOR WET LOCATION.



A POLE MOUNT DETAIL
PEDESTAL ELEVATION
SCALE: NONE



B POLE MOUNT DETAIL
ROADWAY BLISTER ELEVATION
SCALE: NONE



C POLE MOUNTING DETAIL
PEDESTRIAN PEDESTAL ELEVATION
SCALE: NONE

STATISTICS (BASED ON 0.88 LLF)					
DESCRIPTION	AVG	MAX	MIN	MAX/MIN	AVG/MIN
ROADWAY SIDE	1.7 fc	4.1 fc	0.5 fc	8.2:1	3.4:1
PEDESTRIAN SIDE	1.6 fc	3.4 fc	0.5 fc	8.5:1	4.0:1

ILLUMINATION DESIGN CRITERIA TABLE			
DESCRIPTION	AVG	MIN	AVG/MIN
ROADWAY SIDE	1.2 fc	0.35 fc	3.3:1
PEDESTRIAN SIDE	1.5 fc	0.5 fc	3.0:1

LIGHTING CALCULATIONS NOTES:

1. LIGHTING CALCULATIONS WERE PERFORMED USING LITHONIA LIGHTING VISUAL PROFESSIONAL EDITION VERSION 2.06 AND LIGHTING ANALYSTS AGI32 V2.36 SOFTWARES
2. LIGHTING LEVELS ARE IN FOOTCANDLE UNITS (fc).
3. DESIGN BASIS IS THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA, IESNA LIGHTING HANDBOOK, 10TH EDITION AND RP-8-00.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
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BRIDGE ENGINEER

POLE MOUNTING DETAILS AND FIXTURE SCHEDULE
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL9.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54642

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WORKSPACE: AHTD Bridge
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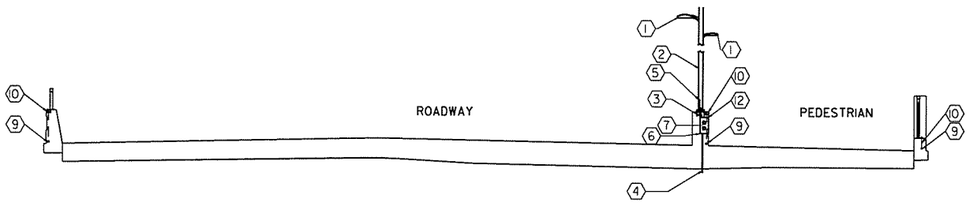
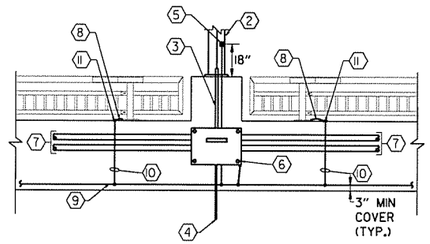
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	419	505
				① 07292-07295, 04926 & 04927		ELEC. DETAILS		54643



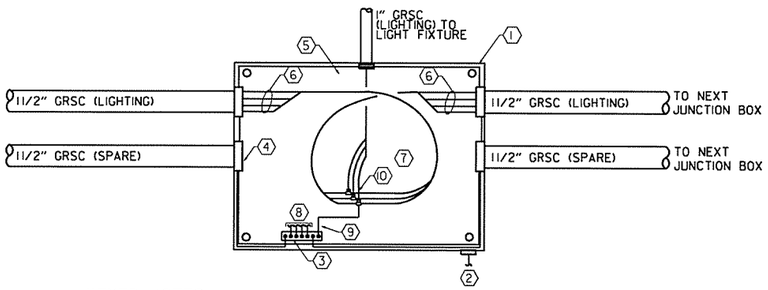
A JUNCTION BOX AND CONDUIT DETAIL - TYPICAL SECTION VIEW

SCALE: NONE



B JUNCTION BOX AND CONDUIT DETAIL - ELEVATION VIEW

SCALE: NONE



KEYED NOTES:

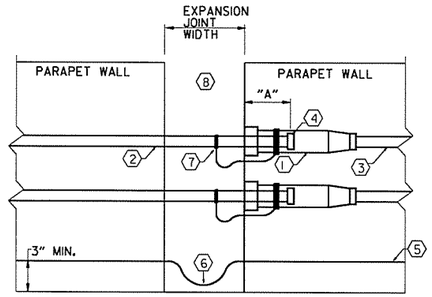
1. INSTALL NEW NEMA 4X STAINLESS STEEL JUNCTION BOX RECESSED IN PARAPET WALL WITH TAMPER RESISTANT CAPTIVE HARDWARE.
2. BOND EXTERNAL GROUND LUG USING #6 AWG COPPER TO #4/0 AWG GROUNDING CONDUCTOR SYSTEM.
3. INSTALL NEW COPPER GROUND BAR AND CONNECT ALL GROUND CONDUCTORS.
4. INSTALL NEW GROUNDING AND BONDING TYPE INSULATED BUSHINGS ON ALL CONDUITS AND BOND TO GROUND BAR (TYPICAL)
5. INSTALL NEW FULL-SIZE BACK PANEL FOR MOUNTING EQUIPMENT.
6. LOOP THE NEW LIGHTING CIRCUITS WITHIN EACH JUNCTION BOX, SLACK WIRE EQUAL TO ONE COMPLETE LOOP FOR FUTURE USE. NEATLY TRAIN AND LACE BRANCH CIRCUIT BUNDLES TOGETHER WITHIN THE BOX SECURED TO THE BACK PANEL WITH A SEPARATE BUNDLE FOR EACH BRANCH CIRCUIT.
7. ALL CABLES, SPLICES, TERMINATIONS, ETC. SHALL BE RATED 600 VOLTS, WATERPROOF METHOD.
8. BOND ALL BRANCH CIRCUIT GROUND WIRES TO GROUND BAR WITHIN EACH BOX (TYPICAL).
9. BOND LIGHT POLE GROUND TO GROUND BAR WITHIN EACH BOX (TYPICAL).
10. ALL CONDUCTORS SHALL BE CONTINUOUS FROM ORIGIN TO EQUIPMENT TERMINATION WITHOUT SPLICES. WHERE LIGHT FIXTURE TAPS ARE REQUIRED, TAPS SHALL BE MADE USING A SEALED, INSULATED PRESSURE CONNECTOR PROVIDING BOTH INSULATION AND JACKET EQUAL TO THE CABLE. CONNECTORS SHALL BE 600V RATED, 150 DEGREE C TEMPERATURE RATED, AND UL LISTED.

C INTERIOR JUNCTION BOX VIEW

SCALE: NONE

KEYED NOTES:

1. INSTALL NEW LIGHT FIXTURE ON POLE. SEE FIXTURE SCHEDULE AND LAYOUT PLANS FOR MORE INFORMATION.
2. INSTALL NEW POLE WITH HANDHOLE FACING WALKWAY. INSTALL NEW IN-LINE FUSE HOLDERS AND FUSES, EQUIPMENT SHALL BE FULLY ACCESSIBLE VIA HANDHOLE.
3. INSTALL NEW 1" GRSC AND CONDUCTORS FROM POLE BASE TO ADJACENT JUNCTION BOX.
4. INSTALL NEW 1/2" GRSC FROM JUNCTION BOX TO UNDERSIDE OF BRIDGE, EXTEND 3" BELOW BRIDGE AND INSTALL DRAIN/BREATHER AT END.
5. INSTALL NEW GROUNDING BUSHING, BOND DEDICATED #6 AWG COPPER GROUND WIRE TO POLES, TO BUSHING AND TO JUNCTION BOXES.
6. INSTALL NEW NEMA 4X STAINLESS STEEL JUNCTION BOX RECESSED IN THE PARAPET WALL WITH THE FOLLOWING ITEMS. SEE DETAIL C THIS SHEET:
   A. 8"H x 8"W x 6"D MINIMUM SIZE.
   B. CAPTIVE TYPE TAMPER RESISTANT, FLUSH HEAD SS SCREWS FOR GASKETED COVER.
   C. MOUNTING BACK PANEL WITH JUNCTION BOX, FULL SIZED.
   D. 2"x4"x1/4" COPPER GROUND BAR WITH MINIMUM OF 10 LUGS.
   E. EXTERNAL GROUND LUG, BOND TO GROUND CONDUCTOR USING #6 AWG COPPER.
7. BOND GROUND CONDUCTORS TO JUNCTION BOX, GROUND BAR AND ALL OTHER GROUND CONDUCTORS. LABEL USING CABLE MARKERS AND COLOR CODE TAPE ALL CONDUCTORS WITHIN EACH JUNCTION BOX. INSTALL NEW (2) 1-1/2" GRS ELECTRICAL CONDUIT DUCT SYSTEM ALONG ENTIRE STRUCTURE:
   A. LIGHTING CIRCUITS 240V IN 1-1/2" GRSC
   B. SPARE 1-1/2" GRSC WITH PULLWIRE
   SECURE ELECTRICAL CONDUIT DUCT SYSTEM AND INSTALL GROUNDING AND BONDING TYPE BUSHINGS WITHIN ALL JUNCTION BOXES, BONDED TO GROUND. INSTALL NEW EXPANSION GRSC CONDUIT FITTINGS AT ALL EXPANSION JOINTS. SEE DETAIL D THIS SHEET.
8. INSTALL NEW GROUNDING COMPRESSION TERMINAL AND CONNECT TO EMBEDDED 4 LUG GROUNDING PLATE VIA #6 AWG GROUND WIRE. TYPICAL FOR EACH SECTION OF HAND RAIL, UTILIZE INSTILLATION METHODS TO PREVENT VANDALISM.
9. INSTALL NEW DEDICATED #4/0 AWG COPPER GROUND WIRE ALONG ENTIRE STRUCTURE. EMBEDDED IN BRIDGE WALL. BOND POLE TO GROUND WIRE AND BOND JUNCTION BOX TO GROUND WIRE USING #6 AWG COPPER AND EXOTHERMIC WELDS ONLY.
10. INSTALL #2 AWG COPPER GROUND WIRE AND BOND EACH HAND RAIL SECTION TO GROUND WIRE SYSTEM. UTILIZE APPROVED INSTALLATION METHODS TO PREVENT VANDALISM.
11. INSTALL NEW EMBEDDED 4 LUG GROUNDING PLATE. CONNECT #2 GROUND WIRE USING GROUNDING COMPRESSION TERMINAL (TYPICAL).
12. ALL JUNCTION BOXES SHALL BE FLUSH WITH CONCRETE SURFACE.

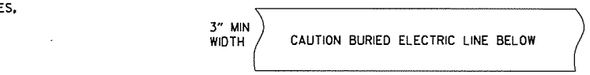


KEYED NOTES:

1. INSTALL NEW EXPANSION JOINT FITTING COUPLING FOR 1 1/2" GRSC FLUSH WITH PARAPET WALL. PAINT COUPLING WITH PVC COATING FOR CORROSION PROTECTION PRIOR TO CONCRETE WORK. INSTALL AT ALL EXPANSION JOINTS.
2. INSTALL NEW 1 1/2" GRSC RECESSED 3-1/2" IN EXPANSION COUPLING. EXPANSION COUPLING SHALL ALLOW FOR 4" OF CONDUIT MOVEMENT. PROVIDE O-Z/GEDNEY TYPE AX OR APPROVED EQUAL. PAINT ALL EXPOSED CONDUIT WITH PVC COATING AT EXPOSED AREAS AND 12" INTO PARAPET WALL FOR CORROSION PROTECTION PRIOR TO CONCRETE WORK.
3. INSTALL NEW 1 1/2" GRSC AND SECURE TO EXPANSION COUPLING. PAINT WITH PVC COATING 12" INTO PARAPET WALL FOR CORROSION PROTECTION PRIOR TO CONCRETE WORK.
4. INSTALL NEW BUSHING INSULATOR (TYPICAL).
5. INSTALL NEW DEDICATED #4/0 AWG COPPER GROUND WIRE. BOND TO ALL POLES AND JUNCTION BOXES.
6. INSTALL SLACK IN GROUND WIRE, COAT WITH PVC COATING AT EXPOSED AREA AND 12" INTO PARAPET WALL BOTH SIDES.
7. INSTALL NEW GROUNDING AND BONDING JUMPERS WITH SLACK ON EACH EXPANSION JOINT FITTING. PAINT WITH PVC COATING.
8. REFER TO BRIDGE DRAWINGS FOR EXPANSION JOINT LOCATIONS AND SIZES.

D EXPANSION JOINT COUPLING DETAIL (TYPICAL)

SCALE: NONE



GENERAL NOTES:

1. POWER MARKING TAPES SHALL BE DETECTABLE TYPE CONSTRUCTION WITH RED BACKGROUND AND BLACK LETTERING.
2. COMMUNICATION MARKING TAPES SHALL BE DETECTABLE TYPE CONSTRUCTION WITH ORANGE BACKGROUND AND BLACK LETTERING, "TELEPHONE LINE" OR "FIBER OPTIC LINE" RESPECTIVELY.
3. TAPE SHALL BE DETECTABLE, DURABLE, HIGHLY VISIBLE, RESISTANT TO ELEMENTS, MEETING AND/OR EXCEEDING ALL INDUSTRY STANDARDS.

E UNDERGROUND DETECTABLE WARNING TAPE

SCALE: N.T.S.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 1 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL10.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54643

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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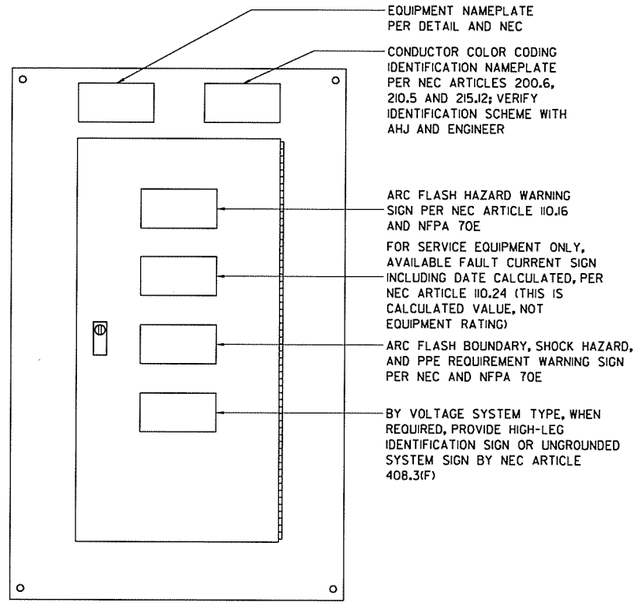
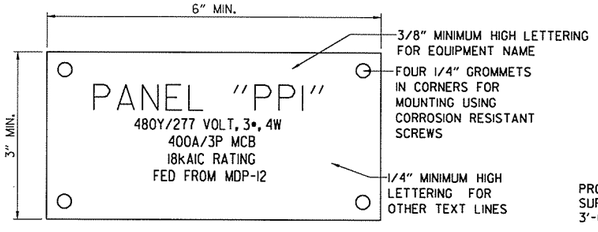
				① 07292-07295, 04926 & 04927		ELEC. DETAILS		54644



PANEL FRONT VIEW

GENERAL NOTES:

1. INSTALL ALL NAMEPLATES AND WARNING SIGNS IN ACCORDANCE WITH NEC AND NFPA 70E REQUIREMENTS.
2. INSTALL NAMEPLATES AND WARNING SIGNS ON ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, SWITCHES, CONTROL PANELS AND MOTOR CONTROL CENTERS.
3. EXTERIOR EQUIPMENT SHALL HAVE WEATHER-RESISTANT, NON-FADING NAMEPLATES AND SIGNAGE.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE AND SIGNAGE REQUIREMENTS.

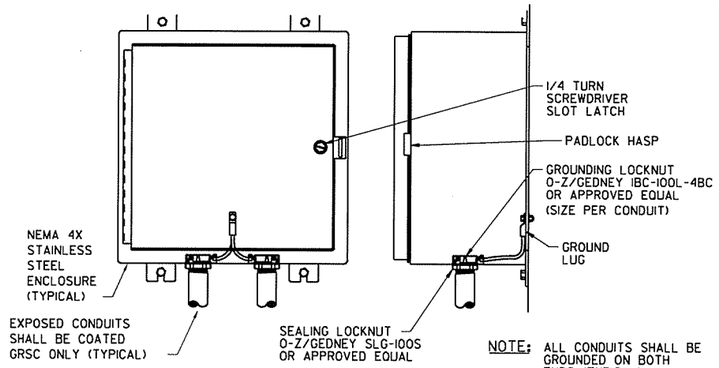


EQUIPMENT NAMEPLATE NOTES:

1. INSTALL 2-PLEX ACRYLIC, WHITE ON BLACK CORE, MULTIPLE LINES TEXT, CUSTOM ENGRAVED NAME PLATES.
2. MOUNT WITH STAINLESS STEEL SCREWS.
3. SEAL SCREW HOLES WITH SILICONE RUBBER.
4. NAMEPLATE INFORMATION SHALL INCLUDE:
   A. IDENTIFICATION NAME
   B. VOLTAGE SYSTEM
   C. AMPACITY RATING AND TYPE
   D. EQUIPMENT AIC RATING
   E. FEEDER DESCRIPTION

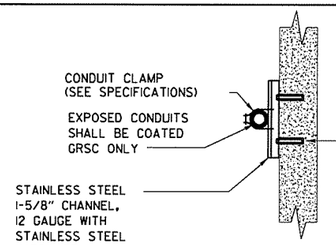
A ENGRAVED NAMEPLATE AND SIGNAGE DETAIL

SCALE: N.T.S.



B CONDUIT GROUNDING DETAIL

SCALE: N.T.S.

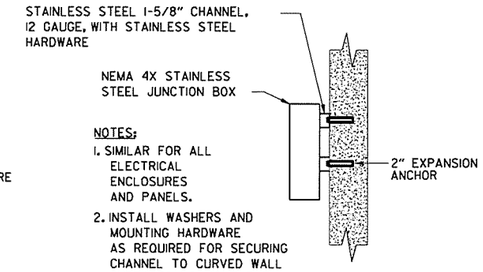


NOTES:

1. SINGLE CONDUIT SHOWN, SIMILAR FOR MULTIPLE CONDUITS.
2. INSTALL WASHERS AND MOUNTING HARDWARE AS REQUIRED FOR SECURING CHANNEL TO CURVED WALL SURFACES, NO MOVEMENT ALLOWED.

C EXPOSED CONDUIT SUPPORT DETAIL

SCALE: N.T.S.

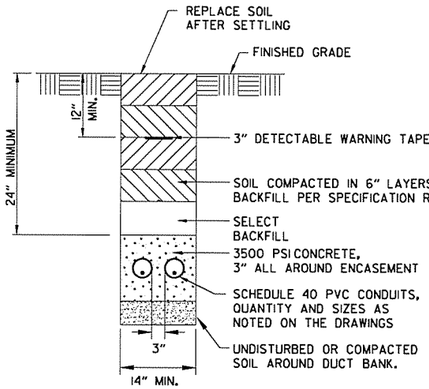


NOTES:

1. SIMILAR FOR ALL ELECTRICAL ENCLOSURES AND PANELS.
2. INSTALL WASHERS AND MOUNTING HARDWARE AS REQUIRED FOR SECURING CHANNEL TO CURVED WALL SURFACES, NO MOVEMENT ALLOWED.
3. SIMILAR FOR CEILING MOUNTING.

D EXPOSED JUNCTION BOX SUPPORT DETAIL

SCALE: N.T.S.

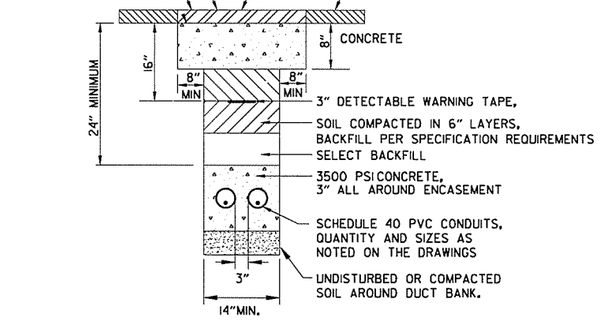


E ELECTRICAL CONCRETE ENCASED DUCT DETAIL

SCALE: N.T.S

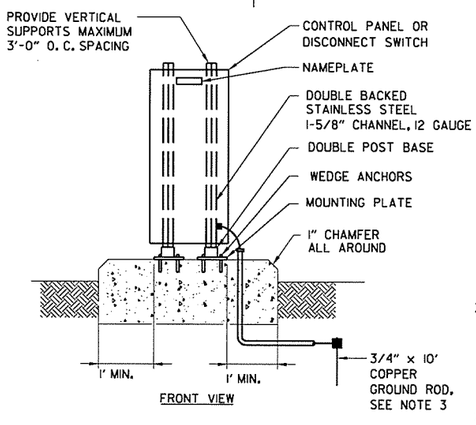
ELECTRICAL DUCT GENERAL NOTES:

1. CONTRACTOR SHALL STAKE THE DUCT INSTALLATION IN PLAN AND ELEVATION FOR NEW ELECTRICAL DUCTS TO AVOID EXISTING UTILITIES, STAKING PLAN SHALL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO WORK.
2. CONTRACTOR SHALL ADJUST THE DEPTH OF THE ELECTRICAL DUCTS AS REQUIRED TO MAINTAIN THE MINIMUM COVER REQUIREMENT INDICATED AND AVOID EXISTING UTILITIES.
3. SIMILAR CONSTRUCTION FOR OTHER DUCT SIZES.
4. OFFSETS AND BENDS OVER 10 DEGREES AND ELBOWS IN PVC CONDUIT RUNS SHALL BE PVC COATED GALVANIZED RIGID STEEL CONDUIT.
5. NO PVC SHALL EMERGE FROM THE GROUND OR CONCRETE SLAB OR ENCASEMENT, PVC SHALL CONVERT TO PVC COATED GALVANIZED RIGID STEEL CONDUIT PRIOR TO ITS EMERGENCE.
6. SPARE PVC COATED GALVANIZED RIGID STEEL CONDUITS SHALL STUB UP 6" ABOVE FINISHED GRADE OR CONCRETE PAD SURFACE AND BE CAPPED WATERTIGHT.
7. INSTALL DUCT SUPPORTS AT 5'-0" O.C. MAXIMUM SPACING (TYPICAL).
8. INSTALL CONDUITS AND CABLES AS NOTED ON DRAWINGS. INSTALL PULLWIRE IN ALL SPARE DUCTS AND CONDUITS.

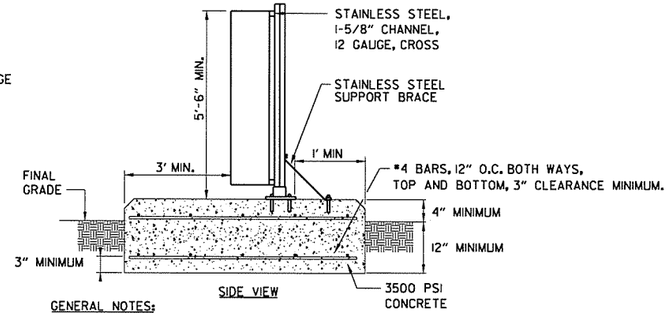


F ASPHALT REPAIR DUCT DETAIL

SCALE: N.T.S.



FRONT VIEW



SIDE VIEW

GENERAL NOTES:

1. ALL BOLTS, NUTS, WASHERS, ANCHORS, PLATES, AND OTHER MOUNTING STEMS SHALL BE CORRISION RESISTANT, STAINLESS STEEL.
2. UTILIZE 5/16" STAINLESS STEEL WEDGE ANCHORS AS REQUIRED.
3. BOND ELECTRICAL EQUIPMENT INCLUDING SUPPORT FRAME TO GROUND ROD USING (1•2) 3/4" CGRS CONDUIT AND EXOTHERMIC WELDS.

G TYPICAL EQUIPMENT RACK DETAIL

SCALE: N.T.S.

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 9236 — ERIC C. FARMER — 5/30/14

BRIDGE ENGINEER

SHEET 2 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_ELII.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54644

SRYancey 5/30/2014 2:27:54 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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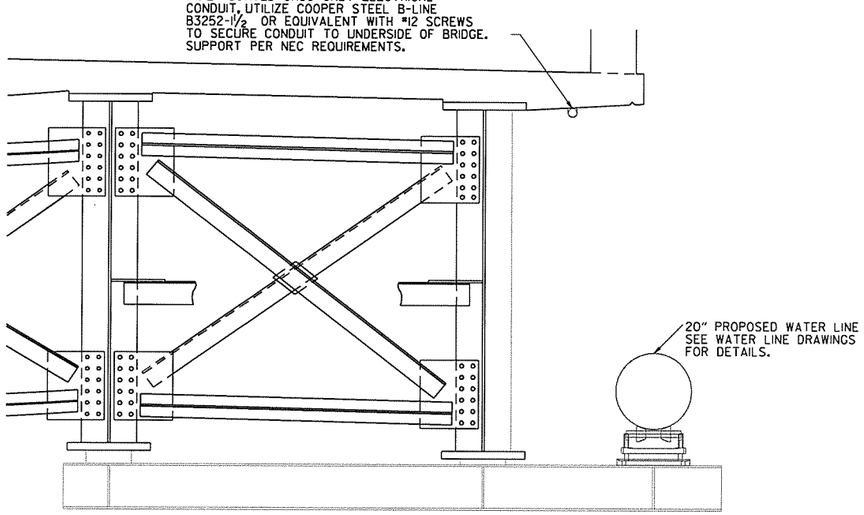
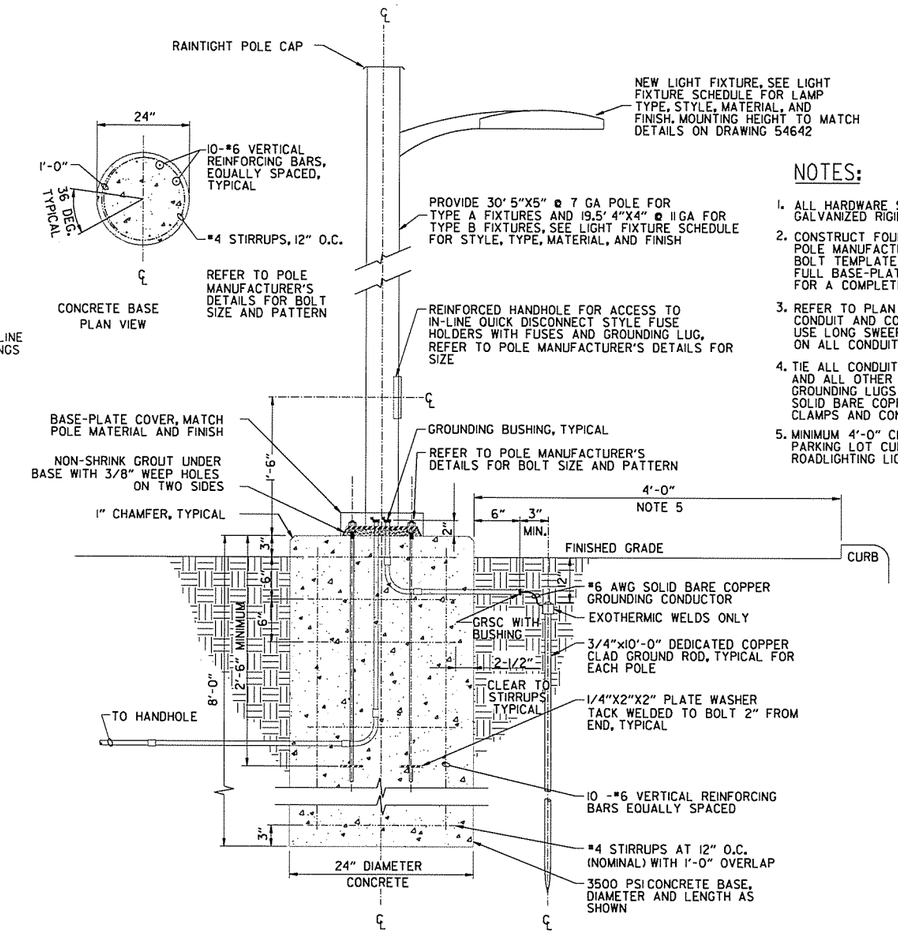
				JOB NO.		061275	421	505
				① 07292-07295, 04926 & 04927		ELEC. DETAILS		54645



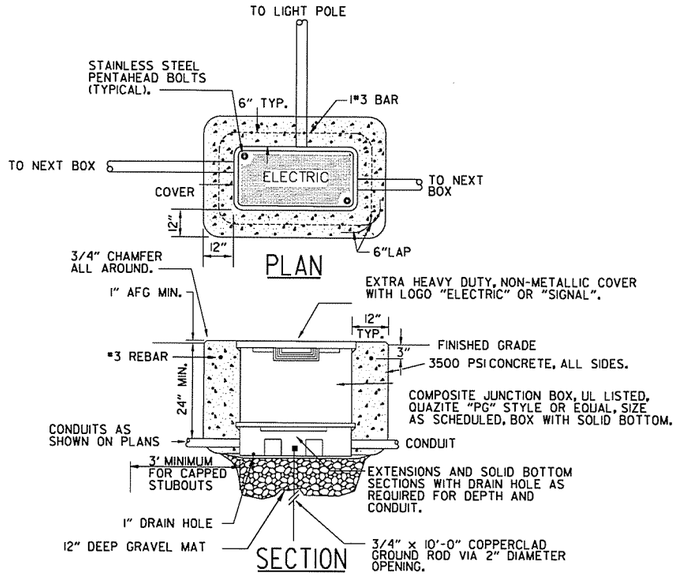
A CONDUIT SUPPORT DETAIL
SCALE: NONE



NOTES:

1. ALL HARDWARE SHALL BE CORROSION RESISTANT, GALVANIZED RIGID STEEL.
2. CONSTRUCT FOUNDATION IN ACCORDANCE WITH POLE MANUFACTURERS GUIDELINES, INSTALLING BOLT TEMPLATE LEVELING UNIT, ANCHOR BOLTS, FULL BASE-PLATE BOLT COVER, AND ACCESSORIES FOR A COMPLETE INSTALLATION.
3. REFER TO PLAN FOR GALVANIZED RIGID STEEL CONDUIT AND CONDUCTOR SIZES. USE LONG SWEEP 90 DEGREE ELBOWS ON ALL CONDUIT BENDS.
4. TIE ALL CONDUITS, POLE, EQUIPMENT GROUND AND ALL OTHER METAL EQUIPMENT AND GROUNDING LUGS TOGETHER USING #6 AWG SOLID BARE COPPER AND APPROVED GROUNDING CLAMPS AND CONNECT TO GROUND ROD SYSTEM.
5. MINIMUM 4'-0" CLEAR FROM BACK OF ROAD OR PARKING LOT CURB TO CLOSEST EDGE OF ROADLIGHTING LIGHT POLE BASE.

B INDEPENDENT LIGHT POLE FOUNDATION DETAIL
SCALE: NONE



NOTES:

1. UL LISTED PULLBOX AND EXTRA HEAVY-DUTY COVER SHALL BE DESIGNED FOR A TEST LOAD OF 33,750 LBS AND A DESIGN LOAD OF 22,500 LBS.
2. PROVIDE PULLBOX WITH SPARE 1-1/2"C STUBOUTS AS SHOWN ON PLANS, CAPPED WATERTIGHT.
3. PULLBOX INTERIOR DIMENSIONS SHALL BE 18"L x 11"W x 30"D.
4. PROVIDE MINIMUM 3' SLACK CABLE LOOP FOR EACH CABLE.
5. COLOR CODE, TAG AND IDENTIFY ALL CABLES IN UL LISTED PULLBOX.
6. EXACT LOCATION OF EACH UL LISTED PULLBOX SHALL BE APPROVED BY THE OWNER AND ENGINEER.

C HAND HOLE DETAILS
SCALE: NONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 3 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL12.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54645

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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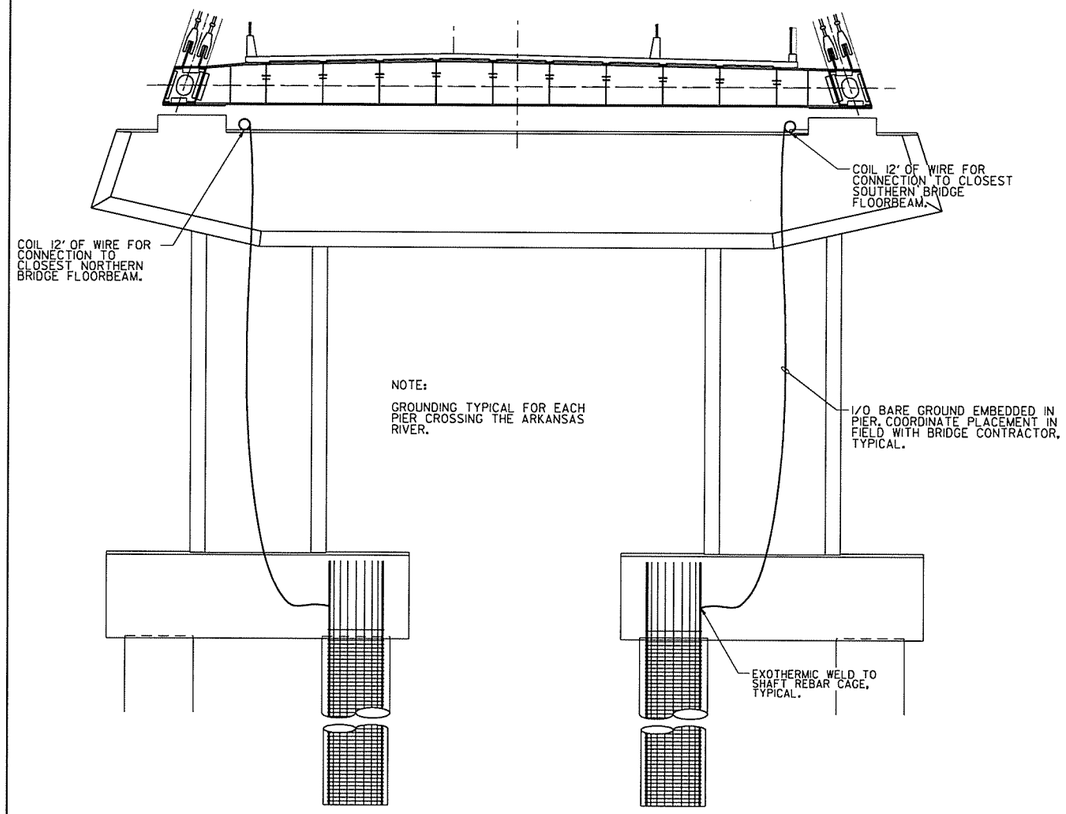
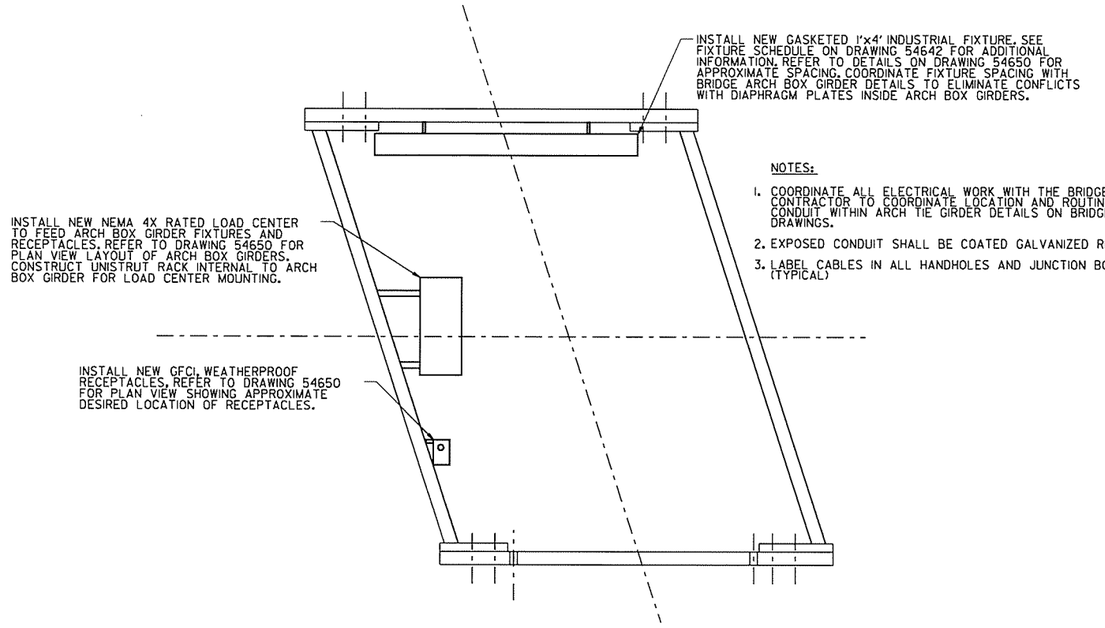
				JOB NO.		061275	422	505
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54646



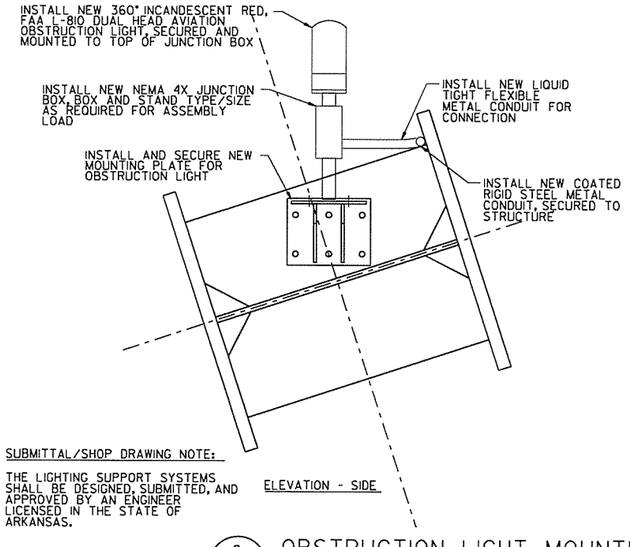
A PIER GROUNDING DETAIL
SCALE: NONE



NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR TO COORDINATE LOCATION AND ROUTING OF CONDUIT WITHIN ARCH TIE GIRDER DETAILS ON BRIDGE DRAWINGS.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES. (TYPICAL)

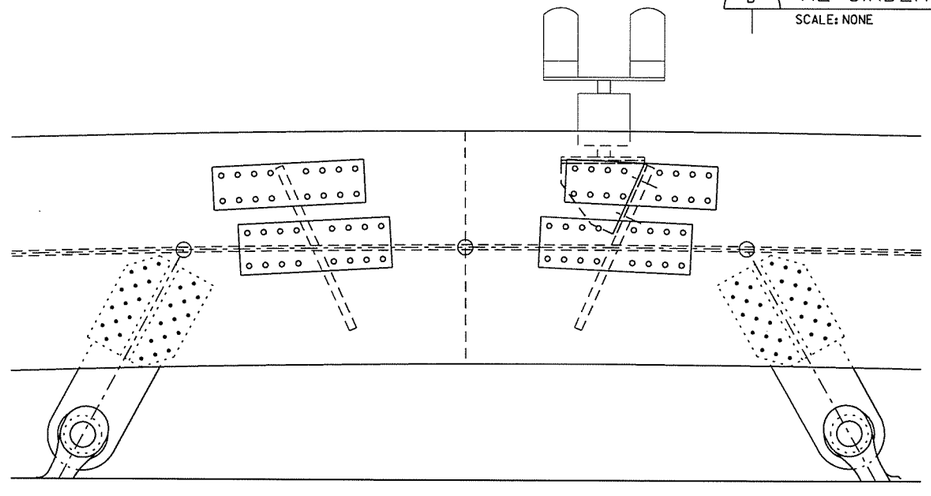
B TIE GIRDER TYPICAL ELECTRICAL ELEVATION
SCALE: NONE



SUBMITTAL/SHOP DRAWING NOTE:

1. THE LIGHTING SUPPORT SYSTEMS SHALL BE DESIGNED, SUBMITTED, AND APPROVED BY AN ENGINEER LICENSED IN THE STATE OF ARKANSAS.

ELEVATION - SIDE



ELEVATION - FRONT

C OBSTRUCTION LIGHT MOUNTING DETAIL
SCALE: NONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 4 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL13.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54646

SRYancey 5/30/2014 2:27:56 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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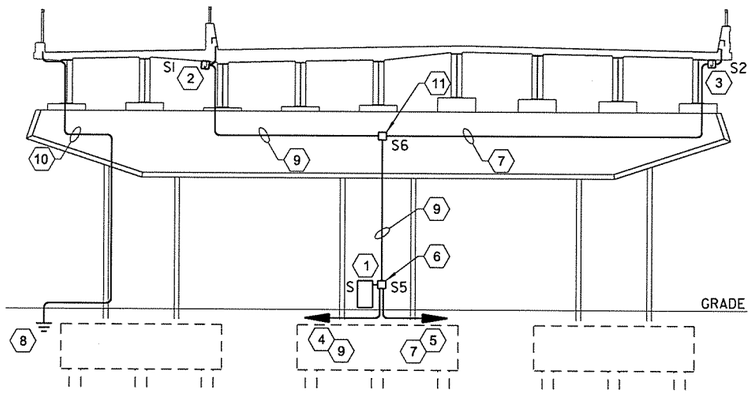
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54647



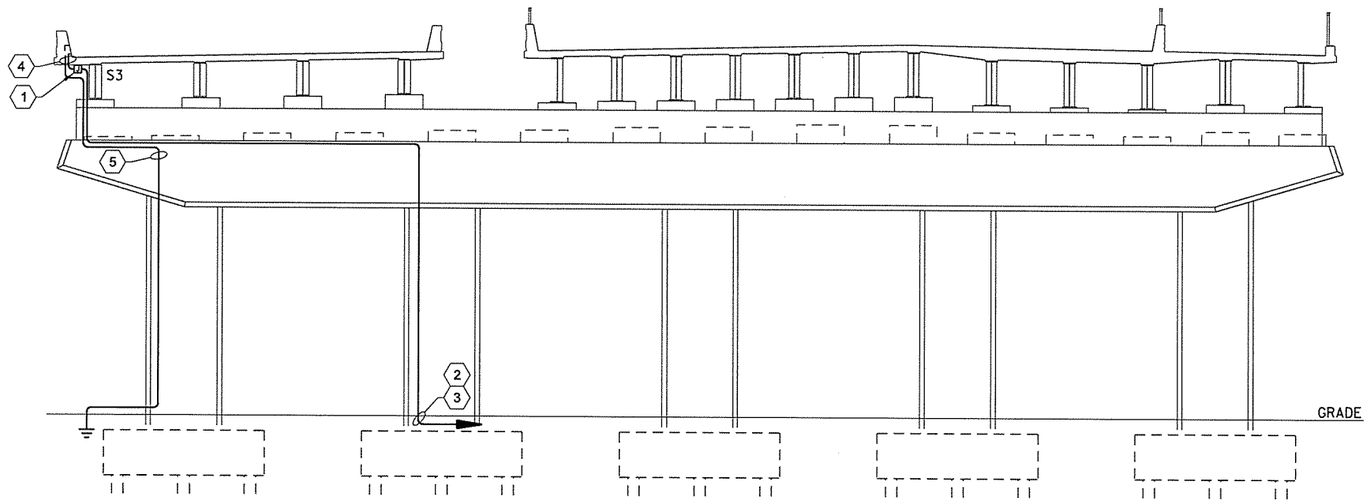
A BROADWAY BRIDGE - BENT NO. 2 ELECTRICAL ELEVATION DETAIL (LOOKING SOUTH)
SCALE: NONE

KEYED NOTES FOR BENT NO. 2:

1. ENCLOSURE "S". SEE ONE-LINE DIAGRAM C ON DRAWING 54651 AND PANEL SCHEDULE ON DRAWING 54653 FOR ADDITIONAL INFORMATION. REFER TO DETAILS ON DRAWING 54644 FOR EQUIPMENT MOUNTING.
2. JUNCTION BOX "S1". SEE DRAWING 54635 FOR PLAN VIEW LOCATION.
3. JUNCTION BOX "S2". SEE DRAWING 54635 FOR PLAN VIEW LOCATION.
4. CIRCUIT S-1/3 TO SOUTH PEDESTRIAN RAMP LIGHTS. REFER TO DRAWING 54639 FOR PLAN VIEW SHOWING LIGHT AND JUNCTION BOX LOCATIONS. REFER TO DETAIL B DRAWING 54648 FOR ELEVATION DETAIL OF PEDESTRIAN BENT.
5. CIRCUIT S-1/3 TO BROADWAY BENT NO.3. SEE DETAIL B THIS DRAWING FOR MORE INFORMATION. REFER TO DRAWINGS 54635 AND 54638 FOR PLAN VIEW SHOWING LIGHT AND JUNCTION BOX LOCATIONS.
6. JUNCTION BOX "S5" FOR SPLICING. 12"x12"x6" MINIMUM SIZE, NEMA 4X RATED.
7. INSTALL NEW 2#10, 1#10 EG, 1-1/2" C.
8. INSTALL NEW 3/4"x10' COPPER CLAD GROUND ROD.
9. INSTALL NEW 2#8, 1#8EG, 1-1/2" C.
10. INSTALL NEW #4/0, 1"C. TO GROUND ROD. CONNECT TO HAND RAIL GROUND WIRE IN PARAPET. REFER TO DETAIL A ON DRAWING 54643 FOR ADDITIONAL INFORMATION.
11. JUNCTION BOX "S6" FOR SPLICING. 12"x12"x6" MINIMUM SIZE, NEMA 4X RATED.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED WITHIN CONCRETE SHALL BE GALVANIZED RIGID STEEL. CONDUIT INSTALLED BELOW GRADE SHALL BE NON-ENCASED SCHEDULE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACE ONLY.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES.
4. REFER TO DETAILS ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION FOR THE ELECTRICAL INSTALLATION.



B BROADWAY BRIDGE - BENT NO. 3 ELECTRICAL ELEVATION DETAIL (LOOKING NORTH)
SCALE: NONE

KEYED NOTES FOR BENT NO. 3:

1. JUNCTION BOX "S3". SEE DRAWING 54635 FOR PLAN VIEW LOCATION.
2. CIRCUIT S-1/3 TO ENCLOSURE "S" . SEE DETAIL A THIS DRAWING, ONE-LINE DIAGRAM C ON DRAWING 54651, AND PANEL SCHEDULE ON DRAWING 54653 FOR ADDITIONAL INFORMATION.
3. INSTALL NEW 2#10, 1#10 EG, 1-1/2"C.
4. INSTALL NEW CIRCUITS. SEE DRAWING 54635 AND 54638. TWO (2) CONDUITS REQUIRED PER PARAPET WALL INSTALLATION.
5. INSTALL NEW #4/0, 1"C. TO GROUND ROD. CONNECT TO HAND RAIL GROUND WIRE IN PARAPET. REFER TO DETAIL A ON DRAWING 54643 FOR ADDITIONAL INFORMATION.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9236 ERIC C. FARMER 5/30/14
BRIDGE ENGINEER

SHEET 5 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_ELI4.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54647

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WORKSPACE: AHTD Bridge
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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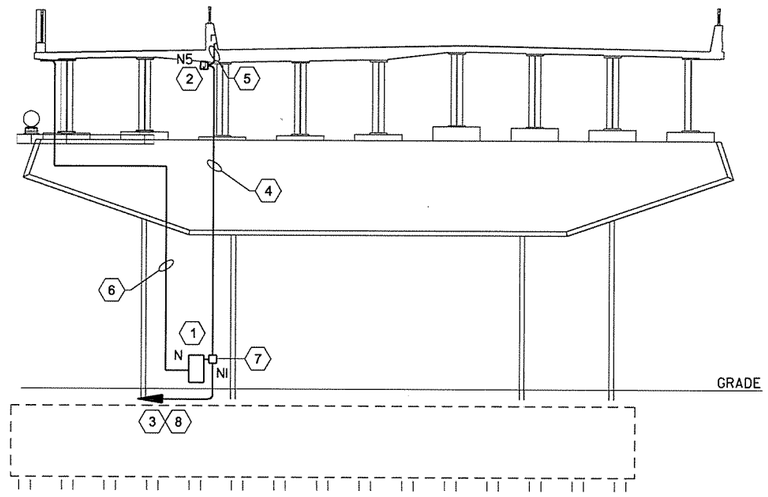
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54648



A BROADWAY BRIDGE - BENT NO. 7 ELECTRICAL ELEVATION DETAIL (LOOKING SOUTH)
SCALE: NONE

KEYED NOTES FOR BENT NO. 7:

(1) ENCLOSURE "N". SEE ONE-LINE DIAGRAM B ON DRAWING 54651 AND PANEL SCHEDULE ON DRAWING 54653 FOR ADDITIONAL INFORMATION. REFER TO DETAILS ON DRAWING 54644 FOR EQUIPMENT MOUNTING.

(2) JUNCTION BOX "N5". SEE DRAWING 54637 FOR PLAN VIEW LOCATION.

(3) CIRCUITS N-2/4 AND N-6/8 TO PEDESTRIAN WALKWAY LIGHTS. REFER TO DRAWING 54640 FOR PLAN VIEW SHOWING LIGHT AND JUNCTION BOX LOCATIONS. REFER TO DETAIL B THIS DRAWING FOR ELEVATION DETAIL OF PEDESTRIAN BENT.

(4) INSTALL NEW 2#8, 1#8 EG, 1-1/2" C.

(5) INSTALL NEW 1-1/2" C, SEE SHEET 54637 FOR CIRCUITING.

(6) INSTALL NEW 3#6, 1#6 EG, 1-1/2" C TO LOAD CENTER IN TIE GIRDER. REFER TO DRAWING 54645 FOR ATTACHMENT TO BRIDGE, REFER TO BRIDGE PLANS FOR ROUTING IN FLOOR BEAM AND TIE GIRDERS.

(7) JUNCTION BOX "N1" FOR SPLICING, 12"x12"x6" MINIMUM SIZE, NEMA 4X RATED.

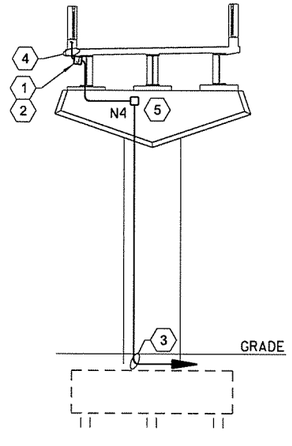
(8) INSTALL NEW 2#8, 2#8, 1#8 EG, 1-1/2" C.

GENERAL NOTES:

1. COORDINATE ALL ELECTRICAL WORK WITH THE BRIDGE LAYOUT. CONTRACTOR SHALL COORDINATE LOCATION AND ROUTING OF CONDUIT WITH BRIDGE ENGINEER SUCH THAT THERE ARE MINIMUM PENETRATIONS TO THE BRIDGE STRUCTURE.
2. EXPOSED CONDUIT SHALL BE COATED GALVANIZED RIGID STEEL. CONDUIT EMBEDDED WITHIN CONCRETE SHALL BE GALVANIZED RIGID STEEL. CONDUIT INSTALLED BELOW GRADE SHALL BE NON-ENCASED SCHEDULE 40 PVC, CONCRETE ENCASED UNDER PAVED SURFACE ONLY.
3. LABEL CABLES IN ALL HANDHOLES AND JUNCTION BOXES.
4. REFER TO DETAILS ON DRAWINGS 54643, 54644, AND 54645 FOR ADDITIONAL INFORMATION FOR THE ELECTRICAL INSTALLATION.

CONSTRUCTION NOTES:

1. NORTHSIDE PEDESTRIAN RAMP INDICATED IN THIS DETAIL.
2. SIMILAR REQUIREMENTS FOR SOUTH PEDESTRIAN RAMP. SEE DRAWING 54639 FOR CIRCUIT DETAILS.



B BROADWAY BRIDGE - PEDESTRIAN BENT (TYPICAL) ELECTRICAL ELEVATION DETAIL
SCALE: NONE

KEYED NOTES FOR PEDESTRIAN BENT:

(1) JUNCTION BOX FOR PEDESTRIAN LIGHT POLE. REFER TO POLE DETAIL C ON DRAWING 54642. SEE DRAWINGS 54639 (SOUTH) AND 54640 (NORTH) FOR PLAN VIEW SHOWING LOCATIONS OF PEDESTRIAN BRIDGE LIGHTS

(2) INSTALL NEW 2#10, 2#10, 1#10 EG, 1-1/2"C. BETWEEN JUNCTION BOXES AT EACH LIGHT POLE LOCATION UNLESS OTHERWISE NOTED.

(3) INSTALL NEW 2#8, 2#8, 1#8 EG, 1-1/2"C. BACK TO PANEL OR TAP BOX FEEDING PEDESTRIAN LIGHTS. SEE DRAWINGS 54639 (SOUTH), 54640 (NORTH), 54641, 54647, AND 54651 FOR ADDITIONAL INFORMATION.

(4) INSTALL NEW CIRCUITS & CONDUITS FROM JUNCTION BOX TO POLE BASES.

(5) JUNCTION BOX "N4"/"S4". SEE DRAWING 54639 (SOUTH) AND 54640 (NORTH) FOR PLAN VIEW LOCATION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

SHEET 6 OF 6
ELECTRICAL INSTALLATION AND MOUNTING DETAILS
ARKANSAS RIVER STR. & APPRS
PULASKI COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL15.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54648

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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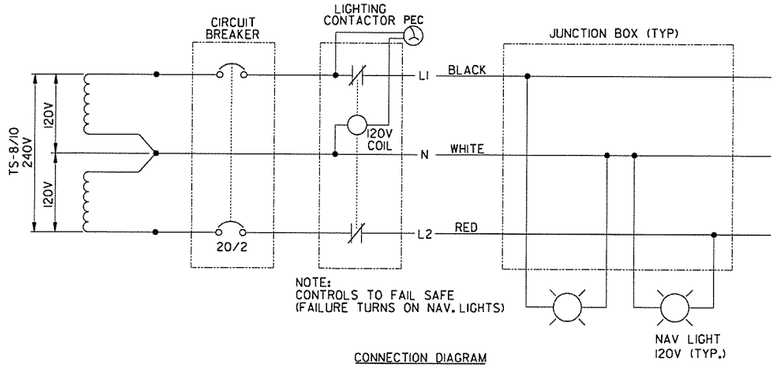
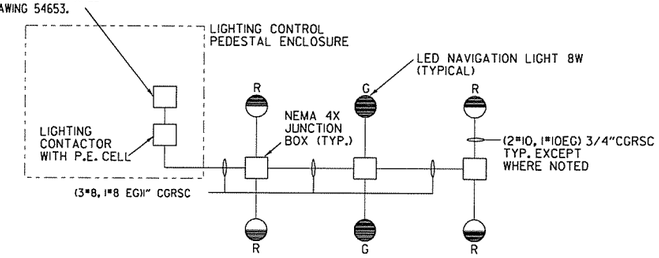


CONNECTION DIAGRAM

20A/2P CIRCUIT BREAKER LOCATED IN PANEL TS. REFER TO ONE LINE DIAGRAM DETAIL A ON DRAWING 54651 AND PANEL SCHEDULE TS ON DRAWING 54653.



WIRING DIAGRAM

A NAVIGATIONAL LIGHTING RISER DIAGRAM

SCALE: NONE

NOTES:

1. ALL CONDUCTORS SHALL BE RUN IN PVC COATED GALVANIZED RIGID STEEL CONDUITS UNLESS OTHERWISE NOTED, AND EXCEPT WHERE FLEXIBLE, LIQUID TIGHT CONDUIT IS USED.

2. ALL JUNCTION BOXES SHALL BE NEMA 4X RATED WITH WEATHER PROOF COVERS.

3. ALL CONDUIT RUNS AND ALL STRUCTURAL STEEL SHALL BE MADE ELECTRICALLY CONTINUOUS BY APPROVED GROUNDING.

4. EXPANSION FITTINGS SHALL BE WEATHER PROOF O.Z. ELECTRICAL CO. TYPE "EXE" (OR APPROVED EQUAL) WITH EXTERNAL BONDING JUMPER.

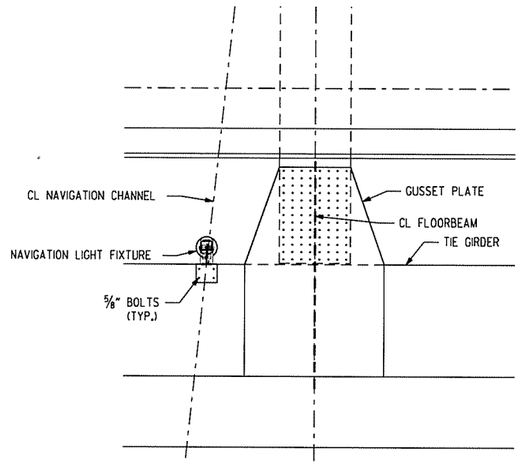
5. FOR ADDTIONAL INFORMATION REFER TO SP JOB 061251, "NAVIGATION LIGHTING SYSTEM".

6. THE NAVIGATION LIGHTING SYSTEM SHALL BE B & B ROADWAY OR APPROVED EQUAL.

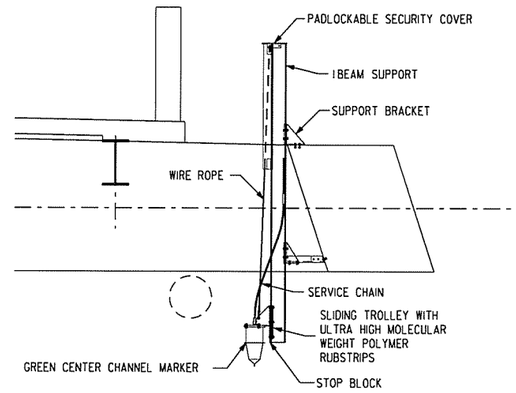
7. THE USE OF THE MANUFACTURER'S NAME IS INTENDED TO INDICATE ONLY THE TYPE AND QUALITY OF PRODUCT TO BE FURNISHED. OTHER MANUFACTURER'S PRODUCTS PROVIDING EQUAL STANDARDS OF PERFORMANCE AND QUALITY WILL BE CONSIDERED ACCEPTABLE SUBJECT TO THE APPROVAL OF THE ENGINEER.

8. ATTACH RETRO-REFLECTIVE MATERIAL IN SHOP. SEE SP JOB 061251, "NAVIGATION LIGHTING SYSTEM".

9. CONTRACTOR SHALL PROVIDE SHOW DRAWINGS DETAILING MOUNTING PLATES, SLIDING TROLLEY AND CONNECTION DESIGNED BY AN ENGINEER LICENSED IN THE STATE OF ARKANSAS.



PLAN VIEW



ELEVATION VIEW (FRONT)

NAVIGATIONAL LIGHT MOUNTING GENERAL NOTES & MATERIALS:

SPECIAL COORDINATION BETWEEN THE CONTRACTOR, ARCH FABRICATOR, AND NAVIGATIONAL LIGHT MOUNTING SUPPORTS FABRICATOR MUST BE CONDUCTED FOR LOCATION AND CONNECTIONS OF THE NAVIGATIONAL LIGHT MOUNTING SUPPORTS PRIOR TO FABRICATION.

LOCATION OF NAVIGATIONAL LIGHT MOUNTING SUPPORTS SHALL BE PLACED TO MISS ANY TIE GIRDER SPLICE LOCATIONS OR BRIDGE MOUNTED WATERLINE SUPPORTS, SEE DWG. NOS. 54414-54425 & 54624-54633 FOR DETAILS.

ELEVATION OF SLIDE-TYPE CHANNEL MARKER SHALL BE BELOW THE BRIDGE MOUNTED WATERLINE AND ALL ITS SUPPORTS, SEE DWG. NOS. 54624-54633 FOR DETAILS.

SHOP DRAWINGS SHOWING DETAILS OF THE NAVIGATIONAL LIGHT MOUNTING SUPPORTS, INCLUDING DESIGN CALCULATIONS, SHALL BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.

STRUCTURAL STEEL FOR SUPPORT MEMBERS, TROLLEY SYSTEM, STOP BAR, SECURITY COVER, ACCESSORIES AND CONNECTIONS SHALL BE AASHTO M270, GR. 36.

ALL STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SUBSECTION 807.75. SEE "PROJECT GENERAL NOTES" ON DWG. NO. 54292 FOR PAINT COLOR AND FEDERAL STANDARD 595C COLOR CHIP NO. UNLESS NOTED OTHERWISE.

BOLTED CONNECTIONS SHALL BE MADE WITH AASHTO M164 BOLTS. ALL NUTS SHALL BE LOCK NUTS.

ALL WELDING SHALL CONFORM TO SUBSECTION 807.26. WELDING FILLER MATERIAL SHALL BE MATCHING.

THREADS ON BOLTS, SCREWS AND NUTS SHALL CONFORM TO AMERICAN STANDARD COARSE SERIES, CLASS 2 FIT, ANSI SPECIFICATION B1.1.

WASHERS SHALL BE HIGH STRENGTH STEEL CONFORMING TO AASHTO M293.

SECURITY COVER SHALL INCLUDE A TOP COVER PLATE WITH A HINGE STYLE CONNECTION TO ALLOW ACCESS. THE COVER PLATE SHALL BE SECURED WITH A PADLOCK INCLUDING 2 KEYS PER INSTALLATION, ALL KEYED ALIKE.

A SLIDING TROLLEY SYSTEM WITH A WIRE ROPE AND RUB STRIPS MUST BE DESIGNED TO ALLOW ACCESS TO NAVIGATIONAL LIGHT. A WELDED STOP BAR MUST BE INCLUDED BELOW SLIDING TROLLEY SYSTEM.

POLYMER RUB STRIPS SHALL BE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (U.H.M.W.).

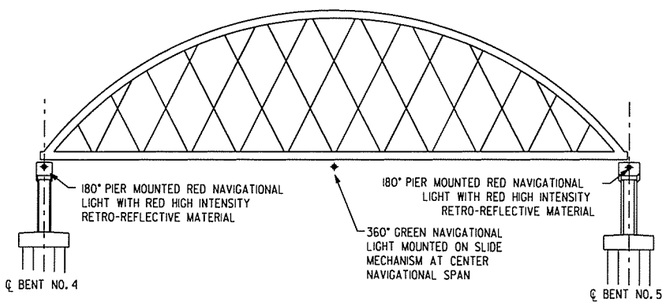
WIRE ROPE SHALL BE A FLEXIBLE STAINLESS STEEL ROPE WITH A NYLON COATING AND SWAGED EYES AT EACH END.

MISCELLANEOUS HARDWARE SHALL BE NON-CORROSIVE MATERIALS.

THE SUPPLIER OF THE NAVIGATIONAL LIGHT ASSEMBLIES SHALL OFFER THE CONTRACTOR THE OPTION OF INSTALLATION SUPERVISION. THE COST OF THIS SUPERVISION SHALL BE INCLUDED IN OTHER ITEMS OF WORK, IF UTILIZED.

NOTES:

THE CONTRACTOR SHALL COOPERATE WITH THE ENGINEER AND THE LOCAL UTILITY COMPANY TO KEEP THE EXISTING NAVIGATIONAL LIGHTING SYSTEM IN SERVICE WHILE DOING THE WORK SPECIFIED BY THIS CONTRACT. THE CONTRACTOR SHALL INSTALL A TEMPORARY SOLAR PANEL FOR EACH PIER PROTECTION CELL NAVIGATIONAL LIGHT. THE SOLAR PANEL SHALL BE RATED TO PROVIDE 24 HOUR LIGHT OPERATION, AND BE CONTAINED IN A WEATHERPROOF ENCLOSURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND TESTING OF THE SOLAR PANEL PRIOR TO DISCONNECTION OF EXISTING POWER, TO PROVIDE LIGHTING FOR NAVIGATIONAL TRAFFIC DURING THE HOURS OF DARKNESS. IF THE EXISTING LIGHTING CANNON BE KEPT IN SERVICE, THE CONTRACTOR SHALL PROVIDE TEMPORARY NAVIGATIONAL LIGHTING AS NEEDED, IN A MANNER APPROVED BY THE ENGINEER OR THE U.S. COAST GUARD. ALL COSTS ASSOCIATED WITH THIS TEMPORARY LIGHTING SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

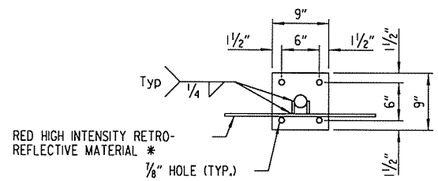


B NAVIGATIONAL LIGHT ELEVATION

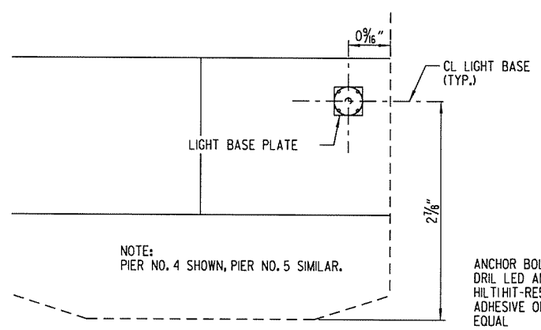
SCALE: NONE

C NAVIGATIONAL LIGHT MOUNTING DETAIL (CENTER CHANNEL)

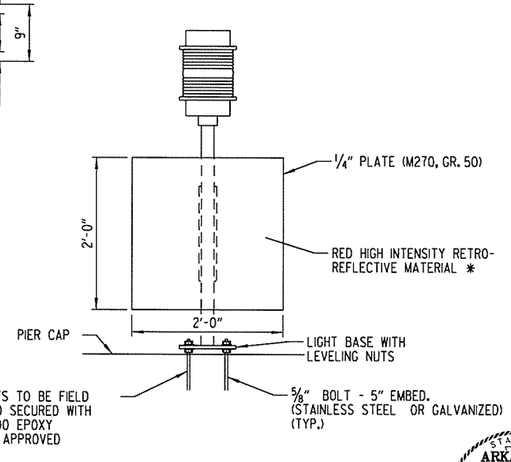
SCALE: NONE



* REFLECTIVE PANEL TO BE MOUNTED TO UPSTREAM LIGHT OF PIER NO. 4 AND DOWNSTREAM LIGHT OF PIER NO. 5.



PLAN VIEW



ELEVATION VIEW (FRONT)

D NAVIGATIONAL LIGHT MOUNTING DETAIL (CHANNEL MARGIN)

SCALE: NONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

NAVIGATION LIGHTING DETAILS
ARKANSAS RIVER STR. & APPRS.
PULASKI COUNTY

ROUTE SEC.

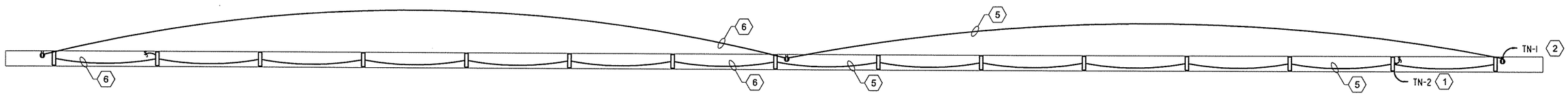
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

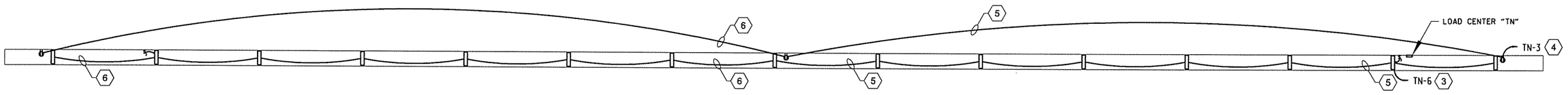
DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL16.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54649

SRTarcley 5/30/2014 2:27:58 PM
WORKSPACE: AHTD Bridge
L:\ROW\DOT080 - Broadway Bridge over the Arkansas River\Drawings\B061275_EL16.dgn
REVISED DATE:

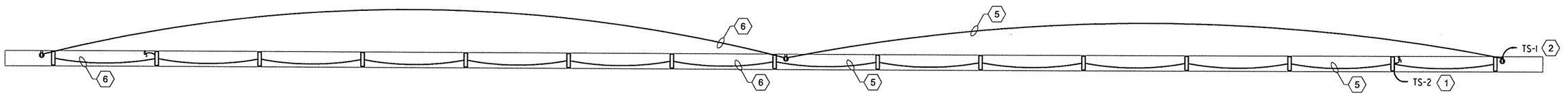
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	426	505
				① 07292-07295, 04926 & 04927		ELEC. DETAILS		54650



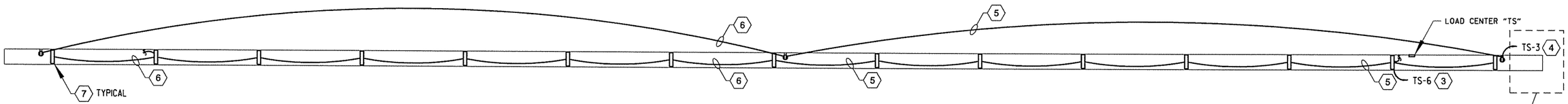
A NORTH ARCH WEST TIE GIRDER
SCALE: 1" = 15'



B NORTH ARCH EAST TIE GIRDER
SCALE: 1" = 15'



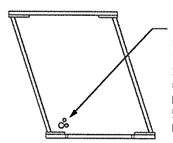
C SOUTH ARCH WEST TIE GIRDER
SCALE: 1" = 15'



D SOUTH ARCH EAST TIE GIRDER
SCALE: 1" = 15'

KEYED NOTES

1. 2"8, 1"8 EG, 3/4"C FOR WESTERN LIGHTS.
2. 2"8, 1"8 EG, 3/4"C FOR WESTERN RECEPTACLES.
3. 2"8, 1"8 EG, 3/4"C FOR EASTERN LIGHTS.
4. 2"8, 1"8 EG, 3/4"C FOR EASTERN RECEPTACLES.
5. 2"8, 1"8 EG, 3/4"C
6. 2"10, 1"10 EG, 3/4"C
7. FIXTURE TYPE "C". REFER TO FIXTURE SCHEDULE ON DRAWING 54642 AND TIE GIRDER ELEVATION DETAIL B ON DRAWING 54646 FOR ADDITIONAL INFORMATION.



TIE GIRDER ACCESS PENETRATIONS, INSTALL RUBBER GROMMET AROUND CONDUIT TO PASS THROUGH TO SEAL PENETRATION. TOTAL OF 3 ACCESS HOLES, 2x1-1/2" FOR 3/4" CONDUIT AND 2-1/2" FOR 1-1/2" CONDUIT. TYPICAL FOR TIE GIRDER ENDS AND INTERIOR STRUCTUAL PLATES. REFER TO DRAWINGS 54636 AND THIS DRAWING FOR ADDITIONAL INFORMATION ON ROUTING CONDUIT.

E TIE GIRDER ACCESS HOLES
SCALE: NONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

ELECTRICAL PLANS FOR ARCH TIE GIRDERS
ARKANSAS RIVER STR. & APPRS.
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL17.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: 1" = 15'
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54650

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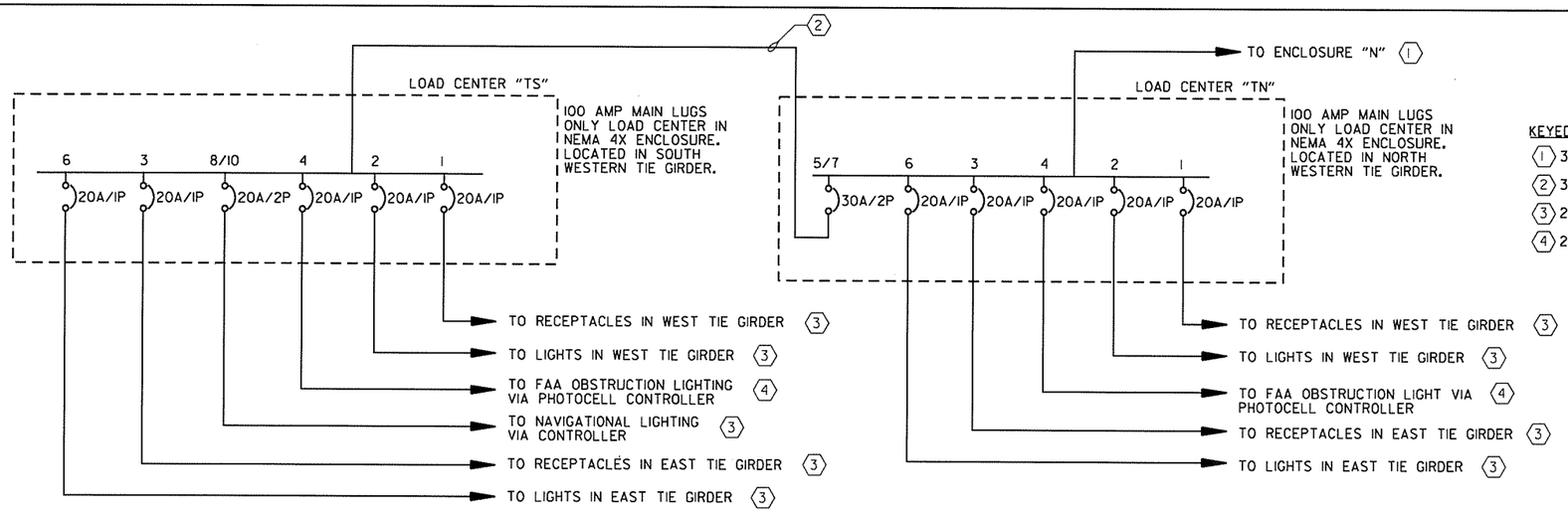
WORKSPACE: AHTD Bridge
L:\ZDRIVE\MOTOBO - Broadway Bridge over the Arkansas River\Drawings\B061275_EL17.dgn
REVISED DATE:

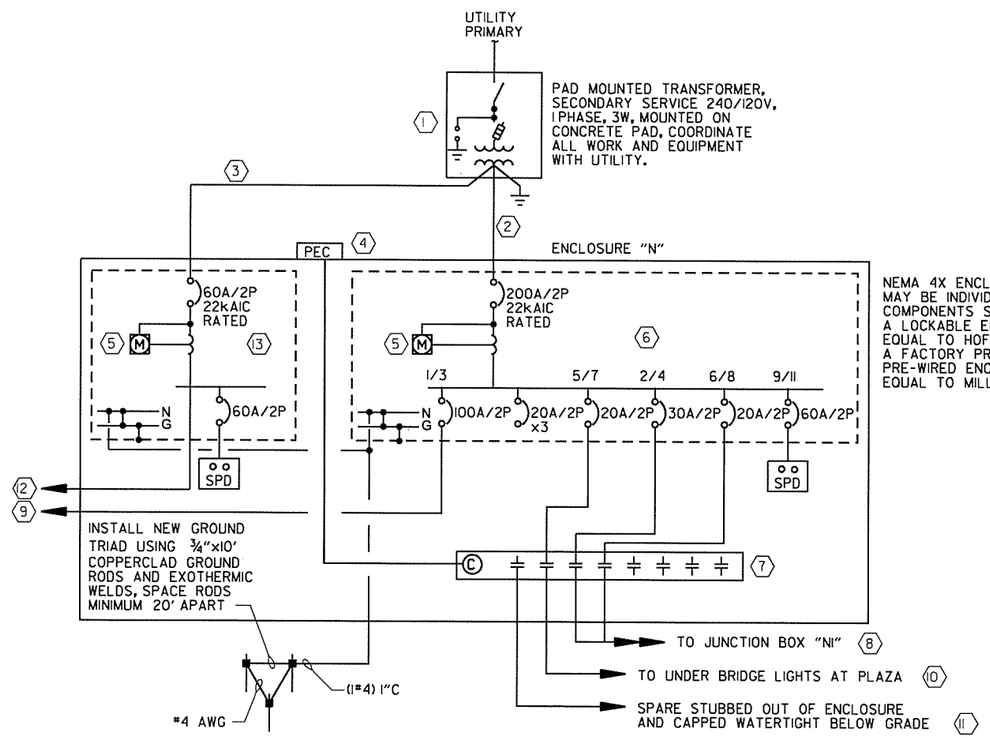
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	427	505
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54651



A ONE LINE DIAGRAM FOR TIE GIRDERS UNDER BRIDGE
SCALE: NONE

KEYED NOTES FOR TIE GIRDER ONE LINE:

(1) 3*2, 1*2 EG, 1-1/2" C
(2) 3*2, 1*2 EG, 1-1/2" C
(3) 2*8, 1*8 EG, 3/4" C
(4) 2*10, 1*10 EG, 3/4" C



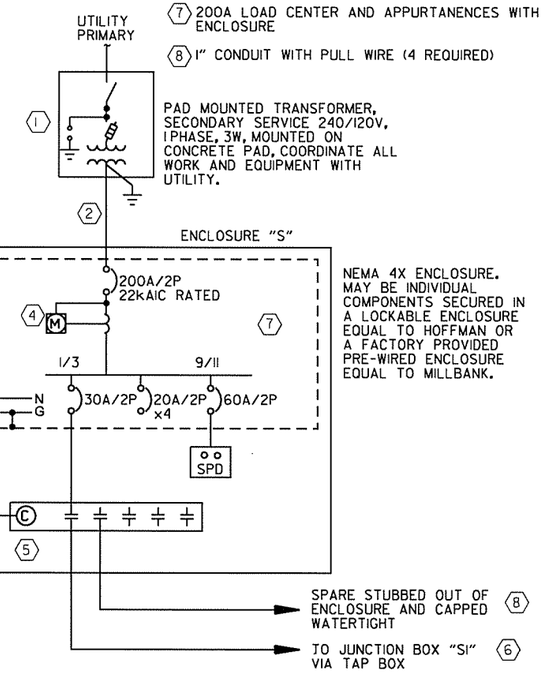
B ONE LINE DIAGRAM FOR NORTH SIDE OF BRIDGE
SCALE: NONE

KEYED NOTES FOR NORTH ONE LINE:

(1) UTILITY TRANSFORMER BY ENTERGY
(2) 3*3/0, 3"C
(3) 3*2, 1"C
(4) WEATHERPROOF PHOTOCELL FOR LIGHTING CONTROL
(5) ENTERGY APPROVED ELECTRIC METER SOCKET
(6) 200A LOAD CENTER AND APPURTENANCES WITH ENCLOSURE
(7) SIXTEEN POLE LIGHTING CONTACTOR
(8) 2*8, 2*8, 1*8 EG, 1-1/2" C TO POLE LIGHTS
(9) 3*3, 1*8 EG, 1-1/2" C TO EXISTING PANEL SERVING RIVER TRAIL
(10) 2*10, 1*10 EG, 1" C TO PLAZA LIGHTS
(11) 1-1/2" CONDUIT WITH PULL WIRE (3 REQUIRED)
(12) 3*2, 1*2 EG, 1-1/2" C TO LOAD CENTER "TN" IN BRIDGE
(13) 60A LOAD CENTER AND APPURTENANCES WITH ENCLOSURE

KEYED NOTES FOR SOUTH ONE LINE:

(1) UTILITY TRANSFORMER BY ENTERGY
(2) 3*3/0, 3"C
(3) WEATHERPROOF PHOTOCELL FOR LIGHTING CONTROL
(4) ENTERGY APPROVED ELECTRIC METER SOCKET
(5) TEN POLE LIGHTING CONTACTOR
(6) 2*8, 1*8 EG, 1 1/2" C
(7) 200A LOAD CENTER AND APPURTANENCES WITH ENCLOSURE
(8) 1" CONDUIT WITH PULL WIRE (4 REQUIRED)



C ONE LINE DIAGRAM FOR SOUTH SIDE OF BRIDGE
SCALE: NONE

SRYoncey 5/30/2014 2:27:59 PM
WORKSPACE: AHTD Bridge
L:\2013\061080 - Broadway Bridge over the Arkansas River\Drawings\B061275_EL18.dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C FARMER
5/30/14
BRIDGE ENGINEER

ELECTRICAL ONE-LINE DIAGRAMS
ARKANSAS RIVER STR. & APPRS.
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL18.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54651

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	428	505
				(1) 07292-07295, 04926 & 04927		ELEC. DETAILS		54652

VOLTAGE DROP CALCULATIONS NORTH LITTLE ROCK

Panel ID	Location Description	# of Sets	Wire Size	One-Way Length (ft)	Line Current (Amps)	Voltage (Line-to-Line)	Phase	Power Factor (100% or 85%)	Wire Type	Conduit Type	Impedance (Ω /1000 ft)	Voltage Drop (Volts)	%VD
1	PANEL N TO JBOX N1	1	8	100	21	240	1	100%	Copper	GRSC	0.78	3.28	1.37%
2	JBOX N1 TO JBOX N2	1	8	610	6	240	1	100%	Copper	GRSC	0.78	5.47	2.28%
3	JBOX N2 TO JBOX N3	1	12	70	2	240	1	100%	Copper	GRSC	2	0.61	0.25%
4	JBOX N1 TO BRIDGE CENTER	1	8	620	7	240	1	100%	Copper	GRSC	0.78	6.35	2.65%
5	PANEL N TO JBOX N4	1	8	150	3	240	1	100%	Copper	GRSC	0.78	0.72	0.30%
6	JBOX N4 TO NLR RIVER TRAIL	1	10	1800	1	240	1	100%	Copper	GRSC	1.2	6.03	2.51%
7	JBOX N2 TO BROADWAY	1	12	190	2	240	1	100%	Copper	GRSC	2	1.87	0.78%
8	JBOX N3 TO BROADWAY	1	12	150	1	240	1	100%	Copper	GRSC	2	0.65	0.27%
9	JBOX N3 TO SOUTH END	1	12	115	1	240	1	100%	Copper	GRSC	2	0.50	0.21%
Panel ID	TOTALS												
N-5/7	Plaza Lighting under bridge	1	10	650	3	240	1	100%	Copper	GRSC	1.2	5.03	2.10%
N-2/4	Total to Bridge Center (1+4)											9.63	4.01%
N-2/4	Total To Broadway (East side) (1+2+3+8)											10.00	3.85%
N-6/8	Total to Riverfront (5+6)											6.75	2.81%
N-2/4	Total To Broadway (West side) (1+2+7)											7.34	4.42%

VOLTAGE DROP CALCULATIONS LITTLE ROCK

Segment ID	Location Description	# of Sets	Wire Size	One-Way Length (ft)	Line Current (Amps)	Voltage (Line-to-Line)	Phase	Power Factor (100% or 85%)	Wire Type	Conduit Type	Impedance (Ω /1000 ft)	Voltage Drop (Volts)	%VD
1	PANEL S TO JBOX S1	1	8	100	21	240	1	100%	Copper	GRSC	0.78	3.28	1.37%
2	PANEL S TO JBOX S2	1	10	125	1	240	1	100%	Copper	GRSC	1.2	0.25	0.10%
3	PANEL S TO JBOX S3	1	10	115	7	240	1	100%	Copper	GRSC	1.2	1.96	0.82%
4	PANEL S TO JBOX S4	1	10	125	4	240	1	100%	Copper	GRSC	1.2	1.20	0.50%
5	JBOX S1 TO ROBINSON	1	12	464	2	240	1	100%	Copper	GRSC	2	4.02	1.68%
6	JBOX S2 TO SOUTH WEST LIMIT	1	12	138	2	240	1	100%	Copper	GRSC	2	0.91	0.38%
7	JBOX S1 TO BRIDGE CENTER	1	8	590	7	240	1	100%	Copper	GRSC	0.78	6.04	2.52%
8	JBOX S3 TO LAHARPE WEST	1	10	615	4	240	1	100%	Copper	GRSC	1.2	6.40	2.67%
9	JBOX S3 TO LAHARPE EAST	1	12	90	1	240	1	100%	Copper	GRSC	2	0.39	0.16%
10	JBOX S4 TO RIVER TRAIL	1	12	300	3	240	1	100%	Copper	GRSC	2	3.02	1.26%
Panel ID	TOTALS												
S-1/3	Total to Bridge Center (1+7)											9.32	3.88%
S-1/3	Total To LaHarpe (3+8)											8.35	3.48%
S-1/3	Total to River Trail (4+10)											4.22	1.76%

LIGHT POLE SCHEDULE

POLE DESIGNATION NUMBER	FIXTURE TYPE A	FIXTURE TYPE B	MOUNTING TYPE	POLE HEIGHT	QUANTITY OF FIXTURE
P1	X		INDEPENDENT	30'	1
P2	X		INDEPENDENT	30'	1
P3	X		BLISTER	27'	1
P4	X		INDEPENDENT	30'	1
P5	X		INDEPENDENT	30'	1
P6	X	X	PEDESTAL	25'	2
P7	X	X	PEDESTAL	25'	2
P8	X	X	PEDESTAL	25'	2
P9	X	X	PEDESTAL	25'	2
P10	X	X	PEDESTAL	25'	2
P11	X	X	PEDESTAL	25'	2
P12	X	X	PEDESTAL	25'	2
P13	X	X	PEDESTAL	25'	2
P14	X	X	PEDESTAL	25'	2
P15	X	X	PEDESTAL	25'	2
P16	X	X	PEDESTAL	25'	2
P17	X	X	PEDESTAL	25'	2
P18	X	X	PEDESTAL	25'	2
P19	X	X	PEDESTAL	25'	2
P20	X	X	PEDESTAL	25'	2
P21	X	X	PEDESTAL	25'	2
P22	X	X	PEDESTAL	25'	2
P23	X	X	PEDESTAL	25'	2
P24	X	X	PEDESTAL	25'	2
P25	X	X	PEDESTAL	25'	2
P26	X	X	PEDESTAL	25'	2
P27	X	X	PEDESTAL	25'	2
P28	X	X	PEDESTAL	25'	2
P29	X	X	PEDESTAL	25'	2
P30	X	X	PEDESTAL	25'	2
P31	X	X	PEDESTAL	25'	2
P32	X		BLISTER	27'	1
P33	X	X	PEDESTAL	25'	2
P34	X		BLISTER	27'	1
P35	X	X	PEDESTAL	25'	2
P36	X		BLISTER	27'	1
P37	X	X	PEDESTAL	25'	2
P38	X		BLISTER	27'	1
P39	X	X	PEDESTAL	25'	2
P40	X		BLISTER	27'	1
P41	X		BLISTER	27'	1
P42	X		BLISTER	27'	1
P43	X		BLISTER	27'	1
P44	X		BLISTER	27'	1
P45	X		BLISTER	27'	1
P46	X		BLISTER	27'	1
P47	X		BLISTER	27'	1
P48	X		BLISTER	27'	1
P49	X		BLISTER	27'	1
P50	X		BLISTER	27'	1
P51		X	BLISTER	14'	1
P52		X	BLISTER	14'	1
P53		X	BLISTER	14'	1
P54		X	BLISTER	14'	1
P55		X	BLISTER	14'	1
P56		X	BLISTER	14'	1
P57		X	INDEPENDENT	19.5'	1
P58		X	INDEPENDENT	19.5'	1
P59		X	INDEPENDENT	19.5'	1
P60		X	PED. PEDESTAL	14'	2
P61		X	PED. PEDESTAL	14'	2
P62		X	PED. PEDESTAL	14'	2
P63		X	PED. PEDESTAL	14'	2
P64		X	PED. PEDESTAL	14'	2
P65		X	PED. PEDESTAL	14'	2
P66		X	INDEPENDENT	19.5'	2
P67		X	INDEPENDENT	19.5'	2
P68		X	INDEPENDENT	19.5'	2
P69		X	PED. PEDESTAL	14'	2
P70		X	INDEPENDENT	14'	2

VOLTAGE DROP CALCULATIONS TIE GIRDER CIRCUITS

SEGMENT ID	Location Description	# of Sets	Wire Size	One-Way Length (ft)	Line Current (Amps)	Voltage (Line-to-Line)	Phase	Power Factor (100% or 85%)	Wire Type	Conduit Type	Impedance (Ω /1000 ft)	Voltage Drop (Volts)	%VD
1	PANEL TN FEEDER	1	2	500	18	120	1	100%	Copper	GRSC	0.2	3.60	3.00%
2	PANEL TS FEEDER FROM PANEL TN	1	2	420	8	120	1	100%	Copper	GRSC	0.2	1.34	1.12%
3	RECEPTACLES 1ST SEGMENT	1	8	310	3	120	1	100%	Copper	GRSC	0.78	1.45	1.21%
4	LIGHTS WEST 1ST SEGMENT	1	8	310	4	120	1	100%	Copper	GRSC	0.78	1.93	1.61%
5	RECEPTACLES 2ND SEGMENT	1	10	210	2	120	1	100%	Copper	GRSC	1.2	0.76	0.63%
6	LIGHTS 2ND SEGMENT	1	10	210	2	120	1	100%	Copper	GRSC	1.2	1.01	0.84%
	TOTALS												
	Total for worst case receptacle (1+2+3+5)											7.15	5.96%
	Total for worst case lighting (1+2+4+6)											7.89	6.57%

*Voltage drop calculations are based on a worst case, fully loaded scenario. Since all receptacles and lighting will not be operated concurrently it is expected that the total voltage drop will be below 5%

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

ELECTRICAL CALCULATIONS
ARKANSAS RIVER STR. & APPRS.
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL19.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54652

SRTorney 5/30/2014 2:29:00 PM
WORKSPACE: AHTD Bridge
L:\ROW\ROW7080 - Broadway Bridge over the Arkansas River\Drawings\B061275_EL19.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061275	429	505
				1 07292-07295, 04926 & 04927		ELEC. DETAILS		54653

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
N	120/240	1	3	100%	Enclosure "N" - North Little Rock Side
MAINS:	**MOUNTING:**	**MAX NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING:**	**LOCATION:**
200A MCB	Surface	16		22,000	Exterior Mounted Enclosure

NO	DESCRIPTION	BRANCH POLES	BRANCH BKR	WIRE (AWG)	VA L1	VA L2		Load Type	Load Type	VA L1	VA L2		WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	EXSTING RIVER TRAIL LIGHTING PANEL	2	100	3	-			L	L	2467			8	30	2	NORTH BRIDGE LIGHTS	2
3		-	-	3		-		L	L		2467		8	-	-		4
5	PLAZA LIGHTS	2	20	10	387			L	L	297			8	20	2	PARK LIGHTS	6
7		-	-	10		387		L	L		297		8	-	-		8
9	SPD	2	60	6	0			E	-				-	20	2	SPARE	10
11		-	-	6		0		E	-				-	-	-		12
13	SPARE	2	20	-				-	-				-	20	2	SPARE	14
15		-	-	-				-	-				-	-	-		16

Description	Code	L1	L2		Total SUM	Total %
LIGHTING	L	3151	3151		6301	100
RECEPT	R	0	0		0	0
EQUIP.	E	0	0		0	0
OTHER		0	0		0	0
HVAC	H	0	0		0	0
CUSTOM	HC	0	0		0	0
ADDITIONAL		0	0		0	0
TOTAL		3151	3151		6301	
DEMAND		3151	3151		6301	100
%		50	50			

Design Load (kVA)
7.88
0.00
0.00
0.00
0.00
0.00
0.00
7.88
Spare 15%

Total Connected Load 30.3 Amps 6.30 kVA

Total Design Load * 44.5 Amps 9.27 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
S	120/240	1	3	100%	Enclosure "S" - Little Rock Side
MAINS:	**MOUNTING:**	**MAX NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING:**	**LOCATION:**
200A MCB	Surface	12		22,000	Exterior Mounted Enclosure

NO	DESCRIPTION	BRANCH POLES	BRANCH BKR	WIRE (AWG)	VA L1	VA L2		Load Type	Load Type	VA L1	VA L2		WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	SOUTH BRIDGE LIGHTS	2	30	8	2425			L	-	-			-	20	2	SPARE	2
3		-	-	8		2425		L	-		-		-	-	-		4
5	SPARE	2	20	-	-			-	-	-			-	20	2	SPARE	6
7		-	-	-		-		-	-		-		-	-	-		8
9	SPD	2	60	6	0			E	-	-			-	20	2	SPARE	10
11		-	-	6		0		E	-		-		-	-	-		12

Description	Code	L1	L2		Total SUM	Total %
LIGHTING	L	2425	2425		4850	100
RECEPT	R	0	0		0	0
EQUIP.	E	0	0		0	0
OTHER		0	0		0	0
HVAC	H	0	0		0	0
CUSTOM	HC	0	0		0	0
ADDITIONAL		0	0		0	0
TOTAL		2425	2425		4850	
DEMAND		2425	2425		4850	100
%		50	50			

Design Load (kVA)
6.06
0.00
0.00
0.00
0.00
0.00
0.00
6.06
Spare 15%

Total Connected Load 23.3 Amps 4.85 kVA

Total Design Load * 34.3 Amps 7.13 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
TN	120/240	1	3	100%	Tie Girder Load Center
MAINS:	**MOUNTING:**	**MAX NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING:**	**LOCATION:**
100A MLO	Surface	12		10,000	North Western Tie Girder Interior (NLR side)

NO	DESCRIPTION	BRANCH POLES	BRANCH BKR	WIRE (AWG)	VA L1	VA L2		Load Type	Load Type	VA L1	VA L2		WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	RECEPTACLES WEST	1	20	8	540			R	L	480			8	20	1	LIGHTS WEST	2
3	RECEPTACLES EAST	1	20	8		540		R	L		200		10	20	1	FAA OBSTRUCTION LIGHT	4
5	LOAD CENTER "TS"	2	30	2	1524			E	L	480			8	20	1	LIGHTS EAST	6
7		-	-	2		764		E	-		-		-	20	1	SPARE	8
9	SPARE	1	20	-	-			-	-	-			-	20	1	SPARE	10
11	SPARE	1	20	-		-		-	-		-		-	20	1	SPARE	12

Description	Code	L1	L2		Total SUM	Total %
LIGHTING	L	960	200		1160	26
RECEPT	R	540	540		1080	24
EQUIP.	E	1524	764		2288	51
OTHER		0	0		0	0
HVAC	H	0	0		0	0
CUSTOM	HC	0	0		0	0
ADDITIONAL		0	0		0	0
TOTAL		3024	1504		4528	
DEMAND		3024	1504		4528	100
%		67	33			

Design Load (kVA)
1.45
1.08
2.29
0.00
0.00
0.00
0.00
4.82
Spare 15%

Total Connected Load 21.8 Amps 4.53 kVA

Total Design Load * 27.3 Amps 5.67 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

PANEL NAME:	VOLTAGE	PHASE:	WIRE:	NEUTRAL RATING:	PANEL DESCRIPTION:
TS	120/240	1	3	100%	Tie Girder Load Center
MAINS:	**MOUNTING:**	**MAX NO. OF CIRCUITS:**	**MANUFACTURER:**	**PANEL A.I.C. RATING:**	**LOCATION:**
100A MLO	Surface	12			South Western Tie Girder Interior (LR side)

NO	DESCRIPTION	BRANCH POLES	BRANCH BKR	WIRE (AWG)	VA L1	VA L2		Load Type	Load Type	VA L1	VA L2		WIRE (AWG)	BRANCH BKR	BRANCH POLES	DESCRIPTION	NO.
1	RECEPTACLES WEST	1	20	8	540			R	L	480			8	20	1	LIGHTS WEST	2
3	RECEPTACLES EAST	1	20	8		540		R	L		200		10	20	1	FAA OBSTRUCTION LIGHT	4
5	SPARE	1	20	-	-			-	L	480			8	20	1	LIGHTS EAST	6
7	SPARE	1	20	-		-		-	L		24		8	20	2	NAVIGATIONAL LIGHTS	8
9	SPARE	1	20	-	-			-	L	24			8	-	-		10
11	SPARE	1	20	-		-		-	-		-		-	20	1	SPARE	12

Description	Code	L1	L2		Total SUM	Total %
LIGHTING	L	984	224		1208	53
RECEPT	R	540	540		1080	47
EQUIP.	E	0	0		0	0
OTHER		0	0		0	0
HVAC	H	0	0		0	0
CUSTOM	HC	0	0		0	0
ADDITIONAL		0	0		0	0
TOTAL		1524	764		2288	
DEMAND		1524	764		2288	100
%		67	33			

Design Load (kVA)
1.51
1.08
0.00
0.00
0.00
0.00
0.00
2.59
Spare 15%

Total Connected Load 11.0 Amps 2.29 kVA

Total Design Load * 14.6 Amps 3.05 kVA

* Total Design Load includes calculated Design Loads per NEC Demand Factors and the stated Spare Capacity.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9236
ERIC C. FARMER
5/30/14
BRIDGE ENGINEER

ELECTRICAL PANEL SCHEDULES
ARKANSAS RIVER STR. & APPRS.
PULASKI COUNTY

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

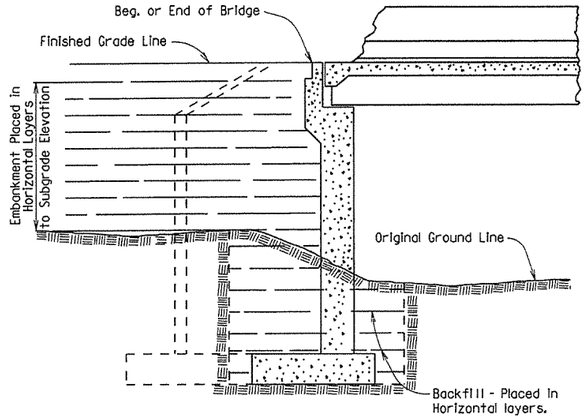
LITTLE ROCK, ARK.

DRAWN BY: NAH DATE: AUG. 2013 FILENAME: B061275_EL20.DGN
CHECKED BY: ECF DATE: AUG. 2013 SCALE: NONE
DESIGNED BY: BTM DATE: AUG. 2013
BRIDGE NO. 07292-07295, 04926 & 04927 DRAWING NO. 54653

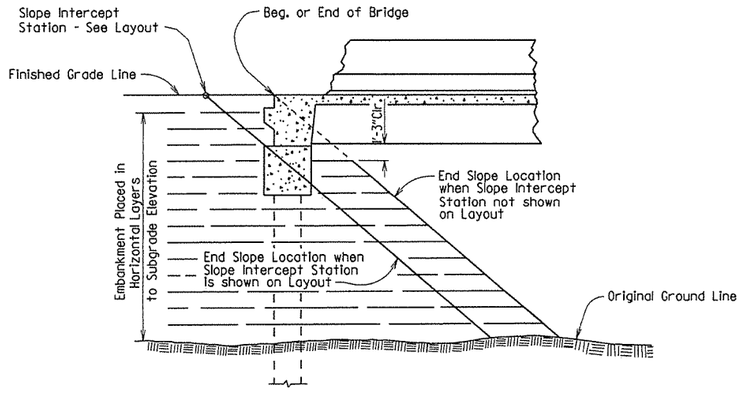
SRYancey 5/30/2014 2:29:17 PM
WORKSPACE: AHTD Bridge
L:\ZDRIVE\DGTOOLS - Broadway Bridge over the Arkansas River\Drawings\B061275_EL20.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		430	
				JOB NO.				

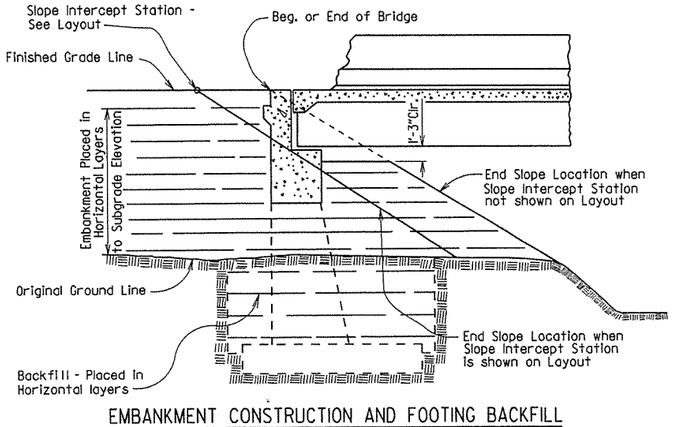
① EMBANKMENT & BACKFILL 55000



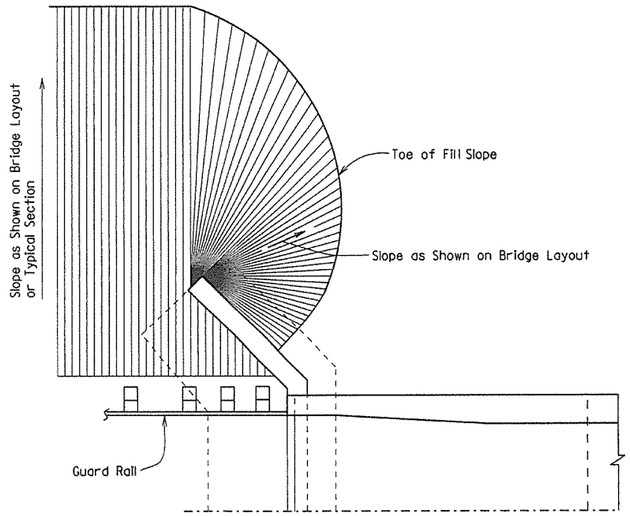
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



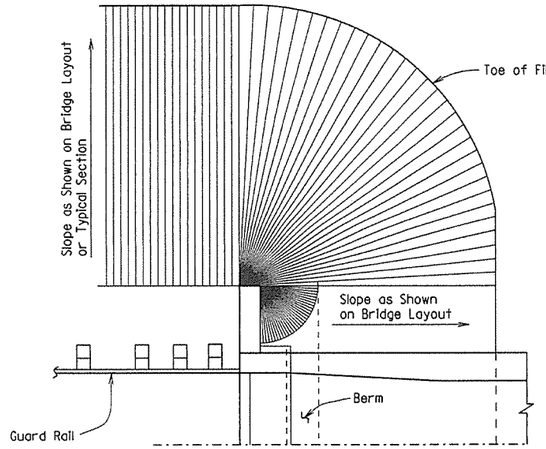
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



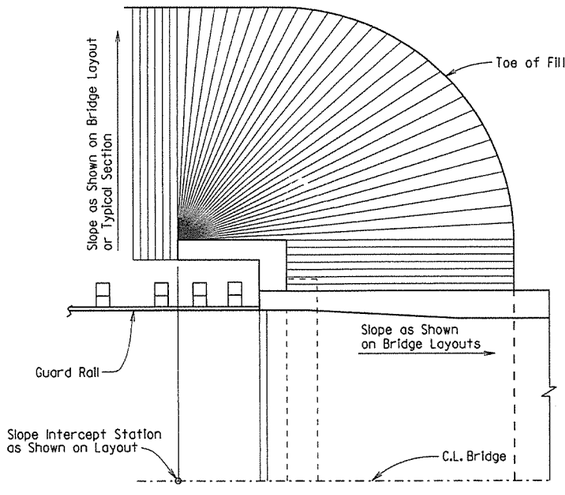
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



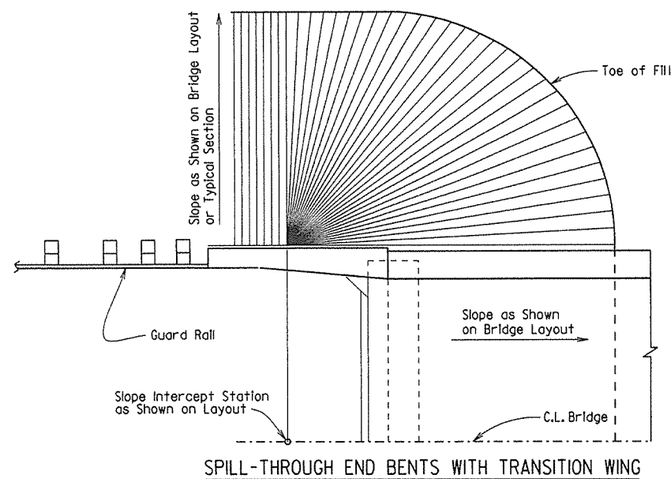
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

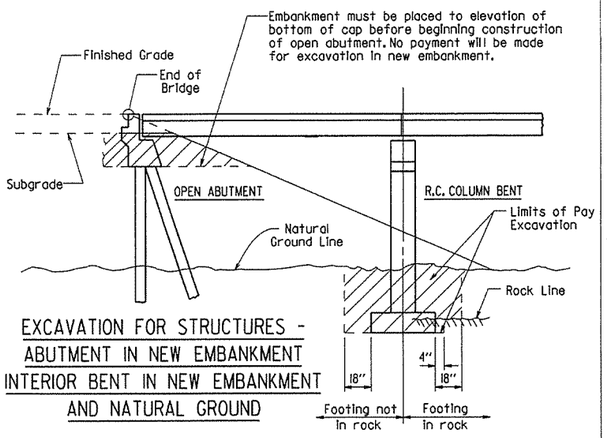
STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

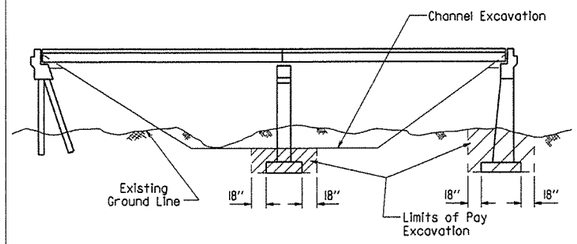
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000

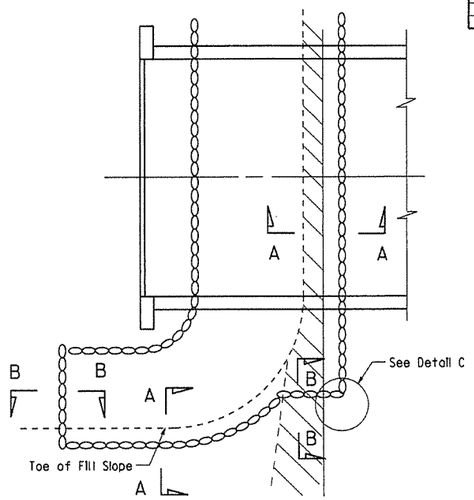
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		431	
				JOB NO.				
				1	RIPRAP & EXCAV. 55001			



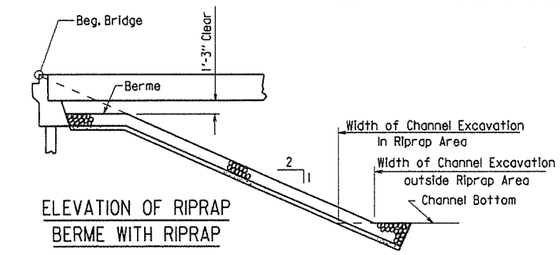
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



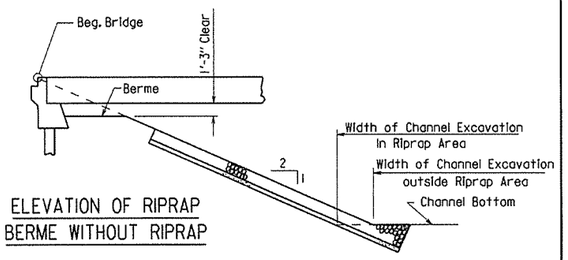
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



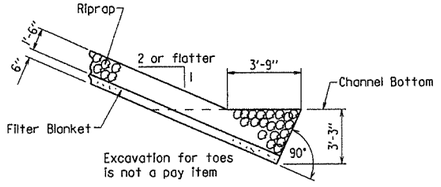
PLAN OF DUMPED RIPRAP



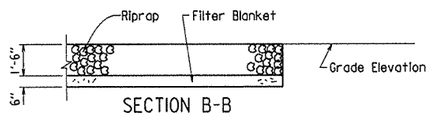
ELEVATION OF RIPRAP BERME WITH RIPRAP



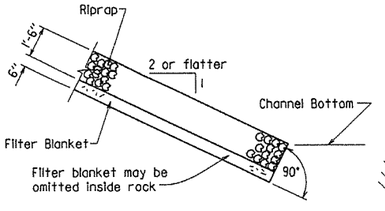
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION A-A
(Toe Excavation in Soil)



SECTION B-B

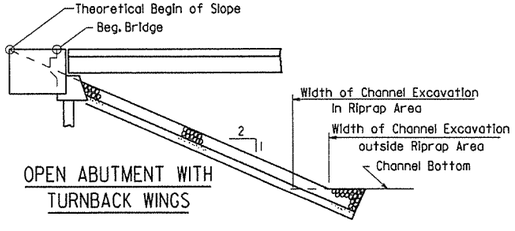


SECTION A-A
(Toe Excavation in Rock)

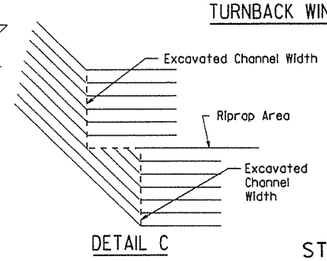
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

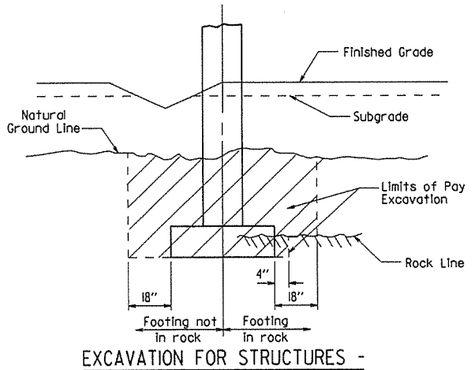
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



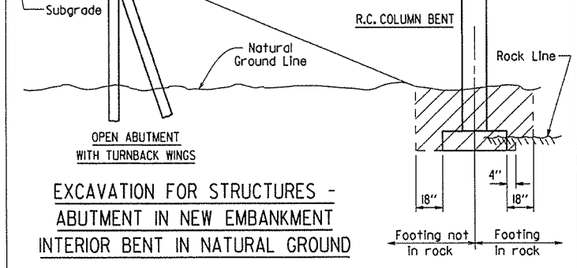
OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

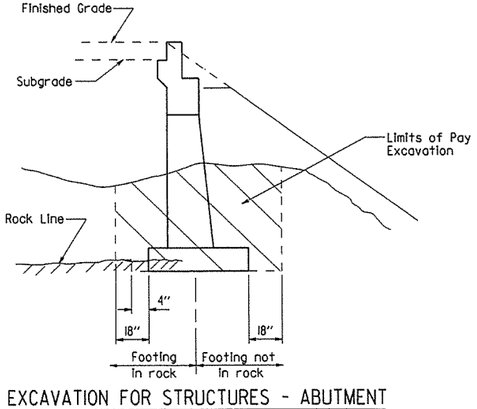


EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND

EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

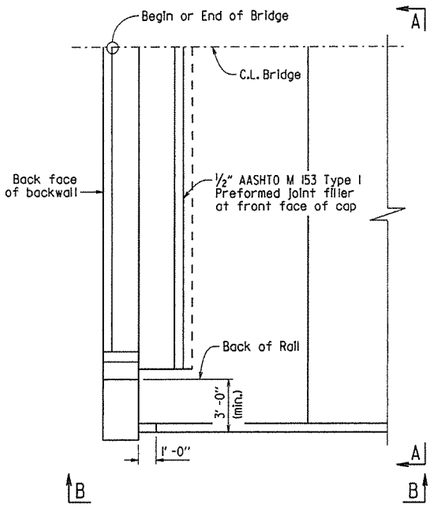
DESIGNED BY: STD. DATE:

DRAWING NO. 55001

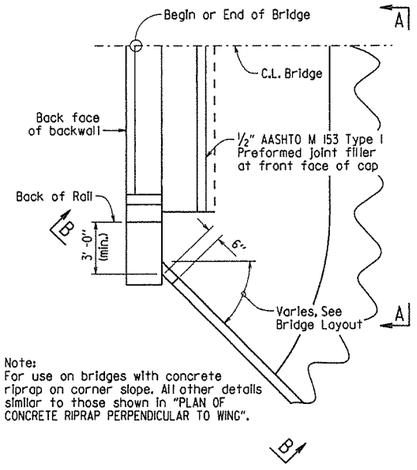
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		4132	
				JOB NO.				

① CONCRETE RIPRAP 55002

Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



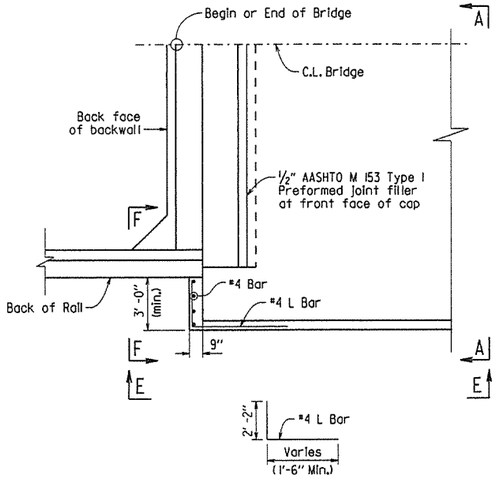
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING
1/4" = 1'-0"



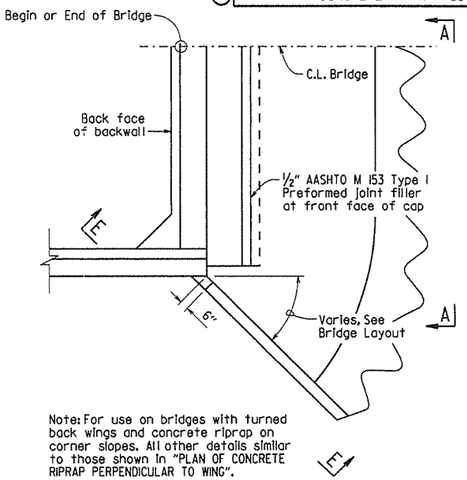
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP AT ANGLE TO WING
1/4" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



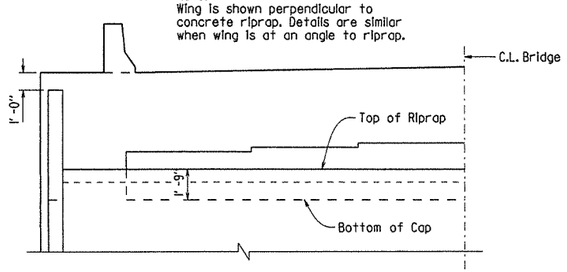
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO TURNED BACK WING
1/4" = 1'-0"



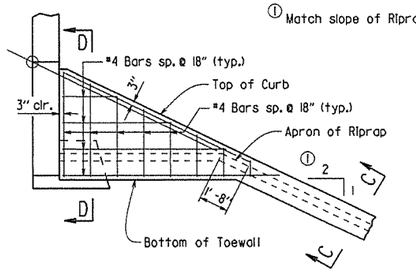
Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP AT ANGLE FROM TURNED BACK WING
1/4" = 1'-0"

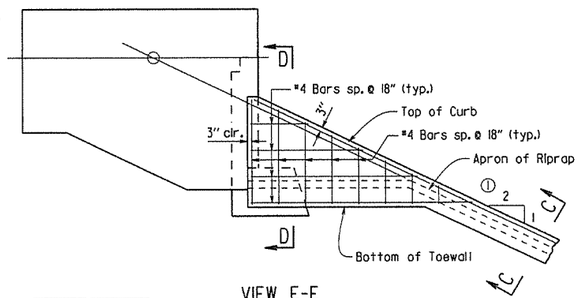
Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.



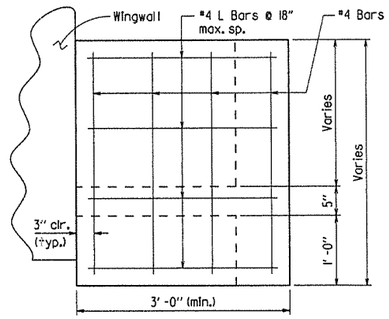
VIEW A-A
1/4" = 1'-0"



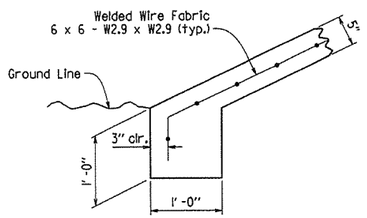
VIEW B-B
1/4" = 1'-0"



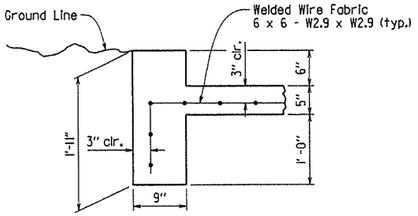
VIEW E-E
1/4" = 1'-0"



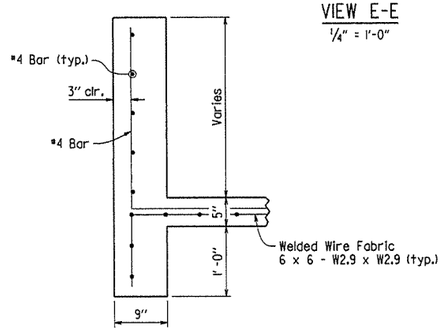
VIEW F-F
1" = 1'-0"



TOE OF CONCRETE RIPRAP
1" = 1'-0"



SECTION C-C
1" = 1'-0"



SECTION D-D
1" = 1'-0"

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, f'c = 2,100 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

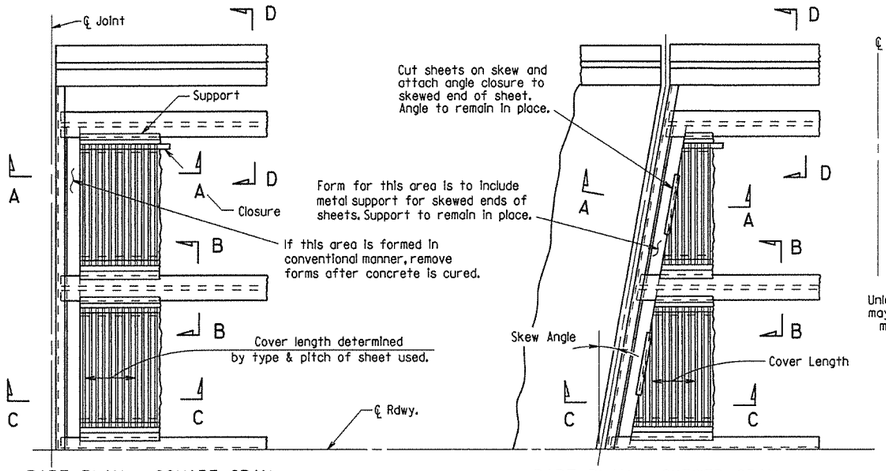
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 2/27/2014 FILENAME: b55002.dgn
CHECKED BY: BEF DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: Std. DATE: ---

DRAWING NO. 55002

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		433	
				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

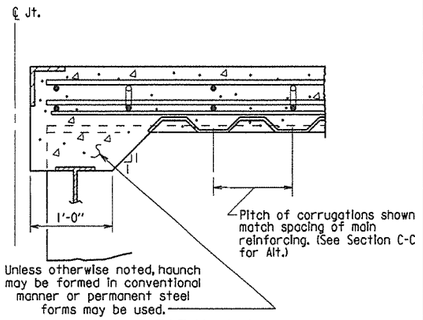


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

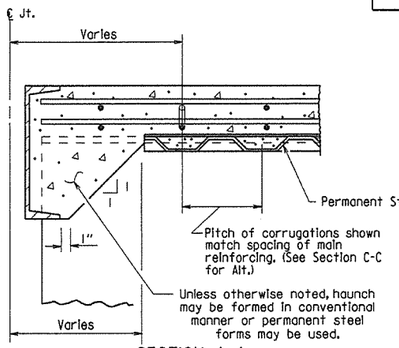
3/8" = 1'-0"



SECTION A-A

N.T.S.

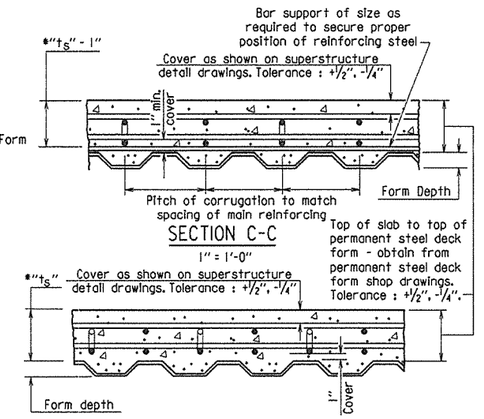
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



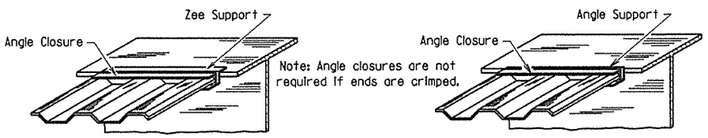
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

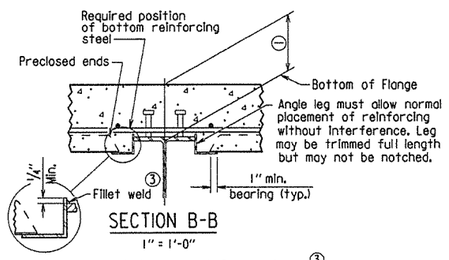
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

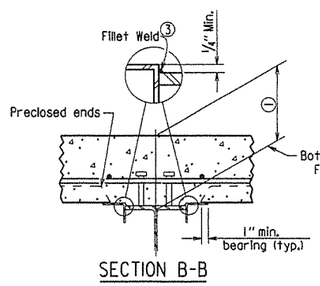


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

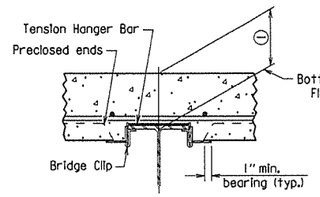
③ Minimum weld: 1/8" x 1' ℄ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

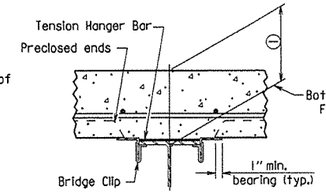
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

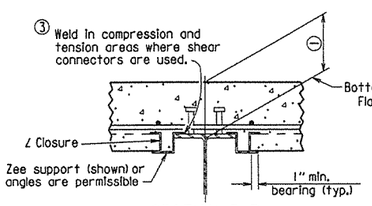
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

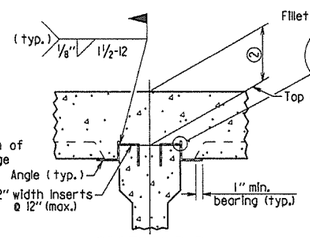
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

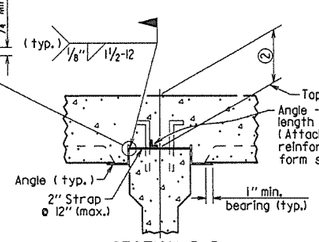


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

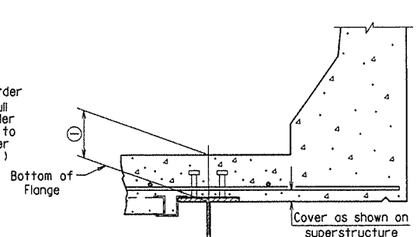


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_S + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

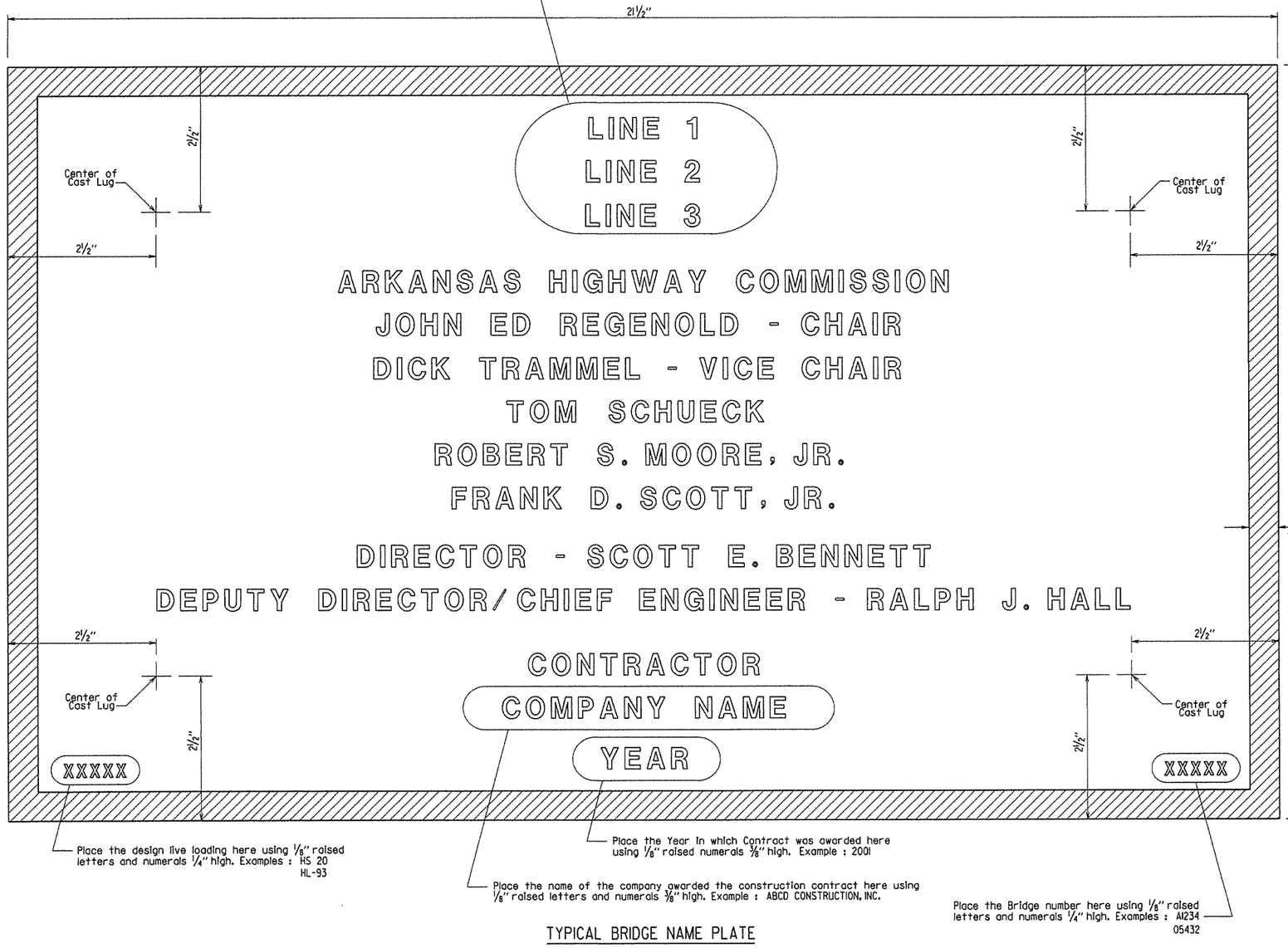
DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		434	
				JOB NO.				

(1) TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



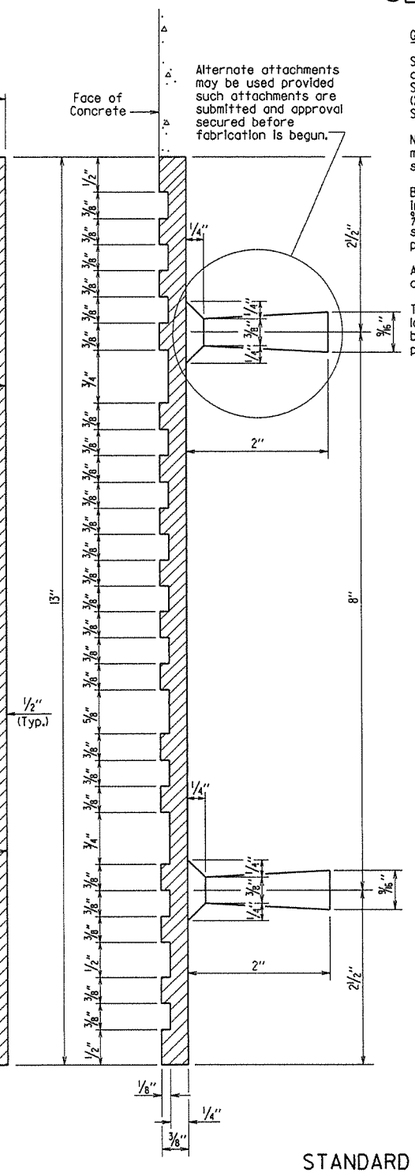
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : A1234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16"x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

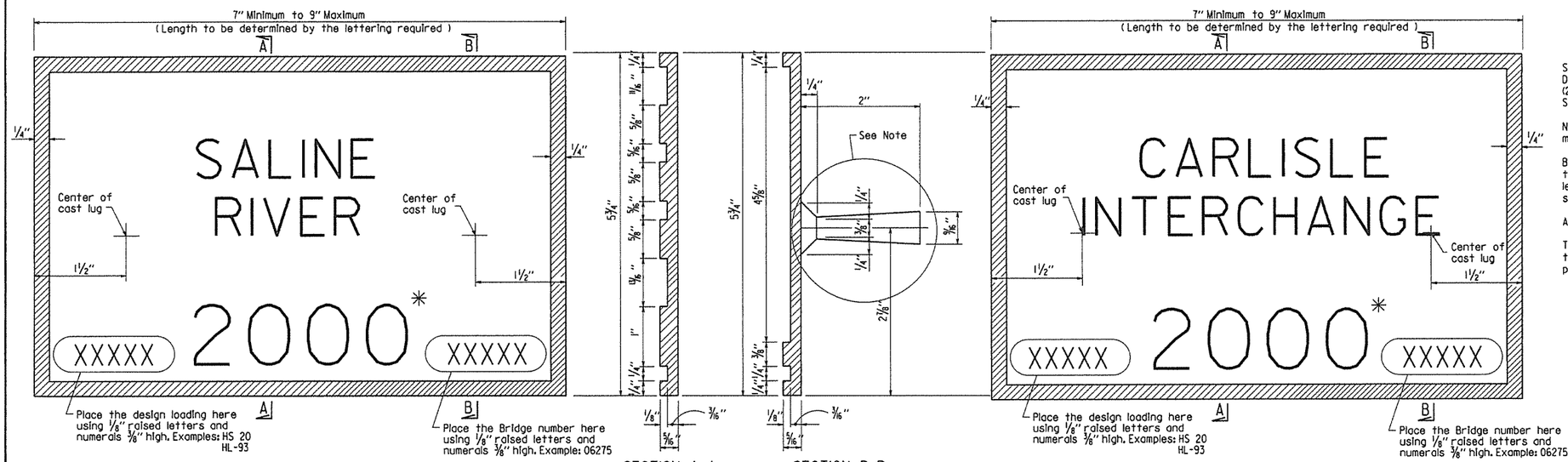
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		435	
				JOB NO.				

① TYPE C NAME PLATE 55011



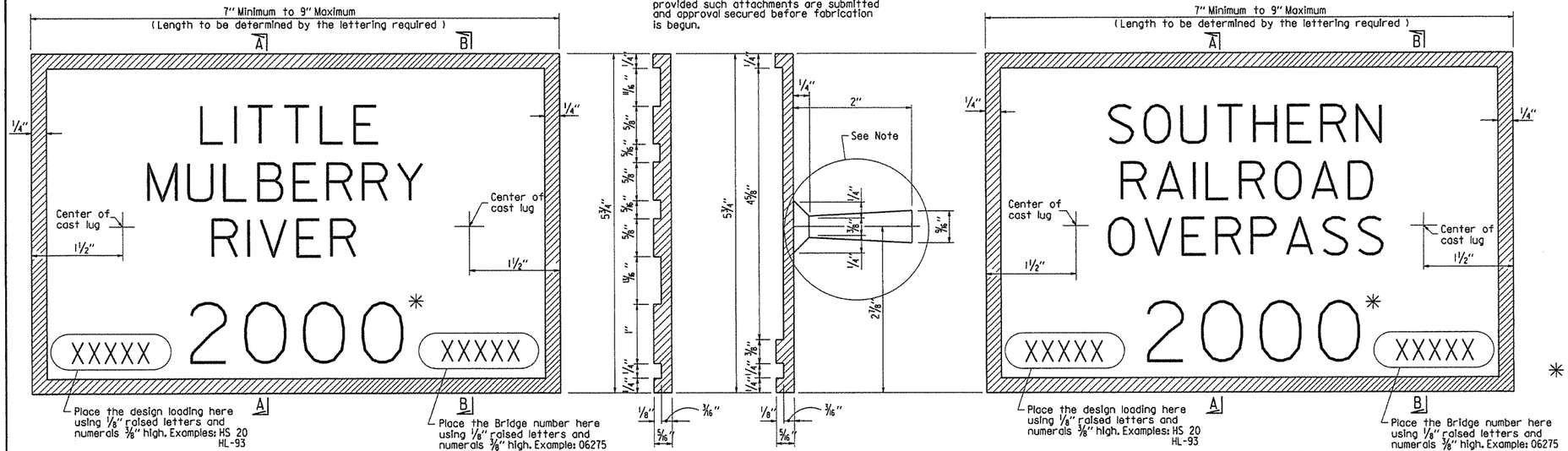
TYPICAL BRIDGE NAME PLATE-STYLE 1 - FULL SIZE
STREAM CROSSINGS

SECTION A-A

SECTION B-B

Note: Alternate attachments may be used provided such attachments are submitted and approval secured before fabrication is begun.

TYPICAL BRIDGE NAME PLATE-STYLE 3 - FULL SIZE
GRADE SEPARATION STRUCTURES



TYPICAL BRIDGE NAME PLATE-STYLE 2 - FULL SIZE
STREAM CROSSINGS

SECTION A-A

SECTION B-B

TYPICAL BRIDGE NAME PLATE-STYLE 4 - FULL SIZE
GRADE SEPARATION STRUCTURES

GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 3/16" thick and shall include two tapering cone lugs 3/8" to 5/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

* Year in which contract is awarded.

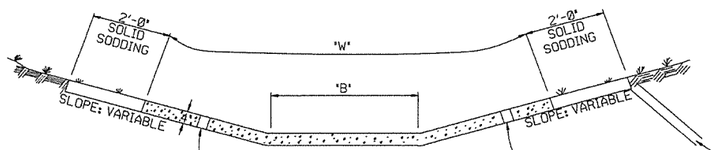
STANDARD DETAILS FOR TYPE C BRIDGE NAME PLATES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55011.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

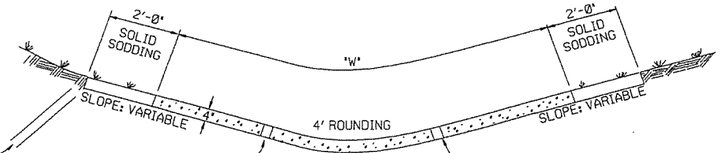
DRAWING NO. 55011

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS

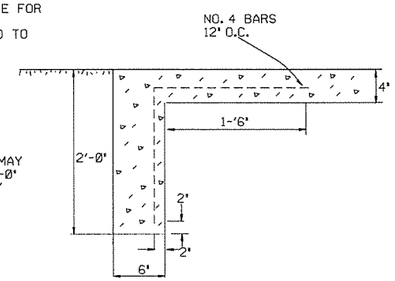


TYPE B

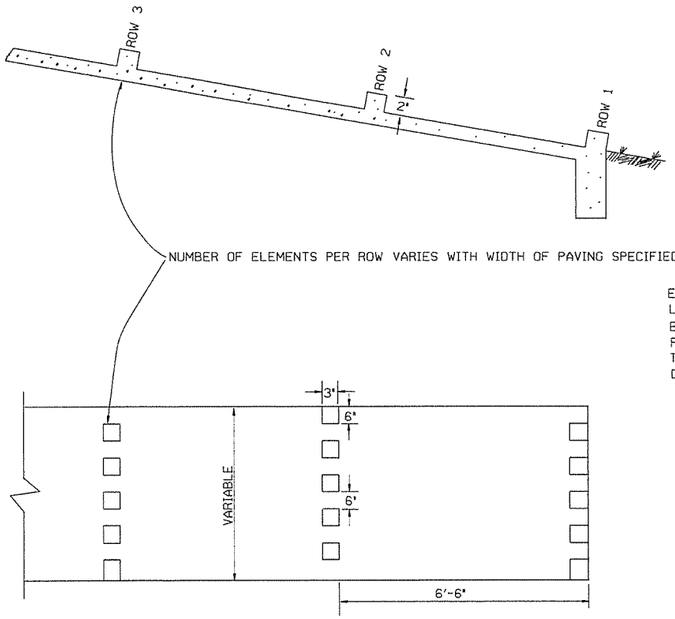
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

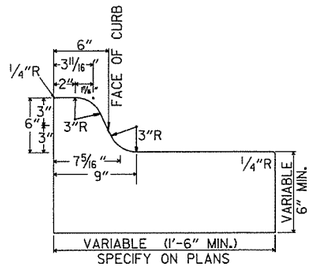
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

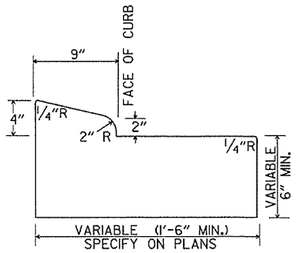
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

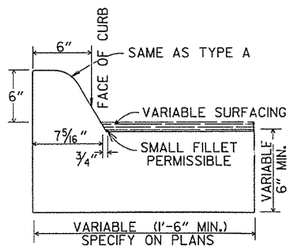
STANDARD DRAWING CDP-1



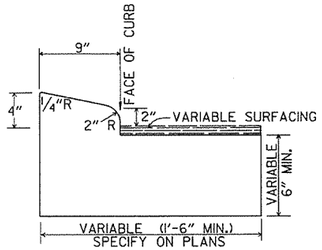
TYPE A



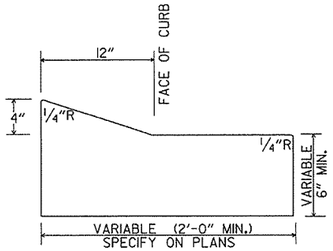
TYPE B-1



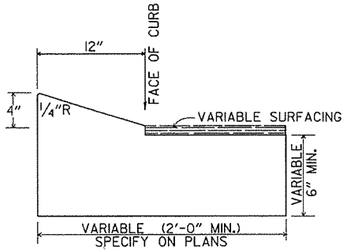
TYPE C



TYPE B-2

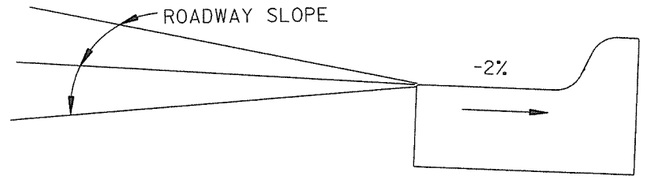


TYPE E-1



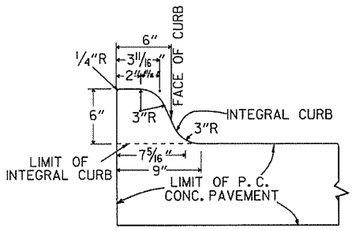
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

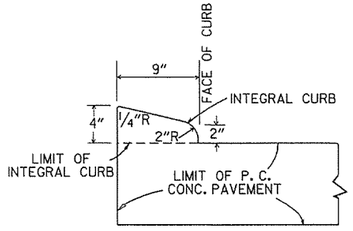


DETAIL OF GUTTER SLOPE

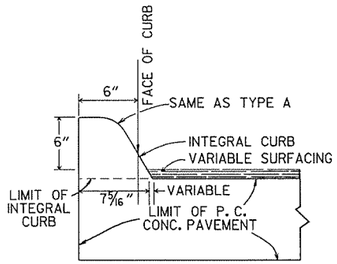
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

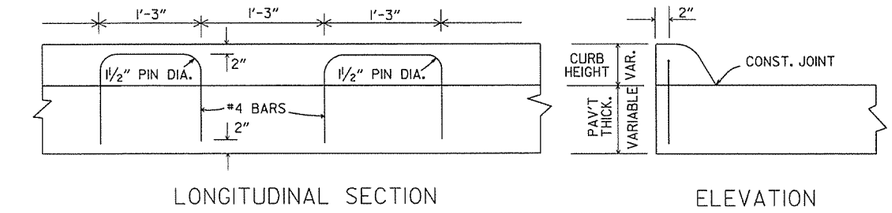


TYPE B



TYPE C

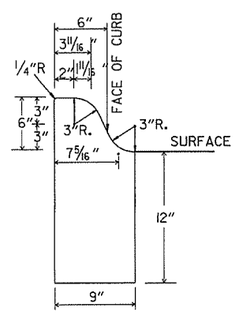
INTEGRAL CURB



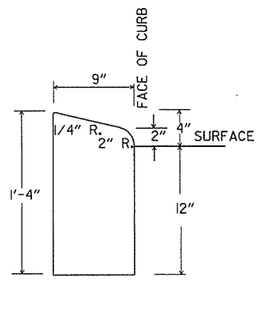
LONGITUDINAL SECTION

ELEVATION

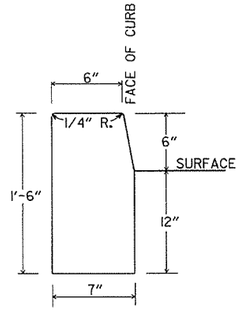
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



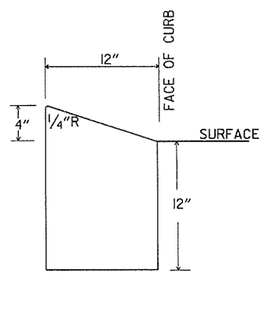
TYPE A



TYPE B

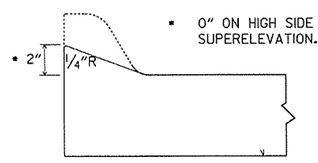


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

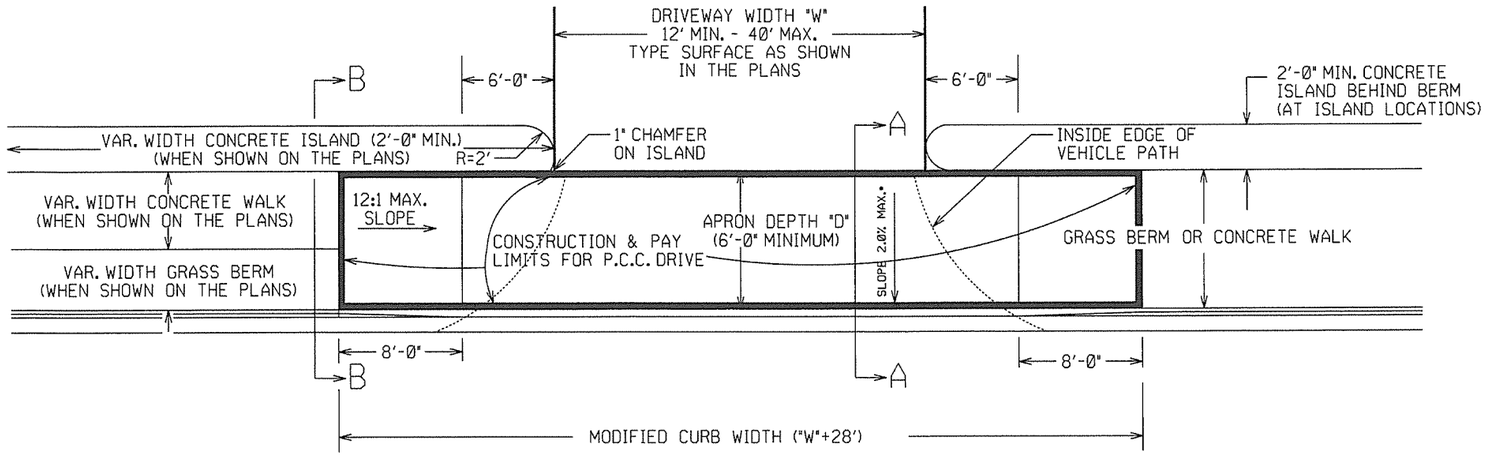
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

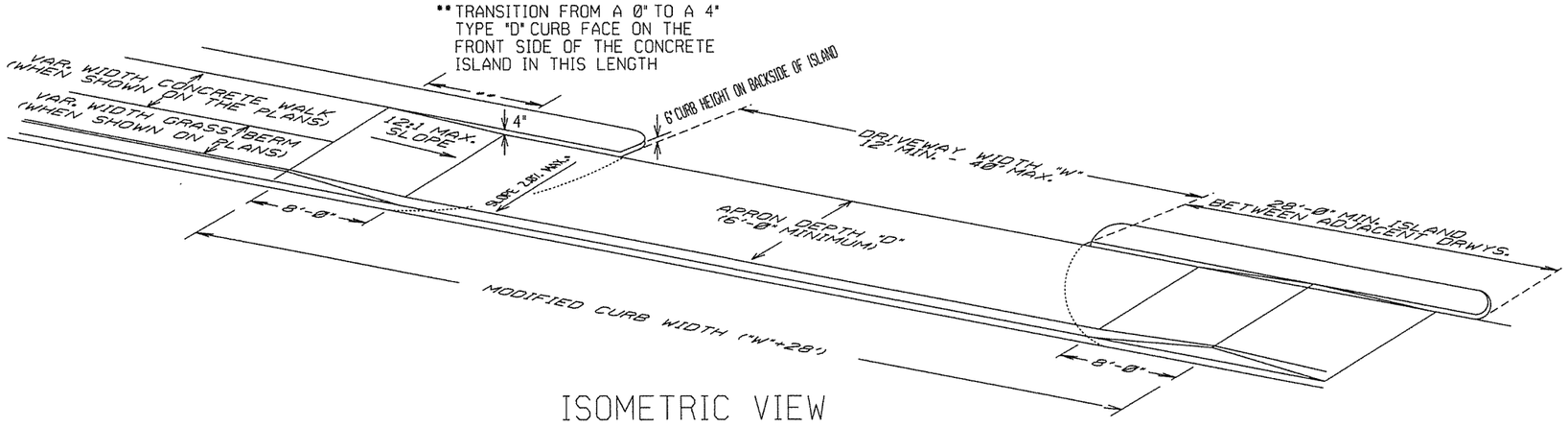
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1

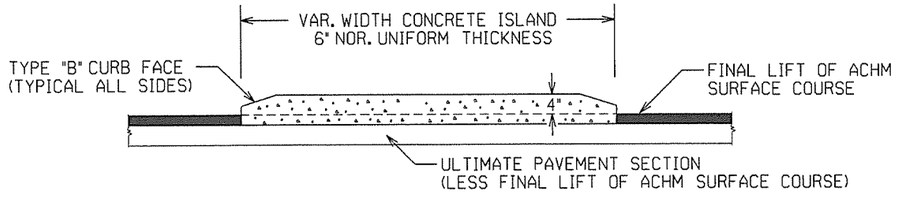


PLAN VIEW

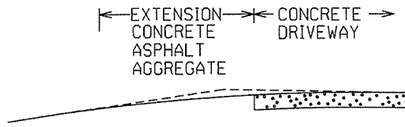


ISOMETRIC VIEW

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



CURBED ISLANDS FOR CHANNELIZATION



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

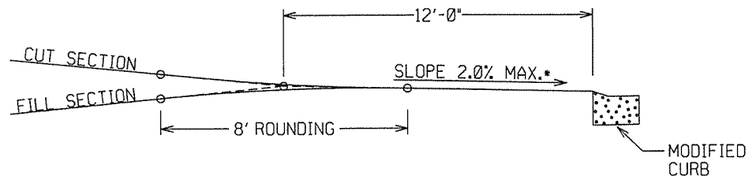
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

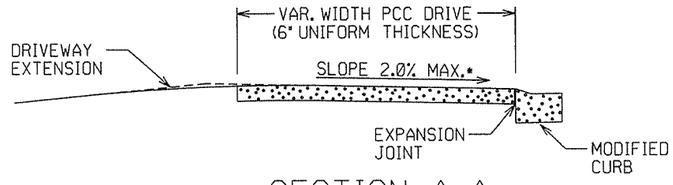
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

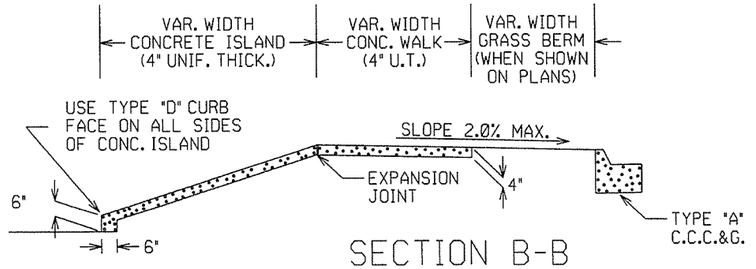


DRIVEWAY VERTICAL ALIGNMENT DETAILS

- NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



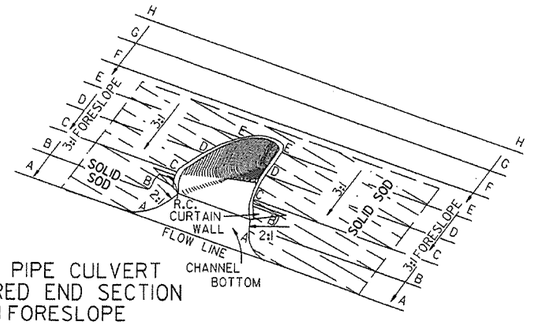
SECTION A-A



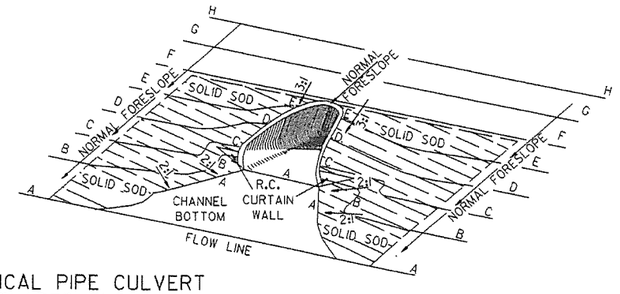
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

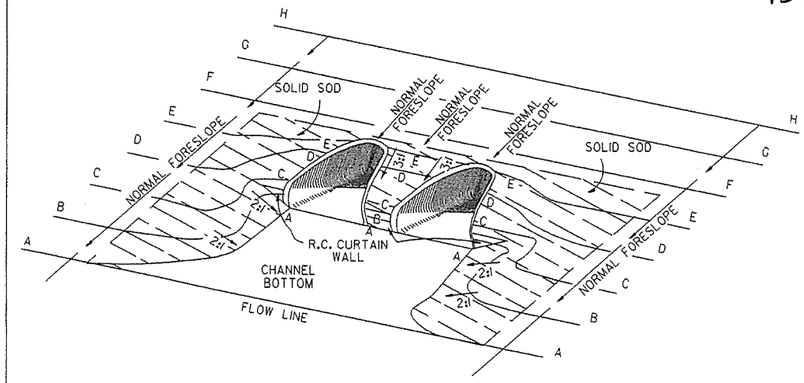
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

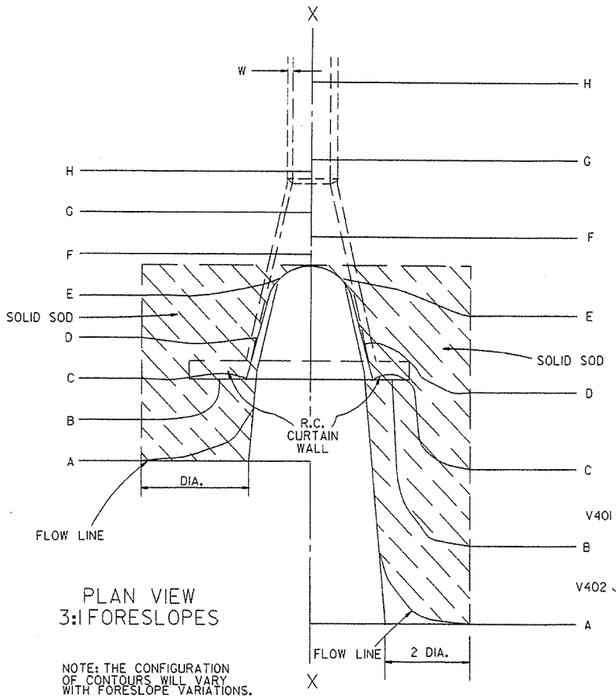
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC. CU. YDS.	SINGLE R.C.P.C. REINF. STEEL LBS.	DOUBLE R.C.P.C. CONC. CU. YDS.	DOUBLE R.C.P.C. REINF. STEEL LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	V401 L	NO.	V402 L	NO.	DOUBLE R.C. PIPE CULVERT H401 L	NO.	H402 L	NO.	H403 L	NO.	V401 L	NO.	V402 L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	18	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

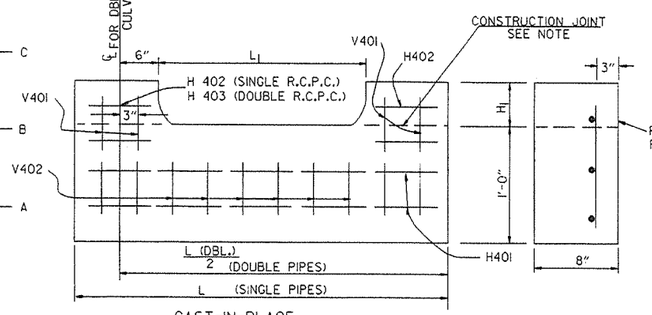
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

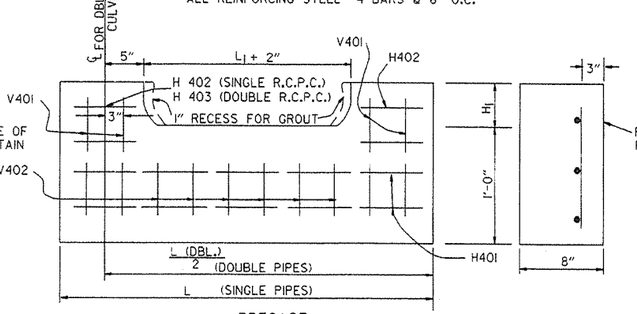
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

SOLID SODDING

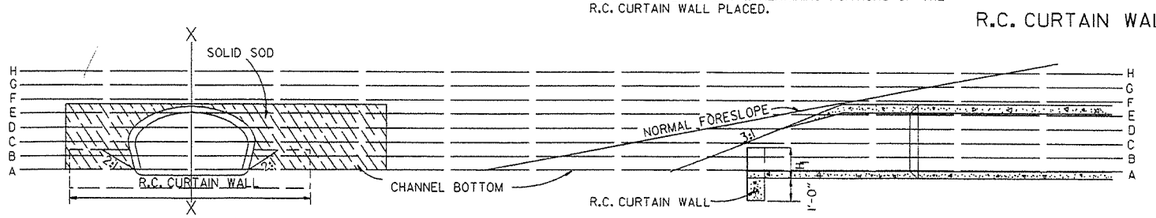
PIPE DIA.	SINGLE R.C.P.C. 3:1 SQ. YDS.	4:1 SQ. YDS.	6:1 SQ. YDS.	DOUBLE R.C.P.C. 3:1 SQ. YDS.	4:1 SQ. YDS.	6:1 SQ. YDS.
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.

R.C. CURTAIN WALL DETAILS



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	10-18-96
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

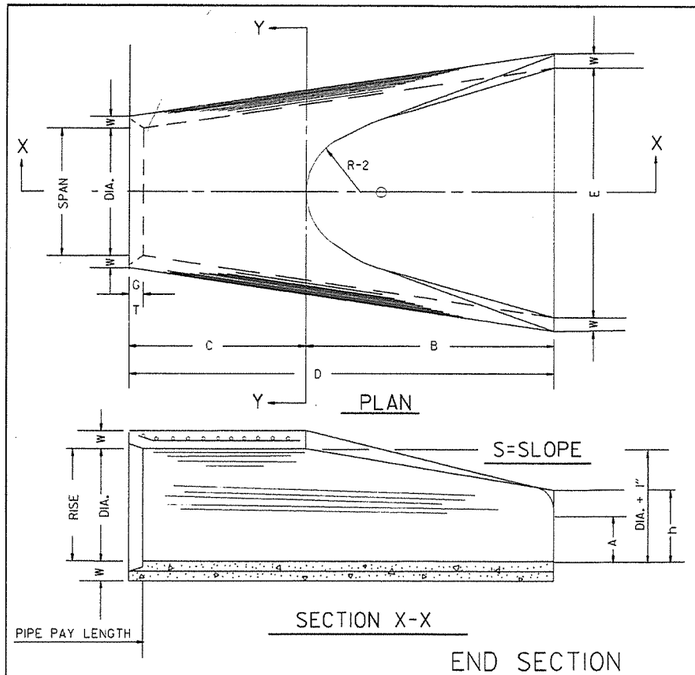


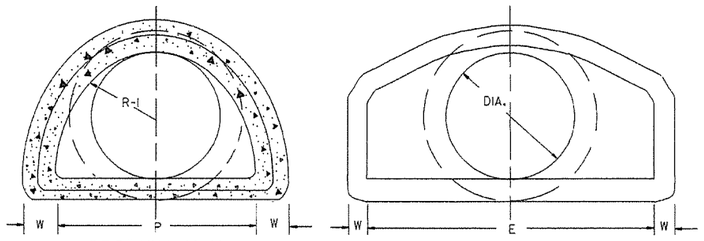
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 5/16"	24"	5"	13250	4'-6"

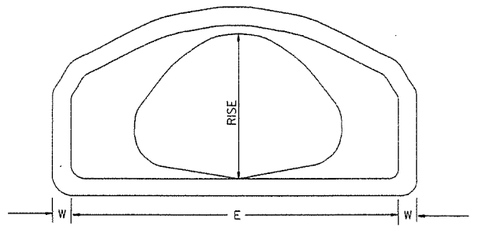
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 15/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅜"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

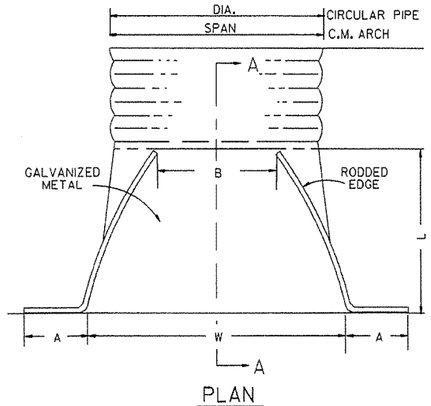


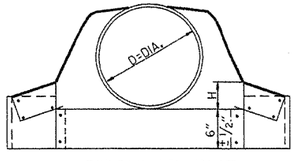
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

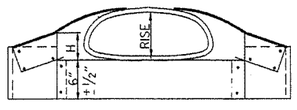




CIRCULAR PIPE

CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1



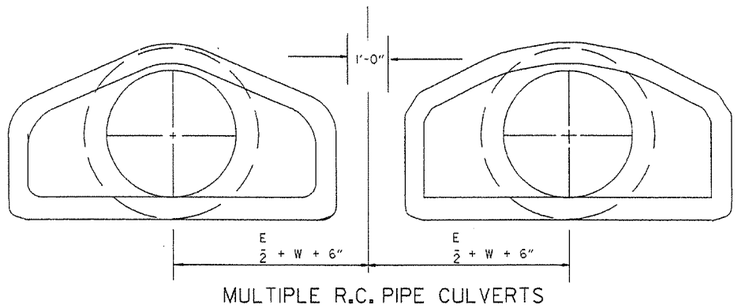
C.M. ARCH PIPE

C.M. ARCH PIPE

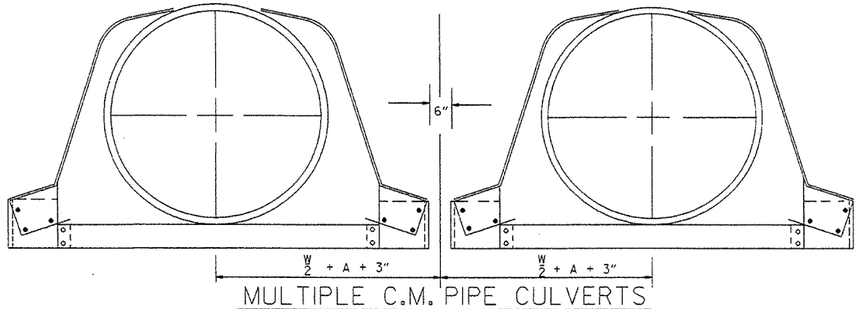
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

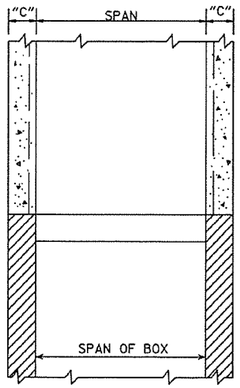
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

ARKANSAS STATE HIGHWAY COMMISION

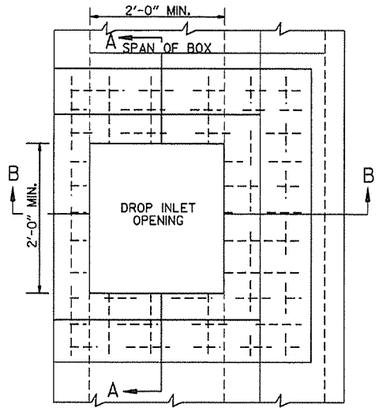
FLARED END SECTION

STANDARD DRAWING FES-2

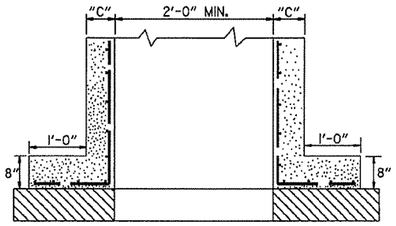
stdfes2.dgn



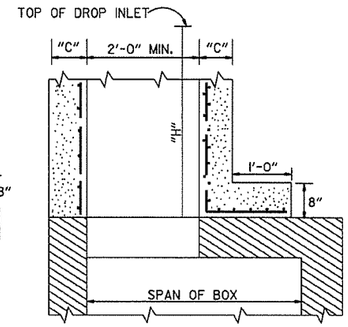
SECTION B-B



PLAN

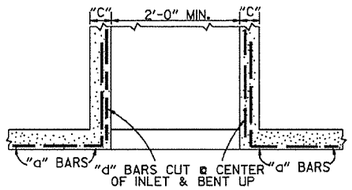


SECTION A-A

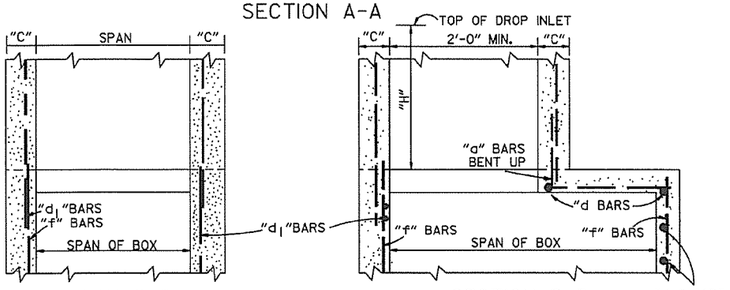


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



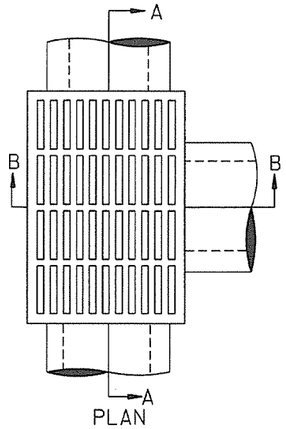
SECTION A-A



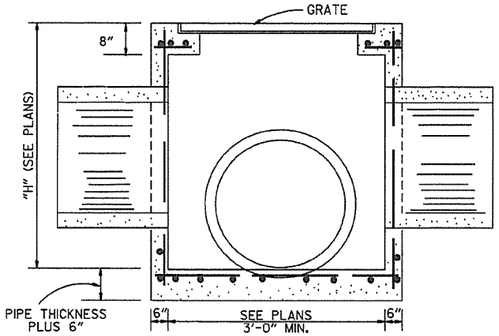
SECTION B-B SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

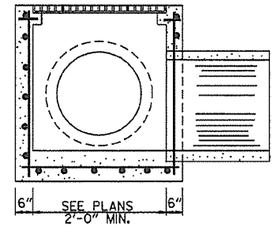


PLAN



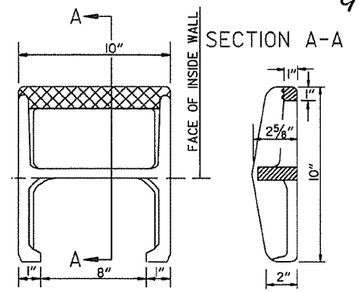
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)

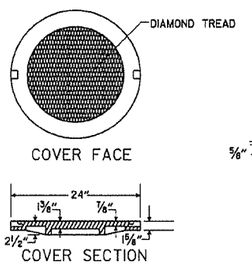


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

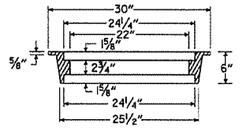
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



COVER FACE

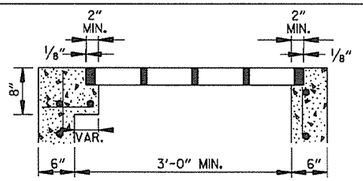
COVER SECTION



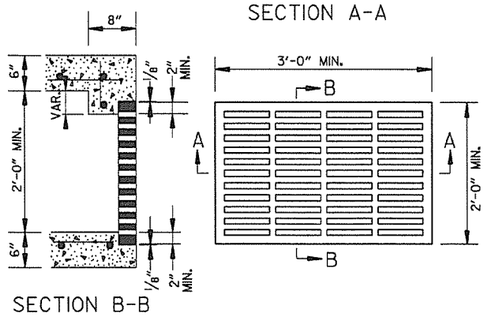
RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



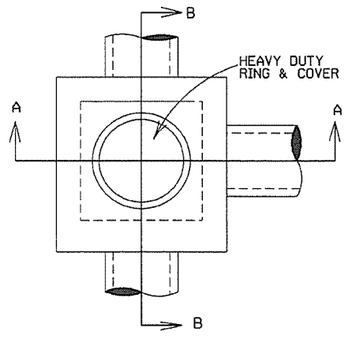
SECTION A-A



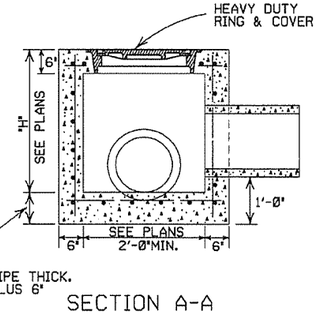
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

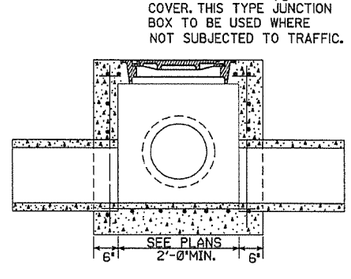


PLAN



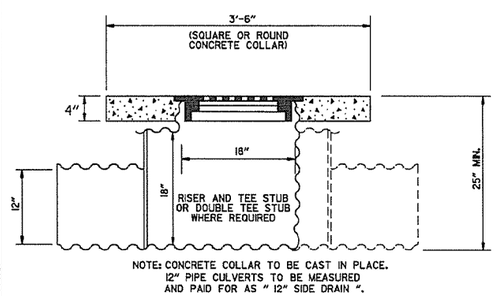
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

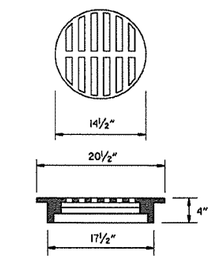


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

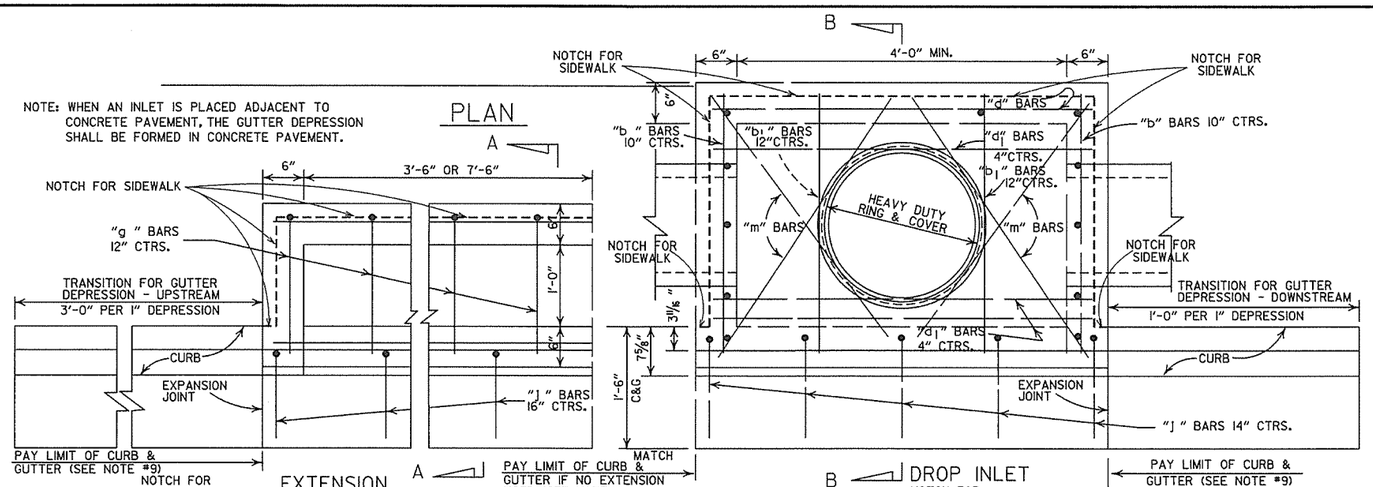
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9



4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC. CU. YDS.	HEIGHT 5'-0" REINF. STEEL POUNDS	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DROP INLET EXTENSION

4'-0" CLASS A CONC. CU. YDS.	4'-0" REINF. STEEL POUNDS	8'-0" CLASS A CONC. CU. YDS.	8'-0" REINF. STEEL POUNDS
0.58	38	0.87	72

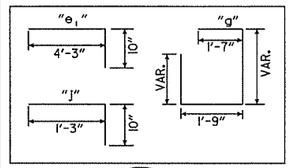
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.

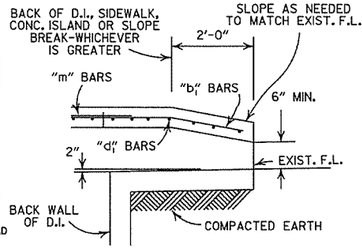
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

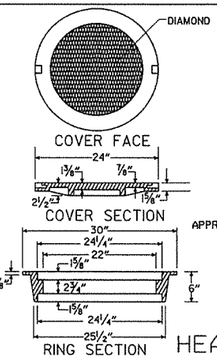
BAR DIAGRAM



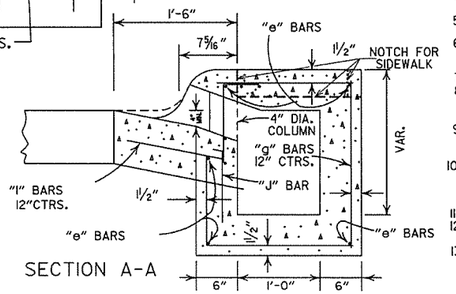


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



HEAVY DUTY RING & COVER



GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

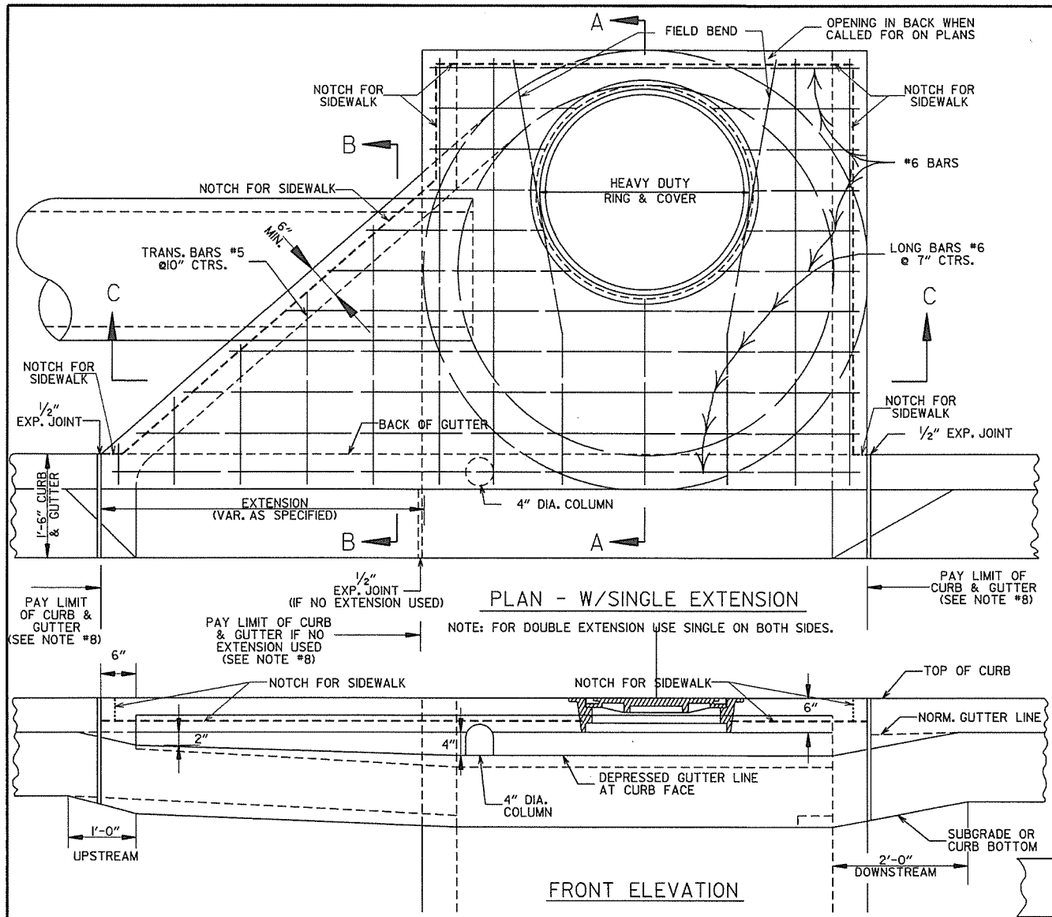
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

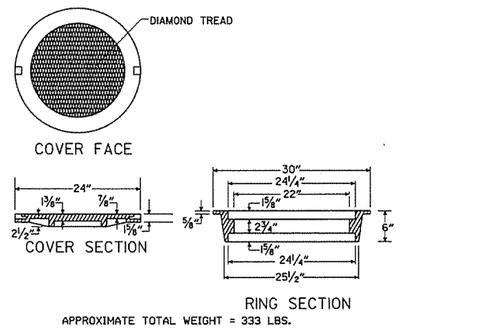
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

(TYPE C)

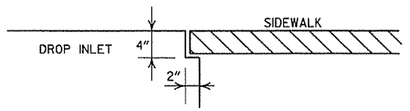
STANDARD DRAWING FPC-9E



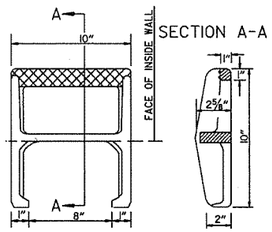


HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS

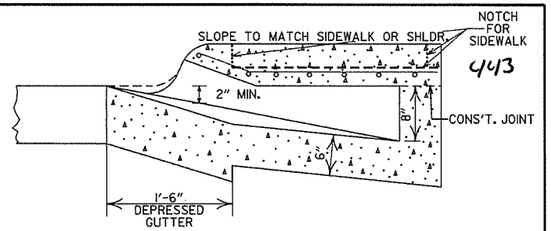


APPROX. WEIGHT = 11 LBS. (CAST IRON)

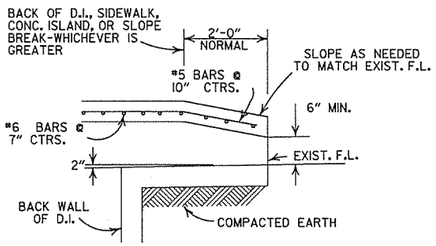
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

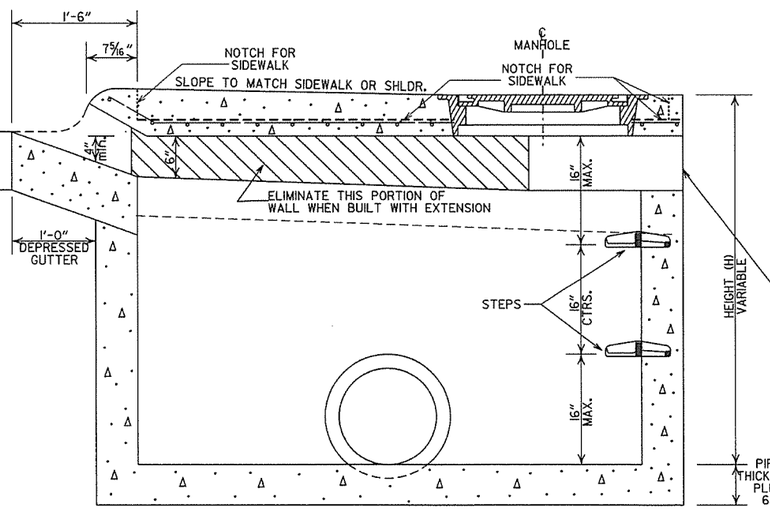


SECTION B-B



BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).



SECTION A-A

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

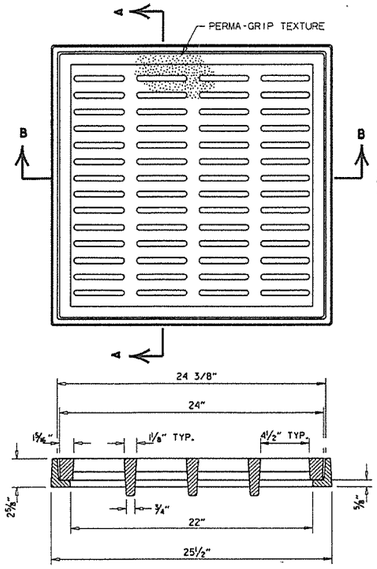
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

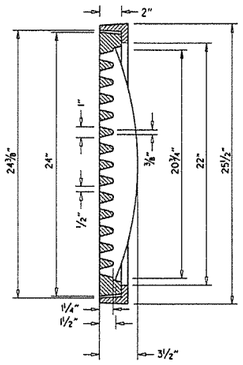
DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11 ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMTER OF D.I. IN BOX	
4-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV BACK OPEN DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO.12	11-30-89
5-24-89	ADDED NOTE & MINUMUM WALL THICKNESS	5/3-5-24-89
7-12-88	ADDED EXTEND NOTE TO SECTION A-A	6/35-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

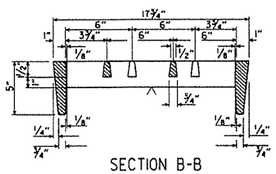


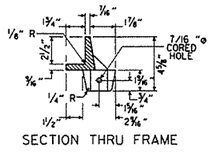


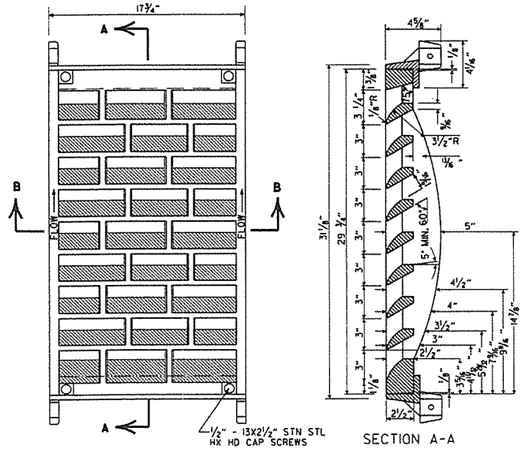
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



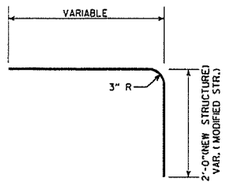




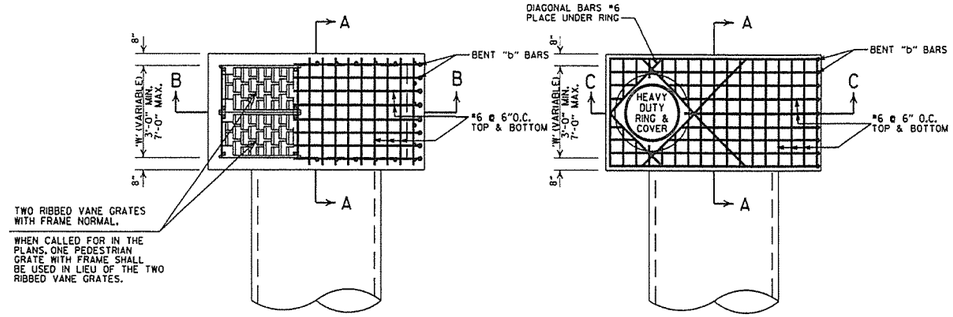
DETAILS OF RIBBED VANE GRATE AND FRAME

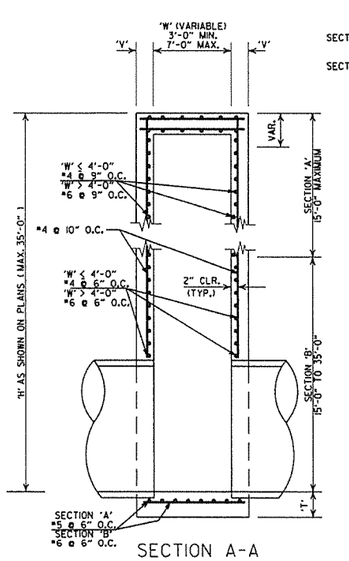
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



DETAIL OF BENT "b" BAR

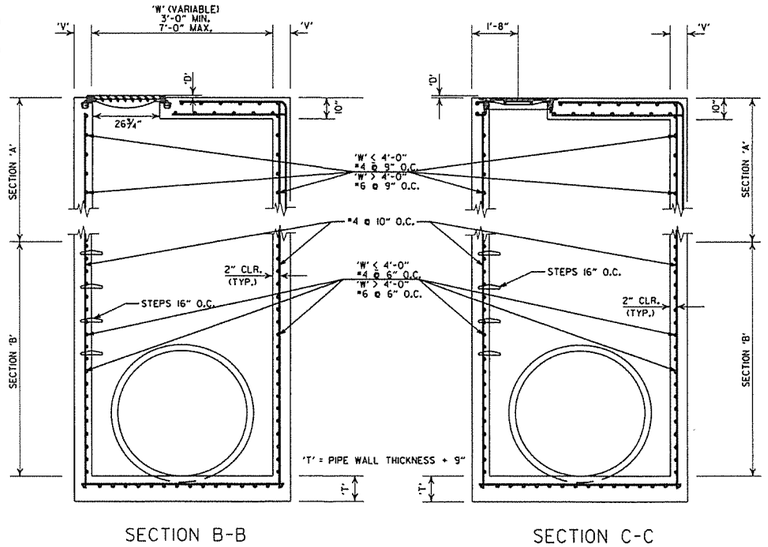




SECTION 'A'
'V' = 8"

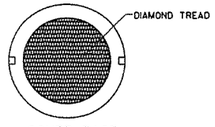
SECTION 'B' (W≤4'-0")
'V' = 8"

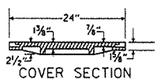
SECTION 'B' (W>4'-0")
'V' = 10"

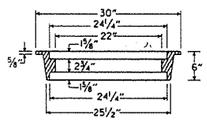


DETAILS OF DROP INLET (TYPE ST)

DETAILS OF JUNCTION BOX (TYPE ST)







HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

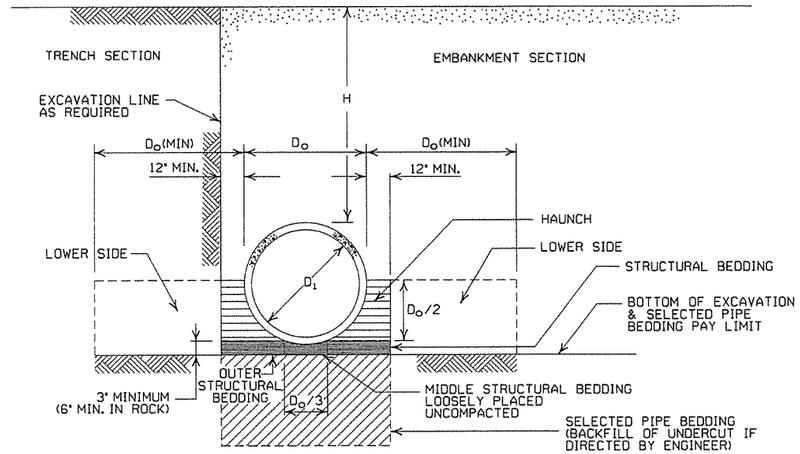
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2,5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			

			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				
				INSTALLATION		INSTALLATION	
				TYPE 2	TYPE 1	TYPE 2	TYPE 1
36	40x31	5	0.079	3	2	12	15
42	46x36	6	0.079	3	2	13	15
48	53x41	7	0.079	3	2	13	15
54	60x46	8	0.079	3	2	13	15
60	66x51	9	0.079	3	2	13	15
66	73x55	12	0.079	3	2	15	15
72	81x59	14	0.079	3	2	15	15
78	87x63	14	0.079	3	2	15	15
84	95x67	16	0.109	3	2	15	15
90	103x71	16	0.109	3	2	15	15
96	112x75	18	0.109	3	2	15	15
102	117x79	18	0.109	3	2	15	15
108	128x83	18	0.138	3	2	15	15

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

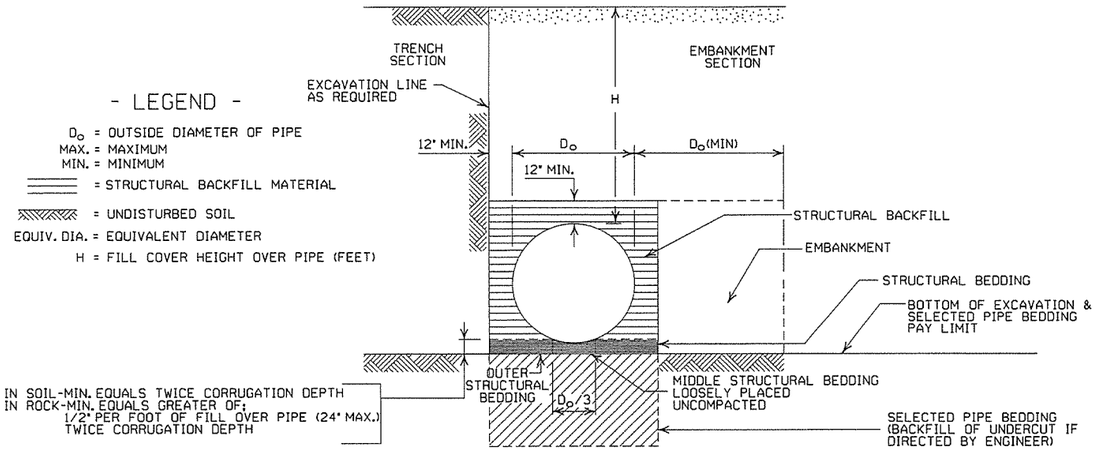
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

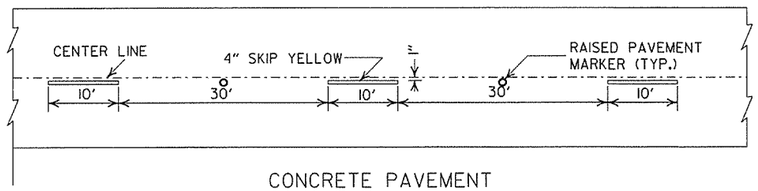
② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

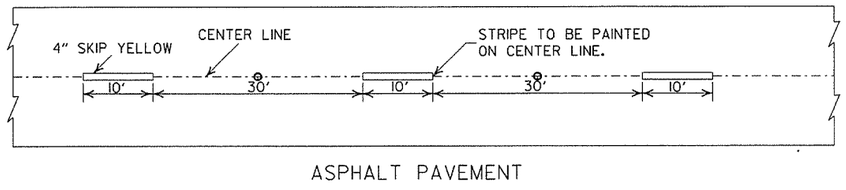
ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

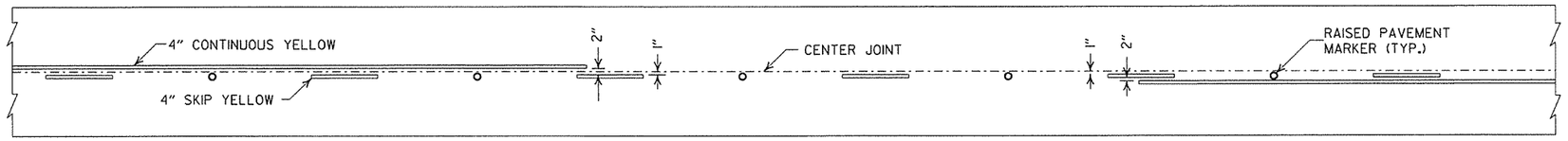


CONCRETE PAVEMENT

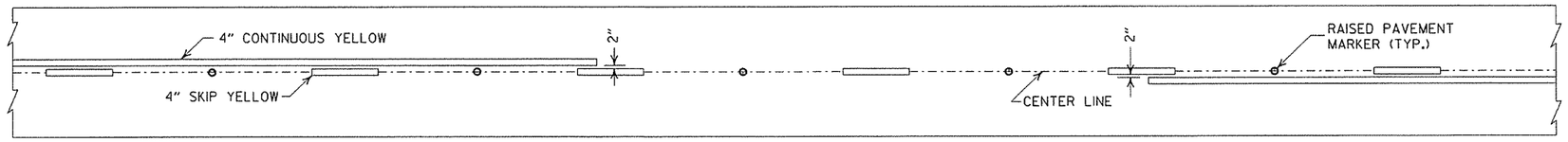


ASPHALT PAVEMENT

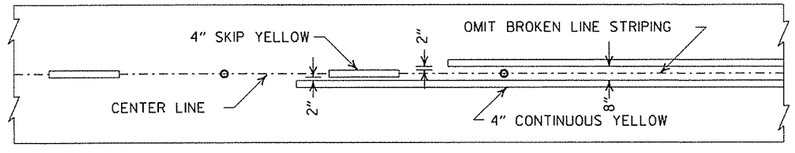
BROKEN LINE STRIPING



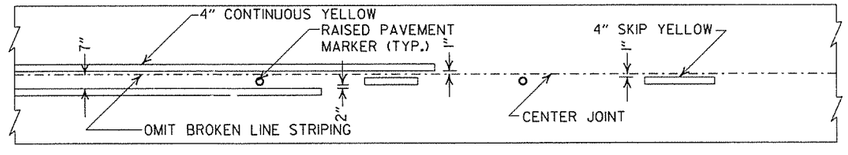
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT



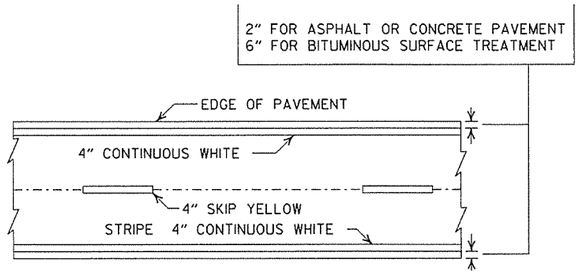
ASPHALT PAVEMENT



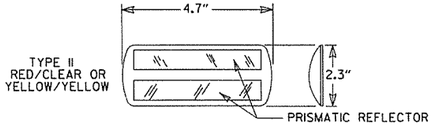
CONCRETE PAVEMENT

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

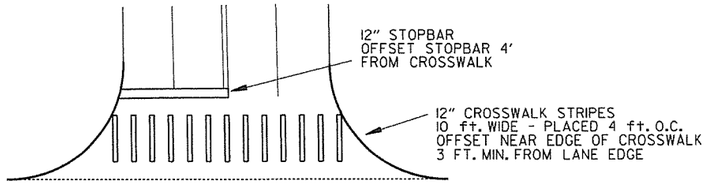
GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

STRIPING AT ADJACENT NO PASSING LANES



CROSSWALK AND STOPBAR DETAILS

DATE	REVISION	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
		FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

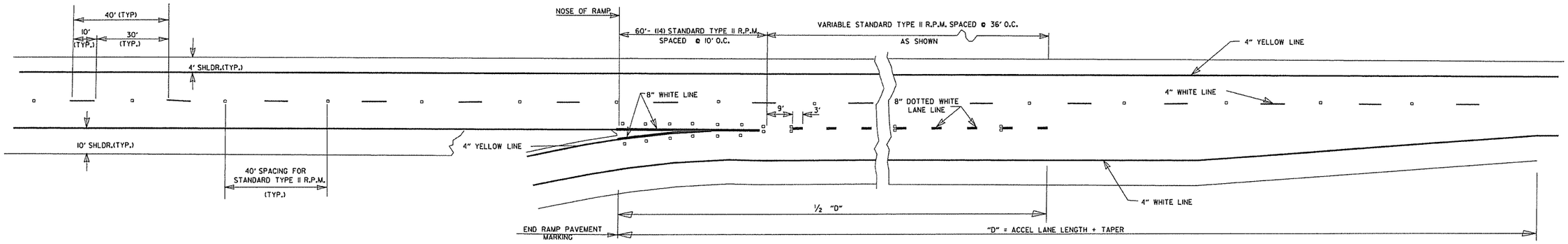
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

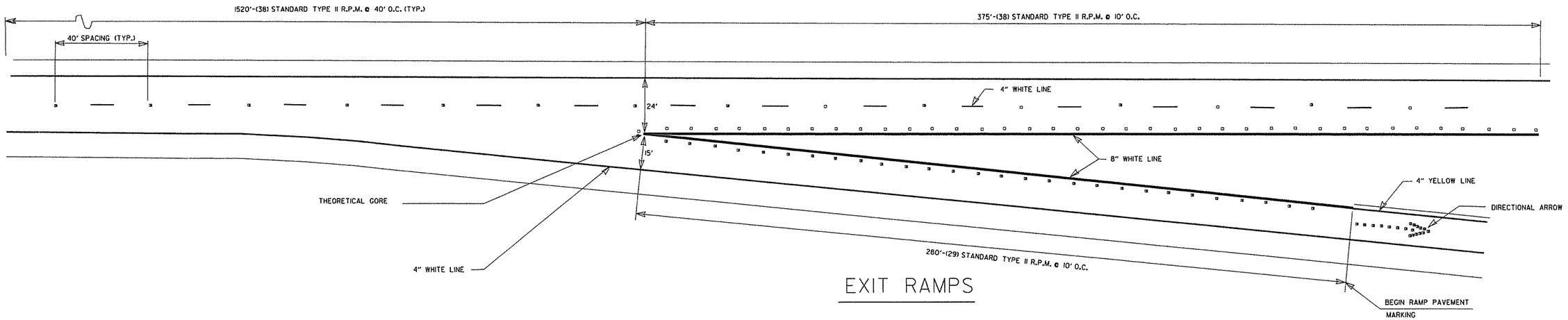
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

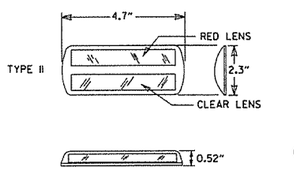
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

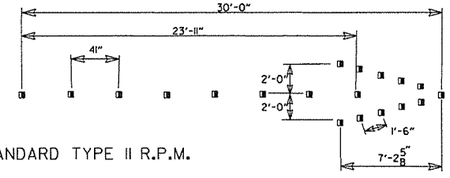


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

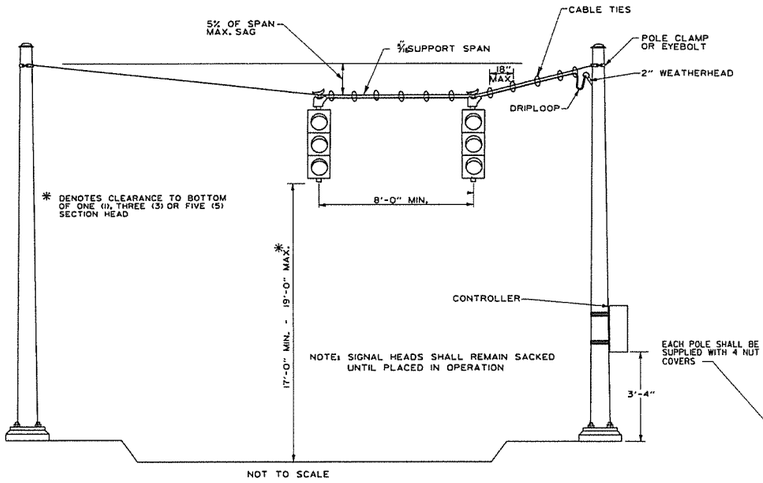
NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

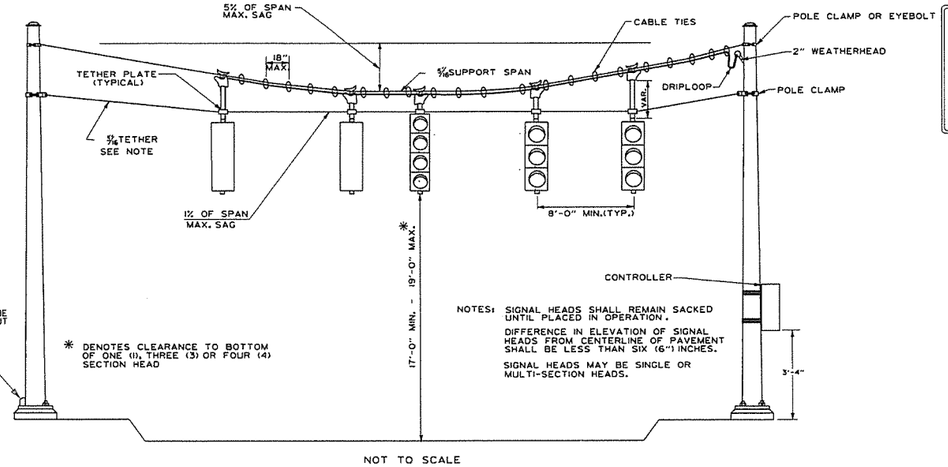
ARKANSAS STATE HIGHWAY COMMISSION

PERMANENT PAVEMENT MARKING
ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2



TYPICAL SPAN WIRE ASSEMBLY



TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

NOTES: SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF 4' BEHIND CURB OR SHOULDER.

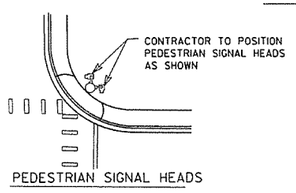
OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND POLES AND ARMS. ALL POLES AND ARMS IN A JOB MUST BE OF THE SAME SHAPE.

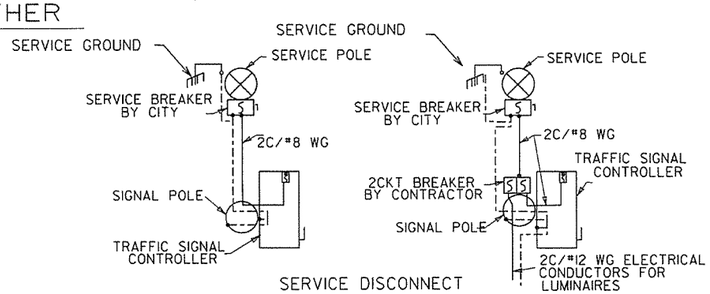
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

THE ANCHOR BOLTS AND SWEEPING "L" CONDUIT SHALL BE PLACED IN THE FOUNDATION IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE FOUND ROD SHALL EXTEND A MINIMUM OF 8' BELOW CABINET FOUNDATION.

THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 AWG SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.

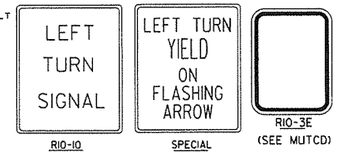




SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

CONCRETE BASE MOUNTED CABINET DETAILS



NOTES:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN SIGNAL PLAN NOTES.

SIGN BLANK SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

SIGN FACE SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)", TO BE USED AS A LEFT TURN INDICATION ONLY, SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

TETHER STRAND SHALL BE EITHER 5#32" OR 3#16" HIGH FATIGUE STAINLESS STEEL AIRCRAFT CABLE IN 7/19 CONFIGURATION, MIL-W-83420 CERTIFIED, WITH A MINIMUM STRENGTH OF 2400 LB.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

FOUNDATION NOTES

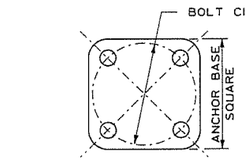
1. ALL REINFORCING STEEL SHALL BE GRADE 40 MINIMUM.
2. SPAN WIRE POLES WITH A 9" OR 10" POLE BASE SHALL USE FOUNDATIONS THAT ARE 30" IN DIA. AND 9'-0" IN DEPTH. VERTICAL REINFORCING SHALL BE 12-#7 @ 102". HORIZONTAL REINFORCING STEEL SHALL BE 13-#4 @ 8.333" O.C.
3. SPAN WIRE POLES WITH AN 11", 12" OR 13" POLE BASE SHALL USE FOUNDATIONS THAT ARE 30" IN DIA. AND 12'-0" IN DEPTH. VERTICAL REINFORCING STEEL SHALL BE 12-#7 @ 138". HORIZONTAL REINFORCING STEEL SHALL BE 17-#4 @ 8.5" O.C.
4. ALL PED POLES SHALL USE FOUNDATIONS THAT ARE 30" IN DIAMETER AND 7'-0" IN DEPTH. VERTICAL REINFORCING STEEL SHALL BE 12-#7 @ 78". HORIZONTAL REINFORCING STEEL SHALL BE 10-#4 @ 8.44" O.C.

MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

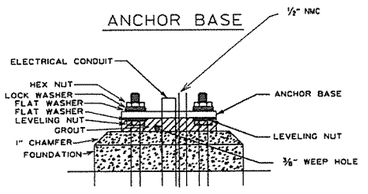
USE FATIGUE CATEGORY II.
CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

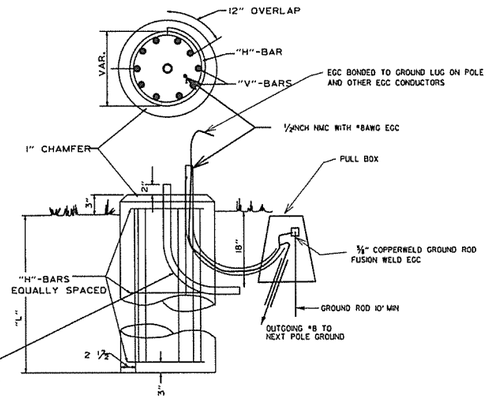
BASE WIND SPEED: 90 MPH

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

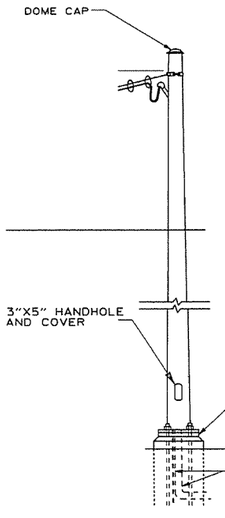


ANCHOR BASE





TYPICAL FOUNDATION DETAILS



SPAN WIRE ASSEMBLY WITH SPAN WIRE SUPPORT POLE

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 713 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND EGC CONDUCTOR SHALL BE PAID FOR SEPARATELY.

ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C=3500 PSI. CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS CHAMFERED 3/4" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

DATE	REVISION	DATE FILM
2-27-14	REVISED NOTES.	
9-12-13	ISSUED AS STANDARD DRAWING	
7-21-11	REVISED PEDESTRIAN SIGN & GROUNDING	
5-21-09	REVISED GROUNDING	
9-10-08	REV. STEEL AIRCRAFT CABLE CONFIGURATION NOTE	
7-31-08	REVISED GROUNDING	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENTATION & SIGNAL OPERATION	
5-22-02	REVISED	
12-27-99	REVISED	
11-18-98	REVISION TO NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SPAN WIRE ASSEMBLY STEEL POLE

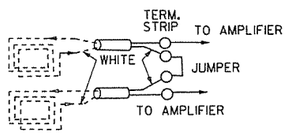
STANDARD DRAWING SD-3

LOOP DETECTOR INSTALLATION AND TESTING

NOTES:

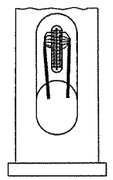
1. LOOPS WITH A PERIMETER GREATER THAN 40' SHALL HAVE TWO TURNS. LOOPS WITH A PERIMETER LESS THAN OR EQUAL TO 40' SHALL HAVE THREE TURNS, UNLESS OTHERWISE NOTED ON THE PLANS. QUADRUPOLE LOOPS SHALL BE TWO TURNS (2-4-2 CONFIGURATION) UNLESS OTHERWISE NOTED.
2. LOOP AND FEEDER WIRE SHALL BE CONTINUOUS WITHOUT SPLICES EXCEPT AT THE LOOP/FEEDER WIRE SPLICE AS SHOWN. SPLICE SHALL BE ROSIN SOLDERED AND WATERPROOFED WITH AN ACCEPTED SPLICE KIT. DRAIN WIRE SHALL BE GROUNDED IN CABINET AND INSULATED AT LOOP TO FEEDER SPLICE.
3. THE LOOP TO FEEDER SPLICE, FEEDER JACKET AND JACKET OF LOOP WIRE IN DUCT SHALL BE COMPLETELY SEALED AND WATERPROOFED.
4. CONTRACTOR MAY MAKE CONNECTIONS TO SIGNAL CABLE AND LOOP TO FEEDER CONNECTION AT TERMINAL STRIPS MOUNTED TO POLE INSIDE HAND HOLD COVER AS SHOWN IN DETAIL. TERMINALS MUST BE EASILY ACCESSIBLE, BUT PROTECTED AGAINST ACCIDENTAL CONTACT. CONNECTION OF POWER CARRYING CIRCUITS MUST BE SEPARATED FROM LOOP OR LOGIC CIRCUITS. ALL CONNECTIONS TO TERMINAL STRIPS SHALL UTILIZE SPADE LUGS OR AS APPROVED BY THE ENGINEER.
5. EACH LOOP SHALL HAVE A SEPARATE "FEEDER WIRE" UNLESS OTHERWISE NOTED. ALL FEEDER WIRES SHALL BE LABELED AS TO LOOP NUMBER AS DESIGNATED ON THE PLANS.
6. ALL LOOP WIRE ENTERING PULL BOXES SHALL BE ENCLOSED IN CONDUIT. EACH LOOP WIRE SHALL ENTER PULL BOX OR POLE BASE THROUGH A SEPARATE PIECE OF ONE INCH (1"O) CONDUIT.
7. LOOP WIRE FROM LOOP TO CONDUIT IS NOT TWISTED. LOOP WIRE IN THE CONDUIT MUST BE TWISTED TWO TO FIVE TURNS PER FOOT.
8. WARRANTY PERIOD FOR LOOPS SHALL NOT COMMENCE UNTIL TESTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER. CONTRACTOR SHALL PERFORM TEST AND PROVIDE A RECORD TO THE ENGINEER AS LISTED IN THE DETECTOR LOOP TESTING PROCEDURE.
9. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BACKER ROD SHALL BE INSTALLED IN SHORT SECTIONS SPACED NOT MORE THAN 18" APART AND WEDGED INTO SLOT TO HOLD CABLE IN PLACE. CABLE SHALL BE TOTALLY ENCAPSULATED IN SEALER.
10. "HOT POUR" SEALER SHALL NOT BE ALLOWED WITH 705-LOOP WIRING IN DUCT.
11. WHERE UNDERGROUND SPLICES OF SIGNAL CABLE ARE REQUIRED, CONNECTIONS SHALL BE SOLDERED AND COMPLETELY WATERPROOFED TO THE SATISFACTION OF THE ENGINEER. WATERPROOFING SHALL EXTEND A MINIMUM OF TWO INCHES PAST THE SIGNAL CABLE JACKET AND SHALL COMPLETELY COVER ALL INDIVIDUAL CONDUCTORS OF THE SIGNAL CABLE. WATERPROOFING DOES NOT APPLY TO CONNECTIONS MADE IN POLE BASES.
12. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE. ONLY ONE NEUTRAL IS REQUIRED FOR PEDESTRIAN SIGNALS. A SEPARATE 5C (TYPICAL) IS PROVIDED FOR PEDESTRIAN PUSH BUTTONS.
13. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO CONTROLLER. CONTROLLER CABINET SHALL BE WIRED SUCH POWER TO LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS DURING FLASH OPERATION.

SERIES CONNECTED LOOPS

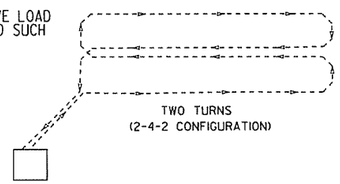


WIND LOOPS COUNTERCLOCKWISE; TAG WIRE EXITING SLOT AND TIE TO WHITE LEAD OF FEEDER WIRE; WHEN LOOPS ARE TIED TO SAME VEHICLE DETECTOR. SERIES CONNECT IN CABINET AS SHOWN.

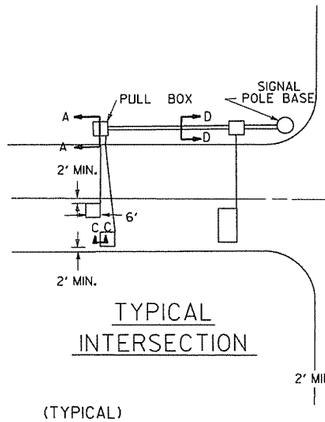
HANDHOLE TERMINAL



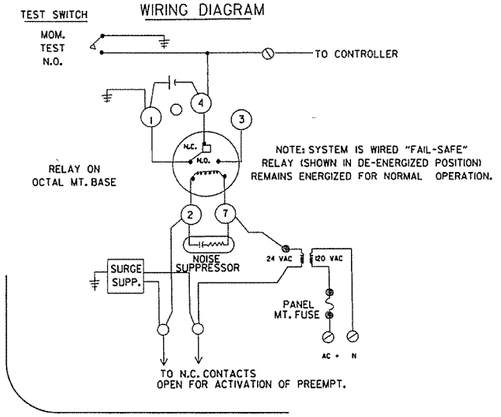
QUADRUPOLE LOOP



TYPICAL INTERSECTION



TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM



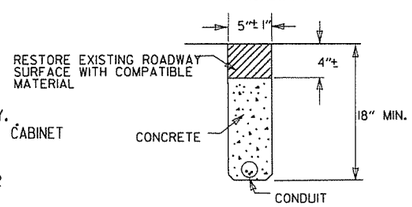
TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

1. DISCONNECT AND TEST CONTINUITY (< 10 OHMS) IF CONTINUITY IS BAD, GO TO TEST 3
2. TEST INSULATION (@ 500 VOLT TEST > 10 MEG-OHM) IF TESTS 1 & 2 ARE GOOD, NO FURTHER TESTING IS NECESSARY. RECORDED RESULTS CONSIST OF TESTS 1 & 2 FROM CONTROL CABINET WITH FEEDER WIRE CONNECTED TO LOOP.
3. OPEN SPLICE (DO NOT BREAK CONNECTION) REPEAT TEST 1 & 2 IF TEST 3 IS BAD, GO TO TEST 4
4. BREAK SPLICE, INSTALL JUMPER IN CABINET, REPEAT TESTS 1 & 2 SEPARATELY FOR FEEDER AND FOR LOOP

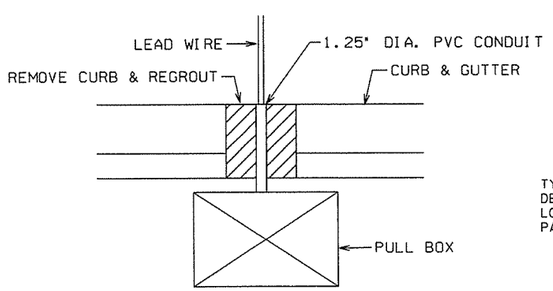
FAILURES TYPICALLY RESULT FROM BROKEN WIRE IN PAVEMENT, FAULTY INSULATION OF LOOP OR FEEDER WIRE, OR POORLY INSULATED SPLICE CONNECTION.

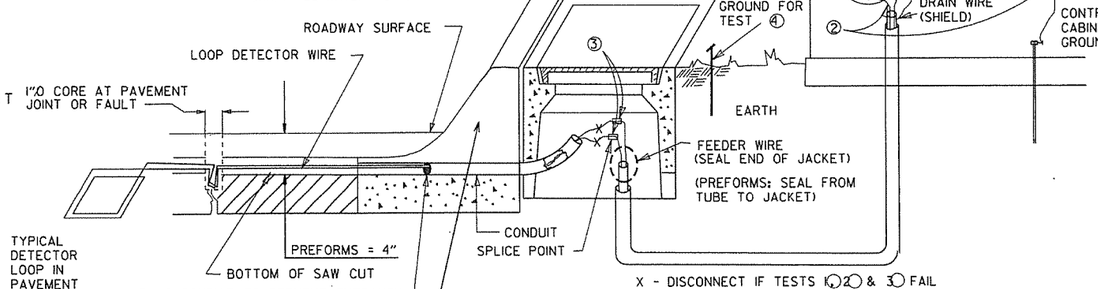
TRENCHING DETAIL

(FOR SAW CUT TRENCH IN ROADWAY)



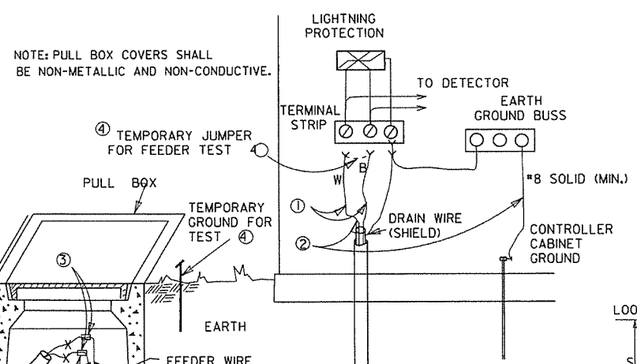
NOTE: CONDUIT SHALL BE INSTALLED IN CURB AS SHOWN OR AS DIRECTED BY THE ENGINEER. END OF CONDUIT SHALL BE WATER-TIGHT.



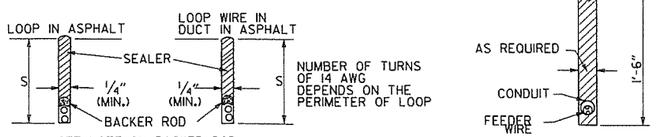


SECTION A-A
1'-6" CONCRETE COMBINATION CURB AND GUTTER

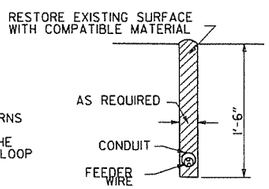
(TYPICAL)



TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS



SECTION C-C
S=2 1/2" IN ASPHALT
S=1 1/2" IN CONCRETE



SECTION D-D

SPECIAL NOTE
IF FEEDER WIRE JACKET IS LEFT UNSEALED AND WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

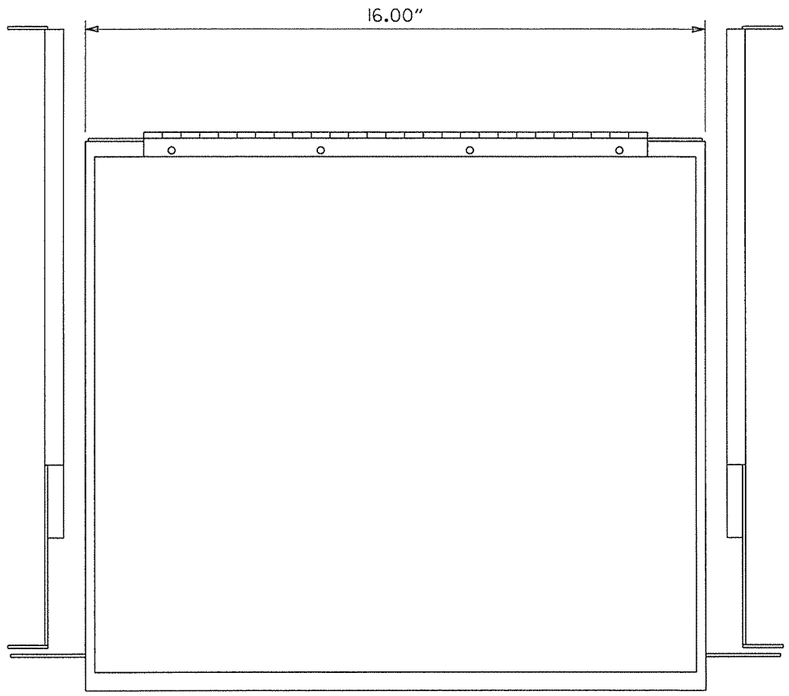
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-17-01	REVISED	
4-11-01	REVISED	
2-4-00	REVISED PRE-EMPTION TEST SWITCH	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

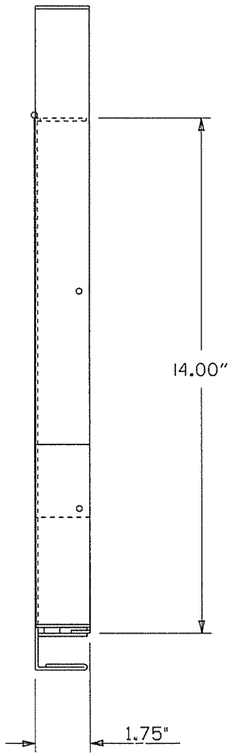
ARKANSAS STATE HIGHWAY COMMISSION

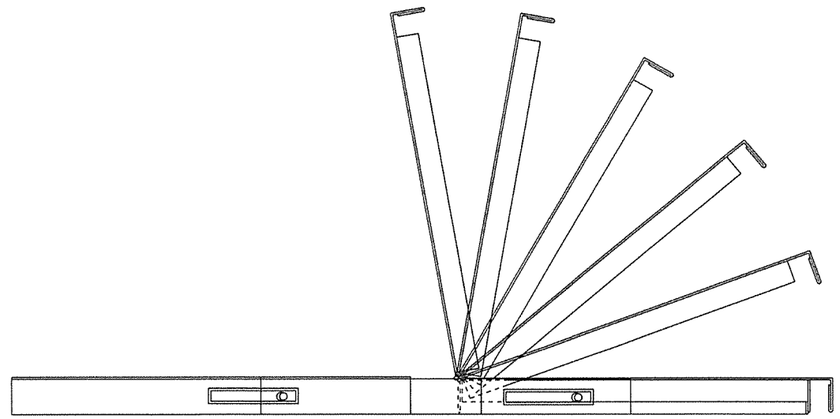
LOOP DETECTOR INSTALLATION

STANDARD DRAWING SD-4

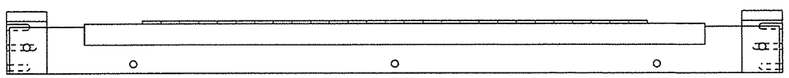
DRAWER PLAN VIEW



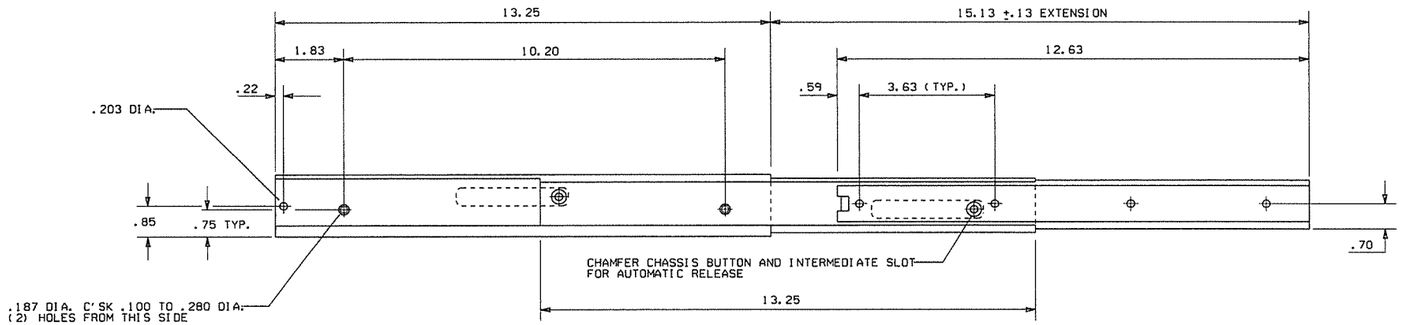




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

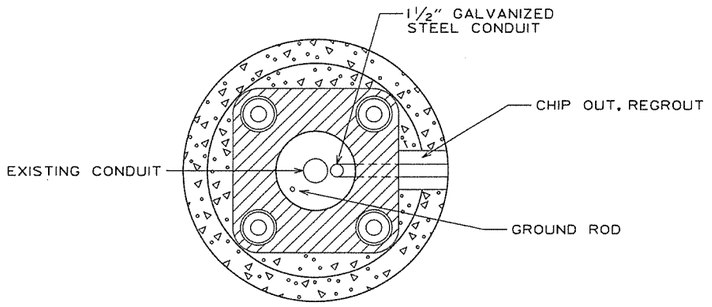
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

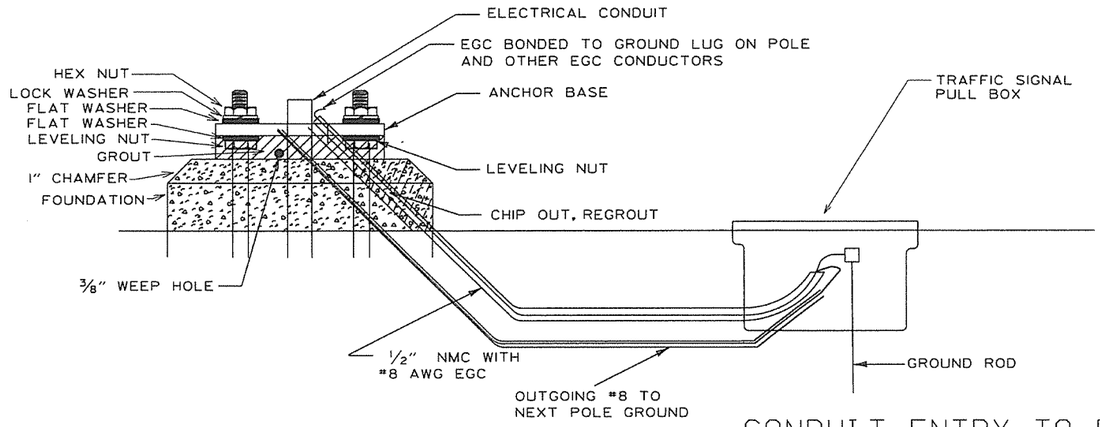
CONTROLLER CABINET
UTILITY DRAWER

STANDARD DRAWING SD-5

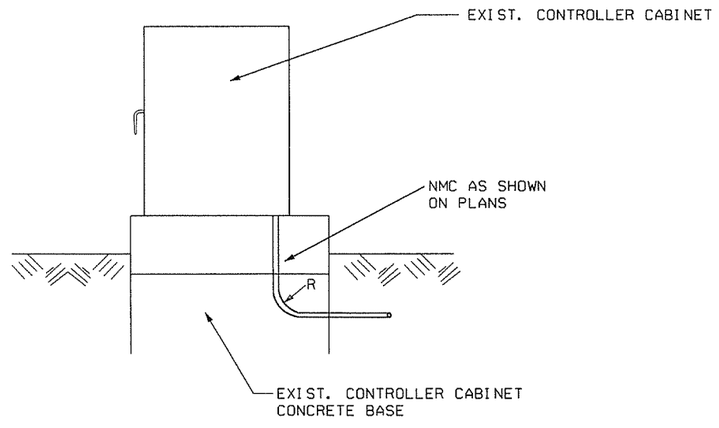
CONDUIT ENTRY TO EXISTING POLE BASE



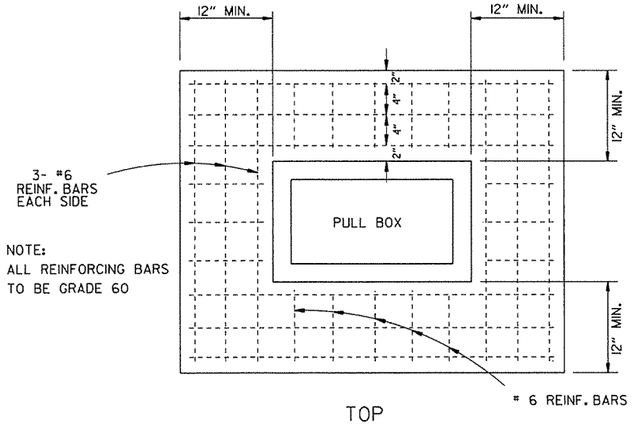
ANCHOR BASE



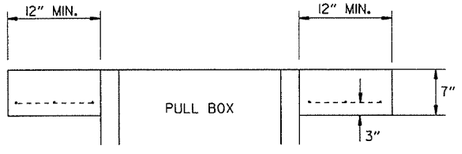
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

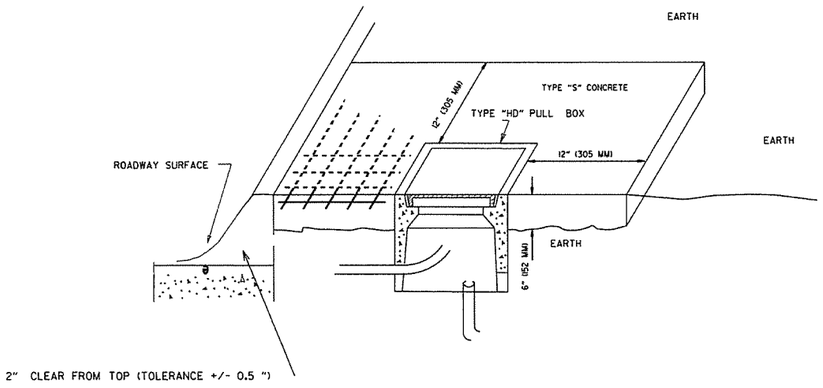


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



NOTE: ALL TYPE 1 AND TYPE 2 HD PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" (305 MM) WIDE AND 6" (152 MM) IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD PULL BOX. PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S." THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE PULL BOX IS REQUIRED IN CONCRETE.

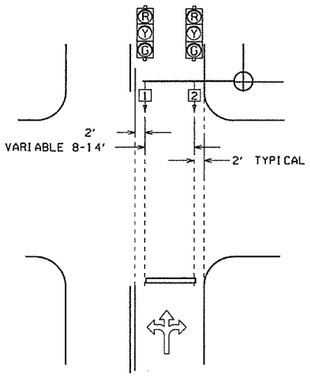
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6

(A)



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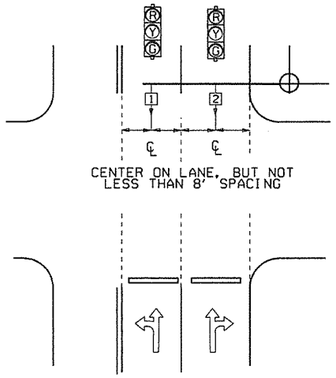

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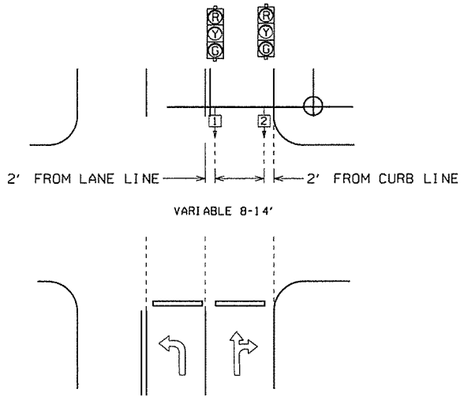
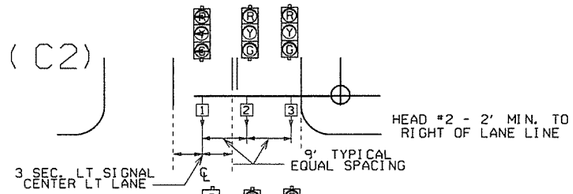
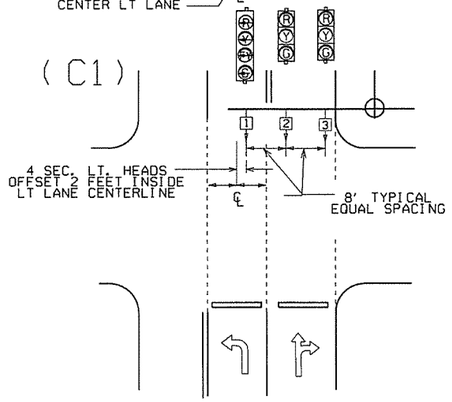


(C2)



(C1)



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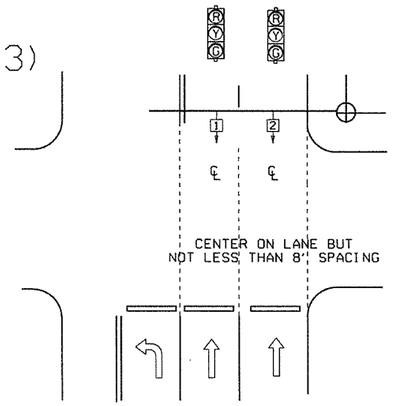

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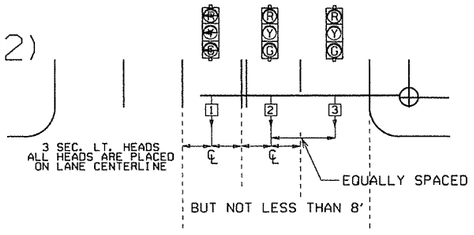

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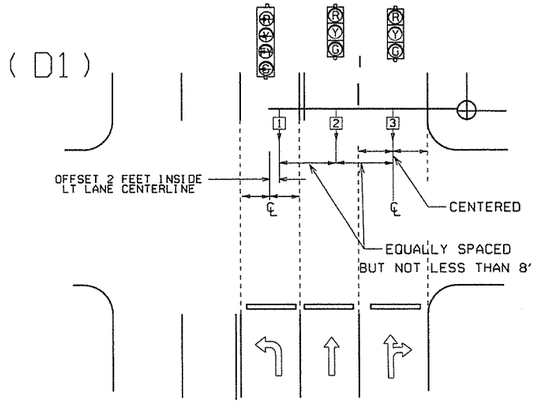
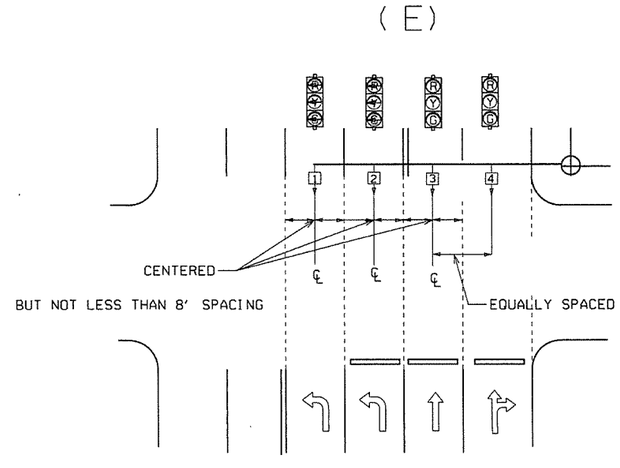


NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

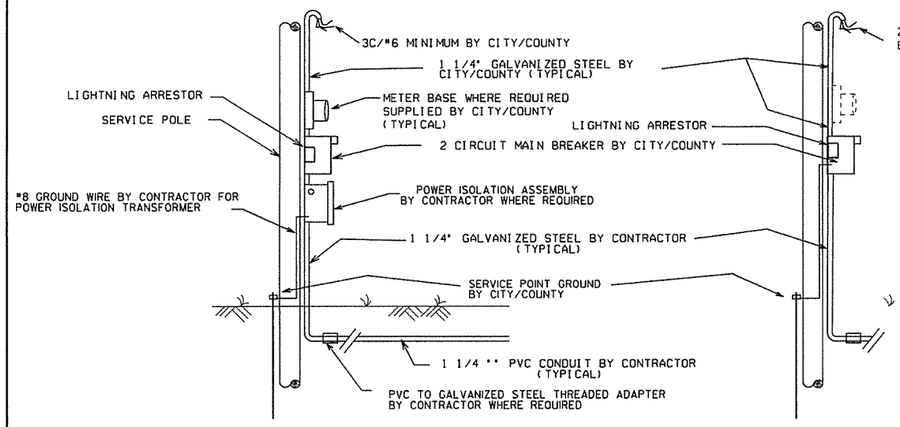
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY



WITHOUT POWER ISOLATION ASSEMBLY

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES: MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S OR COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

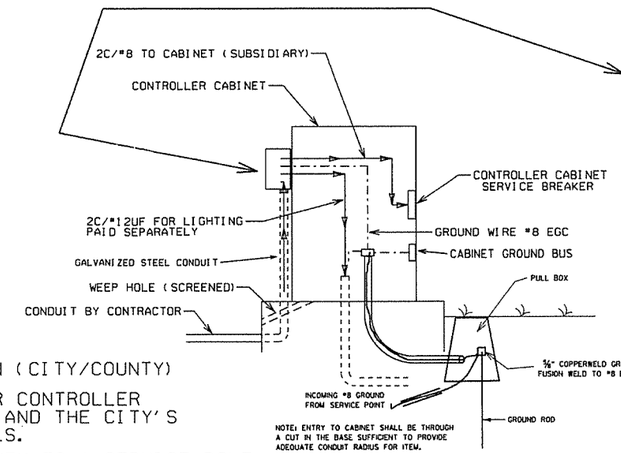
1. ALL SITUATIONS: ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2C/#12 AWG UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

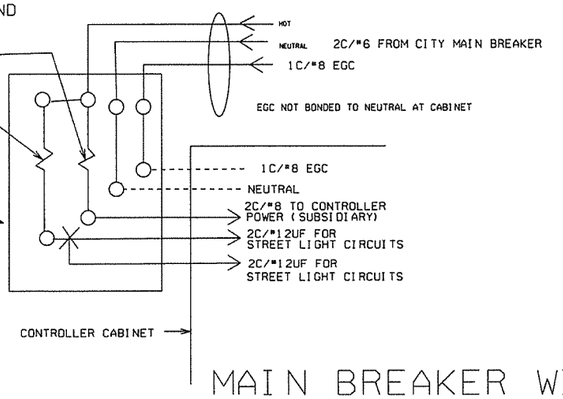
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT, WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

3. MAIN BREAKER NEAR CONTROLLER CABINET: ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

GROUND ROD-A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 701. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



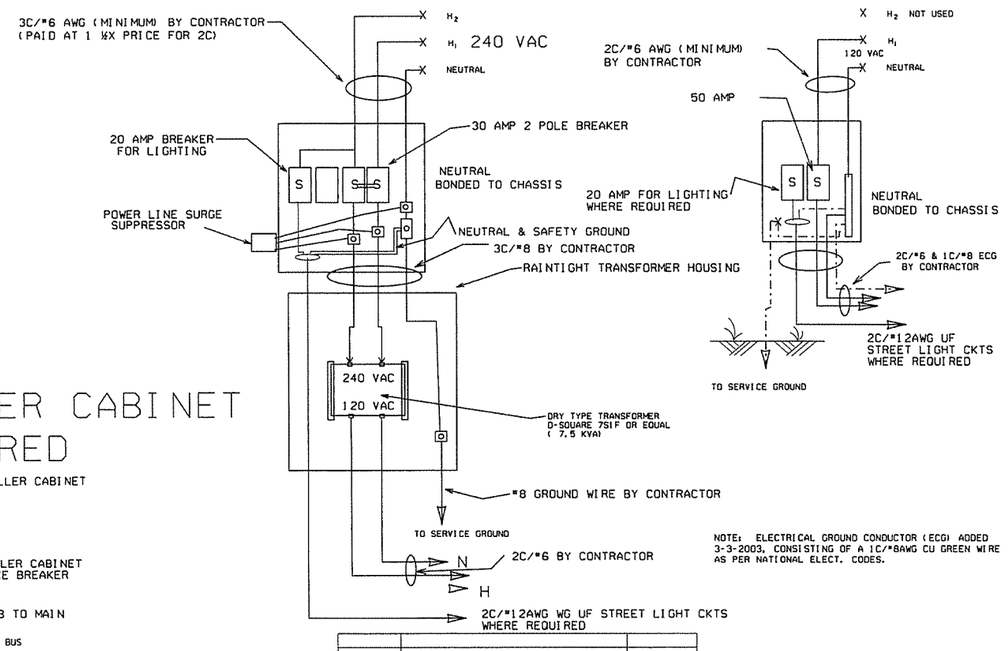


MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

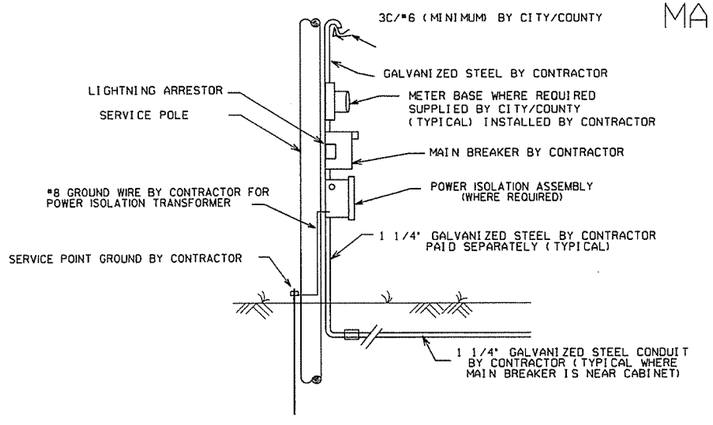
WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

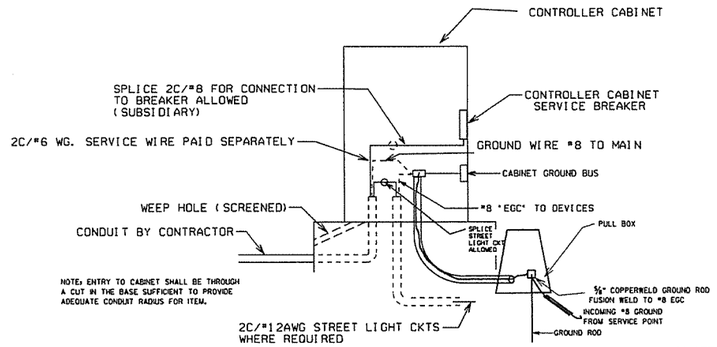
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (ECG) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
4-18-13	ADDED LIGHTNING ARRESTOR	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM 'TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)' SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM 'TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)' TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL * 2' X 0" X 2' * 6"; 20 LB. REMAINING HEADS SPACED A 8 FT. * 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT., INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) * VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

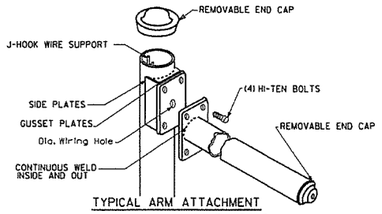
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

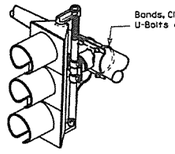
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

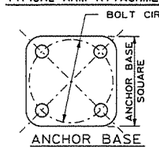
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



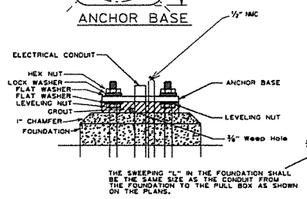
TYPICAL ARM ATTACHMENT

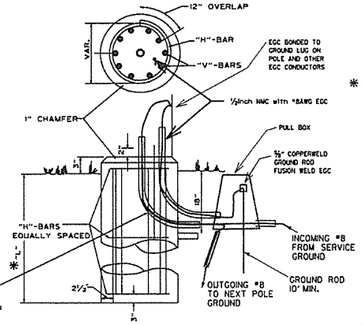


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



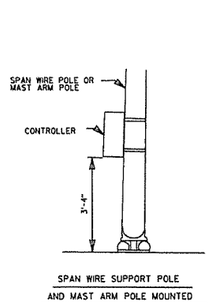


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

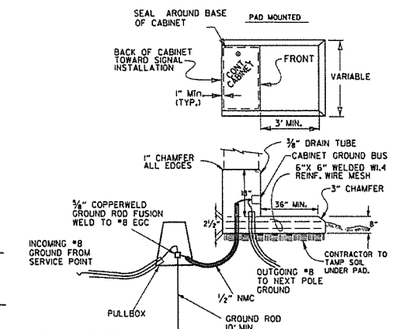
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH 'L' *	STEEL VERT.	STEEL HORZ.	STEEL O/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



CONTROLLER CABINET MOUNTING DETAILS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 5/8' GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS 'S' OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS 'S' OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

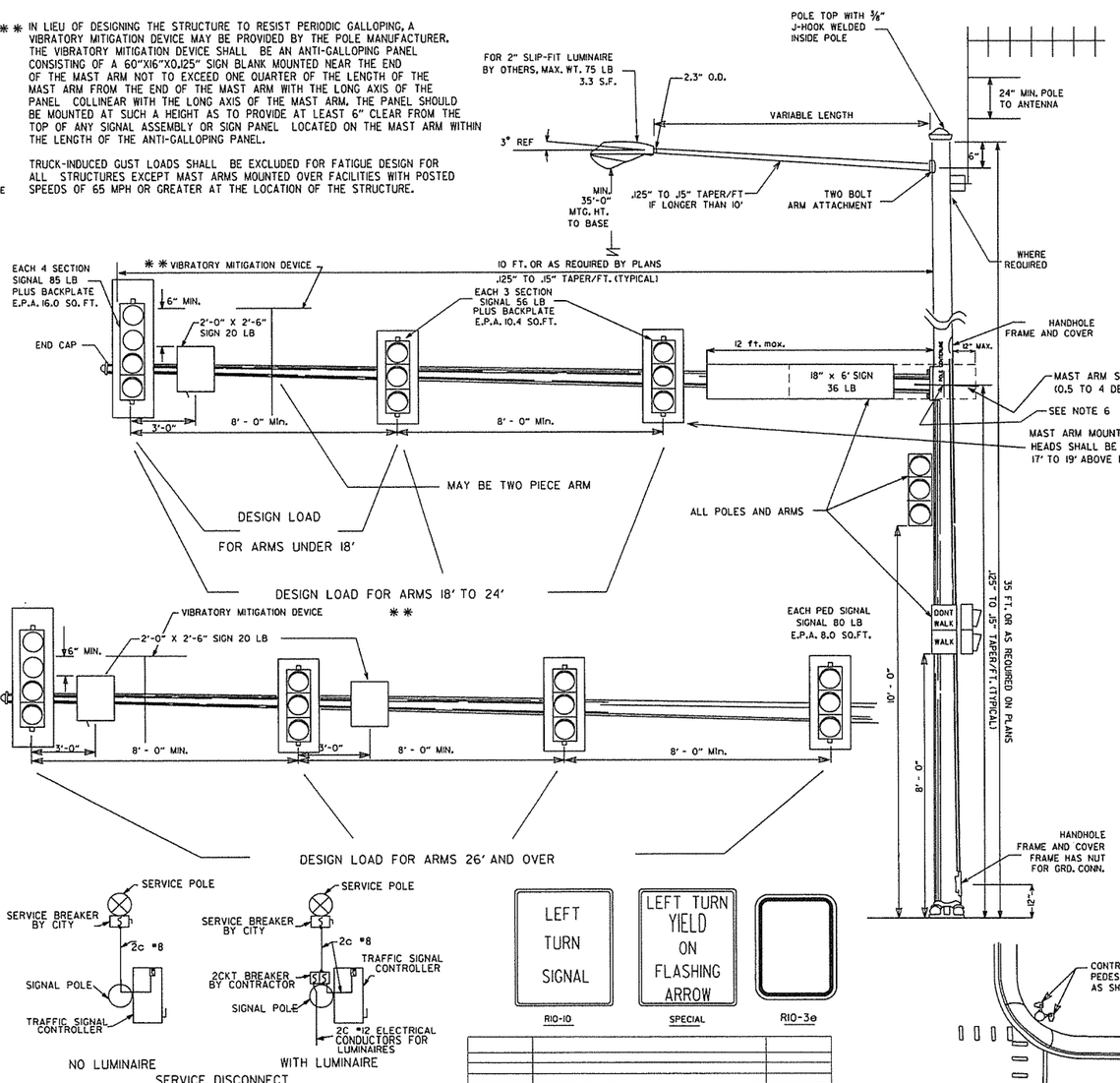
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD, AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

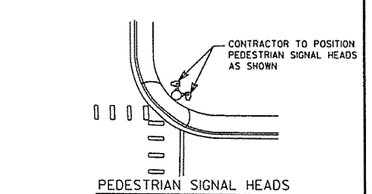
* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.



SERVICE DISCONNECT



PEDESTRIAN SIGNAL HEADS

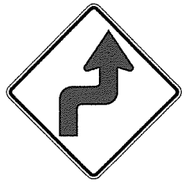
DATE	REVISION	DATE FILM
2-27-14	REVISED NOTES.	
9-12-13	ISSUED AS STANDARD DRAWING	
7-21-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-11-01	REV. NOTES & POLE MAST ARM SLOPE	
4-11-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

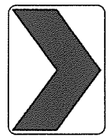
STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

R1-1
30"X30"



W1-3
30"X30"
(LT. OR RT.)

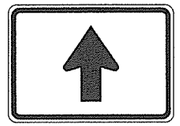


W1-8
18"X24"

W2-5
30"X30"

W3-1
36"X36"

W5-1
36"X36"



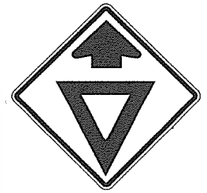
M6-3
21"X15"

R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)

W2-1
30"X30"

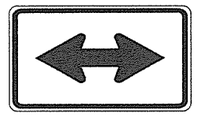
S1-1
36"X36"



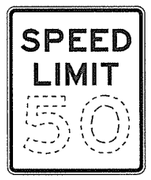
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.



M6-4
21"X15"



R2-1
24"X30"

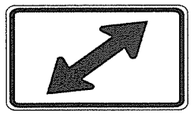
W1-5
30"X30"
(LT. or RT.)

W2-2
30"X30"

W5-2
36"X36"

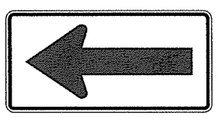
W8-3
36"X36"

R1-3P
18"X6"

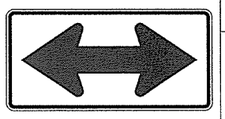


M6-5
21"X15"

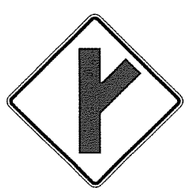
W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"

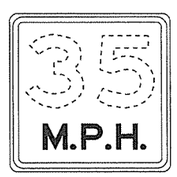


W1-7
48"X24"

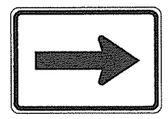


W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

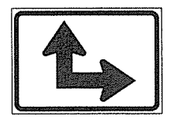


W13-1P
18"X18"



M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.

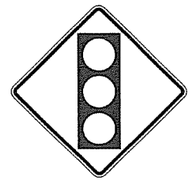


M6-6
21"X15"

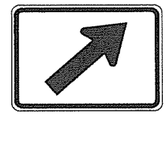
W1-2
30"X30"
(LT. or RT.)

W2-4
30"X30"

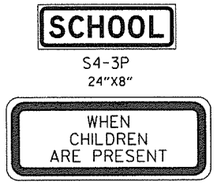
W10-1
36" DIAMETER



W3-3
36"X36"

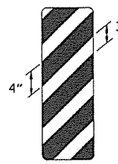


M6-2
21"X15"



S4-3P
24"X8"

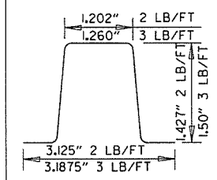
S4-2P
24"X10"



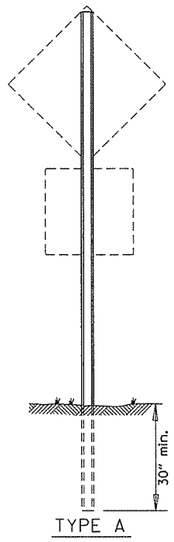
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

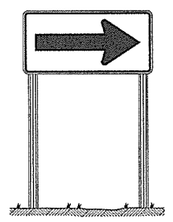


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

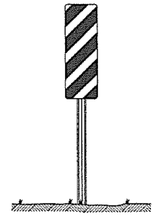


TYPE A

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



TYPE B



TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

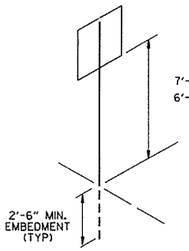
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED R1-3 TO R1-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1& W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

SUPPORT ASSEMBLIES

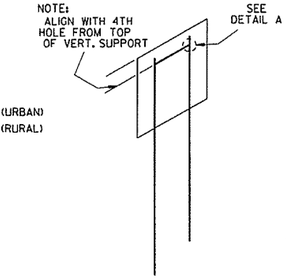
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

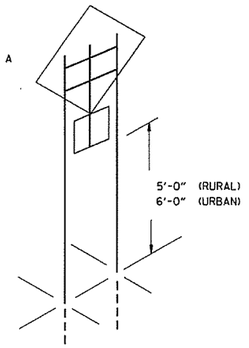
STANDARD DRAWING SHS-1



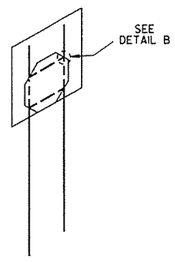
U-1



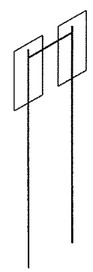
U-2



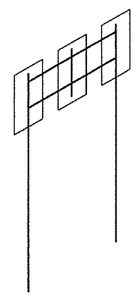
U-2 (A)



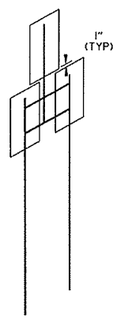
U-2 (B)



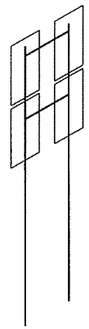
U-2 (1)



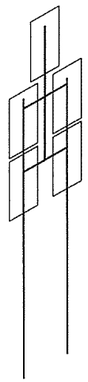
U-2 (2)



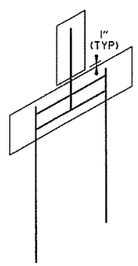
U-2 (3)



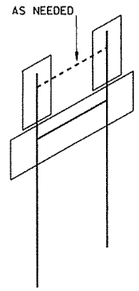
U-2 (4)



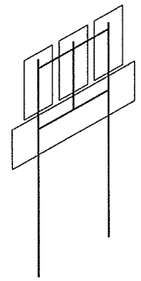
U-2 (5)



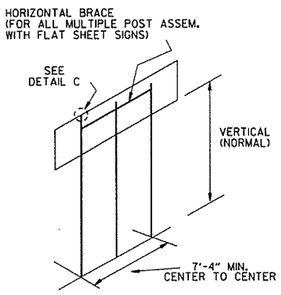
U-2 (6)



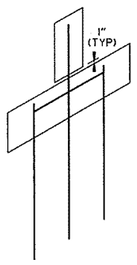
U-2 (7)



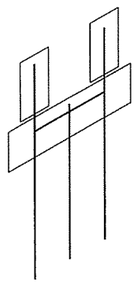
U-2 (8)



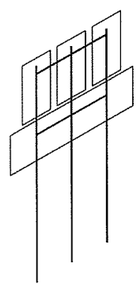
U-3



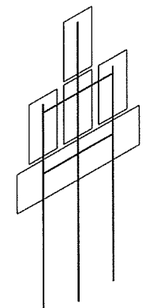
U-3 (1)



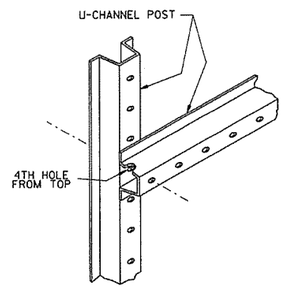
U-3 (2)



U-3 (3)

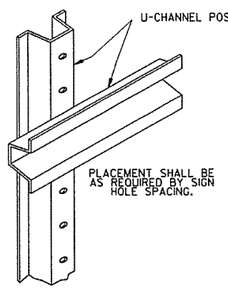


U-3 (4)



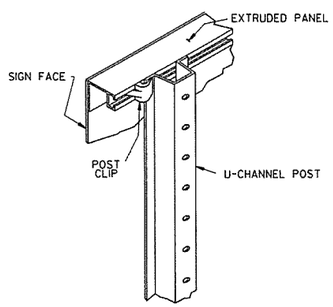
DETAIL A

SHOWING HORIZONTAL BRACE



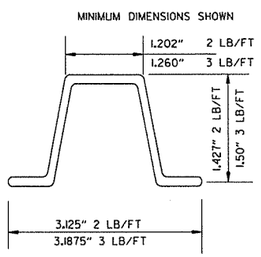
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



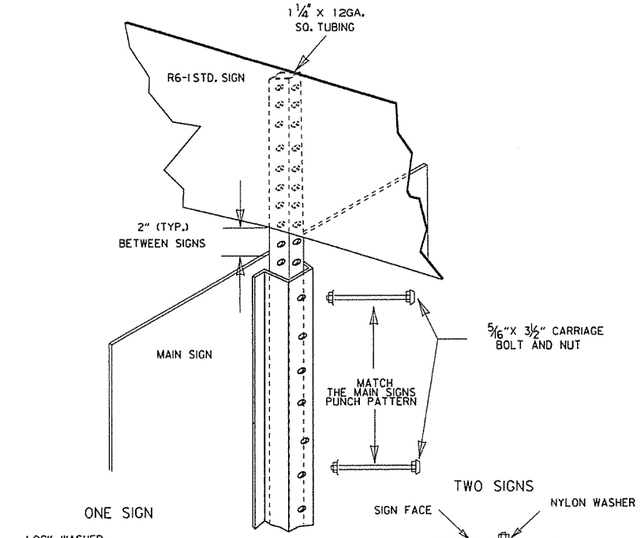
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



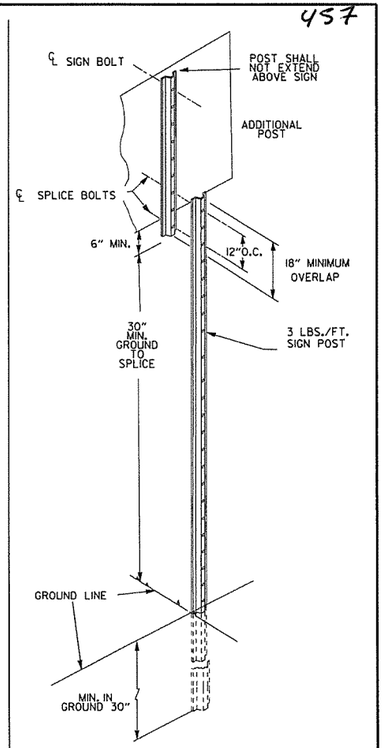
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

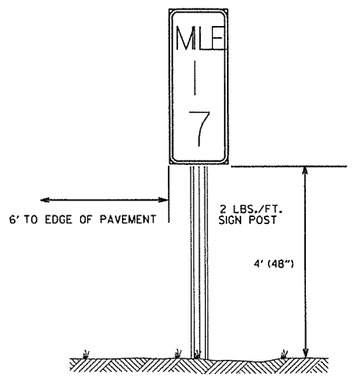
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

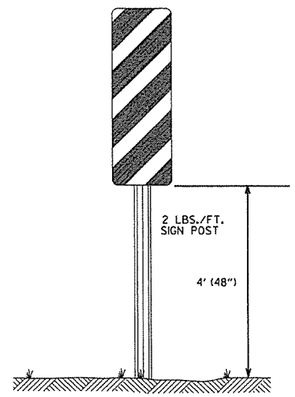
NORMAL INSTALLATIONS WILL REQUIRE 5/16 " DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



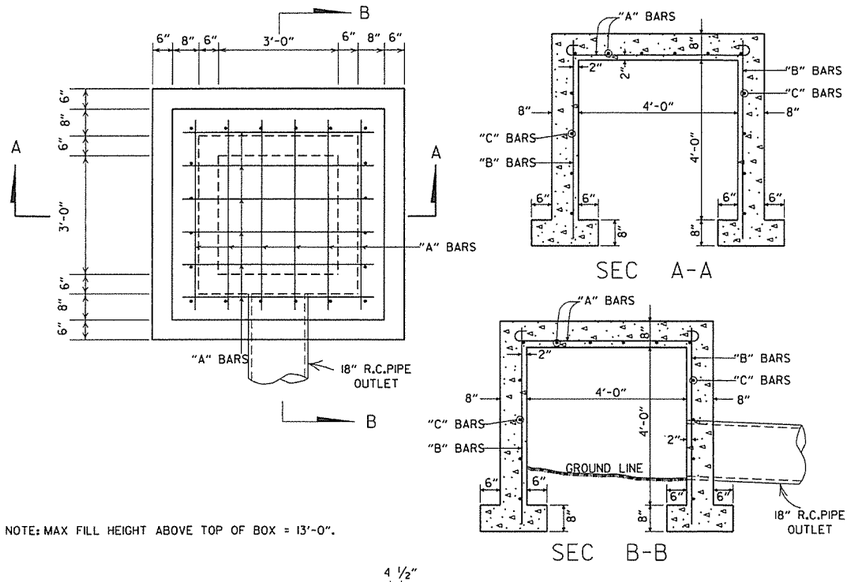
TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

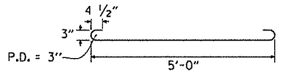


NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



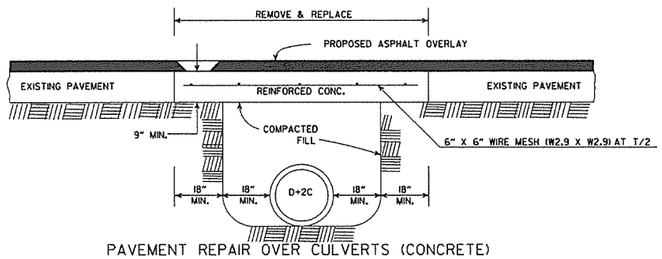
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

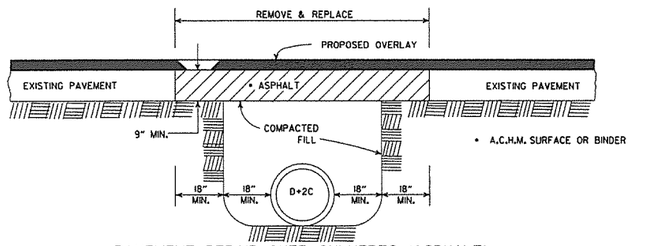
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



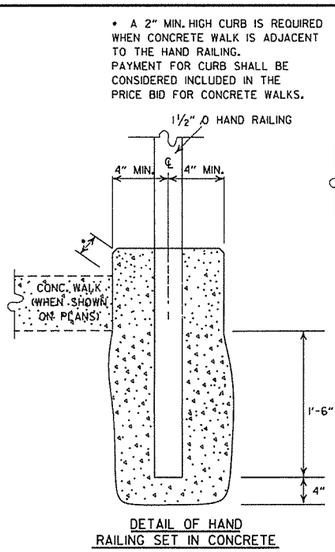
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



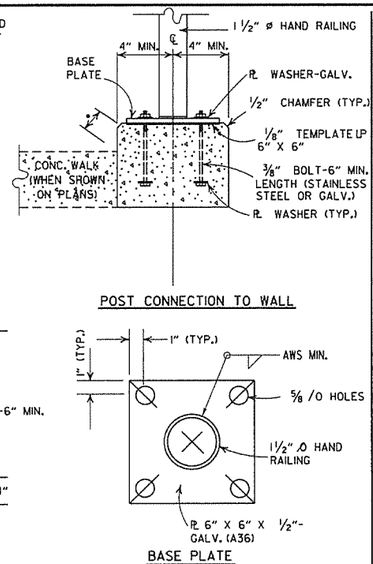
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



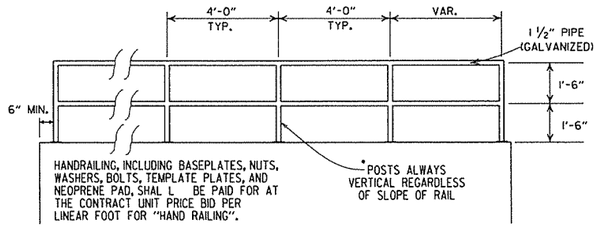
DETAIL OF HAND RAILING SET IN CONCRETE



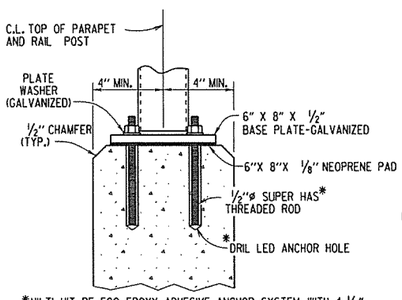
POST CONNECTION TO WALL

BASE PLATE

POST CONNECTION DETAILS



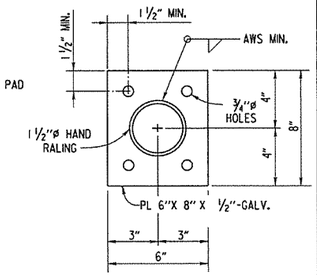
HAND RAILING SHAL L CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHAL L BE INSTAL LED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

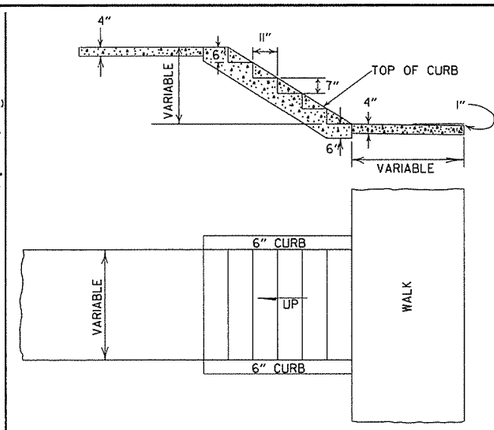
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

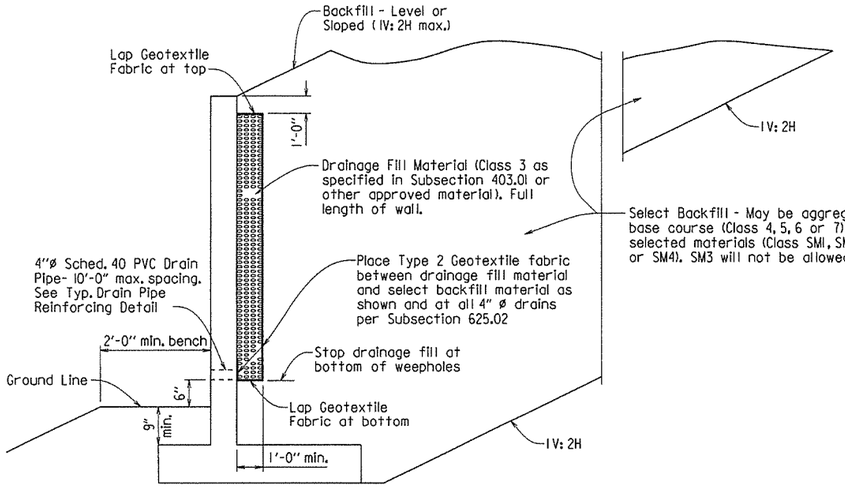
DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

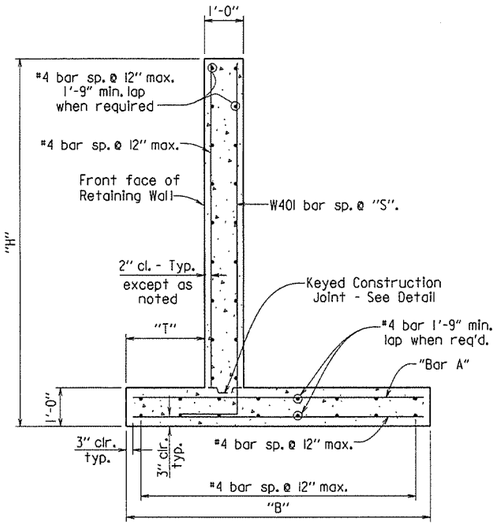
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1



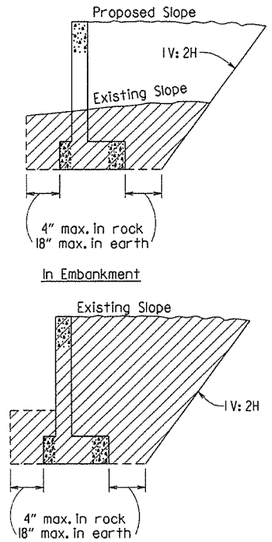
TYPICAL DRAINAGE & BACKFILL DETAILS

N.T.S



TYPICAL SECTION

N.T.S



NOTE: Hatched area denotes maximum limits of pay excavation.

DETAILS OF EXCAVATION

N.T.S

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas state Highway and Transportation Department Standard Specifications for Highway Construction (Current Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOAD: Live Load Surcharge is not included in the design of these walls. Vehicular Live Load shall not be allowed within a distance equal to one-half the height of the wall.

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered ½". All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi. A Class 2 Surface finish shall be used on all surfaces of the concrete unless otherwise noted.

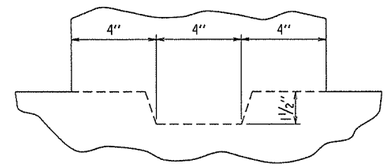
REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 orM53, Grade 60.

Foundations for footings shall be prepared in accordance with subsection 801.04. Backfill for retaining walls shall be in accordance with subsection 801.08.

Waterproof Membrane (Type C), waterstops, preformed joints, weep holes & geotextile fabric shall not be paid for directly, but shall be considered subsidiary to Class S Concrete.

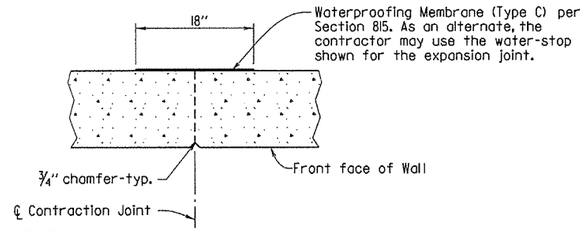
Drainage fill material (Class 3) and select backfill shall be measured and paid for as Compacted Embankment.

These details are not intended for use along streams or ditches without consideration for scour.



KEYED CONSTRUCTION JOINT DETAIL

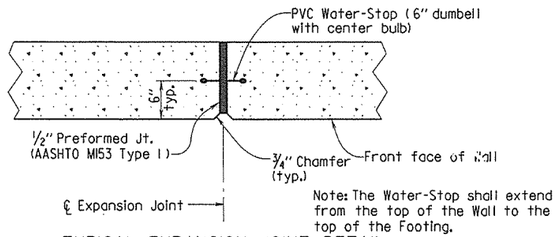
N.T.S



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

Note: 20'-0" Max. Spacing between Contraction Joints. Horizontal reinforcement shall be continuous through Contraction joints.

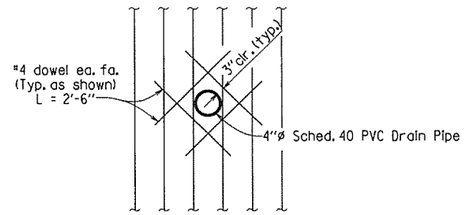


Note: The Water-Stop shall extend from the top of the Wall to the top of the Footing.

TYPICAL EXPANSION JOINT DETAIL

N.T.S.

Note: 60'-0" Max. Spacing between Expansion Joints. Horizontal reinforcing shall stop 2" from ℄ Expansion Joint.



TYPICAL DRAIN PIPE REINFORCING DETAIL

N.T.S

SEISMIC ZONE: These walls have been designed for the following site adjusted peak ground accelerations (A_S):
Level Backfill - $A_S \leq .40g$
Sloped Backfill (1V: 2H max.) - $A_S \leq .30g$

TABLE OF RETAINING WALL VARIABLES

(LEVEL BACKFILL)

"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-0"	12"	#4 @ 12"
6'-0"	9"	4'-6"	12"	#4 @ 12"
7'-0"	9"	5'-6"	12"	#4 @ 10"
8'-0"	9"	6'-0"	12"	#5 @ 10"
9'-0"	1'-0"	7'-0"	12"	#5 @ 6½"

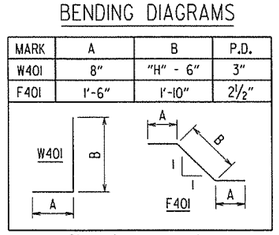
TABLE OF RETAINING WALL VARIABLES

(SLOPED BACKFILL) (1V: 2H MAX.)

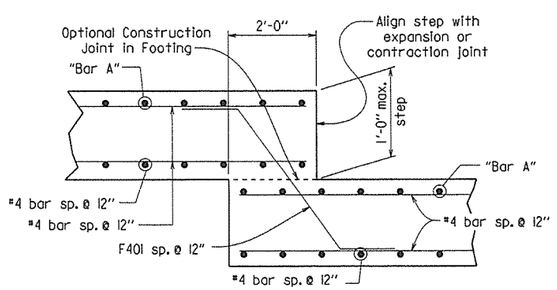
"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-6"	12"	#4 @ 12"
6'-0"	9"	5'-6"	12"	#4 @ 6"
7'-0"	9"	6'-6"	12"	#5 @ 6½"
8'-0"	1'-6"	8'-0"	7½"	#6 @ 6"
9'-0"	1'-11"	9'-6"	5"	#8 @ 6"

BENDING DIAGRAMS

MARK	A	B	P.D.
W401	8"	"H" - 6"	3"
F401	1'-6"	1'-10"	2½"



Dimensions are out to out of bars.



FOOTING STEP DETAIL

N.T.S.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTES.	
7-26-12	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

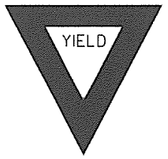
REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)

STANDARD DRAWING SI - 2

R1-1

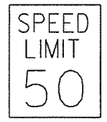
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

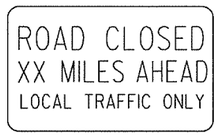
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

48"X30"

RII-3A



60"X30"

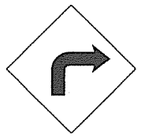
RII-4

60"X30"

RSP-1

48"X30"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

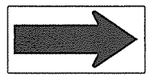
WI-3

STD. 48"X48"

WI-4

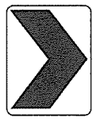
STD. 48"X48"

WI-6



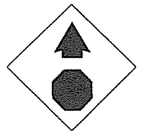
STD. 48"X24"
SPECIAL 60"X30"

WI-8



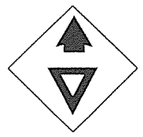
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



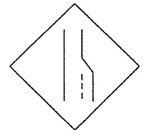
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

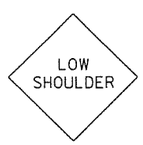
R56-1

STD. 18"X18"

W8-11

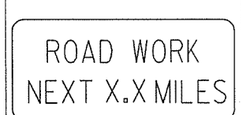
STD. 36"X36"
FWY. 48"X48"

W8-9



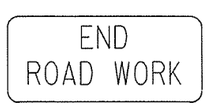
STD. 36"X36"
FWY. 48"X48"

G20-1



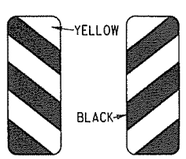
60"X24"

G20-2



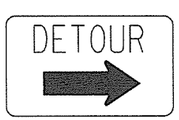
48"X24"

OM-3L OM-3R



12"X36"

M4-9

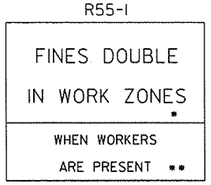


STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

• 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

• 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

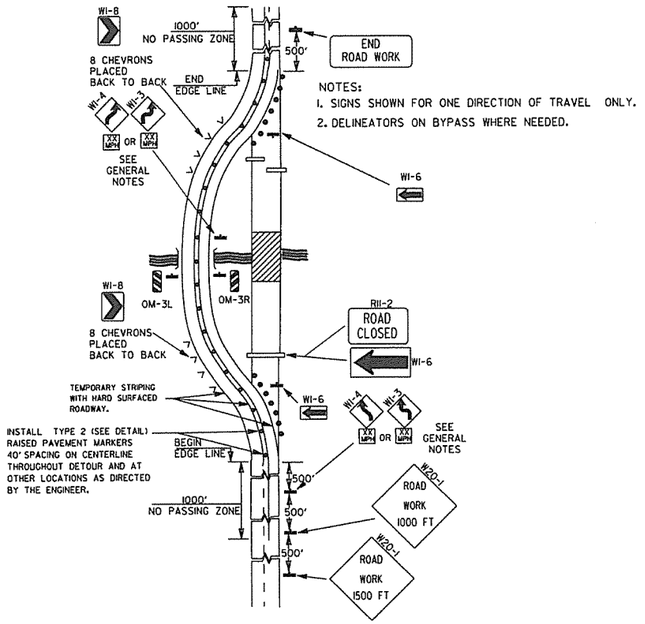
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

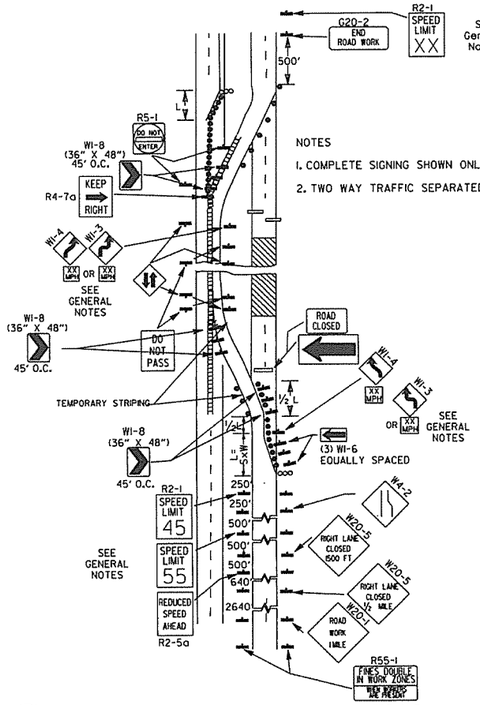
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



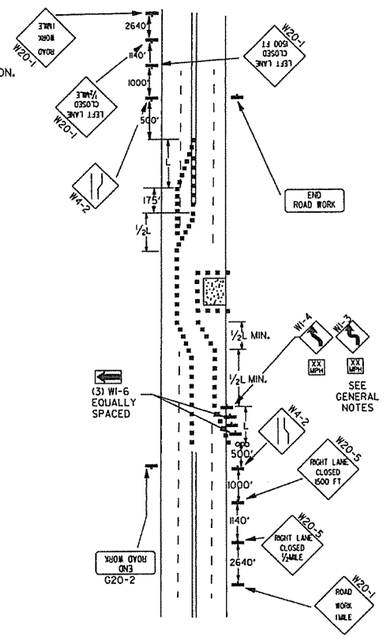
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

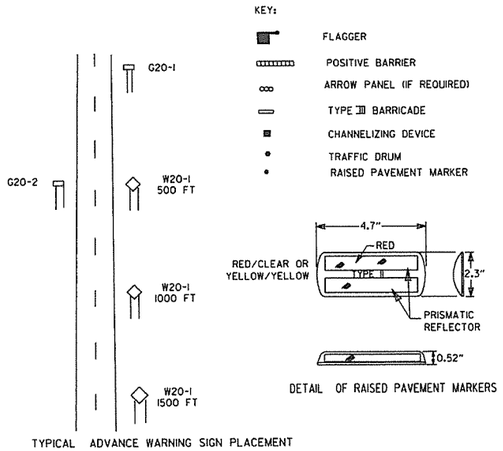


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

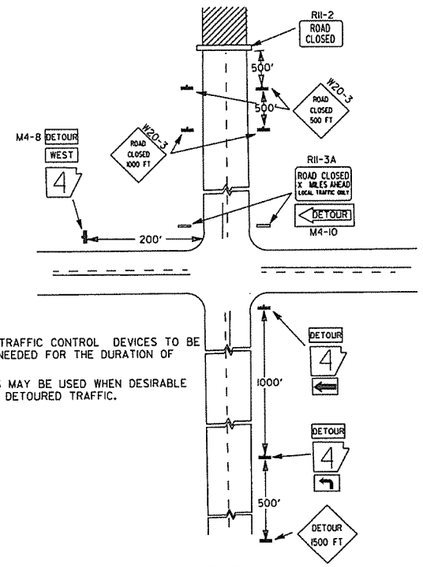


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



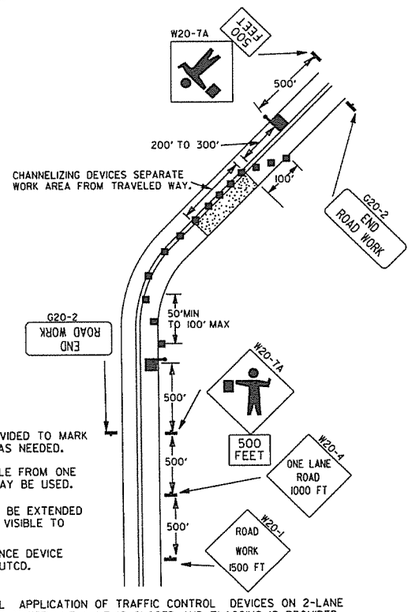
DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT



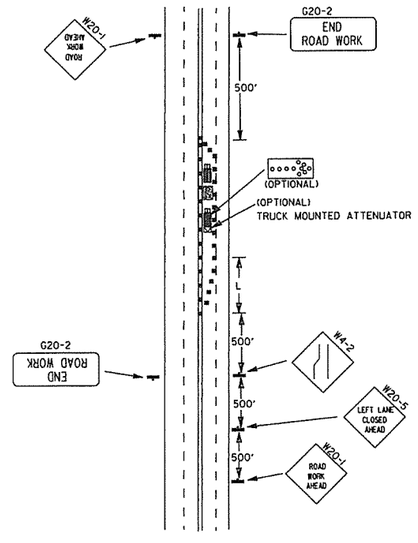
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

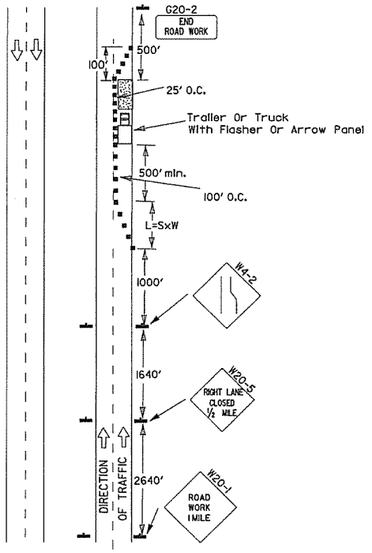
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.

DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

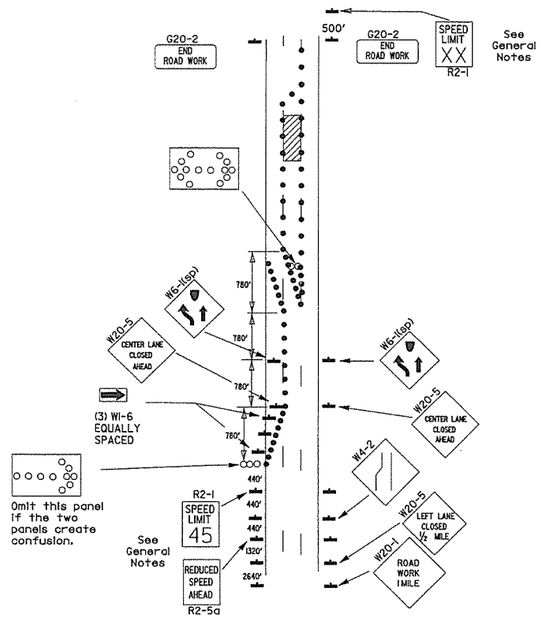
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

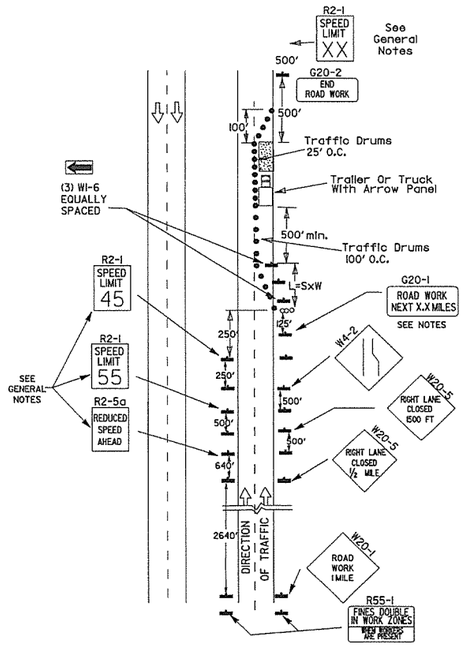
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operatipns of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

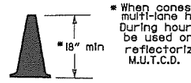
KEY:

- ○○○ Arrow Panel (if Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

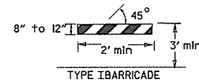
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



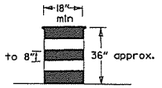
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

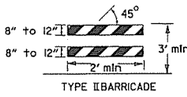
CONES



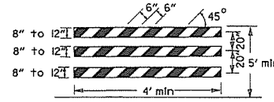
TYPE I BARRICADE

PLASTIC DRUM



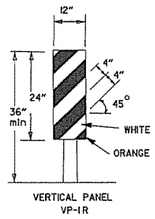


TYPE II BARRICADE



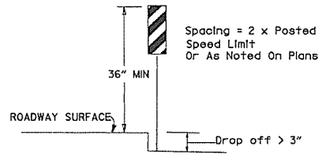
TYPE III BARRICADE

NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



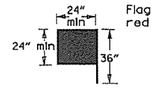
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

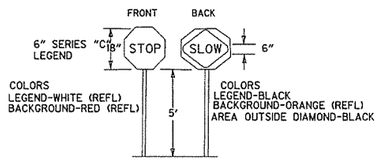
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

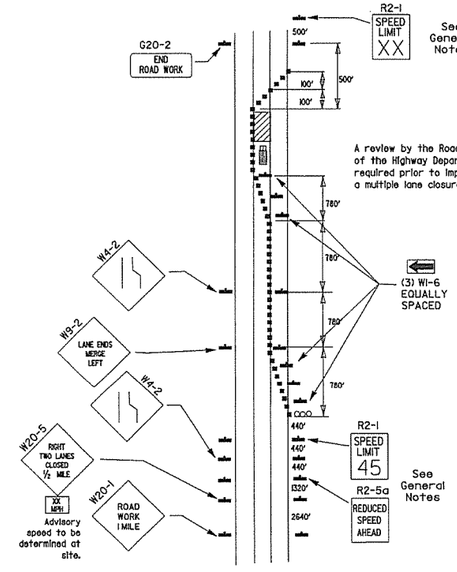
FLAG



Flag shall be of good grade red material

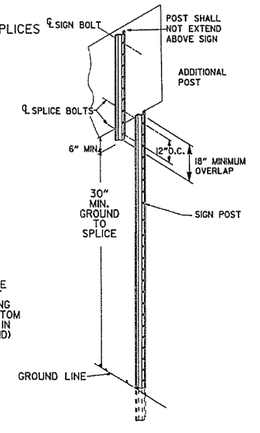
STOP SLOW PADDLE





(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

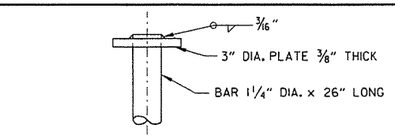
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

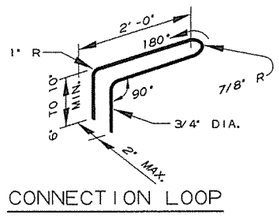
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

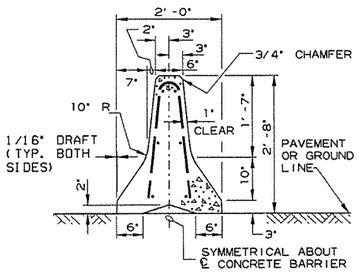
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR, 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 9 1/2", 2'-1 3/8", 4 3/8"



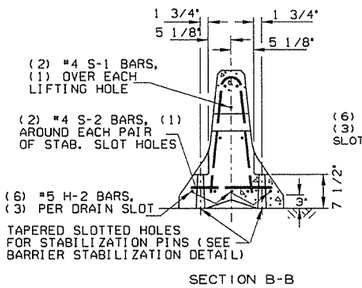
CONNECTION DETAILS



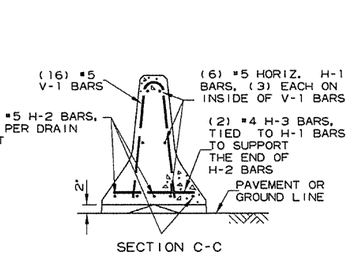
CONNECTION LOOP



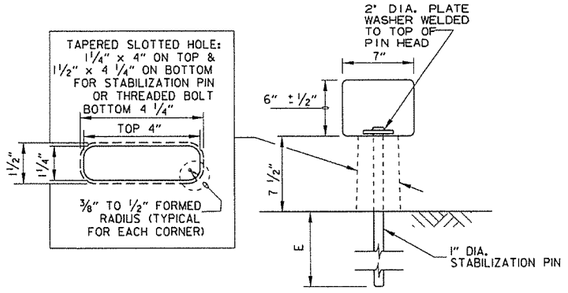
SECTION A-A



SECTION B-B



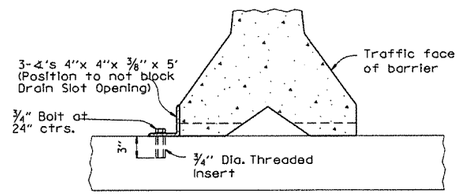
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

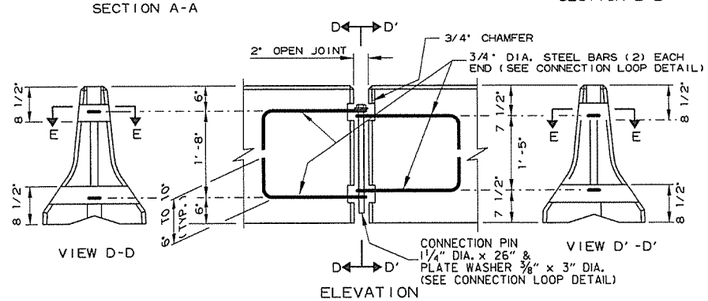
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



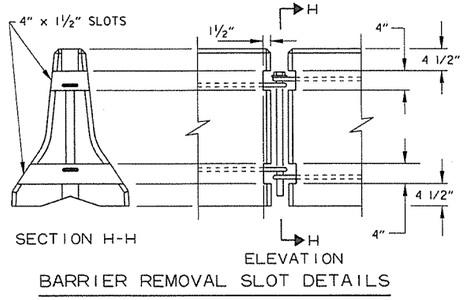
NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the Inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL

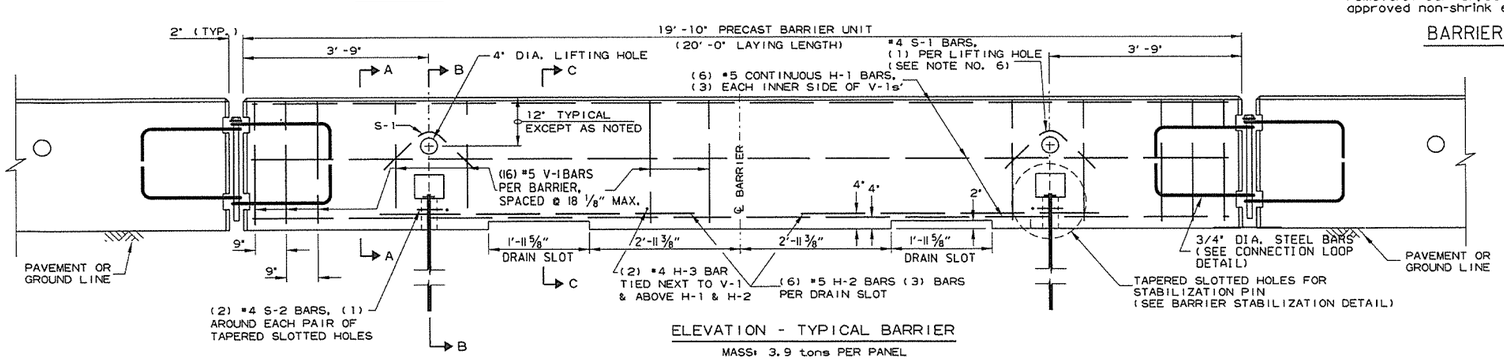
BRIDGE DECKS



ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
2. Materials shall meet the following minimum requirements;
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

   In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
   Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
   Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.
3. Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.
4. Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.
5. Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.
6. A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

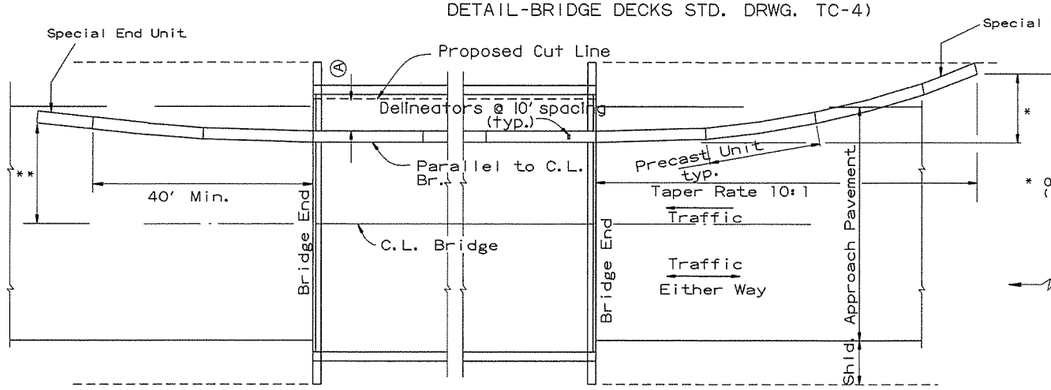
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)

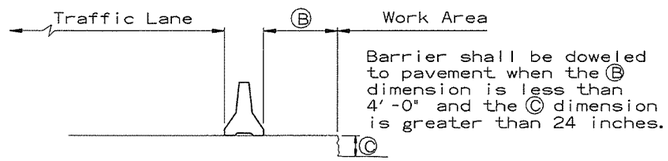


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

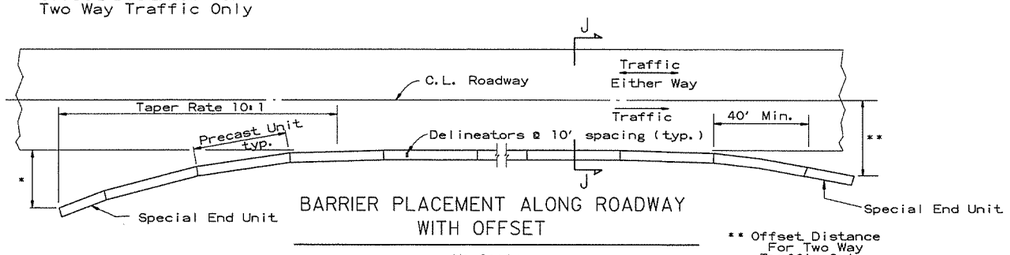
** Offset Distance for Two Way Traffic Only



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

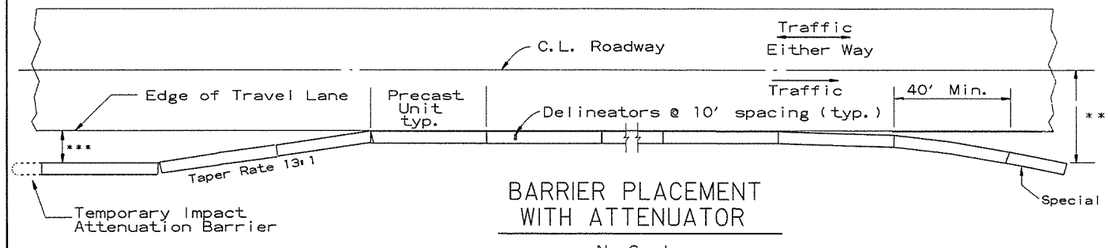
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.

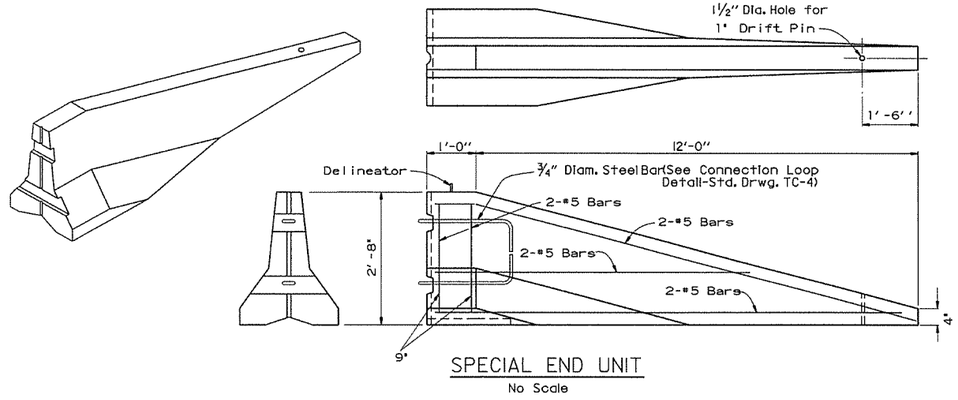


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

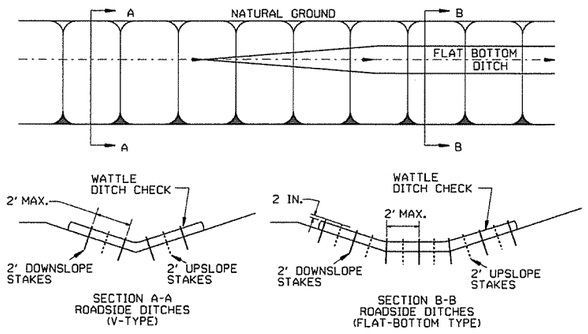
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

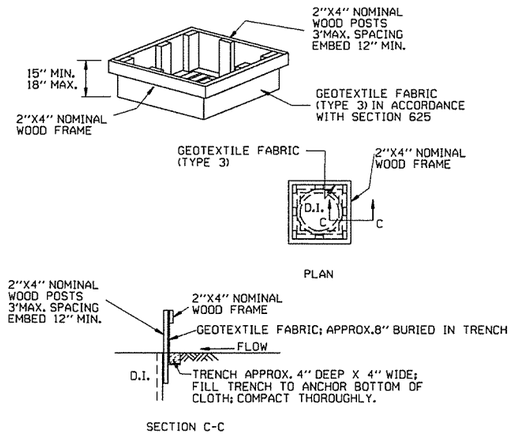
STANDARD DRAWING TC-5

GENERAL NOTES

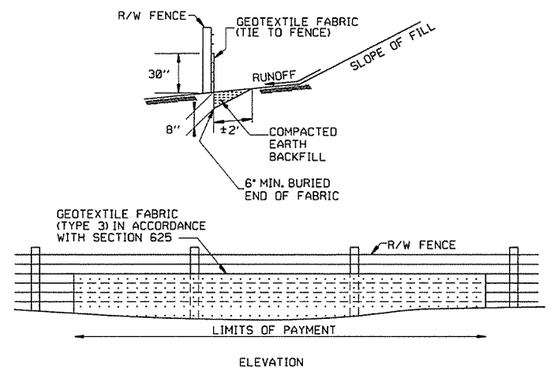
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

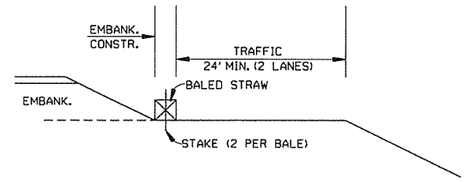
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

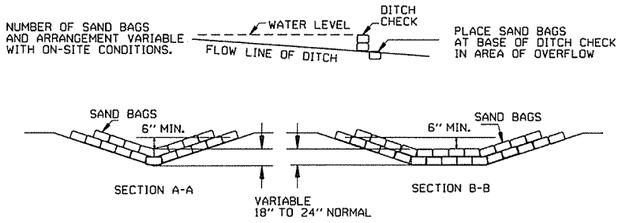
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

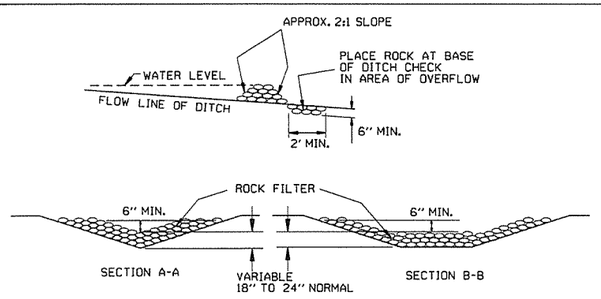
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



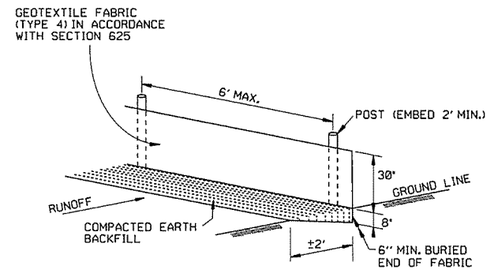
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

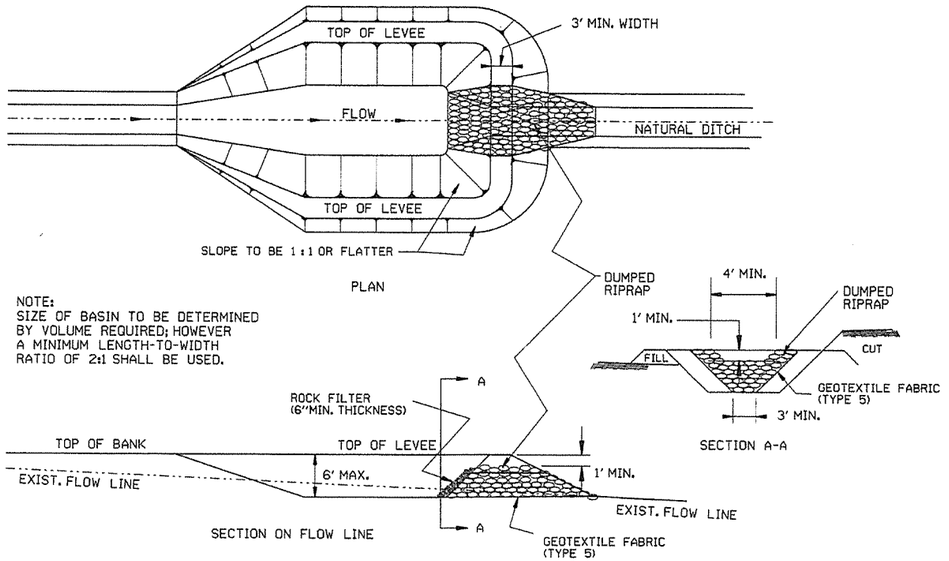
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

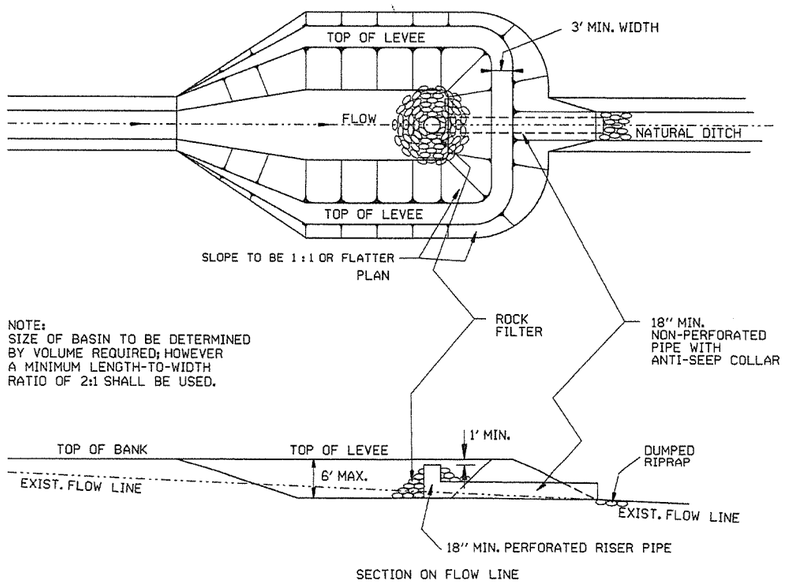
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

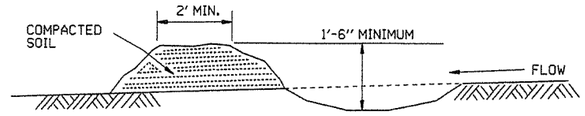
STANDARD DRAWING TEC-1



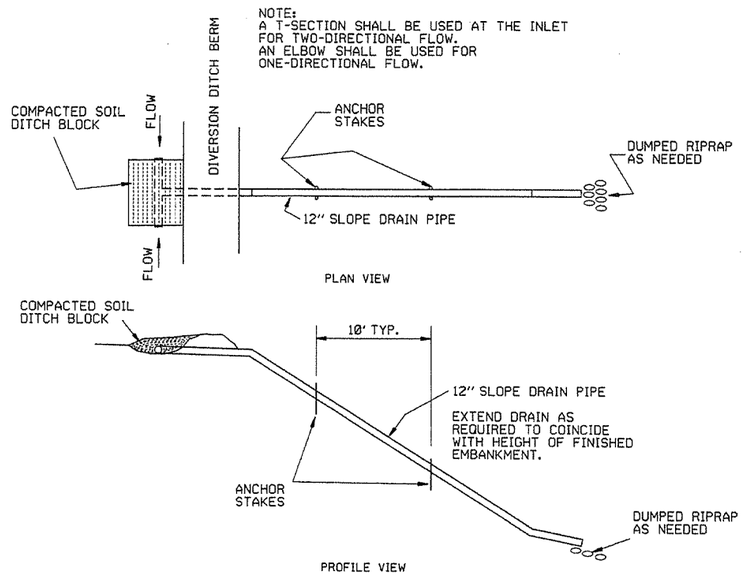
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



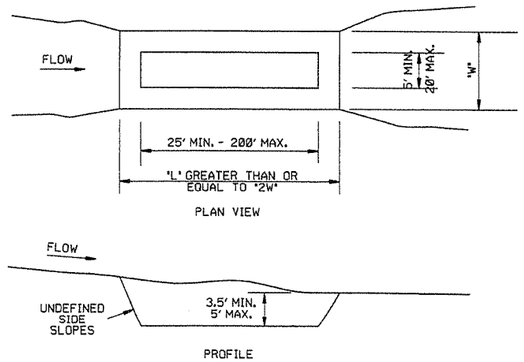
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

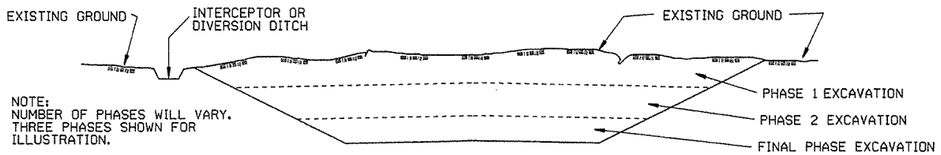
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



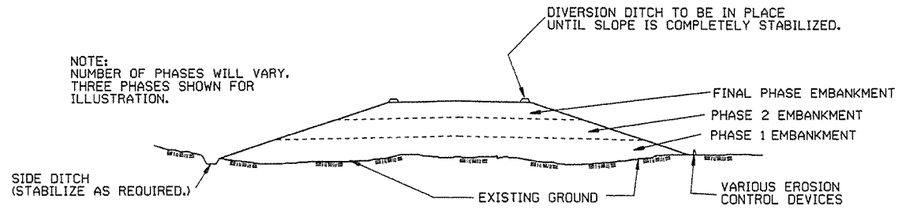
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

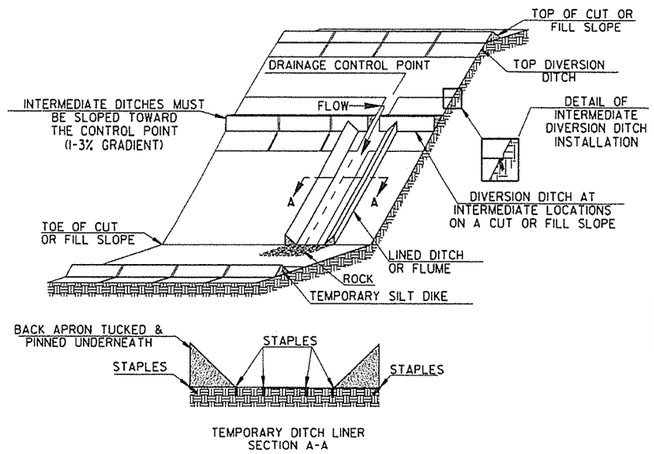
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

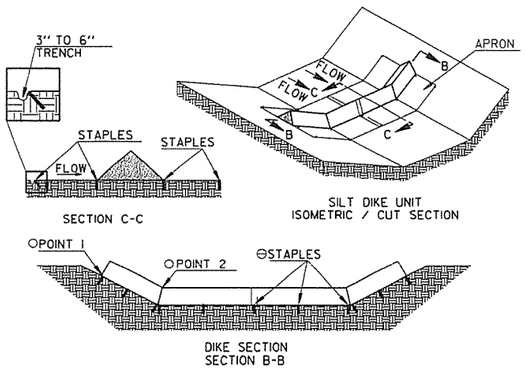
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



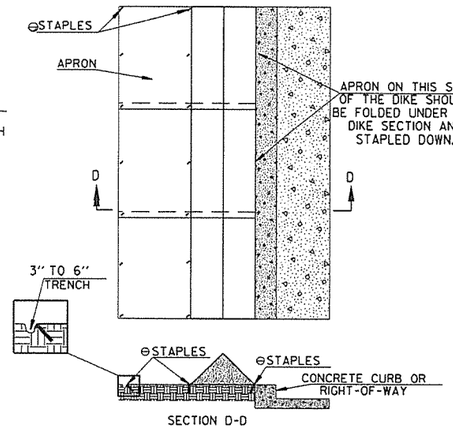
TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER



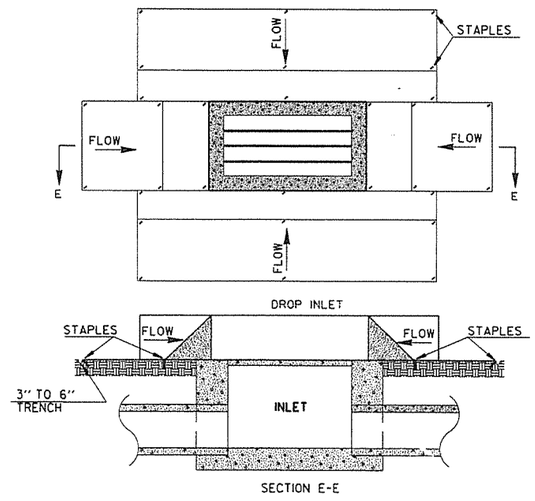
TRIANGULAR SILT DIKE INSTALLATION
FOR
ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

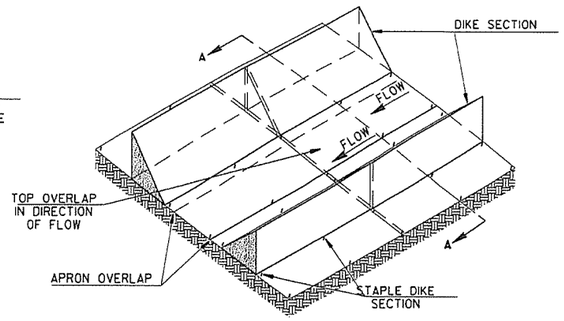
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION
FOR
DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

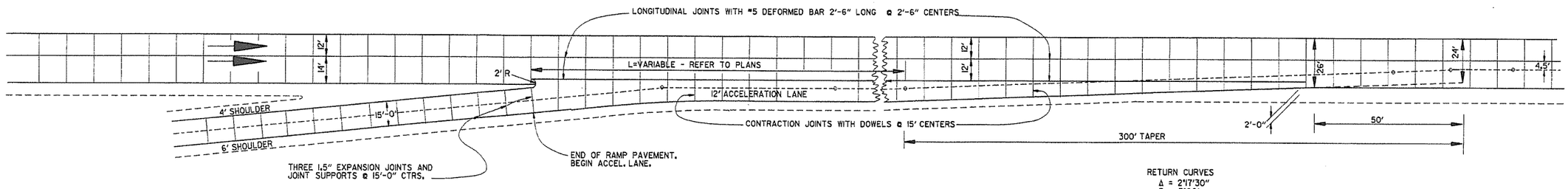
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

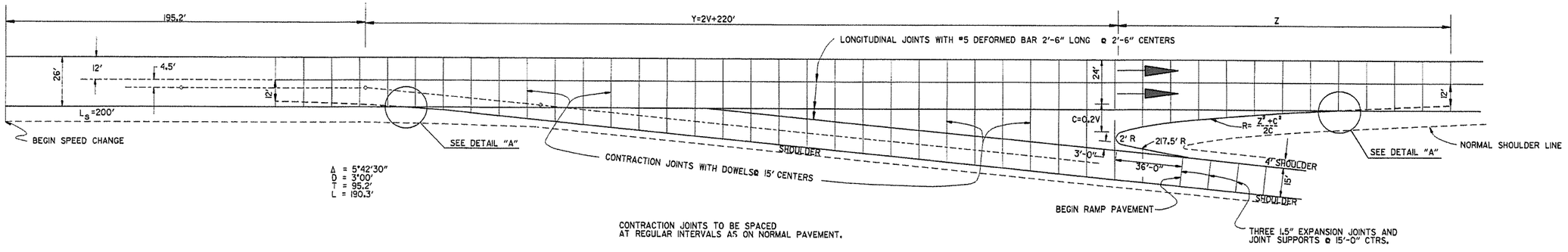
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4



ENTRANCE RAMP

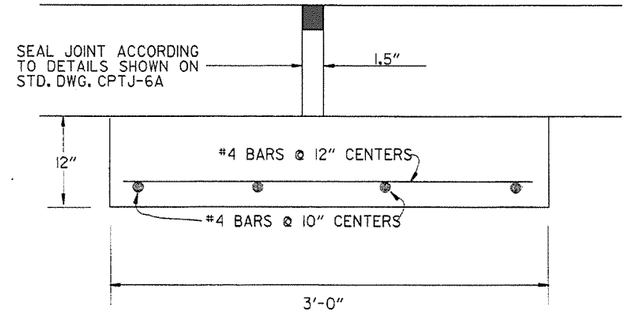
RETURN CURVES
Δ = 2°17'30"
D = 3°00'
T = 38.2'
L = 76.4'



Δ = 5°42'30"
D = 3°00'
T = 95.2'
L = 190.3'

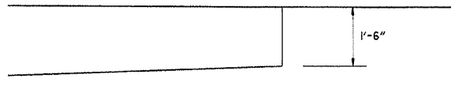
CONTRACTION JOINTS TO BE SPACED AT REGULAR INTERVALS AS ON NORMAL PAVEMENT.

EXIT RAMP



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS).
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE SUBSIDIARY TO THE ABOVE ITEMS.



DETAIL "A"

EXIT RAMP

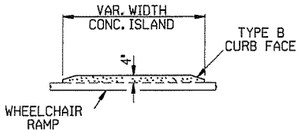
DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R
40	300.0	8.0	96.0	580.0
50	320.0	10.0	120.0	725.0
60	340.0	12.0	168.0	1182.0
70	360.0	14.0	210.0	1582.0

DATE	REVISION	DATE FILM'D
1-12-00	REDRAWN & REISSUED	1-12-00

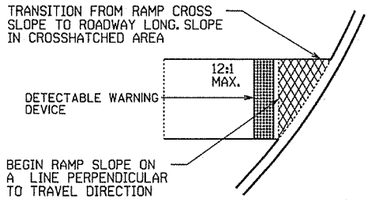
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS

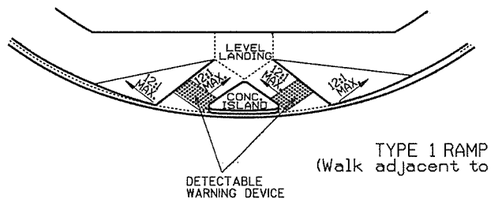
STANDARD DRAWING TR-1



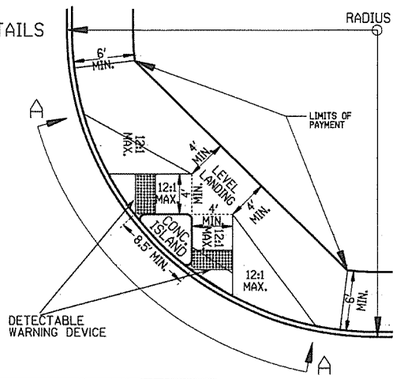
CONCRETE ISLAND DETAIL

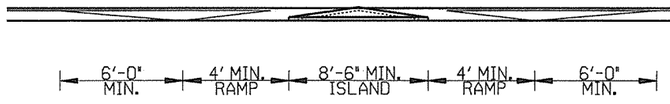


SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)

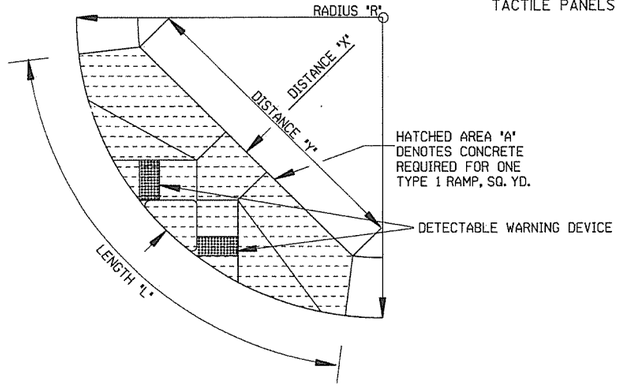




SECTION A-A

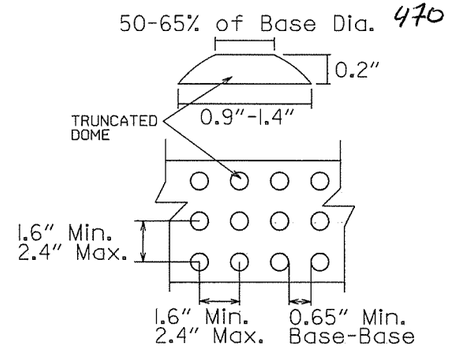
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

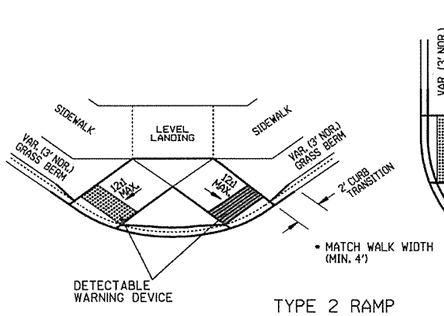
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



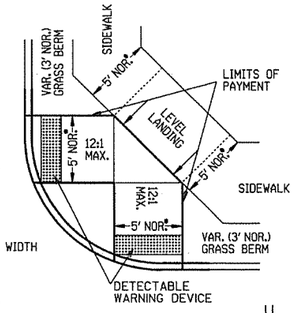
DETECTABLE WARNING DEVICE DETAIL

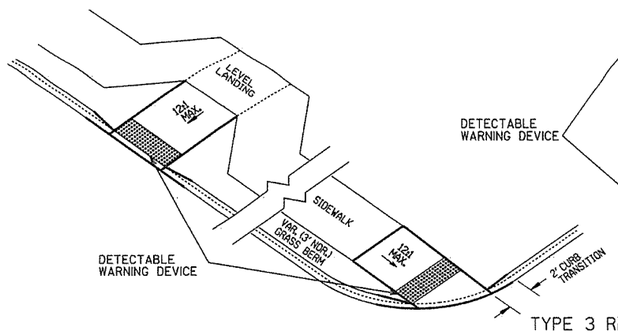
GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

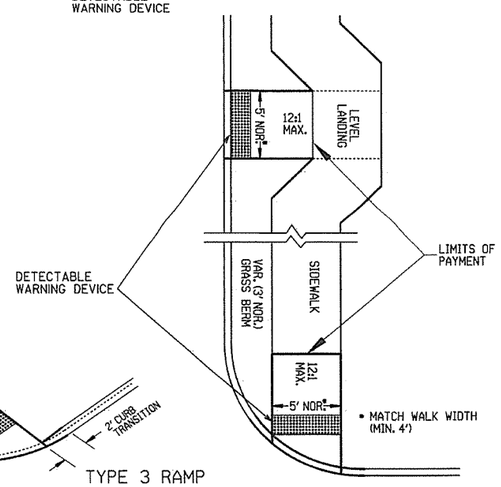


TYPE 2 RAMP

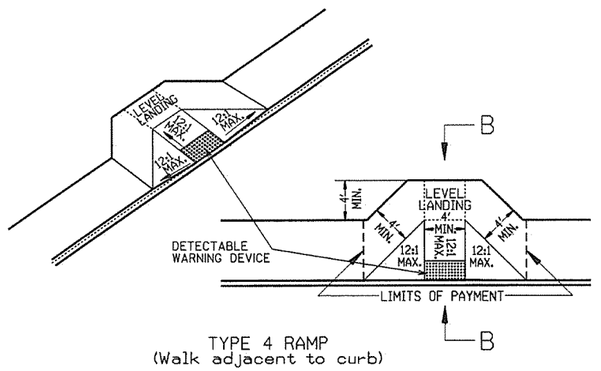




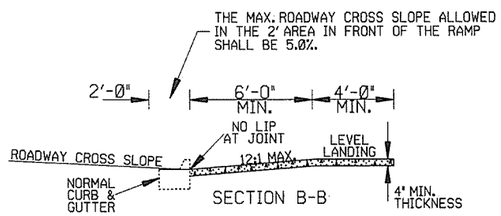
TYPE 3 RAMP



NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD. SLOPE TRANS. & REV. ISL. DIMS.	
8-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLD." IN PAY ITEM	------
6-02-76	ISSUED-P.W.D.	299-7-28-76
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1