"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 71 INTERCHANGE
(B. V. BYPASS) (F)

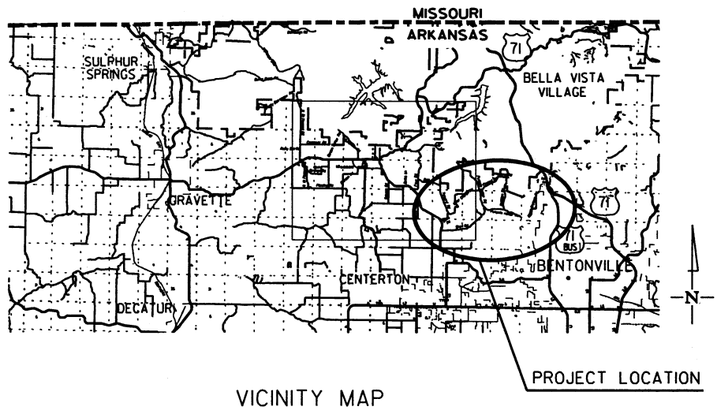
BENTON COUNTY
ROUTE 549 SECTION 9

JOB CA0903

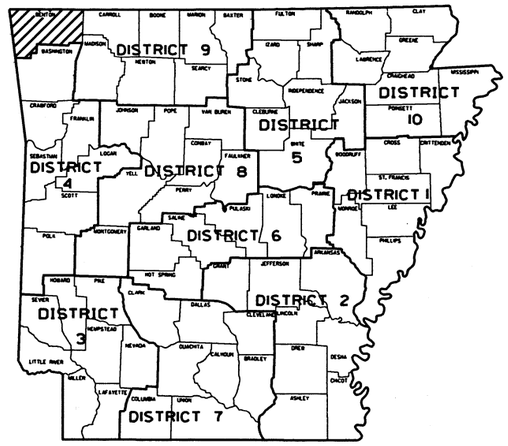
FEDERAL AID PROJ. 9991

NOT TO SCALE

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.		CA0903	1	452
				(2)	HWY. 71 INTERCHANGE (B. V. BYPASS) (F)			



VICINITY MAP



ARK. HWY. DIST. NO. 9

BRIDGE DATA

(1) MAIN LANES
STA. 1107+43.06 BR. END
BR. NO. 07277
55', 84' & 55' COMP. W-BEAM SPANS
VARIABLE CLEAR ROADWAY
196'-2" TOTAL BRIDGE LENGTH
STA. 1109+39.23 BR. END

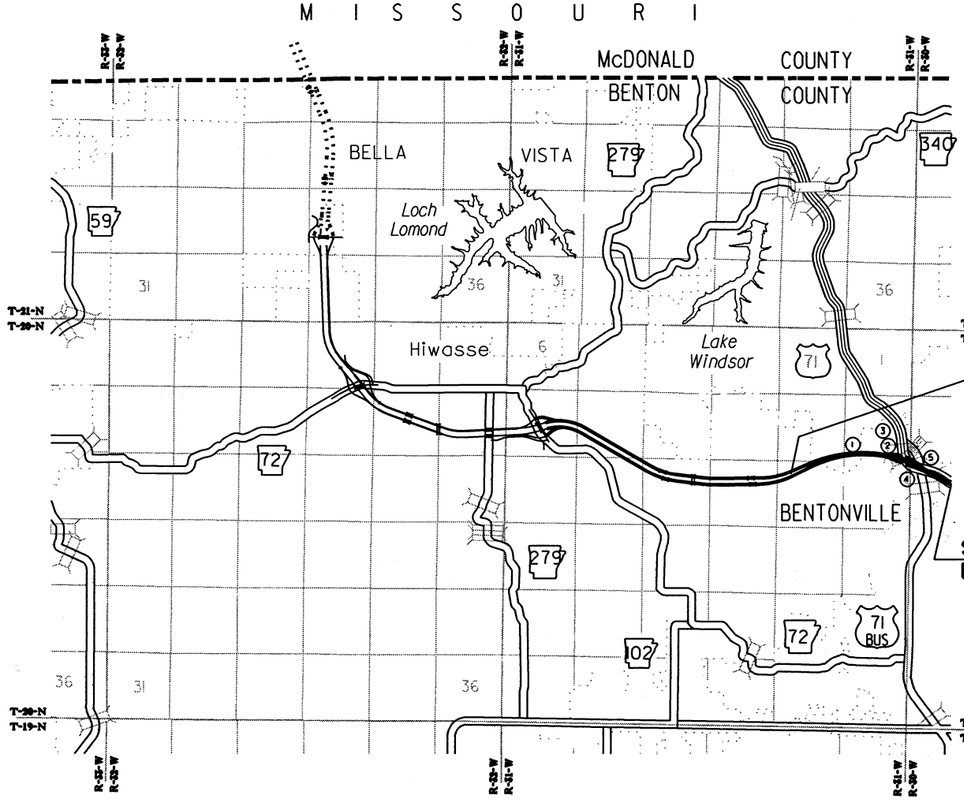
(2) MAIN LANES
STA. 1113+77.94 BR. END
BR. NO. 07278
77'-6" SIMPLE COMP. W-BEAM SPAN &
260' & 155' CONT. COMP. W-BEAM SPANS
2-44' CLEAR ROADWAYS
494'-7 1/2" TOTAL BRIDGE LENGTH
STA. 1118+72.56 BR. END

(3) RAMP 4
STA. 1113+70.94 BR. END
BR. NO. 07280
88' SIMPLE COMP. W-BEAM SPAN &
260' & 155' CONT. COMP. W-BEAM SPANS
34' CLEAR ROADWAY
505'-11/2" TOTAL BRIDGE LENGTH
STA. 1118+76.06 BR. END

(4) MAIN LANES
STA. 1124+70.81 BR. END
BR. NO. 07281
295' SIMPLE COMP. PLATE GIRDER SPAN
2-44' CLEAR ROADWAYS
297'-4 1/4" TOTAL BRIDGE LENGTH
STA. 1127+68.19 BR. END

STRUCTURES OVER 20' SPAN

(5) MAIN LANES
STA. 1129+23 CONSTRUCT
SEXTUPLE 12' X 11' X 520' R.C. BOX CULV'T
(49° 25'' RT. FWD. SKEW)
Q50 = 7630cfs, D.A. = 6.8 Sq. Mi.
SPAN = 102.92'



STA. 1020+72.00
BEGIN JOB CA0903
LOG MILE 1.94

STA. 1172+15.38
END JOB CA0903

DESIGN TRAFFIC DATA

DESIGN YEAR	2039
2019 ADT	13500
2039 ADT	25000
2039 DHV	2750
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	20%
DESIGN SPEED	70 MPH

	BEGIN PROJECT	MID POINT OF PROJECT	END PROJECT
LATITUDE	N 36°24'41.4	N 36°24'57.7	N 36°24'34.6
LONGITUDE	W 94°15'23.4	W 94°13'54.5	W 94°12'27.7

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF	PROJECT	15143.38	FEET OR	2.868	MILES
NET	ROADWAY	14052.29		2.661	MILES
NET	BRIDGES	1091.09		0.207	MILES
NET	PROJECT	15143.38		2.868	MILES

P.E. JOB 090224

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7636
M. E. BANKS

5-17-19

DEPUTY DIRECTOR
AND CHIEF ENGINEER

COPY OF RCA0903 DESIGN.DGN 5/09/2019

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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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RCA0903_REVISED.DGN 5/16/2019

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

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				JOB NO.		CA0903	4	452

(2) STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55002	STANDARD DETAILS FOR CONCRETE RIPRAP	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	01-15-19
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16
55030C	STANDARD DETAILS FOR TYPE C APPROACH GUTTERS	02-27-14
55040C1	STANDARD DETAILS FOR TYPE C1 APPROACH SLAB	02-27-14

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
CPTJ-6A	TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)	05-25-06
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	02-27-14
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9	DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9D	DETAILS OF DROP INLETS	08-22-02
FPC-9E	DETAILS OF DROP INLETS (TYPE C)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
FPC-9N	DETAILS OF DROP INLETS AND SPILLWAY OUTLET	07-02-98
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	07-26-12
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
GRT-1	GUARD RAIL DETAILS	11-16-17
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PM-2	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS	12-08-16
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
SD-1	ANTENNA POLE	11-16-17
SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-16-17
SD-11	STEEL POLE WITH MAST ARM	11-16-17
SE-1	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	01-09-87
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SES-1	SAFETY END SECTION FOR CIRCULAR AND ARCH PIPES	10-18-96
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORTS ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	02-27-14
SHS-3	DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS	09-12-13
SHS-4	DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS	09-12-13
SHS-5	DETAILS OF GUIDE SIGN PANELS	09-12-13
SHS-6	MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS	09-12-13
SHS-7	DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS	09-12-13
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TR-1A	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)	08-22-02
WF-1	WIRE FENCE TYPE A AND B	08-22-02
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-3	CHAIN LINK FENCE	11-17-10
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05
WR-2	WHEELCHAIR RAMPS ALTERATIONS ONLY	10-09-03
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
R-100X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	02-08-63

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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.		CA0903	5	452

(2) GOVERNING SPECS. AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-22-19

GOVERNING SPECIFICATIONS (1 OF 2)

ARKANSAS STATE 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 CA0903
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
617-1_____	GUARDRAIL TERMINAL (TYPE 2)
620-1_____	MULCH COVER
632-1_____	CONCRETE ISLAND
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
700-2_____	TRAFFIC CONTROL FACILITIES
723-1_____	GENERAL REQUIREMENTS FOR SIGNS
732-1_____	CRASH CUSHION
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
808-1_____	INSTALLATION OF ELASTOMERIC BEARINGS
808-2_____	ELASTOMERIC BEARINGS
JOB CA0903_	ACCESSIBLE PEDESTRIAN SIGNAL (APS)
JOB CA0903_	ACTUATED CONTROLLER
JOB CA0903_	AIRPORT CLEARANCE REQUIREMENTS
JOB CA0903_	ANTI-THEFT CONCRETE PULL BOX
JOB CA0903_	ARCHITECTURAL FINISH
JOB CA0903_	ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC
JOB CA0903_	BIDDING REQUIREMENTS AND CONDITIONS
JOB CA0903_	BORROW
JOB CA0903_	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB CA0903_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB CA0903_	CABINET DRAWER ASSEMBLY
JOB CA0903_	CARGO PREFERENCE ACT REQUIREMENTS
JOB CA0903_	CAVE DISCOVERY
JOB CA0903_	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB CA0903_	CLEARING AND GRUBBING
JOB CA0903_	COMPACTED EMBANKMENT
JOB CA0903_	CONCRETE BARRIER WALL
JOB CA0903_	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB CA0903_	CONSTRUCTION PROJECT INFORMATION SIGN

GOVERNING SPECIFICATIONS (2 OF 2)

NUMBER	TITLE
JOB CA0903_	COORDINATION OF WORK
JOB CA0903_	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB CA0903_	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB CA0903_	EDGE CARD VIDEO PROCESSOR
JOB CA0903_	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB CA0903_	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB CA0903_	ELECTRONIC DOCUMENT MANAGEMENT – CONNECTING ARKANSAS PROGRAM
JOB CA0903_	EMPLOYMENT REPORTING
JOB CA0903_	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB CA0903_	EXPLORATORY HOLES
JOB CA0903_	EXTENSION FOR PIPE CULVERTS
JOB CA0903_	FIBERGLASS CONDUIT
JOB CA0903_	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB CA0903_	GENERAL REQUIREMENTS FOR SIGNS
JOB CA0903_	GOALS FOR ARKANSAS OWNED MINORITY BUSINESS ENTERPRISE
JOB CA0903_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB CA0903_	GRADE HPS70W STRUCTURAL STEEL
JOB CA0903_	IP VIDEO DETECTION SYSTEM
JOB CA0903_	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB CA0903_	LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB CA0903_	LED ROADWAY ILLUMINATION POLE
JOB CA0903_	LED TRAFFIC SIGNAL HEAD
JOB CA0903_	MAINTENANCE OF TRAFFIC
JOB CA0903_	MANDATORY ELECTRONIC CONTRACT
JOB CA0903_	NESTING SITES OF MIGRATORY BIRDS
JOB CA0903_	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB CA0903_	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB CA0903_	PARTNERING REQUIREMENTS
JOB CA0903_	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)
JOB CA0903_	PLASTIC PIPE
JOB CA0903_	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB CA0903_	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB CA0903_	PVC COATED GALVANIZED STEEL CONDUIT
JOB CA0903_	REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKER
JOB CA0903_	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB CA0903_	RESTRICTIONS ON THE USE OF RECYCLED ASPHALT PAVEMENT MATERIAL
JOB CA0903_	RETAINING WALLS
JOB CA0903_	RETROREFLECTIVE BACKPLATES
JOB CA0903_	ROCK DITCH LINER
JOB CA0903_	ROCK FILL
JOB CA0903_	SECTION 404 STANDARD INDIVIDUAL PERMIT REQUIREMENTS
JOB CA0903_	SEQUENCE OF CONSTRUCTION - ALTERNATE CONCEPTUAL PROPOSAL (ACP)
JOB CA0903_	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB CA0903_	SHORING FOR CULVERTS
JOB CA0903_	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB CA0903_	SOIL STABILIZATION
JOB CA0903_	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB CA0903_	SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS
JOB CA0903_	STEEL SIGN STRUCTURES
JOB CA0903_	STORM WATER POLLUTION PREVENTION PLAN
JOB CA0903_	SUBMERSIBLE LUMINAIRE
JOB CA0903_	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB CA0903_	SYSTEM LOCAL CONTROLLER
JOB CA0903_	TEXTURED COATING FINISH
JOB CA0903_	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB CA0903_	UTILITY ADJUSTMENTS
JOB CA0903_	VALUE ENGINEERING
JOB CA0903_	VIDEO DETECTOR (COLOR)
JOB CA0903_	WARM MIX ASPHALT
JOB CA0903_	WELLHEAD PROTECTION

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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. 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.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.

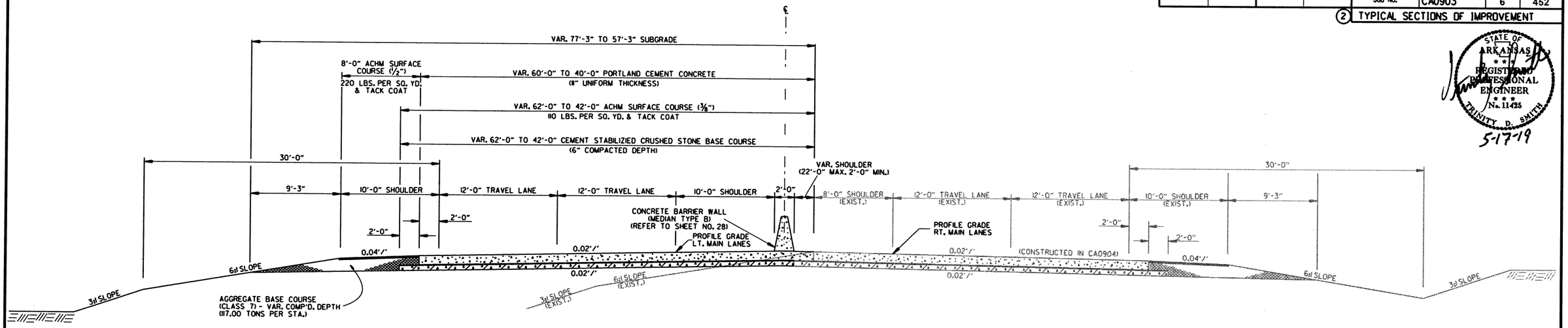
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GOVERNING SPECIFICATIONS AND GENERAL NOTES

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.		CA0903	6	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

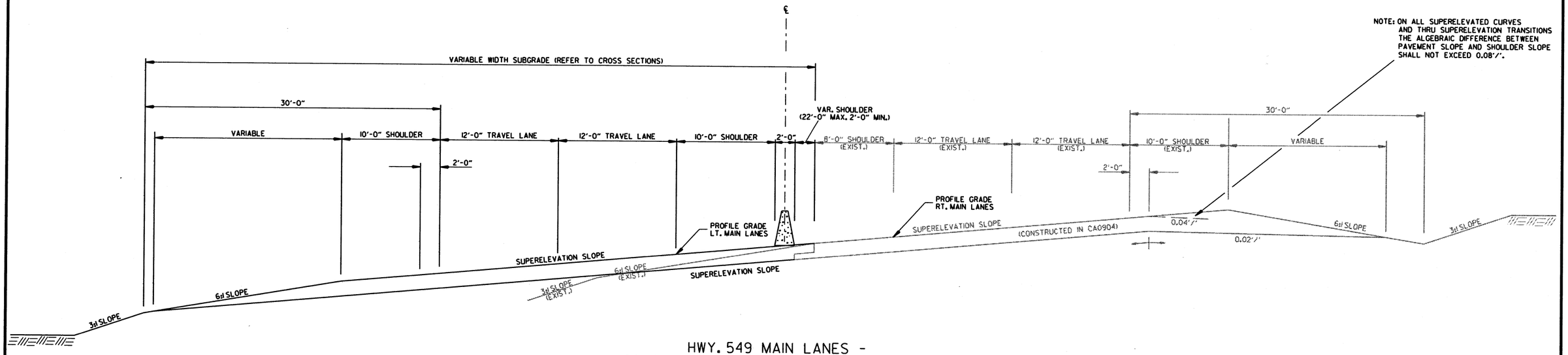
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



HWY. 549 MAIN LANES -
CONCRETE PAVEMENT
STA. 1020+72 TO STA. 1034+25.11

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



HWY. 549 MAIN LANES -
CONCRETE PAVEMENT - SUPERELEVATION

(SHOWN IN THE DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTE: REVOLVE SUPERELEVATION AROUND THE PROFILE GRADE POINT.

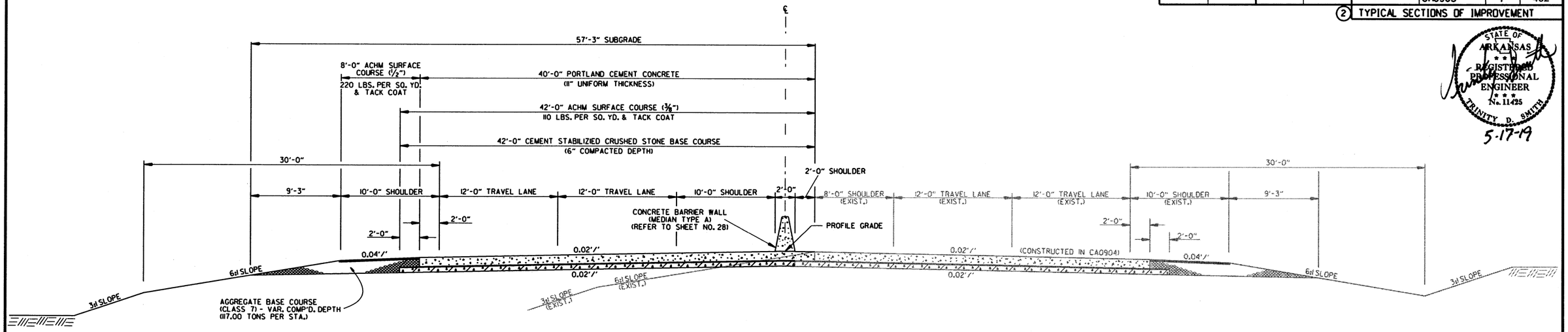
TYPICAL SECTIONS OF IMPROVEMENT

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	7	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

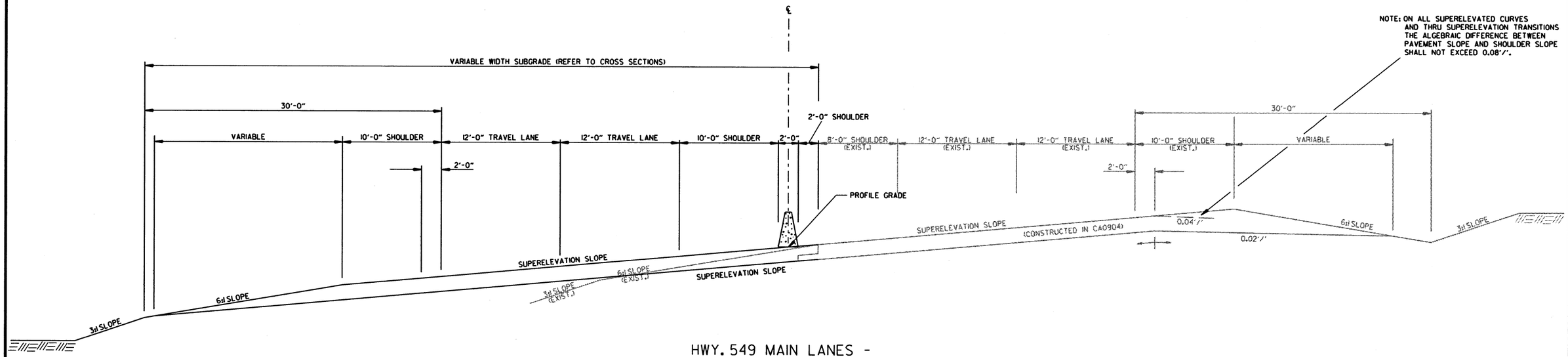
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



HWY. 549 MAIN LANES -
CONCRETE PAVEMENT
STA. 1034+25.11 TO STA. 1107+43.06

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



HWY. 549 MAIN LANES -
CONCRETE PAVEMENT - SUPERELEVATION

(SHOWN IN THE DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTE: REVOLVE SUPERELEVATION AROUND THE PROFILE GRADE POINT.

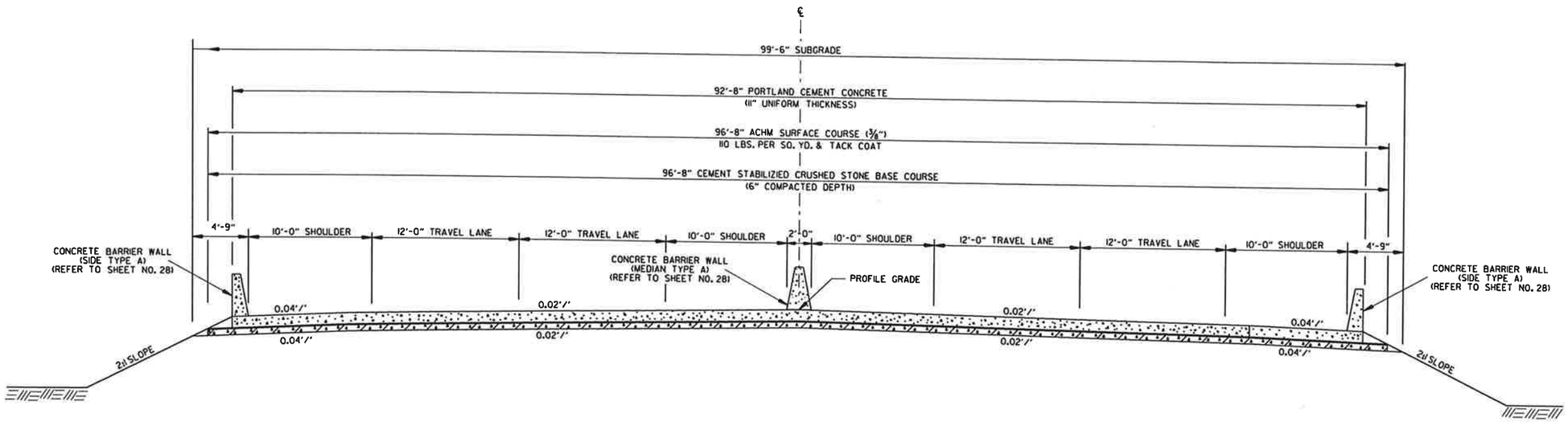
TYPICAL SECTIONS OF IMPROVEMENT

RCA0903_REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	8	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

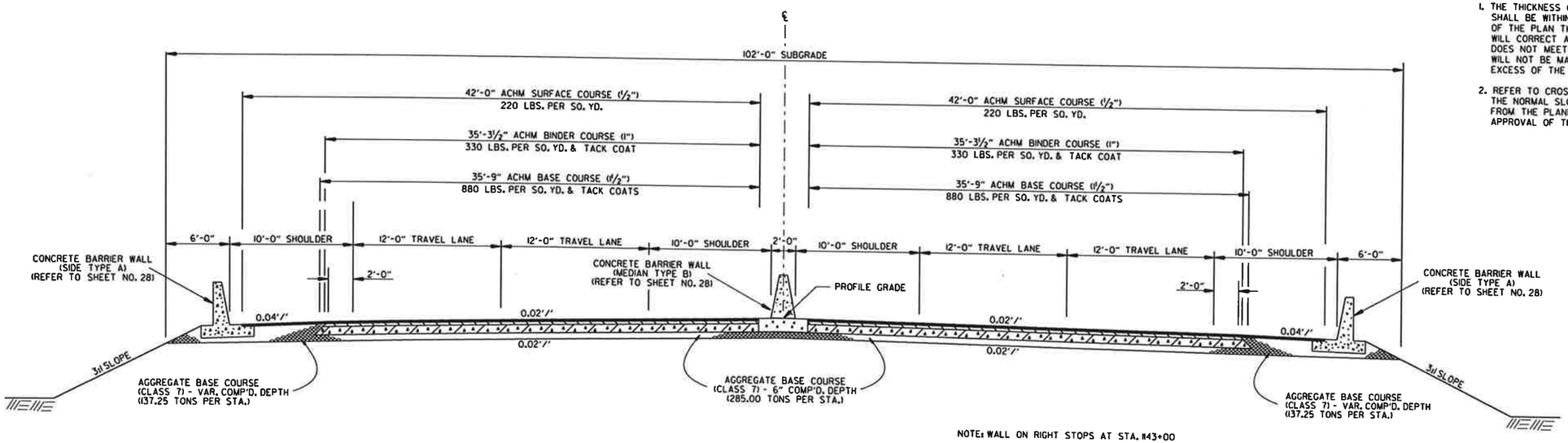


HWY. 549 MAIN LANES
CONCRETE PAVEMENT W/SIDE WALLS
STA. 1109+39.23 TO STA. 1124+70.81

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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



NOTE: WALL ON RIGHT STOPS AT STA. 143+00

HWY. 549 MAIN LANES
ACHM PAVEMENT W/ SIDE WALLS
STA. 1127+68.19 TO STA. 1137+50

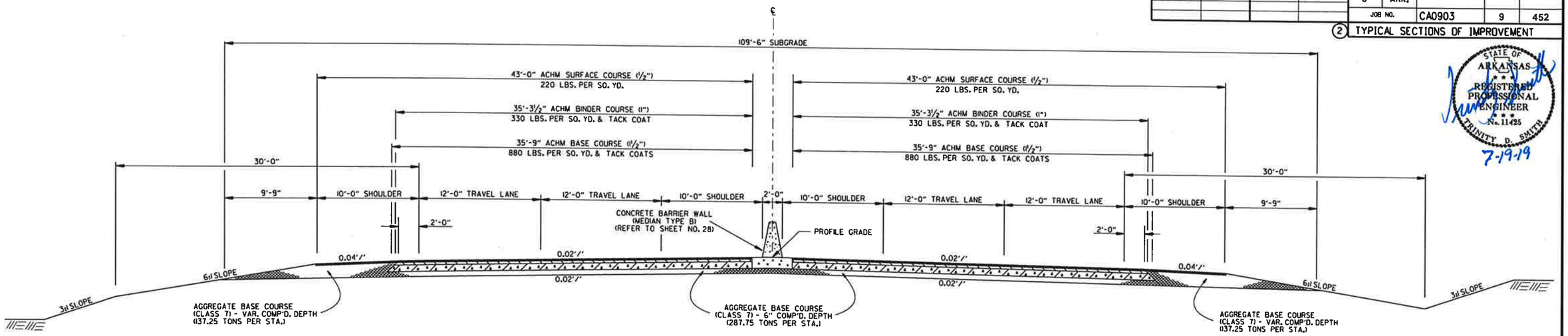
RCA0903.REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	9	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

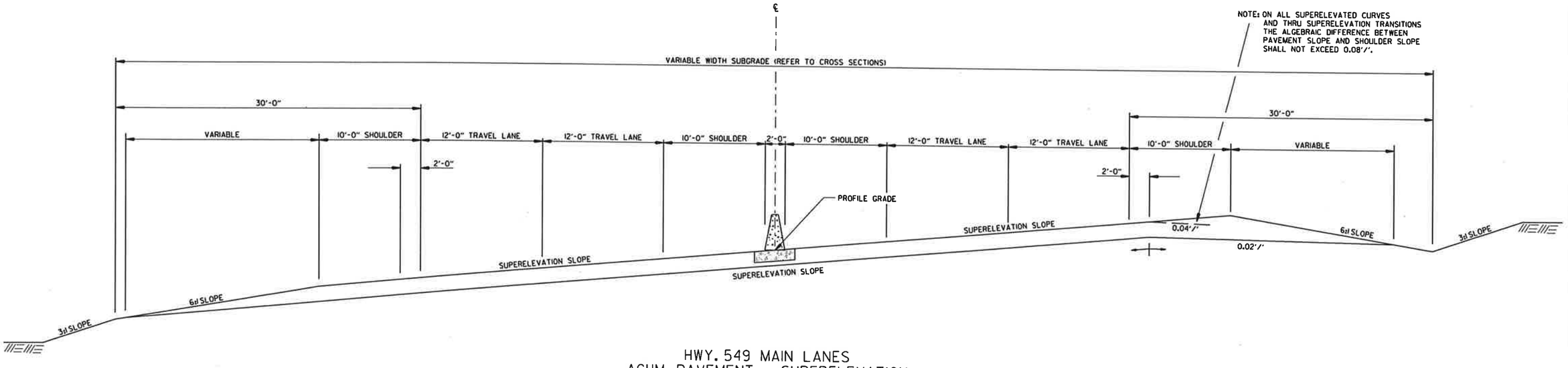


NOTE: WALL ON RIGHT STOPS AT STA. 1143+00

HWY. 549 MAIN LANES
ACHM PAVEMENT
STA. 1137+50 TO STA. 1144+80.11

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



HWY. 549 MAIN LANES
ACHM PAVEMENT - SUPERELEVATION

(SHOWN IN THE DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTE: REVOLVE SUPERELEVATION AROUND THE PROFILE GRADE POINT.

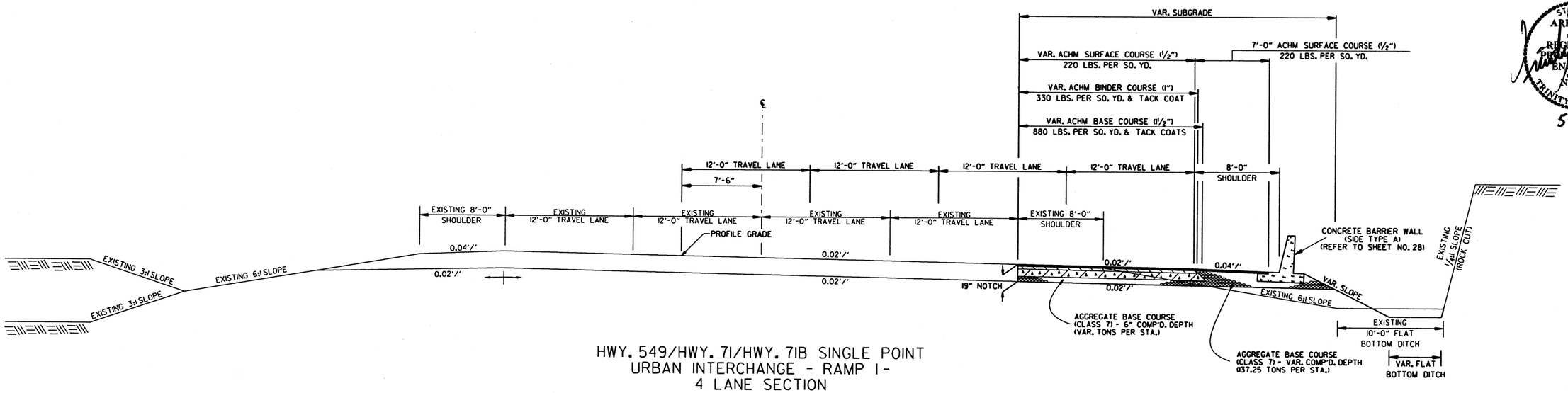
TYPICAL SECTIONS OF IMPROVEMENT

RCA0903.REVISED.DGN 10/19/2016

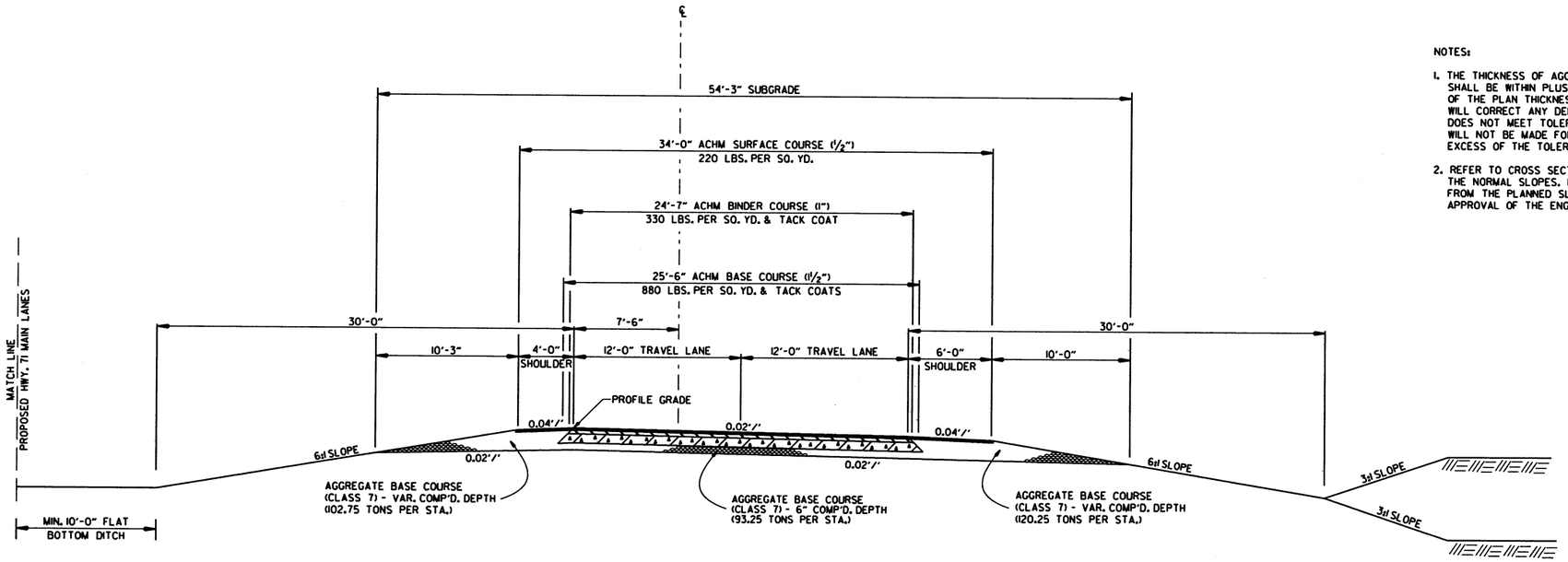
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	10	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 1 -
4 LANE SECTION



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 2 - 2 LANE SECTION

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

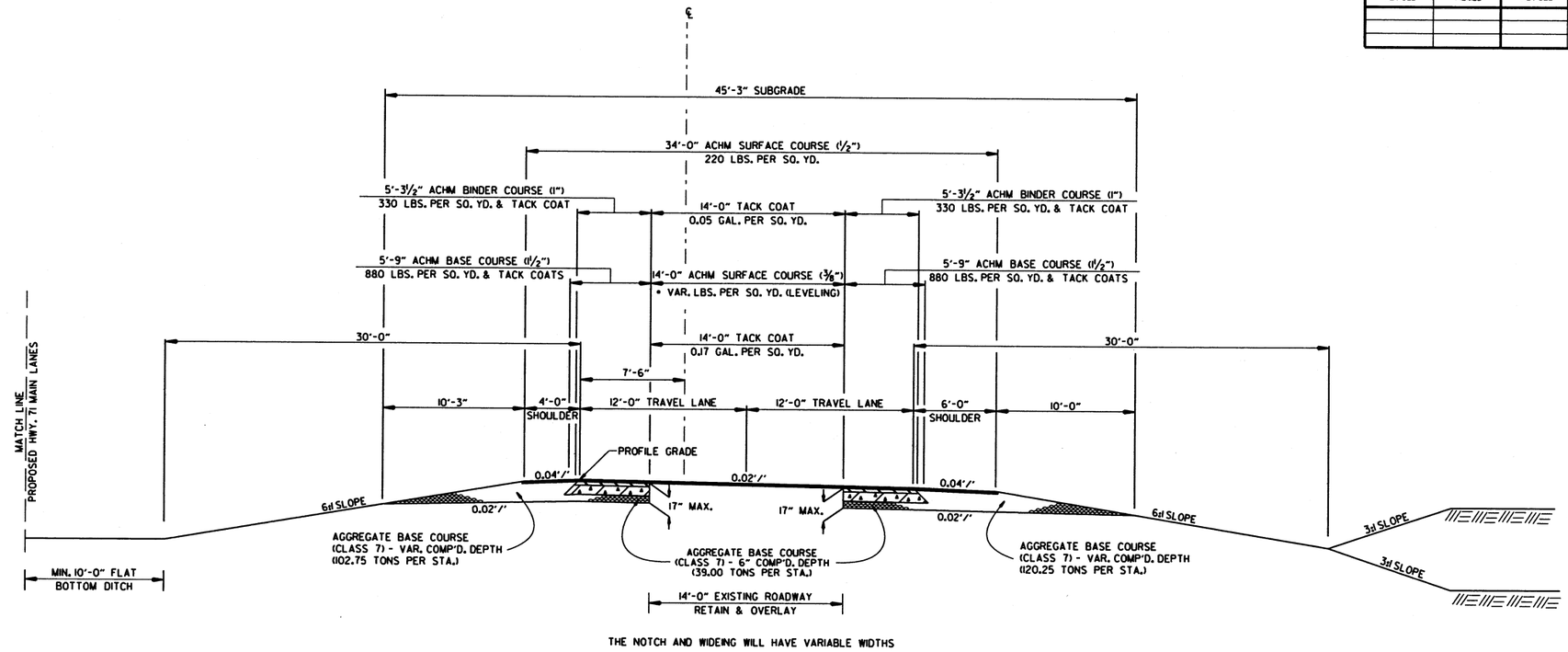
RCA0903_REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	11	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



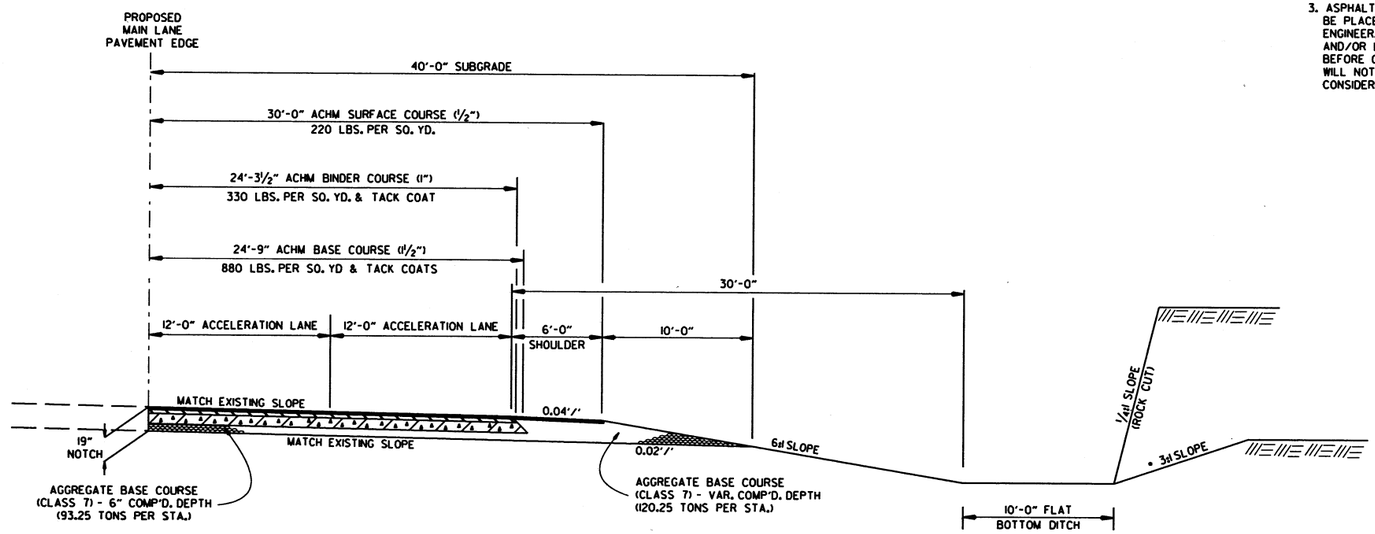
THE NOTCH AND WIDEING WILL HAVE VARIABLE WIDTHS

HWY. 549/HWY. 71/HWY. 71B SINGLE POINT URBAN INTERCHANGE - RAMP 2 - 2 LANE SECTION NOTCH & WIDENING

• TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
3. 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 PAY ITEMS.



• SOIL MATERIAL SHALL BE EXCAVATED ON 3:1 SLOPE OR FLATTER.

HWY. 549/HWY. 71/HWY. 71B SINGLE POINT URBAN INTERCHANGE - RAMP 2 ACCELERATION LANES

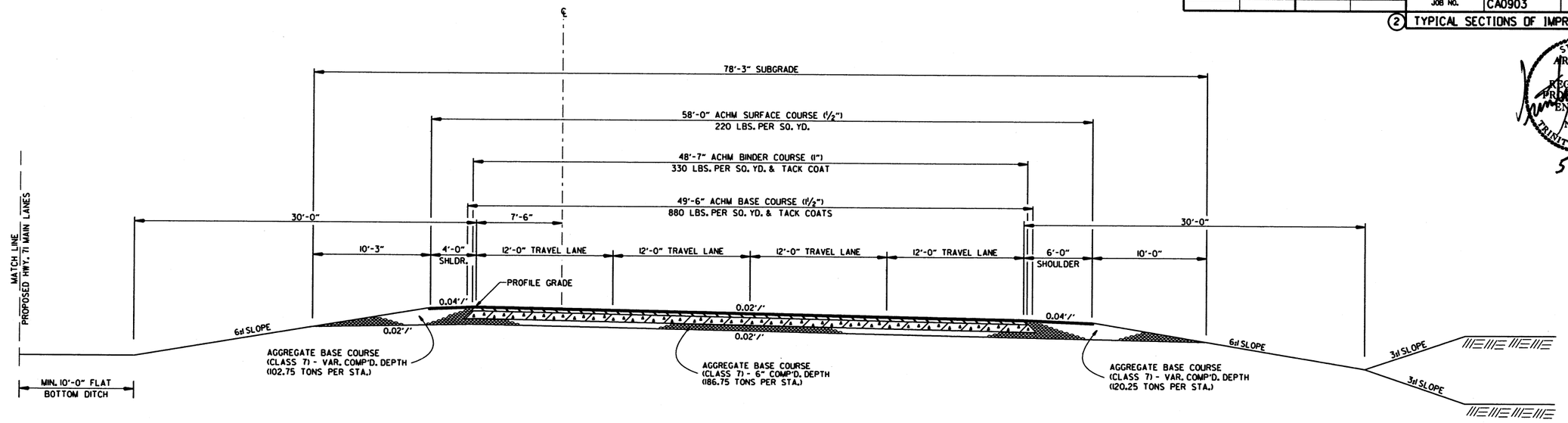
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TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	12	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-17

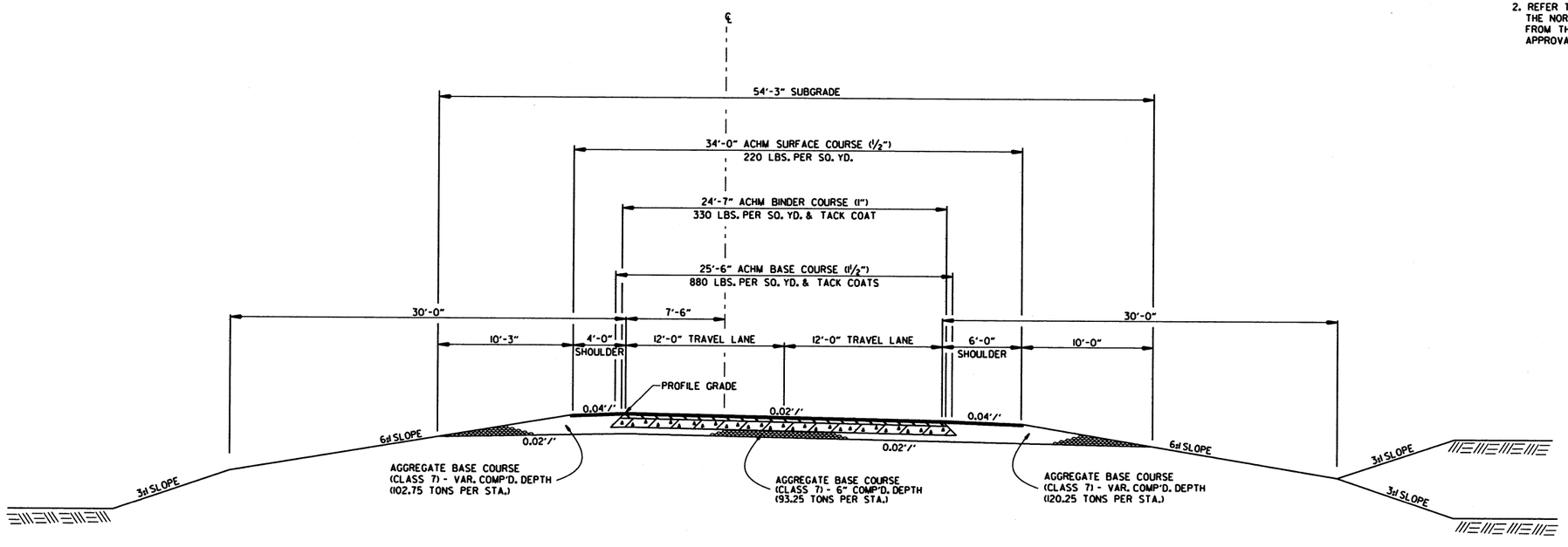


HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 3 - 4 LANE SECTION

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 3 - 2 LANE SECTION

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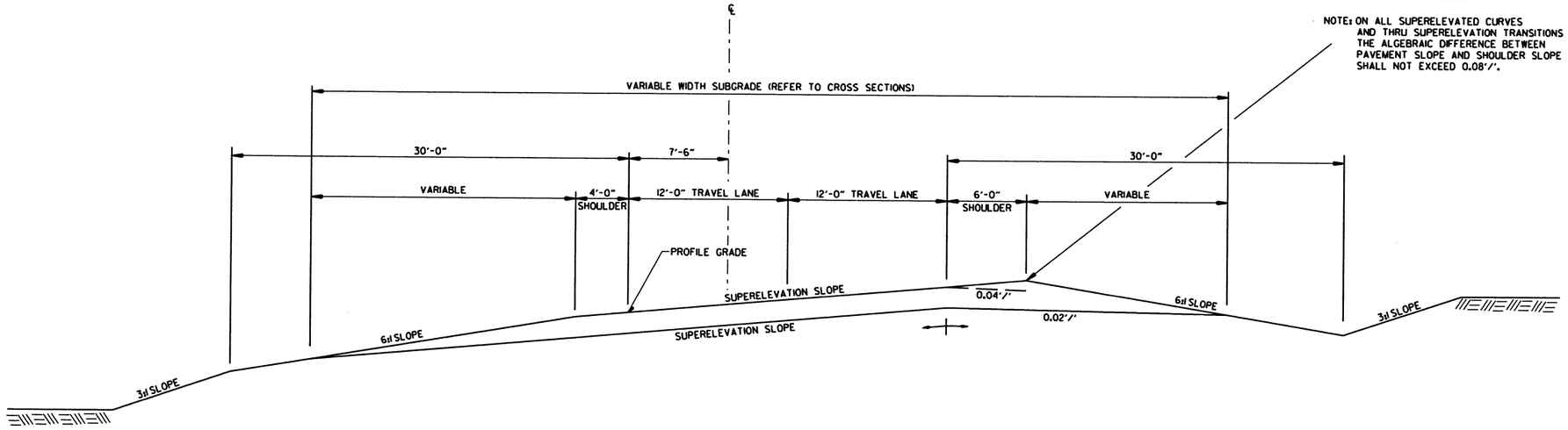
TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	13	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

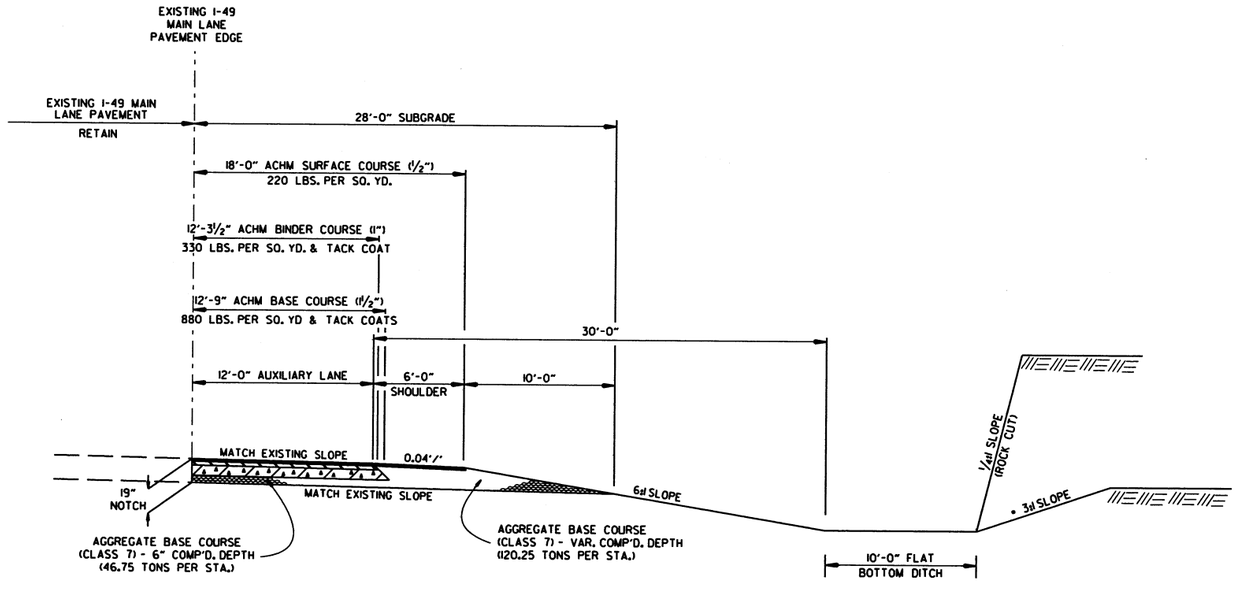


NOTE: ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

HWY. 549/HWY. 71/HWY. 71B SINGLE POINT URBAN INTERCHANGE - RAMP 3 - SUPERELEVATION

(SHOWN IN THE DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTE: REVOLVE SUPERELEVATION AROUND THE PROFILE GRADE POINT.



• SOIL MATERIAL SHALL BE EXCAVATED ON 3:1 SLOPE OR FLATTER.

HWY. 549/HWY. 71/HWY. 71B SINGLE POINT URBAN INTERCHANGE - RAMP 3 AUXILIARY LANE

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

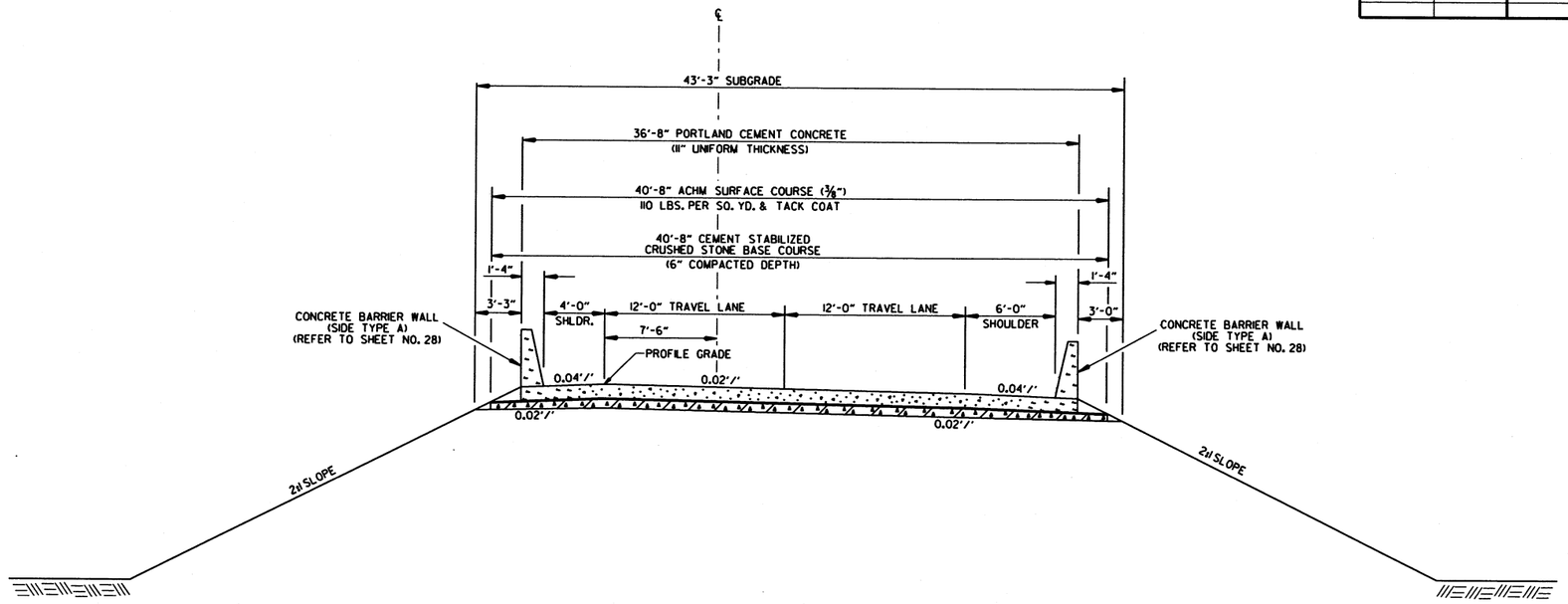
RCA0903.REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	14	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

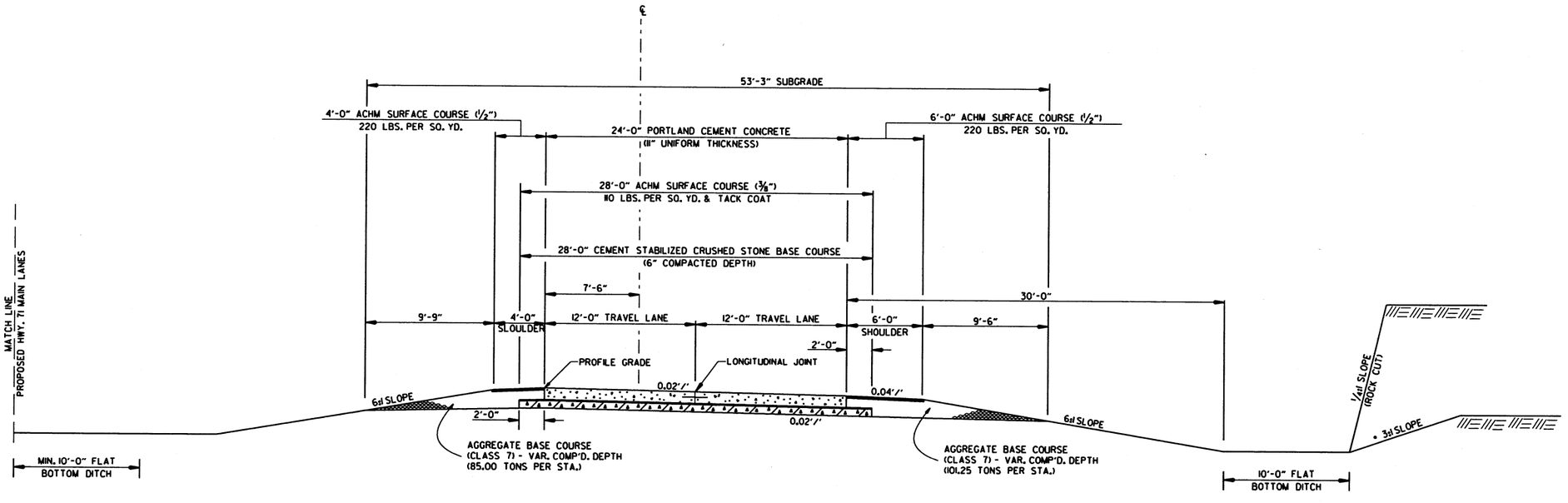
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 4

NOTE:

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



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 4 - 2 LANE OPEN SHOULDER SECTION

• SOIL MATERIAL SHALL BE EXCAVATED ON 3H SLOPE OR FLATTER.

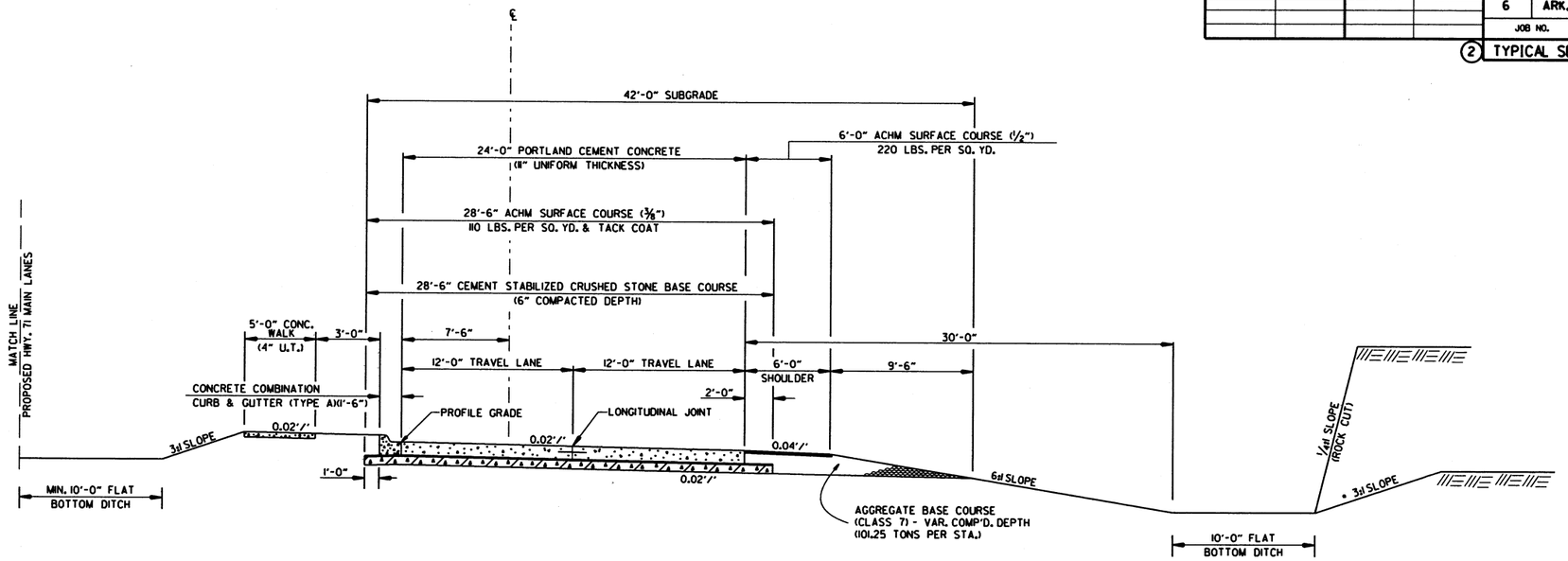
TYPICAL SECTIONS OF IMPROVEMENT

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	15	452

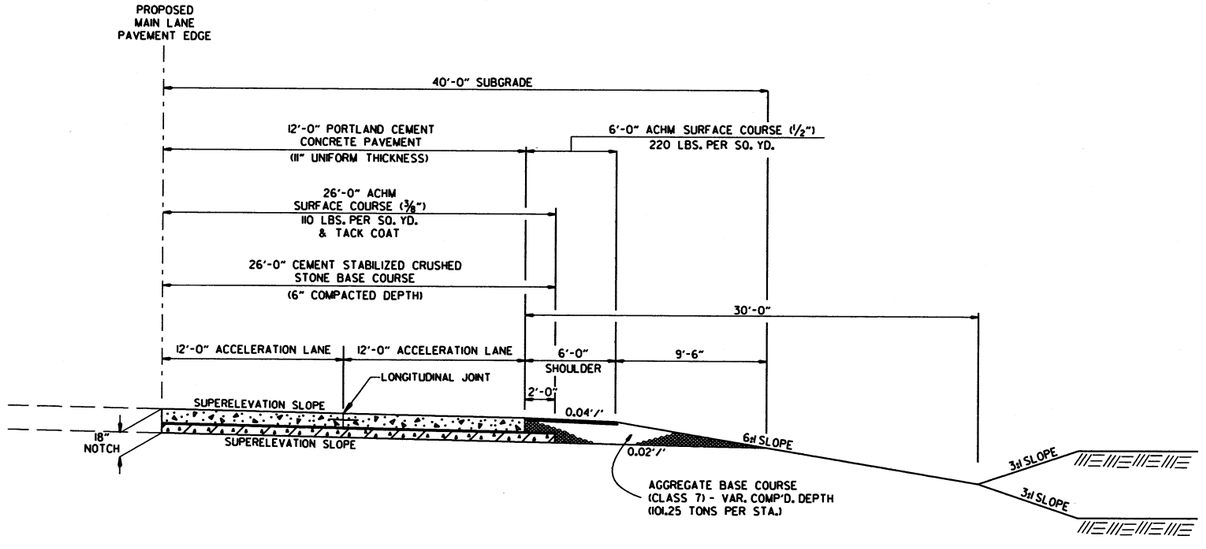
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 4 - 2 LANE CURB & GUTTER SECTION

• SOIL MATERIAL SHALL BE EXCAVATED ON 3:1 SLOPE OR FLATTER.



HWY. 549/HWY. 71/HWY. 71B SINGLE POINT
URBAN INTERCHANGE - RAMP 4 ACCELERATION LANES

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.

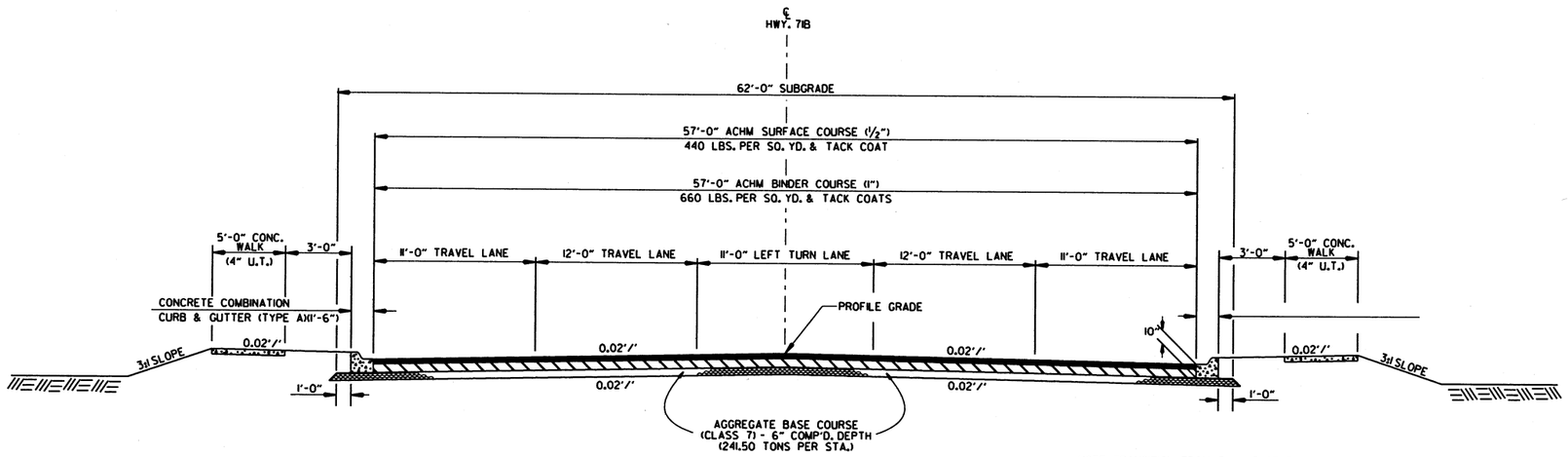
RCA0903.REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	16	452

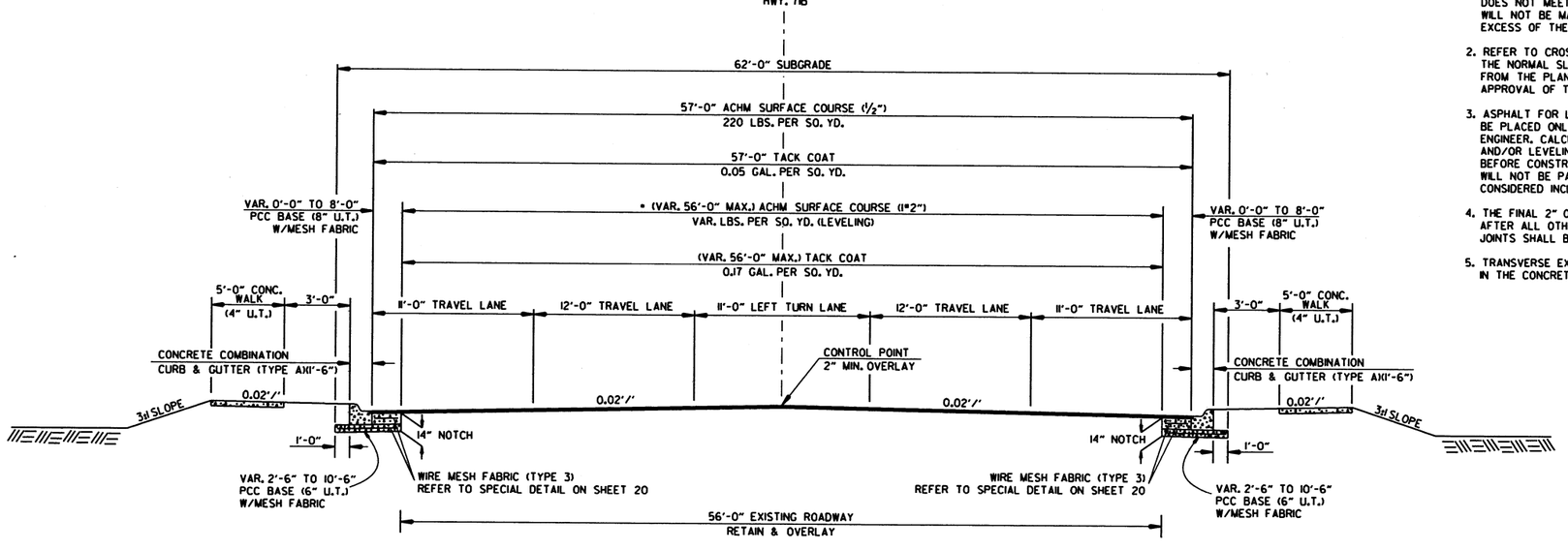
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



NOTE: TRANSITION FROM 5 LANE SECTION AT STA. 127+11.71 TO 6 LANE SECTION AT STA. 128+88.31

HWY. 71B - 5 LANE SECTION
STA. 126+50 TO STA. 128+88.31



• TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

HWY. 71B - 5 LANE SECTION
NOTCH & WIDENING
STA. 120+00 TO STA. 126+50

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
3. 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 PAY ITEMS.
4. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.
5. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.

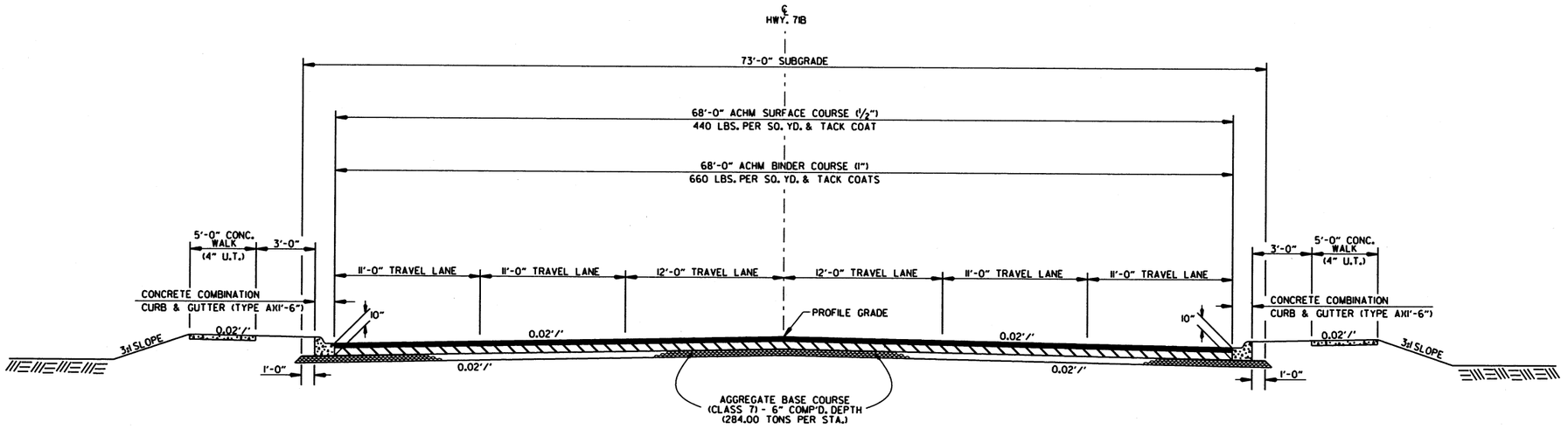
RCA0903_REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	17	452

(2) TYPICAL SECTIONS OF IMPROVEMENT

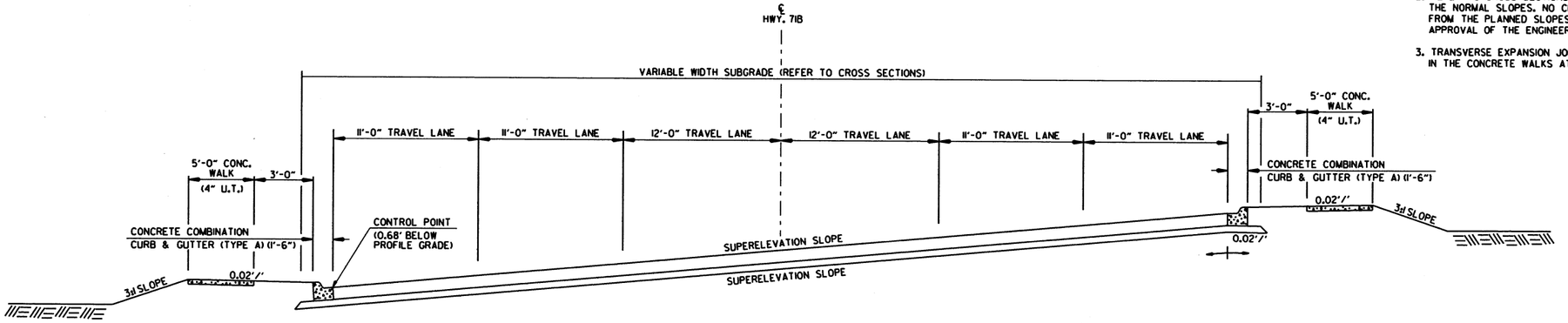
STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
5-17-19



HWY. 71B - 6 LANE SECTION
STA. 128+88.31 TO STA. 149+64.28

NOTES:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
2. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
3. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN THE CONCRETE WALKS AT 45' INTERVALS.



HWY. 71B - SUPERELEVATION

(SHOWN IN THE DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTE: REVOLVE SUPERELEVATION AROUND THE INSIDE PAVEMENT EDGE.

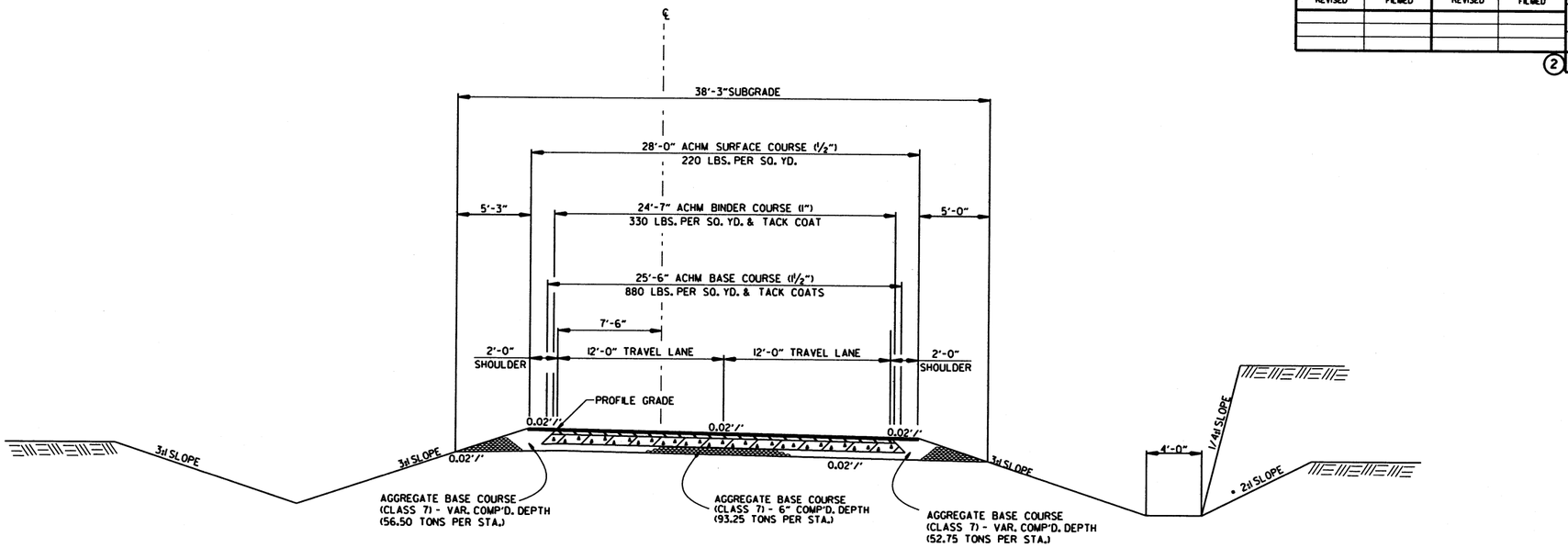
RCA0903.REVISED.DGN 10/19/2016

TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	18	452

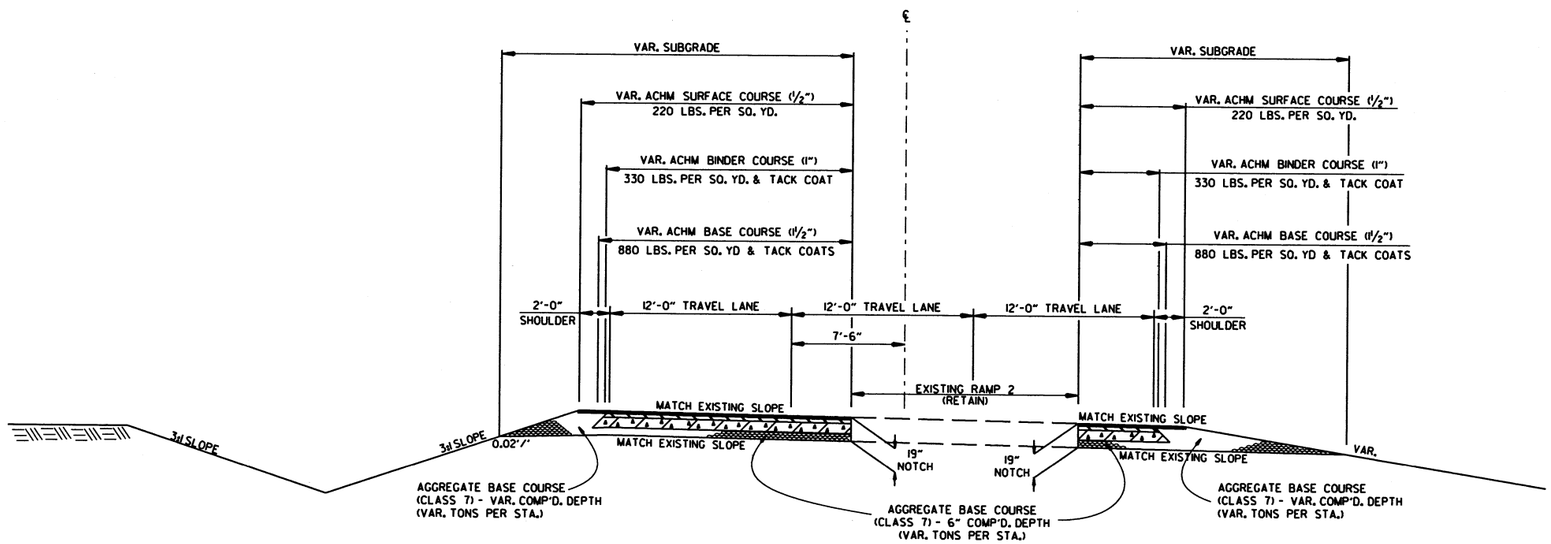
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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• SOIL MATERIAL SHALL BE EXCAVATED ON 2:1 SLOPE OR FLATTER.

MOT RAMP 3 - 2 LANE SECTION



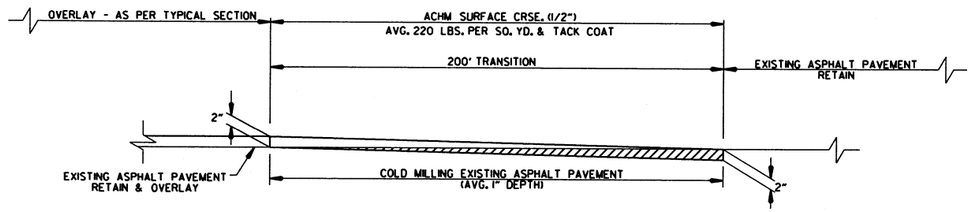
MOT RAMP 3 - 3 LANE SECTION

RCA0903_REVISED.DGN 10/19/2016

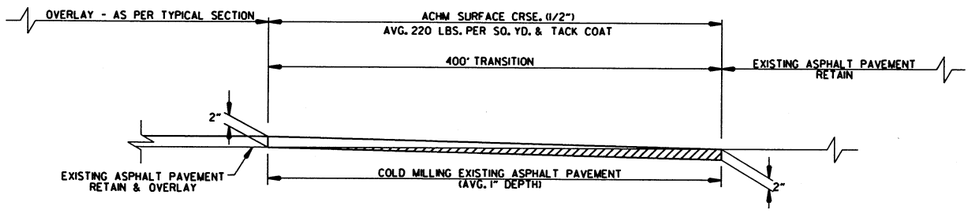
TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0903	19	452

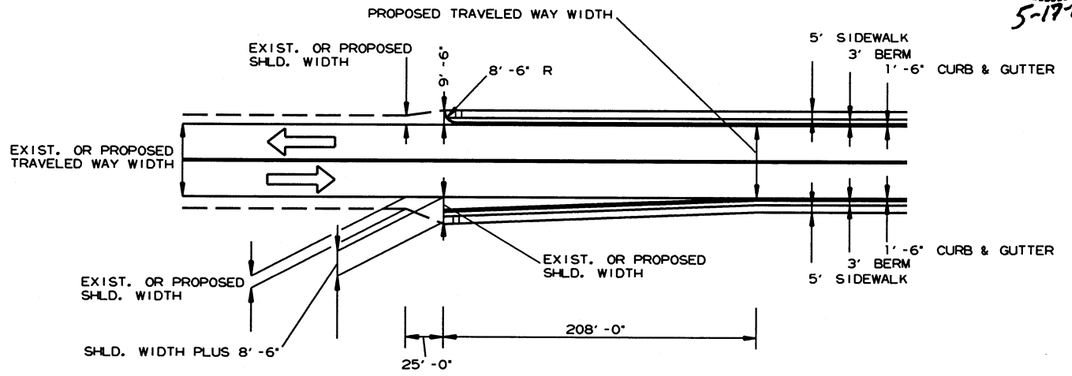
(2) SPECIAL DETAILS



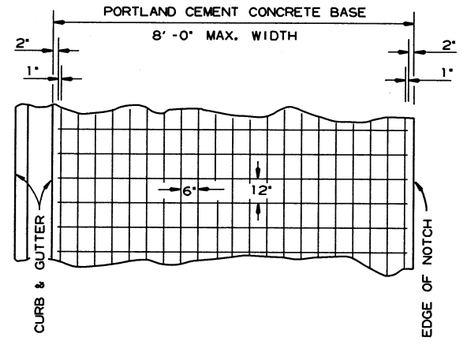
PAVEMENT TRANSITION - HWY. 71B



PAVEMENT TRANSITION - HWY. 549



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION



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

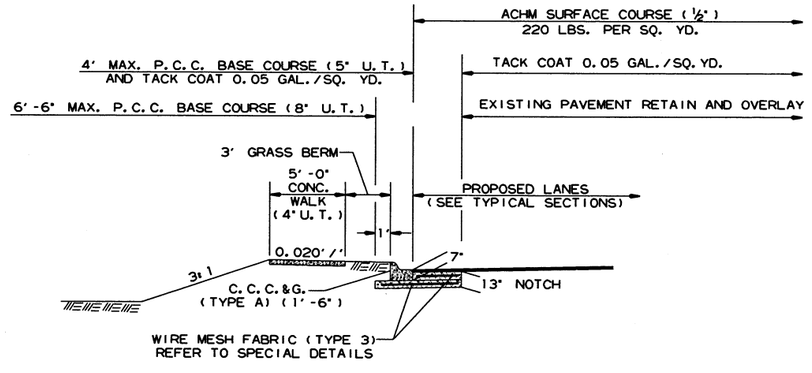
NOTES:

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 (10" U.T.)

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



6.0" Radius, 1.3" Border, Black on Orange;
"Job XXXXXX" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE ARKANSAS.COM" Arial;
Arial;



P.C.C. BASE WIDENING DETAIL

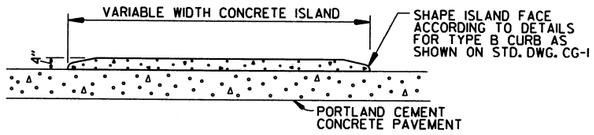
P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 5-17-19

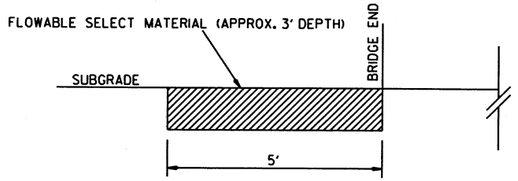
RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	20	452

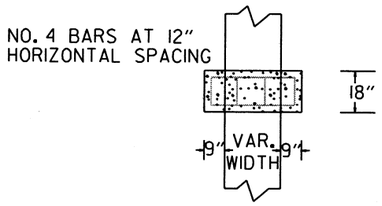
(2) SPECIAL DETAILS



DETAILS OF ISLAND ON P.C. CONCRETE PAVEMENT

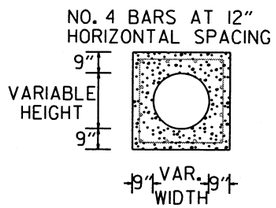


FLOWABLE SELECT MATERIAL AT BRIDGE ENDS

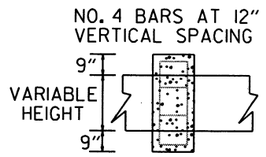


TOP VIEW

MIN. 3" COVER

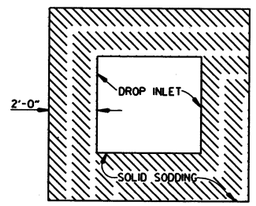


FRONT VIEW

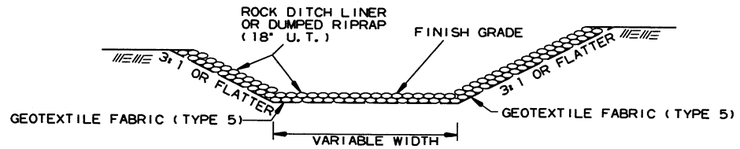


SIDE VIEW

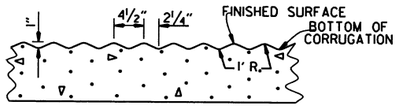
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



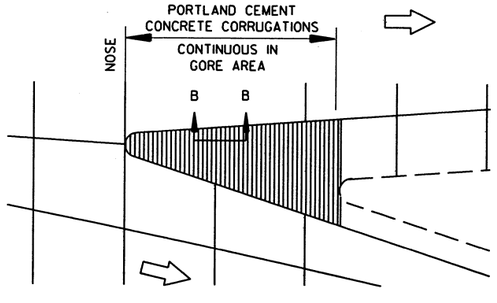
PLAN
DETAIL OF SOLID SODDING AROUND DROP INLET



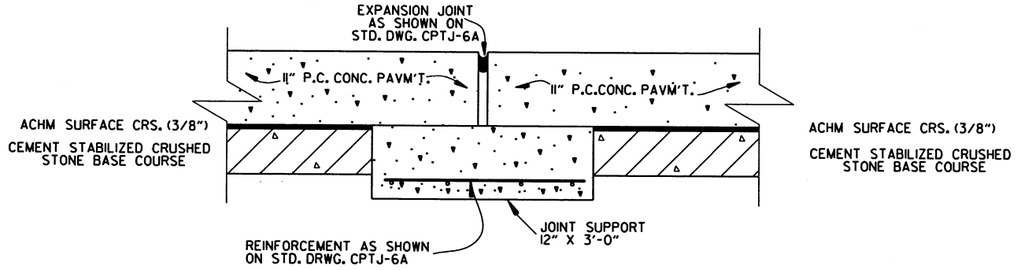
DETAILS OF ROCK DITCH LINER OR DUMPED RIPRAP



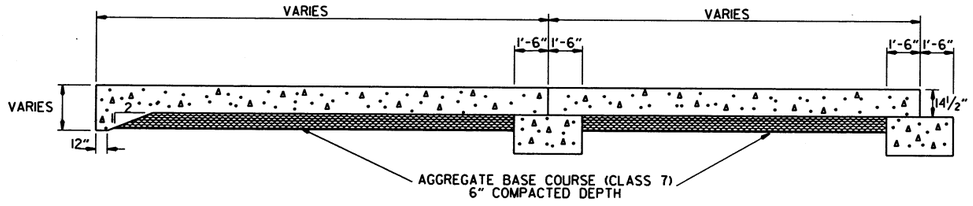
SECTION B-B



LAYOUT OF SHOULDER CORRUGATIONS IN EXIT GORE AREAS



DETAILS OF JOINT SUPPORT



SPECIAL DETAIL OF APPROACH SLAB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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5-17-19

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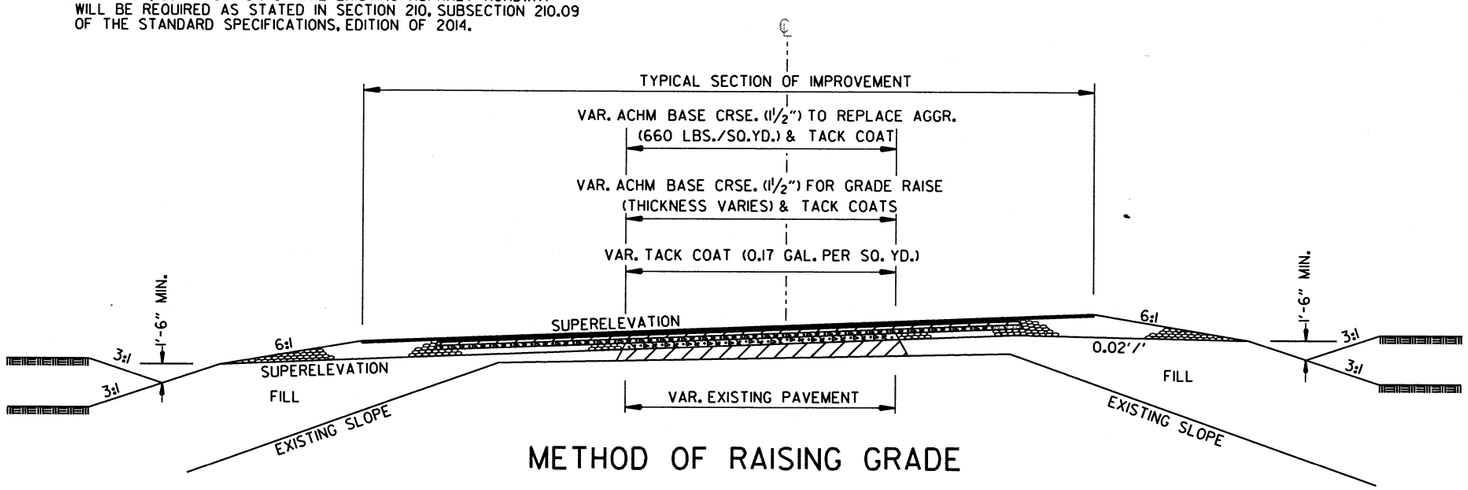
SPECIAL DETAILS

NOTES:
(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014.

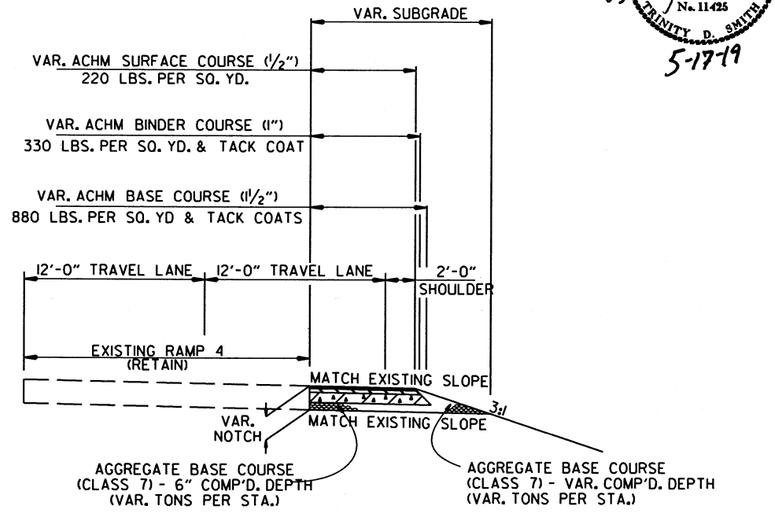
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				6	ARK.			
				JOB NO.		CA0903	21	452

(2) SPECIAL DETAILS

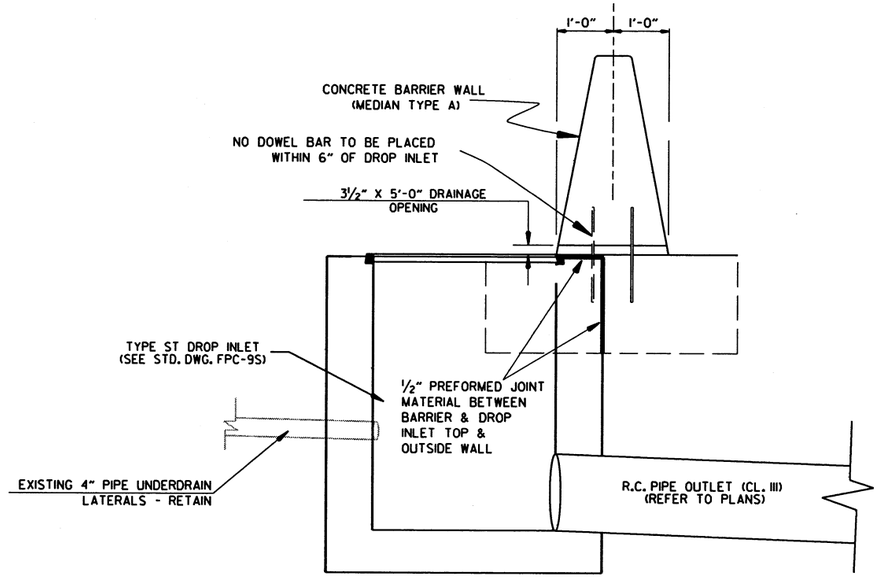
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



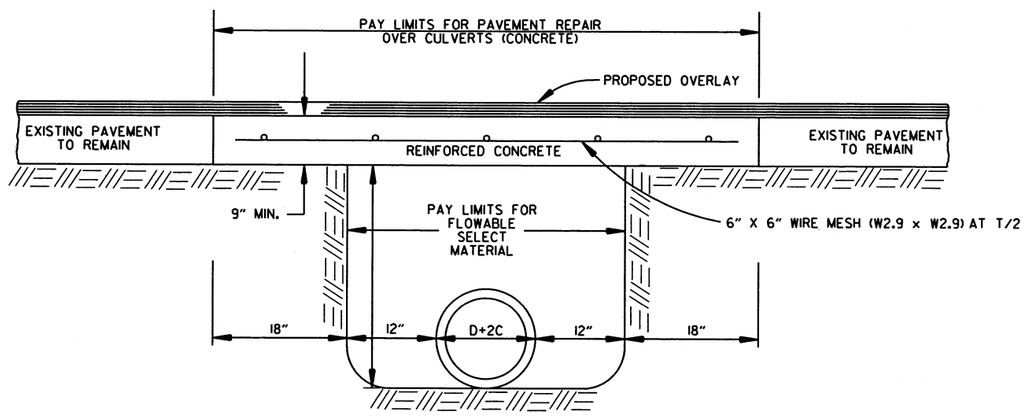
METHOD OF RAISING GRADE



EXIST. RAMP 4 - TEMP. WIDENING



ADJACENT TO CONCRETE BARRIER WALL (MEDIAN TYPE A)
TRANSVERSE SECTION OF TYPE ST DROP INLET



PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

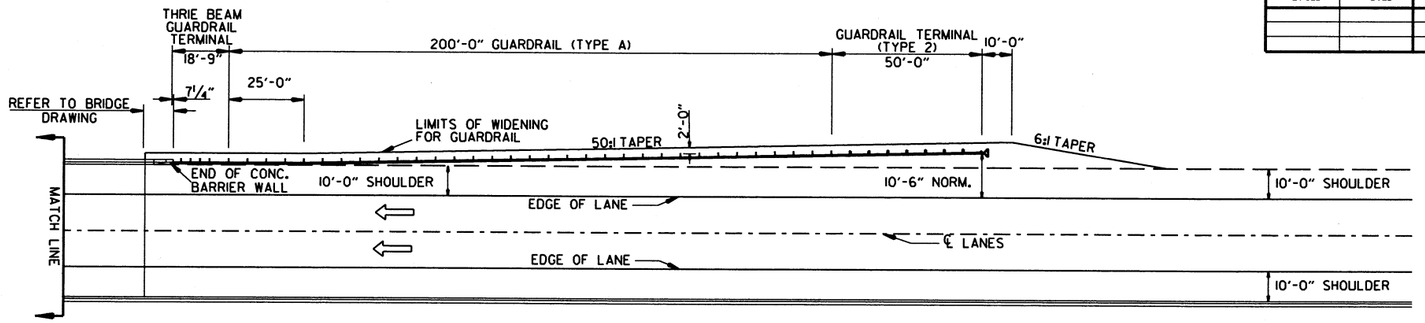
SPECIAL DETAILS

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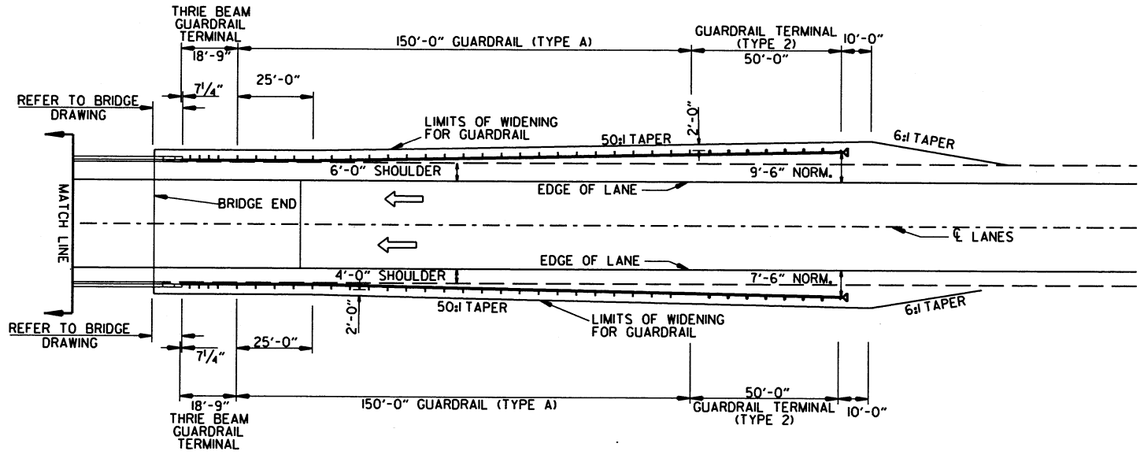
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(2) SPECIAL DETAILS

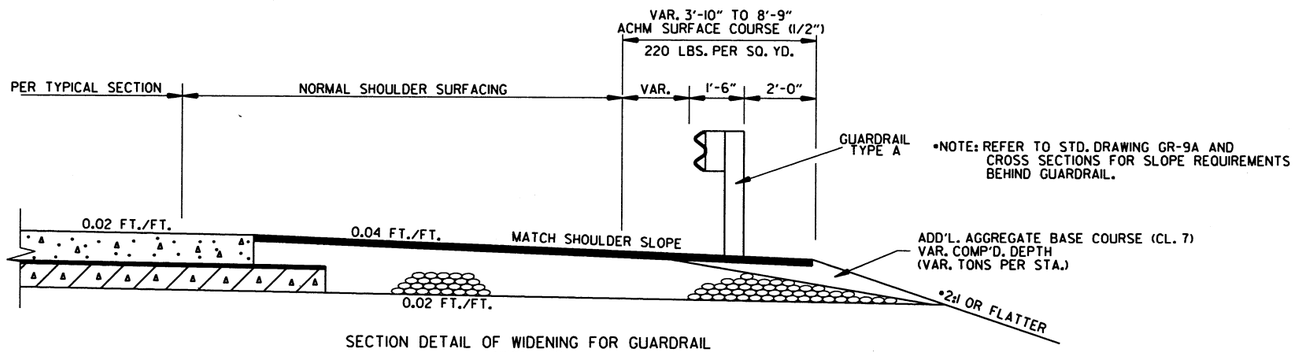
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



TYPICAL LAYOUT OF GUARDRAIL AT END OF HWY. 549 CONCRETE BARRIER WALL



TYPICAL LAYOUT OF GUARDRAIL AT RAMP 4 SPUI BRIDGE END



SECTION DETAIL OF WIDENING FOR GUARDRAIL
HWY. 549

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-8A, GR-9, GR-9A, GR-10 & GR-10A FOR ADDITIONAL INFORMATION.

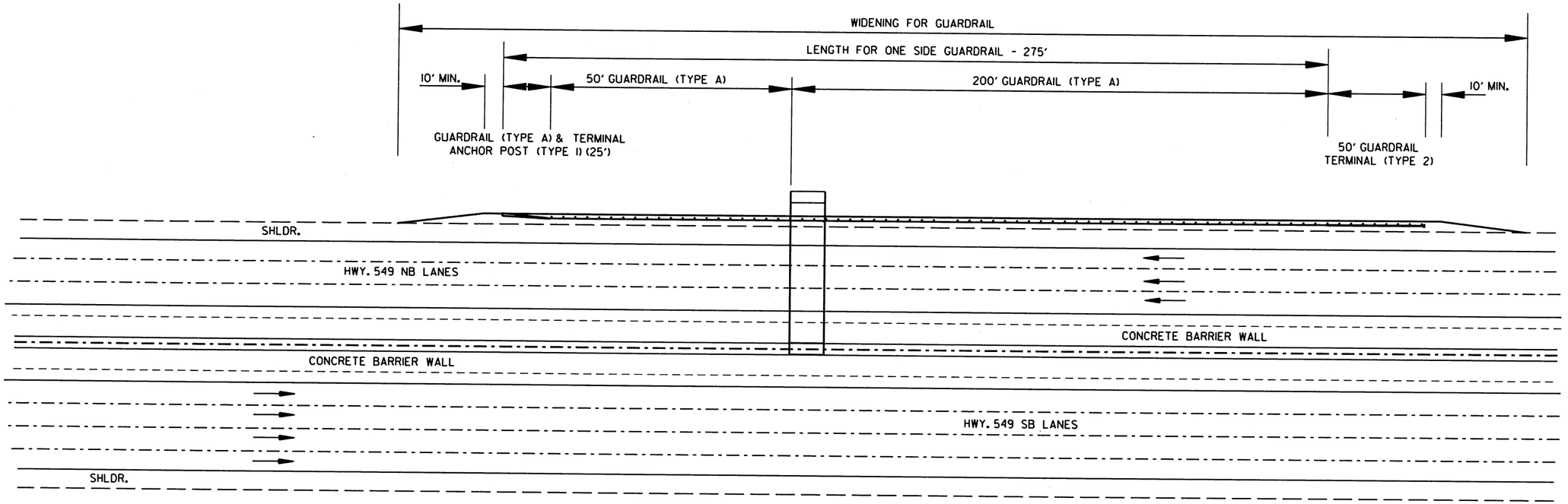
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SPECIAL DETAILS

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				6	ARK.			
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(2) SPECIAL DETAILS

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REGISTERED PROFESSIONAL ENGINEER
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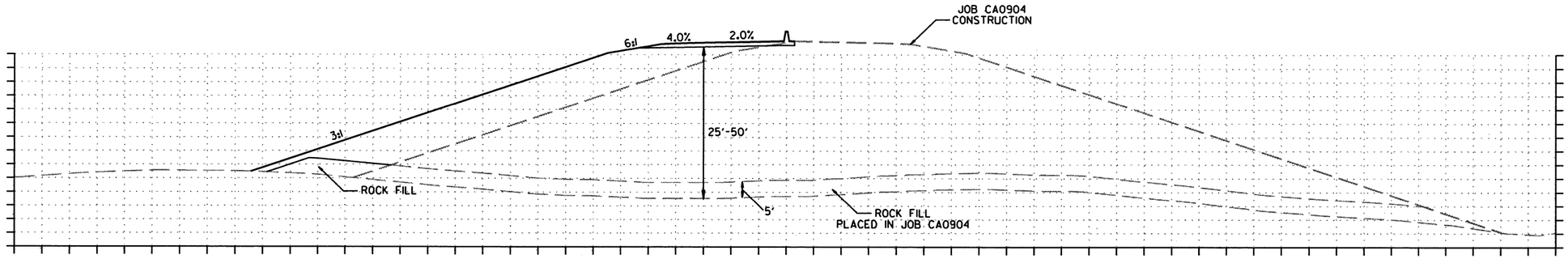
GUARDRAIL INSTALLATION FOR OVERHEAD SIGNS

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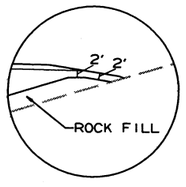
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				JOB NO.		CA0903	24	452

(2) SPECIAL DETAILS

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5-17-19



TYPICAL PLACEMENT OF ROCK FILL FOR COMPACTED EMBANKMENT DEPTHS OF 25'-50'



DETAIL FOR PLACEMENT OF ROCK FILL

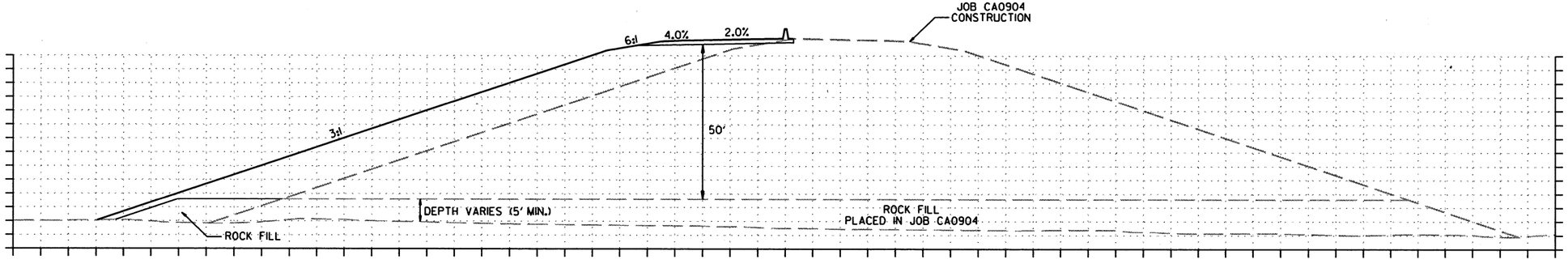
NOTES:
FOR ALL COMPACTED EMBANKMENT DEPTHS GREATER THAN 25' BUT LESS THAN 50' THERE SHALL BE A 5' LAYER OF ROCK FILL ALONG THE EXISTING SURFACE.

FOR ALL COMPACTED EMBANKMENT DEPTHS GREATER THAN 50' THERE SHALL BE A ROCK FILL LAYER FROM 50' TO THE EXISTING SURFACE.

AT THE UPHILL INTERFACE BETWEEN THE ROCK FILL LAYER AND THE PROPOSED FORESLOPE, THERE SHALL BE A 2' BUFFER OF UNSPECIFIED MATERIAL BETWEEN THE ROCK FILL AND BOTH THE FORESLOPE AND/OR SUBGRADE. AT THE DOWNHILL INTERFACE, THE ROCK FILL SHALL BE CONTINUOUS OUT TO THE FORESLOPE. (SEE DETAIL FOR PLACEMENT OF ROCK FILL)

THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE TO ALL ROCK FILL.

REFER TO "ROCK FILL" SPECIAL PROVISION FOR ADDITIONAL INFORMATION.



TYPICAL PLACEMENT OF ROCK FILL FOR COMPACTED EMBANKMENT DEPTHS OF GREATER THAN 50'

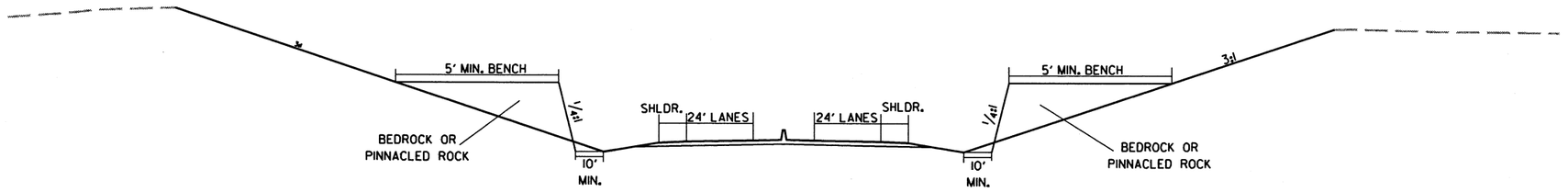
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SPECIAL DETAILS

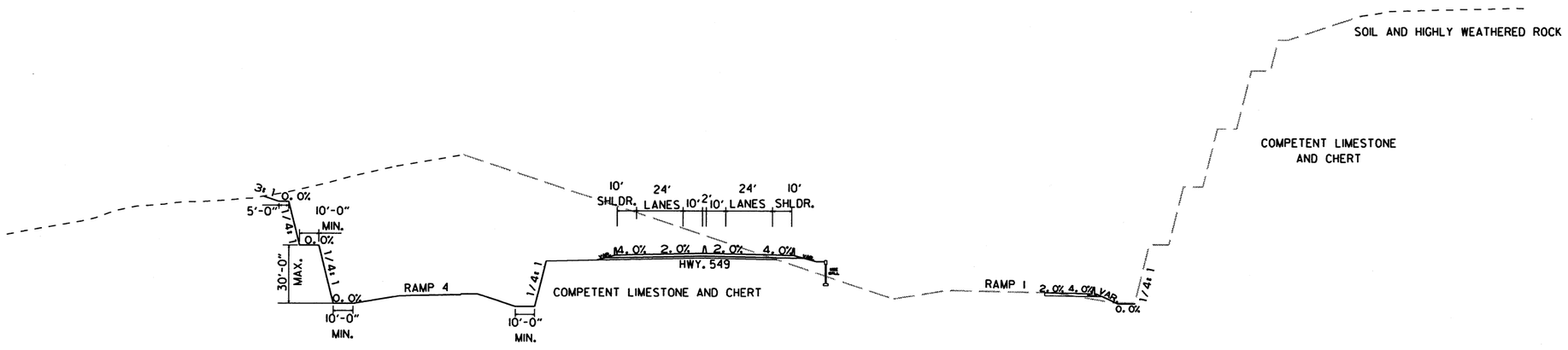
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				6	ARK.			
				JOB NO.		CA0903	25	452

(2) SPECIAL DETAILS

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REGISTERED PROFESSIONAL ENGINEER
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5-17-19



EXCAVATION DETAILS FOR ROCK CUT SECTION
HWY. 549
STA. 1034+00 TO STA. 1039+00
STA. 1048+00 TO STA. 1065+00
STA. 1065+00 TO STA. 1085+00
STA. 1089+00 TO STA. 1107+00



EXCAVATION DETAILS FOR ROCK CUT SECTION
HWY. 549 & SPUI RAMPS 1 & 4
HWY. 549 STA. 1120+00 TO STA. 1125+00

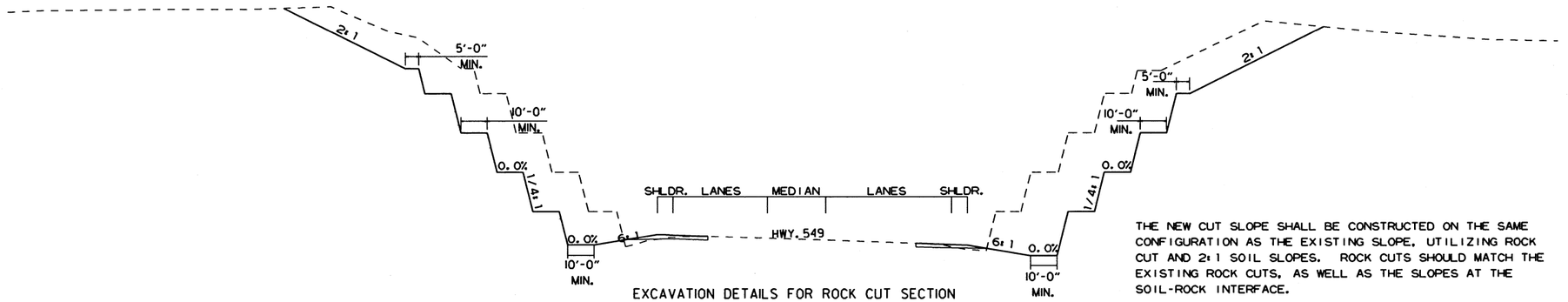
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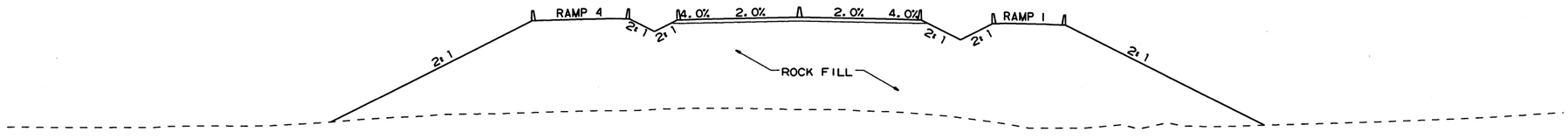
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



EXCAVATION DETAILS FOR ROCK CUT SECTION
HWY. 549
STA. 1143+00 TO STA. 1163+00

THE NEW CUT SLOPE SHALL BE CONSTRUCTED ON THE SAME CONFIGURATION AS THE EXISTING SLOPE, UTILIZING ROCK CUT AND 2:1 SOIL SLOPES. ROCK CUTS SHOULD MATCH THE EXISTING ROCK CUTS, AS WELL AS THE SLOPES AT THE SOIL-ROCK INTERFACE.



DETAILS FOR ROCK FILL SECTION
HWY. 549

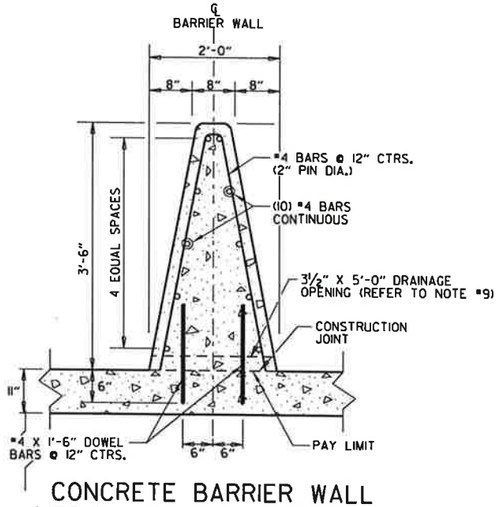
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SPECIAL DETAILS

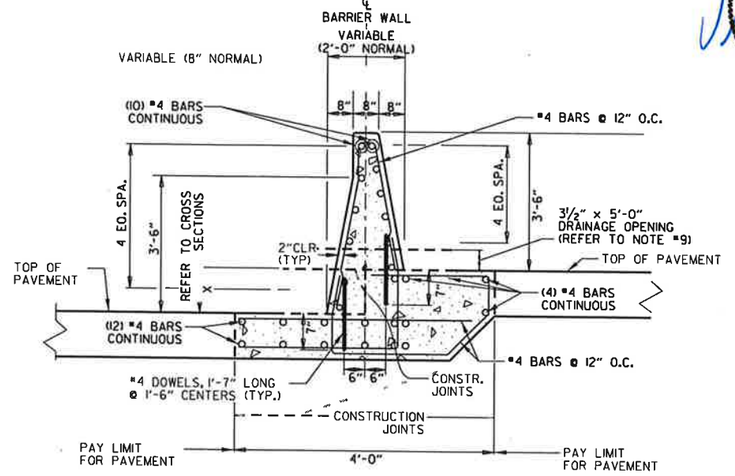
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(2) SPECIAL DETAILS

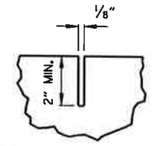
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19



CONCRETE BARRIER WALL
(MEDIAN TYPE A; MASH TL-4)
N.T.S.



CONCRETE BARRIER WALL
(MEDIAN TYPE B; MASH TL-4)
X = 0'-0" TO 1'-0" MAX
N.T.S.

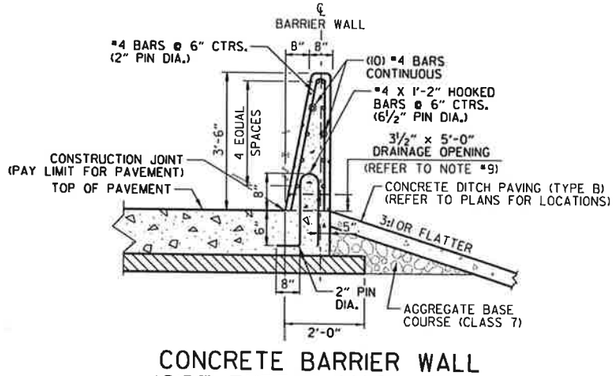


CONTRACTION
JOINT DETAIL

GENERAL NOTES FOR CONCRETE BARRIER WALLS

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2014 EDITION.
2. CONTRACTION JOINTS REQUIRED @ 15'-0" MAXIMUM SPACING FOR BARRIER TYPES MEDIAN A, SIDE A. A 30'-0" MAXIMUM SPACING IS REQUIRED FOR TYPES MEDIAN C, SIDE C, D & E.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND MINIMUM 4' WIDE BASE ARE CAST AS A COMPLETE UNIT.
5. CONTRACTION JOINTS ARE NOT PERMITTED AT THE DOWEL BAR LOCATIONS.
6. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
7. THE DESIGN OF BARRIER WALL TYPES SIDE C, D & E IS BASED ON A MINIMUM FOUNDATION BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION AS DIRECTED BY THE ENGINEER.
8. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES MEDIAN A AND SIDE A OR 120 FT FOR BARRIER TYPES SIDE C, D & E. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
9. CONSTRUCT DRAINAGE OPENINGS AT EVERY 50' O.C. AND AT SAGS IF SHOWN ON THE PLANS. DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.
10. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
11. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING CONDUIT IN CONCRETE BARRIER WALLS. REFER TO ILLUMINATION LAYOUT FOR LOCATIONS OF CONDUIT RUNS.
12. BARRIER REINFORCING BARS ANCHORED INTO EXISTING CONCRETE PAVEMENT SHALL BE INSTALLED AND SECURED ACCORDING TO 804.06 USING AN APPROVED ANCHORING SYSTEM FROM OPL.

NOTE:
THE COST FOR THE MODIFICATION OF THE BARRIERS AND DROP INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS AND CURBS.



CONCRETE BARRIER WALL
(SIDE TYPE A; MASH TL-4)
N.T.S.

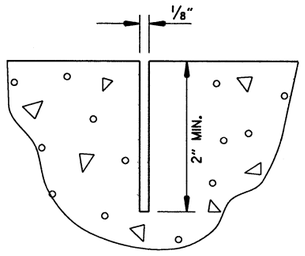
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SPECIAL DETAILS

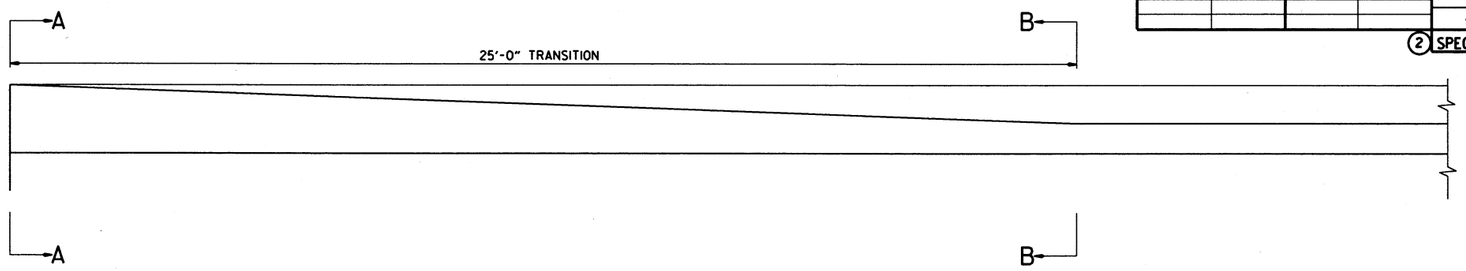
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				6	ARK.			
				JOB NO.		CA0903	28	452

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



CONTRACTION JOINT DETAIL



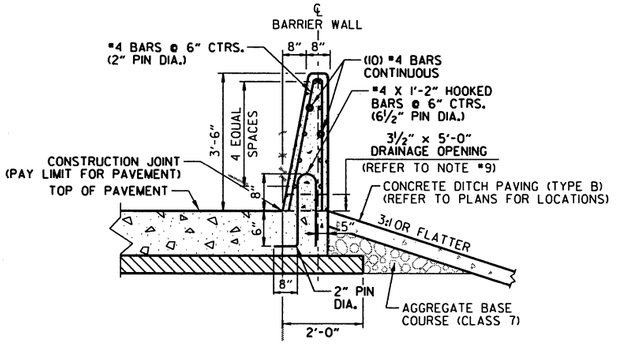
PLAN VIEW
CONCRETE BARRIER WALL (SIDE TYPE A) TRANSITION

NOTE: TRANSITION TO BE CONSTRUCTED AT BEGINNING AND END OF BARRIER WALL.

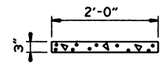
GENERAL NOTES FOR CONCRETE BARRIER WALLS

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6. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
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8. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES MEDIAN A AND SIDE A OR 120 FT FOR BARRIER TYPES SIDE C, D & E. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
9. CONSTRUCT DRAINAGE OPENINGS AT EVERY 50' O.C. AND AT SAGS IF SHOWN ON THE PLANS. DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.
10. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
11. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING CONDUIT IN CONCRETE BARRIER WALLS. REFER TO ILLUMINATION LAYOUT FOR LOCATIONS OF CONDUIT RUNS.
12. BARRIER REINFORCING BARS ANCHORED INTO EXISTING CONCRETE PAVEMENT SHALL BE INSTALLED AND SECURED ACCORDING TO 804.06 USING AN APPROVED ANCHORING SYSTEM FROM OPL.

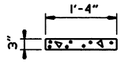
NOTE:
THE COST FOR THE MODIFICATION OF THE BARRIERS AND DROP INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS AND CURBS.



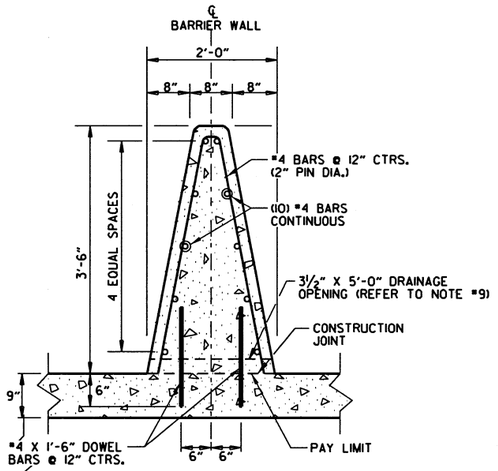
CONCRETE BARRIER WALL
(SIDE TYPE A; MASH TL-4)
(SECTION B-B)
N.T.S.



CONCRETE BARRIER WALL
(MEDIAN TYPE A)
(SECTION A-A)



CONCRETE BARRIER WALL
(SIDE TYPE A)
(SECTION A-A)



CONCRETE BARRIER WALL
(MEDIAN TYPE A; MASH TL-4)
(SECTION B-B)
N.T.S.

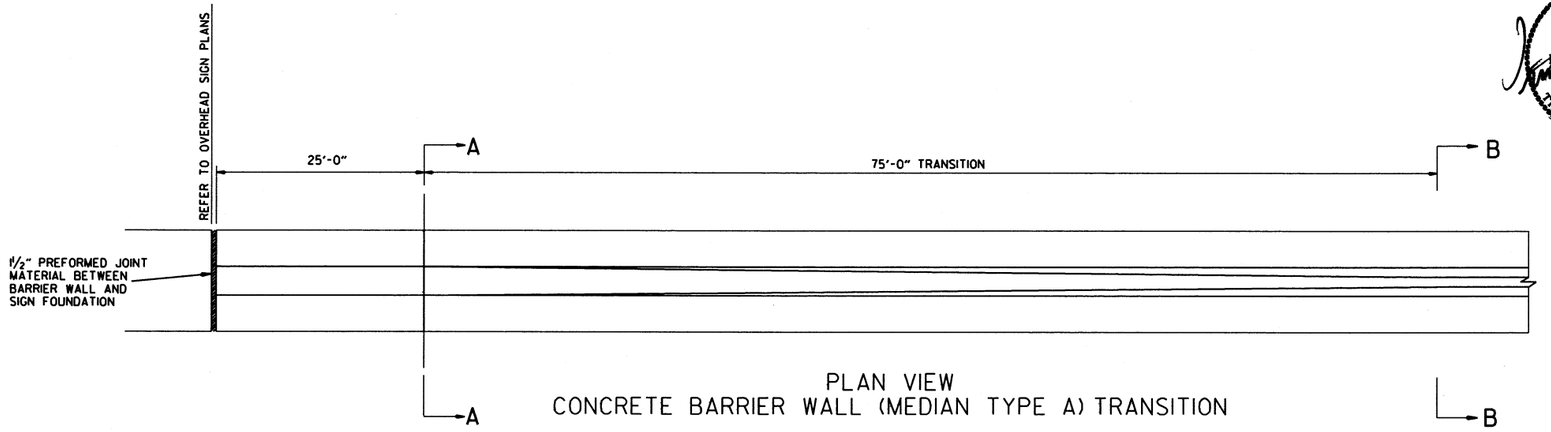
SPECIAL DETAILS

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.		CA0903	29	452

(2) SPECIAL DETAILS

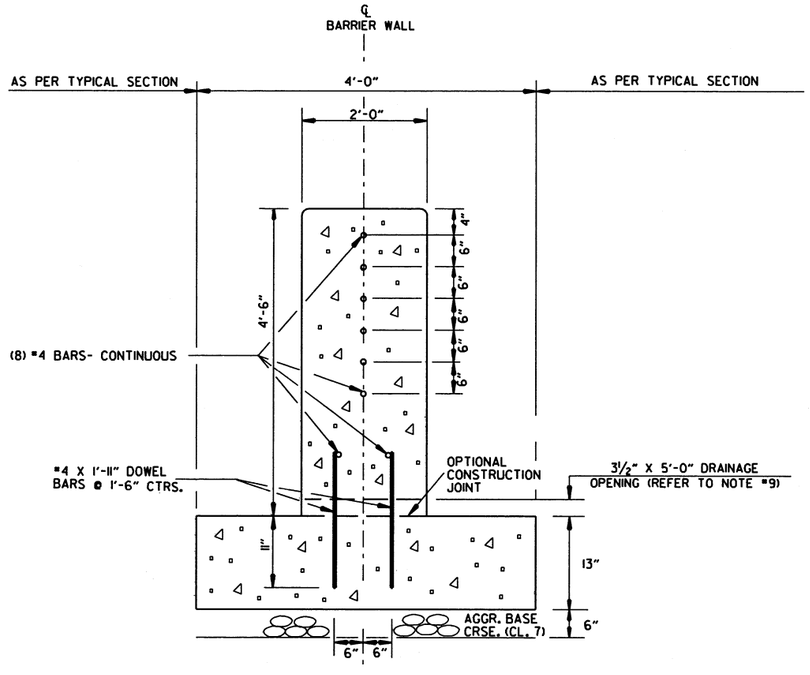
GENERAL NOTES FOR CONCRETE BARRIER WALLS

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2014 EDITION.
2. CONTRACTION JOINTS REQUIRED @ 15'-0" MAXIMUM SPACING FOR BARRIER TYPES MEDIAN A, SIDE A. A 30'-0" MAXIMUM SPACING IS REQUIRED FOR TYPES MEDIAN C, SIDE C, D & E.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND MINIMUM 4' WIDE BASE ARE CAST AS A COMPLETE UNIT.
5. CONTRACTION JOINTS ARE NOT PERMITTED AT THE DOWEL BAR LOCATIONS.
6. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
7. THE DESIGN OF BARRIER WALL TYPES SIDE C, D & E IS BASED ON A MINIMUM FOUNDATION BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION AS DIRECTED BY THE ENGINEER.
8. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES MEDIAN A AND SIDE A OR 120 FT FOR BARRIER TYPES SIDE C, D & E. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
9. CONSTRUCT DRAINAGE OPENINGS AT EVERY 50' O.C. AND AT SAGS IF SHOWN ON THE PLANS. DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.
10. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
11. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING CONDUIT IN CONCRETE BARRIER WALLS. REFER TO ILLUMINATION LAYOUT FOR LOCATIONS OF CONDUIT RUNS.
12. BARRIER REINFORCING BARS ANCHORED INTO EXISTING CONCRETE PAVEMENT SHALL BE INSTALLED AND SECURED ACCORDING TO 804.06 USING AN APPROVED ANCHORING SYSTEM FROM OPL.

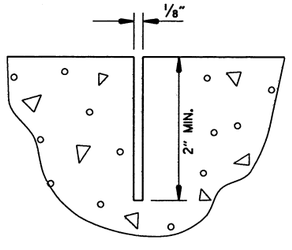


PLAN VIEW
CONCRETE BARRIER WALL (MEDIAN TYPE A) TRANSITION

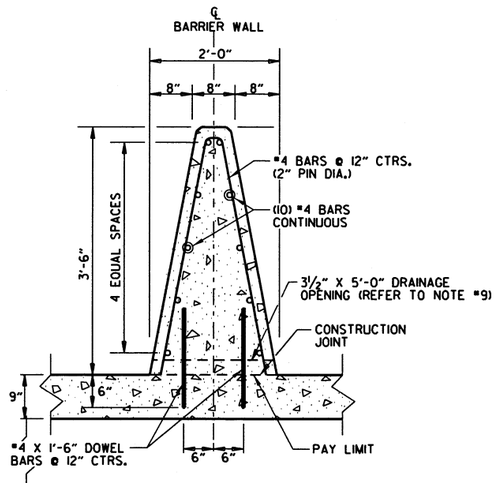
NOTE:
THE COST FOR THE MODIFICATION OF THE BARRIERS AND DROP INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS AND CURBS.



CONCRETE BARRIER WALL (MEDIAN TYPE A)
(SECTION A-A)



CONTRACTION JOINT DETAIL



CONCRETE BARRIER WALL
(MEDIAN TYPE A; MASH TL-4)
(SECTION B-B)
N.T.S.

CONCRETE BARRIER WALL (MEDIAN TYPE A)
TRANSITION FOR OVERHEAD SIGN STRUCTURE

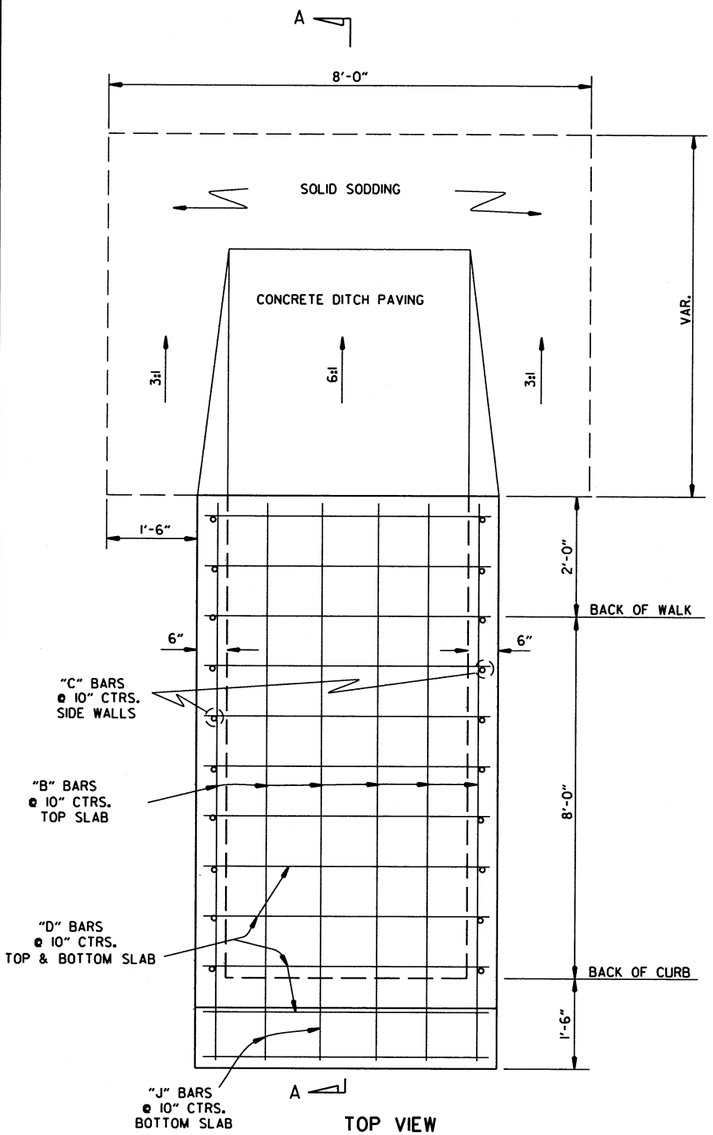
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

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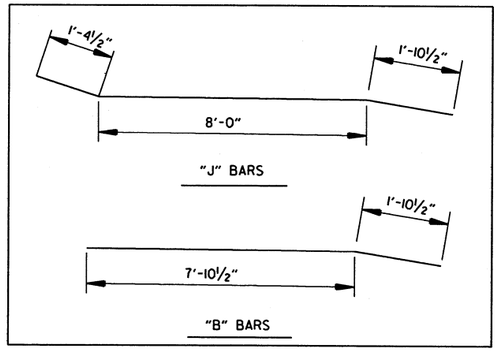
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	30	452

(2) SPECIAL DETAILS



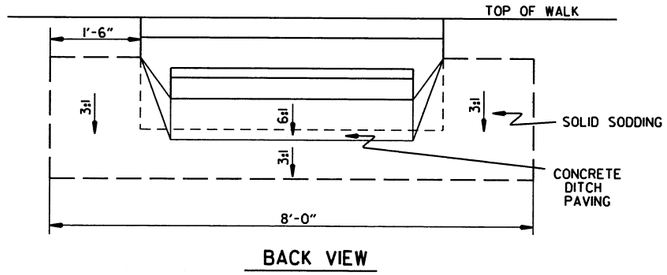
TOP VIEW

BAR DIAGRAM

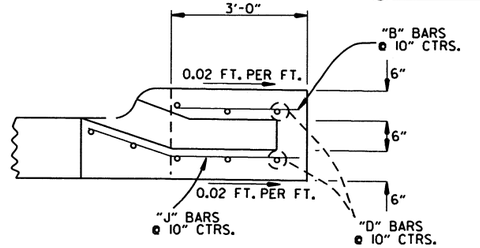


CLASS A CONC.	REINF. STEEL-RDWY GRADE 60
CU. YDS.	POUND
2.53	207

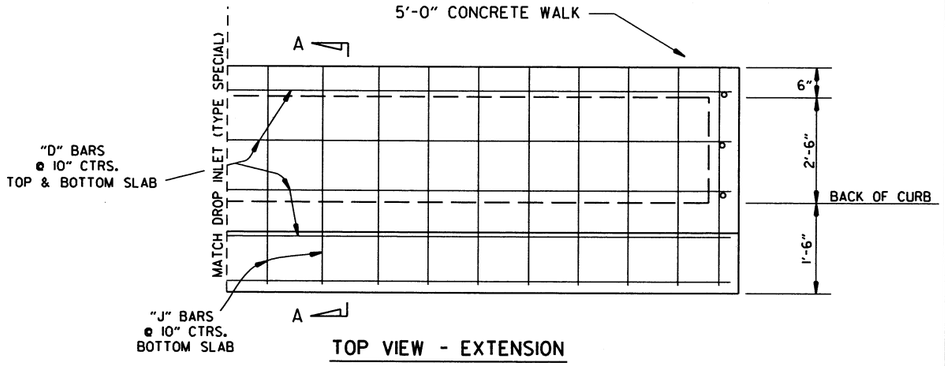
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



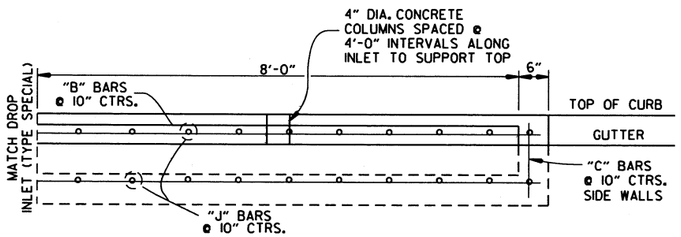
BACK VIEW



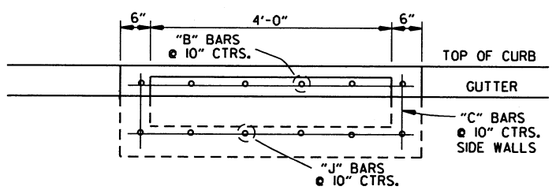
SECTION A-A - EXTENSION



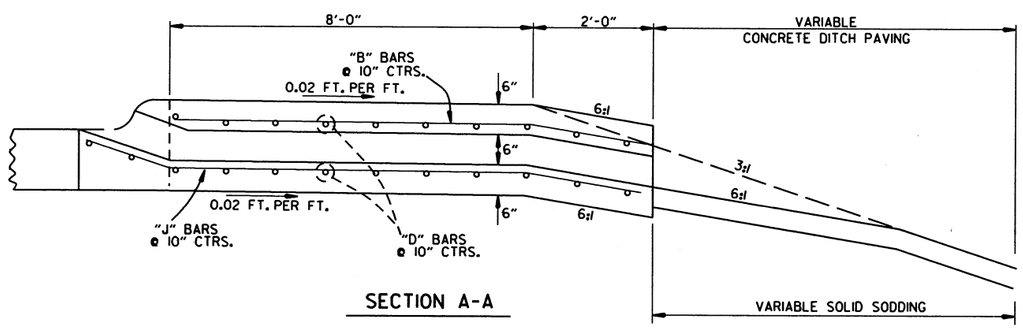
TOP VIEW - EXTENSION



FRONT VIEW - EXTENSION



FRONT VIEW



SECTION A-A

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
3. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
4. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
5. 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.
6. CONCRETE DITCH PAVING & SOLID SODDING SHALL BE PAID FOR SEPARATELY.
7. CONSTRUCT EXTENSIONS UPSTREAM OF DROP INLET UNLESS OTHERWISE SPECIFIED.

DROP INLET (TYPE SPECIAL)

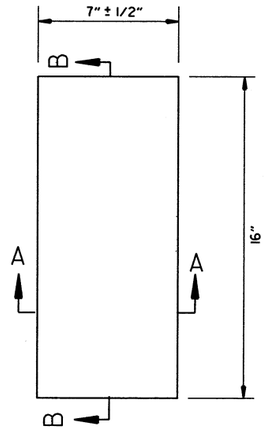
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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TRINITY D. SMITH
5-17-19

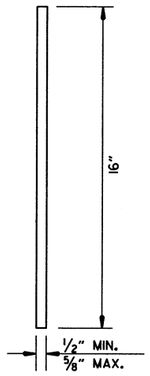
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	31	452

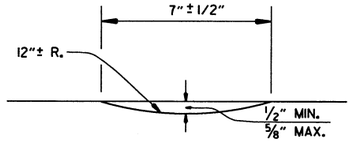
(2) SPECIAL DETAILS



PLAN

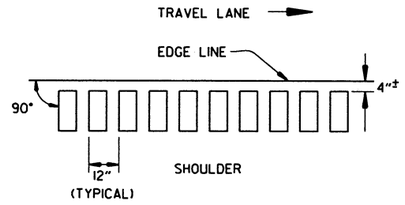


SECTION B-B

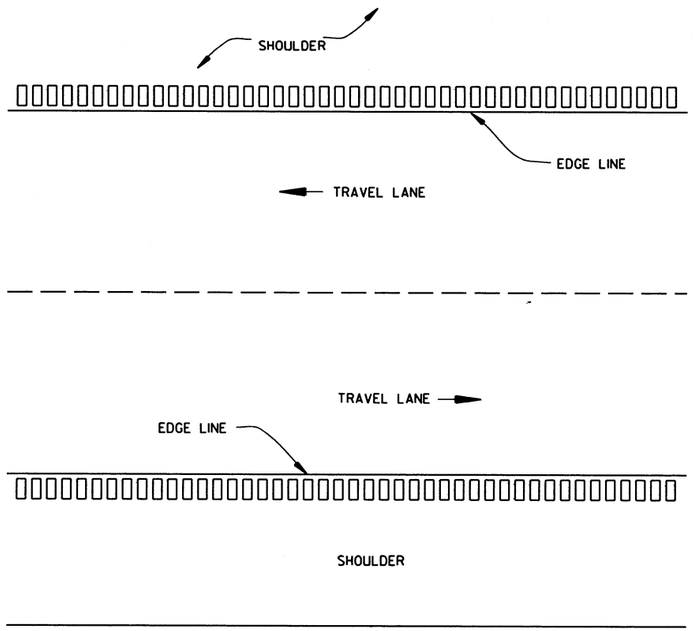


SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



PLAN VIEW

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE AS WILL AS TO AVOID EXISTING LONGITUDINAL JOINTS.
2. THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

STATE OF ARKANSAS
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				6	ARK.			
				JOB NO.		CA0903	32	452

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 1125+46.18 RAMP 4 SPUI=
STA. 139+73.85 HWY. 71B
DELTA = 57° 08' 38"

STA. 1125+28.16 RAMP 3 SPUI=
STA. 139+73.85 HWY. 71B
DELTA = 57° 08' 38"

STA. 1127+53.91 RAMP 1 SPUI=
STA. 136+30.74 HWY. 71B
DELTA = 46° 51' 02"

STA. 1127+55.95 RAMP 2 SPUI=
STA. 136+30.74 HWY. 71B
DELTA = 46° 51' 02"

WIDENING FOR GUARDRAIL
RAMP 4
BEGIN COMB. C&G STA. 1122+75 RAMP 4
END COMB. C&G STA. 1121+40 RAMP 4
PT 1121+05.35
PT 1120+13.22
RAMP 1
END COMB. C&G STA. 1124+24 RAMP 1
END COMB. C&G STA. 1126+53 RAMP 1
BEGIN COMB. C&G STA. 1128+54 RAMP 3
END COMB. C&G STA. 1128+54 RAMP 3
RAMP 3
BEGIN COMB. C&G STA. 1131+09 RAMP 2
END COMB. C&G STA. 1131+53 RAMP 2
RAMP 2
CONCRETE ISLAND
1120
1125
1130
1135
70'
100'R
200'R
R=800'
R=600'
R=160'
R=40'
2'R
5'R
6'-0" SHLDR.
8'-0" SHLDR.
4'-0" SHLDR.
8'-6"
8'-0"
4'-0"
24'
48'
18'
135'
110'

HWY. 549 INTERSECTION
WITH HWY. 71B

SPECIAL DETAILS

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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.		CA0903	33	458

① SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4
77'-0"	11'-0"	1'-0"	0'-11"	40	3:1	98'-4 1/8"	2'-0"	11'-10"	3'-8"	0	60	3'-5"	5'-3"	6'-8 3/8"	2'-4"	5'-9 7/8"	24'-6"	49'-0"	26'-8 1/8"	54'-6 7/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
40.37	3014

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	25	L	Min	5'-2"	5	12	3	L	8'-7"	4	12	9	L	6'-8"	4	18	8	Min
					Max	15'-1"														6'-4"
				X	Min	1'-0"				X	2'-8"				X	2'-0"				Max
					Max	2'-11"														19'-10"
				Y	Min	4'-3"				Y	6'-0"				Y	4'-9"				
					Max	12'-3"														
WING B	4	12	49	L	Min	5'-2"	5	12	12	L	9'-2"	4	12	12	L	6'-2"	4	18	10	Min
					Max	16'-3"														3'-10"
				X	Min	1'-0"				X	3'-3"				X	2'-6"				Max
					Max	4'-0"														39'-10"
				Y	Min	4'-3"				Y	6'-0"				Y	3'-9"				
					Max	12'-4"														

WING	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	
WING A		4	18	6	24'-2"	4	18	17	L	Min 6'-9"	4	8	27'-6"	6	18	16	Min	2'-11"
										Max 14'-9"							Max	4'-8"
									X	Min 2'-7"								
										Max 2'-7"								
									Y	Min 4'-3"								
										Max 12'-3"								
WING B		4	18	8	48'-8"	4	18	33	L	Min 6'-9"	4	8	55'-5"	6	18	36	Min	2'-11"
										Max 14'-10"							Max	6'-2"
									X	Min 2'-7"								
										Max 2'-7"								
									Y	Min 4'-3"								
										Max 12'-4"								

WING	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	2	Min 21'-0"	4	2	25'-4"	4	2	25'-5"	6	12	11	L	3'-4"	983
				Max 21'-0"										X	1'-8"	
WING B	4	18	4	Min 27'-2"	4	2	49'-2"	4	2	56'-10"	6	12	11	L	3'-4"	2031
				Max 51'-8"										X	1'-8"	

MID-SECTION BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft -344.0 ft

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/24/19
CHARLES R. ELLIS

TABULAR DATA BY: BHS DATE: 8/24/2016
CHECKED BY: DHP DATE: 5/26/17

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH								
40	3:1	5	12	11	95'-0"	12.5	3	12.5	10	8	77'-0"	13'-1"	6	6	Max 76'-8"	125	6	6	Max 76'-8"	125
															Min 2'-8"				Min 2'-8"	
															76'-8"	126			76'-8"	126

BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
5	6	Max 76'-8"	125	6	6	Max 76'-8"	125	6	6	381	12'-9"	4	12	960	12'-9"
		Min 2'-8"				Min 2'-8"									
		76'-8"	126			76'-8"	126								

TOP SLAB DISTRIBUTION REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTHS VARY
4	8	227	Max 127'-2"	4	8	227	Max 127'-2"	4	10	14	LONG 126'-7"	4	12	22	LONG 116'-4"
			Min 62'-6"				Min 62'-6"			14	SHORT 63'-1"			66	MID 94'-10"
														22	SHORT 73'-4"

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
7	51'-10"	12	7	51'-10"	12	4	1'-11"	0'-11"	102

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
759.96	136766

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D

BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH

TOP SLAB DISTRIBUTION REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTH = SL	BOTTOM SLAB DISTRIBUTION REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTH = SL	SIDE WALL DISTRIBUTION REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH = SL	INTERIOR WALL DISTRIBUTION REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH = SL

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS NO. REQ'D

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	

Design Fill Depth	Range of Actual Fill Depth
2	0.0 ft - 2.0 ft
5	>2.0 ft - 5.0 ft
10	>5.0 ft - 10.0 ft
15	>10.0 ft - 15.0 ft
20	>15.0 ft - 20.0 ft
25	>20.0 ft - 25.0 ft
30	>25.0 ft - 30.0 ft
35	>30.0 ft - 35.0 ft
40	>35.0 ft - 40.0 ft

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. LENGTH = OW - 4" "a" SIZE	"a" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D
G	40	12	11	30.5	32.5	18	8	78'-4"	16'-3"	298	7	78'-0"	7	78'-0"	6	596

BOTTOM SLAB REINF. LENGTH = OW - 4" "d" SIZE	"d" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH
7	78'-0"	8	78'-0"	6	596	8	6	1192	15'-11"	4	12	2980	15'-11"

TOP SLAB DISTRIBUTION REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTH = SL	BOTTOM SLAB DISTRIBUTION REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTH = SL	SIDE WALL DISTRIBUTION REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH = SL	INTERIOR WALL DISTRIBUTION REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH = SL
6	8	227		6	6	299		5	8	34		4	12	110	

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
5307.90	795239

SHEET 1 OF 3
DETAILS OF R.C. BOX CULVERT
SEXTUPLE BARREL BOX CULVERT
Sta. 1129+23

SPECIAL DETAILS

Ver. 1.14 bca0903_cl.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.		CA0903	34	452

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/21/19
CHARLES R. ELLIS

TABULAR DATA BY: BHS DATE: 8/24/2016
CHECKED BY: DHP DATE: 5/20/19

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT AT HDWL	WALL HEIGHT AT WING END	WINGWALL ANGLE (DEGREE) WING A	WINGWALL ANGLE (DEGREE) WING B	FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL WING A	WIDTH OF WING FOOTINGS AT HDWL WING B	FOOTING DIMENSION PARALLEL WITH HDWL WING A	FOOTING DIMENSION PARALLEL WITH HDWL WING B	LENGTH OF WINGWALLS WING A	LENGTH OF WINGWALLS WING B	LENGTH OF FOOTING HEEL WING A	LENGTH OF FOOTING HEEL WING B	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	OUTLET	OUTLET
77'-0"	11'-0"	1'-0"	0'-11"	40	3:1	98'-4 1/8"	2'-0"	11'-10"	3'-8"	0	60	3'-5"	5'-3"	6'-8 3/8"	2'-4"	5'-9 7/8"	24'-6"	49'-0"	26'-8 1/8"	54'-6 7/8"	CU.YD	LBS.
																					43.55	3014

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 NO. REQ'D	F10 LENGTHS	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	12	25	L	Min	5'-2"	5	12	3	L	8'-7"	4	12	9	L	6'-8"	4	18	8	Min	4	18	6	24'-2"	4	18	17	L	Min	6'-9"	4	8	27'-6"	6	18	16	Min	4	18	2	Min	4	2	25'-4"	4	2	25'-5"	6	12	11	L	3'-4"	983
					Max	15'-1"																6'-4"							Max	14'-9"							2'-11"			21'-0"										
				X	Min	1'-0"				X	2'-8"				X	2'-0"				Min							X	Min	2'-7"										Max									X	1'-8"
					Max	2'-11"																Max							Max	2'-7"							19'-10"			4'-8"										
				Y	Min	4'-3"				Y	6'-0"				Y	4'-9"				Min							Y	Min	4'-3"										Min										
					Max	12'-3"																12'-10"							Max	12'-3"							4'-8"			21'-0"										
WING B	4	12	49	L	Min	5'-2"	5	12	12	L	9'-2"	4	12	12	L	6'-2"	4	18	10	Min	4	18	6	48'-8"	4	18	33	L	Min	6'-9"	4	8	55'-5"	6	18	36	Min	4	18	4	Min	4	2	49'-2"	4	2	56'-10"	6	12	11	L	3'-4"	2031
					Max	16'-3"																3'-10"							Max	14'-10"							2'-11"			27'-2"										
				X	Min	1'-0"				X	3'-3"				X	2'-6"				Min							X	Min	2'-7"										Max									X	1'-8"
					Max	4'-0"																Max							Max	2'-7"							6'-2"			51'-8"										
				Y	Min	4'-3"				Y	6'-0"				Y	3'-9"				Min							Y	Min	4'-3"										Min										
					Max	12'-4"																39'-10"							Max	12'-4"							6'-2"			51'-8"										

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. STEEL "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. STEEL "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. STEEL "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. STEEL "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTHS VARY
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																											
40	3:1	5	12	11	127'-0"	12.5	3	12.5	10	8	77'-0"	13'-1"	6	6	Max 76'-8" Min 2'-8" 76'-8"	125 190	6	6	Max 76'-8" Min 2'-8" 76'-8"	125 190	5	6	Max 76'-8" Min 2'-8" 76'-8"	125 190	6	6	Max 76'-8" Min 2'-8" 76'-8"	125 190	6	6	509	12'-9"	4	12	1280	12'-9"	4	8	227	Max 159'-2" Min 94'-6"	4	8	227	Max 159'-2" Min 94'-6"	4	10	14	LONG 158'-7" SHORT 95'-1"	4	12	22	LONG 148'-4"
																																																									MID 126'-10"
																																																									SHORT 105'-4"

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D
7	51'-10"	12	7	51'-10"	12	4	1'-11"	0'-11"	102

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	① REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
1015.27	181824

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK B	SIDE WALL THK C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINF. STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINF. STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS NO. REQ'D

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	

The required number of bars and lengths shown are for estimating purpose only.
The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 3
DETAILS OF R.C. BOX CULVERT

SEXTUPLE BARREL BOX CULVERT
Sta. 1129+23

SPECIAL DETAILS

Ver. 1.1.4 bca0903_cl.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.		CA0903	35	452
				①		SPECIAL DETAILS		

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/21/13
CHARLES R. ELLIS

TABULAR DATA BY: CMW DATE: 5/31/13
CHECKED BY: DWV DATE: 5/20/13

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'(c) = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

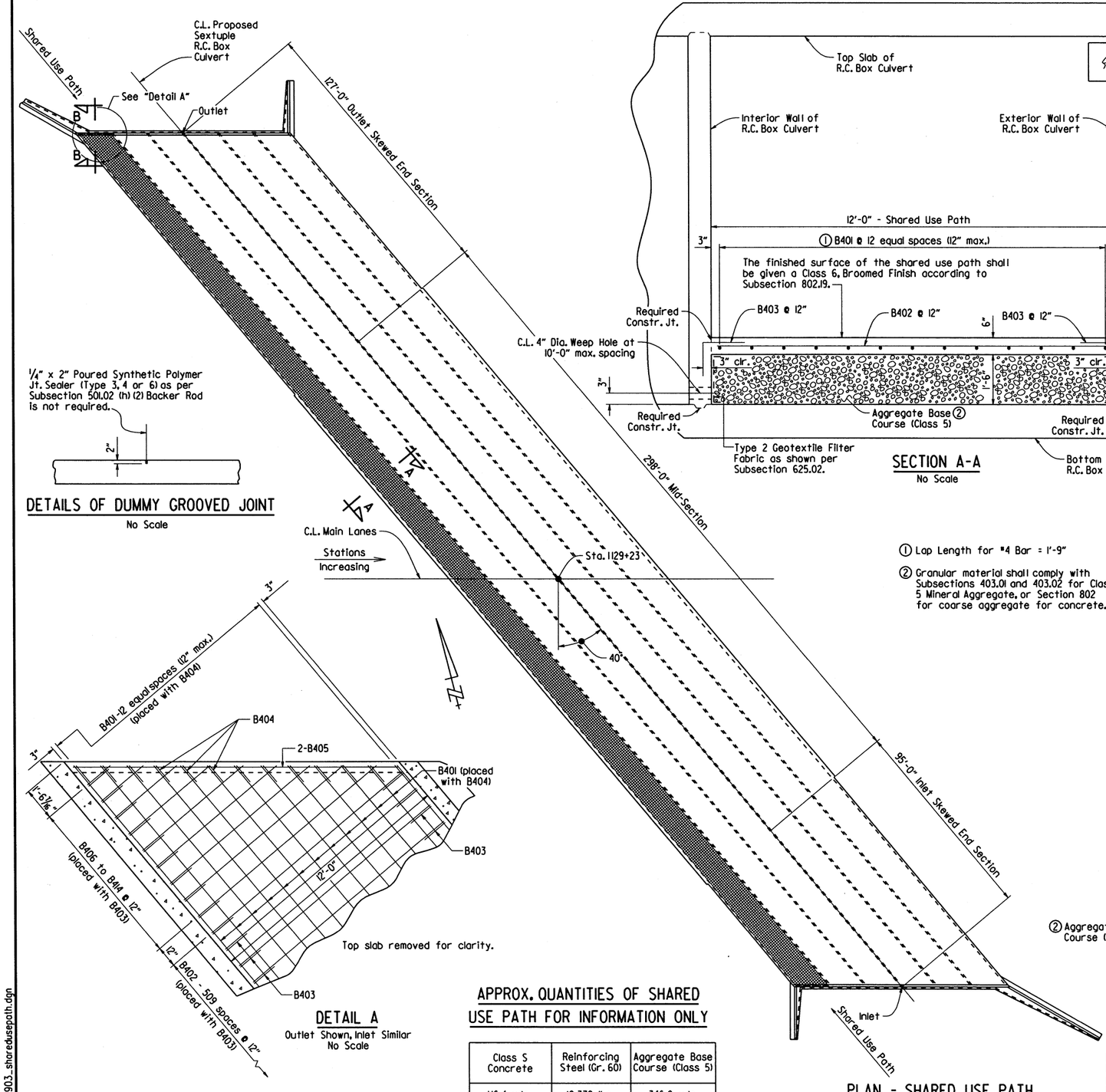
Excavation and backfilling shall be in accordance with the requirements of Section 801.

Weep holes in the box culvert walls containing the shared use path shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed as shown in "SECTION A-A". All other weep holes shall be placed as shown in SHEET 1 of 4, "GENERAL DETAILS OF R.C. BOX CULVERT".

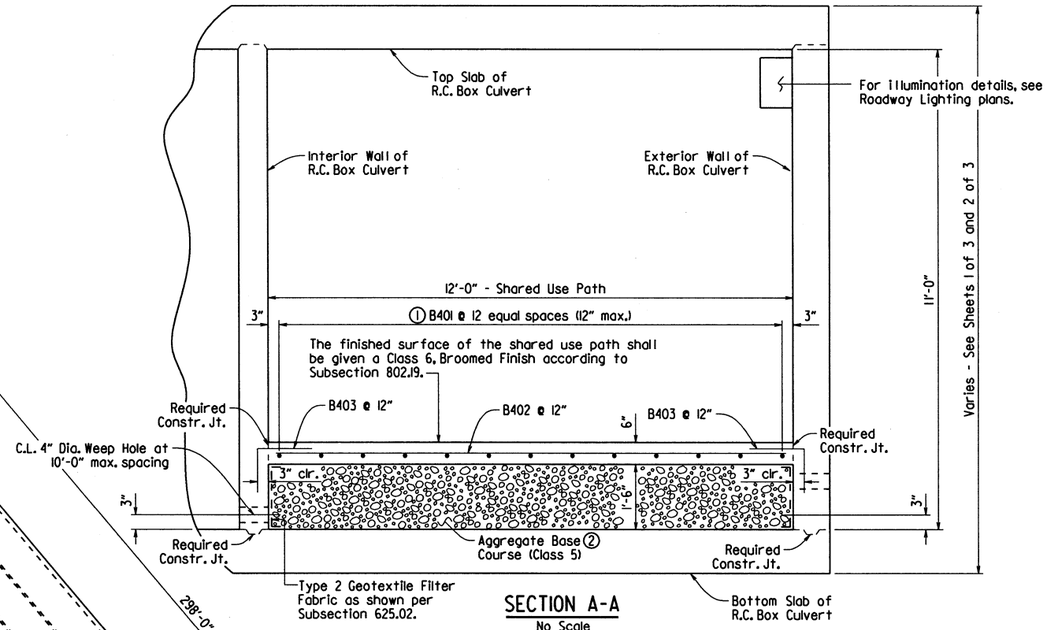
All work and materials associated with weep holes, aggregate and joint sealer will not be paid for directly but shall be considered subsidiary to Class S Concrete.

Dummy grooved joints shall be placed at 20'-0" max spacing in the slab of the shared use path. Dummy grooved joints shall be placed perpendicular to the culvert walls.

For lighting details, see Maintenance Sheets.



PLAN - SHARED USE PATH
No Scale



SECTION A-A
No Scale

DETAILS OF DUMMY GROOVED JOINT
No Scale

Top slab removed for clarity.

DETAIL A
Outlet Shown, Inlet Similar
No Scale

APPROX. QUANTITIES OF SHARED USE PATH FOR INFORMATION ONLY

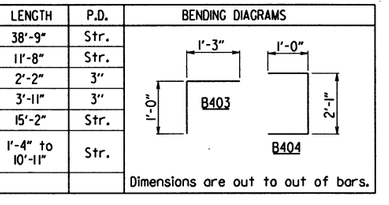
Class S Concrete	Reinforcing Steel (Gr. 60)	Aggregate Base Course (Class 5)
116.4 yds.	10,370 lbs.	346.0 yds.

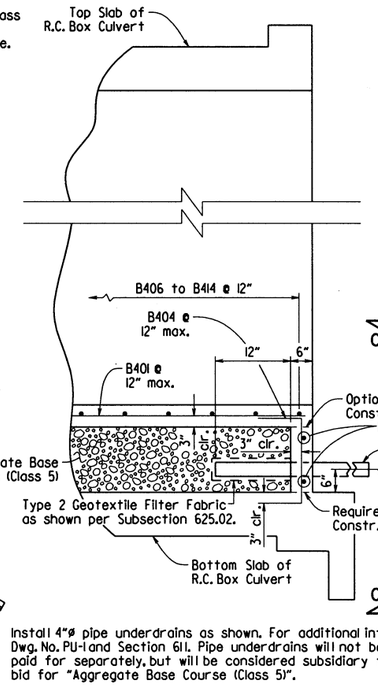
① Lap Length for #4 Bar = 1'-9"

② Granular material shall comply with Subsections 403.01 and 403.02 for Class 5 Mineral Aggregate, or Section 802 for coarse aggregate for concrete.

BAR LIST

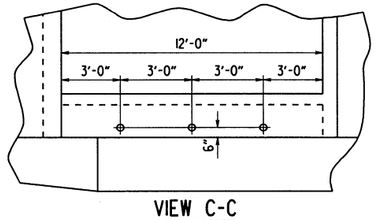
MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	182	38'-9"	Str.	
B402	510	11'-8"	Str.	
B403	1038	2'-2"	3"	
B404	26	3'-11"	3"	
B405	4	15'-2"	Str.	
B406-B414	2 ea.	1'-4" to 10'-11"	Str.	
				Dimensions are out to out of bars.





Install 4"ø pipe underdrains as shown. For additional information, see Std. Dwg. No. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Aggregate Base Course (Class 5)".

SECTION B-B
Outlet Shown, Inlet Similar
No Scale



VIEW C-C
Showing layout of pipe underdrains (outlet end only).
No Scale

SHEET 3 OF 3
DETAILS OF R.C. BOX CULVERT
SEXTUPLE BARREL BOX CULVERT
Sta. 1129+23

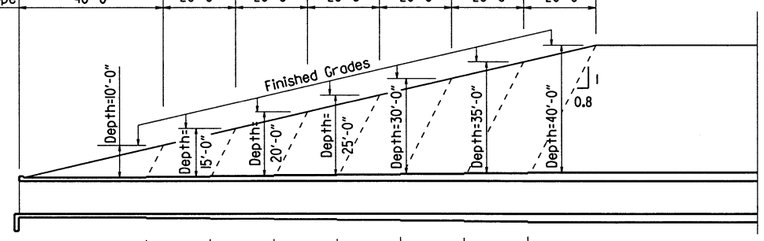
SPECIAL DETAILS

v 1.1 14 bca0903_shareduse path.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.		CA0903	36	452

(1) SPECIAL DETAILS

2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"			
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"			
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"			



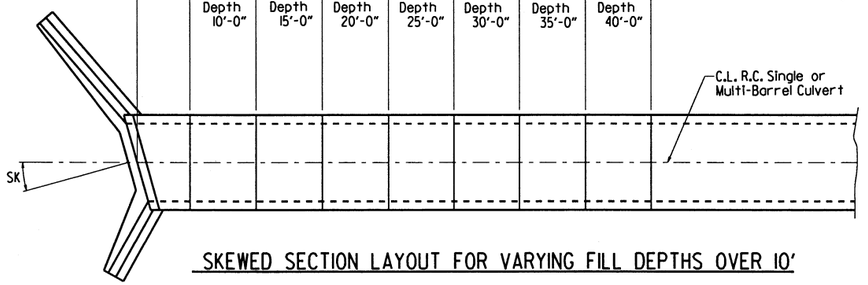
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	G=16'-0"	Mid-Section Length - Varies

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

* LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

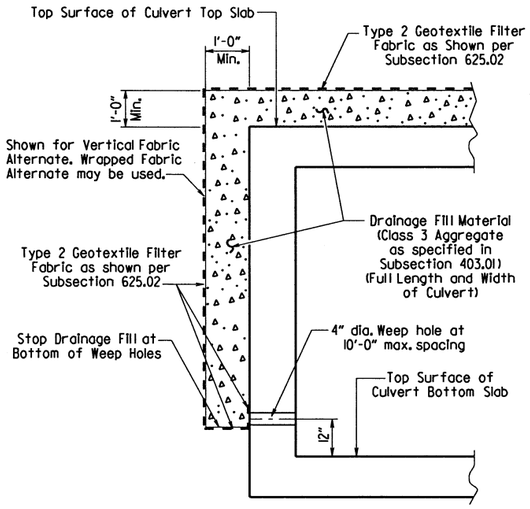
Section Length	*LL		C	D	E	F	G	Mid-Section Length - Varies
Section Length	*LL	B	C	D	E	F	G	Mid-Section Length - Varies
Section Length	*LL	A	B	C	D	E	F	G	Mid-Section Length - Varies
		Depth 10'-0"	Depth 15'-0"	Depth 20'-0"	Depth 25'-0"	Depth 30'-0"	Depth 35'-0"	Depth 40'-0"	



SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

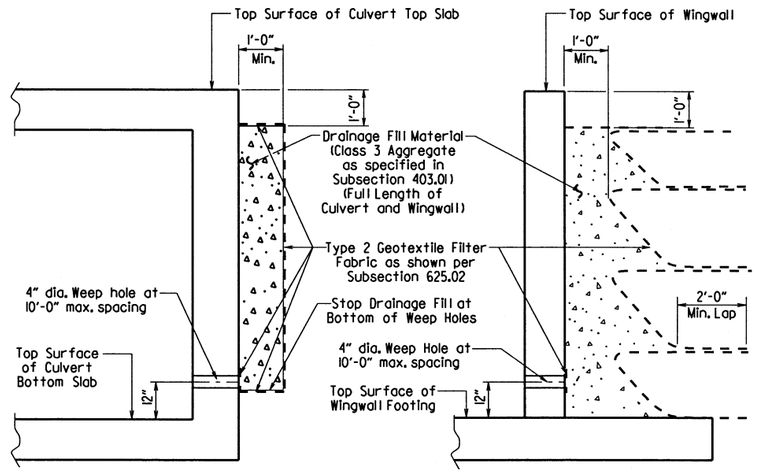
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/21/19
CHARLES R. ELLIS

Lengths for Non-Skewed Boxes



CULVERT DRAINAGE DETAIL FOR ROCK FILL

This detail shall be used when rock fill is specified for embankment construction.

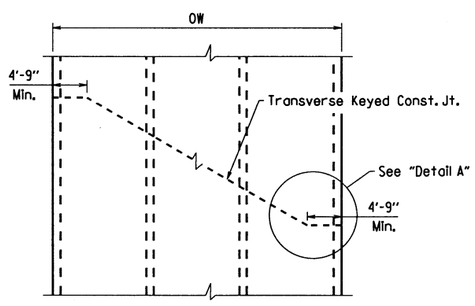


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

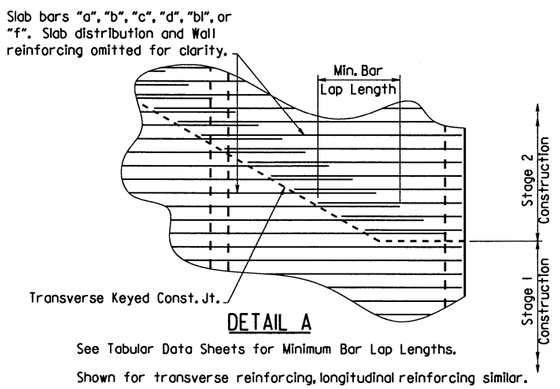
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



SKEWED TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall conform to the requirements of Section 815. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.

Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. All longitudinal construction joints shall be submitted to the Engineer for approval.

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class S Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

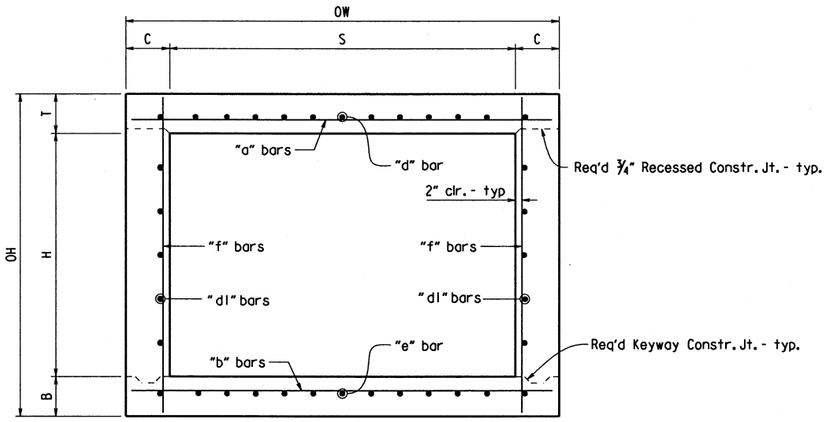
SPECIAL DETAILS

V 1.15 bca0903_culvert.dgn

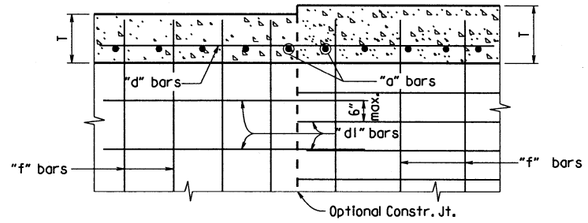
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				6	ARK.			
				JOB NO.		CA0903	37	452

(1) SPECIAL DETAILS

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



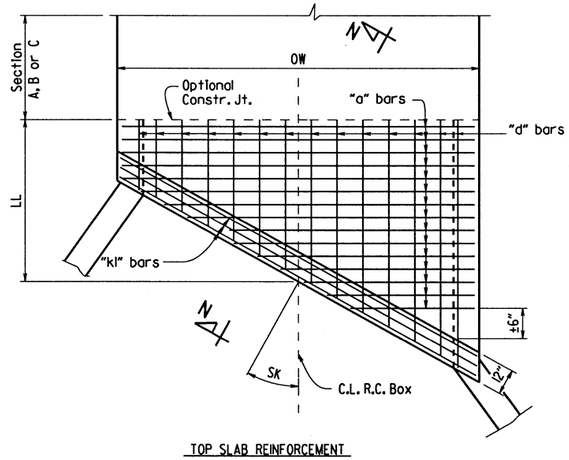
TYPICAL SECTION M-M



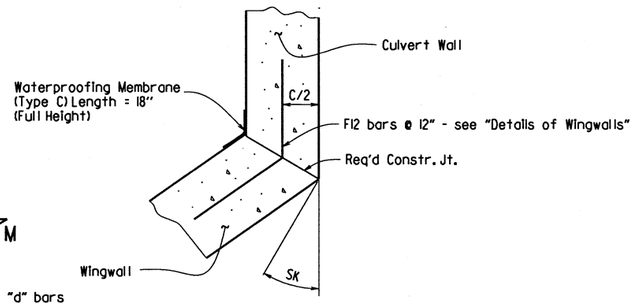
Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

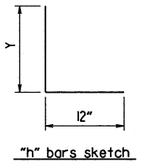


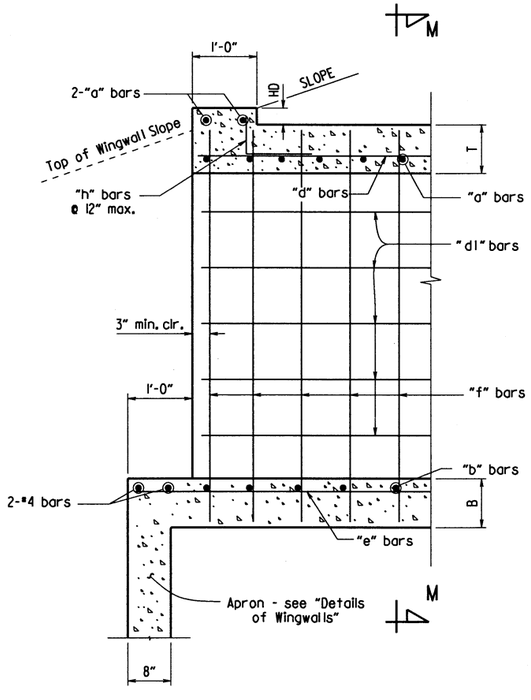
TOP SLAB REINFORCEMENT



WINGWALL ATTACHMENT

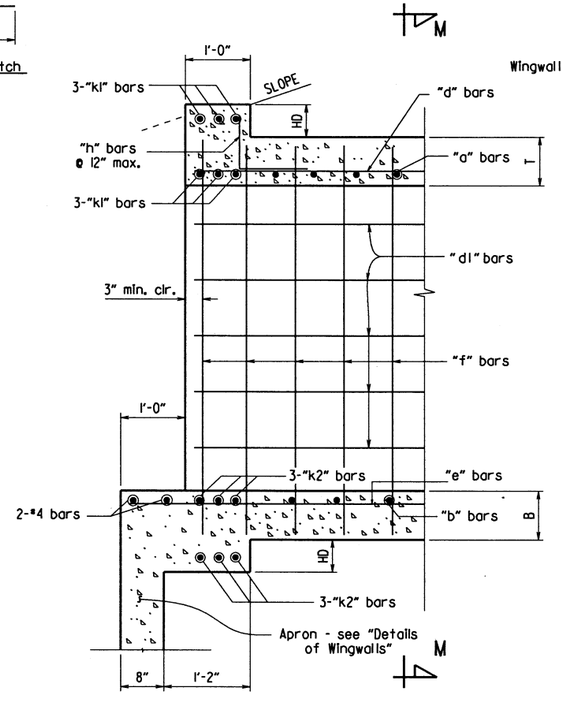
See "Details of Wingwalls" for additional information and wingwall details.





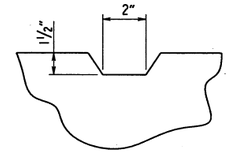
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



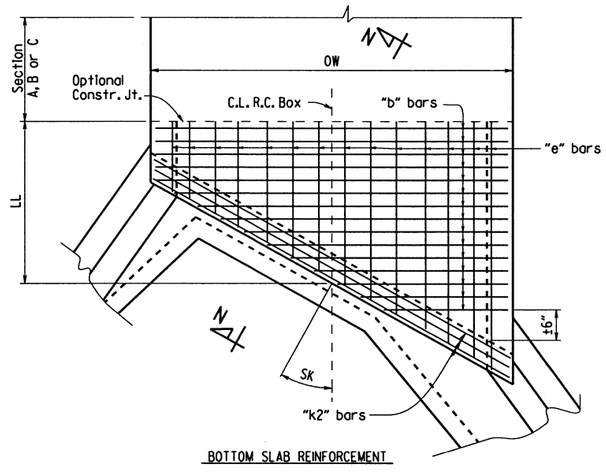
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/21/19
CHARLES R. ELLIS

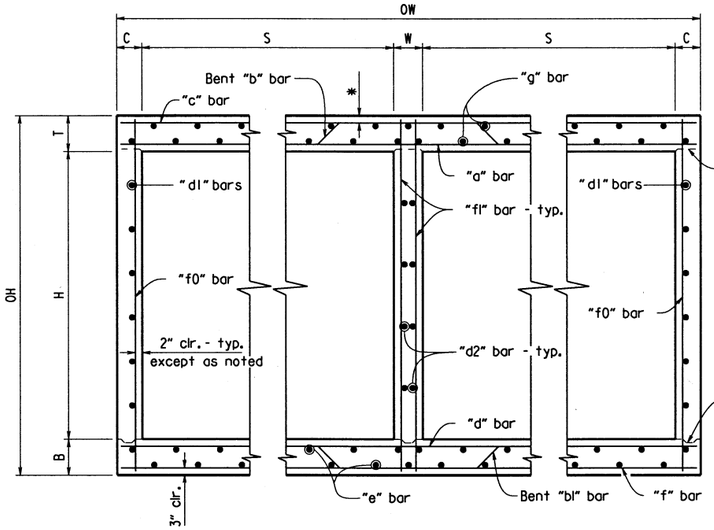
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DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	38	452

SPECIAL DETAILS

*2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.

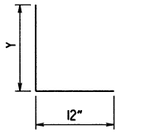
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



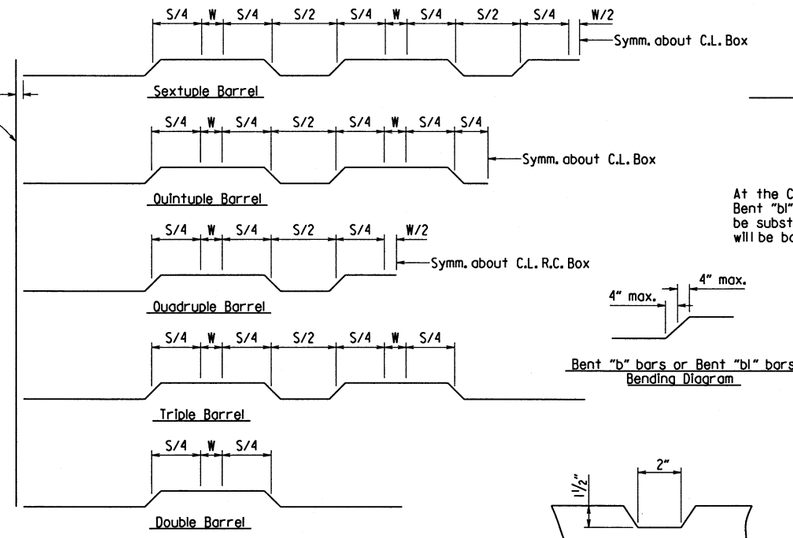
TYPICAL SECTION M-M

Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

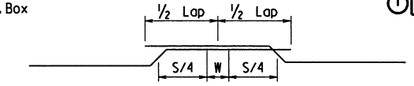
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch



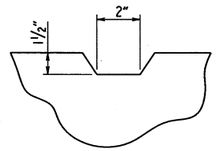
Bent "b" bars or Bent "bl" bars sketch



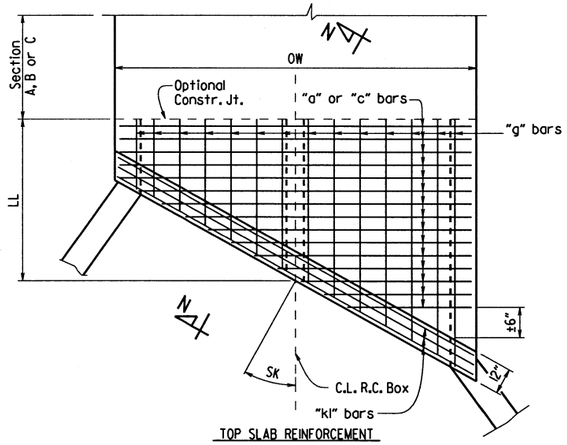
Lap Detail
For Bent "b" bars and Bent "bl" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.

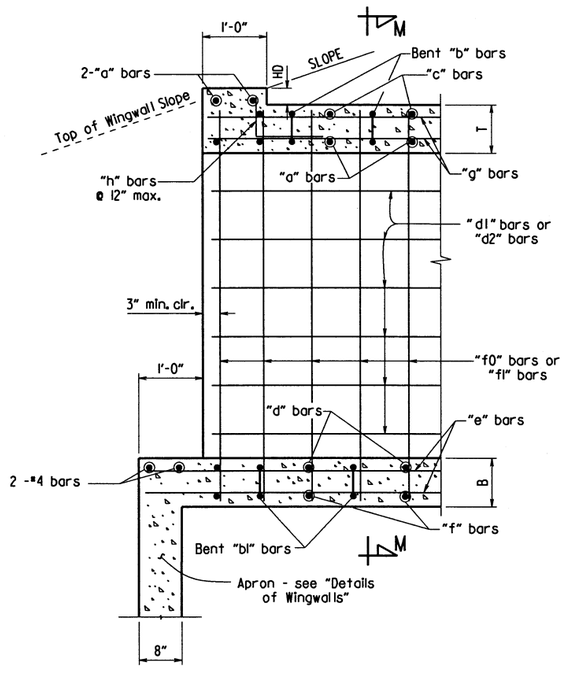
Bent "b" bars or Bent "bl" bars Bending Diagram



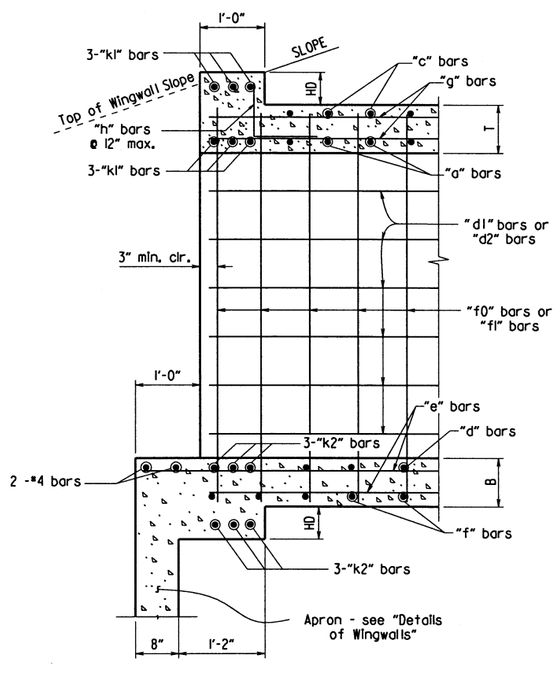
TYPICAL KEYWAY DETAIL
(All Construction Joints)



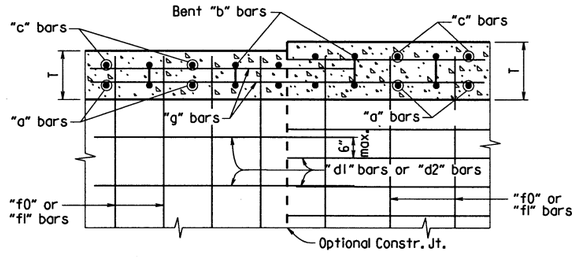
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

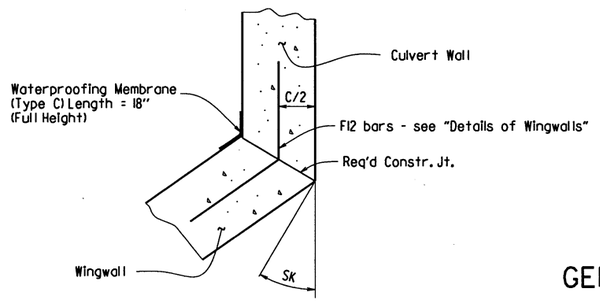


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

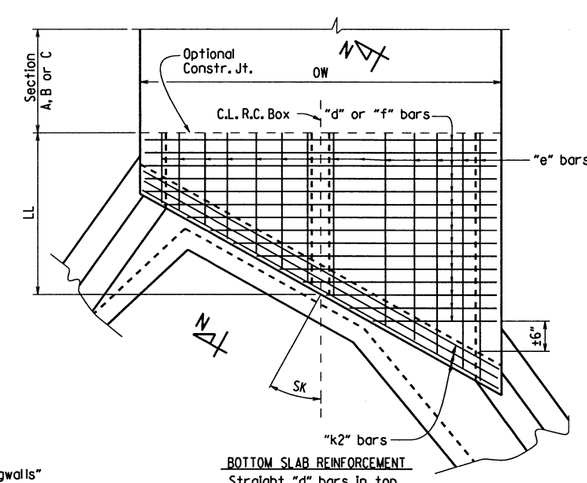


Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT
See "Details of Wingwalls" for additional information and wingwall details.



BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

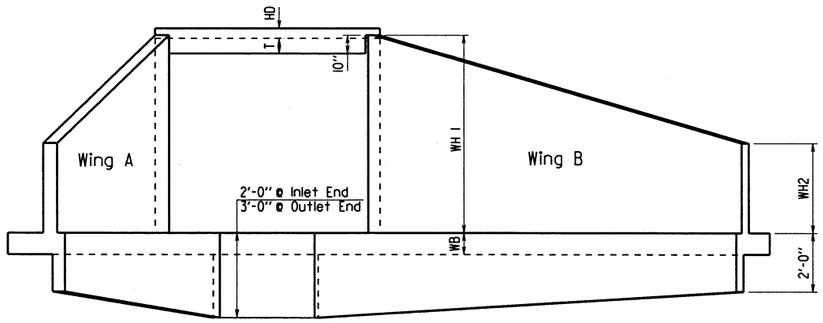
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6/21/19

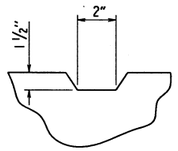
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	39	452

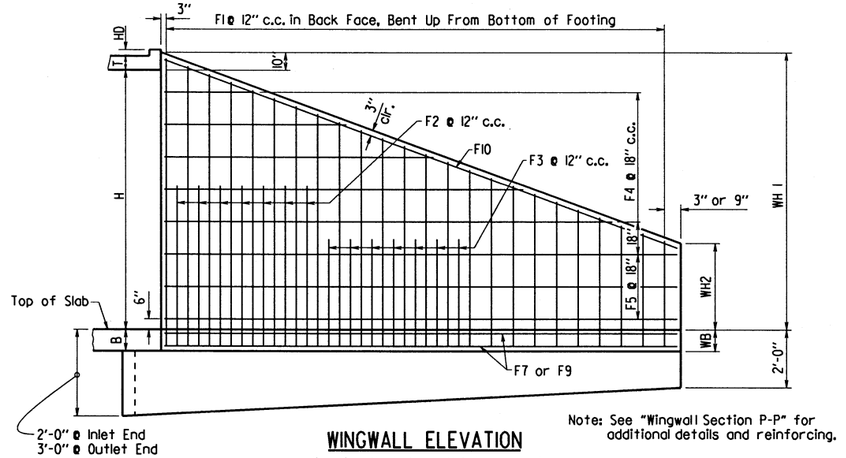
1 SPECIAL DETAILS



END ELEVATION
Flared Wingwalls Shown

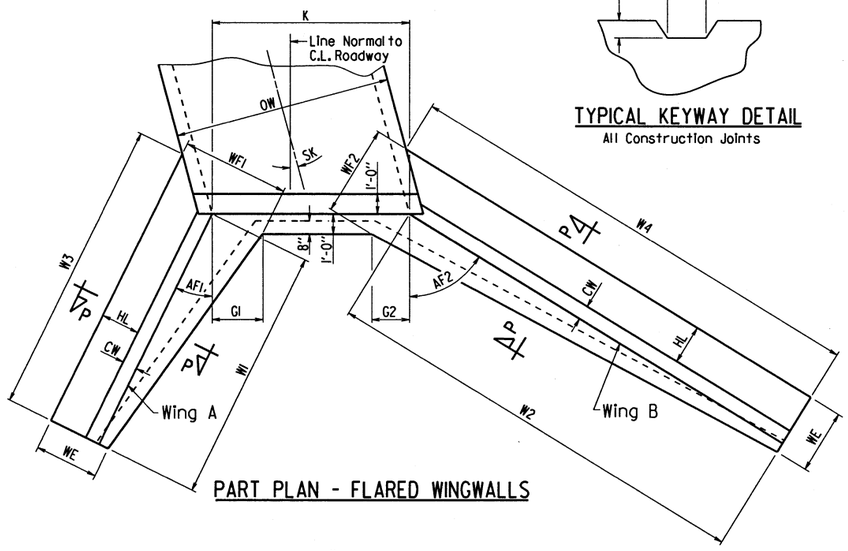


TYPICAL KEYWAY DETAIL
All Construction Joints

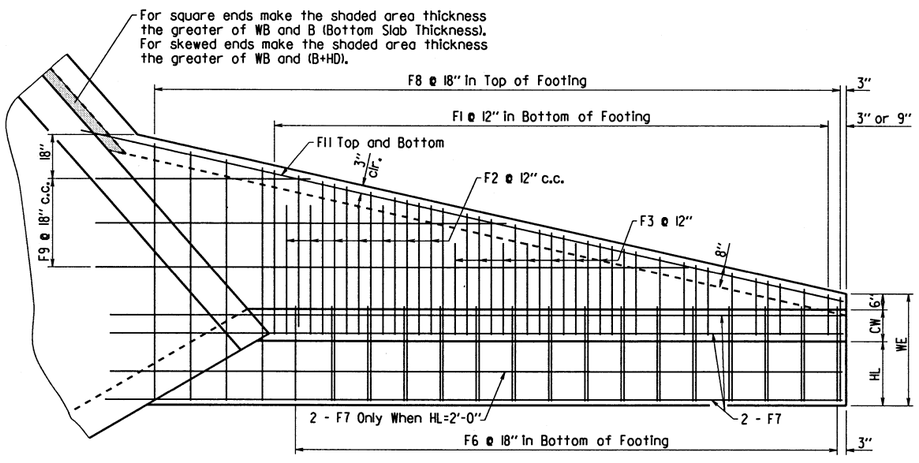


WINGWALL ELEVATION
Showing Back Face Reinforcement

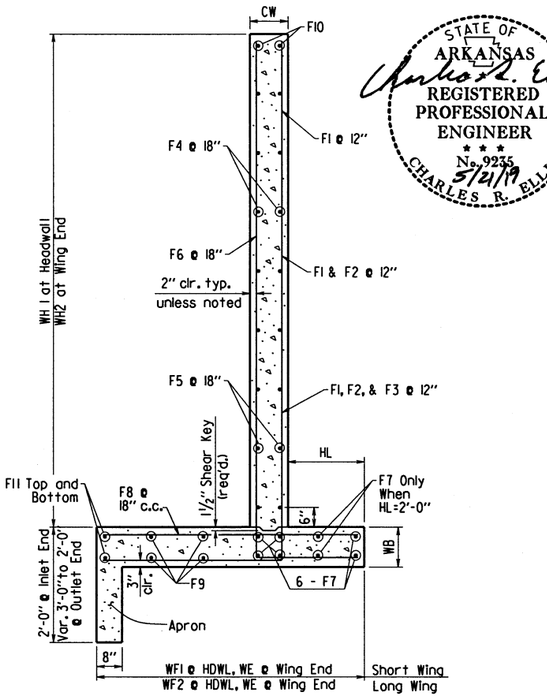
Note: See "Wingwall Section P-P" for additional details and reinforcing.



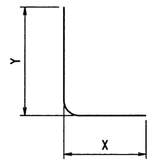
PART PLAN - FLARED WINGWALLS



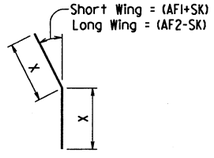
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



WINGWALL SECTION P-P

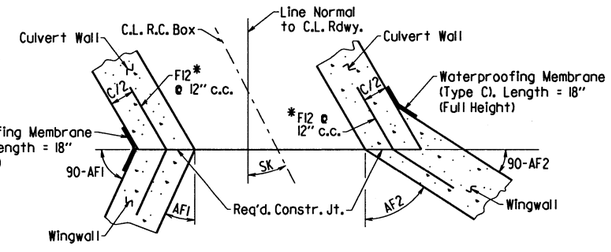


F1, F2, F3, & F6 BARS

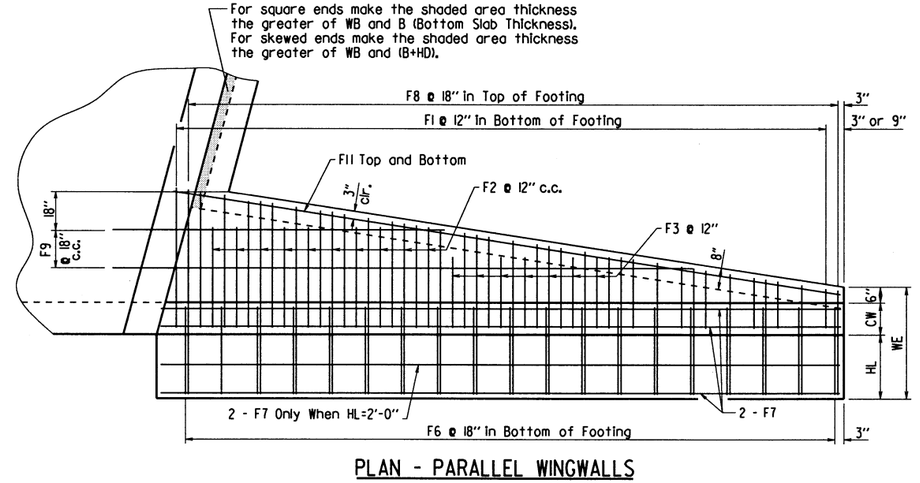


*F12 BAR

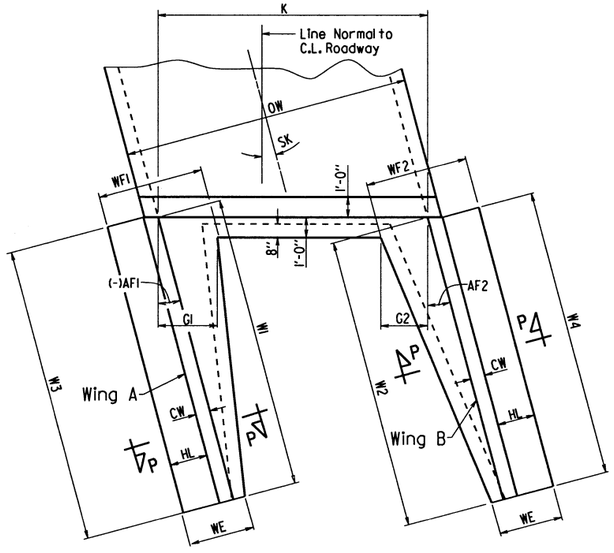
*F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



PART PLAN - PARALLEL WINGWALLS

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5/21/19
CHARLES R. ELLIS

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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.		CA0903	40	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14135
5-17-19
TRINITY D. SMITH

STA. 1020+72
BEGIN JOB CA0903

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE
- E-9 X CU.FT. = SEDIMENT BASIN
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

N 75°27'54" E

PI 1020+33.11
PI 1021+09.84
PI 1021+70.57
PT 1030+16.68
PI 1031+71.07
PT 1030+35.41
PT 1034+54.14
POE 1034+16.64
POE 1034+33.57

E-14 4000 CU.FT.
E-14 1575 CU.FT.
E-14 6600 CU.FT.
E-14 2300 CU.FT.
E-11 540 LIN.FT.
E-11 590 LIN.FT.
E-11 700 LIN.FT.
E-11 535 LIN.FT.
E-11 655 LIN.FT.
E-11 880 LIN.FT.

PC 1078+22.12
1078+22.13 BK. =
1078+62.66 AHD.

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

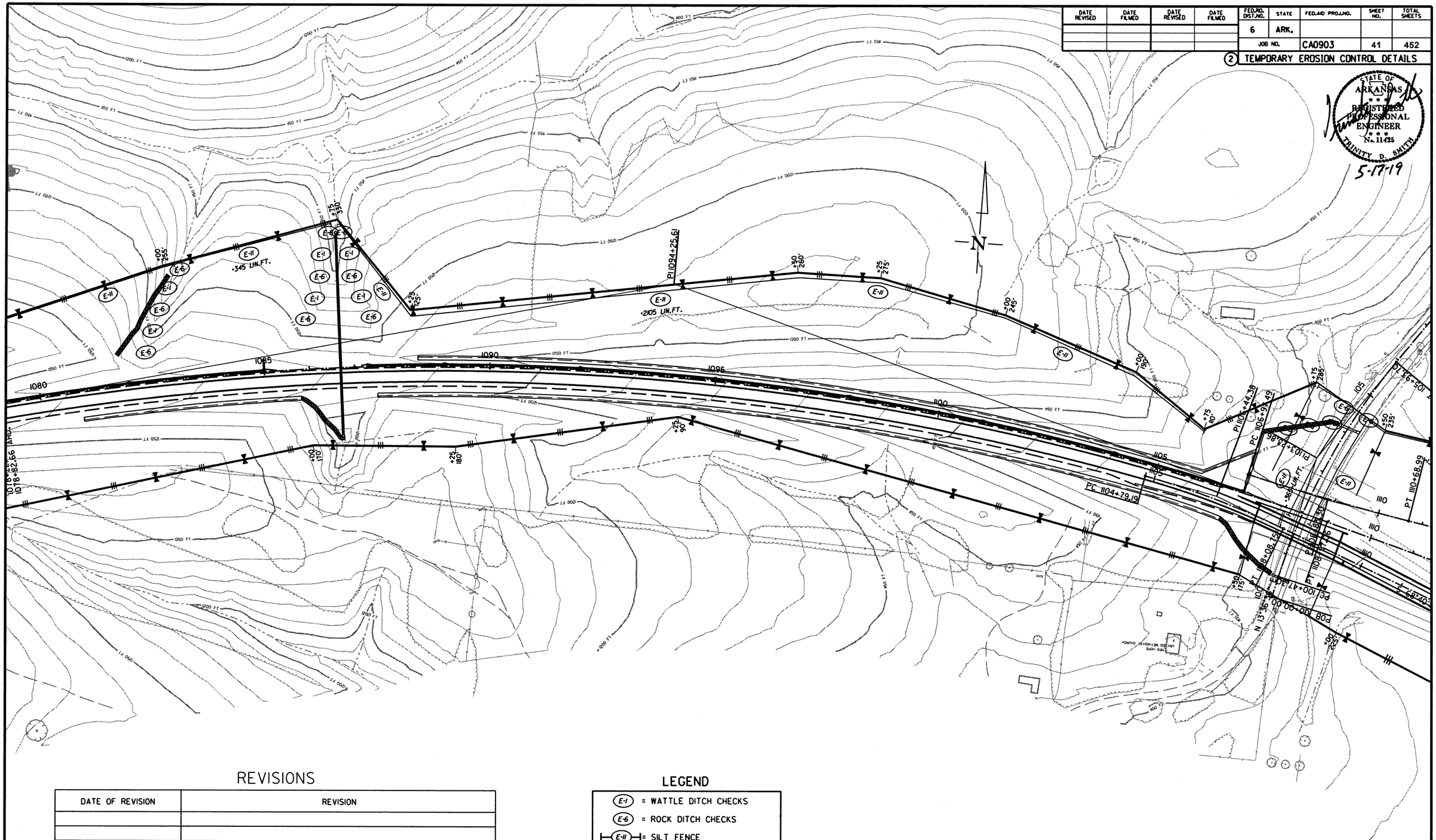
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	41	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-1	= WATTLE DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-11	= SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	42	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

RCA0903_REVISED.DGN 10/19/2016

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0903	43	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

PI 1139+18.53
PC 1141+20.72
PT 1142+71.90
PC 1143+45.95
PT 1148+16.72
PC 1145+54.69
PI 1145+85.49
PT 1147+01.45
PI 1151+13.25
PC 1166+24.37
PT 1167+46.67
PC 1168+17.88
PT 1168+26.69
PC 1168+78.13
PI 1170+08.57
PT 1174+40.93
PI 1117+39.85
STA. 1172+15.38
END JOB CA0903

63°59'26" E
S 74°23'27" E
S 67°14'38" E
S 54°15'01" E
S 55°39'39" E
N 49°48'48" W
N 0°36'57" W

+50 510
+55 L/N.FT.
+50 170
+75 2005
+50 425
+50 205
+50 295
+35 410
+35 190
+64.8 122.57
+31.42 170
+04.45 122.82
+64.8 122.57
+09.24

1140 1145 1150 1155 1160 1165 1170

2200 L/N.FT.
2000 L/N.FT.

E-1 = WATTLE DITCH CHECKS
E-6 = ROCK DITCH CHECKS
E-11 = SILT FENCE

LEGEND

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

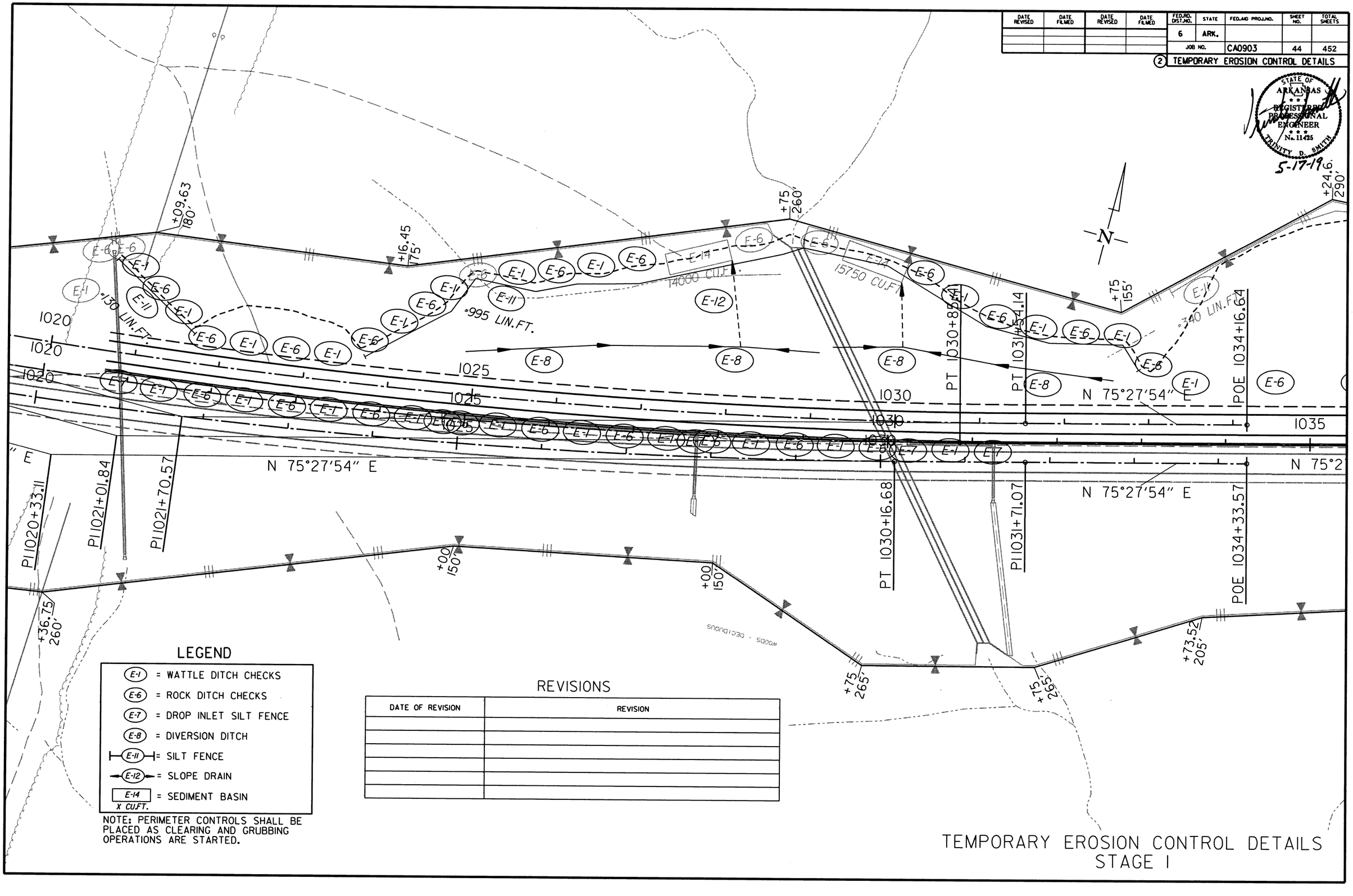
TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	44	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE I

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	45	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

+24.62 290'
E-11
+15 230'
+00 165'
E-6
E-1
E-14 2300 CU.FT.
+00 240'
+15 242.26'
+70.13 330'
+84.84 243.64'
+33.21 315.58'
+15.30 256.65'
+24.69 231.71'
E-14 6600 CU.FT
E-11 =855 LIN.FT.
E-11 =590 LIN.FT.
E-12
E-8
+00 120'

1035 1040 1045 1050

N 75°27'54" E N

+50 175'
+75 260'
+30 245'
WOOD BARN
+00 240'
+70.25 130'

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

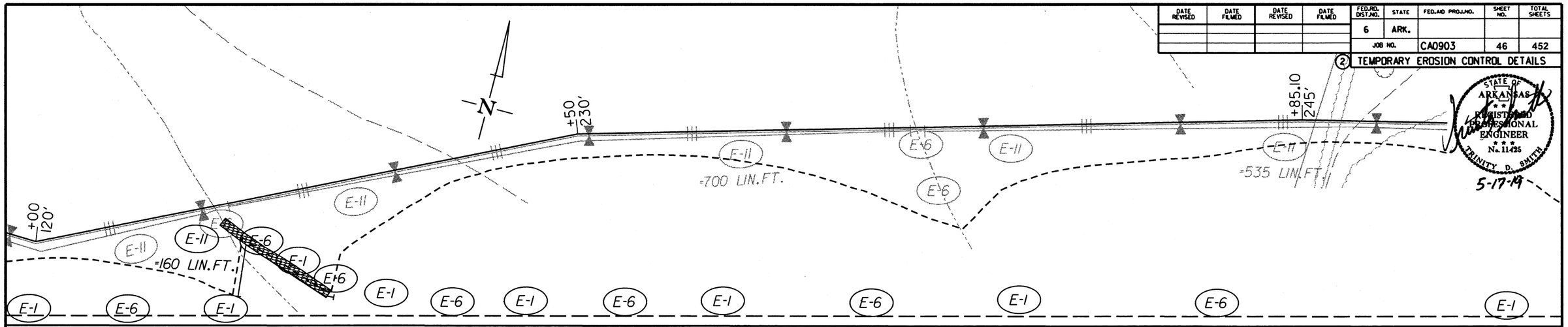
TEMPORARY EROSION CONTROL DETAILS STAGE I

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	46	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



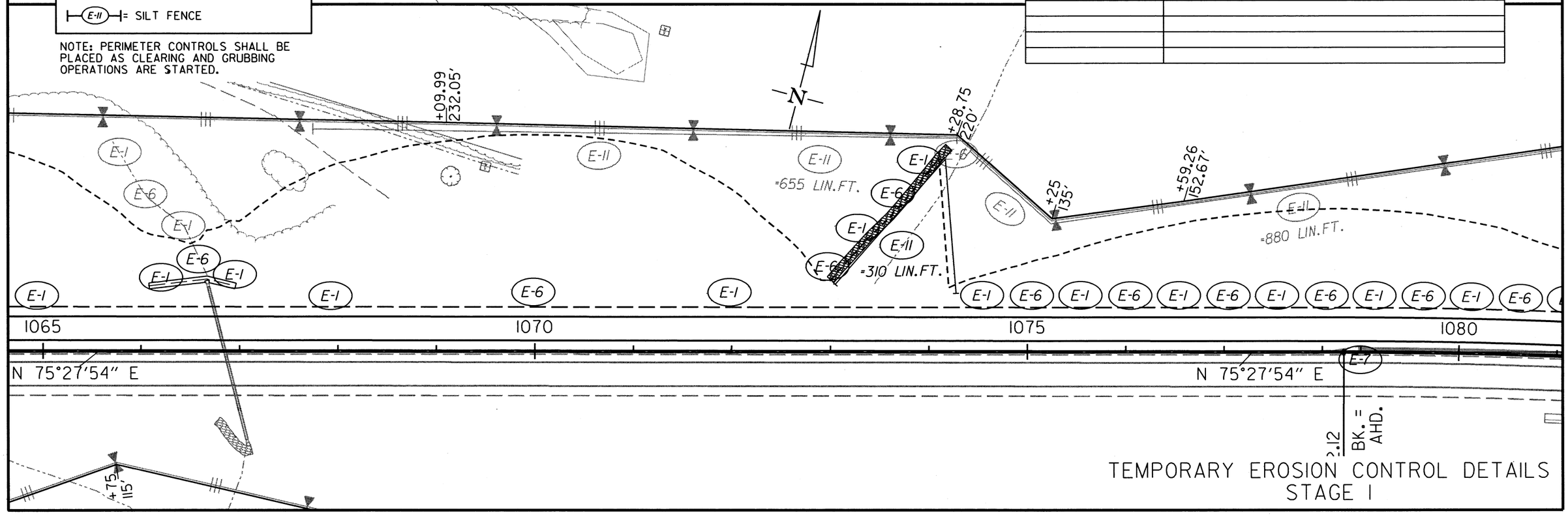
LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION



10/19/2016

RCA0903_REVISED.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE I

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.		CA0903	47	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

+00 255'
+75 330'
+25 125'
+00 170'
+25 180'
+25 90'
PI 1094+25.61
1078+82.66 AHD.
1080
1085
1090
=345 LIN.FT.
=1075 LIN.FT.
=2105 LIN.FT.
N

E-1 E-6 E-1 E-6 E-1 E-6
E-11
E-7

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

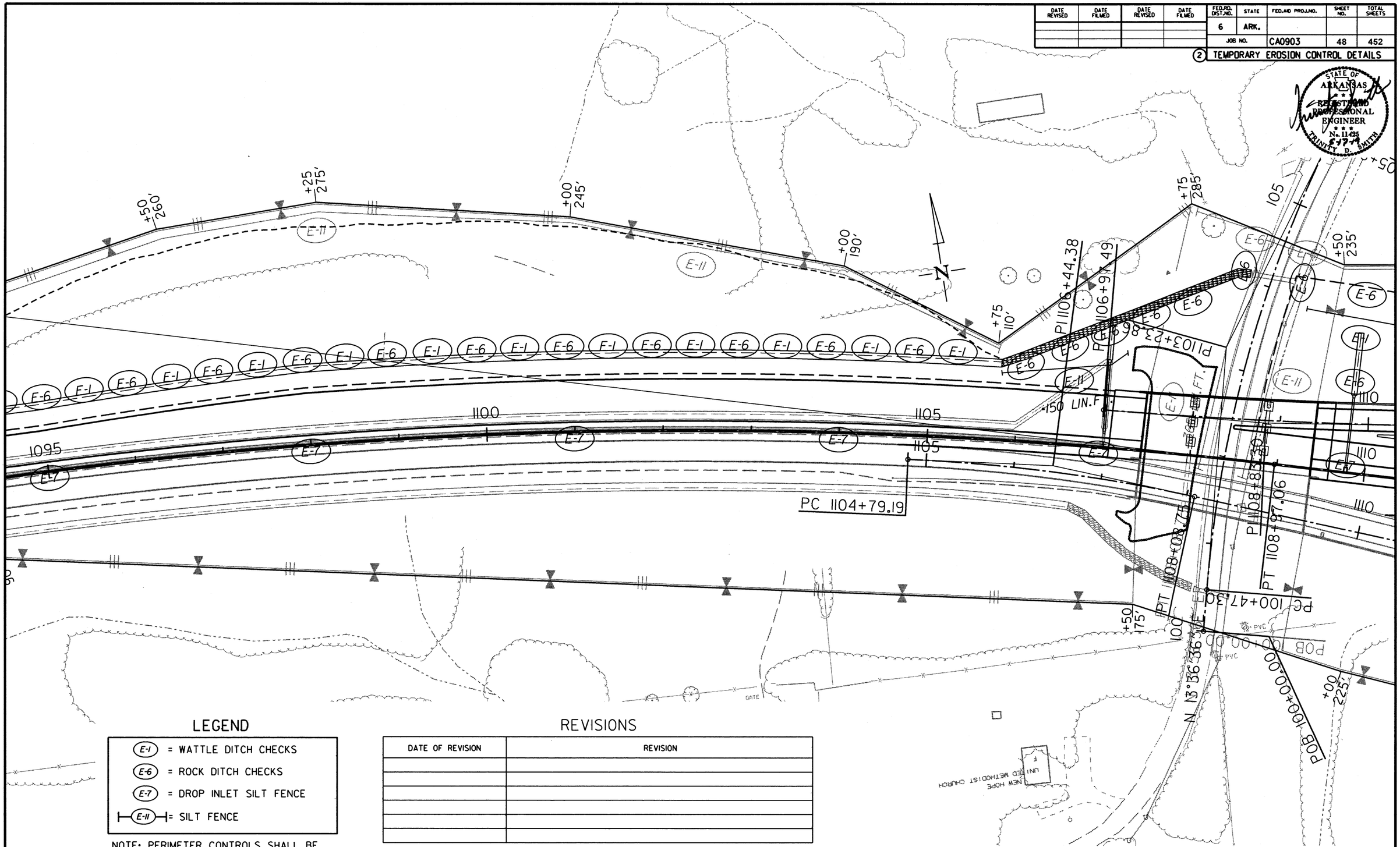
TEMPORARY EROSION CONTROL DETAILS STAGE I

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	48	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-16
TRINITY D. SMITH



LEGEND

E-1	= WATTLE DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE I

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	49	452

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

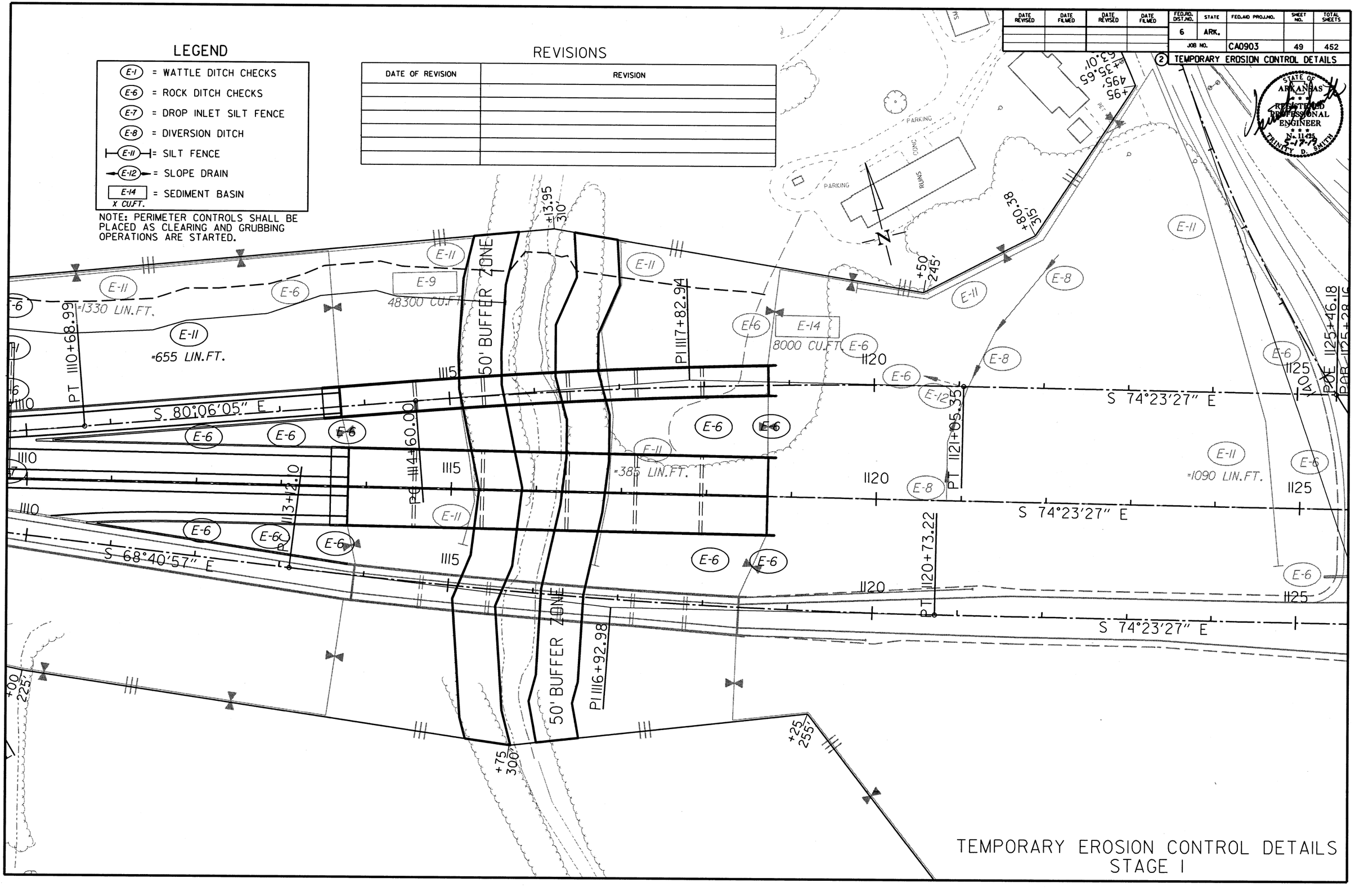
- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-17
TRINITY D. SMITH



TEMPORARY EROSION CONTROL DETAILS
STAGE I

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	50	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

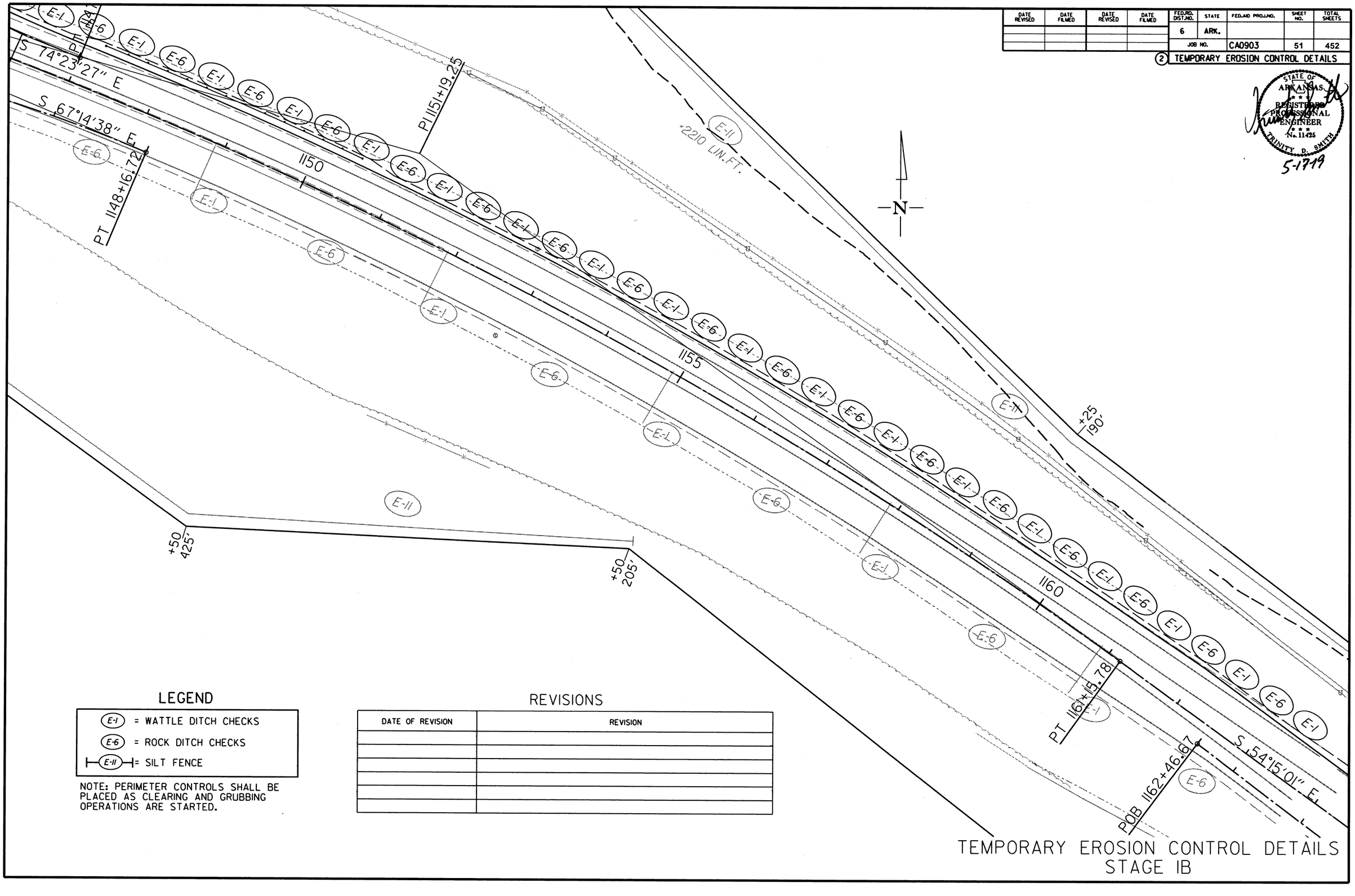
TEMPORARY EROSION CONTROL DETAILS
STAGE IB

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	51	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



TEMPORARY EROSION CONTROL DETAILS
STAGE IB

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	52	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-16
TRINITY D. SMITH

PI 135+87.44
PI 305+98.52
N 0°00'00" E
PC 305+37.
PT 306+59.72
PC 139+92.81
PT 142+17.56
PT 138+66.8
N 19°43'58" W
PI 141+06.2
N 38°35'56" W
50' BUFFERZONE
140
145
150
155
565'
+44.74
1028.26
+49.50
1212.32
+72.05
PC 151+45.47
PI 153+98.43
N 4°15'05" W
PT 156+36.15
PC 159+27.46
MEMBERS SERVICE, INC.
CLINE KNIGHT HOMES

LEGEND

(E-1) = WATTLE DITCH CHECKS
(E-6) = ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE IB

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	53	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

PT 144+07.04
145
N 4°15'05" W
+53.72.92
+85.32 68.69'
+86.51 78.62'
+83.35 98.70'
+14.33 84.77' END EX. CofA
+14.38
N 4°15'05" W
PC 139+92.81
PC 140
142+17.56
PT 145
150
155
PI 154+14.38
PI 141+06.21
PC 152+06.06
PT 156+10.15
EXIST. RAMP 1
EXIST. RAMP 2 / MOT RAMP 3
50' BUFFER ZONE
50' BUFFER ZONE
N 38°35'56" W
+49.50 1028.26'
+72.05 1212.32'
+57.38 931.10'
MEMBERS SERVICE, INC.
GENE KNIGHT HOMES

E-1 = WATTLE DITCH CHECKS
E-6 = ROCK DITCH CHECKS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE IC

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	54	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11495
5-17-16
TRINITY D. SMITH

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- E-14 = SEDIMENT BASIN, X CU.FT.

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

RCA0903_REVISED.DGN 10/19/2016

TEMPORARY EROSION CONTROL DETAILS
STAGE 3A

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.		CA0903	55	452

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- E-14 X CU.FT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

50' BUFFER ZONE

50' BUFFER ZONE

50' BUFFER ZONE

50' BUFFER ZONE

TEMPORARY EROSION CONTROL DETAILS
STAGE 3A

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	56	452

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

50' BUFFER ZONE

EXIST. HWY. 549 RAMP 1

EXIST. RAMP 1

EXIST. RAMP 3

EXIST. RAMP 4

RAMP 1

RAMP 2

RAMP 3

RAMP 4

25 FT. VEGETATED BUFFER ZONE

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- E-14 = SEDIMENT BASIN (X CUFT.)

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS STAGE 3B

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	57	452

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) X CUFT. = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE 4

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	58	452

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- E-14 = SEDIMENT BASIN, X CUFT.

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

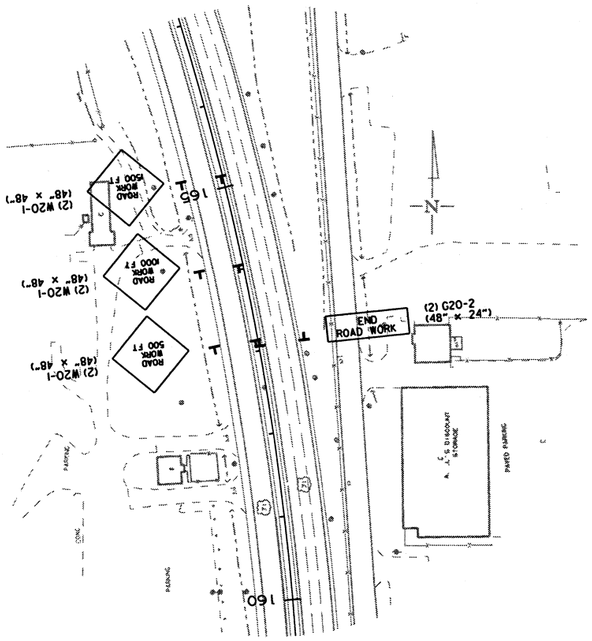
RCA0903_REVISED.DGN 10/19/2016

TEMPORARY EROSION CONTROL DETAILS STAGE 5

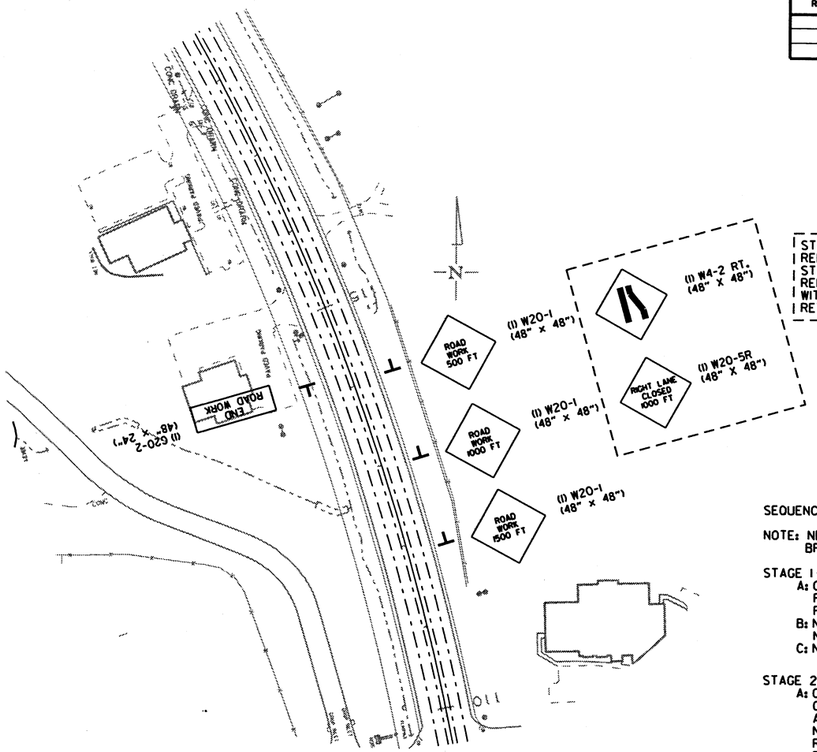
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	59	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



EXISTING HWY. 71B
NORTH OF WORK AREA



STAGE 4 NOTE:
RELOCATE ADVANCE WARNING SIGN INSTALLATION FROM STA. 114+00 TO STA. 107+60 FOR STAGE 4 WORK. REPLACE W20-1 SIGNS (ROAD WORK 500 FT AND 1000 FT) WITH W4-2 RT AND W20-5R AT THE BEGINNING OF STAGE 4. RETAIN FOR THE DURATION OF THE LANE CLOSURE.

EXISTING HWY. 71B
SOUTH OF WORK AREA

SEQUENCE OF CONSTRUCTION

NOTE: NEW CONSTRUCTION OF HWY. 549 AS FAR AS McKISIC CREEK BRIDGE CAN BE BUILT AT ANY TIME.

STAGE 1 - WORK ON RAMP 3
- A: OVERLAY MAIN LANES TO ADJUST SUPERELEVATION. REMOVE PERMANENT PAVEMENT MARKINGS AND INSTALL CONSTRUCTION PAVEMENT MARKINGS FOR STAGE 1B CONFIGURATION.
- B: NOTCH & WIDEN NB LANES AND CONSTRUCT NEW RAMP 3 & MOT RAMP 3. NOTCH & WIDEN MOT RAMP 3 RT. OF EXISTING RAMP 2.
- C: NOTCH & WIDEN MOT RAMP 3 LT. OF EXISTING RAMP 2.

STAGE 2 - REARRANGE TRAFFIC
- A: CLOSE EXIT 93 (EXISTING RAMP 1). PLACE EXIT CLOSED SIGNS ON EXISTING GUIDE SIGNS. PLACE PORTABLE CHANGEABLE MESSAGE SIGNS ON I-49 NORTHBOUND AT EXITS 88, 86, & 85 TO WARN BENTONVILLE-BOUND TRAFFIC THAT THEY NEED TO USE AN ALTERNATE EXIT. REMOVE MEDIAN BARRIER BETWEEN EXISTING RAMP 1 & 2 STA. 137+00 - STA. 141+85 REMOVE MEDIAN ISLAND ON EXISTING HWY. 71 STA. 150+00 - STA. 157+00
- B: SHIFT I-49 NORTHBOUND TRAFFIC ONTO MOT RAMP 3. REMOVE MEDIAN BARRIER ON EXISTING HWY. 71 STA. 139+00 - STA. 148+75

STAGE 3 - WORK ON NEW HWY. 71B & SPUI RAMPS 1, 2, & 4
- A: SHIFT EXISTING HWY. 71 SB TRAFFIC TO NB LANES THROUGH WORK AREA. REMOVE ISLANDS AND RESTRIPE EXISTING HWY. 549 APPROACH TO ROUNDABOUT. CONSTRUCT PORTION OF NEW HWY. 71B ALIGNMENT. BEGIN FROM LEFT SIDE AND WORK UP TO EXISTING ROADWAYS. CONSTRUCT SPUI RAMP 4 CONNECTING IT TO McKISIC CREEK BRIDGE. CONSTRUCT TEMPORARY WIDENING AND GRADE RAISE ON EXISTING RAMP 4. NOTCH & WIDEN EXISTING RAMP 4 & SB LANES OF I-49 FOR SPUI RAMP 2 AND ACCELERATION LANES.
- B: NOTCH & WIDEN SPUI RAMP 1 RT. OF EXISTING HWY. 549 APPROACH TO ROUNDABOUT.

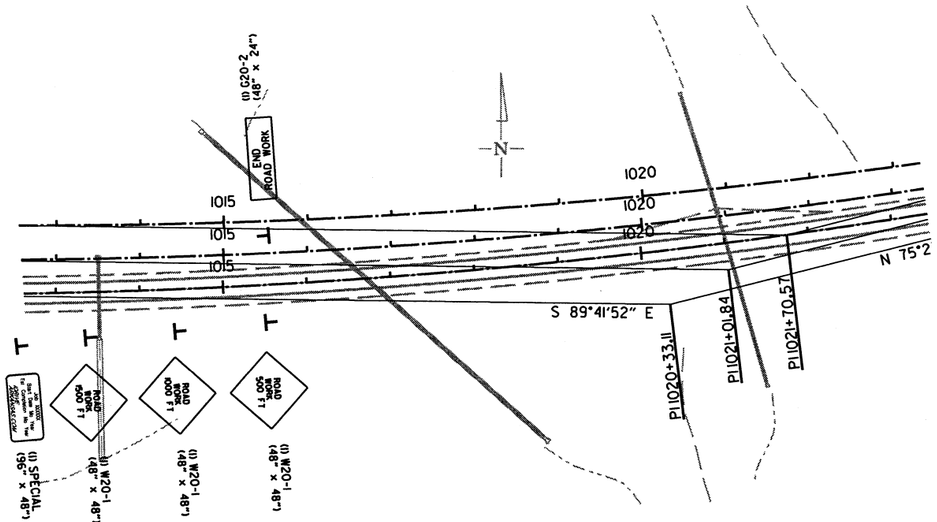
STAGE 4 - WORK ON CENTER OF INTERCHANGE

NOTE: TEMPORARY SIGNAL MUST BE INSTALLED AND OPERATIONAL PRIOR TO CHANGING THE TRAFFIC PATTERN TO THE STAGE 4 CONFIGURATION.

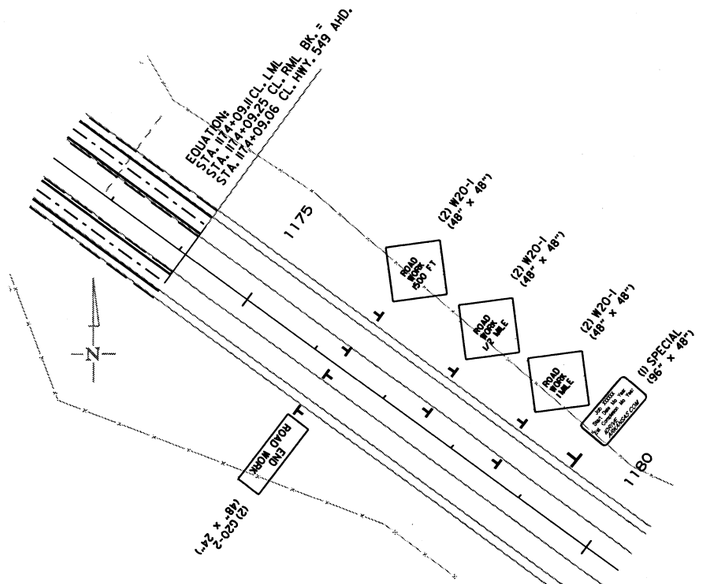
- A: REMOVE CONCRETE ISLANDS FROM EXIST. HWY. 71B APPROACH TO ROUNDABOUT AND INSTALL TEMPORARY SIGNAL.
- B: SHIFT HWY. 71 SB & HWY. 71B NB TRAFFIC ONTO NEW HWY. 71B PAVEMENT. STRIPE FOR 3 LANES, WIDENING TO FOUR FOR DOUBLE LEFT TURN ONTO TEMPORARY RAMP 2 CONNECTOR AT ROUNDABOUT. REMOVE EXISTING HWY. 71 BRIDGES AND PAVEMENT FROM ALL UNUSED ROADWAYS. REMOVE 400' FROM LEFT OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH ROUNDABOUT. CONSTRUCT REMAINDER OF NEW INTERCHANGE. CONSTRUCT SEXTUPLE RC BOX CULVERT AT STATION 1129+23. CONSTRUCT NEW HWY. 549 MAIN LANES AND BRIDGE FROM McKISIC CREEK TO TIE-IN POINT AT I-49 EXISTING LANES. CONSTRUCT RIGHT SIDE OF HWY. 71B AND CONSTRUCT TURNOUTS FOR SPUI RAMPS 2 & 3.

STAGE 5 - ISLAND CONSTRUCTION AND DEMOLITION WORK
INSTALL CONSTRUCTION PAVEMENT MARKINGS AND CHANGE TRAFFIC PATTERN TO BEGIN USING NEWLY CONSTRUCTED HWY. 549 MAIN LANES AND HWY. 71B INTERCHANGE. REBUILD MEDIAN ISLAND CL. HWY. 71B STA. 150+47 - STA. 157+00. CONSTRUCT ISLAND AT SPUI RAMP 1 TURNOUT TO HWY. 71B. CLOSE AND REMOVE TEMPORARY CONNECTION TO EXIST. RAMP 4/SPUI RAMP 2. REMOVE PAVEMENT FROM EXIST. RAMP 2/MOT RAMP 3. REMOVE REMAINING 145' OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH EXISTING RAMP 2.

STAGE 6 - FINAL SURFACING AND PAVEMENT MARKINGS
MILL AND OVERLAY EXISTING I-49 MAIN LANES FROM CL. HWY. 549 STA. 1143+00 TO END OF JOB. PLACE FINAL LIFT OF SURFACE ON HWY. 71B. PLACE FINAL STRIPING ON ENTIRE JOB.



EXISTING HWY. 549
WEST OF WORK AREA



EXISTING INTERSTATE-49
EAST OF WORK AREA

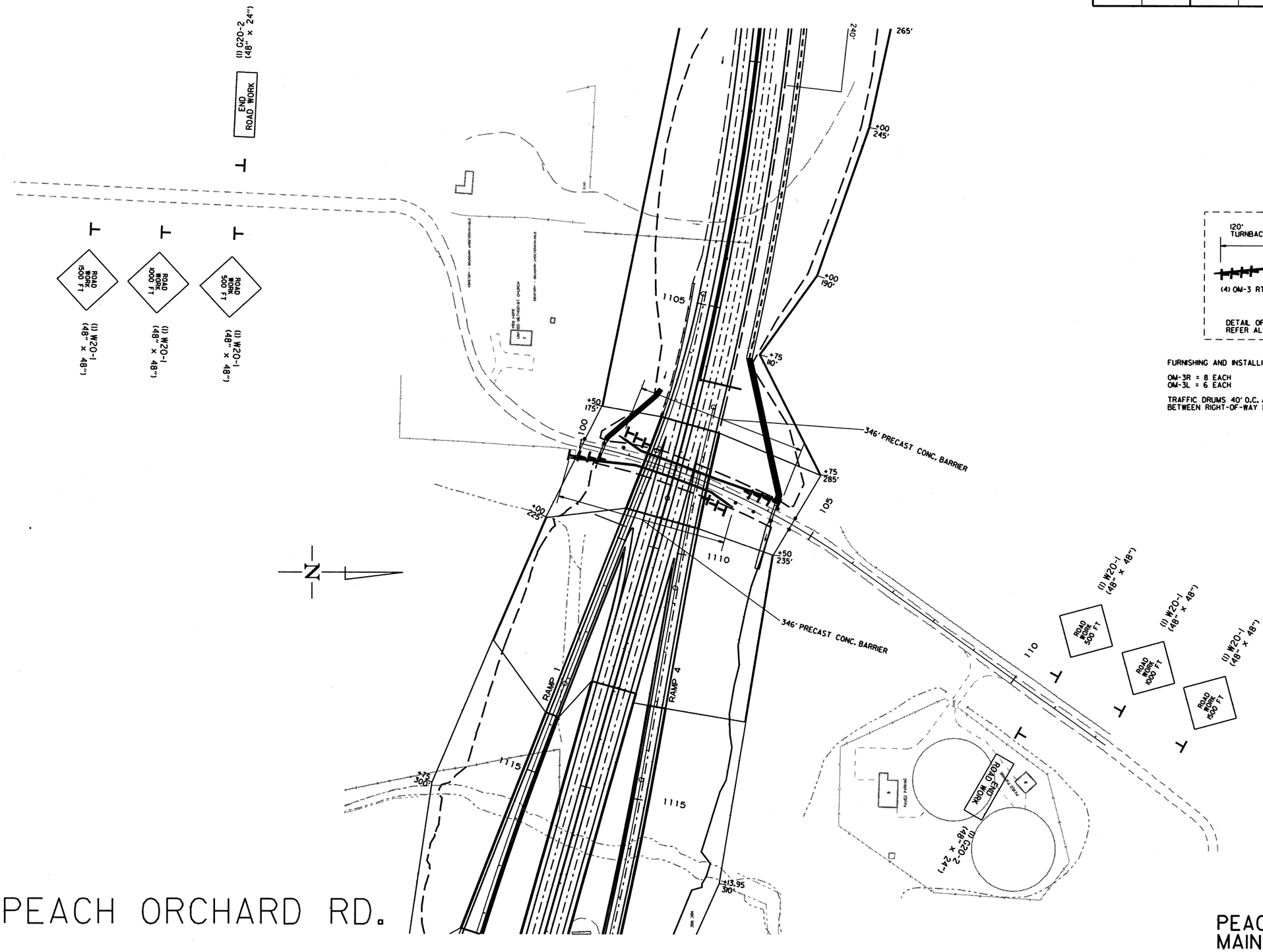
ADVANCE WARNING SIGNS
ALL STAGES

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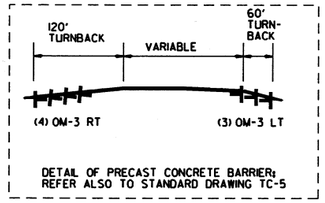
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	60	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



PEACH ORCHARD RD.



DETAIL OF PRECAST CONCRETE BARRIER: REFER ALSO TO STANDARD DRAWING TC-5

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 692 LIN.FT.

OM-3R = 8 EACH
OM-3L = 6 EACH

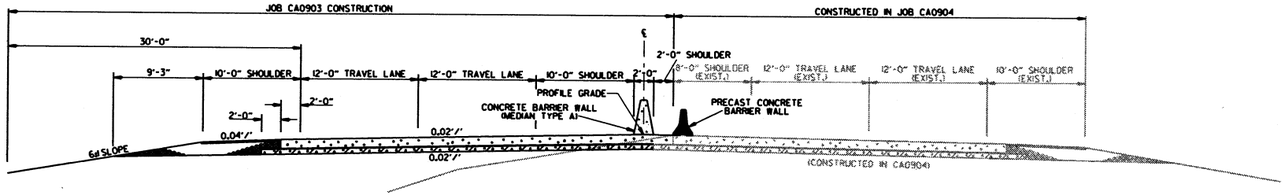
TRAFFIC DRUMS 40' O.C. ALONG EDGES OF ROAD BETWEEN RIGHT-OF-WAY LIMITS AND PCCB LAYOUT = 9 EACH

PEACH ORCHARD RD.
MAINTENANCE OF TRAFFIC
ALL STAGES

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				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC



HWY. 549 MAIN LANES - PLACEMENT OF PRECAST CONCRETE BARRIER

SEQUENCE OF CONSTRUCTION

NOTE: NEW CONSTRUCTION OF HWY. 549 AS FAR AS McKISIC CREEK BRIDGE CAN BE BUILT AT ANY TIME.

STATE OF ARKANSAS
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(1) RII-2 (48" X 30")
32' BARR. TYP. III LT.
ROAD CLOSED
SAFETY END SECTION
(3) OM-3L
PRECAST CONCRETE BARRIER
CONTINUE PCB PLACEMENT AS TYPICAL
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER ALONG EDGE OF EXISTING SHOULDER = 8593 LIN. FT.
OM-3L = 3 EACH
RETAIN PRECAST CONCRETE BARRIER LEFT IN PLACE
CONTINUE PCB PLACEMENT AS TYPICAL
RELOCATING PRECAST CONCRETE BARRIER ON SHOULDER = 440 LIN. FT.
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER ON SHOULDER = 40 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH
T.I.A.B.

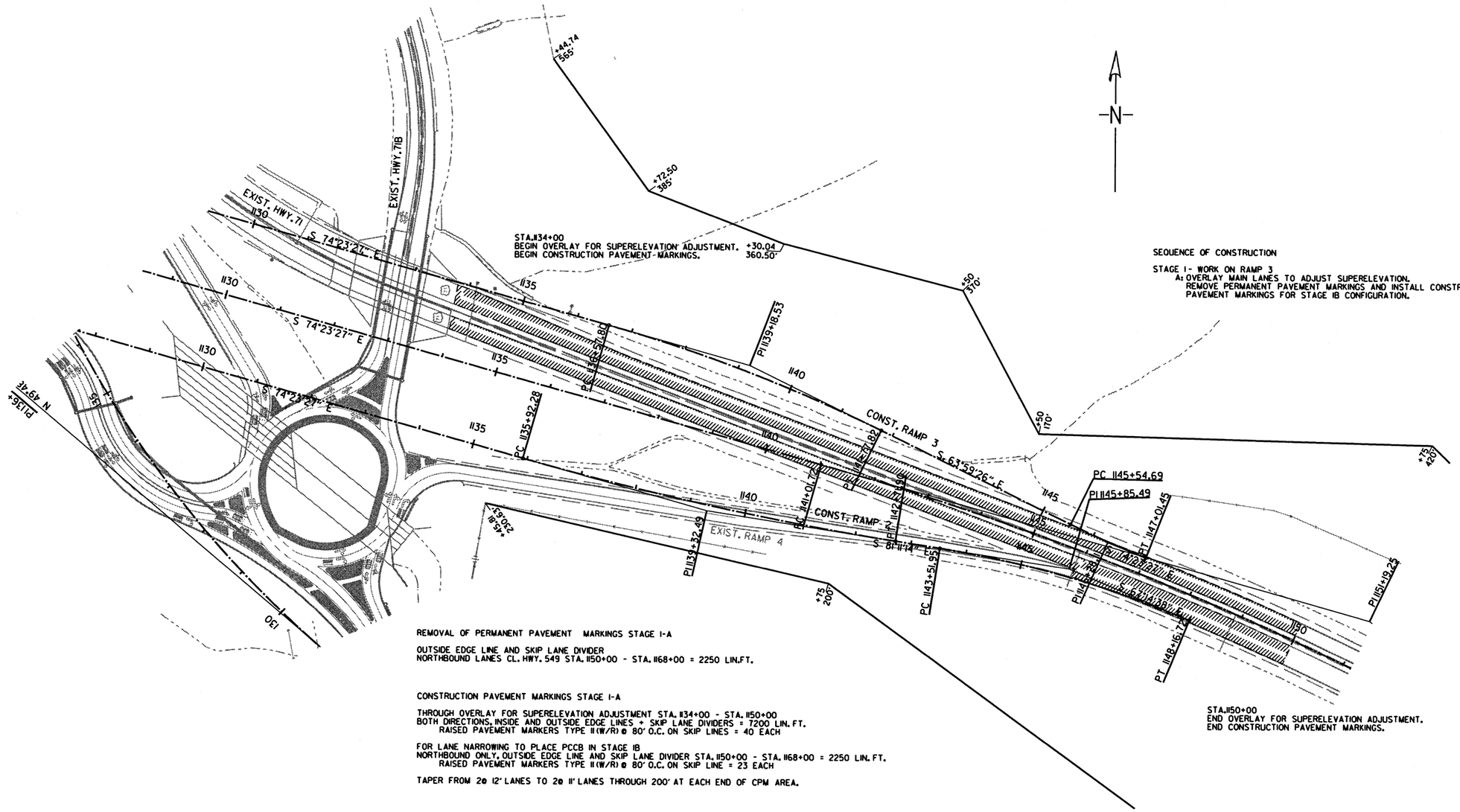
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MAINTENANCE OF TRAFFIC STAGE I

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
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SEQUENCE OF CONSTRUCTION

STAGE I - WORK ON RAMP 3
A: OVERLAY MAIN LANES TO ADJUST SUPERELEVATION.
REMOVE PERMANENT PAVEMENT MARKINGS AND INSTALL CONSTRUCTION PAVEMENT MARKINGS FOR STAGE IB CONFIGURATION.

REMOVAL OF PERMANENT PAVEMENT MARKINGS STAGE I-A

OUTSIDE EDGE LINE AND SKIP LANE DIVIDER
NORTHBOUND LANES CL. HWY. 549 STA. 1150+00 - STA. 1168+00 = 2250 LIN.FT.

CONSTRUCTION PAVEMENT MARKINGS STAGE I-A

THROUGH OVERLAY FOR SUPERELEVATION ADJUSTMENT STA. 1134+00 - STA. 1150+00
BOTH DIRECTIONS, INSIDE AND OUTSIDE EDGE LINES + SKIP LANE DIVIDERS = 7200 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (W/R) @ 80' O.C. ON SKIP LINES = 40 EACH

FOR LANE NARROWING TO PLACE PCCB IN STAGE IB
NORTHBOUND ONLY, OUTSIDE EDGE LINE AND SKIP LANE DIVIDER STA. 1150+00 - STA. 1168+00 = 2250 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (W/R) @ 80' O.C. ON SKIP LINE = 23 EACH

TAPER FROM 2@ 12' LANES TO 2@ 11' LANES THROUGH 200' AT EACH END OF CPM AREA.

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MAINTENANCE OF TRAFFIC STAGE IA

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(2) MAINTENANCE OF TRAFFIC

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REMOVAL OF PERMANENT PAVEMENT MARKINGS
EXISTING RAMP 2 RT. EDGE LINE = 1785 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
EXISTING RAMP 2 AND HWY. 71B RT. EDGE LINE = 2015 LIN. FT.

REMOVE EXISTING GUARDRAIL RIGHT OF EXISTING RAMP 2.
REPLACE WITH PRECAST CONCRETE BARRIER IN STAGE IC.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 313 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

BLASTING AREA
STA. 134+50 - STA. 138+50
MOT RAMP 3

STA. 306+60
BEGIN REM. PPM
RT. EDGE LINE
EXIST. RA. HWY. 71 NB

MOT RAMP 3

PT 138+66.89

N 19°43'58" W

PI 141+06.41

EXIST. RAMP 2 / MOT RAMP 3

N 38°35'56" W

PC 139+32.81

14 TRAFFIC DRUMS
30' O.C.

PI 142+17.46

16 TRAFFIC DRUMS
ALONG RT. SHLDR.
45' O.C.

225' TAPER
RT. EDGE LINE
CPM

PI 305+98.62

PI 305+81.49

N 9°43'00" E

PI 306+59.72

PI 305+17.02

S 74°23'27" E

PI 302+88.27

PI 300+52.52

N 33°25'08" E

EXIST. RAMP 1

EXIST. RAMP 2

200' PCCB

60' TIAB

40' RES.

12' SHLD.

12' DRIV.

12 TRAFFIC DRUMS
ALONG RT. SHLDR.
45' O.C.

(1) W22-3
(42"×36")

STA. 155+46
END REM PPM
RT. EDGE LINE
EXIST RAMP 2

150' TAPER
RT. EDGE LINE

END BLASTING ZONE

PC 151+45.47

PI 155+36.43

N 4°15'05" W

PC 152+27.46

BLASTING ZONE AHEAD

(1) W22-1
(48"×48")

PT 144+07.04

TURN OFF 2-WAY RADIO & CELL PHONES

(1) R22-2
(42"×36")

SEQUENCE OF CONSTRUCTION

STAGE I- WORK ON RAMP 3
B: NOTCH & WIDEN NB LANES AND CONSTRUCT NEW RAMP 3 & MOT RAMP 3.
NOTCH & WIDEN MOT RAMP 3 RT. OF EXISTING RAMP 2.

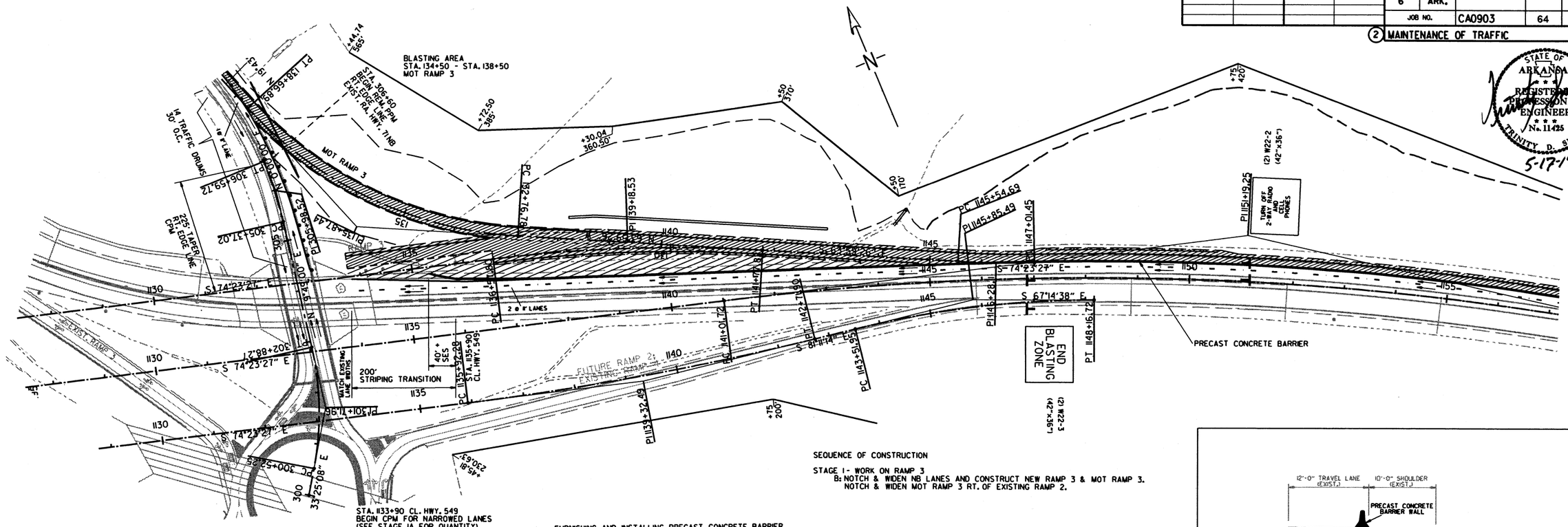
MAINTENANCE OF TRAFFIC
STAGE IB

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(2) MAINTENANCE OF TRAFFIC

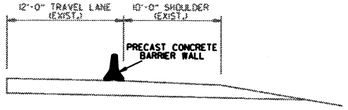
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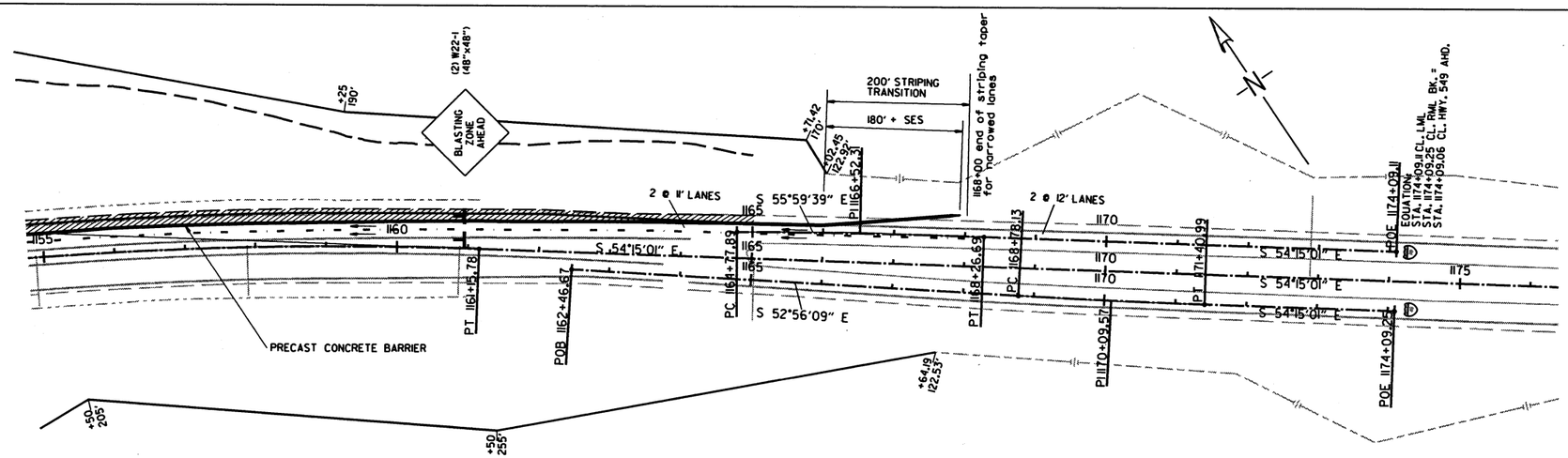
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
ALONG EDGE OF OUTSIDE NB LANE = 3266 LIN. FT.
OM-3L = 3 EACH
OM-3R = 4 EACH

SEQUENCE OF CONSTRUCTION

STAGE I - WORK ON RAMP 3
B: NOTCH & WIDEN NB LANES AND CONSTRUCT NEW RAMP 3 & MOT RAMP 3.
NOTCH & WIDEN MOT RAMP 3 RT. OF EXISTING RAMP 2.



I-49 NORTHBOUND LANES -
PLACEMENT OF PRECAST CONCRETE BARRIER



END BLASTING ZONE (1) W22-3 (42"x36")

TURN OFF 2-WAY RADIO AND CELL PHONES (1) W22-2 (42"x36")

BLASTING ZONE AHEAD (1) W22-1 (48"x48")

TYPICAL BLASTING ZONE ADVANCE WARNING SIGN INSTALLATION

NOTE: PLACE ADDITIONAL BLASTING ZONE ADVANCE WARNING SIGN INSTALLATIONS ON HWY. 71B AND HWY. 549. REFER TO MUTCD FOR ADDITIONAL INFORMATION.

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MAINTENANCE OF TRAFFIC STAGE IB

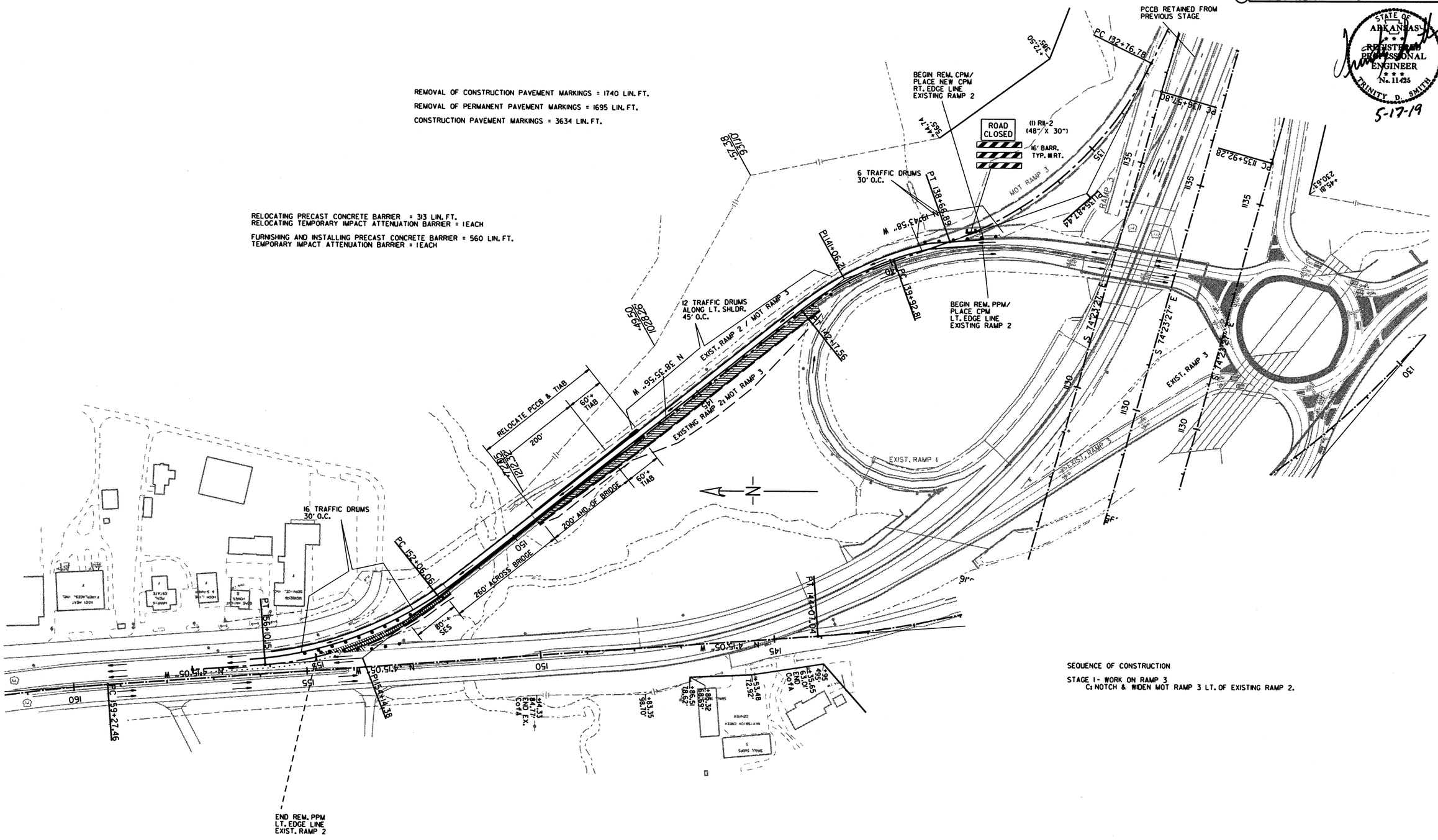
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(2) MAINTENANCE OF TRAFFIC

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 1740 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 1695 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 3634 LIN. FT.

RELOCATING PRECAST CONCRETE BARRIER = 313 LIN. FT.
RELOCATING TEMPORARY IMPACT ATTENUATION BARRIER = 1EACH

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 560 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1EACH



SEQUENCE OF CONSTRUCTION

STAGE I- WORK ON RAMP 3
C: NOTCH & WIDEN MOT RAMP 3 LT. OF EXISTING RAMP 2.

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MAINTENANCE OF TRAFFIC STAGE IC

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(2) MAINTENANCE OF TRAFFIC

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RETAIN STRIPING ON EXISTING RAMP 2 FROM PREVIOUS STAGE.

RELOCATING PRECAST CONCRETE BARRIER
LT. SIDE OF MOT RAMP 3
AHEAD OF BRIDGE = 260 LIN. FT.
RELOCATE TIAB ALSO
BEYOND BRIDGE = 93 LIN. FT.
INCLUDES SPECIAL END SECTION

PCCB RETAINED FROM PREVIOUS STAGE

PC 132+76.78

EXIT CLOSED

(1) E5-2A (48" X 36")

PC 1136+15.80

PC 1135+92.28

MOT RAMP 3

PT 138+66.89

PT 1135+87.44

EXIST. RAMP 2 / MOT RAMP 3

PT 141+06.21

PC 139+92.81

REMOVE MEDIAN BARRIER

STA. 137+00

RETAIN PCCB THIS SIDE

PT 142+17.56

STA. MI-95

24 TRAFFIC DRUMS 40' O.C.

11 TRAFFIC DRUMS 45' O.C.

ROAD CLOSED

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

16' BARR. TYP. ■ RT.

EXIST. RAMP 1

ROAD CLOSED

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

24' BARR. 1130' ■ RT.

EXIST. RAMP 3

13 TRAFFIC DRUMS 45' O.C.

RELOCATE PCCB & TIAB THIS SIDE

200'

50' TIAB

PC 152+06.06

80' RELOCATE PCCB

PT 155+10.15

PC 159+27.46

PI 154+41.38

PT 144+07.04

PC 1125+46.18

PI 1125+78.16

STAGE 2 - REARRANGE TRAFFIC
A: CLOSE EXIT 93 (EXISTING RAMP 1). PLACE EXIT CLOSED SIGNS ON EXISTING GUIDE SIGNS. PLACE PORTABLE CHANGEBLE MESSAGE SIGNS ON I-49 NORTHBOUND AT EXITS 88, 86, & 85 TO WARN BENTONVILLE-BOUND TRAFFIC THAT THEY NEED TO USE AN ALTERNATE EXIT.
REMOVE MEDIAN BARRIER BETWEEN EXISTING RAMP 1 & 2 STA. 137+00 - STA.141+85
REMOVE MEDIAN ISLAND ON EXISTING HWY. 71 STA.150+00 - STA.157+00

157+00 CL. CONST. HWY. 71B

REMOVE MEDIAN ISLAND
30 TRAFFIC DRUMS 50' O.C.

150+00 CL. CONST. HWY. 71

MAINTENANCE OF TRAFFIC STAGE 2A

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
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RELOCATING PRECAST CONCRETE BARRIER
STA. 137+00 - STA. 141+90 EXIST. RAMP 2 & MOT RAMP 3 = 433 LIN. FT.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA. 137+00 - STA. 141+90 EXIST. RAMP 2 & MOT RAMP 3 = 80 LIN. FT.

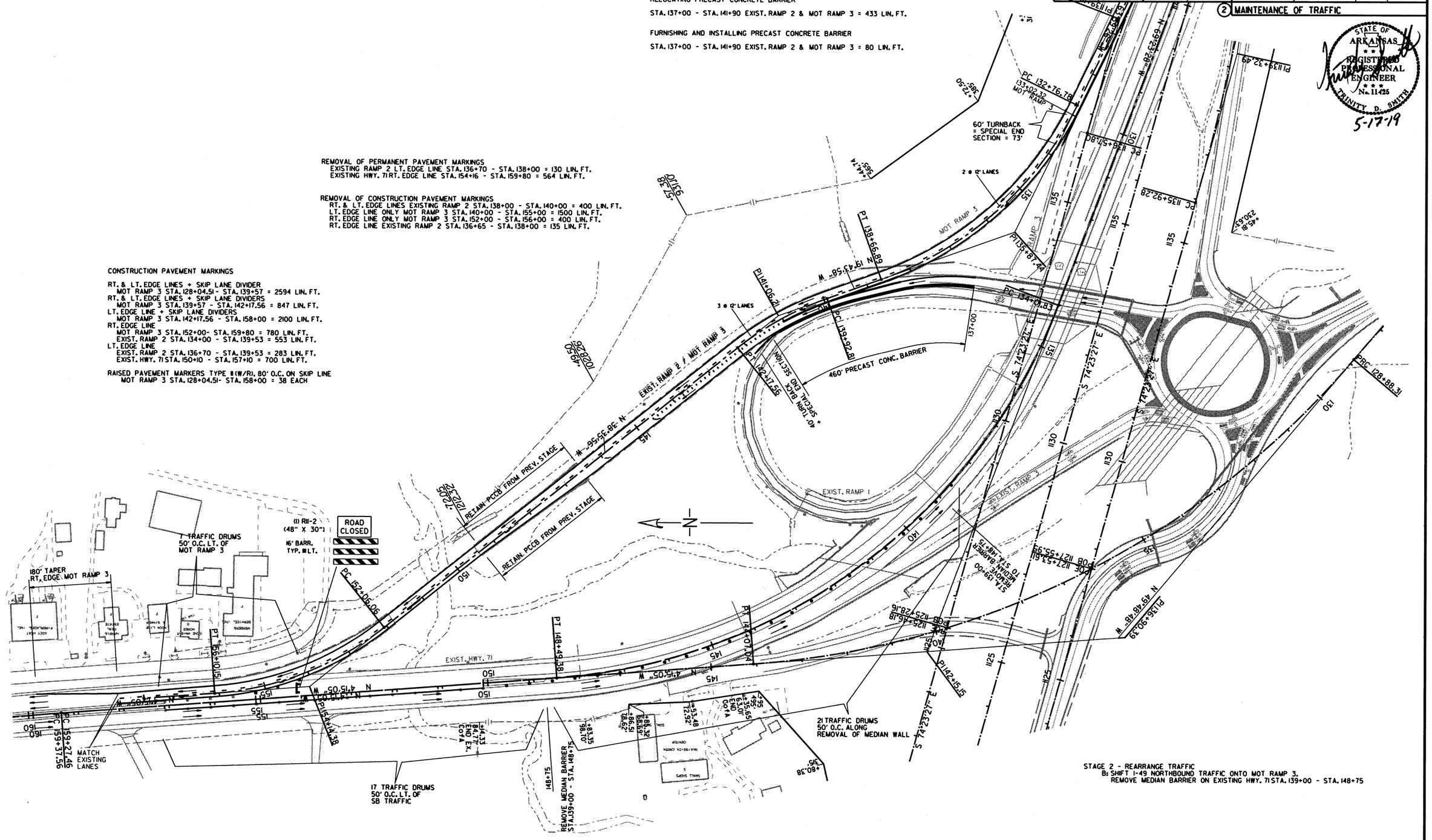
REMOVAL OF PERMANENT PAVEMENT MARKINGS
EXISTING RAMP 2 LT. EDGE LINE STA. 136+70 - STA. 138+00 = 130 LIN. FT.
EXISTING HWY. 71 RT. EDGE LINE STA. 154+16 - STA. 159+80 = 564 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
RT. & LT. EDGE LINES EXISTING RAMP 2 STA. 138+00 - STA. 140+00 = 400 LIN. FT.
LT. EDGE LINE ONLY MOT RAMP 3 STA. 140+00 - STA. 155+00 = 1500 LIN. FT.
RT. EDGE LINE ONLY MOT RAMP 3 STA. 152+00 - STA. 156+00 = 400 LIN. FT.
RT. EDGE LINE EXISTING RAMP 2 STA. 136+65 - STA. 138+00 = 135 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS

RT. & LT. EDGE LINES + SKIP LANE DIVIDER
MOT RAMP 3 STA. 128+04.51 - STA. 139+57 = 2594 LIN. FT.
RT. & LT. EDGE LINES + SKIP LANE DIVIDERS
MOT RAMP 3 STA. 139+57 - STA. 142+17.56 = 847 LIN. FT.
LT. EDGE LINE + SKIP LANE DIVIDERS
MOT RAMP 3 STA. 142+17.56 - STA. 158+00 = 2100 LIN. FT.
RT. EDGE LINE
MOT RAMP 3 STA. 152+00 - STA. 159+80 = 780 LIN. FT.
EXIST. RAMP 2 STA. 134+00 - STA. 139+53 = 553 LIN. FT.
LT. EDGE LINE
EXIST. RAMP 2 STA. 136+70 - STA. 139+53 = 283 LIN. FT.
EXIST. HWY. 71 STA. 150+10 - STA. 157+10 = 700 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II (W/R), 80' O.C. ON SKIP LINE
MOT RAMP 3 STA. 128+04.51 - STA. 158+00 = 38 EACH


PC 132+76.78
133+02.32 MOT RAMP 3
60' TURNBACK = SPECIAL END SECTION = 73'
2 @ 12' LANES
MOT RAMP 3
PT 138+66.89
N 19°43'58" W
PI 141+06.21
3 @ 12' LANES
EXIST. RAMP 2 // MOT RAMP 3
PC 139+92.81
460' PRECAST CONC. BARRIER
PC 134+01.83
S 74°23'27" E
PRC 128+88.31
PI 135+87.44
PC 135+92.28
PI 139+32.49
N 69°23'28" W
230.89'
*45.81'
*385.50'
*44.74'
102.82'
102.95'
EXIST. RAMP 2
EXIST. RAMP 1
EXIST. HWY. 71
RETAIN PCCB FROM PREV. STAGE
RETAIN PCCB FROM PREV. STAGE
ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. @ LT.
1 TRAFFIC DRUMS 50' O.C. LT. OF MOT RAMP 3
180' TAPER RT. EDGE MOT RAMP 3
PC 152+06.06
PT 156+10.51
PC 155+27.46
PC 155+37.56
PC 155+44.38
MATCH EXISTING LANES
17 TRAFFIC DRUMS 50' O.C. LT. OF SB TRAFFIC
148+75
REMOVE MEDIAN BARRIER STA. 139+00 - STA. 148+75
PT 148+49.38
PI 141+01.84
PI 142+15.15
21 TRAFFIC DRUMS 50' O.C. ALONG REMOVAL OF MEDIAN WALL
S 74°23'27" E
STA. 139+00 REMOVE BARRIER TO STA. 148+75
PC 127+53.61
PC 127+55.99
PI 125+28.18
PI 136+90.39
N 49°48'48" W
1125
1130
1135
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				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RELOCATING PRECAST CONCRETE BARRIER

STA. 1136+15 - STA. 1167+93 CONST. RAMP 3 = 3186 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS

OUTSIDE EDGE LINE AND SKIP LANE DIVIDER FROM STAGE I
MAIN LANES STA. 1145+00 - STA. 1168+00 = 2875 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS

RT. & LT. EDGE LINES + SKIP LANE DIVIDER
CONST. RAMP 3 STA. 1141+77.82 - STA. 1168+00 = 5900 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II (W/R), 80' O.C. ON SKIP LINE
CONST. RAMP 3 STA. 1141+77.82 - STA. 1168+00 = 33 EACH

STAGE 2 - REARRANGE TRAFFIC
B: SHIFT I-49 NORTHBOUND TRAFFIC ONTO MOT RAMP 3.
REMOVE MEDIAN BARRIER ON EXISTING HWY. 71 STA. 139+00 - STA. 148+75

MAINTENANCE OF TRAFFIC
STAGE 2B

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				6	ARK.			
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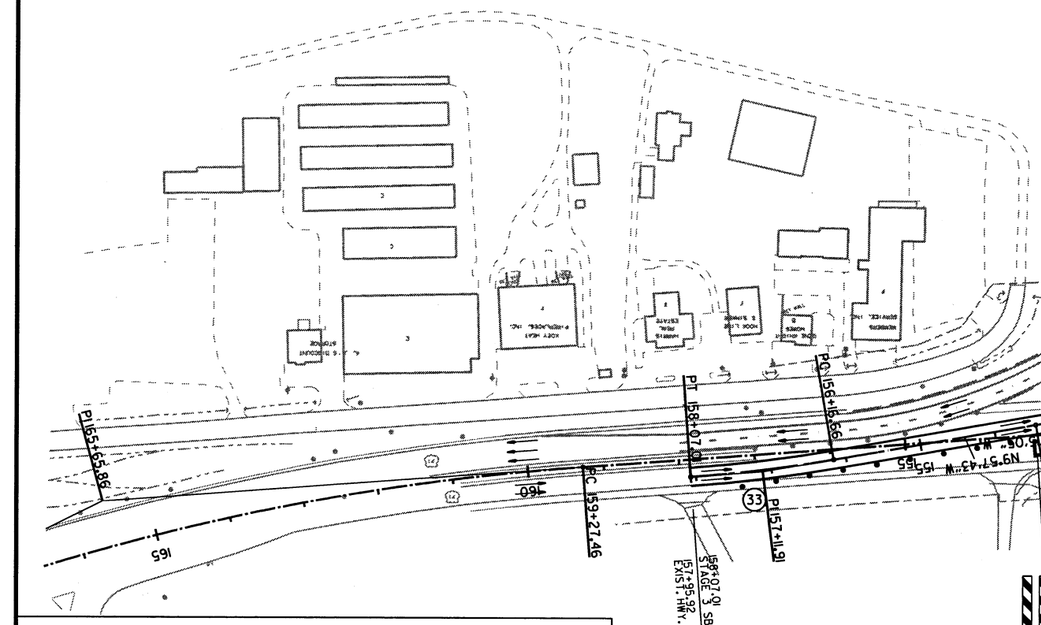
(2) MAINTENANCE OF TRAFFIC

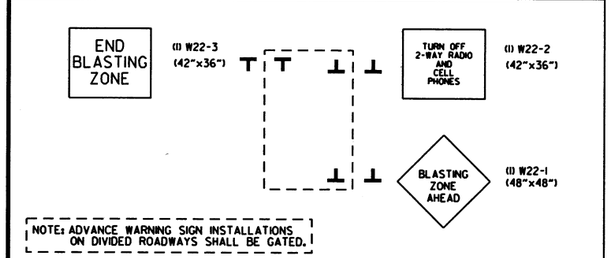
CURVE ID	PI	PC	PT	Δ	DEGREE OF CURVE	TANGENT (FT.)	LENGTH (FT.)	e (FT./FT.)	Ls (FT.)
SB HWY. 71 TRAFFIC - STAGE 3									
29	136+61.42	134+02.95	139+13.19	22°33'12" RT.	4°25'13"	258.46	510.24	N/A	N/A
30	141+69.88	139+13.19	144+14.71	30°05'30" RT.	6°00'00"	256.69	501.53	N/A	N/A
31	147+22.83	145+85.93	148+58.64	12°29'52" RT.	4°34'58"	136.90	272.71	N/A	N/A
32	152+49.78	151+54.47	153+44.92	5°42'49" LT.	3°00'00"	95.30	190.45	N/A	N/A
33	157+11.91	156+16.66	158+07.01	5°42'38" RT.	3°00'00"	95.26	190.35	N/A	N/A
SB HWY. 71B TRAFFIC - STAGE 3									
34	141+75.36	141+19.12	142+30.98	14°33'58" RT.	13°01'18"	56.23	111.86	N/A	N/A
35	142+82.77	142+30.98	143+34.54	3°06'24" LT.	3°00'00"	51.79	103.55	N/A	N/A

STAGE 3 - WORK ON NEW HWY.71B & SPUI RAMPS 1, 2, & 4
As SHIFT EXISTING HWY.71 SB TRAFFIC TO NB LANES THROUGH WORK AREA.
REMOVE ISLANDS AND RESTRIPE EXISTING HWY. 549 APPROACH TO ROUNDABOUT.
CONSTRUCT PORTION OF NEW HWY.71B ALIGNMENT. BEGIN FROM LEFT SIDE AND WORK UP TO EXISTING ROADWAYS.
CONSTRUCT SPUI RAMP 4 CONNECTING IT TO McKISIC CREEK BRIDGE.
CONSTRUCT TEMPORARY WIDENING AND GRADE RAISE ON EXISTING RAMP 4.
NOTCH & WIDEN EXISTING RAMP 4 & SB LANES OF I-49 FOR SPUI RAMP 2 AND ACCELERATION LANES.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA. 139+00 - STA. 139+60 EXIST. HWY. 71B = 60 LIN.FT.

TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH





TYPICAL BLASTING ZONE ADVANCE WARNING SIGN INSTALLATION

NOTE: PLACE BLASTING ZONE ADVANCE WARNING SIGN INSTALLATIONS ON I-49, HWY. 71, HWY. 71B, AND HWY. 549. REFER TO MUTCD FOR ADDITIONAL INFORMATION.

REMOVAL OF PERMANENT PAVEMENT MARKINGS

EXISTING HWY.71 SB STA. 153+00 - STA. 157+96
LT. & RT. EDGE LINES + SKIP LANE DIVIDER = 116 LIN.FT.

EXISTING HWY.71 NB STA. 142+00 - STA. 155+00
LT. & RT. EDGE LINES + SKIP LANE DIVIDER = 2925 LIN.FT.

STAGE 3 SB HWY. 71 & HWY. 71B ALIGNMENTS -
SOUTHBOUND TRAFFIC CROSSED-OVER ONTO EXISTING NORTHBOUND LANES

CONSTRUCTION PAVEMENT MARKINGS
STA. 140+00 - STA. 158+07 = 4305 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE IK(WHITE/RED) 80' O.C. ON LANE DIVIDERS = 23 EACH

MAINTENANCE OF TRAFFIC STAGE 3A

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TIMOTHY D. SMITH
5-17-19

REMOVAL OF PERMANENT PAVEMENT MARKINGS

EXISTING HWY. 549 APPROACH TO ROUNDABOUT
CENTERLINE, EDGE LINES, & LANE DIVIDERS = 3500 LIN. FT.
WORDS = 7 EACH
ARROWS = 9 EACH

CONSTRUCTION PAVEMENT MARKINGS

EXISTING HWY. 549 APPROACH TO ROUNDABOUT
CENTERLINE & EDGE LINES = 5825 LIN. FT.

EXISTING RAMP 4 - CL. RAMP 2 STA. 1134+71 TO STA. 1146+67
LANE DIVIDER & RT. EDGE LINE = 1700 LIN. FT.

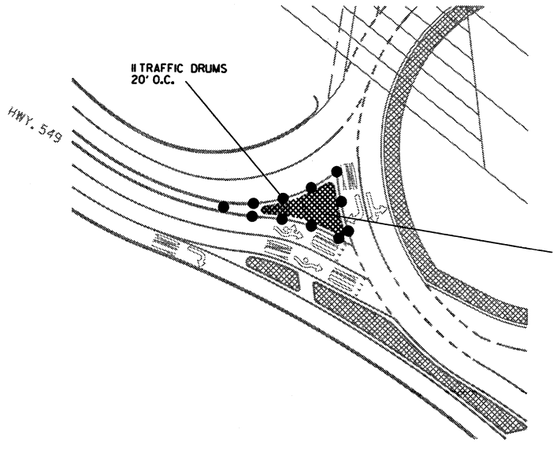
NOTE: STATIONS AND OFFSETS FOR CPM ARE REFERENCED TO EITHER CL. SPUI RAMP 1 OR CL. HWY. 71B.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER

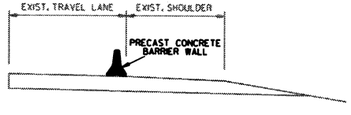
EXISTING HWY. 549 APPROACH TO ROUNDABOUT = 186 LIN. FT.
OM-3L = 3 EACH
OM-3R = 4 EACH

EXISTING RAMP 4 = 1203 LIN. FT.
OM-3R = 4 EACH

STAGE 3 - WORK ON NEW HWY. 71B & SPUI RAMPS 1, 2, & 4
A: SHIFT EXISTING HWY. 71 SB TRAFFIC TO NB LANES THROUGH WORK AREA.
REMOVE ISLANDS AND RESTRIPE EXISTING HWY. 549 APPROACH TO ROUNDABOUT.
CONSTRUCT PORTION OF NEW HWY. 71B ALIGNMENT. BEGIN FROM LEFT SIDE AND WORK UP TO EXISTING ROADWAYS.
CONSTRUCT SPUI RAMP 4 CONNECTING IT TO McKISIC CREEK BRIDGE.
CONSTRUCT TEMPORARY WIDENING AND GRADE RAISE ON EXISTING RAMP 4.
NOTCH & WIDEN EXISTING RAMP 4 & SB LANES OF I-49 FOR SPUI RAMP 2 AND ACCELERATION LANES.



HWY. 549 ROUNDABOUT APPROACH - REMOVAL OF CONCRETE ISLANDS



EXIST. RAMP 4 & I-49 SOUTHBOUND LANES - PLACEMENT OF PRECAST CONCRETE BARRIER

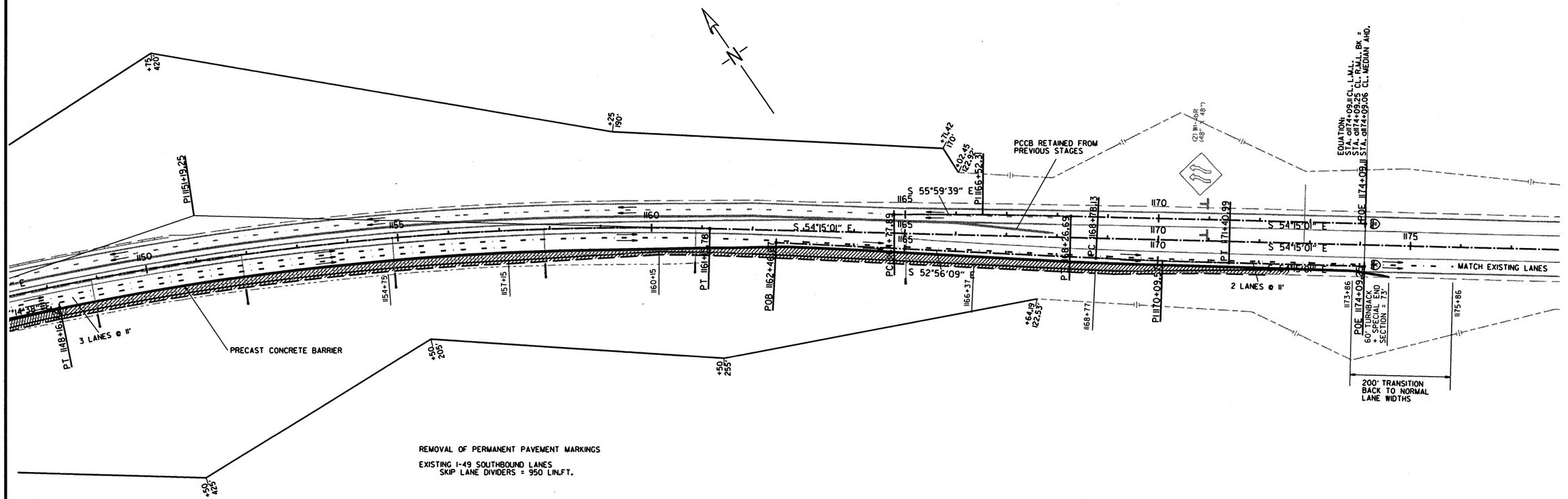
MAINTENANCE OF TRAFFIC STAGE 3A

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



REMOVAL OF PERMANENT PAVEMENT MARKINGS

EXISTING I-49 SOUTHBOUND LANES
SKIP LANE DIVIDERS = 950 LIN.FT.

CONSTRUCTION PAVEMENT MARKINGS

RT. EDGE LINE & 2 SKIP LANE DIVIDERS MAIN LANES STA. 1146+65 - STA. 1157+15 = 1575 LIN.FT.
RT. EDGE LINE & 1 SKIP LANE DIVIDER MAIN LANES STA. 1157+15 - STA. 1173+86 = 2079 LIN.FT.
RT. EDGE LINE & 1 SKIP LANE DIVIDER 200' TRANSITION = 250 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 80' O.C. ON LANE DIVIDERS (MAIN LANES) = 48 EACH

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER

CL. HWY. 549 STA. 1146+65 - STA. 1174+59 = 2783 LIN.FT.
OM-3L = 3 EACH

STAGE 3 - WORK ON NEW HWY. 71B & SPUI RAMPS 1, 2, & 4
A: SHIFT EXISTING HWY. 71 SB TRAFFIC TO NB LANES THROUGH WORK AREA.
REMOVE ISLANDS AND RESTRIPE EXISTING HWY. 549 APPROACH TO ROUNDABOUT.
CONSTRUCT PORTION OF NEW HWY. 71B ALIGNMENT. BEGIN FROM LEFT SIDE AND WORK UP TO EXISTING ROADWAYS.
CONSTRUCT SPUI RAMP 4 CONNECTING IT TO McKISIC CREEK BRIDGE.
CONSTRUCT TEMPORARY WIDENING AND GRADE RAISE ON EXISTING RAMP 4.
NOTCH & WIDEN EXISTING RAMP 4 & SB LANES OF I-49 FOR SPUI RAMP 2 AND ACCELERATION LANES.

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MAINTENANCE OF TRAFFIC STAGE 3A

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
32' BARR. TYP. IRT.

18 TRAFFIC DRUMS 45' O.C. (HWY. 549 TRAFFIC)

PRECAST CONCRETE BARRIER W/(12) SES

13 TRAFFIC DRUMS 45' O.C. (HWY. 718 TRAFFIC)

PCCB RETAINED FROM PREVIOUS STAGES

PCCB RETAINED FROM PREVIOUS STAGES

STAGE 3 - WORK ON NEW HWY. 718 & SPUI RAMPS 1, 2, & 4
B: NOTCH & WIDEN SPUI RAMP IRT. OF EXISTING HWY. 549 APPROACH TO ROUNDABOUT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS

EXISTING HWY. 549 APPROACH TO ROUNDABOUT
CENTERLINE & EDGE LINES = 2250 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS

EXISTING HWY. 549 APPROACH TO ROUNDABOUT
CENTERLINE & EDGE LINES = 2155 LIN. FT.

NOTE: STATIONS AND OFFSETS FOR CPM ARE REFERENCED TO EITHER CL. SPUI RAMP 1 OR CL. HWY. 718.

RELOCATING PRECAST CONCRETE BARRIER

EXISTING HWY. 549 APPROACH TO ROUNDABOUT = 146 LIN. FT.

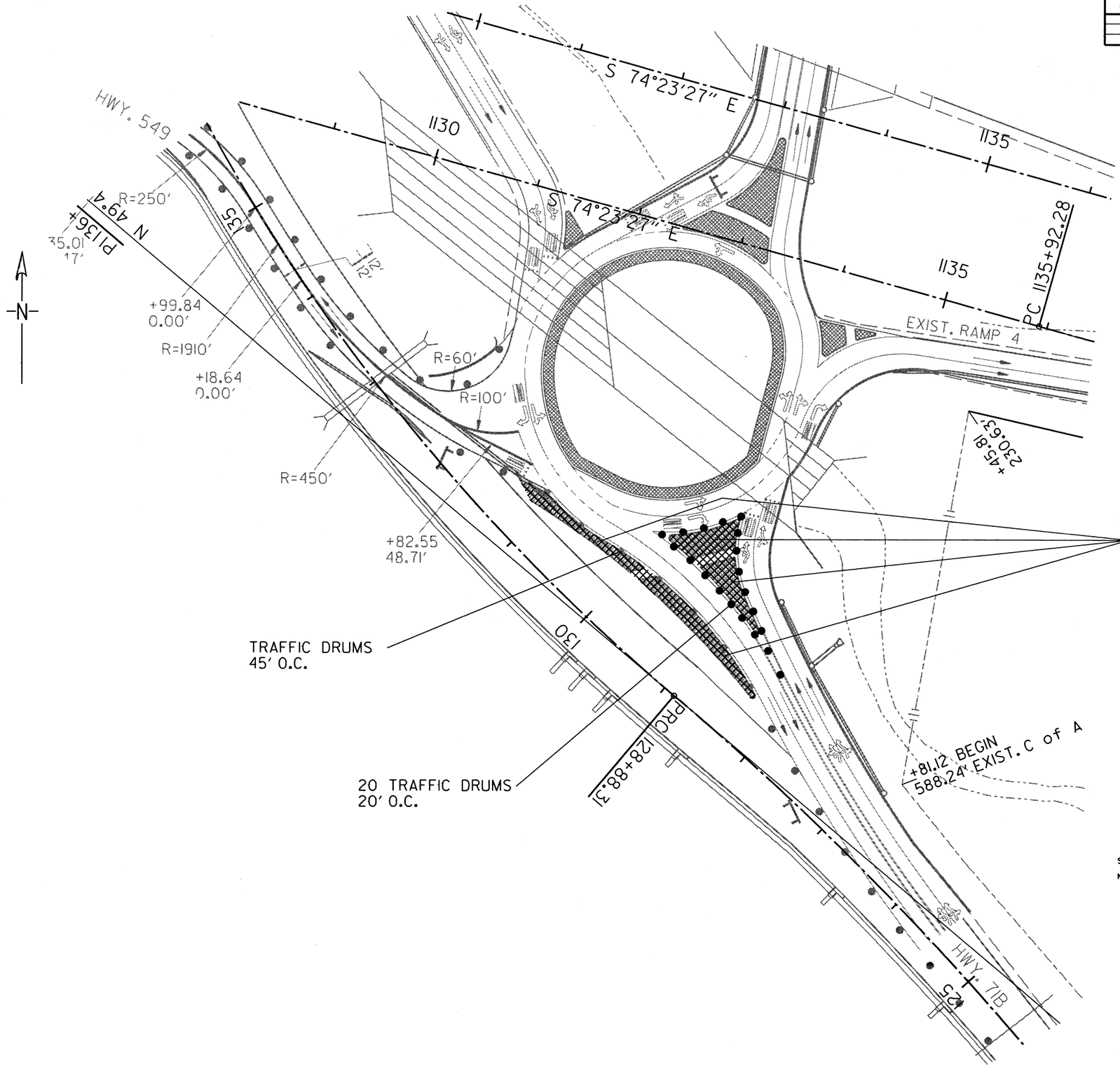
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MAINTENANCE OF TRAFFIC STAGE 3B

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.		CA0903	73	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



STAGE 4 - WORK ON CENTER OF INTERCHANGE

NOTE: TEMPORARY SIGNAL MUST BE INSTALLED AND OPERATIONAL PRIOR TO CHANGING THE TRAFFIC PATTERN TO THE STAGE 4 CONFIGURATION.

A: REMOVE CONCRETE ISLANDS FROM EXIST. HWY. 71B APPROACH TO ROUNDABOUT AND INSTALL TEMPORARY SIGNAL.

MAINTENANCE OF TRAFFIC STAGE 4A

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7/19/19				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11495
TRINITY D. SMITH
7-19-19

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
NB HWY. 71B/RAMP 3

RT. EDGE LINE HWY. 71-B CL CONST. STA.149+80 - STA. 159+80 = 1644 LIN.FT.
RT. & LT. EDGE LINES + SKIP LANE DIVIDER RAMP 3

CONSTRUCTION PAVEMENT MARKINGS
RAMP 3/HWY.71-B NORTHBOUND

RT. & LT.EDGE LINES + SKIP LANE DIVIDER RAMP 3
STA.152+00 - STA. 155+75.65 = 845 LIN.FT.
RT. & LT. EDGE LINES + 2 @ SKIP LANE DIVIDERS HWY.72B NB
STA. 155+694.5 - STA. 159+30 = 914 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON LANE DIVIDERS = 27 EACH

RELOCATION OF PRECAST CONCRETE BARRER
LT. OF TRAFFIC ON MOT RAMP 3= 360 LIN.FT.

PCCB RETAINED FROM PREVIOUS STAGES

PCCB: RELOCATE 360' + SES

EXIST. RAMP 2 / MOT RAMP 3

EXISTING RAMP 3 REMOVE

EXIST. RAMP 1

165+64.5 EXISTING

159+37.6 EXISTING
159+30 (CONST)

CPM WHITE SKIP LANE DIVIDERS
CPM WHITE EDGE LINE
CPM YELLOW EDGE LINE
CPM WHITE EDGE LINE
CPM WHITE SKIP LANE DIVIDER
CPM YELLOW EDGE LINE

(2) RM-2 (48" X 30")
16' BARR. TYP. III LT.

ROAD CLOSED

38 TRAFFIC DRUMS 45' O.C.

PI 165+65.86

PC 159+27.46

2@11' LANES
3@11' LANES
2@12' LANES

+00.00 12.00'

13 TRAFFIC DRUMS 45' O.C.

157+85.9 EXIST.
157+16 EXIST.

CPM WHITE EDGE LINES
CPM WHITE SKIP LANE DIVIDER
CPM DBL YELLOW TAPER & MEDIAN EDGES

540' TAPER FOR LANE SHIFT

+60.00 12.00'

CPM WHITE EDGE LINE
CPM WHITE SKIP LANE DIVIDER
CPM DBL YELLOW CENTERLINE

ROAD CLOSED

(1) RM-2 (48" X 30")

16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

PI 164+05.38

RAMP 4

PI 117+82.94

RAMP L

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
SB HWY. 71-B
RT. & LT. EDGE LINES + SKIP CENTERLINE
ST.147+00 - STA. 158+07 CL EXIST. HWY 71B = 4428 LIN.FT.

CONSTRUCTION PAVEMENT MARKINGS
HWY. 71B

OUTSIDE AND MEDIAN EDGE LINES, AND SOUTHBOUND SKIP LANE DIVIDER
STA.151+90 - STA. 155+64.5 = 2337 LIN.FT.
OUTSIDE AND MEDIAN EDGE LINES, SKIP LANE DIVIDERS SOUTHBOUND ONLY
STA. 155+64.5 - STA. 157+35.9 = 557 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON LANE DIVIDERS = 13 EACH
TYPE II (YEL/YEL) 40' O.C. ON CENTER LINE / CENTER LANE MARKINGS = 22 EACH

STAGE 4 - WORK ON CENTER OF INTERCHANGE

NOTE: TEMPORARY SIGNAL MUST BE INSTALLED AND OPERATIONAL PRIOR TO CHANGING THE TRAFFIC PATTERN TO THE STAGE 4 CONFIGURATION.

A: REMOVE CONCRETE ISLANDS FROM EXIST. HWY. 71B APPROACH TO ROUNDABOUT AND INSTALL TEMPORARY SIGNAL.
B: SHIFT HWY. 71SB & HWY.71B NB TRAFFIC ONTO NEW HWY. 71B PAVEMENT. STRIPE FOR 3 LANES, WIDENING TO FOUR FOR DOUBLE LEFT TURN ONTO TEMPORARY RAMP 2 CONNECTOR AT ROUNDABOUT.
REMOVE EXISTING HWY. 71 BRIDGES AND PAVEMENT FROM ALL UNUSED ROADWAYS.
REMOVE 400' FROM LEFT OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH ROUNDABOUT.
CONSTRUCT REMAINDER OF NEW INTERCHANGE.
CONSTRUCT SEXTUPLE RC BOX CULVERT AT STATION 1129+23.
CONSTRUCT NEW HWY. 549 MAIN LANES AND BRIDGE FROM McKISIC CREEK TO TIE-IN POINT AT I-49 EXISTING LANES.
CONSTRUCT RIGHT SIDE OF HWY. 71B AND CONSTRUCT TURNOUTS FOR SPUI RAMPS 2 & 3.

CONSTRUCTION PAVEMENT MARKINGS
HWY. 71B

STOP LINE AT STA.132+01 = 24 LIN.FT.
ARROWS = 4 EACH
WORDS = 4 EACH
TWO SKIP LANE DIVIDERS (SOUTHBOUND) STA.132+01 - STA. 138+75 = 340 LIN.FT.
LT. EDGE LINE (SB LANES) STA.135+32 - STA. 142+00 = 668 LIN.FT.
RT. EDGE LINE (NB LANES) STA.131+52 - STA.150+90 = 1938 LIN.FT.
DBL. CENTERLINE STA.132+01 - STA. 150+90 = 3778 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON LANE DIVIDERS = 80 EACH
TYPE II (YEL/YEL) 40' O.C. ON CENTERLINE/CENTER LANE MARKINGS = 48 EACH

MAINTENANCE OF TRAFFIC STAGE 4B

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

CONSTRUCTION PAVEMENT MARKINGS
MOT RAMP 2

RT. & LT. EDGE LINES AND SKIP CENTERLINE
STA. 1130+75.39 - STA. 1140+45.63 = 2290 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON CENTER LANE DIVIDER = 24 EACH

CONSTRUCTION PAVEMENT MARKINGS
RAMP 2

RT. & LT. EDGE LINES AND SKIP CENTERLINE
STA. 1140+45.63 - STA. 1146+65.38 = 1395 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON CENTER LANE DIVIDER = 16 EACH

RELOCATING PRECAST CONCRETE BARRIER
LT SHLDR. MOT RAMP 2 = 1473 LIN.FT.
INCLUDES ONE SPECIAL END SECTION



ISLAND DETAIL

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
SB HWY. 71-B
RT. & LT. EDGE LINES + SKIP CENTERLINE
ST.1130+00 - STA. 1138+00 CL EXIST. HWY. 71B = 3200 LIN.FT.

REMOVAL OF PERMANENT PAVEMENT MARKINGS
HWY. 71B

RT. EDGE LINE STA.112+60 - STA.128+00 = 1540 LIN.FT.
RT. LANES SKIP LINE STA. 106+95 - STA. 116+30 = 230 LIN.FT.
LT. LANES SKIP LINE STA.120+00 - STA. 128+00 = 200 LIN.FT.
CONTINUOUS LT. TURN LANE STA.120+00 - STA.124+25 = 1063 LIN.FT.
CENTER LANE TAPER AND LEFT TURN LANE STA.124+25 - STA.126+68 = 836 LIN.FT.

CONSTRUCTION PAVEMENT MARKINGS
HWY. 71B

DBL. YELLOW ON TAPER STA.120+00 - STA. 123+92 = 1568 LIN.FT.
DBL. YELLOW ON CENTERLINE STA.123+92 - STA. 127+00 = 616 LIN.FT.
DBL. YELLOW ON TAPER STA.127+00 - STA. 130+40 = 1360 LIN.FT.
TURN ARROW = 1 EACH
STOP LINE AT STA. 130+40 = 12 LIN.FT.
RT. EDGE LINE STA.112+60 - STA. 130+00 = 1740 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (YEL/YEL) 40' O.C. ON CENTERLINE/CENTER LANE MARKINGS = 44 EACH

RELOCATION OF PRECAST CONCRETE BARRIER
LT. OF TRAFFIC ON MOT RAMP 2= 1299 LIN.FT.

STAGE 4 - WORK ON CENTER OF INTERCHANGE

NOTE: TEMPORARY SIGNAL MUST BE INSTALLED AND OPERATIONAL PRIOR TO CHANGING THE TRAFFIC PATTERN TO THE STAGE 4 CONFIGURATION.

A: REMOVE CONCRETE ISLANDS FROM EXIST. HWY. 71B APPROACH TO ROUNDABOUT AND INSTALL TEMPORARY SIGNAL.
B: SHIFT HWY. 71 SB & HWY.71B NB TRAFFIC ONTO NEW HWY. 71B PAVEMENT. STRIPE FOR 3 LANES. WIDENING TO FOUR FOR DOUBLE LEFT TURN ONTO TEMPORARY RAMP 2 CONNECTOR AT ROUNDABOUT.
REMOVE EXISTING HWY. 71 BRIDGES AND PAVEMENT FROM ALL UNUSED ROADWAYS.
REMOVE 400' FROM LEFT OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH ROUNDABOUT.
CONSTRUCT REMAINDER OF NEW INTERCHANGE.
CONSTRUCT SEXTUPLE RC BOX CULVERT AT STATION 1129+23.
CONSTRUCT NEW HWY. 549 MAIN LANES AND BRIDGE FROM McKISIC CREEK TO TIE-IN POINT AT I-49 EXISTING LANES.
CONSTRUCT RIGHT SIDE OF HWY. 71B AND CONSTRUCT TURNOUTS FOR SPUI RAMPS 2 & 3.

NOTE: REFER TO ADVANCE WARNING SIGN PLACEMENT SHEET FOR SIGNS REQUIRED FOR RT. LANE CLOSURE HWY. 71B NORTHBOUND.

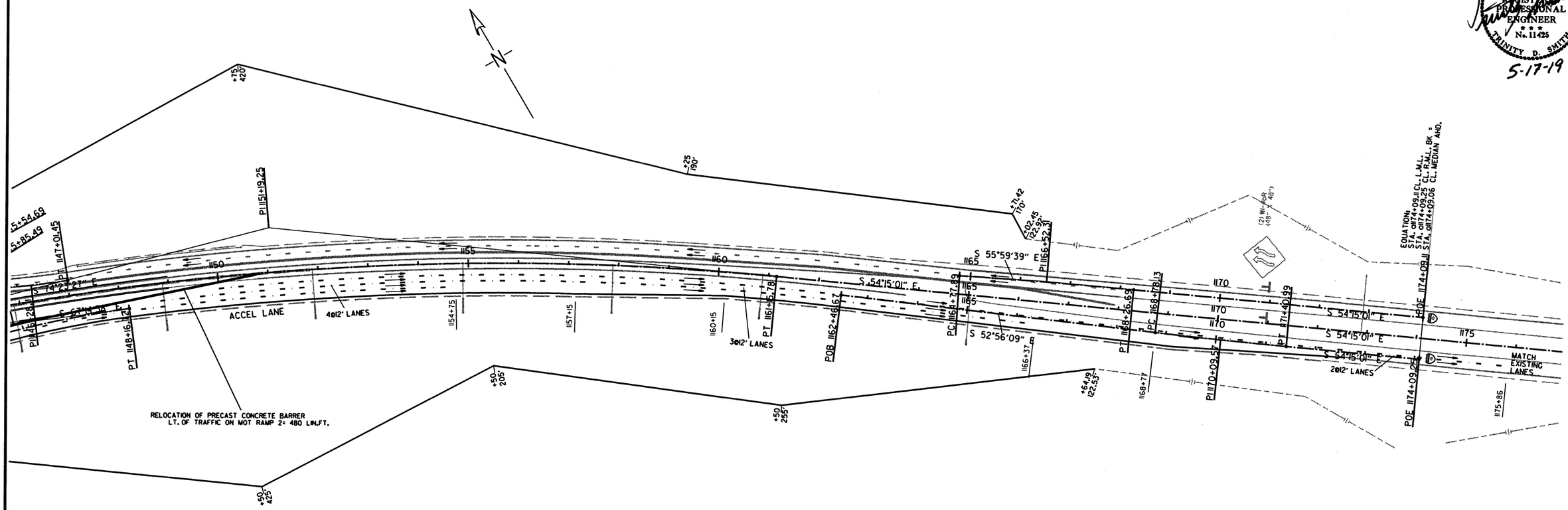
MAINTENANCE OF TRAFFIC STAGE 4B

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(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



CONSTRUCTION PAVEMENT MARKINGS
MAIN LANES AND RAMP 2 ACCEL. LANE

RT. & LT. EDGE LINES AND VARIOUS LANE DIVIDERS
STA.1146+65.38 - STA.1175+86 = 7277 LIN.FT.

RAISED PAVEMENT MARKERS
TYPE II (WHITE/RED) 40' O.C. ON SKIP LANE DIVIDER = 71 EACH

RELOCATION OF PRECAST CONCRETE BARRER
LT. OF TRAFFIC ON MOT RAMP 2= 480 LIN.FT.

STAGE 4 - WORK ON CENTER OF INTERCHANGE

NOTE: TEMPORARY SIGNAL MUST BE INSTALLED AND OPERATIONAL PRIOR TO CHANGING THE TRAFFIC PATTERN TO THE STAGE 4 CONFIGURATION.

A: REMOVE CONCRETE ISLANDS FROM EXIST. HWY. 71B APPROACH TO ROUNDABOUT AND INSTALL TEMPORARY SIGNAL.
B: SHIFT HWY. 71 SB & HWY. 71B NB TRAFFIC ONTO NEW HWY. 71B PAVEMENT.
STRIPE FOR 3 LANES, WIDENING TO FOUR FOR DOUBLE LEFT TURN ONTO TEMPORARY RAMP 2 CONNECTOR AT ROUNDABOUT.
REMOVE EXISTING HWY. 71 BRIDGES AND PAVEMENT FROM ALL UNUSED ROADWAYS.
REMOVE 400' FROM LEFT OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH ROUNDABOUT.
CONSTRUCT REMAINDER OF NEW INTERCHANGE.
CONSTRUCT SEXTUPLE RC BOX CULVERT AT STATION 1129+23.
CONSTRUCT NEW HWY. 549 MAIN LANES AND BRIDGE FROM McKISIC CREEK TO TIE-IN POINT AT I-49 EXISTING LANES.
CONSTRUCT RIGHT SIDE OF HWY. 71B AND CONSTRUCT TURNOUTS FOR SPUI RAMPS 2 & 3.

MAINTENANCE OF TRAFFIC STAGE 4B

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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.		CA0903	77	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

REMOVAL OF PERMANENT PAVEMENT MARKINGS
I-549 RT.
STA. 1020+72 - STA. 1118+43 = 32,000 LIN. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
I-549 LT.
STA. 1135+00 - STA. 1168+00 = 7425 LIN. FT.

STAGE 5 - ISLAND CONSTRUCTION AND DEMOLITION WORK
INSTALL CONSTRUCTION PAVEMENT MARKINGS AND CHANGE TRAFFIC PATTERN TO BEGIN USING NEWLY CONSTRUCTED HWY.-549 MAIN LANES AND HWY. 71B INTERCHANGE.
REBUILD MEDIAN ISLAND CL. HWY. 71B STA. 150+47 - STA. 157+00.
CONSTRUCT ISLAND AT SPUI RAMP TURNOUT TO HWY. 71B.
CLOSE AND REMOVE TEMPORARY CONNECTION TO EXIST. RAMP 4/SPUI RAMP 2.
REMOVE PAVEMENT FROM EXIST. RAMP 2/MOT RAMP 3.
REMOVE REMAINING 145' OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH EXISTING RAMP 2.

6" WHITE EDGE LINES
6" YELLOW EDGE LINES
6" SKIP LANE DIVIDERS, THROUGH LANES
6" WHITE DOTTED LANE DIVIDERS, RAMP 4
PC 1104+79.19
PI 1105+44.38
PC 1106+97.49
PT 1107+13.96
PI 1108+80.00
PC 1108+80.00
PT 1108+98.82
PC 1109+47.82
PT 1109+68.99
PI 1109+39.23
PC 1110+29.55
PT 1110+68.99
S 80°06'05" E
S 68°40'51" E
PC 1113+44.10
PI 1116+92.98
PI 1117+82.94
PC 1120+73.22
PT 1121+05.39
PC 1124+70.81
PI 1127+68.19
PC 1135+92.28
PI 1136+57.81
PC 1136+57.81
PI 1139+18.53
PC 1141+77.84
PT 1142+11.12
PC 1143+50.95
S 74°23'27" E
S 63°59'26" E
N 13°36'35" E
R=1000.00'
D=6°-47'
410'
280'
60'
98'
ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. MRT.
MOT RAMP 3 REMOVE PAVEMENT
17 TRAFFIC DRUMS 30' O.C.
33 TRAFFIC DRUMS 30' O.C.
16' BARR. TYP. MRT. 16' BARR. TYP. MLT.
EXIST. RAMP 4 REMOVE
DBL. 6" YELLOW CENTERLINE
6" WHITE SOLID LANE DIVIDER
DOTTED 6" WHITE
STA. JM3+00 TIE POINT TO EXISTING PAVEMENT
RAMP 1
RAMP 2
RAMP 3
RAMP 4

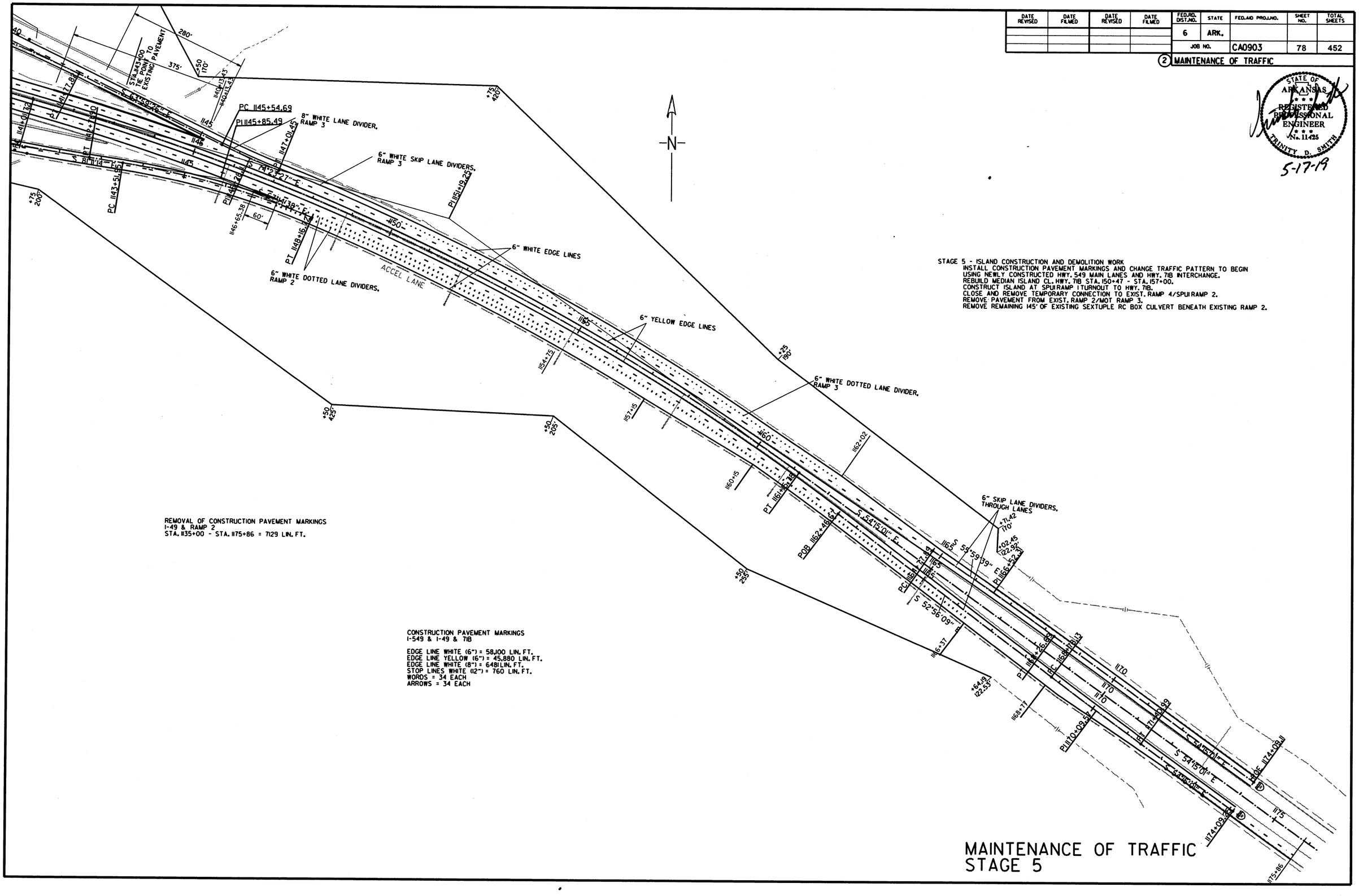
MAINTENANCE OF TRAFFIC
STAGE 5

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	78	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



STAGE 5 - ISLAND CONSTRUCTION AND DEMOLITION WORK
INSTALL CONSTRUCTION PAVEMENT MARKINGS AND CHANGE TRAFFIC PATTERN TO BEGIN USING NEWLY CONSTRUCTED HWY. 549 MAIN LANES AND HWY. 71B INTERCHANGE.
REBUILD MEDIAN ISLAND CL. HWY. 71B STA. 150+47 - STA. 157+00.
CONSTRUCT ISLAND AT SPUI RAMP 1 TURNOUT TO HWY. 71B.
CLOSE AND REMOVE TEMPORARY CONNECTION TO EXIST. RAMP 4/SPUI RAMP 2.
REMOVE PAVEMENT FROM EXIST. RAMP 2/MOT RAMP 3.
REMOVE REMAINING 145' OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH EXISTING RAMP 2.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
I-49 & RAMP 2
STA. 1135+00 - STA. 1175+86 = 7129 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS
I-549 & I-49 & 71B

EDGE LINE WHITE (6") = 58,100 LIN. FT.
EDGE LINE YELLOW (6") = 45,880 LIN. FT.
EDGE LINE WHITE (8") = 6481 LIN. FT.
STOP LINES WHITE (12") = 760 LIN. FT.
WORDS = 34 EACH
ARROWS = 34 EACH

MAINTENANCE OF TRAFFIC STAGE 5

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	79	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
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REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS
HWY. 71B
STA. 112+60 - STA. 159+27 = 18,939 LIN. FT.
ARROWS = 7 EACH
WORDS = 6 EACH

UNDISTURBED STRIPING
CENTER LANE AND SOUTHBOUND LANES
STA. 120+00-SOUTH

100' TRANSITION

6" WHITE SKIP LANE DIVIDERS

6" WHITE EDGE LINES

CPM RT. EDGE LINE

CPM CONTINUOUS LT. TURN LANE

CPM WHITE SKIP LANE DIVIDERS

CONTINUOUS LT.TURN LANE

135.5' TRANSITION

DBL.6" YELLOW CENTERLINE

CPM DBL. SOLID YELLOW MEDIAN EDGE LINES

EXIST. RAMP 4 REMOVE

ROAD CLOSED

8 TRAFFIC DRUMS 30' O.C.

DBL.6" YELLOW TAPER

312.79' TAPER

6" WHITE SKIP LANE DIVIDERS

6" WHITE SOLID LANE DIVIDER

DOTTED (6" WHITE)

17 TRAFFIC DRUMS 30' O.C.

CPM STOP BAR

CPM RAT-TRACKS

DOTTED (6" WHITE)

DBL.6" CENTERLINE

6" WHITE SOLID LANE DIVIDER

6" WHITE SKIP LANE DIVIDERS

DBL.6"

RAMP 4

RAMP 1

N 49°48'48" W

414.96'

PI 135+90.39

N 49°48'48" W

T.C.E.

+50.00 109+83.43 1048.61'

+17.00 995.1'

+47.21 936.40'

+00.00 960'

+75.68 876.86'

+20.61 BEND 1.80° C of A

+00.00 132+00

+82.55 82.17'

+16.64 0.00'

+99.19 0.00'

+80.38 315'

+45.81 230.63'

+80.38 315'

+53.48 72.92'

+80.38 68.39'

+86.51 78.62'

+83.35 88.70'

+95.32 172.92'

+85.32 68.39'

+85.51 78.62'

+83.35 88.70'

+13.35 88.70'

+64.25

+80.38 315'

+53.48 172.92'

+85.32 68.39'

+85.51 78.62'

+83.35 88.70'

+13.35 88.70'

+64.25

+80.38 315'

+53.48 172.92'

+85.32 68.39'

+85.51 78.62'

+83.35 88.70'

+13.35 88.70'

+64.25

PT 144+01.61

PT 1144+01.61

PC 159+27.46

563.83'

PI 163+75.83

165+64.5 EXISTING

147+00

120+71.22

PT 1121+05.38

120+71.22

PT 1121+05.38

RAMP 4

RAMP 1

NOTE:
RETAIN SB LANES STRIPING
NORTH OF B.E.J50+90

34 TRAFFIC DRUMS
50' O.C.
BOTH SIDES OF
MEDIAN CONSTRUCTION

STAGE 5 - ISLAND CONSTRUCTION AND DEMOLITION WORK
INSTALL CONSTRUCTION PAVEMENT MARKINGS AND CHANGE TRAFFIC PATTERN TO BEGIN USING NEWLY CONSTRUCTED HWY. 549 MAIN LANES AND HWY. 71B INTERCHANGE.
REBUILD MEDIAN ISLAND CL. HWY. 71B STA. 150+47 - STA. 157+00.
CONSTRUCT ISLAND AT SPUI RAMP 1 TURNOUT TO HWY. 71B.
CLOSE AND REMOVE TEMPORARY CONNECTION TO EXIST. RAMP 4/SPUI RAMP 2.
REMOVE PAVEMENT FROM EXIST. RAMP 2/MOT RAMP 3.
REMOVE REMAINING 145' OF EXISTING SEXTUPLE RC BOX CULVERT BENEATH EXISTING RAMP 2.

21 TRAFFIC DRUMS
25' O.C.
BOTH SIDES OF
MEDIAN TAPER

6" WHITE SKIP LANE DIVIDERS

6" WHITE SOLID LANE DIVIDER

DBL.6" YELLOW TAPER

CPM STOP LINES

DOTTED (6" WHITE)

CPM WHITE SKIP LANE DIVIDERS

DBL.6" CENTERLINE

DBL.6" YELLOW CENTERLINE

CPM SOLID WHITE LANE DIVIDER

CPM DBL. YELLOW CENTERLINE

CPM DBL YELLOW TAPER EDGES

CPM RT. EDGE LINE

11 TRAFFIC DRUMS
30' O.C.

CPM SKIP LANE DIVIDER

6" YELLOW INSIDE EDGE LINE (BOTH DIRECTIONS)

6" WHITE OUTSIDE EDGE LINE (NORTHBOUND ONLY)

6" WHITE SKIP LANE DIVIDER

155+75.65 RAMP

MOT RAMP 3 REMOVE PAVEMENT

154+16 EXIST.

157+85.9 EXIST.

155+64.5 HWY. 71B CL CONST.

160+00 CONST. 160+7.6 EXIST.

MAINTENANCE OF TRAFFIC
STAGE 5

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				6	ARK.			
				JOB NO.		CA0903	80	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

CONTINUE PERMANENT PAVEMENT MARKINGS AS TYPICAL

6" WHITE EDGE LINES

6" YELLOW EDGE LINES

6" SKIP LANE DIVIDERS, THROUGH LANES

8" WHITE DOTTED LANE DIVIDERS RAMP 4

PERMANENT PAVEMENT MARKINGS
I-549 & I-49

ENHANCED THERMOPLASTIC PAVEMENT MARKINGS
EDGE LINE WHITE (6") = 39,065 LIN. FT.
SKIP LINE WHITE (6") = 9,396 LIN. FT.
EDGE LINE YELLOW (6") = 3654 LIN. FT.
LANE DIVIDER WHITE (8") = 2354 LIN. FT.
DOTTED LANE DIVIDER WHITE (8") = 4655 LIN. FT.

THERMOPLASTIC PAVEMENT MARKINGS
ISLAND OUTLINE WHITE (8") = 2775 LIN. FT.
CROSSWALKS WHITE (12") = 760 LIN. FT.
STOP LINE WHITE (24") = 176 LIN. FT.
WORDS = 24 EACH
ARROWS = 24 EACH

REFLECTORIZED PAINT PAVEMENT MARKINGS
ISLAND CURB WHITE (10") = 2010 LIN. FT.

RAISED PAVMENT MARKERS
TYPE II (WHITE/RED) = 110 EACH
TYPE II (YEL/YEL) = 75 EACH

DOTTED (6" WHITE)

6" WHITE SOLID LANE DIVIDER

6" WHITE SKIP LANE DIVIDES

DBL. 6" YELLOW CENTERLINE

RAMP 1

RAMP 2

RAMP 3

RAMP 4

GATE

PERMANENT PAVEMENT MARKINGS

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	81	452

(2) MAINTENANCE OF TRAFFIC

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

N

PC 1143+51.85
PT 1144+01.72
PC 1142+49.90
PT 1143+00.77
S 81°11'14" E
280'
375'
1140+34.43
1140+34.43
PC 1145+54.69
P.I. 1145+85.49
8" WHITE LANE DIVIDER, RAMP 3
1147+01.45
6" WHITE SKIP LANE DIVIDERS, RAMP 3
P.I. 1151+19.25
S 74°23'21" E
S 74°24'38" E
1146+65.38
60'
1147+25.38
PT 1148+16.24
8" WHITE DOTTED LANE DIVIDERS, RAMP 2
6" WHITE EDGE LINES
6" YELLOW EDGE LINES
1154+75
1157+45
6" WHITE DOTTED LANE DIVIDER, RAMP 3
1160+15
PT 1161+65.78
POB 1162+46.67
1162+62
6" SKIP LANE DIVIDERS, THROUGH LANES
S 54°15'01" E
1165
S 5°58'39" E
P.I. 1166+52.31
PC 1165+77.93
PT 1165+97.93
S 52°56'09" E
1165+37
1168+77
PT 1168+16.68
PC 1169+18.13
P.I. 1170+09.57
1170
1170
1170
1174+09.91
S 54°15'01" E
S 54°15'01" E
POE 1174+09.91
1174+09.91
1175
1175+86
+75 420'
+75 200'
+50 170'
+50 425'
+50 255'
+25 190'
+30 295'
+11.42 170'
+02.45 122.92'
+64.19 122.53'

PERMANENT PAVEMENT MARKINGS

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	82	452

(2) MAINTENANCE OF TRAFFIC

PERMANENT PAVEMENT MARKINGS
I-549 & I-49
THERMOPLASTIC PAVEMENT MARKINGS
EDGE LINE WHITE (6") = 5154 LIN. FT.
SKIP LINE WHITE (6") = 1960 LIN. FT.
EDGE LINE YELLOW (6") = 1560 LIN. FT.
DBL LANE DIVIDER YELLOW (6") = 5590 LIN. FT.
PAINTED MEDIAN YELLOW (6") = 2025 LIN. FT.
DOTTED LANE DIVIDER WHITE (8") = 2000 LIN. FT.
STOP LINE WHITE (24") = 107 LIN. FT.
WORDS = 10 EACH
ARROWS = 10 EACH

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

100' TRANSITION
6" WHITE SKIP LANE DIVIDERS
6" WHITE EDGE LINES
N 49°48'48" W
T.C.E.
DBL.6" YELLOW TAPER
312.79' TAPER
DOTTED (6" WHITE)
6" WHITE SOLID LANE DIVIDER
PI 136+90.39
N 49°48'48" W
414.96'
175.5' TRANSITION
6" WHITE SKIP LANE DIVIDERS
DBL.6" YELLOW CENTERLINE
CONTINUOUS LT. TURN LANE
DOTTED (6" WHITE)
POE 1125+46.18
POB 1125+28.16 DBL.6" CENTERLINE
DBL.6" CENTERLINE
RAMP A
RAMP 1
6" WHITE SOLID LANE DIVIDER
6" WHITE SKIP LANE DIVIDERS
DBL.6" YELLOW TAPER
DBL.4" YELLOW CENTERLINE
6" YELLOW INSIDE EDGE LINES
6" WHITE OUTSIDE EDGE LINE
6" WHITE SKIP LANE DIVIDER
PC 159+27.46
N 41°15'08" W
563.83'
PT 164+90.89

PERMANENT PAVEMENT MARKINGS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	83	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	STAGE 1C	STAGE 2A	STAGE 2B	STAGE 3A	STAGE 3B	STAGE 4A	STAGE 4B	STAGE 5	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	PORTABLE CHANGEABLE MESSAGE SIGN
			LIN. FT. - EACH											NO.	SQ. FT.	EACH	EACH		RIGHT	LEFT	LIN. FT.			EACH		
W20-1	ROAD WORK 1 MILE	48"x48"	2	2	2	2	2	2	2	2	2	2	2	2	32.0											
W20-1	ROAD WORK 1/2 MILE	48"x48"	2	2	2	2	2	2	2	2	2	2	2	2	32.0											
W20-1	ROAD WORK 1500 FT.	48"x48"	7	7	7	7	7	7	7	7	7	7	7	7	112.0											
W20-1	ROAD WORK 1000 FT.	48"x48"	5	5	5	5	5	5	5	5	5	5	5	5	80.0											
W20-1	ROAD WORK 500 FT.	48"x48"	5	5	5	5	5	5	5	5	5	5	5	5	80.0											
G20-2	END ROAD WORK	48"x24"	7	7	7	7	7	7	7	7	7	7	7	7	56.0											
W1-4BR	REVERSE CURVE RT. (2 LANES)	48"x48"					2	2	2	2	2		2	2	32.0											
R11-2	ROAD CLOSED	48"x30"	1	1	2	4	4	9	9	9	12	3	12	12	120.0											
E5-2A	EXIT CLOSED	48"x36"				2	2	2	2	2	1		2	2	24.0											
OM-3L	OBJECT MARKER	12"x36"	9	12	12	12	12	18	18	18	22		22	22	66.0											
OM-3R	OBJECT MARKER	12"x36"	8	12	12	12	12	20	20	20	8		20	20	60.0											
W1-6	LARGE ARROW	48"x24"						2	3	3	1	1	3	3	24.0											
W22-1	BLASTING ZONE AHEAD	48"x48"		5				5	5				5	5	80.0											
W22-2	TURN OFF 2-WAY RADIO AND CELL PHONE	42"x36"		5				5	5				5	5	52.5											
W22-3	END BLASTING ZONE	42"x36"		5				5	5				5	5	52.5											
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"											2	2	64.0											
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE												10			10										
	VERTICAL PANELS							13					13				13									
	TRAFFIC DRUMS		9	51	43	121	54	227	241	261	153	137	261					261								
	TYPE II BARRICADE-RT. (16')				1	2		6	5	5	9	3	9						144							
	TYPE II BARRICADE-LT. (16')						1	3	3	3	9	1	9							144							
	TYPE II BARRICADE-LT. (24')					1	1	1	1	1	1		1							24							
	TYPE II BARRICADE-RT. (32')								1	1			1						32							
	TYPE II BARRICADE-LT. (32')		1	1	1	1	1	2	2	2	1		2							64							
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		9325	3579	560		80	4232					17776								17776					
	RELOCATING PRECAST CONCRETE BARRIER		440		313	353	3619		146		2139		7010									7010				
	TEMPORARY IMPACT ATTENUATION BARRIER		1	1	1			1					4										4			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1	1	2	1		1					6											6		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)				1	1							2												2	
	PORTABLE CHANGEABLE MESSAGE SIGN					3	3	3	3	3	3		3													150
TOTALS:															967.0	10	13	261	176	232	17776	7010	4	6	2	150

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

CONSTRUCTION PAVEMENT MARKINGS

DESCRIPTION	STAGE 1A	STAGE 1B	STAGE 1C	STAGE 2A	STAGE 2B	STAGE 3A	STAGE 3B	STAGE 4A	STAGE 4B	STAGE 5	REMOVAL OF PERMANENT PAVEMENT MARKINGS	REMOVAL OF PERMANENT PAVEMENT MARKINGS		CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS	RAISED PAVEMENT MARKERS
												WORDS	ARROWS		WORDS	ARROWS		WORDS	ARROWS	TYPE II (WHITE/RED)	TYPE II (YEL/YEL)
	LIN. FT. - EACH										LIN. FT.	EACH		LIN. FT.	EACH		LIN. FT.	EACH		EACH	EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2250	1785	1695		694	8491			3600	32000	50515										
REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)						7			4			11									
REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)						9			7				16								
CONSTRUCTION PAVEMENT MARKINGS	9450	2015	3634		13757	15734	2155		33193	113520				193458							
CONSTRUCTION PAVEMENT MARKINGS (WORDS)									4	34					38						
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)									5	34						39					
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			1740		5310		2250		9272	27000							45572				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS (WORDS)										6								6			
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS (ARROWS)										7									7		
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	63				71	71			74											279	
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)									114												114
TOTALS:											50515	11	16	193458	38	39	45572	6	7	279	114

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

PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 6	RAISED PAVEMENT MARKERS		ENHANCED THERMOPLASTIC PAVEMENT MARKING			THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING
		TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	6" WHITE	6" YELLOW	8" WHITE	6" WHITE	6" YELLOW	8" WHITE	12" WHITE	24" WHITE	WORDS	ARROWS	10" WHITE
		EACH		LIN. FT.								EACH		LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	1110	1110												
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)	75		75											
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	48461			48461										
ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	36541				36541									
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")	7009					7009								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")	7114						7114							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	9175							9175						
THERMOPLASTIC PAVEMENT MARKING WHITE (8")	4775								4775					
THERMOPLASTIC PAVEMENT MARKING WHITE (12")	760									760				
THERMOPLASTIC PAVEMENT MARKING WHITE (24")	283										283			
THERMOPLASTIC PAVEMENT MARKING WORDS	34											34		
THERMOPLASTIC PAVEMENT MARKING ARROWS	34												34	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	2010													2010
TOTALS:		1110	75	48461	36541	7009	7114	9175	4775	760	283	34	34	2010

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

4" PIPE UNDERDRAINS

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
*		ENTIRE PROJECT TO BE USED IF AND	2000	9
		WHERE DIRECTED BY THE ENGINEER		
TOTALS:			2000	9

* NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

UNDERDRAINS SHALL BE STUBBED INTO THE PROPOSED DROP INLET IF AND WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS TO BE INCLUDED IN THE UNIT PRICE BID FOR 4" PIPE UNDERDRAINS.

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	84	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	RETAINING WALLS	CONCRETE PAVEMENT	CONCRETE ISLANDS	CONCRETE DITCH PAVING	CONCRETE DRIVEWAYS	WALKS	FOUNDATIONS	GUARDRAIL	PCCB WALL LEFT IN PLACE	CONCRETE MEDIAN BARRIER	PARAPET WALLS	IMPACT ATTENUATION BARRIER	APPROACH SLAB & GUTTERS	APPROACH GUTTERS	PLOWABLE PAVEMENT MARKER
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH
147+30	149+42	RT. OF CL. EXIST. RAMP 2									200							
151+94	152+69	RT. OF CL. EXIST. RAMP 2									75							
141+88	142+08	LT. OF CL. EXIST. RAMP 2					9											
147+30	149+42	LT. OF CL. EXIST. RAMP 2									200							
151+91	152+66	LT. OF CL. EXIST. RAMP 2									75							
149+00	149+36	CL. EXIST. RAMP 2															2	
151+78	152+14	CL. EXIST. RAMP 2															2	
303+20	141+85	EXIST. RAMP 2 / EXIST. RAMP 1 MEDIAN											760					
117+86	132+60	CL. EXIST. HWY. 71 - MEDIAN											1474					
130+95	132+95	RT. OF CL. EXIST. HWY. 71									200							
132+75		LT. OF CL. EXIST. HWY. 71														1		
132+85		RT. OF CL. EXIST. HWY. 71														1		
135+00		LT. OF CL. EXIST. HWY. 71														1		
135+10		RT. OF CL. EXIST. HWY. 71														1		
134+84	136+78	LT. OF CL. EXIST. HWY. 71									200							
134+85	148+75	CL. EXIST. HWY. 71 - MEDIAN											1390					
135+09	135+88	RT. OF CL. EXIST. HWY. 71									75							
135+42	135+60	RT. OF CL. EXIST. HWY. 71					17											
135+91	143+98	LT. OF CL. EXIST. HWY. 71 - LT. OF EXIST. RAMP 3										900						
135+95	141+32	RT. OF CL. EXIST. HWY. 71					434								1			
140+50		RT. OF CL. EXIST. HWY. 71												230				
140+57	142+95	RT. OF CL. EXIST. HWY. 71												105				
140+57	141+38	RT. OF CL. EXIST. HWY. 71 - LT. OF EXIST. RAMP 1																
141+38	142+12	RT. OF CL. EXIST. HWY. 71 - LT. OF EXIST. RAMP 1									175							
141+95	142+15	RT. OF CL. EXIST. HWY. 71 - LT. OF EXIST. RAMP 1					20											
142+95	143+10	RT. OF CL. EXIST. HWY. 71					40											
143+98	146+36	LT. OF CL. EXIST. HWY. 71		247														
146+36	150+64	LT. OF CL. EXIST. HWY. 71												436				
148+74	157+10	CL. EXIST. HWY. 71 - MEDIAN				1050												
148+98	150+98	RT. OF CL. EXIST. HWY. 71									200							
120+90	121+50	LT. OF CL. HWY. 71B						100										
124+90	137+33	LT. & RT. OF CL. HWY. 71B - ALL ROUNDABOUT C&G	4390															
125+97	129+58	RT. OF CL. HWY. 71B									478							
126+80	129+00	RT. OF CL. HWY. 71B							387									
128+30	132+05	RT. OF CL. HWY. 71B - RA ISLAND				440												
128+67	129+95	RT. OF CL. HWY. 71B - RA ISLAND				281												
131+75	132+25	RT. OF CL. HWY. 71B - RA ISLAND				82												
134+00		LT. OF CL. HWY. 71B					11											
134+20	136+40	RT. OF CL. HWY. 71B							329									
134+60		RT. OF CL. HWY. 71B					20											
136+40	140+40	RT. OF CL. HWY. 71B							555									
136+45	139+90	RT. OF CL. HWY. 71B		335														
138+54	140+52	RT. OF CL. HWY. 71B		191														
139+90	140+05	RT. OF CL. HWY. 71B					22											
144+55	145+00	LT. OF CL. HWY. 71B						125										
145+60	145+95	LT. OF CL. HWY. 71B						70										
150+72		RT. OF CL. HWY. 71B															1	
150+72		LT. OF CL. HWY. 71B															1	
1088+41	1105+67	LT. OF CL. HWY. 549					2131											
1096+60		LT. OF CL. HWY. 549								288								
1130+33	1131+20	LT. & RT. OF CL. HWY. 549					50											
1131+28	1131+50	RT. OF CL. HWY. 549 - RA ISLAND				42												
1131+44	1133+66	RT. OF CL. HWY. 549 - RA TRUCK APRON			785													
1132+38	1133+24	RT. OF CL. HWY. 549 - RA ISLAND				387												
1133+01		LT. OF CL. HWY. 549													1			
1133+87	1134+42	RT. OF CL. HWY. 549 - RA ISLAND				83												
1144+80	1174+09	LT. & RT. OF CL. HWY. 549 - EXIST. I-49 NB & SB																73
1118+49	1119+94	RT. OF CL. SPUI RAMP 1									145							
1118+49	1121+22	LT. OF CL. SPUI RAMP 1									273							
1133+75	1142+93	RT. & LT. OF CL. SPUI RAMP 2					785											
1140+00	1145+90	RT. OF CL. SPUI RAMP 2					395											
1133+22	1135+15	LT. OF CL. SPUI RAMP 3					133											
1143+46	1145+00	LT. OF CL. SPUI RAMP 3					98											
TOTALS:			4390	773	785	2365	4165	295	1271	288	2296	900	3624	771	2	4	6	73

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
1021+00	1028+00	HWY. 549	7	7
1030+00	1036+00	HWY. 549	6	6
1037+00	1041+00	HWY. 549	4	4
1046+00	1063+00	HWY. 549	17	17
1064+00	1075+00	HWY. 549	11	11
1081+00	1084+00	HWY. 549	3	3
1103+00	1105+00	HWY. 549	2	2
1119+00	1125+00	HWY. 549	6	6
1127+00	1131+00	HWY. 549	4	4
1134+00	1172+00	HWY. 549	38	38
124+00	132+00	HWY. 71B	8	8
TOTALS:			106	106

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
132+99	134+88	SITE NO. 1 - EXIST. HWY. 71	1.00
132+91	134+80	SITE NO. 2 - EXIST. HWY. 71	1.00

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	85	452

(2) QUANTITIES

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	BOX CULVERTS	DROP INLETS
			EACH	EACH	EACH
1132+59	HWY. 549	DI RT. OF CL. W/ PIPE OUTLET	1		1
1132+71	HWY. 549	DI LT. OF CL. W/ PIPE OUTLET	1		1
1133+37	HWY. 549	DI LT. OF CL. W/ PIPE OUTLET	1		1
1133+43	HWY. 549	DI RT. OF CL. W/ PIPE OUTLET	1		1
1125+67	RAMP 1 SPUI	LT. SIDE DRAIN	1		
1134+10	RAMP 2 SPUI	EXIST. RAMP 4 CROSS DRAIN	1		
1134+30	RAMP 2 SPUI	DI RT. OF CL. W/ PIPE OUTLET	1		1
1132+40	RAMP 3 SPUI	DI LT. OF CL. W/ PIPE OUTLET	1		1
1132+72	RAMP 3 SPUI	DI LT. OF CL. W/ PIPE OUTLET	1		1
1133+03	RAMP 3 SPUI	DI LT. OF CL. W/ PIPE OUTLET	1		1
1133+20	RAMP 3 SPUI	SIDE DRAIN LT. OF CL.	1		
121+20	HWY. 71B	LT. SIDE DRAIN	2		
123+00	HWY. 71B	LT. SIDE DRAIN	1		
123+90	HWY. 71B	LT. SIDE DRAIN	1		
126+82	HWY. 71B	DI RT. OF CL. W/ PIPE OUTLET	1		1
127+10	HWY. 71B	LT. SIDE DRAIN	1		
128+11	HWY. 71B	DI RT. OF CL. W/ PIPE INLET & OUTLET	2		1
128+60	HWY. 71B	MC KISSIC CREEK RD. CROSS DRAIN	1		
128+69	HWY. 71B	DI RT. OF CL. W/ PIPE OUTLET	1		1
130+99	HWY. 71B	DI RT. OF CL. W/ PIPE OUTLET	1		1
132+00	HWY. 71B	R.C.B. RT. OF CL.		1	
133+22	HWY. 71B	DI RT. OF CL. W/ PIPE OUTLET	1		1
134+00	HWY. 71B	DI LT. OF CL. W/ PIPE OUTLET	1		1
134+77	HWY. 71B	DI RT. OF CL. W/ PIPE OUTLET	1		1
134+99	HWY. 71B	DI LT. OF CL. W/ PIPE OUTLET	1		1
135+65	HWY. 71B	DI LT. OF CL. W/ PIPE OUTLET	1		1
136+04	HWY. 71B	DI LT. OF CL. W/ PIPE OUTLET	1		1
139+90	HWY. 71B	MC KISSIC CREEK RD. CROSS DRAIN	1		
144+84	HWY. 71B	LT. SIDE DRAIN	1		
145+80	HWY. 71B	LT. SIDE DRAIN	1		
132+70	EXIST. HWY. 71	DI RT. OF CL. W/ PIPE OUTLET	1		1
135+35	EXIST. HWY. 71	DI RT. OF CL. W/ PIPE OUTLET	1		1
135+97	EXIST. HWY. 71	MEDIAN DI W/ RCP OUTLET	1		1
136+97	EXIST. HWY. 71	MEDIAN DI W/ RCP OUTLET	1		1
141+15	EXIST. HWY. 71	R.C.B. W/ DI		1	1
141+58	EXIST. HWY. 71	EXIST. HWY. 71 RAMP 1 CROSS DRAIN	1		
143+04	EXIST. HWY. 71	DI RT. OF CL. W/ PIPE OUTLET	1		1
144+22	EXIST. HWY. 71	DI W/ RCP OUTLET	1		1
145+30	EXIST. HWY. 71	DI IN MEDIAN W/ RCP OUTLET	1		1
147+97	EXIST. HWY. 71	DI IN MEDIAN W/ RCP OUTLET	1		1
TOTALS:			40	2	27

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

ROCK DITCH LINER, DUMPED RIPRAP, AND FILTER BLANKET

STATION	STATION	LOCATION	LENGTH	WIDTH	ROCK DITCH LINER	DUMPED RIPRAP	DUMPED RIPRAP (GROUTED)	FILTER BLANKET
			LIN. FT.		TON	CU. YD.	CU. YD.	SQ. YD.
1051+87	1053+00	HWY. 549 - LT. OF LML	130	9	156			130
1072+96	1074+23	HWY. 549 - LT. OF LML	182	9	218			182
1081+77	1083+13	HWY. 549 - LT. OF LML	213	9	256			213
1085+00		HWY. 549 - OUTLET OF PIPE CULVERT ON LT.	50	9	60			50
1105+80	1108+47	HWY. 549 - LT. OF LML	303	9	364			303
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			800	100	100	400
TOTALS:					1854	100	100	1278

*NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.		EACH
1118+84.36	1121+03.11	LT. OF RAMP 4 SPUI	150	1	1
1118+84.42	1121+03.17	RT. OF RAMP 4 SPUI	150	1	1
1137+49.40	1140+18.15	LT. OF L.M.L.	200	1	1
1145+10.00	1147+61.00	RT. OF R.M.L.	250	1	1
1159+00.00	1161+00.00	LT. OF L.M.L.	200	1	1
TOTALS:			950	5	5

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
* ENTIRE	PROJECT	IF AND WHERE DIRECTED BY THE ENGINEER	1000.00	888.89
TOTAL:				888.89

NOTE: AVERAGE WIDTH = 8'-0"

* QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

CRASH CUSHION

STATION	LOCATION	EACH
1110+65	RT. SIDE - BETWEEN ML & RAMP 1	1
TOTAL:		1

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	* 5' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.		EACH
1113+40	1113+65	LT. OF L.M.L.	159		1
1113+69	1113+79	LT. OF L.M.L.	37		
1118+70	1118+72	LT. OF L.M.L.		71	
1118+69	144+36	LT. OF L.M.L.		684	1
1134+45	1166+02	LT. OF L.M.L.	3504		
1113+79	1113+89	RT. OF R.M.L.	46		
1118+39	1134+21	RT. OF R.M.L.		2088	1
1118+40	1118+72	RT. OF R.M.L.		78	
1135+81	1167+64	RT. OF R.M.L.	3572		
126+75	133+57	RT. OF HWY. 71B		682	
TOTALS:			7318	3603	3

* DENOTES ALTERNATE BID ITEM.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
1028+85	LT. SIDE MAIN LANES - HEADWALL BOX CULVERT	1
1044+00	LT. SIDE MAIN LANES - HEADWALL BOX CULVERT	1
1107+43	LT. SIDE MAIL LANES - BRIDGE END BR. NO. 07277	1
1113+69	LT. SIDE MAIN LANES - BRIDGE END - BR. NO. 07278	1
1118+76	LT. SIDE RAMP 4 - BRIDGE END - BR. NO. 07280	1
1127+50	LT. SIDE MAIN LANES - BRIDGE END - BR. NO. 07281	1
1130+50	RT. SIDE MAIN LANES - HEADWALL BOX CULVERT	1
133+00	LT. SIDE HWY. 71B - HEADWALL BOX CULVERT	1
TOTAL:		8

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TOPSOIL FURNISHED AND PLACED	SOLID SODDING	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	SLOPE DRAIN (E-12): PIPE FOR SLOPE DRAINS	SLOPE DRAIN (E-12): DUMPED RIPRAP	SEDIMENT BASIN (E-14)	SEDIMENT BASIN (E-9)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	CU. YD.	SQ.YD.	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING											477		288		14195	330	55	5	2505	3530	6035	6710
ENTIRE	PROJECT	STAGE 1B											1197		438	425	4330	1205	255	15				455
ENTIRE	PROJECT	STAGE 1C											90		24									18
ENTIRE	PROJECT	STAGE 3A											477		174	100	1165							47
ENTIRE	PROJECT	STAGE 3B											72		33		185							7
ENTIRE	PROJECT	STAGE 4B											810		282	650	2995							381
ENTIRE	PROJECT	STAGE 5											99		36		530							20
			77.00	154.00	77.00	7871.5	77.00		1385	118.00	118.00	2407.2												
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			19.25	38.50	19.25	1967.9	19.25	27000	346	29.50	29.50	601.8	810	1100	318	300	5850	384	78	5	626	883	1509	1983
TOTALS:			96.25	192.50	96.25	9839.4	96.25	27000	1731	147.50	147.50	3009.0	4032	1100	1593	1475	29250	1919	388	25	3131	4413	7544	9621

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION
DROP INLET SILT FENCE.....25 LIN. FT./LOCATION

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

*QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	86	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	SQ. YD.	M. GAL.
1066+08.00	1066+96.00	HWY. 549 - LT. OF LML	89.00	6.00		59.33	39.56	0.50
1088+40.00	1105+80.00	HWY. 549 - LT. OF LML	1740.00	9.00		1740.00	773.33	9.74
1107+00.00		HWY. 549 - OUTLET OF PIPE CULVERT ON LT.	39.00	6.00		26.00	17.33	0.22
1109+78.00		HWY. 549 - OUTLET OF PIPE CULVERT ON LT.	72.00	6.00		48.00	32.00	0.40
1131+84.00	1140+83.00	RAMP 2 SPUI - RT. OF CL.	906.00	6.00		604.00	402.67	5.07
1136+58.00	1143+00.00	RAMP 3 SPUI - LT. OF CL.	650.00	9.00		650.00	288.89	3.64
125+00.00		HWY. 71B - LT. OF CL.	10.00	4.00		4.44	4.44	0.06
126+50.00		HWY. 71B - LT. OF CL.	10.00	4.00		4.44	4.44	0.06
128+50.00		HWY. 71B - LT. OF CL.	10.00	4.00		4.44	4.44	0.06
129+35.00		HWY. 71B - LT. OF CL.	15.50	4.00		6.89	6.89	0.09
129+65.00		HWY. 71B - LT. OF CL.	15.50	4.00		6.89	6.89	0.09
129+88.00		HWY. 71B - LT. OF CL.	15.50	4.00		6.89	6.89	0.09
146+75.00		HWY. 71B - LT. OF CL.	17.75	4.00		7.89	7.89	0.10
147+29.00		HWY. 71B - LT. OF CL.	37.25	4.00		16.56	16.56	0.21
147+50.00		HWY. 71B - LT. OF CL.	40.25	4.00		17.89	17.89	0.23
148+50.00		HWY. 71B - LT. OF CL.	39.00	4.00		17.33	17.33	0.22
149+50.00		HWY. 71B - LT. OF CL.	22.25	4.00		9.89	9.89	0.12
131+00.00		HWY. 71B - RT. OF CL.	11.75	4.00		5.22	5.22	0.07
132+00.00		HWY. 71B - RT. OF CL.	7.75	4.00		3.44	3.44	0.04
132+88.00		HWY. 71B - RT. OF CL.	24.00	4.00		10.67	10.67	0.13
133+50.00		HWY. 71B - RT. OF CL.	19.50	4.00		8.67	8.67	0.11
140+25.00		HWY. 71B - RT. OF CL.	18.50	6.00		12.33	8.22	0.10
142+50.00		HWY. 71B - RT. OF CL.	134.00	4.00		59.56	59.56	0.75
144+00.00		HWY. 71B - RT. OF CL.	104.50	4.00		46.44	46.44	0.59
145+25.00		HWY. 71B - RT. OF CL.	58.75	4.00		26.11	26.11	0.33
146+75.00		HWY. 71B - RT. OF CL.	17.50	4.00		7.78	7.78	0.10
147+29.00		HWY. 71B - RT. OF CL.	13.00	4.00		5.78	5.78	0.07
147+50.00		HWY. 71B - RT. OF CL.	13.50	4.00		6.00	6.00	0.08
148+50.00		HWY. 71B - RT. OF CL.	10.00	4.00		4.44	4.44	0.06
149+50.00		HWY. 71B - RT. OF CL.	6.50	4.00		2.89	2.89	0.04
* ENTIRE	PROJECT	IF AND WHERE DIRECTED BY THE ENGINEER			1000.00	1000.00	1333.00	16.80
TOTALS:					1000.00	4430.21	3185.55	40.17

* QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

CONCRETE COMBINATION CURB AND GUTTER

FROM STATION	FROM LOCATION	TO STATION	TO LOCATION	TYPE A (1' 6")
				LIN. FT.
119+91	LT. OF HWY. 71B	1126+53	RT. OF RAMP 1	1633
1124+24	LT. OF RAMP 1	1121+40	RT. OF RAMP 4	695
1122+75	LT. OF RAMP 4	150+54	LT. OF HWY. 71B	1035
120+20	RT. OF HWY. 71B	1131+54	RT. OF RAMP 2	1544
1131+09	LT. OF RAMP 2	128+54	RT. OF RAMP 3	633
1128+55	LT. OF RAMP 3	150+54	RT. OF HWY. 71B	1210
TOTAL:				6750

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTERS	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
1107+06.56	1107+43.06	MAIN LANES (PEACH ORCHARD RD.)		177.40	25220	148.50
1107+06.56	1107+43.06	LT. SHOULDER (PEACH ORCHARD RD.)	11.52		623	10.20
1109+39.23	1109+59.23	MAIN LANES (PEACH ORCHARD RD.)		127.50	17940	107.70
1109+39.23	1109+59.23	LT. SHOULDER (PEACH ORCHARD RD.)	7.10		712	5.10
1113+49.94	1113+69.94	MAIN LANES (MCKISIC CREEK)		80.60	9380	54.40
1113+49.94	1113+69.94	LT. SHOULDER (MCKISIC CREEK)	10.80		945	8.50
1113+49.94	1113+69.94	RT. SHOULDER (MCKISIC CREEK)	10.80		945	8.50
1118+72.56	1118+92.56	MAIN LANES (MCKISIC CREEK)		80.60	9380	54.40
1118+72.56	1118+92.56	LT. SHOULDER (MCKISIC CREEK)	10.80		945	8.50
1118+72.56	1118+92.56	RT. SHOULDER (MCKISIC CREEK)	10.80		945	8.50
1113+50.94	1113+70.94	RAMP 4 (MCKISIC CREEK)		26.40	3040	18.70
1113+50.94	1113+70.94	LT. SHOULDER RAMP 4	7.20		680	5.30
1113+50.94	113+70.94	RT. SHOULDER RAMP 4	5.40		530	3.80
1118+76.06	1119+12.56	RAMP 4 (MCKISIC CREEK)		49.15	5556	34.10
1118+76.06	1119+12.56	LT. SHOULDER RAMP 4	11.52		623	10.20
1118+76.06	1119+12.56	RT. SHOULDER RAMP 4	8.25		439	7.30
1124+50.81	1124+70.81	MAIN LANES (HWY. 71B)		81.20	9540	54.40
1124+38.07	1124+58.07	LT. SHOULDER (HWY. 71B)	24.30		2310	8.20
1124+63.55	1124+83.55	RT. SHOULDER (HWY. 71B)	24.30		2310	9.80
1127+68.19	1127+88.19	MAIN LANES (HWY. 71B)		81.20	9540	54.40
1127+55.45	1127+75.45	LT. SHOULDER (HWY. 71B)	24.30		2310	9.80
1127+80.93	1128+00.93	RT. SHOULDER (HWY. 71B)	24.30		2310	8.20
TOTALS:			191.39	704.05	106223	638.50

NOTE: USE T = 14.5"

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	MEDIAN (TYPE B)	MEDIAN (TYPE A)	SIDE (TYPE A)	TEXTURED COATING FINISH
			LIN. FT.			SQ. YD.
1020+72.00	1034+25.11	MEDIAN	1353.11			1153
1034+25.11	1078+22.13	MEDIAN		4397.02		
1078+82.66	1107+06.55	MEDIAN		2823.89		
1109+59.23	1113+57.94	MEDIAN		398.71		
1118+92.56	1124+50.23	MEDIAN		557.67		
1127+88.77	1149+00.00	MEDIAN	2111.23			1798
1110+09.65	1113+57.94	LT. OF L.M.L.			348.29	297
1118+92.56	1124+37.49	LT. OF L.M.L.			544.93	464
1127+76.03	1137+50.00	LT. OF L.M.L.			973.97	830
1110+71.55	1113+57.94	RT. OF R.M.L.			286.39	244
1118+92.56	1124+62.97	RT. OF R.M.L.			570.41	486
1128+01.51	1143+00.00	RT. OF R.M.L.			1498.49	1276
1147+61.00	1159+00.00	LT. OF L.M.L.			1139.00	970
1147+61.00	1161+00.00	RT. OF R.M.L.			1339.00	1141
1110+68.50	1113+79.93	LT. OF RAMP 1 SPUI			311.43	265
1118+42.00	1126+53.31	RT. OF RAMP 1 SPUI			811.31	691
1109+62.97	1113+50.94	LT. OF RAMP 4 SPUI			387.97	330
1110+10.70	1113+50.94	RT. OF RAMP 4 SPUI			340.24	290
TOTALS:			3464.34	8177.29	8551.43	10235

CONCRETE WALKS

FROM STATION	FROM LOCATION	TO STATION	TO LOCATION	LENGTH	CONCRETE WALKS
				LIN. FT.	SQ.YD.
120+00	LT. OF HWY. 71B	120+94	LT. OF HWY. 71B	94	52
121+46	LT. OF HWY. 71B	122+78	LT. OF HWY. 71B	132	73
123+22	LT. OF HWY. 71B	123+68	LT. OF HWY. 71B	46	26
124+12	LT. OF HWY. 71B	1126+84	RT. OF RAMP 1	1248	693
1123+92	LT. OF RAMP 4	144+42	LT. OF HWY. 71B	322	179
145+10	LT. OF HWY. 71B	145+51	LT. OF HWY. 71B	41	23
146+09	LT. OF HWY. 71B	149+64	LT. OF HWY. 71B	355	197
120+26	RT. OF HWY. 71B	1130+00	RT. OF RAMP 2	1355	753
1128+34	LT. OF RAMP 2	136+68	RT. OF HWY. 71B	39	22
1125+93	LT. OF RAMP 3	149+64	RT. OF HWY. 71B	969	538
TOTAL:					2556

CONCRETE ISLAND

STATION	STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
				SQ.YD.
134+85		RT. OF HWY. 71B	C	1417
137+30		LT. OF HWY. 71B	C	750
137+50		RT. OF HWY. 71B	C	486
138+65		LT. OF HWY. 71B	C	1092
138+95		RT. OF HWY. 71B	C	763
140+50		LT. OF HWY. 71B	C	1391
150+47	157+00	MEDIAN HWY. 71B	C	867
TOTAL:				6766

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL	* SOIL STABILIZATION	PRESPLITTING
			CU. YD.		CU. YD.	TON	SQ. YD.
1020+72	1172+15	MAIN LANES	414055	268267	96872		7825
1107+43		MAIN LANES - BRIDGE END	970				
1118+43	1126+99	RAMP 1 SPUI	7466	354			521
1127+97	1146+67	RAMP 2 SPUI	35909	12385			1188
1125+75	1144+79	RAMP 3 SPUI	186348	8906			
1110+31	1125+09	RAMP 4 SPUI	93117		54028		2158
120+00	150+55	HWY. 71B	102311	2654			3161
ENTIRE	PROJECT	APPROACHES	7700	95			
1129+23		CHANNEL CHANGE	24185				
133+23	155+90	EXIST. RAMP 2 / MOT RAMP 3	34002	535			1456
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER				500	4065
TOTALS:			906063	293196	150900	500	20374

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
1107+43	MAIN LANES	42.8
1109+39	MAIN LANES	47.8
1113+78	MAIN LANES	51.7
1118+72	MAIN LANES	51.7
1124+71	MAIN LANES	55.6
1127+68	MAIN LANES	55.6
1113+71	RAMP 4 SPUI	20.6
1118+76	RAMP 4 SPUI	20.6
1124+72	RAMP 1 SPUI CROSS DRAIN	40.6
TOTAL:		387.0

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3	TYPE 4
		SQ.YD.	
119+96	LT. OF HWY. 71B	4.3	
136+38	LT. OF HWY. 71B	3.7	
136+68	LT. OF HWY. 71B		7.3
137+62	LT. OF HWY. 71B		7.3
138+17	LT. OF HWY. 71B		7.3
139+23	LT. OF HWY. 71B		7.3
139+42	LT. OF HWY. 71B		7.3
141+19	LT. OF HWY. 71B		7.3
141+36	LT. OF HWY. 71B	3.6	
120+23	RT. OF HWY. 71B	3.3	
133+70	RT. OF HWY. 71B	3.6	
133+90	RT. OF HWY. 71B		7.3
136+04	RT. OF HWY. 71B		7.3
136+21	RT. OF HWY. 71B	3.6	
137+85	RT. OF HWY. 71B		7.3
138+49	RT. OF HWY. 71B		7.3
139+47	RT. OF HWY. 71B		7.3
139+93	RT. OF HWY. 71B	4.1	
TOTALS:		26.2	80.3

RCA0903_REVISED.DGN 1/20/2017

QUANTITIES

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.		CA0903	87	452

(2) QUANTITIES

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	42"	(CLASS V) 24"	30"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	42"	SAFETY END SECTIONS FOR CROSS DRAIN PIPE CULVERTS (CLASS 2) 18"	TEMPORARY CULVERTS 24"	DROP INLETS TYPE MO	RM	ST	TM	SPECIAL	EXT. 8'	JUNCT. BOXES (TYPE E)	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.					EACH					LIN. FT.	EACH							LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
1085+00	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	58					1																			5	0.06	FES-1, FES-2, FPC-9S, PCC-1
1107+00	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND		84					1																		8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1109+78	HWY. 549 - CONSTR. DI W/ RCP OUTLET TO LT.		84					1							1											8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1123+50	HWY. 549 - CONSTR. DI ON LT. W/ RCP OUTLET	30													1													FPC-9S, PCC-1
1123+50	HWY. 549 - CONSTR. DI ON LT. W/ RCP OUTLET				11									1												8	0.10	FES-1, FES-2, FPC-9D, PCC-1
1123+50	HWY. 549 - CONSTR. JB ON LT. W/ RCP OUTLET		57					1											1							8	0.10	FES-1, FES-2, FPC-9, PCC-1
1124+00	HWY. 549 - CONSTR. DI ON RT. W/ RCP OUTLET	14													1													FPC-9S, PCC-1
1124+00	HWY. 549 - CONSTR. DI ON RT. W/ RCP OUTLET				7			1						1												8	0.10	FES-1, FES-2, FPC-9D, PCC-1
1124+36	HWY. 549 - CONSTR. DI ON LT. W/ RCP OUTLET	84													1													FPC-9S, PCC-1
1124+62	HWY. 549 - CONSTR. DI ON RT. W/ RCP OUTLET	60													1													FPC-9S, PCC-1
1128+28	HWY. 549 - CONSTR. DI ON SEXT. RCB													1														FPC-9, FPC-9D
1128+53	HWY. 549 - CONSTR. DI ON SEXT. RCB															1												FPC-9, FPC-9D
1129+69	HWY. 549 - CONSTR. DI ON SEXT. RCB													1														FPC-9, FPC-9D
1129+96	HWY. 549 - CONSTR. DI ON SEXT. RCB															1												FPC-9, FPC-9D
1140+23	HWY. 549 - CONSTR. DI W/ RCP OUTLET TO LT.		66					1							1											8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1142+00	HWY. 549 - CONSTR. DI W/ RCP OUTLET	177													1													FPC-9S, PCC-1
1143+03	HWY. 549 - RETAIN EXIST. RCP & EXTEND			68						1																23	0.29	FES-1, FES-2. PCC-1
1144+00	HWY. 549 - CONSTR. DI W/ RCP OUTLET	198													1													FPC-9S, PCC-1
1144+62	HWY. 549 - CONSTR. DI ON LT.													1														FPC-9D
1145+89	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	26									1																	PCC-1, SES-1
1148+88	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	24									1																	PCC-1, SES-1
1151+89	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	28									1																	PCC-1, SES-1
1154+88	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	28									1																	PCC-1, SES-1
1157+89	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	26									1																	PCC-1, SES-1
1160+88	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	20									1																	PCC-1, SES-1
1165+04	HWY. 549 - RETAIN EXIST. DI & RCP & EXTEND	10					1																					PCC-1, SES-1
1124+72	RAMP 1 SPUI - CONSTR. RCP W/ FES LT. & RT.		116					2																		5	0.06	FES-1, FES-2, FPC-9S, PCC-1
1122+50	RAMP 4 SPUI - CONSTR. RCP W/ FES LT. & RT.		76					2																		16	0.20	FES-1, FES-2. PCC-1
125+00	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1								16	0.20	
126+50	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
128+50	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
129+35	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
129+65	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
129+88	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
131+00	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
132+00	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
132+88	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
133+00	HWY. 71B - CONSTR. RCB																			6	3	120	60.20	8313	37	12	0.15	RCB-1, RCB-2, R-100X-0, W-X003-1
133+60	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
135+00	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		51										1					1										FPC-9E, FPC-9M, PCC-1
135+55	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		50										1					1										FPC-9E, FPC-9M, PCC-1
135+98	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		114										1					1										FPC-9E, FPC-9M, PCC-1
136+10	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET				52								1					1										FPC-9E, FPC-9M, PCC-1
137+00	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		102										1					1										FPC-9E, FPC-9M, PCC-1
137+50	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		46										1					1										FPC-9E, FPC-9M, PCC-1
137+58	HWY. 71B - CONSTR. DI ON LT. W/ EXT. & RCP OUTLET				117								1					1										FPC-9E, FPC-9M, PCC-1
138+54	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		68										1					1										FPC-9E, FPC-9M, PCC-1
139+25	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET		21										1					1										FPC-9E, FPC-9M, PCC-1
139+50	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET				65								1					1										FPC-9E, FPC-9M, PCC-1
139+55	HWY. 71B - CONSTR. DI ON LT. W/ EXT. & RCP OUTLET				112								1					1										FPC-9E, FPC-9M, PCC-1
140+16	HWY. 71B - CONSTR. DI ON RT. W/ EXT. & RCP OUTLET TO RT.		14					1					1					1										FPC-9E, FPC-9M, PCC-1
141+12	HWY. 71B - CONSTR. DI ON LT. W/ EXT. & RCP OUTLET				160								1					1								8	0.10	FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
142+00	HWY. 71B - CONSTR. RCP W/ FES LT. & RT.					100			2																			FPC-9E, FPC-9M, PCC-1
142+50	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																									26	0.33	FES-1, FES-2. PCC-1
144+00	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
145+25	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
146+75	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
146+75	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
147+29	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	2										SPECIAL DETAIL
147+29	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	2										SPECIAL DETAIL
147+50	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
147+50	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
148+50	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
148+50	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
149+50	HWY. 71B - CONSTR. DI ON LT. W/ EXTENSION																1	1										SPECIAL DETAIL
149+50	HWY. 71B - CONSTR. DI ON RT. W/ EXTENSION																1	1										SPECIAL DETAIL
137+84	MOT RAMP 3 DETOUR - INSTALL TEMP. CULV'T											206																
134+78	INSTALL TEMP. CULV'T HWY. 71B											60																
SUBTOTALS:		**783**	**949**	**68**	**524**	**100**	**2**	**10**	**2**	**1**	**6**	**266**	**13**	**5**	**8**	**2**	**23**	**38**	**1**				**60.20**	**8313**	**37**	**159**	**1.99**	
		STRUCTURES OVER 20' - 0" SPAN																										
1129+23	CONST. SEXTUPLE R.C. BOX																			12	11	520	7283.50	1130227	2931	58	0.73	SPECIAL DETAIL
SUBTOTALS:																												
TOTALS:		**783**	**949**	**68**	**524**	**100**	**2**	**10**	**2**	**1**	**6**	**266**	**13**	**5**	**8**	**2**	**23**	**38**	**1**				**7283.50**	**1130227**	**2931**	**58**	**0.73**	
																							7343.70	**1138540**	**2968**	**217**	**2.72**	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-22-19

RCA0903_REVISED.DGN 1/20/2017

QUANTITIES

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.		CA0903	88	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

JOINT SUPPORTS

STATION	LOCATION	AVG. WIDTH	CLASS S CONCRETE - ROADWAY
		FEET	CU. YD.
1020+72.00	LT. MAIN LANES	26	2.89
1106+78.00	LT. MAIN LANES	48	5.33
1106+93.00	LT. MAIN LANES	48	5.33
1109+74.24	LT. MAIN LANES	26	2.89
1109+89.24	LT. MAIN LANES	26	2.89
1113+27.94	LT. MAIN LANES	26	2.89
1113+42.94	LT. MAIN LANES	26	2.89
1119+07.56	LT. MAIN LANES	26	2.89
1119+22.56	LT. MAIN LANES	26	2.89
1124+12.00	LT. MAIN LANES	26	2.89
1124+27.00	LT. MAIN LANES	26	2.89
1109+74.24	RT. MAIN LANES	26	2.89
1109+89.24	RT. MAIN LANES	26	2.89
1113+27.94	RT. MAIN LANES	26	2.89
1113+42.94	RT. MAIN LANES	26	2.89
1119+07.56	RT. MAIN LANES	26	2.89
1119+22.56	RT. MAIN LANES	26	2.89
1124+28.00	RT. MAIN LANES	26	2.89
1124+43.00	RT. MAIN LANES	26	2.89
1110+31.02	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1110+46.02	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1110+61.02	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1113+20.94	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1113+35.94	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1119+27.56	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
1119+42.56	RAMP 4 - HWY. 71B INTERCHANGE	24	2.67
TOTAL:			78.48

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	220
ENGINEER	
TOTAL:	220

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH	CU.YD.
		FEET		
1124+72	RAMP 1 SPUI	8.50	65	22.2
133+00	HWY. 71B	13.17	60	31.7
TOTAL:				53.9

AVG. DEPTH = 13"

PORTLAND CEMENT CONCRETE CORRUGATIONS

STATION	LOCATION	SQ. YDS.
1109+74	RAMP 1 SPUI - HWY. 71B INTERCHANGE	180
TOTAL:		180

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
										18"	30"	
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.		
121+20	LT.	HWY. 71B - DRIVEWAY	24	120+94	121+46		60.53	6.66	24.72		72	PCC-1, PCM-1, PCP-1, PCP-2
123+00	LT.	HWY. 71B - DRIVEWAY	16	122+78	123+22		39.64	4.36	16.19		60	PCC-1, PCM-1, PCP-1, PCP-2
123+90	LT.	HWY. 71B - DRIVEWAY	16	123+68	124+12		474.13	52.15	193.60		60	PCC-1, PCM-1, PCP-1, PCP-2
144+84	LT.	HWY. 71B - DRIVEWAY	40	144+50	145+18	102.22				52		PCC-1, PCM-1, PCP-1, PCP-2
145+80	LT.	HWY. 71B - DRIVEWAY	30	145+51	146+09	95.33				48		PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES									200.00			
TOTALS:						197.55	574.30	63.17	434.51	100	192	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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.

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

** FOR INFORMATION ONLY

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

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE		
				AVG. WID.	6" U.T.	8" U.T.
			FEET	FEET	SQ. YD.	
123+00	124+80	HWY. 71B - LT. OF CL.	180.00	6.50	130.00	
123+00	124+80	HWY. 71B - LT. OF CL.	180.00	4.00		80.00
120+20	124+20	HWY. 71B - RT. OF CL.	400.00	5.50	244.44	
120+20	124+20	HWY. 71B - RT. OF CL.	400.00	3.00		133.33
TOTALS:					374.44	213.33

CONCRETE PAVEMENT

STATION	STATION	LOCATION	LENGTH	CEMENT STABILIZED CRUSHED STONE BASE COURSE (6" COMP'D. DEPTH)			ACHM SURFACE COURSE (3/8") 110 LBS. PER SQ. YD.			TACK COAT 0.05 GAL. PER SQ. YD.			PORTLAND CEMENT CONCRETE PAVEMENT	
				AVG. WID.	PROCESSING	CEMENT	AGGREGATE	AVG. WID.	SQ. YD.	PG 64-22	AVG. WID.	SQ. YD.	GAL.	AVG. WID.	11" U.T.
			FEET	FEET	SQ. YD.	TON	TON	FEET		TON	FEET			FEET	SQ. YD.
1020+72.00	1034+25.11	HWY. 549 - LT. MAIN LANES	1353.11	39.00	5863.48	123.13	1929.08	39.00	5863.48	322.49	39.00	5863.48	293.17	37.00	5562.79
1034+25.11	1078+22.13	HWY. 549 - LT. MAIN LANES	4397.02	39.00	19053.75	400.13	6268.68	39.00	19053.75	1047.96	39.00	19053.75	952.69	37.00	18076.64
1078+82.66	1082+96.23	HWY. 549 - LT. MAIN LANES	413.57	39.00	1792.14	37.63	589.61	39.00	1792.14	98.57	39.00	1792.14	89.61	37.00	1700.23
1082+96.23	1085+96.23	HWY. 549 - LT. MAIN LANES - ACCEL. LANE TAPER	300.00	45.00	1500.00	31.50	493.50	45.00	1500.00	82.50	45.00	1500.00	75.00	43.00	1433.33
1085+96.23	1094+96.23	HWY. 549 - LT. MAIN LANES - ACCEL. LANE	900.00	51.00	5100.00	107.10	1677.90	51.00	5100.00	280.50	51.00	5100.00	255.00	49.00	4900.00
1094+96.23	1097+96.23	HWY. 549 - LT. MAIN LANES - ACCEL. LANE TAPER	300.00	57.00	1900.00	39.90	625.10	57.00	1900.00	104.50	57.00	1900.00	95.00	55.00	1833.33
1097+96.23	1106+97.49	HWY. 549 - LT. MAIN LANES - ACCEL. LANE	901.26	63.00	6308.82	132.49	2075.60	63.00	6308.82	346.99	63.00	6308.82	315.44	61.00	6108.54
1106+97.49	1107+06.56	HWY. 549 - LT. MAIN LANES - RAMP 4 TURNOUT	9.07	VAR.	70.16	1.47	23.08	VAR.	70.16	3.86	VAR.	70.16	3.51	VAR.	68.15
1109+59.23	1110+29.56	HWY. 549 - LT. MAIN LANES - RAMP 4 TURNOUT	70.33	VAR.	646.10	13.57	212.57	VAR.	646.10	35.54	VAR.	646.10	32.31	VAR.	631.06
1110+29.56	1113+57.94	HWY. 549 - LT. MAIN LANES	328.38	48.33	1763.40	37.03	580.16	48.33	1763.40	96.99	48.33	1763.40	88.17	46.33	1690.43
1118+92.56	1124+44.44	HWY. 549 - LT. MAIN LANES	551.88	48.33	2963.60	62.24	975.02	48.33	2963.60	163.00	48.33	2963.60	148.18	46.33	2840.96
1020+72.00	1034+25.11	HWY. 549 - RT. MAIN LANES	1353.11	13.04	1960.51	41.17	645.01	13.04	1960.51	107.83	13.04	1960.51	98.03	13.04	1960.51
1034+25.11	1078+22.13	HWY. 549 - RT. MAIN LANES	4397.02	3.00	1465.67	30.78	482.21	3.00	1465.67	80.61	3.00	1465.67	73.28	3.00	1465.67
1078+82.66	1107+06.56	HWY. 549 - RT. MAIN LANES	2823.90	3.00	941.30	19.77	309.69	3.00	941.30	51.77	3.00	941.30	47.07	3.00	941.30
1109+59.23	1111+85.87	HWY. 549 - RT. MAIN LANES - RAMP 1 TURNOUT	226.64	VAR.	1142.29	23.99	375.81	VAR.	1142.29	62.83	VAR.	1142.29	57.11	VAR.	1119.62
1111+85.87	1113+57.94	HWY. 549 - RT. MAIN LANES	172.07	48.33	924.02	19.40	304.00	48.33	924.02	50.82	48.33	924.02	46.20	46.33	885.78
1118+92.56	1124+57.18	HWY. 549 - RT. MAIN LANES	564.62	48.33	3032.01	63.67	997.53	48.33	3032.01	166.76	48.33	3032.01	151.60	46.33	2906.54
1110+31.02	1113+50.94	RAMP 4 SPUI	319.92	40.67	1445.68	30.36	475.63	40.67	1445.68	79.51	40.67	1445.68	72.28	36.67	1303.50
1119+12.56	1121+48.17	RAMP 4 SPUI	235.61	28.00	733.01	15.39	241.16	28.00	733.01	40.32	28.00	733.01	36.65	24.00	628.29
1121+48.17	1125+09.48	RAMP 4 SPUI - TURNOUT	361.31	VAR.	3753.67	78.83	1234.96	VAR.	3753.67	206.45	VAR.	3753.67	187.68	VAR.	3558.00
TOTALS:					62359.61	1309.55	20516.30		62359.61	3429.80		62359.61	3117.98		59614.67

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
CEMENT STABILIZED CRUSHED STONE BASE COURSE = 94.0% AGGR. 6.0% CEMENT
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

RUMBLE STRIPS IN SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS	* RUMBLE STRIPS IN PCC SHOULDERS
			LIN.FT.	LIN.FT.
1109+74	1113+57	RT. OF RML		383
1118+93	1124+63	RT. OF RML		570
1128+01	1144+94	RT. OF RML	1693	
1144+94	1172+15	RT. OF RAMP 2 / ACCEL. LANES / RML	2721	
1109+59	1113+57	LT. OF RML		398
1118+93	1124+52	LT. OF RML		559
1127+93	1172+15	LT. OF RML	4422	
1020+72	1078+22	RT. OF LML		5750
1078+83	1107+06	RT. OF LML		2823
1109+59	1113+57	RT. OF LML		398
1118+93	1124+46	RT. OF LML		553
1127+85	1172+15	RT. OF LML	4430	
1020+72	1078+22	LT. OF LML		5750
1078+83	1107+08	LT. OF LML / ACCEL. LANES		2825
1109+59	1113+57	LT. OF LML		398
1118+93	1124+37	LT. OF LML		544
1127+76	1143+70	LT. OF LML	1594	
1143+70	1172+15	LT. OF RAMP 3 / AUX. LANE / LML	2845	
TOTALS:			17705	20951

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

RCA0903_REVISED.DGN 1/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	89	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50
DIRECTED BY THE ENGINEER	
TOTAL:	**50**

NOTE: QUANTITY ESTIMATED,
SEE SECTION 104.03 OF THE STD. SPECS.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50	100
DIRECTED BY THE ENGINEER		
TOTALS:	**50**	**100**

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
1144+80.12	1150+65.38	HWY. 71 - LEFT LANES & SHOULDERS	33.00	2145.95
1150+65.38	1159+41.38	HWY. 71 - LEFT LANES & SHOULDERS	33.00	3212.00
1159+41.38	1165+01.59	HWY. 71 - LEFT LANES & SHOULDERS	40.00	2489.82
1165+01.59	1174+09.11	HWY. 71 - LEFT LANES & SHOULDERS	38.00	3831.75
1144+80.12	1150+65.38	HWY. 71 - RIGHT LANES & SHOULDERS	45.00	2926.30
1150+65.38	1159+68.66	HWY. 71 - RIGHT LANES & SHOULDERS	45.00	4516.40
1159+68.66	1162+68.66	HWY. 71 - RIGHT LANES & SHOULDERS	41.50	1383.33
1162+68.66	1174+09.25	HWY. 71 - RIGHT LANES & SHOULDERS	38.00	4815.82
119+00.00	121+00.00	HWY. 71B - LANES & SHOULDERS	65.00	1444.44
TOTAL:				**26765.81**

NOTE: AVERAGE MILLING DEPTH 2".

RETAINING WALLS

LOCATION	DESCRIPTION	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	TEXTURED COATING FINISH
		CU.YDS.	CU.YDS.	SQ.FT.	SQ.YD.
WALL AT BENT 1 OF BRIDGE OVER HWY. 71B	WALL A-B	407	407	797	85
WALL AT BENT 1 OF BRIDGE OVER HWY. 71B	WALL B-D	1527	1527	2580	266
WALL AT BENT 1 OF BRIDGE OVER HWY. 71B	WALL D-E	1135	1135	2032	208
WALL AT BENT 1 OF BRIDGE OVER HWY. 71B	WALL E-G	2058	2058	3098	325
WALL AT BENT 1 OF BRIDGE OVER HWY. 71B	WALL G-H	522	522	792	85
WALL AT BENT 2 OF BRIDGE OVER HWY. 71B	WALL A-L	8563	10522	18423	1925
WALL AT BENT 2 OF BRIDGE OVER HWY. 71B	WALL L-N	240	1576	2722	297
WALL AT BENT 2 OF BRIDGE OVER HWY. 71B	WALL N-P	50	1865	2669	285
WALL AT BENT 2 OF BRIDGE OVER HWY. 71B	WALL P-R	10	4112	5467	570
WALL AT BENT 2 OF BRIDGE OVER HWY. 71B	WALL R-FF	5860	22041	32885	3567
TOTALS:		**20372**	**45765**	**71465**	**7613**

SOIL LOG

STATION	NORTHING	EASTING	LOCATION	DEPTH	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SIEVE ANALYSIS (PERCENT PASSING)						Ph	RESISTIVITY	UNCONFINED	AASHTO CLASSIFICATION
								3'4"	3'8"	NO.4	NO. 10	NO. 40	NO. 200		(ohms-cm)	(psi)	
				FEET	%												
1017+98	764008.815	648076.779	31.35' RT.	5-35'	26.6	43	19	100	97	94	79	63	54				A-7-6(8)
1017+98	764008.815	648076.779	31.35' RT.	10-11.5'	55.1	90	53										
1025+81	764004.596	648876.768	144.5' RT	5-35'	34.9	49	21	100	97	95	89	80	68	5.8	5000		A-7-6(14)
1053+18	764616.697	651554.497	207.08' RT.	1-10'	40.3	49	28										
1055+36	764596.387	651785.241	284.65' RT.	49.5-50'												5100	
1059+27	764775.354	652142.971	201.19' RT.	10-15'	19.5	39	20	98	97	90	82	69	58	5.5	11000		
1071+02	765313.775	653216.519	50.57' LT.	10-15'	34.3	48	28	100	100	92	81	69	60				A-7-6(16)
1071+02	765313.775	653216.519	50.57' LT.	20-25'	16.5												
1097+62	765862.631	655808.572	250.13' LT.	5-10'	28.1	28	3										
1149+12	763855.230	660567.127	467.28' RT.	7-16'	25.7	57	33										
1161+27	763509.631	661684.597	210.61' RT.	5-10'	32.1	65	35							5.7	9500		
1161+27	763509.631	661684.597	210.61' RT.	15-20'	25.7	34	8							6.2	10900		

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS 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.

RCA0903_REVISED.DGN 1/20/2017

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.		CA0903	90	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-17

BASE AND SURFACING (BOX 1 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	TOTAL PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																										
1127+88.19	1138+39.18	HWY. 549 - LT. MAIN LANES - FULL DEPTH	1050.99	144.00	1513.43	70.33	8212.90	0.05	410.65	35.69	4167.76	880.00	1833.81	35.33	4125.72	330.00	680.74					35.00	4087.18	220.00	449.59	449.59
1138+39.18	1141+89.18	HWY. 549 - LT. MAIN LANES - FULL DEPTH - SUPER TRANSITION	350.00	144.00	504.00	70.33	2735.06	0.05	136.75	35.69	1387.94	880.00	610.69	35.33	1373.94	330.00	226.70					35.00	1361.11	220.00	149.72	149.72
1141+89.18	1144+80.12	HWY. 549 - LT. MAIN LANES - FULL DEPTH - MAX SUPER	290.94	144.00	418.95	70.33	2273.53	0.05	113.68	35.69	1153.74	880.00	507.65	35.33	1142.10	330.00	188.45					35.00	1131.43	220.00	124.46	124.46
1144+80.12	1146+65.38	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	185.26			33.00	679.29	0.05	33.96													33.00	679.29	220.00	74.72	74.72
1146+65.38	1150+65.38	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	400.00			33.00	1466.67	0.05	73.33													33.00	1466.67	220.00	161.33	161.33
1150+65.38	1159+41.38	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	876.00			33.00	3212.00	0.17	546.04													33.00	3212.00	220.00	353.32	353.32
1159+41.38	1165+01.45	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	560.07			40.00	2489.20	0.17	423.16													40.00	2489.20	220.00	273.81	273.81
1165+01.45	1174+09.11	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	907.66			38.00	3832.34	0.17	651.50													38.00	3832.34	220.00	421.56	421.56
1127+88.19	1138+39.18	HWY. 549 - RT. MAIN LANES - FULL DEPTH	1050.99	144.00	1513.43	70.33	8212.90	0.05	410.65	35.69	4167.76	880.00	1833.81	35.33	4125.72	330.00	680.74					35.00	4087.18	220.00	449.59	449.59
1138+39.18	1141+89.18	HWY. 549 - RT. MAIN LANES - FULL DEPTH - SUPER TRANSITION	350.00	144.00	504.00	70.33	2735.06	0.05	136.75	35.69	1387.94	880.00	610.69	35.33	1373.94	330.00	226.70					35.00	1361.11	220.00	149.72	149.72
1141+89.18	1144+80.12	HWY. 549 - RT. MAIN LANES - FULL DEPTH - MAX SUPER	290.94	144.00	418.95	80.33	2596.80	0.05	129.84	35.69	1153.74	880.00	507.65	35.33	1142.10	330.00	188.45					45.00	1454.70	220.00	160.02	160.02
1144+80.12	1146+65.38	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	185.26			45.00	926.30	0.05	46.32													45.00	926.30	220.00	101.89	101.89
1146+65.38	1150+65.38	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	400.00			45.00	2000.00	0.05	100.00													45.00	2000.00	220.00	220.00	220.00
1150+65.38	1160+76.29	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	1010.91			45.00	5054.55	0.17	859.27													45.00	5054.55	220.00	556.00	556.00
1160+76.29	1163+76.29	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	300.00			41.50	1383.33	0.17	235.17													41.50	1383.33	220.00	152.17	152.17
1160+50.93	1161+15.78	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	64.85			38.00	273.81	0.17	46.55													38.00	273.81	220.00	30.12	30.12
1161+15.78	1174+09.25	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	1293.47			38.00	5461.32	0.17	928.42													38.00	5461.32	220.00	600.75	600.75
1144+80.12	1147+01.45	HWY. 549 - LT. MAIN LANES - NOTCH & WIDEN RAMP 3 SPUI TURNOUT	221.33	VAR.	185.50	VAR.	1070.65	0.05	53.53	VAR.	552.27	880.00	243.00	VAR.	540.72	330.00	89.22					VAR.	529.93	220.00	58.29	58.29
1147+01.45	1162+01.45	HWY. 549 - LT. MAIN LANES - NOTCH & WIDEN AUXILIARY LANE	1500.00	46.75	701.25	24.33	4055.00	0.05	202.75	12.68	2113.33	880.00	929.87	12.33	2055.00	330.00	339.08					12.00	2000.00	220.00	220.00	220.00
1162+01.45	1165+01.45	HWY. 549 - LT. MAIN LANES - NOTCH & WIDEN AUXILIARY LANE TAPER	300.00	23.25	69.75	12.33	411.00	0.05	20.55	6.68	222.67	880.00	97.97	6.33	211.00	330.00	34.82					6.00	200.00	220.00	22.00	22.00
1146+65.38	1148+16.40	HWY. 549 - RT. MAIN LANES - NOTCH & WIDEN RAMP 2 SPUI TURNOUT	151.02	VAR.	77.40	VAR.	850.74	0.05	42.54	VAR.	438.01	880.00	192.72	VAR.	429.58	330.00	70.88					VAR.	421.16	220.00	46.33	46.33
1148+16.40	1169+15.37	HWY. 549 - RT. MAIN LANES - NOTCH & WIDEN AUXILIARY LANE	2098.97	46.75	981.27	24.33	5674.22	0.05	283.71	12.68	2957.22	880.00	1301.18	12.33	2875.59	330.00	474.47					12.00	2798.63	220.00	307.85	307.85
1169+15.37	1172+15.37	HWY. 549 - RT. MAIN LANES - NOTCH & WIDEN AUXILIARY LANE TAPER	300.00	23.25	69.75	12.33	411.00	0.05	20.55	6.68	222.67	880.00	97.97	6.33	211.00	330.00	34.82					6.00	200.00	220.00	22.00	22.00
INTERCHANGE RAMPS																										
1118+79.56	1121+21.81	RAMP 1 SPUI - NOTCH & WIDEN ON RT. - TRANSITION	242.25	43.25	104.77	34.78	936.16	0.05	46.81	11.90	320.31	880.00	140.94	11.44	307.93	330.00	50.81					11.15	300.12	220.00	33.01	33.01
1121+21.81	1123+37.27	RAMP 1 SPUI - NOTCH & WIDEN ON RT.	215.46	66.00	142.20	52.33	1252.78	0.05	62.64	17.75	424.94	880.00	186.97	17.29	413.92	330.00	68.30					17.00	406.98	220.00	44.77	44.77
1123+37.27	1126+61.16	RAMP 1 SPUI - NOTCH & WIDEN ON RT.	323.89	33.00	106.88	26.83	965.55	0.05	48.28	9.25	332.89	880.00	146.47	8.79	316.33	330.00	52.19					8.50	305.90	220.00	33.65	33.65
1124+99.57	1126+99.25	RAMP 1 SPUI - TURNOUT	199.68	VAR.	342.65	VAR.	2937.00	0.05	146.85	VAR.	979.00	880.00	430.76	VAR.	979.00	330.00	161.54					VAR.	979.00	220.00	107.69	107.69
1127+97.08	1130+88.12	RAMP 2 SPUI - TURNOUT	291.04	VAR.	1226.70	VAR.	10000.00	0.05	500.00	VAR.	3333.33	880.00	1466.67	VAR.	3333.33	330.00	550.00					VAR.	3333.33	220.00	366.67	366.67
1130+88.12	1137+09.86	RAMP 2 SPUI	621.74	93.25	579.77	74.08	5117.61	0.05	255.88	25.50	1761.60	880.00	775.10	24.58	1698.04	330.00	280.18					24.00	1657.97	220.00	182.38	182.38
1137+09.86	1138+57.71	RAMP 2 SPUI - NOTCH & WIDEN ON LT. W/ OVERLAY	147.85	46.75	69.12	49.04	805.62	0.05	40.28	12.75	209.45	880.00	92.16	12.29	201.90	330.00	33.31					24.00	394.27	220.00	43.37	43.37
1138+57.71	1140+77.31	RAMP 2 SPUI - NOTCH & WIDEN ON LT. & RT. W/ OVERLAY	219.60	35.00	76.86	44.08	1075.55	0.05	53.78	10.50	256.20	880.00	112.73	9.58	233.75	330.00	38.57					24.00	585.60	220.00	64.42	64.42
1140+77.31	1143+51.95	RAMP 2 SPUI - NOTCH & WIDEN ON RT. W/ OVERLAY	274.64	58.25	159.98	55.04	1679.58	0.05	83.98	15.75	480.62	880.00	211.47	15.30	466.89	330.00	77.04					24.00	732.37	220.00	80.56	80.56
1143+51.95	1146+67.17	RAMP 2 SPUI - NOTCH & WIDEN ON RT. W/ OVERLAY	315.22	66.00	208.05	59.04	2067.84	0.05	103.39	17.75	621.68	880.00	273.54	17.29	605.57	330.00	99.92					24.00	840.59	220.00	92.46	92.46
1125+74.99	1128+45.90	RAMP 3 SPUI - TURNOUT W/ SHOULDER IMPROVEMENTS	270.91	VAR.	1224.80	VAR.	10178.11	0.05	508.91	VAR.	3401.11	880.00	1496.49	VAR.	3391.56	330.00	559.61					VAR.	3385.40	220.00	372.39	372.39
1128+45.90	1136+57.80	RAMP 3 SPUI	811.90	186.75	1516.22	146.08	13178.04	0.05	658.90	49.50	4465.45	880.00	1964.80	48.58	4382.46	330.00	723.11					48.00	4330.13	220.00	476.31	476.31
1136+57.80	1141+77.82	RAMP 3 SPUI - TRANSITION	520.02	140.00	728.03	110.08	6360.42	0.05	318.02	37.50	2166.75	880.00	953.37	36.58	2113.59	330.00	348.74					36.00	2080.08	220.00	228.81	228.81
1141+77.82	1144+42.89	RAMP 3 SPUI	265.07	93.25	247.18	74.08	2181.82	0.05	109.09	25.50	751.03	880.00	330.45	24.58	723.94	330.00	119.45					24.00	706.85	220.00	77.75	77.75
HWY. 71B																										
118+00.00	120+00.00	HWY. 71B - OVERLAY W/ SHOULDERS	200.00			65.00	1444.44	0.17	245.55													65.00	1444.44	220.00	158.89	158.89
120+00.00	122+50.00	HWY. 71B - OVERLAY	250.00			59.00	1638.89	0.05	81.94													59.00	1638.89	220.00	180.28	180.28
122+50.00	126+50.00	HWY. 71B - NOTCH & WIDENING	400.00	125.50	502.00	57.00	2533.33	0.05	126.67					28.50	1266.67	660.00	418.00	28.50	1266.67	220.00	139.33	28.50	1266.67	220.00	139.33	278.66
126+50.00	127+11.83	HWY. 71B - FULL DEPTH	61.83	241.00	149.01	171.00	1174.77	0.05	58.74					57.00	391.59	660.00	129.22	57.00	391.59	220.00	43.07	57.00	391.59	220.00	43.07	86.14
127+11.83	128+88.31	HWY. 71B - FULL DEPTH - TRANSITION	176.48	262.50	463.26	187.50	3676.67	0.05	183.83					62.50	1225.56	660.00	404.43	62.50	1225.56	220.00	134.81	62.50	1225.56	220.00	134.81	269.62
128+88.31	132+93.07	HWY. 71B - FULL DEPTH	404.76	284.00	1149.52	204.00	9174.56	0.05	458.73					68.00	3058.19	660.00	1009.20	68.00	3058.19	220.00	336.40	68.00	3058.19	220.00	336.40	672.80
132+93.07	135+30.89	HWY. 71B - FULL DEPTH	237.82	284.00	675.41	204.00	5390.59	0.05	269.53					68.00	1796.86	660.00	592.96	68.00	1796.86	220.00	197.65	68.00	1796.86	220.00	197.65	395.30
135+30.89	141+23.61	HWY. 71B - FULL DEPTH	592.72	284.00	1683.32	204.00	13434.99	0.05	671.75					68.00	4478.33	660.00	1477.85	68.00	4478.33	220.00	492.62	68.00	4478.33	220.00	492.62	985.24
141+23.61	142+15.41	HWY. 71B - FULL DEPTH	91.80	284.00	260.71	204.00	2080.80	0.05	104.04					68.00	693.60	660.00	228.89	68.00	693.60	220.00	76.30	68.00	693.60	220.00	76.30	152.60
142+15.41	149+64.28	HWY. 71B - FULL DEPTH	748.87	284.00	2126.79	204.00	16974.39	0.05	848.72					68.00	5658.13	660.00	1867.18	68.00	5658.13	220.00	622.39	68.00	5658.13	220.00	622.39	1244.78
149+64.28	150+54.28	HWY. 71B - FULL DEPTH	90.00	284.00	255.60	204.00	2040.00	0.05	102.00					68.00	680.00	660.00	224.40	68.00	680.00	220.00	74.80	68.00	680.00	220.00	74.80	149.60
ADDITIONAL FOR LEVELING																										
1144+80.12	1146+65.38	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	185.26			33.00	679.29	0.17	115.48									33.00	679.29	1045.00	354.93					354.93
1146+65.38	1150+65.38	HWY. 549 - LT. MAIN LANES & SHOULDERS - OVERLAY	400.00			33.00	1466.67	0.17	249.33									33.00	1466.67	440.00	322.67					322.67
1144+80.12	1146+65.38	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	185.26			45.00	926.30	0.17	157.47									45.00	926.30	220.00	101.89					101.89
1146+65.38	1150+65.38	HWY. 549 - RT. MAIN LANES & SHOULDERS - OVERLAY	400.00			45.00	2000.00	0.17	340.00									45.00	2000.00	220.00	220.00					220.00
1137+09.86	1138+57.71	RAMP 2 SPUI - NOTCH & WIDEN ON LT. W/ OVERLAY	147.85			12.00	197.13	0.17	33.51									12.00	197.13	220.00	21.68					21.68
1138+57.71	1140+77.31	RAMP 2 SPUI - NOTCH & WIDEN ON LT. & RT. W/ OVERLAY	219.60			15.00	366.00	0.17	62.22									15.00	366.00	220.00	40.26					40.26
1140+77.31	1143+51.95	RAMP 2 SPUI - NOTCH & WIDEN ON RT. W/ OVERLAY	274.64			9.00	274.64	0.17	46.69									9.00	274.64	220.00	30.21					30.21
1143+51.95	1146+67.17	RAMP 2 SPUI - NOTCH & WIDEN ON RT. W/ OVERLAY	315.22			7.00	245.17	0.17	41.68									7.00	245.17	220.00	26.97					26.97
120+00.00	122+50.00	HWY. 71B - OVERLAY	250.00			59.00	1638.89	0.17	278.61									59.00	1638.89	220.00	180.28					180.28
122+50.00	126+50.00	HWY. 71B - NOTCH & WIDENING	400.00			28.50	1266.67	0.17	215.33									28.50	1266.67	220.00	139.33					139.33
SUBTOTALS (BOX 1 OF 3):					**20956.51**		**193377.94**		**13534.30**		**39429.41**		**17348.93**		**58023.55**		**12749.97**		**28309.69**		**3555.59**		**88782.09**		**9766.02**	**13321.61**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

RCA0903_REVISED.DGN 1/20/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	91	452

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

BASE AND SURFACING (BOX 2 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		ACHM SURFACE COURSE (1/2")				
				TON / STATION	TON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22
			FEET			FEET			TON	TON
MAIN LANES SHOULDERS										
1020+72.00	1030+66.64	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - MAX SUPER	994.64	133.00	1322.87	8.00	884.12	220.00	97.25	
1030+66.64	1034+16.64	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - SUPER TRANSITION	350.00	125.00	437.50	8.00	311.11	220.00	34.22	
1034+16.64	1053+33.28	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	1916.64	117.00	2242.47	8.00	1703.68	220.00	187.40	
1053+45.73	1073+72.12	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	2026.39	117.00	2370.88	8.00	1801.24	220.00	198.14	
1073+72.12	1078+22.13	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - SUPER TRANSITION	450.01	117.00	526.51	8.00	400.01	220.00	44.00	
1078+82.66	1080+32.65	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - SUPER TRANSITION	149.99	117.00	175.49	8.00	133.32	220.00	14.67	
1080+32.65	1082+96.23	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - MAX SUPER	263.58	117.00	308.39	8.00	234.29	220.00	25.77	
1082+96.23	1085+96.23	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - ACCEL. LANE TAPER	300.00	109.00	327.00	6.00	200.00	220.00	22.00	
1085+96.23	1094+96.23	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - ACCEL. LANE	900.00	101.25	911.25	6.00	600.00	220.00	66.00	
1094+96.23	1097+96.23	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - ACCEL. LANE TAPER	300.00	101.25	303.75	6.00	200.00	220.00	22.00	
1097+96.23	1106+97.49	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - ACCEL. LANE	901.26	101.25	912.53	6.00	600.84	220.00	66.09	
1106+97.49	1107+06.56	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER - RAMP 4 TURNOUT	9.07	101.25	9.18	6.00	6.05	220.00	0.67	
1127+75.46	1137+50.00	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	974.54	137.25	1337.56	7.00	757.98	220.00		83.38
1137+50.00	1144+50.00	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	700.00	137.25	960.75	8.00	622.22	220.00		68.44
1144+80.12	1147+01.45	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	221.33	120.25	266.15	6.00	147.55	220.00		16.23
1147+01.45	1162+01.45	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	1500.00	120.25	1803.75	6.00	1000.00	220.00		110.00
1162+01.45	1165+01.45	HWY. 549 - LT. MAIN LANES OUTSIDE SHOULDER	300.00	137.25	411.75	8.00	266.67	220.00		29.33
1128+00.93	1143+00.00	HWY. 549 - RT. MAIN LANES OUTSIDE SHOULDER	1499.07	137.25	2057.47	7.00	1165.94	220.00		128.25
1143+00.00	1146+20.00	HWY. 549 - RT. MAIN LANES OUTSIDE SHOULDER	320.00	137.25	439.20	8.00	284.44	220.00		31.29
1146+65.38	1148+16.40	HWY. 549 - RT. MAIN LANES OUTSIDE SHOULDER	151.02	120.25	181.60	6.00	100.68	220.00		11.07
1148+16.40	1169+15.37	HWY. 549 - RT. MAIN LANES OUTSIDE SHOULDER	2098.97	120.25	2524.01	6.00	1399.31	220.00		153.92
1169+15.37	1172+15.37	HWY. 549 - RT. MAIN LANES OUTSIDE SHOULDER	300.00	137.25	411.75	8.00	266.67	220.00		29.33
1137+50.00	1140+83.55	HWY. 549 - LT. MAIN LANES WIDENING FOR GUARDRAIL	333.55	VAR.	77.00	VAR.	197.00	220.00		21.67
1144+67.00	1147+61.00	HWY. 549 - RT. MAIN LANES WIDENING FOR GUARDRAIL	294.00	VAR.	95.00	VAR.	243.00	220.00		26.73
1159+00.00	1161+33.00	HWY. 549 - LT. MAIN LANES WIDENING FOR GUARDRAIL	233.00	VAR.	95.00	VAR.	243.00	220.00		26.73
INTERCHANGE RAMP SHOULDERS										
1118+79.56	1126+61.00	RAMP 1 SPUI - OUTSIDE SHOULDER	781.44	137.25	1072.53	7.00	607.79	220.00		66.86
1130+55.57	1140+77.31	RAMP 2 SPUI - INSIDE SHOULDER	1021.74	102.75	1049.84	4.00	454.11	220.00		49.95
1140+77.31	1146+67.17	RAMP 2 SPUI - INSIDE SHOULDER	589.86	102.75	606.08	4.00	262.16	220.00		28.84
1130+88.12	1136+53.46		565.34	120.25	679.82	6.00	376.89	220.00		41.46
1140+77.13	1146+67.17	RAMP 2 SPUI - OUTSIDE SHOULDER	590.04	120.25	709.52	6.00	393.36	220.00		43.27
1128+45.90	1144+42.89	RAMP 3 SPUI - INSIDE SHOULDER	1596.99	102.75	1640.91	4.00	709.77	220.00		78.07
1126+58.71	1144+42.89	RAMP 3 SPUI - OUTSIDE SHOULDER	1784.18	120.25	2145.48	6.00	1189.45	220.00		130.84
1119+12.61	1121+48.17	RAMP 4 SPUI - INSIDE SHOULDER	235.56	102.75	242.04	4.00	104.69	220.00	11.52	
1119+12.61	1121+48.17	RAMP 4 SPUI - INSIDE SHOULDER WIDENING FOR GUARDRAIL	235.56	VAR.	46.70	VAR.	133.42	220.00	14.68	
1119+12.47	1122+84.01	RAMP 4 SPUI - OUTSIDE SHOULDER	371.54	120.25	446.78	6.00	247.69	220.00	27.25	
1119+12.47	1121+48.17	RAMP 4 SPUI - OUTSIDE SHOULDER WIDENING FOR GUARDRAIL	235.70	VAR.	47.15	VAR.	134.72	220.00	14.82	
SUBTOTALS (BOX 2 OF 3):					**29195.66**		**18383.17**		**846.48**	**1175.66**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....94.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

BASE AND SURFACING (BOX 3 OF 3)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")				
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAINTENANCE OF TRAFFIC																						
130+72.28	133+22.50	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - TRANSITION	250.22	101.25	253.35	37.33	1037.86	0.05	51.89	12.75	354.48	880.00	155.97	12.29	341.69	330.00	56.38	14.00	389.23	220.00		42.82
133+22.50	138+36.21	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2	513.71	202.50	1040.26	74.66	4261.51	0.05	213.08	25.50	1455.51	880.00	640.42	24.58	1403.00	330.00	231.50	28.00	1598.21	220.00		175.80
138+36.21	141+86.00	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON RT.	349.79	110.13	385.22	46.25	1797.53	0.05	89.88	15.88	617.19	880.00	271.56	15.19	590.37	330.00	97.41	17.75	689.86	220.00		75.88
141+86.00	146+31.78	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON LT. & RT.	445.78	195.00	869.27	68.68	3401.80	0.05	170.09	23.50	1163.98	880.00	512.15	22.58	1118.41	330.00	184.54	26.00	1287.81	220.00		141.66
146+31.78	149+31.78	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON LT. & RT.	300.00	171.67	515.01	50.68	1689.33	0.05	84.47	17.50	583.33	880.00	256.67	16.58	552.67	330.00	91.19	20.00	666.67	220.00		73.33
149+31.78	149+41.00	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON LT. & RT.	9.22	148.33	13.68	32.68	33.48	0.05	1.67	11.50	11.78	880.00	5.18	10.58	10.84	330.00	1.79	14.00	14.34	220.00		1.58
151+81.00	154+60.00	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON LT.	279.00	94.42	263.43	30.59	948.29	0.05	47.41	10.50	325.50	880.00	143.22	10.04	311.24	330.00	51.35	11.75	364.25	220.00		40.07
151+81.00	155+90.00	MOT FOR PROPOSED RAMP 3 SPUI/ EXIST. RAMP 2 - NOTCH & WIDEN ON RT.	409.00	56.64	231.66	22.34	1015.23	0.05	50.76	7.75	352.19	880.00	154.96	7.29	331.29	330.00	54.66	9.00	409.00	220.00		44.99
1135+00.00	1136+00.00	MOT FOR EXISTING RAMP 4 - NOTCH & TEMP. WIDEN ON RT.	100.00	43.50	43.50	9.10	101.11	0.05	5.06	3.18	35.33	880.00	15.55	3.01	33.44	330.00	5.52	2.91	32.33	220.00		3.56
1136+00.00	1137+50.00	MOT FOR EXISTING RAMP 4 - METHOD OF RAISING GRADE	150.00	29.50	44.25	116.58	1943.00	0.05	97.15	30.00	500.00	VAR.	192.50	28.58	476.33	330.00	78.59	28.00	466.67	220.00		51.33
1137+50.00	1139+00.00	MOT FOR EXISTING RAMP 4 - METHOD OF RAISING GRADE	150.00	29.50	44.25	116.58	1943.00	0.05	97.15	30.00	500.00	VAR.	192.50	28.58	476.33	330.00	78.59	28.00	466.67	220.00		51.33
SUBTOTALS (BOX 3 OF 3):					**3703.88**		**18172.14**		**908.61**		**5899.29**		**2540.68**		**5645.61**		**931.52**		**6385.04**			**702.35**
SUBTOTALS (BOX 1 OF 3):					**20956.51**		**193377.94**		**13534.30**		**39429.41**		**17348.93**		**58023.55**		**12749.97**		**117091.78**			**13321.61**
SUBTOTALS (BOX 2 OF 3):					**29195.66**														**18383.17**		**846.48**	**1175.66**
TOTALS:					**53856.05**		**211550.08**		**14442.91**		**45328.70**		**19889.61**		**63669.16**		**13681.49**		**141859.99**		**846.48**	**15199.62**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

RCA0903_REVISED.DGN 1/20/2017

QUANTITIES

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.		CA0903	92	452

(1) 02196, 07277-07281 - QUANTITIES - 59142

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. CA0903

BRIDGE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	801	SS & 802	SP, SS, & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	SP, SS, & 807	SP, SS, & 807	SP, SS, & 807	SP, SS, & 807	SS & 808	SS & 809	SS & 809	812	816	816	816	821	SP JOB CA0903	SP JOB CA0903	SP JOB CA0903
		ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	(1) STEEL (3) PILING (HP12X53)	(2) STEEL (3) PILING (HP14X73)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE HPS70W)	PAINTING STRUCTURAL STEEL	ELASTOMERIC BEARINGS	ARMORED JOINT WITH NEOPRENE STRIP SEAL	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	DUMPED RIPRAP	FILTER BLANKET	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO.)	EXPLORATORY HOLES	TEXTURED COATING FINISH	ARCHITECTURAL FINISH
		UNIT	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LB.	LB.	LB.	TON	CU. IN.	LIN. FT.	LIN. FT.	EACH	CU. YD.	CU. YD.	SQ. YD.	LUMP SUM	LIN. FT.	SQ. YD.	SQ. FT.
07277	BENT NO. 1			47.42		12.4	4,552		450			1,405				1,982										
	BENT NO. 2		254	169.40			31,996		630							4,966					230	425			10	
	BENT NO. 3		189	171.90			32,764		1,440							5,186										
	BENT NO. 4			52.78		13.6	5,148		680			1,628				2,202									10	
	55'-0" SIMPLE COMP. W-BEAM (SPAN 1)				120.45	439.0		27,504				94,263						74							110	
	84'-0" SIMPLE COMP. W-BEAM (SPAN 2)				189.70	710.0		43,538				199,673						159							167	
	55'-0" SIMPLE COMP. W-BEAM (SPAN 3)				130.05	490.0		30,198				105,051						86							110	
TOTALS FOR BRIDGE NO. 07277			443	441.50	440.20	1,665.0	74,460	101,240	3,200	0	0	402,020	0	0	0	14,336	0	319	0	0	230	425	1	0	407	0
07278 MCKISIC CREEK	BENT NOS. 1 & 7			140.88		19.6	12,253		850			3,708				7,020									48	
	BENT NOS. 2 - 6		(4) 1380	1,126.82			167,197									42,520										
	77'-6" SIMPLE COMP. W-BEAM SPAN				218.36	758.0		41,719				201,960						93	1						241	
	260'-0" CONT. COMP. W-BEAM UNIT				724.93	2,542.8		159,017				643,391						186							810	
	155'-0" CONT. COMP. W-BEAM UNIT				434.31	1,516.0		92,234				351,171						93							483	
TOTALS FOR BRIDGE NO. 07278			(4) 1380	1,267.70	1,377.60	4,836.4	179,450	292,970	850	0	0	1,200,230	0	0	0	49,540	0	372	1	0	0	0	0	0	1,582	0
07279	EXISTING BRIDGE NO. 07279																						1			
TOTALS FOR BRIDGE NO. 07279			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(6) 1	0	0	0
07280 RAMP 4 OVER MCKISIC CREEK	BENT NOS. 1 & 7			59.17		7.6	6,105		330			1,400				3,510									36	
	BENT NOS. 2 - 6		(5) 581	419.13			61,725									16,173										
	88'-0" SIMPLE COMP. W-BEAM SPAN				100.01	333.3		21,360				100,780						37							197	
	260'-0" CONT. COMP. W-BEAM UNIT				291.73	981.9		66,845				288,630						74							586	
	155'-0" CONT. COMP. W-BEAM UNIT				174.76	586.0		40,785				157,280						37	1						349	
TOTALS FOR BRIDGE NO. 07280			(5) 581	478.30	566.50	1,908.8	67,830	128,990	330	0	0	548,090	0	0	0	19,683	0	148	1	0	0	0	0	0	1,168	0
07281 HWY. 71B	BENT NO. 1			100.20		11.0	10,775			576	144		1,835		1.0	21,263				8				144	43	7
	BENT NO. 2			98.40		11.0	10,795			810	144		1,835		1.0	10,674				10				144	43	7
	295'-0" SIMPLE COMP. PL. GIRDER SPAN				870.30	2,948.0		168,930					195,630	1,755,190	972.0		196		1							1,180
TOTALS FOR BRIDGE NO. 07281			0	198.60	870.30	2,970.0	21,570	168,930	0	1,386	288	0	199,300	1,755,190	974.0	31,937	196	0	1	18	0	0	0	288	86	1,194
02196	EXISTING BRIDGE NO. 02196																						1			
TOTALS FOR BRIDGE NO. 02196			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(7) 1	0	0	0
TOTAL FOR JOB CA0903			2,404	2,386.1	3,254.6	11,380.2	343,310	692,130	4,380	1,386	288	2,150,340	199,300	1,755,190	974.0	115,496	196	839	3	18	230	425		288	3,243	1,194

(1) These steel piles are required to have approved driving points which will not be paid for directly but will be considered subsidiary to the item "Steel Piling (HP12X53)".

(2) These steel piles are required to have approved driving points which will not be paid for directly but will be considered subsidiary to the item "Steel Piling (HP14X73)".

(3) All piling shall be M 270, Grade 50.

(4) Includes approximately 185 Cu. Yds. of rock excavation

(5) Includes approximately 84 Cu. Yds. of rock excavation

(6) This item is for the modification of the existing bridge rail. For Details, see Dwg. No. 59272.

(7) This item is for addition of a Type Special 4 Approach Gutter. See Dwg. No. 59271.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 71 INTERCHANGE (B.V. BYPASS) (F)
BENTON COUNTY
ROUTE 549 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 11-8-16
CHECKED BY: JAC DATE: 5-6-19
DESIGNED BY: — DATE: —
FILENAME: bco0903x2_ql.dgn
SCALE: NO SCALE

BRIDGE NOS. 02196, 07277 - 07281 DRAWING NO. 59142

PRINT DATE: 5/6/2019

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
SP & 201	CLEARING		106	STATION
SP & 201	GRUBBING		106	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER		4390	LIN. FT.
202	REMOVAL AND DISPOSAL OF RETAINING WALLS		773	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT		785	SQ. YD.
202	REMOVAL AND DISPOSAL OF PARAPET WALLS		771	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS		2365	SQ. YD.
202	REMOVAL AND DISPOSAL OF APPROACH GUTTERS		6	EACH
202	REMOVAL AND DISPOSAL OF APPROACH SLAB AND GUTTERS		4	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS		295	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS		1271	SQ. YD.
202	REMOVAL AND DISPOSAL OF FOUNDATIONS		288	SQ. YD.
202	REMOVAL AND DISPOSAL OF DROP INLETS		27	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		40	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS		2	EACH
202	REMOVAL AND DISPOSAL OF PRECAST CONCRETE BARRIER WALL LEFT IN PLACE		900	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING		4165	SQ. YD.
202	REMOVAL AND DISPOSAL OF GUARDRAIL		2296	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE MEDIAN BARRIER		3624	LIN. FT.
202	REMOVAL AND DISPOSAL OF IMPACT ATTENUATION BARRIER		2	EACH
SP	REMOVAL AND DISPOSAL OF PLOWABLE PAVEMENT MARKER		73	EACH
206	FLOWABLE SELECT MATERIAL		387	CU. YD.
210	UNCLASSIFIED EXCAVATION		926435	CU. YD.
SP	SELECT GRANULAR BACKFILL		45765	CU. YD.
210	PRESPLITTING		20374	SQ. YD.
SP & 210	COMPACTED EMBANKMENT		293196	CU. YD.
SP & 210	ROCK FILL		150900	CU. YD.
SP & 210	SOIL STABILIZATION		500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		55389	TON
308	AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE		20516	TON
308	CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE		1310	TON
308	PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE		62360	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)		374	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (8" UNIFORM THICKNESS)		213	SQ. YD.
SS & 401	TACK COAT		17661	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		19055	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")		835	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		13065	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")		616	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")		3238	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")		192	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		15313	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		51	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		857	TON
412	COLD MILLING ASPHALT PAVEMENT		26766	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		50	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		50	TON
SP & 501	PORTLAND CEMENT CONCRETE PAVEMENT (11" UNIFORM THICKNESS)		59615	SQ. YD.
504	APPROACH SLABS		704.05	CU. YD.
504	APPROACH GUTTERS		191.39	CU. YD.
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY		197.55	SQ. YD.
506	PORTLAND CEMENT CONCRETE CORRUGATIONS		180	SQ. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
603	24" TEMPORARY CULVERT		266	LIN. FT.
SS & 604	SIGNS		967	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		10	EACH
SS & 604	BARRICADES		408	LIN. FT.
SS & 604	TRAFFIC DRUMS		261	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		17776	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER		7010	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS		193458	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)		38	EACH
604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		39	EACH
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		45572	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS (WORDS)		6	EACH
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS (ARROWS)		7	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		50515	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (WORDS)		11	EACH
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)		16	EACH
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN		150	WEEK
SS & 604	VERTICAL PANELS		13	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE A)		1000	SQ. YD.
SS & 605	CONCRETE DITCH PAVING (TYPE B)		4430	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		783	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		949	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		524	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		100	LIN. FT.
606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)		68	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		100	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN		192	LIN. FT.
606	18" SAFETY END SECTIONS FOR CROSS DRAIN PIPE CULVERTS (CLASS 2)		6	EACH
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		10	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		2	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		1	EACH
606	SELECTED PIPE BEDDING		220	CU. YD.
SS & 609	DROP INLETS (TYPE MO)		13	EACH
SS & 609	DROP INLETS (TYPE RM)		5	EACH
SS & 609	DROP INLETS (TYPE ST)		8	EACH
SS & 609	DROP INLETS (TYPE TM)		2	EACH
SS & 609	DROP INLETS (TYPE SPECIAL)		23	EACH
SS & 609	JUNCTION BOXES (TYPE E)		1	EACH
SS & 609	DROP INLET EXTENSIONS (8')		38	EACH
SS & 611	4" PIPE UNDERDRAINS		2000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		9	EACH
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)		53.9	CU. YD.
SS & 617	GUARDRAIL (TYPE A)		2050	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)		4	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		9	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		5	EACH
619	WIRE FENCE (TYPE A)		7318	LIN. FT.
* 619	5' STEEL CHAIN LINK FENCE	(ALTERNATE NO. 1)	3603	LIN. FT.
* 619	5' ALUMINUM CHAIN LINK FENCE	(ALTERNATE NO. 2)	3603	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	3	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	3	EACH
620	LIME		193	TON
620	SEEDING		96.25	ACRE
SS & 620	MULCH COVER		243.75	ACRE
620	WATER		12891.3	M. GAL.
621	TEMPORARY SEEDING		147.50	ACRE
621	SILT FENCE		29250	LIN. FT.
621	SAND BAG DITCH CHECKS		1100	BAG
621	DIVERSION DITCH		1919	LIN. FT.
621	DROP INLET SILT FENCE		1475	LIN. FT.
621	SEDIMENT BASIN		7544	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		7544	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		9621	CU. YD.
621	PIPE FOR SLOPE DRAINS		388	LIN. FT.
621	ROCK DITCH CHECKS		1593	CU. YD.
SP	ROCK DITCH LINER		1854	TON
621	WATTLE (20")		4032	LIN. FT.
623	SECOND SEEDING APPLICATION		96.25	ACRE
624	SOLID SODDING		5134	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		889	SQ. YD.
628	TOPSOIL FURNISHED AND PLACED		27000	CU. YD.
631	CONCRETE BARRIER WALL (MEDIAN TYPE A)		8177	LIN. FT.
631	CONCRETE BARRIER WALL (MEDIAN TYPE B)		3464	LIN. FT.
SP & 631	CONCRETE BARRIER WALL (SIDE TYPE A)		8551	LIN. FT.
SS & 632	CONCRETE ISLAND		6766	SQ. YD.
SS & 633	CONCRETE WALKS		2556	SQ. YD.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1'6")		6750	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
641	WHEELCHAIR RAMPS (TYPE 3)		26	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)		80	SQ. YD.
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		17705	LIN. FT.
642	RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS		20951	LIN. FT.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (5 PHASES)		1	EACH
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)		1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)		3	EACH
SP	CELLULAR MODEM		2	EACH

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES

DATE REVISED	DATE PLANS	DATE REVISED	DATE PLANS
7/19/19			

(2) SUMMARY OF QUANTITIES

JOB NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	CA0903	93	452

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
7-19-19

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	24	EACH
SP & 707	CENTRAL CONTROL UNIT	1	EACH
SP & 707	POLE MOUNTED ASSEMBLY	12	EACH
SP & 707	INFRARED PROGRAMMING DEVICE	1	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	12	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	11094	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	929	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	27	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	2212	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	325	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/8 A.W.G., E.G.C.)	580	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	1353	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/12 A.W.G., E.G.C.)	84	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/6 A.W.G.)	919	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	2066	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	40	LIN. FT.
SP	PVC COATED GALVANIZED STEEL CONDUIT (1.5")	546	LIN. FT.
SP	FIBERGLASS CONDUIT H.D. (3")	485	LIN. FT.
710	NON-METALLIC CONDUIT (2")	2449	LIN. FT.
710	NON-METALLIC CONDUIT (3")	1805	LIN. FT.
711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	22	EACH
SP	ANTI-THEFT CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (0')	2	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (50')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	6	EACH
SP	SUBMERSIBLE LUMINAIRE	11	EACH
SP	LED ROADWAY ILLUMINATION POLE (4,700 LUMENS, COBRA HEAD, SHOE BASE, 15')	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	10	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	SERVICE POINT ASSEMBLY (4 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	2010	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	7114	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	4775	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	760	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")	283	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	9175	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	34	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	34	EACH
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	48461	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")	7009	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	36541	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	1578	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-31)	1	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-32)	1	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-33)	1	EACH
SS & 725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	1525	SQ. FT.
SS & 725	GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	1266	SQ. FT.
SP, SS, & 726	STANDARD SIGN	1394	SQ. FT.
SS & 727	EXIT NUMBER PANEL (TYPE A)	119	SQ. FT.
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	9891	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	17	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	8	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	17	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-4)	8	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-6)	1	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-8)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-9)	1	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-10)	4	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	4	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	6	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	2	EACH
SS & 732	CRASH CUSHION	1	EACH
SP & 733	VIDEO DETECTOR (CLR)	3	EACH
SP & 733	VIDEO DETECTOR (IP)	9	EACH
733	VIDEO CABLE	464	LIN. FT.
SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)	2395	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	2	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	2	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)	5	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	37	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	138.68	CU. YD.
SP	RETAINING WALL	71465	SQ. FT.
SP	TEXTURED COATING FINISH	17848	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	114536	POUND
816	FILTER BLANKET	1278	SQ. YD.
816	DUMPED RIPRAP	125	CU. YD.
816	DUMPED RIPRAP (GROUTED)	100	CU. YD.
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	2404	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	2931	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	7283.50	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE	2386.1	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	3254.6	CU. YD.
SP	ARCHITECTURAL FINISH	1194	SQ. FT.
SP	TEXTURED COATING FINISH	3243	SQ. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	11380.2	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	1130227	POUND
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	343310	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	692130	POUND
SS & 805	STEEL PILING (HP 12X53)	4380	LIN. FT.
SS & 805	STEEL PILING (HP 14X73)	1386	LIN. FT.
SS & 805	PREBORING	288	LIN. FT.
SP	EXPLORATORY HOLES	288	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)	2150340	POUND
SP, SS, & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)	199300	POUND
SP, SS, & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GRHPS70W)	1755190	POUND
SP, SS, & 807	PAINTING STRUCTURAL STEEL	974.0	TON
SS & 808	ELASTOMERIC BEARINGS	115496	CU. IN.
SS & 809	ARMORED JOINT WITH NEOPRENE STRIP SEAL	196	LIN. FT.
SS & 809	SILICONE JOINT SEALANT	839	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	3	EACH
816	FILTER BLANKET	425	SQ. YD.
816	DUMPED RIPRAP	230	CU. YD.
816	CONCRETE RIPRAP	18	CU. YD.
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 07277)	1.00	LUMP SUM
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 07279)	1.00	LUMP SUM
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. 02196)	1.00	LUMP SUM

REVISIONS

DATE	REVISION	SHEET NUMBER
7/19/2019	REVISED THE MAINTENANCE OF TRAFFIC PATTERN IN STAGE 4B, TYPICAL SECTIONS AND SPECIAL DETAILS FOR MEDIAN BARRIER WALL TYPE A AND TYPE B AND ASSOCIATED QUANTITIES, REMOVAL AND DISPOSAL OF BUILDINGS, AND THE NOTE FOR COLD MILLING ASPHALT PAVEMENT, ADDED ADDITIONAL TYPE A SIDE BARRIER WALL TO ELIMINATE PORTIONS OF THE PRESPLITTING ON HWY. 549 AND REVISED ASSOCIATED EARTHWORK QUANTITIES AND REMOVAL AND DISPOSAL QUANTITIES THAT WERE REQUESTED BY DISTRICT PERSONNEL, ADDED THE PAY ITEM TOP SOIL FURNISHED AND PLACED, REMOVED APPROACH GUTTER AND APPROACH SLAB QUANTITIES THAT WERE PLACED IN PREVIOUS JOB, CA0904.	8-9, 27, 74-75,83-86,89, 91,93-94, 109-110, & 360-368

SUMMARY OF QUANTITIES & REVISIONS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11495 TIMOTHY D. SMITH 7-19-19

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
7/19/19			

(2) SUMMARY OF QUANTITIES & REVISIONS

FEDERAL DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	CA0903	94	452

JOB NO.

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.		CA0903	95	452

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES

Project Name: s090115.alg
Date: 1/18/2013
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
1	765243.0310	659149.0342	-99999.000	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 1
2	766021.5710	657252.2630	1058.857	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 2
3	765374.8500	656848.5160	1078.988	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 3
4	765342.4798	653154.8084	1307.483	CTL	" Rebar with 2" Aluminum Cap stamped pnt 4
5	764793.5733	652416.1255	1307.582	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 5
6	762298.6155	648313.6803	1173.759	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 6
7	765320.4670	646405.9210	1327.501	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 7
8	764452.8350	641683.3570	1357.172	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 8
9	762947.6970	641636.4200	1360.475	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 9
10	767060.9330	635104.9620	1358.510	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 10
11	766953.7110	632541.9600	1348.844	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 11
12	768230.7820	629720.9530	1351.105	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 12
13	768766.7110	629505.2030	1350.654	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 13
14	769492.4200	629119.2610	1346.675	TV	5/8" Rebar with 2" Aluminum Cap stamped pnt 14
15	769141.7689	625659.3342	1310.133	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 15
16	768517.4050	625638.7080	1288.742	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 16
17	767657.9540	625631.4530	1310.690	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 17
18	768639.6263	621694.3216	1310.979	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 18
19	769389.4440	619085.2960	1258.824	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 19
20	769761.7820	619136.2090	1246.340	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 20
21	770228.5630	619158.9300	1270.617	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 21
22	770126.8920	617833.3077	1283.926	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 22
23	769589.0416	617682.3011	1264.645	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 23
24	772346.1900	614936.3530	1321.911	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 24
25	772643.2268	615661.5929	1316.108	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 25
26	773665.7120	613995.1170	1312.174	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 26
27	773709.2240	613435.3180	1315.957	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 27
28	784314.8260	613657.6890	1288.756	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 28
29	784257.4140	614349.4000	1290.284	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 29
30	787885.3081	613878.7190	1190.002	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 30
31	788522.6973	614353.3326	1170.499	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 31
32	789450.4720	614105.0350	1148.343	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 32
33	789130.0840	613488.8340	1160.796	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 33
34	788699.2580	612778.9990	1177.660	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 34
35	795883.7910	614972.9240	1225.576	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 35
36	795641.3459	614523.1822	1184.815	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 36
60	767773.2178	658397.3004	1039.461	CTL	BENTONVILLE 6
100	765719.9707	658553.4099	1040.603	GPS	RBR ALUM CAP
101	767671.3151	658321.5856	1045.705	GPS	GPS 040026 RBR ALUM CAP
102	762642.8185	646936.0332	1187.918	GPS	GPS BENTONVILLE 16
103	765838.7183	646137.8955	1328.145	GPS	RBR CAP
104	762882.4788	641970.6565	1358.373	GPS	RBR CAP
105	766861.5720	633463.3150	1340.623	GPS	CAP/REBAR GPS
106	766933.0190	631786.5840	1360.065	GPS	CAP/REBAR LT BANK
107	768130.5150	621673.8670	1323.561	GPS	CAP REBAR GPS 040102A
108	769452.0390	621908.0420	1305.742	GPS	ADS GPS 040102
109	771646.3140	613416.6920	1320.461	GPS	RBR\CAP GPS
110	770791.9291	612006.5264	1311.174	GPS	NGS POINT N 34 RESET 1987
111	782824.2570	614663.3580	1275.761	GPS	RBR CAP
112	784639.0704	614554.0001	1293.249	GPS	GPS 040031
113	795801.5310	615492.6250	1246.871	GPS	040032 GPS
114	801935.4869	610517.8416	1031.533	GPS	DISK SET IN CONC "G"
115	801302.3117	609377.5329	1010.898	GPS	DISK SET IN CONC "F"
125	760550.6169	653739.9348	1092.631	GPS	ADS 105 REBAR CAP +/- 2 FEET
126	767773.2178	658397.3004	1039.465	GPS	BENTONVILLE 6-2000 BRASS CAP
500	793132.5671	624285.7262	1337.205	GPS	HIWASSII TRI STA.
501	804309.8870	637544.2282	1210.627	NGS	NGS POINT HOLLAND
502	771207.2919	614376.5146	1309.052	NGS	NGS POINT GRAVETTE
503	771924.2819	625917.8305	1332.494	NGS	NGS POINT M 34
504	770736.3043	612155.5790	1311.677	NGS	NGS POINT N 34 RESET
505	791863.0997	588158.2788	899.611	NGS	NGS POINT C 124
506	795250.6760	586200.8994	885.628	NGS	NGS POINT D 124
508	767414.3888	603163.2667	1325.447	NGS	NGS POINT P 34
509	801995.3987	583511.7981	862.981	NGS	NGS POINT A 108
510	777603.4846	587964.9313	1084.689	NGS	NGS POINT A 124
511	768974.5043	593226.9412	1231.198	NGS	NGS POINT Q 34
512	819289.2751	587783.5298	827.466	BM	NGS POINT C 108
514	769344.8803	590538.1159	1219.765	NGS	NGS POINT R 34
515	832233.3560	631165.1065	1236.874	NGS	NGS POINT MCDONALD RESET
516	777773.2401	583197.8640	1286.087	NGS	NGS POINT WILLS RESET
517	813971.1153	582017.5544	827.357	NGS	NGS POINT B 108
518	829453.7370	593994.2360	846.127	NGS	NGS POINT D 108
519	768046.8610	589851.6709	1198.695	NGS	NGS POINT Y 31
520	768046.8610	589851.6709	1200.719	NGS	NGS POINT Z 31
521	774427.1287	650695.0755	1322.176	NGS	NGS POINT BELLA
523	775106.1418	578665.4740	1233.600	NGS	NGS POINT Y 34
524	836939.9015	594017.1590	856.419	NGS	NGS POINT E 108
525	756614.8438	638806.5095	1383.855	NGS	NGS POINT RICE
526	843318.6002	611830.9649	1190.942	NGS	NGS POINT ANDERSON
527	750436.5215	612944.7087	1354.459	NGS	NGS POINT POND
528	838253.6207	586727.7519	1151.572	NGS	NGS POINT LEIBE
529	772066.5115	570903.6802	1261.507	NGS	NGS POINT T 34
530	755963.1617	583579.0969	1027.258	NGS	NGS POINT A 213
700	765206.9642	655741.7740	1171.485	HPT	HPT-700\RBR CAP
701	764607.3939	662491.7156	1192.125	HPT	HPT-701\N END PRO TANK
702	763464.3331	662099.7398	1196.727	HPT	HPT-702\RBR CAP
704	764406.8764	660317.4519	1122.854	HPT	HPT-704\CPS
705	764367.3616	659087.3454	1051.445	HPT	HPT-705\CPS
706	766571.9132	658753.7644	1034.136	HPT	HPT-706\CPS
707	767630.8562	657574.7037	1136.412	HPT	HPT 707 FE COR
708	768004.0171	658169.7900	1037.758	HPT	HPT-708\NAIL
709	768165.3457	658796.3842	1032.030	HPT	HPT-709\CPS
710	765722.3617	658362.2285	1039.331	HPT	HPT-710\CTR MH
711	765634.3369	660318.0969	1221.643	HPT	HPT-711
712	761118.4779	660158.8033	1089.612	HPT	HPT-712\CPS
713	761612.1965	661254.7262	1136.056	HPT	HPT-713
714	765904.0112	657172.2549	1055.937	HPT	HPT-714\NAIL
715	764716.1156	656422.4660	1113.153	HPT	HPT-715\NAIL
716	765254.0270	654423.1908	1260.206	HPT	HPT-716 RBR CAP
717	766523.2584	654886.2094	1188.858	HPT	HPT-717\NAIL
718	765400.1696	652501.7593	1312.772	HPT	HPT-718\RBR CAP
719	764219.9070	652384.9386	1293.621	HPT	HPT-719\RBR CAP
720	762867.5469	650963.5227	1278.371	HPT	HPT 720 NDC
721	762983.8685	650254.8197	1152.461	HPT	HPT 721 REBAR CAP=ADS 040111
722	763525.4350	650335.7255	1166.388	HPT	HPT-722\RBR CAP
723	764388.4885	650649.5746	1184.230	HPT	HPT-723 NBC
724	762731.3232	648293.8863	1223.025	HPT	HPT-724\RBR CAP
725	763092.5572	648331.9682	1270.008	HPT	HPT-725\RBR CAP
726	763686.1855	648368.6201	1211.474	HPT	HPT-726\NAIL
727	763205.9659	646568.9013	1237.543	HPT	HPT-727 HPT CPS
728	763844.7861	646313.2160	1293.883	HPT	HPT-728 HPT REBAR CAP
729	764659.9857	646290.6691	1319.580	HPT	HPT-729 REBAR CAP
730	763032.9314	645514.5763	1265.440	HPT	HPT-1730\NAIL
731	764576.8850	643909.0199	1304.367	HPT	HPT-731
732	763456.3192	641966.6235	1345.831	HPT	HPT-732\RBR CAP
733	764858.5372	641710.7402	1337.193	HPT	HPT-733\RBR CAP
734	764316.1007	639629.5552	1215.176	HPT	CAP/REBAR BRIAR THICKET
735	765623.0510	639128.4526	1193.217	HPT	CAP/REBAR EDGE OF FIELD
736	765276.2490	637935.8360	1219.721	HPT	HPT 736 NBC TARGET
737	767103.0997	637186.4082	1285.042	HPT	HPT-737
738	766594.6162	635183.4839	1355.376	HPT	CAP/REBAR RT EDGE D.ROAD
739	767735.3359	635215.0348	1361.768	HPT	CAP/REBAR LT EDGE D.ROAD
740	767502.4236	632538.9925	1344.117	HPT	CAP/REBAR LT EDGE D.ROAD
741	768104.0668	632811.4897	1330.318	HPT	NAIL BASE PP\741
742	768495.8187	632879.1575	1324.007	HPT	HPT-742\NAIL BASE PP
743	769550.6337	632678.1131	1319.110	HPT	HPT-743\NW COR FOUNDATION
744	768257.3194	631421.2447	1336.328	HPT	HPT-744\BASE TREE
745	769872.3738	630438.4855	1335.142	HPT	BASE PP\NAIL
746	768532.8276	628615.0258	1346.051	HPT	BASE EASTRN GATE POST\NBC
748	768048.8200	625673.3252	1297.966	HPT	BASE CP\NAIL
749	769635.9955	625688.8002	1313.180	HPT	BASE SN\NAIL
753	767439.8998	621591.7819	1316.685	HPT	N SD WESTERN GATE POST\NBC
754	768094.7999	621897.8650	1323.229	HPT	N SD WESTERN GATE PST\NBC
755	769065.1261	621631.4328	1303.223	HPT	BASE S SD MAPLE TR\NAIL
756	768608.1094	619421.4941	1297.367	HPT	NBC 756 FE POST
757	768873.9946	620009.8194	1288.835	HPT	NBC 757 FE POST
758	770066.0482	619777.9521	1253.163	HPT	NBC 758 FE POST
759	769720.7232	616868.5444	1277.857	HPT	NBC 759 BASE OF PP
760	770240.8457	617477.6007	1288.811	HPT	NBC 760 FE POST
761	770917.3248	617834.0327	1292.534	HPT	NBC 761 BASE OF PP
762	771042.6264	614495.2992	1312.026	HPT	NBC 762 CENTER LINE END OF EB
763	772040.8576	614405.5085	1319.537	HPT	TOMBSTONE NBC 763
764	772438.2704	615062.7406	1321.531	HPT	END OF TAR SEAM 764 CPS
765	772941.0690	616076.5767	1314.354	HPT	NBC 765 SMALL CEDAR
766	773698.9248	613709.1145	1312.496	HPT	GATE POST 766 NBC
767	774834.9085	615081.2956	1298.463	HPT	CLOTHES LINE POST NBC 767
768	775646.8332	612981.5576	1285.544	HPT	SOUTH EDGE FE COR. 768 NBC
769	775845.5757	612250.3137	1289.836	HPT	NBC 769 GATE POST
770	776529.0607	613615.0808	1276.231	HPT	NBC 770 BRACE POST
771	777920.1277	614126.4343	1267.375	HPT	FE POST 771 NBC
772	777814.9000	612894.2868	1226.448	HPT	772 NBC STEEL POST
773	777707.5893	612025.9983	1255.889	HPT	CENT RD 773 NBC
774	780604.8530	614050.7375	1250.396	HPT	GATE POST 774 NBC
775	780565.8551	613422.4473	1259.326	HPT	FE POST 775 NBC
776	780392.6816	612474.4910	1267.524	HPT	END OF LOG 776 NBC
777	782705.6570	613848.8781	1242.113	HPT	GATE POST 777 NBC
778	783124.9688	612432.5602	1291.611	HPT	CEDAR BUSH 778 NBC
779	785614.7446	613892.2970	1269.174	HPT	779 NBC FE POST
780	785907.4238	612385.3763	1298.419	HPT	NAIL BASE BRACE POST
781	788147.2424	614616.5079	1157.017	HPT	8 SPIKE ELEV BY 3-WIRE
782	789213.1463	613471.0262	1174.590	HPT	NAIL BASE SM CEDAR
783	788730.8077	612759.4492	1177.205	HPT	NAIL
784	784346.3823	613150.8071	1300.436	HPT	NAIL BASE E SD SN
785	789997.7351	614298.2388	1139.279	HPT	HPT 785 X/Y +/- 5000 FEET
786	791628.8224	613430.4753	1191.027	HPT	END OF FALLEN TREE
787	791215.1146	614824.2383	1098.587	HPT	HPT 787 ELEV BY 3WIRE
788	793096.7472	614856.5652	1134.967	HPT	CPS BASE MB
789	795883.4502	615101.8045	1229.689	HPT	NAIL BASE SM BUSH
790	799928.7926	611825.5169	1216.363	HPT	NAIL END FALLEN TREE
793	796187.2923	612265.7856	1060.676	HPT	NAIL END GRADER ROW
794	796997.7150	611998.2454	1043.272	HPT	8 SPK X/Y +/- 2500 FEET
799	770909.6148	615208.6072	1283.710	HPT	NBC 799 BASE OF PP
800	795734.5066	613035.8044	1091.341	HPT	MO TARG. A\RBR IN CONC.
801	796017.9848	613977.1697	1207.169	HPT	MO TARG. AA\NAIL
802	797249.9403	613718.2005	1060.100	HPT	MO TARG. B\NAIL
803	797286.7432	612561.9948	1046.953	HPT	MO TARG. C\RBR IN CONC.
804	796401.2567	611475.4469	1080.283	HPT	MO TARG. D
805	798668.1192	610295.1063	1024.682	HPT	MO TARG. E
806	801795.2933	611412.0471	1188.977	HPT	MO TARG. H" SPIKE
900	764880.5131	659342.9617	1081.320	BM	AHTD DISK
901	766097.8036	658598.1118	1043.540	BM	AHTD DISK SW COR. BR WR X/Y +- 500 FT
902	765101.1515	656593.5795	1114.039	BM	TBM-902\CH SQ BASE CH
903	761695.0872	655377.8640	1099.544	BM	TBM-903\CPS PP
904	761197.8176	652598.1290	1110.903	BM	TBM 904 CPS INS PP X/Y +/- 500 FT
905	762164.9489	650444.0232	1129.157	BM	TBM-905 CPS 10IN. SYCAMORE
906	764022.1645	646322.4300	1299.254	BM	906 BM CPS INS 20 IN OAK
907	765661.3638	643949.8308	1321.695	BM	907 TBM CPS INS PP
908	764173.6081	641672.5753	1357.528	BM	TBM-908\CPS PP GUY
909	764880.6881	639324.2841	1213.787	BM	TBM-909\CPS 24" ASH
910	767060.4918	635176.9129	1359.433	BM	TBM-910\CPS 36" OAK
911	767008.3170	632584.9384	1349.486	BM	TBM-911\CPS CP
912	768139.6417	632601.2683	1297.094	BM	TBM-911\CPS CP
913	768862.8457	629464.1513	1350.481	BM	TBM-913\CPS CP
914	763538.5979	650337.8655	1168.114	BM	TBM-914 CPS INS PP
915	765501.0323	652377.8836	1315.897	BM	TBM-915\CH SQ CONC OF MH
916	771904.3410	627718.2163	1352.740	BM	TBM-916\CH SQ CA
917	771842.2031	625828.2908	1334.333	BM	TBM-917\CH SQ CA
918	772021.6926	622822.9584	1304.856	BM	TBM-918 CH SQ IN TB BASE
919	772211.0631	619193.9138	1295.083	BM	TBM-919 10IN. CHERRY CPS
920	771997.7867	614398.2385	1319.075	BM	CPS PP X/Y +/- 500 FEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RCA0903_REVISED.DGN 1/20/2017

SURVEY CONTROL DETAILS

921	770791.9291	612006.5264	1311.174	BM	NGS POINT N 34 RESET 1987
922	769401.8461	622591.9950	1315.158	BM	TBM-922\CPS PP
923	775480.3297	614106.0364	1305.300	BM	TBM-923\CPS PP
924	777344.5924	614207.5071	1283.929	BM	TBM-924\CPS PP
925	780871.5112	614402.8975	1254.579	BM	TBM-925\CPS PP
926	782940.1903	613862.8781	1247.631	BM	CPS 7IN WALNUT
927	784202.1547	614420.7965	1289.865	BM	TBM-927\CH SQ SW CHURCH
928	786390.6514	615070.4996	1293.514	BM	TBM-928\CPS CP-GUY
929	789459.7876	614158.0912	1149.660	BM	CPS 10IN WALNUT\TBM-929
930	791760.2560	614576.3600	1115.637	BM	TBM-930\CPS SYCAMORE
931	793740.4073	614792.7234	1111.367	BM	TBM-931\CPS PP-GUY
932	768483.4668	625690.7891	1285.109	BM	TBM-932\CPS CP
933	794397.7225	611698.2463	1038.745	BM	CAP IN ROCK X/Y +/- 1000 FEET
934	796590.5832	611768.9981	1042.298	BM	TBM-934\CH CUT ROCK
935	798719.7511	610400.5130	1093.836	BM	NGS POINT 1342 CWA 1935
936	794975.1947	613093.4352	1067.124	BM	TBM-936\CPS
940	769740.6606	619250.1256	1247.991	BM	CPS IN WEST FACE 28" WALNUT +-116' EAST
941	784309.1863	612840.1946	1304.328	BM	CPS IN NORTH FACE 12"WILD CHERRY 225+-W
942	796162.4186	612374.1809	1067.892	BM	RR SPIKE N FACE 20"WALNUT
943	789109.4320	613641.6495	1159.799	BM	RR SPIKE E FACE 28"SYCAMORE
944	772566.0544	615379.8994	1316.024	BM	RR SPIKE N EP HWY 72
945	769069.2809	621687.4009	1306.296	BM	RR SPIKE E FACE PP
946	765584.0468	656947.2780	1068.591	BM	RR SPIKE SOUTH SIDE PP
947	765157.4281	657634.0178	1041.694	BM	RR SPIKE SOUTH SIDE 12"ELM
948	763726.0423	659820.5932	1053.792	BM	RR SPIKE WEST FACE 12"SYCAMORE
949	764050.4002	660682.0890	1226.175	BM	RR SPIKE SOUTH SIDE HICKORY
950	765619.1956	655727.2959	1199.407	BM	TBM-950\RRS
951	765557.0060	654561.5333	1224.007	BM	TBM-951KD
952	764593.2683	651413.8259	1294.555	BM	TBM-952\RRS
953	764242.3950	649541.0666	1221.390	BM	TBM-953\RRS
954	764298.5735	648455.7792	1278.117	BM	TBM-954\RRS
955	764202.2167	647273.0918	1309.726	BM	TBM-955\RRS
956	764354.9084	645410.0537	1290.688	BM	TBM-956\RRS
957	764263.7230	643995.4320	1253.775	BM	TBM-957\RRS
958	764291.5815	643035.3963	1319.636	BM	TBM-958\CPS
959	764680.5378	640466.2856	1318.684	BM	TBM-959\CPS
960	765177.7418	638767.3380	1274.284	BM	TBM-960\CPS
961	765887.5569	636746.5025	1314.923	BM	TBM-961\CPS
962	766639.9375	636206.6278	1299.751	BM	TBM-962\CPS
963	767340.6825	634257.1678	1346.333	BM	TBM-963\CPS
964	768082.6494	633550.0495	1313.559	BM	TBM-964\CPS
965	769005.2765	631950.8520	1311.863	BM	TBM-965\CPS
966	768766.7951	630709.3577	1329.851	BM	TBM-966\CPS
968	768294.8157	628639.3763	1340.044	BM	TBM-968\CPS
969	768534.3190	627032.8383	1328.309	BM	TBM-969\CPS
971	768069.7131	624331.0565	1302.076	BM	TBM-971\CPS
972	768199.2213	622976.4369	1292.954	BM	TBM-972\CPS
974	769425.6141	620402.2895	1294.593	BM	TBM-974\CPS
976	769782.9765	618612.4311	1260.819	BM	TBM-976\CPS
977	770947.5852	616596.4680	1272.370	BM	TBM-977\CPS
978	771712.7399	616060.0623	1297.314	BM	TBM-978\CPS
979	773804.9658	614710.8815	1307.039	BM	TBM-979\CPS
980	774737.4859	613920.6122	1292.974	BM	TBM-980\CPS
981	776711.2844	613095.1092	1276.580	BM	TBM-981\CPS
982	779015.8807	612319.4892	1254.573	BM	TBM-982\CPS
983	780356.5650	612380.5422	1268.452	BM	TBM-983\CPS
984	781672.1461	612972.5543	1274.536	BM	TBM-984\CPS
985	783119.6873	612659.4284	1294.723	BM	TBM-985\CPS
986	784966.2990	613153.8718	1306.394	BM	TBM-986\CPS
987	787021.3970	613347.7711	1213.072	BM	TBM-987\CPS
988	788057.3619	613062.6700	1273.505	BM	TBM-988\CPS
989	790096.5322	613688.3663	1231.293	BM	TBM-989\CPS
990	791374.8756	613768.5914	1243.869	BM	TBM-990\CPS
991	792619.7429	613670.9522	1209.850	BM	TBM-991\CPS
992	793900.8366	613414.7211	1153.976	BM	TBM-992\CPS
993	771597.7878	618498.2268	1283.083	BM	TBM 993\CPS FE COR X/Y +/- 2500 FEET
994	761881.2707	640408.6329	1277.072	BM	TBM-994\CPS 10" SYCAMORE
995	766971.1341	639152.7785	1176.900	BM	TBM-995 CPS CROSSTIE
996	767485.4536	637711.0907	1304.098	BM	TBM-996\NAIL PP
997	767522.8035	636175.9811	1342.973	BM	TBM-997\NAIL 12" OAK
998	762272.1246	648267.6284	1175.633	BM	TBM-998 CPS PP
999	788400.4757	614463.0863	1174.927	BM	TBM-999*CLC 1968

Note - Rebar and Cap - Standard -" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 1.000002867 HAS BEEN USED TO COMPUTE THE ABOVE LISTED GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GROUND COORDINATES ARE PROJECTED FROM AR. STATE PLANE GRID COORDINATES BY SCALING ALL X,Y
COORDINATE VALUES WITH THE INVERSE (1/X) OF THE COMBINED AJUSTMENT FACTOR (CAF) ABOUT X=0,Y=0.

GRID COORDINATES ARE STORED UNDER FILE NAME.s090115gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 ELEVATIONS FOR POINTS 1-36,60, 100-115, AND 900-999 WERE ESTABLISHED
BY 3-WIRE LEVEL TECHNIQUES FROM NGS BENCHMARKS.

POSITIONAL ACCURACY:

HORIZONTAL-GPS(POINTS 100-115): 1.0 CM 10 PPM, PRIMARY CONTROL(POINTS 1-36,60): 2.0 CM 20 PPM

VERTICAL-POSITIONAL ACCURACY IS 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:
CONVERGENCE ANGLE: 1 22 56.8916 LEFT AT PN:109
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

LT: LG:

GRID NORTHING: 771648.52631 GRID EASTING: 613418.450666

GROUND NORTHING: 771646.3140 GROUND EASTING: 613416.6920

CL. HWY. 549

POINT NO.	TYPE	STATION	NORTHING	EASTING
8071	POB	103+39.0000	826496.8400	609425.2380
8072	PC	109+76.3636	825936.7454	609729.4195
8073	PT	142+59.9095	822760.6646	609944.7916
8074	PC	193+90.4209	817962.8561	608127.3261
8075	PT	221+84.2666	815215.9410	607800.8440
8076	PC	319+25.9410	805550.8950	609020.3131
8077	PT	347+39.5200	802830.4325	609709.9660
8078	PC	439+46.9148	794249.5972	613048.4364
8079	PT	476+11.8318	790650.9074	613523.2125
8080	PC	532+98.1396	784998.1577	612906.3526
8081	PT	546+44.0376	783654.7122	612839.1652
8082	PC	614+33.4989	776865.5111	612898.6145
8083	PT	639+30.4606	774549.6093	613706.4072
8084	PC	677+67.2881	771524.3398	616066.2779
8085	PT	698+05.2800	770319.1193	617679.7386
8086	PC	744+93.3601	768602.9116	622042.3899
8087	PT	760+14.5154	768338.8109	623530.2557
8088	PC	804+62.1453	768443.0783	627976.6632
8089	PT	817+62.4618	768620.1806	629262.0476
8090	PC	826+67.6417	768844.4708	630138.9995
8091	PT	857+33.1778	768395.9498	633089.0230
8092	PC	917+75.6674	765226.4877	638233.5532
8093	PT	941+43.4533	764430.2158	640445.5714
8094	PC	962+37.4378	764140.2844	642519.3870
8095	PT	977+68.7543	764030.0708	644045.5900
8096	PC	1011+07.1388	764012.4679	647383.9281
8097	PT	1030+85.4123	764256.8635	649341.4816
8098	PC	1078+22.1244	765445.6375	653926.5943
8099	PT	1108+97.0604	765417.7055	656906.2240
8100	PC	1141+01.7214	764555.4172	659992.6962
8042	PT	1161+15.7844	763687.1384	661798.5044
8101	POE	1184+82.0599	762304.6510	663718.9180

CL. HWY. 549 LML

POINT NO.	TYPE	STATION	NORTHING	EASTING
8514	POB	1010+38.4074	764054.8297	647315.4210
8515	PC	1011+75.8665	764054.1049	647452.8782
8517	PT	1031+54.1399	764298.5005	649410.4317
8518	POE	1034+16.6448	764364.3814	649664.5350

CL. HWY. 549 RML

POINT NO.	TYPE	STATION	NORTHING	EASTING
8519	PC	1010+38.4074	763970.8309	647314.9781
8521	PT	1030+16.6809	764215.2265	649272.5316
8522	PI	1031+71.0667	764253.9728	649421.9763
8523	POE	1034+33.5716	764319.8537	649676.0796

CL. I-49 LML

POINT NO.	TYPE	STATION	NORTHING	EASTING
8559	PC	1164+77.8900	763505.3520	662113.8259
8561	PT	1168+26.6943	763305.9039	662399.9648
8562	POE	1174+09.1085	762965.6307	662872.6385

CL. I-49 RML

POINT NO.	TYPE	STATION	NORTHING	EASTING
8563	POB	1162+46.6700	763590.7802	661890.4189
8564	PC	1168+78.1284	763210.1953	662394.2988
8566	PT	1171+40.9918	763054.1852	662605.8524
8567	POE	1174+09.2467	762897.4582	662823.5618

CL. RAMP 1 SPUI

POINT NO.	TYPE	STATION	NORTHING	EASTING
8524	PC	1104+79.1900	765488.4176	656494.5822
8526	PT	1108+08.7548	765395.6266	656810.3884
8527	PC	1113+12.1049	765212.6412	657279.2995
8529	PT	1120+73.2160	764971.6993	658000.9352
8530	POE	1127+53.6095	764788.6236	658656.2356

CL. RAMP 2 SPUI

POINT NO.	TYPE	STATION	NORTHING	EASTING
8530	POB	1127+55.9500	764788.6236	658656.2356
8531	PC	1135+92.2794	764563.5898	659461.7210
8533	PT	1142+71.9016	764419.9254	660125.5775
8534	PC	1143+51.9517	764407.6610	660204.6826
8536	PT	1148+16.7212	764281.5466	660650.8237

CL. RAMP 3 SPUI

POINT NO.	TYPE	STATION	NORTHING	EASTING
8537	POB	1125+28.1600	765105.4317	658525.6983
8538	PC	1136+57.8046	764801.4746	659613.6813
8540	PT	1141+77.8233	764616.9869	660099.1111
8541	PC	1145+54.6874	764451.7244	660437.8069
8543	PT	1147+01.4548	764392.4930	660572.0518

CL. RAMP 4 SPUI

POINT NO.	TYPE	STATION	NORTHING	EASTING
8544	PC	1106+97.4900	765509.3508	656723.1279
8546	PT	1110+68.9862	765433.6738	657086.7680
8547	PC	1114+60.0003	765366.4570	657471.9613
8549	PT	1121+05.3461	765224.0477	658101.1244
8537	POE	1125+46.1781	765105.4317	658525.6983

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-17
TRINITY D. SMITH

CL. PEACH ORCHARD

POINT NO.	TYPE	STATION	NORTHING	EASTING
8568	POB	100+00.0000	765242.9840	656796.5580
8569	PC	100+47.2958	765288.9517	656807.6872
8571	PT	105+93.6952	765782.9959	657033.2309
8572	POE	112+26.1712	766298.1230	657400.2050

CL. HWY. 71B

POINT NO.	TYPE	STATION	NORTHING	EASTING
8550	POB	100+00.0000	761626.4974	660137.8820
8551	PC	104+28.1520	762054.6251	660133.3221
8553	PRC	128+88.3057	764212.6579	659117.2876
8555	PT	144+07.0379	765530.1059	658445.0780
8556	PC	159+27.4648	767046.3492	658332.3661
8558	PT	171+88.4416	768255.2175	658002.0000

CL. EXISTING RAMP 2/MOT RAMP 3 - STAGE 1B

POINT NO.	TYPE	STATION	NORTHING	EASTING
8540	POB	128+04.5100	764616.9869	660099.1111
8715	PC	132+76.7838	764824.0885	659674.6685
8717	PT	138+66.8859	765252.7269	659290.5904
8718	PC	139+92.8112	765371.2575	659248.0736
8720	PT	142+17.5593	765566.6252	659139.0393
8721	PC	151+45.4708	766291.8195	658560.1500
8723	PT	156+36.1483	766741.7804	658383.5853
8724	POE	157+60.3797	766865.6699	658374.3758

CL. EXISTING RAMP 2/MOT RAMP 3 - STAGE 1C

POINT NO.	TYPE	STATION	NORTHING	EASTING
8540	POB	128+04.5100	764616.9869	660099.1111
8715	PC	132+76.7838	764824.0885	659674.6685
8717	PT	138+66.8859	765252.7269	659290.5904
8718	PC	139+92.8112	765371.2575	659248.0736
8720	PT	142+17.5593	765566.6252	659139.0393
8725	PC	152+06.0624	766339.1738	658522.3492
8727	PT	156+10.1497	766709.7299	658376.9429
8728	POE	157+65.8510	766865.0027	658365.4005

CL. EXISTING RA HWY. 71 NB

POINT NO.	TYPE	STATION	NORTHING	EASTING
8659	POB	300+00.0000	764517.2686	659110.9284
8660	PC	300+52.2499	764560.8799	659139.7052
8662	PT	302+88.2707	764778.7514	659226.0448
8663	PC	305+37.0159	765023.8546	659268.4550
8665	PT	306+59.7248	765145.9640	659278.9414
8666	POE	306+61.5226	765147.7618	659278.9414

CL. EXISTING HWY. 71

POINT NO.	TYPE	STATION	NORTHING	EASTING
8042	PC	105+70.2800	763687.1384	661798.5044
8706	PT	120+84.3698	764400.0620	660467.7535
8707	PC	134+01.8253	764863.7884	659234.6083
8709	PT	148+49.3766	765961.1596	658413.0351
8556	PC	159+37.5604	767046.3492	658332.3661
8558	PT	171+98.5372	768255.2175	658002.0000

CL. SB HWY. 71 TRAFFIC - STAGE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8729	PC	134+02.9500	764842.2602	659226.5127
8731	PCC	139+13.1880	765110.0433	658796.0585
8733	PT	144+14.7145	765531.4413	658534.8616
8734	PC	145+85.9327	765695.3982	658485.5279
8736	PT	148+58.6449	765963.0148	658435.9409
8737	PC	151+54.4723	766258.0294	658414.0255
8739	PT	153+44.9217	766446.9380	658390.4783
8740	PC	156+16.6569	766714.5762	658343.4698
8748	PT	158+07.0100	766903.3887	658319.9298

CL. SB HWY. 71B TRAFFIC - STAGE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8742	POB	139+23.0000	765091.8294	658747.6911
8743	PC	141+19.1245	765256.2828	658640.8272
8745	PRC	142+30.9847	765356.7782	658592.3903
8747	PT	143+34.5382	765454.0726	658556.9714

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

CURVE ID	PI	PC	PT	Δ	DEGREE OF CURVE	TANGENT (FT.)	LENGTH (FT.)	e (FT./FT.)	Ls (FT.)
HWY. 549									
1	1021+01.84	1011+07.14	1030+85.41	14°50'13" LT.	0°45'00"	994.70	1978.27	N/A	N/A
2	1094+25.61	1078+22.12	1108+97.06	30°08'39" RT.	1°00'00"	1542.96	3014.41	0.037	450
3	1151+19.25	1141+01.72	1161+15.78	20°08'26" RT.	1°00'00"	1017.53	2014.06	0.037	350
HWY. 549 LML									
4	1021+70.57	1011+75.87	1031+54.14	14°50'13" LT.	0°45'00"	994.70	1978.27	0.028	350
HWY. 549 RML									
5	1020+33.11	1010+38.41	1030+16.68	14°50'13" LT.	0°45'00"	994.70	1978.27	0.028	350
I-49 LML									
6	1166+52.31	1164+77.89	1168+26.69	1°44'38" RT.	0°30'00"	174.42	348.80	N/A	N/A
I-49 RML									
7	1170+09.57	1168+78.13	1171+40.99	1°18'52" LT.	0°30'00"	131.44	262.86	N/A	N/A
RAMP 1 SPUI									
8	1106+44.38	1104+79.19	1108+08.75	9°53'13" RT.	3°00'00"	165.19	329.56	N/A	N/A
9	1116+92.98	1113+12.10	1120+73.22	5°42'30" LT.	0°45'00"	380.87	761.11	N/A	N/A
RAMP 2 SPUI									
10	1139+32.49	1135+92.28	1142+71.90	6°47'46" LT.	1°00'00"	340.21	679.62	N/A	N/A
11	1145+85.49	1143+51.95	1148+16.72	13°56'35" RT.	3°00'00"	233.54	464.77	MATCH EXIST.	MATCH EXIST.
RAMP 3 SPUI									
12	1139+18.53	1136+57.80	1141+77.82	10°24'01" RT.	2°00'00"	260.73	520.02	0.040	300
13	1146+28.11	1145+54.69	1147+01.45	4°24'11" LT.	3°00'00"	73.42	146.77	0.037	300
RAMP 4 SPUI									
14	1108+83.30	1106+97.49	1110+68.99	3°42'54" LT.	1°00'00"	185.81	371.50	0.031	300
15	1117+82.94	1114+60.00	1121+05.35	5°42'38" RT.	0°53'06"	322.94	645.35	N/A	N/A
PEACH ORCHARD									
16	103+23.86	100+47.30	105+93.70	21°51'22" RT.	4°00'00"	276.56	546.40	N/A	N/A
HWY. 71B									
17	117+39.85	104+28.15	128+88.31	49°12'11" LT.	2°00'00"	1311.70	2460.15	0.034	500
18	136+90.39	128+88.31	144+07.04	45°33'43" RT.	3°00'00"	802.09	1518.73	0.020	400
19	165+65.86	159+27.46	171+88.44	22°04'02" LT.	1°45'00"	638.40	1260.98	N/A	N/A
EXISTING RAMP 2/MOT RAMP 3 - STAGE 1B									
20	135+87.44	132+76.78	138+66.89	44°15'28" RT.	7°30'00"	310.65	590.10	0.026	250
21	141+06.21	139+92.81	142+17.56	18°51'57" LT.	8°23'39"	113.40	224.75	MATCH EXIST.	MATCH EXIST.
22	153+98.43	151+45.47	156+36.15	34°20'51" RT.	7°00'00"	252.96	490.68	MATCH EXIST.	MATCH EXIST.
EXISTING RAMP 2/MOT RAMP 3 - STAGE 1C									
20	135+87.44	132+76.78	138+66.89	44°15'28" RT.	7°30'00"	310.65	590.10	0.026	250
21	141+06.21	139+92.81	142+17.56	18°51'57" LT.	8°23'39"	113.40	224.75	MATCH EXIST.	MATCH EXIST.
23	154+14.38	152+06.06	156+10.15	34°20'51" RT.	8°30'00"	208.32	404.09	MATCH EXIST.	MATCH EXIST.
EXISTING RA HWY. 71 NB									
24	301+71.96	300+52.25	302+88.27	23°36'07" LT.	10°00'00"	119.71	236.02	N/A	N/A
25	305+98.52	305+37.02	306+59.72	9°49'00" LT.	8°00'00"	61.50	122.71	N/A	N/A
EXISTING HWY. 71									
26	113+31.76	105+70.28	120+84.37	15°08'27" LT.	1°00'00"	761.48	1514.09	N/A	N/A
27	142+15.15	134+01.83	148+49.38	65°08'23" RT.	4°30'00"	813.33	1447.55	N/A	N/A
28	165+75.96	159+37.56	171+98.54	22°04'02" LT.	1°45'00"	638.40	1260.98	N/A	N/A
SB HWY. 71 TRAFFIC - STAGE 3									
29	136+61.42	134+02.95	139+13.19	22°33'12" RT.	4°25'13"	258.46	510.24	N/A	N/A
30	141+69.88	139+13.19	144+14.71	30°05'30" RT.	6°00'00"	256.69	501.53	N/A	N/A
31	147+22.83	145+85.93	148+58.64	12°29'52" RT.	4°34'58"	136.90	272.71	N/A	N/A
32	152+49.78	151+54.47	153+44.92	5°42'49" LT.	3°00'00"	95.30	190.45	N/A	N/A
33	157+11.91	156+16.66	158+07.01	5°42'38" RT.	3°00'00"	95.26	190.35	N/A	N/A
SB HWY. 71B TRAFFIC - STAGE 3									
34	141+75.36	141+19.12	142+30.98	14°33'58" RT.	13°01'18"	56.23	111.86	N/A	N/A
35	142+82.77	142+30.98	143+34.54	3°06'24" LT.	3°00'00"	51.79	103.55	N/A	N/A

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 1020+72
BEGIN JOB CA0903

N

PN:955
PD:TBM-955\RRS

PN:954
PD:TBM-954\RRS

PN:953
PD:TBM-953\RRS

CL. HWY. 549

POB 1010+38.41

S 89°41'52" E
137.46'

PC 1011+75.87

S 89°41'52" E
3338.38'

1010 8514

8515

PC 1011+07.14

8096

8519

8607

N 89°08'13" E

PC 1010+38.41

PC 1011+89.93

PI1013+69.73

1015

PRC 1015+48.46

8609

N 78°22'52" E

PI1018+10.42

N 83°36'59" E

1020

PT 1020+72.00

8611

CL. HWY. 549
TEMP. CROSSOVER

S 89°41'52" E

PI1020+33.11

PI1021+01.84

PI1021+70.57

SURVEY BASELINE N 85°35'16" W
2061.51'

SURVEY BASELINE

726

CL. HWY. 549 LML

1025

1030

PT 1030+85.41

8097

PT 1031+54.14

8517

N 75°27'54" E
262.50'

POE 1034+16.64

8518

1035

N 75°27'54" E
4736.71'

PT 1030+16.68

8521

N 75°27'54" E
154.39'

PI1031+71.07

8522

N 75°27'54" E
262.50'

POE 1034+33.57

8523

CL. HWY. 549 RML

SURVEY BASELINE S 72°53'11" W
2386.63'

N

PN:915
PD:TBM-915\CH SD CONC OF MH

TIB

SURVEY BASELINE

CL. HWY. 549

1035 1040 1045 1050 1055 1060 1065

N 75°27'54" E
4736.71'

SURVEY BASELINE S 61°21'22" W
280.47'

N 75°27'54" E
4736.71'

723

PN:952
PD:TBM-952\RRS

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(2) SURVEY CONTROL DETAILS

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No. 11425
TRINITY D. SMITH
5-17-19

CL. HWY. 549

1065 1070 1075 8098 1080 1085 1090 1095

N 75°27'54" E
4736.71'

PC 1078+22.12
1078+22.13 BK. =
1078+82.66 AHD.

SURVEY BASELINE N 86°35'15" W
3245.77'

SURVEY BASELINE

PI 1094+25.61

PNM 951
PD:TBM-951\600

PNM 950
PD:TBM-950\ARS

PNM 946
PD:RR SPIKE SOUTH SIDE PP

PNM 902
PD:TBM-902\CH SQ BASE CH

PNM 958
PD:TBM

1095 1100 1105 1110 1115

PC 1104+79.19
8524
S 78°34'10" E

PI 1106+44.38

PC 1106+91.49
8544 S 76°23'1" E

PI 1103+23.86

PT 1108+08.75
8568

PC 1108+55.30
8569

PI 1108+97.06
8569

PC 1108+47.30
8568

N13°36'36" E
47.30'

PT 1108+00.00

S 68°40'57" E
503.35'

CL. RAMP 1 SPUI

PC 1113+12.10
8527

PC 1114+60.00
8547

PI 1117+82.94

PT 1110+68.99

SURVEY BASELINE S 79°39'35" W
2858.05'

8546

S 80°06'05" E
391.01'

CL. RAMP 4 SPUI

PT 105+93.70
8571

N35°27'57" E
632.48'

CL. PEACH ORCHARD

PC 102+26.47
8572

110

105

700

PT 153+44.92
8739

PC 151+54.47
8737

PT 148+58.64
8736

PT 148+49.32
8709

N4°15'05" W
1088.18'

N4°14'54" W
295.83'

N 4°15'05" W
1520.43'

PI 147+22.83

CL. SB HWY. 71 TRAFFIC - STAGE 3

PC 145+85.93

CL. EXISTING HWY. 71

CL. HWY. 71B

PT 144+01.04

8734 8733 8555

N16°44'47" W
171.22'

145 150 151

PNM 00
PD:RR AD

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-17
TRINITY D. SMITH

CL. PEACH ORCHARD
SURVEY BASELINE
CL. EXISTING RAMP 2/MOT RAMP 3
CL. SB HWY. 71B TRAFFIC - STAGE 3
CL. HWY. 71B
CL. SB HWY. 71 TRAFFIC - STAGE 3
CL. EXISTING HWY. 71
CL. RAMP 4 SPUI
CL. HWY. 549
CL. RAMP 3 SPUI
CL. RAMP 1 SPUI
CL. RAMP 2 SPUI
CL. EXISTING RA HWY. 71NB
CL. EXISTING RAMP 2/MOT RAMP 3
SURVEY BASELINE
CL. RAMP 3 SPUI
CL. EXISTING HWY. 71
CL. SB HWY. 71 TRAFFIC - STAGE 3
CL. HWY. 549
CL. RAMP 2 SPUI
CL. EXISTING RA HWY. 71NB

PN:946 PD:RR SPIKE SOUTH SIDE PP
PN:947 PD:RR SPIKE SOUTH SIDE 12"ELM
PN:902 PD:TBM-902\CH SQ BASE CH
PN:900 PD:AHTD DISK
PN:949 PD:RR SPIKE SOUTH SIDE HICKORY

SURVEY BASELINE S 79°39'35" W 2858.05'
SURVEY BASELINE N 57°32'30" W 4202.90'

S 74°23'27" E 1129.64'
S 80°06'05" E 391.01'
S 74°23'27" E 440.83'
S 74°23'27" E 583.40'
S 74°23'27" E 3204.66'
S 68°40'57" E 503.35'
S 74°23'27" E 680.39'
S 74°23'27" E 836.33'
S 63°59'26" E 376.86'
S 68°23'37" E
S 67°14'38" E 120
S 81°11'14" E 80.05'
S 78°34'10" E
S 76°23'11" E
N 49°48'48" W
N 63°59'26" W 472.27'
N 69°23'28" W 1317.46'
N 69°23'28" W 583.40'
N 16°44'47" W 505.26'
N 33°00'59" W 196.12'
N 33°25'08" E 52.25'
N 19°43'58" W 125.93'

PC 1104+79.19
PI 1106+44.38
PC 1106+97.49
PI 1103+23.86
PI 1108+83.30
PT 1108+08.75
PC 100+47.30
POB 100+00.00
PT 1108+97.06
PI 1110+68.99
PC 1113+12.10
PI 1116+92.98
PC 1114+60.00
PI 1117+82.94
PT 1120+73.22
PT 1121+05.35
PI 1125+46.16
POE 1125+28.16
POB 1125+28.16
PI 1127+53.61
POE 1127+55.95
POB 1127+55.95
PI 1136+90.33
PI 1136+61.41
PI 1135+81.24
PI 1135+87.44
PC 305+37.02
PI 305+59.72
POE 306+61.52
POB 306+59.72
PC 134+02.83
PC 134+02.95
PI 302+88.27
PI 301+71.96
PC 300+52.25
POB 300+00.00
PC 135+92.28
PI 135+57.80
PC 135+57.80
PI 139+32.49
PC 132+76.78
PI 139+18.53
POB 128+04.51
PI 141+15.58
PI 141+82.77
PC 139+13.19
PC 143+30.98
PI 143+10.12
PI 145+54.69
PC 145+39.39
PT 147+01.45
PI 148+84.37
PI 148+28.11
PT 148+16.72
PC 143+51.95
PT 142+71.90
PI 142+01.72
PC 141+01.72
PI 151+19.25
PI 153+31.76
PC 135+92.28

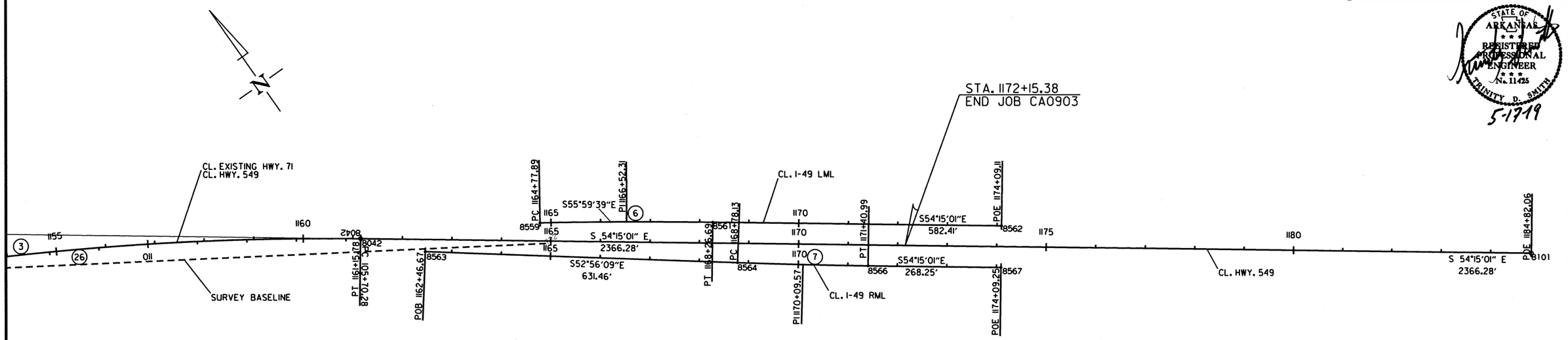
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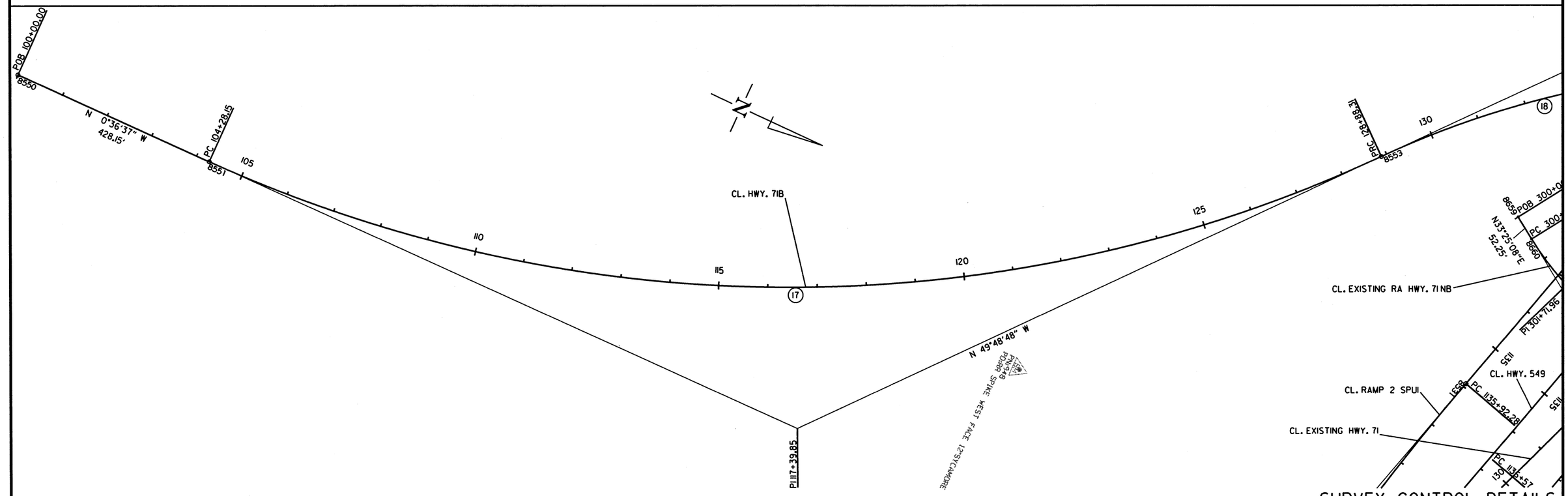
SURVEY CONTROL DETAILS

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.		CA0903	101	452

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19





SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		CA0903	102	452

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-17
TRINITY D. SMITH

CL. RAMP 1 SPUI
CL. HWY. 549
CL. RAMP 4 SPUI
CL. HWY. 71B
CL. EXISTING HWY. 71
CL. SB HWY. 71 TRAFFIC - STAGE 3
CL. SB HWY. 71B TRAFFIC - STAGE 3
SURVEY BASELINE
CL. EXISTING RA HWY. 71 NB
CL. EXISTING RAMP 2/MOT RAMP 3
CL. RAMP 2 SPUI
CL. RAMP 3 SPUI
CL. EXISTING RAMP 2/MOT RAMP 3 - STAGE IC (23)
CL. EXISTING RAMP 2/MOT RAMP 3 - STAGE IB (22)
CL. EXISTING HWY. 71
CL. HWY. 71B
CL. SB HWY. 71 TRAFFIC - STAGE 3

PNH900 PDHDPS 040826 RBR ALUM CAP
PNH126 PDHDPS BENTONVILLE 6-2000 BRASS CAP

RCA0903_REVISED.DGN 1/20/2017

SURVEY CONTROL DETAILS

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.		CA0903	103	452

(2) PLAN AND PROFILE SHEETS

CL. LML
PI = 1021+70.57
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+75.87
PT = 1031+54.14
Ls = 350'
e = 0.028'/'

CL. MEDIAN
PI = 1021+01.84
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+07.14
PT = 1030+85.41

CL. RML
PI = 1020+33.11
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1010+38.41
PT = 1030+16.68
Ls = 350'
e = 0.028'/'

CL. MEDIAN
STA. 1020+90.70 IN PLACE
TYPE ST DROP INLET 6'-11" LT. OF CL. MEDIAN
4'-6" X 3'-0" X H=34'-0"
W/ 24" X 140' R.C. PIPE INLET (CL. V)
(10° RT. FWD. SKEW)
24" X 210' R.C. PIPE OUTLET (CL. V)
(10° RT. FWD. SKEW)
FES LT. & RT.
Q50=13cfs. D.A.=3Ac.
RETAIN

CL. MEDIAN
STA. 1030+01 IN PLACE
DBL. 6' X 5' X 517' R.C. BOX CULVT
(26° 17' RT. FWD. SKEW)
Q50=490cfs. D.A.=168Ac.
RETAIN

CL. MEDIAN
STA. 1024+75 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
4'-6" X 3'-0" X H=5'-6"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
TO D.I. STA. 1027+75
RETAIN

CL. MEDIAN
STA. 1030+25 IN PLACE
TYPE ST DROP INLET 2'-3" RT. CL. MEDIAN
4'-6" X 3'-0" X H=5'-0"
W/18" X 98' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1031+25
RETAIN

CL. MEDIAN
STA. 1031+25 IN PLACE
TYPE ST DROP INLET 3'-2" RT. CL. MEDIAN
4'-6" X 3'-0" X H=5'-3"
W/24" X 60' R.C. PIPE OUTLET (CL. III)
FES ON RT.
RETAIN

CL. MEDIAN
STA. 1027+75 IN PLACE
TYPE ST DROP INLET 0'-3" LT. CL. MEDIAN
4'-6" X 3'-0" X H=4'-6"
W/24" X 68' R.C. PIPE OUTLET (CL. III)
FES ON RT.
RETAIN

STATE OF ARKANSAS
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6-17-16

STA. 1020+72
BEGIN JOB CA0903

STA. 1020+72.00 CL. MEDIAN
BEGIN CONCRETE BARRIER MEDIAN (TYPE A)

STA. 1034+25.11 CL. MEDIAN
= STA. 1034+16.64 CL. LML
= STA. 1034+33.57 CL. RML

HWY. 549

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 1009+13.37 BEGIN SUPERELEVATION LML (-0.020'/')
STA. 1012+63.37 MAX. SUPERELEVATION LML (-0.028'/')
STA. 1030+66.64 MAX SUPERELEVATION LML (-0.028'/')
STA. 1034+16.64 END SUPERELEVATION LML (-0.020'/')

P.V.I. 1005+00.00
ELEV. 1325.39

TOP D.I. 1308.01
F.L. D.I. 1304.51
F.L. OUTLET 1303.17

K=396.04
VC=2000'
e=-12.63'

TOP D.I. 1292.03
F.L. D.I. 1288.53
F.L. OUTLET 1287.19

P.V.I. 1015+00.00
ELEV. 1290.39

P.V.T. 1015+00.00
ELEV. 1290.39

-3.50%

TOP D.I. 1269.30
F.L. INLET 1240.56
F.L. D.I. 1235.30
F.L. OUTLET 1220.94

F.L. INLET 1241.43
F.L. OUTLET 1217.13

TOP D.I. 1256.27
F.L. D.I. 1250.77

P.V.C. 1028+00.00
ELEV. 1244.89

TOP D.I. 1246.11
18" X 295.9 3.0%

F.L. INLET 1241.86
F.L. OUTLET 1241.61
F.L. OUTLET 1240.26

TOP D.I. 1238.07
F.L. D.I. 1233.07

TOP D.I. 1235.47
18" X 98' @2.68%

F.L. INLET 1230.47
F.L. OUTLET 1230.22
F.L. OUTLET 1229.03

K=279.55
VC=1800'
e=14.49'

LT. DT. GR. 0.20%

1033+06.00
1222.10

F.L. INLET 1179.55
F.L. OUTLET 1169.53

1005+00 1010+00 1015+00 1020+00 1025+00 1030+00 1035+00

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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.		CA0903	104	452

(2) PLAN AND PROFILE SHEETS

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5-17-19

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

P.V.I. 1010+38.41 CL. LML = 1010+38.41 CL. MEDIAN ELEV. 1303.86

STA. 1009+13.37 BEGIN SUPERELEVATION LML (-0.020'/')
STA. 1012+63.37 MAX. SUPERELEVATION LML (-0.028'/')
STA. 1030+66.64 MAX SUPERELEVATION LML (-0.028'/')
STA. 1034+16.64 END SUPERELEVATION LML (-0.020'/')

P.V.C. 1010+38.74 ELEV. 1303.85
-2.33%
P.V.I. 1012+68.74 ELEV. 1298.48
K=394.51 VC=460' e=-0.67'
P.V.I. 1014+98.74 ELEV. 1290.43
-3.50%
P.V.C. 1028+39.68 ELEV. 1243.50
K=257.14 VC=575' e=1.61'
P.V.I. 1031+27.18 ELEV. 1233.44
P.V.I. 1034+14.68 ELEV. 1229.81
-1.26%
P.V.I. 1034+16.64 CL. LML = 1034+25.11 CL. MEDIAN ELEV. 1229.78

HWY. 549 - LML

P.V.I. 1010+38.41 CL. RML = 1010+38.41 CL. MEDIAN ELEV. 1303.86

STA. 1007+75.91 BEGIN SUPERELEVATION RML (-0.020'/')
STA. 1011+25.91 MAX. SUPERELEVATION RML (0.028'/')
STA. 1029+29.18 MAX SUPERELEVATION RML (0.028'/')
STA. 1032+79.18 END SUPERELEVATION RML (-0.020'/')

P.V.C. 1010+38.74 ELEV. 1303.85
-2.33%
P.V.I. 1012+68.74 ELEV. 1298.48
K=419.71 VC=460' e=-0.63'
P.V.I. 1014+98.74 ELEV. 1290.80
-3.43%
P.V.C. 1029+22.36 ELEV. 1241.76
K=235.45 VC=510' e=1.38'
P.V.I. 1031+77.36 ELEV. 1233.02
P.V.I. 1034+32.36 ELEV. 1229.80
-1.26%
P.V.I. 1034+33.57 CL. RML = 1034+25.11 CL. MEDIAN ELEV. 1229.78

HWY. 549 - RML

1010+00 1015+00 1020+00 1025+00 1030+00 1035+00 1040+00

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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.		CA0903	105	452

(2) PLAN AND PROFILE SHEETS

STA. 1042+57 IN PLACE
DBL. 6' X 5' X 530' R.C. BOX CULV'T
(35° 38' LT. FWD. SKEW)
Q50=570cfs, D.A. =195Ac.
RETAIN

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
1051+87	1053+00	LT.	9'	156	130

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ROCK DITCH LINER

1035 CL. MEDIAN 1040 1045 1050 1055 1060 CL. MEDIAN 1065
N 75°27'54" E N 75°27'54" E N 75°27'54" E

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 549

K=279.55
VC=1800'
e=14.49'

P.V.I. 1037+00.00
ELEV. 1213.39

P.V.T. 1046+00.00
ELEV. 1239.84

P.V.C. 1046+17.13
ELEV. 1240.34

2.94%

K=574.62
VC=4000'
e=-34.81'

F.L. INLET 1178.98
F.L. OUTLET 1165.93

1035+00 1040+00 1045+00 1050+00 1055+00 1060+00 1065+00

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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.		CA0903	106	452

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
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STA. 1079+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-0"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1082+00
RETAIN

STA. 1082+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=4'-2"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1085+00
RETAIN

STA. 1085+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-11"
W/18" X 16' R.C. PIPE OUTLET (CL. III)
FES ON LT.
RETAIN AND EXTEND 54' LT.
W/FES ON LT.
USE 18" X 58' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 1 BEDDING)

CL. MEDIAN
PI = 1094+25.61
Δ = 30°08'39" RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12
PT = 1108+97.06
Ls = 450'
e = 0.037'/'

ROCK DITCH LINER

CDP

1065 1070 1075 1080 1085 1090 1095

CL. MEDIAN

N 75°27'54" E

+09.99 152.05'

+28.75 220'

+25 235'

+59.26 452.67'

+00 255'

+75 330'

+96.23 24'

+96.23 36'

300' TAPER

+25 25'

PI 1094+25.61

900' ACCELERATION LANE

+96.23 36'

+75 50'

+50 225'

+37.95 290'

PC 1078+22.12
1078+22.13 BK. =
1078+82.66 AHD.

+00 110'

+25 180'

+25 90'

TRIBUTARY TO McKISSIC CREEK

STA. 1066+85 IN PLACE
24" X 162' R.C. PIPE CULV'T. (CL. III)
(14° 10' RT. FWD. SKEW)
FES LT. & RT.
Q50=16cfs, D.A.=4Ac.
RETAIN

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
1072+96	1074+23	LT.	9'	218	182
1081+77	1083+13	LT.	9'	256	213
1085+00		LT.	9'	60	50

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1066+08	1066+96	LT.	6'	59.33
1088+40	1105+80	LT.	9'	1740.00

STA. 1086+70 IN PLACE
36" X 442' R.C. PIPE CULV'T. (CL. SPECIAL)
FES LT. & RT.
Q50 = 32cfs, D.A. = 9Ac.
RETAIN

STA. 1087+30 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/18" X 168' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1089+00
RETAIN

STA. 1089+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1092+00
RETAIN

STA. 1092+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1095+00
RETAIN

HWY. 549

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

TRIBUTARY TO McKISSIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5 cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1257.0 ft. msl. SEE SUBSECTION 110.06(C) OF THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN 5 cfs STREAM LIMITS.

STA. 1074+84.62 BEGIN SUPERELEVATION LML (0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1112+34.56 END SUPERELEVATION LML (0.020'/')

STA. 1078+00.41 BEGIN SUPERELEVATION RML (-0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1109+18.77 END SUPERELEVATION RML (-0.020'/')

P.V.I. 1066+17.13
ELEV. 1299.12

-4.52% D7-GR. LT.
-7.36% D7-GR. LT.

1066+00.00 LT.DT.
ELEV. 1260.01

1066+67.00 LT.DT.
ELEV. 1256.98

1067+00.00 LT.DT.
ELEV. 1259.41

+85
F.L. INLET 1256.84
F.L. OUTLET 1248.64

K=574.62
VC=4000'
e=-34.81'

1078+22.12
1245.18

1078+82.66
1245.18

+00
TOP D. I. 1244.71
F.L. D. I. 1241.71

+00
TOP D. I. 1235.94
F.L. D. I. 1231.77

18" X 298' @ 3.34%

-3.93%

18" X 298' @ 3.45%

+00
TOP D. I. 1225.59
F.L. D. I. 1221.67
F.L. OUTLET 1220.00

P.V.C. 1087+50.01
ELEV. 1215.76

P.V.T. 1086+77.66
ELEV. 1218.67

-4.02%

+30
TOP D. I. 1216.61
F.L. D. I. 1213.11

+00
TOP D. I. 1209.60
F.L. INLET 1206.26
F.L. D. I. 1206.10

18" X 298' @ 4.08%

18" X 298' @ 4.45%

+00
TOP D. I. 1196.16
F.L. INLET 1192.83
F.L. D. I. 192.66

24" X 298' @ 4.91%

P.V.T. 1094+00.01
ELEV. 1189.62

K=657.36
VC=1300'
e=-3.21'

+00
TOP D. I. 1181.36
F.L. INLET 1178.02
F.L. D. I. 1177.86

+70
F.L. INLET 1184.43
F.L. OUTLET 1141.24

1065+00 1070+00 1075+00 1078+22 1078+83 1080+00 1085+00 1090+00 1095+00

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				6	ARK.			
				JOB NO.		CA0903	107	452

2 PLAN AND PROFILE SHEETS

CL. MEDIAN
PI = 1094+25.61
Δ = 30°08'39" RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12
PT = 1108+97.06
Ls = 450'
e = 0.037'/'

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1088+40	1105+80	LT.	9'	1740.00
1107+00		LT.	6'	26.00
1109+78		LT.	6'	48.00

STA. 1095+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 29B' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1098+00
RETAIN

STA. 1098+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1101+00
RETAIN

STA. 1101+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1104+00
RETAIN

STA. 1104+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1107+00
RETAIN

STA. 1107+43 IN PLACE
TYPE M3 DROP INLET ON RT.
W/72" X 72" OUTLET &
CONC. SPILLWAY (TYPE A)
RETAIN

STA. 1108+35 RT. SIDE UNDER PEACH ORCHARD RD.
IN PLACE 48" X 28" R.C. PIPE CULV'T
(CL. III) W/FES LT & RT
RETAIN

STA. 1108+70 LT. SIDE UNDER PEACH ORCHARD RD.
IN PLACE 54" X 36" R.C. PIPE CULV'T
(CL. III) W/FES LT & RT
RETAIN

STA. 1107+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H+3'-6"
W/24" X 10' R.C. PIPE OUTLET (CL. III)
FES ON LT.
RETAIN AND EXTEND 80' LT.
W/FES ON LT.
USE 24" X 84' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 1 BEDDING)

STA. 1109+78 CONSTRUCT
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=5'-1"
W/24" X 84' R.C. PIPE OUTLET (CL. III)
FES ON LT.
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

STATE OF ARKANSAS
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5-17-16
TRINITY D. SMITH

REFER TO INTERCHANGE LAYOUT FOR DETAILS.

STA. 1108+39.44 CL. MEDIAN =
STA. 101+97.62 CL. PEACH ORCHARD
Δ=85°24'37"

STA. 1110+65 INSTALL
CRASH CUSHION

STA. 1107+43.06 BRIDGE END
BRIDGE NO. 07277
55'-0" COMPOSITE W-BEAM UNIT
84'-0" COMPOSITE W-BEAM UNIT
55'-0" COMPOSITE W-BEAM UNIT
196'-2" BRIDGE LENGTH
STA. 1109+39.23 BRIDGE END

STA. 1113+77.94 - STA. 1118+72.56 CONSTRUCT
494'-7½" X 93'-3" OUT-TO-OUT BRIDGE NO. 07278
260' & 155' CONT. COMP. W-BEAM UNITS AND
77'-6" SIMPLE COMP. W-BEAM SPAN.

STA. 1124+70.81 - STA. 1127+68.19 CONSTRUCT
297'-4¼" X 93'-2" OUT-TO-OUT BRIDGE NO. 07281
SIMPLE COMPOSITE PLATE GIRDER SPAN

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
1105+80	1108+47	LT.	9'	364	303

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 549

STA. 1074+84.62 BEGIN SUPERELEVATION LML (0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1112+34.56 END SUPERELEVATION LML (0.020'/')

STA. 1078+00.41 BEGIN SUPERELEVATION RML (-0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1109+18.77 END SUPERELEVATION RML (-0.020'/')

McKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0 ft. msl. SEE SUBSECTION 110.06(c) OF THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN PERENNIAL STREAM LIMITS.

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				6	ARK.			
				JOB NO.	CA0903		108	452

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 1074+84.62 BEGIN SUPERELEVATION LML (0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION LML (-0.037'/')
STA. 1112+34.56 END SUPERELEVATION LML (0.020'/')

STA. 1124+36 CONSTRUCT
TYPE ST DROP INLET 42'-9" LT. CL. MEDIAN
3'-0" x 4'-6" x H = 4'-9" W/
18" x 84' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT STA. 1123+50
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

STA. 1123+50 CONSTRUCT
TYPE ST DROP INLET 43'-6" LT. CL. MEDIAN
3'-0" x 3'-0" x H = 6'-6" W/
18" x 30' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT STA. 1123+50
(USE 2 VANE GRATES)
(USE TYPE 3 BEDDING)

STA. 1123+50 CONSTRUCT
TYPE RM DROP INLET 76'-4" LT. CL. MEDIAN
3'-0" x 4'-0" x H = 20'-2" W/
24" x 11' R.C. PIPE OUTLET (CL. V)
CONNECT TO JUNCTION BOX AT STA. 1123+50
(USE TYPE 1 BEDDING)

STA. 1123+50 CONSTRUCT
TYPE E JUNCTION BOX 90'-0" LT. CL. MEDIAN
4'-0" x 4'-0" x H = 3'-4" W/
24" x 57' R.C. PIPE OUTLET (CL. III)
W/FES
(USE TYPE 3 BEDDING)

BR. END STA. 1107+43.06
BR. END STA. 1109+39.23
BR. END STA. 1113+77.94
BR. END STA. 1118+72.56
BR. END STA. 1124+70.81

+46.53 LT.DT. ELEV. 1117.85
-20.96% LT.DT.GR.
2:1
ROCK FILL
+93.53 LT.DT. ELEV. 1066.07
2.10% LT.DT.GR.
+65.53 LT.DT. ELEV. 1064.56
P.V.I. 1117+19.72 ELEV. 1050.44

K=341.19
VC=2900'
e=30.81'

+36 TOP D.I. 1075.17 F.L. D.I. 1070.42
+50 TOP D.I. 1074.98 F.L. D.I. 1068.48
18" X84' @2.31%
+50 TOP D.I. 1070.33 F.L. INLET 1066.48 F.L. D.I. 1050.20
+50 TOP J.B. 1051.50 F.L. J.B. 1048.17 F.L. OUTLET 1047.10
24" X57' @1.70%

McKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0 ft. msl. SEE SUBSECTION 110.06(C) OF THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN PERENNIAL STREAM LIMITS.

HWY. 549 - LML

1095+00 1100+00 1105+00 1110+00 1115+00 1120+00 1125+00

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 1078+00.41 BEGIN SUPERELEVATION RML (-0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION RML (-0.037'/')
STA. 1109+18.77 END SUPERELEVATION RML (-0.020'/')

STA. 1124+00 CONSTRUCT
TYPE ST DROP INLET 43'-6" RT. CL. MEDIAN
3'-0" x 3'-0" x H = 6'-6" W/
18" x 14' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT STA. 1124+00
(USE 2 VANE GRATES)
(USE TYPE 3 BEDDING)

STA. 1124+62 CONSTRUCT
TYPE ST DROP INLET 42'-9" RT. CL. MEDIAN
3'-0" x 4'-6" x H = 4'-9" W/
18" x 60' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT STA. 1124+00
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

STA. 1124+00 CONSTRUCT
TYPE RM DROP INLET 59'-10" RT. CL. MEDIAN
3'-0" x 4'-0" x H = 17'-11" W/
24" x 7' R.C. PIPE OUTLET (CL. V)
W/FES ON RT.
(USE TYPE 1 BEDDING)

BR. END STA. 1107+43.06
BR. END STA. 1109+39.23
BR. END STA. 1113+77.94
BR. END STA. 1118+72.56
BR. END STA. 1124+70.81

2:1
ROCK FILL
P.V.I. 1117+19.72 ELEV. 1050.44

K=341.19
VC=2900'
e=30.81'

+62 TOP D.I. 1075.27 F.L. D.I. 1070.52
+00 TOP D.I. 1075.07 F.L. D.I. 1068.57
18" X60' @3.25%
+00 TOP D.I. 1069.33 F.L. INLET 1065.57 F.L. D.I. 1051.40
+00 F.L. OUTLET 1050.75

McKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0 ft. msl. SEE SUBSECTION 110.06(C) OF THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN PERENNIAL STREAM LIMITS.

HWY. 549 - RML

1095+00 1100+00 1105+00 1110+00 1115+00 1120+00 1125+00

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7/19/19				6	ARK.			
				JOB NO.		CA0903	109	452

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-19-19

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
1137+49.40	1140+18.15	LML - LT.	200 LIN. FT.	1EA.	1EA.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1131+80	1140+85	RT.	6'	604.00
1136+70	1143+12	LT.	9'	650.00

STA. 1126+36.56 CL. MEDIAN = STA. 138+08.31 CL. HWY. 71B
Δ=52°10'39"

STA. 1140+23 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN 3'-0" X 4'-6" X H=5'-0" W/24" X 66' R.C. PIPE OUTLET (CL. III) FES ON LT. (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1142+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN 3'-0" X 4'-6" X H=4'-0" W/18" X 177' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1040+23 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1144+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN 3'-0" X 4'-6" X H=4'-0" W/18" X 198' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1042+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1144+62 CONSTRUCT TYPE RM DROP INLET 142' LT. 4'-6" X 3'-0" X H=7'-6" CONNECT TO EXISTING PIPE EXTENSION AT STA. 1143+03

CL. MEDIAN
PI = 1151+79.25
Δ = 20°08'26" RT.
D = 1°00'00"
T = 1017.53'
L = 2014.06'
PC = 1141+01.72
PT = 1161+15.78
Ls = 350'
e = 0.037'/'

1500' AUXILIARY LANE

1050' ACCELERATION LANE

STA. 1145+89 IN PLACE TYPE A DROP INLET W/18" X 64' R.C. PIPE OUTLET FES ON RT. RETAIN & EXTEND 22' RT. W/ SES USE 18" X 26' R.C. PIPE CULV'T. (CL. III) (USE TYPE 3 BEDDING)

STA. 1148+88 IN PLACE TYPE A DROP INLET W/18" X 66' R.C. PIPE OUTLET FES ON RT. RETAIN & EXTEND 20' RT W/ SES USE 18" X 24' R.C. PIPE CULV'T. (CL. III) (USE TYPE 3 BEDDING)

STA. 1151+89 IN PLACE TYPE A DROP INLET W/18" X 66' R.C. PIPE OUTLET FES ON RT. RETAIN & EXTEND 24' RT. W/ SES USE 18" X 28' R.C. PIPE CULV'T. (CL. III) (USE TYPE 3 BEDDING)

STA. 1129+23 CONSTRUCT SEXTUPLE 12' X 11' X 520' R.C. BOX CULV'T (40° RT. FWD. SKEW)
TYPE RM DROP INLET 84' LT. STA. 1128+28 4'-0" X 3'-0" X H=22'-3"
TYPE TM DROP INLET 93' LT. STA. 1128+53 4'-0" X 3'-0" X H=2'-1"
TYPE RM DROP INLET 84' RT. STA. 1129+69 4'-0" X 3'-0" X H=24'-4"
TYPE TM DROP INLET 93' RT. STA. 1129+96 4'-0" X 3'-0" X H=1'-3"
CHANNEL CHANGE OUTLET = 24185 CU. YD.
Q50 = 7630cfs, D.A. = 6.8 Sq. Mi.

STA. 1143+03 IN PLACE 42" X 436' R.C. PIPE CULV'T. FES LT. & RT. (50° 53' LT. FWD. SKEW) RETAIN & EXTEND 26' RT. & 34' LT. CONNECT INLET TO DROP INLET AT STA. 1144+62 FES ON RT. USE 42" X 30' R.C. PIPE CULV'T. (CL. III) & 42" X 38' R.C. PIPE CULV'T. (CL. III) (USE TYPE 3 BEDDING)

STA. 1124+70.81 - STA. 1127+68.19 CONSTRUCT
297'-4¼" X 93'-2" OUT-TO-OUT BRIDGE NO. 0728II
SIMPLE COMPOSITE PLATE GIRDER SPAN
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

REFER TO INTERCHANGE LAYOUT FOR DETAILS.

HWY. 549

LIMITS OF SPECIAL FLOOD HAZARD AREA STATION 1129+00 - STATION 1135+00

TOWN BRANCH - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0 ft. msl. SEE SUBSECTION 110.06(C) OF THE STANDARD SPECIFICATIONS REGARDING CONSTRUCTION OF TEMPORARY FILLS WITHIN PERENNIAL STREAM LIMITS.

STA. 1138+39.18 BEGIN SUPERELEVATION (N.C.)
STA. 1141+89.18 MAX. SUPERELEVATION (0.037'/')

BRIDGE A
CL. EXISTING HWY. 71
STA. 132+99 - STA. 134+88 IN PLACE
189'-2⅝" X 50'-6" BRIDGE CONSISTING OF A CONCRETE DECK & CONT. COMP. PLATE GIRDER UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

BRIDGE B
CL. EXISTING HWY. 71
STA. 132+91 - STA. 134+80 IN PLACE
189'-2⅝" X 42'-6" BRIDGE CONSISTING OF A CONCRETE DECK & CONT. COMP. PLATE GIRDER UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

P.V.C. 1139+00.01 ELEV. 1104.94
P.V.T. 1131+69.72 ELEV. 1086.69
K=341.19 VC=2900' e=30.81'
2.50%
BR. END STA. 1127+68.19

P.V.I. 1141+00.01 ELEV. 1109.94
P.V.T. 1143+00.01 ELEV. 1117.94
K=266.57 VC=400' e=0.75'
4.00%
STA. 1144+80.11 ELEV. 1125.15

TOP D.I. 1066.75 +28 LT.
TOP D.I. 1069.97 +69 RT.
TOP D.I. 1046.50 +57 LT.
TOP D.I. 1046.88 +96 RT.
+23 F.L. INLET 1034.32 F.L. OUTLET 1031.75

TOP D.I. 1114.17 +00
TOP D.I. 1121.98 +00 F.L. D.I. 1117.98
TOP D.I. 1108.31 +23
F.L. D.I. 1110.17
TOP D.I. 1107.53 +62
F.L. D.I. 1103.28 F.L. OUTLET 1101.55
F.L. D.I. 1100.03
+03 F.L. OUTLET 1086.56

18" X177' @ 3.85%
18" X198' @ 3.54%

STA. 1132+59 - IN PLACE D.I. RT. OF CL. W/ 18" x 175' PIPE OUTLET REMOVE

STA. 1132+71 - IN PLACE D.I. LT. OF CL. W/ 18" x 57' PIPE OUTLET REMOVE

STA. 1133+37 - IN PLACE D.I. LT. OF CL. W/ 18" x 65' PIPE OUTLET REMOVE

STA. 1133+43 - IN PLACE D.I. RT. OF CL. W/ 18" x 57' PIPE OUTLET REMOVE

CL. EXIST. HWY. 71
STA. 135+97 - IN PLACE
MEDIAN D.I. W/PIPE OUTLET
REMOVE

CL. EXIST. HWY. 71
STA. 138+97 - IN PLACE
MEDIAN D.I. W/PIPE OUTLET
REMOVE

CL. EXIST. HWY. 71
STA. 141+15 - IN PLACE
SEXTUPLE 12' X 9' X 238'
R.C. BOX CULV'T.
W/TYPE A DROP INLET
REMOVE

CL. EXIST. HWY. 71
STA. 141+58 - IN PLACE
EXIST. RAMP 1 CROSS DRAIN
REMOVE

1110 1100 1090 1080 1070 1060 1050 1040 1030 1020
1170 1160 1150 1140 1130 1120 1110 1100 1090 1080
1125+00 1130+00 1135+00 1140+00 1145+00 1150+00 1155+00

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(2) PLAN AND PROFILE SHEETS

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No. 11425
TRINITY D. SMITH
7-19-19

CL. MEDIAN
PI = 1151+19.25
Δ = 20°08'26" RT.
D = 1°00'00"
T = 1017.53'
L = 2014.06'
PC = 1141+01.72
PT = 1161+15.78
Ls = 350'
e = 0.037'/'

CL. I-49 LML
PI = 1166+52.31
Δ = 1°44'38" RT.
D = 0°30'00"
T = 174.42'
L = 348.80'
PC = 1164+77.89
PT = 1168+26.69

STA. 1172+15.38
END JOB CA0903

CL. I-49 RML
PI = 1170+09.57
Δ = 1°18'52" LT.
D = 0°30'00"
T = 131.44'
L = 262.86'
PC = 1168+78.13
PT = 1171+40.99

STA. 1174+09.11 CL. I-49 LML
STA. 1174+09.25 CL. I-49 RML BK. =
STA. 1174+09.06 CL. MEDIAN AHD.

1500' AUXILIARY LANE
300' TAPER
300' TAPER
900' ACCELERATION LANE
300' TAPER
CL. MEDIAN
CL. I-49 LML
CL. I-49 RML
S 55°59'39" E
S 54°15'01" E
S 52°56'09" E
POB 1162+46.67
POE 1164+82.06
HWY. 549

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 1154+88 IN PLACE
TYPE A DROP INLET
W/18" x 66' R.C. PIPE OUTLET
FES ON RT.
RETAIN & EXTEND 24' RT. W/SES
USE 18" X 28' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 3 BEDDING)

STA. 1157+89 IN PLACE
TYPE A DROP INLET
W/18" x 66' R.C. PIPE OUTLET
FES ON RT.
RETAIN & EXTEND 22' RT. W/SES
USE 18" X 26' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 3 BEDDING)

STA. 1160+88 IN PLACE
TYPE A DROP INLET
W/18" x 64' R.C. PIPE OUTLET
FES ON RT.
RETAIN & EXTEND 16' RT. W/SES
USE 18" X 20' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 3 BEDDING)

STA. 1165+04 IN PLACE
TYPE R DROP INLET
4'-0" x 3'-0" x H+5'-9" W/
18" x 86' R.C. PIPE OUTLET
FES ON RT.
RETAIN & EXTEND 6' RT. W/FES
USE 18" X 10' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 3 BEDDING)

1230 1220 1210 1200 1190 1180 1170 1160 1150 1140

1155+00 1160+00 1165+00 1170+00 1175+00 1180+00 1185+00

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(2) PLAN AND PROFILE SHEETS - RAMPS

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TRINITY D. SMITH
5-17-19

PI 1103+23.86
PC 1104+79.19
PT 1108+08.75
PI 1108+87.30
PC 1108+87.06
PT 1110+
PC 100+47.30
PC 113+12.10
PT 1114+60.0
S 80°06'05" E
CL. MEDIAN
CL. RAMP 4 SPUI
S 68°40'57" E
CL. RAMP 1SPUI
N 13°36'36" E
100.00'
NOSE +71.99 7.50'
CRASH CUSHION
+06.21 24'
BR. END STA. 1113+87.94

RAMP 1
PI = 1106+44.38
Δ = 9°53' 13" RT.
D = 3°00' 00"
T = 165.19'
L = 329.56'
PC = 1104+79.19
PT = 1108+08.75
NO SUPERELEVATION

RAMP 1
PI = 1116+92.98
Δ = 5°42' 30" LT.
D = 0°45' 00"
T = 380.87'
L = 761.11'
PC = 1113+12.10
PT = 1120+73.22
NO SUPERELEVATION

RAMP 1SPUI - IN PLACE
STA. 1113+87.94 BRIDGE END
BRIDGE NO. 07279
159'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (79'-6" - 79'-6")
170'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (85' - 85')
124'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (62' - 62')
455'- 1½" BRIDGE LENGTH
STA. 1118+43.06 BRIDGE END
RETAIN

RAMP 1SPUI

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

55.83' RT. 1109+73.87 CL. MEDIAN =
7.5' LT. 1109+71.99 CL. 1RAMP 1SPUI
EVEV. 1101.84

P.V.C. 1111+00.00
ELEV. 1096.02

K=912.04
VC=200'
e=0.05'

P.V.I. 1112+00.00
ELEV. 1091.87

P.V.T. 1113+00.00
ELEV. 1087.93

BR. END
STA. 1113+87.94

-4.16%
-3.94%
2:1 BR.
ROCK FILL

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(2) PLAN AND PROFILE SHEETS - RAMPS

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CL. RAMP 4 SPUI
CL. RAMP 3 SPUI
CL. MEDIAN
CL. RAMP 1SPUI
CL. RAMP 2 SPUI
S 74°23'27" E
PT 1121+05.35
PT 1120+73.22
PI 1116+92.98
POE 1127+53.61
POB 1127+55.95
PN:947 PDRR SPIKE SOUTH SIDE 12"ELM
PN:1644 PDx60 D NAIL
PN:1645 PDx60 D NAIL
PN:1646 PDx60 D NAIL
PN:1647 PDx60 D NAIL
PN:3695 PDNEC 8"
STA. 1118+43.06
BEG. CONST. RAMP 1SPUI
BR. END
STA. 1118+43.06
39.56'
48'
+50 6'
+00 8'
+23.50
+21.81
R=2000'
RAMP 1
PI = 1116+92.98
Δ = 5°42'30" LT.
D = 00°45'00"
T = 380.87'
L = 761.11'
PC = 1113+12.10
PT = 1120+73.22
NO SUPERELEVATION
+25 255'
+75 300'
STA. 1124+72 CONSTRUCT
24" X 116' R.C. PIPE CULV'T. (CL. III)
(30° RT. FWD. SKEW)
W/FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50 = 20cfs, D.A. = 3Ac.
REFER TO INTERCHANGE LAYOUT FOR DETAILS.
STA. 1127+53.61 CL. RAMP 1
STA. 1127+55.95 CL. RAMP 2 =
STA. 136+30.74 CL. HWY. 71B
Δ=46°51'02"
N 49°48'48" W
PI 136+90.39
STA. 1126+99.25
END CONST. RAMP 1SPUI
RAMP 1SPUI

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1125+67 - IN PLACE
LT. SIDE DRAIN
REMOVE

STA. 1118+43.06
BEG. CONST. RAMP 1SPUI
ELEV. 1067.23
P.V.C. 1116+55.61
ELEV. 1073.93
BR. END
STA. 1118+43.06
-3.94%
K=258.26
VC=500'
e=1.21'
P.V.I. 1119+05.61
ELEV. 1064.09
2:1 BR.
ROCK FILL
P.V.T. 1121+55.61
ELEV. 1059.09
-2.00%
-3.84% RT. DT. GR.
-1.04% RT. DT. GR.
+72
F.L. INLET 1047.82
F.L. OUTLET 1045.65
1123+00.00 RT. DT.
ELEV. 1050.94
1124+33.02 RT. DT.
ELEV. 1045.83
1126+61.12 RT. DT.
ELEV. 1043.45
7.5' LT. STA. 1126+99.25
35.00' LT. STA. 136+72.63
ELEV. 1048.22
STA. 1126+99.25
END CONST. RAMP 1SPUI

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030 1020

1116+00 1117+00 1118+00 1119+00 1120+00 1121+00 1122+00 1123+00 1124+00 1125+00 1126+00 1127+00 1128+00 1129+00 1130+00 1131+00

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(2) PLAN AND PROFILE SHEETS - RAMPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-16
TRINITY D. SMITH

S 74°23'27" E CL. RAMP 4 SPUI

CL. RAMP 3 SPUI

PT 1121+05.36

PC 1120+10.22

CL. MEDIAN

S 74°23'27" E

1125

1130

1135

POE 1127+53.61

POB 1127+55.95

CL. RAMP 1 SPUI

S 74°23'27" E

CL. RAMP 2 SPUI

PC 1135+62.81

STA. 1127+97.08
BEG. CONST. RAMP 2 SPUI

STA. 1127+53.61 CL. RAMP 1
STA. 1127+55.95 CL. RAMP 2 =
STA. 136+30.74 CL. HWY. 71B
Δ=46°51'02"

REFER TO INTERCHANGE LAYOUT FOR DETAILS.

N 49°48'48" W

P1136+90.39

135

+45.81
230.63'

N

RAMP 2 SPUI

PN:1644 PD:60 D NAIL
PN:1645 PD:60 D NAIL
PN:1646 PD:60 D NAIL
PN:1872 PD:60 D NAIL
PN:1111 PD:60D NAIL
PN:1806 PD:NDC 8"

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1134+30 - IN PLACE
D.I. RT. OF CL. W/
18" x 44' PIPE OUTLET
REMOVE

STA. 1127+97.08
BEG. CONST. RAMP 2 SPUI

35.00' RT. STA. 136+07.66 CL. HWY. 71B =
7.50' LT. STA. 1127+97.08 CL. RAMP 2 SPUI
ELEV. 1047.10

1.00%

P.V.C. 1130+45.30
ELEV. 1049.58

1.00% LT.DT.GR.

1130+00.00 LT.DT.
ELEV. 1046.88

K=144.09
VC=1000'
e=8.68'

1133+00.00 LT.DT.
ELEV. 1049.89

P.V.T. 1135+45.30
ELEV. 1054.58

1130

1120
1110
1100
1090
1080
1070
1060
1050
1040
1030

1121+00 1122+00 1123+00 1124+00 1125+00 1126+00 1127+00 1128+00 1129+00 1130+00 1131+00 1132+00 1133+00 1134+00 1135+00 1136+00

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(2) PLAN AND PROFILE SHEETS - RAMPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
5-17-16
TRINITY D. SMITH

CL. RAMP 3 SPUI

PC 1145+54.0

PI 1145+85.49

PT 1147+01.45

S 63°59'26" E

1145

PC 36+57.80

CL. MEDIAN

1140

PI 41+77.88

R=1432.69'

PT 42+79.90

1145

S 74°23'27" E

1150

CL. MEDIAN

PC 1135+92.28

CL. RAMP 2 SPUI

1140

PI 1146+28.72

S 67°14'38" E

NOSE
+67.17
7.50'

PI 1139+32.49

PC 1143+51.95

PT 1148+16.72

STA. 1146+67.17
END CONST. RAMP 2 SPUI

+45.81
230.63

+75
200'

PNI653
PD:60 D NAIL

PNI873
PD60 D NAIL

PNI949
PDRR SPIKE SOUTH SIDE HICKORY

N

RAMP 2
PI = 1139+32.49
Δ = 6°47'46" LT.
D = 1°00'00"
T = 340.21'
L = 679.62'
PC = 1135+92.28
PT = 1142+71.90
NO SUPERELEVATION

RAMP 2
PI = 1145+85.49
Δ = 13°56'35" RT.
D = 3°00'00"
T = 233.54'
L = 464.77'
PC = 1143+51.95
PT = 1148+16.72
MATCH EXISTING SLOPE

RAMP 2 SPUI

K=144.09
VC=1000'
e=8.68'

P.V.T. 1140+45.30
ELEV. 1094.28

P.V.I. 1140+45.63
ELEV. 1094.31

7.9Δ%

STA. 1146+67.17
END CONST. RAMP 2 SPUI

7.50' LT. STA. 1146+67.17 CL. RAMP 2 SPUI =
38.90' RT. STA. 1146+65.38 CL. MEDIAN
ELEV. 1131.12

1130
1120
1110
1100
1090
1080
1070
1060
1050
1040
1030

1136+00 1137+00 1138+00 1139+00 1140+00 1141+00 1142+00 1143+00 1144+00 1145+00 1146+00 1147+00 1148+00 1149+00 1150+00 1151+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	115	452

(2) PLAN AND PROFILE SHEETS - RAMPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 1125+28.16 CL. RAMP 3
STA. 1125+46.18 CL. RAMP 4 =
STA. 139+73.85 CL. HWY. 71B
Δ=57°08'38"

STA. 1125+74.99
BEG. CONST. RAMP 3 SPUI

REFER TO INTERCHANGE LAYOUT FOR DETAILS.

PN:1643 PD:60 D NAIL
PN:1644 PD:60 D NAIL
PN:1072 PD:60 D NAIL
PN:1111 AD:60D NAIL

CL. RAMP 4 SPUI
CL. RAMP 3 SPUI
CL. RAMP 1 SPUI
CL. RAMP 2 SPUI
CL. MEDIAN

S 74°23'27" E

PT 1121+05.35
POE 1125+46.18
ROB 1125+28.16
POE 1127+23.61
POB 1127+05.85
1135+92.28

RAMP 3 SPUI

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1134+32.80 BEGIN SUPERELEVATION (-0.02'/')
STA. 1137+32.80 MAX. SUPERELEVATION (+0.040'/')
STA. 1141+02.82 MAX. SUPERELEVATION (+0.040'/')
STA. 1144+02.82 MAX. SUPERELEVATION (+0.037'/')
STA. 1144+78.88 END SUPERELEVATION (+0.037'/')

STA. 1125+74.99
BEG. CONST. RAMP 3 SPUI

35.00' RT. STA. 139+41.55 CL. HWY. 71B =
7.50' RT. STA. 1125+74.99 CL. RAMP 3 SPUI
ELEV. 1045.66

1.00%

P.V.C. 1127+23.71
ELEV. 1047.15

0.34% RT. DT. GR.

1128+50.00 RT. DT.
ELEV. 1046.50

1129+50.00 RT. DT.
ELEV. 1046.84

P.V.I. 1130+23.71
ELEV. 1050.15

K=133.33
VC=600'
e=3.37'

P.V.T. 1133+23.71
ELEV. 1066.65

5.50%

STA. 1132+40 - IN PLACE
D.I. LT. OF CL. W/
18" x 189' PIPE OUTLET
REMOVE

STA. 1133+03 - IN PLACE
D.I. LT. OF CL. W/
18" x 188' PIPE OUTLET
REMOVE

STA. 1132+72 - IN PLACE
D.I. LT. OF CL. W/
18" x 36' R.C. PIPE OUTLET
REMOVE

STA. 1133+20 - IN PLACE
SIDE DRAIN LT. OF CL.
REMOVE

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

1121+00 1122+00 1123+00 1124+00 1125+00 1126+00 1127+00 1128+00 1129+00 1130+00 1131+00 1132+00 1133+00 1134+00 1135+00 1136+00

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	116	452

(2) PLAN AND PROFILE SHEETS - RAMPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RAMP 3
PI = 1139+18.53
Δ = 10°24'01" RT.
D = 2°00'00"
T = 260.73'
L = 520.02'
PC = 1136+57.80
PT = 1141+77.82
e = 0.040'/'
Ls = 300'

RAMP 3
PI = 1146+28.11
Δ = 4°24'11" LT.
D = 3°00'00"
T = 73.42'
L = 146.77'
PC = 1145+54.69
PT = 1147+01.45
e = 0.037'/'
Ls = 300'

+30.04
360.50'

R=1400'

+57.80
48'
+12.36
36.41'
24'
+77.82

PI 1139+18.53
PC 1136+57.80
PT 1141+77.82
PT 1147+01.45
PC 1145+54.69
PI 1145+85.49
PI 1146+28.11
PI 1151+19.25
PC 1135+92.28
PT 1142+11.90
PT 1140+01.72

1140
1145
1150
1160

CL. RAMP 3 SPUI
CL. MEDIAN
CL. RAMP 2 SPUI

S 63°59'26" E
S 74°23'27" E
S 67°14'38" E
S 81°11'14" E

NOSE
+78.88
7.50'

+50
170'

STA. 1144+78.88
END CONST. RAMP 3 SPUI

+51.95
+16.42

RAMP 3 SPUI

STA. 1134+32.80 BEGIN SUPERELEVATION (-0.02'/')
STA. 1137+32.80 MAX. SUPERELEVATION (+0.040'/')
STA. 1141+02.82 MAX. SUPERELEVATION (+0.040'/')
STA. 1144+02.82 MAX. SUPERELEVATION (+0.037'/')
STA. 1144+78.88 END SUPERELEVATION (+0.037'/')

7.5' RT. STA. 1144+78.88 CL. RAMP 3 SPUI =
38.78' LT. STA. 1144+80.12 CL. MEDIAN
ELEV. 1126.58

P.V.I. 1142+38.82
ELEV. 1116.98

P.V.C. 1140+38.82
ELEV. 1105.98

P.V.T. 1144+38.82
ELEV. 1124.98

K=266.67
VC=400'
e=-0.75'

5.50%
4.00%

STA. 1144+78.88
END CONST. RAMP 3 SPUI

1150 1140 1130 1120 1110 1100 1090 1080 1070 1060

1136+00 1137+00 1138+00 1139+00 1140+00 1141+00 1142+00 1143+00 1144+00 1145+00 1146+00 1147+00 1148+00 1149+00 1150+00 1151+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	117	452

(2) PLAN AND PROFILE SHEETS - RAMPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RAMP 4
PI = 1108+83.30
Δ = 3°42'54" LT.
D = 1°00'00"
T = 185.81'
L = 371.50'
PC = 1106+97.49
PT = 1110+68.99
e = 0.037'/'
Ls = 450'

PT 105+92.85
105
+75 285'
+50 235'
GATE
245'
+00 190'
+75 110'
PI 1106+44.38
PC 1106+93.19
PI 1103+23.86
PN:1642 PD:60 D NAIL
PN:1641 PD:60 D NAIL
PN:946 PD:RR SPIKE SOUTH SIDE PP
PN:1642 PD:60 D NAIL
BR. END STA. 1113+70.94
STA. 1110+31.02 BEG. CONST. RAMP 4 SPUI
NOSE +31.02 7.50'
PT 1110+68.99
1115
1110
CL. RAMP 4 SPUI
S 80°06'05" E
PC 1114+60.00
PN:7813 PD:60 D NAIL
CL. MEDIAN
1105
1105
CL. MEDIAN
PC 1104+79.19
1130
PI 1108+83.30
PT 1108+97.06
1108+08.75
1110
PC 1113+12.10
S 68°40'57" E
1115
CL. RAMP 1 SPUI
RAMP 4 SPUI
1130

STA. 1110+31.02 MAX. SUPERELEVATION (0.006'/')
STA. 1112+36.02 END SUPERELEVATION (-0.020'/')

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

STA. 1110+31.02
BEG. CONST. RAMP 4 SPUI

P.V.I. 1110+31.02
ELEV. 1100.63

P.V.C. 1110+32.62
ELEV. 1100.56

-3.98%

P.V.I. 1111+57.62
ELEV. 1095.59

K=771.41
VC=250'
e=-0.10'

P.V.T. 1112+82.62
ELEV. 1090.21

ROCK FILL

BR. END
STA. 1113+70.94

-4.30%

2:1 BR.

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

1101+00 1102+00 1103+00 1104+00 1105+00 1106+00 1107+00 1108+00 1109+00 1110+00 1111+00 1112+00 1113+00 1114+00 1115+00 1116+00

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	118	452

(2) PLAN AND PROFILE SHEETS - RAMPS

RAMP 4
STA. 1113+70.94 - STA. 1118+76.06 CONSTRUCT
505'-1½" X 34'-0" BRIDGE NO. 07280.
88'-0" SIMPLE COMPOSITE W-BEAM UNIT, SPAN OF 88'.
260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT.
SPANS OF 80'-100'-80' &
155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT.
SPANS OF 77.5'-77.5'

RAMP 4
PI = 1117+82.94
Δ = 5°42'38" RT.
D = 0°53'06"
T = 322.94'
L = 645.35'
PC = 1114+60.00
PT = 1121+05.35
NO SUPERELEVATION

STA. 1125+09.48
END CONST. RAMP 4 SPUI

STA. 1125+28.16 CL. RAMP 3
STA. 1125+46.18 CL. RAMP 4 =
STA. 139+73.85 CL. HWY. 71B
Δ=57°08'38"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 1122+50 CONSTRUCT
24" X 76' R.C. PIPE CULV'T. (CL. III)
W/FES LT. & RT.
(USE TYPE 3 BEDDING)
050 = 20cfs, D.A. = 3Ac.

BR. END
STA. 1118+76.06

PI 1117+82.94

PT 1121+05.35

PT 1120+73.22

POE 1125+46.18

POB 1125+28.16

POE 1127+53.61

POB 1127+55.95

S 74°23'27" E

CL. RAMP 4 SPUI

CL. RAMP 3 SPUI

CL. MEDIAN

CL. RAMP 1 SPUI

CL. RAMP 2 SPUI

RAMP 4 SPUI

REFER TO INTERCHANGE LAYOUT FOR DETAILS.

PN:947 PD:RR SPIKE SOUTH SIDE 12'LM

PN:1543 PD:60 D NAIL

PN:1544 PD:60 D NAIL

PN:1545 PD:NBC RR

PN:1545 PD:NBC 8'

PN:1111 PD:60D NAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
1118+84.40	1121+03.15	RAMP 4 - LT.	150 LIN. FT.	1 EA.	1 EA.
1118+84.40	1121+03.15	RAMP 4 - RT.	150 LIN. FT.	1 EA.	1 EA.

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

-4.30%

BR. END
STA. 1118+76.06

P.V.C. 1119+00.00
ELEV. 1063.66

2:1 BR.

ROCK FILL

K=173.85
VC=400'
e=1.15'

P.V.I. 1121+00.00
ELEV. 1055.06

+50

F.L. INLET 1047.01
F.L. OUTLET 1045.15

P.V.T. 1123+00.00
ELEV. 1051.06

-2.00%

P.V.I. 1125+09.48
ELEV. 1046.87

STA. 1125+09.48
END CONST. RAMP 4 SPUI

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030

1116+00 1117+00 1118+00 1119+00 1120+00 1121+00 1122+00 1123+00 1124+00 1125+00 1126+00 1127+00 1128+00 1129+00 1130+00 1131+00

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				6	ARK.			
				JOB NO.		CA0903	119	452

(2) PLAN AND PROFILE SHEETS - HWY. 71B

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 121+20 IN PLACE
DBL. 30" X 54' PIPE CULV'T.
REMOVE & INSTALL
DBL. 30" X 36' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. =
30 CU. YD. COMP. EMB.

STA. 123+00 IN PLACE
18" X 33' PIPE CULV'T.
REMOVE & INSTALL
DBL. 30" X 30' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. =
5 CU. YD. COMP. EMB.

STA. 123+90 INSTALL
DBL. 30" X 30' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. =
7700 CU. YD. UNCLASS. EXC.

CL. HWY. 71B
PI = 117+39.85
Δ = 49°12'11" LT.
D = 2°00'00"
T = 1311.70'
L = 2460.15'
PC = 104+28.15
PRC = 128+88.31
e = 0.034'/'
Ls = 500'

N 0°36'37" W
PI 117+39.85
N 49°48'48" W

STA. 120+00.00
BEGIN CONST. HWY. 71B

STA. 120+00 CL. HWY. 71B
BEGIN COMBINATION CURB & GUTTER (1'-6")

STA. 120+20 CL. HWY. 71B
BEGIN COMBINATION CURB & GUTTER (1'-6")

200' TRANSITION

PAVED PARKING

+50 1090.43'
+83.43 1048.61'
+73.68 876.86'
+17 995.71'
+00 960.40'
+47.21 936.40'
+20.61 879.80'
END Co+A

T.C.E.

STA. 124+38 IN PLACE
DBL. 29" X 18" X 80' ARCH PIPE CULV'T
RETAIN

STA. 125+00 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

STA. 126+50 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

STA. 127+10 IN PLACE
18" X 66' LT. SIDE DRAIN
REMOVE

STA. 128+50 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

STA. 129+35 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

STA. 129+65 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

STA. 129+88 CONSTRUCT
TYPE SPECIAL DROP INLET
ON LT. WITH 8' EXTENSION

128+88.31 PRC

175.5' TAPER

STA. 131+00 CONSTRUCT
TYPE SPECIAL DROP INLET
ON RT. WITH 8' EXTENSION

+88.12 588.24' BEG

CL. HWY. 71B

HWY. 71B

STA. 123+88.31 MAX SUPERELEVATION (0.034'/')
STA. 128+88.31 END SUPERELEVATION (N.C.)
STA. 132+88.31 MAX. SUPERELEVATION (0.020'/')
STA. 143+07.04 MAX. SUPERELEVATION (0.020'/')
STA. 147+07.04 END SUPERELEVATION (N.C.)

STA. 120+00.00
BEGIN CONST. HWY. 71B

120+00.00 LT.DT.
ELEV. 1059.16

-1.99%

-1.99% LT.DT.GR.

P.V.C. 122+50.00
ELEV. 1057.52

K=320.68
VC=500'
e=0.97'

125+00.00 LT.DT.
ELEV. 1049.22
P.V.I. 125+00.00
ELEV. 1052.55

+00 LT.
TOP D.I. 1053.38

+50 LT.
TOP D.I. 1051.97

P.V.T. 127+50.00
ELEV. 1051.48

+50 LT.
TOP D.I. 1050.85

-0.43%

+35 LT.
TOP D.I. 1050.64

+65 LT.
TOP D.I. 1050.63

+88 LT.
TOP D.I. 1050.61

+00 RT.
TOP D.I. 1049.78

-0.93% LT.DT.GR.

STA. 126+82 - IN PLACE
D.I. RT. OF CL. W/
18" X 135' PIPE OUTLET
REMOVE

STA. 128+11 - IN PLACE
D.I. RT. OF CL. W/
36" X 100' R.C. PIPE INLET &
36" X 26' R.C. PIPE OUTLET
W/F.E.S. RT.
REMOVE

STA. 128+69 - IN PLACE
D.I. RT. OF CL. W/
18" X 62' PIPE OUTLET
REMOVE

STA. 130+99 - IN PLACE
D.I. RT. OF CL. W/
24" X 219' R.C. PIPE OUTLET
REMOVE

1075 1070 1065 1060 1055 1050 1045 1040 1035 1030 1025

116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00

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				6	ARK.			
				JOB NO.		CA0903	120	452

(2) PLAN AND PROFILE SHEETS - HWY. 71B

CL. HWY. 71B
PI = 136+90.39
Δ = 45°33'43" RT.
D = 3°00'00"
T = 802.09'
L = 1518.73'
PRC = 128+88.31
PT = 144+07.04
e = 0.020'/'
Ls = 400'

STA. 137+58 CONSTRUCT
DROP INLET ON LT. W/8' EXTENSION & 24" X 117' R.C. PIPE OUTLET (CL. V)
CONNECT TO DROP INLET AT
STA. 137+50 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 139+55 CONSTRUCT
DROP INLET ON LT. W/8' EXTENSION & 24" x 112' R.C. PIPE OUTLET (CL. V)
CONNECT TO DROP INLET AT
STA. 139+25 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H = 4'-0"
TYPE C = 4'-0" x 4'-0"
(USE TYPE 3 BEDDING)

STA. 133+00 CONSTRUCT
6' X 3' X 120' R.C. BOX CULV'T.
Q50 = 135cfs, D.A. = 25Ac.

STA. 1127+53.61 CL. RAMP 1
STA. 1127+55.95 CL. RAMP 2 =
STA. 136+30.74 CL. HWY. 71B
Δ=46°51'02"

PI 136+90.39
N 49°48'48" W

POE 1127+53.61
POB 1127+55.95

STA. 141+12 CONSTRUCT
DROP INLET ON LT. W/8' EXTENSION & 24" X 160' R.C. PIPE OUTLET (CL. V)
CONNECT TO DROP INLET AT
STA. 140+16 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 1125+28.16 CL. RAMP 3
STA. 1125+46.18 CL. RAMP 4 =
STA. 139+73.85 CL. HWY. 71B
Δ=57°08'38"

POE 1125+46.18
POB 1125+28.16

STA. 144+84 IN PLACE
18" x 52' PIPE CULV'T
REMOVE & INSTALL
18" X 52' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. =
35 CU. YD. COMP. EMB.

STA. 145+80 IN PLACE
18" x 60' PIPE CULV'T
REMOVE & INSTALL
18" X 48' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. =
30 CU. YD. COMP. EMB.

STA. 126+36.56 CL. MEDIAN =
STA. 138+08.31 CL. HWY. 71B
Δ=52°10'39"

PT 144+07.04
N 4°15'05" W

CL. HWY. 71B

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

HWY. 71B

STA. 132+00 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION
STA. 132+88 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION
STA. 133+60 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 135+00 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 51' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 135+55 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 135+55 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 50' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 136+10 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-6"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 135+98 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 114' R.C. PIPE OUTLET (CL. III)
CONNECT TO BOX CULVERT
TYPE MO = 6'-0" I.D. H=6'-6"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 136+10 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 52' R.C. PIPE OUTLET (CL. V)
CONNECT TO DROP INLET AT
STA. 135+98 RT. CL. HWY. 71B
TYPE MO = 5'-0" I.D. H=5'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 137+00 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 102' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 135+98 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-9"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 137+50 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 46' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 137+00 RT. CL. HWY. 71B
TYPE MO = 5'-0" I.D. H=4'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 138+54 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 68' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 139+25 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 139+25 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 21' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT
STA. 139+50 RT. CL. HWY. 71B
TYPE MO = 5'-0" I.D. H=4'-6"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 139+50 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 65' R.C. PIPE OUTLET (CL. V)
CONNECT TO DROP INLET AT
STA. 140+16 RT. CL. HWY. 71B
TYPE MO = 4'-0" I.D. H=4'-8"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 140+16 CONSTRUCT
DROP INLET ON RT. W/8' EXTENSION & 24" X 14' R.C. PIPE OUTLET (CL. III) W/FES
TYPE MO = 5'-0" I.D. H=5'-0"
TYPE C = 4'-0" X 4'-0"
(USE TYPE 3 BEDDING)

STA. 142+00 CONSTRUCT
30" X 100' R.C. PIPE CULV'T. (CL. V)
FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50 = 30cfs, D.A. = 4Ac.

STA. 142+50 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 144+00 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 145+25 CONSTRUCT
TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

+00 RT. TOP D.I. 1049.78 -0.43%
+00 RT. TOP D.I. 1049.35
+88 RT. TOP D.I. 1048.97
+60 RT. TOP D.I. 1048.20
-0.93% LT.DT.GR.
0.50% LT.DT.GR.
+00 F.L. INLET 1041.75 F.L. OUTLET 1039.37
133+00.00 LT.DT. ELEV. 1041.75
+00 RT. TOP D.I. 1047.73
+55 RT. TOP D.I. 1047.50
+10 TOP D.I. 1047.26
+98 RT. TOP D.I. 1047.59
24"x51' @1.43% F.L. D.I. 1043.00
24"x50' @1.48% F.L. D.I. 1041.09
24"x52' @2.25% F.L. D.I. 1042.26
F.L. D.I. 1043.73
136+40.26 LT.DT. ELEV. 1043.45
+00 TOP D.I. 1046.83
+50 TOP D.I. 1046.72
+58 TOP D.I. 1048.83
24"x102' @0.97% F.L. D.I. 1042.08
24"x46' @1.39% F.L. D.I. 1042.72
24"x47' @1.80% F.L. D.I. 1044.83
+54 TOP D.I. 1045.96
24"x68' @0.82% F.L. D.I. 1041.96
+50 TOP D.I. 1045.80
+25 TOP D.I. 1045.90
+55 TOP D.I. 1047.97
24"x112' @3.29% F.L. D.I. 1041.40
24"x65' @1.03% F.L. D.I. 1043.97
+16 TOP D.I. 1045.46
24"x21' @1.29% F.L. D.I. 1041.13 F.L. OUTLET 1039.70
+12 TOP D.I. 1047.68
-0.43%
24"x160' @2.08% F.L. D.I. 1043.68
+00 F.L. INLET 1041.80 F.L. OUTLET 1039.47
P.V.C. 142+50.00 ELEV. 1045.04
+50 RT. TOP D.I. 1044.84
+00 RT. TOP D.I. 1044.29
+25 RT. TOP D.I. 1044.00
0.02%
P.V.I. 145+00.00 ELEV. 1043.96
K=1114.37
VC=500'
e=0.28'

STA. 132+00 - IN PLACE SEXTUPLE 12' X 9' X 528' R.C. BOX CULVERT REMOVE

STA. 133+22 - IN PLACE D.I. RT. OF CL. W/ 24" x 76' PIPE OUTLET REMOVE

STA. 134+00 - IN PLACE D.I. LT. OF CL. W/ 24" x 73' PIPE OUTLET REMOVE

STA. 134+77 - IN PLACE D.I. RT. OF CL. W/ 24" x 58' R.C. PIPE OUTLET W/F.E.S. REMOVE

STA. 134+99 - IN PLACE D.I. LT. OF CL. W/ 24" x 70' R.C. PIPE OUTLET REMOVE

STA. 135+65 - IN PLACE D.I. LT. OF CL. W/ 18" x 65' PIPE OUTLET REMOVE

STA. 136+04 - IN PLACE D.I. LT. OF CL. W/ 18" x 37' PIPE OUTLET REMOVE

CL. EXIST. HWY. 71 STA. 143+04 - IN PLACE D.I. RT. OF CL. W/ PIPE OUTLET REMOVE

CL. EXIST. HWY. 71 STA. 144+22 - IN PLACE DROP INLET W/18" X 116' R.C. PIPE OUTLET REMOVE

CL. EXIST. HWY. 71 STA. 145+30 - IN PLACE DROP INLET W/18" X 68' R.C. PIPE OUTLET REMOVE

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	121	452

(2) PLAN AND PROFILE SHEETS - HWY. 71B

CL. HWY. 71B
PI = 165+65.86
Δ = 22°04' 02" LT.
D = 1°45' 00"
T = 638.40'
L = 1260.98'
PC = 159+27.46
PT = 171+88.44

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 146+75 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 147+29 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 2 - 8' EXTENSIONS

STA. 147+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 148+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 149+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 150+72 CONSTRUCT TYPE SPECIAL 4 APPROACH GUTTER ON LT.

STA. 150+54.98
END CONST. HWY. 71B

+85.32 68.69'
+86.51 78.62'
+83.35 98.70'
+14.33 84.77' END EX. C of A

SHOPS
S
SSICK CREEK
CENTER
CONC
SMALL
30'

4°15'05" W
CL. HWY. 71B
150
155
N 4°15'05" W
CL. HWY. 71B
PC 159+27.46
160

STA. 146+75 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 147+29 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 2 - 8' EXTENSIONS

STA. 148+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 147+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 149+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

STA. 150+72 CONSTRUCT TYPE SPECIAL 4 APPROACH GUTTER ON RT.

CL. EXISTING RAMP 2
STA. 149+41 - STA. 151+83 IN PLACE
242'-1" X 25'-0" BRIDGE CONSISTING OF A CONCRETE DECK & CONT. W-BEAM UNIT
LEAVE IN PLACE

PAVED PARKING
CONC
MEMBERS SERVICE, INC.
PAVED PARKING
GENE KNIGHT HOMES B
PAVED PARKING
HOOK LINE & SINKER
PAVED PARKING
HARRIS REAL ESTATE
PAVED PARKING
KOZY HEAT FIREPLACES, INC.
HWY. 71B 1070

1070
1065
1060
1055
1050
1045
1040
1035
1030
1025
1020

K=1114.37
VC=500'
e=0.28'

+75 LT. & RT. TOP D.I. 1043.82
+29 LT. & RT. TOP D.I. 1043.81
P.V.T. 147+50.00 ELEV. 1044.01
+50 LT. & RT. TOP D.I. 1043.81
+50 LT. & RT. TOP D.I. 1043.83
P.V.I. 148+65.00 ELEV. 1044.03
+50 LT. & RT. TOP D.I. 1043.88
P.V.I. 150+54.98 ELEV. 1044.13
0.02%
0.05%

STA. 150+54.98
END CONST. HWY. 71B

CL. EXIST. HWY. 71
STA. 147+97 - IN PLACE
DROP INLET W/18" X 68'
R.C. PIPE OUTLET
REMOVE

146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

RCA0903_REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	122	452

(2) INTERCHANGE LAYOUT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

RAMP 4 SPUI
STA. 1122+50 CONSTRUCT
24' x 76' R.C. PIPE CULV'T. (CL. 111)
W/FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50 =20 cfs, D.A. =3 Ac.

RAMP 4 SPUI
STA. 1113+70.94 - STA. 1118+76.06 CONSTRUCT
505'-1½" x 34'-0" BRIDGE NO. 07280
88'-0" SIMPLE COMPOSITE W-BEAM UNIT, SPAN OF 88'.
260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT,
SPANS OF 80'-100'-80' &
155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT,
SPANS OF 77.5'-77.5'

STA. 1108+39.44 CL. MEDIAN HWY. 549 =
STA. 101+97.62 CL. PEACH ORCHARD
Δ=85°24'37"

RAMP 4 SPUI
P.I. 1108+83.30
Δ = 3°42'53.9"LT.
D = 1°00'00"
T = 185.81'
L = 371.50'
P.C. 1106+97.49
P.T. 1110+68.99
Ls = 450'
e = 0.037'/'

RAMP 4 SPUI
P.I. 1117+82.94
Δ = 5°42'38.1"RT.
D = 0°53'05.6"
T = 322.94'
L = 645.35'
P.C. 1114+60.00
P.T. 1121+05.35
NO SUPERELEVATION

STA. 1125+28.16 CL. RAMP 3
STA. 1125+46.18 CL. RAMP 4 =
STA. 139+73.85 CL. HWY. 71B
Δ =57°08'38"

CL. EXISTING RAMP 2
STA. 149+41 - STA. 151+83 IN PLACE
242'-1" x 25'-0" BRIDGE CONSISTING OF
A CONCRETE DECK & CONT. W-BEAM UNIT
RETAIN

EXIST. RAMP 2

EXIST. RAMP 1

DENOTES: OBLITERATION OF EXISTING PAVEMENT

BRIDGE A
CL. EXISTING HWY. 71
STA. 132+99 - STA. 134+88 IN PLACE
189'-2⅝" x 50'-6" BRIDGE CONSISTING OF
A CONCRETE DECK & CONT. COMP. PLATE GIRDER UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

STA. 1126+36.56 CL. MEDIAN HWY. 549 =
STA. 138+08.31 CL. HWY. 71B
Δ=52°10'39"

RAMP 3 SPUI
P.I. 1139+18.53
Δ = 10°24'01.3"RT.
D = 2°00'00"
T = 260.73'
L = 520.02'
P.C. 1136+57.80
P.T. 1141+77.82
Ls = 300'
e = 0.040'/'

RAMP 3 SPUI
P.I. 1146+28.11
Δ = 4°24'10.9"LT.
D = 3°00'00"
T = 73.42'
L = 146.77'
P.C. 1145+54.69
P.T. 1147+01.45
Ls = 300'
e = 0.037'/'

RAMP 1 SPUI
P.I. 1106+44.38
Δ = 9°53'13.0"RT.
D = 3°00'00"
T = 165.19'
L = 329.56'
P.C. 1104+79.19
P.T. 1108+08.75
NO SUPERELEVATION

RAMP 1 SPUI
P.I. 1116+92.98
Δ = 5°42'30.0"LT.
D = 0°45'00"
T = 380.87'
L = 761.11'
P.C. 1113+12.10
P.T. 1120+73.22
NO SUPERELEVATION

RAMP 1 SPUI - IN PLACE
STA. 1113+87.94 BRIDGE END
BRIDGE NO. 07279
159'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (79'-6" - 79'-6")
170'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (85' - 85')
124'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (62' - 62')
455'- 1½" BRIDGE LENGTH
STA. 1118+43.06 BRIDGE END
RETAIN

STA. 1127+53.61 CL. RAMP 1
STA. 1127+55.95 CL. RAMP 2 =
STA. 136+30.74 CL. HWY. 71B
Δ =46°51'02"

HWY. 549
STA. 1113+77.94 - STA. 1118+72.56 CONSTRUCT
494'-7½" X 93'-3" OUT-TO-OUT BRIDGE NO. 07278
260' & 155' CONT. COMP. W-BEAM UNITS AND
77'-6" SIMPLE COMP. W-BEAM SPAN.

BRIDGE B
CL. EXISTING HWY. 71
STA. 132+91 - STA. 134+80 IN PLACE
189'-2⅝" x 42'-6" BRIDGE CONSISTING OF
A CONCRETE DECK & CONT. COMP. PLATE GIRDER UNIT
REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

HWY. 549
STA. 1124+70.81 - STA. 1127+68.19 CONSTRUCT
297'-4¼" x 93'-2" BRIDGE NO. 07281
SIMPLE COMPOSITE PLATE GIRDER SPAN

RAMP 2 SPUI
P.I. 1139+32.49
Δ = 6°47'46.4"LT.
D = 1°00'00"
T = 340.21'
L = 679.62'
P.C. 1135+92.28
P.T. 1142+71.90
Ls = NO SUPERELEVATION

RAMP 2 SPUI
P.I. 1145+85.49
Δ = 13°56'35.1"RT.
D = 3°00'00"
T = 233.54'
L = 464.77'
P.C. 1143+51.95
P.T. 1148+16.72
MATCH EXISTING SLOPE

RAMP 1 SPUI
STA. 1124+72 CONSTRUCT
24' x 116' R.C. PIPE CULV'T. (CL. 111)
(30° RT. FWD. SKEW)
W/FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50 =20 cfs, D.A. =3 Ac.

HWY. 549
STA. 1129+23 CONSTRUCT
SEXTUPLE 12' X 11' X 520' R.C. BOX CULV'T
(40° 35' RT. FWD. SKEW)
CHANNEL CHANGE OUTLET = 24185 CU. YD.
Q50 = 7630cfs, D.A. = 6.8 Sq. mi.

HWY. 549/HWY. 71B INTERCHANGE

RCA0903_REVISED.DGN 1/20/2017

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.		CA0903	123	452

(2) STAGE CONST. PLAN AND PROFILE SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

STA. 133+22.50
BEGIN CONST. MOT RAMP 3

STA. 155+90.00
END CONST. EXIST. RAMP 2

STA. 137+84 INSTALL 24" x 206' TEMPORARY CULV'T.

MOT RAMP 3 - STAGE IB & IC
P.I. 135+87.44
Δ = 44°15'28"RT.
D = 7°30'00"
T = 310.65'
L = 590.10'
P.C. 132+76.78
P.T. 138+66.89
Ls = 250'
e = 0.026'/'

MOT RAMP 3 - STAGE IB & IC
P.I. 141+06.21
Δ = 18°51'57"LT.
D = 8°23'39"
T = 113.40'
L = 224.75'
P.C. 139+92.81
P.T. 142+17.56
MATCH EXISTING SUPER

MOT RAMP 3 - STAGE IB
P.I. 153+98.43
Δ = 34°20'51"RT.
D = 7°00'00"
T = 252.96'
L = 490.68'
P.C. 151+45.47
P.T. 156+36.15
MATCH EXISTING SUPER

MOT RAMP 3 - STAGE IC
P.I. 154+14.38
Δ = 34°20'51"RT.
D = 8°30'00"
T = 208.32'
L = 404.09'
P.C. 152+06.06
P.T. 156+10.15
MATCH EXISTING SUPER

MOT FOR N.B. I-49
EXIST. RAMP 2 / MOT RAMP 3
STAGE 1B & 1C CONSTRUCTION

1120 REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 133+22.50 BEGIN SUPERELEVATION (+0.026'/')
STA. 135+72.50 END SUPERELEVATION (-0.020'/')
STA. 135+84.50 BEGIN SUPERELEVATION (-0.020'/')
STA. 138+34.50 END SUPERELEVATION (+0.059'/')

P.V.I. 133+22.50 ELEV. 1086.82
P.V.C. 133+24.56 ELEV. 1086.51
P.V.I. 133+86.56 ELEV. 1083.21
-5.50%
K=40.00
VC=120'
e=-0.45'
P.V.T. 134+44.56 ELEV. 1078.11
P.V.C. 135+42.28 ELEV. 1069.80
-8.50%
K=41.49
VC=290'
e=2.53'
P.V.I. 136+87.28 ELEV. 1057.48
P.V.T. 138+32.28 ELEV. 1055.28
P.V.I. 138+34.50 ELEV. 1055.25
-1.51%

125+00 130+00 135+00 140+00 145+00 150+00 155+00
1020 1030 1040 1050 1060 1070 1080 1090 1100 1110

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				6	ARK.			
				JOB NO.		CA0903	124	452

(2) SIGNAL QUANTITIES AND SIGNS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

	ITEM NUMBER	ITEM	TEMPORARY SIGNAL	PERMANENT SIGNAL	QUANTITY	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (5 PHASES)	1		1	EACH
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)		1	1	EACH
	SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	2	1	3	EACH
	SP	CELLULAR MODEM	1	1	2	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	18	24	EACH
	SP & 707	CENTRAL CONTROL UNIT		1	1	EACH
	SP & 707	POLE MOUNTED ASSEMBLY		12	12	EACH
	SP & 707	INFRARED PROGRAMMING DEVICE		1	1	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED		12	12	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	334	10760	11094	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	205	724	929	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	27		27	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	283	1929	2212	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	110	215	325	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	20	414	434	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	340	1726	2066	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	20	20	40	LIN. FT.
	SP	FIBERGLASS CONDUIT H.D. (3")		485	485	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	90	886	976	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	215	1590	1805	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 1 HD)		1	1	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	4	18	22	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (0')		2	2	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')		1	1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')		1	1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48')	1		1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (50')	1		1	EACH
	SP	LED LUMINAIRE ASSEMBLY	2	4	6	EACH
	SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION		10	10	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1		1	EACH
	SP	SERVICE POINT ASSEMBLY (4 CIRCUITS)		1	1	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT		1.00	1.00	LUMP SUM
	SP & 733	VIDEO DETECTOR (CLR)	3		3	EACH
*	SP & 733	VIDEO DETECTOR (IP)		9	9	EACH
	733	VIDEO CABLE	464		464	LIN. FT.
	SP & 733	VIDEO CABLE (EXTERIOR CAT 5E)		2395	2395	LIN. FT.
	733	VIDEO MONITOR (CLR)	1		1	EACH
	SP & 733	VIDEO MONITOR (CLR)		1	1	EACH
	SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	2		2	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	1	2	EACH
	SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)		2	2	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)		5	5	EACH

* ONE SPARE VIDEO DETECTOR(IP) AND ONE SPARE VIDEO PROCESSOR, EDGE CARD (IP) SHALL BE SUPPLIED.

TCA0903.DGN 5/9/2019

DATE: 05-15-19 FILE NAME: tCA0903.dgn

LOCATION: HWY. 71/HWY. 71B INTERCHANGE
CITY: BENTONVILLE
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: GWE

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.		CA0903	125	452

(2) TRAFFIC SIGNAL NOTES

TRAFFIC SIGNAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2017) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. 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/COUNTY 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 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/ COUNTY'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 A.W.G. 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 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

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 STANDARD DRAWINGS MAY BE USED.

9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.

10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

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 STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

12. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH 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/COUNTY.

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LICENSED PROFESSIONAL ENGINEER
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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, THIRTY-EIGHT (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 TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (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 SIX (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 LENGTH IS KEYED INTO COMPETENT ROCK.

20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE 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 AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

22. ONE VIDEO PROGRAMMNG 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 SHALL NOTIFY THE 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. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODFICATION.

26. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

27. IN PULL BOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED BY ATTACHING A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO THE CONDUIT. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. IN INSTANCES WHERE THE CONDUIT OR CONDUIT ENTRANCES ARE NOT VISIBLE OR ACCESSIBLE, A DIRECTION TAG SHALL BE ATTACHED TO EACH CABLE.

28. THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

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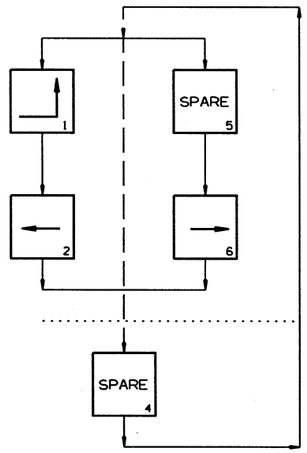
DATE: 05-15-19 FILE NAME: tCA0903.dgn

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CITY:	BENTONVILLE				
COUNTY:	BENTON				
DISTRICT:	9	SCALE:	N/A	DRAWN BY:	GWE

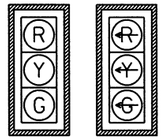
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				6	ARK.			
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(2) TEMPORARY STAGE 4B SIGNALIZATION PLAN

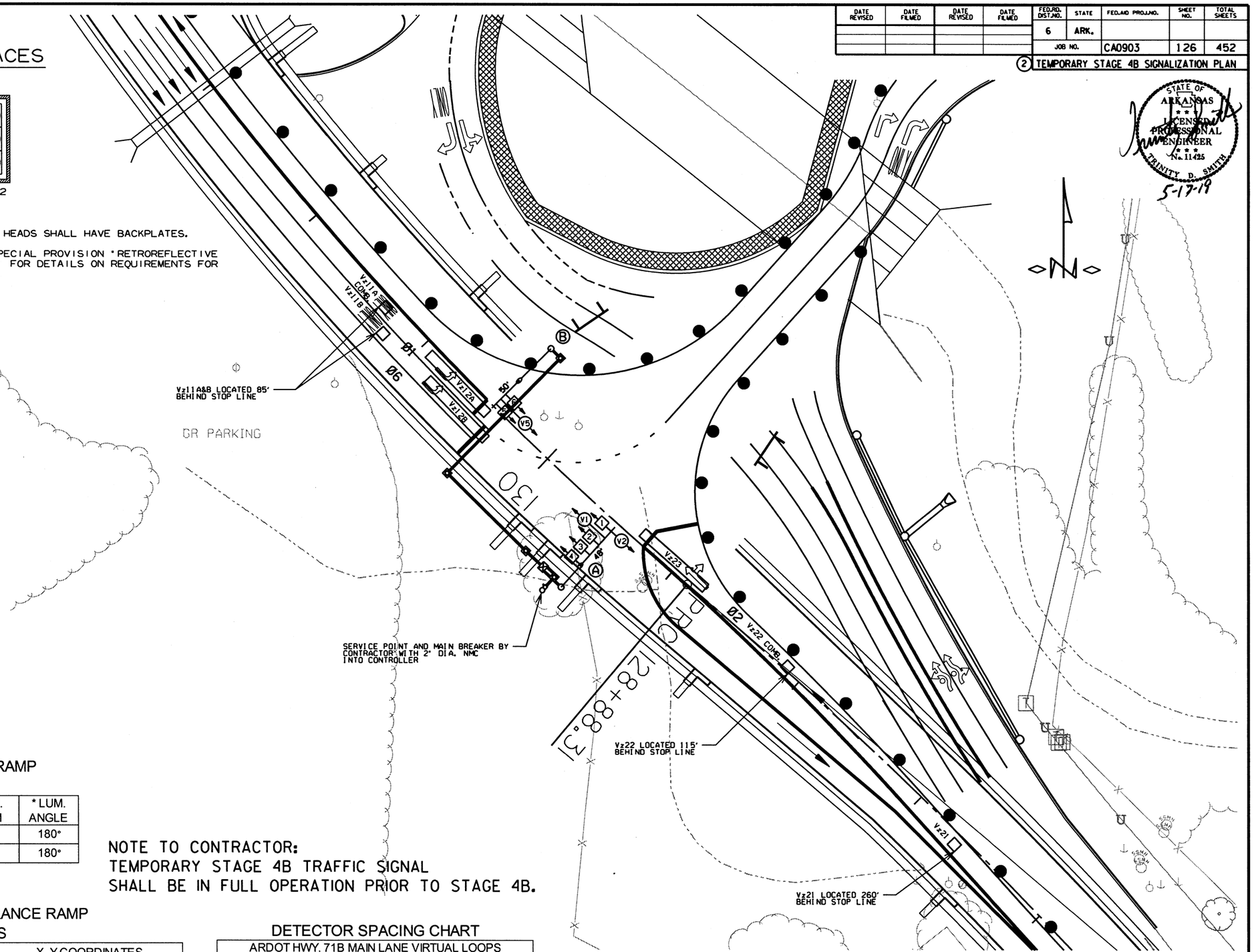
PHASING DIAGRAM SIGNAL FACES



12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.



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DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
POLES A & B - 10 FEET FROM HWY. 71B

HWY. 71B/HWY. 71 SB ENTRANCE RAMP POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	48'	180°	35'	15'	180°
B	50'	180°	35'	25'	180°

* ANGLE MEASURED CLOCKWISE FROM HAND HOLE.

NOTE TO CONTRACTOR:
TEMPORARY STAGE 4B TRAFFIC SIGNAL SHALL BE IN FULL OPERATION PRIOR TO STAGE 4B.

HWY. 71B/HWY. 71 SB ENTRANCE RAMP POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 71B - STA. 129+43.22	51' LT.	659042.11, 764211.00
B	HWY. 71B - STA. 130+44.79	49' RT.	659036.25, 764352.79

DETECTOR SPACING CHART

POSTED SPEED	ARDOT HWY. 71B MAIN LANE VIRTUAL LOOPS	
	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'

LOCATION: HWY. 71B/HWY. 71 SB ENTRANCE RAMP
CITY: BENTONVILLE
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: GWE

DATE: 05-15-19 FILE NAME: tCA0903.dgn

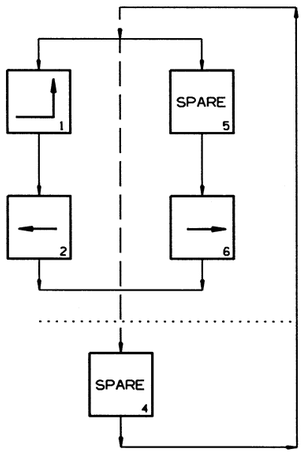
TCA0903.DGN 5/15/2019

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				6	ARK.			
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(2) TEMPORARY STAGE 4B SIGNALIZATION PLAN

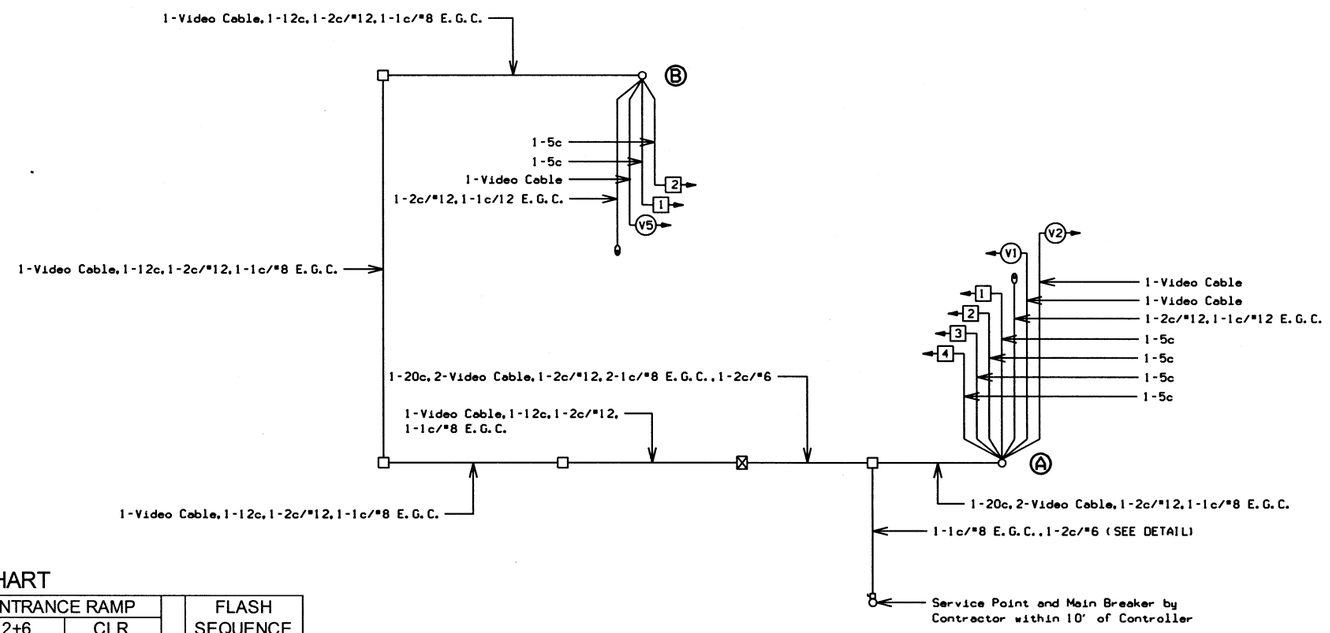
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

PHASING DIAGRAM



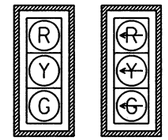
WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.



SIGNAL FACES

12" LENSES



3 & 4
5 & 6

1 & 2

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

INTERVAL CHART

SIGNAL FACES	HWY. 71B /HWY. 71 SB ENTRANCE RAMP 1+6	CLR.	2+6	CLR.		FLASH SEQUENCE
1 & 2	~~G~~	*	~~R~~	~~R~~		~~R~~
3 & 4	G	**	G	**		Y
5 & 6	R	R	G	**		R

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

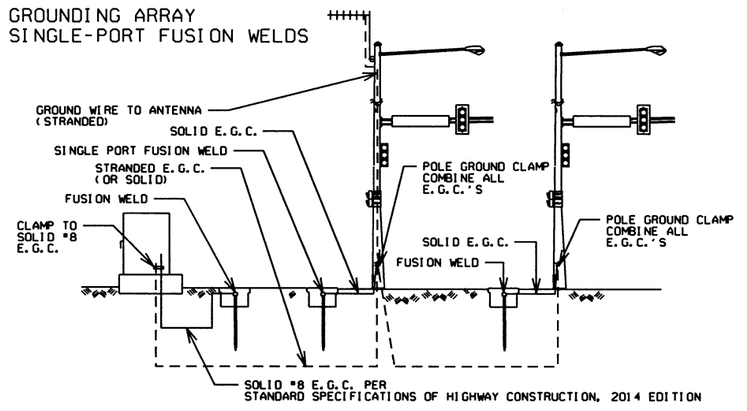
DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB CA0903											
HWY. 71B/HWY. 71 SB ENTRANCE RAMP DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM		
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11 A&B	SB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	58"
Vz12 A&B	SB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	58"
Vz21	NB ADVANCE	LOCAL			5	V2	2			CAMERA V2	74"
Vz22	NB INTERMIDIATE	COMB.			6	V10	2	2		CAMERA V5	74"
Vz23	NB NEAR	LOCAL			7	P1	2			CAMERA V5	74"
					SPARE: 3, 4 & 8						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



LOCATION:	HWY. 71B/HWY. SB ENTRANCE RAMP
CITY:	BENTONVILLE
COUNTY:	BENTON
DISTRICT:	9 SCALE: N/A DRAWN BY: GWE

DATE: 05-15-19 FILE NAME: tCA0903.dgn

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(2) SIGNALIZATION PLAN SHEET

HWY. 71/HWY. 71B INTERCHANGE
POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	N/A	N/A	15'	N/A	N/A
B	N/A	N/A	35'	20'	90°
C	42'	180°	35'	15'	180°
D	N/A	N/A	15'	N/A	N/A
E	N/A	N/A	15'	N/A	N/A
F	N/A	N/A	15'	N/A	N/A
G	N/A	N/A	15'	N/A	N/A
H	N/A	N/A	15'	N/A	N/A
I	N/A	N/A	35'	20'	90°
J	36'	180°	35'	15'	180°
K	N/A	N/A	15'	N/A	N/A
L	N/A	N/A	15'	N/A	N/A
M	N/A	N/A	15'	N/A	N/A
N	N/A	N/A	15'	N/A	N/A

* ANGLE MEASURED CLOCKWISE FROM HAND HOLE.
POLES C & I - INSTALL R10-17a SIGNS (RIGHT ON RED ARROW AFTER STOP)
POLES F & M - INSTALL R10-10 SIGNS (LEFT TURN SIGNAL)

DETECTOR SPACING CHART

ARDOT HWY. 71B MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
ARDOT HWY. 71 SPUI RAMPS VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
30 MPH	85'	N/A

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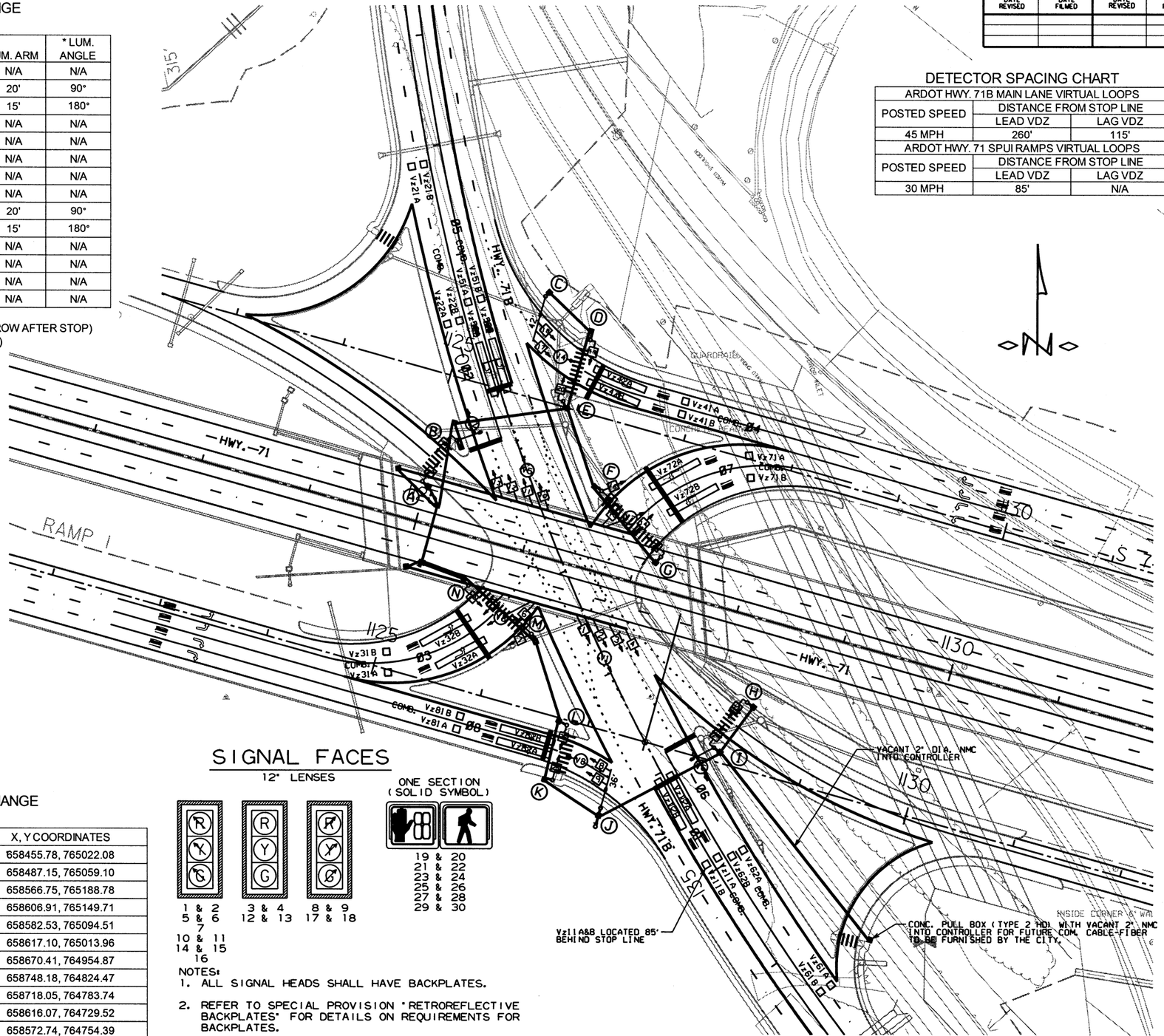
DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST AND WEST RAMPS APPROACH
45 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
3 FEET BEHIND CURB



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(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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VIRTUAL 6'X6' VD PULSE LOOP (TYPICAL)
Vz51A&B LOCATED 85' BEHIND STOP LINE
VIRTUAL 6'X50' VD PRESENCE LOOP (TYPICAL)
2-3" DIA. NMC
3" DIA. FIBERGLASS CONDUIT
VIDEO DETECTOR (TYPICAL)
3-3" DIA. NMC
SECONDARY BREAKER BY CONTRACTOR INSTALLED INTO CONTROLLER
2-3" DIA. NMC
3" DIA. FIBERGLASS CONDUIT
VACANT 1-2" DIA. NMC
Vz32A&B LOCATED 85' BEHIND STOP LINE
Vz81A&B LOCATED 85' BEHIND STOP LINE
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR
Vz41A&B LOCATED 85' BEHIND STOP LINE
Vz32A&B LOCATED 85' BEHIND STOP LINE
VACANT 2" DIA. NMC INTO CONTROLLER
GUARDRAIL
CONCRETE BEAM
HWY. 71
HWY. 71B
RAMP 1
COMB. Vz51A Vz51B Vz22A Vz22B
COMB. Vz41A Vz41B Ø4
COMB. Vz71A Vz71B Ø7
COMB. Vz31A Vz31B Ø3
COMB. Vz81A Vz81B Ø8
Ø6
Vz42A Vz42B
Vz72A Vz72B
Vz32A Vz32B
Vz82A Vz82B
Vz112A Vz112B
1125
1130
1130

SCALE IN FEET
0 30 60 120

DATE: 05-15-19 FILE NAME: tCA0903.dgn

LOCATION:	HWY. 71/HWY. 71B INTERCHANGE		
CITY:	BENTONVILLE		
COUNTY:	BENTON		
DISTRICT:	9	SCALE: 1"=60'	DRAWN BY: GWE

TCA0903.DGN 5/15/2019

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				6	ARK.			
				JOB NO.		CA0903	130	452

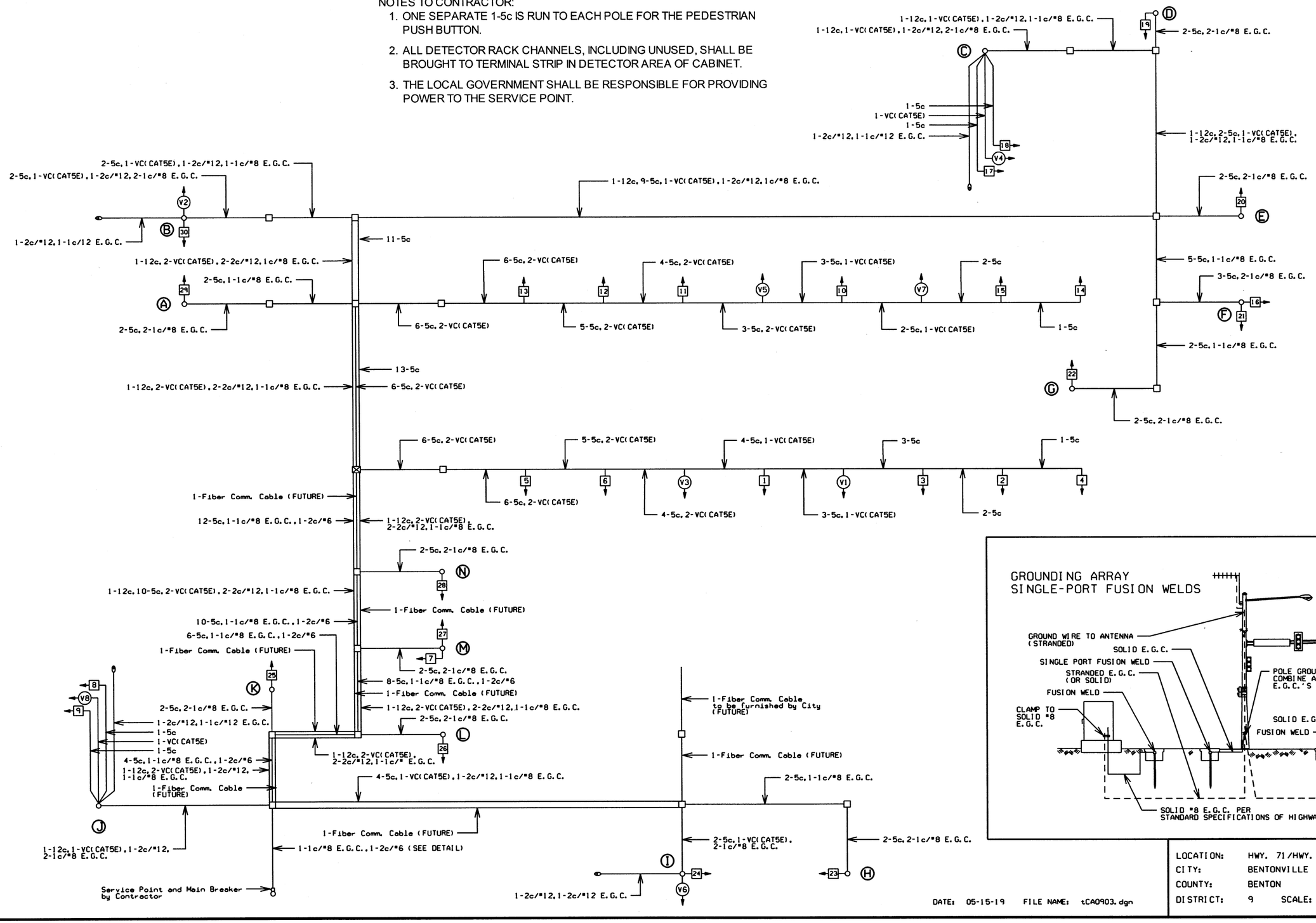
(2) SIGNALIZATION PLAN SHEET

WIRING DIAGRAM

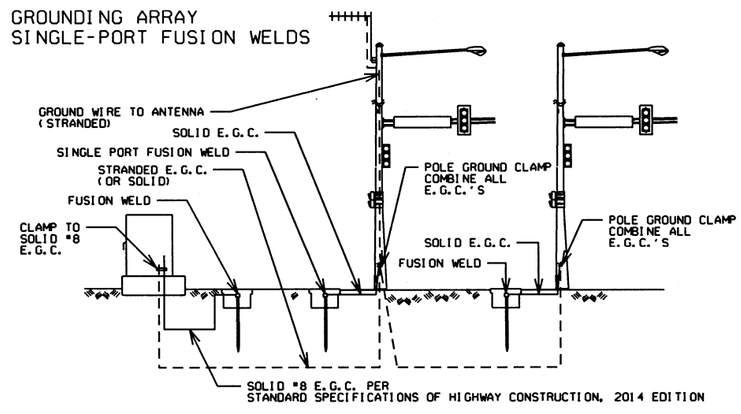
NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



LOCATION:	HWY. 71/HWY. 71B INTERCHANGE		
CITY:	BENTONVILLE		
COUNTY:	BENTON		
DISTRICT:	9	SCALE: N/A	DRAWN BY: GWE

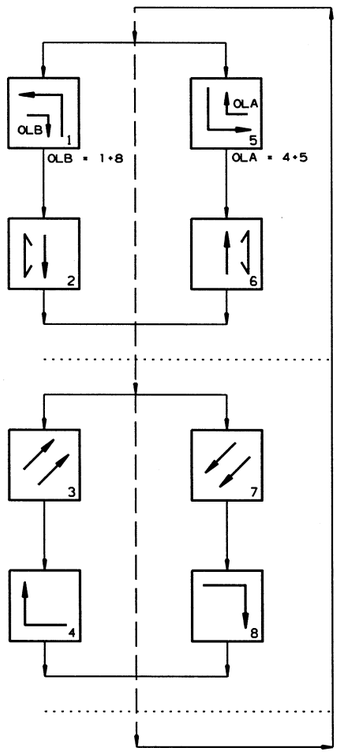
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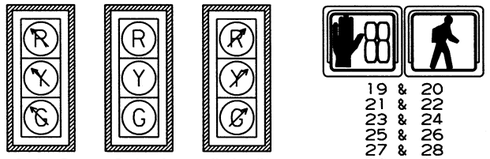
(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM



SIGNAL FACES

12" LENSES



1 & 2
5 & 6
7
10 & 11
14 & 15
16

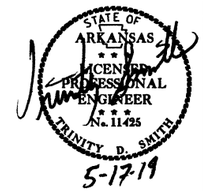
3 & 4
12 & 13

8 & 9
17 & 18

ONE SECTION
(SOLID SYMBOL)

19 & 20
21 & 22
23 & 24
25 & 26
27 & 28
29 & 30

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.



INTERVAL CHART

SIGNAL FACES	HWY. 71/HWY. 71B INTERCHANGE 1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.	FLASH SEQUENCE
1 & 2	R	*	G	*	R	R	R	**	R	R	R	R	R	R	R	R	R
3 & 4	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
5, 6 & 7	R	R	R	R	R	R	R	R	G	*	G	*	R	R	R	R	R
8 & 9	G	*	R	R	R	R	R	R	R	R	G	*	R	R	G	*	R
10 & 11	G	*	R	R	G	*	R	R	R	R	R	R	R	R	R	R	R
12 & 13	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
14, 15 & 16	R	R	R	R	R	R	R	R	G	*	R	R	G	*	R	R	R
17 & 18	G	*	R	R	R	R	R	R	R	R	R	R	G	*	G	*	R
19 & 20	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
21 & 22	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
23 & 24	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
25 & 26	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
27 & 28	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
29 & 30	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB CA0903											
HWY. 71/HWY. 71B INTERCHANGE DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11 A&B	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12 A&B	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	23"
Vz22 A&B	SB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz31 A&B	EB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	23"
Vz32 A&B	EB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	23"
Vz41 A&B	WB RIGHT TURN FAR	COMB.			13	V12	4	4		CAMERA V4	37"
Vz42 A&B	WB RIGHT TURN	LOCAL			14	V4	4			CAMERA V4	37"
Vz51 A&B	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52 A&B	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V6	23"
Vz62 A&B	NB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz71 A&B	WB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	23"
Vz72 A7B	WB LEFT TURN	LOCAL			16	V7	7			CAMERA V7	23"
Vz81 A&B	EB RIGHT TURN FAR	COMB.			11	V16	8	8		CAMERA V8	37"
Vz82 A&B	EB RIGHT TURN	LOCAL			12	V8	8			CAMERA V8	37"
PB2 A&B	HWY. 71 RAMPS W. LEGS	PED.				P2	2				
PB6 A&B	HWY. 71 RAMPS E. LEGS	PED.				P6	6				
					SPARE						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

TCA0903.DGN 5/15/2019

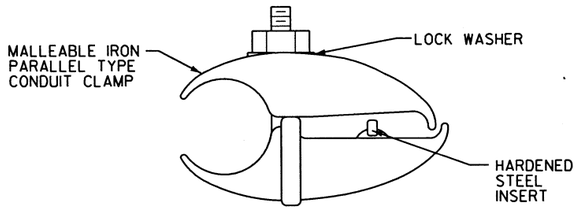
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CITY: BENTONVILLE
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: GWE

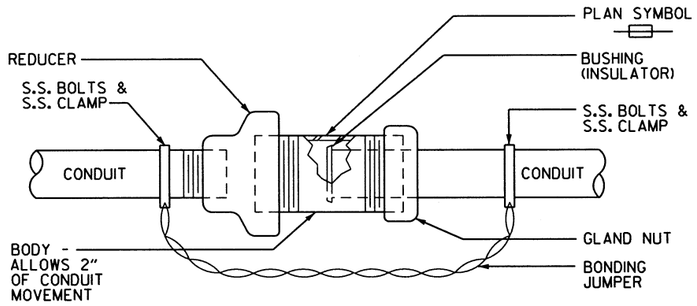
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				6	ARK.			
				JOB NO.		CA0903	132	452

(2) SPECIAL SIGNALIZATION DETAILS

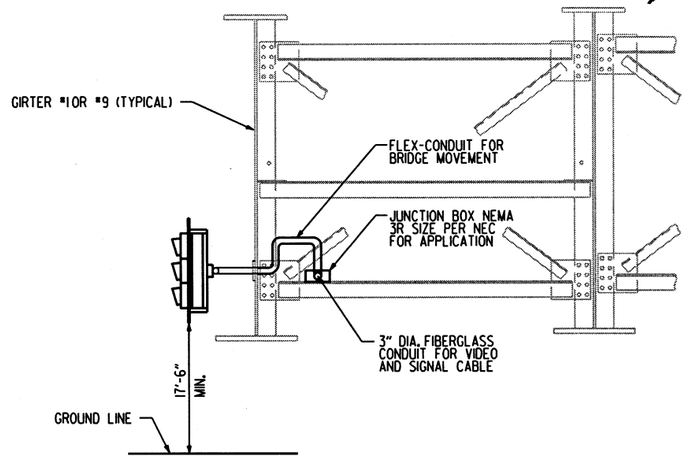
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



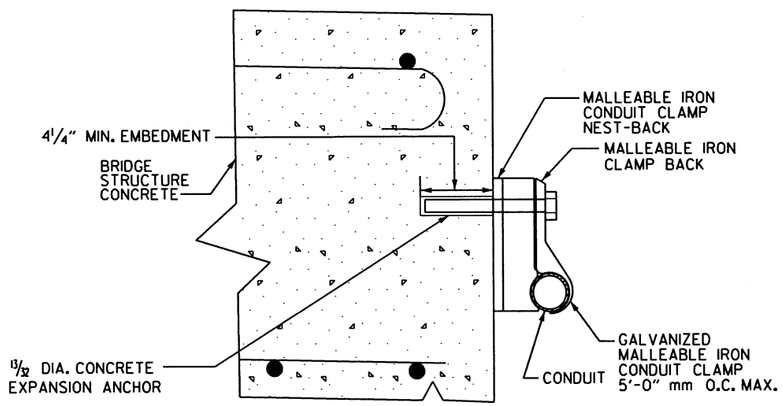
STEEL STRUCTURE FASTENING
N.T.S.



EXPANSION FITTING
N.T.S.

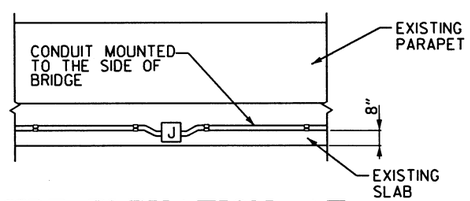


GIRDER 1 AND 9 SIGNAL HANGER DETAIL
N.T.S.

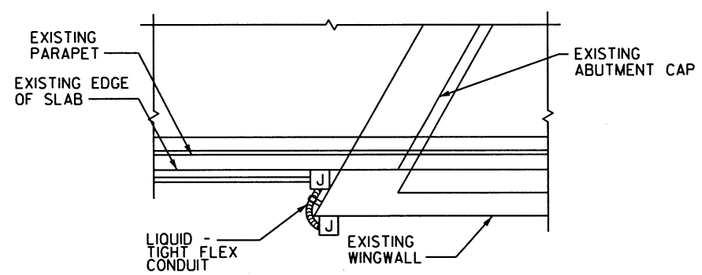


CONCRETE STRUCTURE FASTENING
N.T.S.

NOTE:
COST OF CAST IRON OR ALUMINUM JUNCTION BOXES, AND ALL MISCELLANEOUS ITEMS REQUIRED TO ATTACH CONDUIT TO EXISTING BRIDGE SHALL BE INCLUDED IN ITEM FIBERGLASS CONDUIT H.D. (3")



SIDE ELEVATION AT MIDSPAN OF BRIDGE
N.T.S.



SECTION A-A
N.T.S.

TCA0903.DGN 5/15/2019

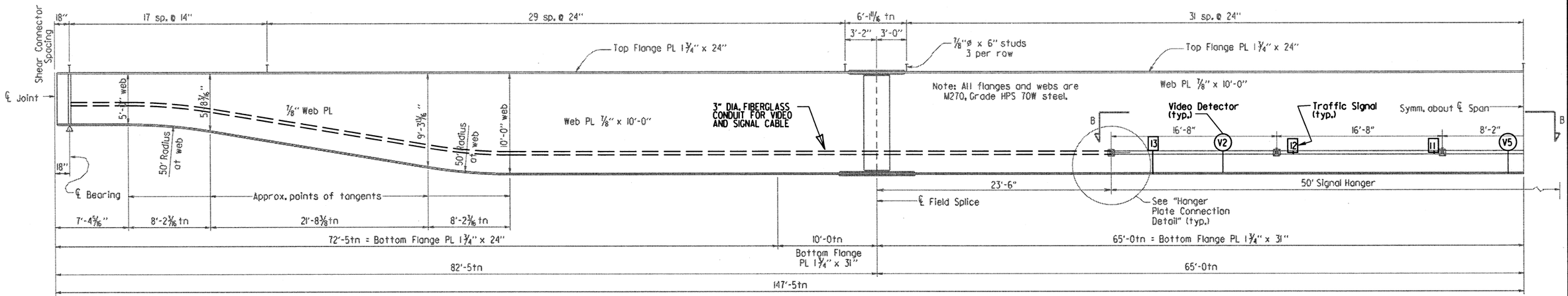
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CITY:	BENTONVILLE		
COUNTY:	BENTON		
DISTRICT:	9	SCALE: N/A	DRAWN BY: GWE

DATE: 05-15-19 FILE NAME: tCA0903.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.		CA0903	133	452

(2) GIRDER I SIGNAL HANGER DETAIL

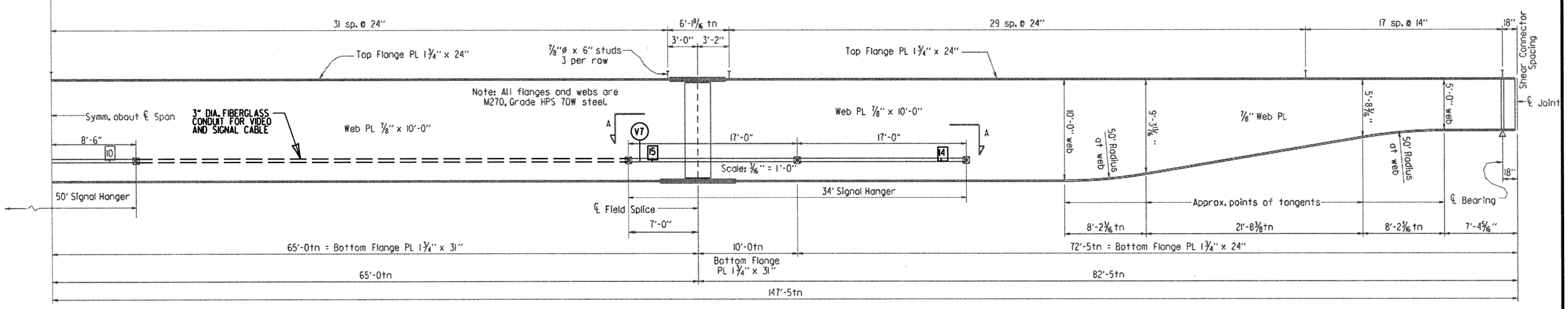
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



GIRDER I SIGNAL HANGER DETAIL

Scale: 3/16" = 1'-0"

Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

GIRDER I SIGNAL HANGER DETAIL

Scale: 3/16" = 1'-0"

SCALE IN FEET
0 5 10 20

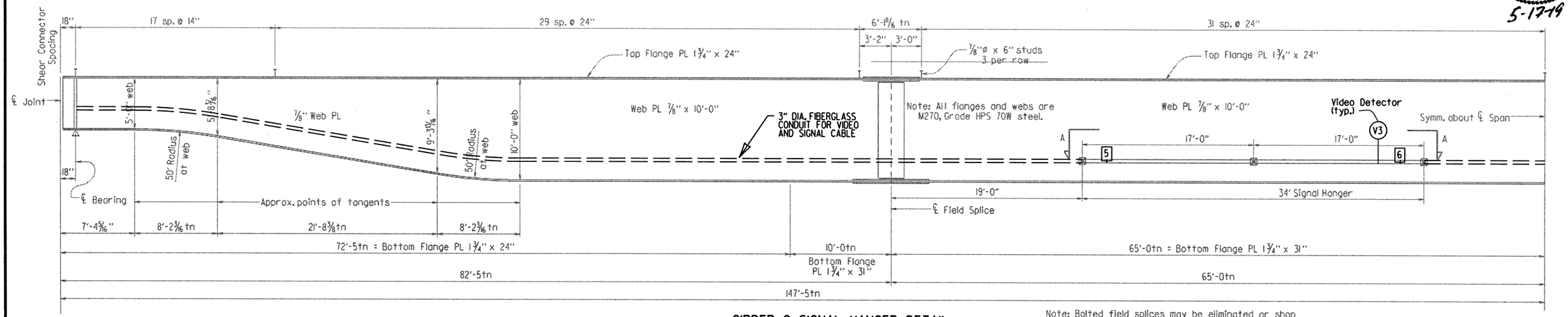
DATE: 05-15-19 FILE NAME: tCA0903.dgn

LOCATION:	HWY. 71/HWY. 71B INTERCHANGE				
CITY:	BENTONVILLE				
COUNTY:	BENTON				
DISTRICT:	9	SCALE:	1"=10'	DRAWN BY:	GWE

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.		CA0903	134	452

(2) GIRDER 9 SIGNAL HANGER DETAIL

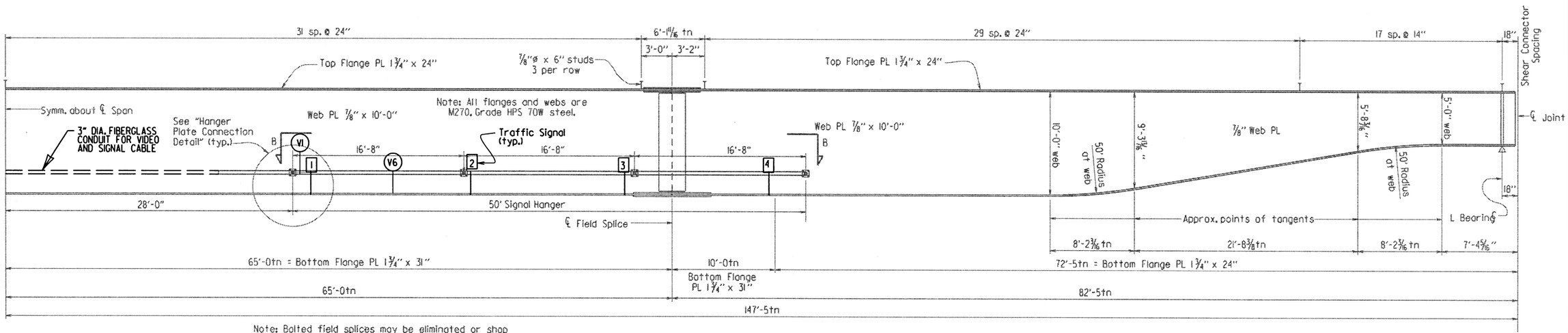
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19



GIRDER 9 SIGNAL HANGER DETAIL

Scale: 3/16" = 1'-0"

Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

GIRDER 9 SIGNAL HANGER DETAIL

Scale: 3/16" = 1'-0"

SCALE IN FEET
0 5 10 20

DATE: 05-15-19 FILE NAME: tCA0903.dgn

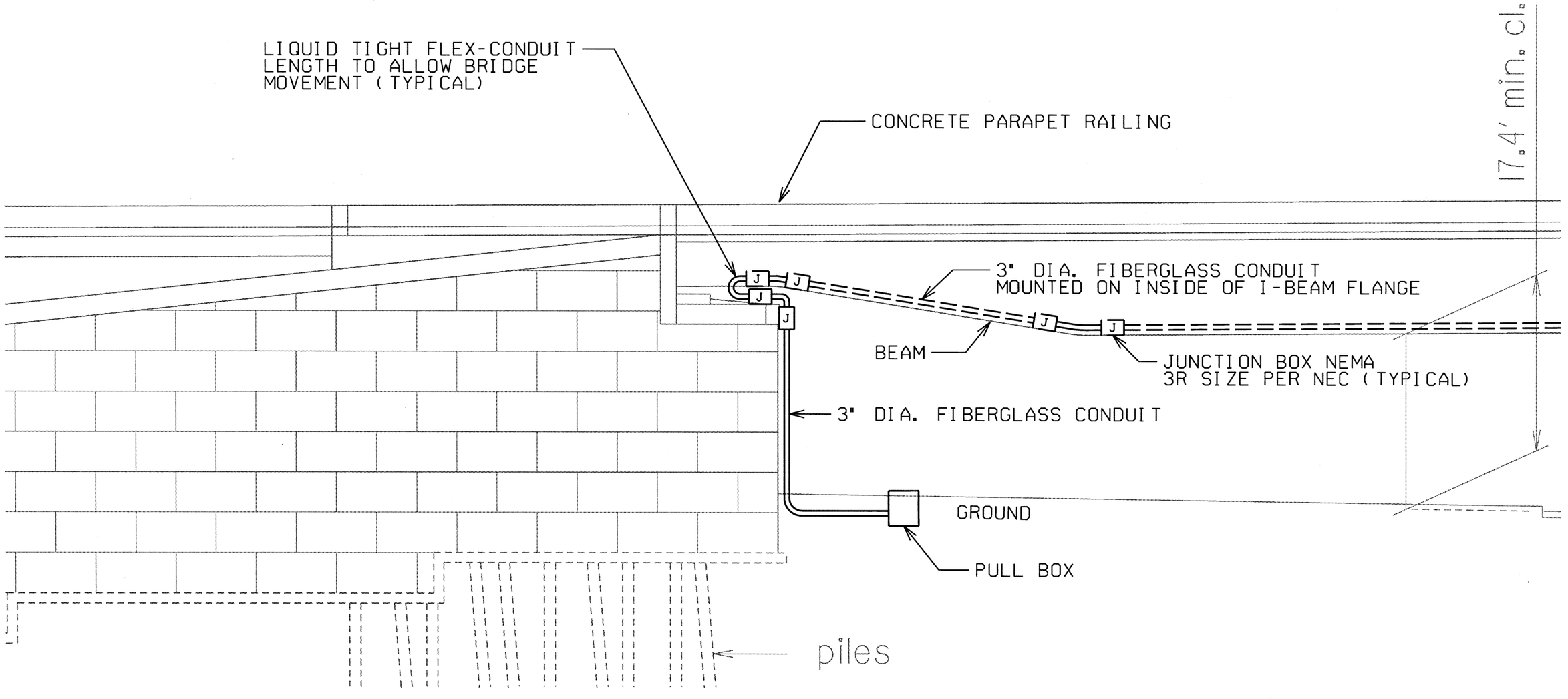
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CITY:	BENTONVILLE				
COUNTY:	BENTON				
DISTRICT:	9	SCALE:	1"=10'	DRAWN BY:	GWE

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.		CA0903	135	452

(2) BRIDGE ABUTMENT CONDUIT DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-17-19

SIDE ELEVATION - CONDUIT MOUNTING AT BRIDGE ABUTMENT



DATE: 05-15-19 FILE NAME: tCA0903.dgn

LOCATION:	HWY. 71B/HWY. 71 SB ENTRANCE RAMP				
CITY:	BENTONVILLE				
COUNTY:	BENTON				
DISTRICT:	9	SCALE:	N/A	DRAWN BY:	GWE

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.		CA0903	136	452

(2) ILLUMINATION NOTES AND QUANTITIES

GENERAL NOTES:

1. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAYBE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.

2. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NATIONAL ELECTRICAL CODE (NFPA 70), LIFESAFETY CODE (NFPA 101), STATE AND LOCAL ELECTRICAL CODE. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

3. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY A PUSHING OR BORING METHOD OR AS DIRECTED BY ENGINEER. PVC OR HDPE CONDUIT SHALL BE USED. PVC CONDUIT SHALL BE MARKED "DIR. BORING" OR "DIRECTIONAL BORING" AS PER NFPA 70 (NEC) REQUIREMENTS.

4. PULL BOX LIDS SHALL CLOSE FLUSH WITHOUT PINCHING ANY CONDUCTORS. CONDUIT LENGTHS IN PULL BOXES SHALL BE SET ACCORDINGLY. ANY CONDUCTORS THAT HAVE BEEN DAMAGED BY PINCHING SHALL BE COMPLETELY REPLACED AT CONTRACTOR'S EXPENSE.

5. INSTALL BREAKAWAY FUSE HOLDER IN POLE BASES. ALL ELECTRICAL SPLICES, INCLUDING DUMMY FUSES, SHALL BE WATERTIGHT AND SHALL BE DESIGNED AS BREAKAWAY (HOMAC FLOOD SEAL, EATON BUSSMANN, OR APPROVED EQUAL).

6. EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) SHALL BE EXOTHERMICALLY BONDED TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.

7. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED OR UL CERTIFIED.

8. CONTRACTOR SHALL PERFORM 14 DAY BURN TEST COORDINATED WITH THE JOB ENGINEER.

9. ALL LUMINAIRE ASSEMBLIES SHALL BE OF BUG RATING OF U0, OR IESNA FULL CUTOFF TYPE.

10. PULL CABLE SHALL BE MINIMUM 1/4" PULL NYLON OR POLYESTER ROPE, OR 1200 LBS PULL TAPE WHEN PULLING CONDUCTORS. STEEL CABLE OR FISH TAPE SHALL NOT BE USED. CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET. USE PULLING COMPOUND PER MANUFACTURER'S REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY NEC FOR CONDUCTORS USED.

11. AFTER INSTALLATION, IF DAMAGED, THE ILLUMINATION ASSEMBLIES SHALL RECEIVE SPOT GALVANIZING REPAIR IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS, CURRENT EDITION.

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITIES TOTAL	UNIT
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/8 A.W.G., E.G.C.)	580	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	919	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/12 A.W.G., E.G.C.)	84	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/6 A.W.G.)	919	LIN. FT.
710	NON-METALLIC CONDUIT (2")	1473	LIN. FT.
SP	ANTI-THEFT CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SP	LED ROADWAY ILLUMINATION POLE (4,700 LUMENS, COBRA HEAD, SHOE BASE, 15')	4	EACH
SP	SUBMERSIBLE LUMINAIRE	11	EACH
SP	PVC COATED GALVANIZED STEEL CONDUIT (1.5")	546	LIN. FT.

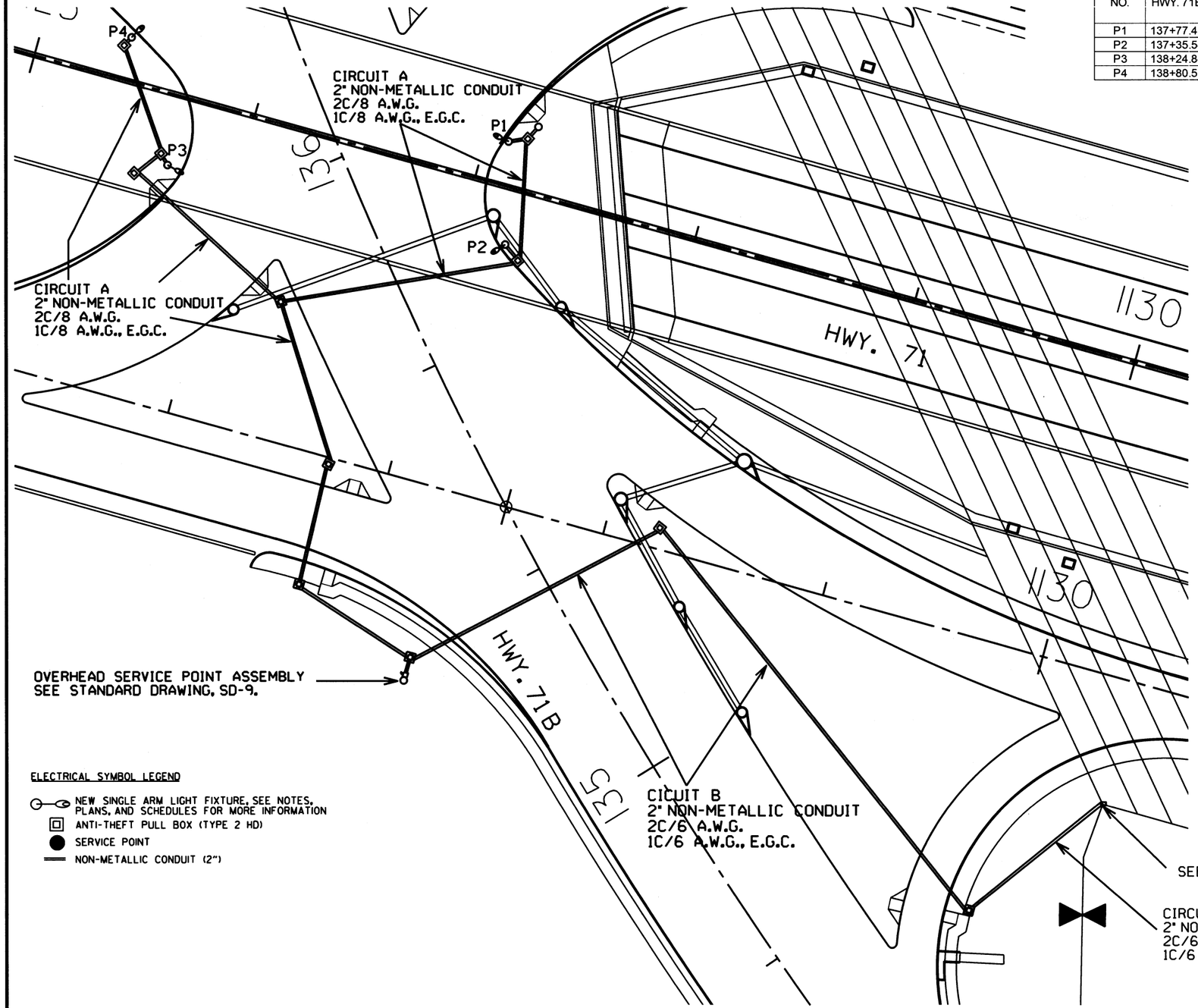
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
4-9-19

HWY. 71 INTERCHANGE
ILLUMINATION NOTES AND QUANTITIES

MAINT_CA0903 LIGHTING.DGN 4/9/2019

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.		CA0903	137	452

(2) ILLUMINATION LAYOUT



ELECTRICAL SYMBOL LEGEND

- NEW SINGLE ARM LIGHT FIXTURE, SEE NOTES, PLANS, AND SCHEDULES FOR MORE INFORMATION
- ANTI-THEFT PULL BOX (TYPE 2 HD)
- SERVICE POINT
- NON-METALLIC CONDUIT (2")

LUMINAIRE POLE SCHEDULE

POLE NO.	STATION HWY. 71B	EASTING	NORTHING	OFFSET (FT)	MOUNTING HEIGHT (FT)	BASE TYPE	VOLTAGE (V)	DELIVERED LUMENS (LM)	ORIENTATION ANGLE (PLAN NORTH = 0°, CW ROTATION)
P1	137+77.45	658657.34	764948.48	69.47'	15'	SHOE BASE	120	4,676	300°
P2	137+35.54	658655.94	764903.50	50.06'	15'	SHOE BASE	120	4,676	240°
P3	138+24.84	658508.19	764938.23	72.32'	15'	SHOE BASE	120	4,676	125°
P4	138+80.57	658492.56	764994.08	67.02'	15'	SHOE BASE	120	4,676	50°

CONDUIT FILL

CONDUIT SIZE	CONDUCTORS		CONDUIT FILL	MAX. FILL ALLOWED
1.5"	2C/6 A.W.G., 1C/6 A.W.G.		10.26%	40%
1.5"		2C/8 A.W.G., E.G.C.	7.78%	40%
2"		2C/8 A.W.G., E.G.C.	4.69%	40%

ILLUMINATION STATISTICS

DESCRIPTION	AVERAGE (FOOT-CANDLE)	MAXIMUM (FOOT-CANDLE)	MINIMUM (FOOT-CANDLE)	AVG/MIN
UNDERPASS	0.4	2.2	0.1	4:01
PED TUNNEL	2.2	4.7	0.7	3.1:1

NOTE: CALCULATION WAS BASED ON 0.86 LIGHT LOSS FACTOR FOR UNDERPASS LIGHTING, 0.80 LIGHT LOSS FACTOR FOR PED TUNNEL LIGHTING.

VOLTAGE DROP CALCULATIONS

FROM	TO	WIRE SIZE	VOLTAGE (LINE-TO-LINE)	PHASE	WIRE TYPE	CONDUIT TYPE	IMPEDENCE (OHM/1000FT)	%VD
SERVICE	P2	2#8, 1#8 EGC	120V	1	COPPER	PVC	0.69	0.83
P2	P1	2#8, 1#8 EGC	120V	1	COPPER	PVC	0.69	0.07
SERVICE	P3	2#8, 1#8 EGC	120V	1	COPPER	PVC	0.69	0.83
P3	P4	2#8, 1#8 EGC	120V	1	COPPER	PVC	0.69	0.09
							TOTAL	1.82

ILLUMINATION NOTES:

1. FOR UNDERPASS LUMINAIRE POLE LOCATIONS AND ORIENTATIONS, SEE LUMINAIRE POLE SCHEDULE.
2. INSTALL 2#12 XHHW-2, 1#12 E.G.C. XHHW-2 FROM PULL BOX TO LUMINAIRES.
3. THE DEGREE OF TILT ON LUMINAIRES SHALL BE ZERO.
4. ALL SPLICES SHALL BE WATERTIGHT, AND UL-LISTED FOR CONTINOUS USE IN SUBMERSIBLE INSTALLATIONS, SUCH AS HOMAC FLOOD-SEAL, EATON BUSSMANN, OR EQUIVALENT.
5. CONDUCT A MINIMUM 14-DAY BURN TEST FOR THE COMPLETE LIGHTING SYSTEM. REPLACE BURNED OUT AND NOTICEABLY DIM LUMINAIRES; MALFUNCTIONING EQUIPMENT SHALL BE CORRECTED, AND RETEST THE SYSTEM. OTHERWISE REMOVE AND REPLACE WITH NEW EQUIPMENT.
6. ALL CONCRETE PULL BOXES SHALL BE TYPE 2 HD UNLESS OTHERWISE INDICATED.
7. INSTALL A JUNCTION BOX (SIZE PER NEC) AND A SECONDARY SERVICE DISCONNECT ON THE CULVERT WING. SEE PEDESTRIAN TUNNEL DETAIL.
8. INSTALL 1.5" PVC COATED GALVANIZED STEEL CONDUIT FROM JUNCTION BOX TO THE CULVERT.
9. POLES SHALL BE PLACED 3 FEET FROM THE BACK OF CURB.
10. POWER FOR LIGHTING SYSTEM IS SUPPLIED BY THE TRAFFIC SIGNAL SERVICE POINT.

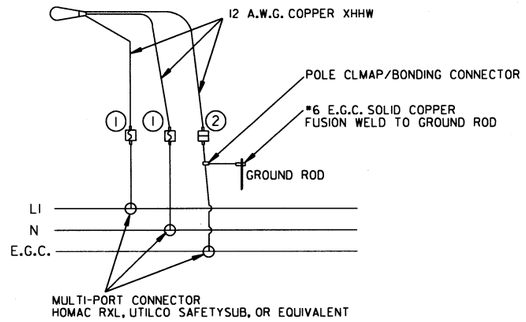
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7527
5-2-19
JOSEPH A. SARTIN

HWY. 71 INTERCHANGE
ILLUMINATION LAYOUT

MAINT.CA0903 LIGHTING.DGN 4/9/2019

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.		CA0903	138	452

(2) ILLUMINATION DETAIL



TYPICAL WIRING FOR LUMINAIRES
THREE-WIRE CIRCUIT-CENTER GROUNDED
LUMINIARES SERVED AT 120 VAC.

(120/240 VOLT SERVICE)

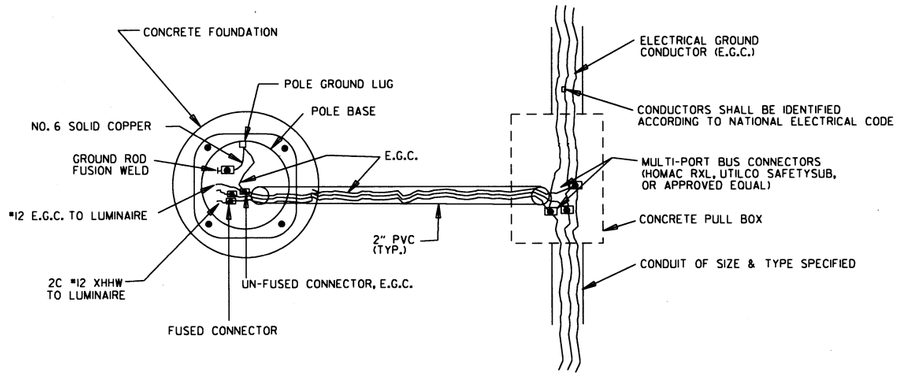
LUMINAIRE WIRING SCHEMATICS

KEYED NOTES:

① FUSED CONNECTOR SHALL BE WATERTIGHT. USE A FUSED CONNECTOR FOR THE LINE WIRE ON ALL POLES.

② UN-FUSED CONNECTOR SHALL BE WATERTIGHT.

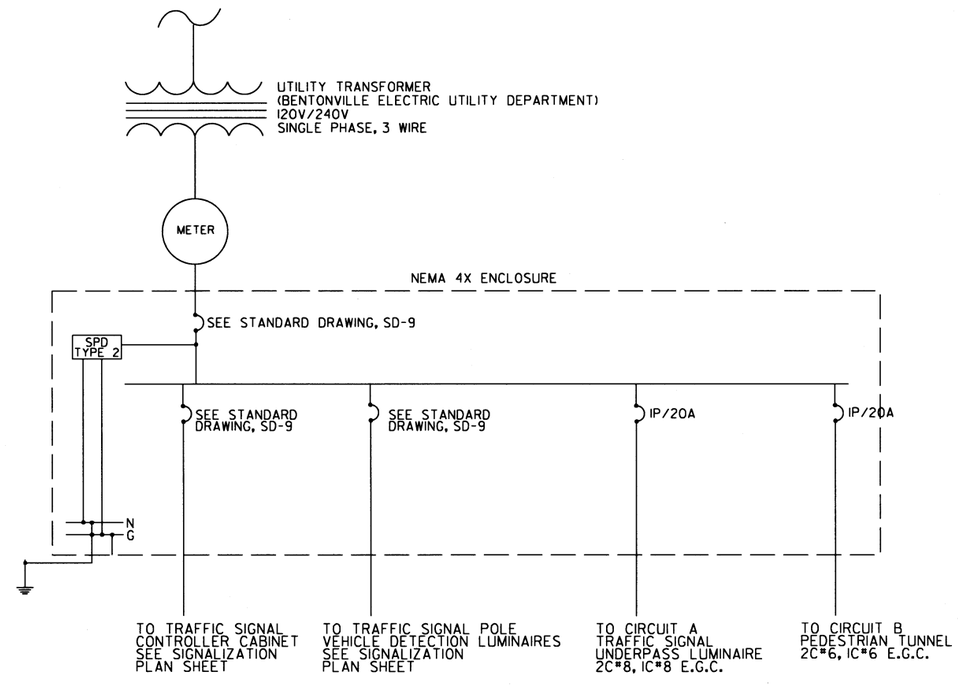
③ E.G.C. SHALL BE BONDED TO THE POLE AND GROUND ROD.



POLE FOUNDATION/PULL BOX WIRING DETAIL

GENERAL NOTES:

1. ALL ELECTRICAL CONNECTIONS, INCLUDING DUMMY FUSES, SHALL BE WATERTIGHT AND SHALL BE DESIGNED AS BREAKAWAY (HOMAC FLOOD-SEAL, EATON BUSSMANN, OR EQUAL).
2. ALL ELECTRICAL CONNECTIONS FOR GROUND SHALL HAVE A GREEN COLOR MARKING AND SHALL HAVE A PERMANENTLY INSTALLED SOLID GROUND.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (NEC), NFPA 101 (LIFE SAFETY CODE).
4. COORDINATE ELECTRICAL POWER SUPPLY WITH THE EQUIPMENT SUPPLIED.
5. COORDINATE ALL ELECTRICAL WORK AND POWER OUTAGES WITH THE CITY AND THE ELECTRIC UTILITY.
6. EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND AVAILABLE INTERRUPTING CURRENT RATINGS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS. SERIES RATED SYSTEMS SHALL NOT BE USED.
7. NEUTRAL BUSES SHALL BE COPPER 100% RATED UNLESS OTHERWISE NOTED
8. GROUND BUSES SHALL BE COPPER UNLESS OTHERWISE NOTED.
9. INSTALL EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) IN ALL FEEDER AND BRANCH CIRCUITS.
10. THE LOCAL ELECTRIC UTILITY IS BENTONVILLE ELECTRIC UTILITY DEPARTMENT. FOR COORDINATION, CONTACT TRAVIS MATLOCK, 479-271-5941.



ONE-LINE DIAGRAM

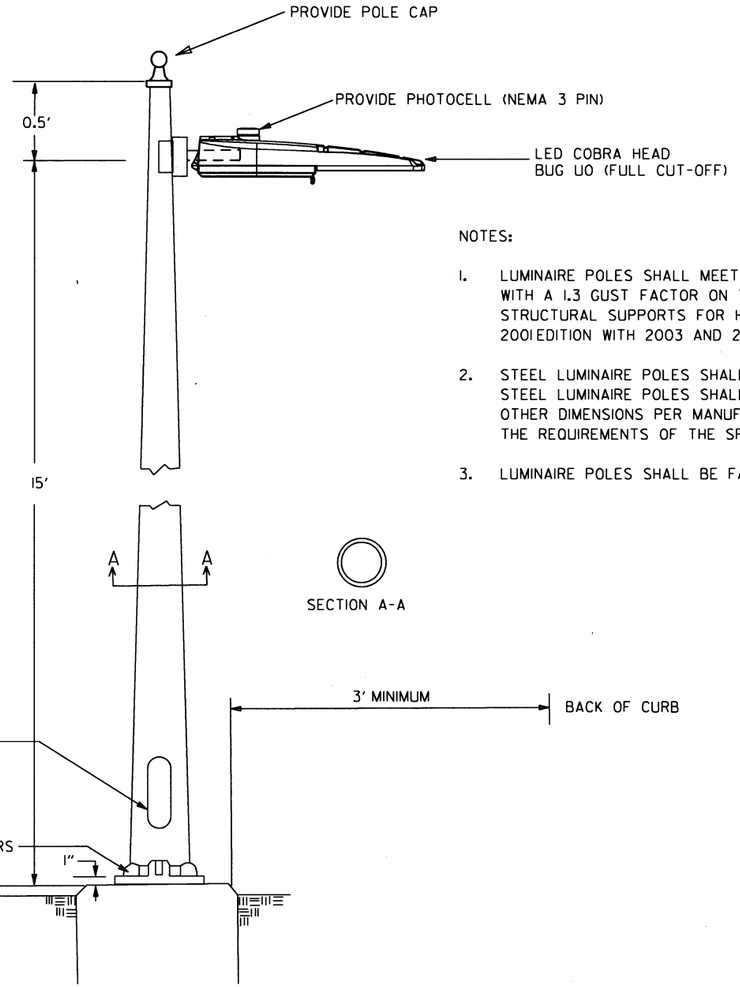
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
5-8-19
JOSEPH A. SARTIN

HWY. 71 INTERCHANGE
ILLUMINATION DETAIL

MAINT.CA0903 LIGHTING.DGN 4/9/2019

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.		CA0903	139	452

(2) ILLUMINATION DETAIL



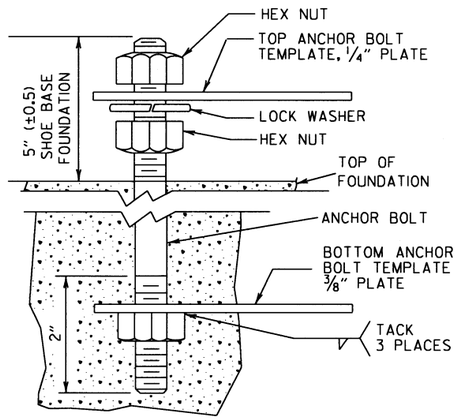
COBRA HEAD LUMINAIRE WITH SHOE BASE

NOTES:

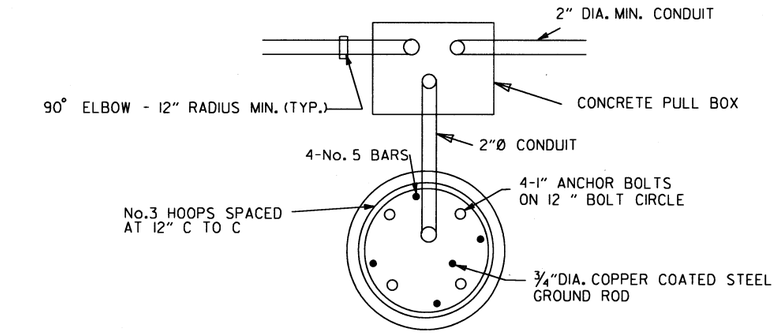
1. LUMINAIRE POLES SHALL MEET THE REQUIREMENTS OF 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR ON THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS LUMINAIRES AND TRAFFIC SIGNALS, 2001 EDITION WITH 2003 AND 2006 INTERIMS.

2. STEEL LUMINAIRE POLES SHALL BE A MINIMUM OF 11 GAUGE.
STEEL LUMINAIRE POLES SHALL BE HOT-DIPPED GALVANIZED.
OTHER DIMENSIONS PER MANUFACTURER'S RECOMMENDATION AS NECESSARY TO MEET THE REQUIREMENTS OF THE SP - LED ROADWAY ILLUMINATION POLE.

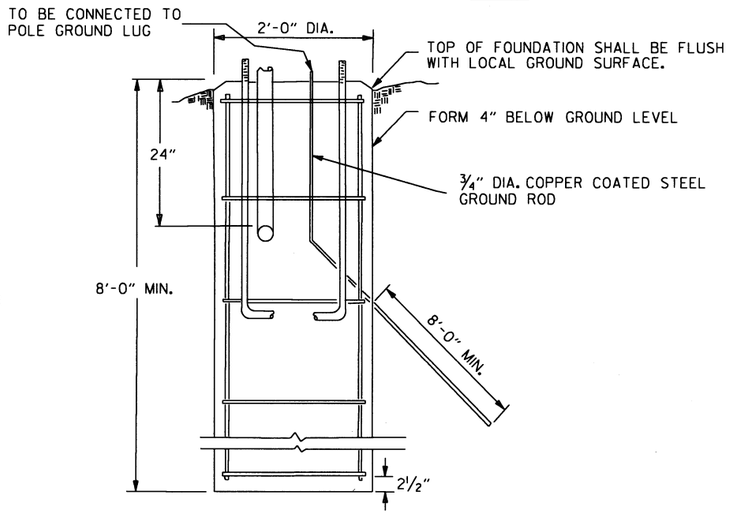
3. LUMINAIRE POLES SHALL BE FABRICATED FROM ASTM A572 GRADE 50 OR 65 STEEL.



ANCHOR BOLT DETAIL



PLAN



CONCRETE FOUNDATION

FOUNDATION NOTES:

1. TOP 6 INCHES OF FOUNDATION SHALL BE FORMED AND STRUCK LEVEL.

2. ANCHOR BOLTS FOR ALL POLES SHALL BE A-36M55 ANCHOR BOLTS. THE TOP 8 INCHES OF ALL ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A-153.
ANCHOR BOLTS IN FOUNDATIONS SHALL BE:
1 1/4 INCHES X 30 INCHES FOR MOUNTING HEIGHTS 40 FEET AND GREATER,
1 INCH X 30 INCHES FOR MOUNTING HEIGHTS LESS THAN 40 FEET.
ANCHOR BOLTS SHALL HAVE TOP END THREADED NOT LESS THAN 5 INCHES AND FURNISHED WITH GALVANIZED HEX NUTS LOCK WASHERS AND TEMPLATE. THE LOWER END OF THE BOLT SHALL BE THREADED AND FURNISHED WITH NUT AND TEMPLATE. WHEN BOLTS WITH ROLLED THREADS ARE FURNISHED, BOLT BODY NEED NOT BE FULL SIZE. ANCHOR BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT. NUTS SHALL BE TAPPED AND CHASED AFTER GALVANIZING.

3. CONCRETE SHALL BE CLASS A OR S. SEE ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION, SECTION 802.

4. TWO CONDUITS SHALL BE INSTALLED IN FOUNDATION FOR POLE NUMBER 2 AND 3.

5. ANCHOR BOLT TEMPLATE SHALL NOT BE SUPPLIED WITH FLAT WASHERS.

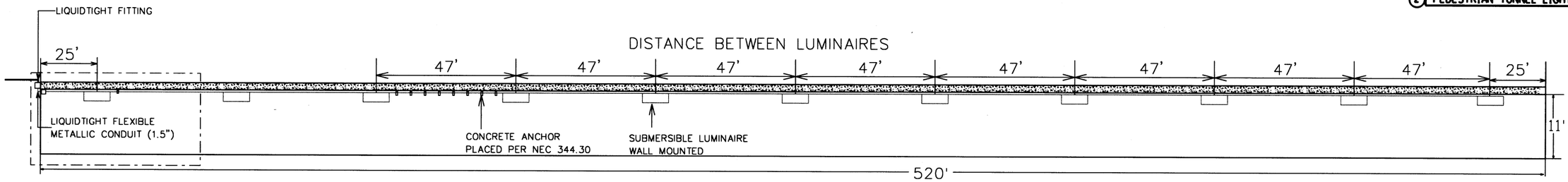
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
5-8-19
JOSEPH A. SARTIN

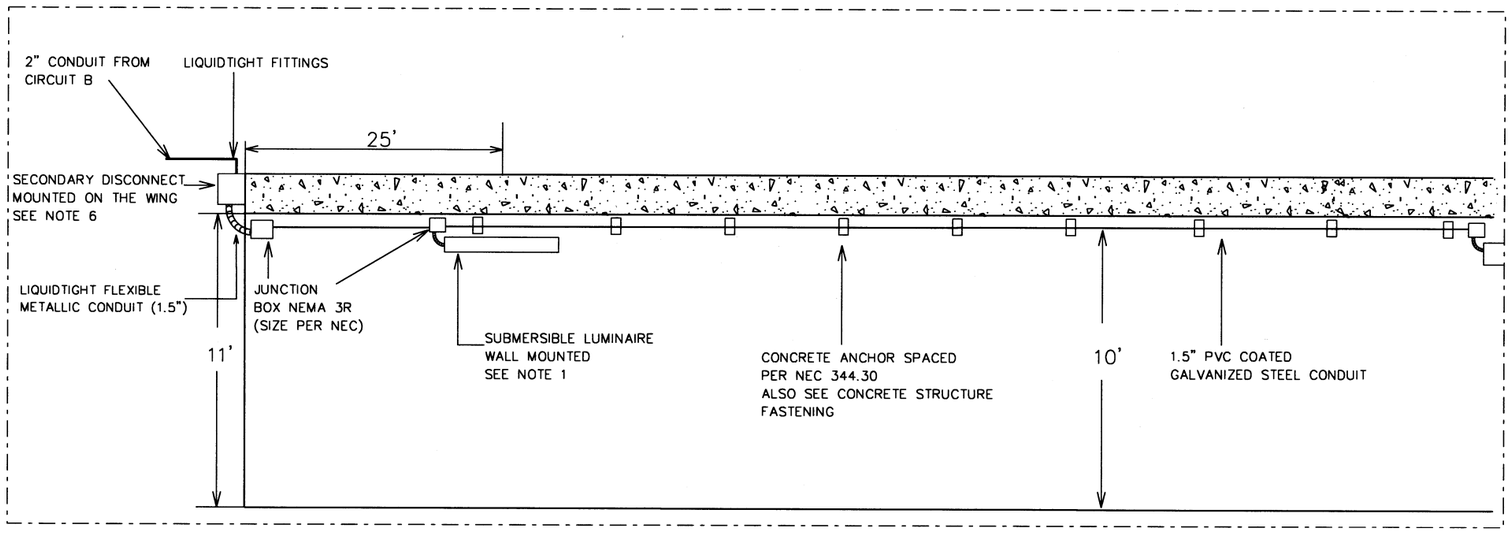
HWY. 71 INTERCHANGE
ILLUMINATION DETAIL

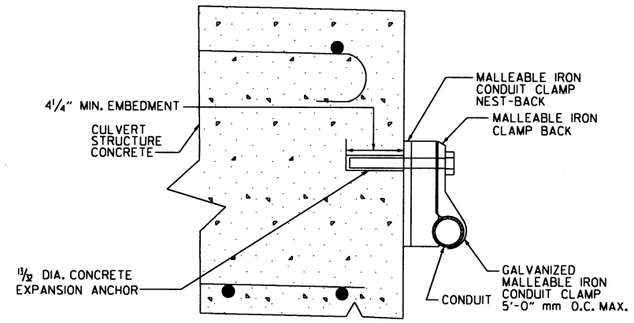
MAINT_CA0903 LIGHTING.DGN 4/9/2019

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.		CA0903	140	452

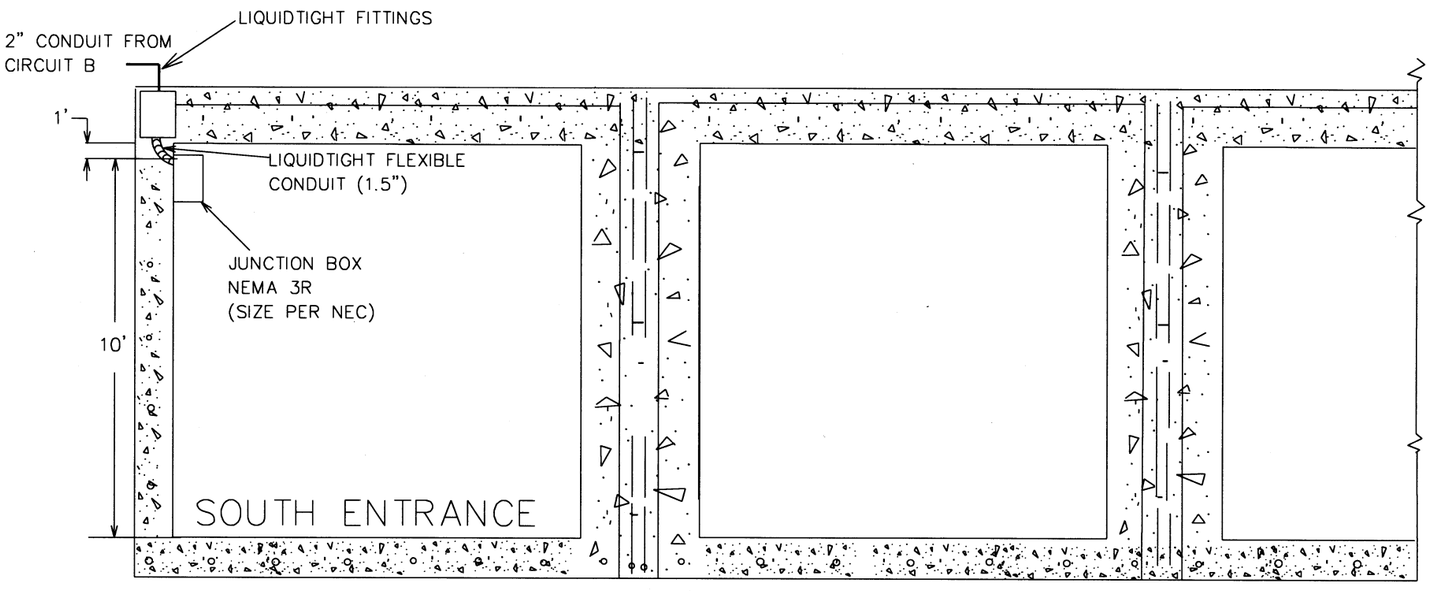
(2) PEDESTRIAN TUNNEL LIGHTING DETAIL







CONCRETE STRUCTURE FASTENING
NOT TO SCALE



NOTES:

1. LUMINAIRES IN THE BOX CULVERT SHALL BE RATED IP-67 WITH NEMA 4X HOUSING. SEE SPECIAL PROVISION SUBMERSIBLE LUMINAIRE.
2. SEE MANUFACTURER'S INSTALLAION GUIDE FOR THE SIZE OF CONDUCTORS AND CONDUIT SIZE.
3. ALL METAL ENCLOSURES AND CONDUIT SHALL BE BONDED TO E.G.C.
4. ALL CONDUIT FITTINGS SHALL BE LIQUIDTIGHT.
5. ALL SUPPORTS, BOLTS, STRAPS, SCREWS, AND SO FORTH SHALL BE OF CORROSION-RESISTANT MATERIALS OR PROTECTED AGAINST CORROSION BY CORROSION-RESISTANT MATERIALS.
6. SECONDARY DISCONNECT SHALL BE CONSIDERED SUBSIDIARY TO THE PAY ITEM, SERVICE POINT ASSEMBLY (4 CIRCUITS).

VOLTAGE DROP CALCULATIONS

FROM	TO	WIRE SIZE	VOLTAGE (LINE-TO-LINE)	PHASE	WIRE TYPE	CONDUIT TYPE	IMPEDENCE (OHM/1000FT)	%VD
SERVICE	T1	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	2.03
T1	T2	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.19
T2	T3	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.17
T3	T4	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.15
T4	T5	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.13
T5	T6	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.12
T6	T7	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.10
T7	T8	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.08
T8	T9	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.06
T9	T10	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.04
T10	T11	2#6, 1#6 EGC	120V	1	COPPER	PVC	0.49	0.02
							TOTAL	3.09

NOTE: T1-T11 DENOTES TUNNEL LIGHTING FIXTURES.

STATE OF ARKANSAS
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No. 7537
JOSEPH A. SARTINAS
5-8-15

HWY. 71 INTERCHANGE
PEDESTRIAN TUNNEL LIGHTING DETAIL

RCA0903_ILLUMINATION.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.		CA0903	141	452
				(2)	SIGNING SUMMARY OF QUANTITIES			

SIGNING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	TOTAL	UNIT
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	460	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	106	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	6	TON
SS & 617	GUARDRAIL (TYPE A)	1100	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)	4	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-31)	1	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-32)	1	EACH
SP	STEEL OVERHEAD SIGN STRUCTURE (OH-049-04-33)	1	EACH
SS & 725	GUIDE SIGN - ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	1525	SQ. FT.
SS & 725	GUIDE SIGN - OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	1266	SQ. FT.
SP, SS, & 726	STANDARD SIGN	1394	SQ. FT.
SS & 727	EXIT NUMBER PANEL (TYPE A)	119	SQ. FT.
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	9891	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G-1)	17	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G-2)	8	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-1)	17	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-4)	8	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-6)	1	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-8)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-9)	1	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-10)	4	EACH

NOTES:

ALL EXISTING GUIDE SIGNS SHALL BE MAINTAINED IN SUCH A MANNER THAT THE SIGNS ARE FULLY VISIBLE, INTACT, AND ERECT FOR THE DURATION OF THE PROJECT, AND SHALL BE REMOVED WHEN THEIR USE IS NO LONGER REQUIRED. REMOVAL AND DISPOSAL OF SIGNS, SUPPORTS, AND FOUNDATIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE EXISTING SIGNS AND SUPPORTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING FOOTINGS SHALL BE REMOVED AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

EXISTING LOGOS WILL BE RELOCATED TO THE NEW LOGO SIGN BY THE CONTRACTOR. THE LOGO INSTALLATION SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE CONTRACTOR SHOULD MAKE EVERY EFFORT TO LOCATE BURIED UTILITIES PRIOR TO EXCAVATION INCLUDING, BUT NOT LIMITED TO, CALLING ARKANSAS ONE CALL CENTER (800) 482-8998 FOR LOCATES. SHOULD IT BE DETERMINED A POSSIBILITY OF A UTILITY CONFLICT, CONTRACTOR SHALL CONSULT WITH THE RESIDENT ENGINEER FOR FURTHER GUIDANCE.

BREAKAWAY SIGN SUPPORT TOTAL IS CALCULATED BY TAKING THE LENGTH OF H1, H2, H3, AND THE STUB POST AND MULTIPLYING BY THE BEAM WEIGHT (LBS).

BASIS OF ESTIMATE:
NMAX = 205
MINERAL AGGREGATE 94.4%
ASPHALT BINDER (PG 76 – 22) 5.6%

STATE OF ARKANSAS
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5-20-19
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				6	ARK.			
				JOB NO.		CA0903	142	452
				(2)	SIGNING QUANTITIES			

STANDARD SIGNS FLAT SHEET (BOX 1 OF 2)

SIGN NO./ LOCATION	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS TYPE G1 EA.	G2 EA.	G2-1 EA.	G2-2 EA.	G2-3 EA.	G2-4 EA.	G2-5 EA.	G2-6 EA.	G2-7 EA.	G2-8 EA.	G2-9 EA.	G2-10 EA.	STANDARD SIGN SQ. FT.
SS-71-146+00NB	1												12.00
SS-71B-130+10SB	1												12.00
SS-71-1123+40NB		1											16.00
SS-71-1130+00SB		1											16.00
SS-71-1180+00SB		1											20.00
SS-049-1175+00SB	1												12.00
SS-71-1434+50NB	1												6.00
SS-71B-133+10SB	1												6.00
SS-71-1185+00SB		1											20.00
SS-71-1125+50SB				1									17.00
SS-71-154+00SB				1									17.00
SS-71-124+00NB				1									17.00
SS-71-138+10SB						1							30.00
SS-71-137+50SB						1							30.00
SS-71-136+80SB						1							30.00
SS-71-136+00SB						1							30.00
SS-71-140+20NB						1							30.00
SS-71-139+60NB						1							30.00
SS-71-138+80NB						1							30.00
SS-71-137+80NB						1							30.00
SS-71-1123+00SB-A	1												9.00
SS-71-1123+00SB-B	1												9.00
SS-71-1132+00NB-A	1												9.00
SS-71-1132+00NB-B	1												9.00
SS-71-1118+85NB-A	1												3.00
SS-71-1118+85NB-B	1												3.00
SS-71-1137+50NB	1												3.00
SS-71-1116+00SB			1										16.00
SS-71-151+00SB			1										16.00
SS-71-1140+00NB-A			1										16.00
SS-71-1140+00NB-B			1										16.00
SS-71B-121+00NB			1										16.00
SS-049-1154+00SB			1										16.00
SS-049-1162+00SB			1										16.00
SUBTOTALS(BOX 1 OF 2):	**12**	**4**	**7**	**3**		**8**							**568.00**

STANDARD SIGNS FLAT SHEET (BOX 2 OF 2)

SIGN NO./ LOCATION	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS TYPE G1 EA.	G2 EA.	G2-1 EA.	G2-2 EA.	G2-3 EA.	G2-4 EA.	G2-5 EA.	G2-6 EA.	G2-7 EA.	G2-8 EA.	G2-9 EA.	G2-10 EA.	STANDARD SIGN SQ. FT.
SS-049-1112+00NB			1										16.00
SS-049-1140+00SB			1										16.00
SS-71-1121+50NB			1										16.00
SS-71-1139+00NB			1										16.00
SS-71-1109+00SB			1										20.00
SS-049-1105+00NB			1										16.00
SS-71-146+10SB			1										16.00
SS-71B-130+00NB			1										16.00
SS-71-1120+00SB-A												1	78.00
SS-71-1120+00SB-B												1	78.00
SS-71-1136+60NB-A												1	78.00
SS-71-1136+60NB-B												1	78.00
SS-71B-133+95NB										1			35.00
SS-71B-128+00NB										1			35.00
SS-71-148+00SB								1					26.00
SS-71-142+10SB										1			35.00
SS-71-139+50SNB										1			35.00
SS-71B-136+00NB											1		41.00
SS-049-1139+00NB			1										16.00
SS-049-1100+00SB			1										16.00
SS-049-1119+00NB		1											9.00
SS-049-1113+50SB		1											9.00
SS-049-1100+00NB	1												12.00
SS-71-1127+10NB				1									17.00
SS-040-1085+00NB		1											20.00
SS-049-1090+00NB		1											20.00
SS-71-1123+00SB(A)	1												9.00
SS-71-1123+00SB(B)	1												9.00
SS-71-1132+00NB(A)	1												9.00
SS-71-1132+00NB(B)	1												9.00
SUBTOTALS(BOX 2 OF 2):	**5**	**4**	**10**	**1**				**1**		**4**	**1**	**4**	**806.00**
TOTALS:	**17**	**8**	**17**	**4**		**8**		**1**		**4**	**1**	**4**	**1374.00**

STATE OF ARKANSAS
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4-8-19
JOSEPH A. SARTINI

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				6	ARK.			
				JOB NO.		CA0903	143	452
				(2)	SIGNING QUANTITIES			

MAIN LANES ROADSIDE MOUNTED SIGNING QUANTITIES

SIGN NO./ LOCATION	OMNI-DIRECTIONAL SIGN SUPPORT			I-BEAM STRUCTURE TYPE			GUIDE SIGN DEMOUNTABLE LEGEND			I-BEAM BREAKAWAY SIGN SUPPORT													EXIT NUMBER PANEL			
										STEEL SECT. A-572		SIGN POST LENGTH			STUB POST			FOOTINGS			SIGN POST AND STUB	LEGEND	TYPE		
												H-1	H-2	H-3	H-1	H-2	H-3	DIA.	DEPTH	EMBED.			A	B	C
	G1	G2	G3	G1	G2	G3	LENGTH LIN. FT.	HEIGHT LIN. FT.	SQ. FT.	BEAM	LBS	LIN FT			LIN FT			LIN FT			POUND		SQ. FT.		
GM-049-04-1165+00NB					1		21.00	12.50	262.50	W10	26.00	19.50	19.50	20.5	5.66	5.66	5.66	3.00	8.00	5.33	1841.32	93	23.75		
GM-049-04-1104+00SB					1		21.50	12.50	268.75	W10	26.00	19.50	19.50	20.5	5.66	5.66	5.66	3.00	8.00	5.33	1841.32	93	23.75		
GM-049-04-1218+00NB					1		18.00	14.50	261.00	W10	26.00	21.50	21.50	22.5	5.66	5.66	5.66	3.00	8.00	5.33	1997.32	93	23.75		
GM-049-04-1051+00SB					1		18.00	14.50	261.00	W10	26.00	21.50	21.50	22.5	5.66	5.66	5.66	3.00	8.00	5.33	1997.32	93	23.75		
SS-71-1143+00NB					1		14.00	10.00	140.00	W8	18.00	17.00	18.00		4.66	4.66		2.50	6.50	4.33	797.76				
SS-71-1114+00SB					1		14.00	10.00	140.00	W8	18.00	17.00	18.00		4.66	4.66		2.50	6.50	4.33	797.76				
GM-049-04-1095+00NB					1		14.00	5.00	70.00	W8	18.00	12.00	13.00		4.66	4.66		2.50	6.50	4.33	617.76				
SS-71B-128+00NB		1					5.50	3.50	19.25																
SS-71-148+00SB		1					6.50	3.50	22.75																
EX-71-1110+50SB		1					8.00	5.00	40.00																
EX-71-1143+50NB		1					8.00	5.00	40.00																
TOTALS:		4			7				1525.25												9890.56		95.00		

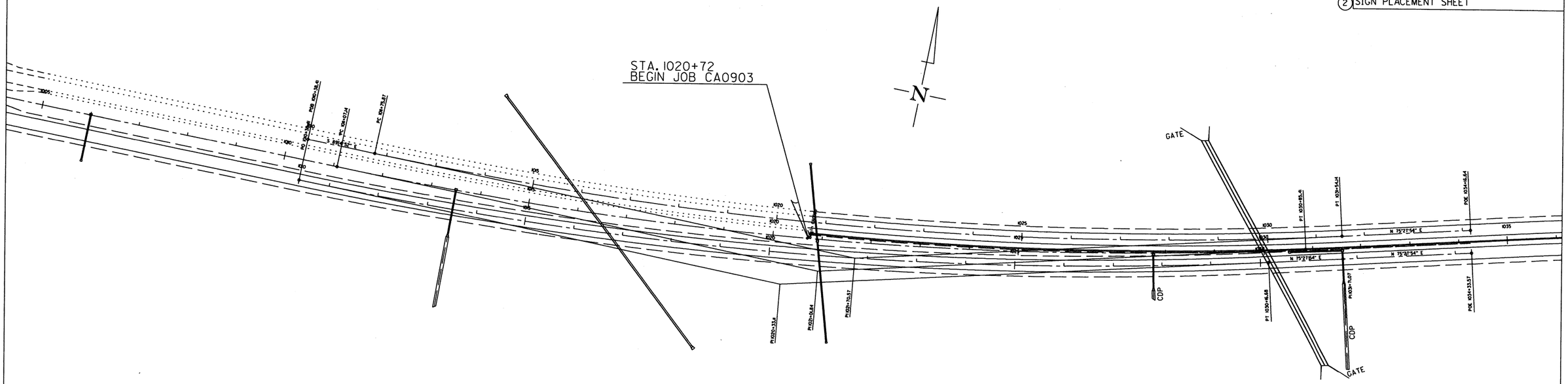
OVERHEAD SIGNING QUANTITIES

SIGN NO./ LOCATION	STRUCTURE TYPE												GUIDE SIGN			EXIT NUMBER PANEL				OVERHEAD DMS ASSEMBLY	STD. SIGN	GUARDRAIL				
	INSTALL SIGN STRUCTURE				REMOVE EXISTING SIGN STRUCTURE				MODIFY EXISTING SIGN STRUCTURE							LEGEND	TYPE					TYPE A	TERM. ANCHOR POSTS TYPE 1	GUARDRAIL TERM. TYPE 2	AGG. BASE CR (CL. 7)	ACHM SURF. CR. 220 LBS/SY
	ST	OC	OH	BM	ST	OC	OH	BM	ST	OC	OH	BM	LENGTH LIN. FT.	HEIGHT LIN. FT.	SQ. FT.		A	B	C	EACH	SQ. FT.	LIN. FT.	EACH	EACH	TON	TON
																	SQ. FT.									
OH-049-04-31			1																			275	1	1	115	28
OH-049-04-1148+00NB													36.50	17.50	638.75	93	23.75				20.00					
OH-049-04-32			1																			550	2	2	230	56
OH-049-04-1135+00NB(A)													16.50	9.50	156.75											
OH-049-04-1135+00NB(B)													16.50	9.50	156.75											
OH-049-04-32			1																			275	1	1	115	28
OH-049-04-1121+00SB(A)													16.50	9.50	156.75											
OH-049-04-1121+00SB(B)													16.50	9.50	156.75											
TOTALS:			3												1265.75		23.75				20	1100	4	4	460	112

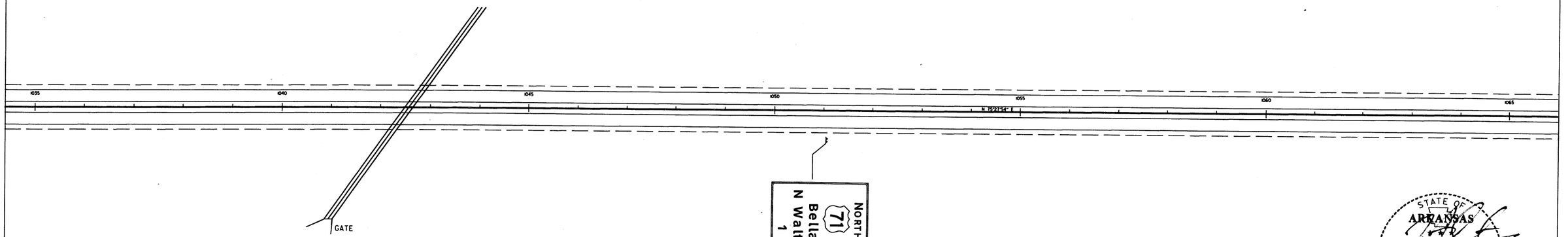
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
4-8-13

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.		CA0903	144	452

(2) SIGN PLACEMENT SHEET



STA 1020+72 TO STA 1035+00



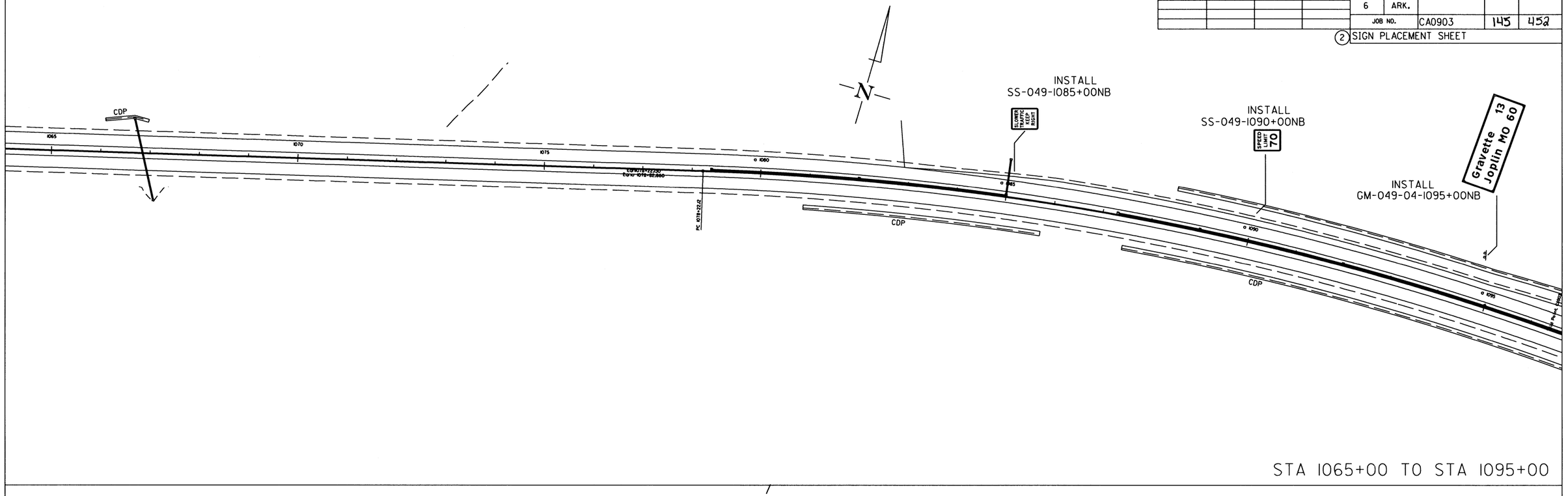
INSTALL
GM-049-04-1051+00SB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-19
JOSEPH A. SARTIN

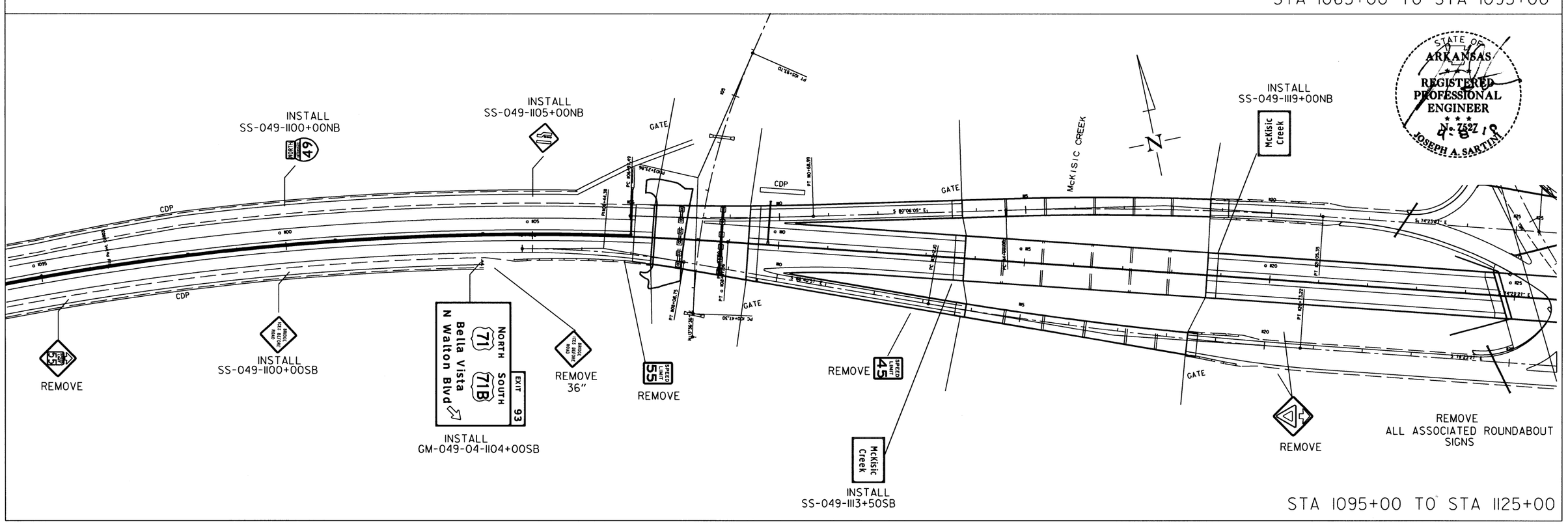
STA 1035+00 TO STA 1065+00

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.		CA0903	145	458

(2) SIGN PLACEMENT SHEET



STA 1065+00 TO STA 1095+00



STA 1095+00 TO STA 1125+00

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.		CA0903	1126	452

(2) SIGN PLACEMENT SHEET

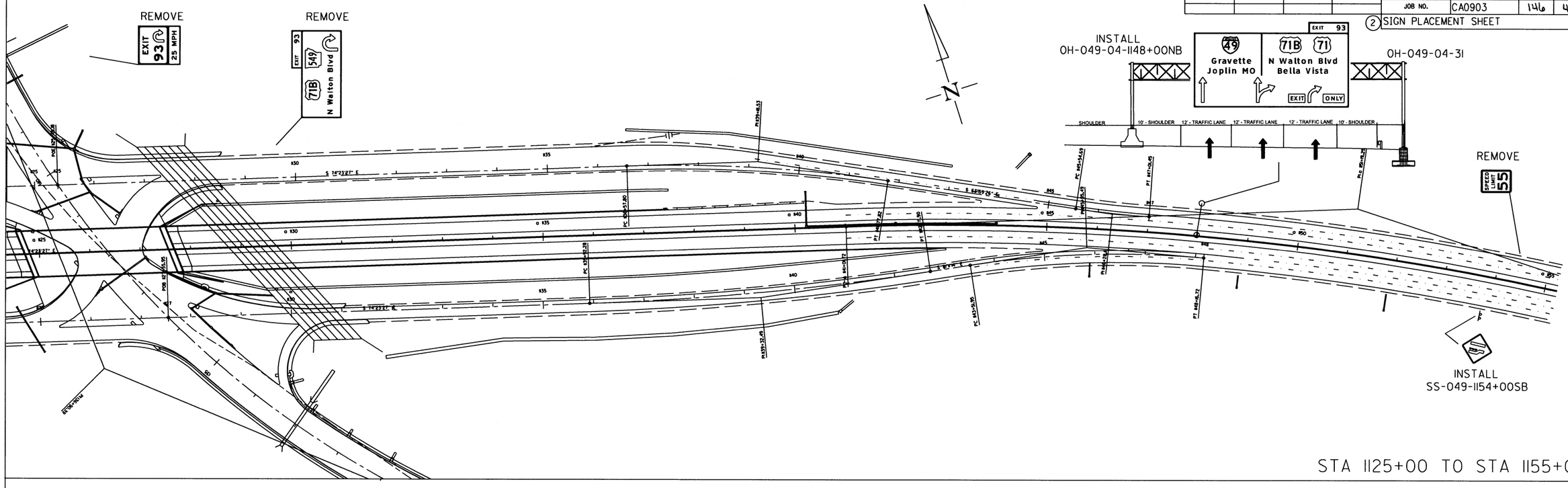
REMOVE

REMOVE

INSTALL
0H-049-04-1148+00NB

0H-049-04-31

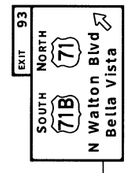
REMOVE



INSTALL
SS-049-1154+00SB

STA 1125+00 TO STA 1155+00

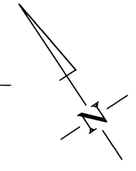
INSTALL
GM-049-04-1165+00NB

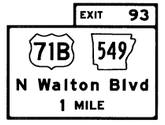


REMOVE

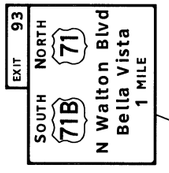


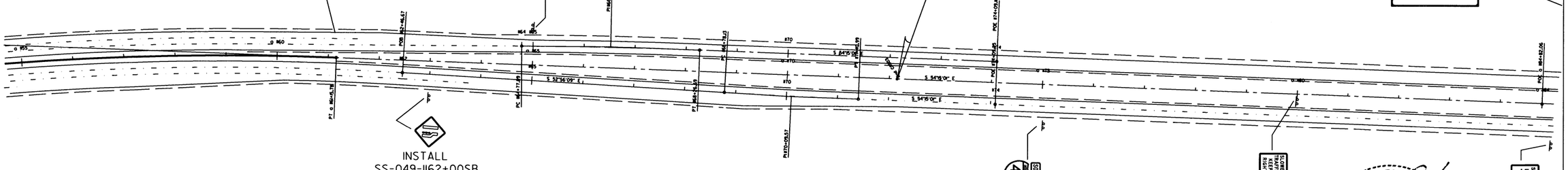
STA. 1172+15.38
END JOB CA0903





REPLACE WITH
GM-049-04-1218+00NB





INSTALL
SS-049-1162+00SB

INSTALL
SS-049-1175+00SB

INSTALL
SS-049-1180+00SB

INSTALL
SS-049-1185+00SB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-9-19
JOSEPH A. SARTINI

STA 1155+00 TO STA 1185+00

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.		CA0903	147	452

(2) SIGN PLACEMENT SHEET

REMOVE
EXIT 93
718 549
N Walton Blvd
1 MILE

INSTALL
SS-71-154+00SB

INSTALL
SS-71-151+00SB

INSTALL
SS-71-148+00SB
Walton Blvd
Fort Smith
Gravette

INSTALL
SS-71-146+00SB
ONLY

INSTALL
SS-71-146+00NB
SPEED LIMIT 45

INSTALL
SS-71-142+10SB

INSTALL
SS-049-1112+00NB

INSTALL
SS-71-139+50SB

INSTALL
SS-71-1434+50NB
NORTH 71

INSTALL
SS-71-1121+50NB

INSTALL
SS-71-1118+85NB-A
SS-71-1118+85NB-B

INSTALL
SS-71-1123+40NB

INSTALL
SS-71-1140+20NB
SS-71-1139+60NB
SS-71-1138+80NB
SS-71-1137+80NB

INSTALL
SS-71-1127+10NB

INSTALL
SS-71-1132+00NB-(B)

INSTALL
SS-71-1132+00NB-(A)

INSTALL
SS-71-1109+00SB

INSTALL
EX-71-1110+50SB
EXIT 93

INSTALL
SS-71-1114+00SB
N Walton Blvd
Bella Vista
71B SOUTH
71 NORTH

INSTALL
SS-71-1116+00SB

RAMP 1

GATE

RAMP 3

INSTALL
SS-71-1136+60NB-A
SS-71-1136+60NB-B
ONLY ONLY ONLY

INSTALL
SS-049-1139+00NB

INSTALL
SS-71-1140+00NB-A
SS-71-1140+00NB-B

INSTALL
SS-71-1143+00NB

INSTALL
SS-71-1120+00SB-A
SS-71-1120+00SB-B
ONLY ONLY ONLY

INSTALL
SS-71-1123+00SB(A)

INSTALL
SS-71-1125+50SB

INSTALL
SS-71-1123+00SB(B)

INSTALL
SS-71-1138+10SB
SS-71-137+50SB
SS-71-1136+80SB
SS-71-1136+00SB

INSTALL
SS-71B-136+00NB

INSTALL
SS-71B-133+10SB

INSTALL
SS-71B-130+10SB

INSTALL
SS-71-1130+00SB

INSTALL
SS-71B-133+95NB

INSTALL
SS-71B-130+00NB

INSTALL
SS-71B-128+00NB

INSTALL
SS-71B-124+00NB

INSTALL
SS-71B-121+00NB

INSTALL
SS-71-1137+50NB

INSTALL
SS-049-1140+00SB

INSTALL
EX-71-1143+50NB
EXIT 93

Bella Vista
Gravette
Fort Smith

B INSTALL
71 NORTH
Bella Vista

A INSTALL
71B SOUTH
N Walton Blvd

On-049-04-33
INSTALL OVERHEAD STRUCTURE
RAMP 1
STA 1121+00SB

6' SHOULDER | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 6' SHOULDER

B INSTALL
71 NORTH
Bella Vista

A INSTALL
71B SOUTH
N Walton Blvd

On-049-04-33
INSTALL OVERHEAD STRUCTURE
RAMP 3
STA 1135+00NB

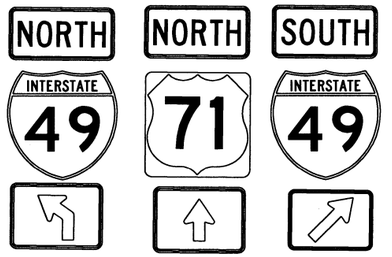
6' SHOULDER | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 6' SHOULDER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-15
JOSEPH A. SARTIN

STA 1107+00 TO STA 1148+00

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.		CA0903	148	452

(2) SIGN LAYOUT SHEET

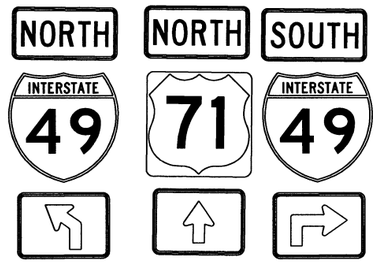


M3-1 (12"X24")
M3-1 (12"X24")
M3-3 (12"X24")

MI-1 (24"X24")
MI-4 (24"X24")
MI-1 (24"X24")

M5-2L (15"X21")
M6-3 (15"X21")
M6-2R (15"X21")

SS-71B-133+95NB

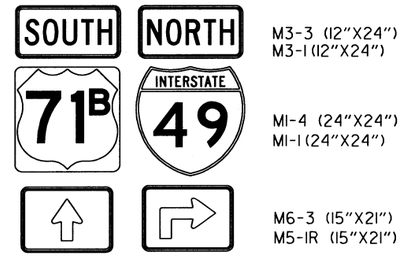


M3-1 (12"X24")
M3-1 (12"X24")
M3-3 (12"X24")

MI-1 (24"X24")
MI-4 (24"X24")
MI-1 (24"X24")

M5-2L (15"X21")
M6-3 (15"X21")
M5-1R (15"X21")

SS-71B-128+00NB

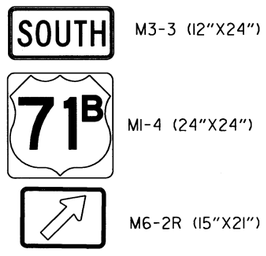


M3-3 (12"X24")
M3-1 (12"X24")

MI-4 (24"X24")
MI-1 (24"X24")

M6-3 (15"X21")
M5-1R (15"X21")

SS-71-148+00SB

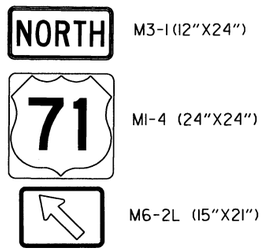


M3-3 (12"X24")

MI-4 (24"X24")

M6-2R (15"X21")

SS-71-1123+00SB(B)

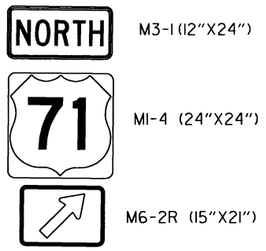


M3-1 (12"X24")

MI-4 (24"X24")

M6-2L (15"X21")

SS-71-1123+00SB(A)

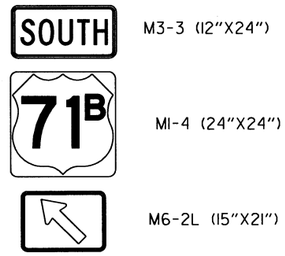


M3-1 (12"X24")

MI-4 (24"X24")

M6-2R (15"X21")

SS-71-1132+00NB(B)

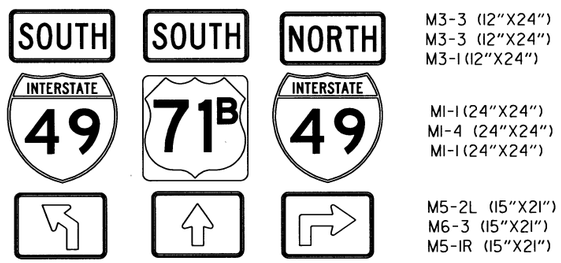


M3-3 (12"X24")

MI-4 (24"X24")

M6-2L (15"X21")

SS-71-1132+00NB(A)

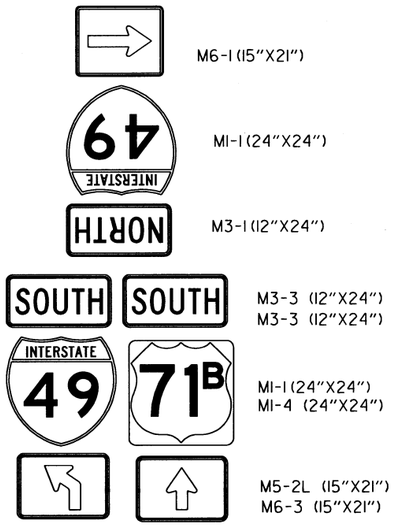


M3-3 (12"X24")
M3-3 (12"X24")
M3-1 (12"X24")

MI-1 (24"X24")
MI-4 (24"X24")
MI-1 (24"X24")

M5-2L (15"X21")
M6-3 (15"X21")
M5-1R (15"X21")

SS-71-142+10SB



M6-1 (15"X21")

MI-1 (24"X24")

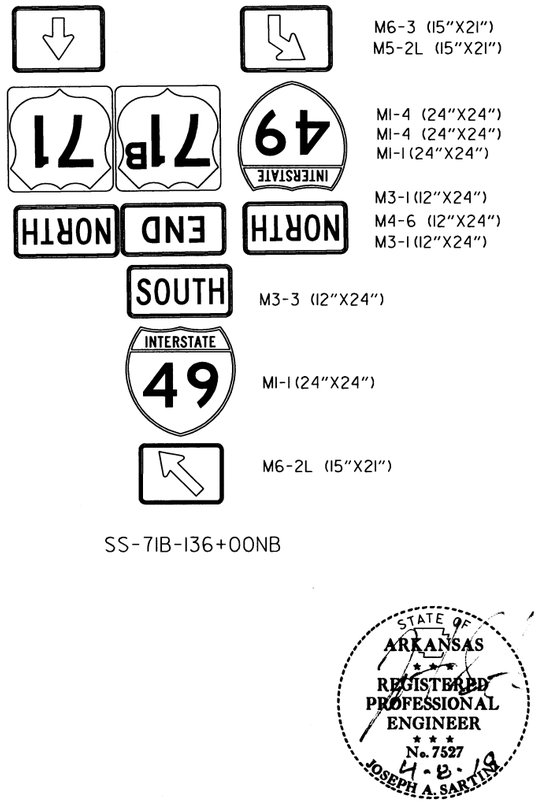
M3-1 (12"X24")

M3-3 (12"X24")
M3-3 (12"X24")

MI-1 (24"X24")
MI-4 (24"X24")

M5-2L (15"X21")
M6-3 (15"X21")

SS-71-139+50SB



M6-3 (15"X21")
M5-2L (15"X21")

MI-4 (24"X24")
MI-4 (24"X24")
MI-1 (24"X24")

M3-1 (12"X24")
M4-6 (12"X24")
M3-1 (12"X24")

M3-3 (12"X24")

MI-1 (24"X24")

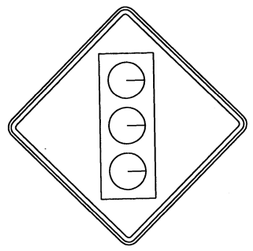
M6-2L (15"X21")

SS-71B-136+00NB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-19
JOSEPH A. SARTIN

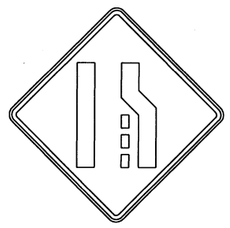
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	149	452

(2) **SIGN LAYOUT SHEET**



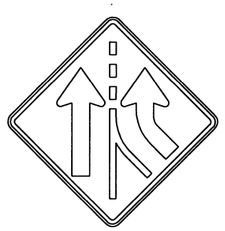
W3-3 (48"X48")

SS-7I-1116+00SB
SS-7I-151+00SB
SS-7I-1140+00NB-A
SS-7I-1140+00NB-B
SS-7IB-121+00NB



W4-2R (48"X48")

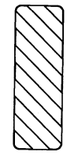
SS-049-1154+00SB
SS-049-1162+00SB
SS-049-1105+00NB



W4-3R (48"X48")

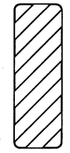
SS-049-1112+00NB
SS-049-1140+00SB

OM-3L (12"X36")

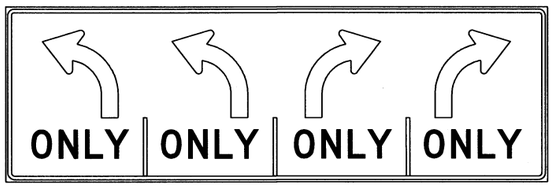


SS-7I-1118+85NB-A

OM-3R (12"X36")

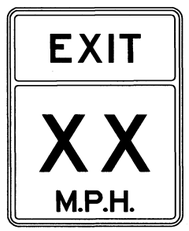


SS-7I-1118+85NB-B
SS-7I-1137+50NB



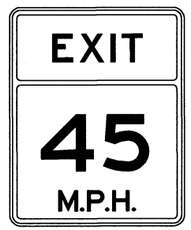
R3-8SPEC (60"X186")

SS-7I-1120+00SB-A
SS-7I-1120+00SB-B
SS-7I-1136+60NB-A
SS-7I-1136+60NB-B



WI3-2 (48"X60")

SS-7I-1109+00SB



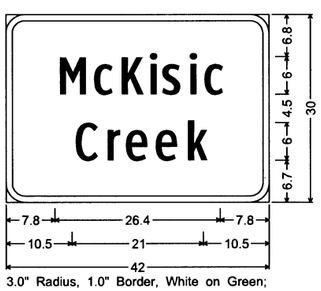
WI3-2 (48"X60")

SS-49-1148+00NB

W8-13 (48"X48")

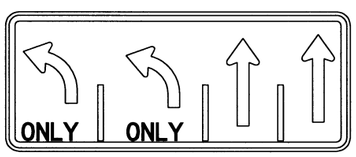


SS-7I-1121+50NB
SS-049-1139+00NB
SS-049-1100+00SB



3.0" Radius, 1.0" Border, White on Green;
[McKisic] ClearviewHwy-2-W;
[Creek] ClearviewHwy-2-W;

SS-049-1119+00NB
SS-049-1113+50SB



R3-8SPEC (30"X74")

SS-7I-146+00SB
SS-7IB-130+00NB



GM-049-04-1095+00NB; 6.0" Radius, 2.0" Border, White on Green;
[Gravette] ClearviewHwy-5-W-R; [13] ClearviewHwy-5-W-R; [Joplin MO] ClearviewHwy-5-W-R; [60] ClearviewHwy-5-W-R;

GM-049-04-1095+00NB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-13
JOSEPH A. SARTIN

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.		CA0903	150	452

(2) **SIGN LAYOUT SHEET**



M3-1 (15"X30")
MI-1 (36"X36")

SS-049-1100+00NB



M3-3 (15"X30")
MI-1 (36"X36")

SS-049-1175+00SB



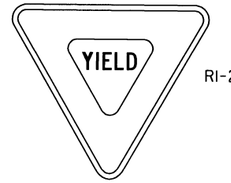
M3-1 (12"X24")
MI-4 (24"X24")

SS-71-1434+50NB



M3-3 (12"X24")
MI-4 (24"X24")

SS-71B-133+10SB



RI-2 (48"X48"X48")

SS-71-1123+40NB
SS-71-1130+00SB



M3-1 (12"X24")
M3-3 (12"X24")
MI-4 (24"X24")
MI-4 (24"X24")
M6-2L (15"X21")
M6-2R (15"X21")

SS-71-1125+50SB



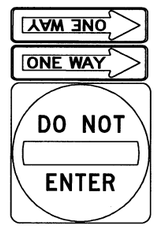
R2-1 (48"X60")

SS-049-1185+00SB
SS-049-1090+00NB



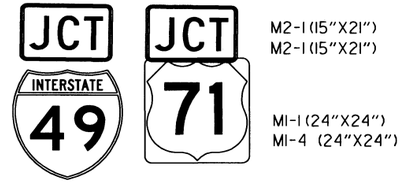
R2-1 (36"X48")

SS-71B-130+10SB
SS-71-146+00NB



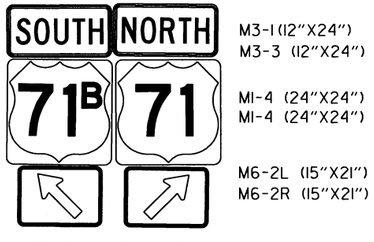
R6-1L (18"X54")
R6-1R (18"X54")
R5-1 (48"X48")

SS-71-138+10SB
SS-71-137+50SB
SS-71-136+80SB
SS-71-136+00SB
SS-71-140+20NB
SS-71-139+60NB
SS-71-138+80NB
SS-71-137+80NB



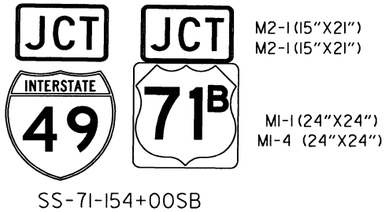
M2-1 (15"X21")
M2-1 (15"X21")
MI-1 (24"X24")
MI-4 (24"X24")

SS-71B-124+00NB



M3-1 (12"X24")
M3-3 (12"X24")
MI-4 (24"X24")
MI-4 (24"X24")
M6-2L (15"X21")
M6-2R (15"X21")

SS-71-1127+10NB



M2-1 (15"X21")
M2-1 (15"X21")
MI-1 (24"X24")
MI-4 (24"X24")

SS-71-154+00SB



R4-3 (48"X60")

SS-049-1180+00SB
SS-049-1085+00NB



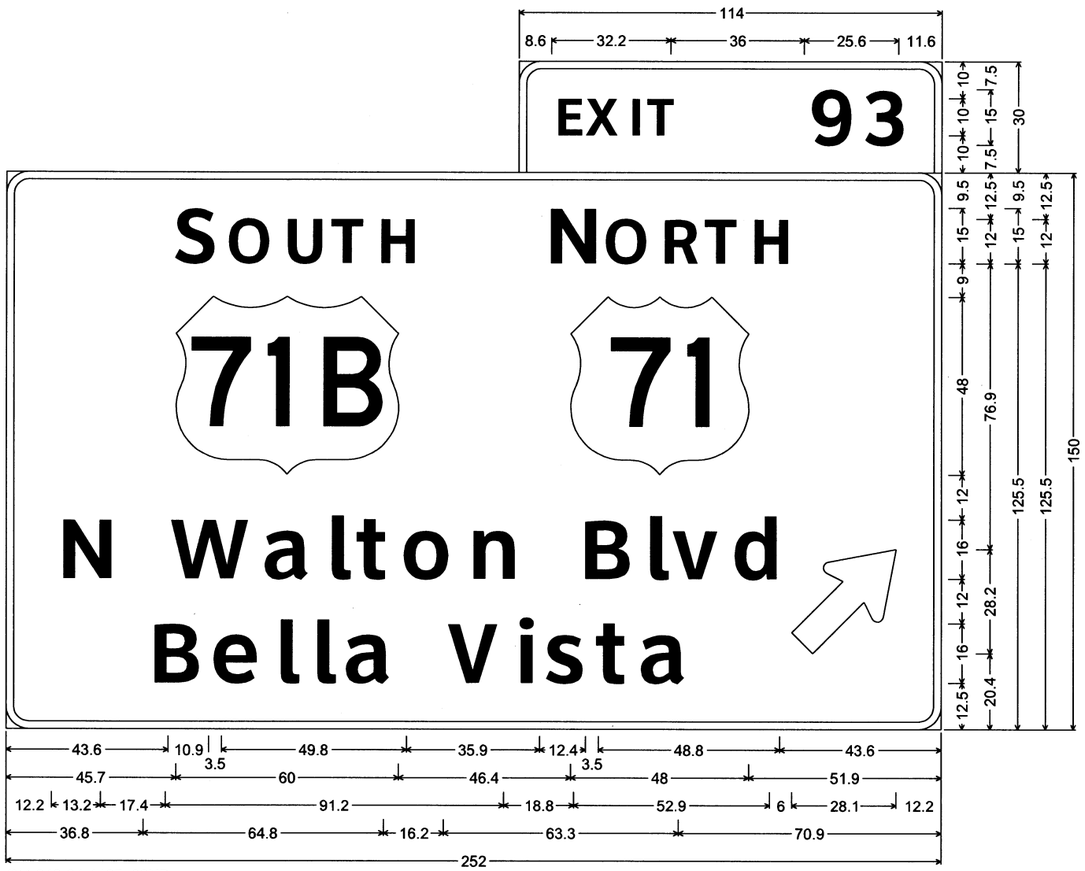
R5-1A (30"X42")

SS-71-1123+00SB-A
SS-71-1123+00SB-B
SS-71-1132+00NB-A
SS-71-1132+00NB-B



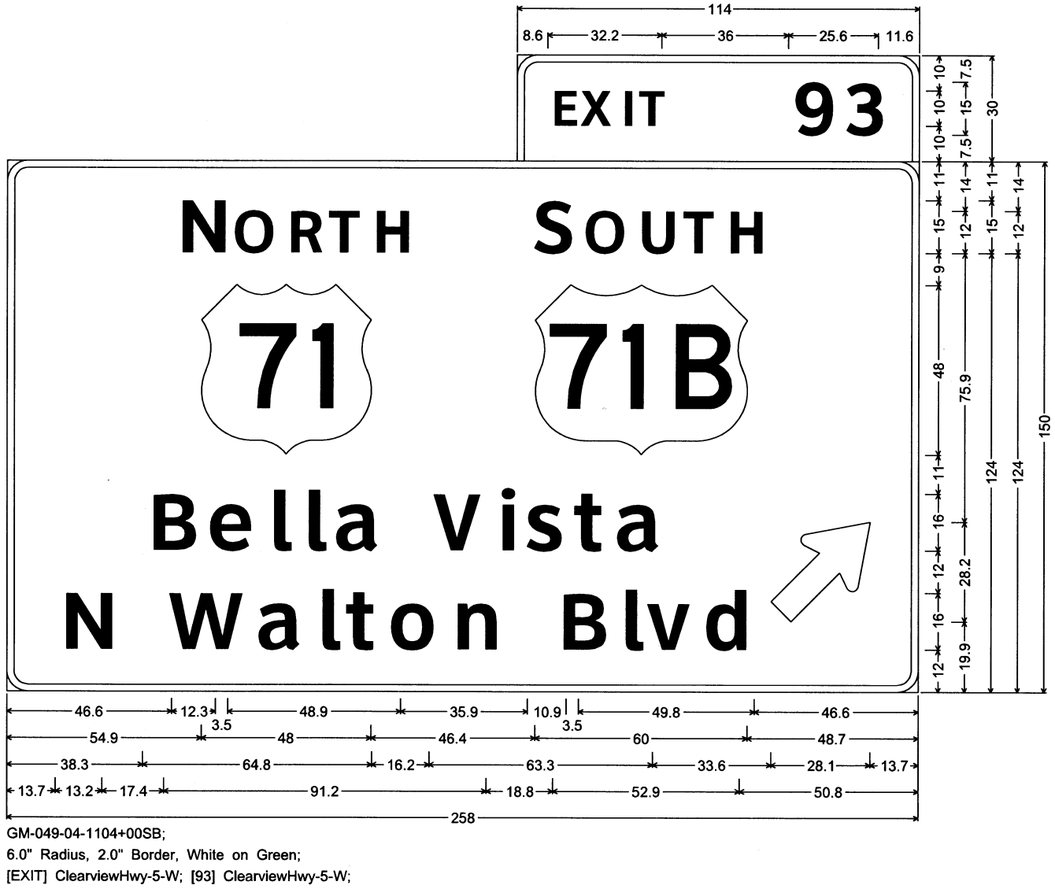
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	151	452

(2) SIGN LAYOUT SHEET



GM-049-04-1165+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [93] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W;
[N Walton Blvd] ClearviewHwy-5-W; [Bella Vista] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45°;

GM-049-04-1165+00NB



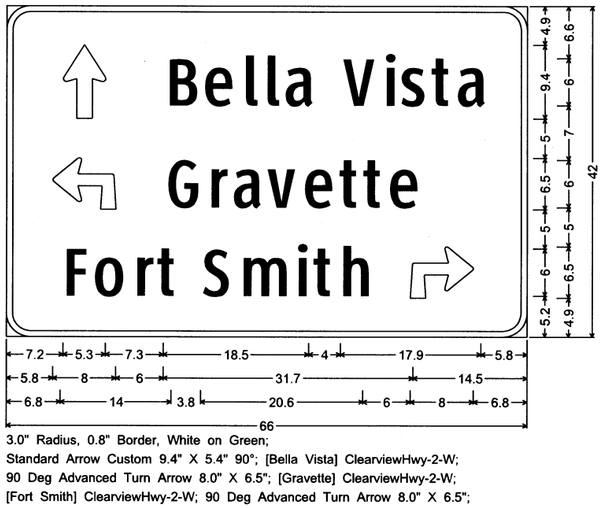
GM-049-04-1104+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [93] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Bella Vista] ClearviewHwy-5-W; [N Walton Blvd] ClearviewHwy-5-W; Standard Arrow Custom 35.8" X 21.6" 45°;

GM-049-04-1104+00SB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-19
JOSEPH A. SARTAIN

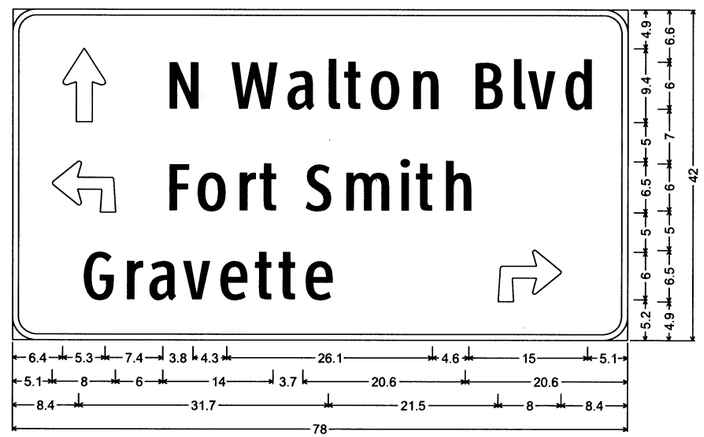
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	152	452

(2) **SIGN LAYOUT SHEET**



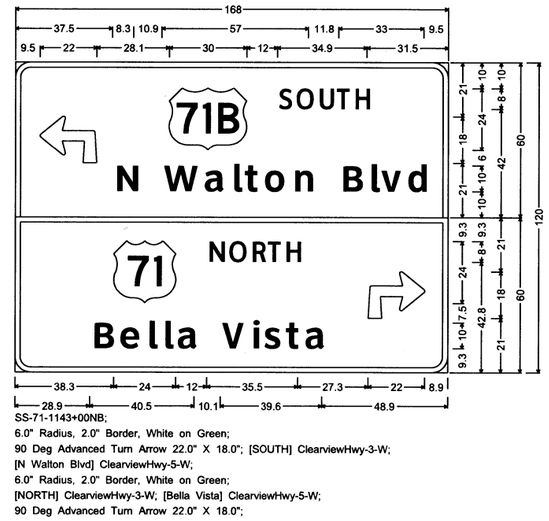
3.0" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.4" X 5.4" 90°; [Bella Vista] ClearviewHwy-2-W;
90 Deg Advanced Turn Arrow 8.0" X 6.5"; [Gravette] ClearviewHwy-2-W;
[Fort Smith] ClearviewHwy-2-W; 90 Deg Advanced Turn Arrow 8.0" X 6.5";

SS-71B-128+00NB



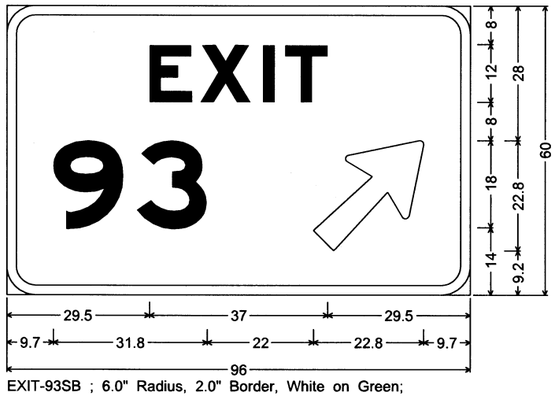
3.0" Radius, 0.8" Border, White on Green;
Standard Arrow Custom 9.4" X 5.4" 90°; [N Walton Blvd] ClearviewHwy-2-W;
90 Deg Advanced Turn Arrow 8.0" X 6.5"; [Fort Smith] ClearviewHwy-2-W;
[Gravette] ClearviewHwy-2-W; 90 Deg Advanced Turn Arrow 8.0" X 6.5";

SS-71-148+00SB



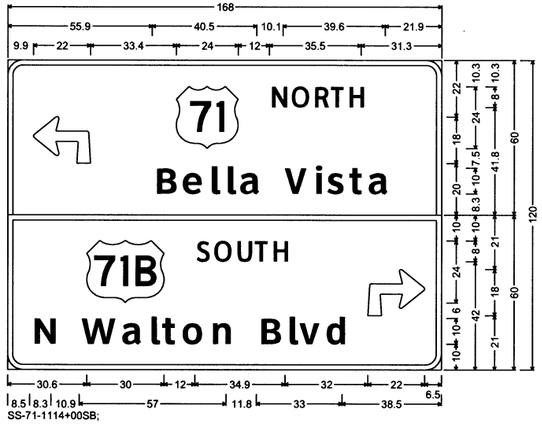
SS-71-1143+00NB;
6.0" Radius, 2.0" Border, White on Green;
90 Deg Advanced Turn Arrow 22.0" X 18.0"; [SOUTH] ClearviewHwy-3-W;
[N Walton Blvd] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[NORTH] ClearviewHwy-3-W; [Bella Vista] ClearviewHwy-5-W;
90 Deg Advanced Turn Arrow 22.0" X 18.0";

SS-71-1143+00NB



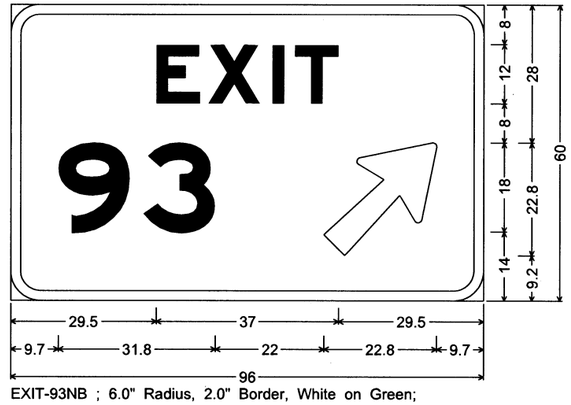
EXIT-93SB ; 6.0" Radius, 2.0" Border, White on Green;
[EXIT] E Mod 2K; [93] E Mod 2K; Arrow Custom - 29.0" 45°;

EX-71-1110+50SB



SS-71-1114+00SB;
6.0" Radius, 2.0" Border, White on Green;
90 Deg Advanced Turn Arrow 22.0" X 18.0"; [NORTH] ClearviewHwy-3-W;
[Bella Vista] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[SOUTH] ClearviewHwy-3-W; [N Walton Blvd] ClearviewHwy-5-W;
90 Deg Advanced Turn Arrow 22.0" X 18.0";

SS-71-1114+00SB



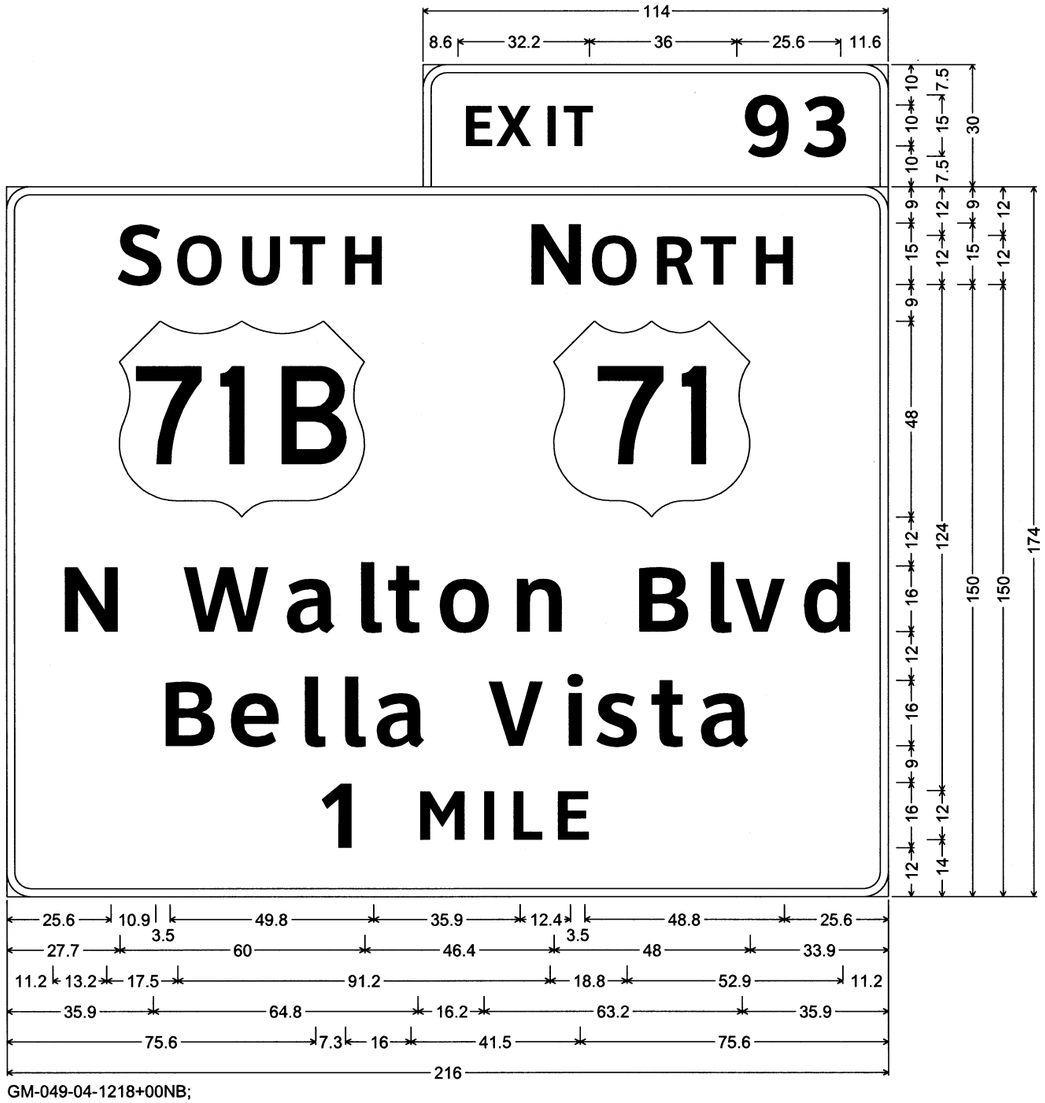
EXIT-93NB ; 6.0" Radius, 2.0" Border, White on Green;
[EXIT] E Mod 2K; [93] E Mod 2K; Arrow Custom - 29.0" 45°;

EX-71-1143+50NB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-8-19
JOSEPH A. SARTIN

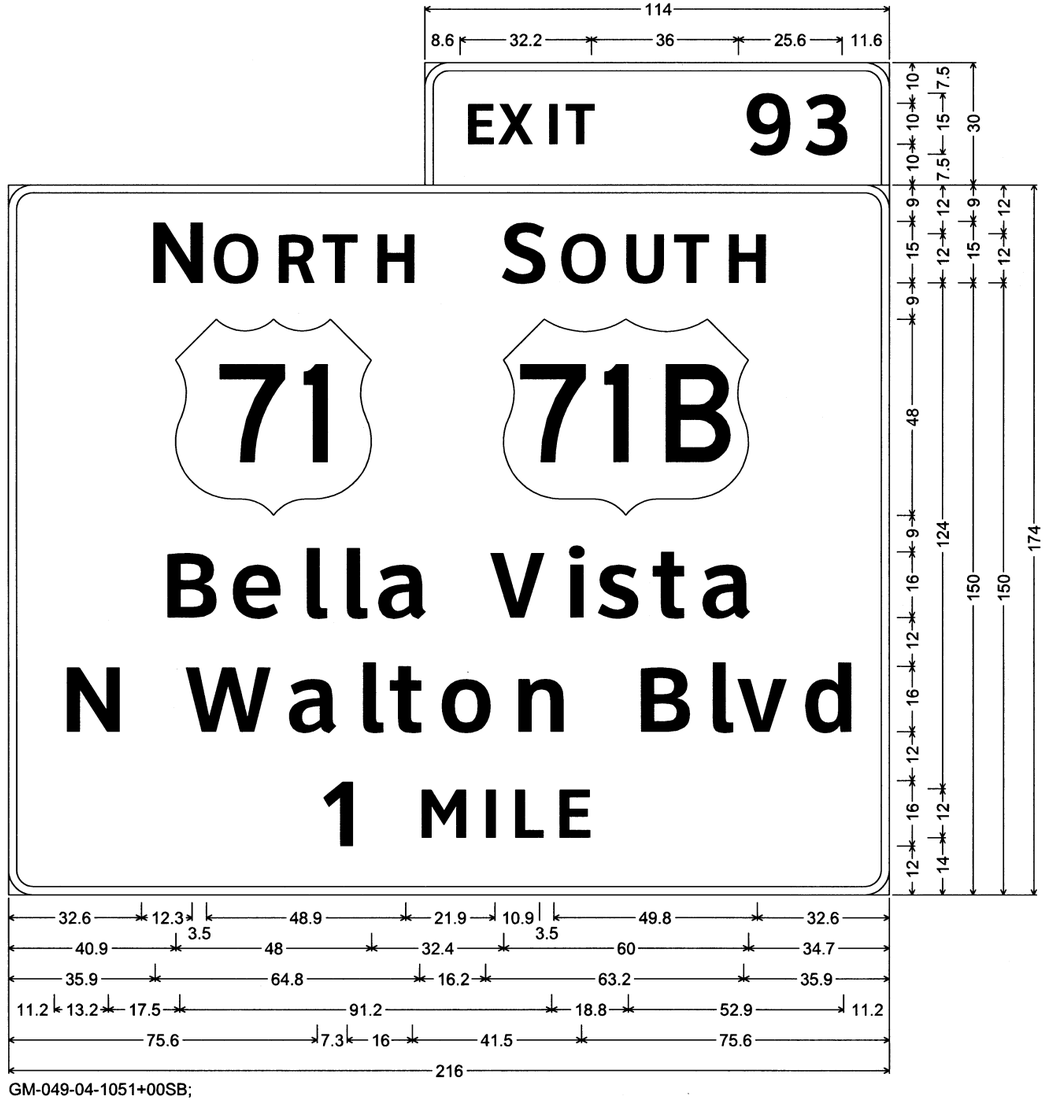
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	153	452

(2) SIGN LAYOUT SHEET



GM-049-04-1218+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [93] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W;
[N Walton Blvd] ClearviewHwy-5-W; [Bella Vista] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

GM-049-04-1218+00NB



GM-049-04-1051+00SB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [93] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Bella Vista] ClearviewHwy-5-W; [N Walton Blvd] ClearviewHwy-5-W; [1] ClearviewHwy-5-W;
[MILE] ClearviewHwy-5-W;

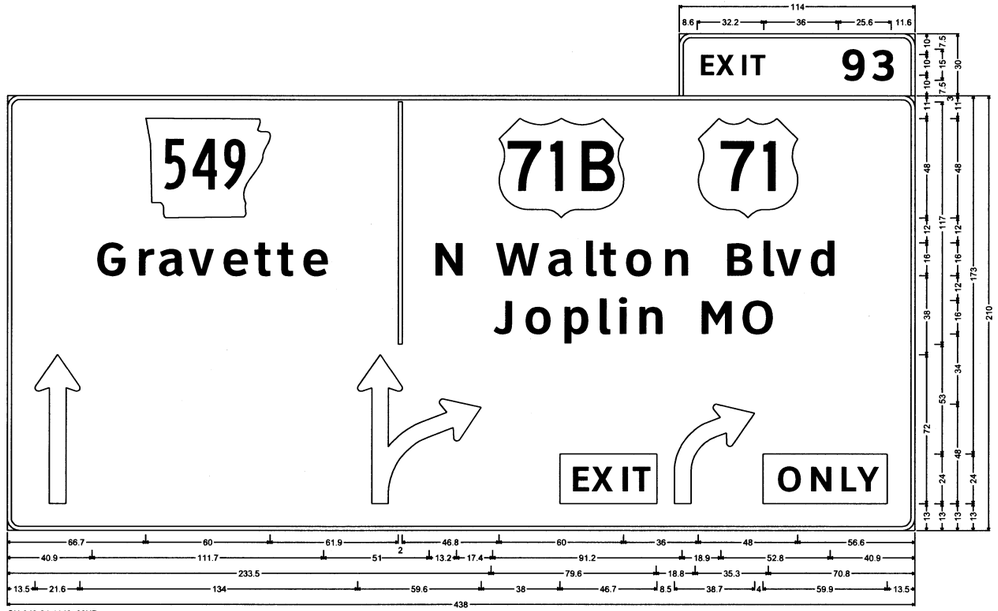
GM-049-04-1051+00SB

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
JOSEPH A. SARTIN
4-8-19

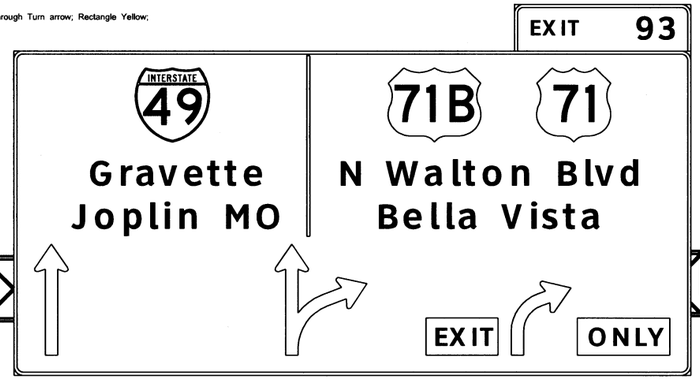
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	154	452

② SIGN LAYOUT SHEET

OH-049-04-31



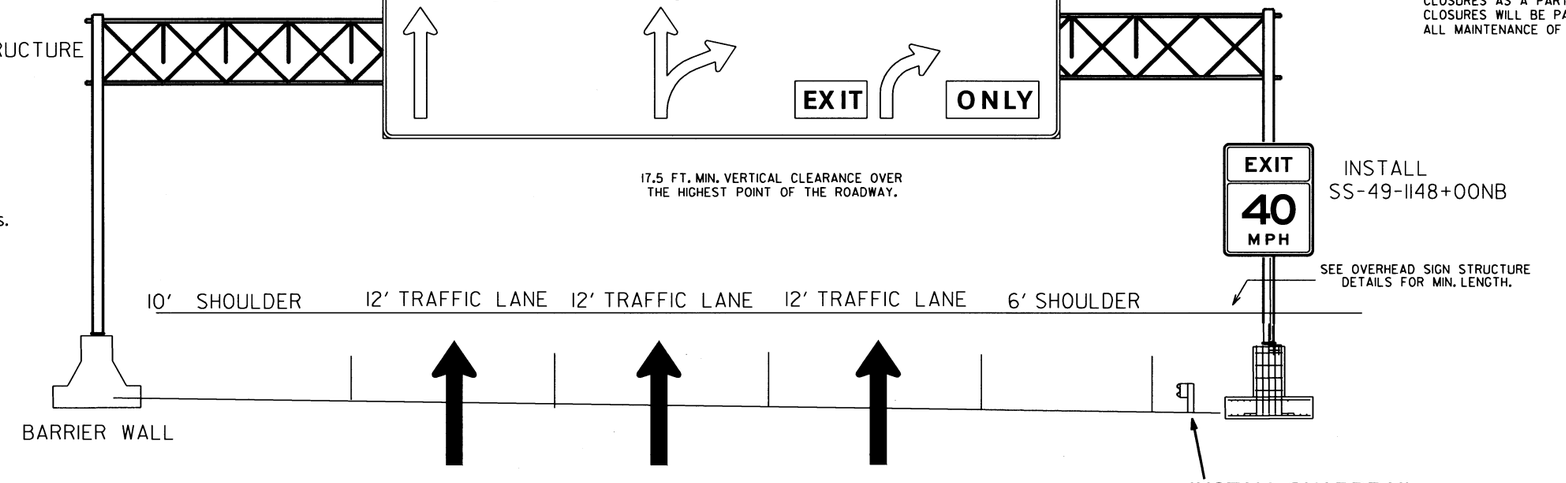
OH-049-04-1148+00NB;
6.0" Radius, 2.0" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [93] ClearviewHwy-5-W;
6.0" Radius, 2.0" Border, White on Green;
[Gravette] ClearviewHwy-5-W; [N Walton Blvd] ClearviewHwy-5-W; [Joplin MO] ClearviewHwy-5-W; Standard Arrow Custom 72.0" X 21.6" 90°; through Turn arrow; Rectangle Yellow;
turn arrow1; Rectangle Yellow;



OH-049-04-31
INSTALL OVERHEAD STRUCTURE
STA 1148+00NB

SEE OVERHEAD SIGN STRUCTURE DETAILS FOR DESIGN SPECIFICATIONS.

17.5 FT. MIN. VERTICAL CLEARANCE OVER THE HIGHEST POINT OF THE ROADWAY.



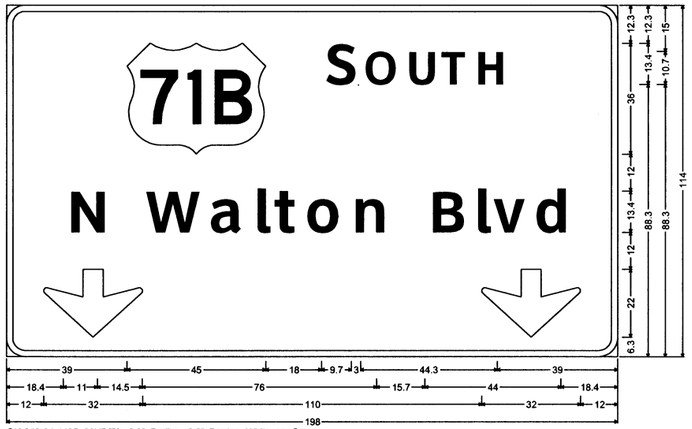
NOTES:
THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

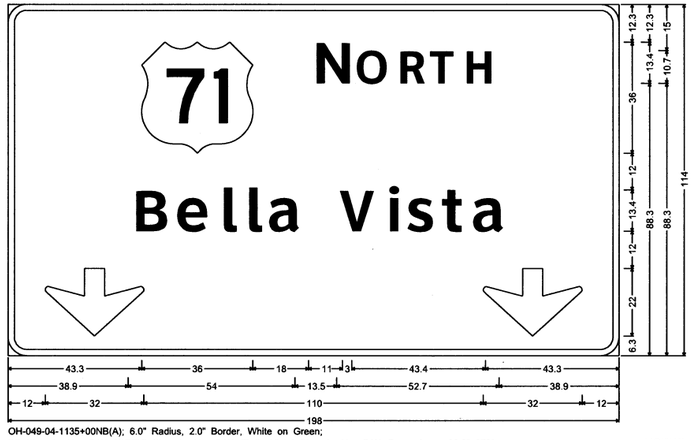


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	155	452

② SIGN LAYOUT SHEET



OH-049-04-1135+00NB(B); 6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [N Walton Blvd] ClearviewHwy-5-W; Down Arrow 22.0° 270°;
Down Arrow 22.0° 270°;



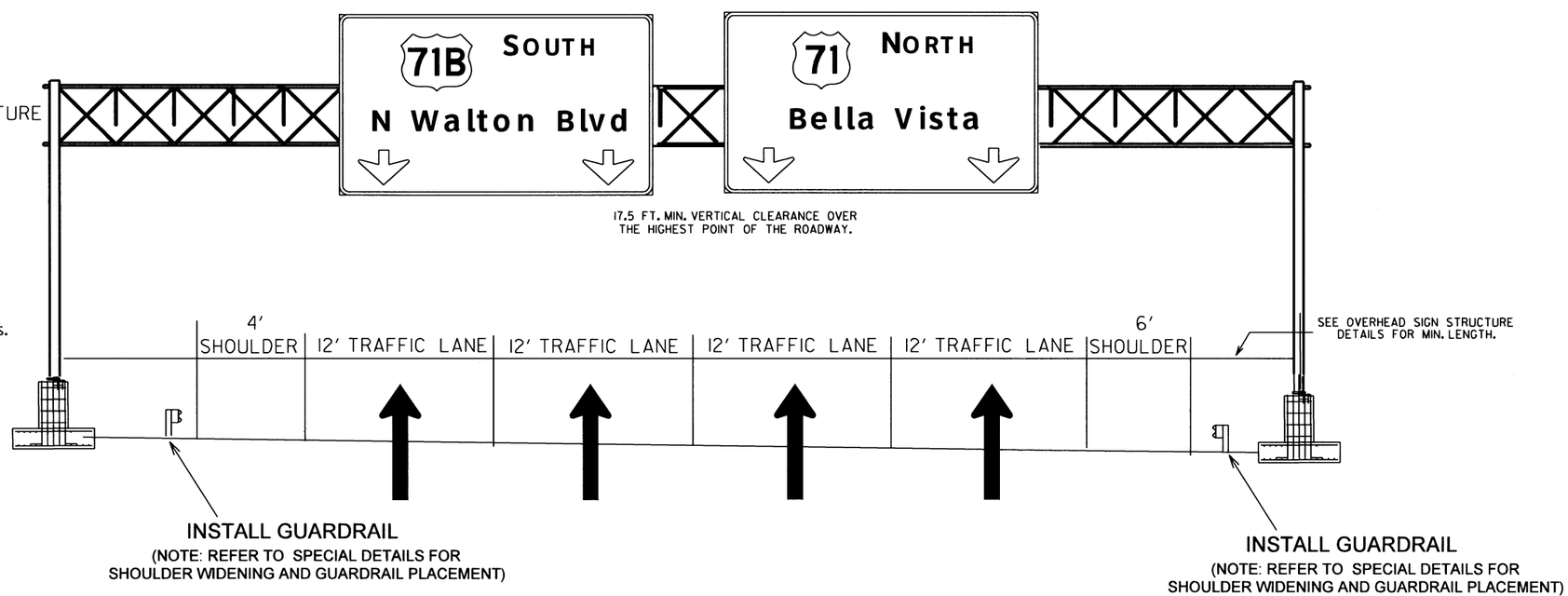
OH-049-04-1135+00NB(A); 6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [Bella Vista] ClearviewHwy-5-W; Down Arrow 22.0° 270°;
Down Arrow 22.0° 270°;

OH-049-04-32

NOTES:
THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

OH-049-04-32
INSTALL OVERHEAD STRUCTURE
RAMP 3
STA 1135+00NB

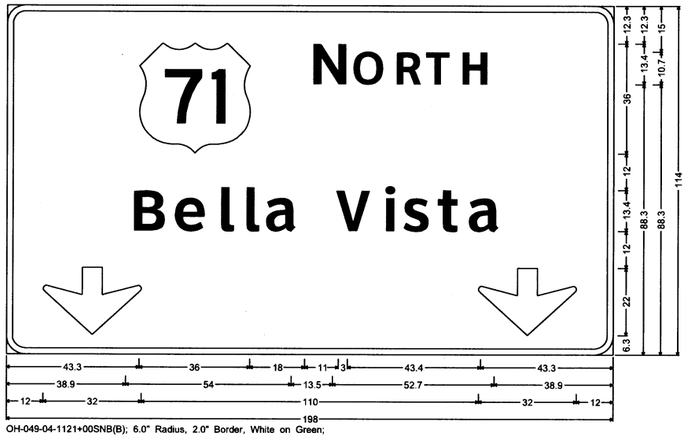




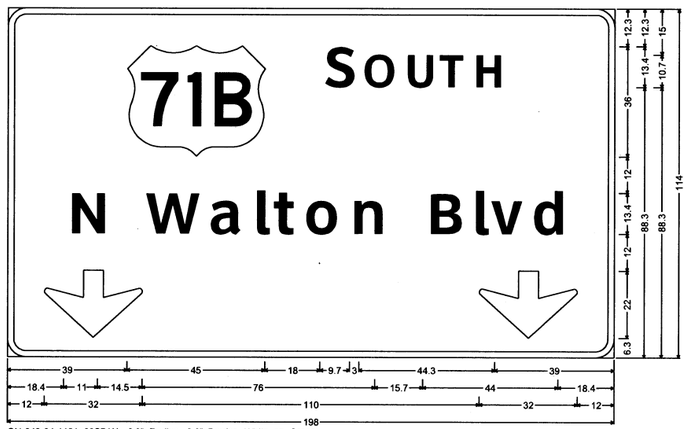
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	156	452

② SIGN LAYOUT SHEET

OH-049-04-33



OH-049-04-1121+00SNB(B); 6.0" Radius, 2.0" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH] ClearviewHwy-5-W; [Bella Vista] ClearviewHwy-5-W; Down Arrow 22.0" 270°;
Down Arrow 22.0" 270°;



OH-049-04-1121+00SB(A); 6.0" Radius, 2.0" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W; [N Walton Blvd] ClearviewHwy-5-W; Down Arrow 22.0" 270°;
Down Arrow 22.0" 270°;

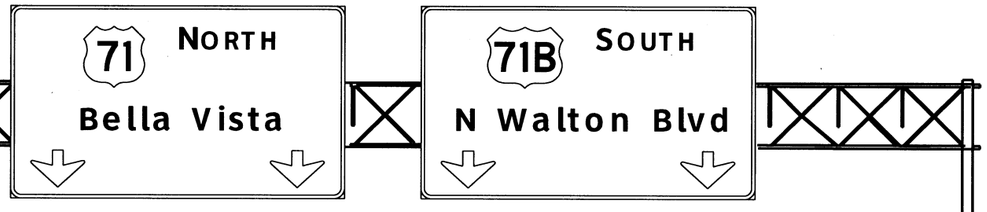
NOTES:
THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

OH-049-04-33
INSTALL OVERHEAD STRUCTURE
RAMP I
STA 1121+00SB

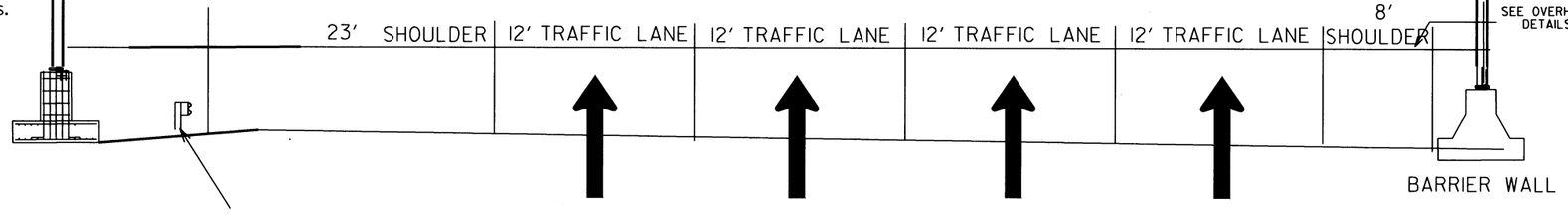
B INSTALL

A INSTALL



17.5 FT. MIN. VERTICAL CLEARANCE OVER THE HIGHEST POINT OF THE ROADWAY.

SEE OVERHEAD SIGN STRUCTURE DETAILS FOR DESIGN SPECIFICATIONS.



SEE OVERHEAD SIGN STRUCTURE DETAILS FOR MIN. LENGTH.

INSTALL GUARDRAIL
(NOTE: REFER TO SPECIAL DETAILS FOR SHOULDER WIDENING AND GUARDRAIL PLACEMENT)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7527
4-9-19
JOSEPH A. SARTIN

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.		CA0903	151	452
				07277	-	LAYOUT - 59143		

Notes: For R/W Data, Guardrail Details & Barrier Rail Details, see Roadway Plans.

Use Type C Approach Gutter at Beg. Br. ("w" = 6'-0")
Use Type Special I Approach Slab at Beg. Br.

Use Type Special I Approach Gutter at End of Bridge.
Use Type Special 2 Approach Slab at End of Bridge.

Note: The existing structure dimensions shown are plan dimensions based on Job CA0904 and shall be field verified by the Contractor in accordance with Subsection 821.02.

Note: Contours shown do not reflect the existing finished surface constructed under Job No. CA0904. All quantities dependent on the existing surface shall be assumed estimates for bidding purposes only. Actual quantities are to be determined in the field.

Dumped Riprap 1'-6" thick placed on Filter Blanket. Top of Riprap Elev. 1108.0 at Beg. of Bridge only.

Toe of Fill

Excavation Completed Under Job CA0904

Dumped Riprap (To Be Removed)

Dumped Riprap

Wing Wall (To Be Removed)

Concrete Median Barrier

Precast Conc. Barrier (To Be Removed)

Toe of Rock Fill Slope at End of Bridge Only. See "DETAIL A", Dwg. No. 59145 and Roadway Plans.

Limits of Aggregate Base Course (Class 7)

Barrier Rail (See Rdwy. Plans)

Limits of Aggregate Base Course (Class 7) Placed During Job CA0904

Longitudinal Constr. Joint

Test Hole (typ.)

Wing Wall (To Be Removed)

Precast Conc. Barrier (To Be Removed)

Point of Minimum Vertical Clearance

Top of Cut

Existing Portion of Br. No. 07277, built under Job CA0904

Toe of Rock Fill Slope

Tangent Distance over 500' For C.L. Constr. Hwy. 549

C.L. Ramp 4

C.L. Ramp 1

C.L. Constr. Hwy. 549 & Point of Rotation

Sta. 1107+84.56 *3.7%
Sta. 1110+76.67 0.0 %
-2.0%
Sta. 1112+34.56
-2.0%
-3.7%
Sta. 1109+18.77
Sta. 1107+84.56

C.L. Peach Orchard Rd. (Co. Rd. 37)

C.L. Constr. Hwy. 549

Slope Varies

Variable Clear Width Roadway

Clear Roadway Width

Width, Job CA0903

Width, Job CA0904

Sta. 1101 + 91.62 County Road 37 C.L. U.S. Hwy 71

Sta. 1108 + 39.44 Constr. C.L. U.S. Hwy 71

P.C. Sta. 1106 + 97.49

P.T. Sta. 1108 + 97.06

P.I. Sta 1110 + 68.99

S.80° 06' 05.29" E.

S. 74° 23' 27.16" E.

S. 68° 40' 57.16" E.

Completed Under Job CA0904

Measured at Begin Bridge

Measured at End Bridge

Placed along existing edge of bridge deck completed under Job CA0904

These items will not be paid for directly, but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

PLAN

Notes: Bridge to be widened on a chord defined as the forward tangent of the 1°00' Curve of the C.L. Constr. Hwy. 549 as described in the "HORIZONTAL CURVE DATA".

Bents shall be widened perpendicular to the bridge construction chord. Parapets and Barrier rails shall be constructed concentric to the respective curves.

For additional information see "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 and detail drawings.

VERTICAL CURVE DATA ALONG C.L. Constr. Hwy. 549

Not to Scale

LVC = 2900'
-6.00%
+2.50%
PVC Sta. 1102 + 69.72
PVI Sta. 1117 +49.72
El. 1050.44
PVT Sta. 1131 + 69.12

SUPERELEVATION TRANSITION

Not to Scale
LOOKING AHEAD

HORIZONTAL CURVE DATA

C.L. Constr. Hwy. 549	C.L. Ramp 1	C.L. Ramp 4
P.I. Sta. 1094+25.61	P.I. Sta. 1106+44.38	P.I. Sta. 1108+83.30
Δ = 30° 08' 39" Rt.	Δ = 09° 53' 13.00" Rt.	Δ = 03° 42' 53.86" Lt.
D = 1° 00' 00"	D = 03° 00' 00"	D = 1° 00' 00"
T = 1542.96'	T = 165.19'	T = 185.81'
L = 3014.41'	L = 329.56'	L = 371.43
P.C. Sta. 1078+22.12	P.C. Sta. 1104+79.19	P.C. Sta. 1106+97.49
P.T. Sta. 1108+97.06	P.T. Sta. 1108+08.76	P.T. Sta. 1110+68.99

Total Length of Bridge = 196'-2"

1'-1" | 55'-0" Comp. W-Beam Span No. 1 | 84'-0" Comp. W-Beam Span No. 2 | 55'-0" Comp. W-Beam Span No. 3 | 1'-1"

C.L. 2" Poured Silicone Jt. (typ.)

Slope Intercept Sta. 1107+36.93
Begin Bridge Sta. 1107+43.06 Elev. 1112.32
Sta. 1107+99.15 Elev. 1109.78
Sta. 1108+83.15 Elev. 1106.15
Conc. Parapet Rail
End Bridge Sta. 1109+39.23 Elev. 1103.84
Slope Intercept Sta. 1109+46.73

6'-4⅛" Top of Deck at Constr. C.L. to Low Seat of Cap
5'-11½"
Top of Deck at Constr. C.L. to Low Steel = 5'-9⅞"
21'-3" Min. Vert. Clr.

Existing Ground Line C.L. Constr. Hwy. 549
Guardrail, See Rdwy. Plans
Proposed Grade Line at C.L. Constr. Hwy. 549

Conc. Median Barrier (See Rdwy. Plans)
Concrete Barrier Rail (See Rdwy. Plans)

Rock fill this bridge end only

50' Piling
Varies 10'-15' Piling
Varies 20'-35' Piling
Varies 55'-80' Piling

NOTE: For Soil Boring Data, see Dwg. No. 59144 & 59145.

NOTE: See Int. Bent Details, Dwg. Nos. 59150 - 59153, for Footing Elevations and Bent Heights.

Note: Span lengths, stations & elevations are along C.L. Constr. Hwy. 549 See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional information.

NOTE: All elevations on Bridge are based on C.L. Constr. Hwy. 549 stations & corresponding Superelevation Cross Slopes.

③ Constr. C.L. = C.L. Constr. Hwy. 549 (typ.)

② See "DETAIL A", Dwg. No. 59145

BENT NO. 1 2 3 4

ELEVATION

GENERAL NOTES

BENCH MARK: B.M. 902 Chiseled Square in S.E. Corner of Church, 384.68' Lt. of C.L. Constr. Hwy. 549, Sta. 1106 + 65.49, Elev. 1114.04.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable Supplemental Specifications and Special Provisions. Unless noted otherwise, Section and Subsection refer to the Standard Construction Specification.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications Third Edition, with 2006 interim revisions.

LIVE LOADING: HL93 METHOD OF DESIGN: LRFD

SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S (AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from the Program Management Division upon request.

STEEL PILING: All piling shall be HP 12X53; AASHTO M 270, Gr. 50 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile. Piling shall be driven into the material designated as hard chert or limestone on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Section 805. Actual pile lengths are to be determined in the field. Piling in end bents shall be driven after embankment to bottom of cap is in place. On all piles the Contractor shall use approved steel H-Pile driving points.

FOOTINGS: The top of the footings for Bents 2 and 3 shall have a minimum cover above top of footing of 2'-0". Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled according to Subsection 801.08.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP Job CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied to surfaces where Class 2 Protective Surface Treatment is applied.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Tining shall continue to left edge of bridge deck.

DETAIL DRAWINGS:

	DRAWING NO.
Bent No. 1	59146 - 59148
Bent No. 2	59150 & 59151
Bent No. 3	59152 & 59153
Bent No. 4	59154 - 59156
55'-0" Comp. W-Beam Span No. 1	59157 - 59161
84'-0" Comp. W-Beam Span No. 2	59162 - 59166
55'-0" Comp. W-Beam Span No. 3	59167 - 59171
Details of Concrete Median Barrier	59172
Details of Joints	59173
Common Details For Composite W-Beam Spans	59174
Details of Elastomeric Bearings	59175
Steel Piles	55020
Type C Approach Gutter	55030C
Type Special I Approach Slab	59176
Type Special 2 Approach Slab	59177
Type Special I Approach Gutter	59178

MAINTENANCE OF TRAFFIC: For details of Maintenance of Traffic, see Roadway Plans.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD HWY. 71 INTERCHANGE (B.V. BYPASS) (F)
BENTON COUNTY
ROUTE 549 SEC. 9

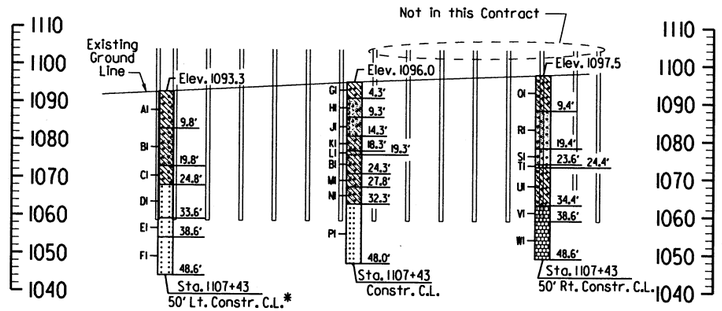
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JAC DATE: 4-19-17 SCALE: 1" = 20'-0" OR AS NOTED
DESIGNED BY: PGT DATE: 9-1-16

BRIDGE NO. 07277 DRAWING NO. 59143

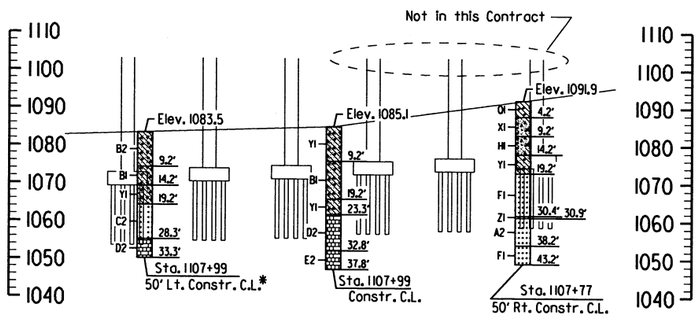
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				6	ARK.			
				JOB NO.		CA0903	158	452
				(1) 07277	-	LAYOUT	-	59144



Sta. 1107+43 - 50' Lt. Constr. C.L.*	Sta. 1107+43 - Constr. C.L.	Sta. 1107+43 - 50' Rt. Constr. C.L.
5.3- 6.3, N=27	4.8- 5.8, N=60	4.9- 5.9, N=23
10.3- 10.6, N=60(4)	9.8- 10.8, N=23	9.9- 10.1, N=60(2)
15.3- 16.3, N=27	14.8- 15.8, N=8	14.9- 15.9, N=27
20.3- 21.3, N=5	19.8- 20.8, N=12	19.9- 20.9, N=21
25.3- 25.5, N=60(2)	24.8- 25.8, N=17	24.4- 24.7, N=60(4)
	29.8- 30.8, N=3	29.9- 30.9, N=24
		34.4- 34.6, N=60(2)

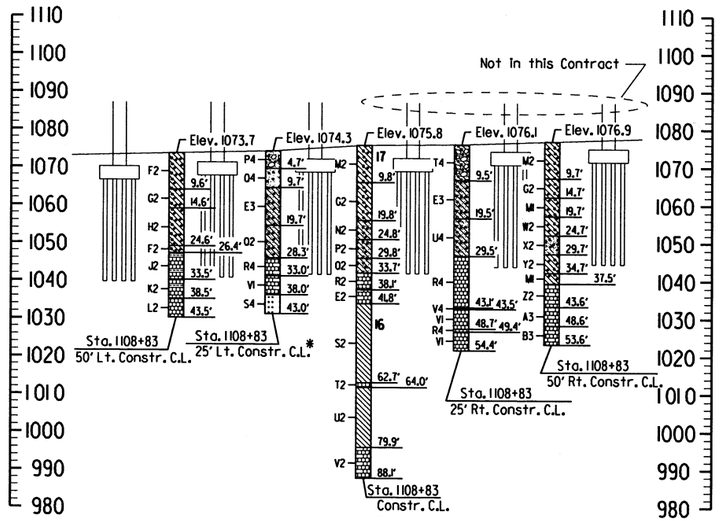
SECTION A-A



Sta. 1107+99 - 50' Lt. Constr. C.L.*	Sta. 1107+99 - Constr. C.L.	Sta. 1107+77 - 50' Rt. Constr. C.L.
4.7- 5.7, N=68	4.7- 5.7, N=34	4.7- 5.7, N=29
9.7- 10.7, N=21	9.7- 10.7, N=16	9.7- 10.7, N=64
14.7- 15.7, N=41	14.7- 15.7, N=19	14.7- 15.7, N=32
19.7- 20.4, N=72(2)	19.7- 20.7, N=31	19.2- 19.5, N=60(3)

SECTION B-B

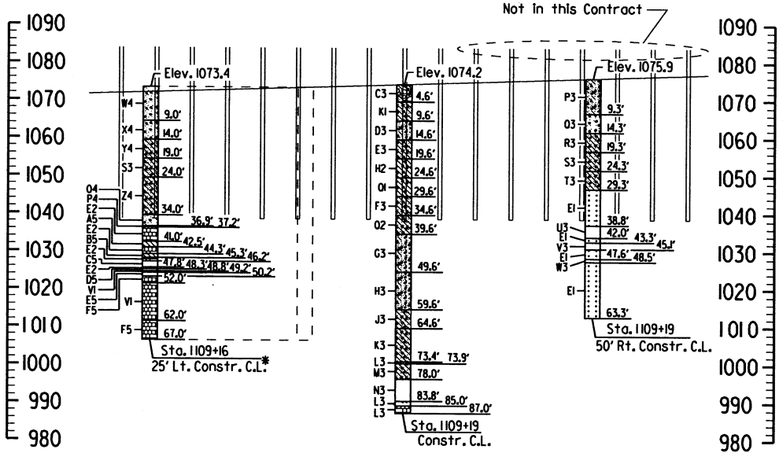
* Constr. C.L. = C.L. Constr. Hwy. 549 (typ.)



Sta. 1108+83 - 25' Lt. Constr. C.L.*	Sta. 1108+83 - Constr. C.L.	Sta. 1108+83 - 25' Rt. Constr. C.L.
5.2- 6.2, N=5	5.3- 6.3, N=6	5.0- 6.0, N=7
10.2- 11.2, N=12	10.3- 11.3, N=11	10.0- 11.0, N=8
15.2- 16.2, N=10	15.3- 16.3, N=10	15.0- 16.0, N=7
20.2- 21.2, N=16	20.3- 21.3, N=40	20.0- 21.0, N=21
25.2- 26.2, N=22	25.3- 26.3, N=87	25.0- 26.0, N=16
	30.3- 31.3, N=18	29.5- 29.8, N=60(4)
		35.0- 35.7, N=62(2)

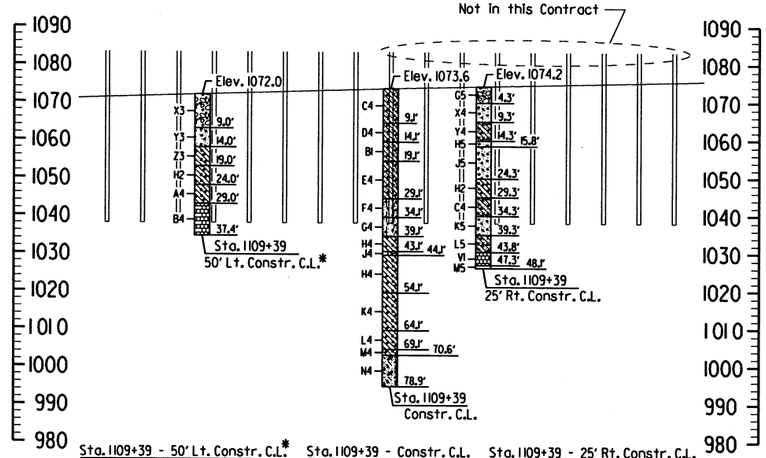
Sta. 1108+83 - 50' Lt. Constr. C.L.	Sta. 1108+83 - 50' Rt. Constr. C.L.
5.1- 6.1, N=4	5.2- 6.2, N=7
10.1- 11.1, N=11	10.2- 11.2, N=12
15.1- 16.1, N=13	15.2- 16.2, N=22
20.1- 21.1, N=11	20.2- 21.2, N=17
25.1- 26.1, N=3	25.2- 26.2, N=14
	30.2- 31.2, N=4
	35.2- 36.2, N=14

SECTION C-C



Sta. 1109+16 - 25' Lt. Constr. C.L.*	Sta. 1109+19 - Constr. C.L.	Sta. 1109+19 - 50' Rt. Constr. C.L.
4.5- 5.5, N=31	5.1- 6.1, N=5	4.8- 5.8, N=7
9.5- 10.5, N=12	10.1- 11.1, N=5	9.8- 10.8, N=4
14.5- 15.5, N=4	15.1- 16.1, N=13	14.8- 15.8, N=5
19.5- 20.5, N=15	20.1- 21.1, N=11	19.8- 20.8, N=11
24.5- 25.5, N=39	25.1- 26.1, N=22	24.8- 25.8, N=30
29.5- 30.5, N=49	30.1- 31.1, N=32	29.8- 30.1, N=60(4)
34.5- 35.5, N=10	35.1- 36.1, N=21	34.3- 34.4, N=60(1)
	40.1- 41.1, N=14	
	45.1- 46.1, N=16	
	50.1- 51.1, N=5	
	55.1- 56.1, N=7	
	60.1- 61.1, N=17	
	65.1- 66.1, N=7	
	70.1- 71.1, N=7	
	75.5- 76.5, N=25	
	85.0- 85.3, N=60(4)	

SECTION D-D



Sta. 1109+39 - 50' Lt. Constr. C.L.*	Sta. 1109+39 - Constr. C.L.	Sta. 1109+39 - 25' Rt. Constr. C.L.
4.5- 4.8, N=60(4)	4.6- 5.6, N=12	4.8- 5.8, N=13
9.5- 10.5, N=7	9.6- 10.6, N=5	9.8- 10.8, N=2
14.5- 15.5, N=6	14.6- 15.6, N=12	14.8- 15.8, N=5
19.5- 20.5, N=12	19.6- 20.6, N=16	19.8- 20.8, N=14
24.5- 25.5, N=50	24.6- 25.6, N=33	24.8- 25.8, N=9
29.5- 29.8, N=60(3)	29.6- 30.6, N=15	29.8- 30.8, N=13
	34.6- 35.6, N=11	34.8- 35.8, N=16
	39.6- 40.6, N=16	39.8- 40.8, N=8
	44.6- 45.6, N=11	
	49.6- 50.6, N=28	
	54.1- 54.4, N=60(4)	
	59.6- 60.6, N=6	
	64.6- 65.6, N=6	
	69.6- 70.6, N=51	
	74.1- 74.4, N=60(4)	
	78.9- 78.9, N=60(0)	

SECTION E-E

NOTE: For Soil Boring Legend, see Dwg. No. 59145.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-8-19
BRIDGE ENGINEER

SHEET 2 OF 3
LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD
HWY. 71 INTERCHANGE
(B.V. BYPASS) (F)
BENTON COUNTY
ROUTE 549 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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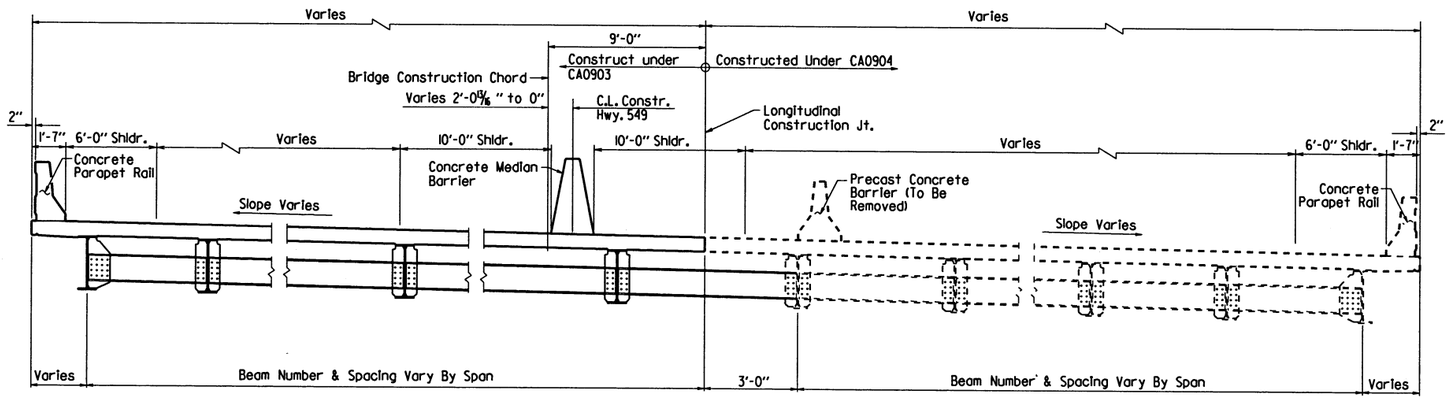
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				JOB NO.		CA0903	159	452
				① 07277	-	LAYOUT	-	59145

BORING LEGEND

A1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with some Organic Matter
B1-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
C1-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay
D1-Hard, Gray Chert with some Clay Seams
E1-Hard, Gray Chert with Limestone Seams
F1-Hard, Gray Chert with Limestone and some Dark Gray Shale Seams
G1-Moist, Stiff to Very Stiff , Brown and Gray Gravelly (Chert Fragments) Clay
H1-Moist, Very Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
J1-Moist, Medium Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments) with some Organic Matter
K1-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
L1-Moist, Very Soft, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
M1-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments)
N1-Moist, Very Loose, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
P1-Hard, Gray Chert with Limestone and some Thin Dark Gray Shale Seams
Q1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
R1-Moist, Medium Dense, Brown Sand with Gravel (Chert Fragments) and some Clay
S1-Moist, Medium Dense, Brown and Gray Gravel (Chert Fragments) with some Clay
T1-Hard, Gray Fractured Chert
U1-Moist, Very Stiff, Brown and Gray Gravely (Chert Fragments) Clay
V1-Hard, Gray Cherty Limestone
W1-Hard, Gray Cherty Limestone with some Thin Dark Gray Shale Seams
X1-Moist, Medium Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
Y1-Moist, Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
Z1-Soil-filled Cavity (30.4' to 30.9')
A2-Hard, Gray Chert with Limestone and some Dark Gray Shale and Fractured Seams
B2-Moist, Very Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
C2-Hard, Gray Chert with Limestone and some Dark Gray Shale Seams
D2-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
E2-Hard, Gray Cherty Limestone
F2-Moist, Soft, Reddish Brown Gravelly (Chert Fragments) Clay
G2-Moist, Stiff, Brown Gravelly (Chert Fragments) Clay
H2-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
J2-Hard, Gray Cherty Limestone with Dark Gray Shale and some Fractured Seams
K2-Hard, Gray Cherty Limestone with Dark Gray Shale Seams
L2-Hard, Gray Cherty Limestone with Dark Gray Shale Seams and some Slickensides
M2-Moist, Medium Stiff, Brown Gravelly (Chert Fragments) Clay
N2-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
P2-Moist, Very Hard, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
Q2-Moist, Very Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
R2-Hard, Gray Cherty Limestone with some Fractured Seams
S2-Soil-filled Cavity (41.8' - 62.7')
T2-Hard, Gray Fractured Cherty Limestone
U2-Soil-filled Cavity (64.0' - 79.9')
V2-Hard, Gray Limestone
W2-Moist, Stiff, Brown Gravelly (Chert Fragments) Clay
X2-Moist, Medium Dense, Brown and Gray Clayey Sand with Gravel (Chert Fragments)
Y2-Moist, Soft, Brown and Gray Gravelly (Chert Fragments) Clay
Z2-Hard, Gray Fractured Cherty Limestone
A3-Hard, Gray Cherty Limestone with some Cherty Clay
B3-Hard, Gray Cherty Limestone
C3-Moist, Medium Stiff, Brown Gravelly (Chert Fragments) Clay with Sand and Cobbles
D3-Moist, Loose, Brown Clayey Gravel with Sand
E3-Moist, Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
F3-Moist, Hard, Brown and Gray Gravelly (Chert Fragments) Clay with Sand

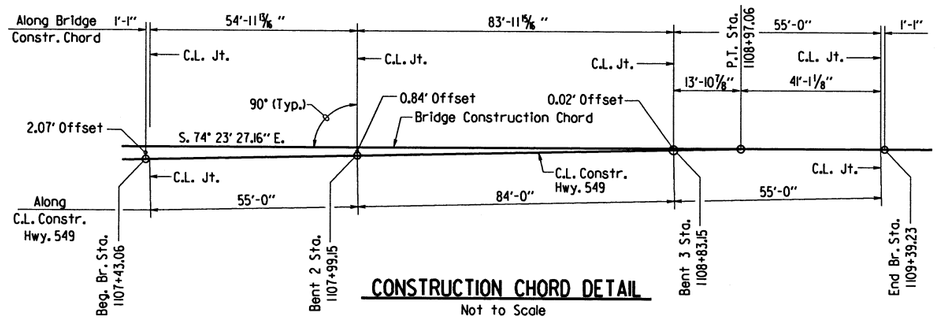
G3-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments) with Sand
H3-Wet, Loose, Reddish Brown Clayey Gravel (Chert Fragments) with Sand
J3-Wet, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
K3-Wet, Medium Stiff, Brown and Gray Gravelly Clay with Sand
L3-Hard, Gray Fractured Chert
M3-Wet, Very Stiff, Brown and Gray Gravelly Clay with Sand
N3-Cavity (78.0' to 83.8')
P3-Moist, Loose, Brown and Gray Clayey Gravel with Sand
Q3-Moist, Very Loose, Gray Sand with Gravel
R3-Moist, Medium Stiff, Brown Gravelly Clay with Sand
S3-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
T3-Moist, Very Stiff, Reddish Brown Gravelly
U3-Cavity (38.8' to 42.0')
V3-Cavity (43.3' to 45.1')
W3-Cavity (47.6' to 48.5')
X3-Moist, Very Dense, Brown and Gray Chert Cobbles with Gravel (Limestone Fragments)
Y3-Moist, Loose, Gray and Brown Sand with Gravel (Cherty Limestone Fragments)
Z3-Moist, Medium Stiff, Brown Gravelly (Cherty Limestone Fragments) Clay
A4-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
B4-Hard, Gray Cherty Limestone and some Thin Dark Gray Shale Seams
C4-Moist, Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
D4-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
E4-Moist, Very Stiff to Hard, Reddish Brown Sandy Clay with Gravel (Chert Fragments)
F4-Moist, Medium Dense, Reddish Brown Silty Sand with Gravel (Chert Fragments)
G4-Wet, Medium Dense, Reddish Brown Silty Sand with Gravel (Chert Fragments)
H4-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments)
J4-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments) with Cobbles
K4-Wet, Loose, Reddish Brown Clayey Gravel (Chert Fragments)
L4-Wet, Loose, Brown and Gray Clayey Gravel (Chert Fragments)
M4-Wet, Very Dense, Reddish Brown Clayey Gravel (Chert Fragments)
N4-Wet, Very Dense, Gray and Brown Clayey Gravel (Chert Fragments) with Sand
P4-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments) and Cobbles
Q4-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments)
R4-Hard, Gray Fractured Cherty Limestone
S4-Hard, Gray Chert with Limestone Dark Gray Shale and some Vertically Fractured Seams
T4-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand and Cobbles
U4-Moist, Very Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
V4-Cavity (43.1' to 43.5')
W4-Moist, Medium Dense to Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
X4-Moist, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments)
Y4-Moist, Soft, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
Z4-Moist, Hard, Reddish Brown to Brown and Gray Gravelly (Chert Fragments) Clay with Sand
A5-Soil-filled Cavity (41.0' to 42.0')
B5-Soil-filled Cavity (44.3' to 45.3')
C5-Cavity (46.2' to 47.0')
D5-Cavity (48.3' to 48.8')
E5-Cavity (49.2' to 50.2')
F5-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
G5-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments), Cobbles and some Clay
H5-Moist, Loose, Gray Gravel (Chert Fragments) with Sand
J5-Moist, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
K5-Wet, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
L5-Wet, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
M5-Cavity (47.3' to 48.1')

Note: Traces of Chert and Cavities were encountered in the borings and may be encountered in greater amounts at other locations in the project area.



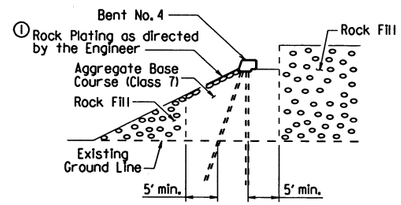
TYPICAL ROADWAY SECTION

Looking Ahead
Not to Scale



CONSTRUCTION CHORD DETAIL

Not to Scale



① Portions of existing rock plating will have to be removed to facilitate construction of the final embankment and zone of aggregate base course (Class 7) that was not completed under Job CA0904.

Where rock fill is used for embankment construction, aggregate base course (Class 7), in accordance with Subsection 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "Rock Fill".

At the Contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation through the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be included in Item "Steel Piling".

DETAIL A (FOR END OF BRIDGE ONLY)

Not to Scale

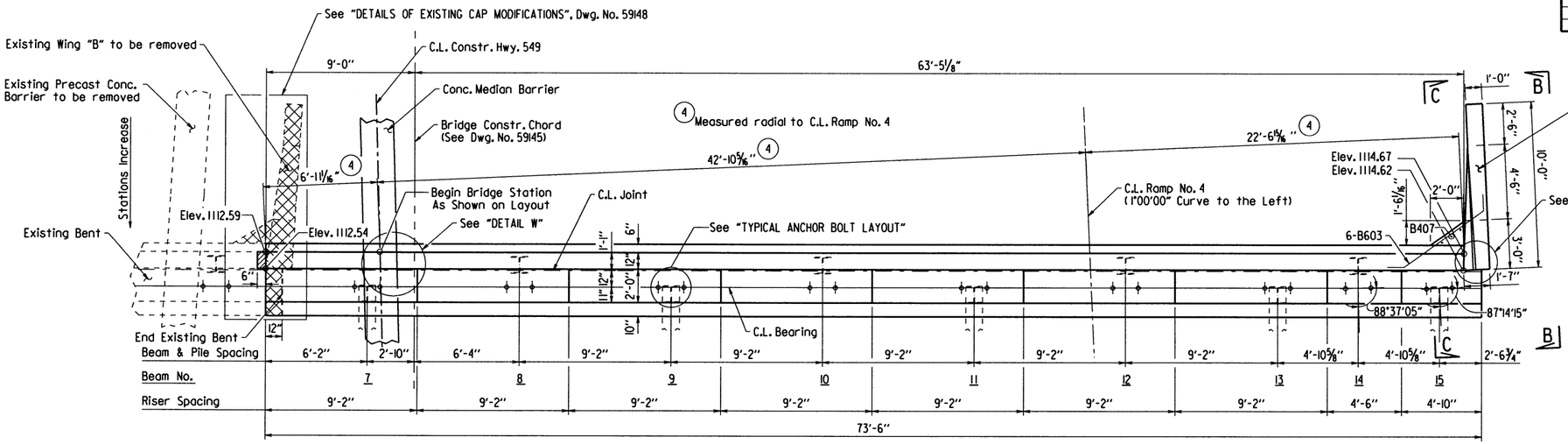
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD
HWY. 71 INTERCHANGE
(B.V. BYPASS) (F)
BENTON COUNTY
ROUTE 549 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

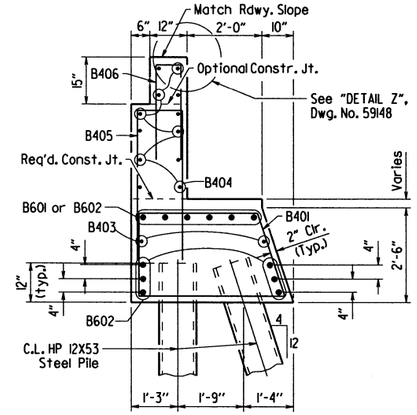
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BRIDGE NO. 07277 DRAWING NO. 59145

PRINT DATE: 5/6/2019

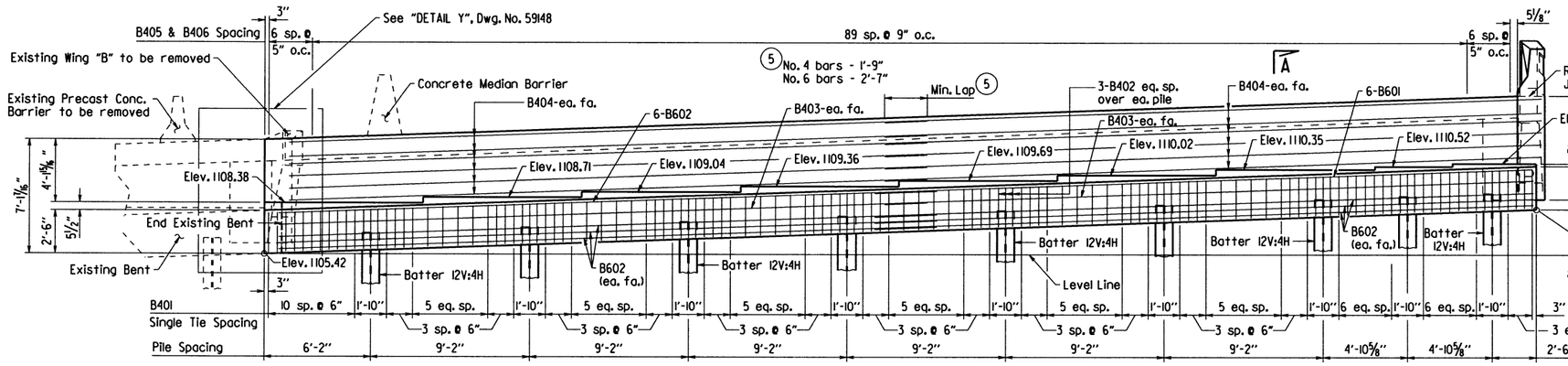
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				JOB NO.		CA0903	1600	452
				①	07277 - END BENT NO. 4 - 59146			



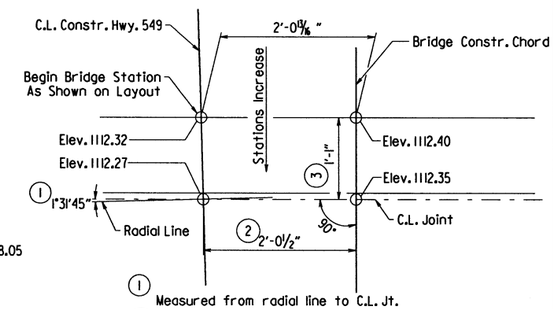
PLAN VIEW



SECTION A-A
1/2" = 1'-0"

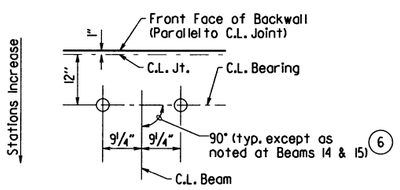


ELEVATION
Looking Back



1 Measured from radial line to C.L. Jt.
2 Measured along C.L. Joint
3 Measured along Bridge Constr. Chord. See Dwg. No. 59143 for additional details of Bridge Constr. Chord.

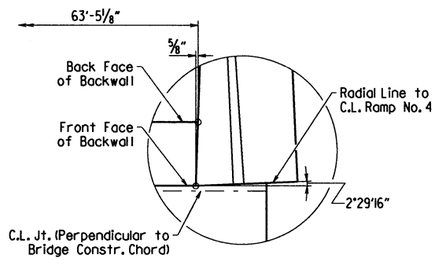
DETAIL W
1" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
No Scale

Note: For details of Elastomeric Bearings, see Dwg. No. 59175.

6 See "PLAN VIEW" for angles at Beams 14 & 15



DETAIL X
No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENT NO. 1
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

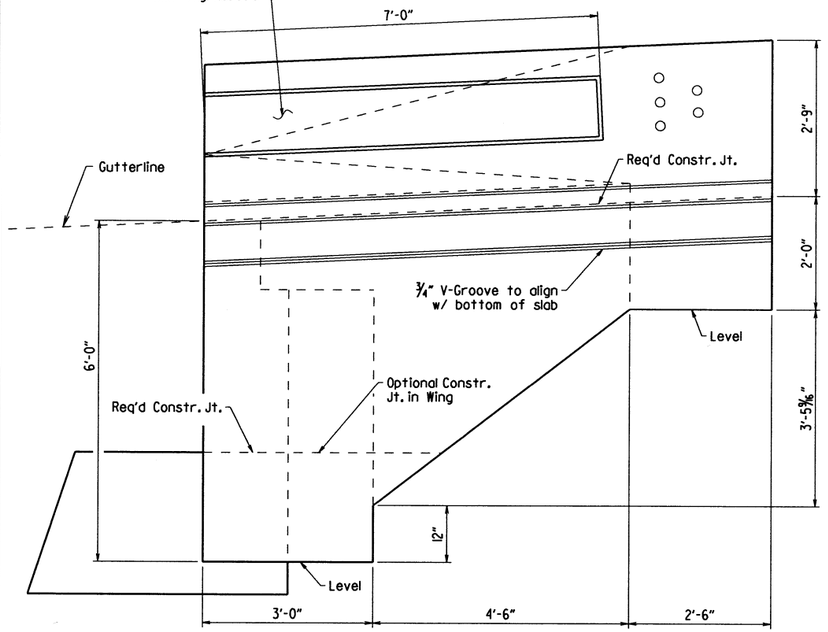
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BRIDGE NO. 07277 DRAWING NO. 59146

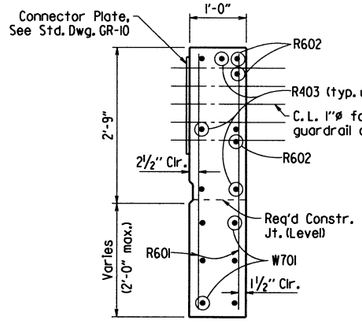
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				JOB NO.		CA0903	1161	452
				①		07277 - END BENT NO. 1 - 59147		

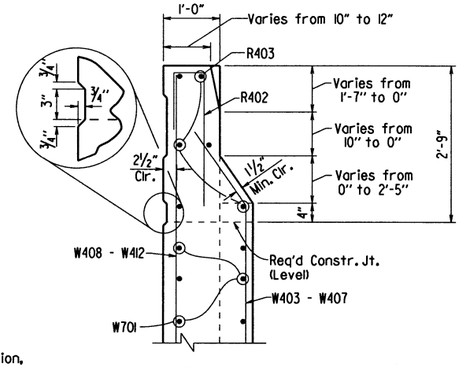
For details of Parapet Enhancement, See Dwg. No. 59161



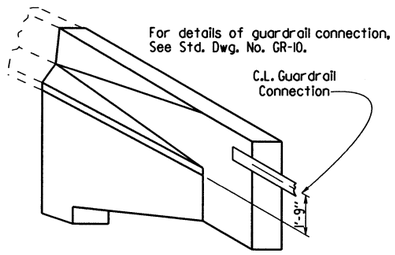
VIEW B-B
¾" = 1'-0"



SECTION X-X
¾" = 1'-0"



SECTION Y-Y
¾" = 1'-0"



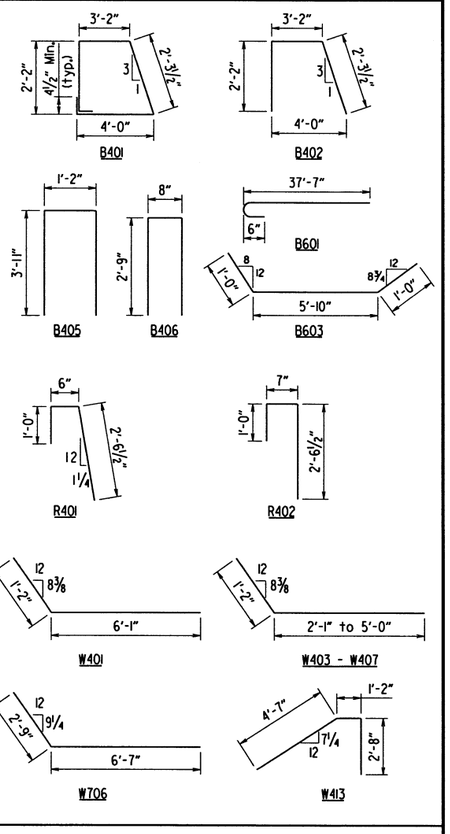
THREE DIMENSIONAL VIEW OF RAIL
No Scale

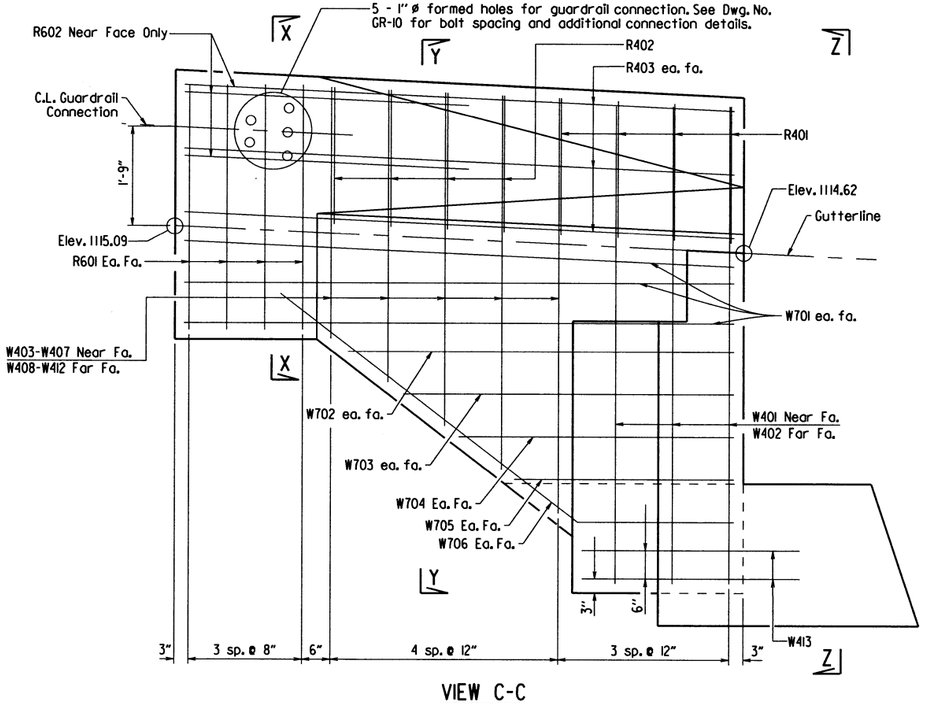
Note: Construct Wing "C" on arc concentric to C.L. Ramp No. 4

BAR LIST

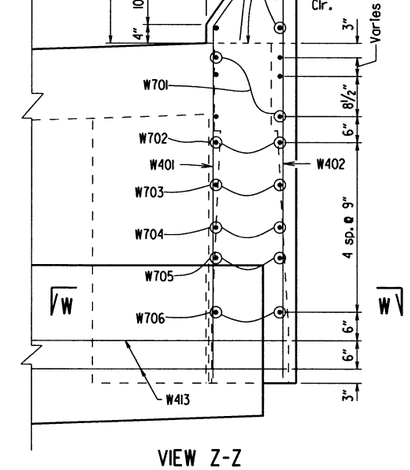
Mark	No. Req'd.	Length	Pin Dia.
B401	101	12'-0"	2"
B402	27	7'-6"	2"
B403	4	37'-2"	str.
B404	24	37'-5"	str.
B405	102	8'-10"	2"
B406	102	6'-0"	2"
B407	3	4'-5"	str.
B601	6	38'-3"	4½"
B602	18	37'-7"	str.
B603	6	7'-10"	4½"
R401	4	3'-11"	2"
R402	4	4'-0"	2"
R403	6	9'-8"	str.
R601	8	4'-5"	str.
R602	3	5'-0"	str.
W401	3	7'-3"	2"
W402	3	8'-5"	str.
W403 to W407	1 ea.	3'-3" to 6'-2"	2"
W408 to W412	1 ea.	4'-5" to 7'-5 "	str.
W413	2	8'-4"	2"
W701	6	9'-8"	str.
W702	2	6'-9"	str.
W703	2	5'-9 "	str.
W704	2	4'-10"	str.
W705	2	3'-10"	str.
W706	2	9'-4"	5¼"

Bending Diagrams
(Dimensions are out to out of bars.)

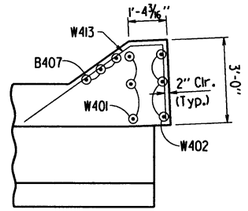




VIEW C-C
¾" = 1'-0"



VIEW Z-Z
¾" = 1'-0"



SECTION W-W
⅜" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
6-5-17
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BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT NO. 1
PEACH ORCHARD RD.

ROUTE SEC.

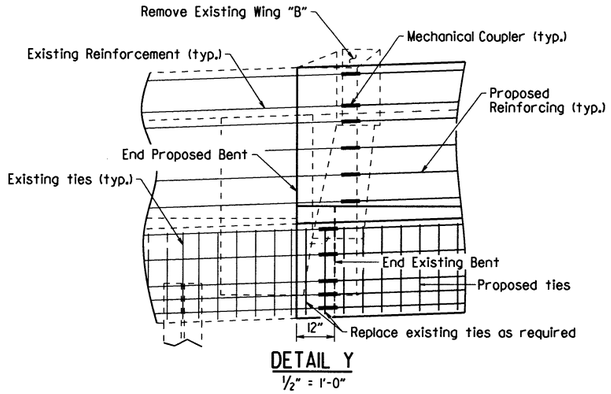
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: TMG DATE: 5/15/17
DESIGNED BY: TMG DATE: 8/2018
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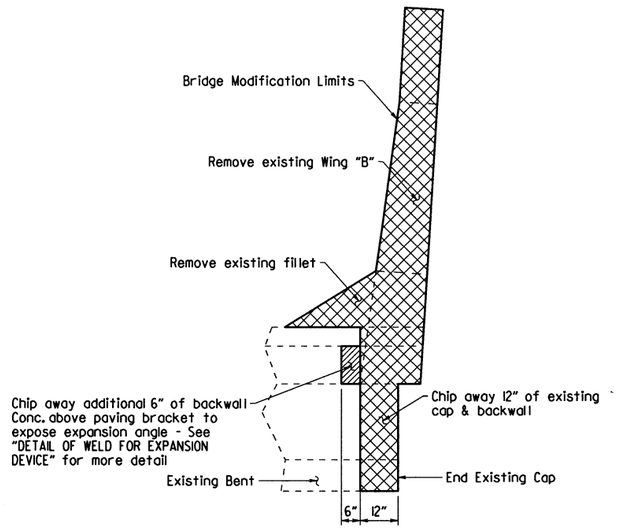
BRIDGE NO. 07277 DRAWING NO. 59147

PRINT DATE: 5/15/2017

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.		CA0903	162	452
				①		07277 - END BENT NO. 1 - 59148		

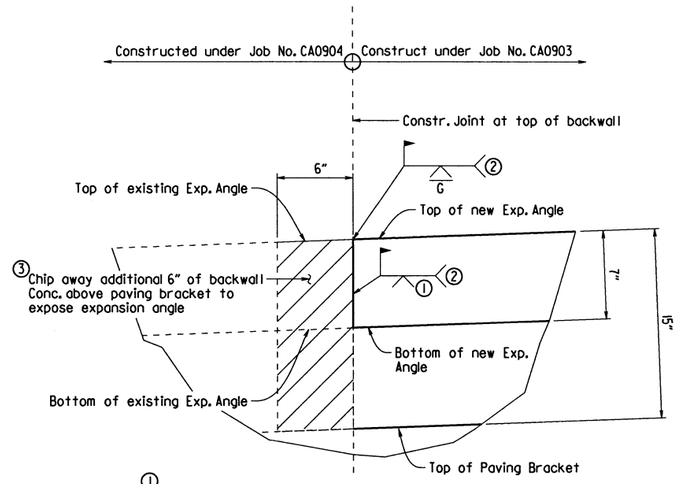


DETAIL Y
½" = 1'-0"



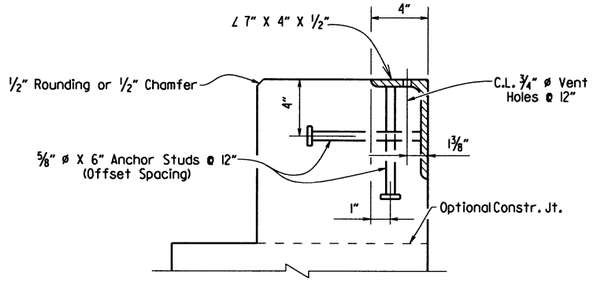
DETAILS OF EXISTING CAP MODIFICATIONS
½" = 1'-0"

Note: Except for those to be utilized for connection with new construction reinforcement, all existing reinforcement exposed during cap modifications shall be removed at least 2" into the existing cap or backwall and all cavities where existing rebar are removed shall be backfilled with approved non-shrink grout.



① Grind flush from top of deck to 5" below top of deck
② Weld after angle installation for Job No. CA0903
③ Contractor shall clean any exposed reinforcing steel

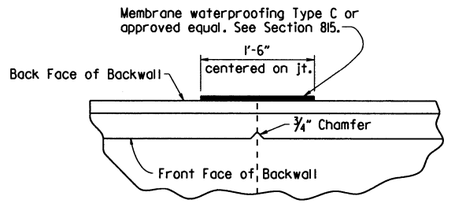
DETAIL OF WELD FOR EXPANSION DEVICE
Looking Back
No Scale



For additional Joint Details, see Dwg. No. 59173

DETAIL Z
No Scale

Note: Concrete shall be hand packed under the joint armor in the backwall.



Note: Payment for membrane to be considered subsidiary to Class S Concrete-Bridge.

CONSTRUCTION JOINT DETAIL
No Scale

GENERAL NOTES:
Remove existing Wing "B" and portions of existing bent and backwall as shown in "DETAILS OF EXISTING CAP MODIFICATIONS". Retain and clean existing reinforcing steel in cap and backwall. Any required bent connections to the existing bent using mechanical couplers, or other means approved by the Engineer, will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

Mechanical bar couplers shall be of threaded type. Bar couplers shall be listed on the Department's Qualified Products List (QPL) and shall be installed according to the manufacturer's recommendations. Connections utilizing bar couplers shall develop at least 125% of the specified yield strength of the bar and maintain a minimum of 2" clear from the formwork. The cost for the Mechanical Bar Couplers shall be considered subsidiary to the item "Reinforcing Steel - Bridge (Grade 60)".

The backwall above the required construction joint shall not be poured until the beams are in place. The backwall above the optional construction joint shall not be poured until the bridge deck has been placed. See Dwg. No. 59173 for additional information.

If anchor bolts are drilled into the cap, the top reinforcing bars shall be placed to avoid damage.

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 be Grade 60 (Yield strength = 60,000 p.s.i.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bent shall be AASHTO M 270, Grade 50W and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

Class 2 Protective Surface Treatment shall be applied to the top of the backwall. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0903 "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.

See Drawing No. 59147 for Bar List and details of wing and rail.

For additional information, see Layout.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENT NO. 1
PEACH ORCHARD ROAD

ROUTE SEC.

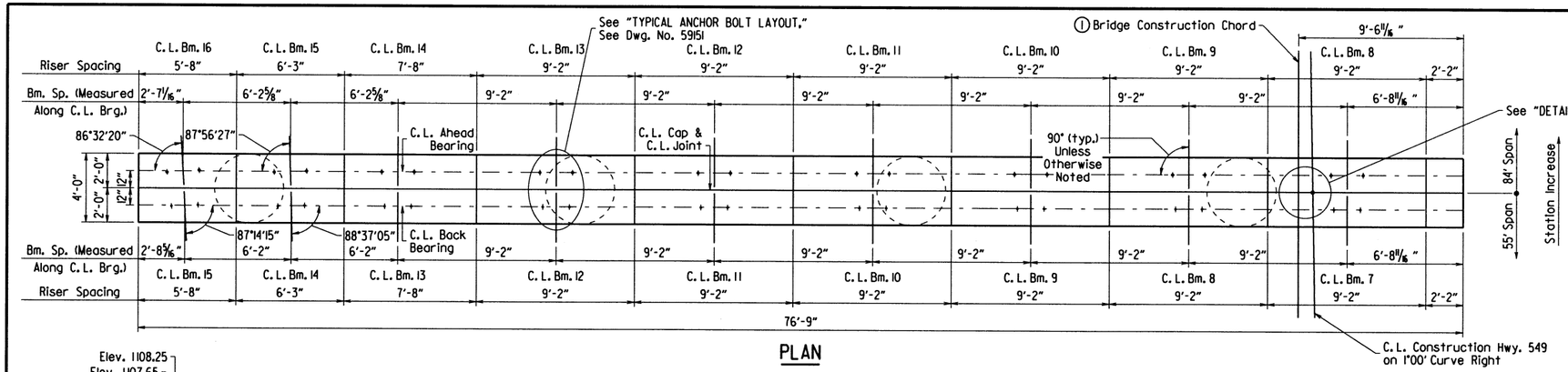
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: TMG DATE: 4/25/17
DESIGNED BY: TMG DATE: 8/2016
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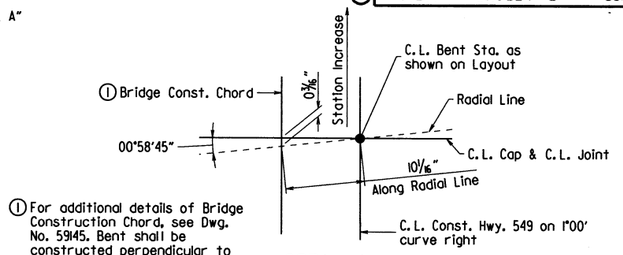
BRIDGE NO. 07277
DRAWING NO. 59148

PRINT DATE: 4/25/2017

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.		CA0903	163	452
				①	07277 -	INT. BENT 2	- 59150	

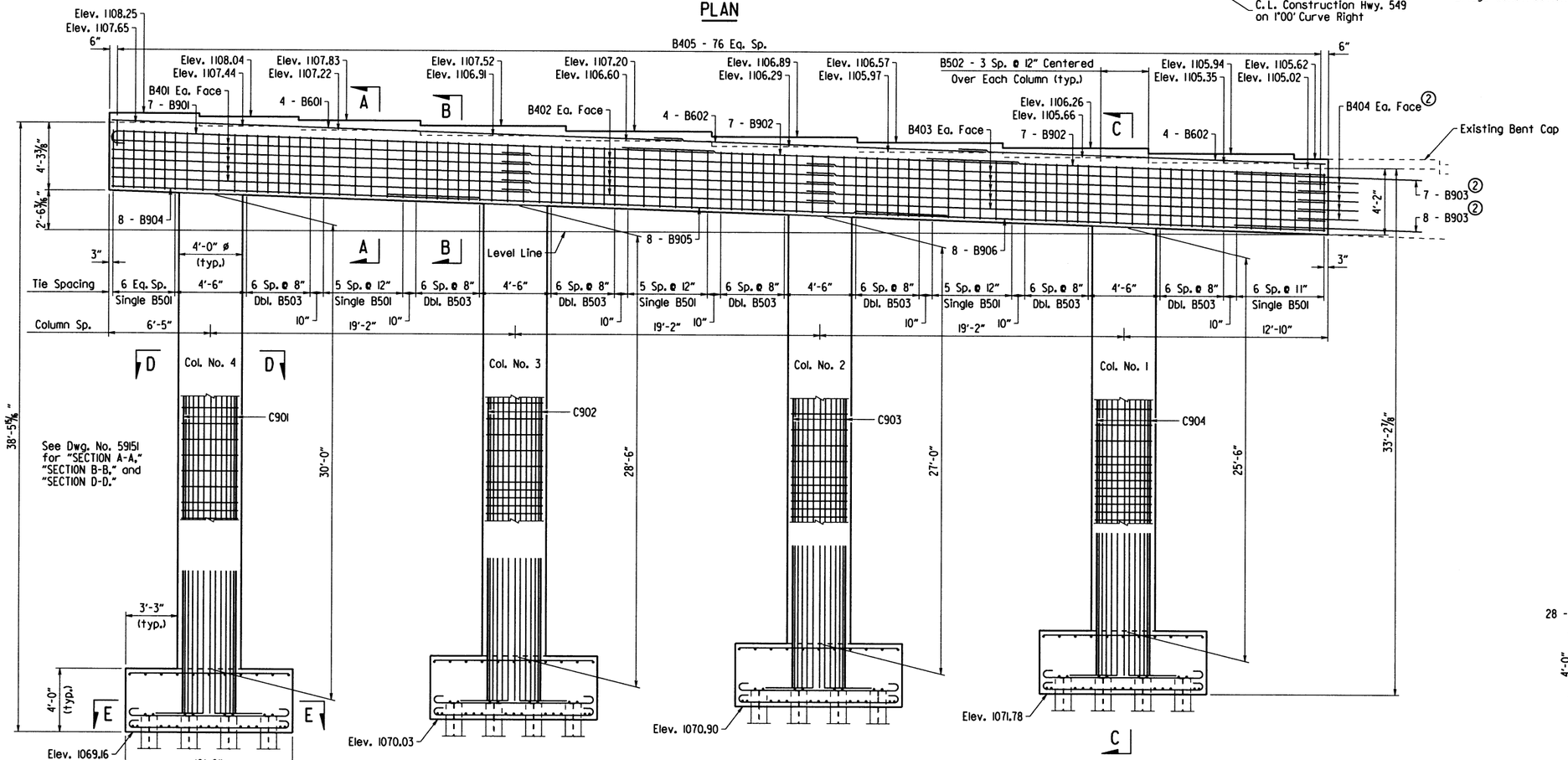


PLAN



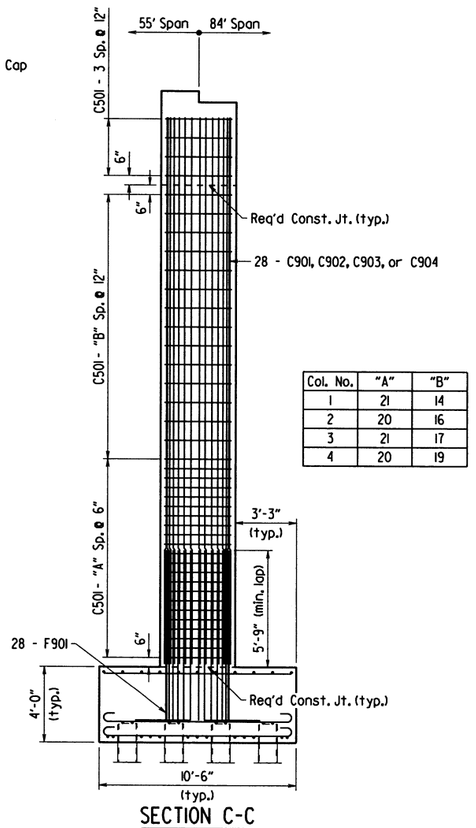
① For additional details of Bridge Construction Chord, see Dwg. No. 59145. Bent shall be constructed perpendicular to Bridge Construction Chord.

DETAIL A
NO SCALE



See "SECTION E-E," "SECTION F-F," & "SECTION G-G" (Dwg. No. 59151) for footing pile and reinforcement layouts.

ELEVATION
LOOKING AHEAD



SECTION C-C

Col. No.	"A"	"B"
1	21	14
2	20	16
3	21	17
4	20	19

MINIMUM LAP LENGTHS

No. 4 bar = 1'-9"
No. 6 bar = 2'-7"
No. 9 bar = 5'-9"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength of f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Reinforcing bars in top of cap and riser shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

② B404 and B903 bars shall be drilled and grouted (1'-11" and 4'-0" respectively) into existing bent cap using a OPL approved non-shrink grout or resin anchoring system. Work and material required for doweling will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."

See layout for additional details.

STATE OF ARKANSAS
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6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT NO. 2
PEACH ORCHARD ROAD

ROUTE SEC.

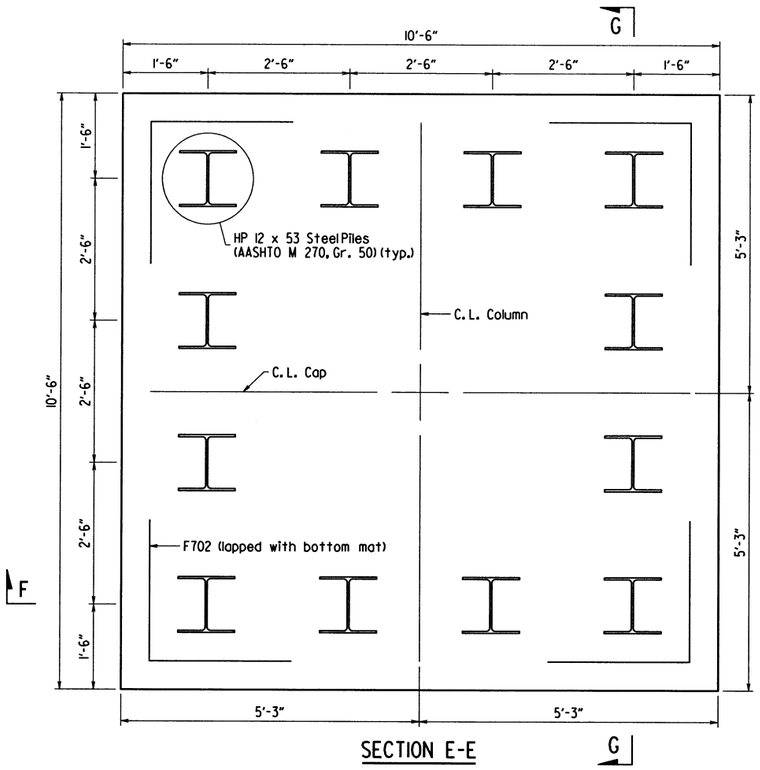
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: IMG DATE: 8/2016 OR AS NOTED

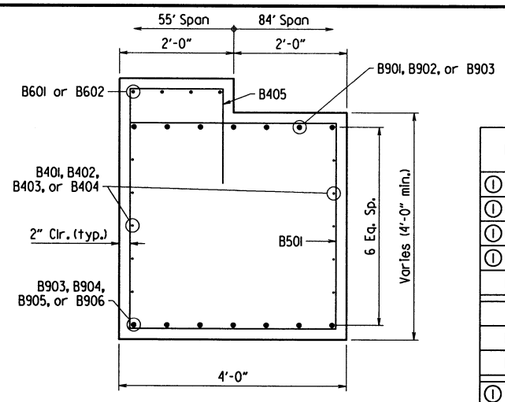
BRIDGE NO. 07277 DRAWING NO. 59150

PRINT DATE: 4/19/2017

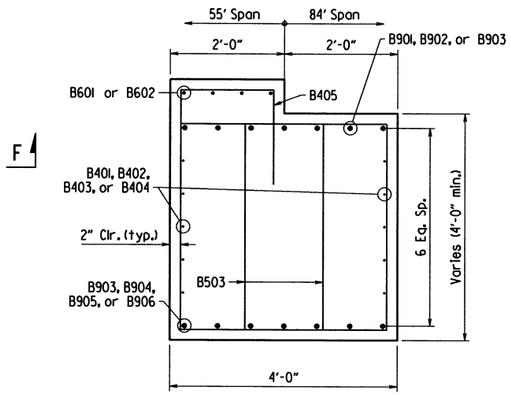
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				6	ARK.			
				JOB NO.		CA0903	164	452
				07277 -		INT. BENT 2	- 59151	



SECTION E-E



SECTION A-A

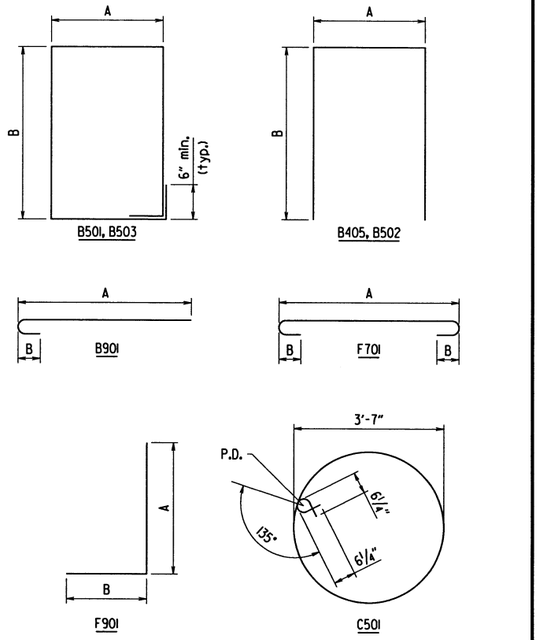


SECTION B-B

MARK	NUMBER REQUIRED	LENGTH	A	B	P.D.
(1) B401	10	26'-4"	-	-	Str.
(1) B402	10	21'-0"	-	-	Str.
(1) B403	10	32'-9"	-	-	Str.
(1) B404	10	3'-10"	-	-	Str.
B405	77	4'-11"	1'-8"	1'-8"	2"
B501	32	15'-2"	3'-8"	3'-8"	2½"
B502	16	10'-10"	3'-8"	3'-8"	2½"
B503	98	12'-10"	2'-6"	3'-8"	2½"
(1) B601	4	36'-4"	-	-	Str.
(1) B602	8	22'-8"	-	-	Str.
(1) B901	7	39'-2"	37'-11"	10"	9"
(1) B902	14	25'-1"	-	-	Str.
(1) B903	15	10'-0"	-	-	Str
(1) B904	8	23'-2"	-	-	Str.
(1) B905	8	35'-4"	-	-	Str.
(1) B906	8	29'-8"	-	-	Str
C501	164	12'-10"	-	-	3¾"
C901	28	33'-5"	-	-	Str.
C902	28	32'-0"	-	-	Str.
C903	28	30'-5"	-	-	Str.
C904	28	29'-0"	-	-	Str.
F601	88	10'-0"	-	-	Str.
F701	168	11'-8"	10'-0"	7"	5¼"
F702	16	4'-10"	2'-6"	2'-6"	5¼"
F901	112	10'-6"	9'-0"	1'-8"	9"

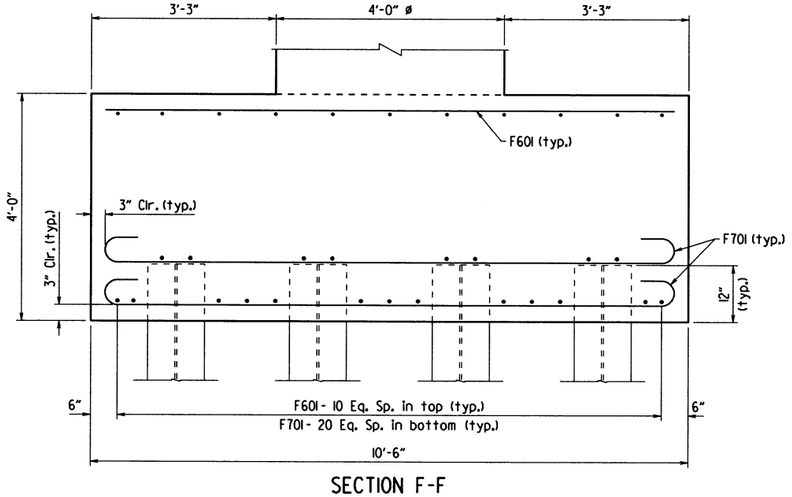
BAR LIST

BENDING DIAGRAMS
Dimensions are out to out of bars

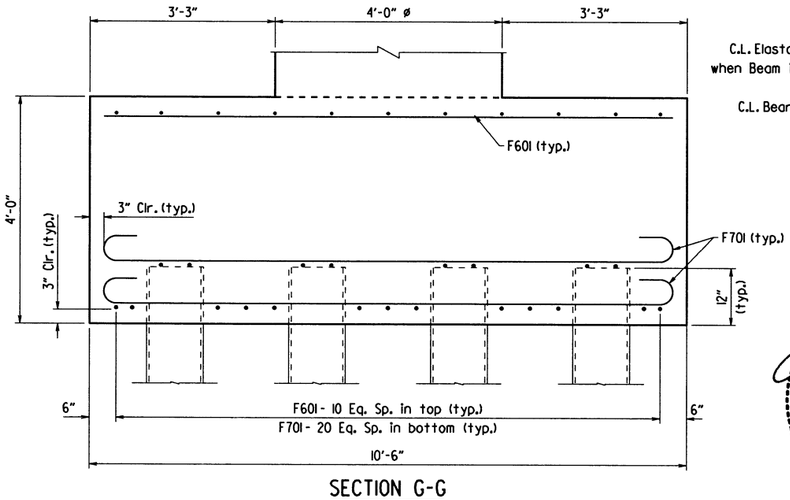


(1) Lap Length No. 4 bar = 1'-9"
Lap Length No. 6 bar = 2'-7"
Lap Length No. 9 bar = 5'-9"

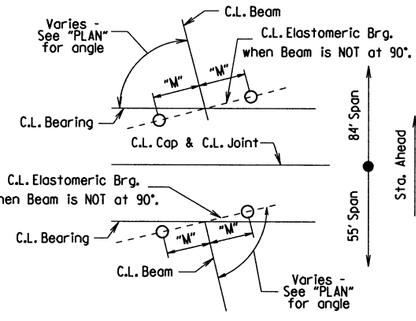
Note: The top F701 bars may rest on top of steel piling.



SECTION F-F



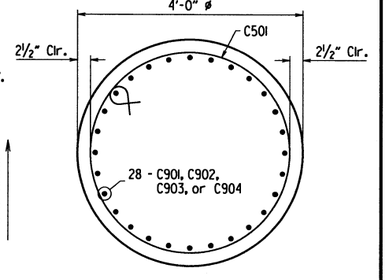
SECTION G-G



TYPICAL ANCHOR BOLT LAYOUT

For Details of Elastomeric Bearings, see Dwg. No. 59175.

Location	"M"
55' Span	9¼"
84' Span	11¼"



SECTION D-D

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT NO. 2
PEACH ORCHARD ROAD

ROUTE SEC.

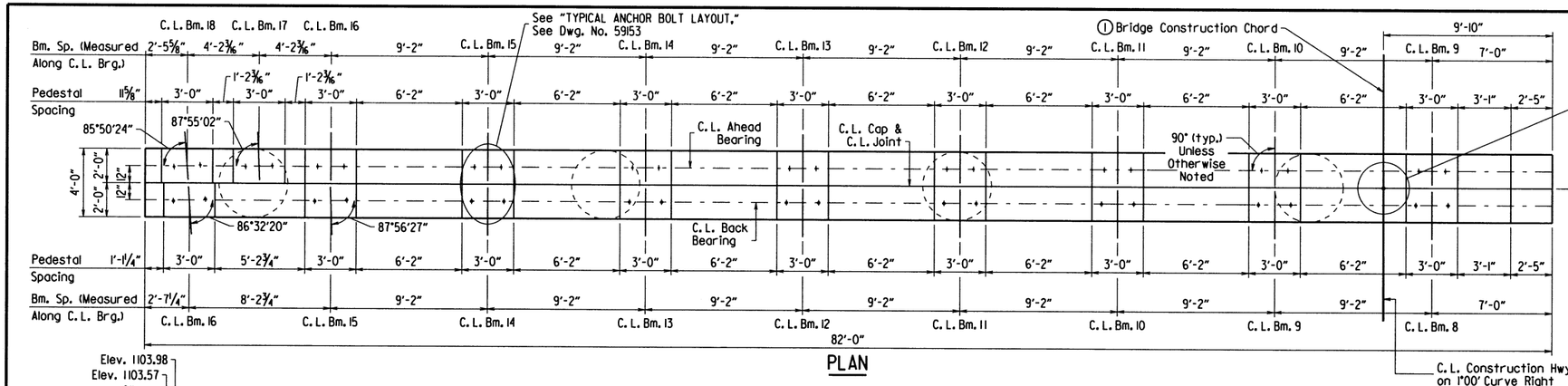
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: PGT DATE: 4/25/17 SCALE: ¾" = 1'-0"
DESIGNED BY: TMG DATE: 8/2016 OR AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59151

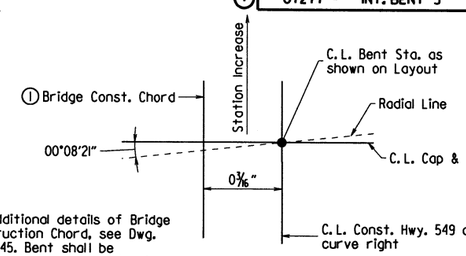
PRINT DATE: 4/19/2017

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.		CA0903	165	452
				07277 -		INT. BENT 3	- 59152	

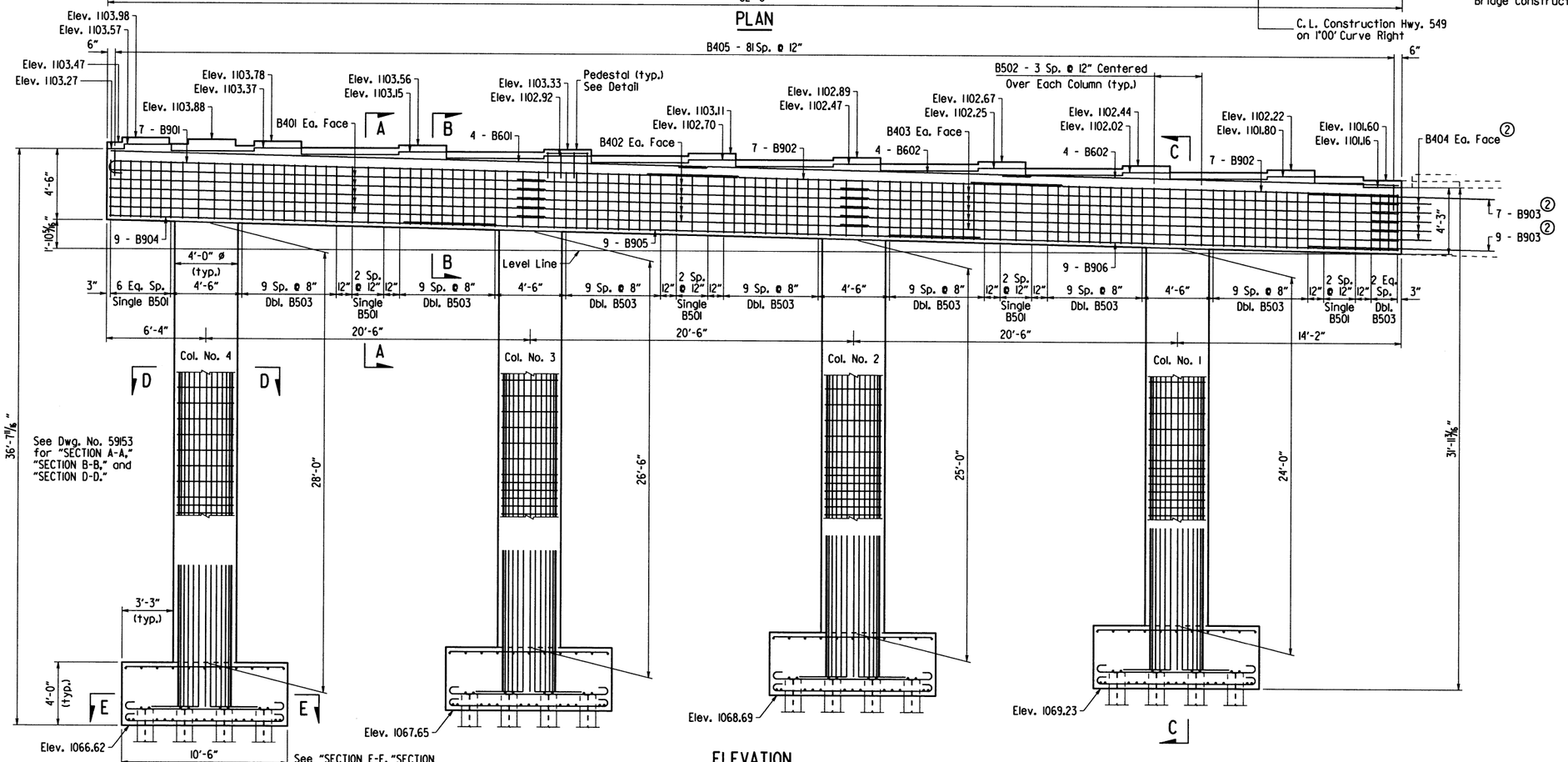


PLAN

① For additional details of Bridge Construction Chord, see Dwg. No. 59145. Bent shall be constructed perpendicular to Bridge Construction Chord.



DETAIL A
NO SCALE



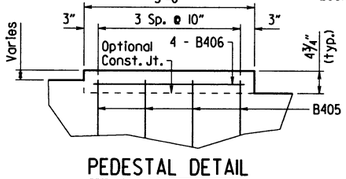
ELEVATION
LOOKING AHEAD

SECTION C-C

Col. No.	"A"	"B"
1	20	13
2	20	14
3	21	15
4	20	18

MINIMUM LAP LENGTHS

No. 4 bar = 1'-9"
No. 6 bar = 2'-7"
No. 9 bar = 5'-9"



PEDESTAL DETAIL
LOOKING AHEAD
¾" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength of f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Reinforcing bars in top of cap and riser shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

② B404 and B903 bars shall be drilled and grouted (1'-11" and 4'-0" respectively) into existing bent cap using a QPL approved non-shrink grout or resin anchoring system. Work and material required for doweling will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."

See layout for additional details.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT NO. 3
PEACH ORCHARD ROAD

ROUTE SEC.

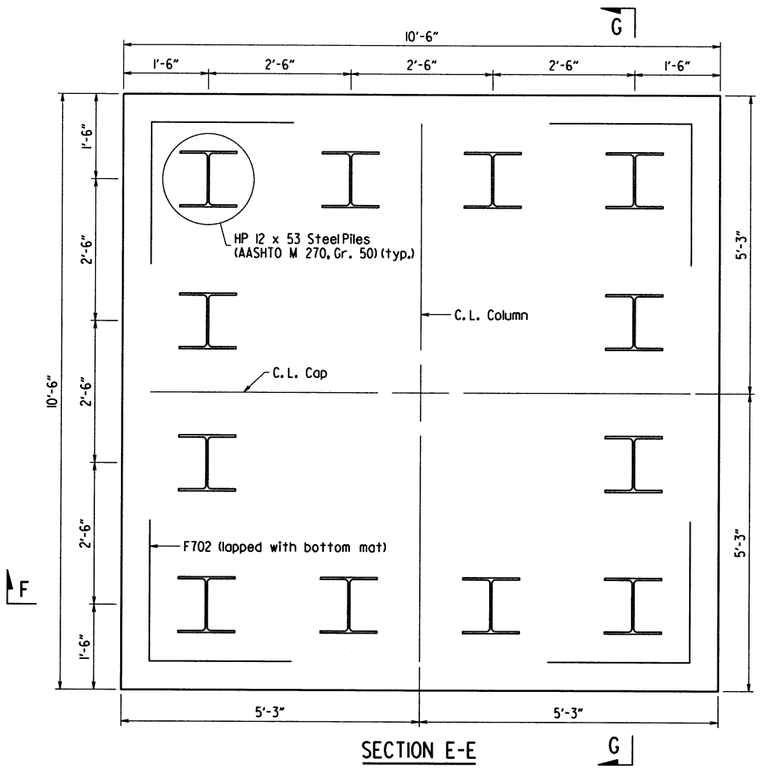
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: TMG DATE: 8/2016

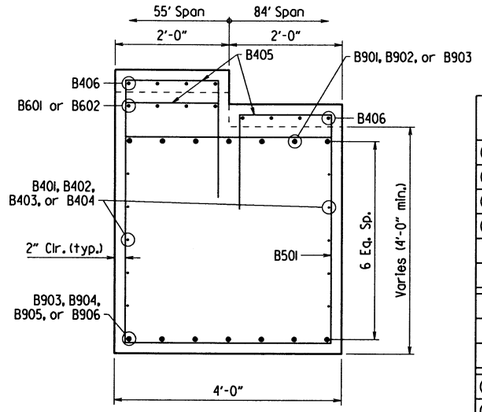
BRIDGE NO. 07277 DRAWING NO. 59152

PRINT DATE: 4/19/2017

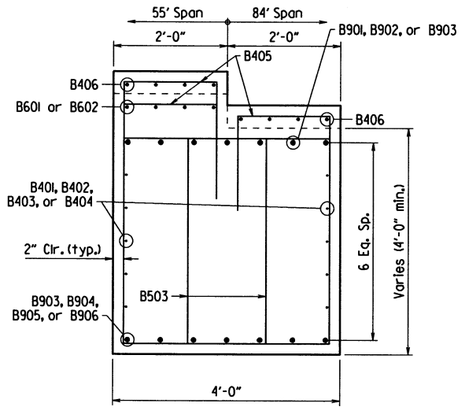
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				6	ARK.			
				JOB NO.		CA0903	166	452
				① 07277 -		INT. BENT 3	- 59153	



SECTION E-E



SECTION A-A



SECTION B-B

F

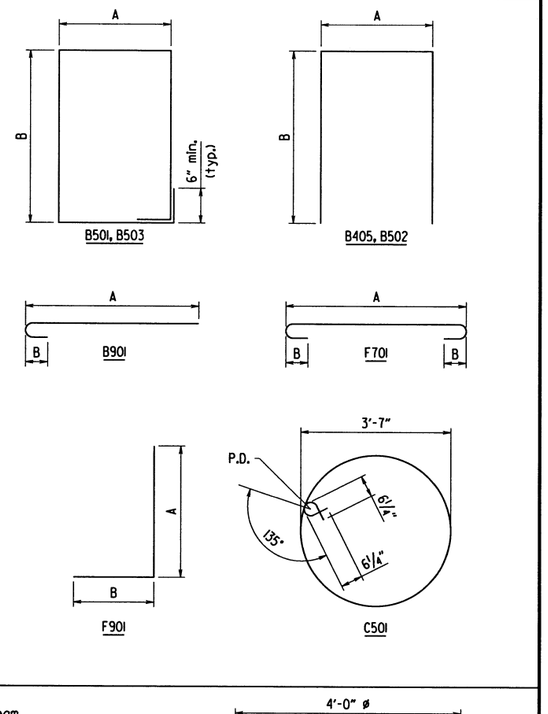
G

BAR LIST

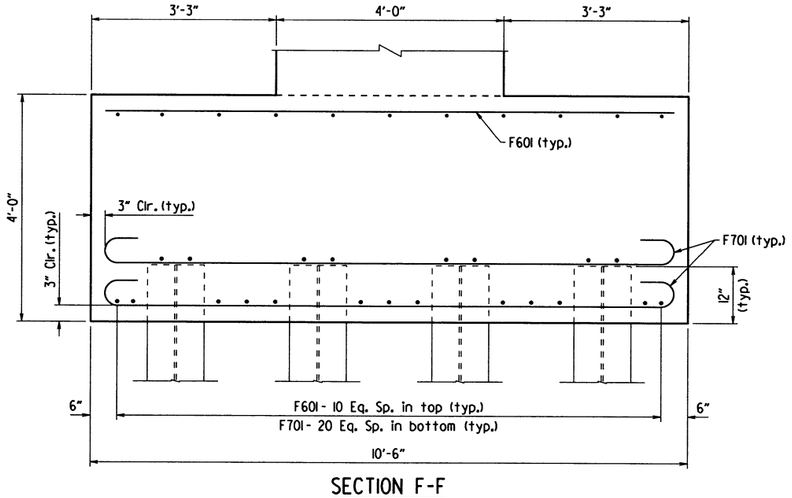
MARK	NUMBER REQUIRED	LENGTH	A	B	P. D.
① B401	10	27'-7"	-	-	Str.
① B402	10	22'-5"	-	-	Str.
① B403	10	35'-5"	-	-	Str.
① B404	10	3'-10"	-	-	Str.
B405	158	4'-11"	1'-8"	1'-8"	2"
B406	76	2'-8"	-	-	Str.
B501	19	15'-2"	3'-8"	3'-8"	2½"
B502	16	10'-10"	3'-8"	3'-8"	2½"
B503	146	12'-10"	2'-6"	3'-8"	2½"
① B601	4	37'-9"	-	-	Str.
① B602	8	24'-7"	-	-	Str.
① B901	7	40'-8"	39'-10"	10"	9"
① B902	14	26'-9"	-	-	Str.
① B903	16	10'-0"	-	-	Str
① B904	9	24'-6"	-	-	Str.
① B905	9	36'-6"	-	-	Str.
① B906	9	32'-4"	-	-	Str
C501	162	12'-10"	-	-	3¾"
C901	28	31'-5"	-	-	Str.
C902	28	29'-11"	-	-	Str.
C903	28	28'-5"	-	-	Str.
C904	28	27'-5"	-	-	Str.
F601	88	10'-0"	-	-	Str.
F701	168	11'-8"	10'-0"	7"	5¼"
F702	16	4'-10"	2'-6"	2'-6"	5¼"
F901	112	10'-6"	9'-0"	1'-8"	9"

① Lap Length No. 4 bar = 1'-9"
Lap Length No. 6 bar = 2'-7"
Lap Length No. 9 bar = 5'-9"

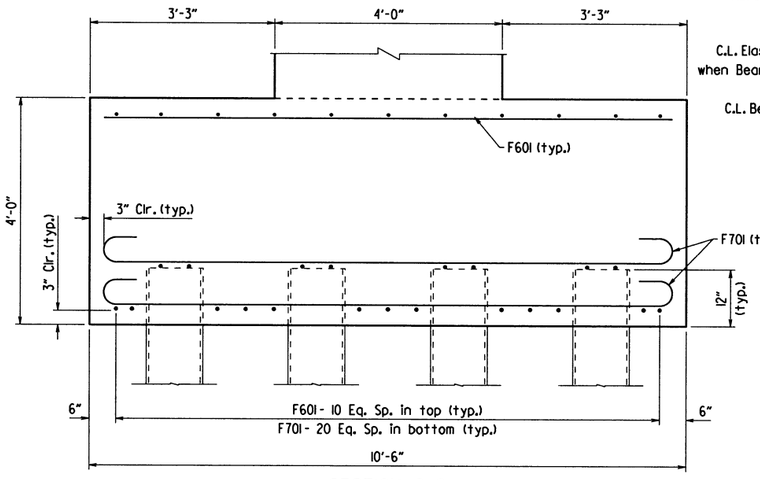
BENDING DIAGRAMS
Dimensions are out to out of bars



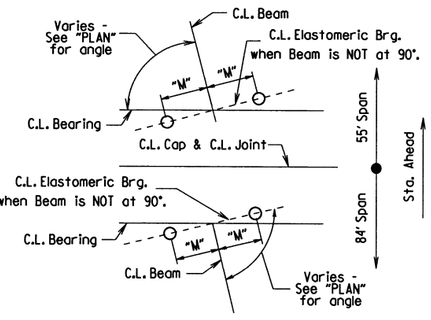
Note: The top F701 bars may rest on top of steel piling.



SECTION F-F



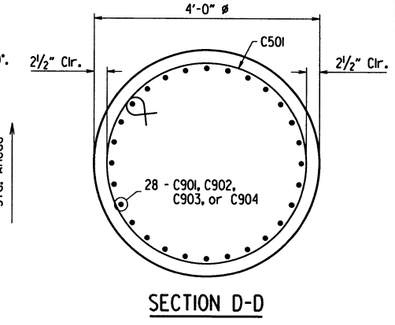
SECTION G-G



TYPICAL ANCHOR BOLT LAYOUT

For Details of Elastomeric Bearings, see Dwg. No. 59175.

Location	"M"
55' Span	9¼"
84' Span	11¼"



SECTION D-D

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9335
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT NO. 3
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

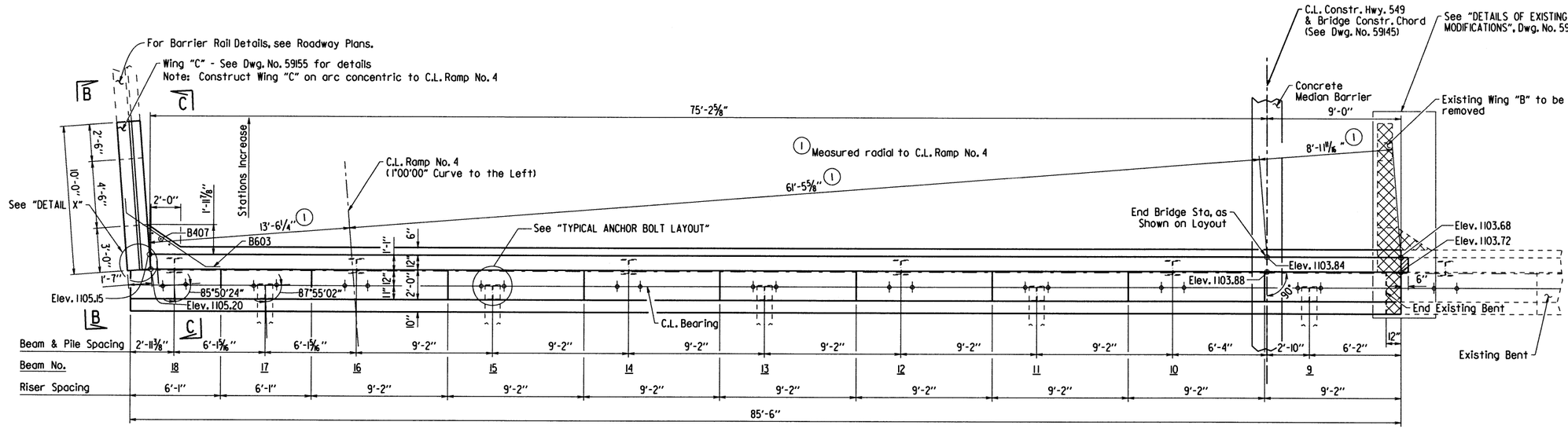
LITTLE ROCK, ARK.

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CHECKED BY: PGT DATE: 4/25/17 SCALE: ¾" = 1'-0"
DESIGNED BY: TMG DATE: 8/2016 OR AS NOTED

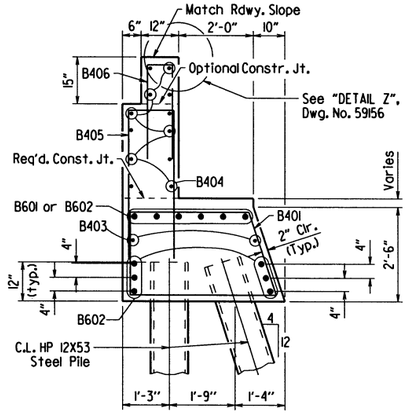
BRIDGE NO. 07277 DRAWING NO. 59153

PRINT DATE: 4/19/2017

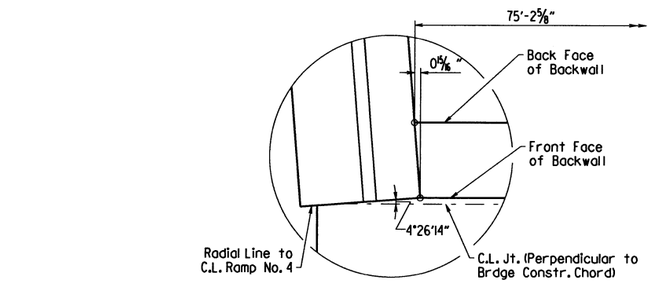
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				JOB NO.		CA0903	167	452
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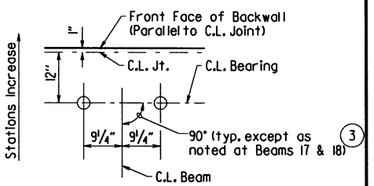
PLAN VIEW



SECTION A-A
½" = 1'-0"



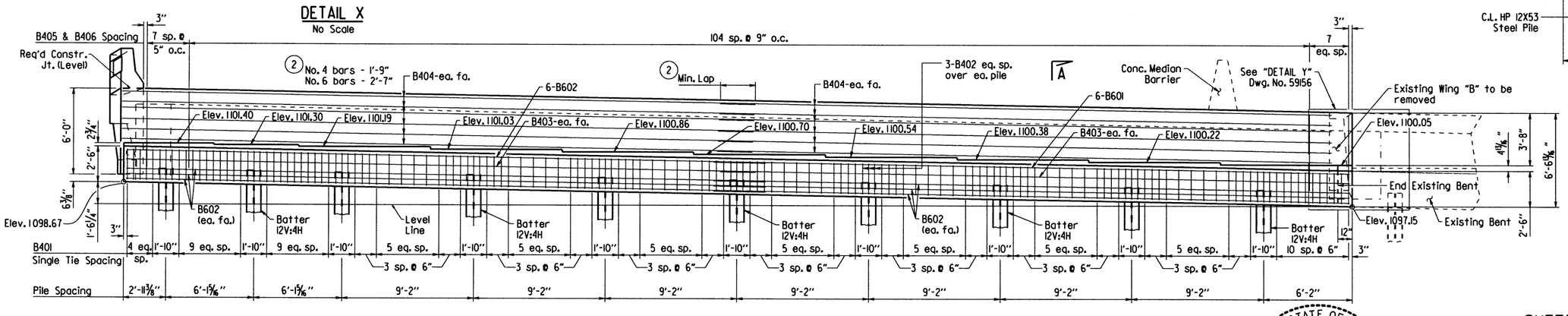
DETAIL X
No Scale



TYPICAL ANCHOR BOLT LAYOUT
No Scale

Note: For details of Elastomeric Bearings, see Dwg. No. 59175.

③ See "PLAN VIEW" for angles at Beams 17 & 18



ELEVATION
Looking Ahead

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENT NO. 4
PEACH ORCHARD ROAD

ROUTE SEC.

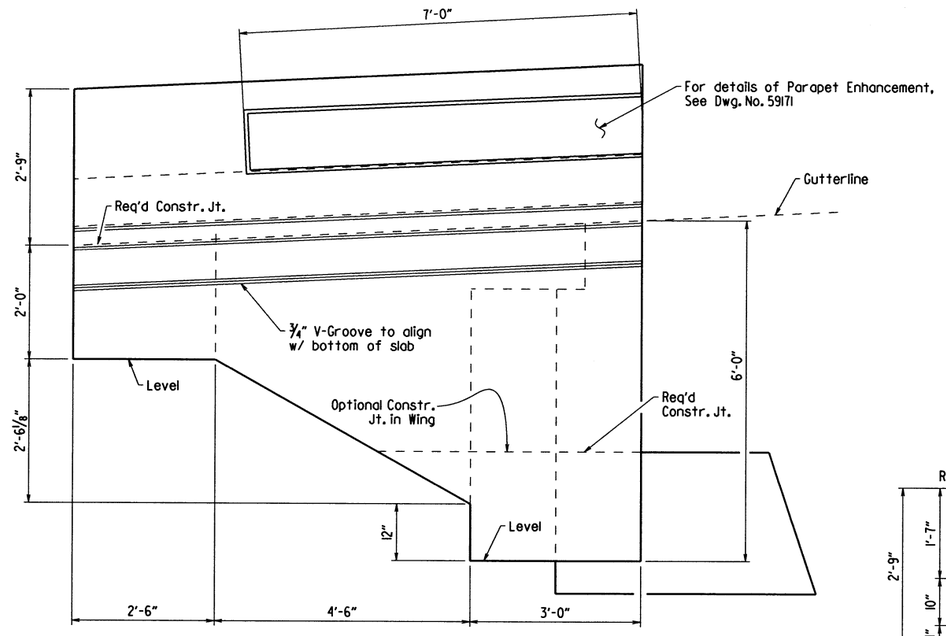
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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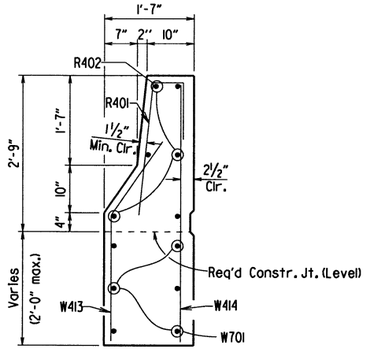
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DRAWING NO. 59154

PRINT DATE: 4/25/2017

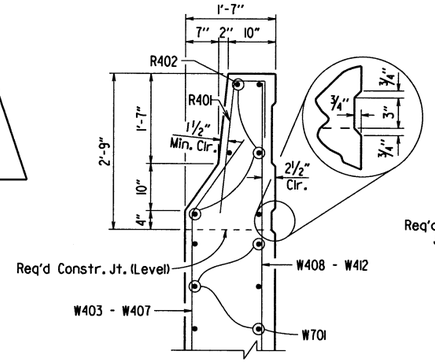
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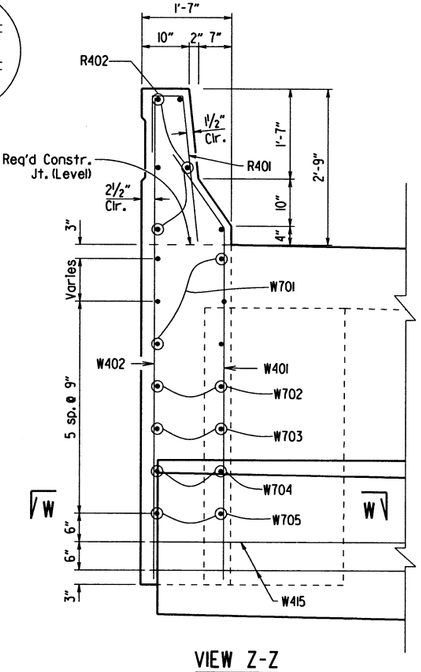
VIEW B-B
3/4" = 1'-0"



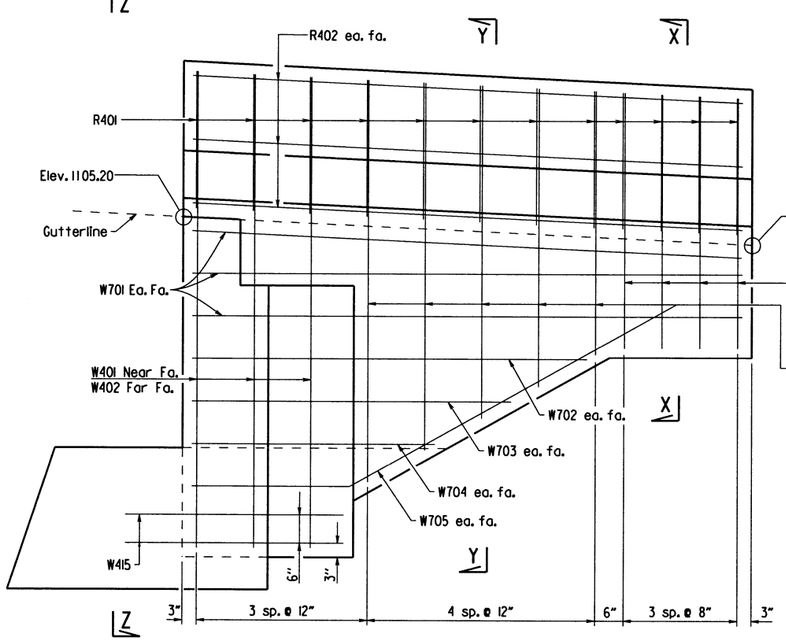
SECTION X-X
3/4" = 1'-0"



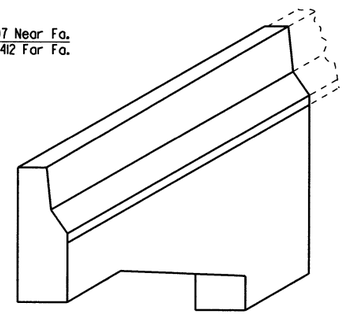
SECTION Y-Y
3/4" = 1'-0"



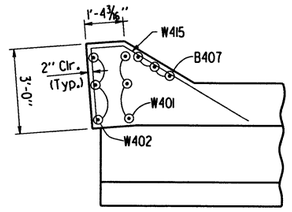
VIEW Z-Z
3/4" = 1'-0"



VIEW C-C
3/4" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL
No Scale

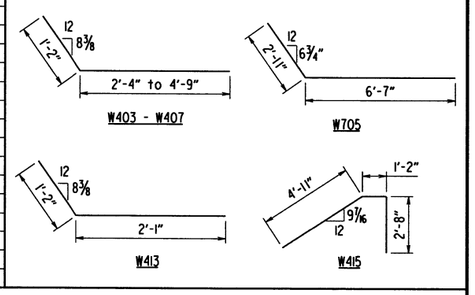


SECTION W-W
3/8" = 1'-0"

Note: Construct Wing "C" on arc concentric to C.L. Ramp No. 4

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
B401	120	12'-0"	2"	
B402	30	7'-6"	2"	
B403	4	43'-6"	str.	
B404	24	43'-0"	str.	
B405	117	8'-10"	2"	
B406	117	6'-0"	2"	
B407	3	4'-5"	str.	
B601	6	44'-7"	4 1/2"	
B602	18	43'-11"	str.	
B603	6	8'-5"	4 1/2"	
R401	12	3'-11"	2"	
R402	6	9'-8"	str.	
W401	3	7'-2"	2"	
W402	3	8'-5"	str.	
W403 to W407	1 ea.	5'-11" to 3'-6"	2"	
W408 to W412	1 ea.	7'-1" to 4'-8"	str.	
W413	4	3'-3"	2"	
W414	4	4'-6"	Str.	
W415	2	8'-10"	2"	
W701	6	9'-8"	str.	
W702	2	7'-1"	str.	
W703	2	5'-9"	str.	
W704	2	4'-5"	str.	
W705	2	9'-6"	5 1/4"	



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT NO. 4
PEACH ORCHARD RD.

ROUTE SEC.

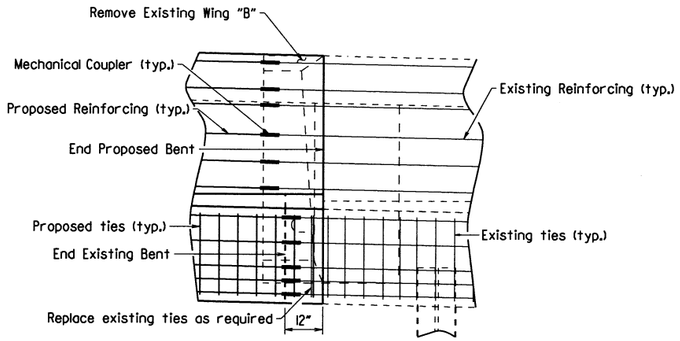
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: YZ DATE: 01/30/17
CHECKED BY: TMG DATE: 5/15/17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bco0903x1_bl.dgn
SCALE: AS NOTED

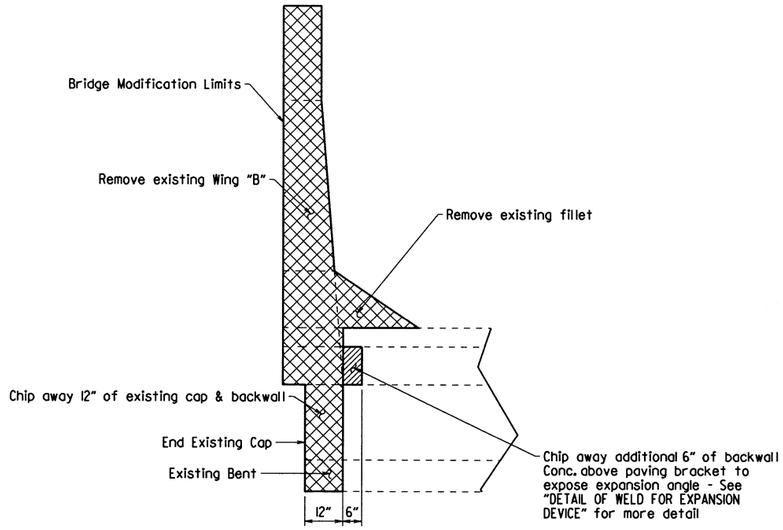
BRIDGE NO. 07277
DRAWING NO. 59155

PRINT DATE: 5/15/2017

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.		CA0903	169	452
				①		07277 - END BENT NO. 4 - 59156		

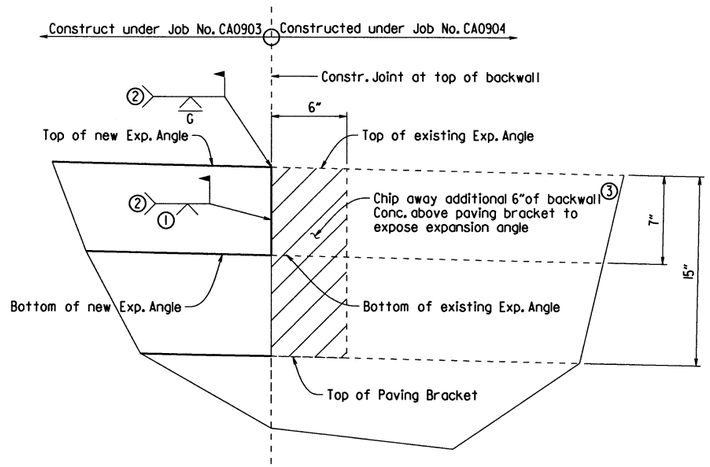


DETAIL Y
No Scale



DETAILS OF EXISTING CAP MODIFICATIONS
½" = 1'-0"

Note: Except for those to be utilized for connection with new construction reinforcement, all existing reinforcement exposed during cap modifications shall be removed at least 2" into the existing cap or backwall and all cavities where existing rebar are removed shall be backfilled with approved non-shrink grout.

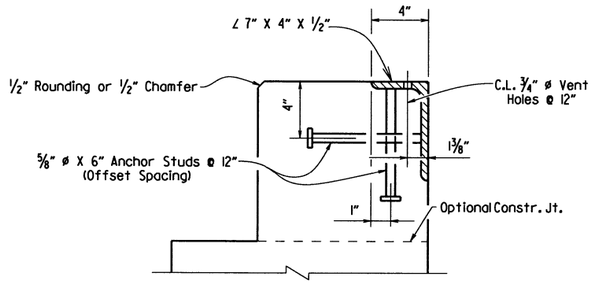


① Grind flush from top of deck to 5" below top of deck

② Weld after angle installation for Job No. CA0903

③ Contractor shall clean any exposed reinforcing steel

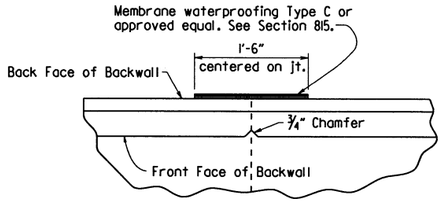
DETAIL OF WELD FOR EXPANSION DEVICE
Looking Back
No Scale



For additional Joint Details, see Dwg. No. 59173

DETAIL Z
No Scale

Note: Concrete shall be hand packed under the joint armor in the backwall.



Note: Payment for membrane to be considered subsidiary to Class S Concrete-Bridge.

CONSTRUCTION JOINT DETAIL
No Scale

GENERAL NOTES:
Remove existing Wing "B" and portions of existing bent and backwall as shown in "DETAILS OF EXISTING CAP MODIFICATIONS". Retain and clean existing reinforcing steel in cap and backwall. Any required bent connections to the existing bent using mechanical couplers, or other means approved by the Engineer, will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

Mechanical bar couplers shall be of threaded type. Bar couplers shall be listed on the Department's Qualified Products List (QPL) and shall be installed according to the manufacturer's recommendations. Connections utilizing bar couplers shall develop at least 125% of the specified yield strength of the bar and maintain a minimum of 2" clear from the formwork. The cost for the Mechanical Bar Couplers shall be considered subsidiary to the item "Reinforcing Steel - Bridge (Grade 60)".

The backwall above the required construction joint shall not be poured until the beams are in place. The backwall above the optional construction joint shall not be poured until the bridge deck has been placed. See Dwg. No. 59173 for additional information.

If anchor bolts are drilled into the cap, the top reinforcing bars shall be placed to avoid damage.

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 be Grade 60 (Yield strength = 60,000 p.s.i.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bent shall be AASHTO M 270, Grade 50W and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)".

Class 2 Protective Surface Treatment shall be applied to the top of the backwall. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0903 "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.

See Drawing No. 59155 for Bar List and details of wing and rail.

For additional information, see Layout.

STATE OF ARKANSAS
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6-5-17
CHARLES R. ELLIS
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SHEET 3 OF 3
DETAILS OF BENT NO. 4
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: YZ DATE: 01/30/17
CHECKED BY: TMG DATE: 4/25/17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_bt.dgn
SCALE: ½"=1'-0" OR AS NOTED

BRIDGE NO. 07277
DRAWING NO. 59156

PRINT DATE: 4/25/2017

For General Notes and "Detail Z", see Dwg. No. 59174.

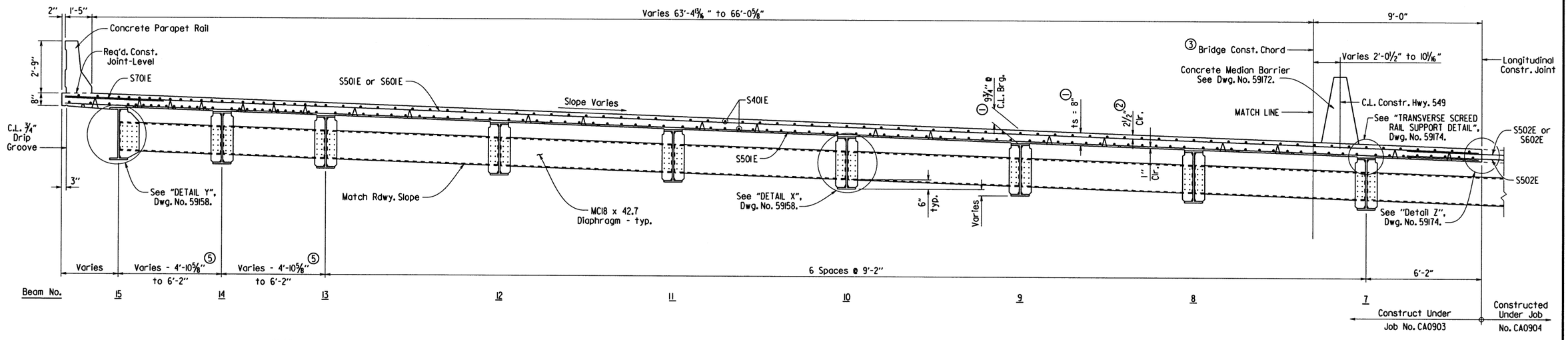
SLAB REINFORCING

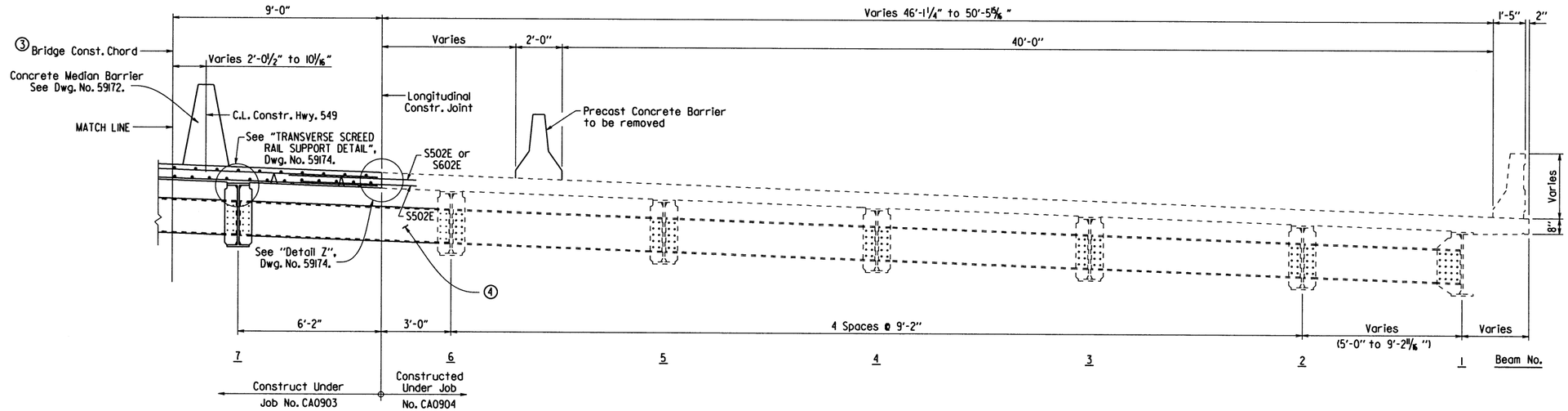
Longitudinal: S401E in top & bottom placed as shown (12" max.)
Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——————— Alternate
S501E-Top & Bottom @ 15" o.c. ———————
S502E, S602E, at Longit. Constr. Joint -see Detail Z, Dwg. No. 59174.
S701E @ 15" o.c. - Top of overhang (Left side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 59160.

NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0903 "Textured Coating Finish".

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.		CA0903	170	452
				① 07277 -		SPAN DETAILS	- 59157	





TYPICAL ROADWAY SECTION

Looking Ahead
3/8" = 1'-0"

① See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE", Dwg. No. 59158.

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", Dwg. No. 59158.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145.

④ In this bay, connection plate widths and diaphragm lengths shall be fabricated, as necessary, to facilitate installation of diaphragms between adjacent beams with significant differential deflections. Hole diameters of 5/8" shall be provided for these connections with a washer supplied under both the nut and head of bolt.

Before the pouring of the deck, loosely install as many bolts as possible on both ends of the diaphragms in this bay to the satisfaction of the Engineer. An external means of supporting the existing overhang shall be provided and shall remain in place until after completion of the deck pour. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the deck pour.

⑤ The longitudinal slab reinforcing between Beams 13, 14 & 15 shall flare such that an even spacing is maintained between the bars.

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SHEET 1 OF 5
DETAILS OF 55'-0"
COMPOSITE W-BEAM SPAN NO. 1
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-16
CHECKED BY: JAC DATE: 4/9-17
DESIGNED BY: JMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

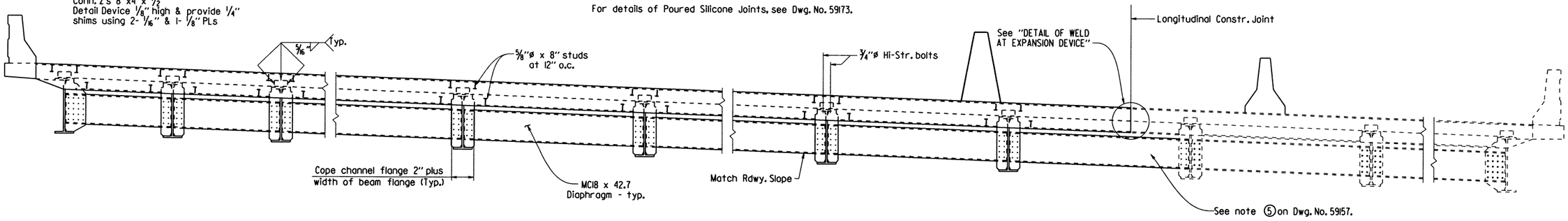
BRIDGE NO. 07277
DRAWING NO. 59157

PRINT DATE: 4/19/2017

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.		CA0903	171	452
				①		07277 - SPAN DETAILS - 59158		

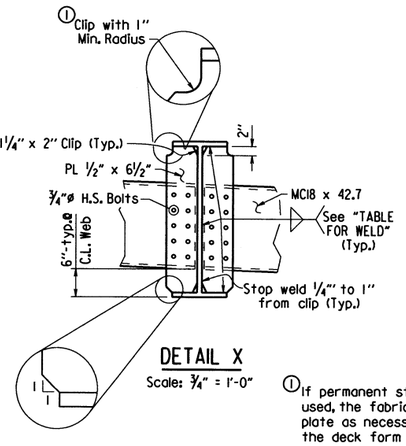
Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of Poured Silicone Joints, see Dwg. No. 59173.



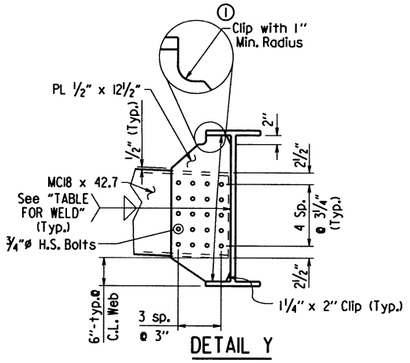
SECTION THRU JOINT

Looking Ahead - Bent 1
Bent 2 Similar
Scale: ⅞" = 1'-0"



DETAIL X

Scale: ¾" = 1'-0"

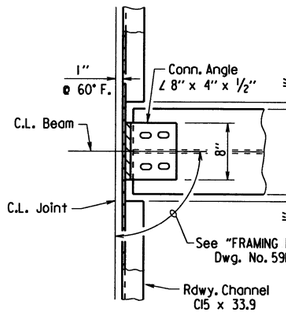


DETAIL Y

Scale: ¾" = 1'-0"

① If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 59159.



CHANNEL CONNECTION DETAIL

No Scale

TABLE FOR WELD

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.



Beams 7 thru 14 — Beam 15

② Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

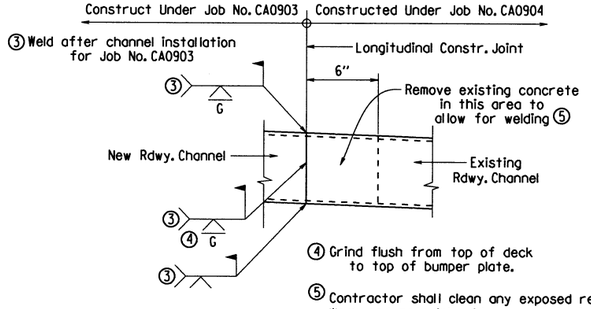
Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale



④ Grind flush from top of deck to top of bumper plate.

⑤ Contractor shall clean any exposed reinforcing steel. Work and materials will not be paid for directly, but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

DETAIL OF WELD AT EXPANSION DEVICE

No Scale

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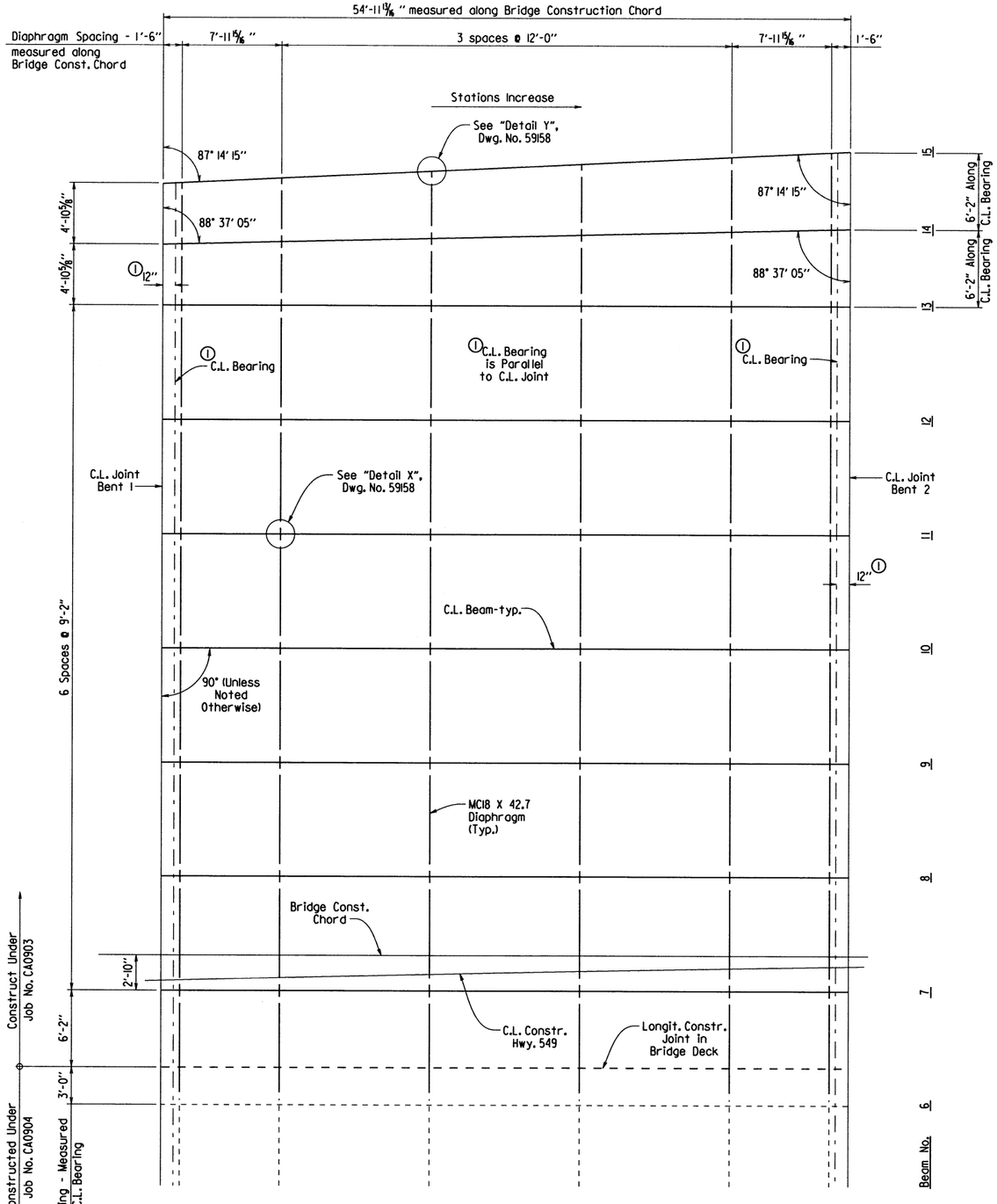
SHEET 2 OF 5
DETAILS OF 55'-0"
COMPOSITE W-BEAM SPAN NO. 1
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-16
CHECKED BY: JAC DATE: 4-19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59158

PRINT DATE: 4/19/2017

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.		CA0903	172	452
				①	07277 -	SPAN DETAILS	- 59159	



FRAMING PLAN

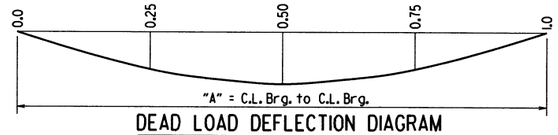
Scale: 3/16" = 1'-0"

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Point of Deflection	Structural Steel					Structural Steel + Slab					Structural Steel + Slab + Parapet + Median Barrier				
	Beam 7	Bms. 8-12	Beam 13	Beam 14	Beam 15	Beam 7	Bms. 8-12	Beam 13	Beam 14	Beam 15	Beam 7	Bms. 8-12	Beam 13	Beam 14	Beam 15
0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.25	0.118	0.118	0.113	0.107	0.098	0.691	0.807	0.664	0.521	0.506	0.727	0.844	0.701	0.561	0.545
0.50	0.166	0.165	0.158	0.151	0.137	0.972	1.131	0.932	0.735	0.713	1.023	1.183	0.985	0.791	0.768
0.75	0.118	0.118	0.113	0.107	0.098	0.691	0.807	0.664	0.521	0.506	0.727	0.844	0.701	0.561	0.545
1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

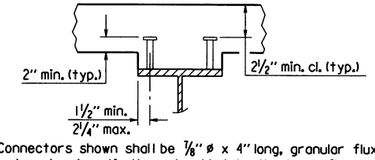
No Scale

NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- 1/4" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.

TYPICAL BEAM ELEVATION

No Scale

Beam No.	"A" = C.L. Brg. to C.L. Brg.
7-13	52'-11 15/16"
14	53'-0"
15	53'-0 9/16"



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 beam 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

STATE OF ARKANSAS
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SHEET 3 OF 5
DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

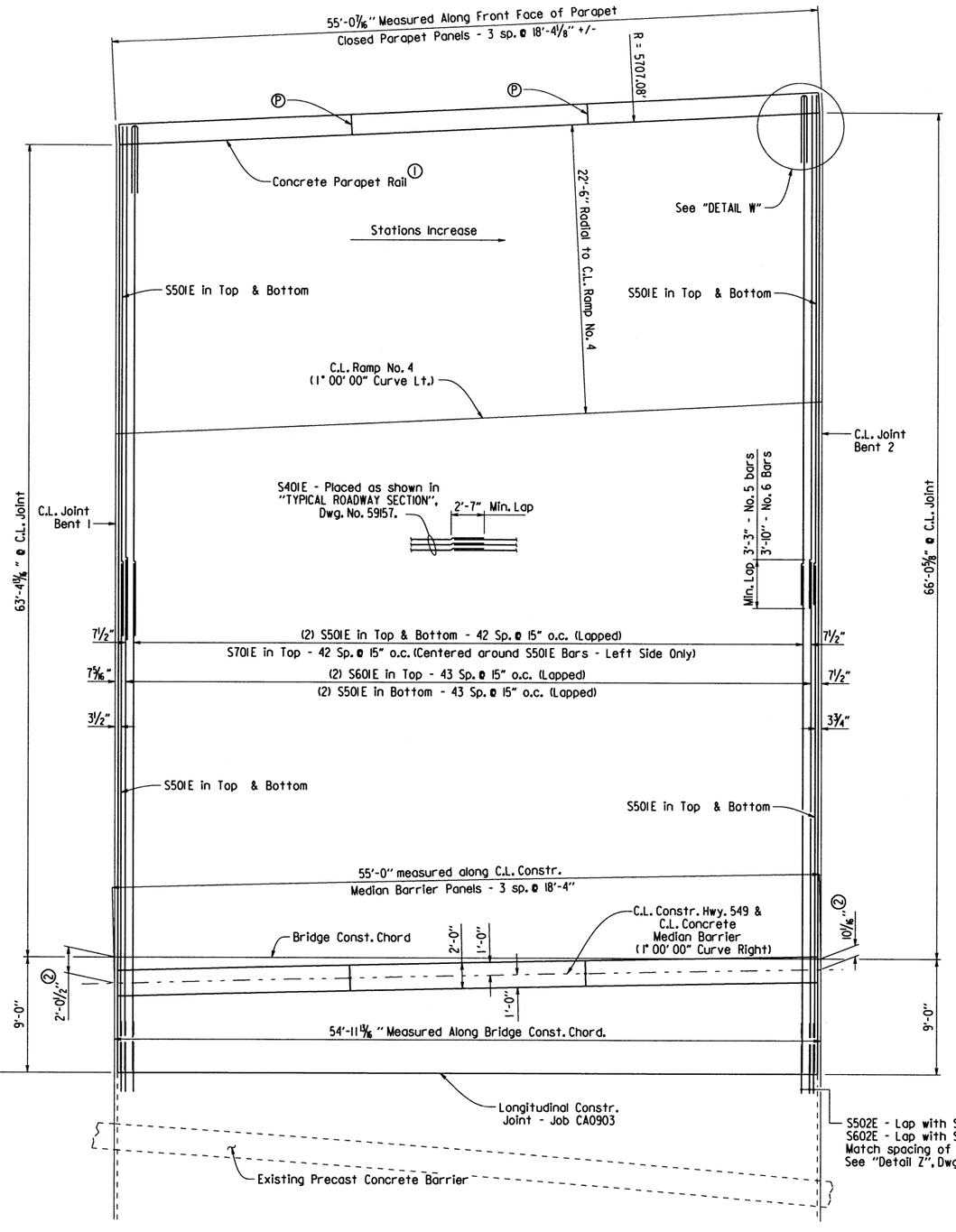
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-16
CHECKED BY: JAC DATE: 4-19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59159

PRINT DATE: 4/19/2017

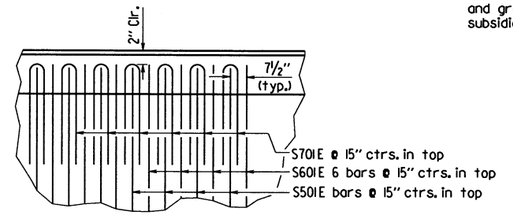
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	173	4152
				①	07277 -	SPAN DETAILS	- 59160	



REINFORCING PLAN

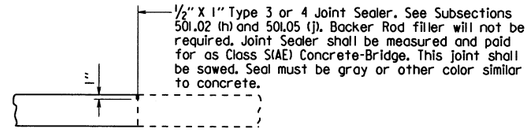
Scale: 3/16" = 1'-0"

②Measured at C.L. Joint



DETAIL W

No Scale

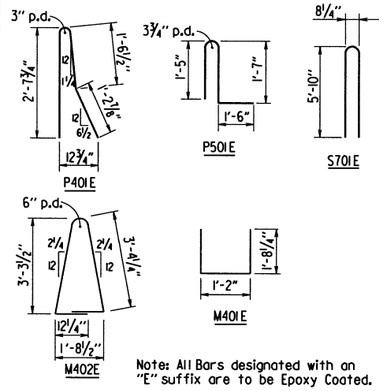


LONGITUDINAL CONSTRUCTION JOINT

No Scale

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	392	28'-8"	Str.	
S501E	268	39'-10"	Str.	
S502E	③34	4'-11"	Str.	
S601E	88	40'-2"	Str.	
S602E	③44	5'-6"	Str.	
S701E	43	12'-1"	6 1/2"	
P401E	111	5'-6"	2"	
P402E	21	18'-0"	Str.	
P403E	8	6'-0"	Str.	
P501E	111	4'-6"	2 1/2"	
M401E	111	4'-5"	2"	
M402E	111	8'-11"	2"	
M403E	24	18'-0"	Str.	



Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

③The lengths shown are based on a 1'-6" embedment into the existing deck. The Contractor shall revise these lengths if required based on the approved drilling and grouting procedure used. These bars are not paid for directly, but are considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."

①Concentric to C.L. Ramp No. 4

Ⓟ Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 59143 for "HORIZONTAL CURVE DATA". The right edge of the bridge deck is parallel to the Bridge Construction Chord, and shall abut the existing bridge deck. See "LONGITUDINAL CONSTRUCTION JOINT DETAIL".

POURING SEQUENCE NOTE:
The deck concrete shall be placed as a single pour. No railing or median barrier pours shall be made until 72 hours have elapsed from the completion of the slab pour. The Contractor must obtain approval from the Engineer for any deviations from this pouring sequence.

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No. 9235
5-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 55'-0"
COMPOSITE W-BEAM SPAN NO. 1
PEACH ORCHARD ROAD

ROUTE SEC.

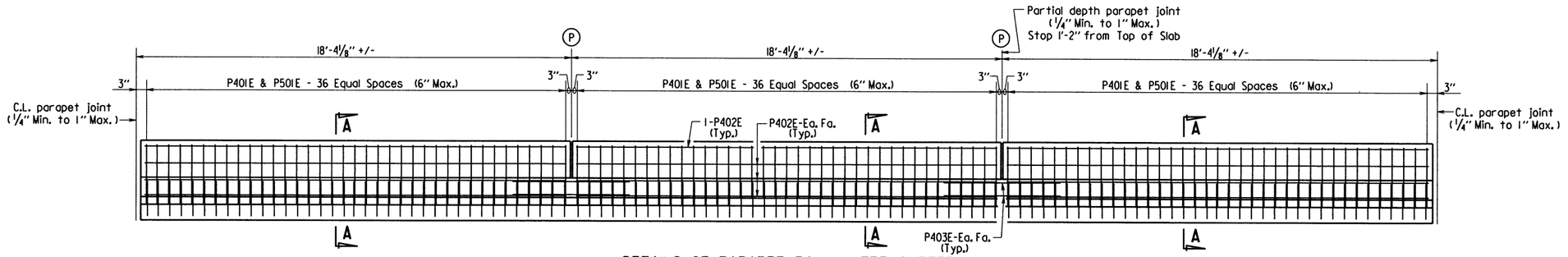
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-16 FILENAME: bca0903x1_sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016

BRIDGE NO. 07277 DRAWING NO. 59160

PRINT DATE: 4/19/2017

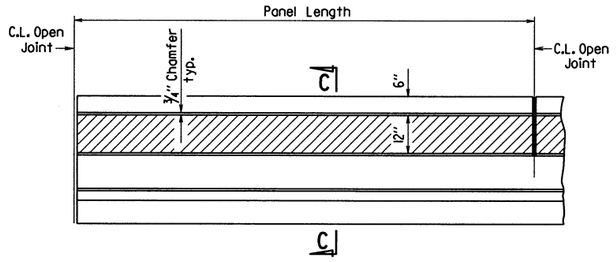
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	174	452
				07277 -		SPAN DETAILS	- 59161	



DETAILS OF PARAPET RAIL - LEFT GUTTER

No Scale

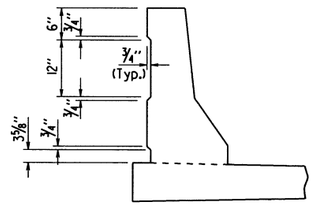
(P) Partial depth parapet joint at this location



Note: Recess shall be made continuous.

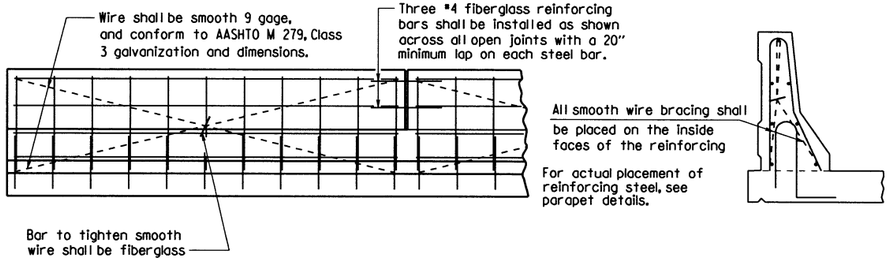
DETAILS OF PARAPET ENHANCEMENT

Outside Face of Rail
No Scale



SECTION C-C

No Scale

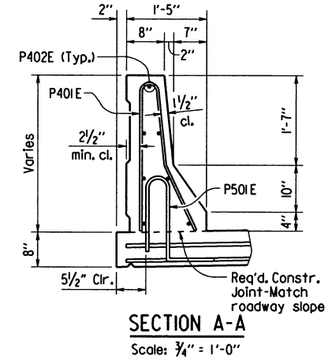


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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 A-A

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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-12-16 FILENAME: bca0903x1_sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016

BRIDGE NO. 07277 DRAWING NO. 59161

PRINT DATE: 4/19/2017

For General Notes and "Detail Z", see Dwg. No. 59174.

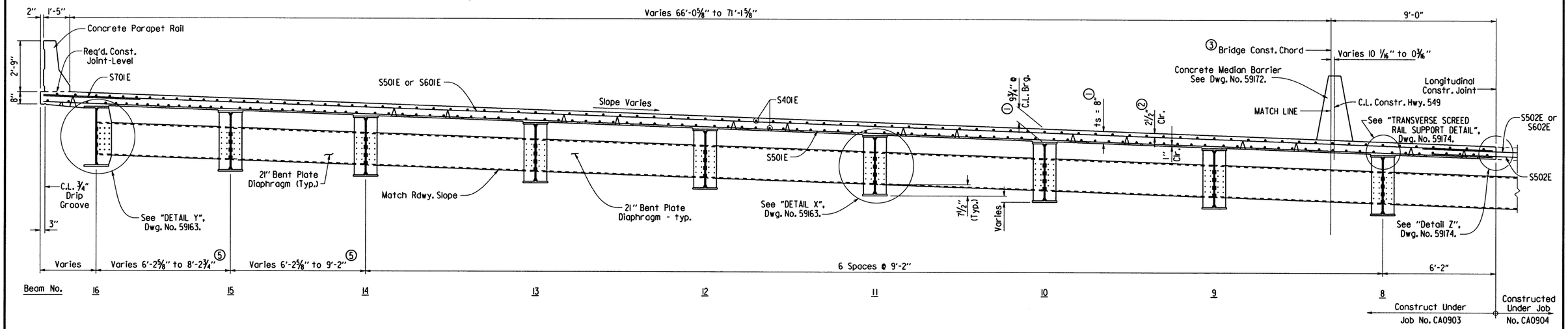
SLAB REINFORCING

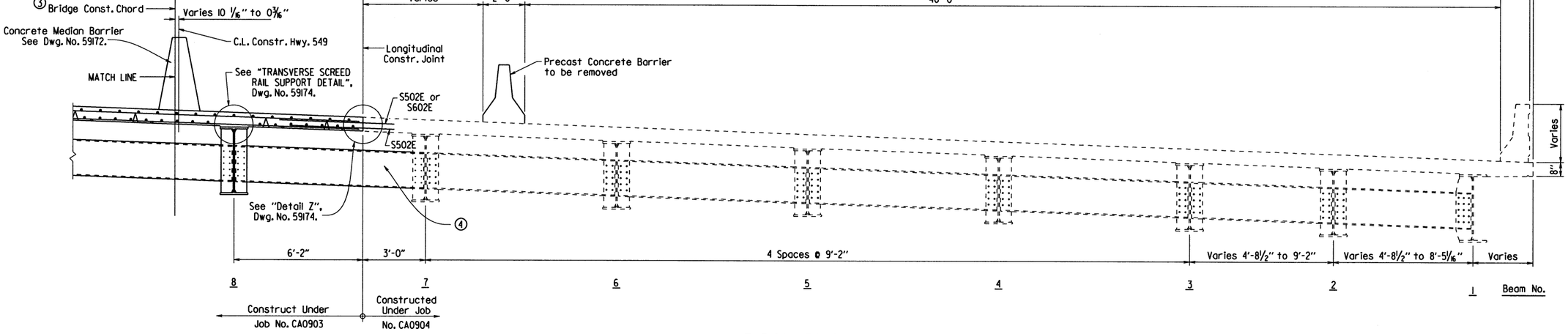
Longitudinal: S401E in top & bottom placed as shown (12" max.)
Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S501E-Top & Bottom @ 15" o.c.
S502E, S602E, at Longit. Constr. Joint -see Detail Z, Dwg. No. 59174.
S701E @ 15" o.c. - Top of overhang (Left side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 59165.

NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0903 "Textured Coating Finish".

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.		CA0903	175	452
				① 07277 -		SPAN DETAILS	- 59162	





TYPICAL ROADWAY SECTION

Looking Ahead
3/8" = 1'-0"

① See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE", Dwg. No. 59158.

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", Dwg. No. 59158.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145.

④ In this bay, connection plate widths and diaphragm lengths shall be fabricated, as necessary, to facilitate installation of diaphragms between adjacent beams with significant differential deflections. Hole diameters of 5/8" shall be provided for these connections with a washer supplied under both the nut and head of bolt.

Before the pouring of the deck, loosely install as many bolts as possible on both ends of the diaphragms in this bay to the satisfaction of the Engineer. An external means of supporting the existing overhang shall be provided and shall remain in place until after completion of the deck pour. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the deck pour.

⑤ The longitudinal slab reinforcing between Beams 14, 15 & 16 shall flare such that an even spacing is maintained between the bars.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 84'-0"
COMPOSITE W-BEAM SPAN NO. 2
PEACH ORCHARD ROAD
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-14-16
CHECKED BY: JAC DATE: 4-19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

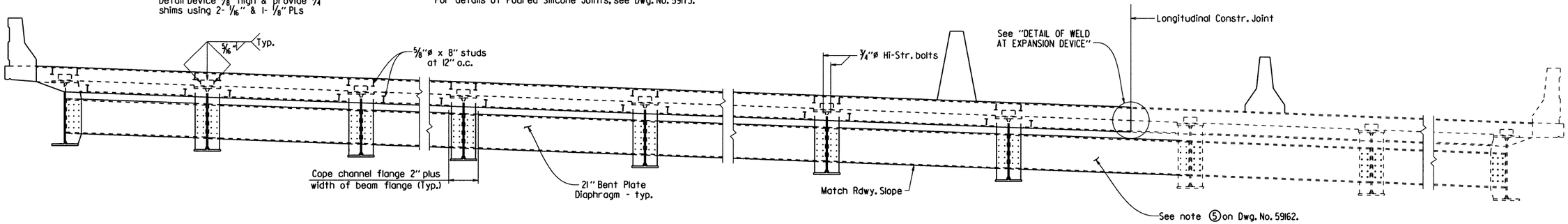
BRIDGE NO. 07277
DRAWING NO. 59162

PRINT DATE: 4/19/2017

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.		CA0903	176	452
				① 07277 -		SPAN DETAILS		- 59163

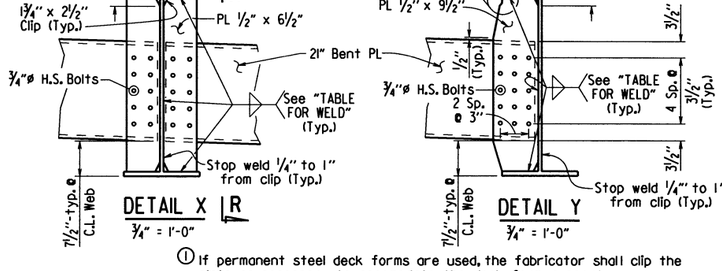
Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of Poured Silicone Joints, see Dwg. No. 59173.



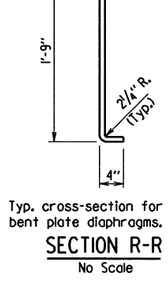
SECTION THRU JOINT

Looking Ahead - Bent 2
Bent 3 Similar
Scale: ⅜" = 1'-0"



① If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

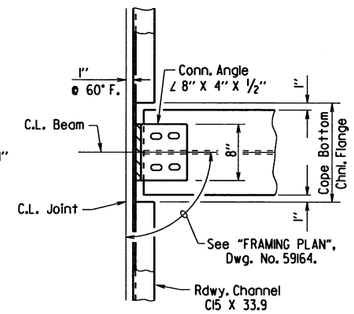
Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 59164.



Typ. cross-section for all 21" bent plate diaphragms.

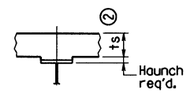
SECTION R-R

No Scale

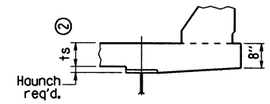


CHANNEL CONNECTION DETAIL

No Scale



Beams 8 thru 15



Beam 16

② Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

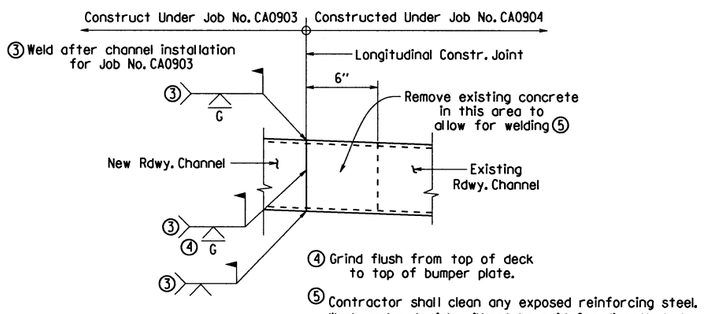
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

TABLE FOR WELD

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.



④ Grind flush from top of deck to top of bumper plate.

⑤ Contractor shall clean any exposed reinforcing steel. Work and materials will not be paid for directly, but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

DETAIL OF WELD AT EXPANSION DEVICE

No Scale

STATE OF ARKANSAS
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CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 84'-0" COMPOSITE W-BEAM SPAN NO. 2
PEACH ORCHARD ROAD

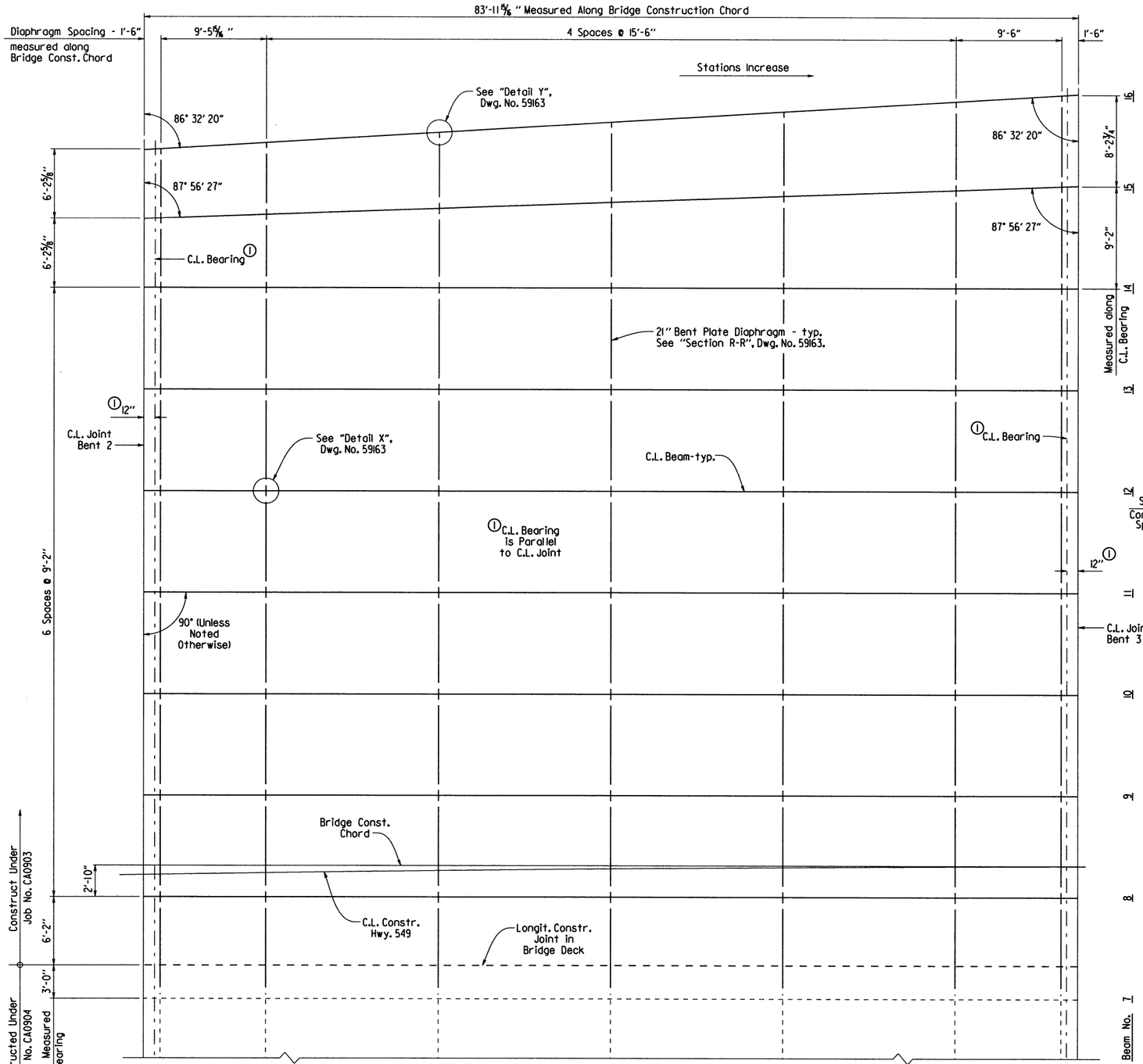
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-15-16 FILENAME: bca0903x1_sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016
BRIDGE NO. 07277 DRAWING NO. 59163

PRINT DATE: 4/19/2017

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.		CA0903	177	452
				① 07277 - SPAN DETAILS - 59164				



FRAMING PLAN
Scale: 3/16" = 1'-0"

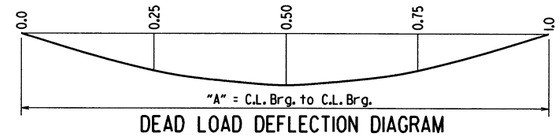
Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

Beam No.	"A" = C.L. Brg. to C.L. Brg.
8-14	81'-11 5/16"
15	82'-0 5/16"
16	82'-1 3/4"

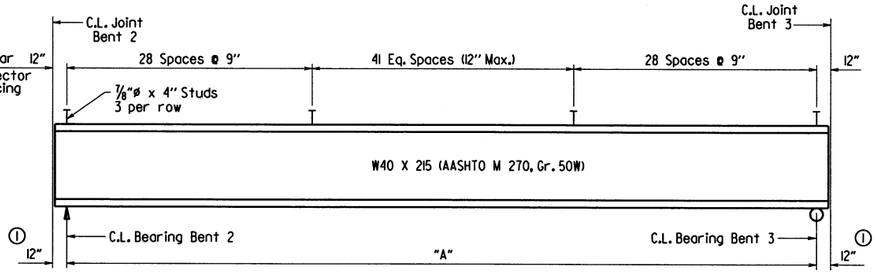
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Point of Deflection	Structural Steel					Structural Steel + Slab					Structural Steel + Slab + Parapet + Median Barrier				
	Bm. 8	Bms. 9-13	Bm. 14	Bm. 15	Bm. 16	Bm. 8	Bms. 9-13	Bm. 14	Bm. 15	Bm. 16	Bm. 8	Bms. 9-13	Bm. 14	Bm. 15	Bm. 16
0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.25	0.372	0.372	0.370	0.365	0.346	1.695	1.951	1.819	1.652	1.431	1.801	2.043	1.922	1.759	1.541
0.50	0.521	0.521	0.518	0.513	0.485	2.376	2.735	2.556	2.335	2.010	2.524	2.864	2.700	2.485	2.164
0.75	0.372	0.372	0.370	0.365	0.346	1.695	1.951	1.819	1.652	1.431	1.801	2.043	1.922	1.759	1.541
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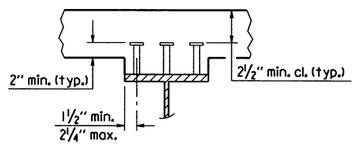


DEAD LOAD DEFLECTION DIAGRAM
No Scale

NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- 1/4" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.



TYPICAL BEAM ELEVATION
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 beam 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

STATE OF ARKANSAS
Charles R. Ellis
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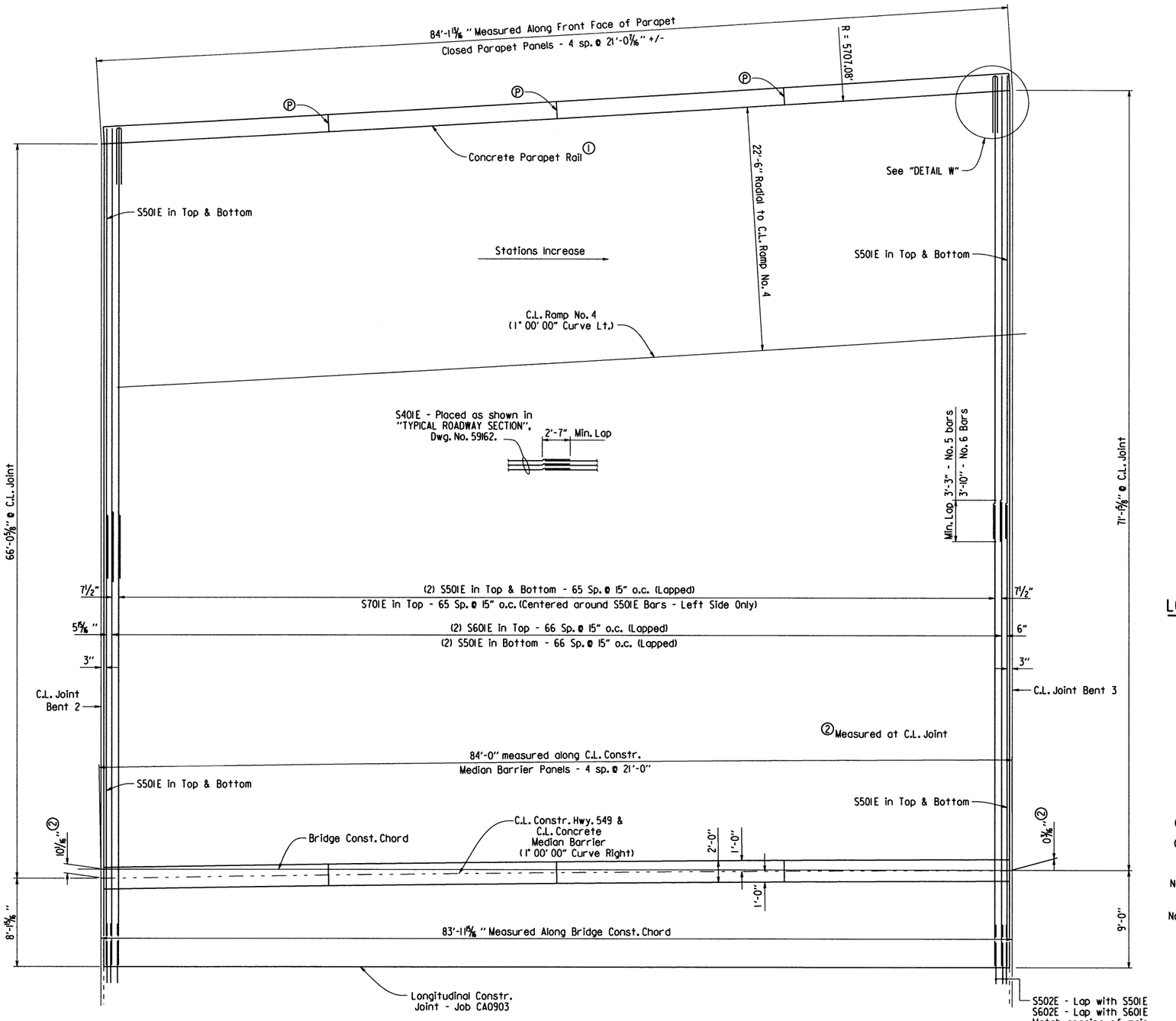
SHEET 3 OF 5
DETAILS OF 84'-0" COMPOSITE W-BEAM SPAN NO. 2
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-19-16
CHECKED BY: JAC DATE: 4-19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59164

PRINT DATE: 4/19/2017

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.		CA0903	178	452
				① 07277 -		SPAN DETAILS	- 59165	

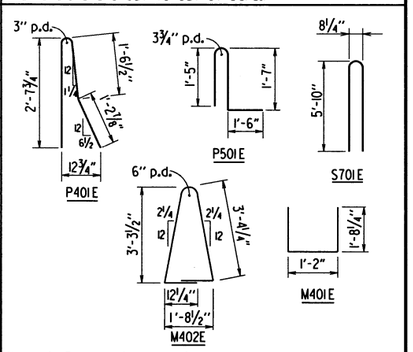


REINFORCING PLAN

3/16" = 1'-0"

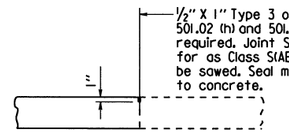
BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	392	43'-2"	Str.	
S501E	406	42'-10"	Str.	
S502E	203	③ 4'-11"	Str.	
S601E	134	43'-2"	Str.	
S602E	67	③ 5'-6"	Str.	
S701E	66	12'-1"	6 1/2"	
P401E	168	5'-6"	2"	
P402E	28	20'-8"	Str.	
P403E	12	6'-0"	Str.	
P501E	168	4'-6"	2 1/2"	
M401E	168	4'-5"	2"	
M402E	168	8'-11"	2"	
M403E	32	20'-8"	Str.	



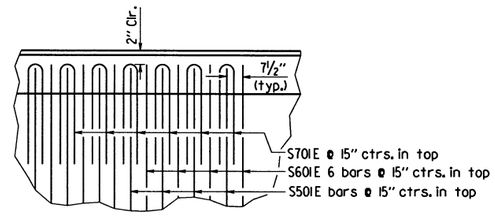
Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

③ The lengths shown are based on a 1'-6" embedment into the existing deck. The Contractor shall revise these lengths if required based on the approved drilling and grouting procedure used. These bars are not paid for directly, but are considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."



LONGITUDINAL CONSTRUCTION JOINT

No Scale



DETAIL W

No Scale

① Concentric to C.L. Ramp No. 4

Ⓟ Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 59143 for "HORIZONTAL CURVE DATA". The right edge of the bridge deck is parallel to the Bridge Construction Chord, and shall abut the existing bridge deck. See "LONGITUDINAL CONSTRUCTION JOINT DETAIL".

POURING SEQUENCE NOTE:
The deck concrete shall be placed as a single pour. No railing or median barrier pours shall be made until 72 hours have elapsed from the completion of the slab pour. The Contractor must obtain approval from the Engineer for any deviations from this pouring sequence.

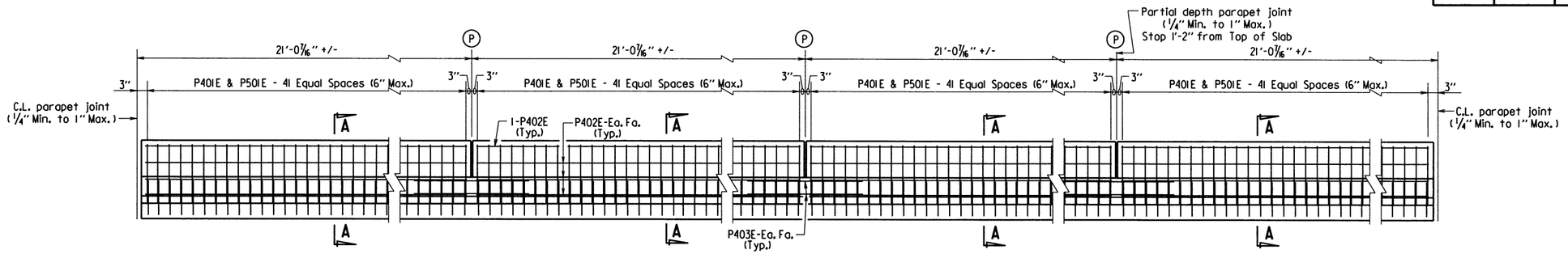
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 84'-0"
COMPOSITE W-BEAM SPAN NO. 2
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-20-16
CHECKED BY: JAC DATE: 4/19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903xl_sl.dgn
SCALE: AS NOTED
BRIDGE NO. 07277
DRAWING NO. 59165

PRINT DATE: 4/19/2017

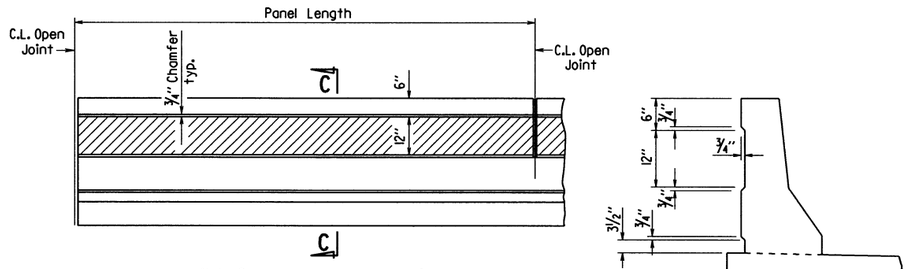
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	179	452
				(1) 07277 -		SPAN DETAILS	- 59166	



(P) Partial depth parapet joint at this location

DETAILS OF PARAPET RAIL - LEFT GUTTER

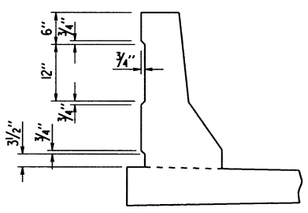
No Scale



Note: Recess shall be made continuous.

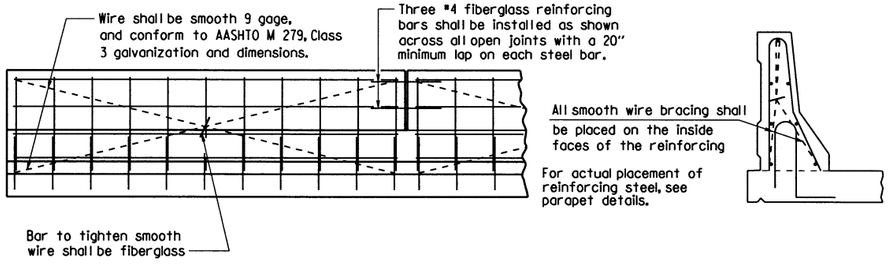
DETAILS OF PARAPET ENHANCEMENT

Outside Face of Rail
No Scale



SECTION C-C

No Scale

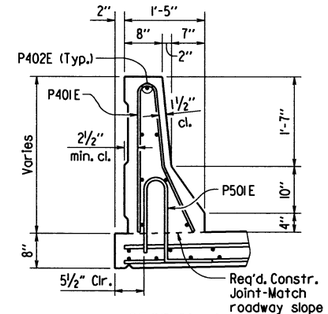


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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 A-A

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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 84'-0"
COMPOSITE W-BEAM SPAN NO. 2
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-21-16 FILENAME: bca0903x1_sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016
BRIDGE NO. 07277 DRAWING NO. 59166

PRINT DATE: 4/19/2017

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.		CA0903	180	459
				①	07277 -	SPAN DETAILS	- 59167	

For General Notes and "Detail Z", see Dwg. No. 59174.

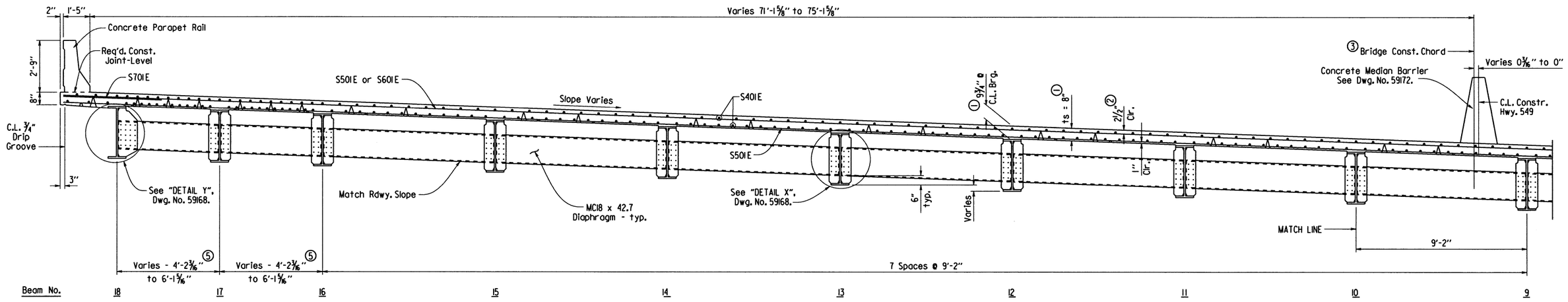
SLAB REINFORCING

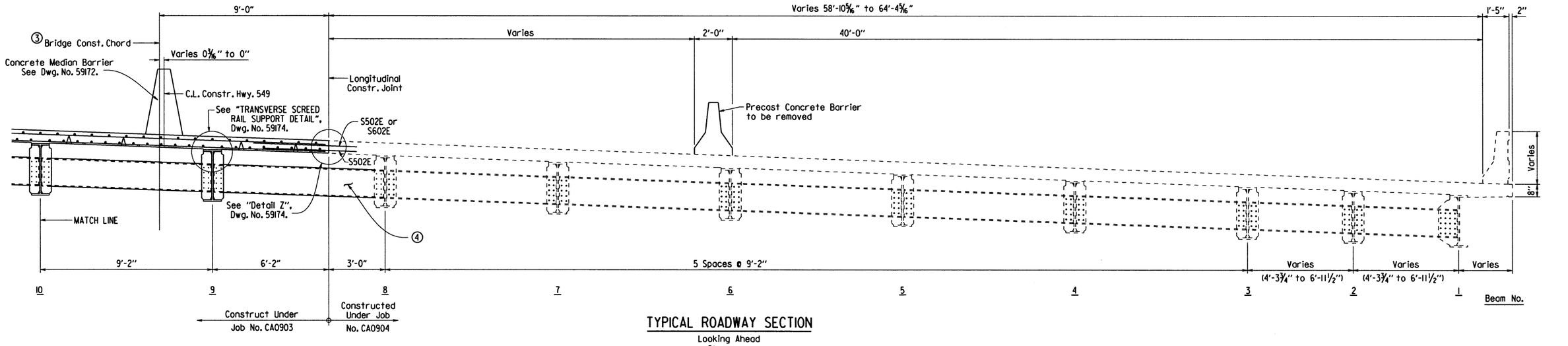
Longitudinal: S401E in top & bottom placed as shown (12" max.)

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S501E-Top & Bottom @ 15" o.c. ———
S502E, S602E, at Longit. Constr. Joint -see Detail Z, Dwg. No. 59174.
S701E @ 15" o.c. - Top of overhang (Left side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 59170.

NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0903 "Textured Coating Finish".





TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

① See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE", Dwg. No. 59168.

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE", Dwg. No. 59168.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145.

④ In this bay, connection plate widths and diaphragm lengths shall be fabricated, as necessary, to facilitate installation of diaphragms between adjacent beams with significant differential deflections. Hole diameters of ⅞" shall be provided for these connections with a washer supplied under both the nut and head of bolt.

Before the pouring of the deck, loosely install as many bolts as possible on both ends of the diaphragms in this bay to the satisfaction of the Engineer. An external means of supporting the existing overhang shall be provided and shall remain in place until after completion of the deck pour. Install remaining bolts and fully tighten all bolts as soon as practical after completion of the deck pour.

⑤ The longitudinal slab reinforcing between Beams 16, 17 & 18 shall flare such that an even spacing is maintained between the bars.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 55'-0"
COMPOSITE W-BEAM SPAN NO. 3
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

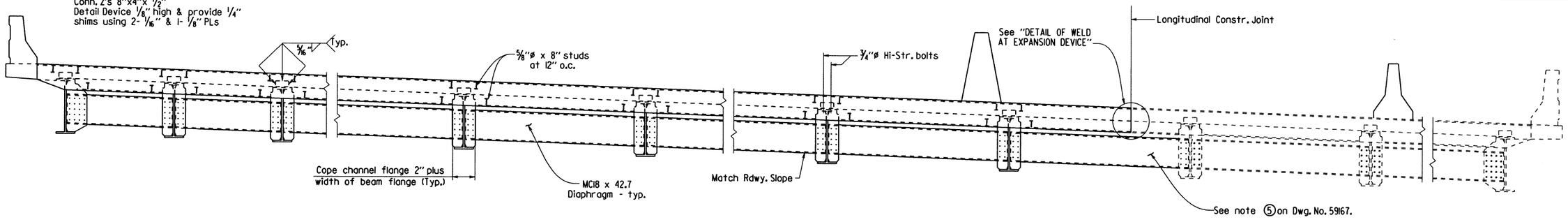
DRAWN BY: KDH DATE: 9-21-16 FILENAME: bca0903x1.sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016
BRIDGE NO. 07277 DRAWING NO. 59167

PRINT DATE: 5/15/2017

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.		CA0903	181	452
				① 07277 - SPAN DETAILS - 59168				

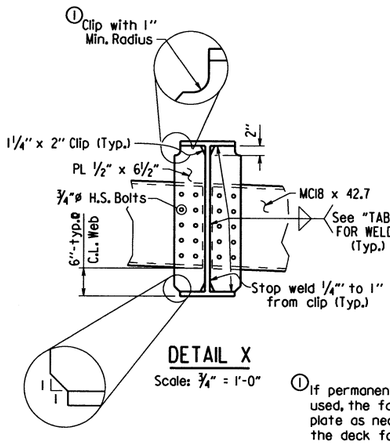
Expansion Device:
Rdwy. Channel - C15x33.9
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of Poured Silicone Joints, see Dwg. No. 59173.



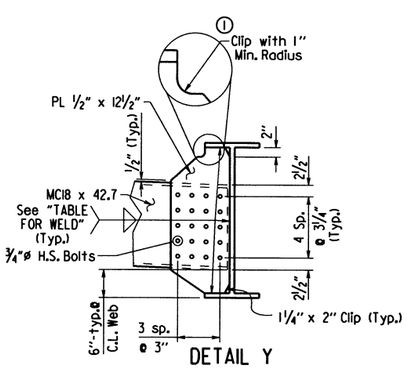
SECTION THRU JOINT

Looking Ahead - Bent 4 Similar
Scale: ⅜" = 1'-0"



DETAIL X

Scale: ¾" = 1'-0"

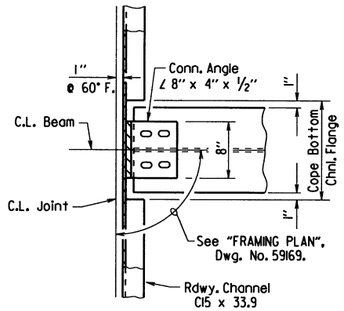


DETAIL Y

Scale: ¾" = 1'-0"

① If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 59169.



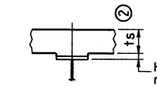
CHANNEL CONNECTION DETAIL

No Scale

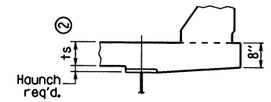
TABLE FOR WELD

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"	⅝"	

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.



Beams 9 thru 17



Beam 18

② Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

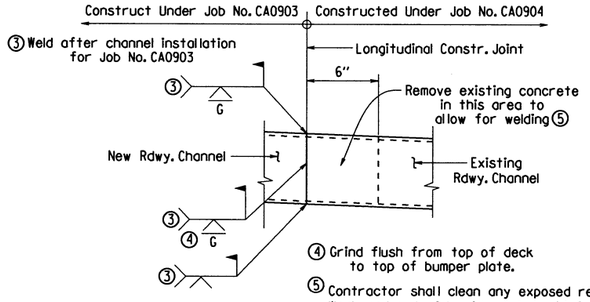
Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale



DETAIL OF WELD AT EXPANSION DEVICE

No Scale

STATE OF ARKANSAS
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No. 9235
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BRIDGE ENGINEER

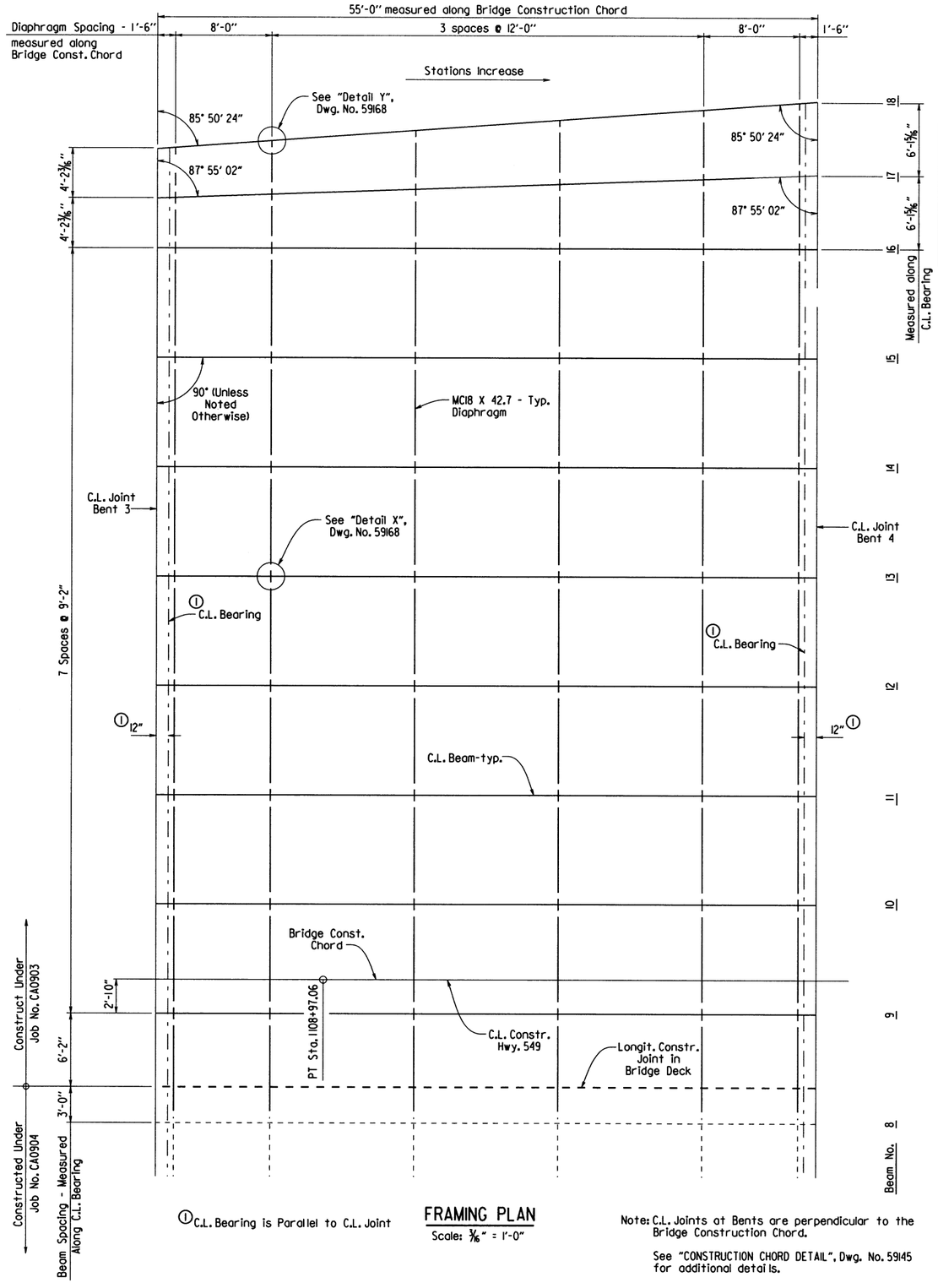
SHEET 2 OF 5
DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-21-16
CHECKED BY: JAC DATE: 4-19-17
DESIGNED BY: TMG DATE: 8/2016
FILENAME: bca0903x1_sl.dgn
SCALE: AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59168

PRINT DATE: 4/19/2017

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.		CA0903	182	452
				07277 - SPAN DETAILS - 59169				



℄ C.L. Bearing is Parallel to C.L. Joint

FRAMING PLAN

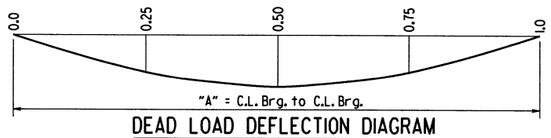
Scale: 3/16" = 1'-0"

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

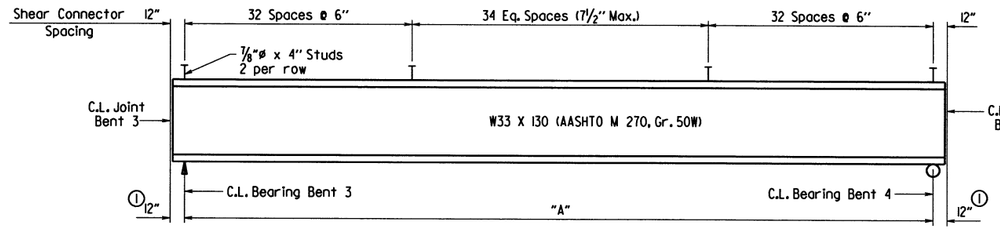
Point of Deflection	Structural Steel					Structural Steel + Slab					Structural Steel + Slab + Parapet + Median Barrier				
	Beam 9	Bms. 10-15	Beam 16	Beam 17	Beam 18	Beam 9	Bms. 10-15	Beam 16	Beam 17	Beam 18	Beam 9	Bms. 10-15	Beam 16	Beam 17	Beam 18
0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.25	0.118	0.118	0.112	0.106	0.106	0.692	0.807	0.647	0.492	0.530	0.725	0.843	0.680	0.529	0.566
0.50	0.166	0.166	0.158	0.149	0.149	0.974	1.130	0.912	0.695	0.748	1.020	1.183	0.959	0.747	0.798
0.75	0.118	0.118	0.112	0.106	0.106	0.692	0.807	0.647	0.492	0.530	0.725	0.843	0.680	0.529	0.566
1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

No Scale

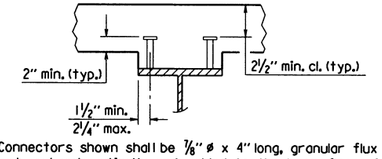
NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- 1/4" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.



TYPICAL BEAM ELEVATION

No Scale

Beam No.	"A" = C.L. Brg. to C.L. Brg.
9-16	53'-0"
17	53'-0⅛"
18	53'-1⅛"



Stud Shear Connectors shown shall be ⅞" ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam 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
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3 PEACH ORCHARD ROAD

ROUTE SEC.

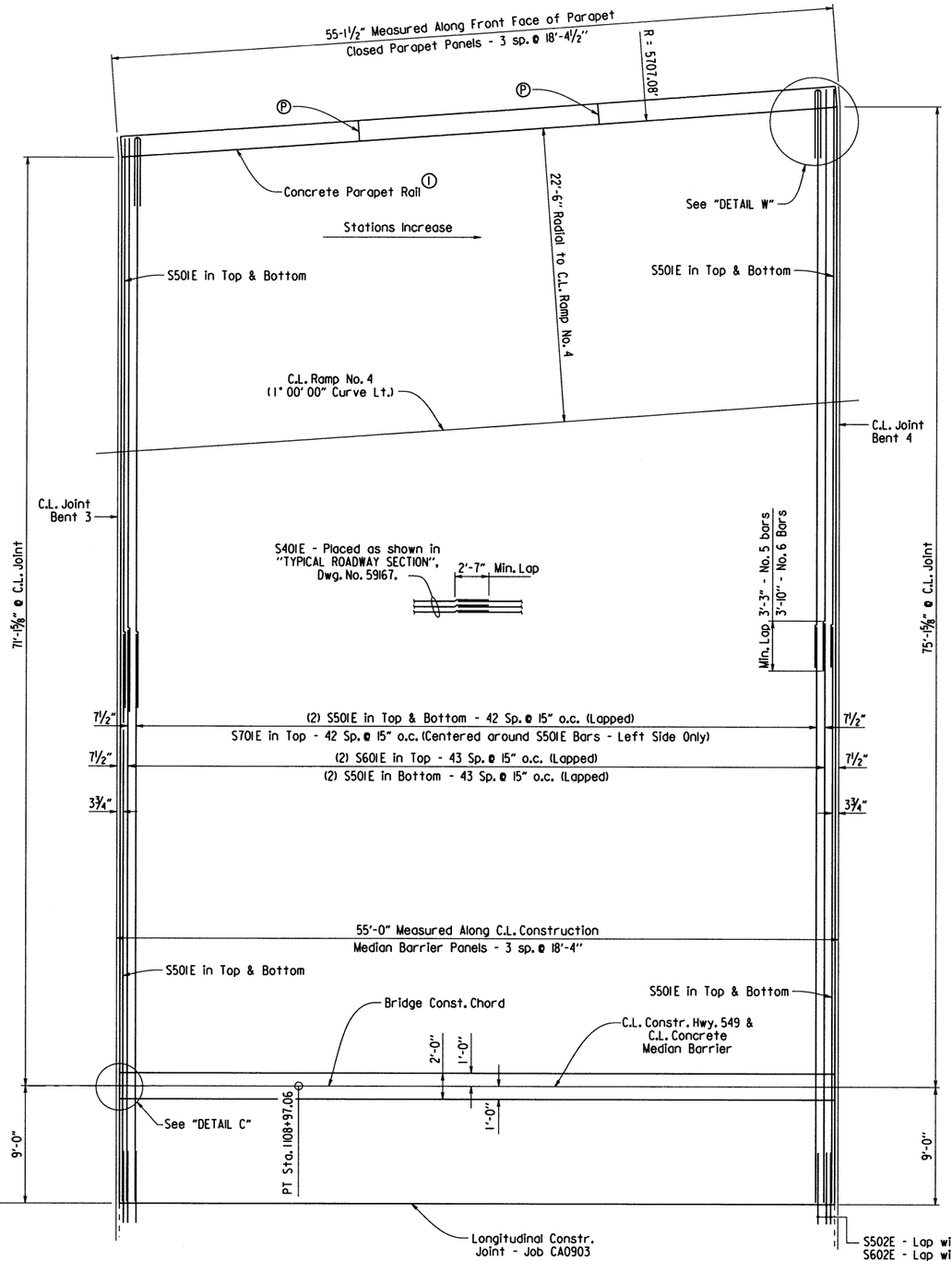
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-22-16 FILENAME: bca0903xl_sl.dgn
CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016

BRIDGE NO. 07277 DRAWING NO. 59169

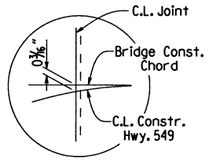
PRINT DATE: 4/19/2017

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.		CA0903	183	452
				①	07277 -	SPAN DETAILS	- 59170	

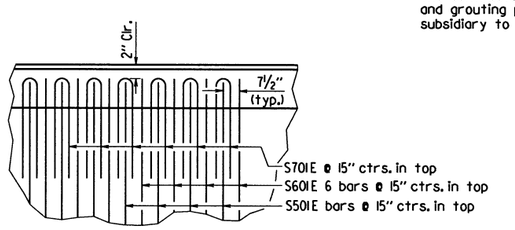


REINFORCING PLAN
Scale: 3/16" = 1'-0"

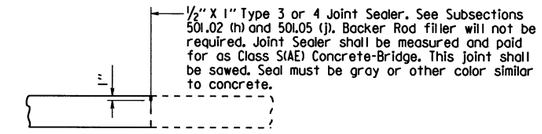
POURING SEQUENCE NOTE:
The deck concrete shall be placed as a single pour.
No railing or median barrier pours shall be made until 72 hours have elapsed from the completion of the slab pour.
The Contractor must obtain approval from the Engineer for any deviations from this pouring sequence.



DETAIL C



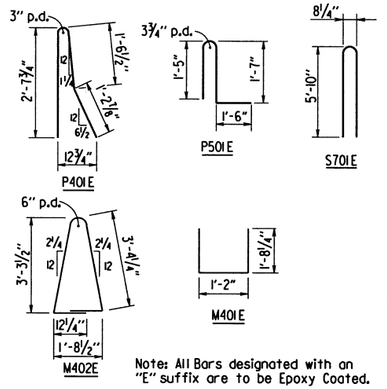
DETAIL W
No Scale



LONGITUDINAL CONSTRUCTION JOINT
No Scale

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	436	28'-8"	Str.	
S501E	268	44'-4"	Str.	
S502E	③134	4'-11"	Str.	
S601E	88	44'-8"	Str.	
S602E	③44	5'-6"	Str.	
S701E	43	12'-1"	6½"	
P401E	111	5'-6"	2"	
P402E	21	18'-0"	Str.	
P403E	8	6'-0"	Str.	
P501E	111	4'-6"	2½"	
M401E	111	4'-5"	2"	
M402E	111	8'-11"	2"	
M403E	24	18'-0"	Str.	



Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

③ The lengths shown are based on a 1'-6" embedment into the existing deck. The Contractor shall revise these lengths if required based on the approved drilling and grouting procedure used. These bars are not paid for directly, but are considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."

① Concentric to C.L. Ramp No. 4

Ⓟ Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 59145 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 59143 for "HORIZONTAL CURVE DATA". The right edge of the bridge deck is parallel to the Bridge Construction Chord, and shall abut the existing bridge deck. See "LONGITUDINAL CONSTRUCTION JOINT DETAIL".

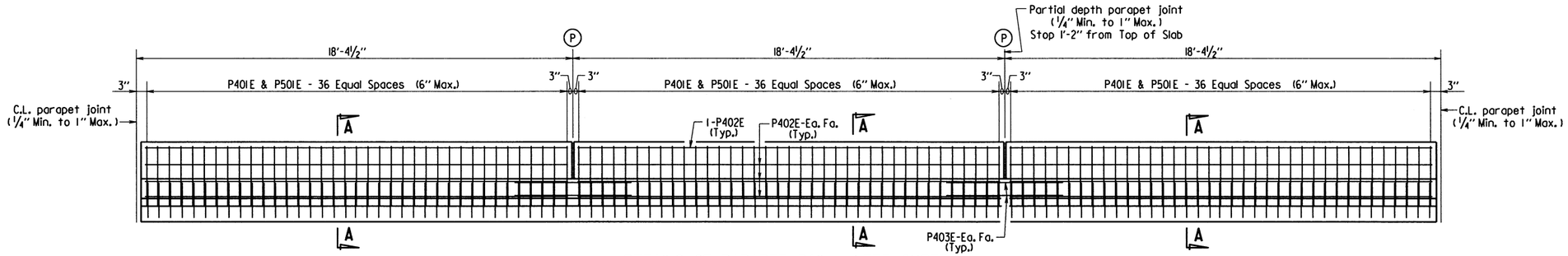
STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3
PEACH ORCHARD ROAD
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-22-16 FILENAME: bca0903x1_sl.dgn
CHECKED BY: JAC DATE: 4/19/17 SCALE: AS NOTED
DESIGNED BY: TMG DATE: 8/2016
BRIDGE NO. 07277 DRAWING NO. 59170

PRINT DATE: 4/19/2017

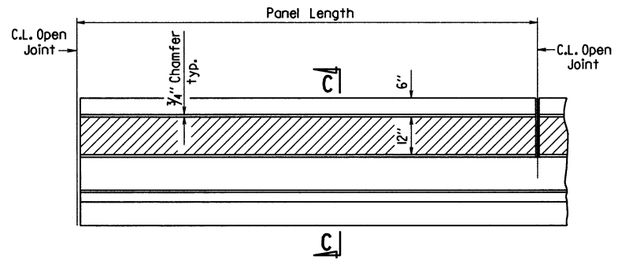
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	184	452
				07277 - SPAN DETAILS - 59171				



(P) Partial depth parapet joint at this location

DETAILS OF PARAPET RAIL - LEFT GUTTER

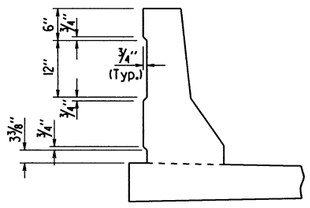
No Scale



Note: Recess shall be made continuous.

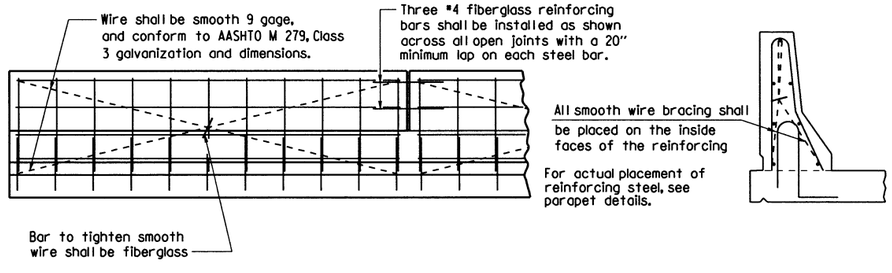
DETAILS OF PARAPET ENHANCEMENT

Outside Face of Rail
No Scale



SECTION C-C

No Scale

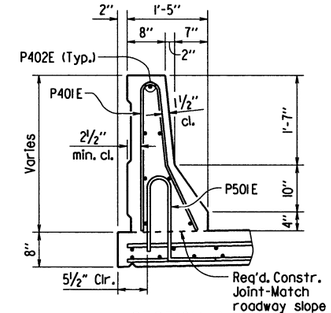


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practicalto a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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 A-A

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 55'-0"
COMPOSITE W-BEAM SPAN NO. 3
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

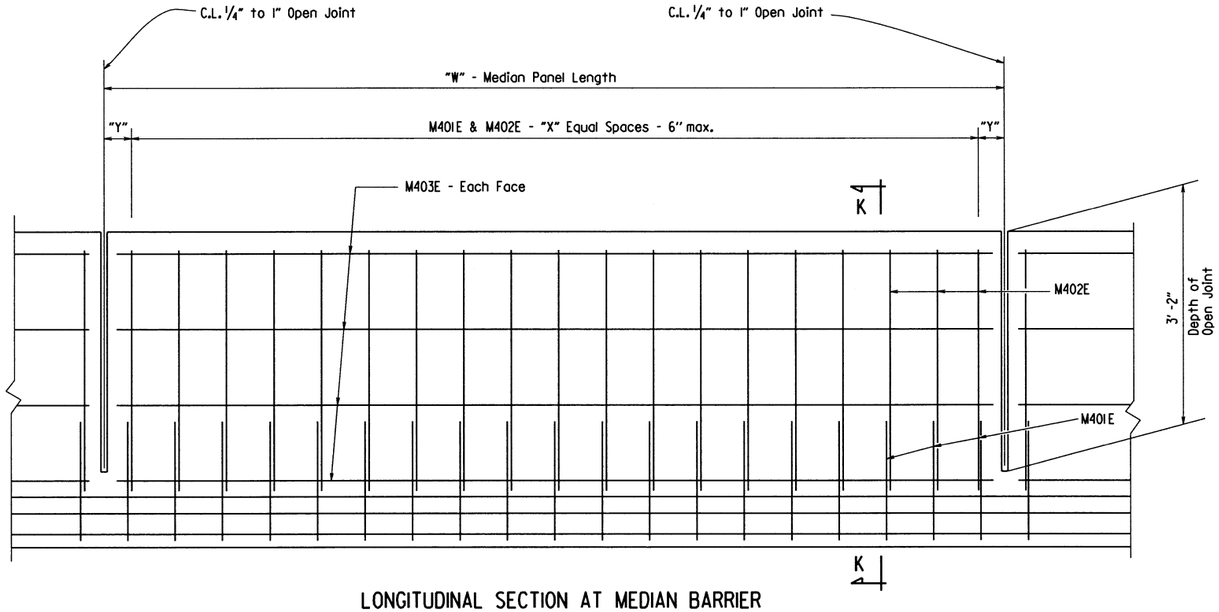
DRAWN BY: KDH DATE: 9-22-16
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FILENAME: bca0903xl_sl.dgn
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BRIDGE NO. 07277 DRAWING NO. 59171

PRINT DATE: 4/19/2017

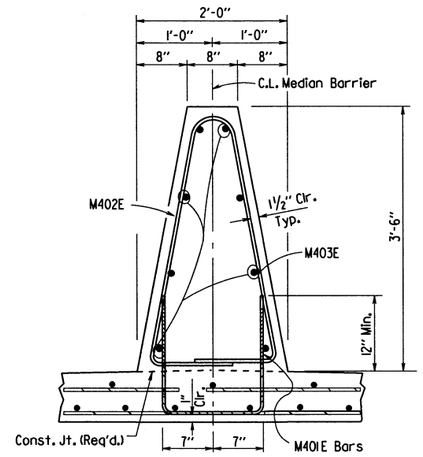
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				6	ARK.			
				JOB NO.		CA0903	185	452

(1) 07277 - CONC. MEDIAN BARRIER - 59172



LONGITUDINAL SECTION AT MEDIAN BARRIER

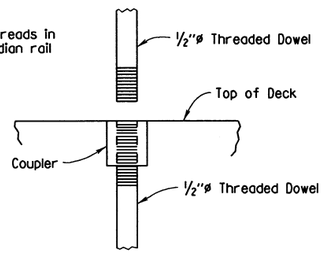
1" = 1'-0"



SECTION K-K

1" = 1'-0"

NOTE: Protect threads in coupler until median rail is constructed.

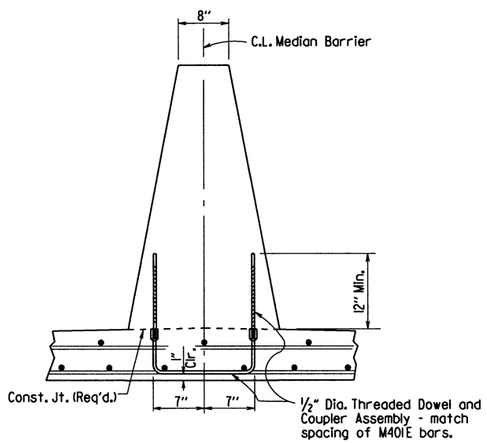


ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401E. The Threaded Dowel and Coupler Assembly shall consist of a OPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401E bars.

Dowel bars shall be of 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.



ALTERNATE SECTION K-K

1" = 1'-0"

VARIABLES FOR
CONCRETE MEDIAN BARRIER

"W"	"X"	"Y"
18'-4"	36	3"
21'-0"	41	3"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF CONCRETE MEDIAN BARRIER PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

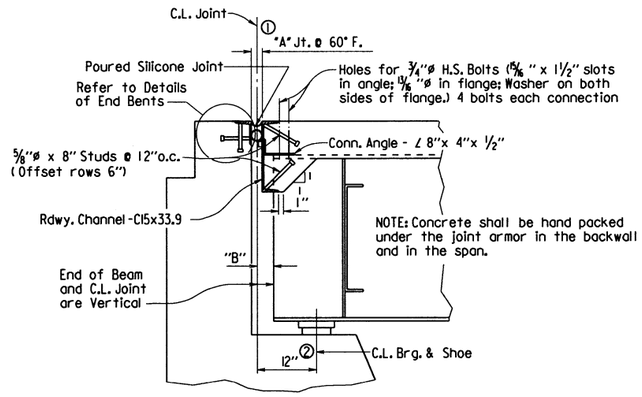
LITTLE ROCK, ARK.

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CHECKED BY: JAC DATE: 4-19-17 SCALE: AS NOTED
DESIGNED BY: Std. DATE: —

BRIDGE NO. 07277 DRAWING NO. 59172

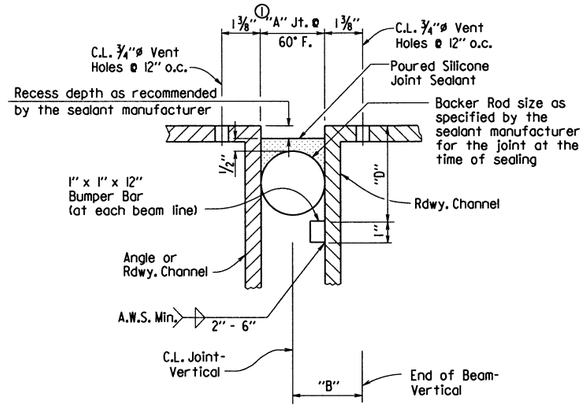
PRINT DATE: 5/12/2017

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.		CA0903	186	452
				①	07277 -	JOINT DETAILS	- 59173	



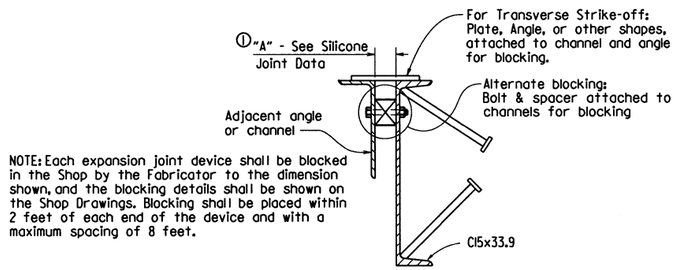
SECTION THRU JOINT AT BENTS 1 & 4

Scale: ¾" = 1'-0"



DETAIL OF POURED SILICONE JOINT

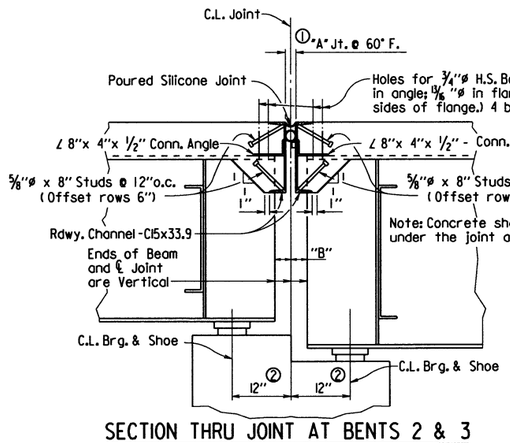
NO SCALE



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

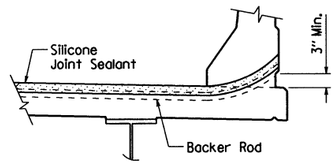
Scale: 1½" = 1'-0"

② C.L. Bearing is parallel to C.L. Joint



SECTION THRU JOINT AT BENTS 2 & 3

No Scale



JOINT SEAL PLACEMENT AT CURB

NO SCALE

SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature Of: ①			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
All	2⅛"	2"	1⅞"	2¼" ±	1" x 1"	5"

① 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 shall be installed 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.

EXPANSION DEVICE INSTALLATION

BENTS 1 & 4

The Contractor may elect to install the expansion device for the end bents 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.**

BENTS 2 & 3

After all beams on both sides of the joint are erected, the blocked expansion device shall be installed and adjusted for grade. Connection bolts shall be tightened only on the span whose concrete will be poured first. Connection bolts on the second span shall be loosely installed to allow for thermal movements and for end rotation of the beams of the first span while the concrete deck is poured.

After the concrete on the first span has hardened and immediately prior to pouring concrete for the second span, the blocking shall be removed and the joint width shall be adjusted for temperature & grade. Joint openings shown are for when concrete is poured at an air temperature of 60°F. If concrete is poured at other temperatures, set the joint width by interpolating. After the joint width has been set, the connection bolts on the second span shall be tightened and concrete in the second span can then be poured. A joint opening adjustment is not required for end rotation of the beams caused by the weight of the slab and parapets.

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DETAILS OF JOINTS PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-22-16 FILENAME: bca0903xl_sl.dgn
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BRIDGE NO. 07277 DRAWING NO. 59173

PRINT DATE: 5/15/2017

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.		CA0903	187	458
				①	07277 - SPAN DETAILS - 59174			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications Third Edition, with 2006 Interims.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

CONCRETE:
Concrete shall be poured in the dry and all exposed corners to 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 measurement 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.

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 beam. For each span, a minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing and median barrier. The use of a longitudinal screed is prohibited.

REINFORCING STEEL:
All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports. 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:
Structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted unless noted otherwise. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) except as noted on Dwg. No. 59175 for external load plates. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36 unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

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 the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05.

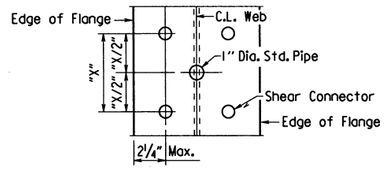
All beams shall be blocked in their true position in the shop with the webs horizontal as specified in Subsection 807.54(b). The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part of the permanent records for 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 degrees F. A tolerance of ¼" +/- is allowed for camber.

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 falswork 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.

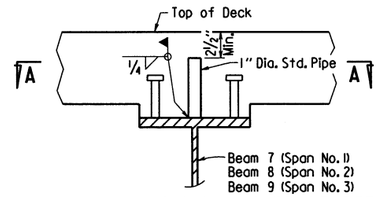
Field connections shall be bolted with high-strength bolts and shall be ¾" ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for ¾" ø high-strength bolts may be 15/16" ø diameter if a washer is supplied for use under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected. Unless otherwise noted, all bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

Bearings shall be installed in accordance with Subsection 808.08. This work and material are to be considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.



VIEW A-A
No Scale



TRANSVERSE SCREED RAIL SUPPORT DETAIL
No Scale

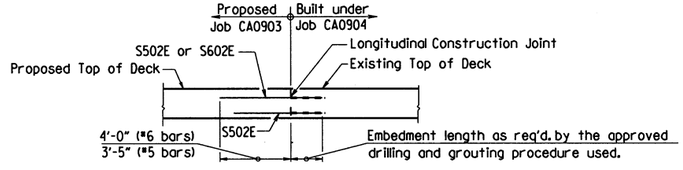
Notes: The transverse screed rail supports shall be centered over the beam web and centered longitudinally between adjacent rows of shear connectors.

The pipe shall not interfere with the proper vertical position of the deck reinforcing steel.

The pipe shall be free of dirt, grease, rust, or other foreign substance before the deck is poured.

Care shall be exercised so as air voids do not exist in the pipe after placement of the deck concrete.

All welding shall be performed by a certified welder and in accordance with Subsections 802.13 and 807.26.



Note: S502E and S602E dowelbars shall be drilled and grouted as shown above into existing deck slab, using a QPL approved non-shrink grout or a resin anchoring system. These dowel bars shall be lapped with the proposed deck transverse reinforcing steel of the same size. Work and materials shall not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)".

Any alternate methods of joining the proposed work to the existing deck must be submitted by the Contractor to to the Engineer for approval. Payment will be based upon method and materials shown in the plans, and no additional compensation will be provided for adjustments to the method shown.

DETAIL Z

STATE OF ARKANSAS
Charles R. Ellis
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COMMON DETAILS FOR COMPOSITE W-BEAM SPANS PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

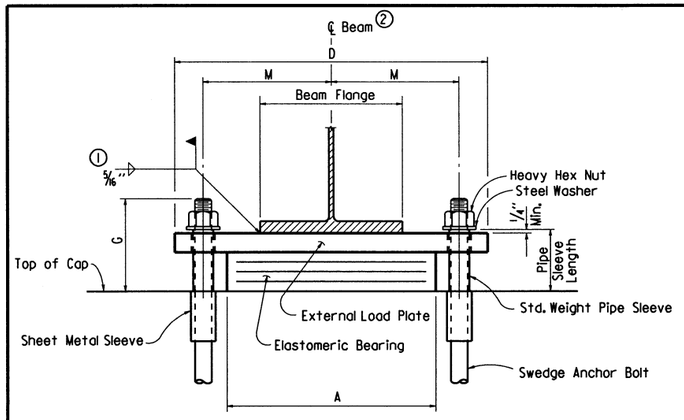
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BRIDGE NO. 07277 DRAWING NO. 59174

PRINT DATE: 4/19/2017

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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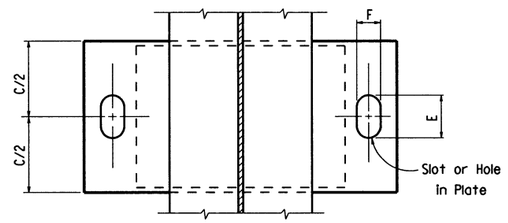
① 07277 -ELASTOMERIC BEARINGS- 59175



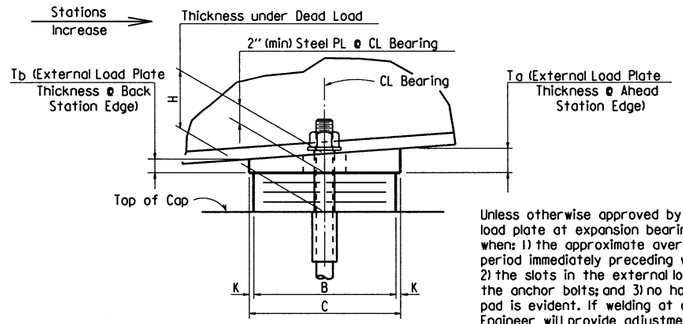
FRONT VIEW

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L Elastomeric pad shall be aligned with C.L. Beam.



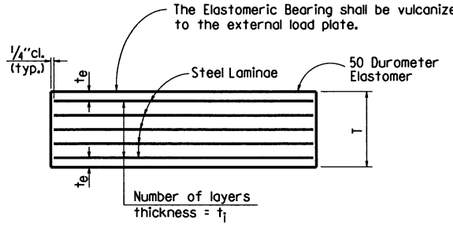
PLAN VIEW



SIDE VIEW

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: 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.

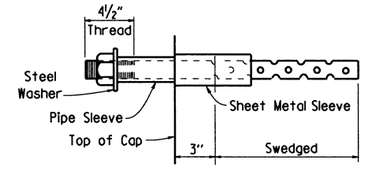


t_e = thickness of elastomer cover on top and bottom of pad

t_i = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



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 (M 270, Gr. 50W)"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates 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(e) for unpainted Grade 50W steel.

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 Beam Spans (M 270, Gr. 50W)". External load plates will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

③ Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION BENT NO(S).	LOCATION BEAM NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE C	D	E	F	K	M	T_a	T_b	ANCHOR BOLT ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07277	1	7 - 15	EXP.	9	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	3 3/4"	2 5/8"	1/2"	9 1/4"	1.77"	2.23"	1 3/4" x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	2 Bk.	7 - 15	FIX	9	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	2 5/8"	2 5/8"	1/2"	9 1/4"	1.78"	2.22"	1 3/4" x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	2 Ahd.	8 - 16	FIX	9	146	9"	4 3/8"	17"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	9"	29"	3 1/8"	3 1/8"	1/2"	11 1/4"	1.80"	2.20"	2 1/4"x32"	55	2 1/2" x 4 3/4"	4" x 8"	4"
	3 Bk.	8 - 16	EXP.	9	146	9"	4 3/8"	17"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	9"	29"	4"	3 1/8"	1/2"	11 1/4"	1.81"	2.19"	2 1/4"x32"	55	2 1/2" x 4 3/4"	4" x 8"	4"
	3 Ahd.	9 - 18	FIX	10	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	2 5/8"	2 5/8"	1/2"	9 1/4"	1.79"	2.21"	1 3/4" x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	4	9 - 18	EXP.	10	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	3 3/4"	2 5/8"	1/2"	9 1/4"	1.80"	2.20"	1 3/4" x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"

Tabular Data by : KDH Date: 1-19-17

Checked by : TMG Date: 5/12/17

Designed by : TMG Date: 8/2016

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
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5-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: Nov. 12.96 FILENAME: bca0903xl_el.dgn

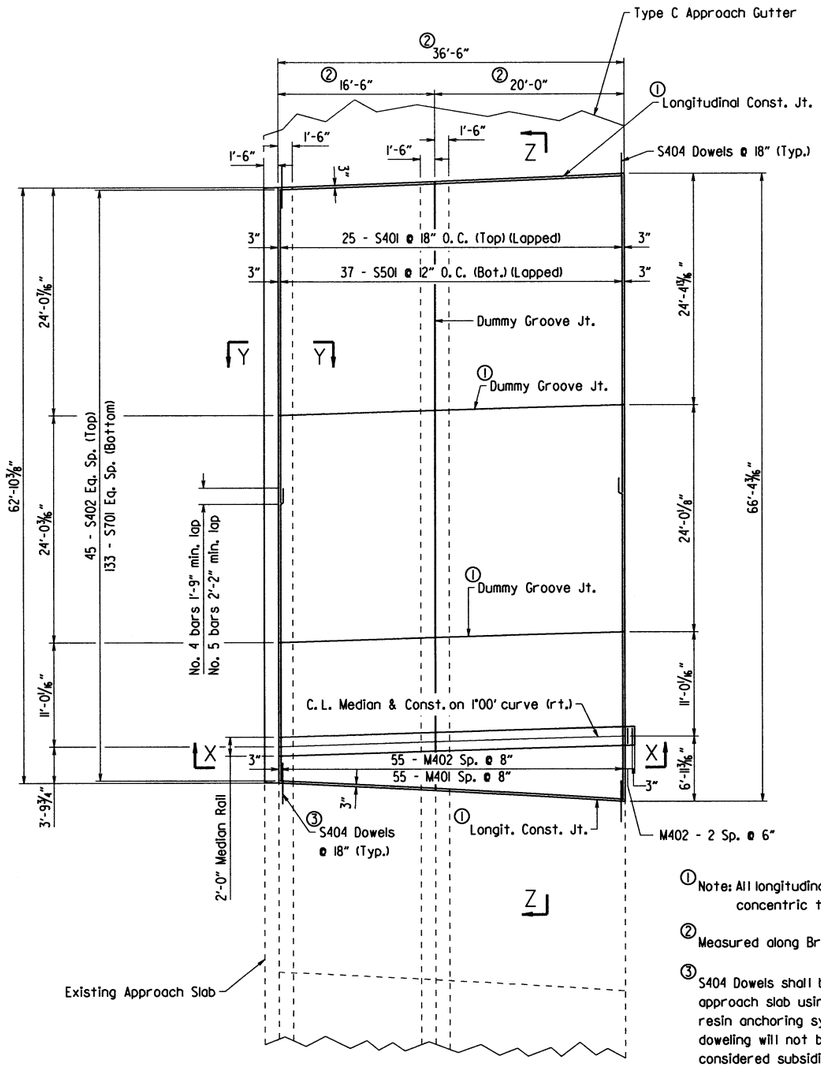
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BRIDGE NO. 07277 DRAWING NO. 59175

PRINT DATE: 19-APR-2017

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.		CA0903	189	452
				07277 - APPROACH SLABS - 59176				



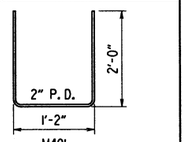
PLAN - APPROACH SLAB

1/8" = 1'-0"

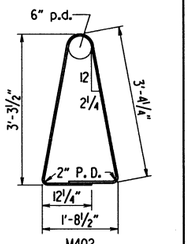
BAR LIST

Mark	No. Req'd	Length
S401	50	34'-0"
S402	45	36'-2"
S403	129	2'-8"
S404	50	3'-0"
S405	16	33'-0"
S501	74	34'-2"
S701	133	36'-2"
M401	55	5'-0"
M402	57	8'-11"
M403	8	20'-8"
M404	8	16'-2"

Note: Dimensions are out to out of bars



M401

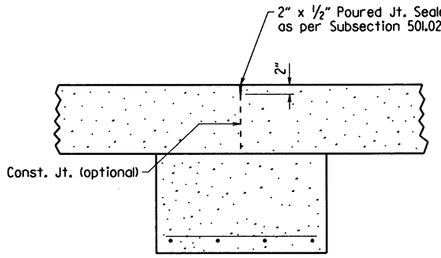


M402

① Note: All longitudinal lines shall be constructed concentric to their respective curves.

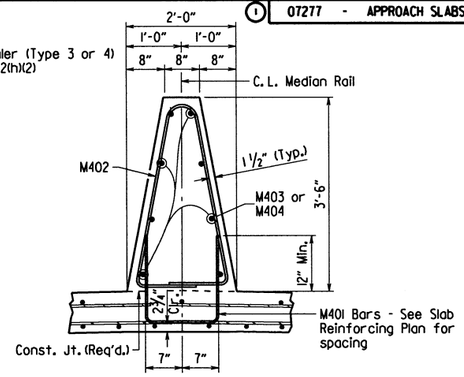
② Measured along Bridge Construction Chord

③ S404 Dowels shall be drilled and grouted 18" into existing approach slab using a QPL approved non-shrink grout or a resin anchoring system. Work and material required for doweling will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."



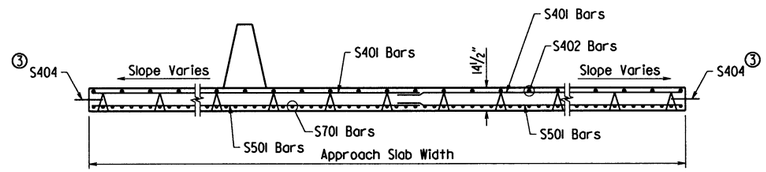
DETAILS OF DUMMY GROOVE JOINT

¾" = 1'-0"



SECTION K-K

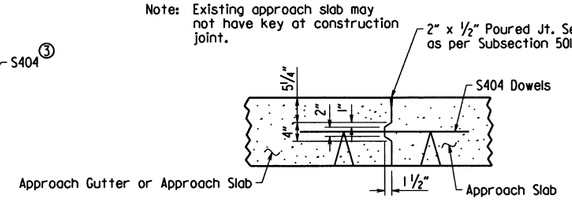
½" = 1'-0"



SECTION Z-Z

No Scale

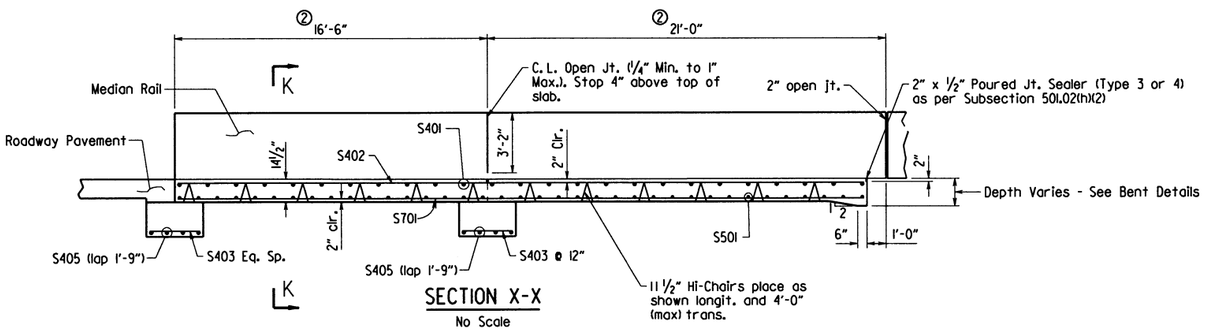
Note: Existing approach slab may not have key at construction joint.



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

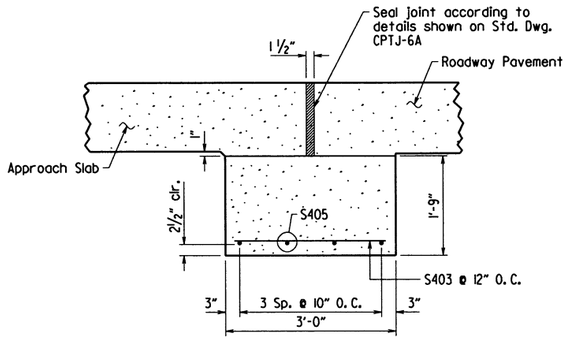
¾" = 1'-0"

C.L. Open jt. (1/4" Min. to 1" Max.) Stop 4" above top of slab.



SECTION X-X

No Scale



SECTION Y-Y

¾" = 1'-0"

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
16,095	137.14

General Notes

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A) (fy = 60,000 psi).

Type Special Approach Slab will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish shall match that used on the bridge deck, except Median Rail shall receive finish as described in Job Special Provision "Textured Coating Finish".

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL I APPROACH SLAB PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TMG DATE: 08/30/16 FILENAME: bca0903xl_as.dgn

CHECKED BY: PGT DATE: 2/2/17 SCALE: 1/8" = 1'-0"

DESIGNED BY: Std. DATE: — OR AS NOTED

BRIDGE NO. 07277 DRAWING NO. 59176

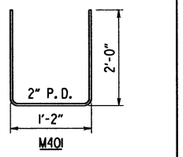
PRINT DATE: 5/16/2017

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.		CA0903	190	452
				① 07277	-	APPROACH SLABS	-	59177

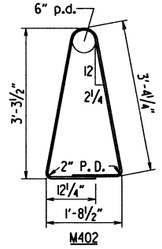
BAR LIST

Mark	No. Req'd	Length
S401	28	40'-8"
S402	54	19'-8"
S403	54	2'-8"
S404	28	3'-0"
S405	12	27'-1"
S501	40	40'-10"
S701	160	19'-8"
M401	30	5'-0"
M402	32	8'-11"
M403	8	20'-8"

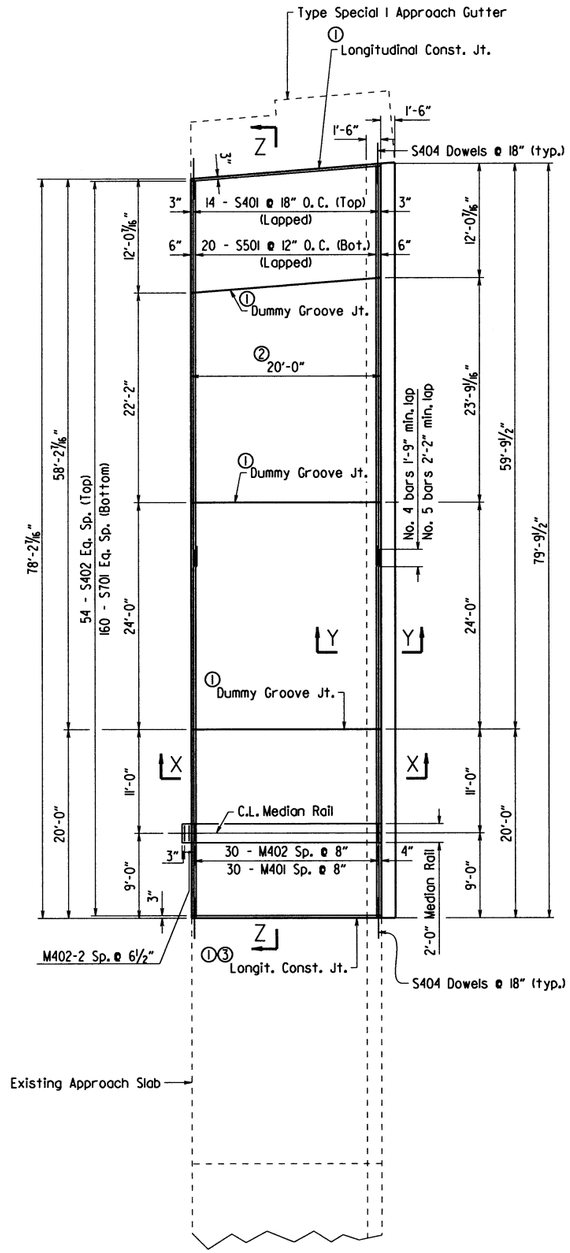
Note: Dimensions are out to out of bars



M401



M402



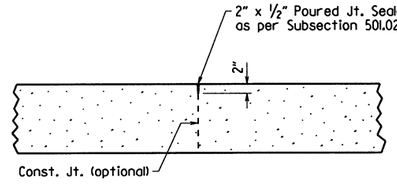
PLAN - APPROACH SLAB

1/8" = 1'-0"

① Note: All longitudinal lines shall be constructed concentric to their respective curves.

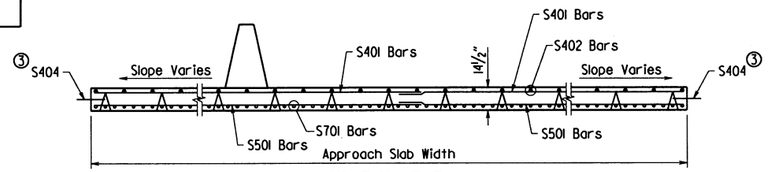
② Measured along C.L. Construction Hwy. 549

③ S404 Dowels shall be drilled and grouted 18" into existing approach slab using a OPL approved non-shrink grout or a resin anchoring system. Work and material required for doweling will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. 07277)."



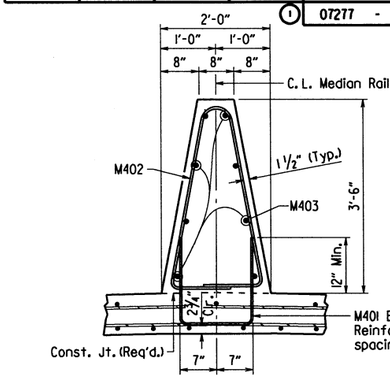
DETAILS OF DUMMY GROOVE JOINT

¾" = 1'-0"



SECTION Z-Z

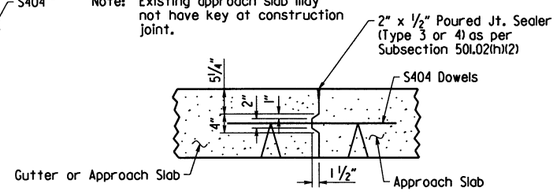
No Scale



SECTION K-K

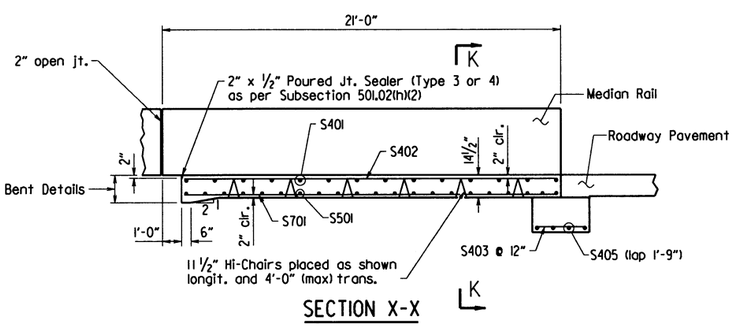
½" = 1'-0"

Note: Existing approach slab may not have key at construction joint.



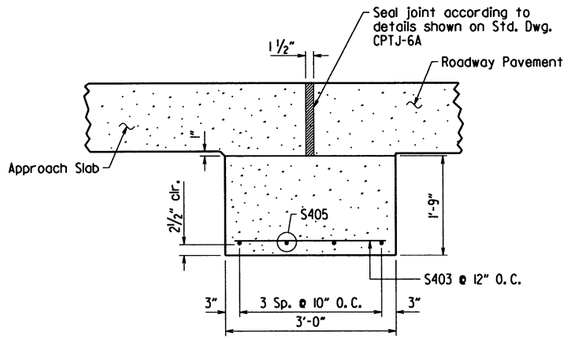
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION X-X

No Scale



SECTION Y-Y

¾" = 1'-0"

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
10,376	89.85

General Notes

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A) (fy = 60,000 psi).

Type Special Approach Slab will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish shall match that used on the bridge deck, except Median Rail shall receive finish as described in Job Special Provision "Textured Coating Finish".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 2 APPROACH SLAB PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

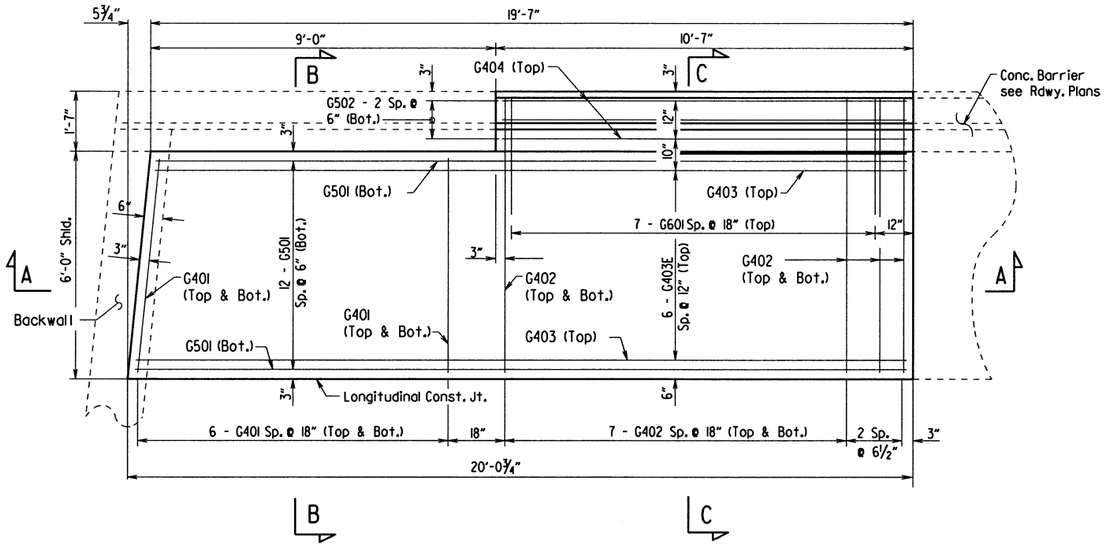
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CHECKED BY: PGT DATE: 2/2/17 SCALE: AS NOTED
DESIGNED BY: Std. DATE: —

BRIDGE NO. 07277 DRAWING NO. 59177

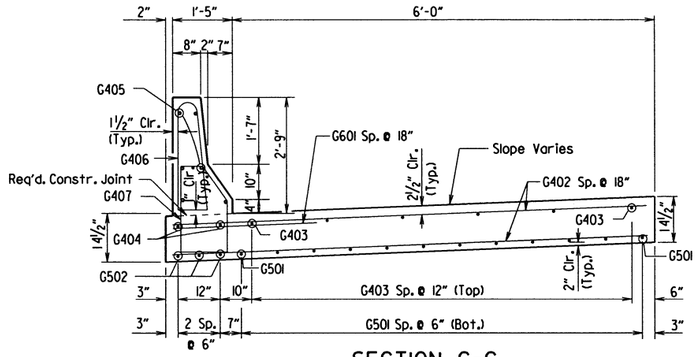
PRINT DATE: 5/16/2017

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.		CA0903	191	452

① 07277 TYPE SPEC. APPR. GUTTER 59178



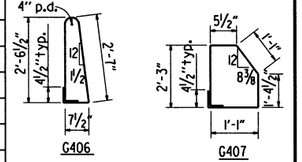
PLAN OF TYPE SPECIAL I APPROACH GUTTER
N.T.S.



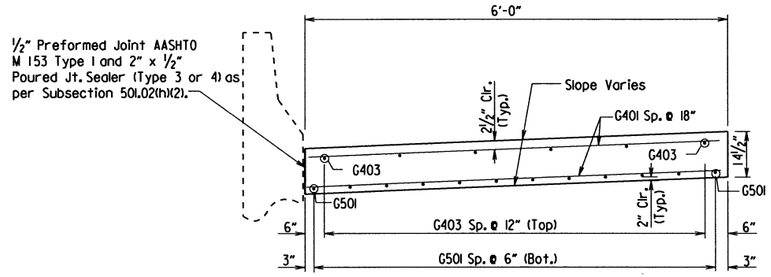
SECTION C-C
N.T.S.

BAR LIST

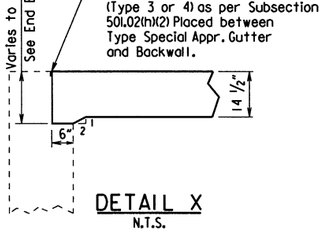
MK	NO. REQ'D	Length	Pin Dia.	Bending Diagram
G401	12	5'-8"	Str.	(Dimensions are out to out of bars.)
G402	18	7'-3"	Str.	
G403	6	①	Str.	
G404	2	10'-2"	Str.	
G405	6	10'-2"	Str.	
G406	15	6'-4"	2"	
G407	15	6'-7"	2"	
G501	12	①	Str.	
G502	3	10'-2"	Str.	
G601	7	3'-0"	Str.	



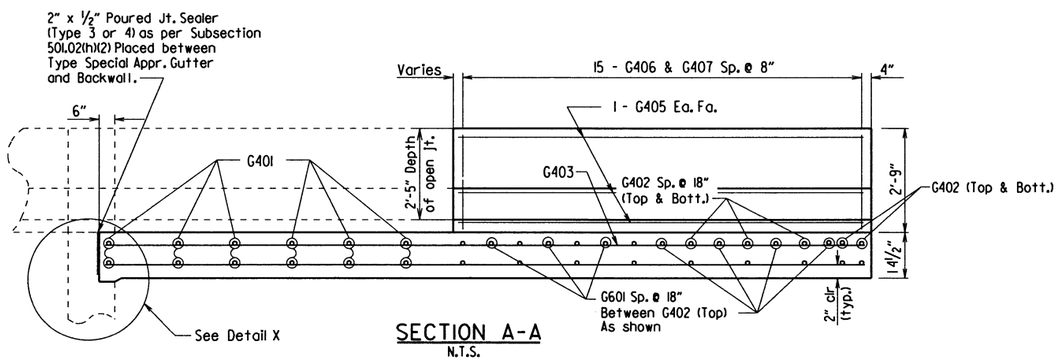
①Length Varies from 19'-2" to 19'-8"



SECTION B-B
N.T.S.



DETAIL X
N.T.S.



SECTION A-A
N.T.S.

General Notes

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A) (fy = 60,000 psi).

Type Special I Approach Gutter will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish shall match that used on the bridge deck, except parapet railing shall receive finish as described in Job Special Provision "Textured Coating Finish".

QUANTITIES FOR ONE TYPE SPECIAL I APPROACH GUTTER

(FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
700	7.10

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL I APPROACH GUTTER PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TMG DATE: 08-30-16 FILENAME: bca0903x12_as.dgn
CHECKED BY: PGT DATE: 2/2/17 SCALE: AS NOTED
DESIGNED BY: Std. DATE: —

BRIDGE NO. 07277 DRAWING NO. 59178

PRINT DATE: 5/16/2017

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.		CA0903	192	452

① 07278 - LAYOUT - 59179

For R/W Data, See Rdwy. Plans

Place Type Special 2 Approach Gutters (w = 10'-0") with Type Special 3 Approach Slab at each end of Bridge. See Dwg. Nos. 59210 & 59209, respectively.

Proposed Bridge No. 07280

C.L. Ramp 4

Toe of Rock Fill ②

Roadway Ditch

B36-3

B36-2

Test Hole (Typ.)

B36-4

B36-5

C.L. Median Hwy. 549 & C.L. Bridge

B36-7

B36-6

B37-3

B37-2

Barrier Rail - Typ. Each Side (See Rdwy. Plans)

S74°23'27"E

Tangent Distance = 480.88'

90'-0" Finished Surface

10'-0" Shldr.

2-12'-0" Lanes

2% Slope

1'-5" Parapet Rail

2'-0" Median Barrier

44'-0" Clear Roadway

93'-2" Out-to-Out

B41-9

B41-10

B36-9

0.13 Miles to Jct. U.S. Hwy 71B

Tangent Distance over 500'

Aggregate Base Course (Class 7) (typ.), see "Detail A" on Dwg. No. 59181.

② Toe of Rock Fill

C.L. Ramp 1

McKISIC CREEK

③ Constructed under Job No. CA0904.

③ Existing Bridge No. 07279

Toe of Existing Rock Fill

Toe of Existing Rock Fill

For details of existing bridge rail modification, see Dwg. No. 59272.

Stations and Elevations are shown along C.L. Median. Elevations are shown at top of deck C.L. Bridge.

PLAN

NOTE: Contours shown do not reflect the existing finished surface constructed under Job No. CA0904. All quantities dependent on the existing surface shall be assumed estimates for bidding purposes only. Actual quantities are to be determined in the field.

② For Details of Rock Fill, see Roadway Plans and "DETAIL A", Dwg. No. 59181. Refer to Special Provision Job CA0903 "Rock Fill" for additional information.

NOTES: For additional Soil Boring Information, see Dwg. No. 59180.

For General Notes and Hydraulic Table, see Dwg. No. 59181.

① Top of Deck @ C.L. Bridge and C.L. Bent to Low Seat of Cap

Total Length of Bridge = 494'-7½"

1'-0¾" | 77'-6" Simple Comp. W-Beam Span | 260'-0" Continuous Composite W-Beam Unit (80'-100'-80') | 155'-0" Continuous Composite W-Beam Unit (77'-6"-77'-6") | 1'-0¾"

C.L. 1½" Poured Silicone Joint

C.L. 3" Poured Silicone Joint

Proposed Grade Line @ C.L. Bridge

Slope intercept Sta. 1113+69.94

Begin Bridge Sta. 1113+77.94 Elev. 1088.95

C.L. Bent 2 Sta. 1114+56.50 Elev. 1086.87

C.L. Bent 3 Sta. 1115+36.50 Elev. 1084.95

④ Low Steel to Design H.W. = 26.6'

C.L. Bent 4 Sta. 1116+36.50 Elev. 1082.81

Concrete Parapet Rail

C.L. Bent 5 Sta. 1117+16.50 Elev. 1081.31

C.L. Bent 6 Sta. 1117+94.00 Elev. 1080.03

④ Top of Deck @ C.L. Bridge to Low Steel = 4'-10⅛"

End Bridge Sta. 1118+72.56 Elev. 1078.92

Slope intercept Sta. 1118+80.56

Fix / Exp

② Rock Fill

50' Piles

35' Piles

Rock Fill ②

Existing Ground Line @ C.L. Bridge

Elev. 1028.04

Elev. 1025.58

Design H.W. Elev. 1047.3

Elev. 1026.94

Elev. 1034.51

Elev. 1033.24

BENT NOS. 1 2 3 4 5 6 7

④ Low steel occurs at Station 1118+70.50, Elev. 1074.10.

ELEVATION

LVC = 2,900'

-6.000% +2.500%

P.V.I. Sta. 1117+19.72 Elev. 1050.440

VERTICAL CURVE DATA

ALONG C.L. MEDIAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF MAIN LANES OVER McKISIC CREEK
HWY. 71 INTERCHANGE (B.V. BYPASS) (F)
BENTON COUNTY

ROUTE 549 SEC. 9

ARKANSAS STATE HIGHWAY COMMISSION

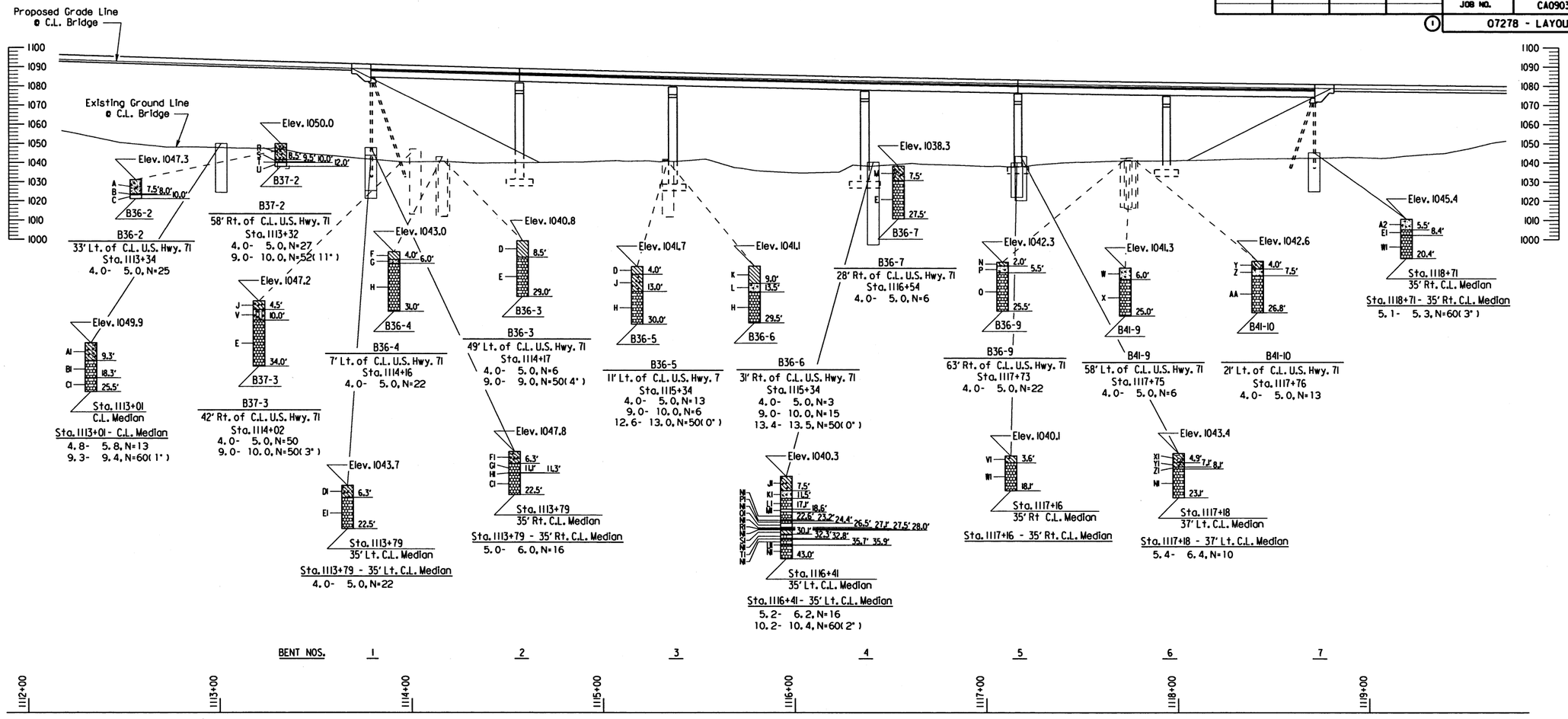
LITTLE ROCK, ARK.

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CHECKED BY: (CMW) DATE: 5/14/19 SCALE: 1" = 30'
DESIGNED BY: CSL DATE: 2/07

BRIDGE NO. 07278 DRAWING NO. 59179

PRINT DATE: 5/6/2019

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.		CA0903	193	452
				07278 - LAYOUT - 59180				



ELEVATION

NOTE: Materials designated A - Z & AA refer to borings B36-2, B37-2, B37-3, B36-4, B36-3, B36-5, B36-6, B36-7, B36-9, B41-9, B41-10 obtained from Geotechnical Investigation Report by others dated April 2003. Materials designated AI - ZI & A2 refer to borings obtained from Geotechnical Investigation Report by AHTD dated June 2007.

BORING LEGEND

A-CLAYEY SAND, few gravel red and gray, medium dense, moist (SC)
B-LIMESTONE, light gray, hard
C-Auger refusal on apparent limestone
D-LEAN CLAY, brown, stiff, moist (CL)
E-LIMESTONE, stratified, some chert seams and inclusions, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
F-LEAN CLAY, brown, stiff to very stiff, moist (CL)
G-CLAYEY SAND, few clay seams red and white, medium dense, moist (SC)
H-LIMESTONE, stratified, little chert seams and inclusions, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
J-GRAVELLY LEAN CLAY, few sand red, very stiff, moist (CL)
K-LEAN CLAY, trace sand brown, medium stiff to stiff, moist (CL)
L-SANDY GRAVEL, few silt gray, medium dense, wet (GP)
M-SILTY LEAN CLAY, trace gravel brown, medium stiff, moist (CL-ML)
N-SILTY LEAN CLAY, dark brown, moist (CL-ML)
P-SANDY GRAVEL, few clay brown, medium dense, moist (GP)
O-CHERT, stratified, some limestone seams, gray and light gray, very fine grained, medium bedded, slightly weathered to fresh, hard, solid
R-LEAN CLAY, some sand brown, stiff, moist (CL)
S-LEAN CLAY, little gravel red, medium stiff, moist to wet (CL)
T-LIMESTONE, gray, hard
U-AUGER REFUSAL ON LIMESTONE
V-SILTY GRAVEL, some sand light gray, dense, dry (GM)
W-SANDY GRAVEL, trace clay brown, loose (GP)
X-CHERT, stratified, some limestone seams, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
Y-SILTY LEAN CLAY, dark brown, stiff, moist
Z-SANDY GRAVEL, little clay light brown, medium dense, dry to moist (GP)
AA-CHERT, stratified, some limestone seams, gray and light gray, very fine grained, medium bedded, fresh, hard, solid

AI-Moist, Medium Dense, Brown Clayey Gravel (Chert Fragments) with Sand
BI-Hard, Gray Cherty Limestone with some Thin Dark Gray Shale Seams
CI-Hard, Gray Fractured Cherty Limestone with some Thin Dark Gray Shale Seams
DI-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
EI-Hard, Gray Cherty Limestone
FI-Moist, Medium Dense, Brown and Gray Gravel (Chert Fragments) with Sand and some Clay
GI-Hard, Gray Fractured Cherty Limestone
HI-Soil-filled Cavity (11.1' to 11.3')
JI-Moist, Very Stiff, Brown and Gray Gravely (Chert Fragments) Clay with some Organic Matter
KI-Wet, Very Dense, Gray and Brown Gravel (Chert Fragments) with Sand and some Clay
LI-Hard, Gray Fractured Cherty Limestone
MI-Cavity (17.1' to 18.0')
NI-Hard, Gray Fractured Cherty Limestone with some Dark Gray Shale Seams
PI-Cavity (22.6' to 23.2')
QI-Cavity (24.4' to 26.5')
RI-Cavity (27.1' to 27.5')
SI-Soil-filled Cavity (28.0' to 30.1')
TI-Cavity (32.3' to 32.8')
UI-Cavity (35.7' to 35.9')
VI-Moist, Hard, Brown Gravely (Chert Fragments) Clay
WI-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
XI-Moist, Stiff, Brown and Gray Gravely (Chert Fragments) Clay with Cobbles and Boulders (Fill Material)
YI-Moist, Stiff, Brown and Gray Gravely (Chert Fragments) Clay (Fill Material)
ZI-Hard, Gray Cherty Limestone
A2-Moist, Very Dense, Brown and Gray Gravel (Chert Fragments) with Sand

Note: Cavities were encountered in the borings and may be encountered in greater amounts at other locations in the project area.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-8-19
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF MAIN LANES OVER McKISIC CREEK
HWY. 71 INTERCHANGE (B.V. BYPASS) (F)
BENTON COUNTY

ROUTE 549 SEC. 9

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 5/10/07 FILENAME: bca0903a2_ll.dgn
CHECKED BY: CMW DATE: 5/6/19 SCALE: 1" = 30'
DESIGNED BY: CSL DATE: 2/07

BRIDGE NO. 07278 DRAWING NO. 59180

PRINT DATE: 5/6/2019

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.		CA0903	194	452

① 07278 & 07280 -GENERAL NOTES- 59181

GENERAL NOTES

BENCH MARK: RR Spike in South side 12" Elm, 54.85' Rt. C.L. Median U.S. Hwy. 71 Sta. 1116+68.04, Elev. 1041.69.

CONSTRUCTION SPECIFICATION: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007).

LIVE LOADING: HL-93 SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Grade 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Grade 36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

STEEL PILING: Piling in end bents shall be HP 12x53; AASHTO M 270, Gr. 50 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons and into material designated as Chert and Limestone on the boring legend. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

FOOTINGS: Footings for intermediate bents shall be set a minimum of 2'-0" into material designated as Chert and Limestone on the boring legend. The top of the footings at interior Bents shall be set at or below natural ground as determined by the lowest natural ground elevation within the footprint of the footing or the elevations shown in the plans, whichever is lower. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled according to Subsection 801.08. Rock excavation shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:	DRAWING NUMBER(S):
MAIN LANES	
Layout of Main Lanes	59179
Soil Borings	59180
Bent 1 & 7	59182 & 59183
Bent 2	59184
Bent 3	59185
Bent 4	59186
Bent 5	59187
Bent 6	59188
77'-6" Simple W-Beam Span	59189 - 59194
260'-0" Cont. Comp. W-Beam Unit	59195 - 59200
155'-0" Cont. Comp. W-Beam Unit	59201 - 59206
Joint Details	59207
Elastomeric Bearings	59208
Type Special 3 Approach Slab	59209
Type Special 2 Approach Gutter	59210
Steel Piling	55020
RAMP 4	
Layout of Ramp 4	59211
Bent 1	59212 & 59213
Bent 2	59214
Bent 3, 4 & 6	59215
Bent 5	59216
Bent 7	59217 & 59218
88'-0" Simple W-Beam Span	59219 - 59223
260'-0" Cont. Comp. W-Beam Unit	59224 - 59228
155'-0" Cont. Comp. W-Beam Unit	59229 - 59233
Joint Details	59234
Elastomeric Bearings	59235
Type Special 2 Approach Gutter	59210
Type Special 4 Approach Slab	59236
Type C Approach Gutter	55030C
Type CI Approach Slab	55040CI
Steel Piling	55020

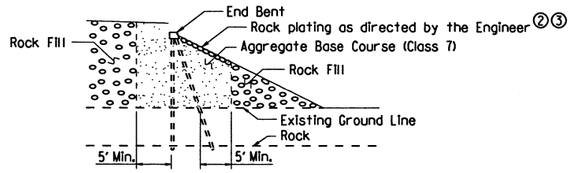
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	①NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	10800	1046.8	1047.3
Base	100	12264	1047.4	1047.4
Extreme	500	16167	1048.7	1048.7
Overtopping	>500	-----	-----	-----

① Unconstricted water surface without Bridge Nos. 07278, 07279 & 07280 and the roadway approaches.

Drainage area = 21.8 square miles.
Historical H.W. elev. = N/A.

② Payment for rock plating shall be incidental to the pay item "Rock Fill".



③ Portions of existing rock plating will have to be removed to facilitate construction of the final embankment and zone of aggregate base course (Class 7) that was not completed under Job CA0904.

Where rock fill is used for embankment construction, aggregate base course (Class 7), in accordance with Subsection 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "Compacted Embankment".

At the Contractor's option preboring or other methods as approved by the Engineer may be used to facilitate pile installation thru the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles where rock fill is used for embankment construction will not be paid for separately but shall be included in item "Steel Piling".

DETAIL A

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-8-19

BRIDGE ENGINEER

GENERAL NOTES FOR BRIDGE STRUCTURES OVER McKISIC CREEK HWY. 71 INTERCHANGE (B.V. BYPASS) (F) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

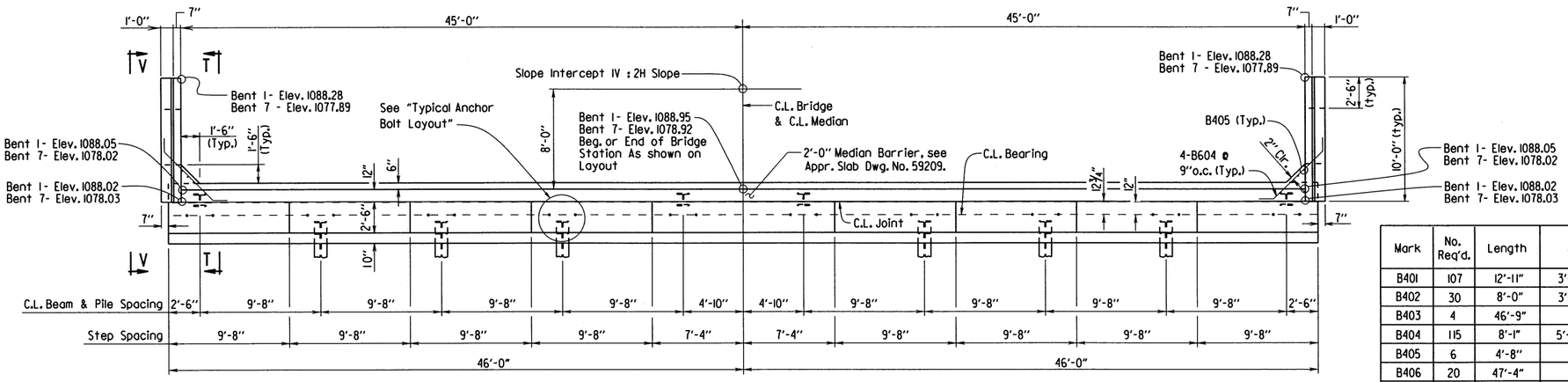
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CHECKED BY: CMH DATE: 5/6/19 SCALE: As Shown
DESIGNED BY: CSL DATE: 2/07

BRIDGE NO. 07278 & 07280 DRAWING NO. 59181

PRINT DATE: 5/6/2019

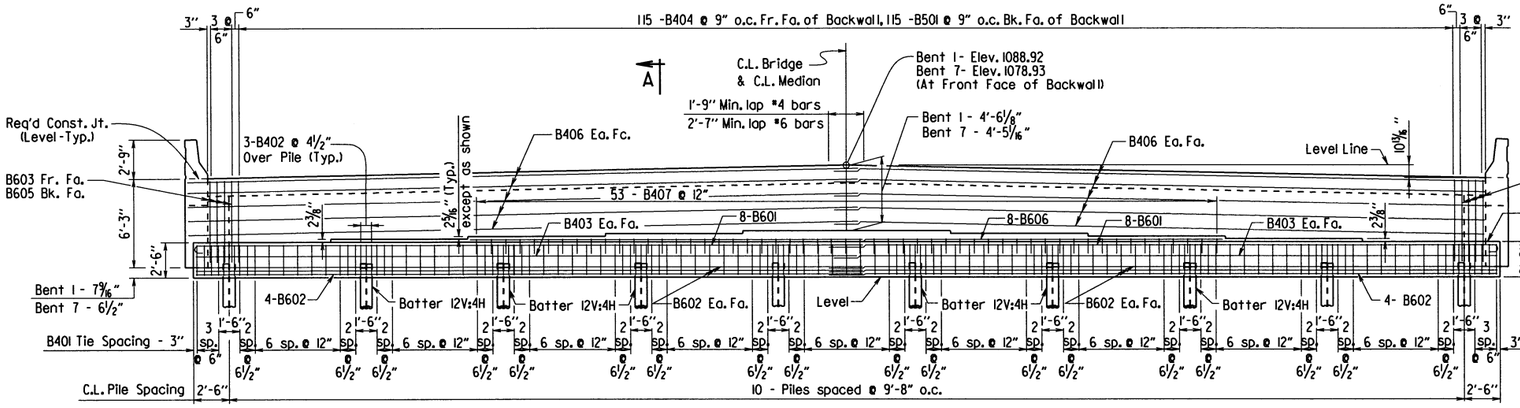
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				6	ARK.			
				JOB NO.		CA0903	195	452
				(1)	07278 - END BENT DETAILS - 59182			

For Details of Wings,
See Dwg. No. 59183.



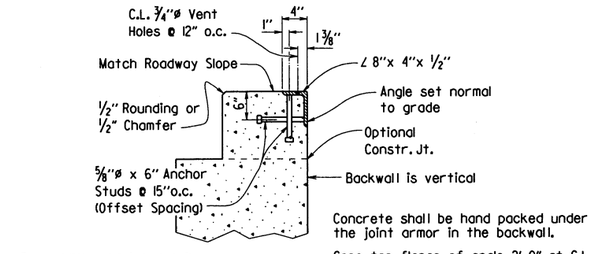
PLAN

3/16" = 1'-0"



ELEVATION

Bent 1- Looking Back
Bent 7 - Looking Ahead
3/16" = 1'-0"



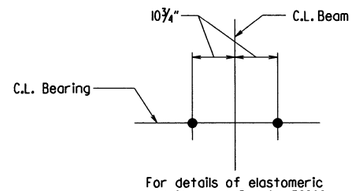
Concrete shall be hand packed under the joint armor in the backwall.

Cope top flange of angle 2'-0" at C.L. Bridge. See "Section C-C", Dwg. No. 59189.

For additional joint details, see Dwg. No. 59207.

DETAIL Z

No Scale



For details of elastomeric bearings, see Dwg. No. 59208.

TYPICAL ANCHOR BOLT LAYOUT

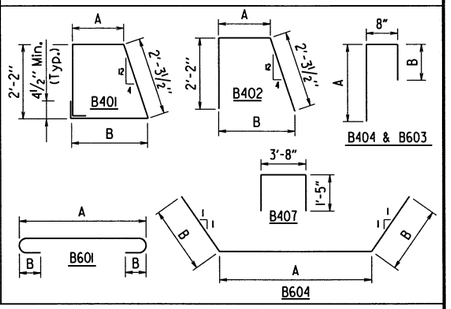
No Scale

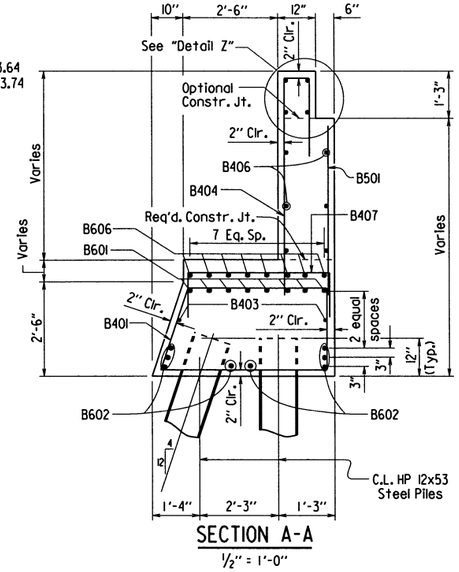
Class 2 Protective Surface Treatment shall be applied to the top of the backwall. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

BAR LIST - PER END BENT

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	107	12'-11"	3'-8"	4'-4¾"	2"
B402	30	8'-0"	3'-8"	4'-4¾"	2"
B403	4	46'-9"			Str.
B404	115	8'-1"	5'-6"	2'-1"	2"
B405	6	4'-8"			Str.
B406	20	47'-4"			Str.
B407	53	6'-4"			2"
B501	115	4'-6"			Str.
B601	8	47'-11"	47'-3"	6"	4½"
B602	8	47'-3"			Str.
B603	8	8'-9"	5'-10"	2'-7"	4½"
B604	8	7'-6"	5'-6"	1'-0"	4½"
B605	8	4'-7"			Str.
B606	8	52'-0"			Str.

Bending Diagrams
(Dimensions are out to out of bars.)





SECTION A-A

½" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi. All concrete shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be grade 60 (yield strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, type A, with mill test reports.

The backwall below the paving bracket shall not be poured until the beams are in place. The backwall above the paving bracket shall not be poured before the superstructure slab in the adjacent span has been placed. Avoid having heavy construction equipment behind the backwall until the concrete for the span has been completed. See "Expansion Device Installation" on Dwg. No. 59207 for additional information.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (AASHTO M 270, Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Piling shall be HP 12x53; AASHTO M 270, Gr. 50.

For additional information, see Layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-15-17
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENTS 1 & 7
McKISIC CREEK MAIN LANES

ROUTE SEC.

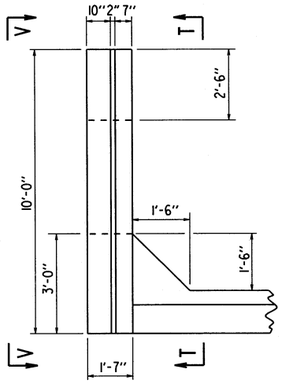
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: BHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: DHP DATE: 9/07

BRIDGE NO. 07278 DRAWING NO. 59182

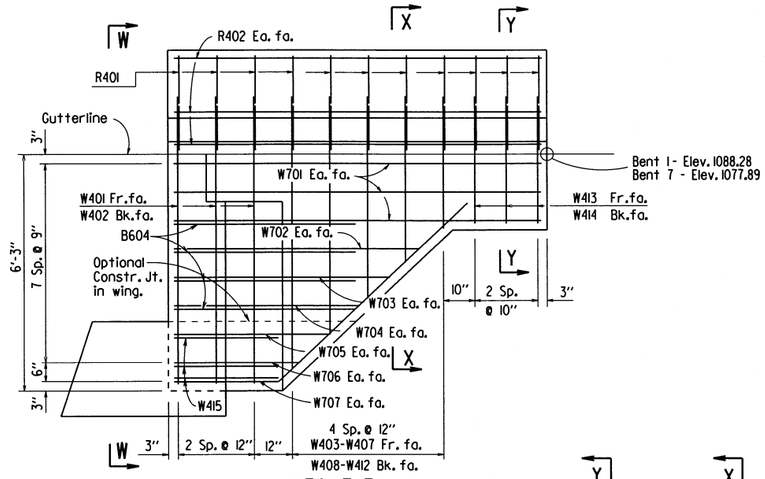
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	196	452
				①	07278 - END BENT DETAILS - 59183			



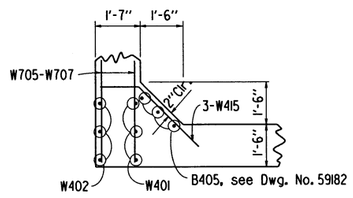
PLAN OF RAIL

3/8" = 1'-0"



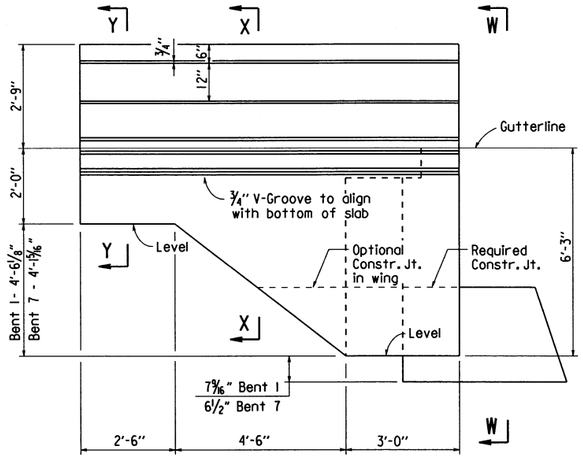
VIEW T-T

1/2" = 1'-0"



SECTION Z-Z

3/8" = 1'-0"

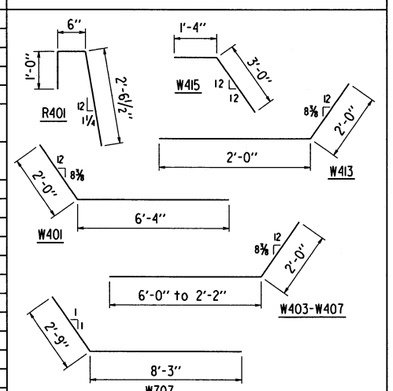


VIEW V-V

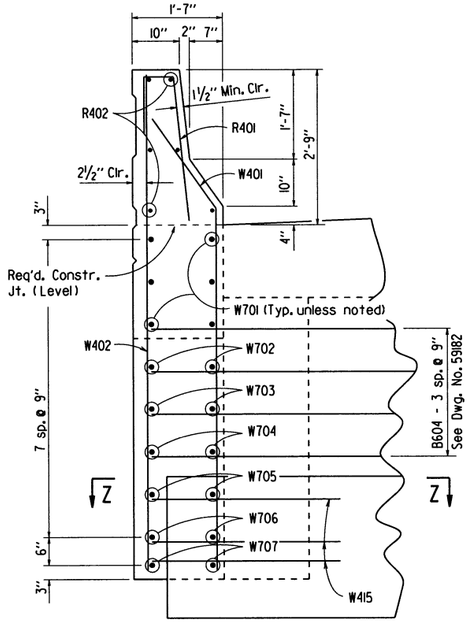
1/2" = 1'-0"

BAR LIST - PER BENT

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
R401	22	3'-11"	2"	
R402	12	9'-8"	Str.	
W401	6	8'-4"	2"	
W402	6	8'-8"	Str.	
W403-W407	2 ea.	8'-1" to 4'-2"	2"	
W408-W412	2 ea.	8'-3" to 4'-5"	Str.	
W413	6	4'-0"	2"	
W414	6	4'-4"	Str.	
W415	6	4'-4"	2"	
W701	12	9'-8"	Str.	
W702	4	6'-5"	Str.	
W703	4	5'-8"	Str.	
W704	4	4'-11"	Str.	
W705	4	4'-1"	Str.	
W706	4	3'-3"	Str.	
W707	4	11'-0"	5 1/4"	

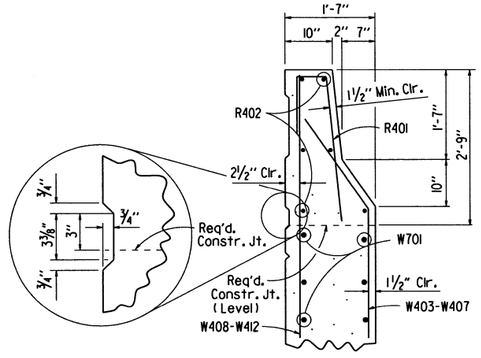


Dimensions are out to out of bars.



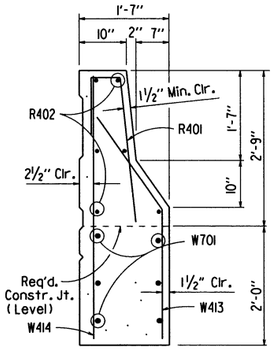
VIEW W-W

3/4"=1'-0"



SECTION X-X

3/4"=1'-0"

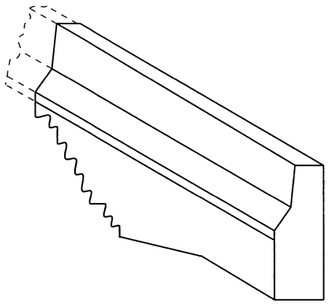


SECTION Y-Y

3/4"= 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER



THREE DIMENSIONAL VIEW OF RAIL

No Scale

SHEET 2 OF 2
DETAILS OF BENTS 1 & 7
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

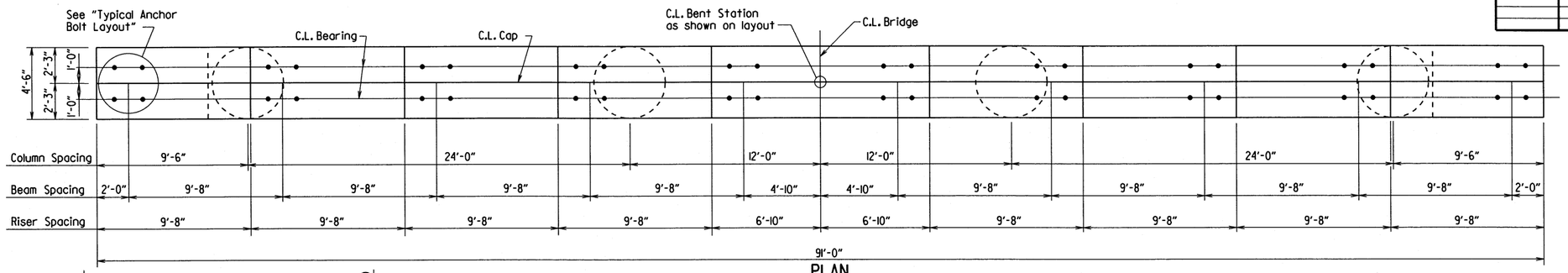
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DESIGNED BY: DHP DATE: 9/07

BRIDGE NO. 07278 DRAWING NO. 59183

PRINT DATE: 5/15/2017

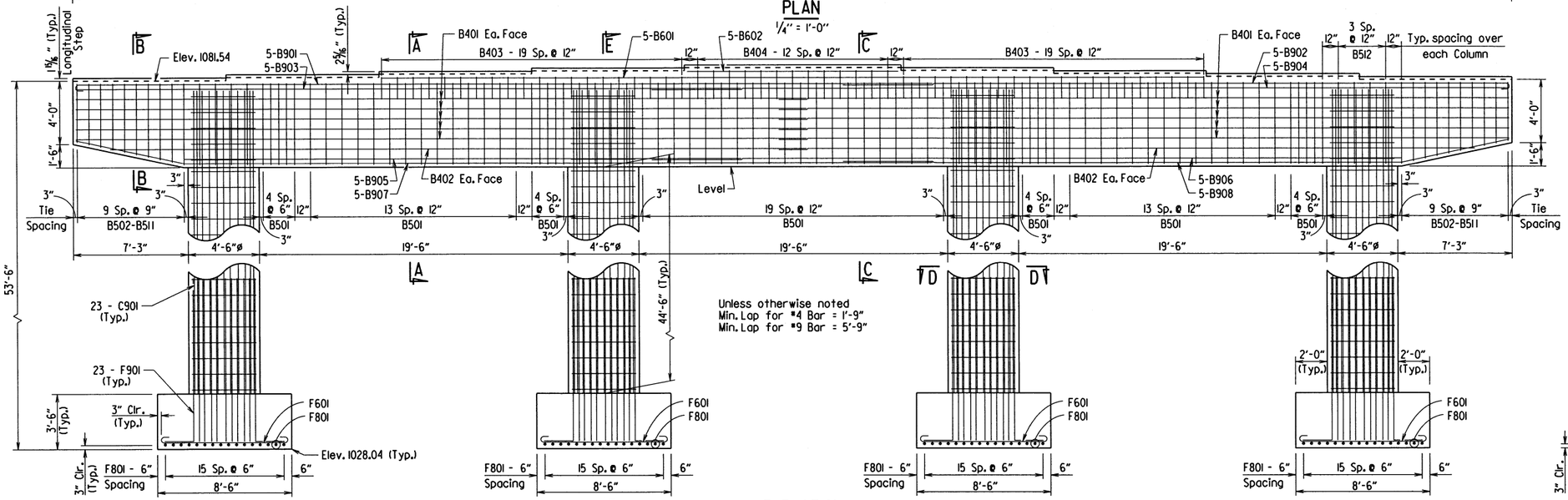
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				6	ARK.			
				JOB NO.		CA0903	197	452

(1) 07278 - INT BENT DETAILS - 59184

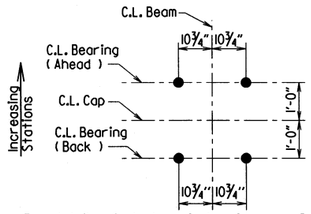


PLAN

1/4" = 1'-0"



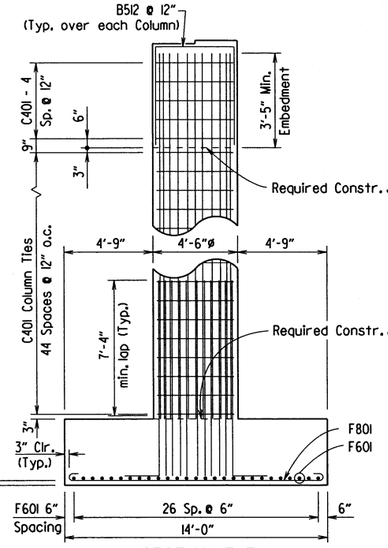
Unless otherwise noted
Min. Lap for #4 Bar = 1'-9"
Min. Lap for #9 Bar = 5'-9"



For details of elastomeric bearings, see Dwg. No. 59208.

TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"



SECTION E-E

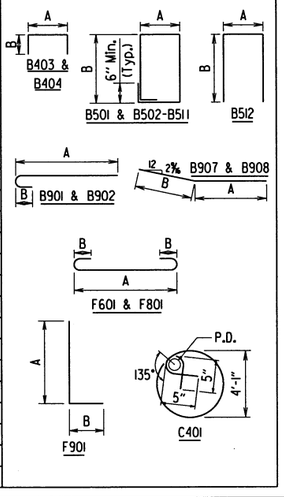
1/4" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	20	46'-3"			Str.
B402	4	44'-0"			Str.
B403	40	6'-10"	4'-2"	1'-5"	2"
B404	13	7'-8"	4'-2"	1'-10"	2"
B501	68	19'-2"	4'-2"	5'-2"	2½"
B502-B511	2 ea.	Var. 16'-3" to 19'-2"	4'-2"	Var. 3'-8½" to 5'-2"	2½"
B512	16	14'-4"	4'-2"	5'-2"	2½"
B601	5	52'-0"			Str.
B602	5	13'-4"			Str.
B901	5	55'-6"	54'-3"	10"	9"
B902	5	43'-6"	42'-3"	10"	9"
B903	5	42'-3"			Str.
B904	5	54'-3"			Str.
B905	5	35'-4"			Str.
B906	5	47'-4"			Str.
B907	5	54'-4"	47'-4"	7'-0"	9"
B908	5	42'-4"	35'-4"	7'-0"	9"
C401	200	13'-11"			3"
C901	92	49'-4"			Str.
F901	92	12'-4"	10'-11"	1'-8"	9"
F601	108	9'-4"	8'-0"	6"	4½"
F801	64	15'-4"	13'-6"	8"	6"

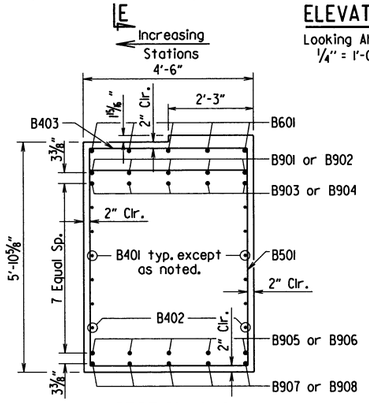
BENDING DIAGRAMS

Dimensions are out to out of bars.



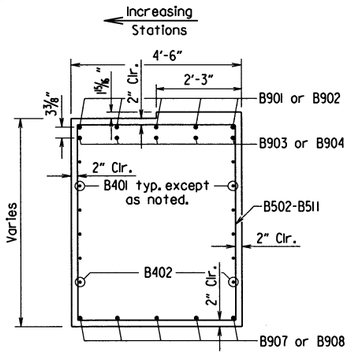
ELEVATION

Looking Ahead
1/4" = 1'-0"



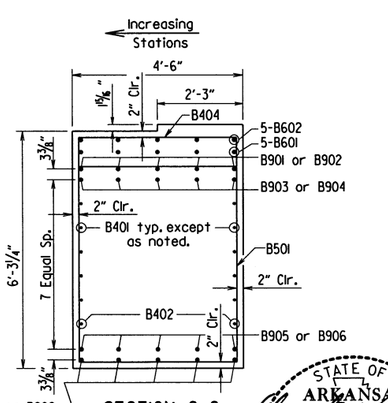
SECTION A-A

1/2" = 1'-0"



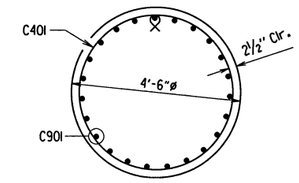
SECTION B-B

1/2" = 1'-0"



SECTION C-C

1/2" = 1'-0"



SECTION D-D

1/2" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17

BRIDGE ENGINEER

DETAILS OF BENT 2
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

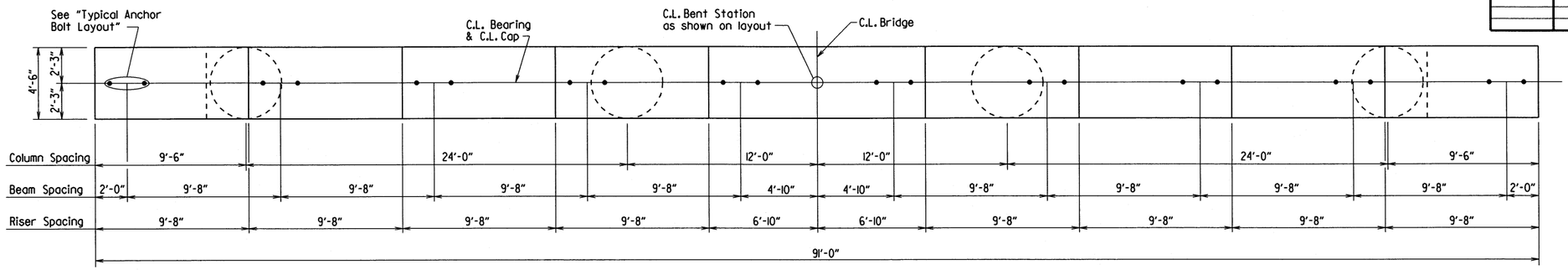
LITTLE ROCK, ARK.

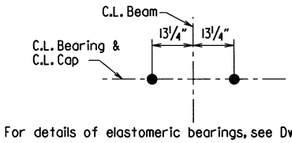
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CHECKED BY: BHS DATE: 5-15-17
DESIGNED BY: DHP DATE: 9/07
FILENAME: bca0903a2_b2.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59184

PRINT DATE: 5/15/2017

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.		CA0903	198	452
				07278 - INT BENT DETAILS - 59185				





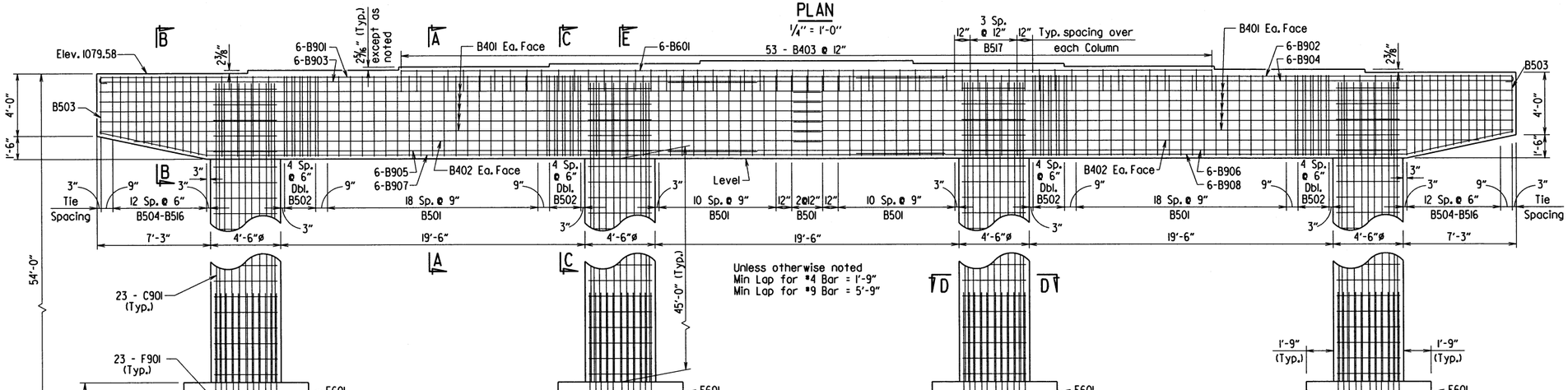
For details of elastomeric bearings, see Dwg. No. 59208.

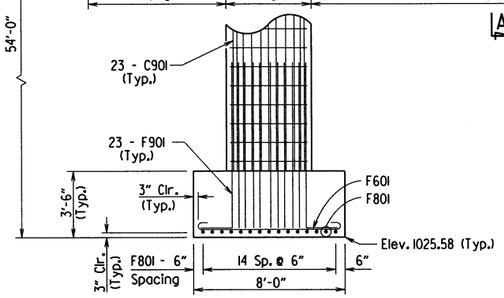
TYPICAL ANCHOR BOLT LAYOUT

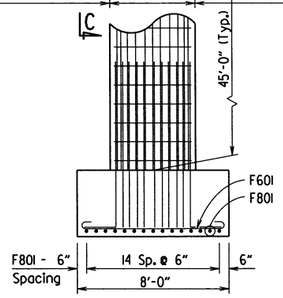
½" = 1'-0"

PLAN

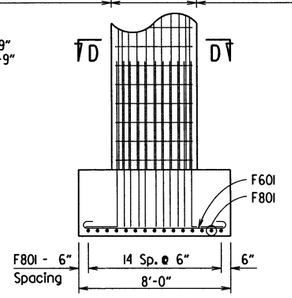
¼" = 1'-0"

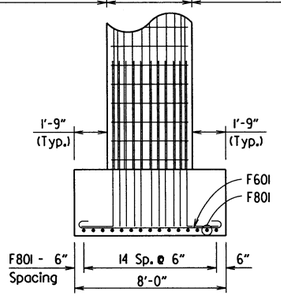


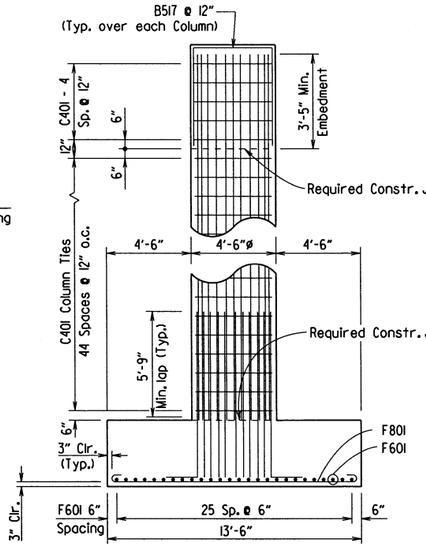




Unless otherwise noted
Min Lap for #4 Bar = 1'-9"
Min Lap for #9 Bar = 5'-9"







SECTION E-E

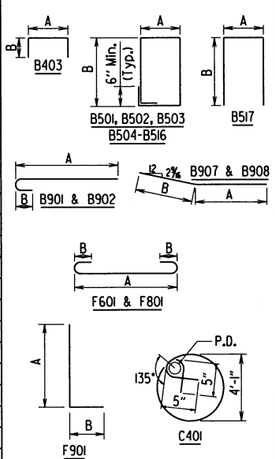
¼" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	20	46'-3"			Str.
B402	4	44'-0"			Str.
B403	53	6'-10"	4'-2"	1'-5"	2"
B501	63	19'-2"	4'-2"	5'-2"	2½"
B502	40	16'-6"	2'-10"	5'-2"	2½"
B503	2	16'-3"	4'-2"	3'-8½"	2½"
B504-B516	2 ea.	Var. 16'-7" to 19'-2"	4'-2"	Var. 3'-10½" to 5'-2"	2½"
B517	16	14'-4"	4'-2"	5'-2"	2½"
B601	6	52'-0"			Str.
B901	6	55'-6"	54'-3"	10"	9"
B902	6	43'-6"	42'-3"	10"	9"
B903	6	42'-3"			Str.
B904	6	54'-3"			Str.
B905	6	35'-4"			Str.
B906	6	47'-4"			Str.
B907	6	54'-4"	47'-4"	7'-0"	9"
B908	6	42'-4"	35'-4"	7'-0"	9"
C401	200	13'-11"			3"
C901	92	49'-10"			Str.
F901	92	12'-4"	10'-11"	1'-8"	9"
F601	104	8'-10"	7'-6"	6"	4½"
F801	60	14'-10"	13'-0"	8"	6"

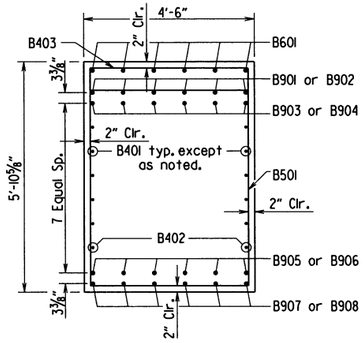
BENDING DIAGRAMS

Dimensions are out to out of bars.



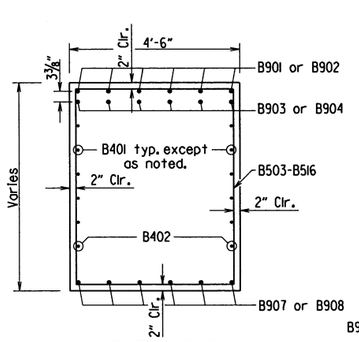
ELEVATION

Looking Ahead
¼" = 1'-0"



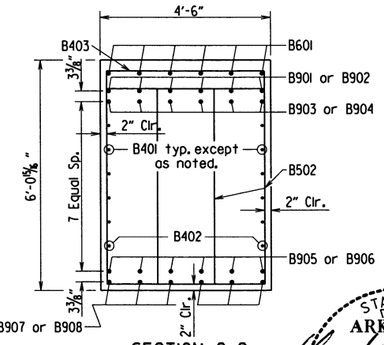
SECTION A-A

½" = 1'-0"



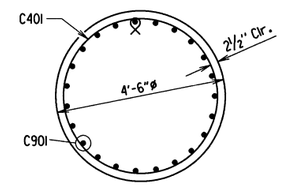
SECTION B-B

½" = 1'-0"



SECTION C-C

½" = 1'-0"



SECTION D-D

½" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 3
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

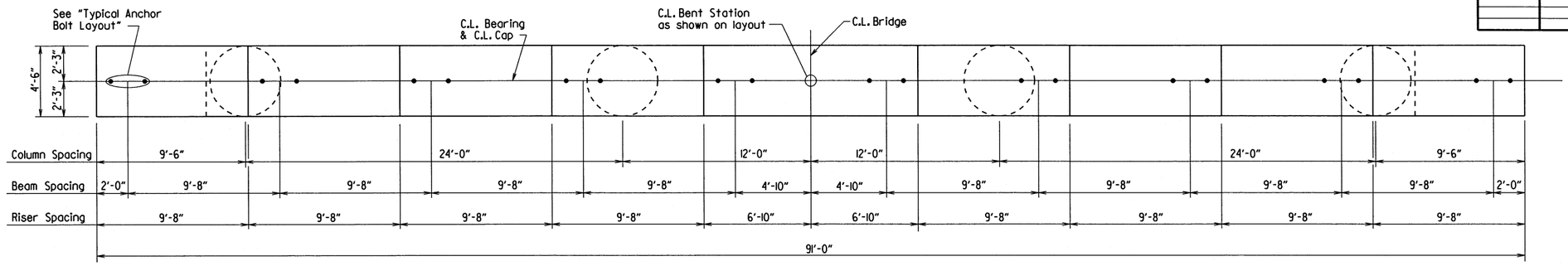
LITTLE ROCK, ARK.

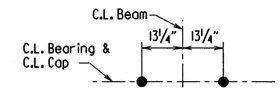
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CHECKED BY: BHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: DHP DATE: 9/07

BRIDGE NO. 07278 DRAWING NO. 59185

PRINT DATE: 5/15/2017

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.		CA0903	199	452
				1	07278 - INT BENT DETAILS - 59186			





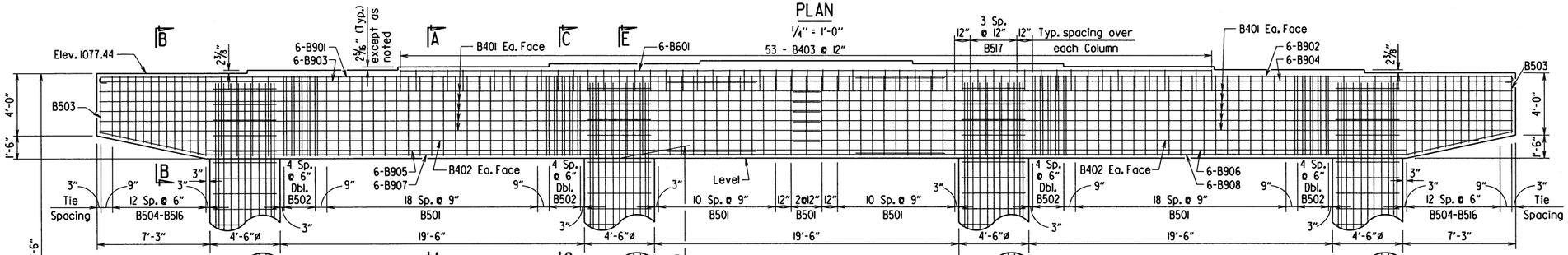
For details of elastomeric bearings, see Dwg. No. 59208.

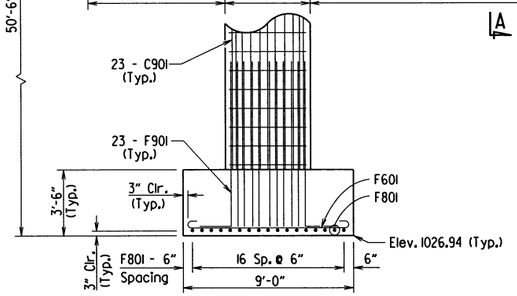
TYPICAL ANCHOR BOLT LAYOUT

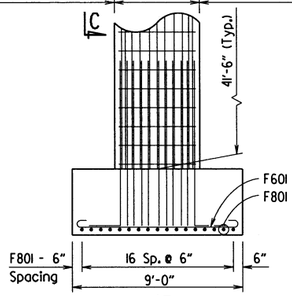
½" = 1'-0"

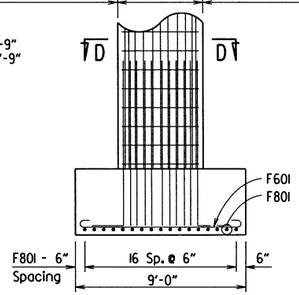
PLAN

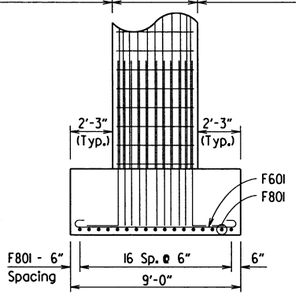
¼" = 1'-0"

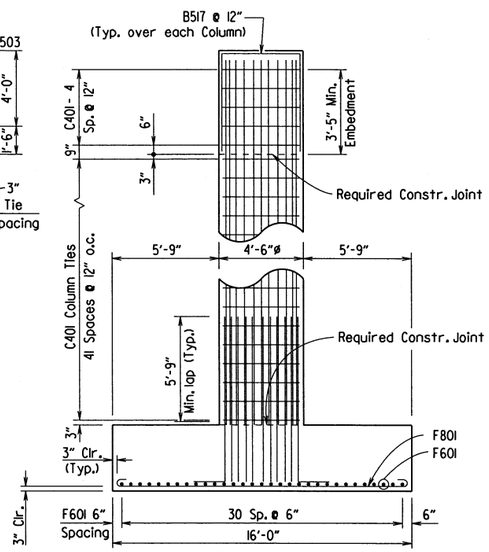












SECTION E-E

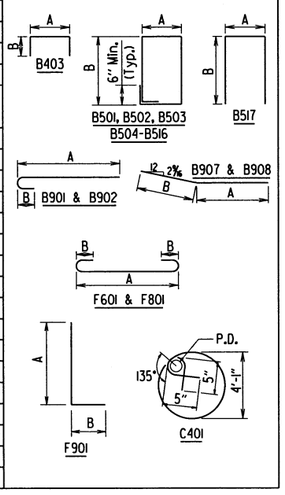
¼" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	20	46'-3"			Str.
B402	4	44'-0"			Str.
B403	53	6'-10"	4'-2"	1'-5"	2"
B501	63	19'-2"	4'-2"	5'-2"	2½"
B502	40	16'-6"	2'-10"	5'-2"	2½"
B503	2	16'-3"	4'-2"	3'-8½"	2½"
B504-B516	2 ea.	Var. 16'-7" to 19'-2"	4'-2"	Var. 3'-10½" to 5'-2"	2½"
B517	16	14'-4"	4'-2"	5'-2"	2½"
B601	6	52'-0"			Str.
B901	6	55'-6"	54'-3"	10"	9"
B902	6	43'-6"	42'-3"	10"	9"
B903	6	42'-3"			Str.
B904	6	54'-3"			Str.
B905	6	35'-4"			Str.
B906	6	47'-4"			Str.
B907	6	54'-4"	47'-4"	7'-0"	9"
B908	6	42'-4"	35'-4"	7'-0"	9"
C401	188	13'-11"			3"
C901	92	46'-4"			Str.
F901	92	12'-4"	10'-11"	1'-8"	9"
F601	124	9'-10"	8'-6"	6"	4½"
F801	68	17'-4"	15'-6"	8"	6"

BENDING DIAGRAMS

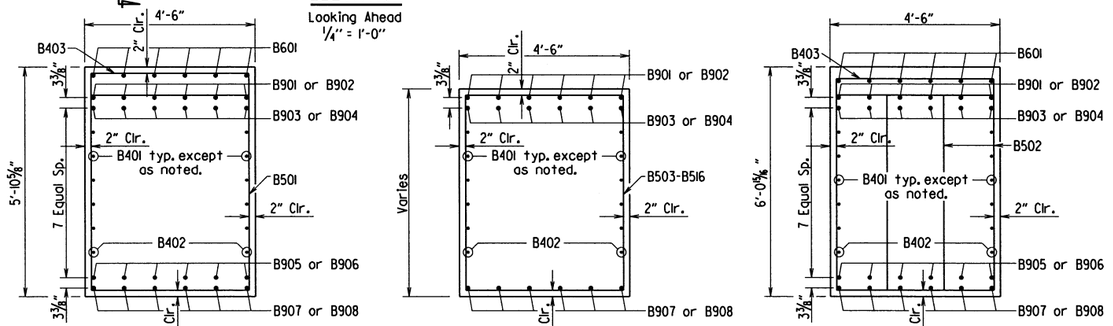
Dimensions are out to out of bars.



LE ELEVATION

Looking Ahead

¼" = 1'-0"



SECTION A-A

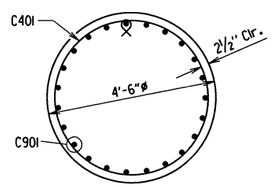
½" = 1'-0"

SECTION B-B

½" = 1'-0"

SECTION C-C

½" = 1'-0"



SECTION D-D

½" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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.

Unless otherwise noted
Min. Lap for #4 Bar = 1'-9"
Min. Lap for #9 Bar = 5'-9"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-3-17
BRIDGE ENGINEER

DETAILS OF BENT 4
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

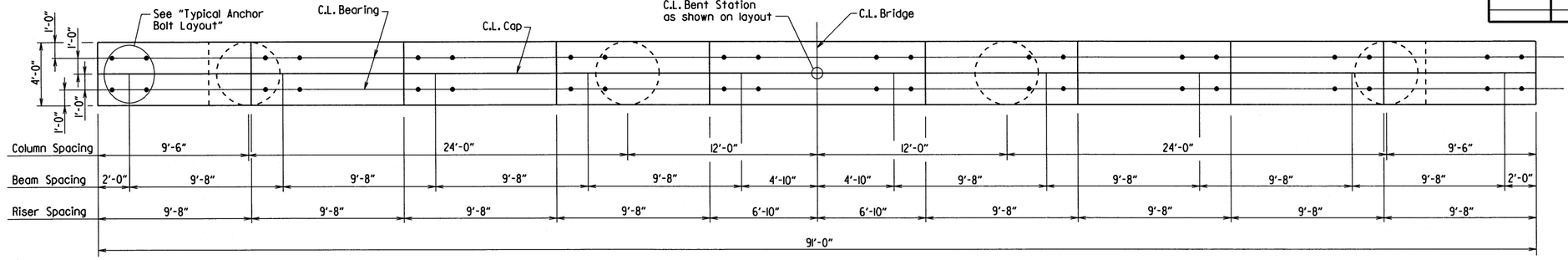
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DESIGNED BY: DHP DATE: 9/07

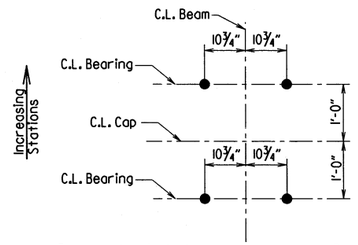
BRIDGE NO. 07278 DRAWING NO. 59186

PRINT DATE: 5/15/2017

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.		CA0903	200	452

1 07278 - INT BENT DETAILS - 59187

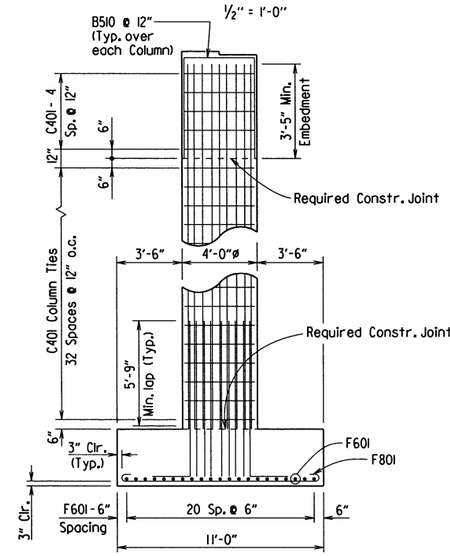




For details of elastomeric bearings, see Dwg. No. 59208.

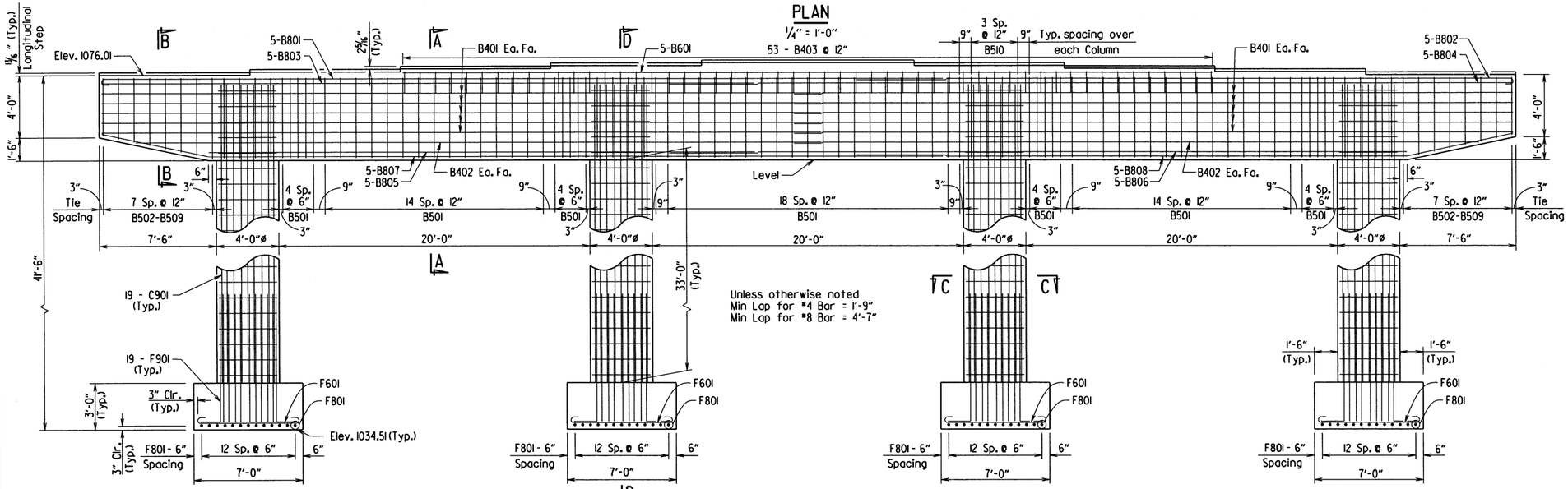
TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"



PLAN

¼" = 1'-0"



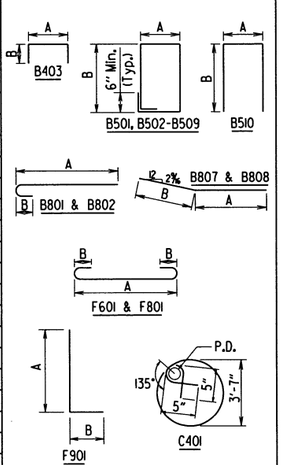
Unless otherwise noted
Min Lap for #4 Bar = 1'-9"
Min Lap for #8 Bar = 4'-7"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	20	46'-3"			Str.
B402	4	43'-10"			Str.
B403	53	6'-4"	3'-8"	1'-5"	2"
B501	71	18'-2"	3'-8"	5'-2"	2½"
B502-B509	2 ea.	Var. 15'-3" to 18'-2"	3'-8"	Var. 3'-8½" to 5'-2"	2½"
B510	16	13'-10"	3'-8"	5'-2"	2½"
B601	5	52'-0"			Str.
B801	5	54'-7"	53'-8"	8"	6"
B802	5	42'-7"	41'-8"	8"	6"
B803	5	41'-8"			Str.
B804	5	53'-8"			Str.
B805	5	34'-6"			Str.
B806	5	46'-6"			Str.
B807	5	53'-9"	46'-6"	7'-3"	6"
B808	5	41'-9"	34'-6"	7'-3"	6"
C401	152	12'-4"			3"
C901	76	37'-10"			Str.
F901	76	11'-10"	10'-5"	1'-8"	9"
F601	84	7'-10"	6'-6"	6"	4½"
F801	52	12'-4"	10'-6"	8"	6"

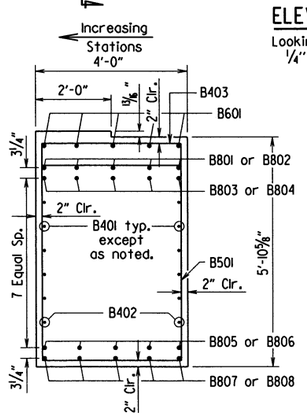
BENDING DIAGRAMS

Dimensions are out to out of bars.



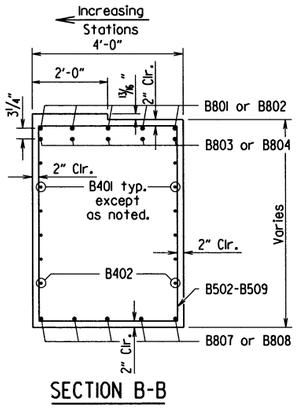
SECTION A-A

½" = 1'-0"



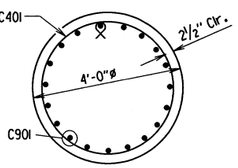
ELEVATION

Looking Ahead
¼" = 1'-0"



SECTION B-B

½" = 1'-0"



SECTION C-C

½" = 1'-0"

SECTION D-D

¼" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17

BRIDGE ENGINEER

DETAILS OF BENT 5
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

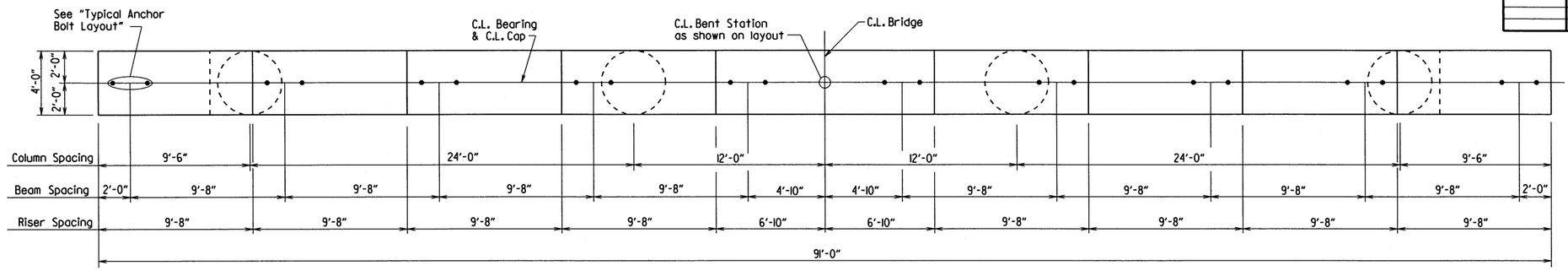
LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 11/2/07 FILENAME: bca0903a2_b2.dgn
CHECKED BY: BH S DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: DHP DATE: 9/07

BRIDGE NO. 07278 DRAWING NO. 59187

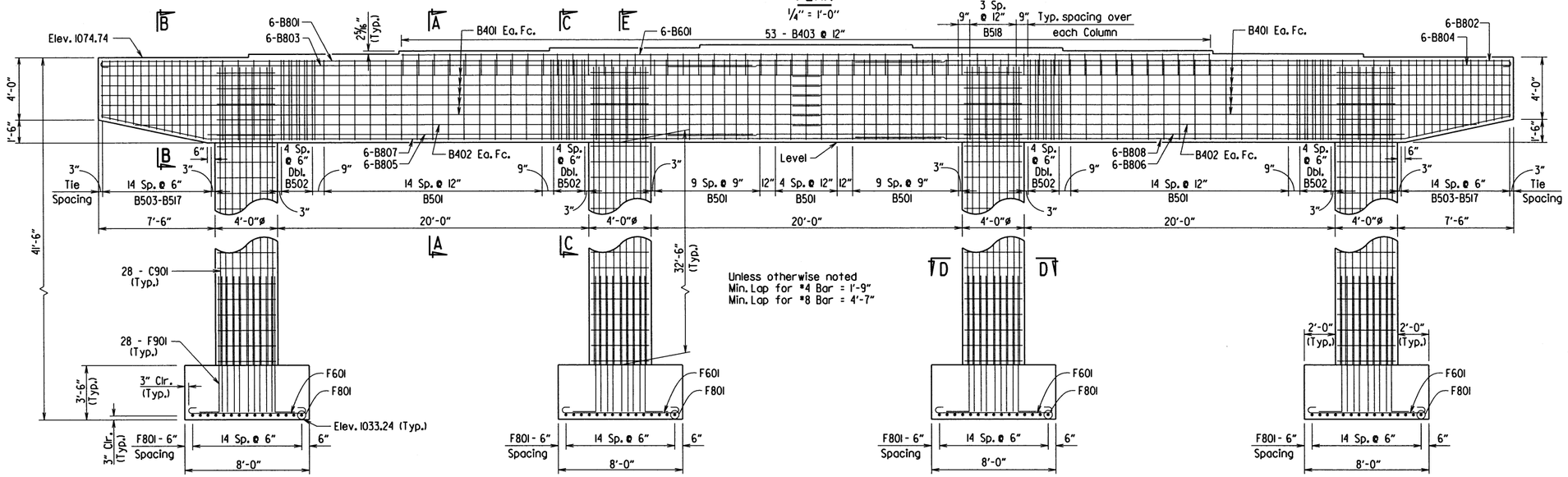
PRINT DATE: 5/15/2017

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.		CA0903	201	452
				07278 - INT BENT DETAILS - 59188				

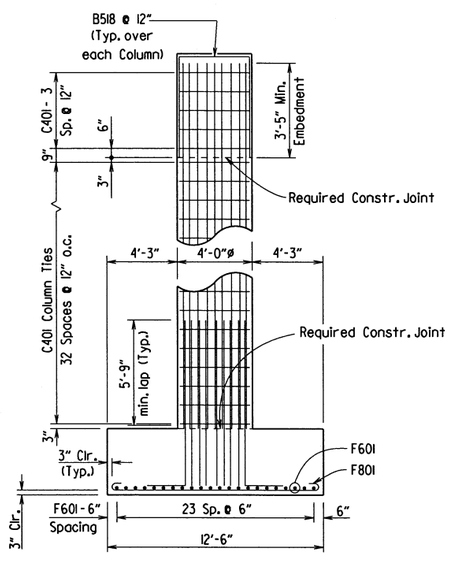


PLAN

1/4" = 1'-0"

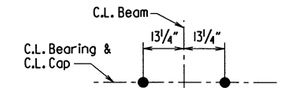


Unless otherwise noted
Min. Lap for #4 Bar = 1'-9"
Min. Lap for #8 Bar = 4'-7"



SECTION E-E

1/4" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 59208.

TYPICAL ANCHOR BOLT LAYOUT

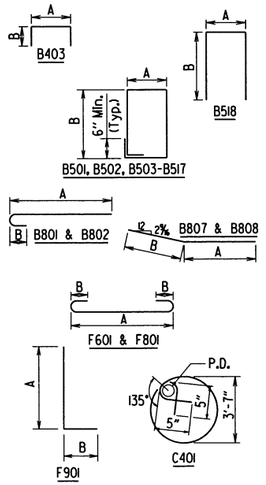
1/2" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	20	46'-3"			Str.
B402	4	43'-10"			Str.
B403	53	6'-4"	3'-8"	1'-5"	2"
B501	55	18'-2"	3'-8"	5'-2"	2½"
B502	40	15'-10"	2'-6"	5'-2"	2½"
B503-B517	2 ea.	Var. 15'-3" to 18'-2"	3'-8"	Var. 3'-8½" to 5'-2"	2½"
B518	16	13'-10"	3'-8"	5'-2"	2½"
B601	6	52'-0"			Str.
B801	6	54'-7"	53'-8"	8"	6"
B802	6	42'-7"	41'-8"	8"	6"
B803	6	41'-8"			Str.
B804	6	53'-8"			Str.
B805	6	34'-6"			Str.
B806	6	46'-6"			Str.
B807	6	53'-9"	46'-6"	7'-3"	6"
B808	6	41'-9"	34'-6"	7'-3"	6"
C401	152	12'-4"			3"
C901	112	37'-4"			Str.
F901	112	12'-4"	10'-11"	1'-8"	9"
F601	96	8'-10"	7'-6"	6"	4½"
F801	60	13'-10"	12'-0"	8"	6"

BENDING DIAGRAMS

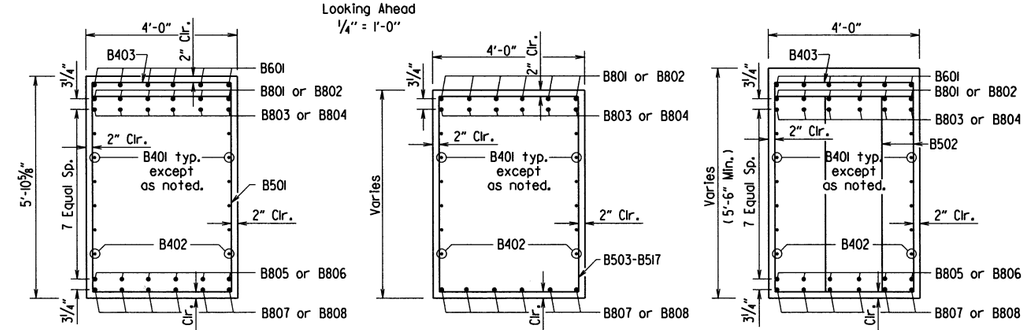
Dimensions are out to out of bars.



ELEVATION

Looking Ahead

1/4" = 1'-0"



SECTION A-A

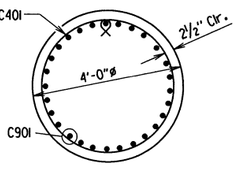
1/2" = 1'-0"

SECTION B-B

1/2" = 1'-0"

SECTION C-C

1/2" = 1'-0"



SECTION D-D

1/2" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-15-17
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 6
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 11/2/07 FILENAME: bca0903a2_b2.dgn
CHECKED BY: BNS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: DHP DATE: 9/07

BRIDGE NO. 07278 DRAWING NO. 59188

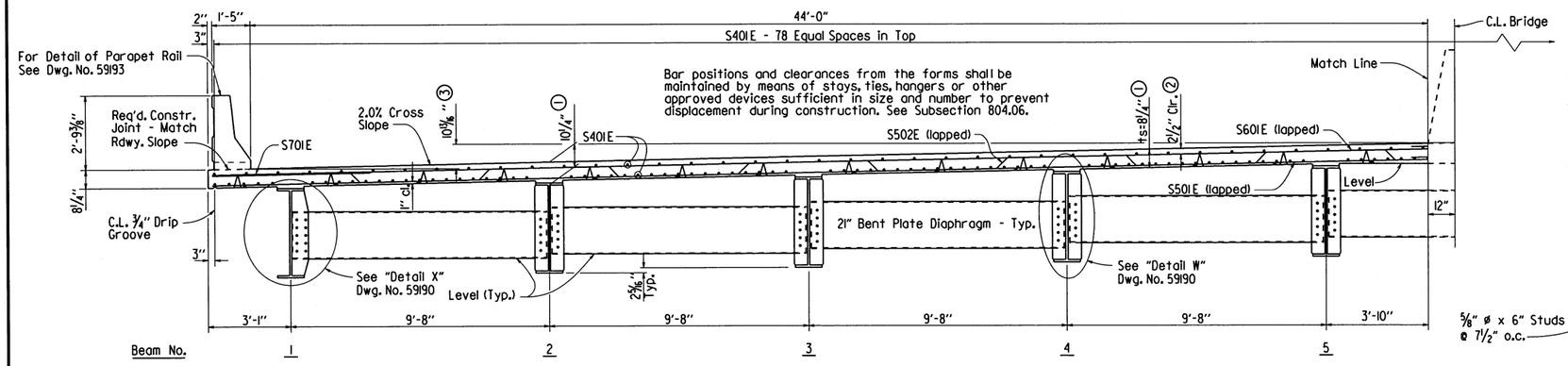
PRINT DATE: 5/15/2017

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.		CA0903	202	452
				①	07278 - 77'-6" SPAN - 59189			

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E and S504E. Payment for reinforcing will be based on the weight of bar S502E and S504E.

For General Notes, See Dwg. No. 59207.



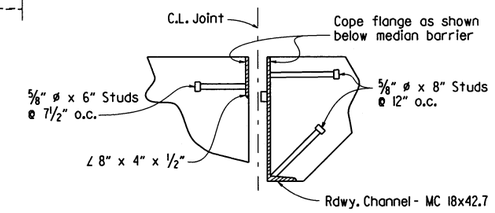
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

① See "Adjustment for Slab Thickness Tolerance" Detail.

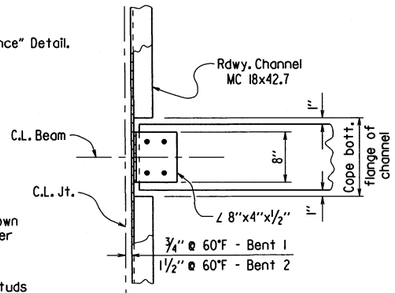
② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance"

③ Top of Deck to Gutter Line



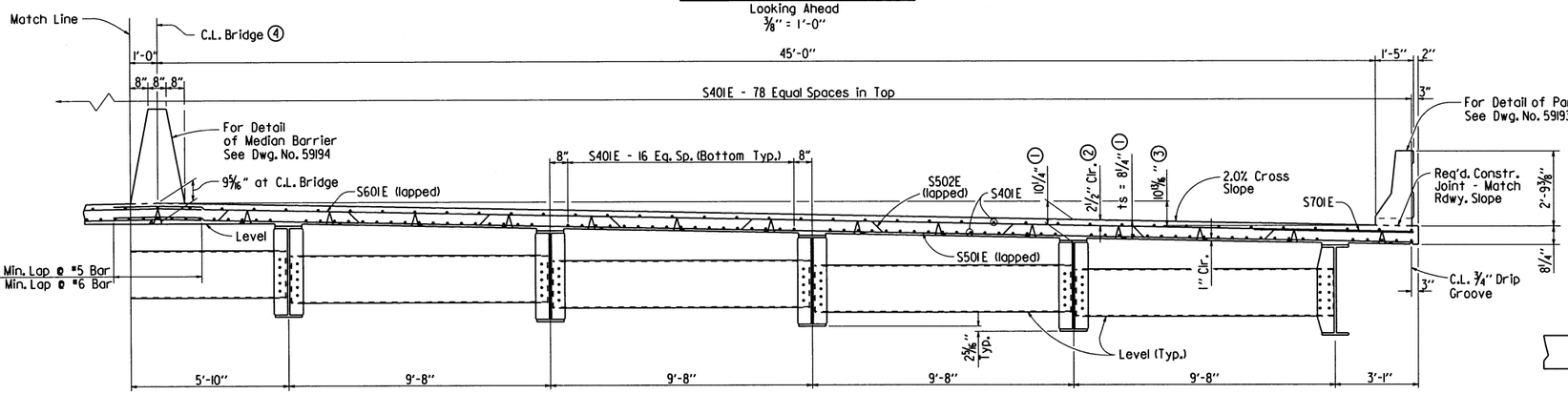
SECTION C-C

No Scale



CHANNEL CONNECTION DETAIL

No Scale



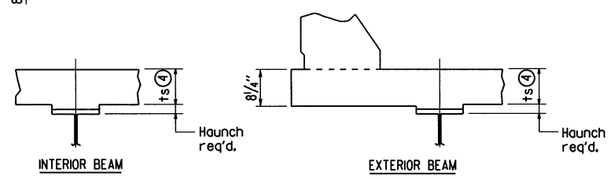
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

TABLE FOR WELD

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"	⅝"	

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.



④ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

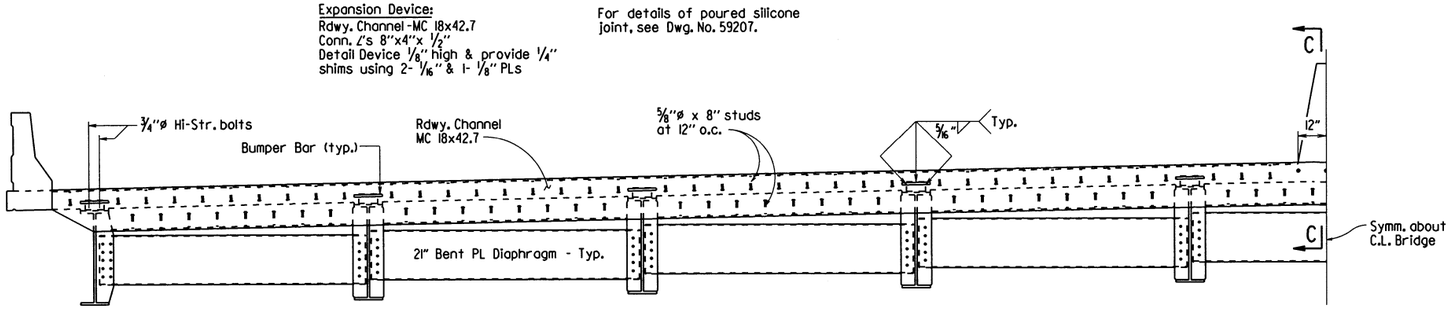
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.

Expansion Device:
Rdwy. Channel - MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 59207.



SECTION THRU JOINT AT BENT 1

Looking Ahead
⅜" = 1'-0"

STATE OF ARKANSAS
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6-5-17
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BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN McKISIC CREEK MAIN LANES

ROUTE SEC.

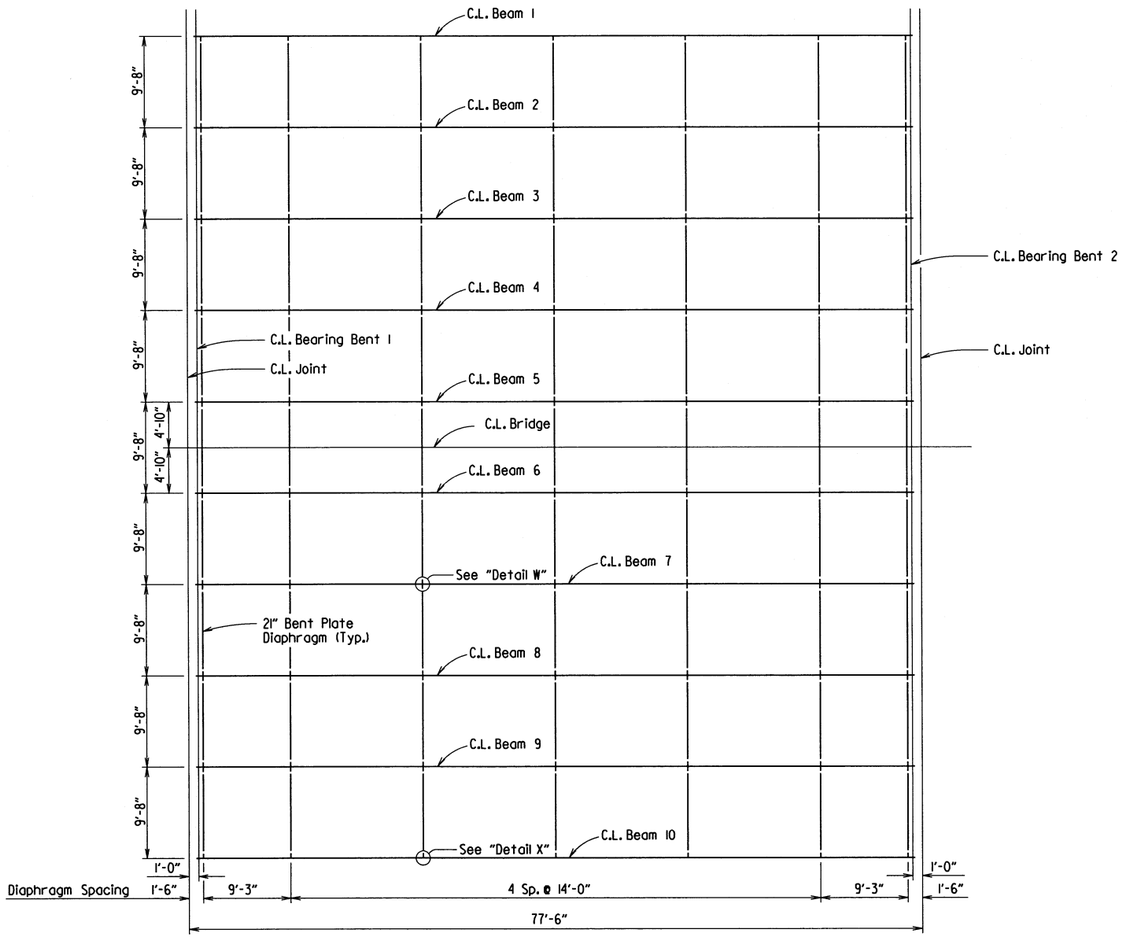
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07 FILENAME: bca0903a2_sl.dgn
CHECKED BY: CWY DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: CSL DATE: 4/07

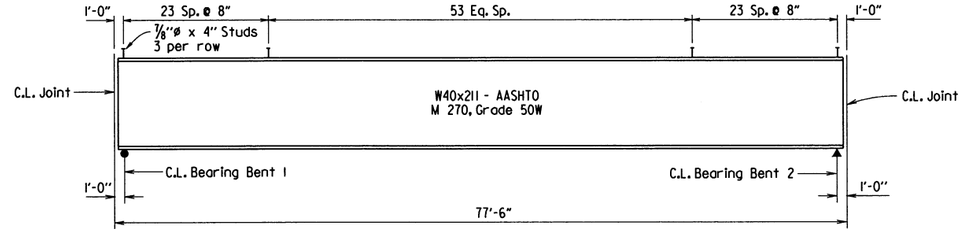
BRIDGE NO. 07278 DRAWING NO. 59189

PRINT DATE: 5/15/2017

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.		CA0903	203	452
				①	07278 - 77'-6" SPAN - 59190				

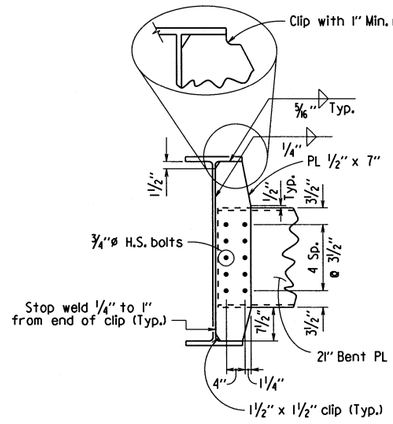


FRAMING PLAN
1/8" = 1'-0"

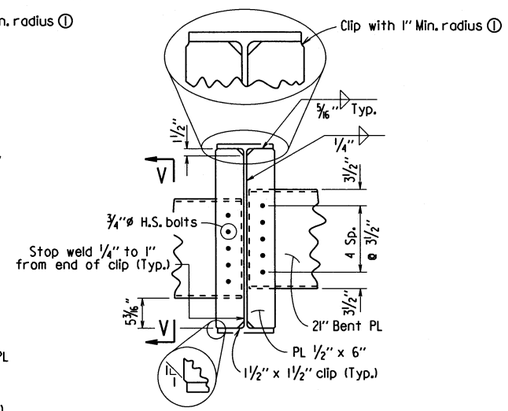


BEAM ELEVATION
No Scale

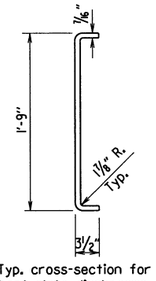
① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



DETAIL X
No Scale



DETAIL W
No Scale



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V
No Scale

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
6-5-17
CHARLES R. ELLIS
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SHEET 2 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK MAIN LANES

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07 FILENAME: bca0903a2_sl.dgn
CHECKED BY: KWY DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: CSL DATE: 4/07

BRIDGE NO. 07278 DRAWING NO. 59190

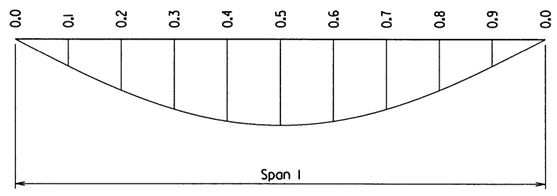
PRINT DATE: 5/15/2017

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.		CA0903	204	452
				07278 - 77'-6" SPAN - 59191				

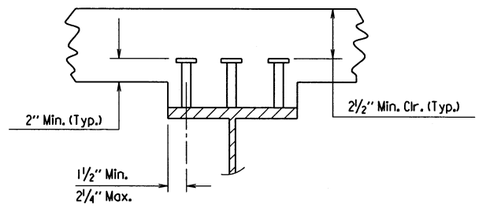
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Point of Deflection	Structural Steel			Structural Steel + Slab			Structural Steel + Slab + Parapet + Median Barrier		
	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6
0	0	0	0	0	0	0	0	0	0
0.1	0.118	0.127	0.127	0.581	0.708	0.708	0.636	0.736	0.767
0.2	0.223	0.241	0.241	1.099	1.341	1.341	1.203	1.394	1.453
0.3	0.306	0.330	0.330	1.506	1.837	1.837	1.648	1.910	1.990
0.4	0.358	0.387	0.387	1.763	2.152	2.152	1.930	2.238	2.331
0.5	0.376	0.406	0.406	1.852	2.26	2.26	2.027	2.350	2.448
0.6	0.358	0.387	0.387	1.763	2.152	2.152	1.930	2.238	2.331
0.7	0.306	0.330	0.330	1.506	1.837	1.837	1.648	1.910	1.990
0.8	0.223	0.241	0.241	1.099	1.341	1.341	1.203	1.394	1.453
0.9	0.118	0.127	0.127	0.581	0.708	0.708	0.636	0.736	0.767
0	0	0	0	0	0	0	0	0	0

Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included. Negative sign (-) indicates point above chord.



DEAD LOAD DEFLECTION DIAGRAM
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 beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL
No Scale

STATE OF ARKANSAS
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6-5-17
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BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK MAIN LANES

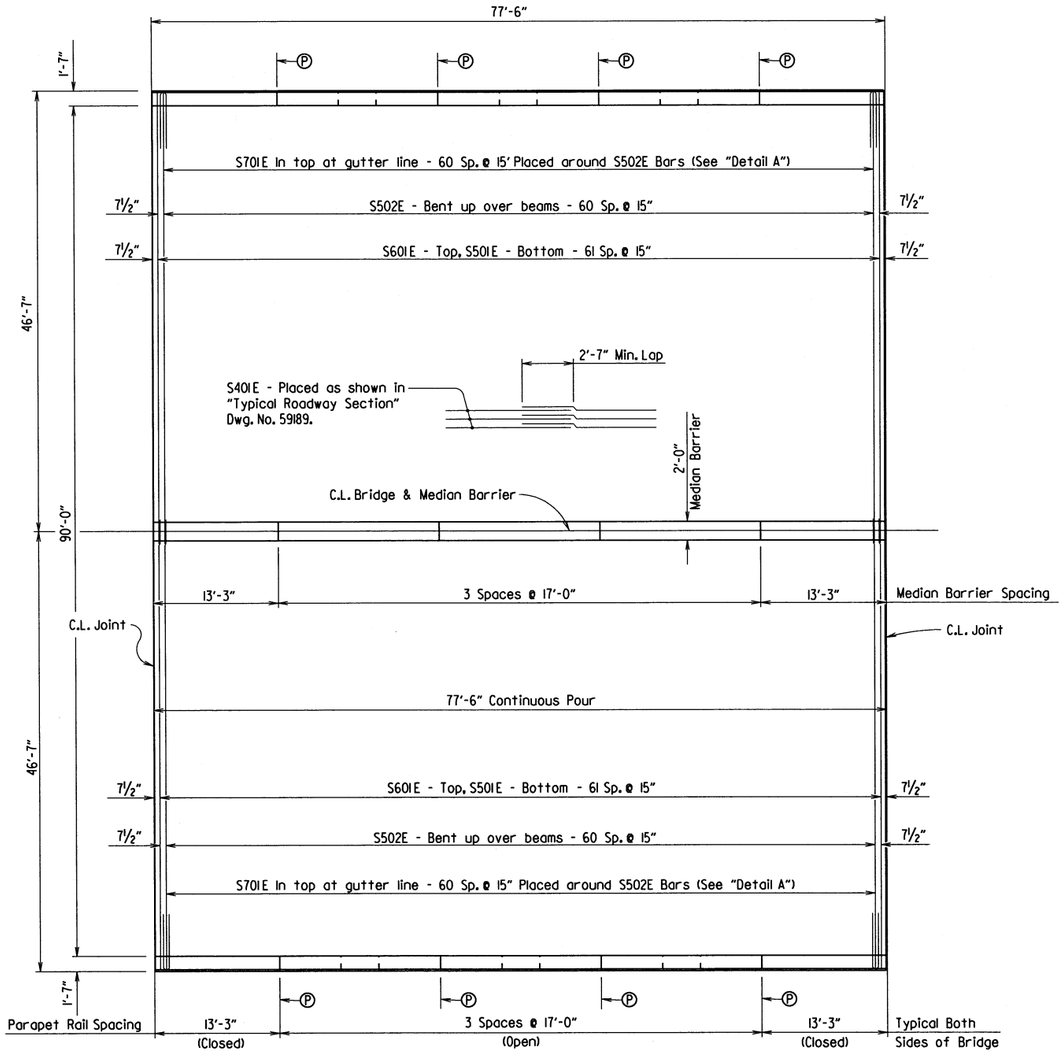
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59191

PRINT DATE: 5/15/2017

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.		CA0903	205	432
				① 07278 - 77'-6" SPAN - 59192				



REINFORCING PLAN & SLAB POURING SEQUENCE

1/8" = 1'-0"

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.

Unless otherwise noted:
Min. Lap for #4 Epoxy Coated Bar = 2'-7"
Min. Lap for #5 Epoxy Coated Bar = 3'-3"
Min. Lap for #6 Epoxy Coated Bar = 3'-10"

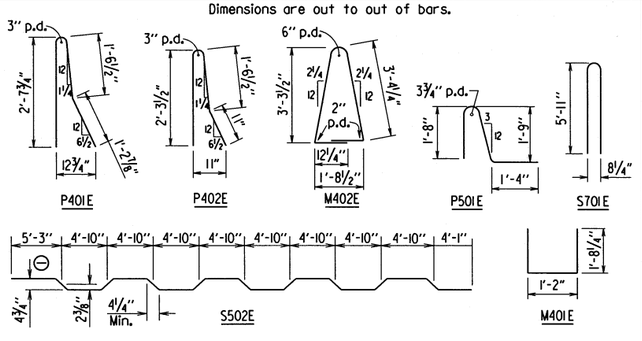
The deck concrete shall be placed as a single pour. A minimum of 72 hours shall elapse between the completion of the deck pour and the pouring of the parapet railing and median barrier. The Contractor must obtain approval from the Engineer for any deviations from this pouring sequence.

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	484	39'-11"	Str.
S501E	124	48'-1"	Str.
S502E	122	49'-2"	3"
S601E	124	48'-4"	Str.
S701E	122	12'-1"	6½"
P401E	260	5'-6"	3"
P402E	48	4'-10"	3"
P403E	16	39'-11"	Str.
P404E	28	12'-11"	Str.
P405E	42	16-8"	Str.
P501E	206	4'-9"	3¾"
M401E	118	4'-5"	2"
M402E	118	8'-11"	2"

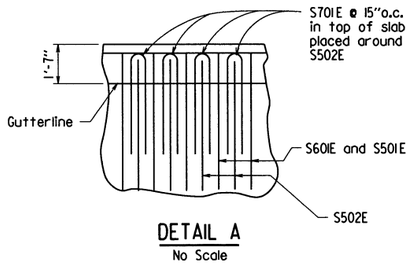
BENDING DIAGRAMS

Dimensions are out to out of bars.



① ½" Overtolerance
No Undertolerance

Bars marked with an "E" suffix shall be epoxy coated.



DETAIL A

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK MAIN LANES

ROUTE SEC.

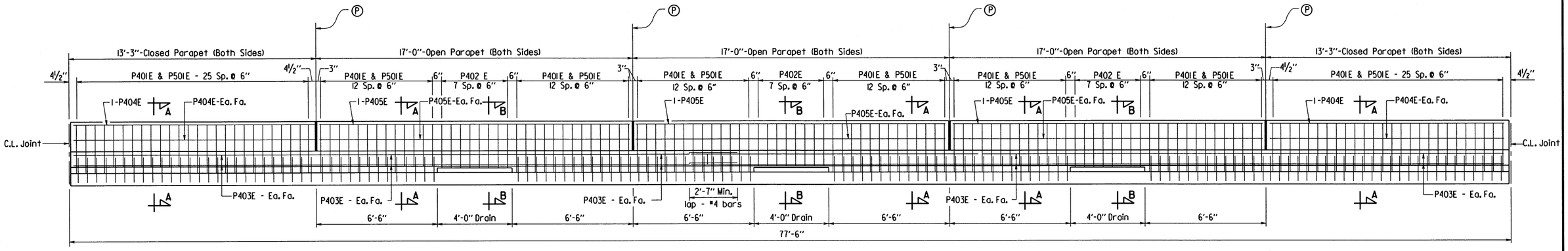
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/26/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59192

PRINT DATE: 5/15/2017

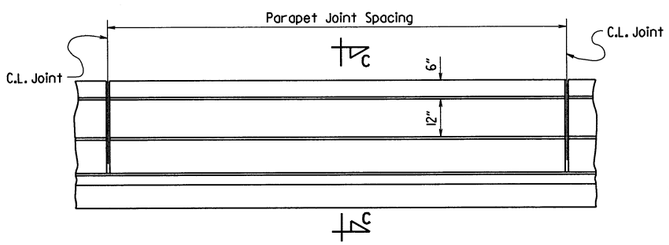
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	206	452
				①	07278 - 77'-6" SPAN - 59193			



PARAPET RAIL REINFORCING PLAN

3/8" = 1'-0"

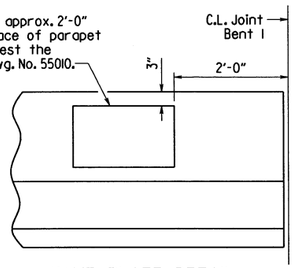
Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan" Dwg. No. 59192 Stop 1'-2" from top of slab.



DETAILS OF PARAPET ENHANCEMENT

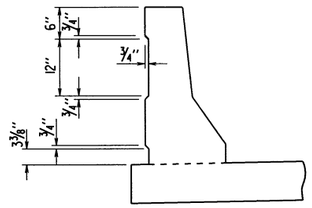
Outside Face Of Rail
No Scale

Place Type D Bridge Name Plate approx. 2'-0" from C.L. Joint on the front face of parapet rail on right side of span nearest the beginning of Bridge. See Std. Dwg. No. 550110.



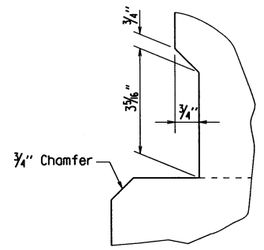
NAME PLATE DETAIL

No Scale



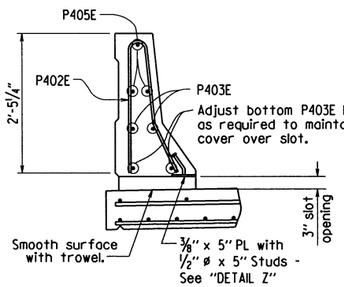
SECTION C-C

No Scale



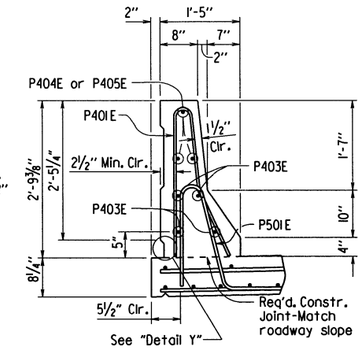
DETAIL Y

No Scale



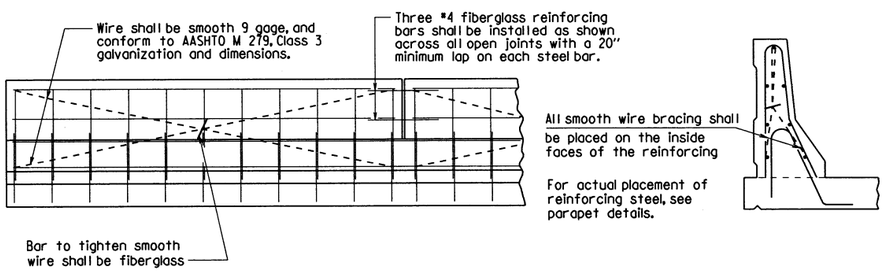
SECTION B-B

3/4" = 1'-0"



SECTION A-A

3/4" = 1'-0"

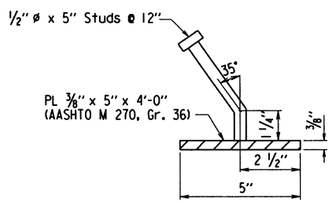


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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



DETAIL Z

No Scale

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)."

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK MAIN LANES

ROUTE SEC.

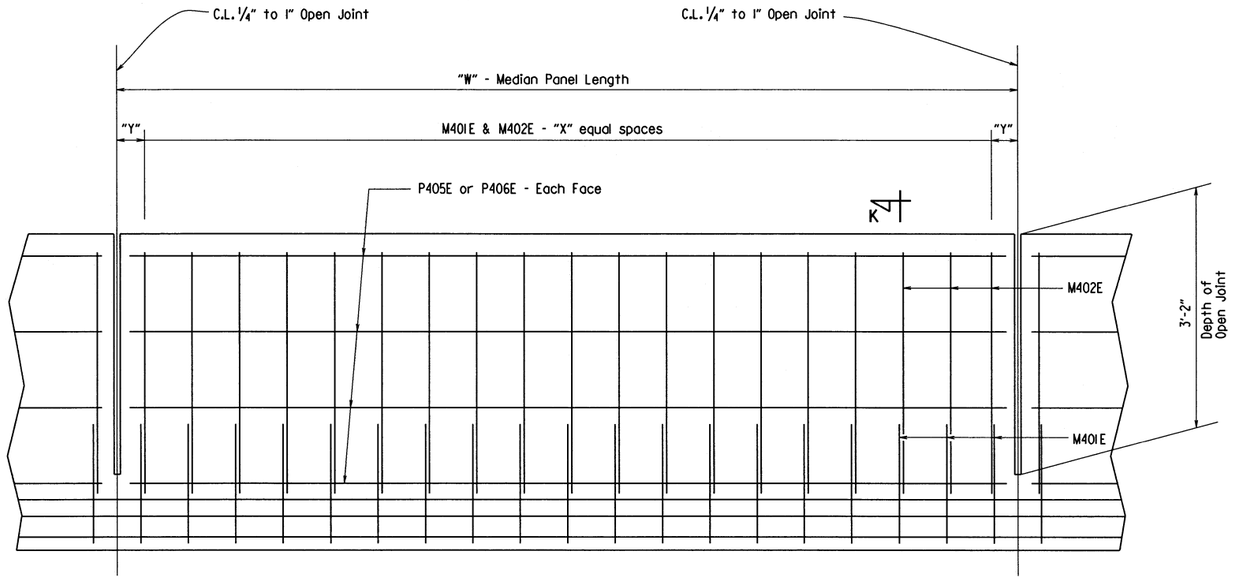
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59193

PRINT DATE: 5/15/2017

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.		CA0903	207	452
				07278 - 77'-6" SPAN - 59194				

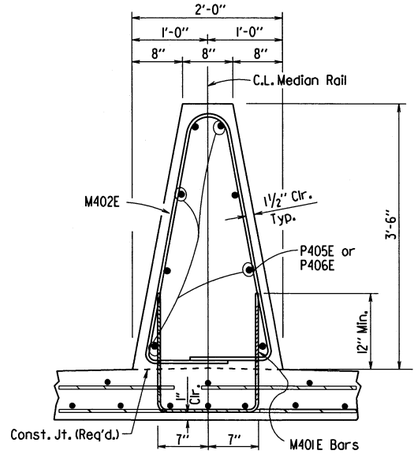


LONGITUDINAL SECTION AT MEDIAN BARRIER

1" = 1'-0"

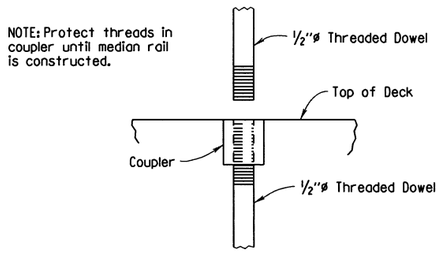
VARIABLES FOR CONCRETE MEDIAN BARRIER

"W"	"X"	"Y"	#4 bar
13'-3"	19	3½"	P405E
17'-0"	25	2"	P406E



SECTION K-K

1" = 1'-0"

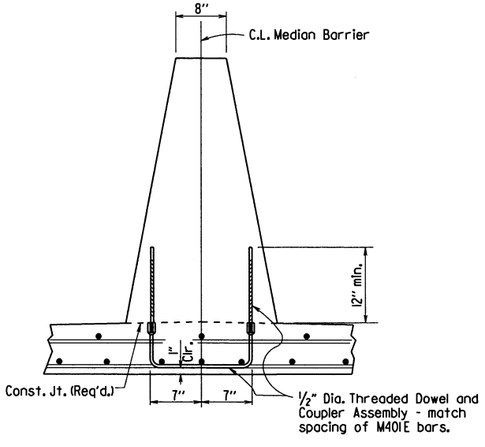


ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401E. The Threaded Dowel and Coupler Assembly shall consist of a OPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401E bars.

Dowel bars shall be of minimum 60 ksi yield strengh and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



ALTERNATE SECTION K-K

1" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 77'-6" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 11/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59194

PRINT DATE: 5/15/2017

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.		CA0903	208	452
				①		07278 - 260' UNIT - 59195		

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

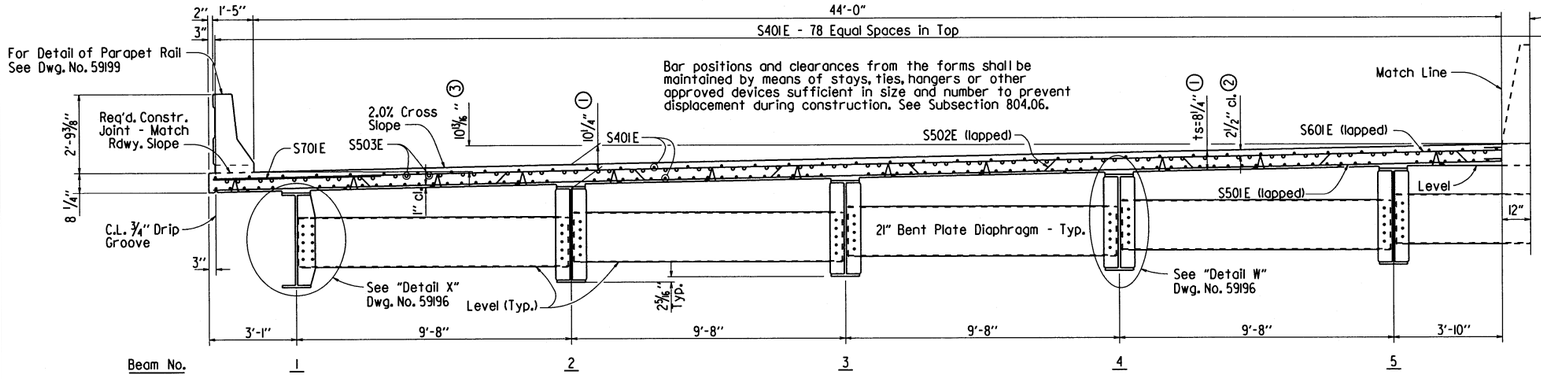
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E and S504E. Payment for reinforcing will be based on the weight of bar S502E and S504E.

SLAB REINFORCING

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. — Alternate
S502E @ 15" o.c.-Bent up over beams
S701E Top @ 15" o.c. @ gutter (See "Detail A", Dwg. No. 59198)

Longitudinal: S401E as shown
S503E as shown over Int. Supports

For General Notes, See Dwg. No. 59207.



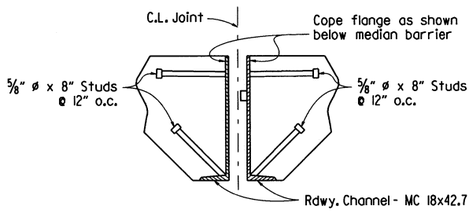
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

① See "Adjustment for Slab Thickness Tolerance" Detail.

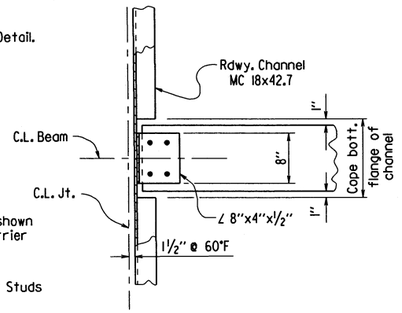
② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance"

③ Top of Deck to Gutter Line



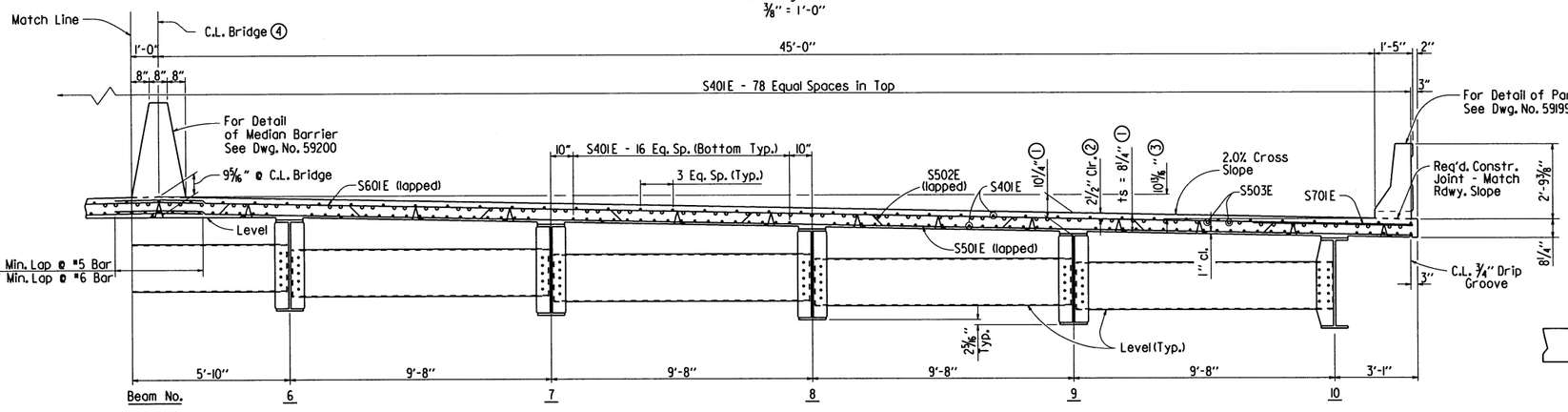
SECTION C-C

No Scale



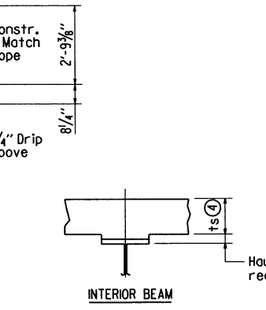
CHANNEL CONNECTION DETAIL

No Scale



TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"



④ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

TABLE FOR WELD

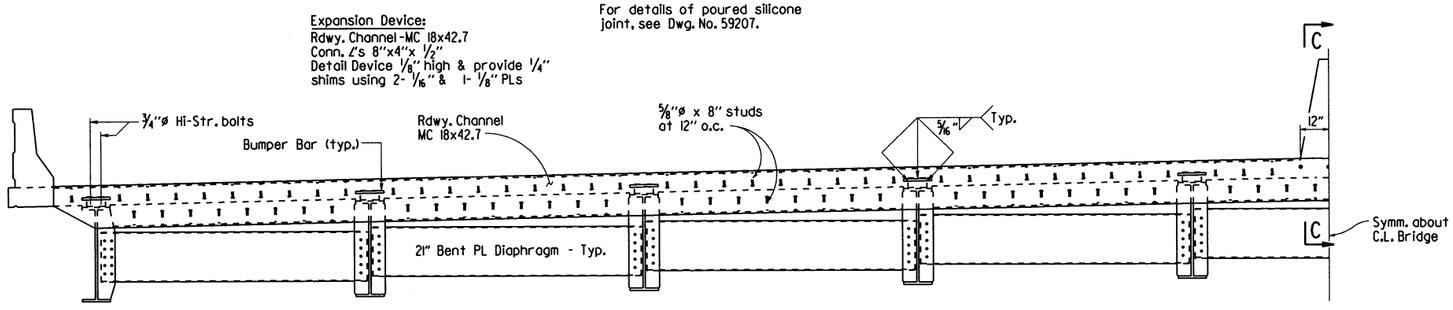
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	⅝"	

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.

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.

For details of poured silicone joint, see Dwg. No. 59207.

Expansion Device:
Rdwy. Channel-MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2-1/16" & 1-⅛" PLs



SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
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6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

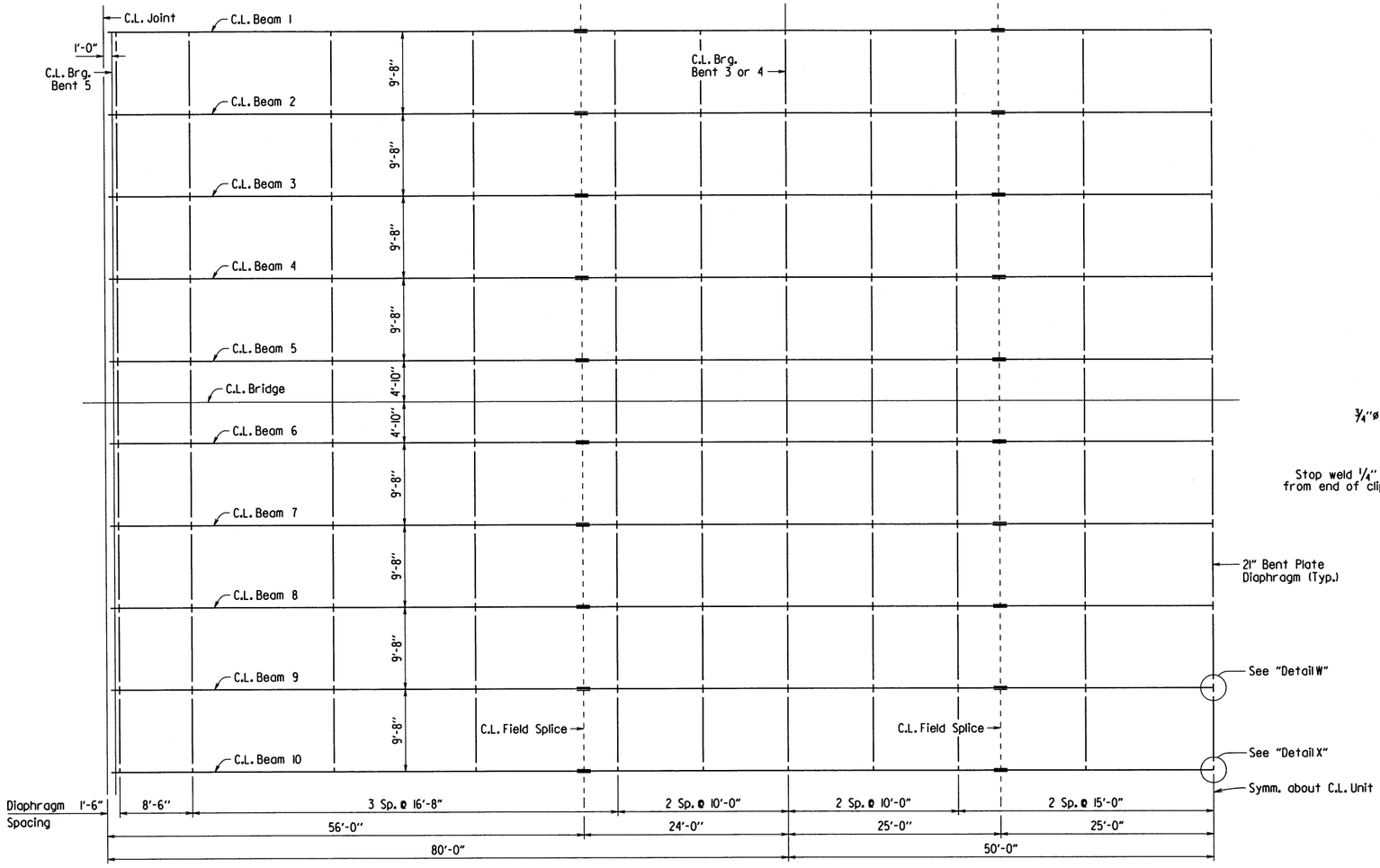
ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: RWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59195

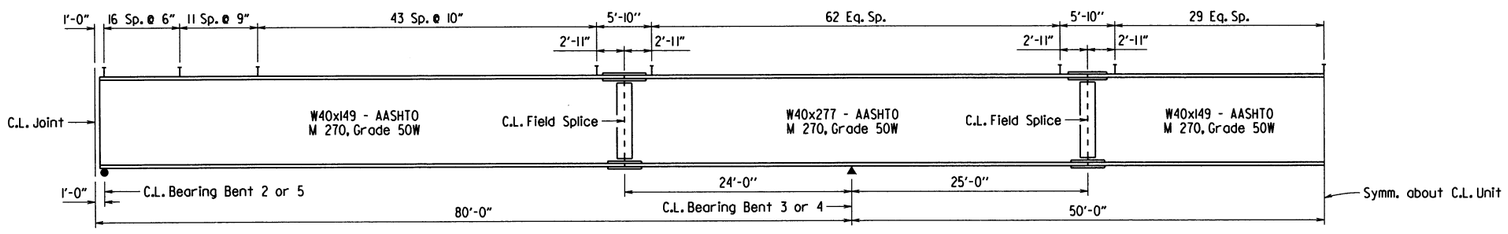
PRINT DATE: 5/15/2017

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.		CA0903	209	452
				① 07278 - 260' UNIT - 59196				



HALF FRAMING PLAN

1/8" = 1'-0"

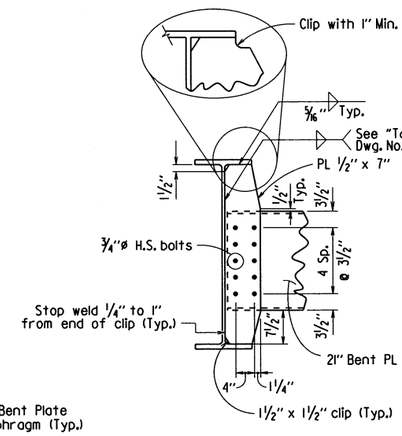


BEAM ELEVATION

No Scale

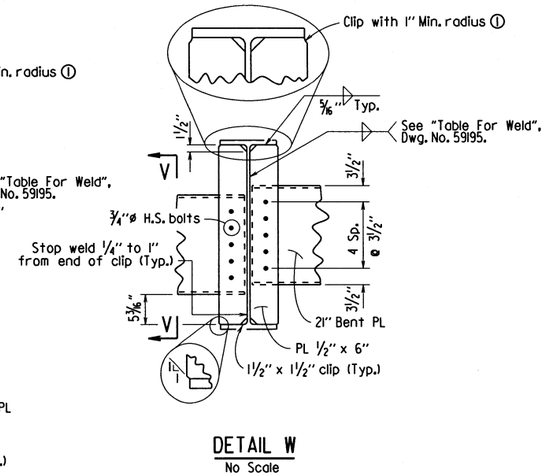
Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



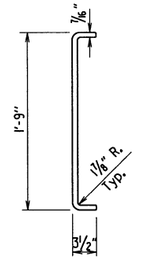
DETAIL X

No Scale



DETAIL W

No Scale



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V

No Scale



BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

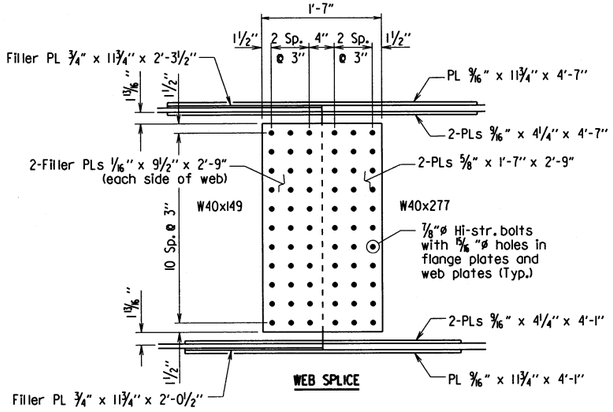
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWV DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

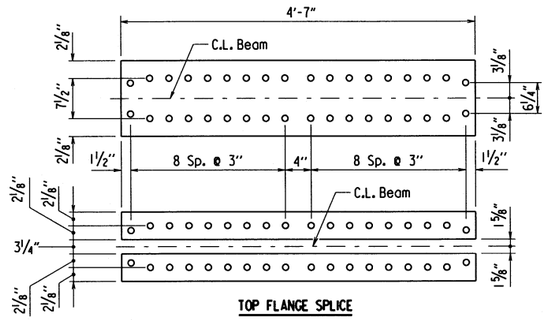
BRIDGE NO. 07278 DRAWING NO. 59196

PRINT DATE: 5/15/2017

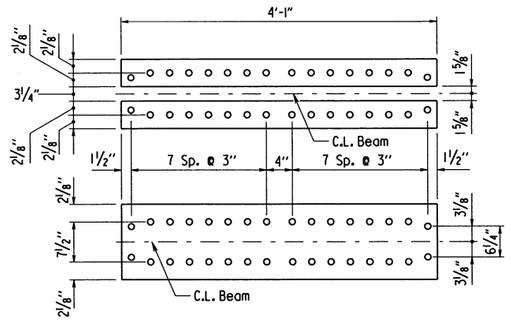
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	210	452
				①		07278 - 260' UNIT - 59197		



WEB SPLICE



TOP FLANGE SPLICE

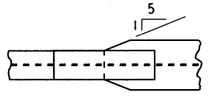


BOTTOM FLANGE SPLICE

All splice plates shall be AASHTO M 270, Gr. 50W

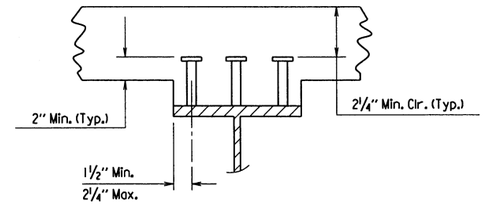
FIELD SPLICE DETAILS

1" = 1'-0"



FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

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 beam flange in accordance with the recommendations of the Manufacturer.

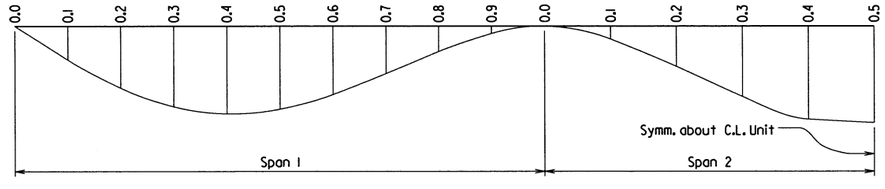
SHEAR CONNECTOR DETAIL

No Scale

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel			Structural Steel + Slab			Structural Steel + Slab + Parapet + Median Barrier		
		Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6
1	0	0	0	0	0	0	0	0	0	0
	0.1	0.071	0.077	0.077	0.432	0.530	0.530	0.470	0.549	0.571
	0.2	0.130	0.141	0.141	0.789	0.967	0.967	0.859	1.002	1.042
	0.3	0.169	0.183	0.183	1.020	1.250	1.250	1.110	1.295	1.347
	0.4	0.184	0.199	0.199	1.100	1.349	1.349	1.198	1.398	1.454
	0.5	0.174	0.188	0.188	1.031	1.263	1.263	1.123	1.309	1.362
	0.6	0.143	0.155	0.155	0.837	1.026	1.026	0.912	1.064	1.107
	0.7	0.100	0.108	0.108	0.575	0.704	0.704	0.626	0.730	0.759
	0.8	0.055	0.059	0.059	0.312	0.382	0.382	0.339	0.396	0.411
	0.9	0.018	0.019	0.019	0.100	0.122	0.122	0.108	0.126	0.131
2	0	0	0	0	0	0	0	0	0	0
	0.1	0.017	0.018	0.018	0.096	0.117	0.117	0.108	0.123	0.131
	0.2	0.061	0.066	0.066	0.349	0.428	0.428	0.390	0.448	0.472
	0.3	0.112	0.122	0.122	0.652	0.800	0.800	0.724	0.837	0.878
	0.4	0.153	0.166	0.166	0.899	1.102	1.102	0.996	1.151	1.207
	0.5	0.168	0.182	0.182	0.992	1.216	1.216	1.098	1.270	1.331

← C.L. Unit



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-5-17

BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK MAIN LANES

ROUTE SEC.

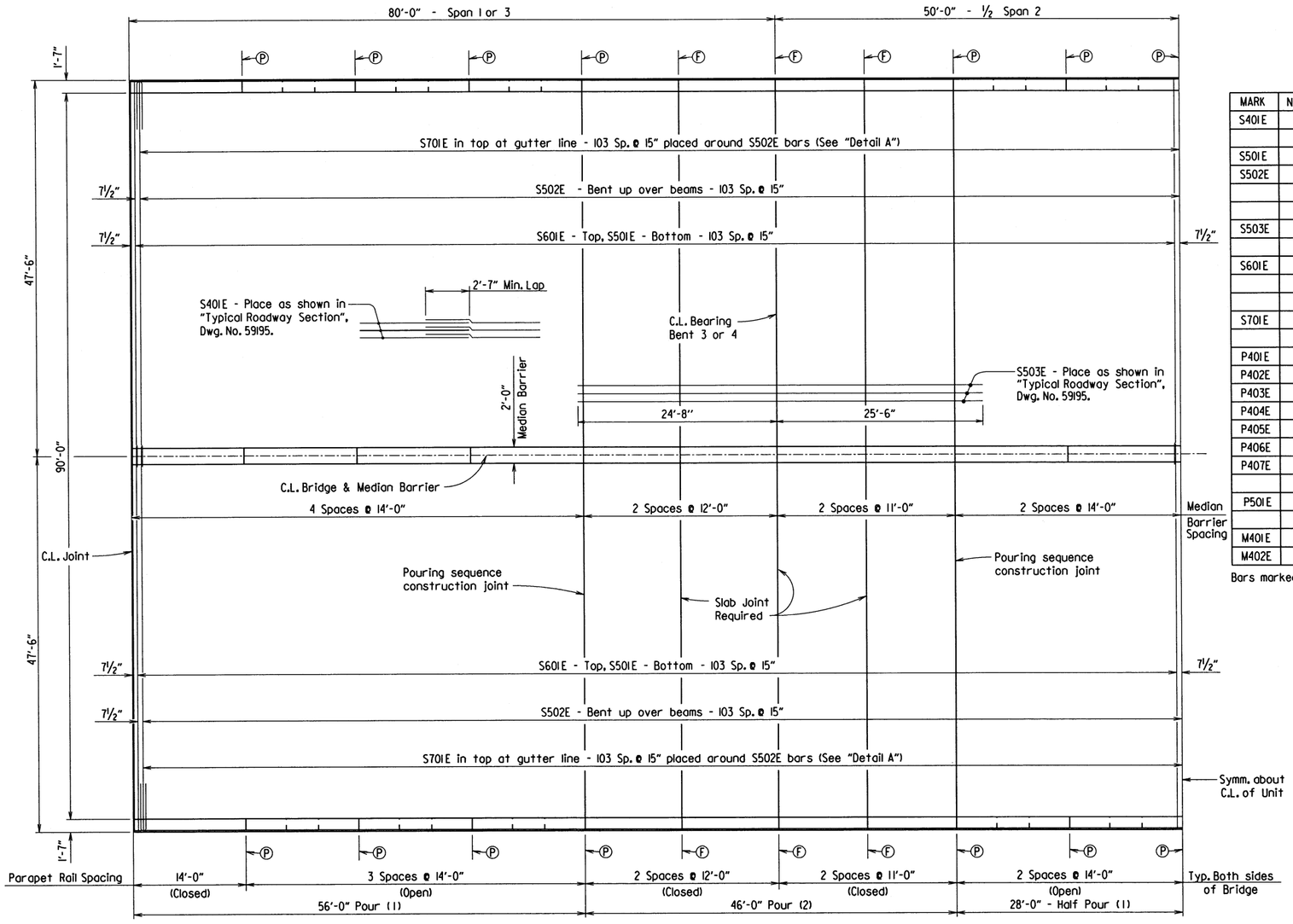
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59197

PRINT DATE: 5/15/2017

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.		CA0903	211	452
				①		07278 - 260' UNIT - 59198		



Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

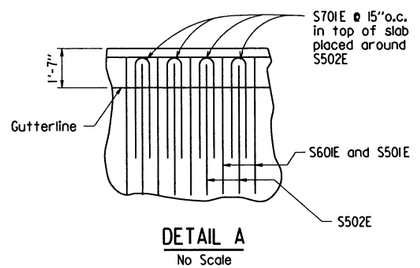
Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.

Unless otherwise noted:
Min. Lap for #4 Epoxy Coated Bar = 2'-7"
Min. Lap for #5 Epoxy Coated Bar = 3'-3"
Min. Lap for #6 Epoxy Coated Bar = 3'-10"

REINFORCING PLAN & DECK POURING SEQUENCE

⅛" = 1'-0"

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 between 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 completion of the slab and the pouring of the parapet railing and median barrier. Any parapet railing and median barrier pours made before the entire slab unit has been placed must be approved by the Engineer. 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 Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.



DETAIL A

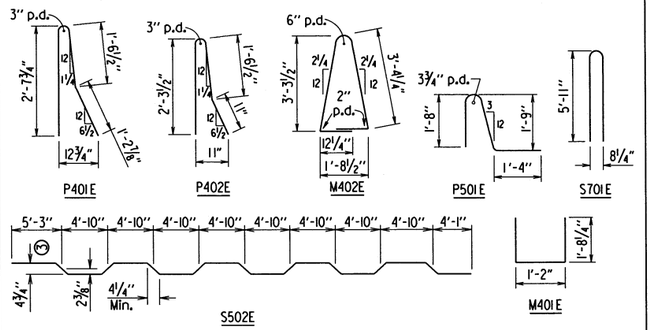
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	1694	39'-5"	Str.
S501E	416	48'-1"	Str.
S502E	414	49'-2"	3"
S503E	312	50'-2"	Str.
S601E	416	48'-4"	Str.
S701E	414	12'-1"	6½"
P401E	880	5'-6"	3"
P402E	160	4'-10"	3"
P403E	32	35'-2"	Str.
P404E	168	13'-8"	Str.
P405E	72	11'-8"	Str.
P406E	72	10'-8"	Str.
P407E	16	40'-2"	Str.
P501E	880	4'-9"	3¾"
M401E	412	4'-5"	2"
M402E	412	8'-11"	2"

BENDING DIAGRAMS

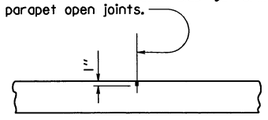
Dimensions are out to out of bars.



③ ½" Overtolerance
No Undertolerance

Bars marked with an "E" suffix shall be epoxy coated.

½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S (AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joint shall be installed before the parapet rail and median barrier are 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 slab (gutterline to gutterline). Slab joints shall align with parapet open joints.



SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS
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No. 9235
5-15-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

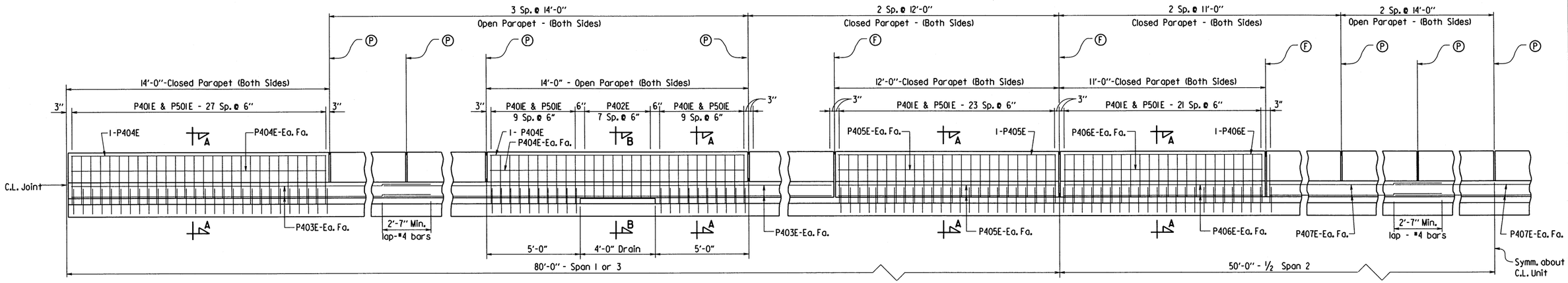
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/26/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59198

PRINT DATE: 5/15/2017

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.		CA0903	212	452
				①		07278 - 260' UNIT - 59199		

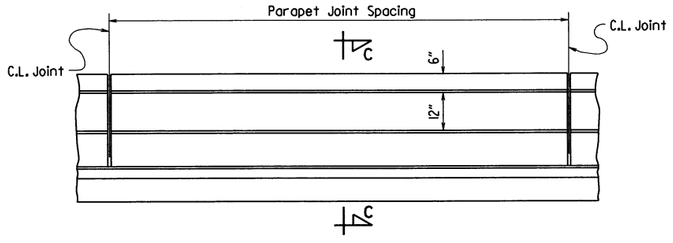


Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59198. Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59198. Stop 1'-2" from top of slab.

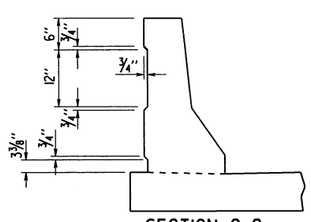
PARAPET RAIL REINFORCING PLAN

⅜" = 1'-0"



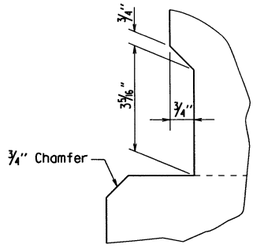
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



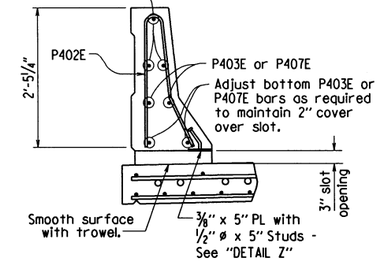
SECTION C-C

No Scale



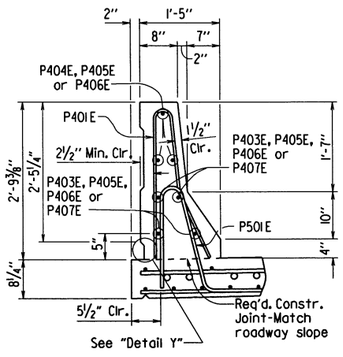
DETAIL Y

No Scale



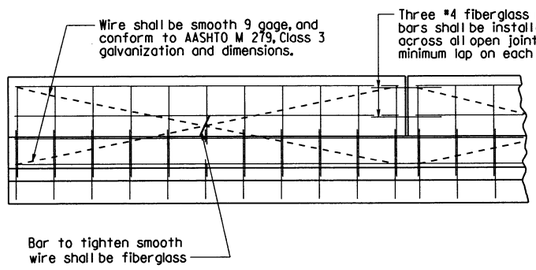
SECTION B-B

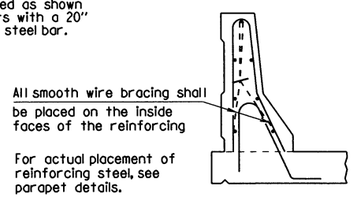
¾" = 1'-0"



SECTION A-A

¾" = 1'-0"



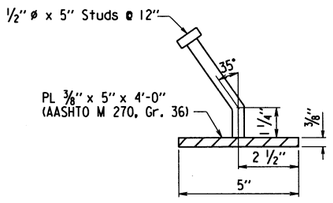


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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



DETAIL Z

No Scale

The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."

STATE OF ARKANSAS
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SHEET 5 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

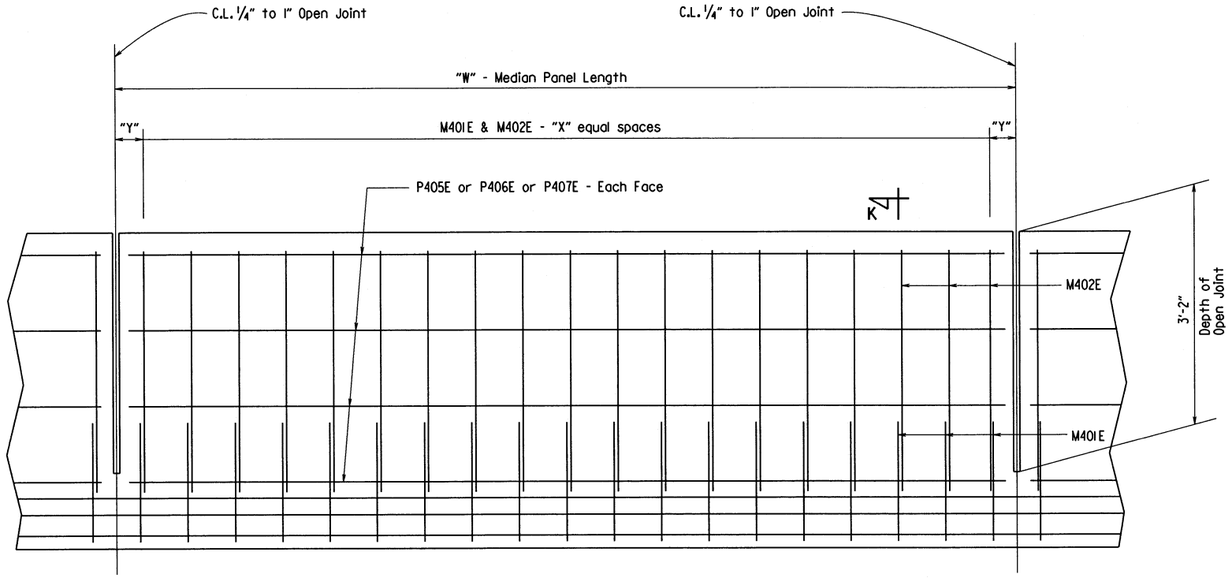
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59199

PRINT DATE: 5/15/2017

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.		CA0903	213	452
				①		07278 - 260' UNIT - 59200		

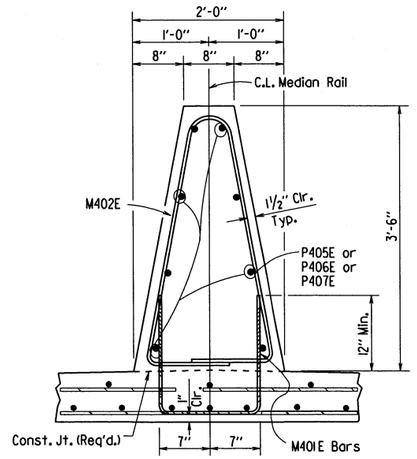


LONGITUDINAL SECTION AT MEDIAN BARRIER

1" = 1'-0"

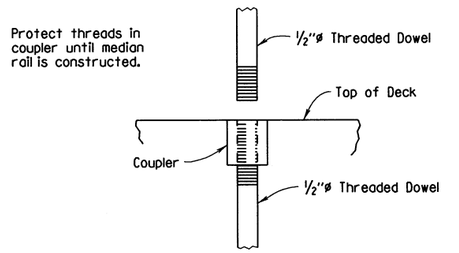
VARIABLES FOR CONCRETE MEDIAN BARRIER

"W"	"X"	"Y"	#4 bar
11'-0"	21	3"	P407E
12'-0"	17	4"	P406E
14'-0"	20	4"	P405E



SECTION K-K

1" = 1'-0"

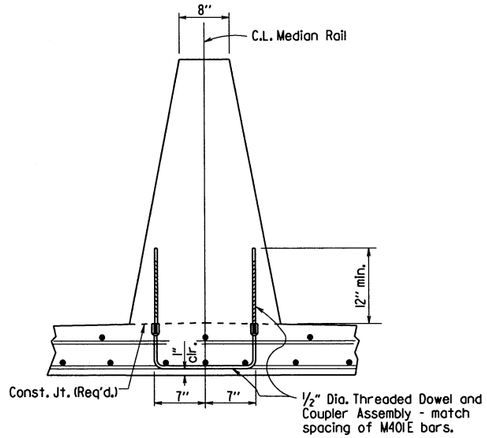


ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401E. The Threaded Dowel and Coupler Assembly shall consist of a OPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401E bars.

Dowel bars shall be of minimum 60 ksi yield strengh and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



ALTERNATE SECTION K-K

1" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
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SHEET 6 OF 6
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 11/19/07
CHECKED BY: KWY DATE: 5/15/17
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FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59200

PRINT DATE: 5/15/2017

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

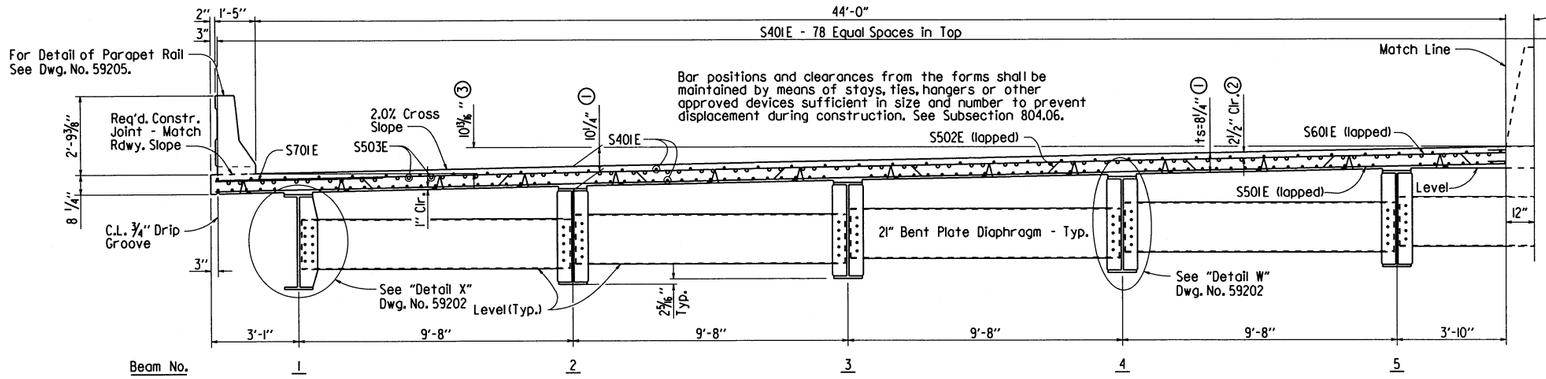
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E and S504E. Payment for reinforcing will be based on the weight of bar S502E and S504E.

SLAB REINFORCING

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. — Alternate
S502E @ 15" o.c.-Bent up over beams
S701E Top @ 15" o.c. @ gutter (See "Detail A", Dwg. No. 59204)

Longitudinal: S401E as shown
S503E as shown over Int. Supports

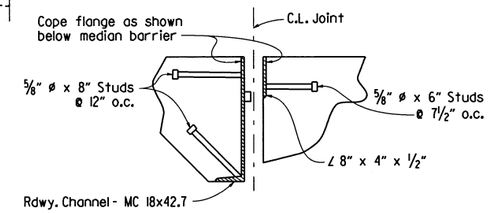
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				6	ARK.			
				JOB NO.		CA0903	214	452
				07278 - 155' UNIT - 59201				



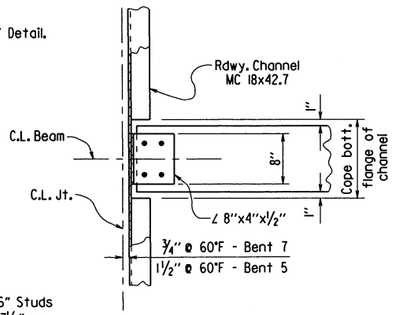
TYPICAL ROADWAY SECTION
Looking Ahead
⅜" = 1'-0"

1. See "Adjustment for Slab Thickness Tolerance" Detail.
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. Top of Deck C.L. Bridge to Gutter Line

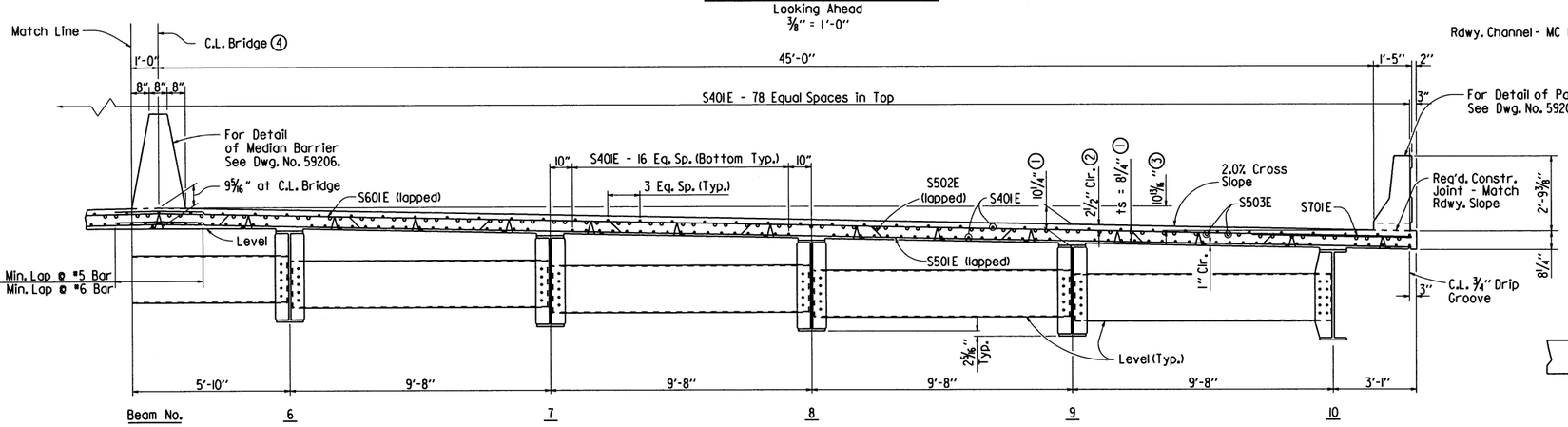
For General Notes, See Dwg. No. 59207.



SECTION C-C
No Scale

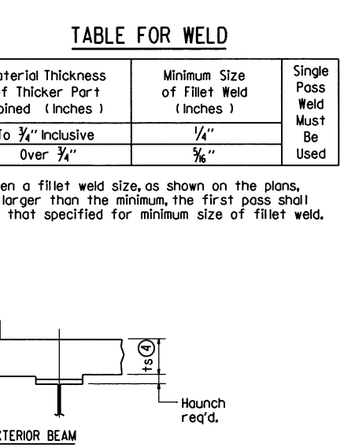


CHANNEL CONNECTION DETAIL
No Scale



TYPICAL ROADWAY SECTION
Looking Ahead
⅜" = 1'-0"

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.



(4) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
No Scale

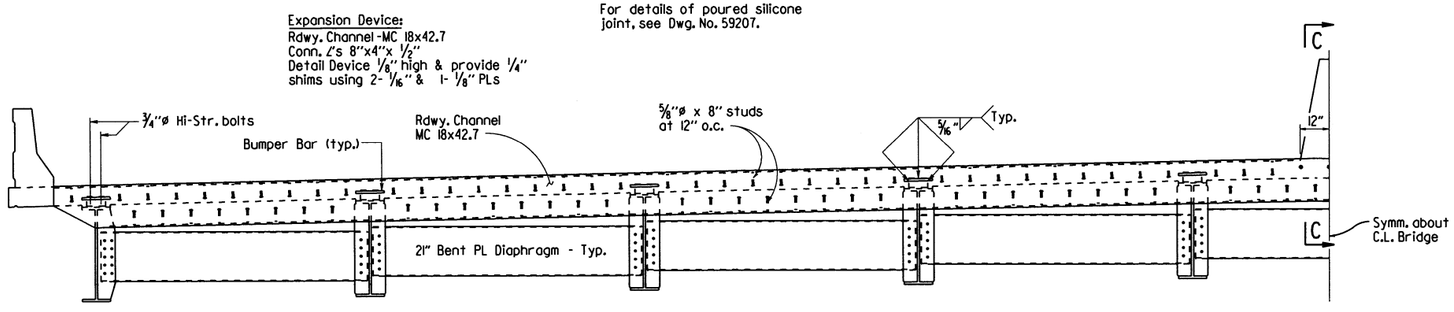
TABLE FOR WELD

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"	⅝"	

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.

Expansion Device:
Rdwy. Channel - MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLS

For details of poured silicone joint, see Dwg. No. 59207.



SECTION THRU JOINT AT BENT 7
Looking Back
⅜" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK MAIN LANES

ROUTE SEC.

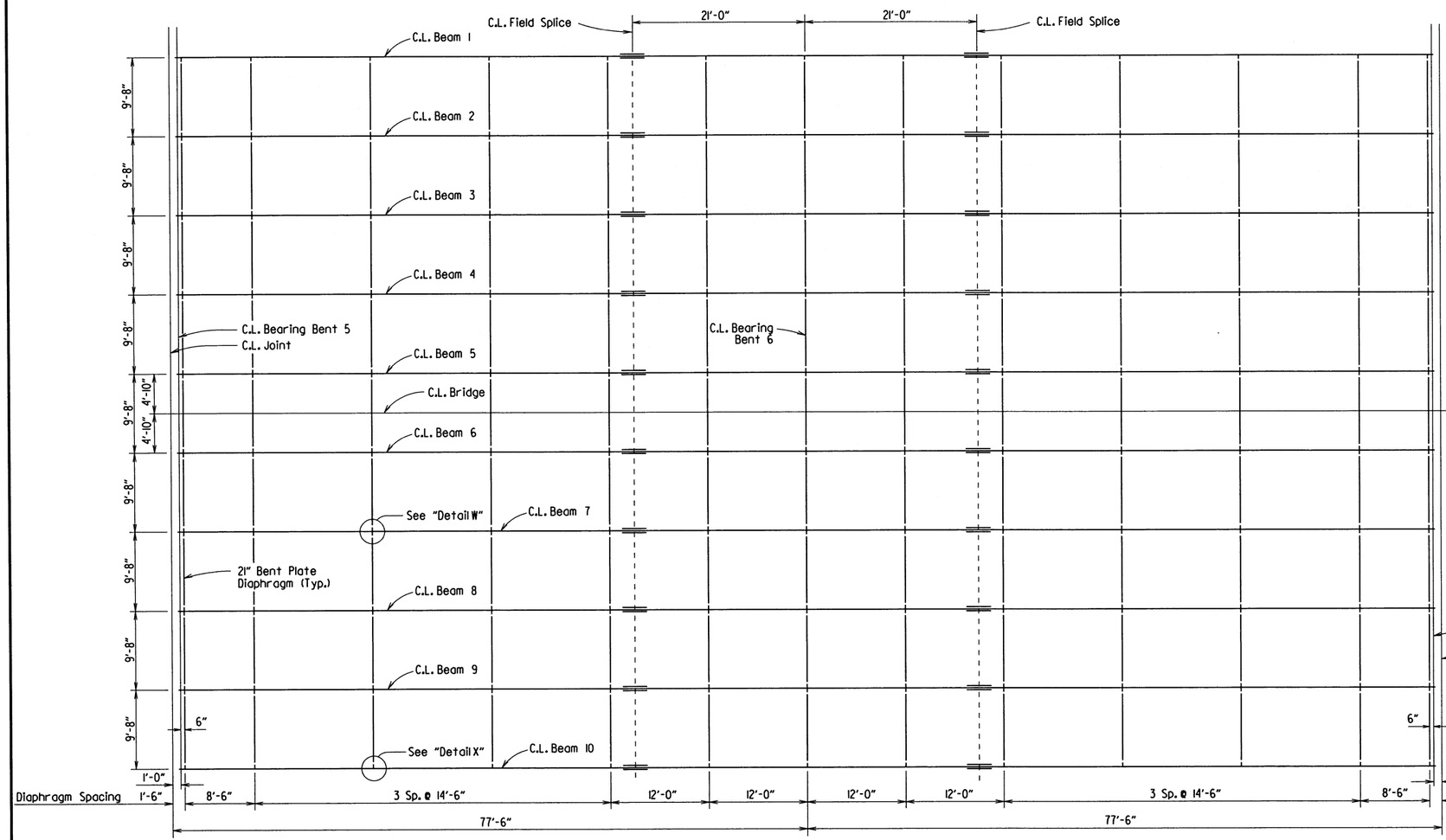
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59201

PRINT DATE: 5/15/2017

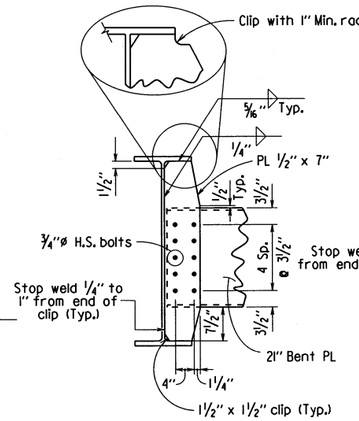
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	215	452
				①		07278 - 155' UNIT - 59202		



FRAMING PLAN

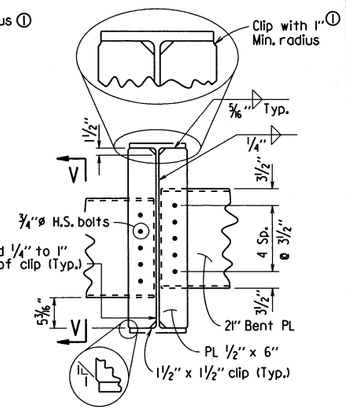
1/8" = 1'-0"

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



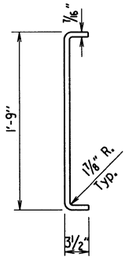
DETAIL X

No Scale



DETAIL W

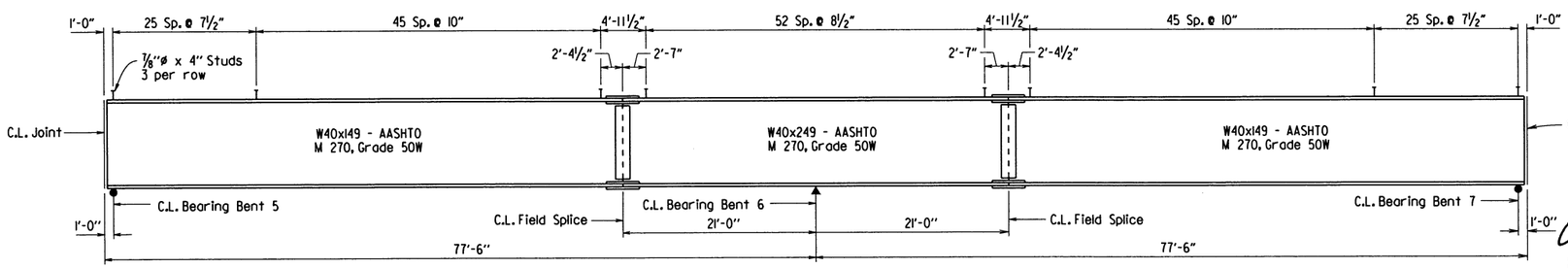
No Scale



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V

No Scale



Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

BEAM ELEVATION

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5/15/17

BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

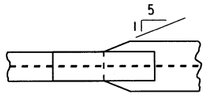
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07 FILENAME: bca0903a2_sl.dgn
CHECKED BY: KWY DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: CSL DATE: 4/07

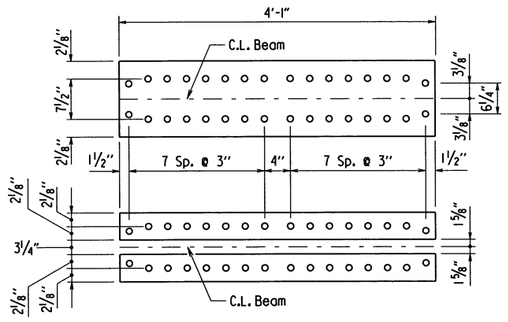
BRIDGE NO. 07278 DRAWING NO. 59202

PRINT DATE: 5/15/2017

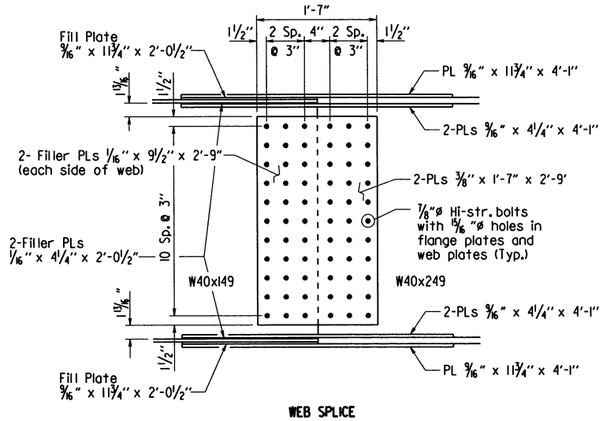
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				6	ARK.			
				JOB NO.		CA0903	216	452
				①		07278 - 155' UNIT - 59203		



FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS
No Scale



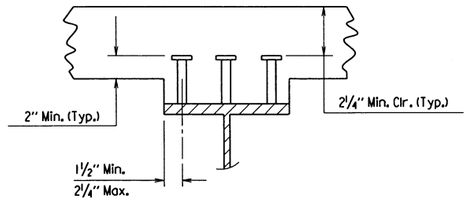
FLANGE SPLICE



WEB SPLICE

All splice plates shall be AASHTO M 270, Gr. 50W

FIELD SPLICE - DETAILS
1" = 1'-0"

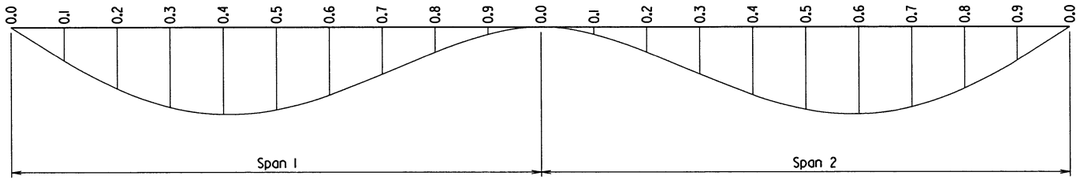


Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL
No Scale

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel			Structural Steel + Slab			Structural Steel + Slab + Parapet + Median Barrier		
		Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6	Bm 1 & 10	Bm 2-4,7-9	Bm 5 & 6
Span 1	0	0	0	0	0	0	0	0	0	0
	0.1	0.059	0.065	0.065	0.396	0.465	0.465	0.43	0.483	0.502
	0.2	0.109	0.119	0.119	0.725	0.849	0.849	0.788	0.881	0.917
	0.3	0.141	0.155	0.155	0.936	1.097	1.097	1.018	1.139	1.185
	0.4	0.152	0.167	0.167	1.008	1.181	1.181	1.097	1.227	1.276
	0.5	0.143	0.157	0.157	0.942	1.104	1.104	1.026	1.147	1.194
	0.6	0.116	0.127	0.127	0.761	0.891	0.891	0.83	0.926	0.965
	0.7	0.079	0.087	0.087	0.514	0.603	0.603	0.562	0.628	0.654
	0.8	0.042	0.046	0.046	0.27	0.317	0.317	0.295	0.33	0.344
	0.9	0.012	0.014	0.014	0.079	0.093	0.093	0.086	0.097	0.101
	0	0	0	0	0	0	0	0	0	0
Span 2	0.1	0.012	0.014	0.014	0.079	0.093	0.093	0.086	0.097	0.101
	0.2	0.042	0.046	0.046	0.27	0.316	0.316	0.295	0.329	0.343
	0.3	0.079	0.087	0.087	0.514	0.603	0.603	0.562	0.628	0.654
	0.4	0.116	0.127	0.127	0.761	0.891	0.891	0.83	0.927	0.965
	0.5	0.143	0.157	0.157	0.942	1.104	1.104	1.026	1.147	1.194
	0.6	0.152	0.167	0.167	1.008	1.181	1.181	1.097	1.227	1.276
	0.7	0.141	0.155	0.155	0.936	1.097	1.097	1.018	1.139	1.185
	0.8	0.109	0.119	0.119	0.725	0.848	0.848	0.788	0.88	0.916
	0.9	0.059	0.065	0.065	0.396	0.465	0.465	0.43	0.483	0.502
	0	0	0	0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM
No Scale

Camber for Dead Load Deflection plus Vertical curve ± ¼" tolerance. Deflections shown are from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
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6-5-17
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BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

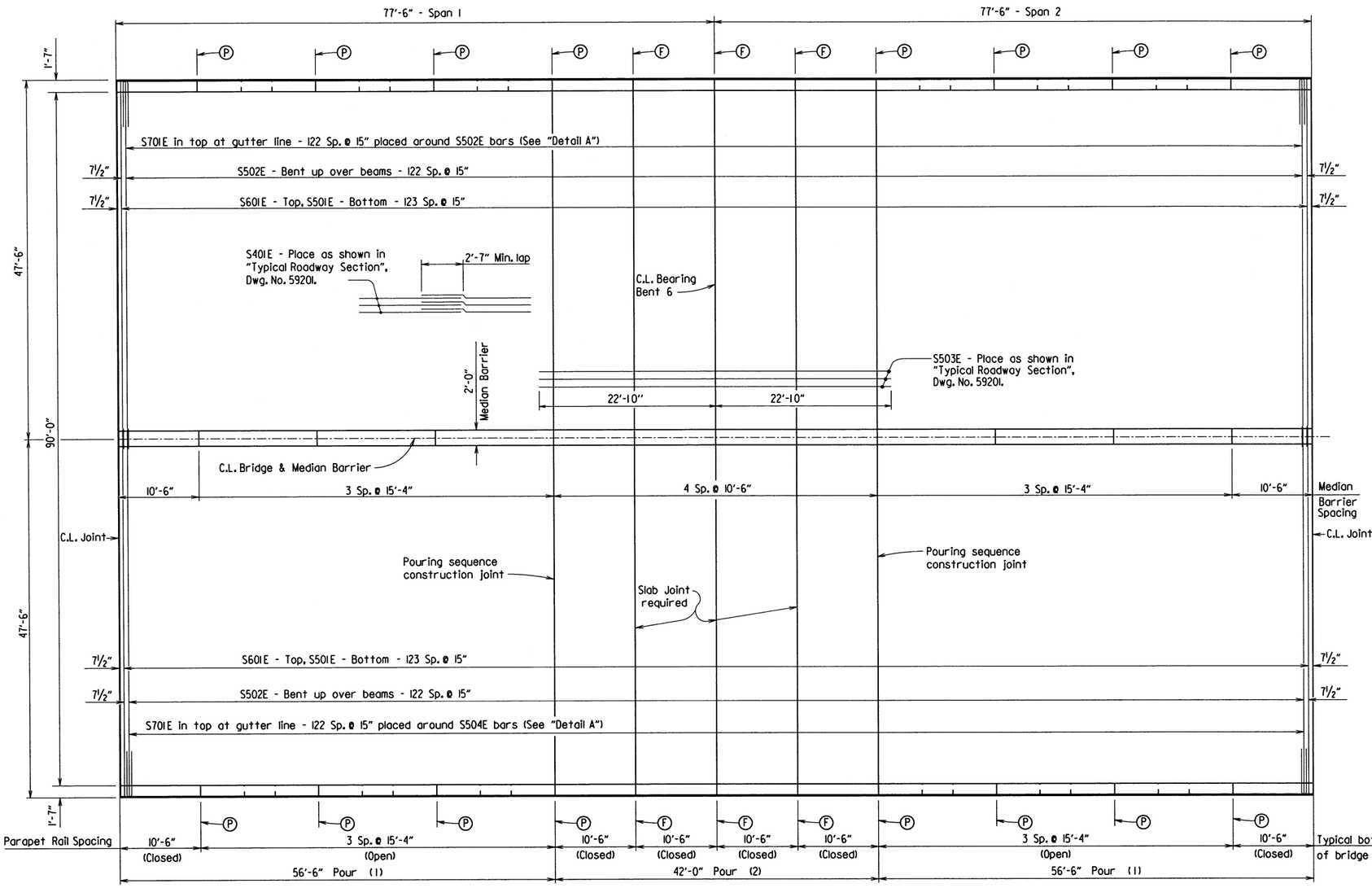
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 4/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59203

PRINT DATE: 5/15/2017

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.		CA0903	217	452
				①		07278 - 155' UNIT - 59204		

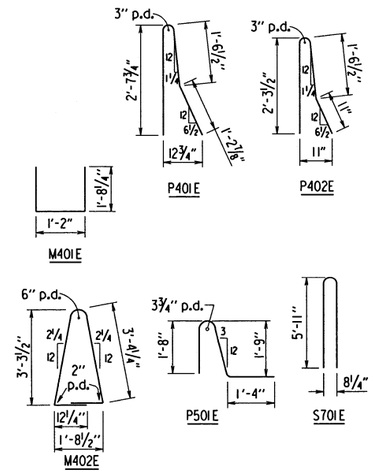


BAR LIST

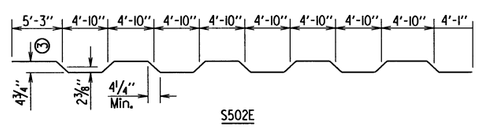
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	968	40'-8"	Str.
S501E	248	48'-1"	Str.
S502E	246	49'-2"	3"
S503E	156	45'-8"	Str.
S601E	248	48'-4"	Str.
S701E	246	12'-1"	6½"
P401E	516	5'-6"	3"
P402E	96	4'-10"	3"
P403E	32	34'-8"	Str.
P404E	100	10'-2"	Str.
P405E	84	15'-0"	Str.
P501E	516	4'-9"	3¾"
M401E	264	4'-5"	2"
M402E	264	8'-11"	2"

BENDING DIAGRAMS

Dimensions are out to out of bars.



P401E P402E M401E P501E S701E M402E



S502E

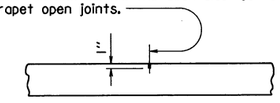
③ ½" Overtolerance
No Undertolerance

Bars marked with an "E" suffix shall be epoxy coated.

REINFORCING PLAN & DECK POURING SEQUENCE

⅛" = 1'-0"

½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S (AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joint shall be installed before the parapet rail and median barrier are 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 slab (gutterline to gutterline). Slab joints shall align with parapet open joints.

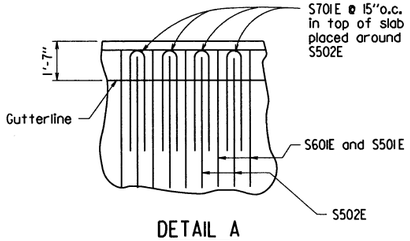


SLAB JOINT DETAIL
No Scale

Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.

Unless otherwise noted:
Min. Lap for #4 Epoxy Coated Bar = 2'-7"
Min. Lap for #5 Epoxy Coated Bar = 3'-3"
Min. Lap for #6 Epoxy Coated Bar = 3'-10"



DETAIL A
No Scale

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 between 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 completion of the slab and the pouring of the parapet railing and median barrier. Any parapet railing and median barrier pours made before the entire slab unit has been placed must be approved by the Engineer. 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 Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

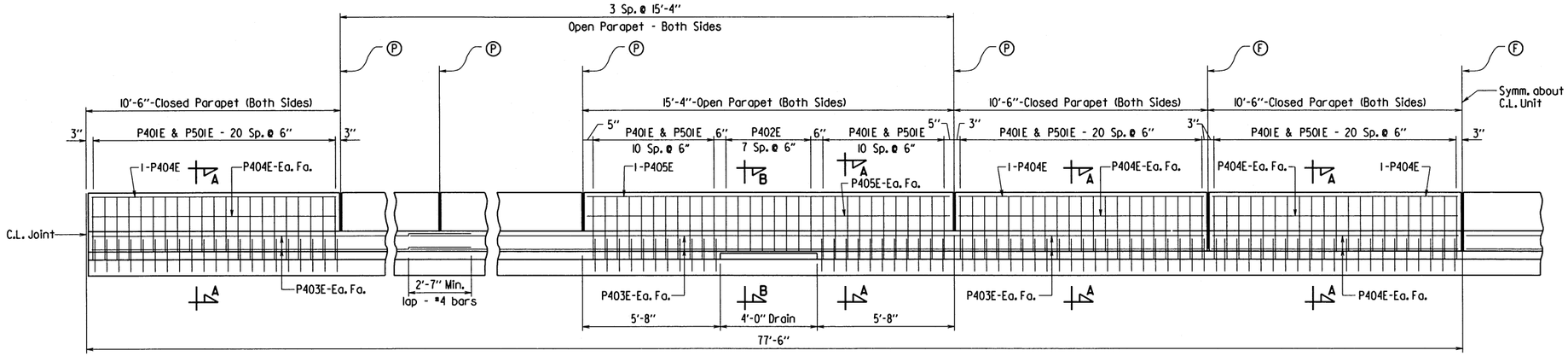
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/26/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59204

PRINT DATE: 5/15/2017

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.		CA0903	218	452
				①	07278 - 155' UNIT - 59205			

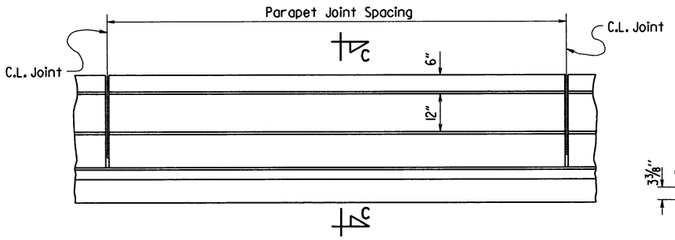


PARAPET RAIL REINFORCING PLAN

3/8" = 1'-0"

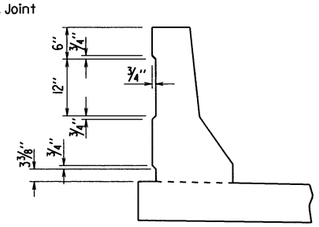
Ⓕ C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59204. Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59204. Stop 1'-2" from top of slab.



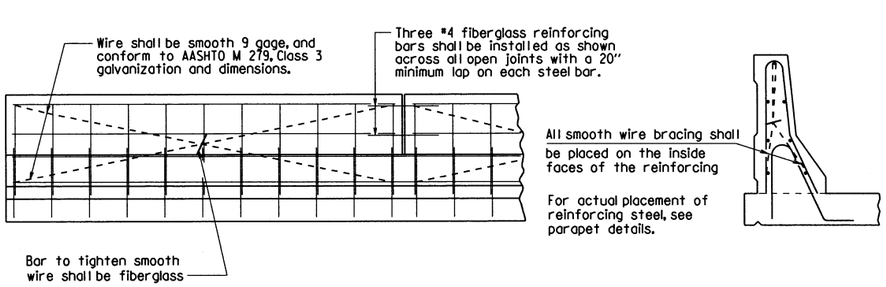
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



SECTION C-C

No Scale

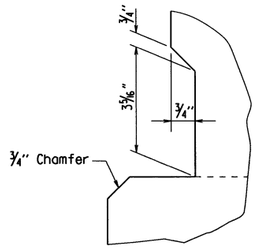


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

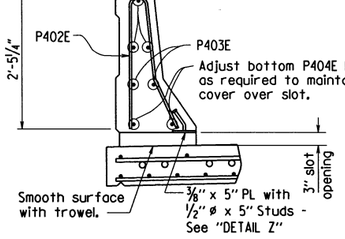
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



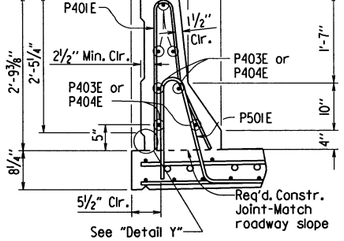
DETAIL Y

No Scale



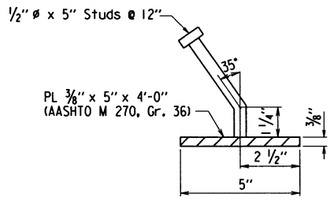
SECTION B-B

3/4" = 1'-0"



SECTION A-A

3/4" = 1'-0"



DETAIL Z

No Scale

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)."

STATE OF ARKANSAS
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SHEET 5 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

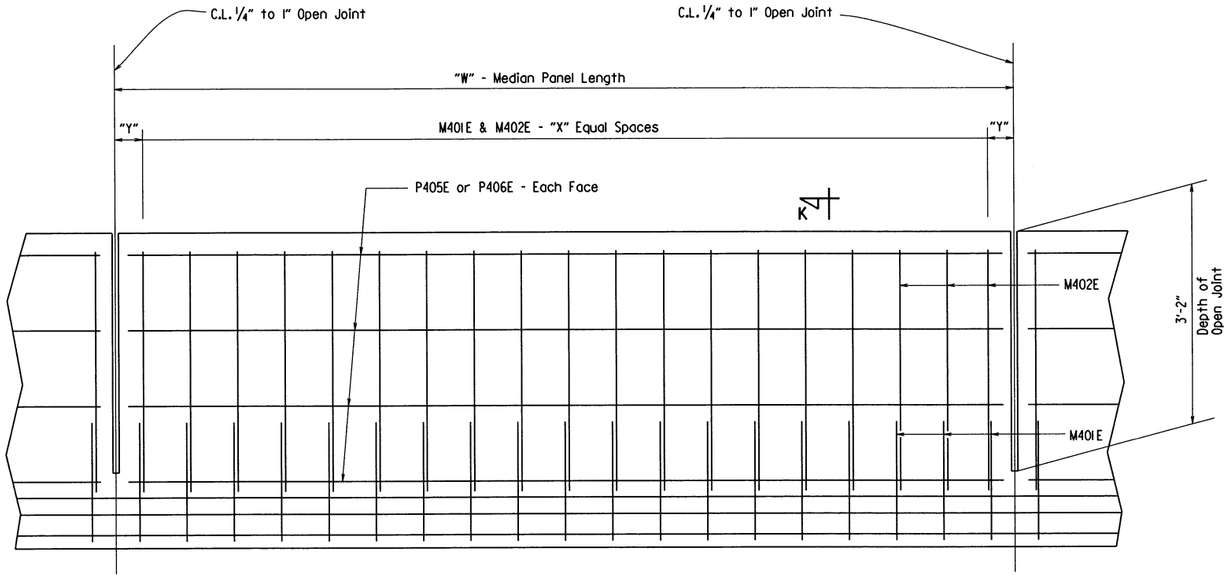
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07
FILENAME: bca0903a2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07278 DRAWING NO. 59205

PRINT DATE: 5/15/2017

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.		CA0903	219	452
				①	07278 - 155' UNIT - 59206			

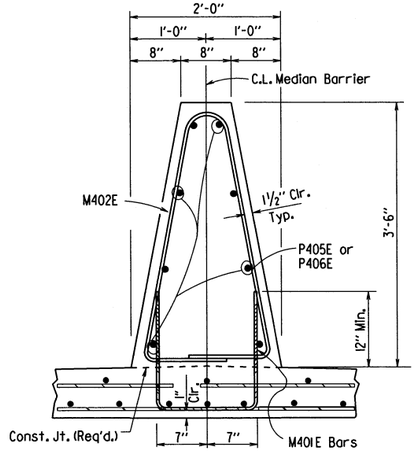


LONGITUDINAL SECTION AT MEDIAN BARRIER K

1" = 1'-0"

VARIABLES FOR CONCRETE MEDIAN BARRIER

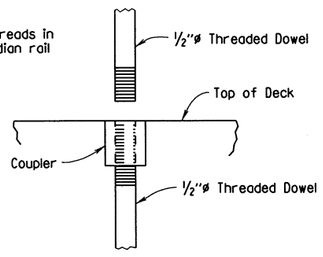
"W"	"X"	"Y"	#4 bar
10'-6"	20	3"	P405E
15'-4"	22	4"	P406E



SECTION K-K

1" = 1'-0"

NOTE: Protect threads in coupler until median rail is constructed.

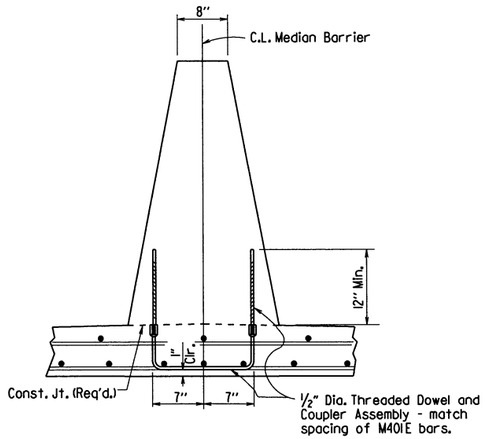


ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401E. The Threaded Dowel and Coupler Assembly shall consist of a OPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401E bars.

Dowel bars shall be of minimum 60 ksi yield strengh and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.



ALTERNATE SECTION K-K

1" = 1'-0"

STATE OF ARKANSAS
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SHEET 6 OF 6
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 11/19/07 FILENAME: bca0903a2_sl.dgn
CHECKED BY: KWV DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: CSL DATE: 4/07

BRIDGE NO. 07278 DRAWING NO. 59206

PRINT DATE: 5/15/2017

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				6	ARK.			
				JOB NO.		CA0903	220	452
				①	07278 - COMMON DETAILS - 59207			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007).

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:
Concrete: All concrete shall be Class S(AE) with a minimum 28 day strength f'c = 4000 psi.

Reinforcing Steel: Reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi.), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural Steel: Structural steel shall conform to AASHTO M 270, Gr. 50W (Fy = 50,000 psi.) or AASHTO M 270 Gr. 36 (Fy = 36,000 psi.).

STRUCTURAL STEEL:
All Structural Steel shall be AASHTO M 270, Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Structural Steel completely embedded in concrete may be AASHTO M 270. Gr. 36, Gr. 50, or Gr. 50W. AASHTO M 270, Gr. 50W Steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) unless noted otherwise.

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 the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams, including all 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 shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)".

Steel plates for main members 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.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with the recommendations of the manufacturer.

All beams shall be blocked in their true position 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 position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and those marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of 1/4" (plus or minus) is allowed for camber.

Field connections shall be bolted with high-strength bolts. Bolts shall be 3/4"ø, except as noted, and open holes shall be 13/16 "ø unless otherwise noted. Holes for 3/4"ø bolts may be 15/16 "ø if a washer is supplied for use under both the nut and the head of the bolt. Bolt spacing shall be 2 1/2" for 3/4"ø bolts. For field splices, bolts shall be 7/8"ø bolts. Open holes shall be 15/16 "ø. Bolt spacing shall be 3" for 1/8"ø bolts. Bolts shall be placed with heads on the outside face of the exterior beam web and on the bottom of the beam flanges.

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 permanent or temporary, 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.

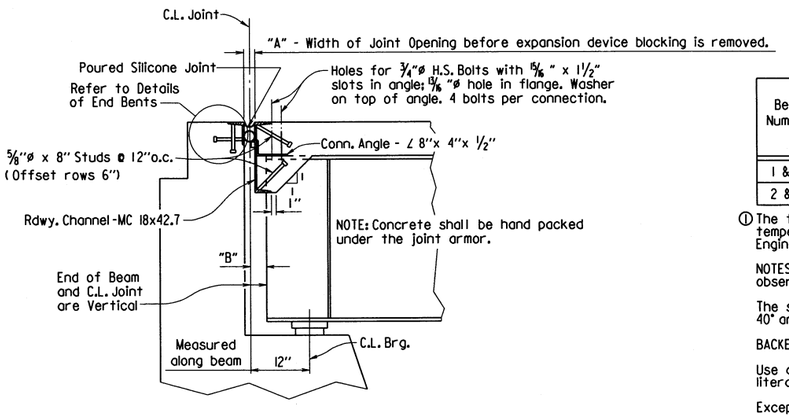
Diaphragms shall be installed as beams are erected. Unless otherwise noted, all bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the deck.

REINFORCING STEEL:
The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports, sufficient in size and number, 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)".

CONCRETE:
All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted. 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.

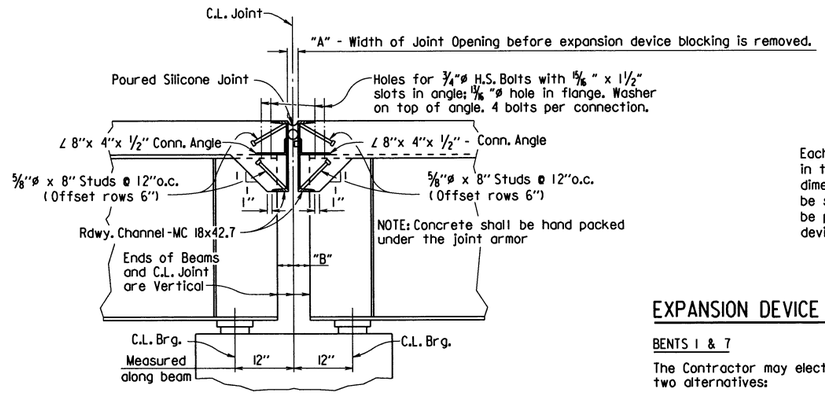
The concrete deck shall be given a Tine Finish in accordance with Subsection 802.19 for Class 5, Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. 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 parapet railing.

A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.



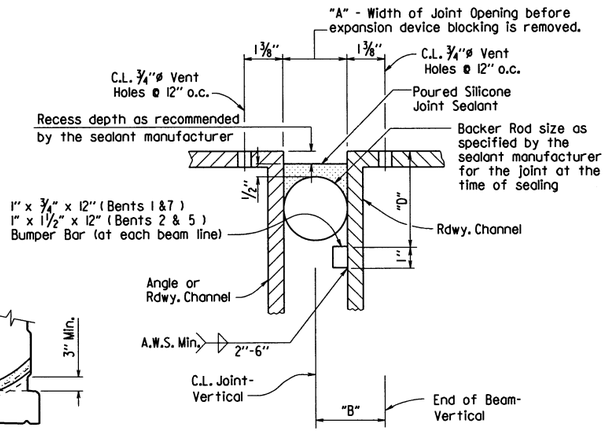
SECTION THRU JOINT AT BENTS 1 & 7

3/4" = 1'-0"



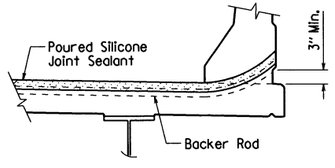
SECTION THRU JOINT AT BENTS 2 & 5

3/4" = 1'-0"



DETAIL OF POURED SILICONE JOINT SEAL

No Scale



JOINT SEAL PLACEMENT AT CURB

No Scale

SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature Of: ①			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1 & 7	1 5/8"	1 1/2"	1 3/8"	2" ±	1" x 3/4"	5"
2 & 5	3 3/16"	3"	2 11/16"	2 3/4" ±	1" x 1 1/2"	5"

① 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.

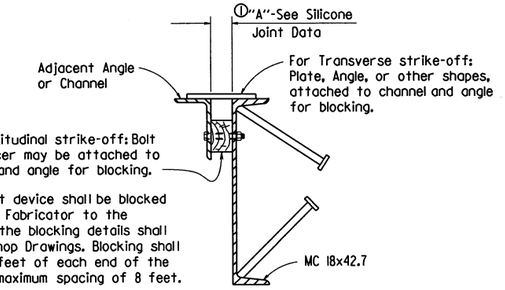
The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

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.



Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A", and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

1 1/2" = 1'-0"

EXPANSION DEVICE INSTALLATION

BENTS 1 & 7

The Contractor may elect to install the expansion device for the end bents 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.

BENTS 2 & 5

After all beams on both sides of the joint are erected, the blocked expansion device shall be installed and adjusted for grade. Connection bolts shall be tightened only on the unit whose concrete will be poured first. Connection bolts on the second unit shall be loosely installed to allow for thermal movements and for end rotation of the beams of the first unit while the concrete deck is poured.

After the concrete on the first unit has hardened and immediately prior to pouring concrete for the second unit, the blocking shall be removed and the joint width shall be adjusted for temperature. Joint openings shown are for when concrete is poured at an air temperature of 60°F. If concrete is poured at other temperatures, set the joint width by interpolating. After the joint width has been set, the connection bolts on the second unit shall be tightened and concrete in the second unit can then be poured. A joint opening adjustment is not required for end rotation of the beams caused by the weight of the slab and parapets.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

COMMON SUPERSTRUCTURE DETAILS
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: CSL DATE: 4/07

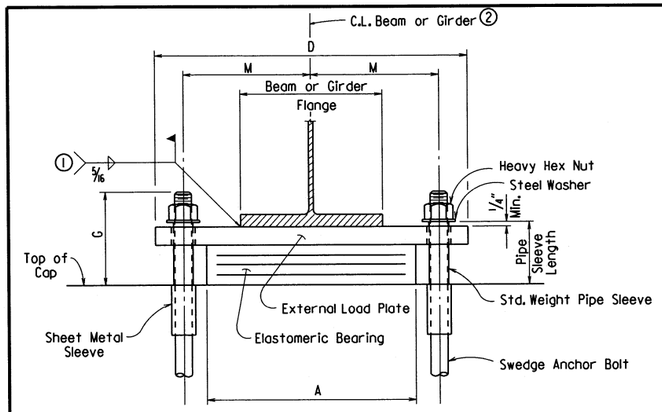
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BRIDGE NO. 07278 DRAWING NO. 59207

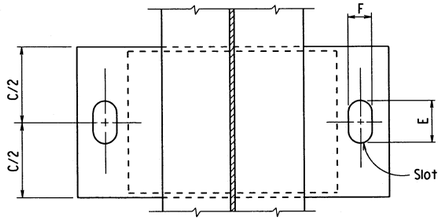
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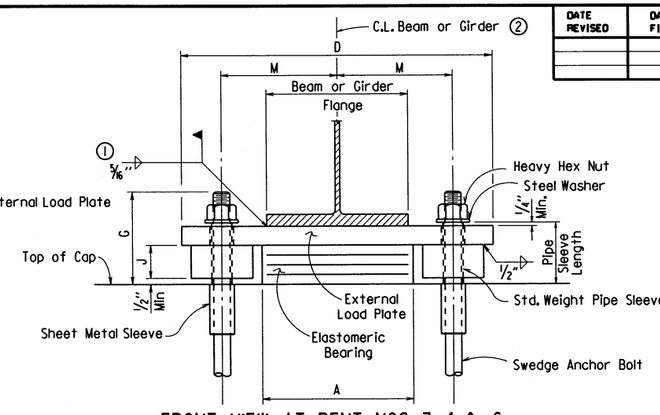
① 07278 - ELASTO. BRGS. - 59208



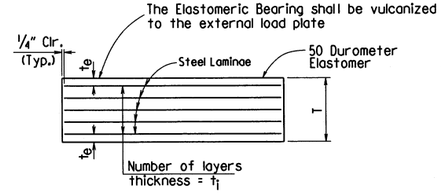
FRONT VIEW AT BENT NOS 1, 2BK, 2AH, 5BK, 5AH & 7



PLAN VIEW AT BENT NOS. 1, 2BK, 2AH, 5BK, 5AH & 7

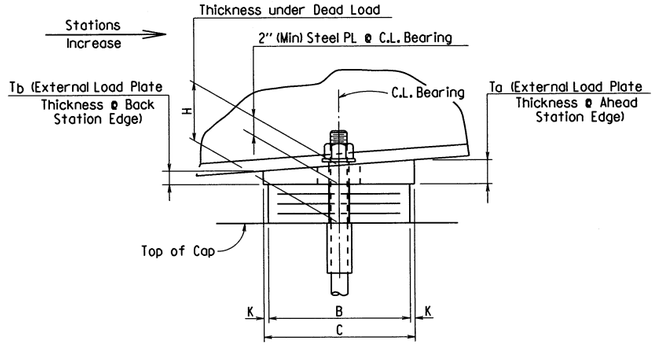


FRONT VIEW AT BENT NOS. 3, 4 & 6

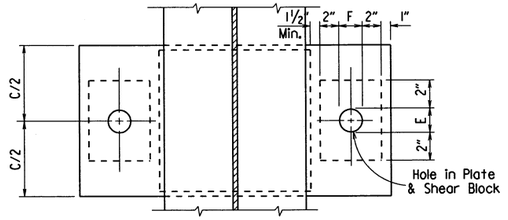


t_e = thickness of elastomer cover on top and bottom of pad
t_i = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t_i

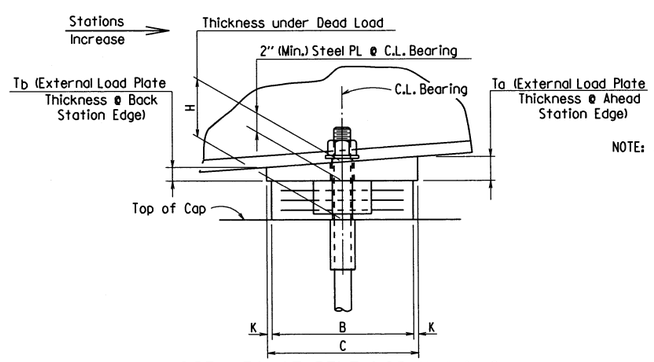
ELASTOMERIC BEARING



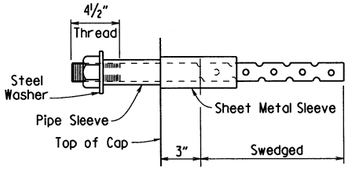
SIDE VIEW AT BENT NOS. 1, 2BK, 2AH, 5BK, 5AH & 7



PLAN VIEW AT BENT NOS. 3, 4 & 6



SIDE VIEW AT BENT NOS. 3, 4 & 6



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 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 Beam Spans, (M 270, Gr. 50W)."

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② Centerline Beam or Girder shall align with centerline bearing.

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.

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: UNIT	LOCATION: BEAM NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	ELASTOMERIC PAD: H	ELASTOMERIC PAD: A	ELASTOMERIC PAD: B	ELASTOMERIC PAD: N	ELASTOMERIC PAD: t_i	ELASTOMERIC PAD: t_e	ELASTOMERIC PAD: NO. & THICKNESS OF STEEL LAMINAE	ELASTOMERIC PAD: T	EXTERNAL LOAD PLATE: C	EXTERNAL LOAD PLATE: D	EXTERNAL LOAD PLATE: E	EXTERNAL LOAD PLATE: F	EXTERNAL LOAD PLATE: J	EXTERNAL LOAD PLATE: K	EXTERNAL LOAD PLATE: M	EXTERNAL LOAD PLATE: T_a	EXTERNAL LOAD PLATE: T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	ANCHOR BOLT: GRADE	ANCHOR BOLT: PIPE SLEEVE SIZE (ø x L)	ANCHOR BOLT: SHEET METAL SLEEVE SIZE (ø x L)	ANCHOR BOLT: STEEL WASHER SIZE (O.D.)
07278	1	77'-6"	All	Exp	10	148.00	8"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	28"	4 1/2"	3 1/8"	-	1/2"	10 3/4"	1.86	2.14	2 1/4"ø x 33"	55	2 1/2" x 4 5/8"	4"ø x 6"	4"
	2 Back	77'-6"	All	Fix	10	148.00	7 1/2"	3 11/16"	16"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	28"	3 1/8"	3 1/8"	-	1/2"	10 3/4"	1.87	2.13	2 1/4"ø x 33"	55	2 1/2" x 4 1/8"	4"ø x 6"	4"
	2 Ahead	260'	All	Exp	10	126.00	9"	5 5/8"	16"	12"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	13"	28"	5 1/4"	3 1/8"	-	1/2"	10 3/4"	1.84	2.16	2"ø x 31"	55	2 1/2" x 5 7/8"	4"ø x 6"	3 3/4"
	3	260'	All	Fix	10	324.00	9"	5 5/16"	16"	14"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	15"	35 3/4"	3 1/8"	3 1/8"	3 1/16"	1/2"	13 1/4"	1.83	2.17	2"ø x 31"	55	2 1/2" x 5 7/8"	4"ø x 6"	3 3/4"
	4	260'	All	Fix	10	324.00	9"	5 5/16"	16"	14"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	15"	35 3/4"	3 1/8"	3 1/8"	3 1/16"	1/2"	13 1/4"	1.85	2.15	2"ø x 31"	55	2 1/2" x 5 7/8"	4"ø x 6"	3 3/4"
	5 Back	260'	All	Exp	10	126.00	9"	5 5/8"	16"	12"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	13"	28"	5 1/4"	3 1/8"	-	1/2"	10 3/4"	1.89	2.11	2"ø x 31"	55	2 1/2" x 5 7/8"	4"ø x 6"	3 3/4"
	5 Ahead	155'	All	Exp	10	123.00	7 3/4"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	28"	4 1/2"	3 1/8"	-	1/2"	10 3/4"	1.91	2.09	2"ø x 31"	55	2 1/2" x 4 5/8"	4"ø x 6"	3 3/4"
	6	155'	All	Fix	10	306.00	8 1/4"	4 5/16"	16"	13"	4	1/2"	1/4"	5 @ 12 Ga.	3"	14"	35 3/4"	3 1/8"	3 1/8"	2 7/16"	1/2"	13 1/4"	1.89	2.11	2"ø x 31"	55	2 1/2" x 5 1/4"	4"ø x 6"	3 3/4"
	7	155'	All	Exp	10	123.00	7 3/4"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	28"	4 1/2"	3 1/8"	-	1/2"	10 3/4"	1.93	2.07	2"ø x 31"	55	2 1/2" x 4 5/8"	4"ø x 6"	3 3/4"

③ Maximum Design Load = Service I Limit State

GENERAL NOTES

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 M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and external load plates with shear blocks shall be completely fabricated (including bevel, bolt holes, and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces 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(e) for unpainted weathering steel.

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 Beam Spans (M 270, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price 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
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
McKISIC CREEK MAIN LANES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

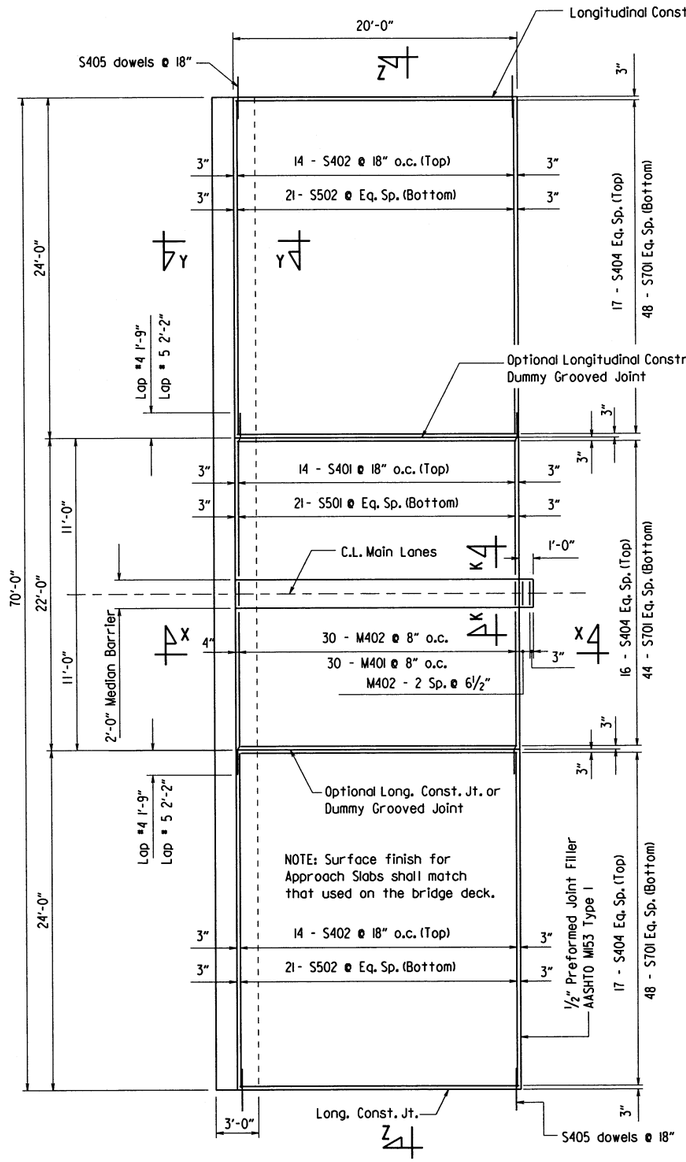
LITTLE ROCK, ARK.

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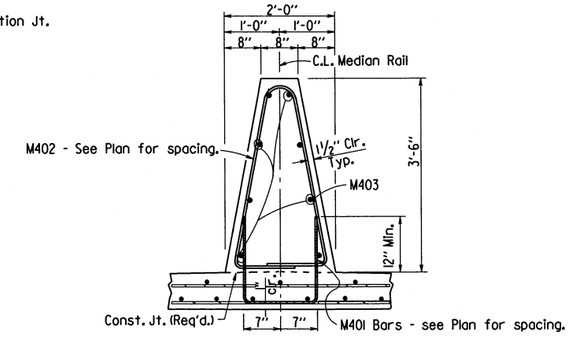
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				①		07278 - APPROACH SLABS - 59209		



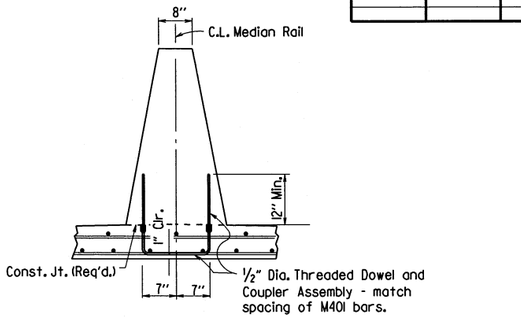
PLAN - APPROACH SLAB

¾6" = 1'-0"



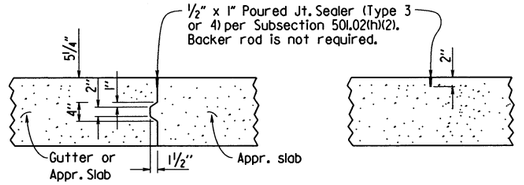
SECTION K-K

¾" = 1'-0"



ALTERNATE SECTION K-K

¾" = 1'-0"

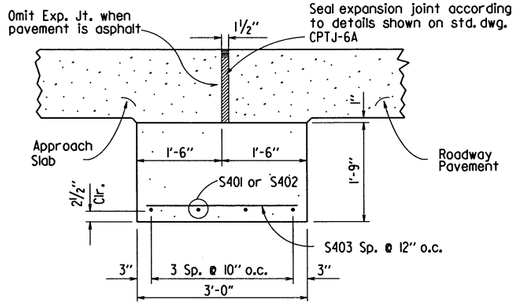


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"

DETAILS OF DUMMY GROOVED JOINT

¾" = 1'-0"

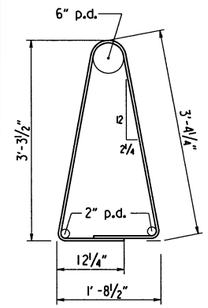


SECTION Y-Y

¾" = 1'-0"

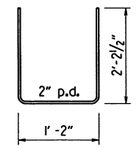
BAR LIST

MARK	NO. REQ'D	LENGTH	BENDING DIAGRAMS
S401	18	25'-10"	
S402	36	23'-8"	
S403	70	2'-8"	
S404	50	19'-8"	
S405	28	3'-0"	
S501	21	26'-8"	
S502	42	23'-8"	
S701	140	19'-8"	
M401	30	5'-5"	
M402	32	8'-11"	
M403	8	20'-8"	

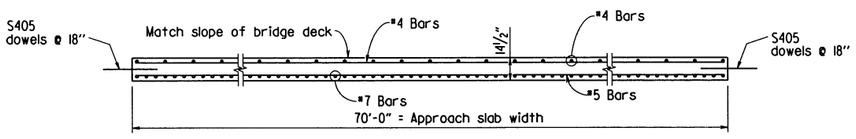


M402

Dimensions are out to out of bars

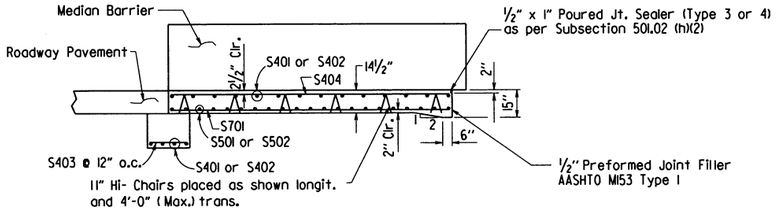


M401



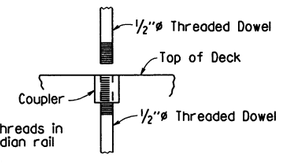
SECTION Z-Z

No Scale



SECTION X-X

No Scale



NOTE: Protect threads in coupler until median rail is constructed.

ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401. The Threaded Dowel and Coupler Assembly shall consist of a QPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401 bars.

Dowel bars shall be of minimum 60 ksi yield strength and threaded as required.

TABLE OF QUANTITIES FOR TYPE SPECIAL 3 APPROACH SLAB

(FOR INFORMATION ONLY)

Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
9,380	80.6

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

Reinforcement Steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slab (Type Special 3) will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 3 APPROACH SLAB McKISIC CREEK MAIN LANES

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: CSL	DATE: 10/17/07	FILENAME: bca0903a2_as.dgn
CHECKED BY: KWY	DATE: 5/15/17	SCALE: As Shown
DESIGNED BY: STD	DATE: —	

BRIDGE NO. 07278 DRAWING NO. 59209

PRINT DATE: 5/15/2017

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.		CA0903	224	452
				①		07280 - LAYOUT RAMP 4 - 59211		

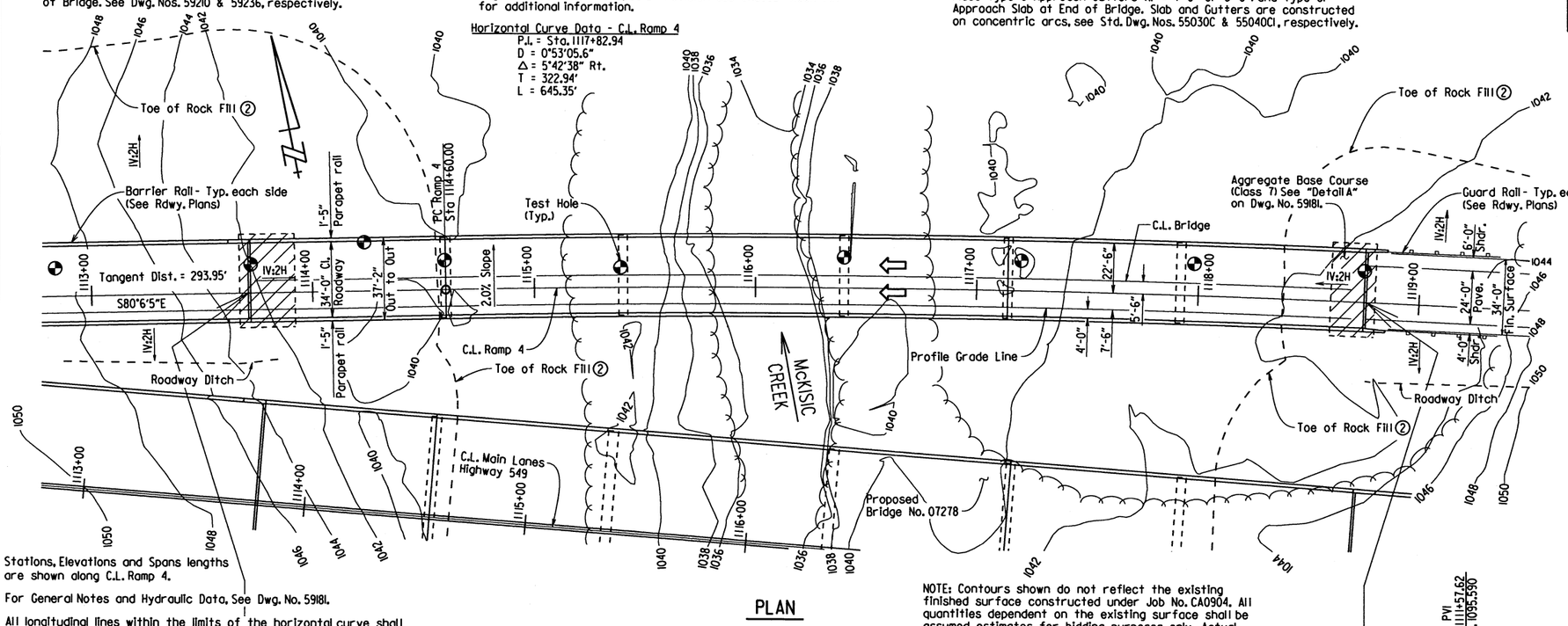
Place Type Special 2 Appr. Gutters (w = 4'-0" or w = 6'-0") with Type Special 4 Appr. Slab at Beg. of Bridge. See Dwg. Nos. 59210 & 59236, respectively.

② For Details of Rock Fill, see Roadway Plans and "DETAIL A", Dwg. No. 59181. Refer to Special Provision Job CA0903 "Rock Fill" for additional information.

Horizontal Curve Data - C.L. Ramp 4
P.I. = Sta. 1117+82.94
D = 0°53'05.6"
Δ = 5°42'38" Rt.
T = 322.94'
L = 645.35'

For R/W Data, See Rdwy. Plans

Place Type C Approach Gutters (w = 4'-0" or 6'-0") and Type CI Approach Slab at End of Bridge. Slab and Gutters are constructed on concentric arcs, see Std. Dwg. Nos. 55030C & 55040CI, respectively.



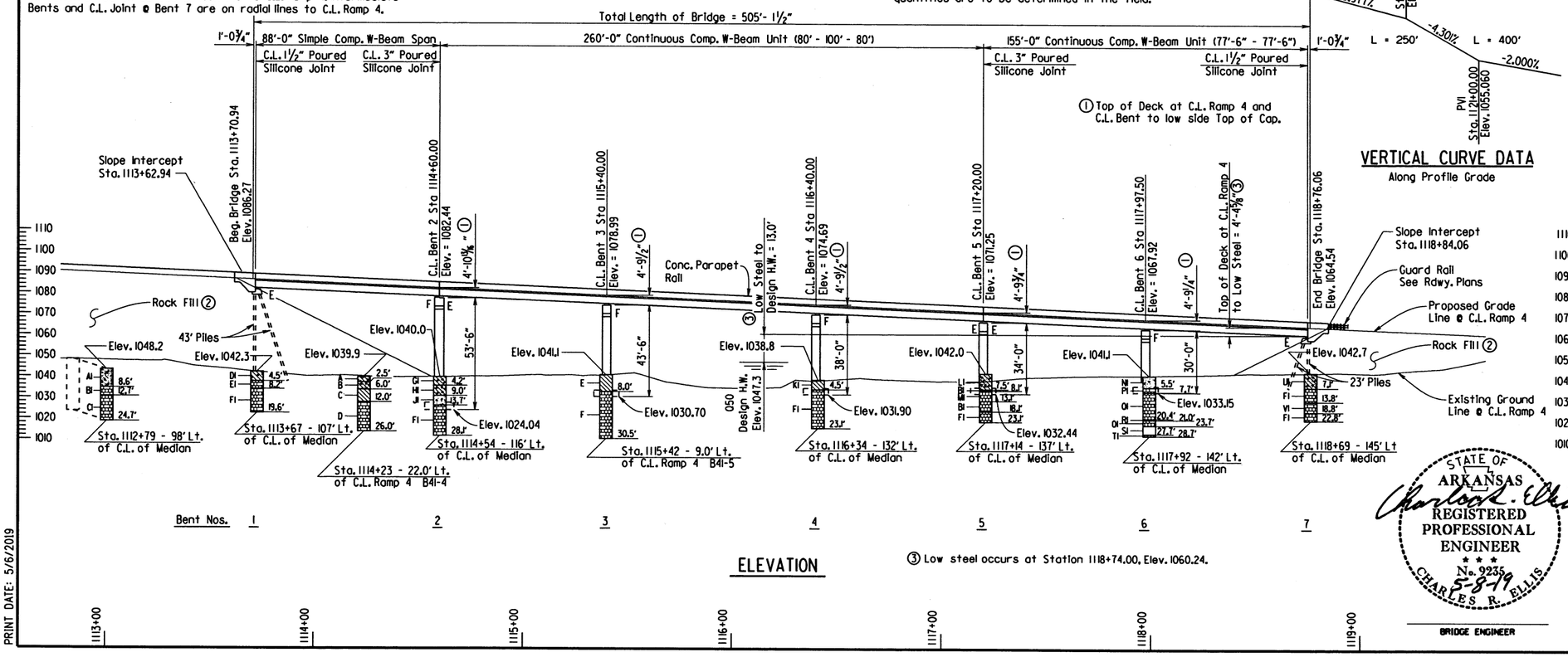
PLAN

Stations, Elevations and Spans lengths are shown along C.L. Ramp 4.

For General Notes and Hydraulic Data, See Dwg. No. 59181.

All longitudinal lines within the limits of the horizontal curve shall be constructed on curves concentric to C.L. Ramp 4. Intermediate Bents and C.L. Joint @ Bent 7 are on radial lines to C.L. Ramp 4.

NOTE: Contours shown do not reflect the existing finished surface constructed under Job No. CA0904. All quantities dependent on the existing surface shall be assumed estimates for bidding purposes only. Actual quantities are to be determined in the field.



ELEVATION

③ Low steel occurs at Station 1118+74.00, Elev. 1060.24.

VERTICAL CURVE DATA

Along Profile Grade

PVI Sta. 1111+57.62 Elev. 1095.590
-3.977%
-4.301%
L = 400'
-2.000%
L = 250'
PVI Sta. 1112+00.00 Elev. 1055.060

BORING LEGEND

Note: Material designated A-F refer to borings B4I-4 and B4I-5 obtained from Geotechnical Investigation report by others dated April 2003. Materials designated AI- VI refer to borings obtained from Geotechnical Investigation Report by AHTD dated June 2007.

A-SILTY LEAN CLAY, dark brown, stiff, moist
B-SANDY LEAN CLAY, few gravel red and white, very stiff, moist (CL)
C-LEAN CLAY, dark brown, soft, moist to wet (CL)
D-LIMESTONE, stratified, some chert seams and inclusions, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
E-LEAN CLAY, reddish-brown, medium stiff, moist (CL)
F-LIMESTONE, stratified, little chert seams and inclusions, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
AI-Moist, Very Dense, Brown and Gray Sand with Clay and Gravel (Chert Fragments)
BI-Hard, Gray Cherty Limestone
CI-Hard, Gray Cherty Limestone with some Thin Dark Gray Shale Seams
DI-Moist, Medium Stiff, Brown Gravely (Chert Fragments) Clay
EI-Hard, Gray Cherty Limestone
FI-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
GI-Moist, Stiff, Brown Gravely (Chert Fragments) Clay
HI-Moist, Medium Stiff, Brown and Gray Gravely (Chert Fragments) Clay
JI-Wet, Loose, Brown Gravel (Chert Fragments) with Sand
KI-Moist, Medium Stiff, Brown Clay with some Gravel (Chert Fragments)
LI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
MI-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
NI-Moist, Loose, Brown and Gray Gravel (Chert Fragments) with Sand and some Organic Matter
OI-Hard, Gray Fractured Cherty Limestone with some Dark Gray Shale Seams
PI-Hard, Gray Fractured Cherty Limestone
RI-Cavity (20.4' to 21.0')
SI-Cavity (23.7' to 27.7')
TI-Hard, Gray Highly Fractured Cherty Limestone with some Dark Gray Shale Seams
UI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
VI-Hard, Gray Cherty Limestone with Dark Gray Shale Seams

Note: Cavities were encountered in the borings and may be encountered in greater amounts at other locations in the project area.

"N" VALUES

Sta. 1114+23 - 22.0' Lt. of C.L. Ramp 4 B4I-4
4.0- 5.0, N=12
9.0- 10.0, N=4

Sta. 1115+42 - 9.0' Lt. of C.L. Ramp 4 B4I-5
4.0- 5.0, N=4

Sta. 1112+79 - 98' Lt. of C.L. of Median
4.8- 5.0, N=60(2")

Sta. 1113+67 - 107' Lt. of C.L. of Median
4.5- 4.6, N=60(1")

Sta. 1114+54 - 116' Lt. of C.L. of Median
4.7- 5.7, N=7
9.7- 10.7, N=7

Sta. 1116+34 - 132' Lt. of C.L. of Median
5.0- 5.3, N=60(4")

Sta. 1117+14 - 137' Lt. of C.L. of Median
4.7- 5.7, N=21

Sta. 1117+92 - 142' Lt. of C.L. of Median
4.8- 5.1, N=60(3")

Sta. 1118+69 - 145' Lt. of C.L. of Median
5.0- 5.8, N=70(10")

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

LAYOUT OF RAMP 4 OVER McKISIC CREEK HWY. 71 INTERCHANGE (B.V. BYPASS) (F) BENTON COUNTY

ROUTE 549 SEC. 9

ARKANSAS STATE HIGHWAY COMMISSION

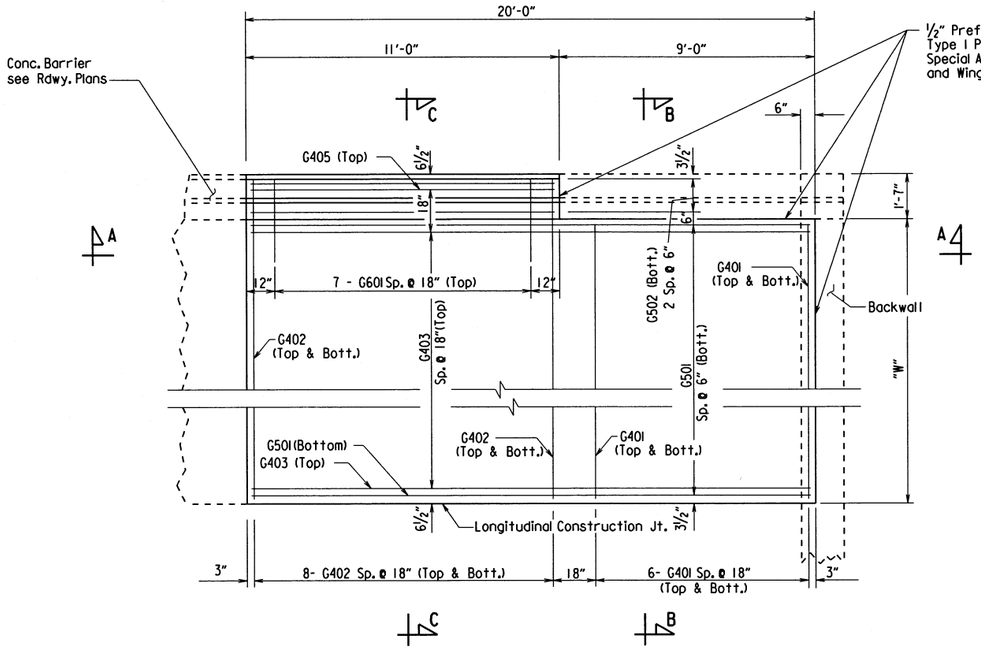
LITTLE ROCK, ARK.

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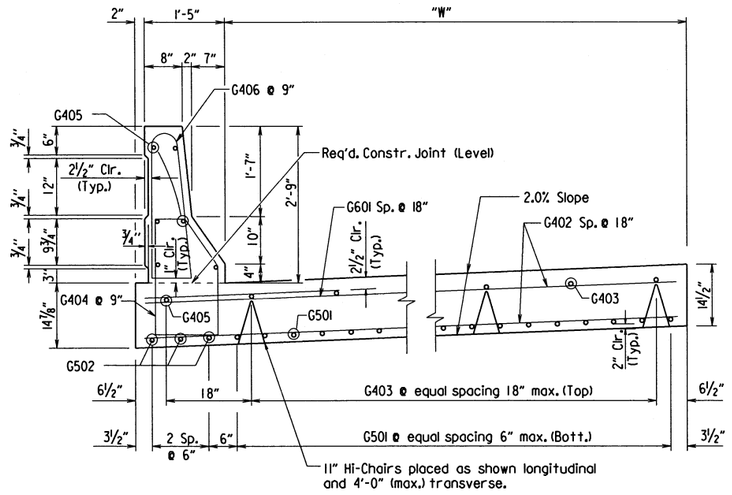
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PRINT DATE: 5/6/2019

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				6	ARK.			
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				①		07278 & 07280-APPR. GUTTER-59210		



PLAN VIEW APPROACH GUTTER

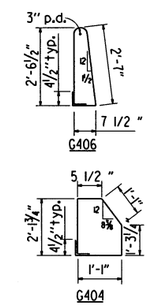


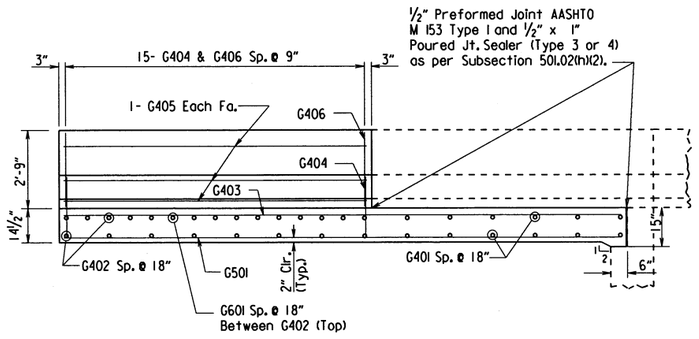
SECTION C-C

BAR LIST

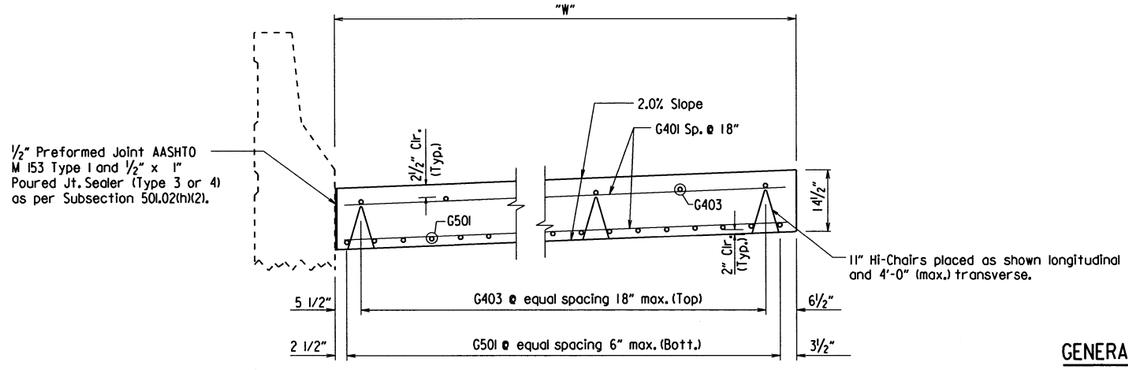
MARK	NO. REQ'D. FOR WIDTH "W" 4'-0"	6'-0"	10'-0"	LENGTH	P.D.	BENDING DIAGRAMS
G401	12	12	12	"W"- 4"	Str.	
G402	16	16	16	"W" + 1'-3"	Str.	
G403	3	5	7	19'-8"	Str.	
G404	15	15	15	6'-5"	2"	
G405	7	7	7	10'-8"	Str.	
G406	15	15	15	6'-4"	2"	
G501	8	12	20	19'-8"	Str.	
G502	3	3	3	10'-8"	Str.	
G601	7	7	7	3'-1"	Str.	

Dimensions are out to out of bars.





SECTION A-A



SECTION B-B

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

Reinforcement Steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutter (Type Special 2) will be measured and paid for in accordance with Section 504.

QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" width (Ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	530	5.40
6	680	7.20
10	945	10.80

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 2 APPROACH GUTTER McKISIC CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

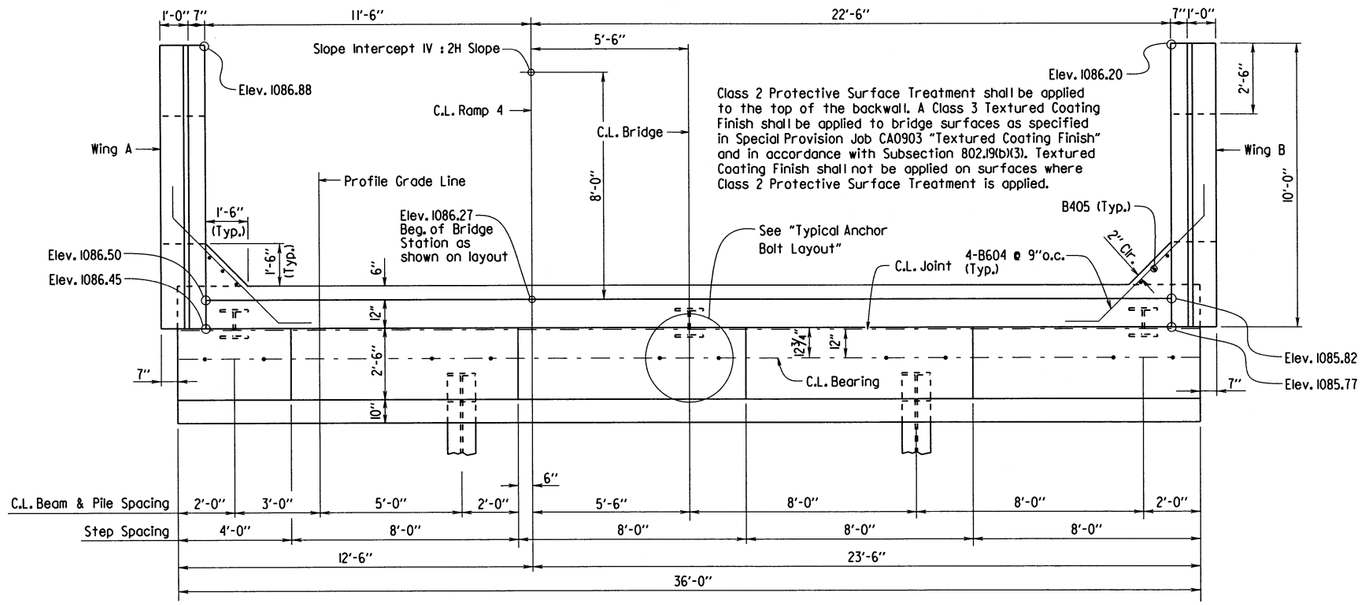
LITTLE ROCK, ARK.

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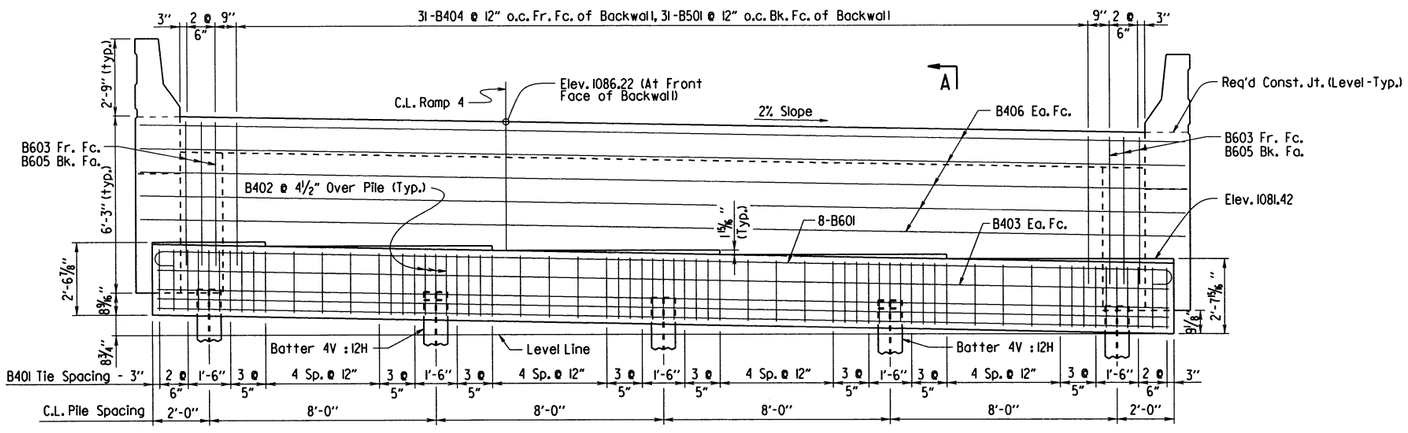
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PRINT DATE: 5/15/2017

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				6	ARK.			
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				1	07280 - END BENT DETAILS - 59212			



PLAN
⅜" = 1'-0"

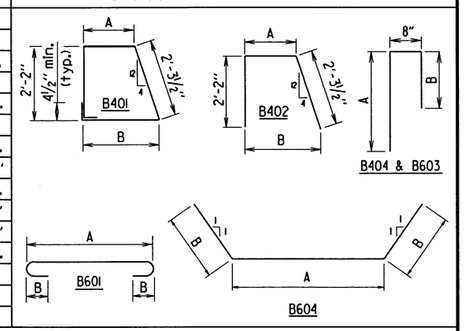


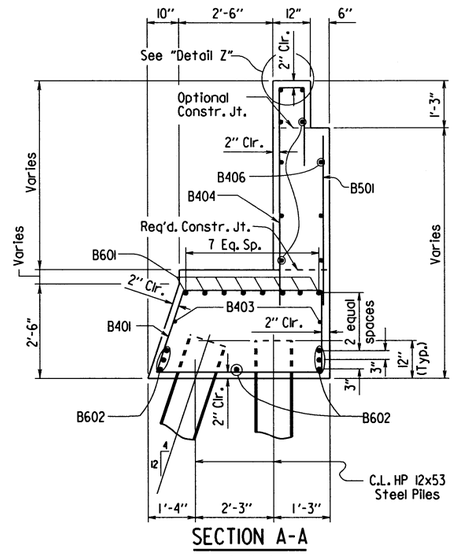
ELEVATION
Looking Back
⅜" = 1'-0"

BAR LIST

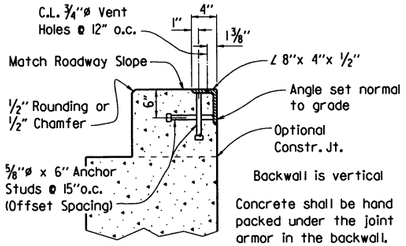
Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	50	12'-11"	3'-8"	4'-4¾"	2"
B402	15	8'-0"	3'-8"	4'-4¾"	2"
B403	2	35'-8"			Str.
B404	31	7'-10"	5'-3"	2'-1"	2"
B405	6	4'-8"			Str.
B406	10	35'-8"			2"
B501	31	4'-4"			Str.
B601	8	37'-0"	41'-8"	6"	4½"
B602	7	35'-8"			Str.
B603	6	8'-8"	5'-9"	2'-7"	4½"
B604	8	7'-3"	5'-3"	1'-0"	4½"
B605	6	4'-6"			Str.

Bending Diagrams
(Dimensions are out to out of bars.)



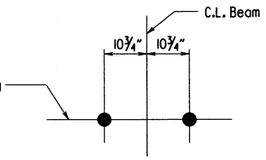


SECTION A-A
No Scale



For additional joint details, see Dwg. No. 59234.

DETAIL Z
No Scale



For details of elastomeric bearings, see Dwg. No. 59235.

TYPICAL ANCHOR BOLT LAYOUT
No Scale

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi. All concrete shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports

The backwall below the paving bracket shall not be poured until the beams are in place. The backwall above the paving bracket shall not be poured before the superstructure slab in the adjacent span has been placed. Avoid having heavy construction equipment behind the backwall until the concrete for the span has been completed. See "Expansion Device Installation" on Dwg. No. 59234 for additional information.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (AASHTO M 270, Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Piling shall be HP 12x53; AASHTO M 270, Gr. 50.

For additional information, see Layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
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SHEET 1 OF 2
DETAILS OF BENT 1
McKISIC CREEK RAMP 4

ROUTE SEC.

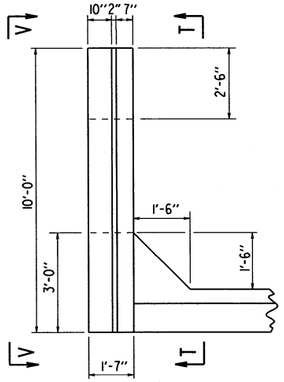
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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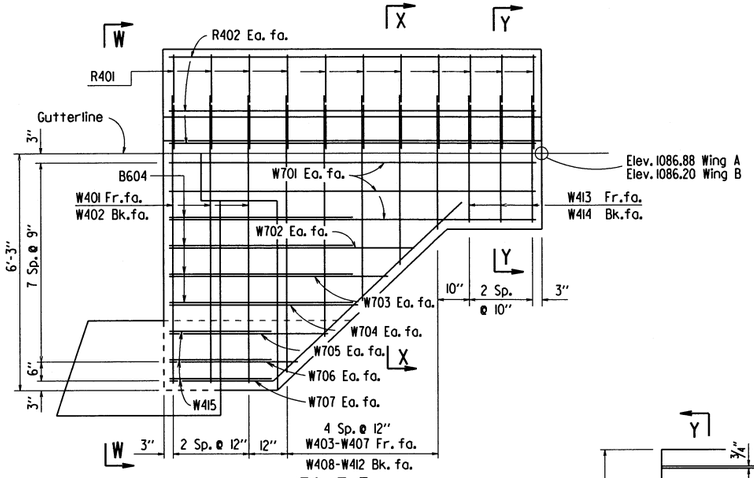
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PRINT DATE: 5/15/2017

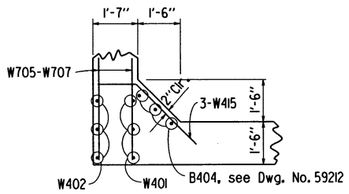
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				JOB NO.		CA0903	226	452
				(1)	07280 - END BENT DETAILS - 59213			



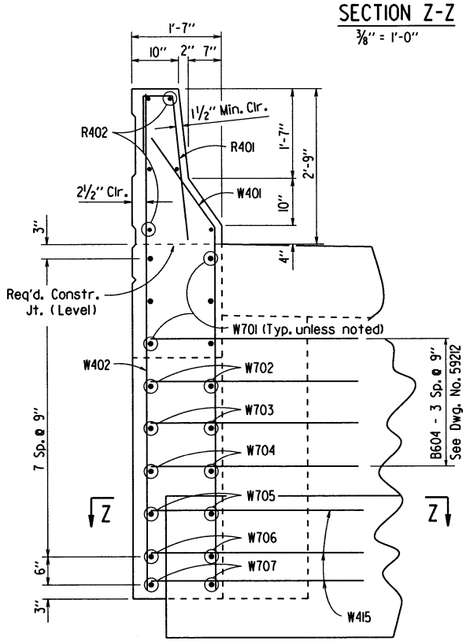
PLAN OF RAIL
3/8" = 1'-0"



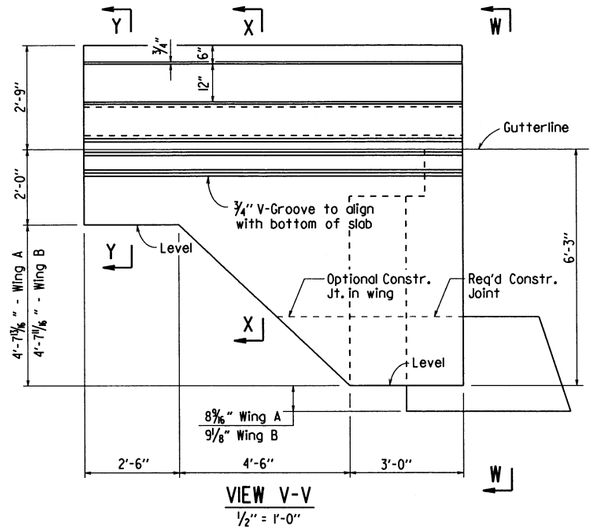
VIEW T-T
1/2" = 1'-0"



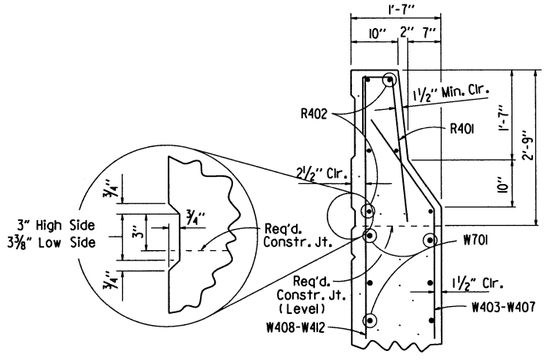
SECTION Z-Z
3/8" = 1'-0"



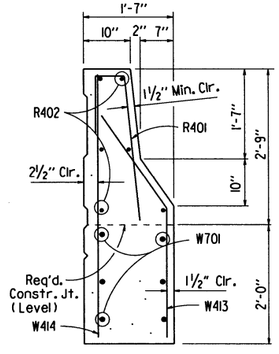
VIEW W-W
3/4"=1'-0"



VIEW V-V
1/2" = 1'-0"



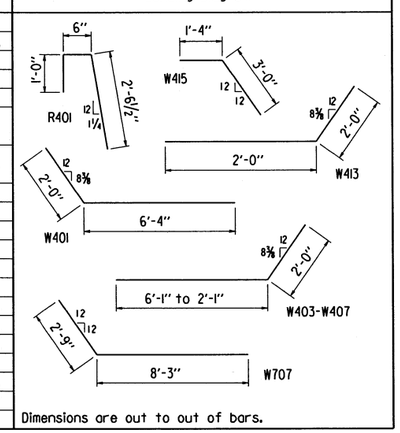
SECTION X-X
3/4"=1'-0"



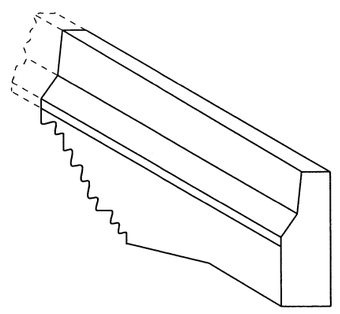
SECTION Y-Y
3/4"= 1'-0"

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
R401	22	3'-11"	2"	
R402	12	9'-8"	Str.	
W401	6	8'-4"	2"	
W402	6	8'-8"	Str.	
W403-W407	2 ea.	8'-1" to 4'-1"	2"	
W408-W412	2 ea.	8'-4" to 4'-5"	Str.	
W413	6	4'-0"	2"	
W414	6	4'-3"	Str.	
W415	6	4'-4"	2"	
W701	12	9'-8"	Str.	
W702	4	6'-3"	Str.	
W703	4	5'-6"	Str.	
W704	4	4'-9"	Str.	
W705	4	4'-0"	Str.	
W706	4	3'-3"	Str.	
W707	4	11'-0"	5¼"	



Dimensions are out to out of bars.



THREE DIMENSIONAL VIEW OF RAIL
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 1
McKISIC CREEK RAMP 4

ROUTE SEC.

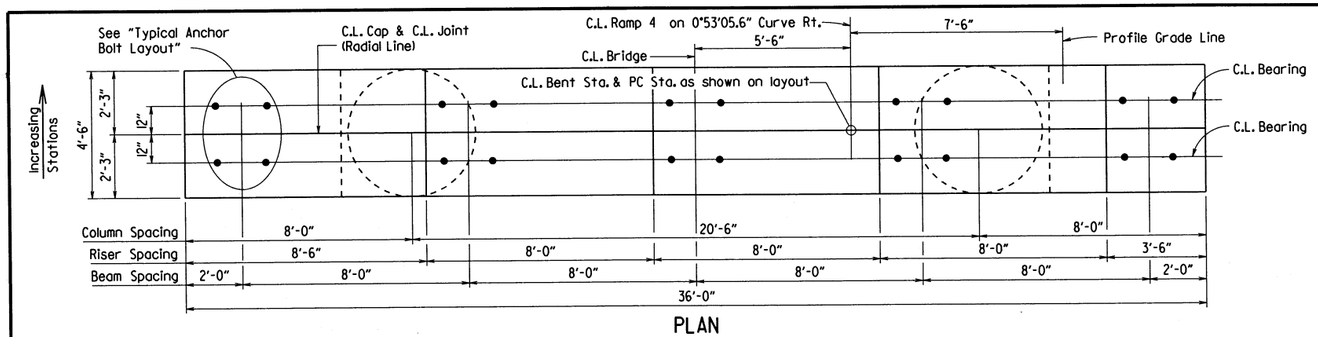
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HOT DATE: 10/12/07 FILENAME: bca0903c2_bl.dgn
CHECKED BY: DHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: HOT DATE: 9/07

BRIDGE NO. 07280 DRAWING NO. 59213

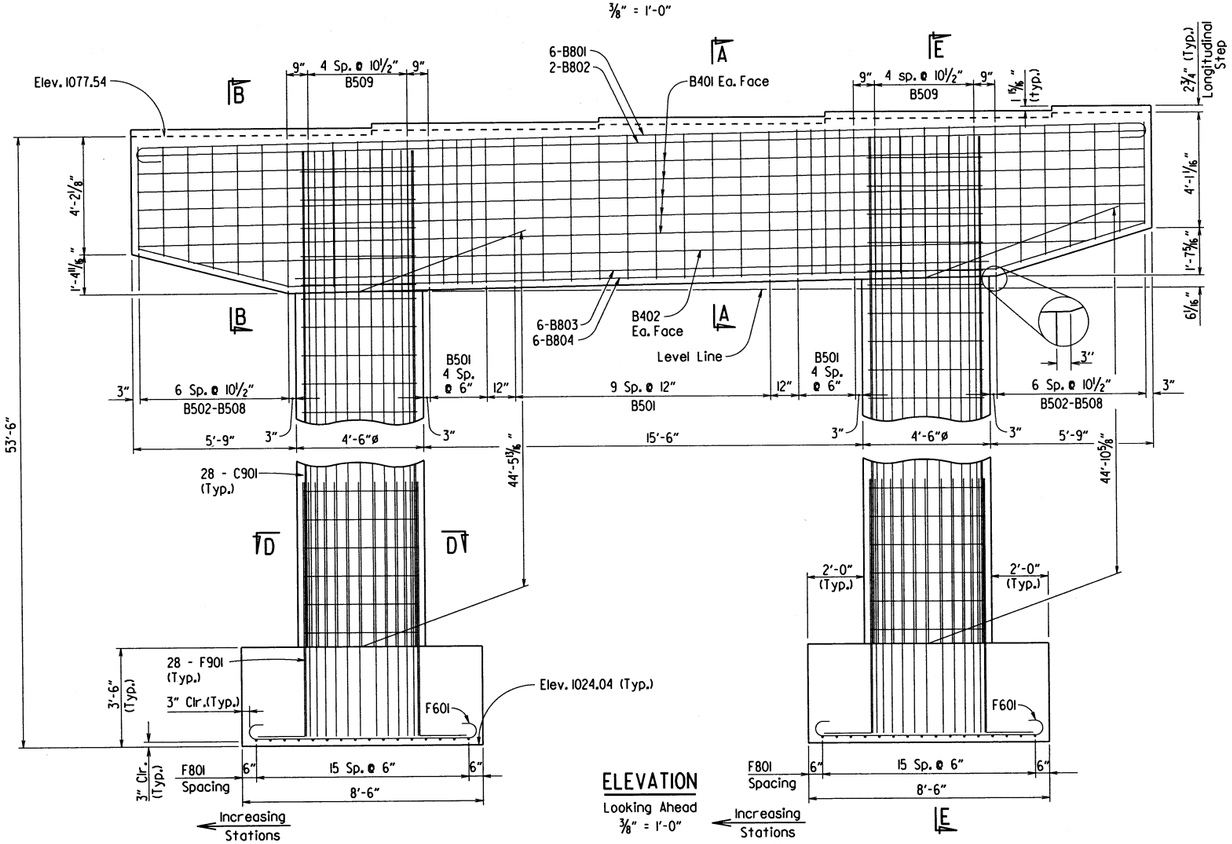
PRINT DATE: 5/15/2017

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.		CA0903	227	452
				①		07280 - INT BENT DETAILS - 59214		



PLAN

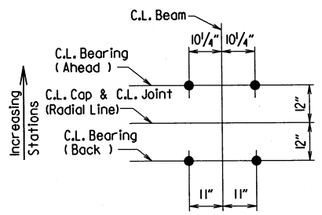
3/8" = 1'-0"



ELEVATION

Looking Ahead

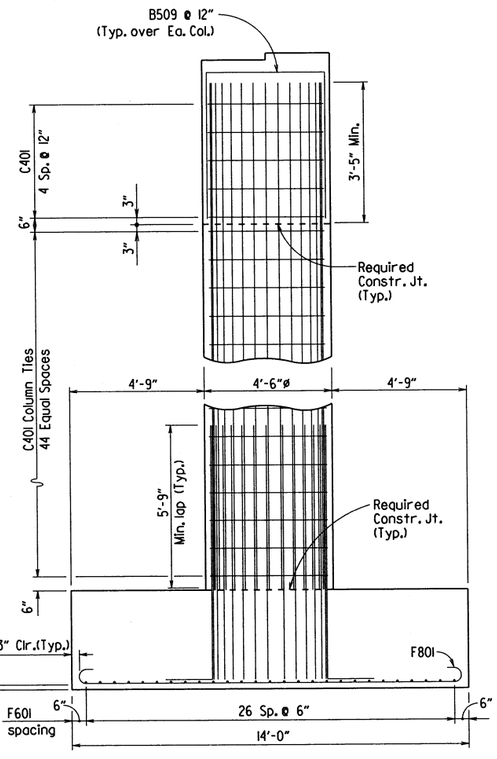
3/8" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 59235.

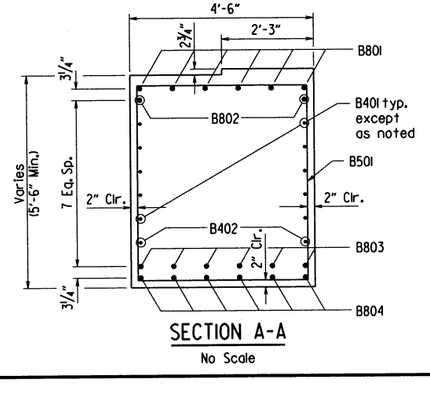
TYPICAL ANCHOR BOLT LAYOUT

No Scale



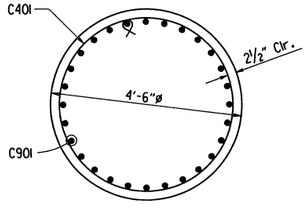
SECTION E-E

3/8" = 1'-0"



SECTION A-A

No Scale



SECTION D-D

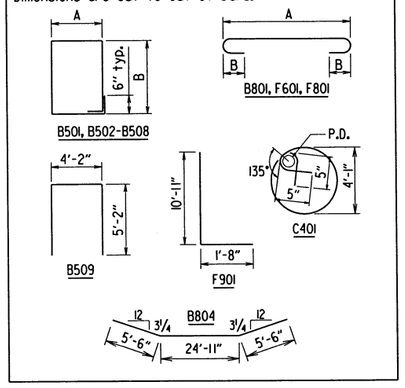
No Scale

BAR LIST

MARK	No. Req'd	LENGTH	"A"	"B"	P.D.
B401	10	35'-8"			Str.
B402	2	32'-0"			Str.
B501	20	19'-4"	4'-2"	5'-2"	2½"
B502-B508	2 ea.	Var. 16'-4" to 19'-2"	4'-2"	Var. 3'-8¾" to 5'-2"	2½"
B509	10	14'-4"			2½"
B801	6	37'-6"	35'-8"	8"	6"
B802	2	35'-8"			Str.
B803	6	25'-0"			Str.
B804	6	35'-11"			6"
C401	100	13'-11"			3"
C901	56	49'-5"			Str.
F601	54	9'-4"	8'-0"	6"	4½"
F801	32	15'-4"	13'-6"	8"	6"
F901	56	12'-3"			9

BENDING DIAGRAMS

Dimensions are out to out of bars.



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 to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 2
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

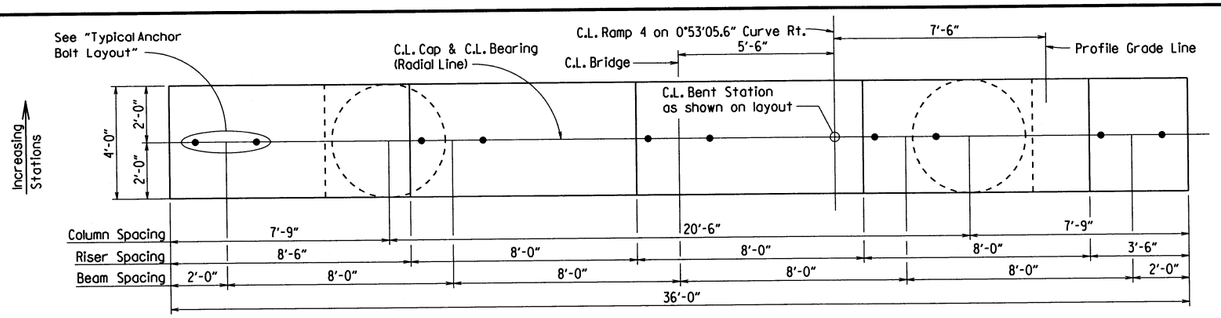
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 10/12/07 FILENAME: bca0903c2.b2.dgn
CHECKED BY: BHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: HOT DATE: 9/07

BRIDGE NO. 07280 DRAWING NO. 59214

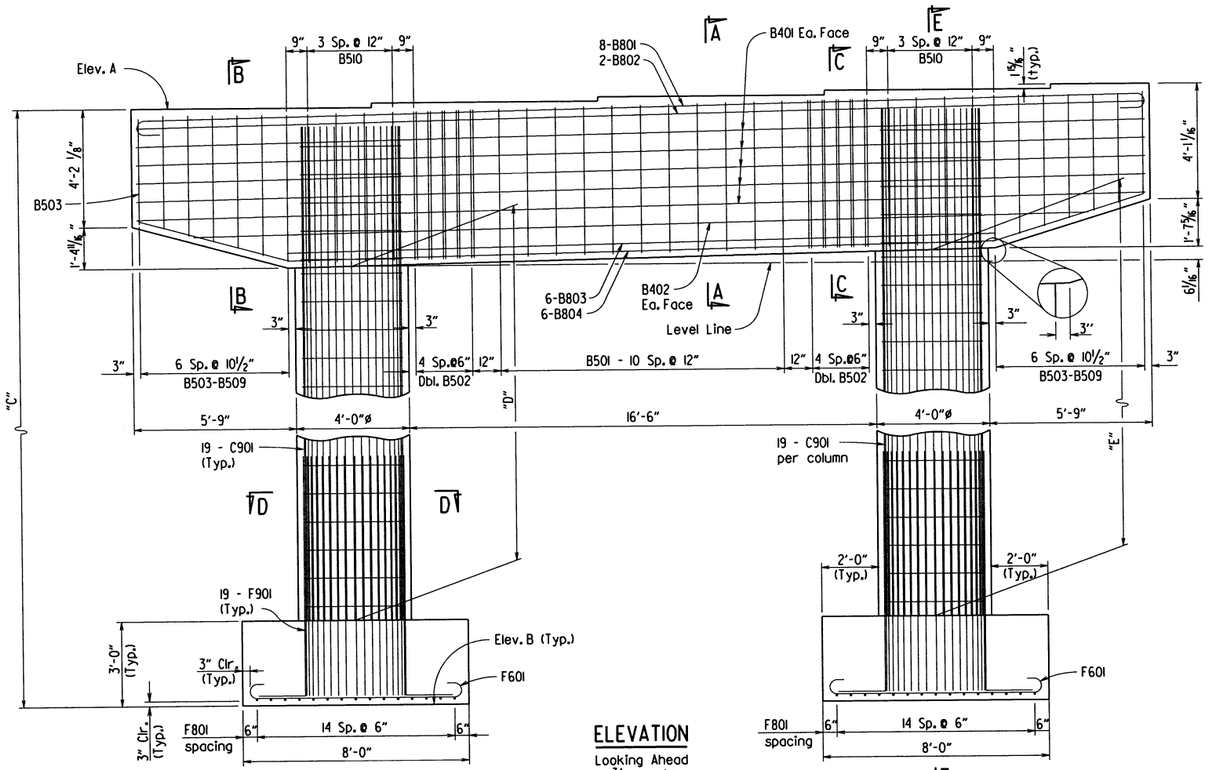
PRINT DATE: 5/15/2017

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.		CA0903	228	452
				①		07280 - INT BENT DETAILS - 59215		



PLAN

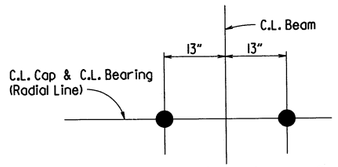
3/8" = 1'-0"



ELEVATION

Looking Ahead

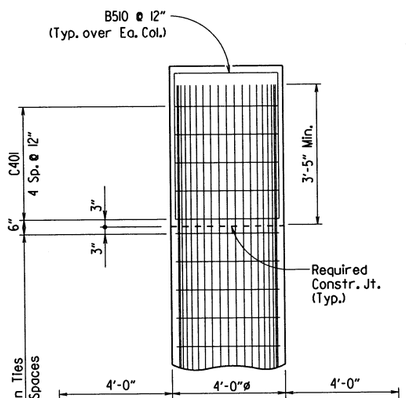
3/8" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 59235.

TYPICAL ANCHOR BOLT LAYOUT

No Scale



SECTION E-E

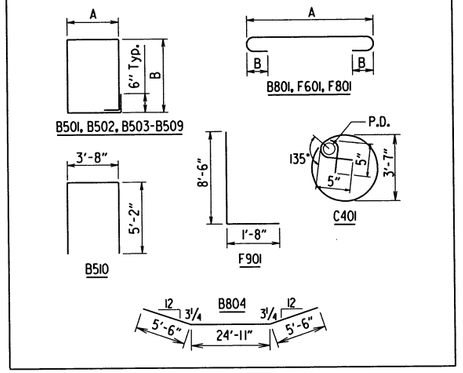
3/8" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D. Bent 3	Bent 4	Bent 6	LENGTH	"A"	"B"	P.D.
B401	10	10	10	35'-8"			Str.
B402	2	2	2	32'-0"			Str.
B501	11	11	11	18'-2"	3'-8"	5'-2"	2 1/2"
B502	20	20	20	15'-10"	2'-6"	5'-2"	2 1/2"
B503-B509	2 Ea.	2 Ea.	2 Ea.	Var. 15'-4" to 18'-2"	3'-8"	Var. 3'-8 3/4" to 5'-2"	2 1/2"
B510	8	8	8	13'-10"			2 1/2"
B801	8	8	8	37'-6"	35'-8"	8"	6"
B802	2	2	2	35'-8"			Str.
B803	6	6	6	25'-0"			Str.
B804	6	6	6	35'-11"			6"
C401	82	70	54	12'-4"			3"
C901	38	38	38	"G"			Str.
F601	46	46	46	8'-10"	7'-6"	6"	4 1/2"
F801	30	30	30	13'-4"	11'-6"	8"	6"
F901	38	38	38	11'-10"			9"

BENDING DIAGRAMS

Dimensions are out to out of bars.



GENERAL NOTES

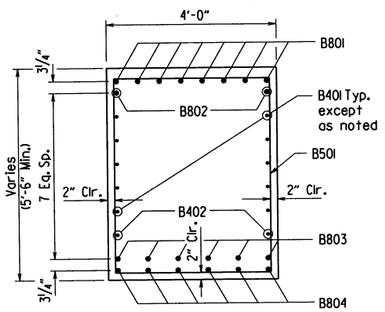
All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. 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.

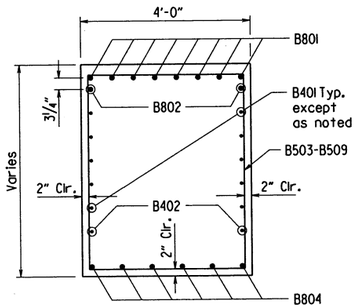
TABLE OF VARIABLES

Bent No.	Elev. A	Elev. B	C	D	E	F	G
3	1074.20	1030.70	43'-6"	34'-11 3/4"	35'-4 11/16"	35	39'-11"
4	1069.90	1031.90	38'-0"	29'-5 3/4"	29'-10 11/16"	29	34'-5"
6	1063.15	1033.15	30'-0"	21'-5 5/8"	21'-10 5/8"	21	26'-5"



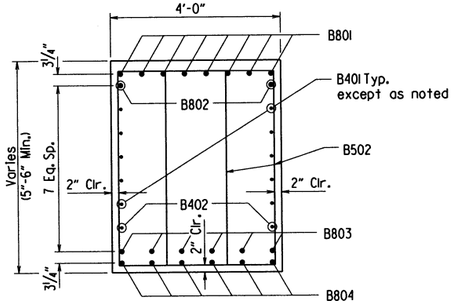
SECTION A-A

No Scale



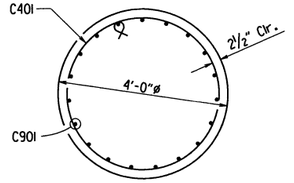
SECTION B-B

No Scale



SECTION C-C

No Scale



SECTION D-D

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

DETAILS OF BENTS 3, 4, & 6
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 10/4/07 FILENAME: bca0903c2_b2.dgn

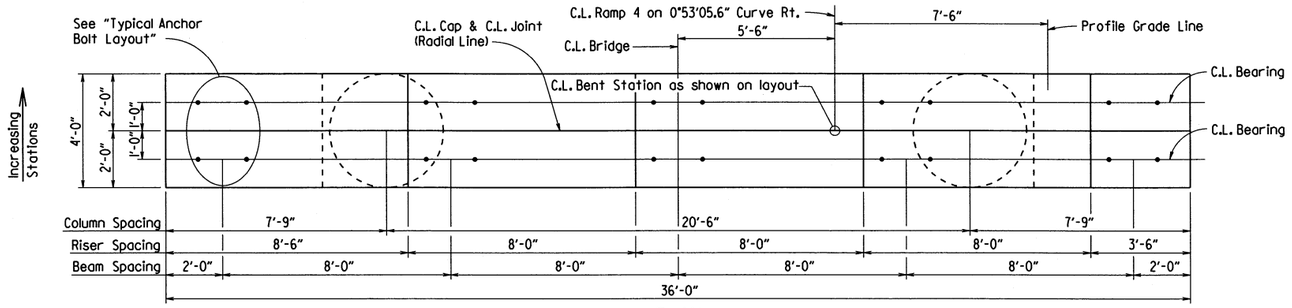
CHECKED BY: DHS DATE: 5-15-17 SCALE: As Shown

DESIGNED BY: HOT DATE: 9/07

BRIDGE NO. 07280 DRAWING NO. 59215

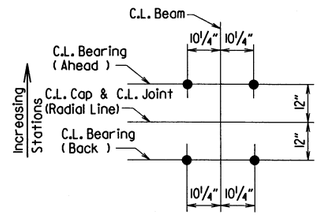
PRINT DATE: 5/15/2017

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.		CA0903	229	452
				①	07280 - INT BENT DETAILS - 59216			



PLAN

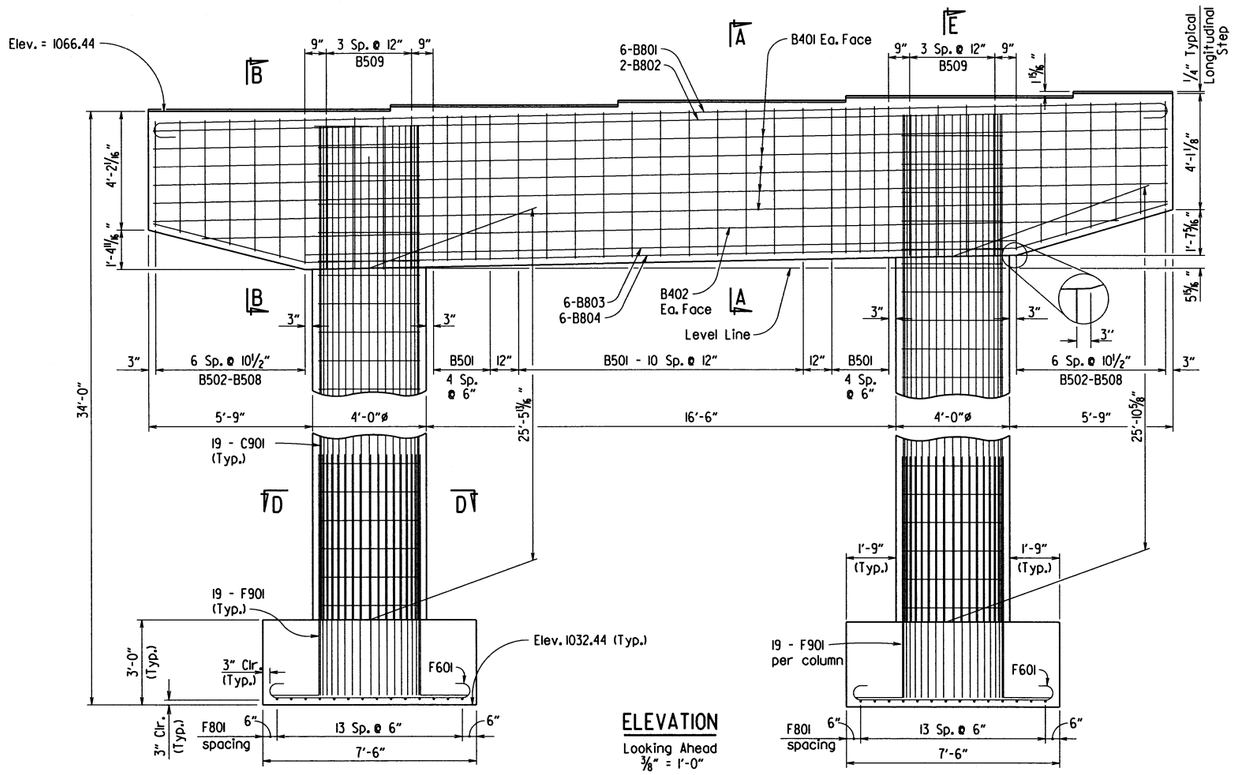
3/8" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 59235.

TYPICAL ANCHOR BOLT LAYOUT

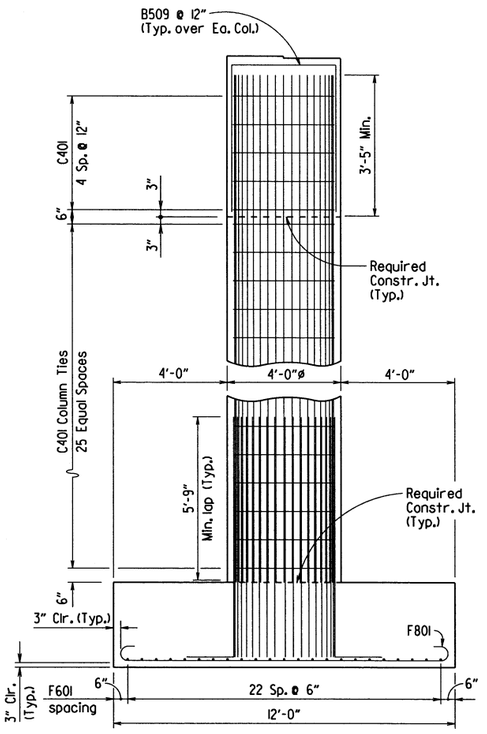
No Scale



ELEVATION

Looking Ahead

3/8" = 1'-0"



SECTION E-E

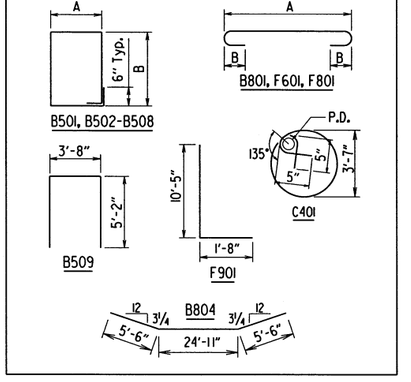
3/8" = 1'-0"

BAR LIST

MARK	No. Req'd	LENGTH	"A"	"B"	P.D.
B401	10	35'-8"			Str.
B402	2	32'-0"			Str.
B501	21	18'-2"	3'-8"	5'-2"	2½"
B502-B508	2 Ea.	Var. 15'-2" to 18'-2"	3'-8"	Var. 3'-8" to 5'-2"	2½"
B509	8	13'-10"			2½"
B801	6	37'-6"	35'-8"	8"	6"
B802	2	35'-8"			Str.
B803	6	25'-0"			Str.
B804	6	35'-11"			6"
C401	62	12'-4"			3"
C901	38	30'-5"			Str.
F601	46	8'-4"	7'-0"	6"	4½"
F801	28	13'-4"	11'-6"	8"	6"
F901	38	11'-10"			9

BENDING DIAGRAMS

Dimensions are out to out of bars.

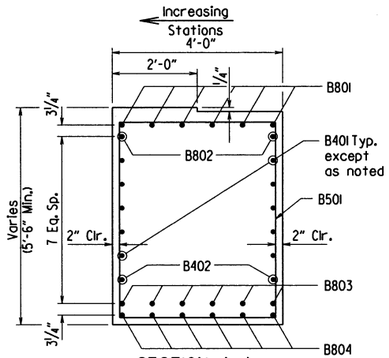


GENERAL NOTES

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 to be chamfered ¾" unless otherwise noted.

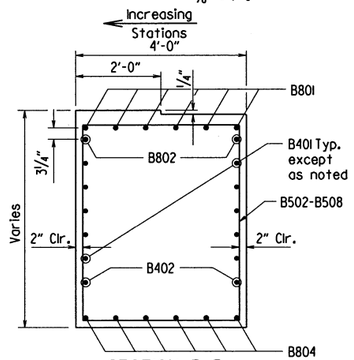
All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports. Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.



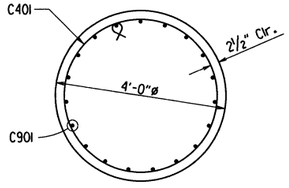
SECTION A-A

No Scale



SECTION B-B

No Scale



SECTION D-D

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF BENT 5
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

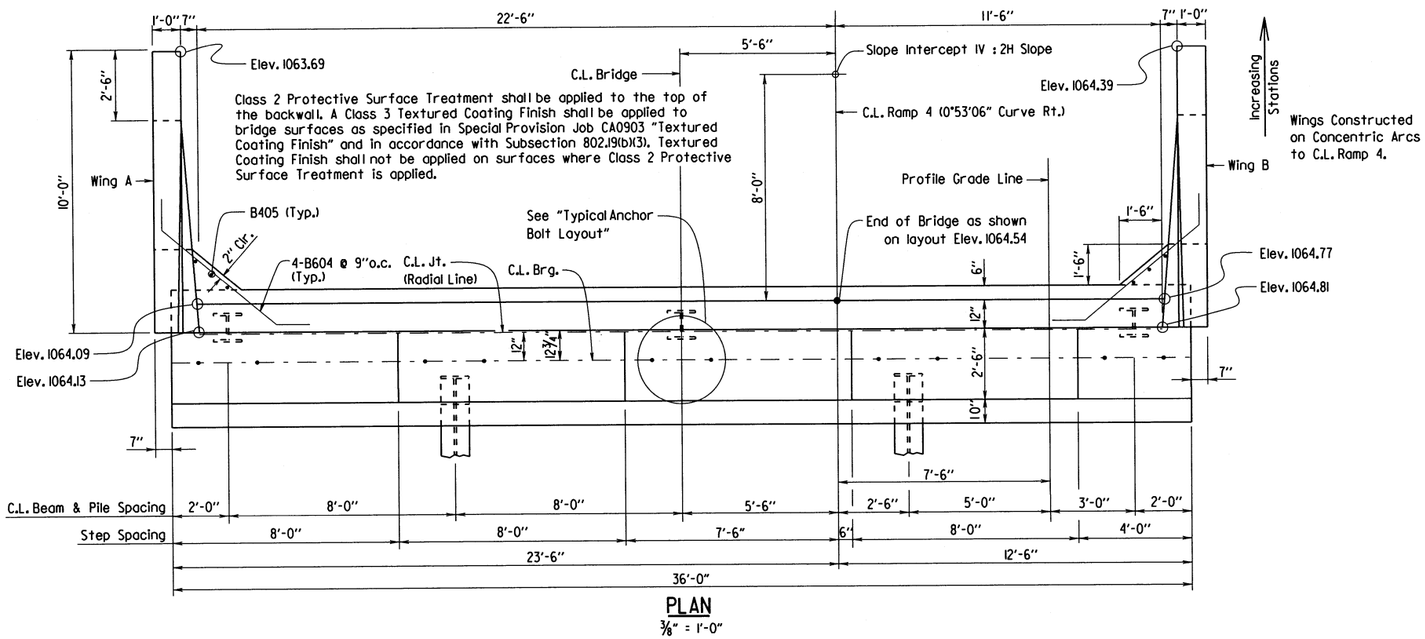
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 10/8/07
CHECKED BY: BHS DATE: 5-15-17
DESIGNED BY: HOT DATE: 9/07
FILENAME: bca0903c2_b2.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59216

PRINT DATE: 5/15/2017

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.		CA0903	230	452
				①		07280 - END BENT DETAILS - 59217		



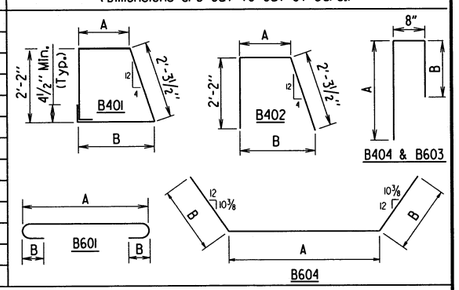
PLAN

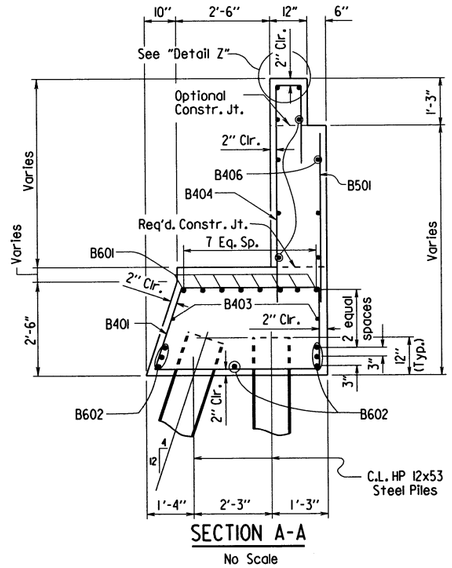
3/8" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	50	12'-11"	3'-8"	4'-4¾"	2"
B402	15	8'-0"	3'-8"	4'-4¾"	2"
B403	2	35'-8"			Str.
B404	31	7'-10"	5'-3"	2'-1"	2"
B405	6	4'-8"			Str.
B406	10	35'-8"			Str.
B501	31	4'-4"			Str.
B601	8	37'-0"	35'-8"	6"	4½"
B602	7	35'-8"			Str.
B603	6	8'-8"	5'-9"	2'-7"	4½"
B604	8	7'-3"	5'-3"	1'-0"	4½"
B605	6	4'-6"			Str.

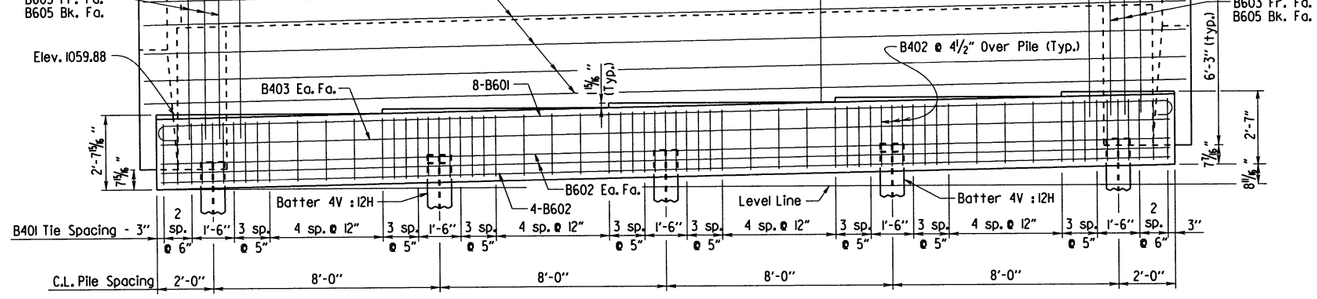
Bending Diagrams (Dimensions are out to out of bars.)





SECTION A-A

No Scale

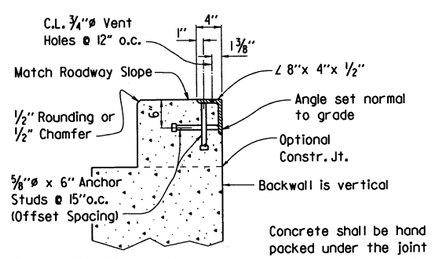


A

ELEVATION

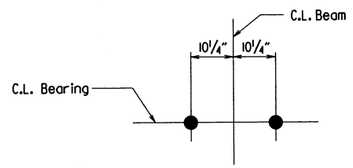
Looking Ahead

3/8" = 1'-0"



DETAIL Z

No Scale



TYPICAL ANCHOR BOLT LAYOUT

No Scale

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3500 psi. All concrete shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi), and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports

The backwall below the paving bracket shall not be poured until the beams are in place. The backwall above the paving bracket shall not be poured before the superstructure slab in the adjacent span has been placed. Avoid having heavy construction equipment behind the backwall until the concrete for the span has been completed. See "Expansion Device Installation" on Dwg. No. 59234 for additional information.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (AASHTO M 270, Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Piling shall be HP 12x53; AASHTO M 270, Gr. 50.

For additional information, see Layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-15-17

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT 7
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

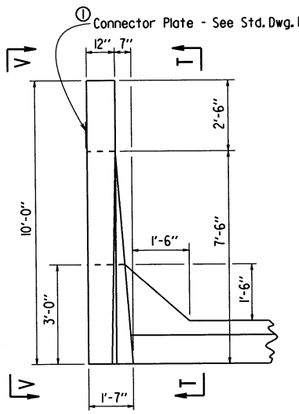
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CHECKED BY: BHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: HOT DATE: 9/07

BRIDGE NO. 07280 DRAWING NO. 59217

PRINT DATE: 5/15/2017

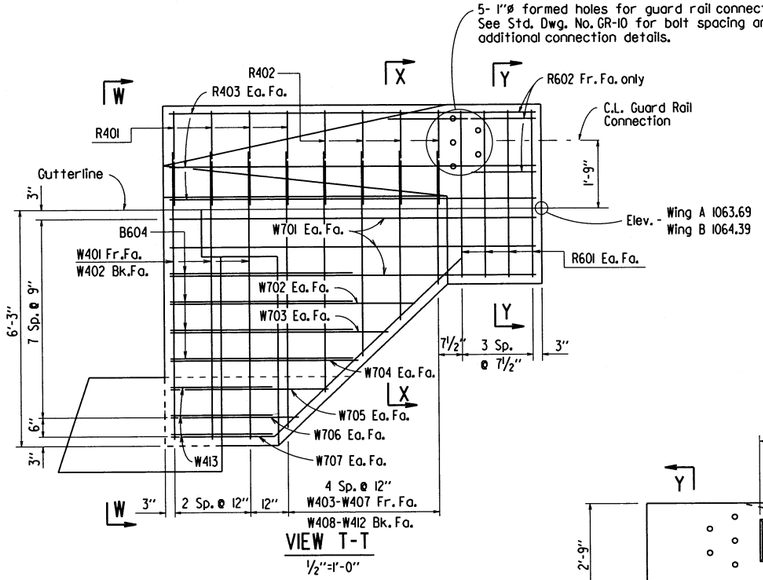
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				6	ARK.			
				JOB NO.		CA0903	231	452
				①	07280 - END BENT DETAILS - 59218			

① Connector Plate as required, See Rdwy. Plans for location of guard rail.



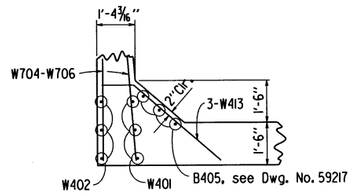
PLAN OF RAIL

3/8" = 1'-0"



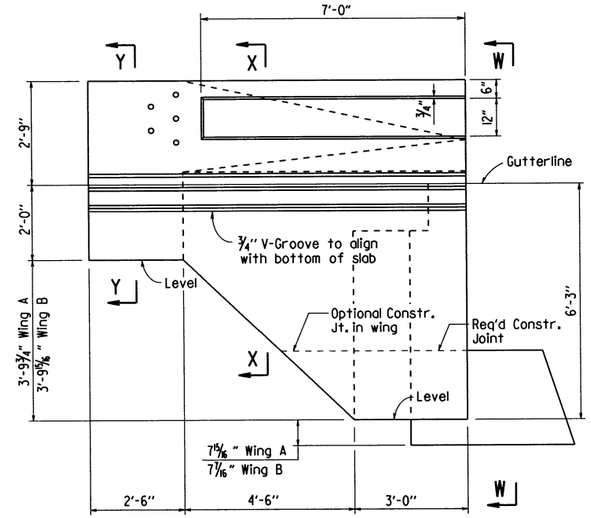
VIEW T-T

1/2"=1'-0"



SECTION Z-Z

3/8" = 1'-0"

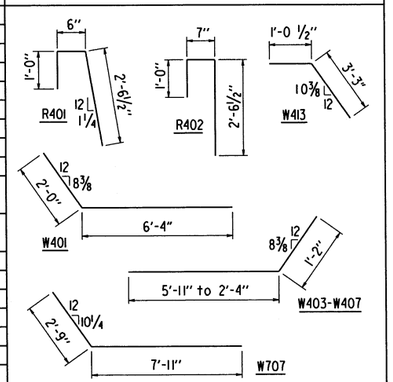


VIEW V-V

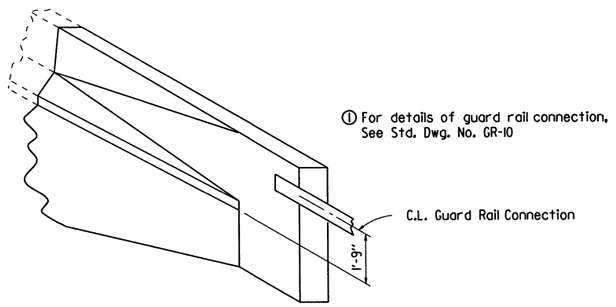
1/2" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
R401	8	3'-11"	2"	
R402	8	4'-0"	2"	
R403	12	9'-8"	Str.	
R601	16	4'-5"	Str.	
R602	6	5'-0"	Str.	
W401	6	8'-4"	2"	
W402	6	8'-8"	Str.	
W403-W407	2 ea.	7'-1" to 3'-6"	2"	
W408-W412	2 ea.	8'-2" to 4'-7"	Str.	
W413	6	4'-4"	2"	
W701	12	9'-8"	Str.	
W702	4	6'-7"	Str.	
W703	4	5'-9"	Str.	
W704	4	4'-11"	Str.	
W705	4	4'-1"	Str.	
W706	4	3'-2"	Str.	
W707	4	10'-8"	5 1/4"	

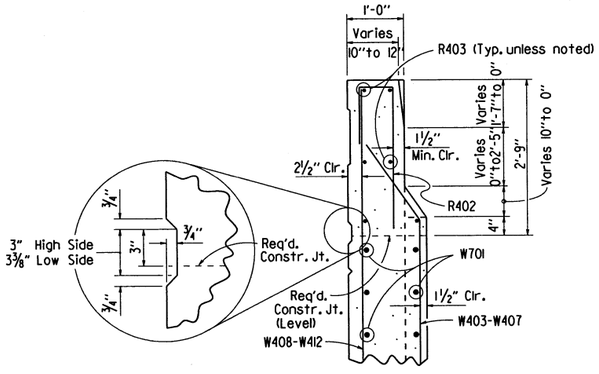


Dimensions are out to out of bars.



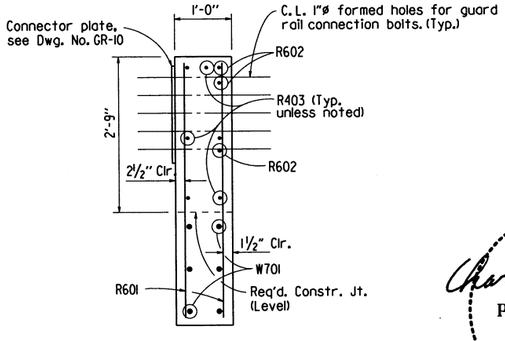
THREE DIMENSIONAL VIEW OF RAIL

No Scale



SECTION X-X

3/4"=1'-0"



SECTION Y-Y

3/4"= 1'-0"

VIEW W-W

3/4"=1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 7
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HOT DATE: 9/26/07 FILENAME: bca0903c2_bl.dgn
CHECKED BY: BHS DATE: 5-15-17 SCALE: As Shown
DESIGNED BY: HOT DATE: 9/07

BRIDGE NO. 07280 DRAWING NO. 59218

PRINT DATE: 5/15/2017

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.		CA0903	232	452
				①	07280 - 88'-0" SPAN - 59219			

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

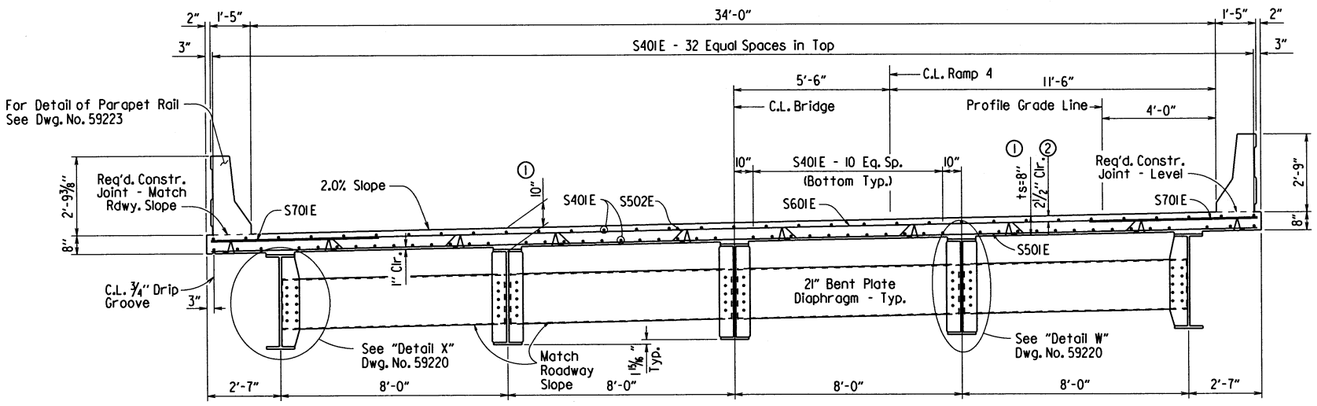
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction. See Subsection 804.06.

For General Notes, See Dwg. No. 59234.

SLAB REINFORCING

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S502E @ 15" o.c.-Bent up over beams ———
S701E Top @ 15" o.c. @ gutter (See "Detail A", Dwg. No. 59222)
Longitudinal: S401E as shown



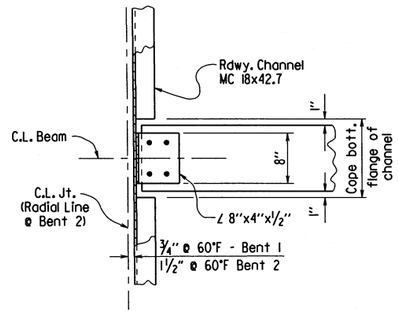
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.

① See "Adjustment for Slab Thickness Tolerance" Detail

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".



CHANNEL CONNECTION DETAIL

No Scale

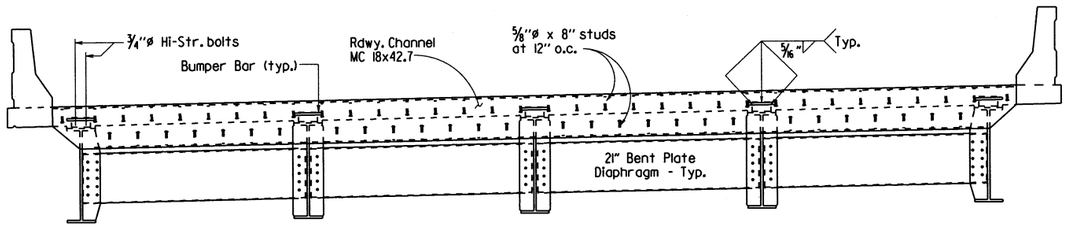
TABLE FOR WELD

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.

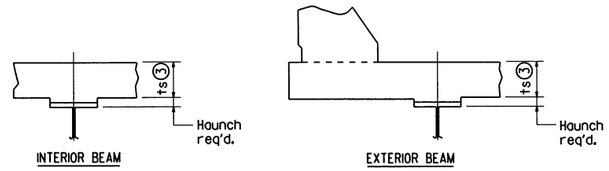
Expansion Device:
Rdwy. Channel-MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 59234.



SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"



③ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 88'-0" SIMPLE COMPOSITE W-BEAM SPAN McKISIC CREEK RAMP 4

ROUTE SEC.

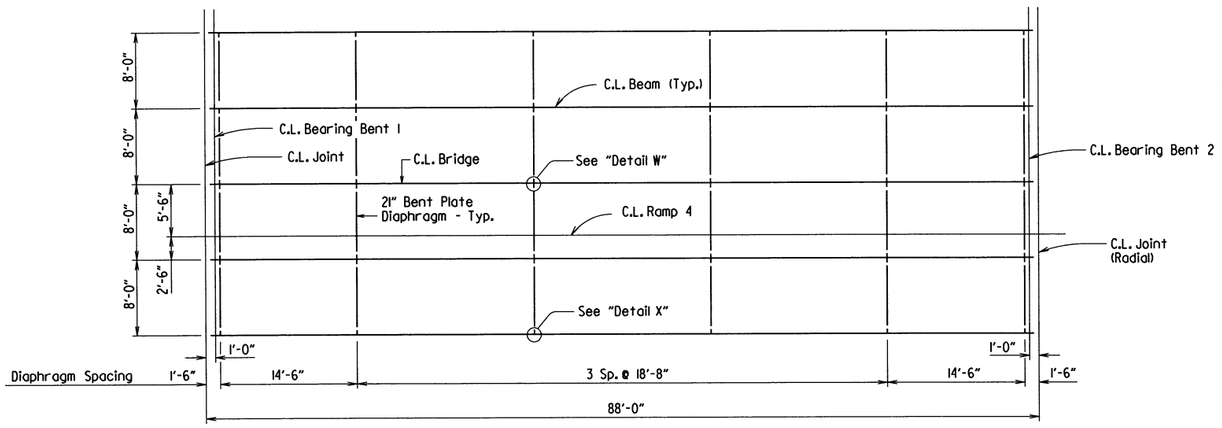
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 8/15/07
CHECKED BY: RWY DATE: 5/15/17
DESIGNED BY: DDD DATE: 5/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59219

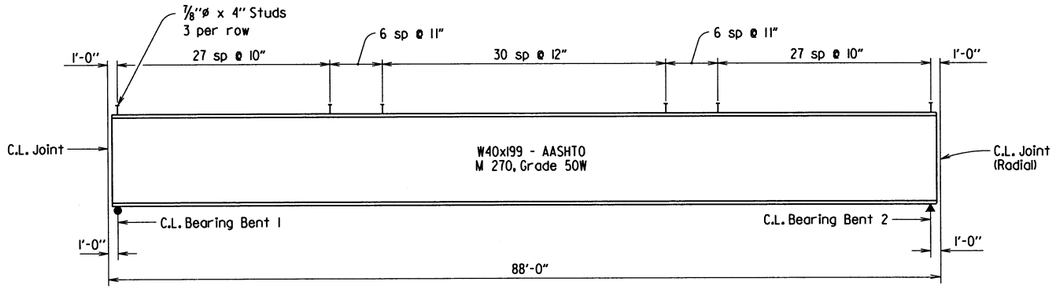
PRINT DATE: 5/15/2017

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.		CA0903	233	452
				①	07280 - 88'-0" SPAN - 59220				



FRAMING PLAN

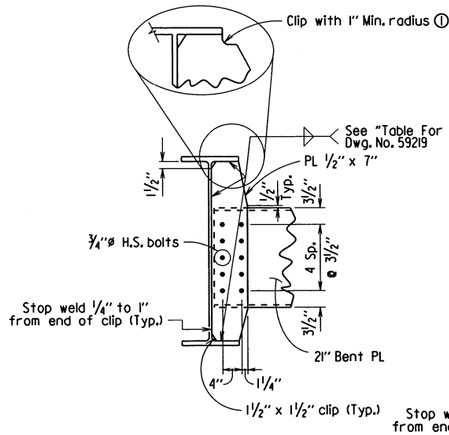
1/8" = 1'-0"



BEAM ELEVATION

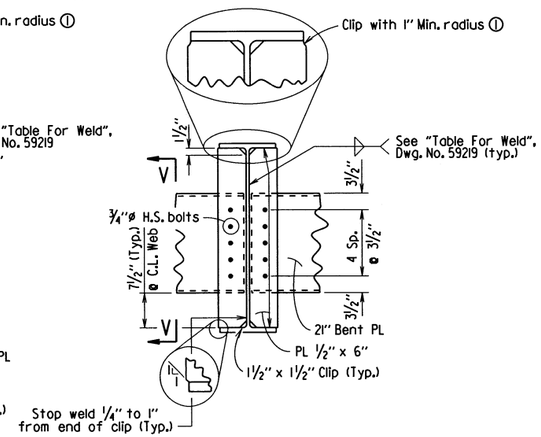
No Scale

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



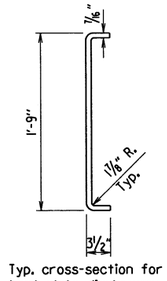
DETAIL X

No Scale



DETAIL W

No Scale



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 88'-0" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: KWY DATE: 5/16/17
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FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

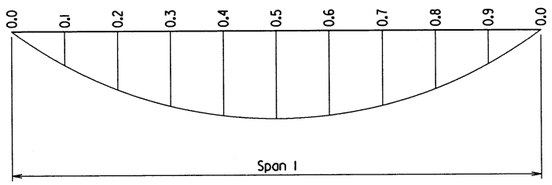
BRIDGE NO. 07280 DRAWING NO. 59220

PRINT DATE: 5/15/2017

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.		CA0903	234	452
				(1)	07280 - 88'-0" SPAN - 59221			

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

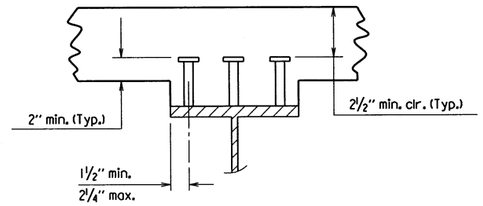
Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
	Interior	Exterior	Interior	Exterior	Interior	Exterior
0	0.000	0.000	0.000	0.000	0.000	0.000
0.1	0.197	0.188	0.920	0.784	1.000	0.869
0.2	0.372	0.355	1.740	1.483	1.891	1.643
0.3	0.509	0.486	2.382	2.030	2.589	2.249
0.4	0.596	0.569	2.789	2.377	3.032	2.634
0.5	0.626	0.597	2.929	2.496	3.184	2.765
0.6	0.596	0.569	2.789	2.377	3.032	2.634
0.7	0.509	0.486	2.382	2.030	2.589	2.249
0.8	0.372	0.355	1.740	1.483	1.891	1.643
0.9	0.197	0.188	0.920	0.784	1.000	0.869
0	0.000	0.000	0.000	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.



Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 88'-0" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK RAMP 4

ROUTE SEC.

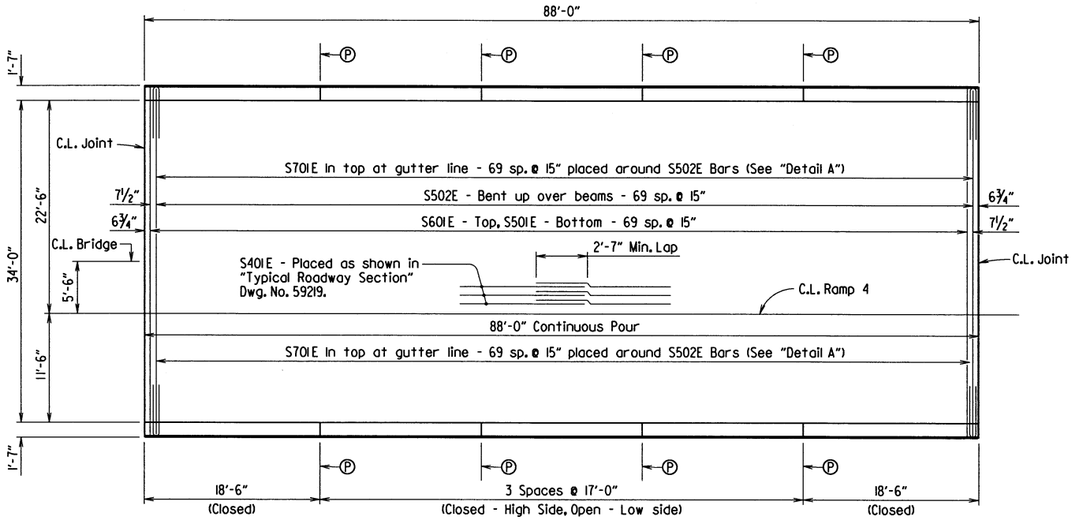
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: KWY DATE: 5/15/17 SCALE: As Shown
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BRIDGE NO. 07280 DRAWING NO. 59221

PRINT DATE: 5/15/2017

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.		CA0903	235	452
				①		07280 - 88'-0" SPAN - 59222		



REINFORCING PLAN & DECK POURING SEQUENCE

1/8" = 1'-0"

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.

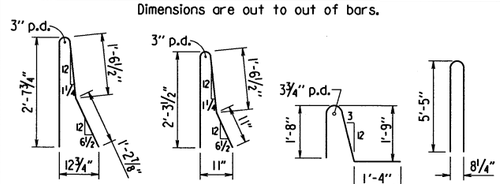
The deck concrete shall be placed as a single pour. A minimum of 72 hours shall elapse between the completion of the deck pour and the pouring of the parapet railing. The Contractor must obtain approval from the Engineer for any deviations from this pouring sequence.

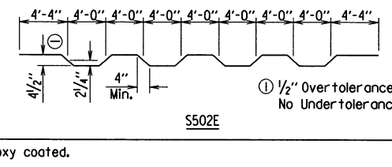
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	249	30'-11"	Str.
S501E	70	36'-10"	Str.
S502E	70	37'-6"	3"
S601E	70	36'-10"	Str.
S701E	140	11'-1"	6½"
P401E	328	5'-6"	3"
P402E	24	4'-10"	3"
P403E	24	30'-11"	Str.
P404E	12	18'-2"	Str.
P405E	18	16-8"	Str.
P501E	328	4'-9"	3¾"

BENDING DIAGRAMS

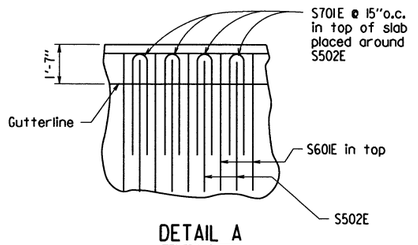
Dimensions are out to out of bars.





① ½" Overtolerance
No Undertolerance

NOTE: Bars marked with an "E" suffix shall be epoxy coated.



DETAIL A

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 88'-0" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK RAMP 4

ROUTE SEC.

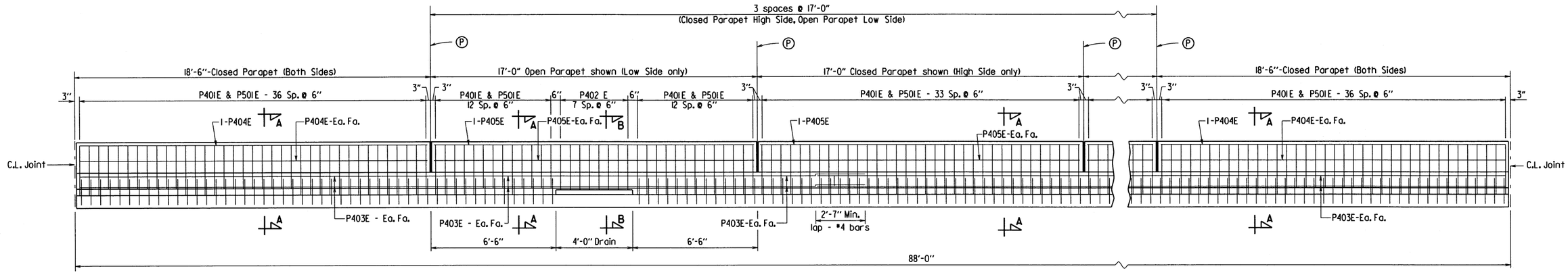
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: KWY DATE: 5/16/17
DESIGNED BY: DDD DATE: 5/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59222

PRINT DATE: 5/15/2017

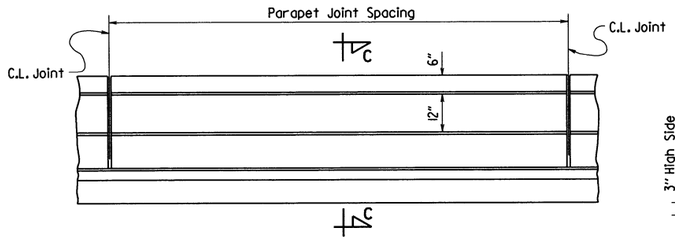
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	236	452
				(1)		07280 - 88'-0" SPAN - 59223		



PARAPET RAIL REINFORCING PLAN

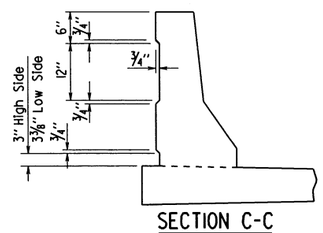
3/8" = 1'-0"

Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan" Dwg. No. 59222 Stop 1'-2" from top of slab.



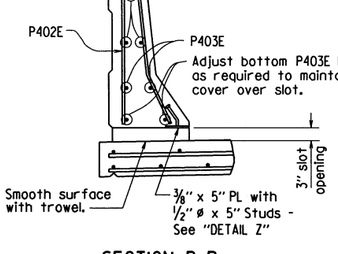
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



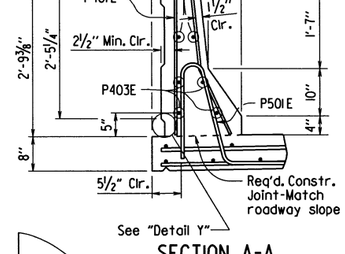
SECTION C-C

No Scale



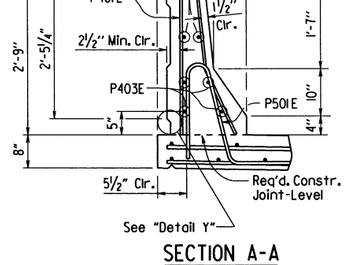
SECTION B-B

3/4" = 1'-0"



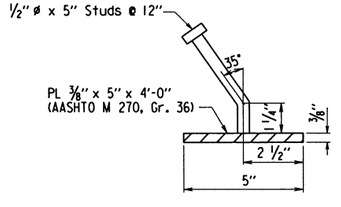
SECTION A-A

Low Side
3/4" = 1'-0"



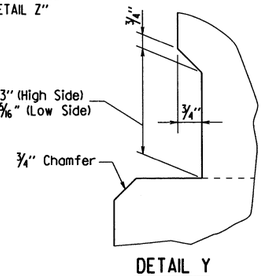
SECTION A-A

High Side
3/4" = 1'-0"



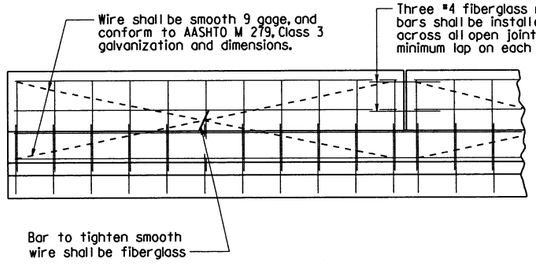
DETAIL Z

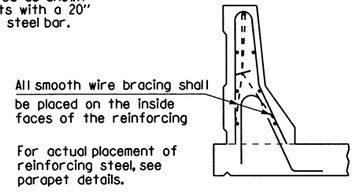
No Scale



DETAIL Y

No Scale





All panels shall be braced as required 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

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 88'-0" SIMPLE COMPOSITE W-BEAM SPAN
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 8/16/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: DDD DATE: 5/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59223

PRINT DATE: 5/15/2017

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.		CA0903	237	452
				①		07280 - 260'-0" UNIT - 59224		

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

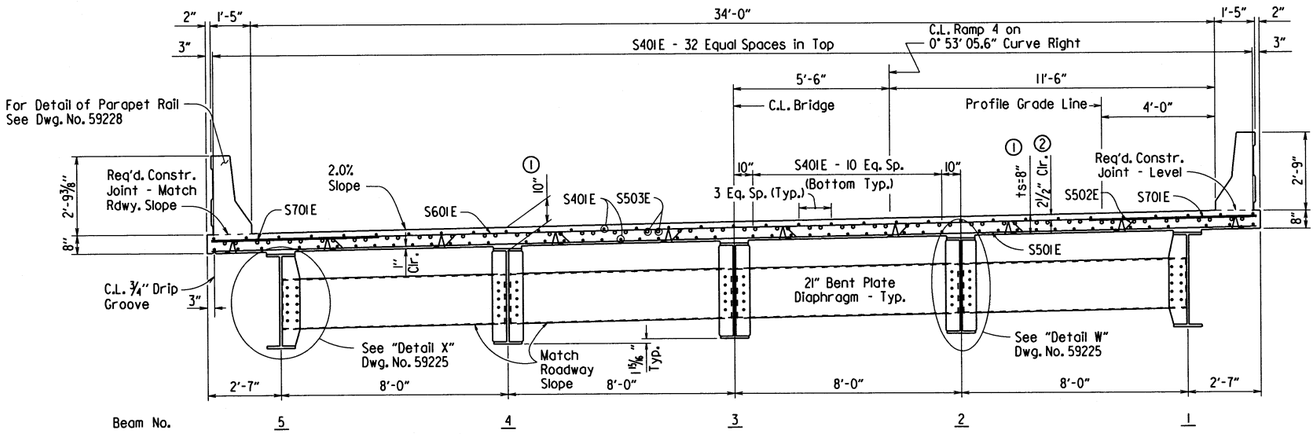
Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction. See Subsection 804.06.

For General Notes, See Dwg. No. 59234.

SLAB REINFORCING

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——————— Alternate
S502E @ 15" o.c.-Bent up over beams ———————
S701E Top @ 15" o.c. @ gutter (See "Detail A", Dwg. No. 59227)

Longitudinal: S401E as shown
S503E as shown over Int. Supports



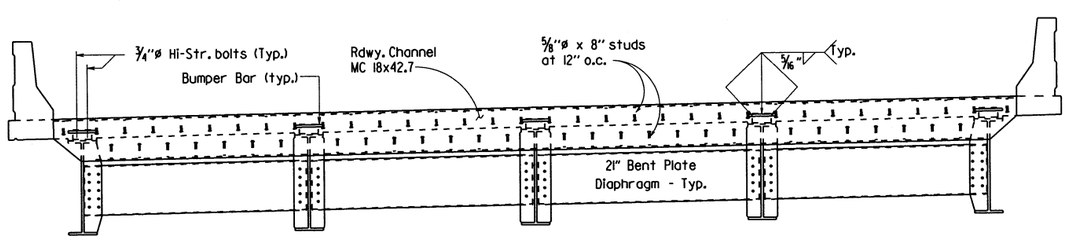
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.

Expansion Device:
Rdwy. Channel - MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 59234.

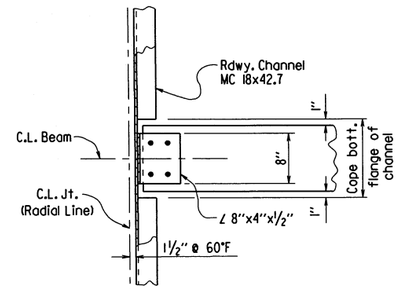


SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"

① See "Adjustment for Slab Thickness Tolerance" Detail

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".



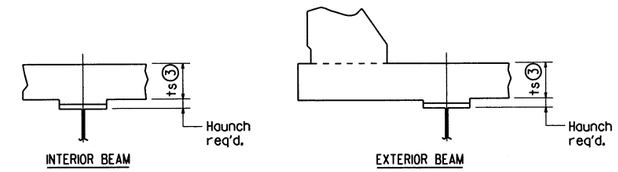
CHANNEL CONNECTION DETAIL

No Scale

TABLE FOR WELD

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.



③ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

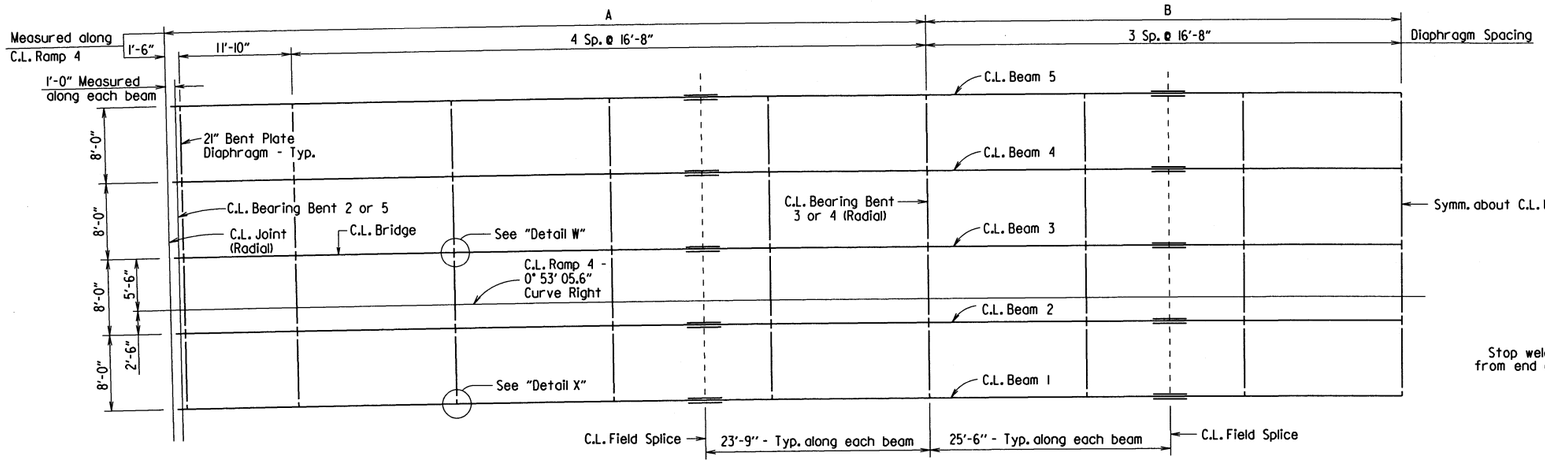
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CHECKED BY: KWY DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: SAT DATE: 6/07

BRIDGE NO. 07280 DRAWING NO. 59224

PRINT DATE: 5/15/2017

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.		CA0903	238	452
				①	07280 - 260'-0" UNIT - 59225				

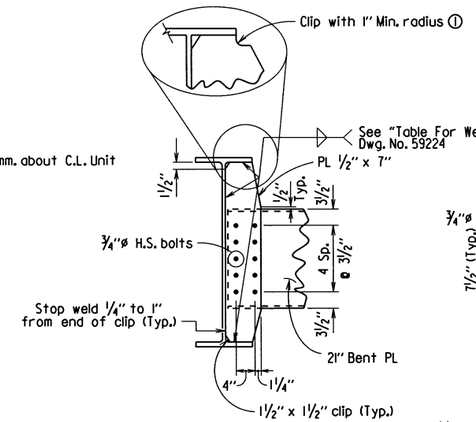
Beams are curved and are concentric to C.L. Ramp 4. Diaphragms are on radial lines.



FRAMING PLAN

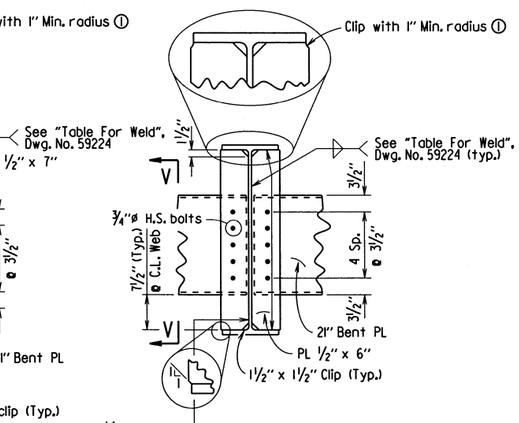
1/8" = 1'-0"

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



DETAIL X

No Scale

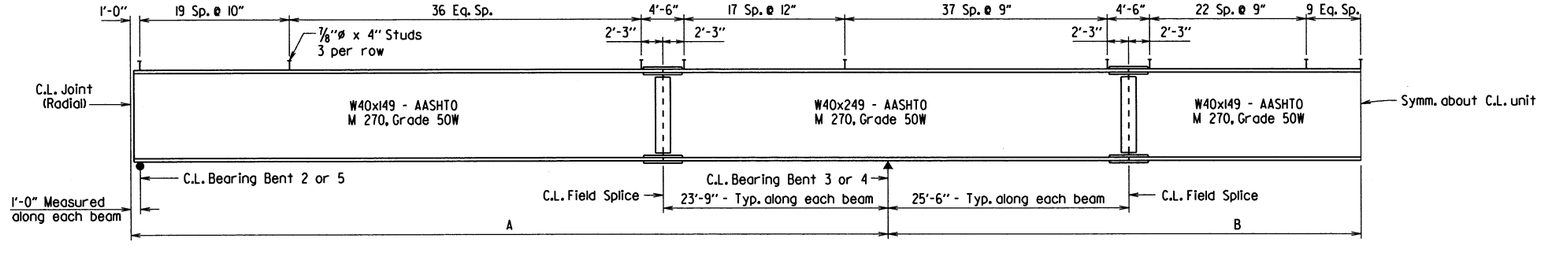


DETAIL W

No Scale

TABLE OF VARIABLES

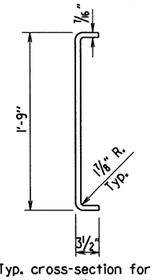
Beam No.	A	B
1	79'-10 7/16"	49'-11"
2	79'-11 5/8"	49'-11 3/4"
3	80'-0 13/16"	50'-0 1/2"
4	80'-2"	50'-1 1/4"
5	80'-3 3/16"	50'-2"



Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

BEAM ELEVATION

No Scale



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

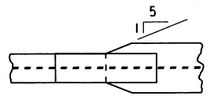
LITTLE ROCK, ARK.

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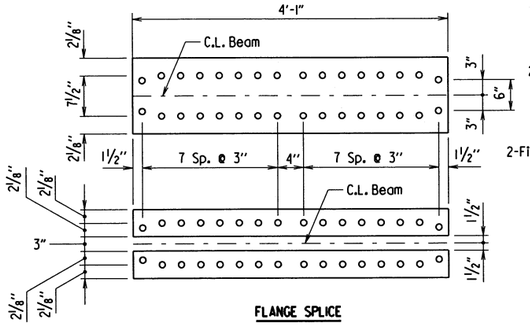
BRIDGE NO. 07280 DRAWING NO. 59225

PRINT DATE: 5/15/2017

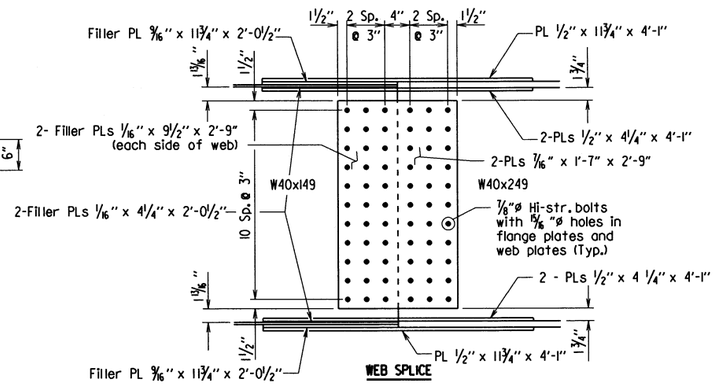
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				6	ARK.			
				JOB NO.		CA0903	239	452
				07280 - 260'-0" UNIT - 59226				



FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



FLANGE SPLICE

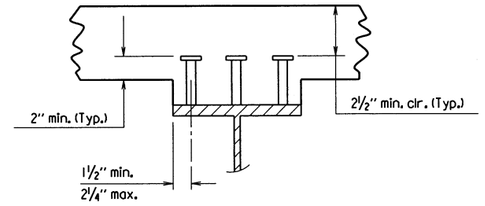


WEB SPLICE

All splice plates shall be AASHTO M 270, Gr. 50W

FIELD SPLICE DETAILS

1" = 1'-0"



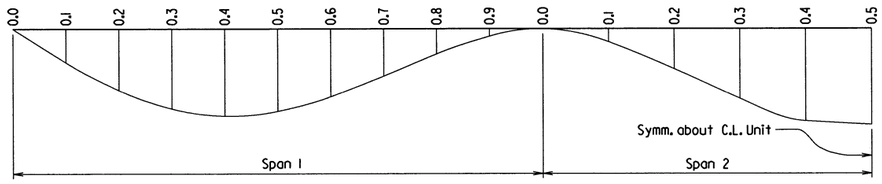
Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	260' Unit - Ramp 4		
		Str. Steel	Str. Steel + Slab	Str. Steel + Slab + Parapet
1	0	0.000	0.000	0.000
	0.1	0.071	0.383	0.411
	0.2	0.130	0.696	0.746
	0.3	0.170	0.904	0.970
	0.4	0.184	0.975	1.046
	0.5	0.173	0.910	0.976
	0.6	0.141	0.737	0.791
	0.7	0.097	0.504	0.541
	0.8	0.052	0.271	0.290
	0.9	0.016	0.083	0.088
2	0	0.000	0.000	0.000
	0.1	0.023	0.105	0.115
	0.2	0.072	0.350	0.381
	0.3	0.130	0.641	0.696
	0.4	0.181	0.900	0.975
	0.5	0.199	0.992	1.075 ← C.L. Unit



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Camber for Dead Load Deflection plus Vertical curve ± ¼" tolerance. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above plane.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

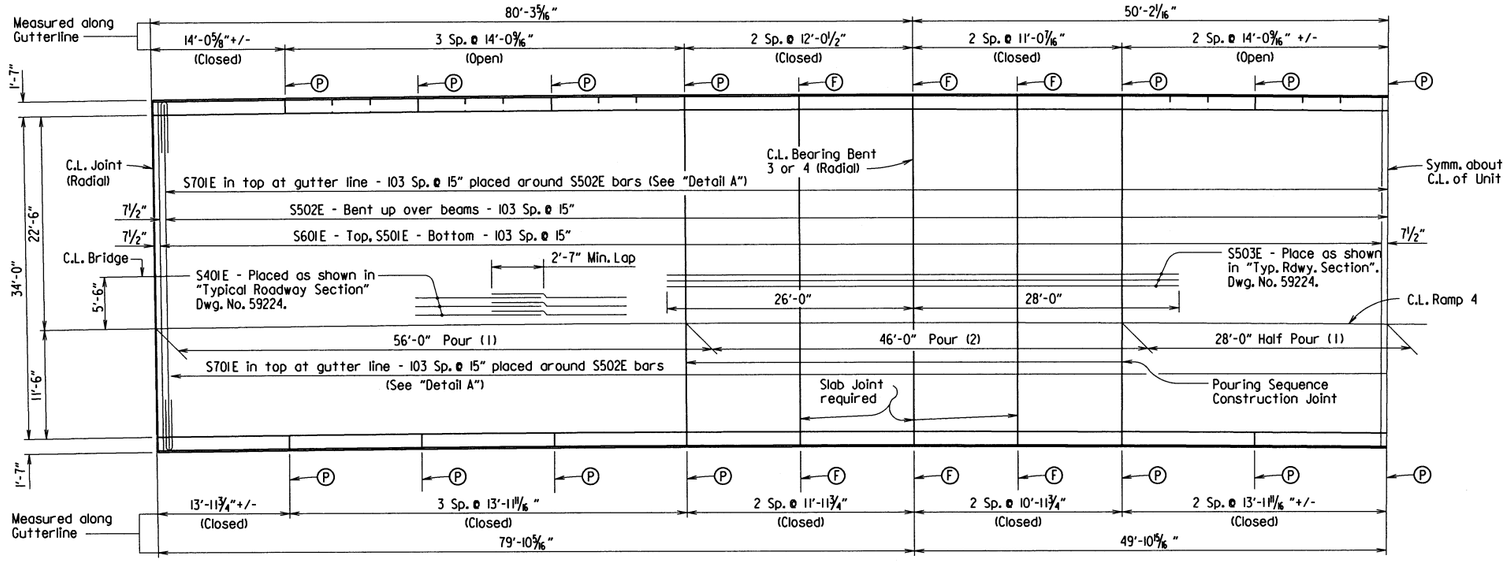
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BRIDGE NO. 07280 DRAWING NO. 59226

PRINT DATE: 5/15/2017

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.		CA0903	240	452
				07280 - 260'-0" UNIT - 59227				

All Longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Ramp 4. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Ramp 4.



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 between 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 completion of the slab and the pouring of the parapet railing. Any parapet railing pours made before the entire slab unit has been placed must be approved by the Engineer. 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 Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

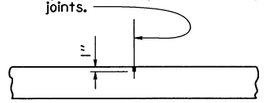
Ⓕ C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) Stop 1'-2" from top of slab.

REINFORCING PLAN & DECK POURING SEQUENCE

1/8" = 1'-0"

1/2" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S (AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joint shall be installed before the parapet rail 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 slab (gutterline to gutterline). Slab joints shall align with parapet open joints.

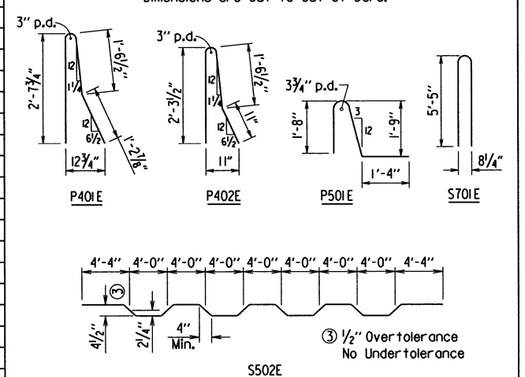


SLAB JOINT DETAIL

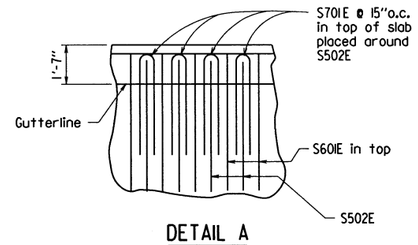
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401E	581	39'-5"	Str.	Dimensions are out to out of bars.
S501E	208	36'-10"	Str.	
S502E	207	37'-6"	3"	
S503E	64	54'-0"	Str.	
S601E	208	36'-10"	Str.	
S701E	414	11'-1"	6 1/2"	
P401E	960	5'-6"	3"	
P402E	80	4'-10"	3"	
P403E	32	35'-2"	Str.	
P404E	16	40'-2"	Str.	
P405E	40	11'-7"	Str.	
P406E	40	10'-7"	Str.	
P407E	72	13'-7"	Str.	
P501E	960	4'-9"	3 3/4"	



NOTE: Bars marked with an "E" suffix shall be epoxy coated.



DETAIL A

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

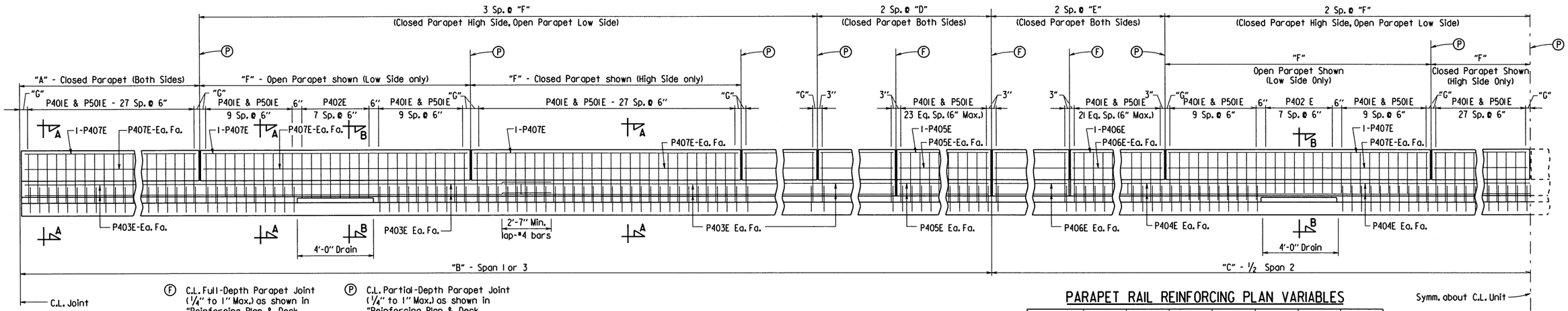
LITTLE ROCK, ARK.

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BRIDGE NO. 07280 DRAWING NO. 59227

PRINT DATE: 5/15/2017

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.		CA0903	241	452
				①	07280 - 260'-0" UNIT - 59228				



Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59227. Stop 4" from top of slab.

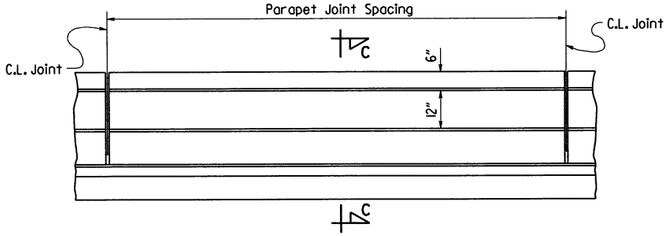
Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59227. Stop 1'-2" from top of slab.

PARAPET RAIL REINFORCING PLAN

⅜" = 1'-0"

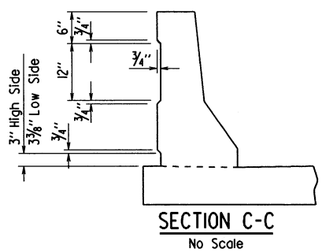
PARAPET RAIL REINFORCING PLAN VARIABLES

Gutterline	"A"	"B"	"C"	"D"	"E"	"F"	"G"
Low Side	14'-0⅝"	80'-3⅝"	50'-2 1/16"	12'-0½"	11'-0 1/16"	14'-0⅜"	3⅝"
High Side	13'-11¾"	79'-10⅝"	49'-10⅝"	11'-11¾"	10'-11¾"	13'-11 11/16"	2⅞"



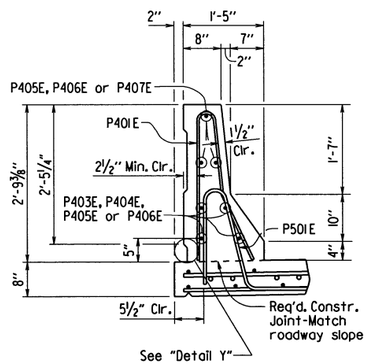
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



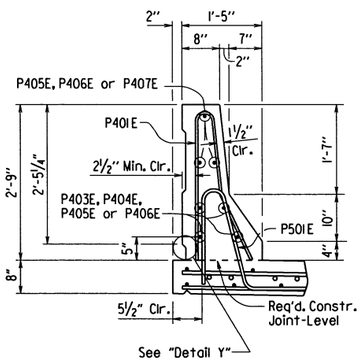
SECTION C-C

No Scale



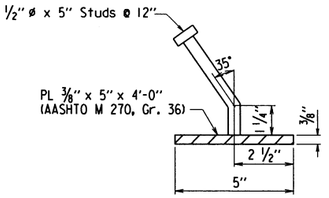
SECTION A-A

Low Side
¾" = 1'-0"



SECTION A-A

High Side
¾" = 1'-0"

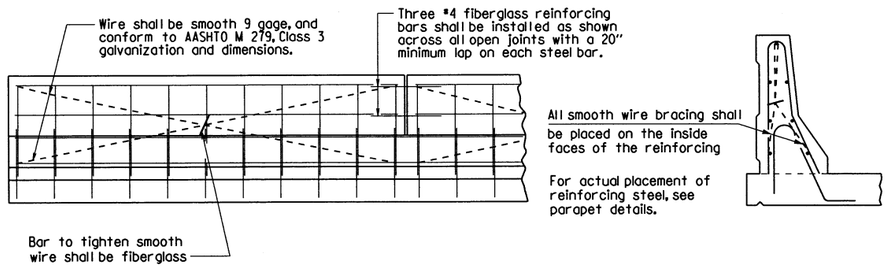


DETAIL Z

No Scale

The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."

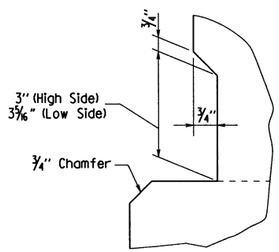


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

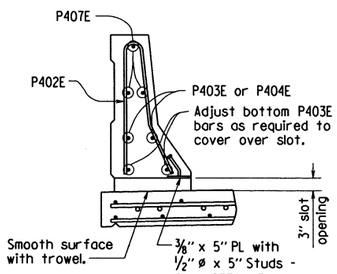
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



DETAIL Y

No Scale



SECTION B-B

¾" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 260'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 9/5/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: SAT DATE: 6/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59228

PRINT DATE: 5/15/2017

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.		CA0903	242	452
				①		07280 - 155'-0" UNIT - 59229		

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. CA0903 "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.

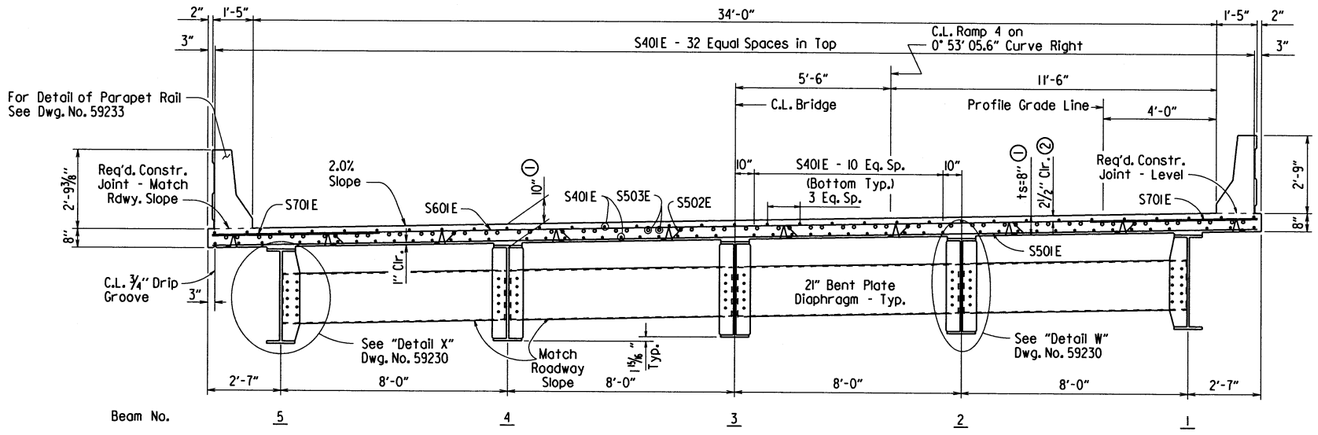
At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction. See Subsection 804.06.

For General Notes, See Dwg. No. 59234.

SLAB REINFORCING

Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S502E @ 15" o.c.-Bent up over beams ———
S701E Top @ 15" o.c. @ gutter (See "Detail A", Dwg. No. 59232)
Longitudinal: S401E as shown
S503E as shown over Int. Supports



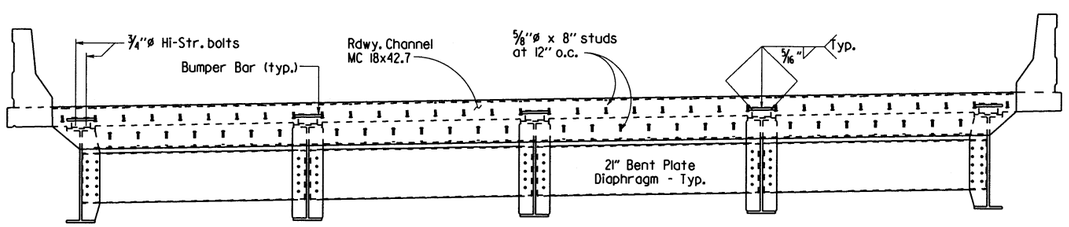
TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

The superstructure details shown are for use when removable deck forming is used and are for the basis of measurement of Class S(AE) Concrete.

Expansion Device:
Rdwy. Channel - MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 59234.

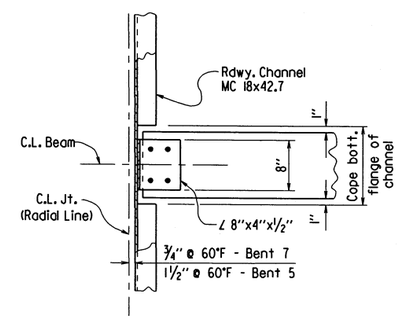


SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"

① See "Adjustment for Slab Thickness Tolerance" Detail

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adjustment for Slab Thickness Tolerance



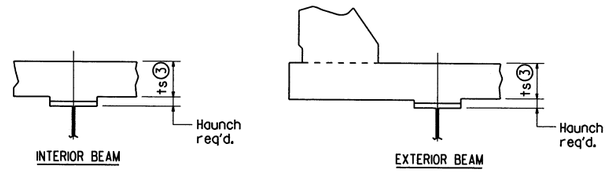
CHANNEL CONNECTION DETAIL

No Scale

TABLE FOR WELD

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.



③ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on superstructure detail drawings.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

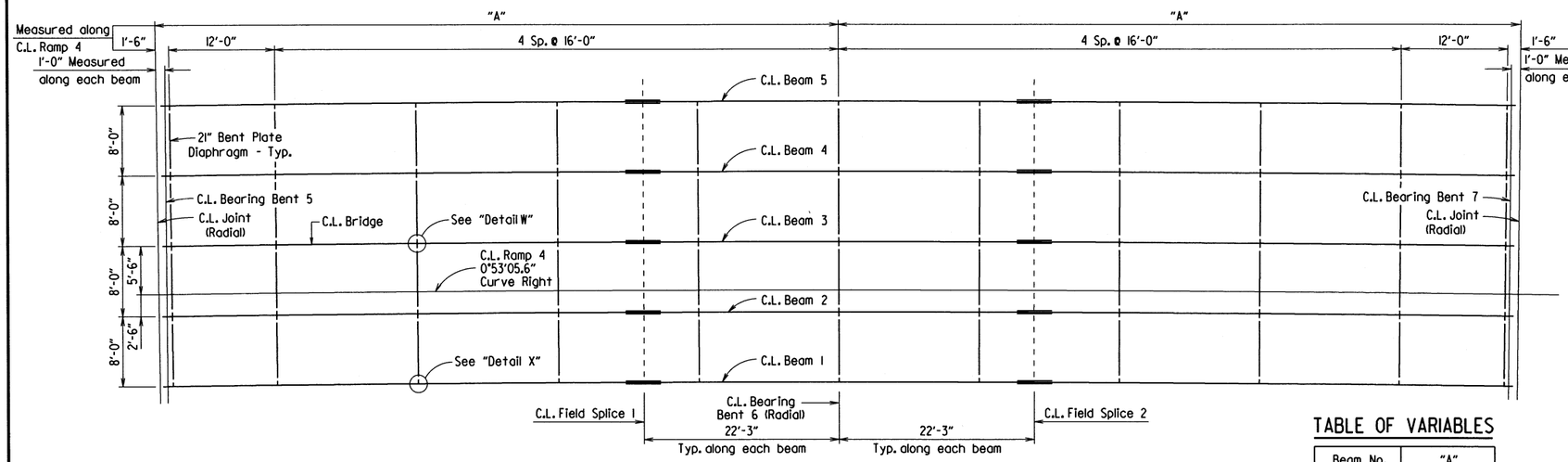
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DESIGNED BY: SAT DATE: 6/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280
DRAWING NO. 59229

PRINT DATE: 5/15/2017

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.		CA0903	243	452
				①		07280 - 155'-0" UNIT - 59230		

Beams are curved and are concentric to C.L. Ramp 4. Diaphragms are on radial lines.

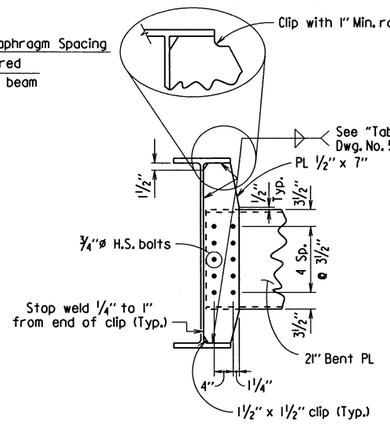


FRAMING PLAN
1/8" = 1'-0"

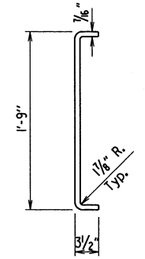
TABLE OF VARIABLES

Beam No.	"A"
1	77'-4 1/2"
2	77'-5 5/8"
3	77'-6 3/4"
4	77'-7 15/16"
5	77'-9 1/16"

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

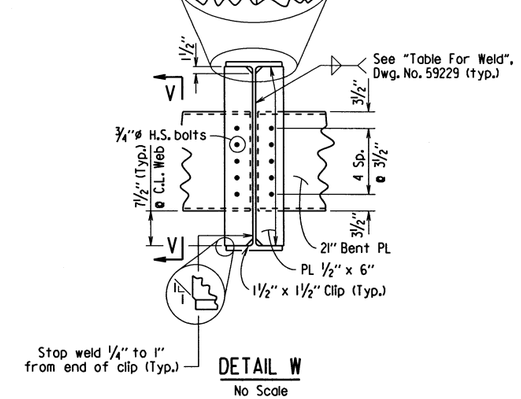


DETAIL X
No Scale

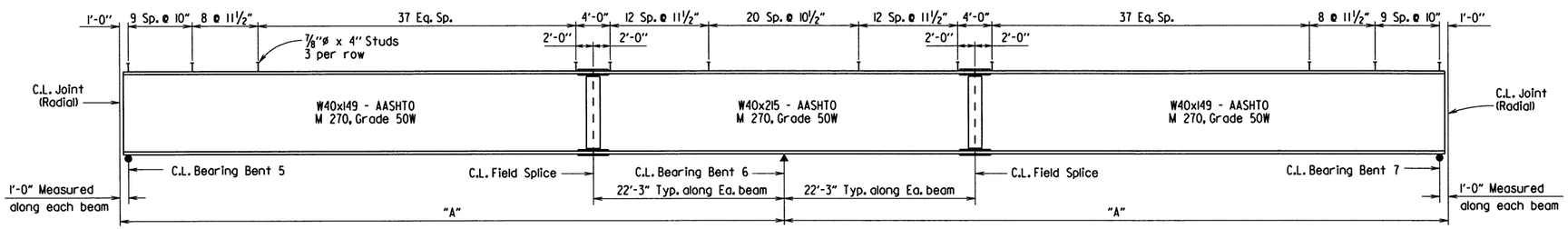


Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V
No Scale



DETAIL W
No Scale



BEAM ELEVATION
No Scale

Bolted Field Splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT McKISIC CREEK RAMP 4

ROUTE SEC.

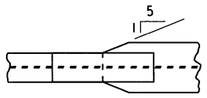
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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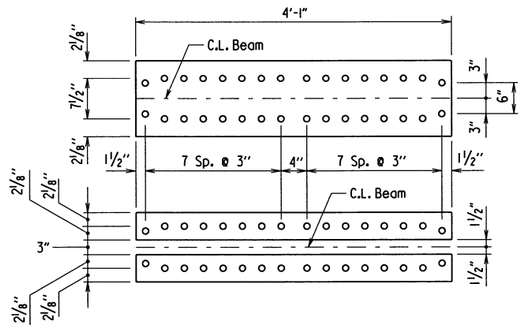
BRIDGE NO. 07280 DRAWING NO. 59230

PRINT DATE: 5/15/2017

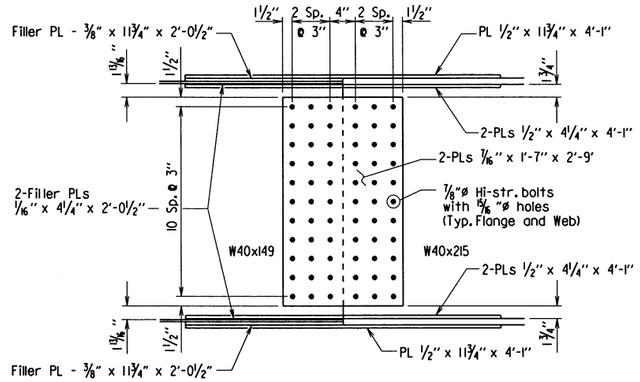
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				6	ARK.			
				JOB NO.		CA0903	244	452
				①	07280 - 155'-0" UNIT - 59231				



FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



FLANGE SPLICE

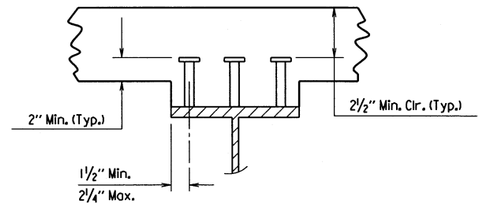


WEB SPLICE

All splice plates shall be AASHTO M 270, Gr. 50W

FIELD SPLICE - DETAILS

1" = 1'-0"



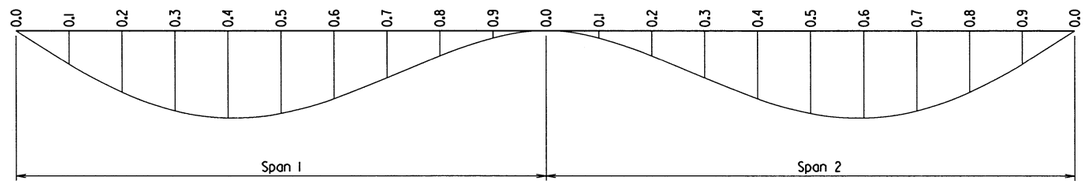
Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	155' Unit - Ramp 4		
		Str. Steel	Str. Steel + Slab	Str. Steel + Slab + Parapet
1	0	0.000	0.000	0.000
	0.1	0.063	0.348	0.374
	0.2	0.116	0.635	0.682
	0.3	0.151	0.827	0.888
	0.4	0.164	0.896	0.963
	0.5	0.155	0.845	0.908
	0.6	0.127	0.692	0.744
	0.7	0.087	0.472	0.508
	0.8	0.046	0.248	0.267
	0.9	0.014	0.073	0.079
	0	0.000	0.000	0.000
2	0.1	0.014	0.073	0.079
	0.2	0.046	0.248	0.267
	0.3	0.087	0.472	0.508
	0.4	0.127	0.692	0.744
	0.5	0.155	0.845	0.908
	0.6	0.164	0.896	0.963
	0.7	0.151	0.827	0.888
	0.8	0.116	0.635	0.682
	0.9	0.063	0.348	0.374
	0	0.000	0.000	0.000



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Camber for Dead Load Deflection plus Vertical curve ± ¼" tolerance. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above plane.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

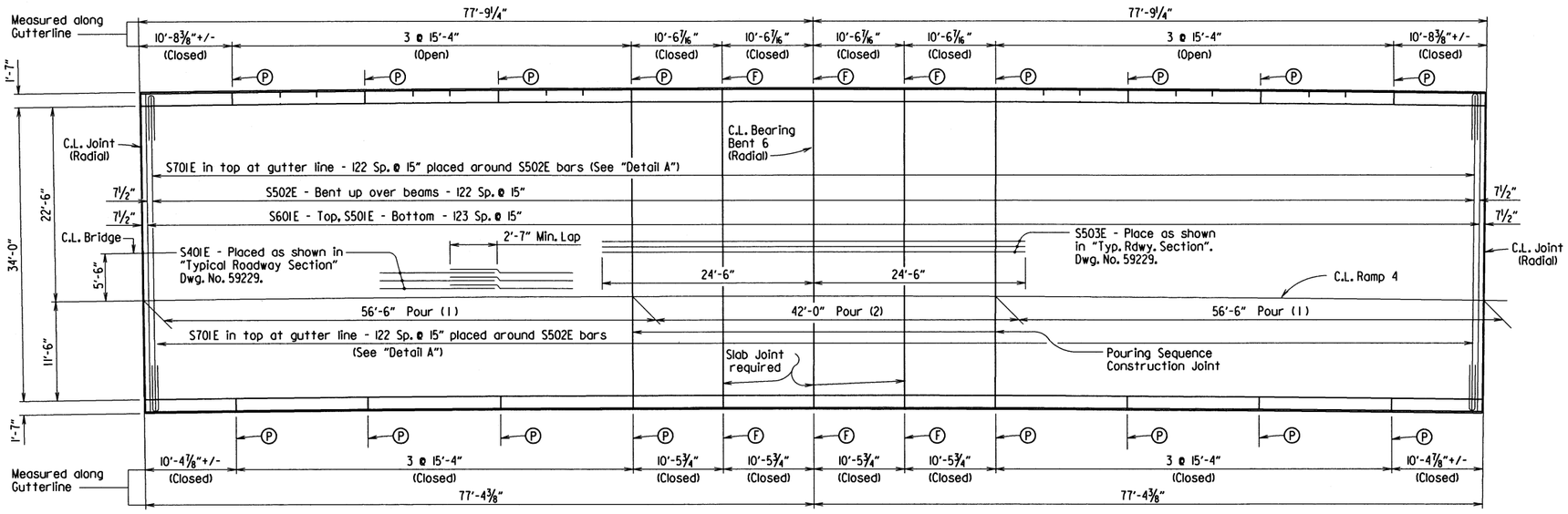
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BRIDGE NO. 07280 DRAWING NO. 59231

PRINT DATE: 5/15/2017

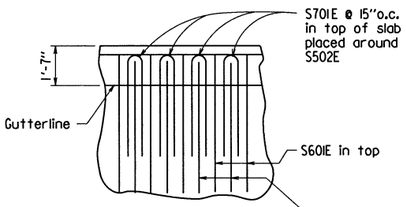
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				6	ARK.			
				JOB NO.		CA0903	245	452
				07280 - 155'-0" UNIT - 59232				

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Ramp 4. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Ramp 4.



Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.



DETAIL A
No Scale

REINFORCING PLAN & DECK POURING SEQUENCE

⅛" = 1'-0"

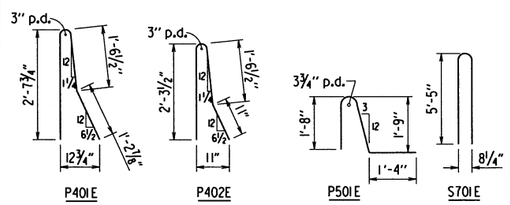
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a Pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. Any parapet railing pours made before the entire slab unit has been placed must be approved by the Engineer. 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 Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown. If deviation from the pouring sequence shown is allowed, the dead load deflections, as shown on Dwg. No. 59231, may require adjustment.

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	332	40'-9"	Str.
S501E	124	36'-10"	Str.
S502E	123	37'-6"	3"
S503E	64	49'-0"	Str.
S601E	124	36'-10"	Str.
S701E	246	11'-1"	6½"
P401E	564	5'-6"	3"
P402E	48	4'-10"	3"
P403E	32	34'-9"	Str.
P404E	52	10'-0"	Str.
P405E	36	15'-0"	Str.
P501E	564	4'-9"	3¾"

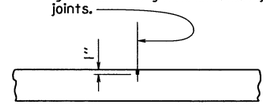
BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars marked with an "E" suffix shall be epoxy coated.

½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S (AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joint shall be installed before the parapet rail 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 slab (gutterline to gutterline). Slab joints shall align with parapet open joints.



SLAB JOINT DETAIL
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
6-5-17
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

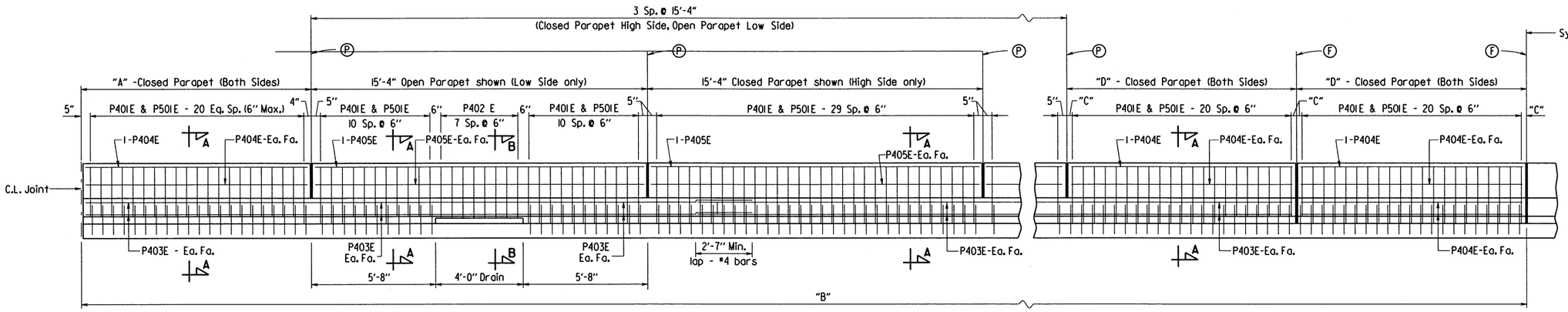
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 8/22/07
CHECKED BY: KWY DATE: 5/15/17
DESIGNED BY: SAT DATE: 6/07
FILENAME: bca0903c2_sl.dgn
SCALE: As Shown

BRIDGE NO. 07280 DRAWING NO. 59232

PRINT DATE: 5/15/2017

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.		CA0903	246	452
				①	07280 - 155'-0" UNIT - 59233				



Ⓕ C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59232. Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 59232. Stop 1'-2" from top of slab.

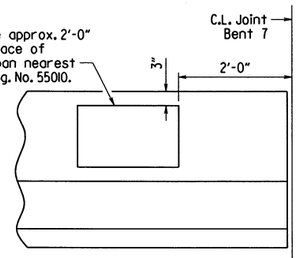
PARAPET RAIL REINFORCING PLAN

3/8" = 1'-0"

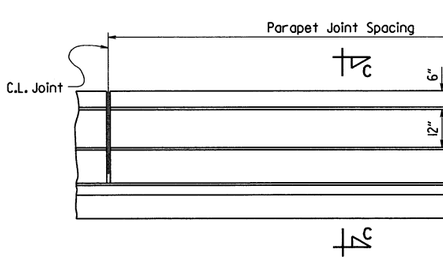
PARAPET RAIL REINFORCING PLAN VARIABLES

Gutterline	"A"	"B"	"C"	"D"
Low Side	10'-8 3/8"	77'-9 1/4"	3 1/4"	10'-6 7/8"
High Side	10'-4 7/8"	77'-4 3/8"	2 7/8"	10'-5 3/4"

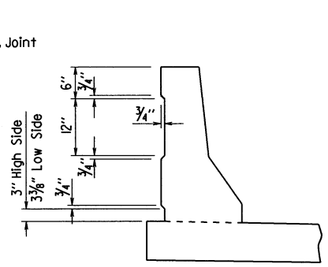
Place Type D Bridge Name Plate approx. 2'-0" from C.L. Joint on the front face of parapet rail on left side of span nearest the end of Bridge. See Std. Dwg. No. 550110.



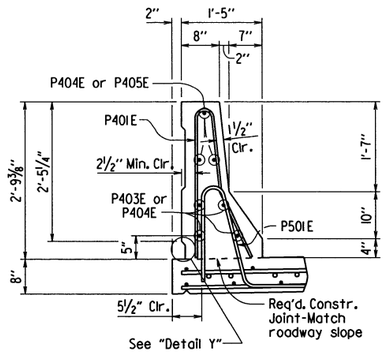
NAME PLATE DETAIL
No Scale



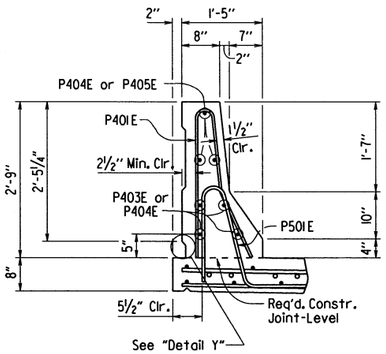
DETAILS OF PARAPET ENHANCEMENT
Outside Face Of Rail
No Scale



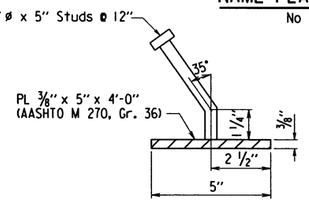
SECTION C-C
No Scale



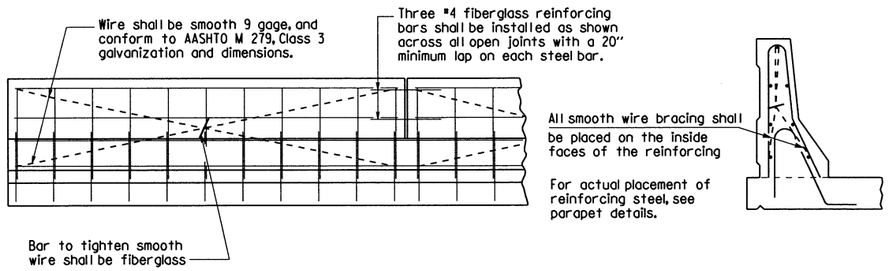
SECTION A-A
Low Side
3/4" = 1'-0"



SECTION A-A
High Side
3/4" = 1'-0"



DETAIL Z
No Scale

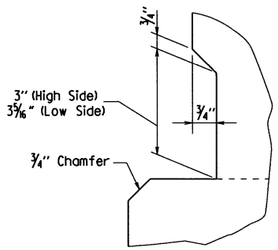


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

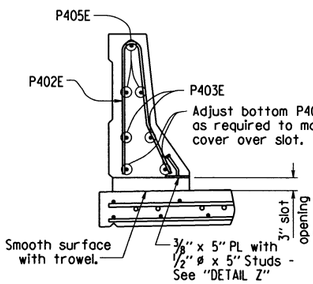
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



DETAIL Y
No Scale



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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."

SHEET 5 OF 5
DETAILS OF 155'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 8/22/07
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BRIDGE NO. 07280 DRAWING NO. 59233

PRINT DATE: 5/15/2017

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.		CA0903	347	452
				①		07280 - COMMON DETAILS - 59234		

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007).

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:
Concrete: All concrete shall be Class S(AE) with a minimum 28 day strength f'c = 4000 psi.

Reinforcing Steel: Reinforcing steel shall be Grade 60 (Yield Strength = 60,000 psi) and shall conform to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural Steel: Structural steel shall conform to AASHTO M 270, Gr. 50W (Fy = 50,000 psi.) or AASHTO M 270 Gr. 36 (Fy = 36,000 psi.).

STRUCTURAL STEEL:
All Structural Steel shall be AASHTO M 270, Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Structural Steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50, or Gr. 50W. AASHTO M 270, Gr.50W Steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84e unless noted otherwise.

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 the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams including web and flange splice plates and the diaphragms and connection plates of the curved units 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 shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50W)".

Steel plates for main members 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.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with the recommendations of the manufacturer.

All beams shall be blocked in their true position 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 position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and those marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of 1/4" (plus or minus) is allowed for camber.

Field connections shall be bolted with high-strength bolts. Bolts shall be 3/4"ø, except as noted, and open holes shall be 15/16 "ø unless otherwise noted. Holes for 3/4"ø bolts may be 15/16 "ø if a washer is supplied for use under both the nut and the head of the bolt. Bolt spacing shall be 2 1/2" for 3/4"ø bolts. For field splices, bolts shall be 7/8"ø bolts. Open holes shall be 15/16 "ø. Bolt spacing shall be 3" for 7/8"ø bolts. Bolts shall be placed with heads on the outside face of the exterior beam web and on the bottom of the beam flanges.

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 permanent or temporary, 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.

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 the deck.

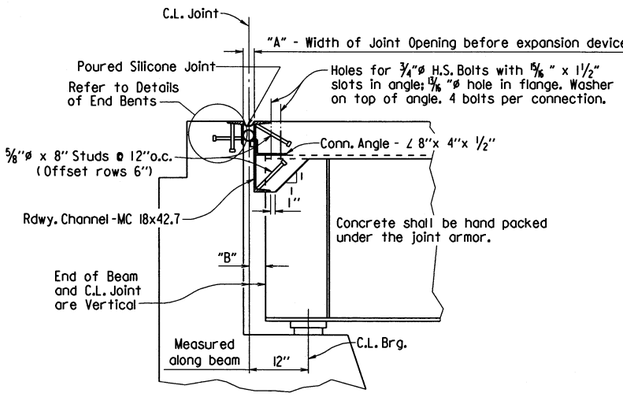
REINFORCING STEEL:
The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports, sufficient in size and number, to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

CONCRETE:
All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

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.

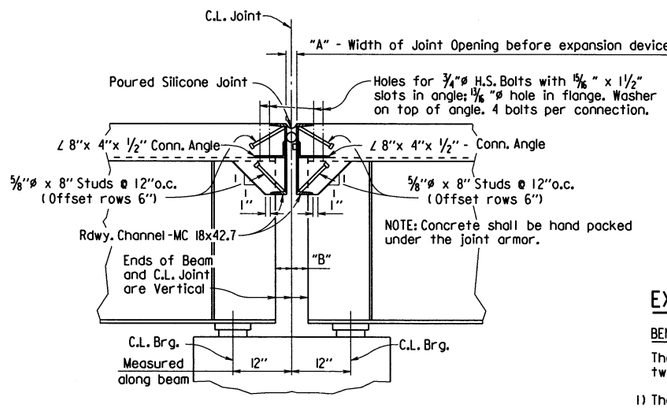
The concrete deck shall be given a Tine Finish in accordance with Subsection 802.19 for Class 5, Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. If a longitudinal strike-off is used for the 88'-0" Span, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. Use of a longitudinal screed for the curved units is prohibited.

A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.



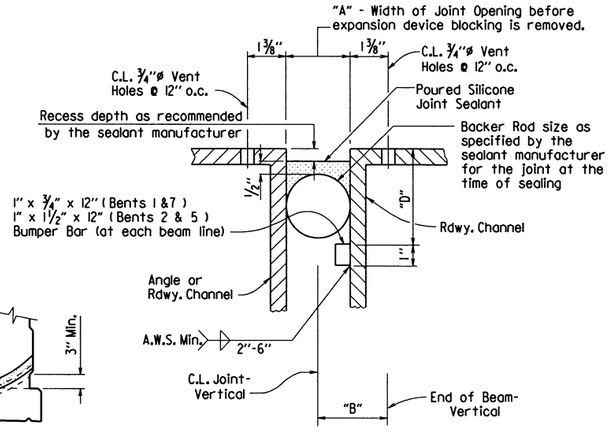
SECTION THRU JOINT AT BENTS 1 & 7

3/4" = 1'-0"



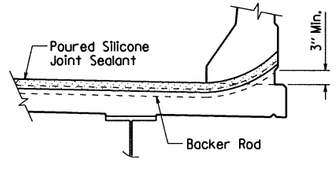
SECTION THRU JOINT AT BENTS 2 & 5

3/4" = 1'-0"



DETAIL OF POURED SILICONE JOINT SEAL

No Scale



JOINT SEAL PLACEMENT AT CURB

No Scale

SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature Of: ①			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1 & 7	1 5/16"	1 1/2"	1 3/16"	2 1/8" ±	1" x 3/4"	5"
2 & 5	3 5/16"	3"	2 11/16"	3 5/8" ±	1" x 1 1/2"	5"

① 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.

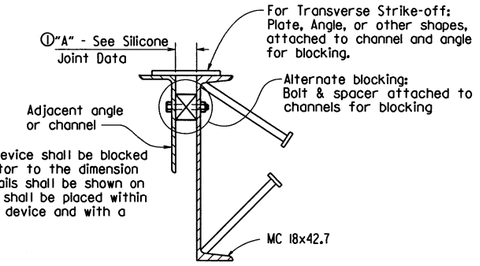
NOTES: The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant shall be installed 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.



NOTE: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension shown, and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

1 1/2" = 1'-0"

EXPANSION DEVICE INSTALLATION

BENTS 1 & 7

The Contractor may elect to install the expansion device for the end bents 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.

BENTS 2 & 5

After all beams on both sides of the joint are erected, the blocked expansion device shall be installed and adjusted for grade. Connection bolts shall be tightened only on the unit whose concrete will be poured first. Connection bolts on the second unit shall be loosely installed to allow for thermal movements and for end rotation of the beams of the first unit while the concrete deck is poured.

After the concrete on the first unit has hardened and immediately prior to pouring concrete for the second unit, the blocking shall be removed and the joint width shall be adjusted for temperature. Joint openings shown are for when concrete is poured at an air temperature of 60°F. If concrete is poured at other temperatures, set the joint width by interpolating. After the joint width has been set, the connection bolts on the second unit shall be tightened and concrete in the second unit can then be poured. A joint opening adjustment is not required for end rotation of the beams caused by the weight of the slab and parapets.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

COMMON SUPERSTRUCTURE DETAILS
McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

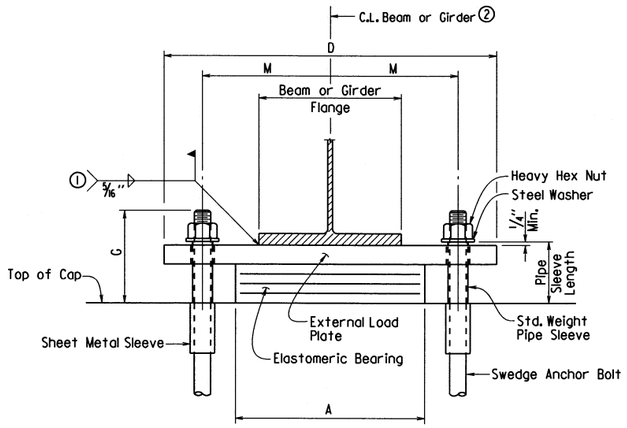
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DESIGNED BY: CSL DATE: 4/07

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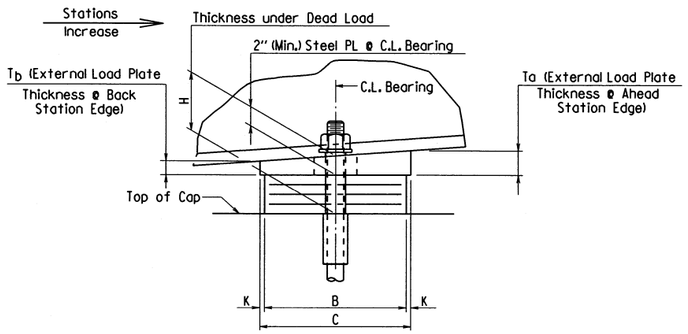
BRIDGE NO. 07280 DRAWING NO. 59234

PRINT DATE: 5/15/2017

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.		CA0903	248	452
				①	07280 - ELASTO. BRGS. - 59235			



FRONT VIEW



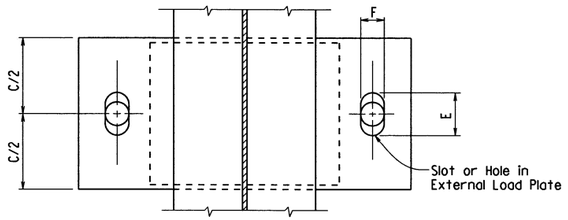
SIDE VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

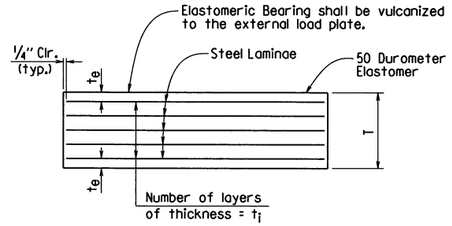
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external 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.

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② Centerline Beam or Girder shall align with centerline bearing.



PLAN VIEW



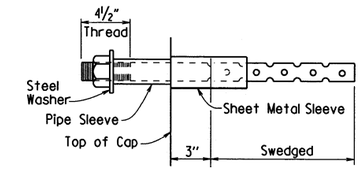
t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.



ANCHOR BOLT DETAIL

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 concrete. 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 Beam Spans (M 270, Gr. 50W)"

TABLE OF FABRICATOR VARIABLES

③ Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION BENT NO(S).	UNIT	BEAM NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE C	D	E	F		K	M	T_a	T_b	ANCHOR BOLT ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07280	1	88'	All	Exp	5	140.00	7 1/2"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	27 1/2"	4 1/8"	2 5/8"	-	1/2"	10 3/4"	1.78	2.22	1 3/4"ø x 27"	55	2"ø x 4 5/8"	4"ø x 6"	3 3/8"
	2 Back	88'	All	Fix	5	140.00	7 1/4"	3 13/16"	16"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	28 1/2"	3 1/8"	3 1/8"	-	1/2"	11"	1.78	2.22	2"ø x 29"	55	2 1/2"ø x 4 1/8"	4"ø x 6"	3 3/4"
	2 Ahead	260'	All	Exp	5	99.00	8 1/2"	5 5/8"	16"	10"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	11"	26"	4 1/4"	2 1/4"	-	1/2"	10 1/4"	1.76	2.24	1 1/2"ø x 25"	55	1 1/2"ø x 5 7/8"	3"ø x 6"	3"
	3	260'	All	Fix	5	259.00	8 1/4"	4 3/8"	20"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	33"	3 3/4"	3 3/4"	-	1/2"	13"	1.76	2.24	2 1/2"ø x 35"	55	3"ø x 4 5/8"	4"ø x 6"	4 1/2"
	4	260'	All	Fix	5	259.00	8 1/4"	4 3/8"	20"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	33"	3 3/4"	3 3/4"	-	1/2"	13"	1.76	2.24	2 1/2"ø x 35"	55	3"ø x 4 5/8"	4"ø x 6"	4 1/2"
	5 Back	260'	All	Exp	5	99.00	8 1/2"	5 5/8"	16"	10"	5	1/2"	1/4"	6 @ 12 Ga.	3 5/8"	11"	26"	4 1/4"	2 1/4"	-	1/2"	10 1/4"	1.76	2.24	1 1/2"ø x 25"	55	1 1/2"ø x 5 7/8"	3"ø x 6"	3"
	5 Ahead	155'	All	Exp	5	98.00	7 1/4"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	26"	3 1/2"	2 1/4"	-	1/2"	10 1/4"	1.78	2.22	1 1/2"ø x 25"	55	1 1/2"ø x 4 5/8"	3"ø x 6"	3"
	6	155'	All	Fix	5	247.00	8 1/4"	4 3/8"	20"	10"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	11"	33"	3 3/4"	3 3/4"	-	1/2"	13"	1.76	2.24	2 1/2"ø x 35"	55	3"ø x 4 5/8"	4"ø x 6"	4 1/2"
	7	155'	All	Exp	5	98.00	7 1/4"	4 3/8"	16"	9"	3	1/2"	1/4"	4 @ 12 Ga.	2 7/16"	10"	26"	3 1/2"	2 1/4"	-	1/2"	10 1/4"	1.78	2.22	1 1/2"ø x 25"	55	1 1/2"ø x 4 5/8"	3"ø x 6"	3"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates 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 807.84(e) for unpainted Grade 50W steel.

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 Beam Spans (M 270, Gr. 50W)". External load plates will not be measured and paid for separately, but will be considered incidental to 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
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REGISTERED PROFESSIONAL ENGINEER
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6-5-17
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BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DHP DATE: 8/1/07 FILENAME: bca0903c2_el.dgn

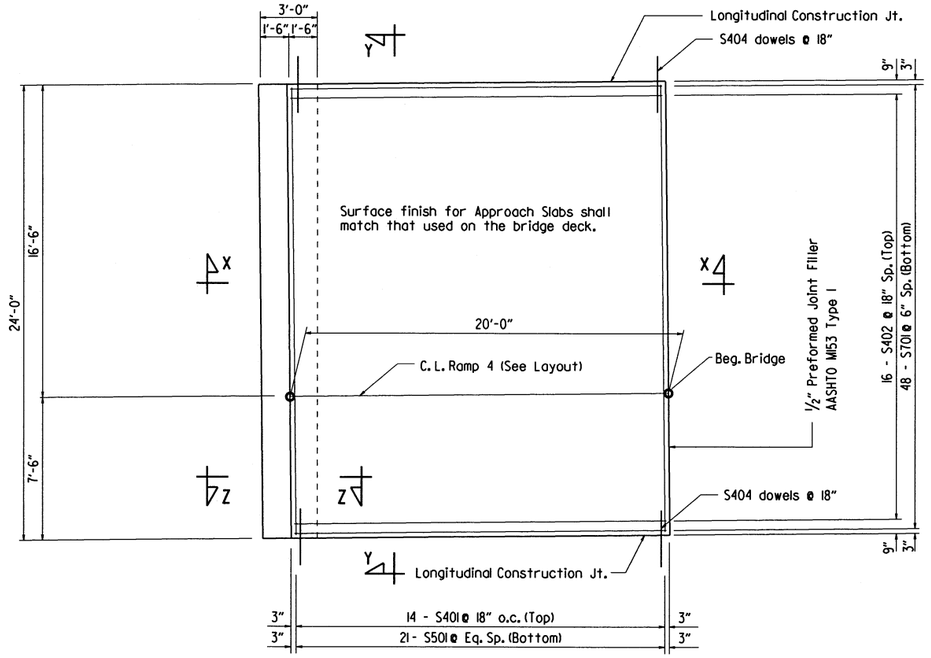
CHECKED BY: CWJ DATE: 5/15/17 SCALE: No Scale

DESIGNED BY: DDD/SAT DATE: 6/07

BRIDGE NO. 07280 DRAWING NO. 59235

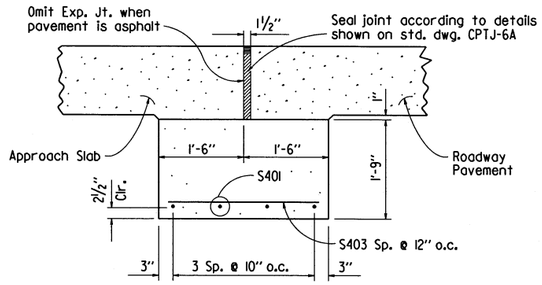
PRINT DATE: 5/15/2017

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.		CA0903	249	452
				1		07280 - APPROACH SLAB - 59236		



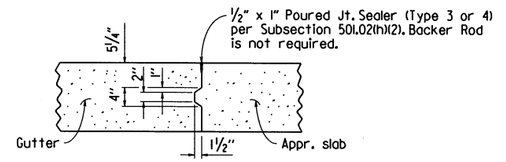
PLAN - APPROACH SLAB

¼" = 1'-0"



SECTION Z-Z

¾" = 1'-0"

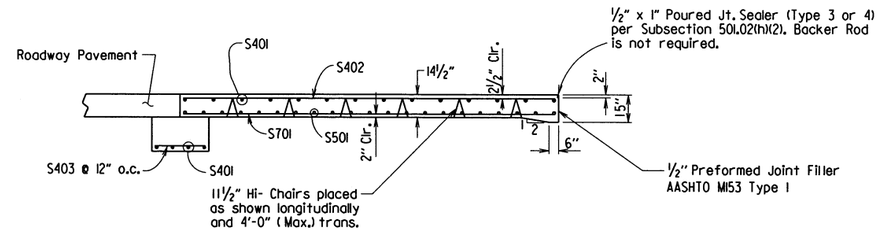


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"

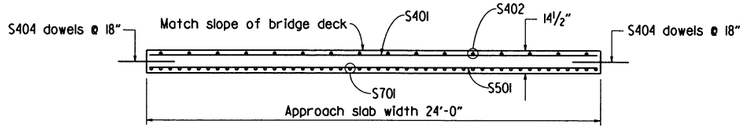
BAR LIST

MARK	NO. REQ'D	LENGTH
S401	18	23'-8"
S402	16	19'-8"
S403	24	2'-8"
S404	28	3'-0"
S501	21	23'-8"
S701	48	19'-8"



SECTION X-X

¼" = 1'-0"



SECTION Y-Y

¼" = 1'-0"

GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

Reinforcement Steel shall be Grade 60 (Yield Strength = 60,000 psi) conforming to AASHTO M 31 or M322, Type A, with mill test reports.

Approach Slab (Type Special 4) will be measured and paid for in accordance with Section 504 of the Standard Specifications.

TABLE OF QUANTITIES FOR TYPE SPECIAL 4 APPROACH SLAB

(FOR INFORMATION ONLY)

Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
3040	26.40

STATE OF ARKANSAS
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DETAILS OF TYPE SPECIAL 4 APPROACH SLAB McKISIC CREEK RAMP 4

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DHP DATE: 11/20/07 FILENAME: bca0903c2_as.dgn
CHECKED BY: KW4 DATE: 5/15/17 SCALE: As Shown
DESIGNED BY: STD DATE: —

BRIDGE NO. 07280 DRAWING NO. 59236

PRINT DATE: 5/15/2017

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.		CA0903	250	452
				07281 -		LAYOUT	- 59237	

For additional details and R/W Data, see Rdwy. Plans

Ramp 4

75'

Slope Varies

Test Hole-typ.

AR-B14-1

10'-0" min. g.l. to face of curb

10'-0" Shdr.

2 - 12'-0" Lanes

10'-0" Shdr.

2 - 12'-0" Lanes

10'-0" Shdr.

90'-0" Finished Crown

Sta. 124+00

Sta. 125+00

2'-0" Median Barrier

S74°23'27.16"E

100'

AR-B14-2

Tangent Dist. over 500'

Concrete Barrier Wall (Side Type A-1). See Rdwy. Plans for details

Concrete Riprap-See Std. Dwg. No. 55002

Barrier Rail-Typ. each side - See Rdwy. Plans.

Slope Varies

AR-B14-3

AR-B14-4

MSE Wall - See Dwg. Nos. 59240-59242

1'-6" Para.

44'-0" Clear Roadway

95'-2" out to out

Sta. 139+00

Sanitary Sewer

Point of Min. Vertical Clearance

Note: For additional interchange information, see Rdwy. Plans.

℄ Bridge & Constr. Hwy. 549

Sta. 126+00

Sta. 127+00

Sta. 136+00

2.0% Cross Slope

Intersection Point
Sta. 1126+36.56 - ℄ Constr. Hwy. 549
Sta. 138+08.31 - ℄ Hwy. 71B

Underground Cable

Concrete Barrier Wall (Side Type A-1). See Rdwy. Plans for details

AR-B14-5

MSE Wall - See Dwg. Nos. 59243-59247

Sta. 128+00

Tangent Dist. over 500'

Box Culvert - See Rdwy. Plans

20' typ.

Concrete Riprap

AR-B14-6

WALK/BIKE TRAIL

Ramp 3

18'-4" to face of curb

Wall

Median Barrier - typ. See Rdwy. Plans

AR-B14-7

Barrier Rail-Typ. each side. See Rdwy. Plans

Ramp 1

Ramp 2

℄ Hwy. 71B

10'-0" min. g.l. to face of curb

HORIZONTAL CURVE DATA
HWY. 71B
PI = Sta. 136+90.39
Delta = 45°33'43"
D = 3°00'00.00"
T = 802.09'
L = 1513.73'
R = 1909.8593'

Place Type Special 5 Approach Slab and Type Special 3 Approach Gutters at both ends of bridge. See Dwg. Nos. 59269 & 59270.

PLAN

Total Length of Bridge = 297'-4¼"
295'-0" Simple Composite Plate Girder Span

1'-2⅛"
℄ 3" Strip Seal Joint (5" movement rating)
℄ 3" Strip Seal Joint (5" movement rating)
1'-2⅛"

PVI Sta. 1117+19.72
Elev. 1050.44
-6.0%
2.5%
L = 2900'
VERTICAL CURVE DATA ALONG ℄ BRIDGE

Begin Bridge Sta. 124+10.81 Elev. 1076.38

17.4' min. cl.

℄ Deck to Low Steel = 12'-0⅛"

Concrete Parapet Railing

End Bridge Sta. 127+68.19 Elev. 1079.01

Proposed Grade Line at ℄ Bridge

EXP.

FIX

32' piles

45' piles

Existing Ground Line at ℄ Bridge

BENT 1

BENT 2

ELEVATION

Contours shown reflect existing surface as surveyed by the Surveys Division (Dated June 29, 2017)

Note: Stations and elevations shown are along ℄ Bridge.
For General Notes, see Dwg. No. 59238.
For Soil Borings, see Dwg. No. 59239.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
OVER HWY. 71B
HWY. 71 INTERCHANGE
(B.V. BYPASS) (F)
BENTON COUNTY

ROUTE 549 SEC. 9

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 3-27-07 FILENAME: bca0903x3_111.dgn
CHECKED BY: S.W.P DATE: 5-6-19 SCALE: 1" = 20'
DESIGNED BY: ARW DATE: 03/2007

BRIDGE NO. 07281 DRAWING NO. 59237

PRINT DATE: 5/6/2019

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.		CA0903	251	452
				① 07281 -		LAYOUT	- 59238	

GENERAL NOTES

BENCH MARK: BM 900 - AHTD Disk #040024 Bridge A, 138.24' Lt. C.L. Median, Sta. 1133+88.45, Elev. 1081.31.

CONSTRUCTION SPECIFICATION: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 edition, with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted, Section and Subsection numbers in the plans refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 edition) with 2005 & 2006 interims.

LIVE LOADING: HL93 SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 70W)	Fy = 70,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling in Bents 1 & 2 shall be HP 14x73; AASHTO M 270, Gr. 50, and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 134 tons per pile and into material designated as limestone or chert on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the standard specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. In all piles the Contractor shall use approved steel H-Pile driving points. Actual pile lengths to be determined in the field.

Pile casings are required for all piling in Bents 1 and 2. Casings shall be installed prior to or during embankment construction and shall extend from top of leveling pad to bottom of cap. Pile casing material shall be of 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 21". Piles shall be driven after any required preboring and through the open casings after embankment to the bottom of cap is in place. 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 (HP 14x73)".

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at Bents 1 and 2 after excavation to the bottom of leveling pad of MSE wall in accordance with Special Provision Job No. CA0903 "Exploratory Holes". The quantities of exploratory holes shown are for bidding purposes only. The actual locations, number, and depths of exploratory holes are to be determined in the field by the Engineer.

PREBORING: Preboring is required for piling in Bents 1 and 2 where exploratory holes indicate that the depth to rock is less than 8' below the bottom of leveling pad of MSE walls. Preboring shall be sufficient to provide a minumum 3' depth into material designated as limestone or chert on the boring legend, or to a minimum embedment length of 8' below the leveling pad, whichever is greater. The quantities of preboring shown are for bidding purposes only. The actual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored hole shall be backfilled with Portland cement, approved non-shrink grout, or other approved material to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "Preboring".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface in accordance with Section 803.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge and retaining wall surfaces as specified in Special Provision Job No. CA0903 "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.

PAINTING STRUCTURAL STEEL: All structural steel except galvanized members and surfaces in contact with concrete shall be painted as specified in Section 807. Color of paint shall be Dark Gray Federal Std. 595B, color chip 26122.

FORM INSERT: State of Arkansas Form Insert to be used at MSE Walls (4 locations). See Dwg. Nos. 59241, 59245 & 59248.

DETAIL DRAWINGS:

MSE Walls	59240-59247
Arkansas Form Inserts	59248
End Bents	59249-59254
295' Simple Composite Plate Girder Span	59255-59263
Elastomeric Bearings	59264
Safety Handrail	59265
Signal Support	59266-59268
Type Special 3 Approach Gutter	59270
Type Special 5 Approach Slab	59271
Steel Piling	55020

PRINT DATE: 5/6/2019

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
OVER HWY. 71B
HWY. 71 INTERCHANGE
(B.V. BYPASS) (F)
BENTON COUNTY

ROUTE 549 SEC. 9

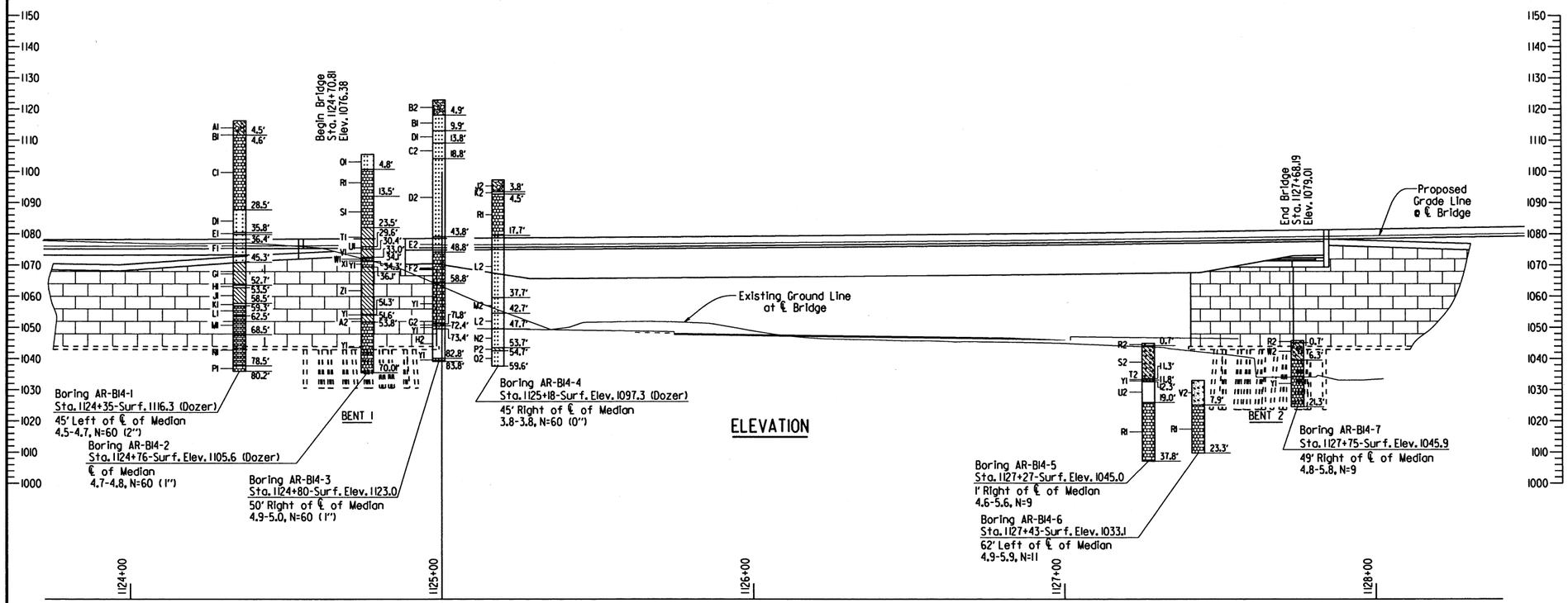
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 5-6-19 SCALE: 1" = 20'
DESIGNED BY: ARW DATE: 3/2007

BRIDGE NO. 07281 DRAWING NO. 59238

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.		CA0903	252	452
① 07281 -		LAYOUT	- 59239	



BORING LEGEND

AI-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Cobbles and Boulders
BI-Hard, Brown and Gray Weathered Chert
CI-Hard, Gray Fractured Cherty Limestone
DI-Hard, Gray Fractured Chert with Limestone Seams
EI-Cavity (35.8' - 36.4')
FI-Hard, Gray Fractured Chert with Limestone Seams
GI-Soil-filled Cavity (45.3' - 52.7')
HI-Hard, Gray Fractured Chert
JI-Soil-filled Cavity (53.5' - 58.5')
KI-Hard, Gray Fractured Chert
LI-Hard, Gray Fractured Limestone Interbedded with Hard, Dark Gray Shale
MI-Hard, Gray Limestone Interbedded with Hard, Dark Gray Shale
NI-Hard, Gray Limestone Interbedded with Hard, Dark Gray Shale with some Chert Seams
PI-Hard, Gray Limestone
QI-Hard, Gray Weathered Chert
RI-Hard, Gray Cherty Limestone
SI-Hard, Gray Cherty Limestone with Fractured Seams
TI-Soil-filled Cavity (28.9' - 29.6')
UI-Hard, Gray Cherty Limestone with some Calcite Seams
VI-Soil-filled Cavity (30.4' - 33.0')
WI-Hard, Gray Cherty Limestone with some Dark Gray Chert Seams
XI-Soil-filled Cavity (34.1' - 34.3')
YI-Hard, Gray Cherty Limestone
ZI-Soil-filled Cavity (36.1' - 51.3')
A2-Soil-filled Cavity (51.6' - 53.8')
B2-Moist, Very Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand and Cobbles
C2-Hard, Gray Chert with Limestone and some Fractured Seams
D2-Hard, Gray Chert with Limestone Seams
E2-Hard, Gray Chert with Limestone and some Thin Dark Gray Shale Seams
F2-Hard, Gray Cherty Limestone with some Thin Dark Gray Shale Seams
G2-Moist, Very Stiff, Brown Gravelly (Chert Fragments) Clay
H2-Cavity (73.4' to 82.8')
J2-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand, Cobbles and Boulders
K2-Hard, Gray Chert
L2-Hard, Gray Chert with Limestone Seams
M2-Hard, Gray Chert with Limestone and some Vertically Fractured Seams
N2-Hard, Gray Chert with Limestone and Fractured Seams
P2-Soil-filled Cavity (53.7' - 54.7')
Q2-Hard, Gray Chert with Limestone and Soil-filled Fracture Seams
R2-Asphalt Pavement (8")
S2-Moist, Stiff, Brown Gravelly (Chert Fragments) Clay with Sand
T2-Cavity (11.3' to 11.8')
U2-Cavity (12.3' to 19.0') with some Chert Fragments
V2-Wet, Loose to Medium Dense, Brown Sand with Gravel
W2-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand

Note: Cavities were encountered in the borings and may be encountered in greater amounts in other locations within the project area.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SOIL BORINGS FOR BRIDGE OVER HWY. 71B HWY. 71 INTERCHANGE (B.V. BYPASS) (F) BENTON COUNTY

ROUTE 549 SEC. 9

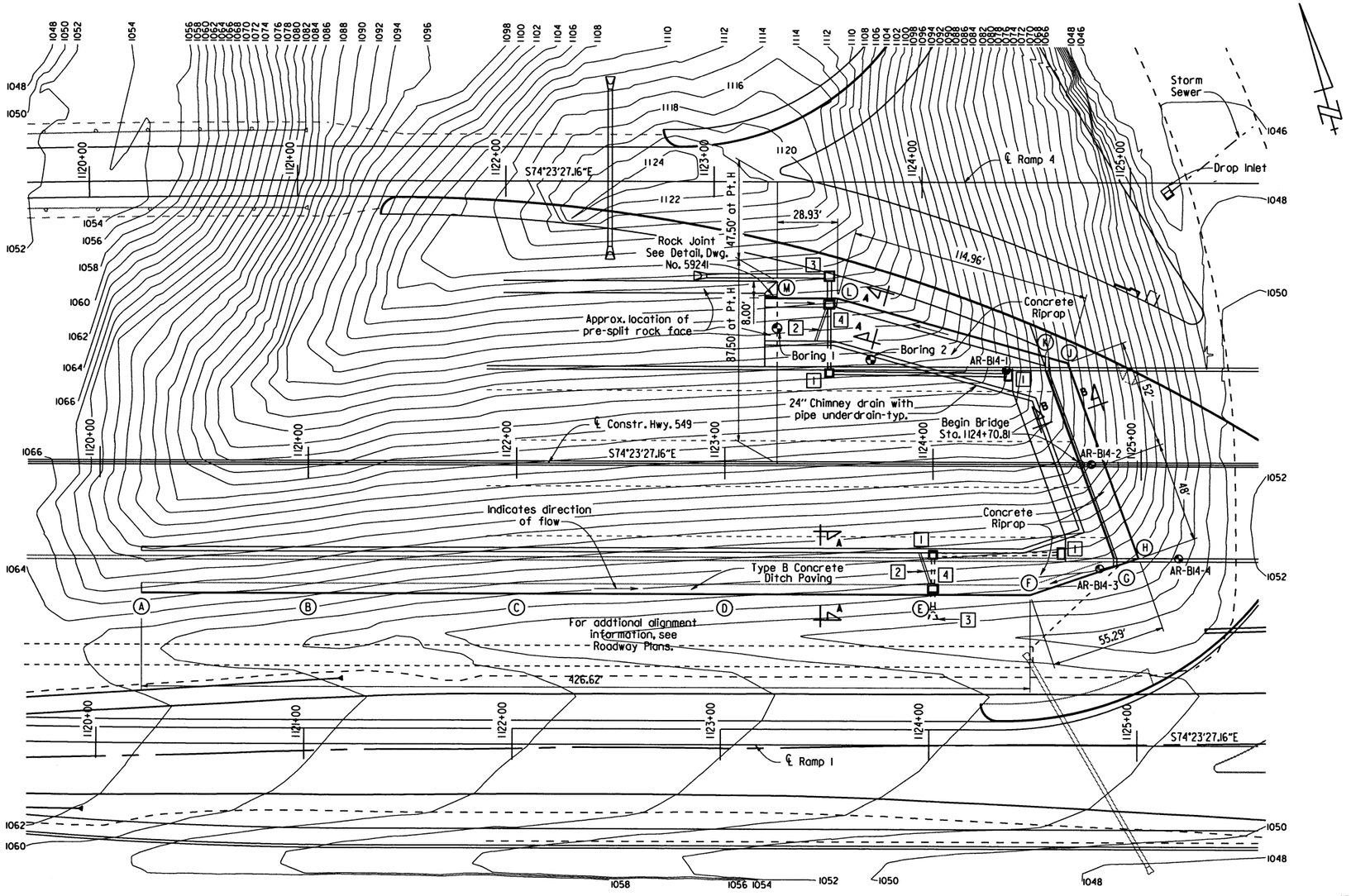
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-4-07 FILENAME: bca0903x3.113.dgn
CHECKED BY: SWP DATE: 5-6-19 SCALE: 1" = 20'
DESIGNED BY: - DATE: -

BRIDGE NO. 07281 DRAWING NO. 59239

PRINT DATE: 5/6/2019

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.		CA0903	253	452
				(1) 07281 - RETAINING WALLS - 59240				



[1] Drop inlets with 18" RCP between - See Rdwy. Plans

[2] 4" lateral - connect to drop inlet - See Rdwy. Plans

[3] 18" RCP through wall - See Rdwy. Plans

[4] Drop inlets with 18" RCP. Adjust wall reinforcing as required. - See Rdwy. Plans

PLAN OF WALL AT BENT 1

Scale: 1" = 30'

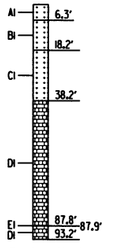
Contours shown reflect existing surface as surveyed by the Surveys Division (Dated June 29, 2017)

TABLE OF VARIABLES FOR WALL AT BENT 1

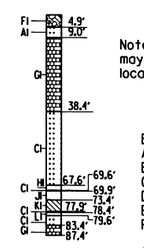
POINT	STATION	OFFSET	TOP OF WALL ELEVATION	APPROX. FINISHED GROUND ELEVATION
A	1120+20.00	63.00' R	1075.00	1069.29
B	1121+00.00	63.00' R	1073.95	1064.90
C	1122+00.00	63.00' R	1072.63	1060.52
D	1123+00.00	63.00' R	1071.32	1058.02
E	1124+00.00	63.00' R	1070.00	1055.92
F	1124+46.62	63.00' R	1073.00	1055.27
G	1124+86.66	49.30' R	1075.56	1054.88
H	1124+98.93	45.11' R	1067.60	1054.78
J	1124+64.73	48.86' L	1067.60	1050.20
K	1124+58.90	51.86' L	1075.41	1050.41
L	1123+53.93	79.50' L	1071.00	1052.22
[5] M	1123+25.00	79.50' L	1072.00	1052.70

Stations shown are along ℄ Constr. Hwy. 549
Offsets are perpendicular from ℄ Constr. Hwy. 549
Stations & offsets are measured to outside face of wall.

[5] The location of Point M and the length of wall Section L-M is shown for estimating purposes only. Actual length is to be determined in the field based on the location of the pre-split rock face. Wall length to be approved by the Engineer prior to the fabrication of the MSE panels.



Boring No. 1
Sta. 1123+25
Surf. Elev. 1135.6
65' Left of ℄ Median
4.3-4.4, N=60 (1")



Boring No. 2
Sta. 1123+70
Surf. Elev. 1133.6
50' Left of ℄ Median
5.4-6.2, N=87 (3")

Note: Cavities were encountered in the borings and may be encountered in greater amounts in other locations within the project area.

BORING LEGEND
AI-Hard, Gray Weathered Chert
BI-Hard, Gray Fractured Chert with Clay Seams
CI-Hard, Gray Chert with Limestone Seams
DI-Hard, Gray Cherty Limestone
EI-Moist, Stiff, Reddish Brown Clay (87.8' to 87.9')
FI-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Cobbles
GI-Hard, Gray Cherty Limestone
HI-Cavity (67.6' to 69.6')
JI-Cavity (69.9' to 73.4')
KI-Soil-filled Cavity (73.4' to 77.9')
LI-Cavity (78.4' to 79.6')

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
12-21-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF RETAINING WALLS AT BENT 1
BRIDGE OVER HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

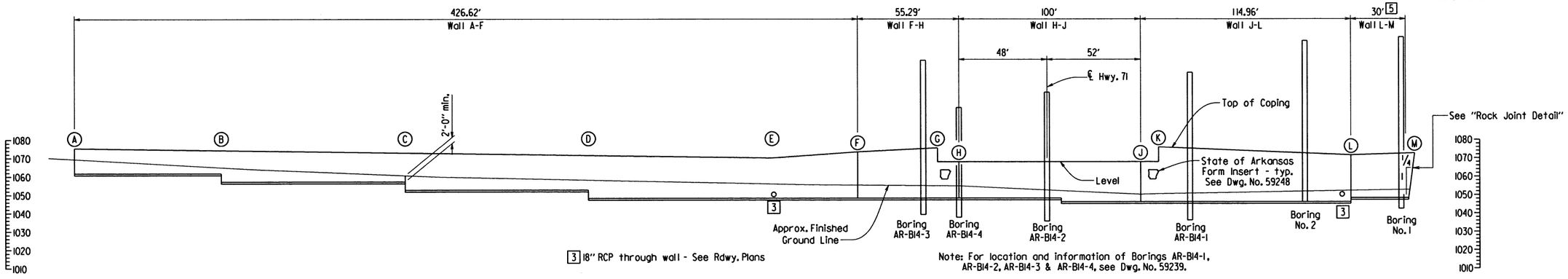
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DESIGNED BY: SWP DATE: 10/2007

BRIDGE NO. 07281 DRAWING NO. 59240

PRINT DATE: 12/18/2017

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.		CA0903	254	452
				①	07281 - RETAINING WALLS - 59241			

[5] The location of Point M and the length of wall Section L-M is shown for estimating purposes only. Actual length is to be determined in the field based on the location of the pre-split rock face. Wall length to be approved by the Engineer prior to the fabrication of the MSE panels.

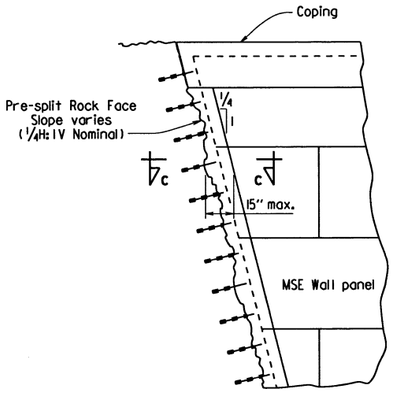


[3] 18" RCP through wall - See Rdwy. Plans

Note: For location and information of Borings AR-BI4-1, AR-BI4-2, AR-BI4-3 & AR-BI4-4, see Dwg. No. 59239.

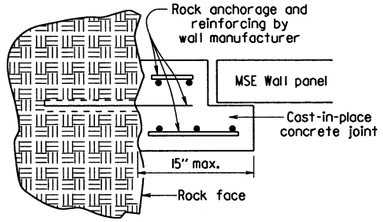
ELEVATION OF WALL AT BENT 1

Scale: 1" = 30'



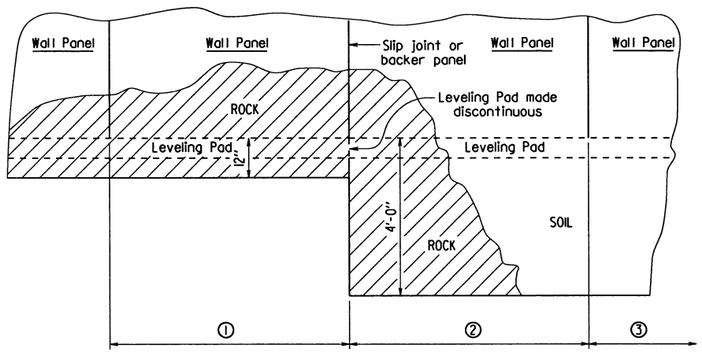
ROCK JOINT DETAIL

No Scale



SECTION C-C

No Scale



PLACEMENT OF WALL IN ROCK

No Scale

① If rock is encountered over the full width of wall panel, excavate the rock 1ft. below the bottom of the wall and back fill with select granular material.

② If a soil/rock interface is encountered within a wall panel, excavate the rock 4 ft. below the bottom of the wall over the full width of the panel, and backfill with select granular material. The leveling pad should be made discontinuous and a backer panel or slip joint cover used at this location per the wall manufacturer.

③ See Dwg. No. 59242 "Notes for Undercutting and Backfill".

STATE OF ARKANSAS
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SHEET 2 OF 3
DETAILS OF RETAINING WALLS AT BENT 1
BRIDGE OVER HWY. 71B

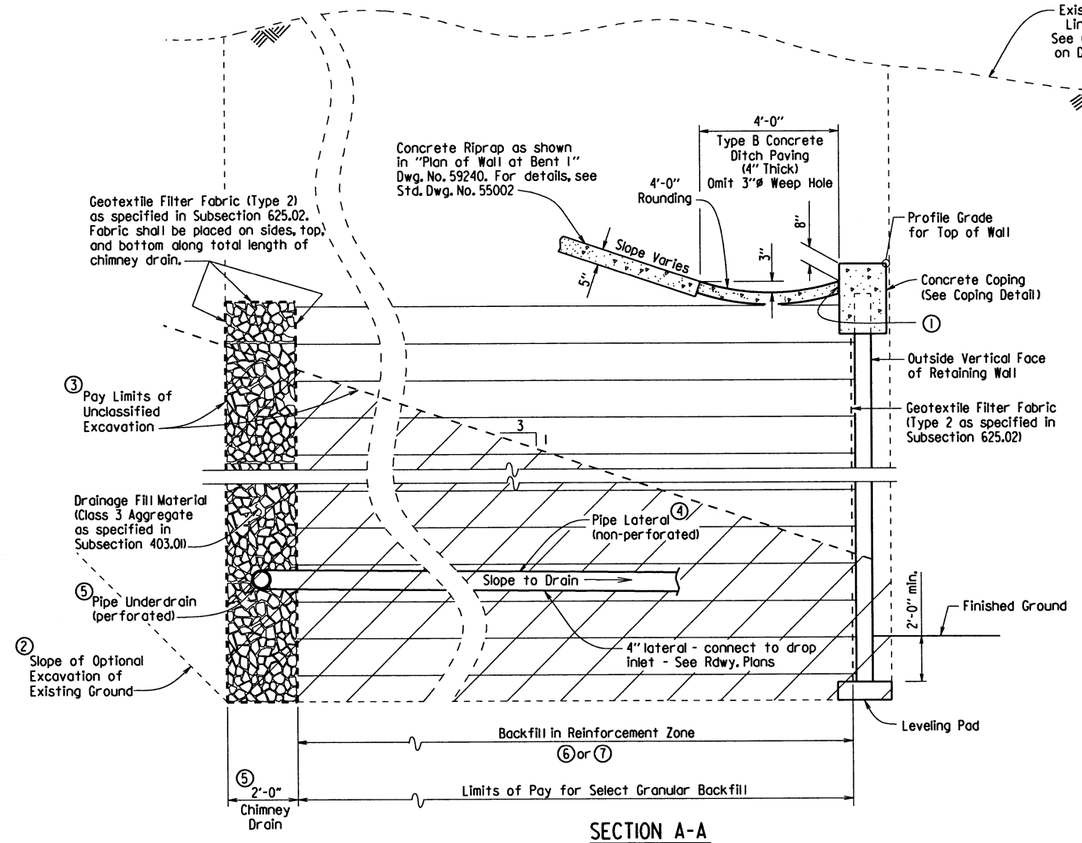
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ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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				6	ARK.			
				JOB NO.		CA0903	255	452
				①	07281 - RETAINING WALLS - 59242			



SECTION A-A
No Scale

① 1/2" Preformed Joint Filler (AASHTO M 153, Type 1) per Subsection 501.02(h)(1). Seal with 1/2" x 1" Type 3 or 4 Joint Sealer per Subsection 501.02(h)(2)

② The Contractor has the option of using a cut slope or shoring to maintain stability of the cut. Any excavation beyond the limits of the reinforcement zone and chimney drains or any shoring used will not be paid for directly, but shall be considered incidental to the item "Retaining Wall". See Special Provision Job No. CA0903 "Retaining Walls" for additional information.

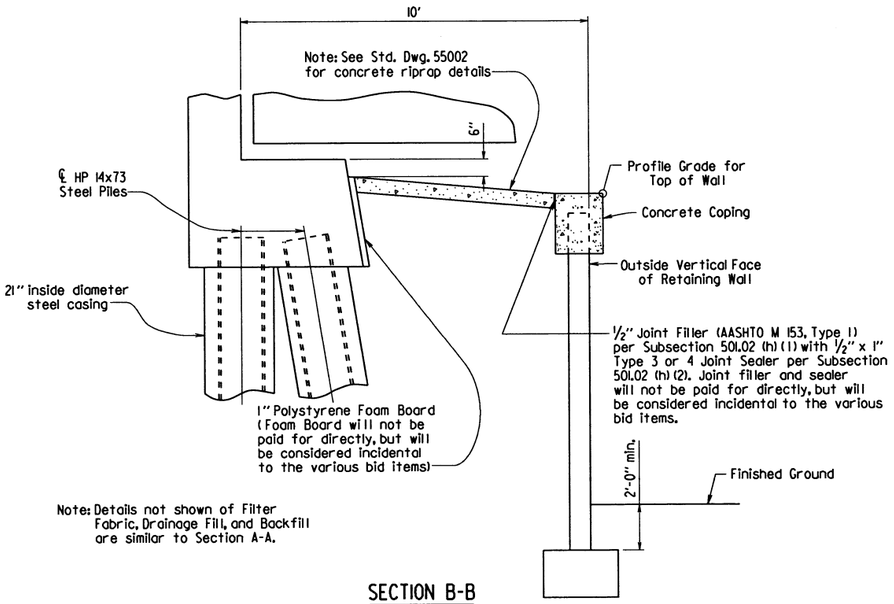
③ Excavation within the reinforcement zone and for the leveling pad and chimney drains will be paid for as Unclassified Excavation in accordance with the Special Provision Job No. CA0903 "Retaining Walls".

④ 4" Pipe Lateral (non-perforated) in accordance with Section 611 and Std. Dwg. PU-1. Lateral underdrains shall be placed at end of Walls A-F and L-M and sloped to drain into the drainage structure as shown in "Plan". This work and material are to be considered subsidiary to the item "Retaining Wall" and will not be paid for directly.

⑤ Chimney Drains shall be constructed immediately behind the reinforcement zone and shall extend from the bottom of excavation to the top of the reinforcement zone. 4" Pipe Underdrains (perforated) shall be placed in chimney drains to collect seepage water. This work and materials shall be in accordance with Section 611 and Std. Dwg. PU-1 and shall be considered subsidiary to the item "Retaining Wall".

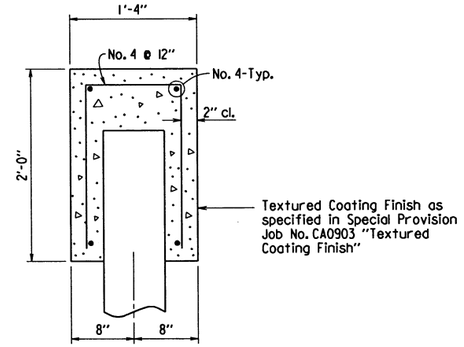
⑥ Backfill Method A:
Backfill in Reinforcement Zone shall conform to requirements of Aggregate Base Course (Class 7) or Selected Material (Class SM-1). See SP Job No. CA0903 "Retaining Walls"

⑦ Backfill Method B:
Backfill in Reinforcement Zone shall conform to requirements of Select Granular Backfill (Crushed Rock or Stone). See SP Job No. CA0903 "Retaining Walls"



Note: Details not shown of Filter Fabric, Drainage Fill, and Backfill are similar to Section A-A.

SECTION B-B
No Scale



COPING DETAIL
No Scale

Note: Reinforcing Steel and Class (S) Concrete for Concrete Coping shall not be paid for directly but will be considered subsidiary to the item "Retaining Wall".

Note: Precast concrete coping may be substituted for the cast in place coping shown.

NOTES FOR UNDERCUTTING & BACKFILL:

Large scale undercut is not anticipated. However, due to the irregular bedrock surface and the tendency for the gravelly clay and clayey gravel in the low areas of the bedrock surface to stay saturated, some isolated undercut is anticipated. If soft or unstable material is encountered beneath the retaining wall and reinforcement zone, it shall be removed and backfilled with Select Granular Backfill. Depth and area of any required undercutting shall be as determined by the Engineer.

Any excavation and backfill required for undercutting shall be paid for as "Unclassified Excavation" and "Select Granular Backfill" in accordance with Special Provision Job No. CA0903 "Retaining Walls". For additional details, see "Placement of Wall in Rock", Dwg. No. 59241.

GENERAL NOTES:

Design Specifications: AASHTO LRFD Bridge Design Specifications (Third Edition, 2004 with 2005 & 2006 interim revisions).

Seismic Performance Zone 1

Retaining Wall Stations are measured along outside vertical face of wall. Elevations shown are profile grade for top of wall. Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Reinforcement placement and details for retaining walls may be affected by end bent construction and proposed roadway drainage structures. See End Bent drawings for pile locations and wingwall details. See Roadway Plans for locations and details of drainage structures.

For ditch paving, See Standard Dwg. No. CDP-1.

Preformed joint filler, joint sealer, polystyrene board, and pipe underdrains will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".

An Ashlar Stone finish or approved equivalent will be required for the concrete wall face.

A Class 3 Textured Coating Finish shall be applied to retaining wall surfaces as specified in Special Provision Job No. CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3).

State of Arkansas Form Inserts shall be placed on each turned back section of retaining wall in accordance with Dwg. No. 59248.

A Factored Bearing Pressure of 4600 psf is recommended for the existing foundation material based on an estimated width of the reinforced zone.

See Special Provision Job No. CA0903 "Retaining Walls" for additional information.

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

LOCATION	ITEM NO.	210	SP CA0903	SP CA0903	SP CA0903
	ITEM	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	⑧ TEXTURED COATING FINISH
	UNIT	CU. YD.	CU. YD.	SQ. FT.	SQ. YD.
WALL A - F		3408	4411	7950	631
WALL F - H		492	492	1369	120
WALL H - J		1135	1135	2032	185
WALL J - L		2058	2058	3098	306
WALL L - M		522	522	792	89
TOTALS		7615	8618	15241	1331

⑧ Exposed surfaces of coping & face of wall.

STATE OF ARKANSAS
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No. 9235
12-21-17
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BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF RETAINING WALLS AT BENT 1
BRIDGE OVER HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 11-19-07 FILENAME: bca0903x3_wl.dgn
CHECKED BY: SWP DATE: 12-20-17 SCALE: AS NOTED
DESIGNED BY: SWP DATE: 12/2007

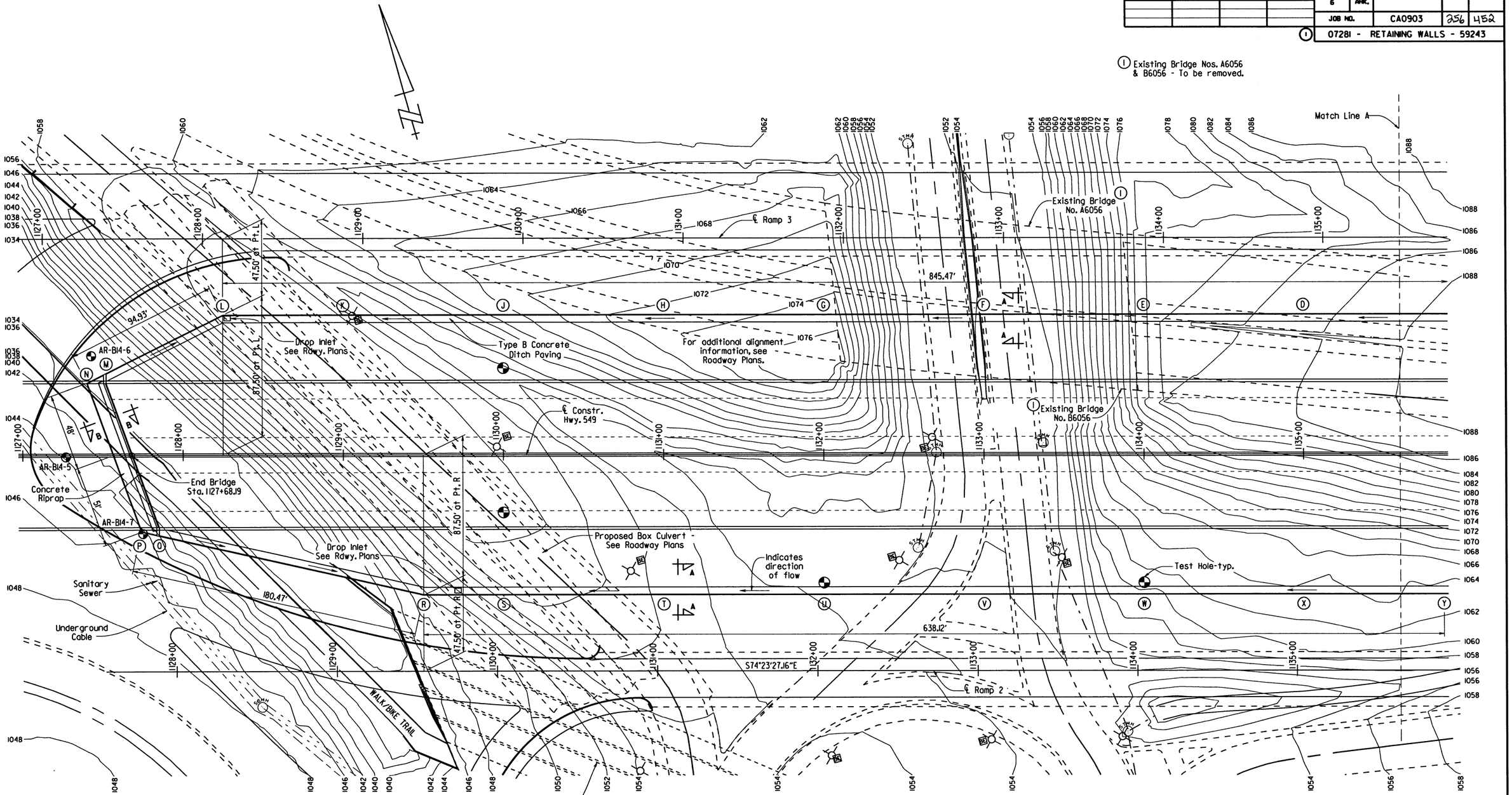
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PRINT DATE: 12/18/2017

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.		CA0903	256	452
①	07281 - RETAINING WALLS - 59243			

① Existing Bridge Nos. A6056 & B6056 - To be removed.



PLAN OF WALL AT BENT 2

Roadways anddrainage structures shown constructed under Job CA0904. See Roadway Plans for removal.

Contours shown reflect existing surface as surveyed by the Surveys Division (Dated June 29, 2017)

STATE OF ARKANSAS
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SHEET 1 OF 5
DETAILS OF RETAINING WALLS AT BENT 2
BRIDGE OVER HWY. 71B

ROUTE SEC.

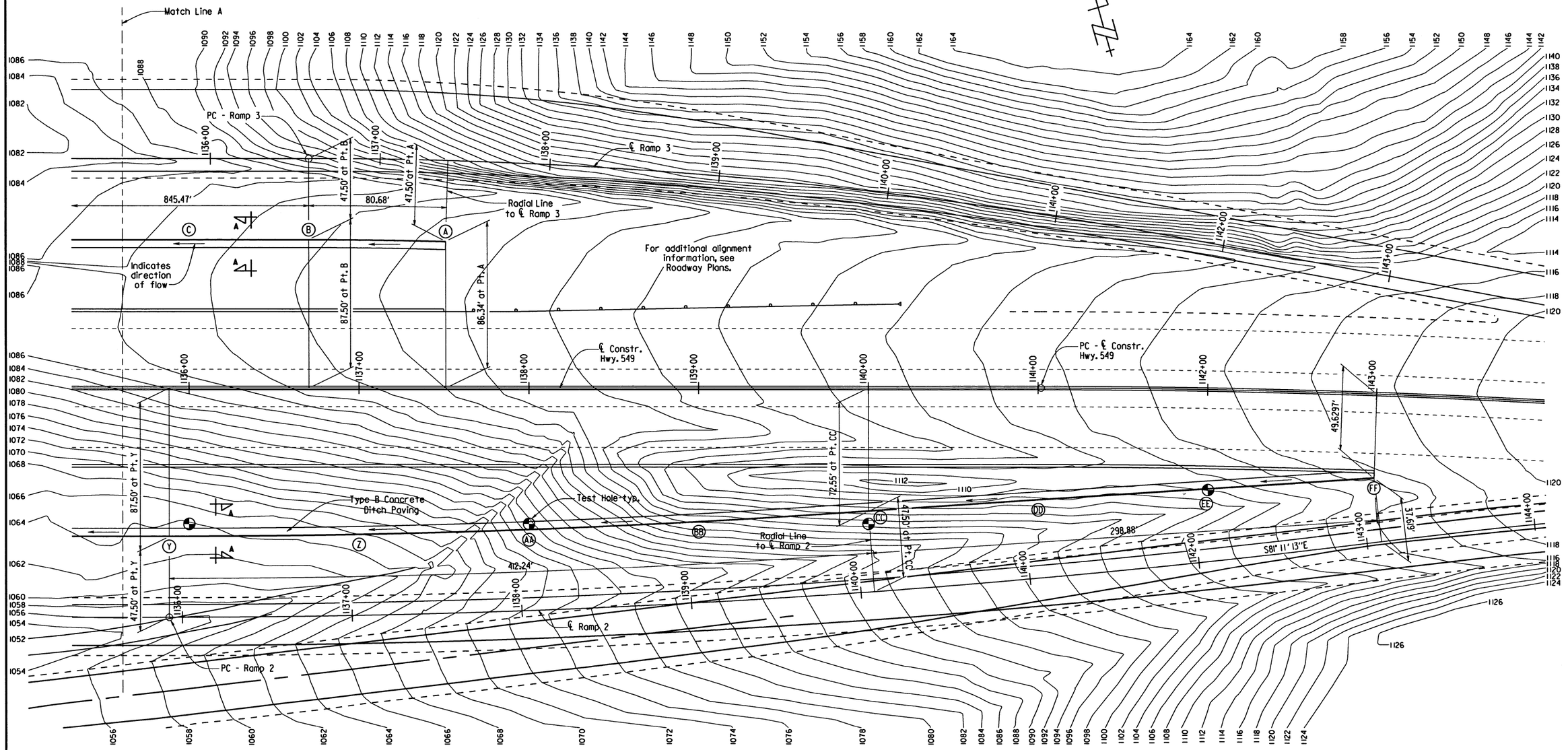
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 12-20-17 SCALE: 1" = 30'
DESIGNED BY: SWP DATE: 10/2007
BRIDGE NO. 07281 DRAWING NO. 59243

PRINT DATE: 12/18/2017

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.		CA0903	257	452
				①	07281 - RETAINING WALLS - 59244			



PLAN OF WALL AT BENT 2

Contours shown reflect existing surface as surveyed by the Surveys Division (Dated June 29, 2017)

STATE OF ARKANSAS
Charles R. Ellis
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12-21-17
CHARLES R. ELLIS
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SHEET 2 OF 5
DETAILS OF RETAINING WALLS AT BENT 2
BRIDGE OVER HWY. 71B

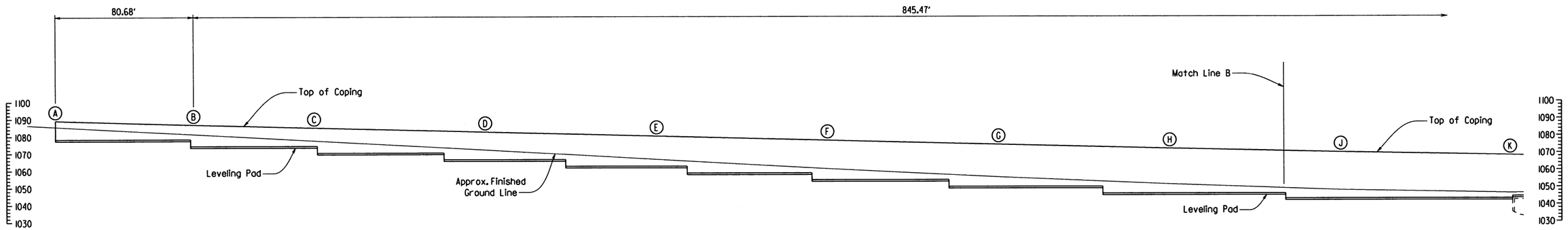
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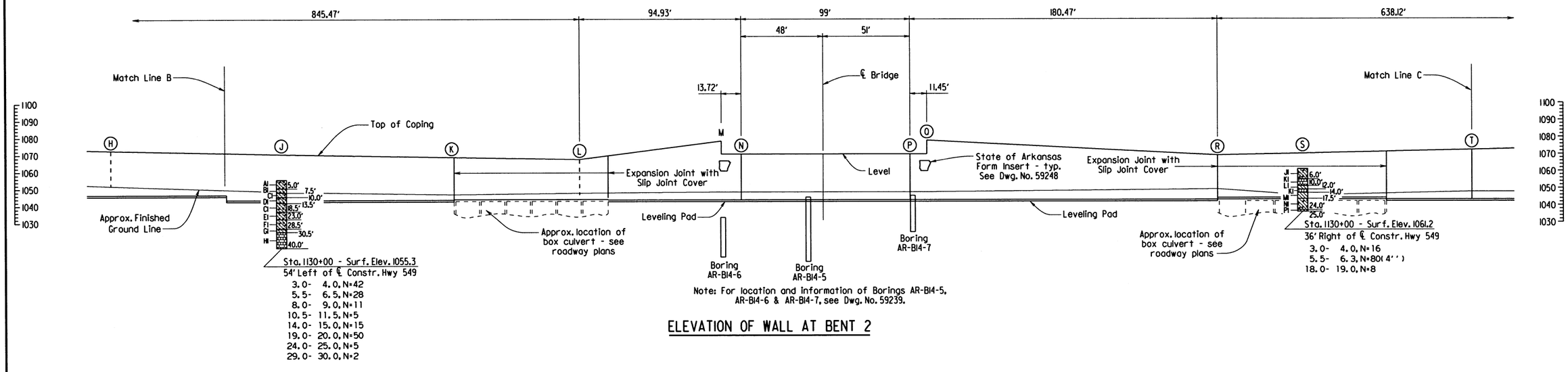
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 10-07
BRIDGE NO. 07281 DRAWING NO. 59244

PRINT DATE: 12/18/2017

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.		CA0903	258	452
				(1)	07281 - RETAINING WALLS - 59245			





Note: For location and information of Borings AR-BI4-5, AR-BI4-6 & AR-BI4-7, see Dwg. No. 59239.

ELEVATION OF WALL AT BENT 2

STATE OF ARKANSAS
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12-21-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF RETAINING WALLS AT BENT 2
BRIDGE OVER HWY. 71B

ROUTE SEC.

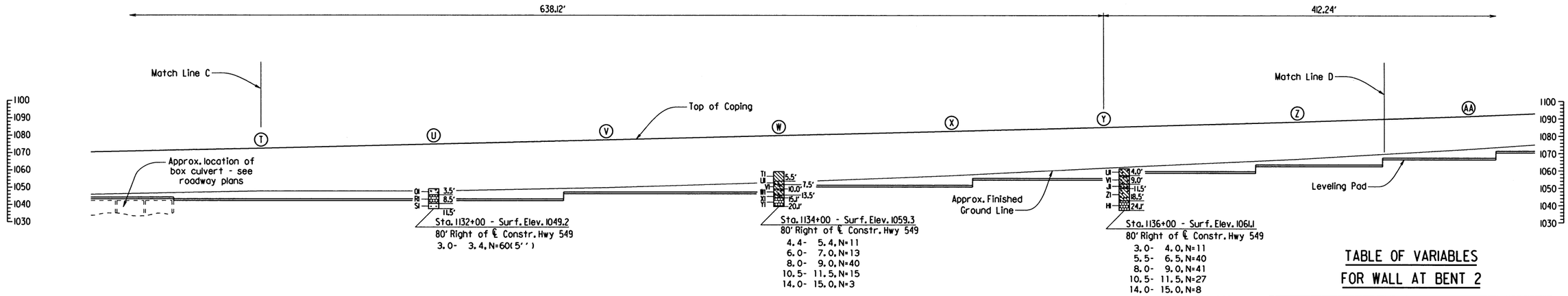
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

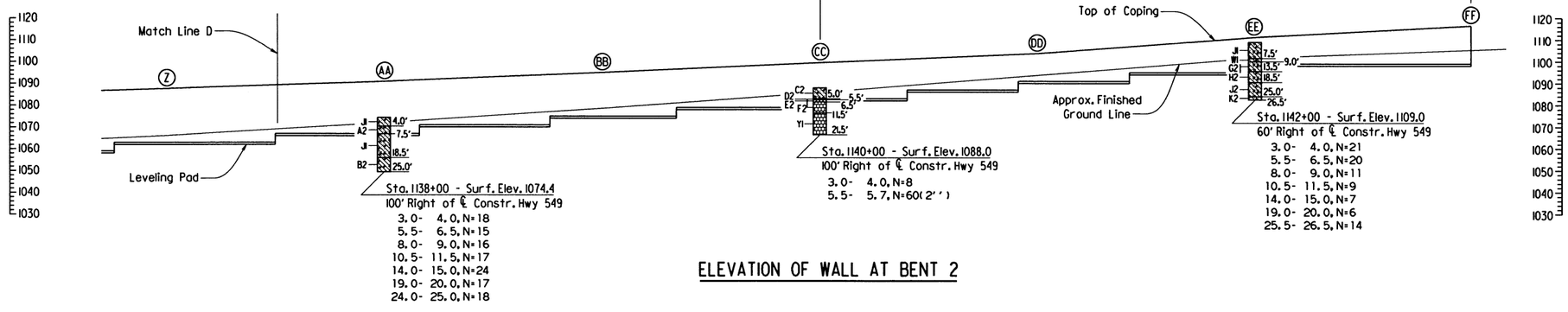
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				6	ARK.			
				JOB NO.		CA0903	259	452
				①	07281 - RETAINING WALLS - 59246			





ELEVATION OF WALL AT BENT 2

TABLE OF VARIABLES FOR WALL AT BENT 2

POINT	STATION	OFFSET	TOP OF WALL ELEVATION	APPROX. FINISHED GROUND ELEVATION
A	1137+51.14	86.34' L	1089.11	1086.60
B	1336+70.47	87.50' L	1086.71	1081.28
C	1136+00.00	87.50' L	1084.95	1077.46
D	1135+00.00	87.50' L	1082.45	1072.04
E	1134+00.00	87.50' L	1079.95	1066.35
F	1133+00.00	87.50' L	1077.45	1060.87
G	1132+00.00	87.50' L	1074.95	1055.72
H	1131+00.00	87.50' L	1072.52	1051.73
J	1130+00.00	87.50' L	1070.37	1048.28
K	1129+00.00	87.50' L	1068.51	1046.59
L	1128+25.00	87.50' L	1067.31	1046.47
M	1127+52.34	51.23' L	1077.90	1047.98
N	1127+40.07	45.10' L	1070.30	1047.98
P	1127+73.93	47.92' R	1070.30	1047.98
Q	1127+85.10	50.44' R	1078.34	1048.00
R	1129+50.00	87.50' R	1069.41	1049.55
S	1130+00.00	87.50' R	1070.37	1047.20
T	1131+00.00	87.50' R	1072.52	1047.88
U	1132+00.00	87.50' R	1074.95	1047.89
V	1133+00.00	87.50' R	1077.45	1049.89
W	1134+00.00	87.50' R	1079.95	1053.00
X	1135+00.00	87.50' R	1082.45	1056.81
Y	1135+92.28	87.50' R	1084.76	1061.31
Z	1137+00.00	85.94' R	1087.97	1066.51
AA	1138+00.00	83.56' R	1091.26	1072.40
BB	1139+00.00	78.95' R	1095.35	1078.59
CC	1140+00.00	72.55' R	1099.93	1085.86
DD	1141+00.00	66.01' R	1104.05	1093.68
EE	1142+00.00	58.69' R	1111.59	1101.57
FF	1143+00.00	49.63' R	1116.90	1105.25

Stations shown are along ℄ Constr. Hwy. 549
Offsets are perpendicular from ℄ Constr. Hwy. 549
Stations & offsets are measured to outside face of wall.

BORING LEGEND

A1-Moist, Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
B1-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
C1-Moist, Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
D1-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
E1-Moist, Hard, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
F1-Wet, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
G1-Wet, Very Loose, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
H1-Hard, Gray Cherty Limestone
J1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
K1-Hard, Gray Fractured Limestone
L1-Soil-filled Cavity (10.0' to 12.0')
M1-Soil-filled Cavity (14.0' to 17.5')
N1-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
P1-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
Q1-Moist, Very Dense, Gray and Brown Sand with Gravel (Chert Fragments)
R1-Hard, Gray Fractured Cherty Limestone
S1-Hard, Gray Chert with Limestone Seams

T1-Moist, Stiff, Reddish Brown Clay
U1-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
V1-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
W1-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
X1-Wet, Soft, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
Y1-Hard, Gray Cherty Limestone
Z1-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
A2-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
B2-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
C2-Moist, Loose, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
D2-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
E2-Hard, Gray Chert
F2-Hard, Gray Fractured Cherty Limestone
G2-Wet, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
H2-Wet, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
J2-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
K2-Moist, Stiff, Gray Gravelly (Chert Fragments) Clay with Sand and some Organic Matter

Note: Cavities were encountered in the borings and may be encountered in greater amounts in other locations within the project area.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
12-21-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF RETAINING WALLS AT BENT 2
BRIDGE OVER HWY. 71B

ROUTE SEC.

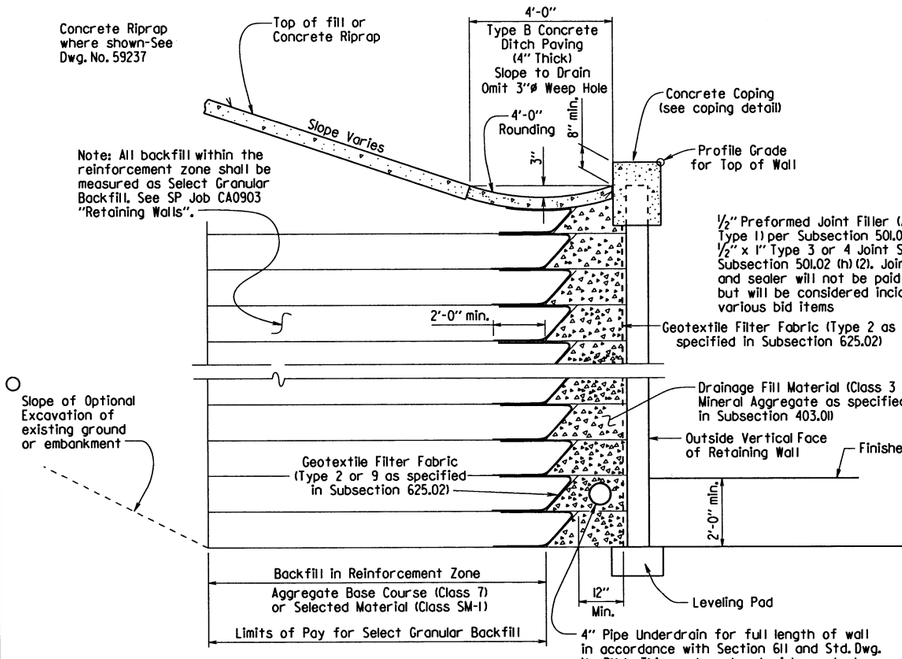
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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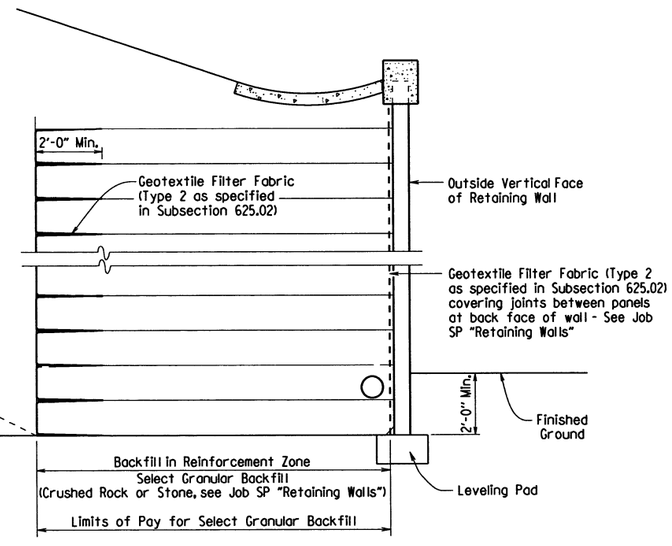
PRINT DATE: 12/18/2017

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				6	ARK.			
				JOB NO.		CA0903	260	452
				①	07281 - RETAINING WALLS - 59247			



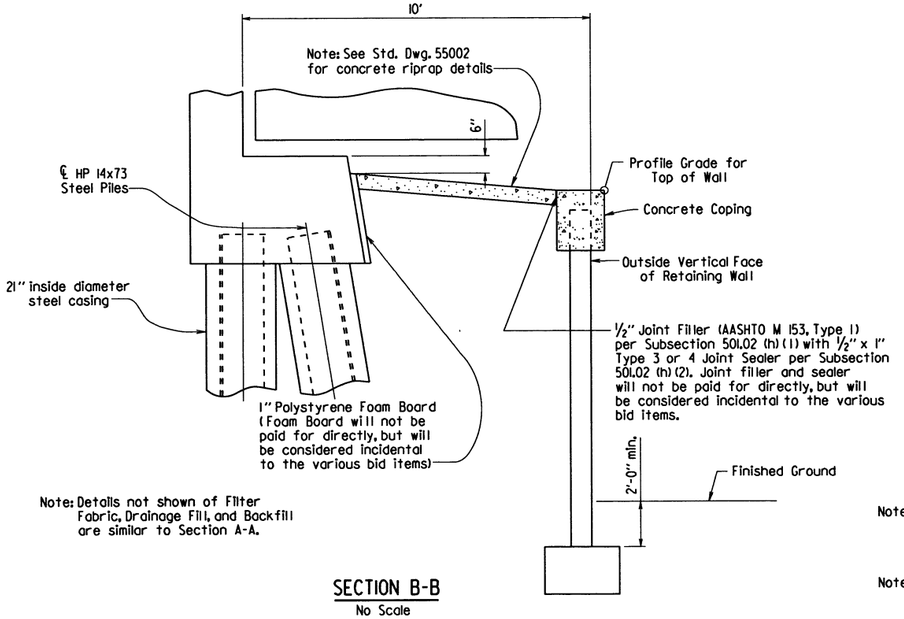
SECTION A-A
(BACKFILL METHOD A)

① Contractor has the option of using a cut slope or shoring to maintain stability of cut. Any excavation beyond the limits of Reinforcing Zone or any shoring used will not be paid for directly but will be considered subsidiary to various pay items. See SP Job Special Provision Job No. CA0903 "Retaining Walls".



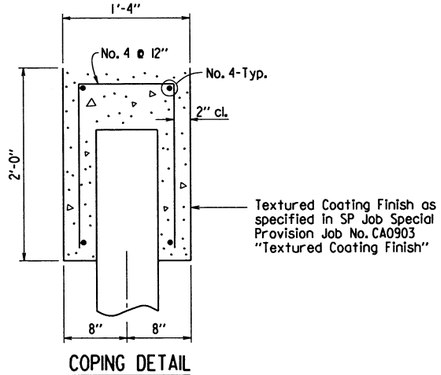
SECTION A-A
(BACKFILL METHOD B)

Note: For details, notes and dimensions not shown in "Section A-A (Backfill Method B)" see "Section A-A (Backfill Method A)".



Note: Details not shown of Filter Fabric, Drainage Fill, and Backfill are similar to Section A-A.

SECTION B-B
No Scale



COPING DETAIL
No Scale

Note: Reinforcing Steel and Class (S) Concrete for Concrete Coping shall not be paid for directly but will be considered subsidiary to the item "Retaining Wall".

Note: Precast concrete coping may be substituted for the cast in place coping shown.

NOTES FOR UNDERCUTTING & BACKFILL:

Large scale undercut is not anticipated. However, due to the irregular bedrock surface and the tendency for the gravelly clay and clayey gravel in the low areas of the bedrock surface to stay saturated, some isolated undercut is anticipated. If soft or unstable material is encountered beneath the retaining wall and reinforcement zone, it shall be removed and backfilled with Select Granular Backfill. Depth and area of any required undercutting shall be as determined by the Engineer.

Any excavation and backfill required for undercutting shall be paid for as "Unclassified Excavation" and "Select Granular Backfill" in accordance with Special Provision Job No. CA0903 "Retaining Walls". For additional details, see "Placement of Wall in Rock", Dwg. No. 59241.

GENERAL NOTES:

Design Specifications: AASHTO LRFD Bridge Design Specifications (Third Edition, 2004 with 2005 & 2006 interim revisions).

Seismic Performance Zone 1

Retaining Wall Stations are measured along outside vertical face of wall. Elevations shown are profile grade for top of wall. Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Reinforcement placement and details for retaining walls may be affected by end bent construction and proposed roadway drainage structures. See End Bent drawings for pile locations and wingwall details. See Roadway Plans for locations and details of drainage structures.

For ditch paving, See Standard Dwg. No. CDP-1.

Preformed joint filler, joint sealer, polystyrene board, and pipe underdrains will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".

An Ashlar Stone finish or approved equivalant will be required for the concrete wall face.

A Class 3 Textured Coating Finish shall be applied to retaining wall surfaces as specified in Special Provision Job No. CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3).

State of Arkansas Form Inserts shall be placed on each turned back section of retaining wall in accordance with Dwg. No. 59248.

A Factored Bearing Pressure of 4,600 psf is recommended for the existing foundation material based on an estimated width of the reinforced zone.

See Special Provision Job No. CA0903 "Retaining Walls" for additional information.

TABLE OF QUANTITIES
(FOR INFORMATION ONLY)

LOCATION \ ITEM NO.	210	SP CA0903	SP CA0903	SP CA0903
ITEM	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	*TEXTURED COATING FINISH
UNIT	CU. YD.	CU. YD.	SQ. FT.	SQ. YD.
WALL A - L	8563	10522	18423	1925
WALL L - N	240	1576	2722	297
WALL N - P	50	1865	2669	285
WALL P - R	10	4112	5467	570
WALL R - FF	5860	22041	32885	3567
TOTALS	14723	40116	62166	6644

*Exposed surfaces of coping & face of wall.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
12-21-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF RETAINING WALLS AT BENT 2
BRIDGE OVER HWY. 71B

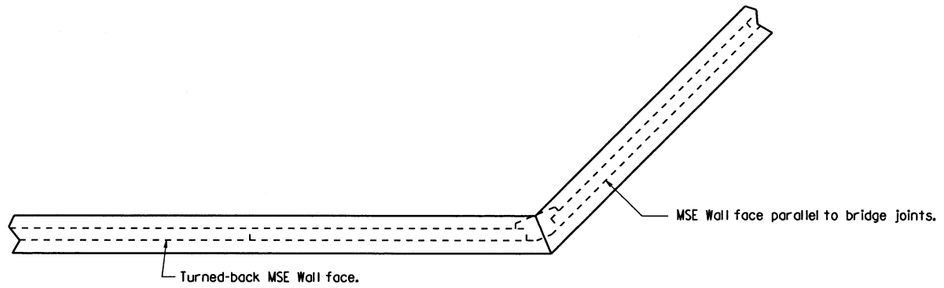
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 12-10-17 SCALE: NONE
DESIGNED BY: SWP DATE: 10/06

BRIDGE NO. 07281 DRAWING NO. 59247

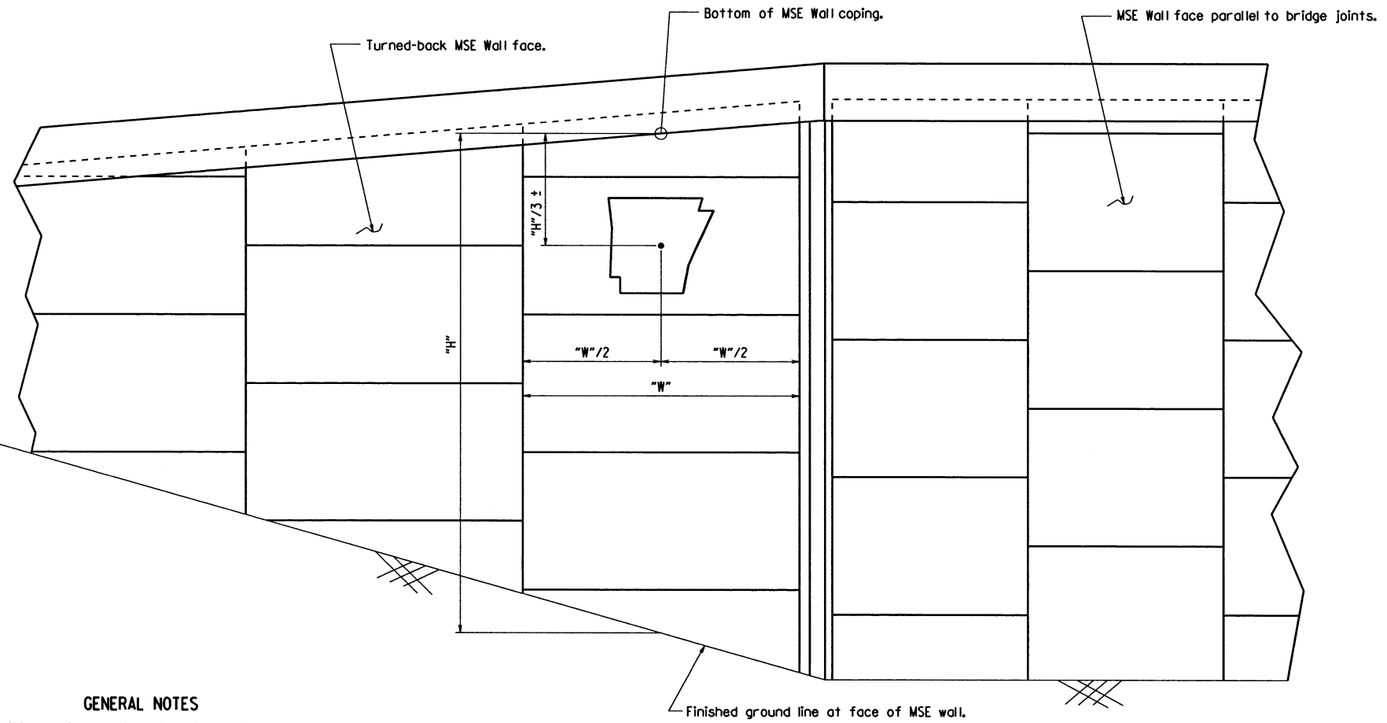
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				JOB NO.		CA0903	261	452
				07281 -		FORM INSERT		- 59248



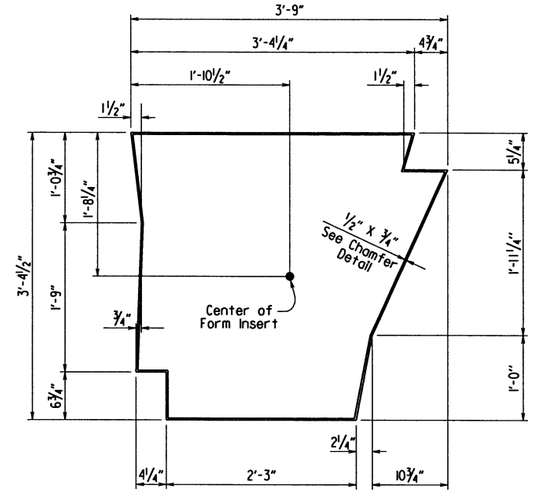
PLAN OF MSE WALLS

3/8" = 1'-0"



ELEVATION OF MSE WALLS

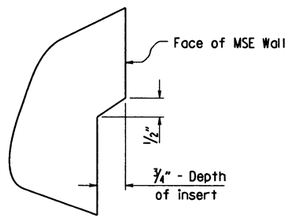
3/8" = 1'-0"



NOTE: See Dwg. Nos. 59241 & 59245 for locations of form inserts.

FORM INSERT DETAILS AT MSE WALL

No Scale



CHAMFER DETAIL

No Scale

GENERAL NOTES

Place center of insert in the first full-width MSE Wall panel along the turned-back wall face at the approximate height shown.

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for form inserts shall be included in the unit price bid for "Retaining Wall".

The form insert shall be approved by the Engineer before its use.

Paint inset with a Class 3 Textured Coating Finish as specified in Special Provision Job No. CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3).

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
12-21-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF STATE OF ARKANSAS FORM INSERT BRIDGE OVER HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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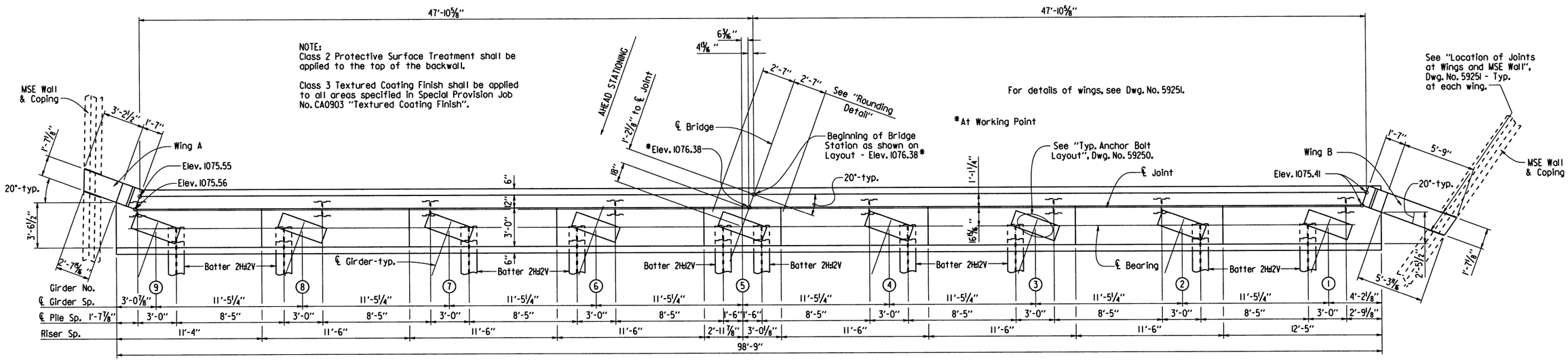
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DESIGNED BY: — DATE: —

BRIDGE NO. 07281 DRAWING NO. 59248

PRINT DATE: 12/18/2017

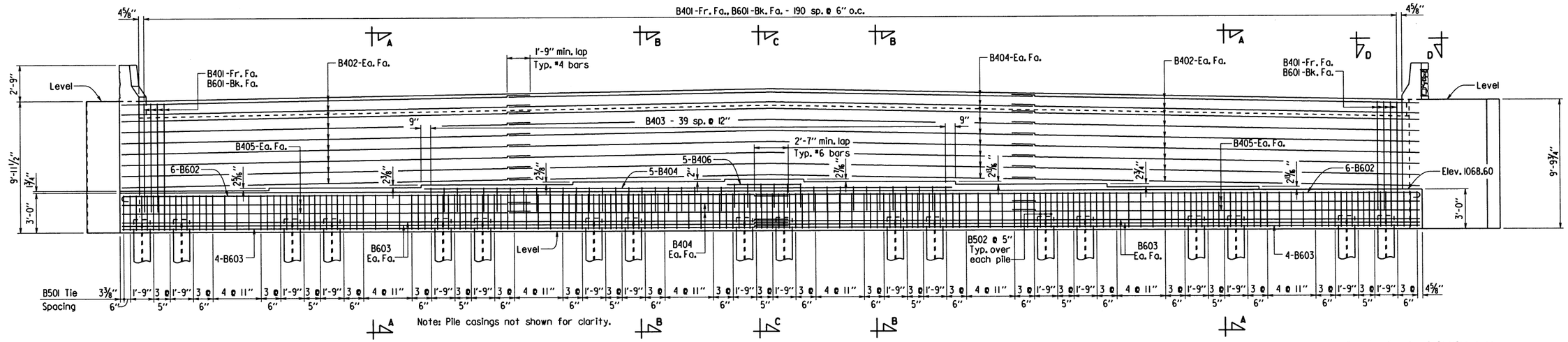
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				6	ARK.			
				JOB NO.		CA0903	262	452
				1	07281 - BENT NO. 1 - 59249			



PLAN

Scale: 1/4" = 1'-0"

Note: The profile of the backwall channel shall be established based on the vertical curve in conjunction with the skew.

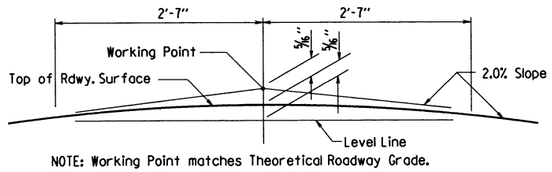


Note: Pile casings not shown for clarity.

ELEVATION

Looking Back
Scale: 1/4" = 1'-0"

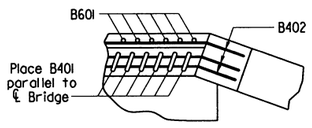
For details of reinforcing steel in wing, see Dwg. No. 59251.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale



VIEW D-D

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

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF BENT 1
HWY. 71B

ROUTE SEC.

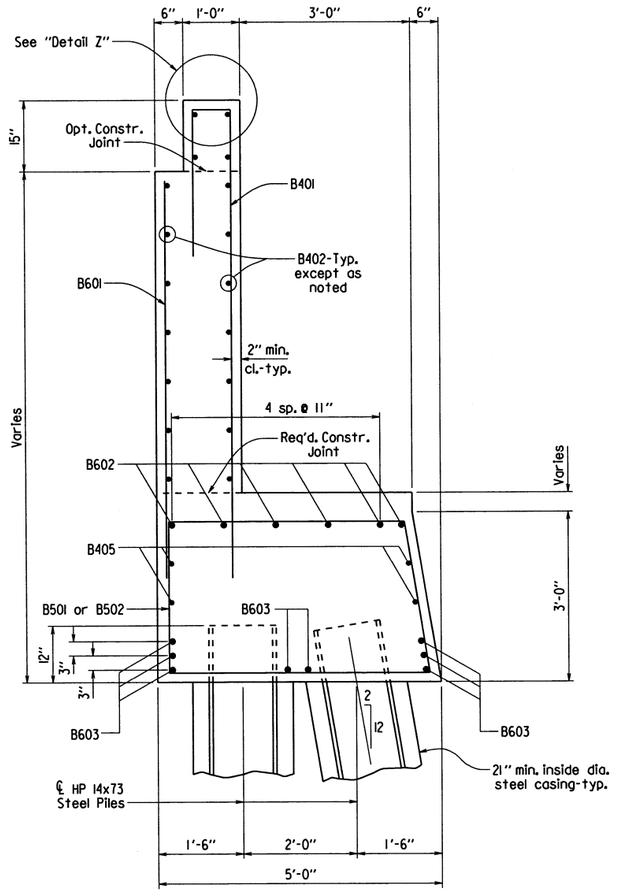
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LITTLE ROCK, ARK.

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CHECKED BY: BEF DATE: 6/1/2013 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 7/1/2007

BRIDGE NO. 07281 DRAWING NO. 59249

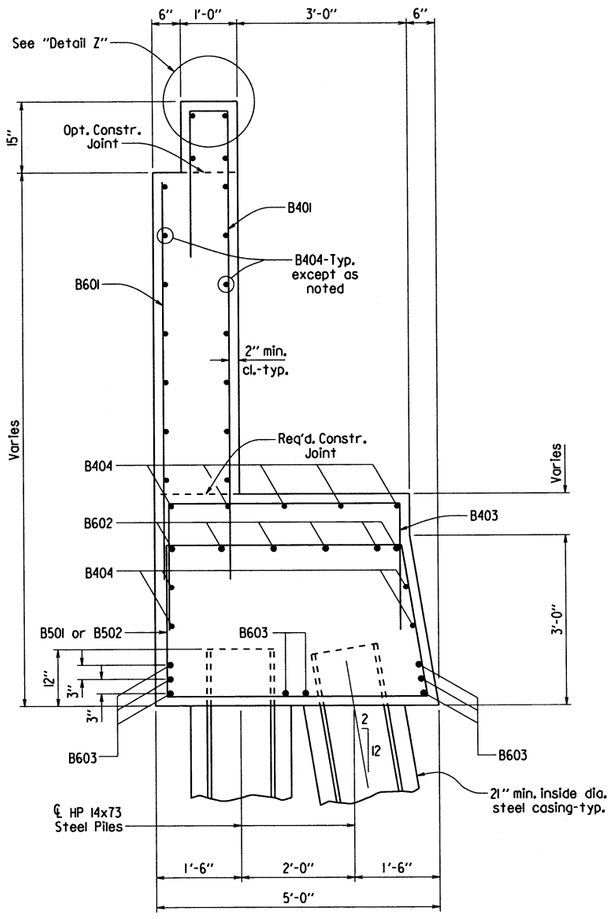
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				JOB NO.		CA0903	263	452
				07281 - BENT NO. 1 - 59250				



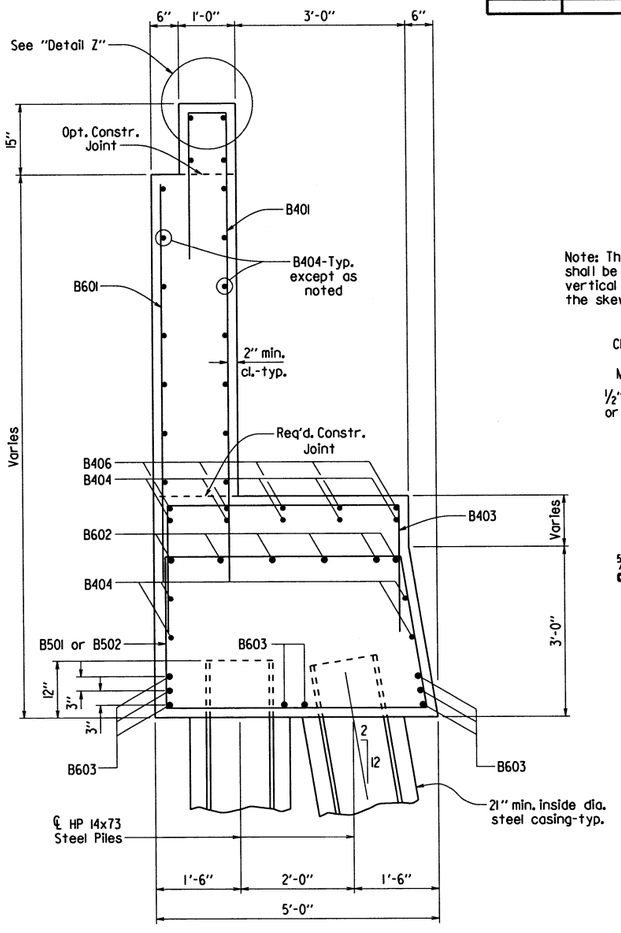
SECTION A-A

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



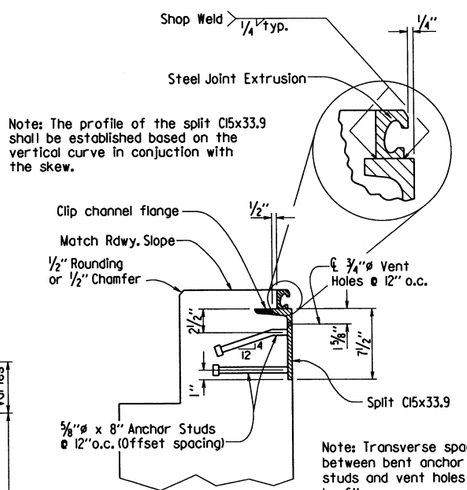
SECTION B-B

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



SECTION C-C

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



Note: The profile of the split C15x33.9 shall be established based on the vertical curve in conjuction with the skew.

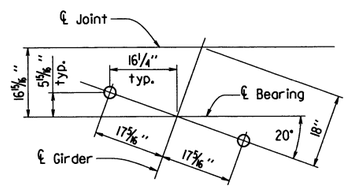
Note: For additional joint details, see Dwg. No. 59262.

DETAIL Z

No Scale

Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.



TYP. ANCHOR BOLT LAYOUT

No Scale

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All piles shall be HP14x73 (AASHTO M 270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place. The portion of the backwall above the optional construction joint shall not be poured before the superstructure slab in the span has been placed. Refer to "Expansion Device Installation", Dwg. No. 59262.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

For additional information, see layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT 1
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 10-3-07 FILENAME: bca0903x3_bt2.dgn
CHECKED BY: RCE DATE: 06/2013 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 07/2007

BRIDGE NO. 07281 DRAWING NO. 59250

PRINT DATE: 5/17/2017

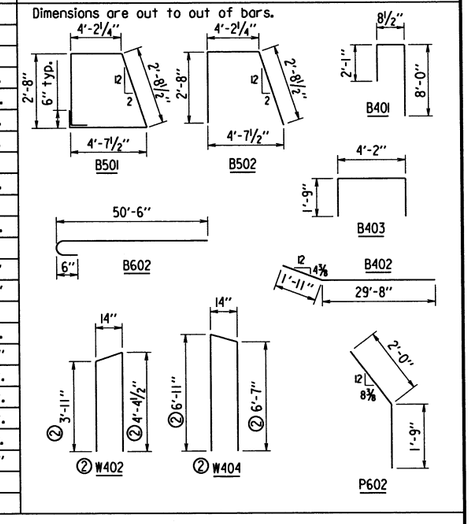
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				6	ARK.			
				JOB NO.		CA0903	264	452
				①		07281 - BENT NO. 1 - 59251		

BAR LIST

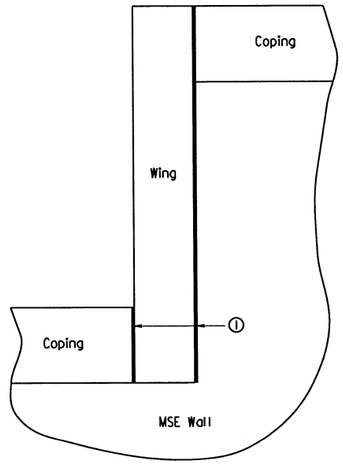
MARK	NO. REQ'D.	LENGTH	P.D.
B401	191	10'-8"	2"
B402	36	31'-7"	3"
B403	40	7'-6"	2"
B404	27	40'-0"	Str.
B405	8	31'-0"	Str.
B406	5	5'-8"	Str.
W401	10	9'-7"	Str.
②W402	13	9'-5"	2"
W403	15	9'-5"	Str.
②W404	13	14'-7"	2"
P401	12	1'-3"	Str.
B501	130	14'-8"	2½"
B502	54	9'-4"	2½"
B601	191	7'-2"	Str.
B602	12	51'-2"	4½"
B603	16	50'-6"	Str.
W601	10	9'-7"	Str.
W602	15	9'-5"	Str.
P601	12	4'-1"	Str.
P602	6	3'-9"	4½"

BENDING DIAGRAMS

Dimensions are out to out of bars.

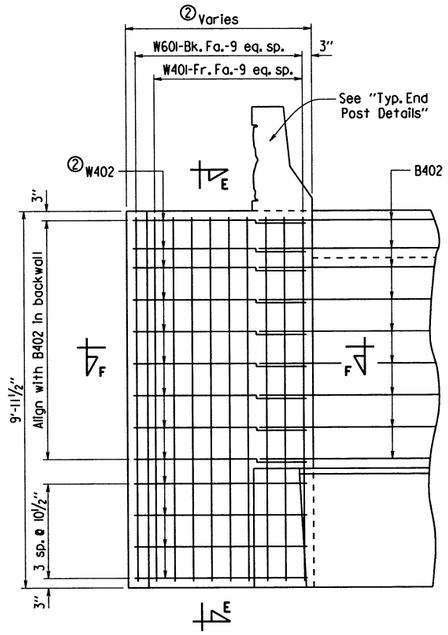


①½" Preformed Joint Filler (AASHTO M 153, Type 1) per Subsection 501.02(h)(1). Seal with ½" x 1" Type 3 or 4 Joint Sealer per Subsection 501.02(h)(2). Place on the vertical faces where the wings come in contact with MSE wall or coping. Typ. at each wing. Preformed joint filler and joint sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".



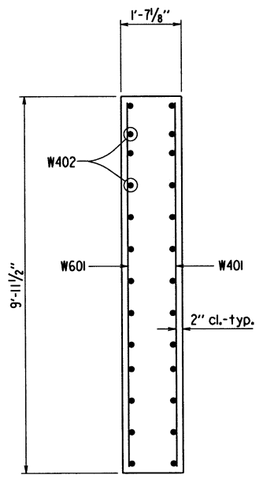
LOCATION OF JOINTS AT WINGS AND MSE WALL

Scale: ½" = 1'-0"



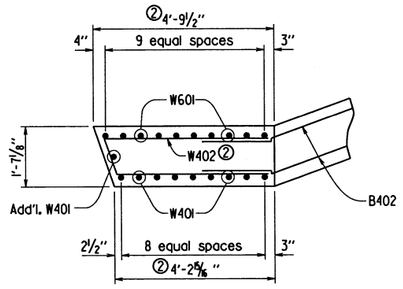
DETAILS OF WING A

Scale: ½" = 1'-0"



SECTION E-E

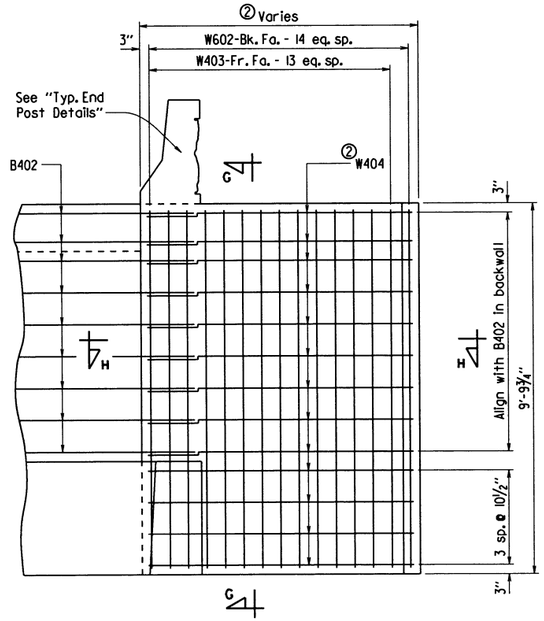
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SECTION F-F

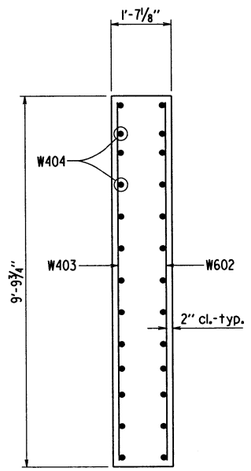
Scale: ½" = 1'-0"

②Note: Edge of wing wall shall match the face of the retaining wall coping. Lenth of wing walls and bars may need to be adjusted in the field.



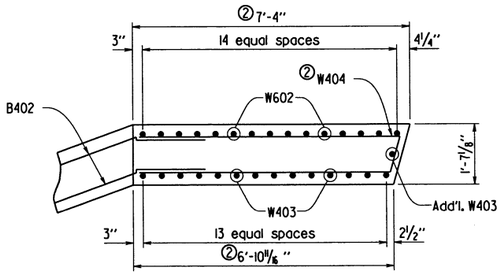
DETAILS OF WING B

Scale: ½" = 1'-0"



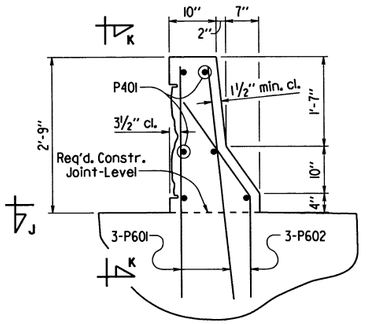
SECTION G-G

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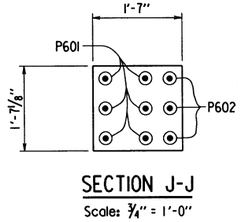
SECTION H-H

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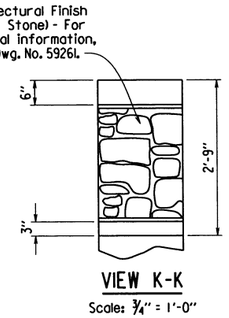
TYP. END POST DETAILS

Scale: ¾" = 1'-0"



SECTION J-J

Scale: ¾" = 1'-0"



VIEW K-K

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENT 1
U.S. HWY 71B

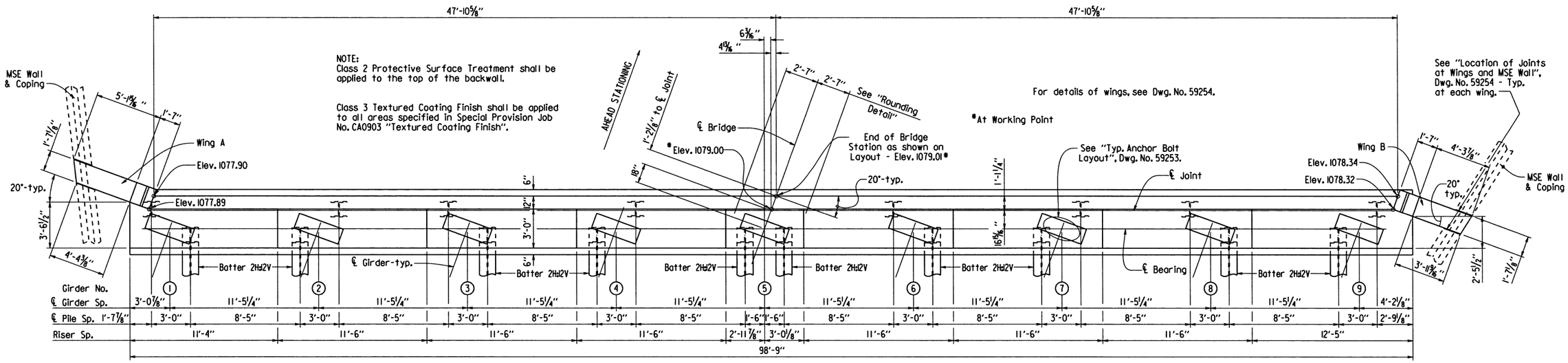
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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BRIDGE NO. 07281 DRAWING NO. 59251

PRINT DATE: 5/17/2017

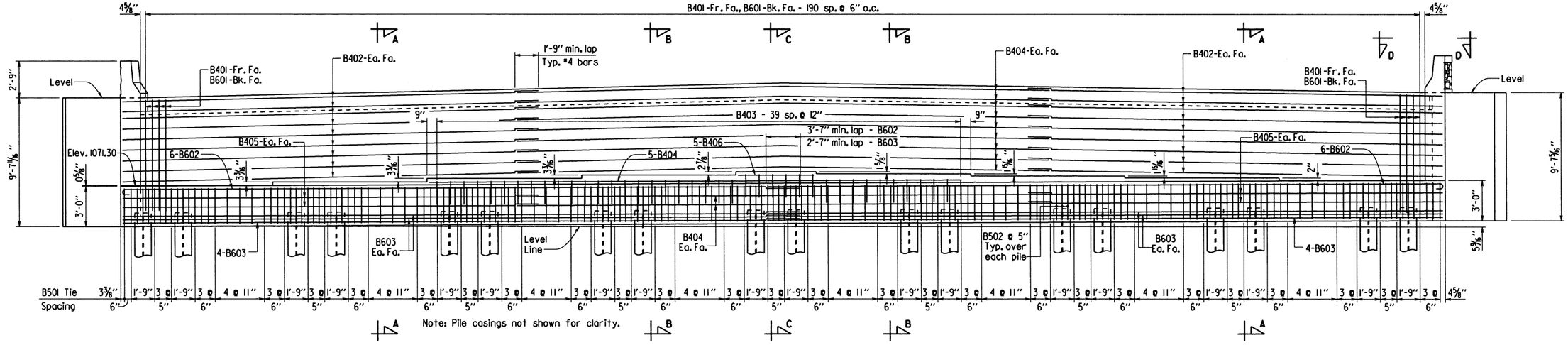
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				6	ARK.			
				JOB NO.		CA0903	265	452
				(1)		07281 - BENT NO. 2 - 59252		



PLAN

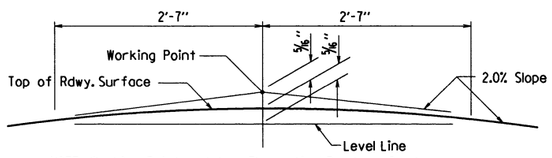
Scale: ¼" = 1'-0"

Note: The profile of the backwall channel shall be established based on the vertical curve in conjunction with the skew.



ELEVATION

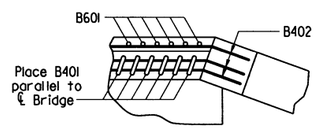
Looking Ahead
Scale: ¼" = 1'-0"



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale



VIEW D-D

Scale: ⅜" = 1'-0"

For details of reinforcing steel in wing, see Dwg. No. 59254.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF BENT 2 HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

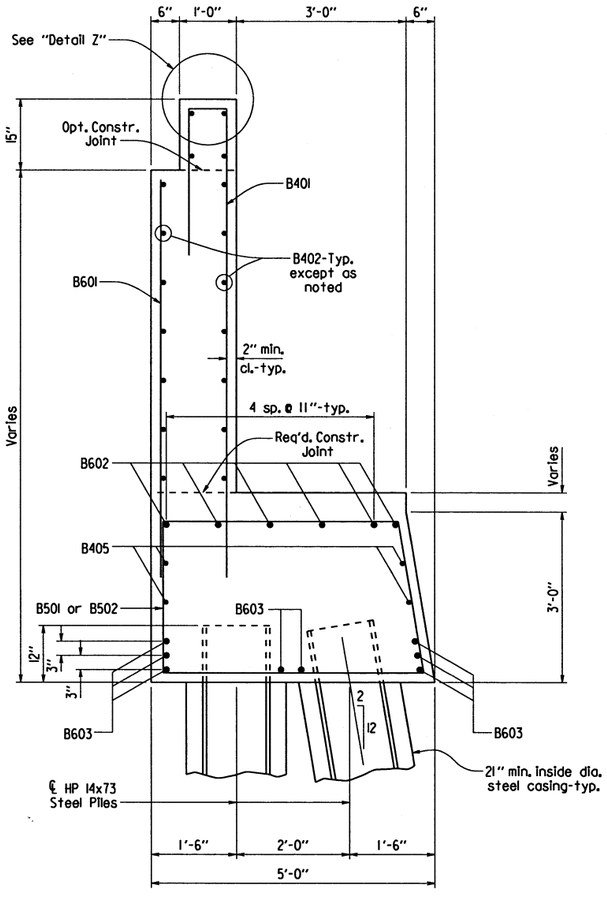
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-23-09 FILENAME: bca0903x3_b21.dgn
CHECKED BY: BEF DATE: 10/2013 SCALE: AS NOTED
DESIGNED BY: BCM DATE: 07/2007

BRIDGE NO. 07281 DRAWING NO. 59252

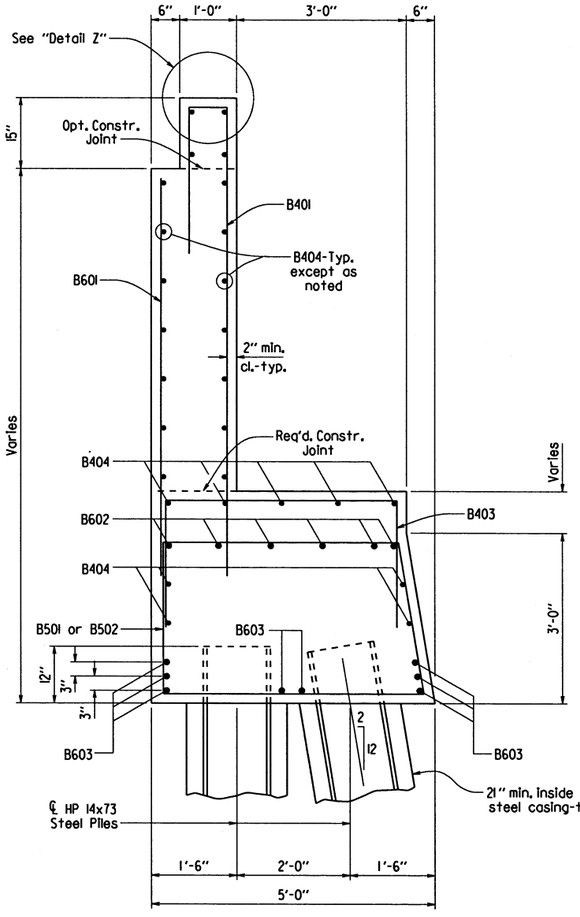
PRINT DATE: 5/17/2017

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.		CA0903	266	452
				(1)		07281 - BENT NO. 2 - 59253		



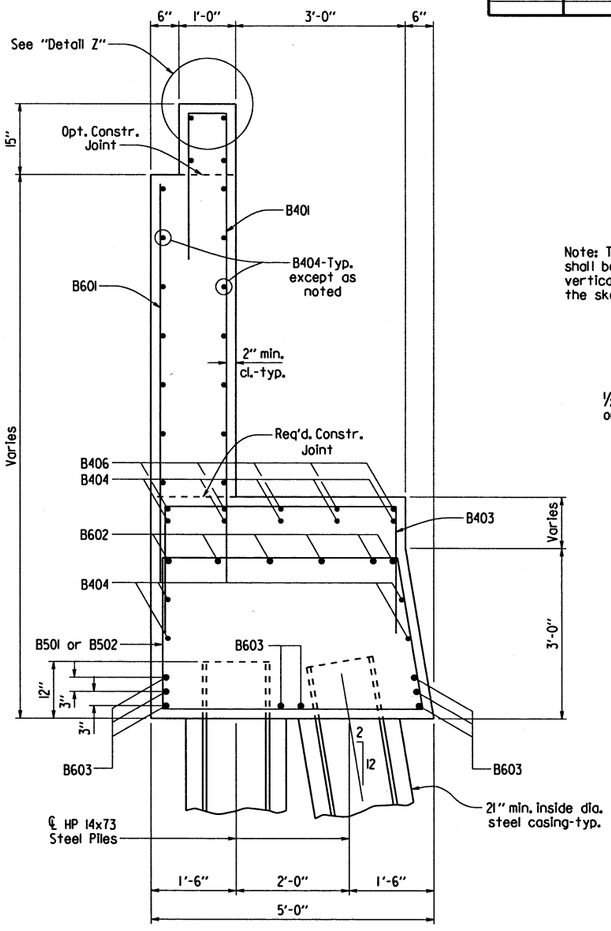
SECTION A-A

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



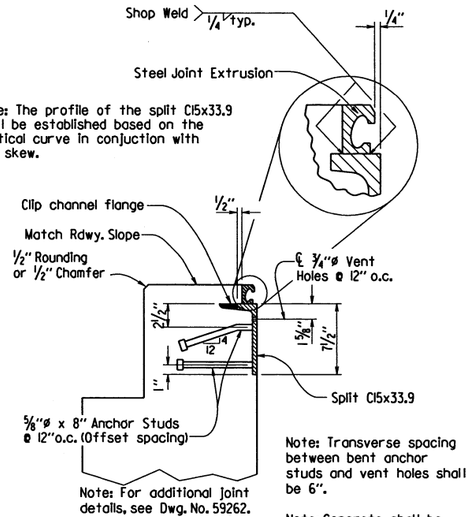
SECTION B-B

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



SECTION C-C

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



Note: The profile of the split C15x33.9 shall be established based on the vertical curve in conjuction with the skew.

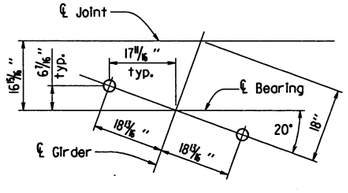
Note: For additional joint details, see Dwg. No. 59262.

DETAIL Z

No Scale

Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.



TYP. ANCHOR BOLT LAYOUT

No Scale

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A , with mill test reports.

All piles shall be HP14x73 (AASHTO M 270, Gr. 50).

No portion of the backwall shall be poured until the girders are in place. The portion of the backwall above the optional construction joint shall not be poured before the superstructure slab in the span has been placed. Refer to "Expansion Device Installation", Dwg. No. 59262. No heavy construction equipment or backfill shall be allowed directly behind the backwall until the concrete for the span has been completed.

Structural steel in end bents shall be AASHTO M 270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

For additional information, see layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF BENT 2
HWY. 71B

ROUTE SEC.

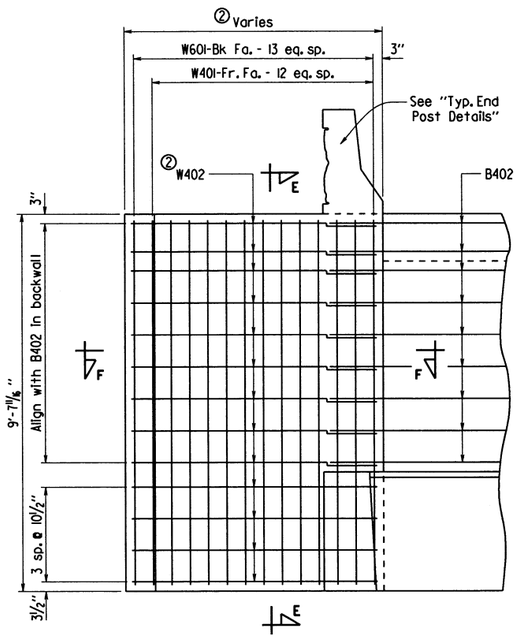
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-23-09
CHECKED BY: BER DATE: 10/20/09
DESIGNED BY: DGM DATE: 11/2007
FILENAME: bca0903x3_b22.dgn
SCALE: AS NOTED

BRIDGE NO. 07281 DRAWING NO. 59253

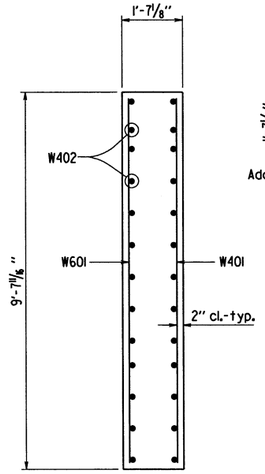
PRINT DATE: 5/8/2019

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.		CA0903	267	452
				①		07281 - BENT NO. 2 - 59254		



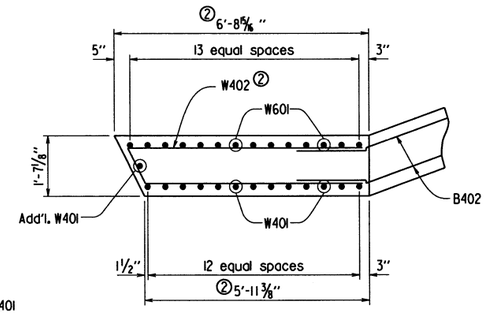
DETAILS OF WING A

Scale: ½" = 1'-0"



SECTION E-E

Scale: ½" = 1'-0"

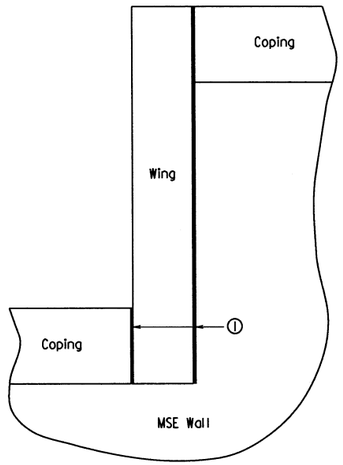


SECTION F-F

Scale: ½" = 1'-0"

②Note: Edge of wing wall shall match the face of the retaining wall coping. Lenth of wing walls and bars may need to be adjusted in the field.

①½" Preformed Joint Filler (AASHTO M 153, Type 1) per Subsection 501.02(h)(1). Seal with ½" x 1" Type 3 or 4 Joint Sealer per Subsection 501.02(h)(2). Place on the vertical faces where the wings come in contact with MSE wall or coping. Typ. at each wing. Preformed joint filler and joint sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".



LOCATION OF JOINTS AT WINGS AND MSE WALL

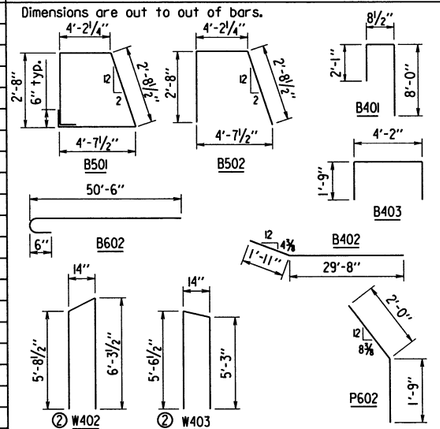
Scale: ½" = 1'-0"

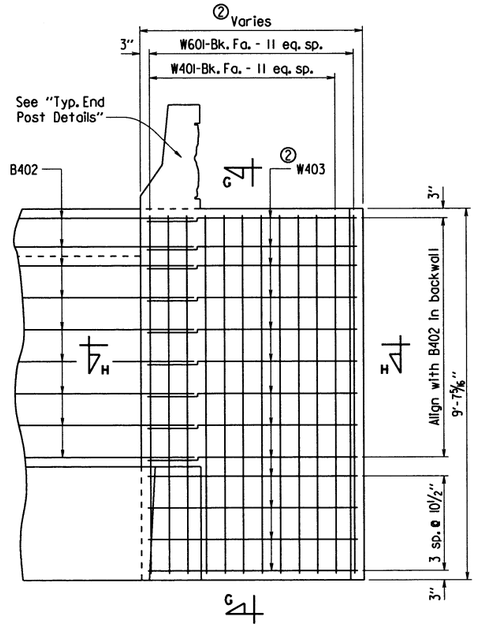
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	191	10'-8"	2"
B402	36	31'-7"	3"
B403	40	7'-6"	2"
B404	27	40'-0"	Str.
B405	8	31'-0"	Str.
B406	5	5'-8"	Str.
W401	27	9'-3"	Str.
②W402	13	13'-2"	2"
②W403	13	11'-10"	2"
P401	12	1'-3"	Str.
B501	130	14'-8"	2½"
B502	54	9'-4"	2½"
B601	191	7'-2"	Str.
B602	12	51'-2"	4½"
B603	16	50'-6"	Str.
W601	26	9'-3"	Str.
P601	12	4'-1"	Str.
P602	6	3'-9"	4½"

BENDING DIAGRAMS

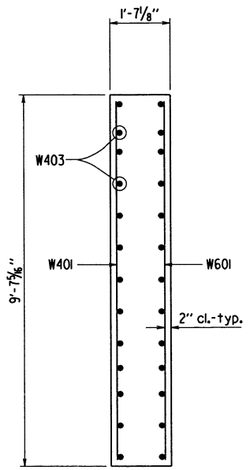
Dimensions are out to out of bars.





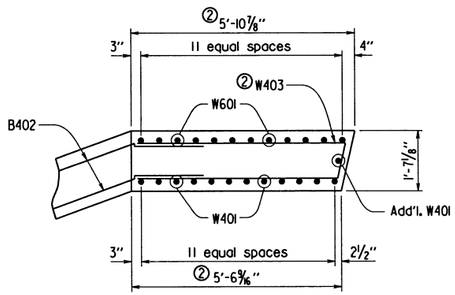
DETAILS OF WING B

Scale: ½" = 1'-0"



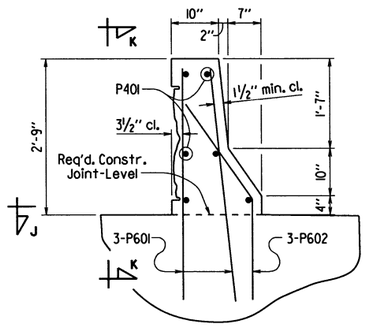
SECTION G-G

Scale: ½" = 1'-0"



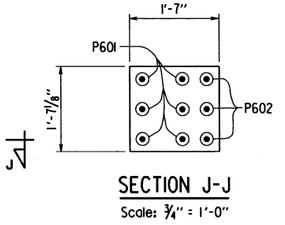
SECTION H-H

Scale: ½" = 1'-0"



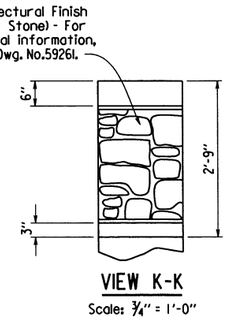
TYP. END POST DETAILS

Scale: ¾" = 1'-0"



SECTION J-J

Scale: ¾" = 1'-0"



VIEW K-K

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF BENT 2
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-23-09 FILENAME: bca0903x3_b23.dgn
CHECKED BY: BEF DATE: 6/2013 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 7/2007
BRIDGE NO. 07281 DRAWING NO. 59254

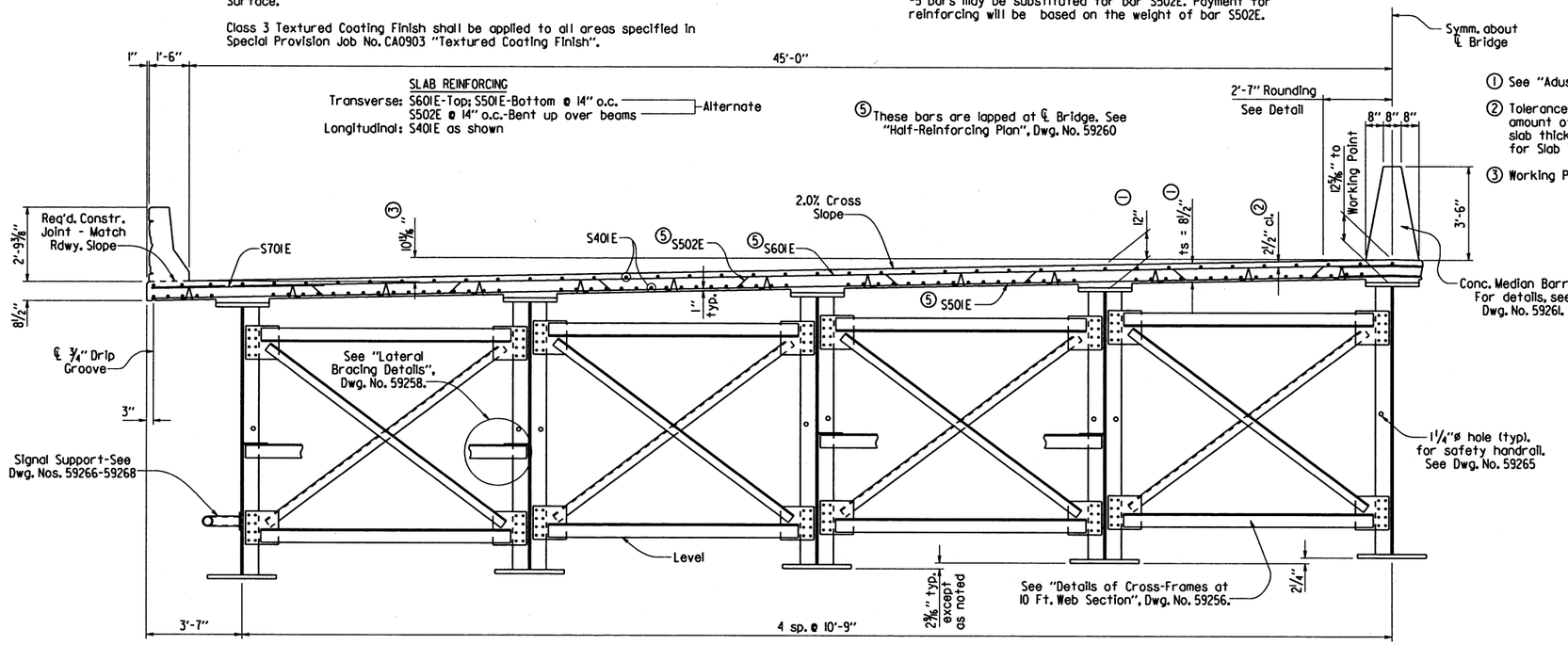
PRINT DATE: 5/17/2017

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface.

Class 3 Textured Coating Finish shall be applied to all areas specified in Special Provision Job No. CA0903 "Textured Coating Finish".

NOTE: At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

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.		CA0903	268	452
				①		07281 - 295 FT. SPAN - 59255		



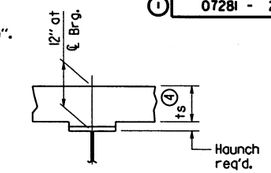
TYPICAL ROADWAY SECTION

Scale: ⅜" =1'-0"

① See "Adustment for Slab Thickness Tolerance".

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adustment for Slab Thickness Tolerance".

③ Working Point to Gutterline.



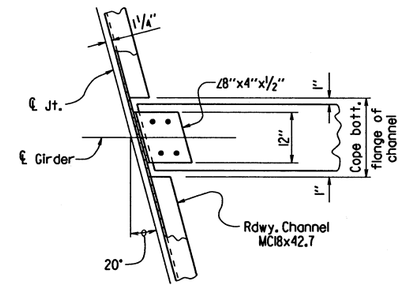
④ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note : ts = slab thickness as shown in "Typical Roadway Section".

For both removable and permanent steel deck forms the haunch dimension may vary plus 1½" and minus 2" to maintain grade, slab thickness, and shear connector requirements. See "Shear Connector Detail" on Dwg. No. 59257 for shear connector requirements. No increase in concrete and structural steel quantities will be made to maintain tolerances. Payment for concrete shall be based on removable deck forming. For additional details related to the use of permanent steel deck forms, see Std. Dwg. No. 55005.

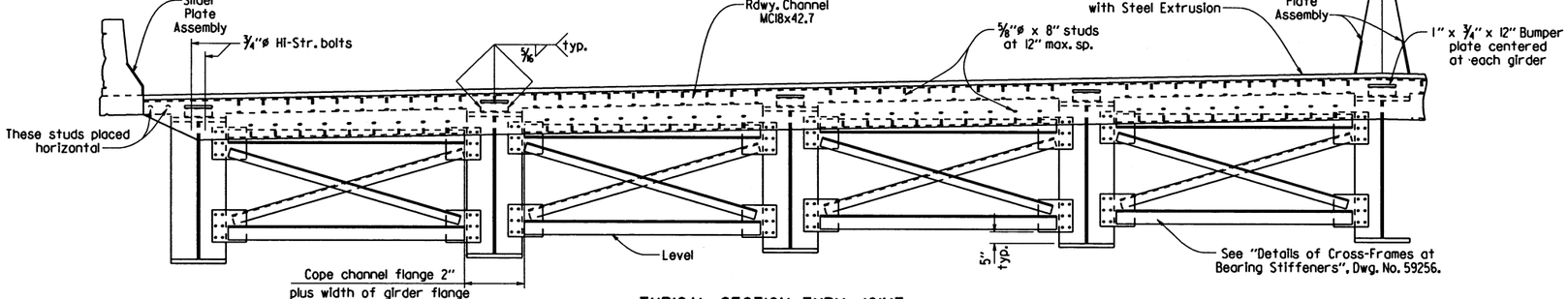
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale



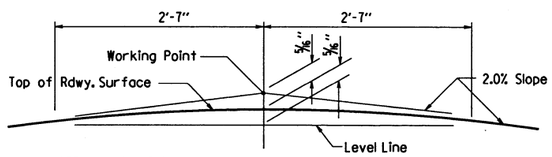
CHANNEL CONNECTION DETAIL

No Scale



TYPICAL SECTION THRU JOINT

Scale: ⅜" =1'-0"



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-8-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

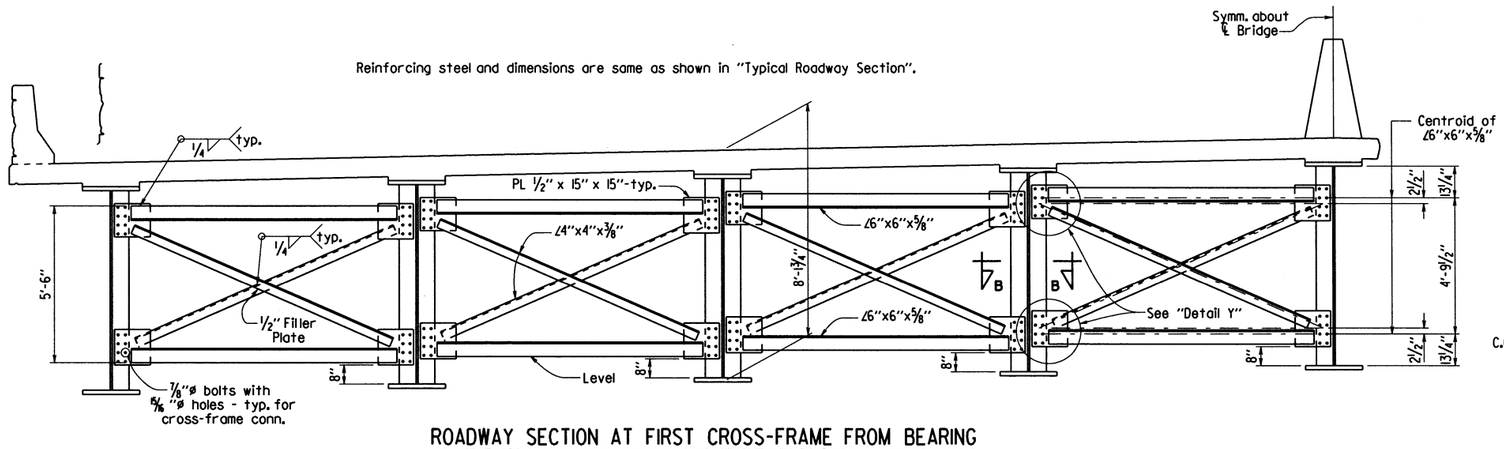
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CHECKED BY: BEF DATE: 5/19 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 6/2007

BRIDGE NO. 07281 DRAWING NO. 59255

PRINT DATE: 5/6/2019

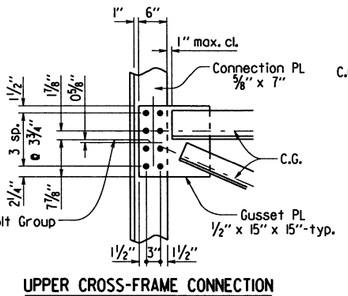
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	2/9	452
				07281 -		295 FT. SPAN - 59256		

Reinforcing steel and dimensions are same as shown in "Typical Roadway Section".

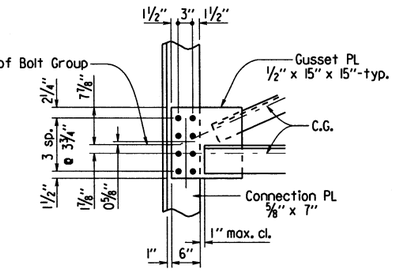


ROADWAY SECTION AT FIRST CROSS-FRAME FROM BEARING

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



UPPER CROSS-FRAME CONNECTION

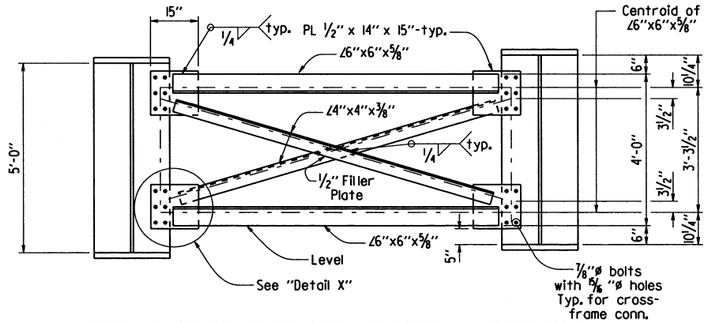


LOWER CROSS-FRAME CONNECTION

DETAIL Y

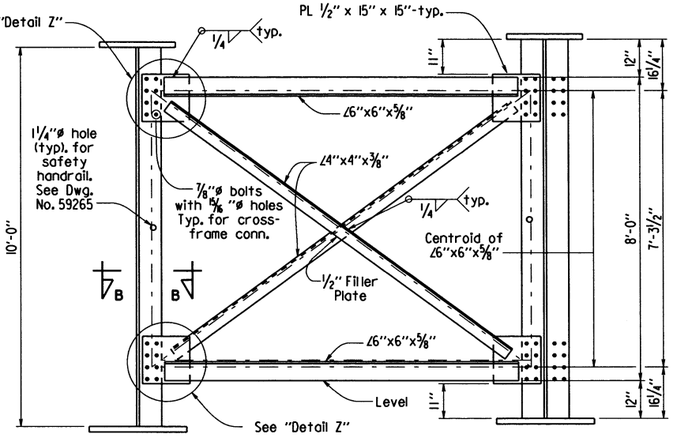
Scale: 3/4" =1'-0"

Note: Center of gravity of cross-angles intersect 5/8" above or below the center of the bolt group. Center of gravity of top & bottom angles intersect 1 7/8" above or below the center of the bolt group.



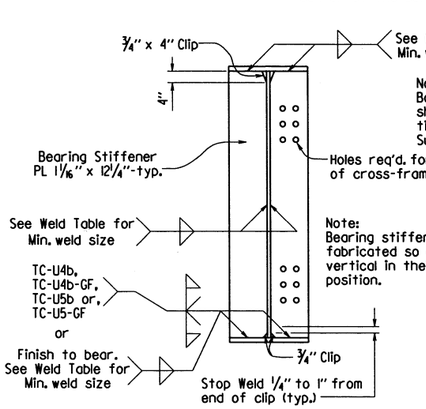
DETAILS OF CROSS-FRAMES AT BEARING STIFFENERS

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



DETAILS OF CROSS-FRAMES AT 10 FT. WEB SECTION

Scale: 1/2" = 1'-0"

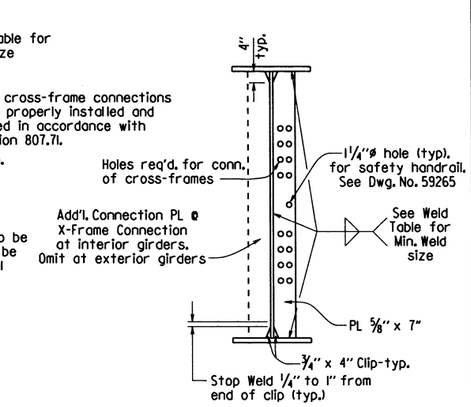


Note: Bolts in cross-frame connections shall be properly installed and tightened in accordance with Subsection 807.71.

Note: Bearing stiffeners to be fabricated so as to be vertical in their final position.

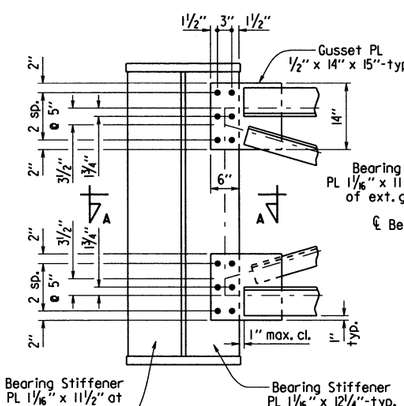
BEARING STIFFENER DETAILS

No Scale



CONNECTION PLATE DETAILS

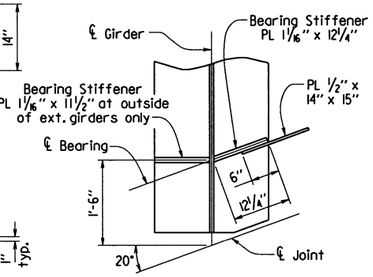
No Scale



DETAIL X

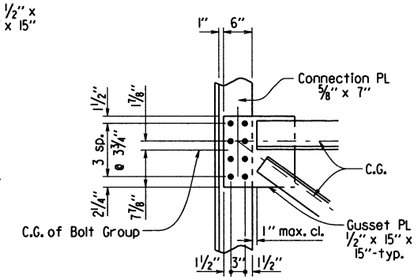
Scale: 3/4" =1'-0"

Note: Center of gravity of cross-angles and center of gravity of top and bottom angles to intersect 1 3/4" above or below the center of the bolt group.

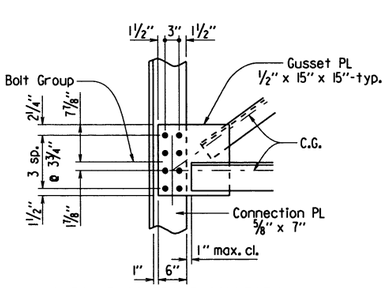


SECTION A-A

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



UPPER CROSS-FRAME CONNECTION

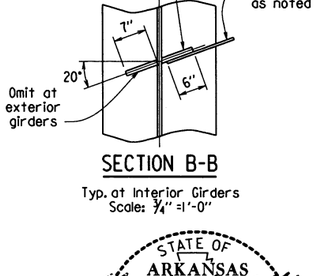


LOWER CROSS-FRAME CONNECTION

DETAIL Z

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

Note: Center of gravity of cross-angles and center of gravity of top and bottom angles to intersect 1 7/8" above or below the center of the bolt group.



SECTION B-B

Typ. at Interior Girders
Scale: 3/4" =1'-0"

TABLE FOR WELD

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
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REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

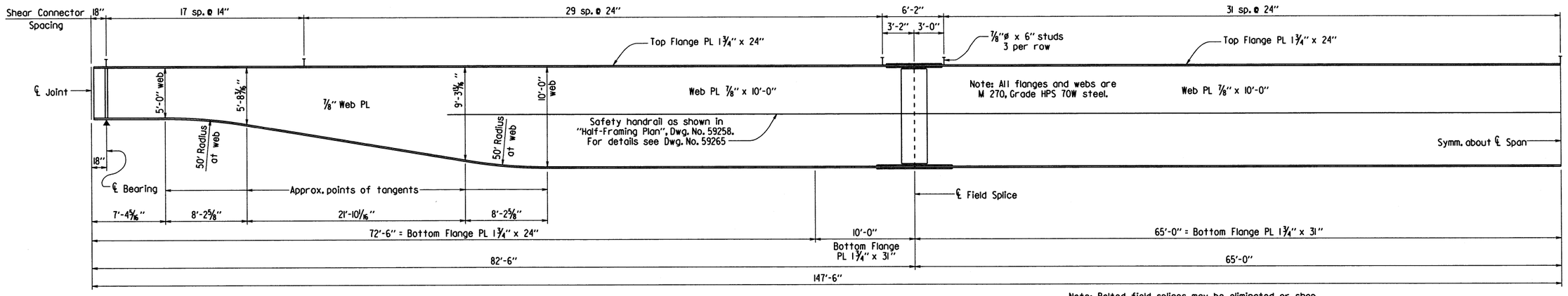
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 7-27-07 FILENAME: bca0903x3_sl2.dgn
CHECKED BY: BEF DATE: 6/2017 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 6/2007

BRIDGE NO. 07281 DRAWING NO. 59256

PRINT DATE: 5/17/2017

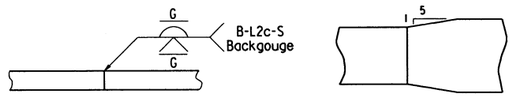
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	270	452
				① 07281 -		295 FT. SPAN	- 59257	



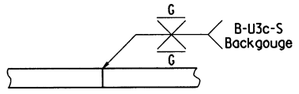
GIRDER ELEVATION

Scale: 3/16" = 1'-0"

Note: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



FLANGE SPLICE

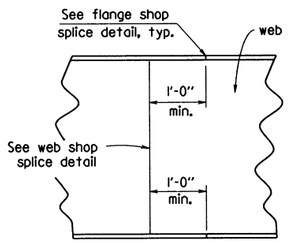


Equal Thickness

WEB SPLICE

DETAILS OF WELDED SPLICES

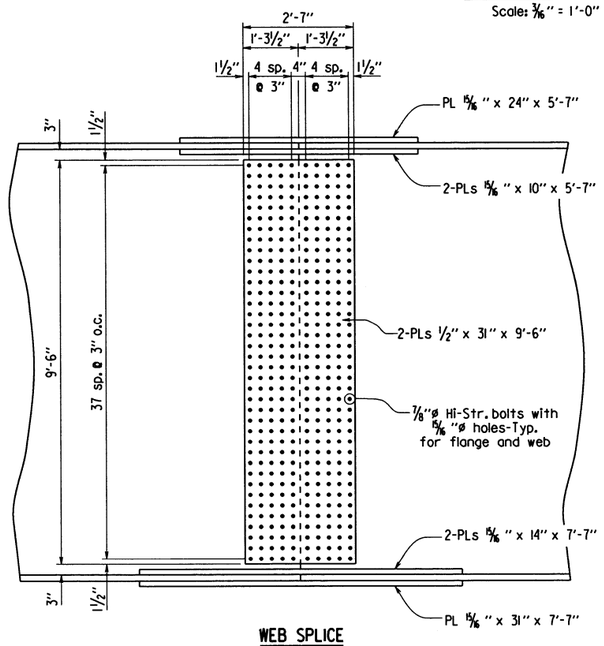
No Scale



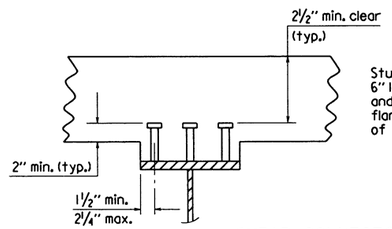
Note: Web and flange shop splices shall be located a minimum of 8" from stiffener and connection plates.

LOCATION OF SHOP SPLICES

No Scale



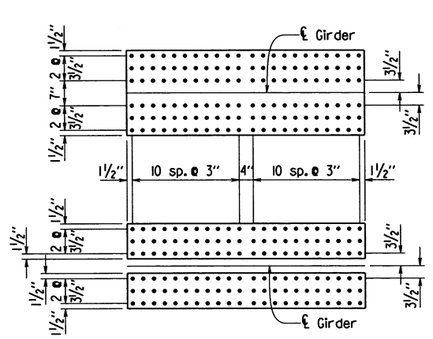
WEB SPLICE



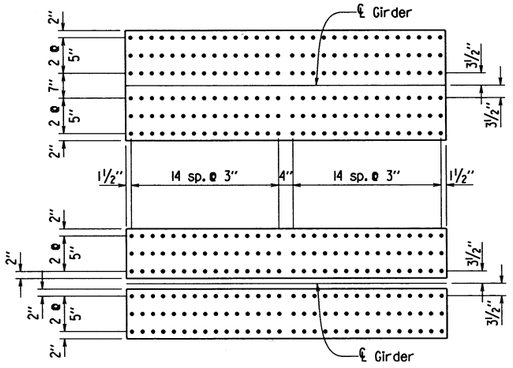
Stud Shear Connectors shown shall be ⅞"ø x 6" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale



TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

Note: All field splice plates are M 270, Grade HPS 70W steel.

FIELD SPLICE DETAILS

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
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SHEET 3 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

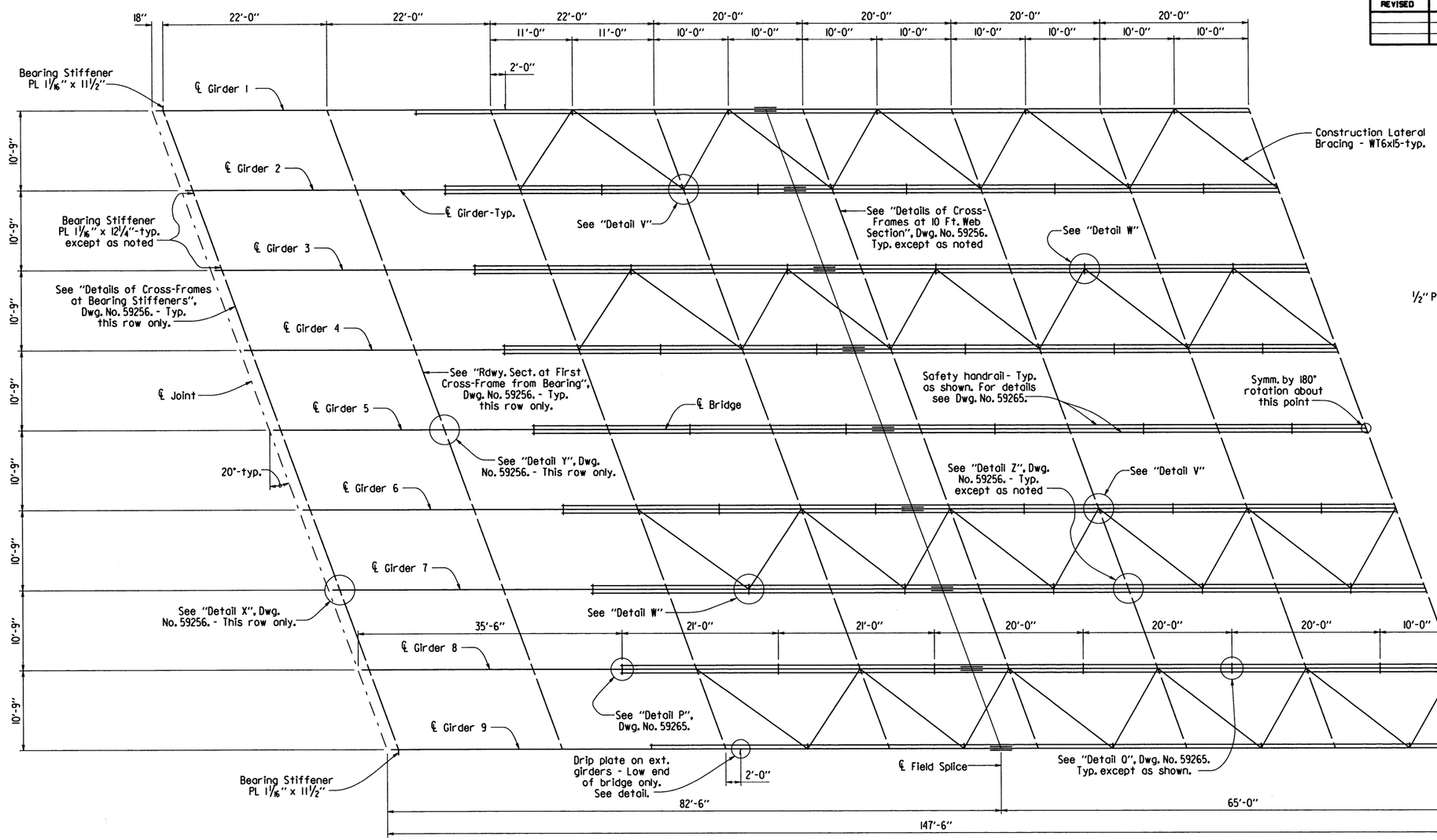
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-1-07 FILENAME: bca0903x3_sl3.dgn
CHECKED BY: RJEE DATE: 12/20/07 SCALE: AS NOTED
DESIGNED BY: DBM DATE: 12/2007

BRIDGE NO. 07281 DRAWING NO. 59257

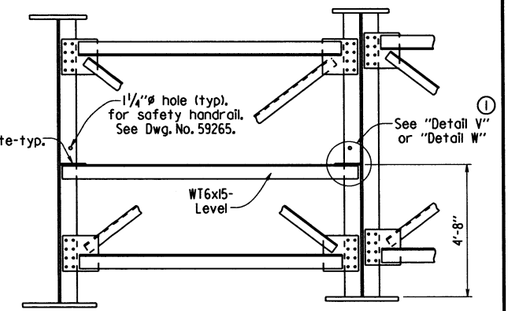
PRINT DATE: 5/17/2017

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.		CA0903	271	452
				① 07281 -		295 FT. UNIT - 59258		



HALF-FRAMING PLAN

Scale: 1/8" = 1'-0"

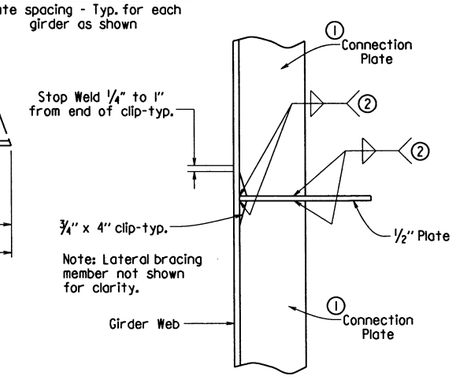


LATERAL BRACING DETAILS

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

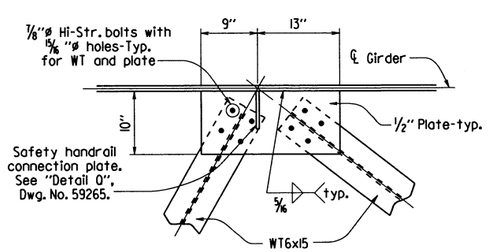
① Connection plates shall be discontinuous thru lateral bracing conn. plates.

② See "Table for Weld", Dwg. No. 59256.



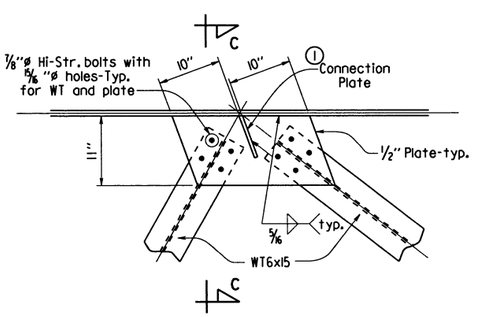
SECTION C-C

No Scale



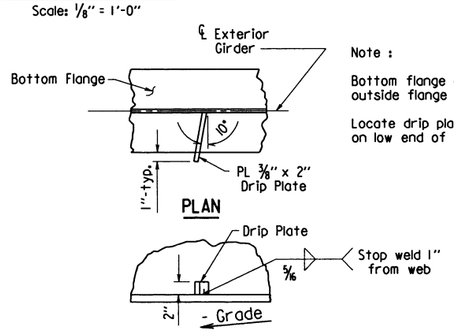
DETAIL W

Scale: 1" = 1'-0"



DETAIL V

Scale: 1" = 1'-0"



BOTTOM FLANGE DRIP PLATE

No Scale

Note :

Bottom flange drip plate to be welded to the outside flange of the exterior girders only.

Locate drip plate as shown in "Half-Framing Plan" on low end of girders only.

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
6-5-17
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SHEET 4 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-7-07
CHECKED BY: BEF DATE: 6/2013
DESIGNED BY: DXM DATE: 6/2007
FILENAME: bca0903x3_sl4.dgn
SCALE: AS NOTED

BRIDGE NO. 07281 DRAWING NO. 59258

PRINT DATE: 5/17/2017

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.		CA0903	272	452
				07281 - 295 FT. SPAN - 59259				

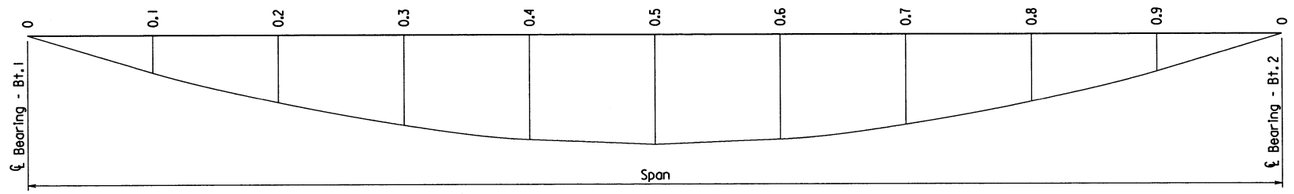
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet & Median Barrier	
	Interior	Exterior	Interior	Exterior	Interior	Exterior
0	0	0	0	0	0	0
0.1	2.940	2.927	8.491	8.291	8.867	8.667
0.2	5.308	5.287	15.312	14.967	15.997	15.654
0.3	7.121	7.093	20.521	20.073	21.442	20.998
0.4	8.266	8.234	23.806	23.296	24.878	24.372
0.5	8.661	8.627	24.938	24.407	26.062	25.535
0.6	8.266	8.234	23.806	23.296	24.878	24.372
0.7	7.121	7.093	20.521	20.073	21.442	20.998
0.8	5.308	5.287	15.321	14.967	15.997	15.654
0.9	2.940	2.927	8.491	8.291	8.867	8.667
0	0	0	0	0	0	0

Note:
Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance.
Deflections shown are from a chord from ℄ Bearing to ℄ Bearing.
Vertical curve corrections not included.

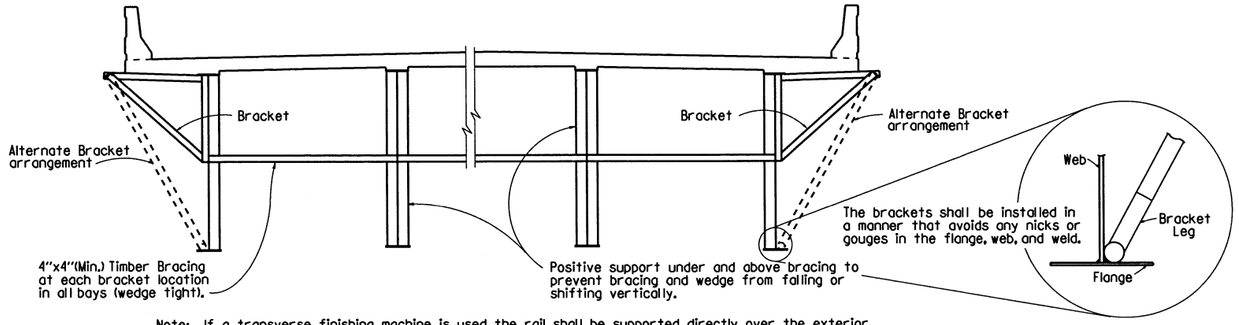
Dead load deflections include 16.5 psf of extra concrete and permanent steel deck form weight. If the weight due to the forms and additional concrete exceeds 16.5 psf, the corrugations shall be filled with styrofoam.

Revisions to the "Table of Dead Load Deflections" may be necessary upon review of the Contractor's submitted forming details.



DEAD LOAD DEFLECTION DIAGRAM

No Scale



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 5/8"x7" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for intermediate connection plates shown on "Connection Plate Details", Dwg. No. 59256. 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 (M 270, HPS Gr. 70W)".

SCREED RAIL SUPPORT

N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

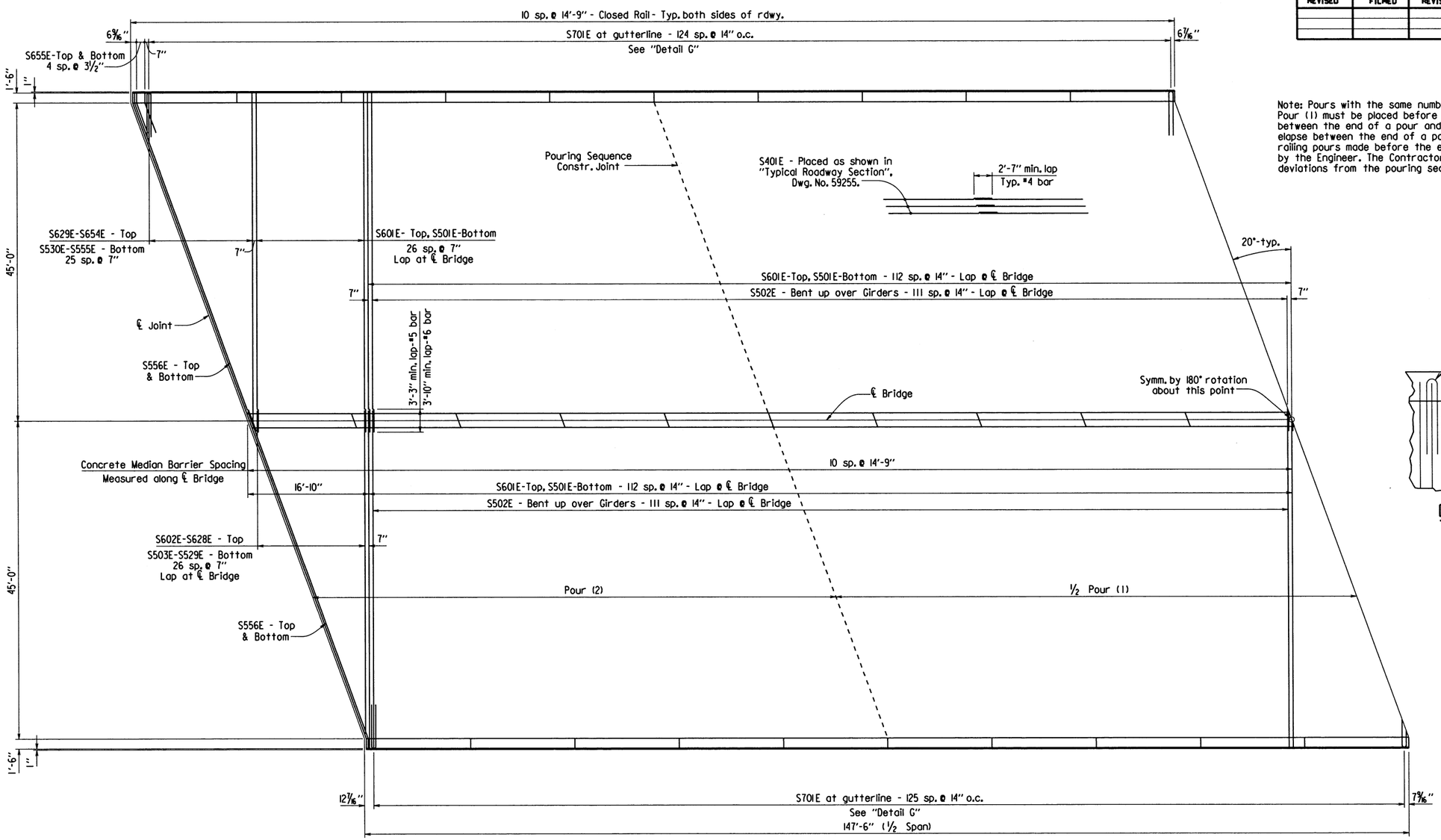
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-29-07
CHECKED BY: BEF DATE: 6/19/2013
DESIGNED BY: DGM DATE: 6/1/2007
FILENAME: pca0903x3_sl5.dgn
SCALE: AS NOTED

BRIDGE NO. 07281 DRAWING NO. 59259

PRINT DATE: 5/17/2017

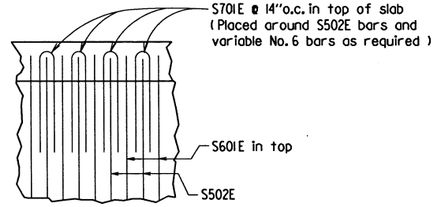
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	273	452
				①	07281 -	295 FT. SPAN	- 59260	



HALF-REINFORCING PLAN

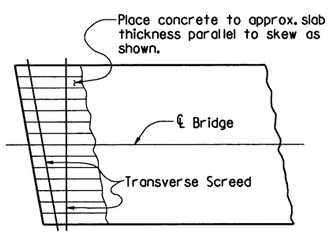
Scale: 1/8" = 1'-0"

Note: Pours with the same number may be placed simultaneously or separately. Pour (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between 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. 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.



DETAIL G

No Scale

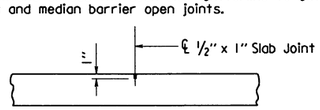


Note: At the Contractor's Option, the Transverse Screed may be placed parallel to the skew or perpendicular to ℄ Bridge.

CONCRETE PLACEMENT PROCEDURE

No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and 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 rail or median barrier 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. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet and median barrier open joints.



SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 295' SIMPLE
COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

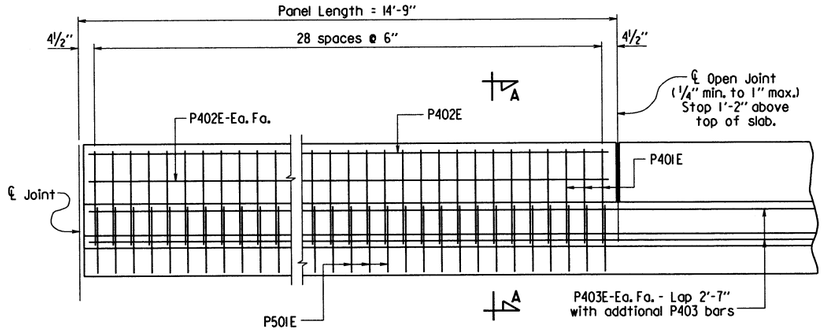
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-10-07 FILENAME: bca0903x3_sl6.dgn
CHECKED BY: DEF DATE: 6/2015 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 6/2007

BRIDGE NO. 07281 DRAWING NO. 59260

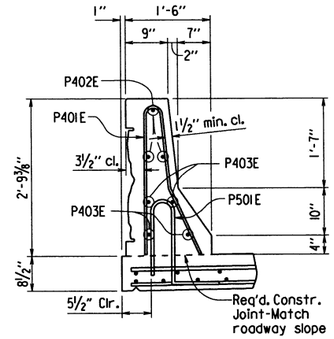
PRINT DATE: 5/17/2017

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.		CA0903	274	452
				① 07281 - 295 FT. SPAN - 59261				



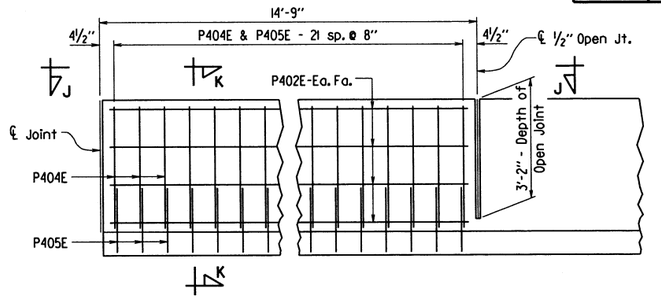
DETAILS OF PARAPET RAILING

Scale : ½" = 1'-0"



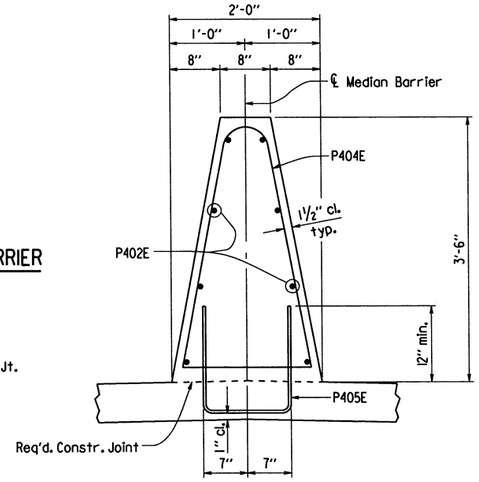
SECTION A-A

Scale: ¾" = 1'-0"



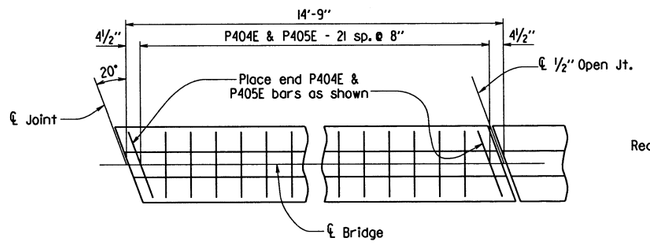
LONGITUDINAL SECTION AT CURB FOR CONCRETE MEDIAN BARRIER

Scale: ½" = 1'-0"



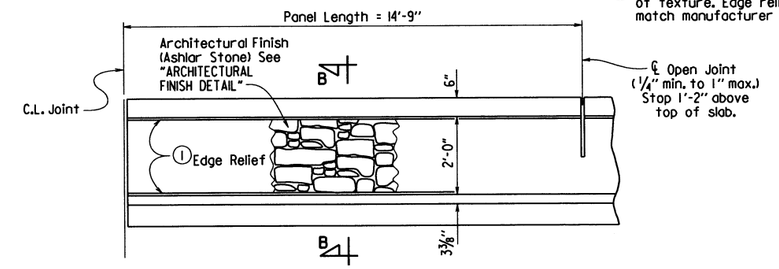
SECTION K-K

Scale: 1" = 1'-0"



VIEW J-J

Scale: ½" = 1'-0"

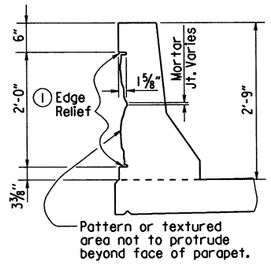


① Provide edge relief around perimeter of texture. Edge relief dimensions shall match manufacturer edge distance.

DETAILS OF PARAPET ENHANCEMENT

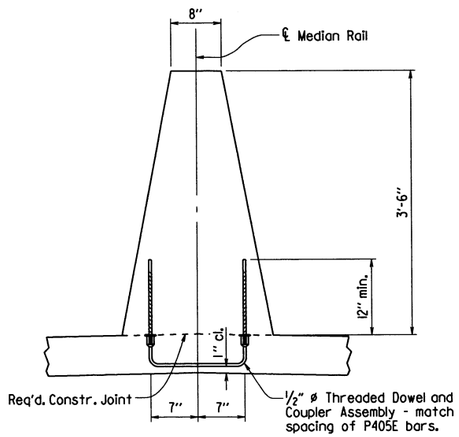
½" = 1'-0"

Slip forming of Parapet Panels shall not be permitted.



SECTION B-B

¾" = 1'-0"

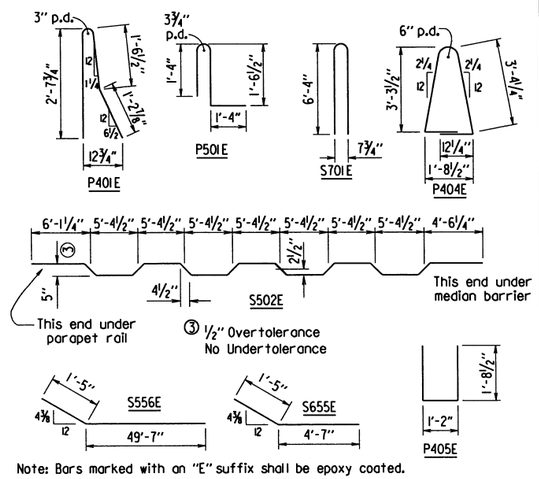


ALTERNATE SECTION K-K

Scale: 1" = 1'-0"

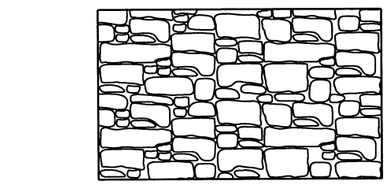
BAR LIST

	MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
②	S401E	1736	39'-2"	Str.	Dimensions are out to out of bars.
	P401E	1160	5'-6"	2"	
	P402E	280	14'-3"	Str.	
	P403E	64	39'-2"	Str.	
	P404E	440	8'-11"	2"	
	P405E	440	4'-5"	2"	
	S501E	504	48'-2"	Str.	
	S502E	448	49'-3"	3"	
	S503E-S529E	2 each	Var. 4'-1" to 45'-9"	Str.	
	S530E-S555E	2 each	Var. 6'-10" to 46'-11"	Str.	
	S556E	8	51'-0"	3¾"	
	P501E	1160	4'-3"	3¾"	
	S601E	504	48'-5"	Str.	
	S602E-S628E	2 each	Var. 4'-4" to 46'-0"	Str.	
	S629E-S654E	2 each	Var. 6'-10" to 46'-11"	Str.	
	S655E	20	6'-0"	4½"	
	S701E	502	12'-11"	6"	



Note: Bars marked with an "E" suffix shall be epoxy coated.

② Length of S401E bars are based on providing 2" clear at expansion channel.



ARCHITECTURAL FINISH DETAIL

(Ashlar Stone)
NO SCALE

General Notes:

The pattern finish shall be applied to the exposed surfaces in accordance with Special Provision Job No. CA0903 "Architectural Finish" and as shown in the plans. Care shall be taken with form liner handling and installation to insure aesthetic quality of the pattern finish is maintained. Where form liner panels require modification to conform to the location, dimensions, and lines shown in the plans, the Contractor shall provide edge relief matching that of the unaltered form liner. Payment for pattern finish shall be in accordance with Special Provision Job No. CA0903 "Architectural Finish".

No adjustments will be made in concrete volume due to the use of "Architectural Finish". Class "S" Concrete shall be measured in accordance with Subsection 802.24(a). Care shall be taken in placing concrete to avoid segregation and to eliminate flow lines.

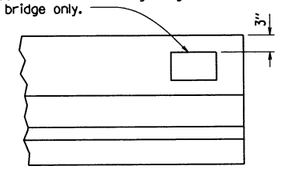
Class 3 Textured Coating Finish shall be applied to the surfaces as specified in Special Provision Job No. CA0903 "Textured Coating Finish".

NOTE:

The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar P405E. The Threaded Dowel and Coupler Assembly shall consist of a QPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the P405E bars.

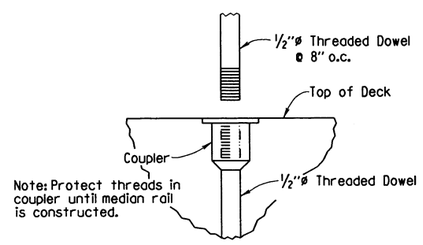
Dowel bars shall be of minimum 60 ksi yield strength and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.

Place Type D Bridge Name Plate on front face of span parapet rail approx. 2'-0" from front face of backwall at beginning of bridge only.



NAME PLATE DETAIL

No Scale



ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
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SHEET 7 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

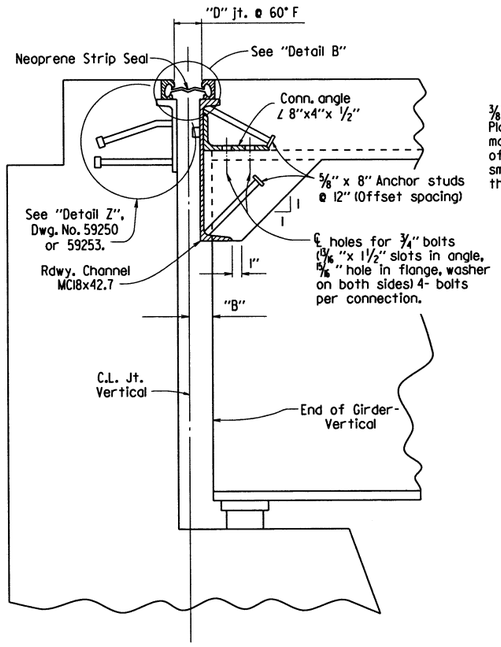
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-12-07
CHECKED BY: BEF DATE: 6/2007
DESIGNED BY: DGM DATE: 6/2007
FILENAME: bca0903x3_sl7.dgn
SCALE: AS NOTED

BRIDGE NO. 07281 DRAWING NO. 59261

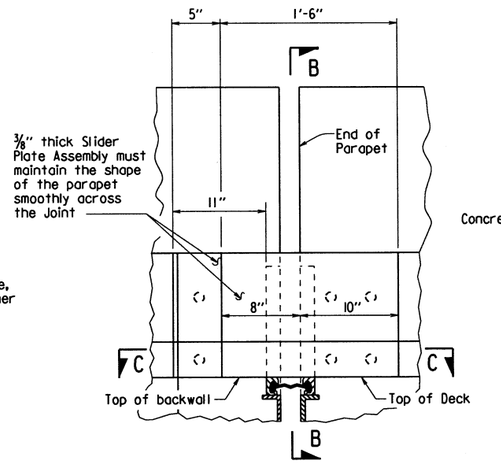
PRINT DATE: 5/17/2017

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.		CA0903	275	452
				①		07281 - 295 FT. SPAN - 59262		



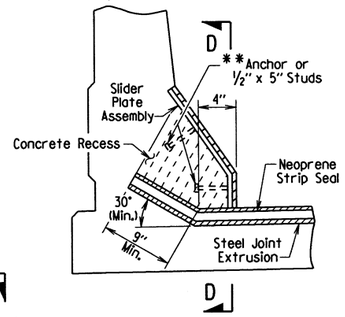
DETAILS OF JOINT AT END BENTS

Perpendicular to Joint
No Scale



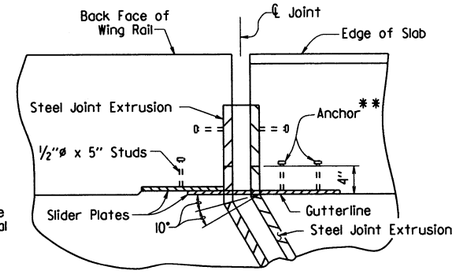
DETAIL OF NEOPRENE SEAL AT CURB

No Scale



SECTION B-B

No Scale



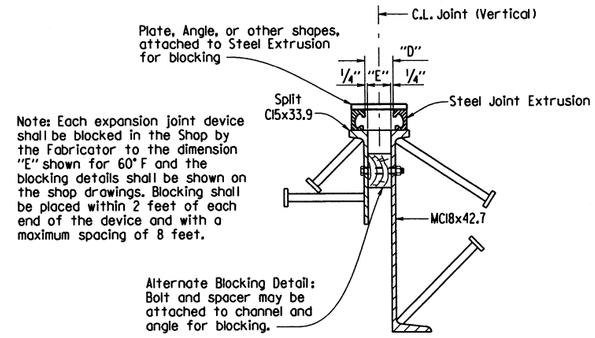
SECTION C-C

No Scale

Note: Details of Joint turn-up in curb and parapet are general and show basic design controls only. See Section 809. Method of installation and fabrication shall be determined by the manufacturer.

The method of attachment of the slider plate assembly must be such that it may be removed in order to provide for future replacement of the neoprene seal.

** Anchors will not be paid for directly but will be considered subsidiary to "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "E" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

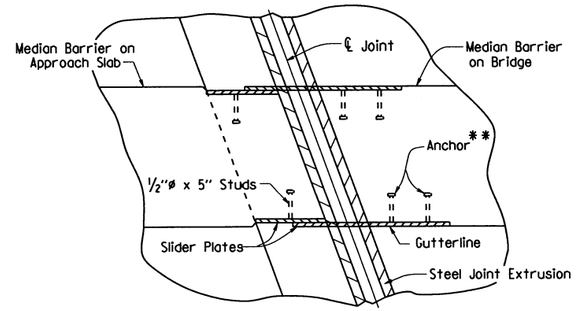
DETAILS FOR BLOCKING EXPANSION JOINT DEVICE AT STRIP SEAL JOINTS

No Scale

The Contractor may elect to install the expansion device using one of the following two alternatives:

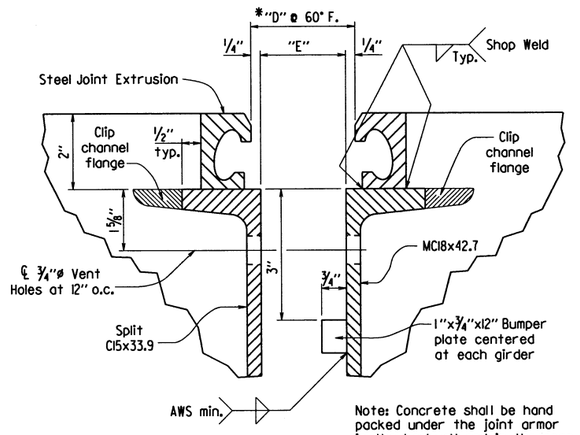
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing 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.



SECTION F-F

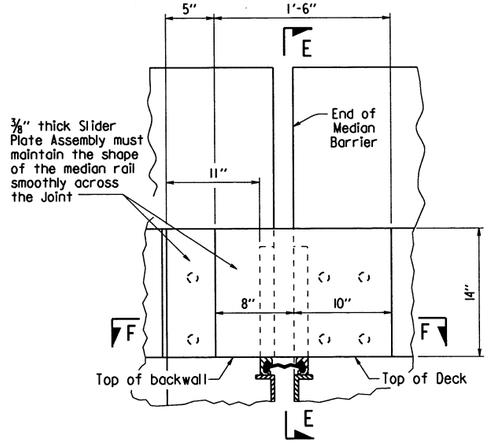
No Scale



Note: Concrete shall be hand packed under the joint armor in the backwall and in the span

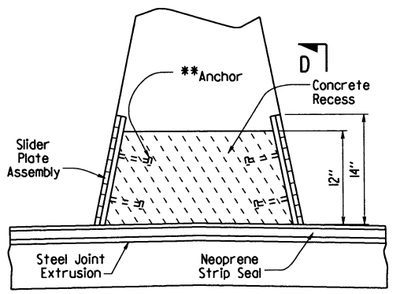
DETAIL B

No Scale



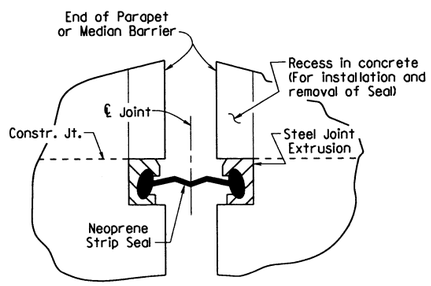
DETAIL OF NEOPRENE SEAL AT MEDIAN BARRIER

No Scale



SECTION E-E

No Scale



SECTION D-D

No Scale

STRIP SEAL JOINT DATA

Bent No(s).	Movement Rating	"D" Width Perpendicular to Joint at 24 Hour Average *Temperature of:			"E" Width Perpendicular to Joint at 24 Hour Average *Temperature of:			"B" Perpendicular to Joint at 24 Hour Average Temperature of 60° F
		40° F	60° F	80° F	40° F	60° F	80° F	
1	5"	3 1/16"	3"	2 15/16"	2 5/16"	2 1/2"	2 1/16"	2 1/2"
2	5"	3"	3"	3"	2 1/2"	2 1/2"	2 1/2"	2 1/2"

* Installation is limited to 40°F min. and 80°F max.
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.

GENERAL NOTES FOR NEOPRENE STRIP SEAL JOINTS:

The steel extrusion and neoprene strip seal material and installation shall be in accordance with Section 809.

The expansion device shall provide for the movement rating(s) 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.

Details of proposed slider plate assembly shall be submitted to the Engineer for approval prior to the fabrication of any structural steel at the expansion device.

All structural steel shall conform to AASHTO M 270, Grade 50W unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). The parapet slider plates and structural steel completely embedded in concrete shall conform to AASHTO M 270, Grade 36, 50 or 50W steel. Unless otherwise noted in the plans, all exposed surfaces of the parapet slider plates shall be cleaned and painted in accordance with Section 807. The paint color shall match the textured coating color as specified in SP Job CA0903 "Texture Coating Finish" for parapets. Structural steel completely embedded in concrete need not be painted. Payment for structural steel shall be as specified in the plans.

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SHEET 8 OF 8
DETAILS OF 295' SIMPLE COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 8-14-07 FILENAME: bca0903x3_sl8.dgn
CHECKED BY: BEE DATE: 6/9/2013 SCALE: AS NOTED
DESIGNED BY: DGW DATE: 6/1/2007
BRIDGE NO. 07281 DRAWING NO. 59262

PRINT DATE: 5/17/2017

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.		CA0903	276	452
				①	07281 - GENERAL NOTES - 59263			

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions.

DEISGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition) with 2005 and 2006 interims.

MATERIALS AND STRENGTHS

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (M 270, HPS Gr. 70W)	Fy = 70,000 psi
Structural Steel (M 270, Gr. 36)	Fy = 36,000 psi

CONCRETE: Concrete shall be poured in the dry and all exposed corners to 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 measurement 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.

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. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. The use of a longitudinal screed is prohibited.

REINFORCING STEEL: All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports. 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 girder flange and web plates, and field splice plates shall be AASHTO M270, HPS Gr. 70W, conforming to the requirements of Special Provision Job No. CA0903 "Grade HPS 70W Structural Steel", and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, HPS Gr. 70W)". All other structural steel shall be AASHTO M 270, Grade 50W, unless otherwise noted, and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36 or Gr. 50 unless otherwise noted.

All structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall conform to Federal Standard 595B, Color Chip No. 26122, Dark Gray.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

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 the approved shop drawings. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Girder web and flange plates 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 shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, HPS Gr. 70W)"

All girders shall be assembled in the shop as specified in Subsection 807.54 and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. 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 degrees F. A tolerance of ¼" +/- is allowed for camber.

Web and flange plates for main members and flange field splice plates for main members 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.

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 permanent or temporary, 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 and Special Provision Job No. CA0903 "Grade HPS 70W Structural Steel".

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment for welds for these splices will be made.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the governing specifications in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, HPS Gr. 70W)".

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 diameter 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.

Cross-Frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck unless otherwise noted.

PRINT DATE: 5/17/2017

STATE OF ARKANSAS
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GENERAL NOTES FOR
295' SIMPLE COMPOSITE
PLATE GIRDER SPAN
HWY. 71B

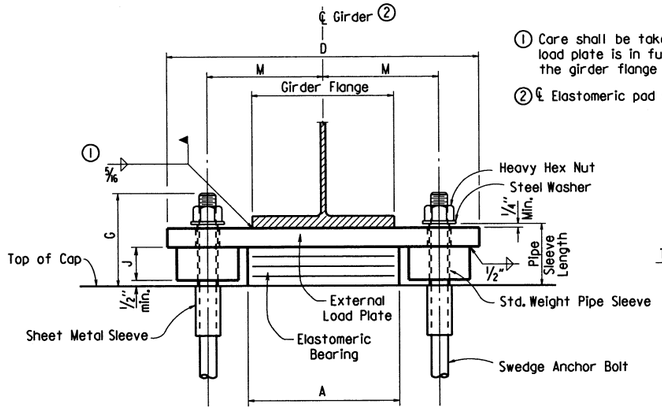
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 12-04-12
CHECKED BY: BCE DATE: 6/2013
DESIGNED BY: DGM DATE: 6/2007
FILENAME: bca0903x3_gen.dgn
SCALE: AS NOTED

BRIDGE NO. 07281 DRAWING NO. 59263

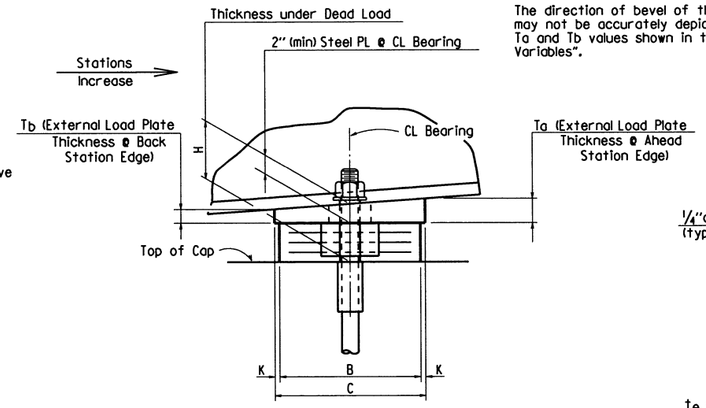
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				6	ARK.			
				JOB NO.		CA0903	277	452
				① 07281 - ELASTO. BRGS. - 59264				



FRONT VIEW

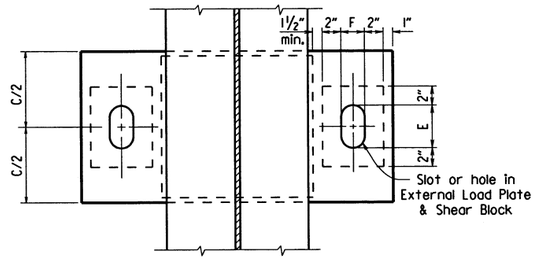
① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

② ℄ Elastomeric pad shall be aligned with ℄ Girder.



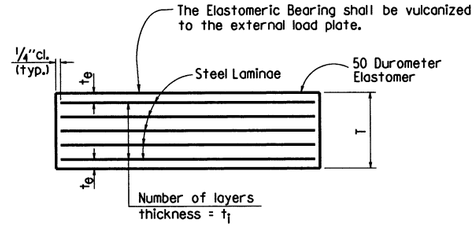
SIDE VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".



PLAN VIEW

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.

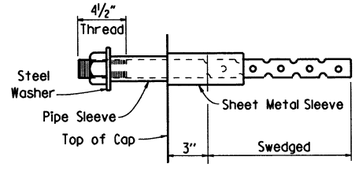


t_e = thickness of elastomer cover on top and bottom of pad

t_i = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



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 concrete. 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 (M 270, Gr. 50W)"

GENERAL NOTES

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 M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, 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).

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 (M 270, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials shall be considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	SPAN	GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	③ J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07281	1	295'	1 - 4	Exp.	4	475	11 5/8"	8 3/16"	25"	14"	10	1/2"	5/16"	11 @ 12 Gauge	6 3/4"	15"	43 1/4"	8 1/8"	2 5/8"	6"	1/2"	17 5/16"	2.04"	1.96"	1 3/4"ø x 33"	55	2"ø x 8 7/8"	4"ø x 13"	3 3/8"ø
	1	295'	5 - 9	Exp.	5	475	11 5/8"	8 3/16"	25"	14"	10	1/2"	5/16"	11 @ 12 Gauge	6 3/4"	15"	43 1/4"	8 1/8"	2 5/8"	6"	1/2"	17 5/16"	2.03"	1.97"	1 3/4"ø x 33"	55	2"ø x 8 7/8"	4"ø x 13"	3 3/8"ø
	2	295'	All	Fix	9	475	9 1/8"	5 5/8"	27 1/2"	11 1/2"	5	1/2"	5/16"	6 @ 12 Gauge	3 3/4"	12 1/2"	46 3/4"	3 1/8"	3 1/8"	3 1/8"	1/2"	18 13/16"	2.08"	1.92"	2 1/4"ø x 36"	55	2 1/2"ø x 5 7/8"	4"ø x 13"	4"ø

*Maximum Design Load = Service I Limit State

③ Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.

Tabular Data by : KDH Date: 8-29-07

Checked by : BEF Date: 6/2013

Designed by : DGM Date: 6/2007

STATE OF ARKANSAS
Charles R. Ellis
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No. 9235
6-5-13
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DETAILS OF ELASTOMERIC BEARINGS HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: Nov.1996 FILENAME: bca0903x3_el.dgn

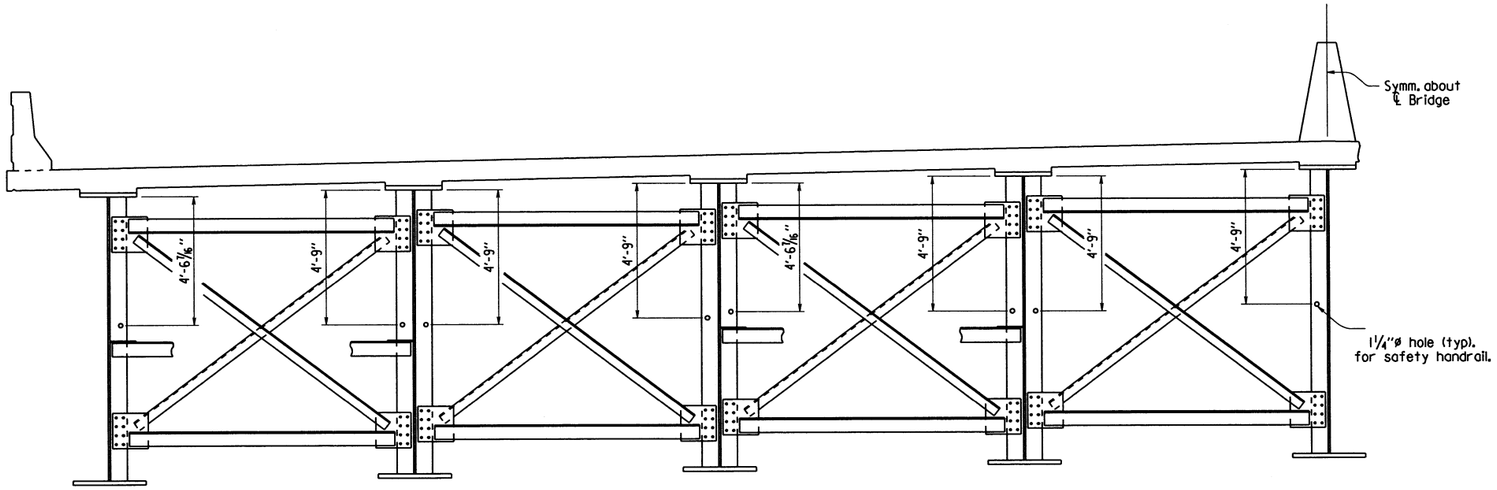
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DESIGNED BY: Std. DATE:

BRIDGE NO. 07281 DRAWING NO. 59264

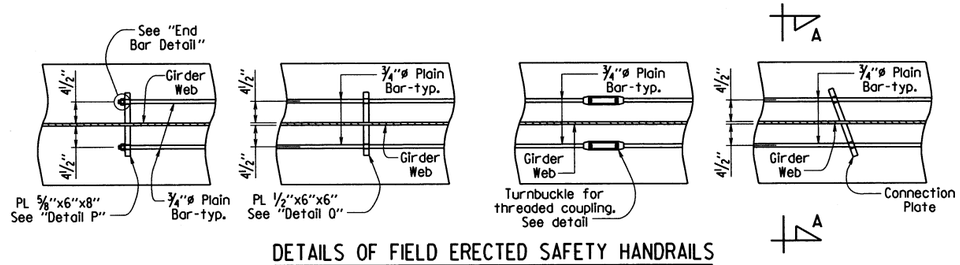
PRINT DATE: 5/17/2017

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.		CA0903	278	452
				①	07281 - SAFETY HANDRAILS - 59265			



TYPICAL ROADWAY SECTION

Scale: ⅜" =1'-0"



DETAILS OF FIELD ERECTED SAFETY HANDRAILS

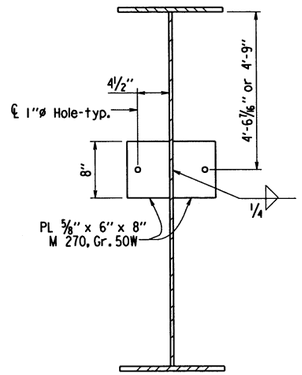
No Scale

Unless otherwise noted, all structural steel in safety handrails shall conform to the requirements of AASHTO M 270, Gr. 36 and Section 807.

Structural steel, including ¾"ø plain bar and support plates, shall be measured and paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Turnbuckles shall not be paid for directly but shall be subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

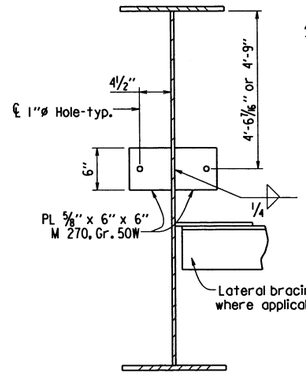
The ¾"ø plain bar, turnbuckles and accessories shall be galvanized according to AASHTO M 232, Class C or ASTM B695, Class 50. All galvanizing will not be paid for directly, but will be subsidiary to the item of "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

Plain bar should be furninshed in 20' - 25' lengths, with 6" minimum of cut threads at each end.



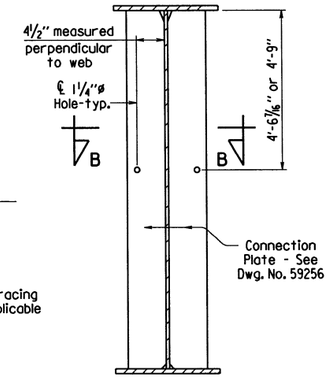
DETAIL P

No Scale



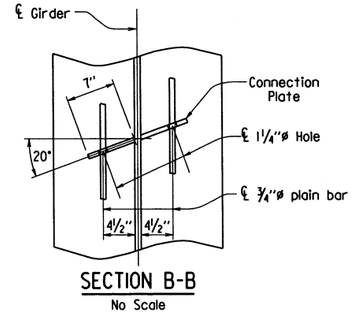
DETAIL O

No Scale



SECTION A-A

No Scale

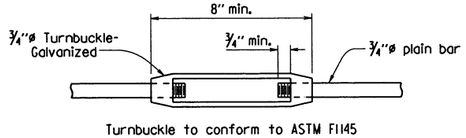


SECTION B-B

No Scale

For locations and other information not shown, see "Half-Framing Plan", Dwg. No. 59258.

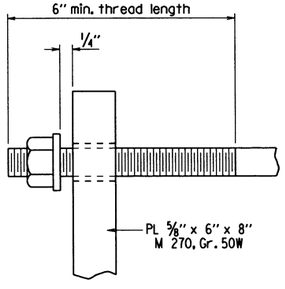
Note: All safety handrails shall be ¾"ø plain bars made continuous by using turnbuckle couplings.



Turnbuckle to conform to ASTM F1145

TURNBUCKLE FOR THREADED COUPLING

No Scale



END BAR DETAIL

No Scale

¾"ø Heavy hex nuts with standard washer. After gap width has been set, tack weld heavy hex nut to plain bar.

Gap width shall be set after slab has been poured.

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REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS
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DETAILS OF SAFETY HANDRAILS HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

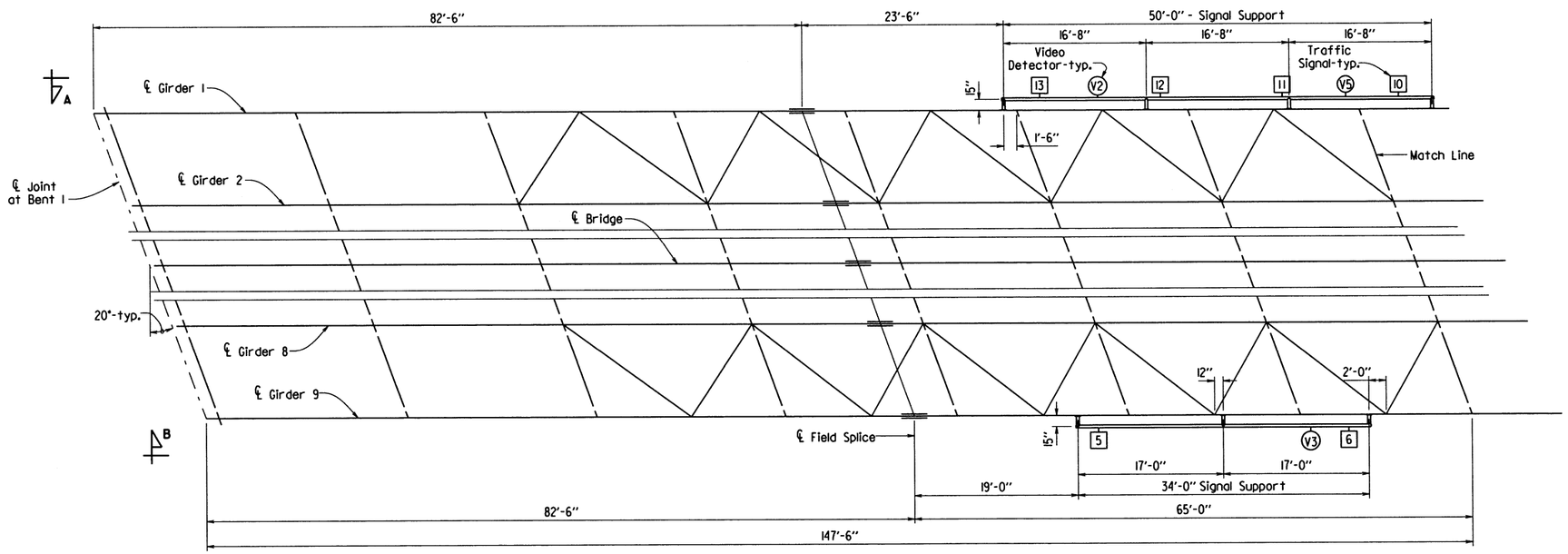
LITTLE ROCK, ARK.

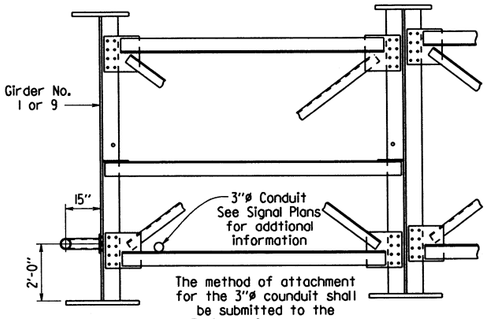
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DESIGNED BY: DCM DATE: 10/2009

BRIDGE NO. 07281 DRAWING NO. 59265

PRINT DATE: 5/17/2017

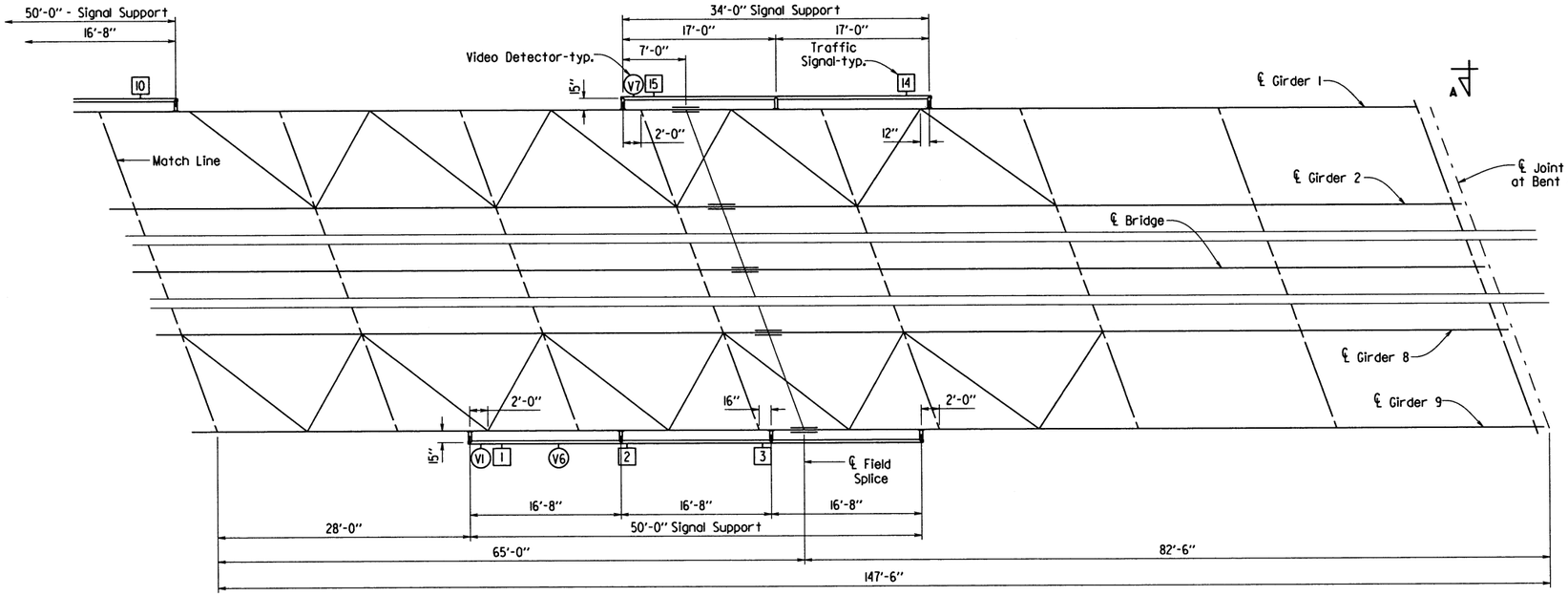
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	279	452
				(1) 07281 - SIGNAL SUPPORT - 59266				





DETAIL THRU BAY

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



PLAN OF SIGNAL SUPPORT LOCATIONS

Scale: 1/8" = 1'-0"

For "View A-A", see Dwg. No. 59267.

For "View B-B", see Dwg. No. 59268.

GENERAL NOTES

All structural steel items shown shall be supplied in accordance with Section 807.

Pipes shall be ASTM A500, Gr. B, Fy = 42,000 psi.

Plates shall be AASHTO M 270, Gr. 50W.

All steel shall be painted in accordance with Subsection 807.25. The color of paint shall shall conform to Federal Standard 595B, Chip No. 26122, Dark Gray.

Pipes, plates, bolts, washers and nuts shall be mesured and paid for as "Structural Steel in Plate Girder Spans (M 270, Gr 50W)".

All welding that is done during fabrication, including any temporary weld, shall be detailed on the shop drawings and submitted for approval.

If necessary, pipe may be shop spliced using "Splice Detail" shown on Dwg. No. 59267.

Bolts shall be installed with the heads on the outside face of girder. Signal supports shall be installed after concrete deck has been placed.

For additional information regarding signal locations and attachments, see Signalization Plans.

STATE OF ARKANSAS
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SHEET 1 OF 3
DETAILS OF SIGNAL SUPPORT
FOR 295' SIMPLE
COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

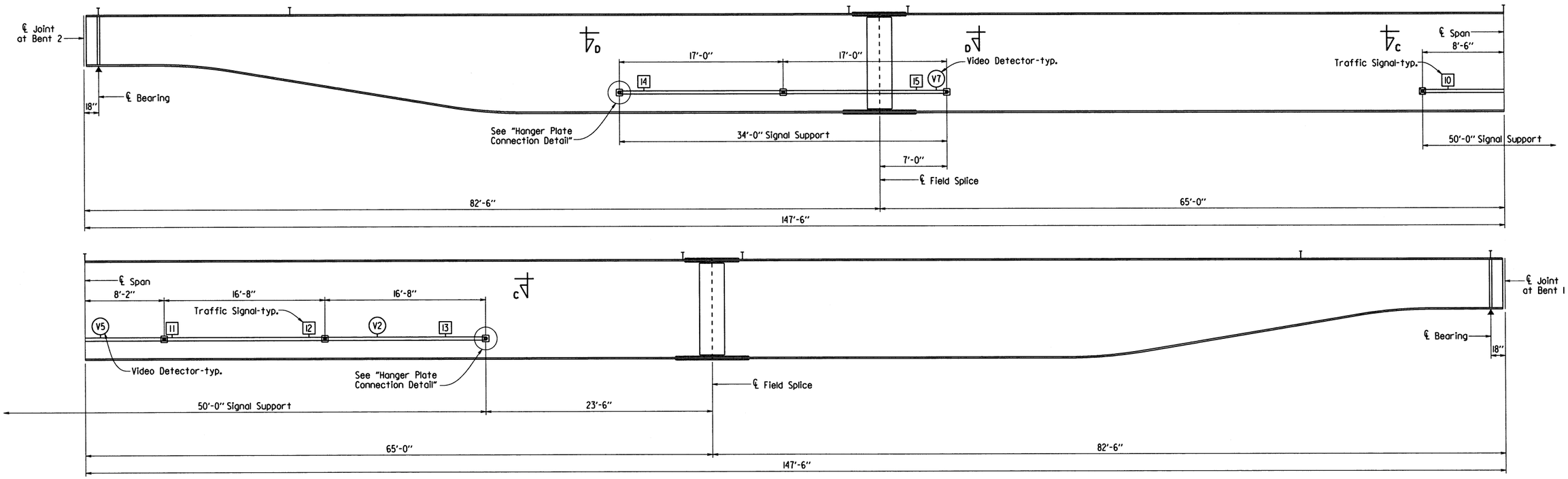
LITTLE ROCK, ARK.

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CHECKED BY: BEF DATE: 6/19/2013 SCALE: AS NOTED
DESIGNED BY: DGM DATE: 10/2009

BRIDGE NO. 07281 DRAWING NO. 59266

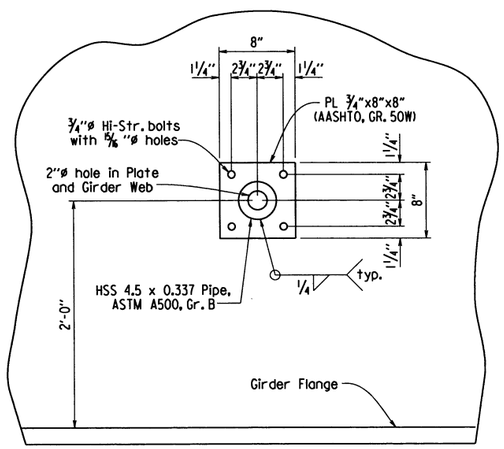
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	280	452
				(1) 07281 - SIGNAL SUPPORT - 59267				



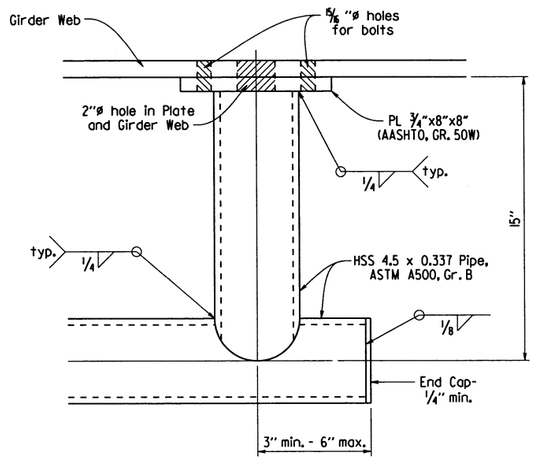
VIEW A-A
GIRDER I SIGNAL SUPPORT DETAIL

Scale: 3/16" = 1'-0"



HANGER PLATE CONNECTION DETAIL

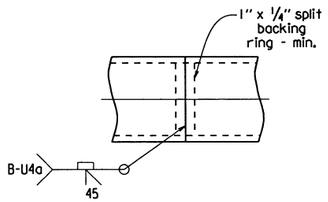
Scale: 1½" = 1'-0"



SUPPORT DETAIL

Scale: 3" = 1'-0"

Note: For Sections C-C & D-D, see Dwg. No. 59268.



SPLICE DETAIL

Scale: 3" = 1'-0"

STATE OF ARKANSAS
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No. 9235
6517
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF SIGNAL SUPPORT
FOR 295' SIMPLE
COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

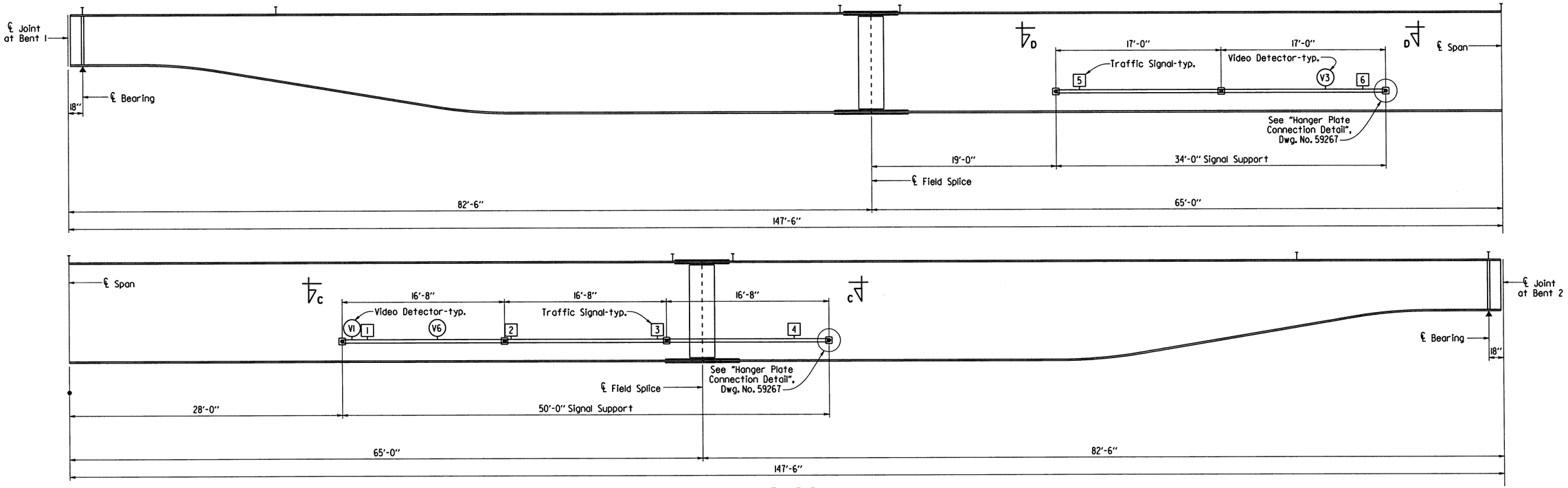
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CHECKED BY: BEE DATE: 6/2013
DESIGNED BY: DGM DATE: 6/2013

FILENAME: bca0903_signal.dgn
SCALE: AS NOTED

BRIDGE NO. 07291 DRAWING NO. 59267

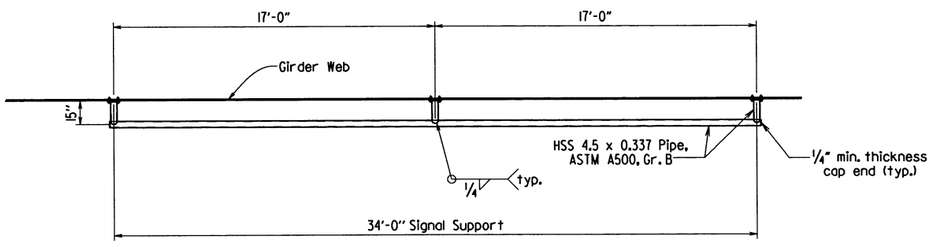
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				6	ARK.			
				JOB NO.		CA0903	283	452
				(1)	07281 - SIGNAL SUPPORT - 59268			



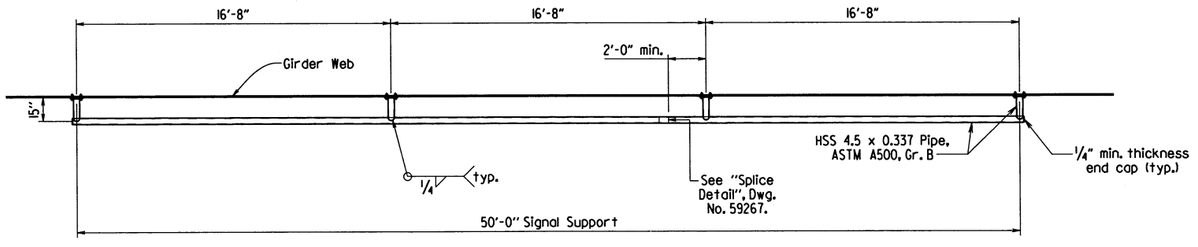
VIEW B-B
GIRDER 9 SIGNAL SUPPORT DETAIL

Scale: 3/16" = 1'-0"



SECTION D-D

Scale: 1/4" = 1'-0"



SECTION C-C

Scale: 1/4" = 1'-0"

STATE OF ARKANSAS
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No. 9235
6-5-17
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SHEET 3 OF 3
DETAILS OF SIGNAL SUPPORT
FOR 295' SIMPLE
COMPOSITE PLATE GIRDER SPAN
HWY. 71B

ROUTE SEC.

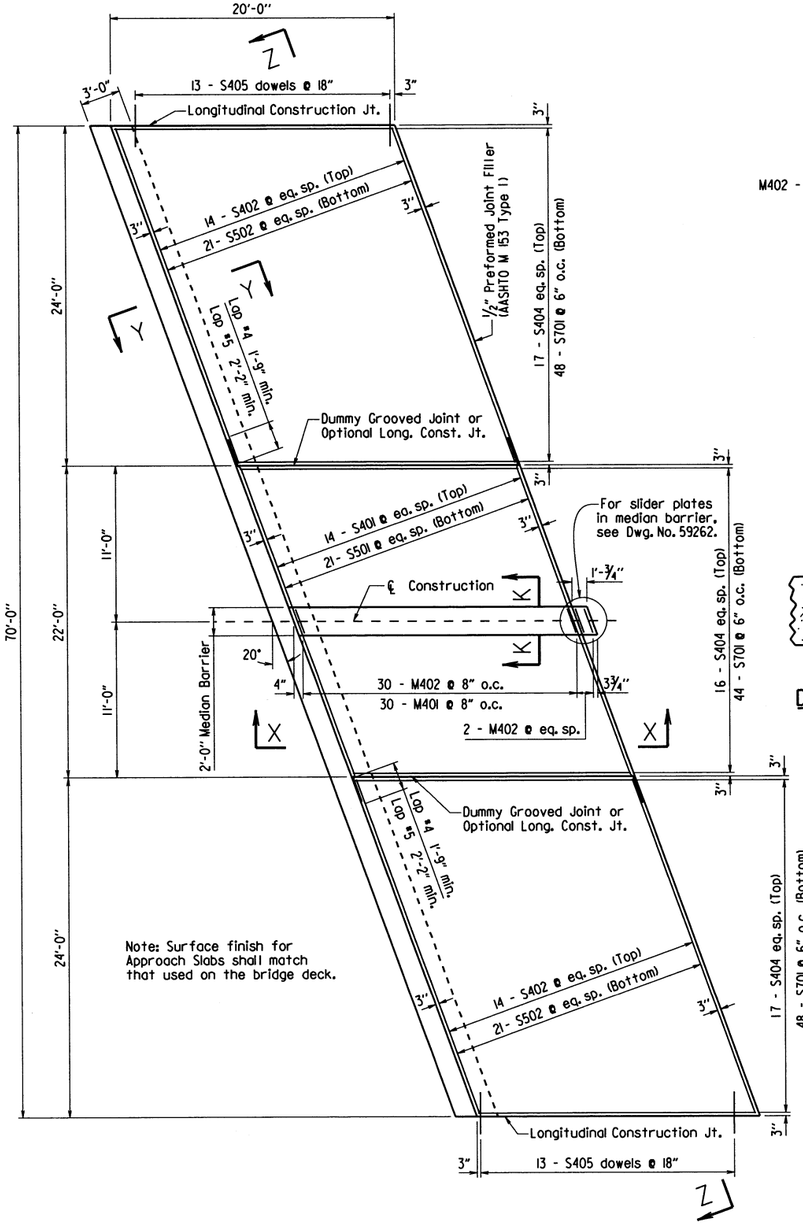
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 6-5-13
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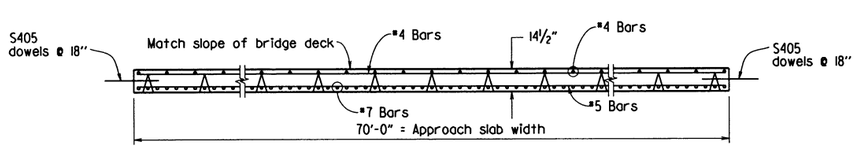
BRIDGE NO. 07281 DRAWING NO. 59268

PRINT DATE: 5/17/2017

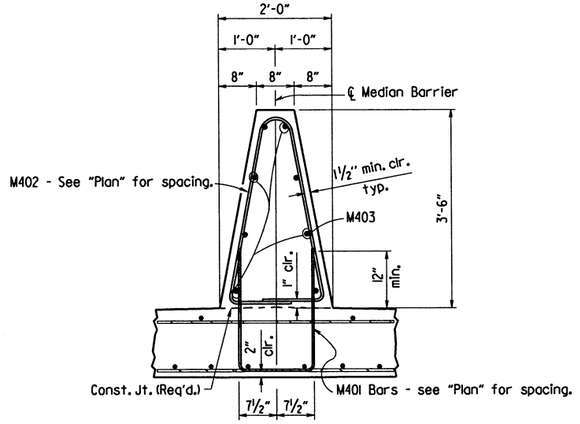
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				6	ARK.			
				JOB NO.		CA0903	282	452
				①		07281 - APPROACH SLAB - 59269		



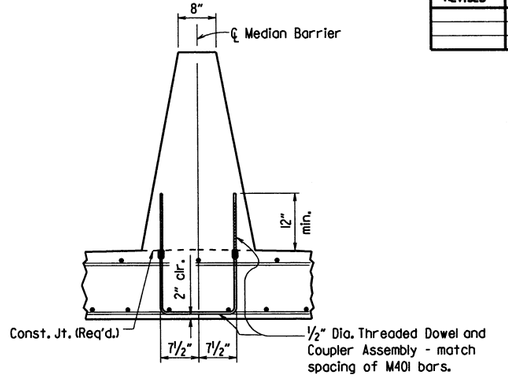
PLAN - APPROACH SLAB
3/16" = 1'-0"



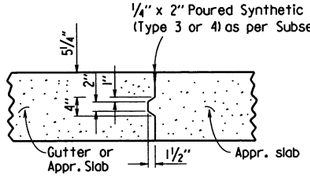
SECTION Z-Z
N.T.S.



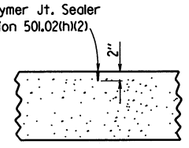
SECTION K-K
½" = 1'-0"



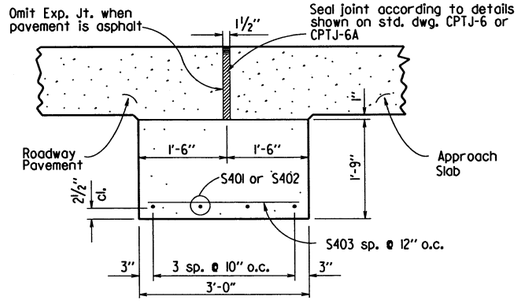
ALTERNATE SECTION K-K
½" = 1'-0"



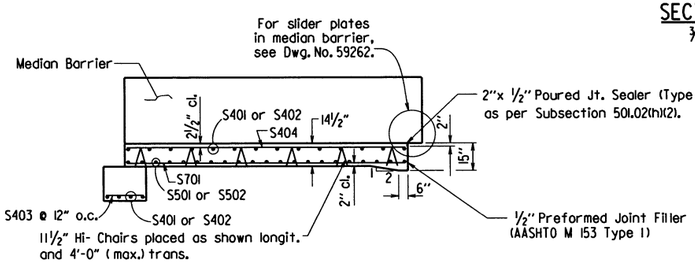
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
¾" = 1'-0"



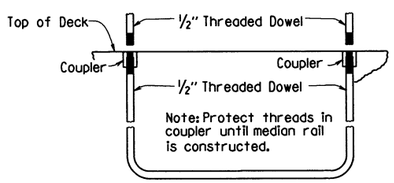
DETAILS OF DUMMY GROOVED JOINT
¾" = 1'-0"



SECTION Y-Y
¾" = 1'-0"



SECTION X-X
N.T.S.

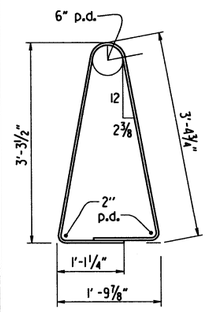


ALTERNATE THREADED DOWEL AND COUPLER ASSEMBLY
No Scale

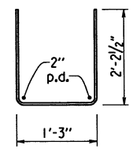
NOTES:
The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar M401. The Threaded Dowel and Coupler Assembly shall consist of a OPL approved mechanical coupler with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the M401 bars. Dowel bars shall be of minimum 60 ksi yield strength and threaded as required.

BAR LIST-PER BRIDGE END

MARK	NO. REQ'D	LENGTH	BENDING DIAGRAMS
S401	18	27'-4"	
S402	36	25'-2"	
S403	75	2'-8"	
S404	50	19'-8"	
S405	26	3'-0"	
S501	21	28'-2"	
S502	42	25'-2"	
S701	140	19'-8"	
M401	30	5'-6"	
M402	32	9'-1"	
M403	8	20'-8"	



M402



M401

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

Reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A with mill test reports.

Type Special Approach Slab will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR APPROACH SLAB - PER BRIDGE END

Reinforcing Steel (lb.)	Concrete (Cu. Yd.)
9540	81.20

STATE OF ARKANSAS
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No. 9235
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6-5-17
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DETAILS OF TYPE SPECIAL 5 APPROACH SLAB HWY. 71B

ROUTE SEC.

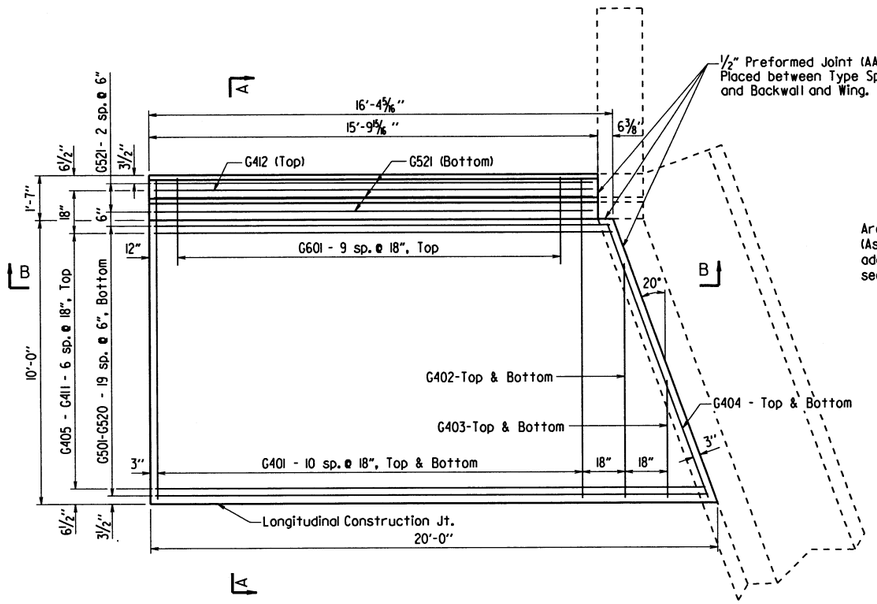
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 08/04/09 FILENAME: bca0903x3_as.dgn
CHECKED BY: BEF DATE: 10/20/13 SCALE: AS NOTED
DESIGNED BY: STD. DATE: —

BRIDGE NO. 07281 DRAWING NO. 59269

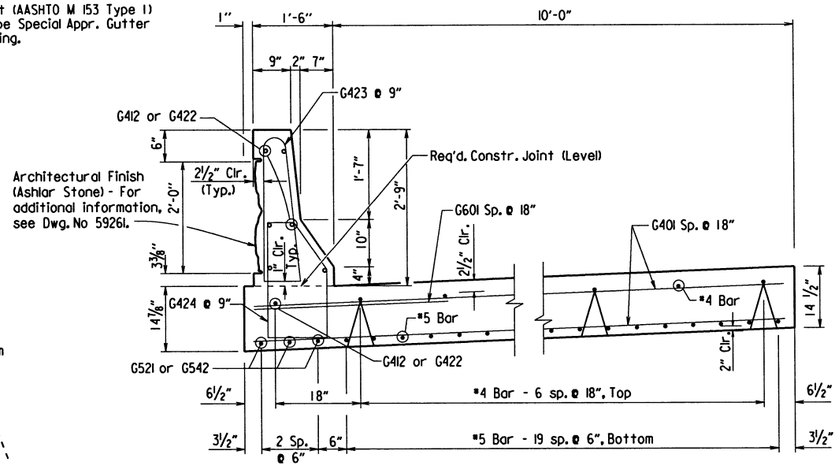
PRINT DATE: 5/17/2017

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.		CA0903	283	452
				①		07281 - APPROACH GUTTER - 59270		



PLAN OF TYPE SPECIAL APPROACH GUTTER

⅜" = 1'-0"

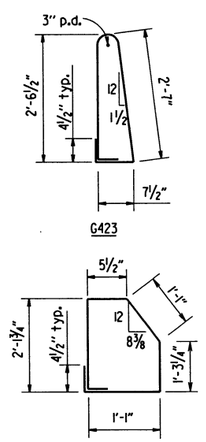


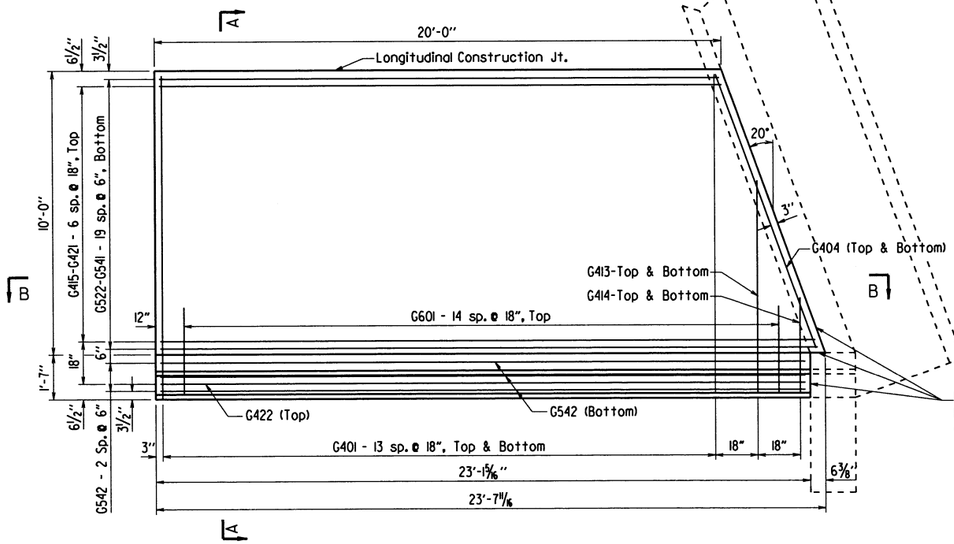
SECTION A-A

N.T.S.

BAR LIST-PER BRIDGE END

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
G401	50	11'-3"	Str.	Dimensions are out to out of bars.
G402	2	8'-3"	Str.	
G403	2	4'-2"	Str.	
G404	4	10-3"	Str.	
G405-G411	1 Each	Var. 16'-2" to 19'-5"	Str.	
G412	7	15'-6"	Str.	
G413	2	7'-6"	Str.	
G414	2	3'-4"	Str.	
G415-G421	1 Each	Var. 19'-10" to 23'-1"	Str.	
G422	7	22'-9"	Str.	
G423	54	6'-4"	2"	
G424	54	6'-5"	2"	
G501-G520	1 Each	Var. 16'-1" to 19'-6"	Str.	
G521	3	15'-6"	Str.	
G522-G541	1 Each	Var. 19'-9" to 23'-2"	Str.	
G542	3	22'-9"	Str.	
G601	25	3'-1"	Str.	

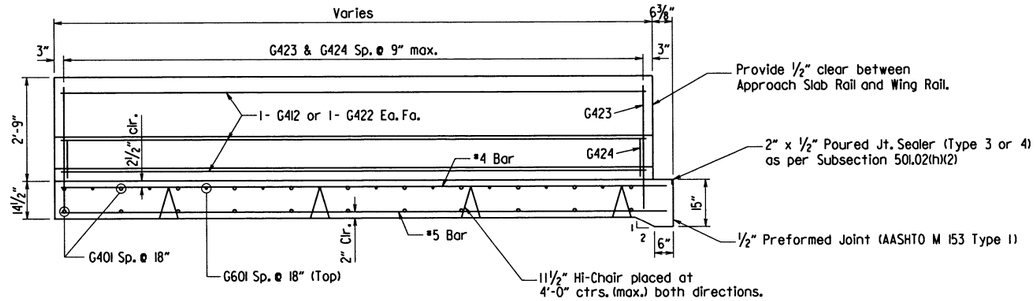




PLAN OF TYPE SPECIAL APPROACH GUTTER

⅜" = 1'-0"

½" Preformed Joint (AASHTO M 153 Type 1) Placed between Type Special Appr. Gutter and Backwall and Wing.



SECTION B-B

N.T.S.

TABLE OF QUANTITIES FOR APPROACH GUTTER - PER BRIDGE END

Reinforcing Steel (lb.)	Concrete (Cu. Yd.)
2310	24.30

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

Reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A with mill test reports.

Type Special Approach Gutter will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
6-5-17
CHARLES R. ELLIS

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 3 APPROACH GUTTER HWY. 71B

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

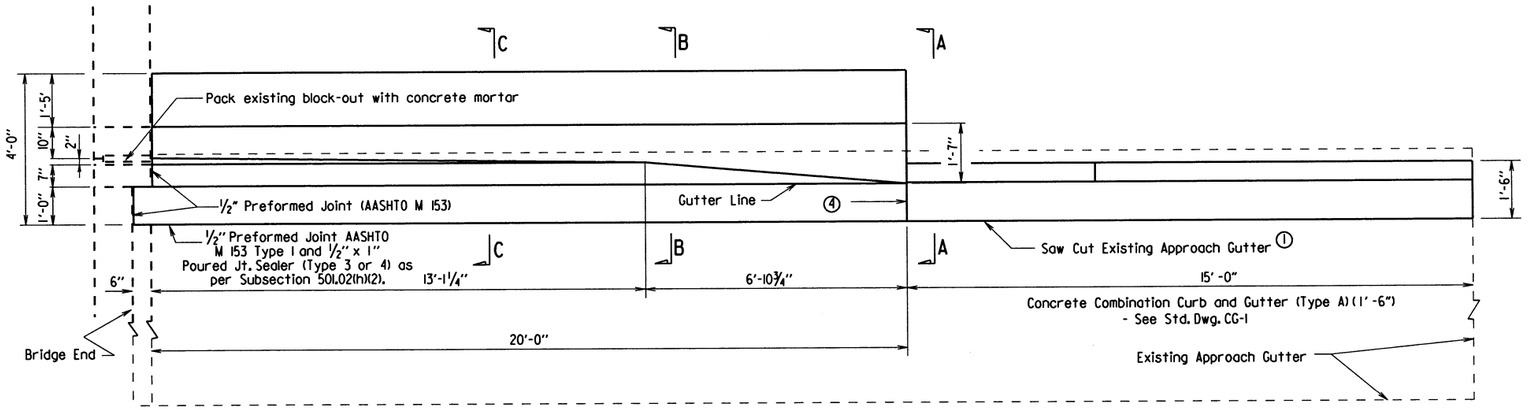
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 8/06/09 FILENAME: bca0903x3_ag.dgn
CHECKED BY: SWP DATE: 1/25/17 SCALE: AS NOTED
DESIGNED BY: STD. DATE:

BRIDGE NO. 07281 DRAWING NO. 59270

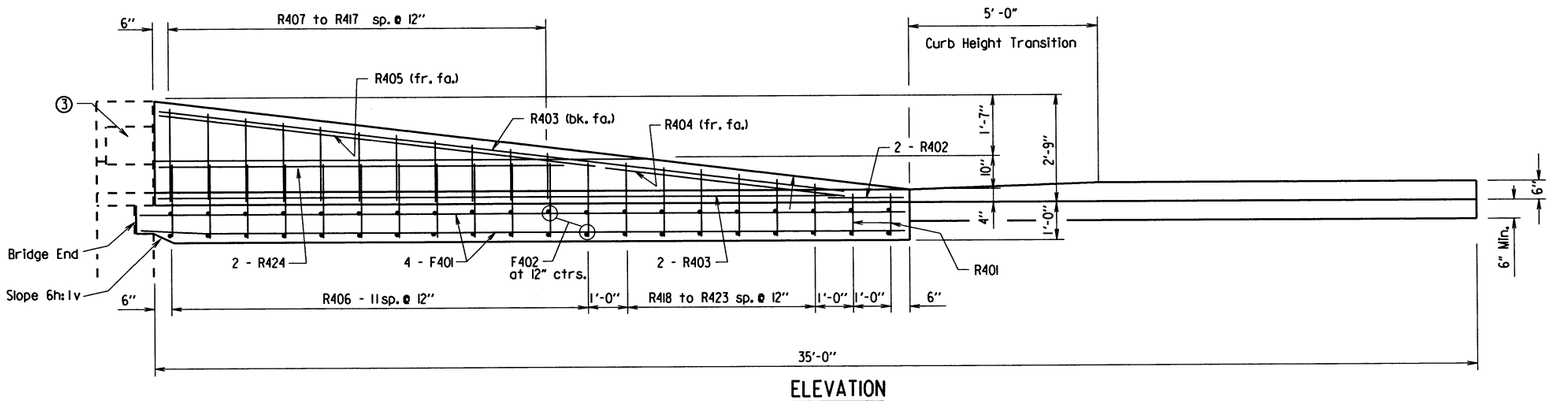
PRINT DATE: 5/17/2017

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.		CA0903	284	452
				①	02196 - APPROACH GUTTER - 59271			



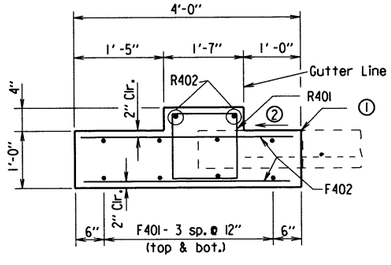
PLAN

Scale: ½" = 1'-0"



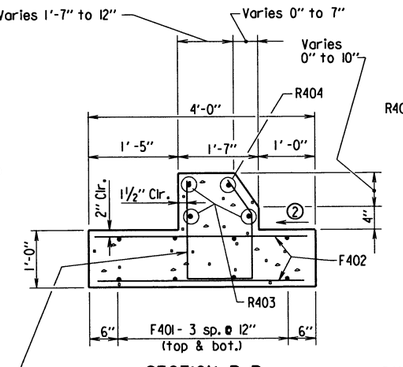
ELEVATION

Scale: ½" = 1'-0"



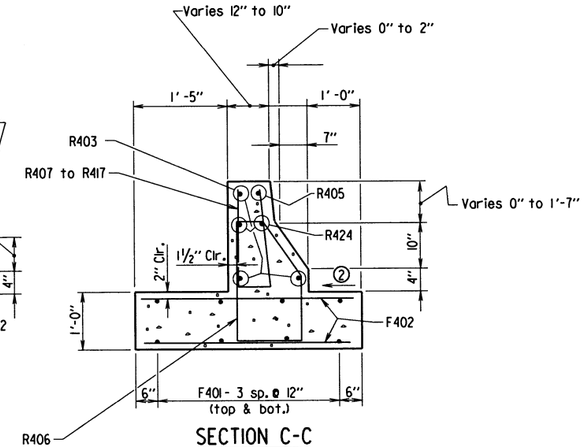
VIEW A-A

Scale: ¾" = 1'-0"



SECTION B-B

Scale: ¾" = 1'-0"



SECTION C-C

Scale: ¾" = 1'-0"

① Saw cut to 1" min depth and remove portion of existing gutter as shown. Retain and extend existing horizontal reinforcing 1'-0" into new construction.

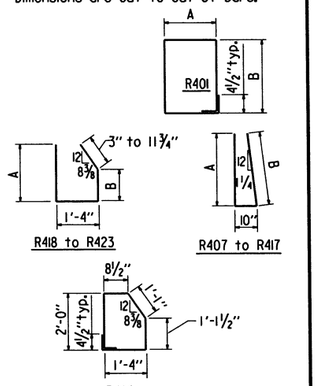
② 2% Slope

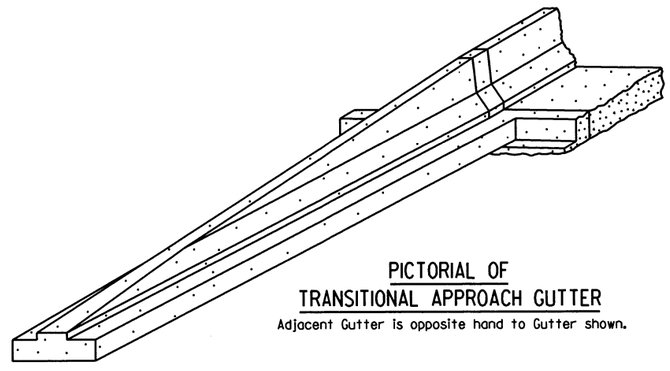
BAR LIST PER GUTTER

MARK	NO. REQ'D.	LENGTH	'A'	'B'	P.D.
F401	8	19'-8"			str.
F402	40	3'-8"			str.
R401	2	5'-2"	1'-4"	1'-1"	2"
R402	2	2'-0"			str.
R403	3	17'-9"			str.
R404	1	5'-0"			str.
R405	1	12'-9"			str.
R406	12	6'-7"			2"
R407 to R417	1 ea.	3'-2" to 5'-7"	1'-3" to 2'-5½"	1'-3" to 2'-5½"	2"
R418 to R423	1 ea.	3'-11" to 5'-3"	1'-4" to 1'-11¼"	1'-1½"	2"
R424	2	10'-9"			str.

BENDING DIAGRAMS

Dimensions are out to out of bars.





PICTORIAL OF TRANSITIONAL APPROACH GUTTER

Adjacent Gutter is opposite hand to Gutter shown.

FOR INFORMATION ONLY SCHEDULE OF QUANTITIES PER GUTTER

CLASS S CONCRETE	REINFORCING STEEL (GRADE 60)
4.40 Cu. Yds.	390 Lbs.

General Notes

Transitional Approach Gutter shall be placed on both sides of the south end of Br. No. 02196. See Rdwy. Plans

All concrete shall be Class S or S(AE) or mixture used for Portland Cement Concrete Pavement unless otherwise noted and shall be poured in the dry. All exposed corners to be chamfered ¾".

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Type Special 4 Approach Gutters shall be measured and paid for in accordance with Section 504. Type A Curb & Gutter shall be paid for at the contract unit price bid per linear foot for Concrete Combination Curb and Gutter (Type A) (1'-6").

STATE OF ARKANSAS
Charles R. Ellis
REGISTERED PROFESSIONAL ENGINEER
No. 9235
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DETAILS OF TYPE SPECIAL 4 APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: J.G.T. DATE: 8-29-07 FILENAME: bca0903xl2_og.dgn

CHECKED BY: CWP DATE: 1-17-17 SCALE: AS NOTED

DESIGNED BY: Std. DATE: —

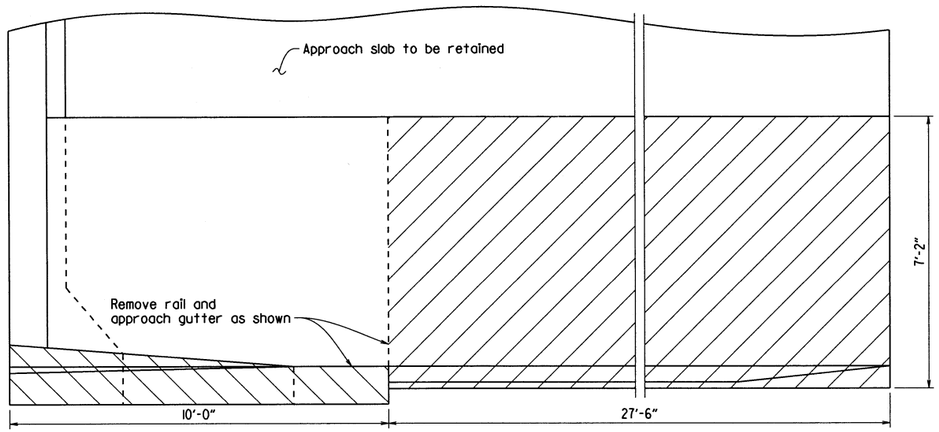
BRIDGE NO. 02196 DRAWING NO. 59271

PRINT DATE: 5/17/2017

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.		CA0903	285	452

① 07279 - RAIL MODIFICATION - 59272

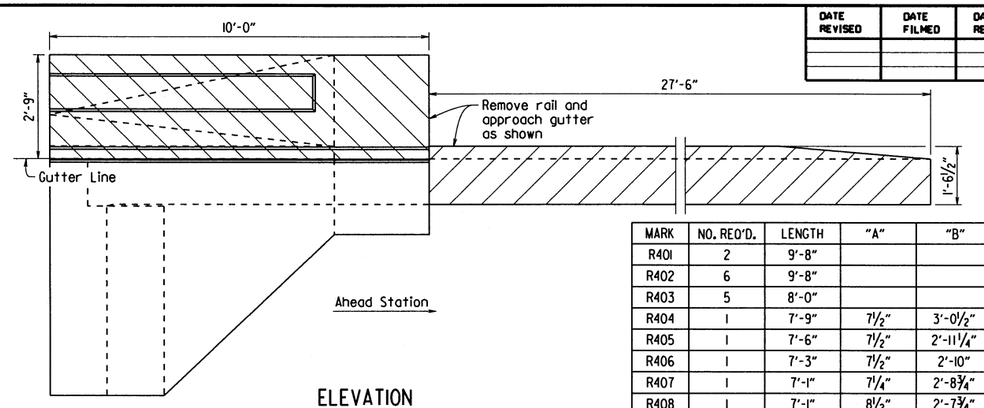


PLAN

Existing rail to be replaced as shown, existing approach gutter to be replaced with concrete barrier wall. See Roadway Plans for additional information.

Reinforcing embedded in wing is to be retained. Any reinforcing steel damaged during removal of rail shall be replaced at the Contractor's expense.

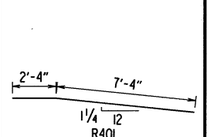
All approach slab and gutter rebar left exposed in the final condition due to partial removal of the existing approach gutter shall be drilled down 2" below the concrete surface and filled with a OPL approved non-shrink grout.



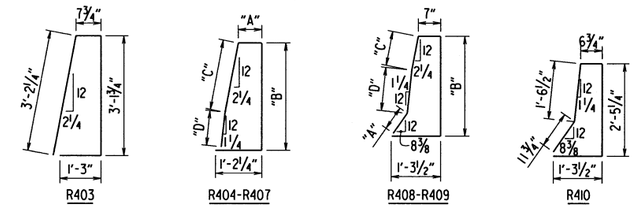
ELEVATION

BAR LIST

MARK	NO. REQ'D.	LENGTH	"A"	"B"	"C"	"D"	P.D.	BENDING DIAGRAMS
R401	2	9'-8"					3"	
R402	6	9'-8"					Str.	
R403	5	8'-0"					2"	
R404	1	7'-9"	7½"	3'-0½"	2'-9¾"	3¼"	2"	
R405	1	7'-6"	7½"	2'-11¼"	2'-4"	7¾"	2"	
R406	1	7'-3"	7½"	2'-10"	1'-10½"	1'-0	2"	
R407	1	7'-1"	7¼"	2'-8¾"	1'-4¾"	1'-4½"	2"	
R408	1	7'-1"	8½"	2'-7¾"	11"	1'-1¾"	2"	
R409	1	6'-10"	10¼"	2'-6½"	5¼"	1'-4¼"	2"	
R410	1	6'-7"					2"	



Dimensions are out to out of bars.

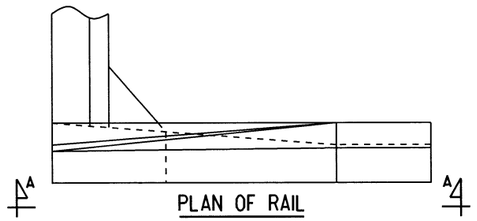


GENERAL NOTES

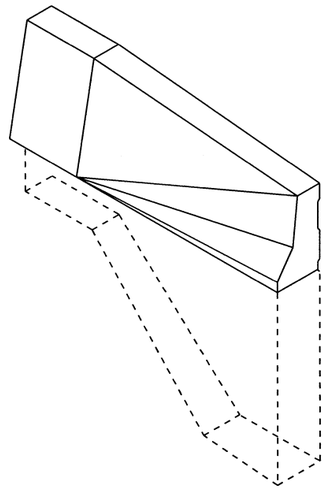
All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

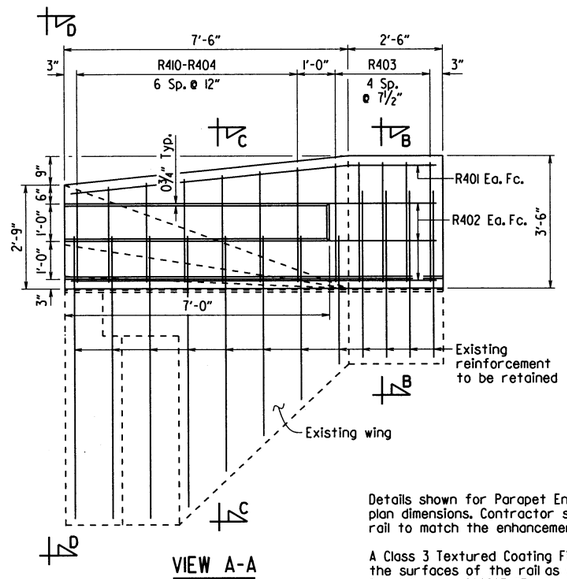
This work and materials shall be paid for as "Modification of Existing Bridge Structure (Bridge No. 07279)".



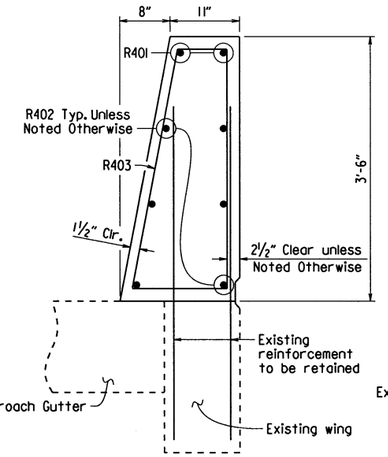
PLAN OF RAIL



ISOMETRIC VIEW OF RAIL

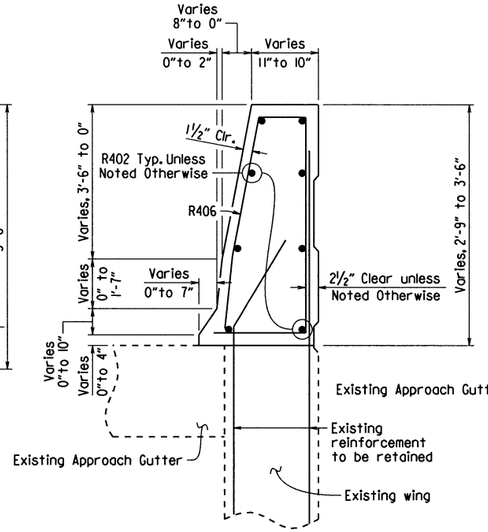


VIEW A-A



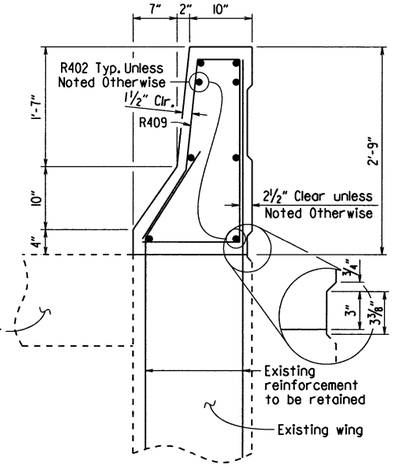
SECTION B-B

½" = 1'-0"



SECTION C-C

½" = 1'-0"



VIEW D-D

½" = 1'-0"

TABLE OF QUANTITIES

Concrete (cu. yds.)	Reinforcing Steel (lbs.)	Class 3 Textured Coating Finish (sq. yd.)
1.4	115	8

For information only

Details shown for Parapet Enhancement are based on plan dimensions. Contractor shall construct the new rail to match the enhancement on existing bridge.

A Class 3 Textured Coating Finish shall be applied to the surfaces of the rail as specified in Special Provision Job CA0903 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3).

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-5-17
BRIDGE ENGINEER

DETAILS OF RAIL MODIFICATION

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: BHS DATE: 9/19/2016 FILENAME: bca0903x0_trl.dgn
CHECKED BY: MW DATE: 5/15/17 SCALE: 1/4" = 1'-0" or As Shown
DESIGNED BY: DATE:

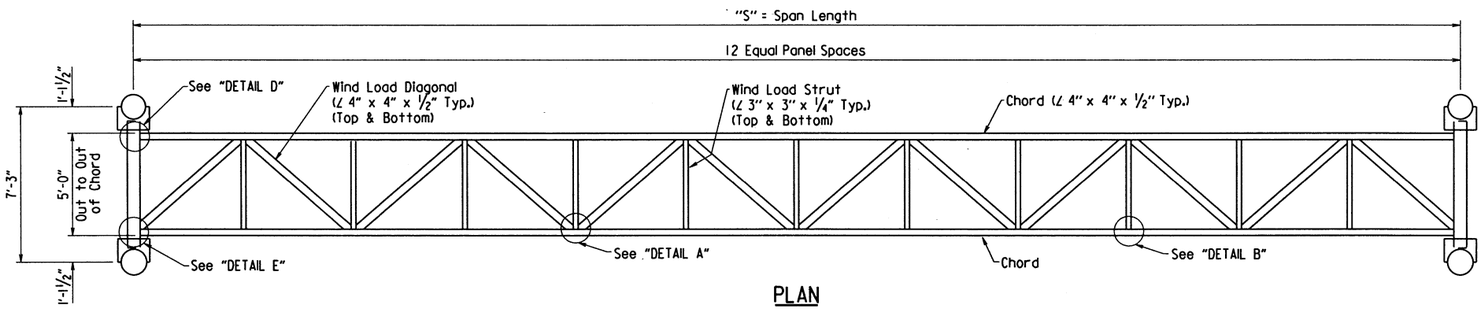
BRIDGE NO. 07279 DRAWING NO. 59272

PRINT DATE: 5/16/2017

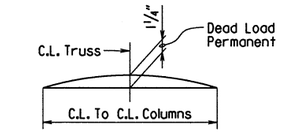
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	286	452
				① SEE TABLE		OVERHEAD SIGN STR.		59273

Notes:
For "View A-A - Foundation A", see Sheet 2 of 5.

For "DETAIL A" thru "DETAIL G" and
"View A-A - Foundation B", see Sheet 3 of 5.



PLAN

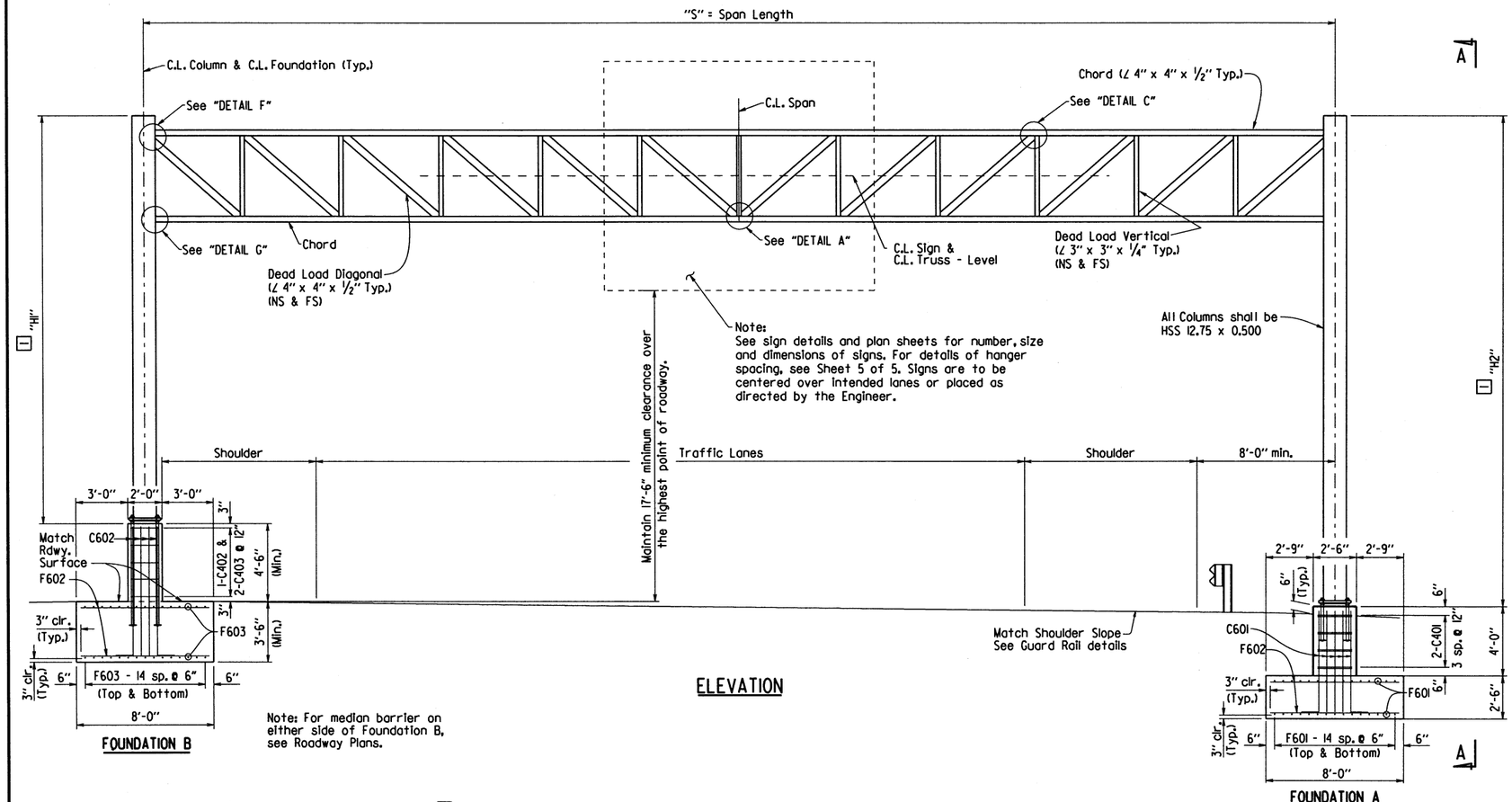


TRUSS CAMBER DIAGRAM

TABLE OF VARIABLES

SIGN STRUCTURE	SPAN LENGTH "S"	FOUNDATION	
		MEDIAN	OUTSIDE SHOULDER
OH-049-04-31	61'-0"	B	A

TABULAR DATA BY: KAW DATE: 3-26-2019
CHECKED BY: SWP DATE: 5-13-19



ELEVATION

FOUNDATION B

Note: For median barrier on either side of Foundation B, see Roadway Plans.

FOUNDATION A

BAR LIST-FOUNDATION A

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C401	8	17'-2"	3"	6'-3", 2'-1", 5" (Typ.), 45°, 5'-1", 12" — C401 C601
C601	46	6'-9"	4½"	
F601	30	16'-6"	Str.	
F602	66	7'-6"	Str.	

BAR LIST-FOUNDATION B

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C402	5	25'-2"	3"	10'-9", 1'-7", 5" (Typ.), 45° — C402
C403	10	18'-2"	3"	7'-3", 1'-7", 5" (Typ.), 45° — C403
C602	76	8'-3"	4½"	7'-5", 12" — C602
F602	70	7'-6"	Str.	
F603	30	17'-6"	Str.	

APPROXIMATE QUANTITIES FOR FOUNDATION (FOR INFORMATION ONLY)

STRUCTURE	CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
FOUNDATION A	16.30	2,045	49
FOUNDATION B	24.67	2,724	30

① Note: The Contractor shall make field measurements to determine the column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (55'-0" to 69'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 55' TO 69' STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

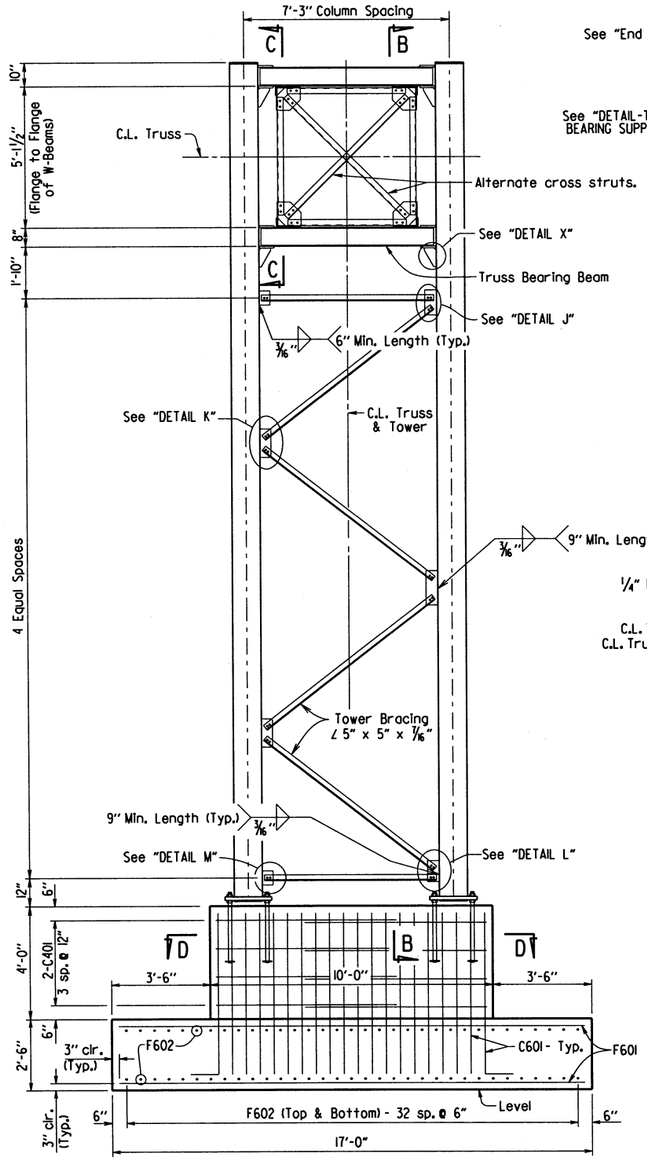
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 7/24/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: TMG DATE: 9/15
FILENAME: OH Sign 55-69.dgn
SCALE: No Scale

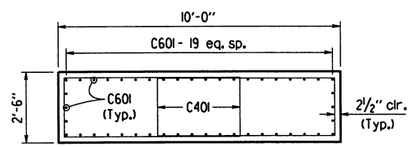
STR. NO. SEE TABLE DRAWING NO. 59273

PRINT DATE: 5/13/2019

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.		CA0903	287	452
				①	SEE TABLE	OVERHEAD SIGN STR.		59274

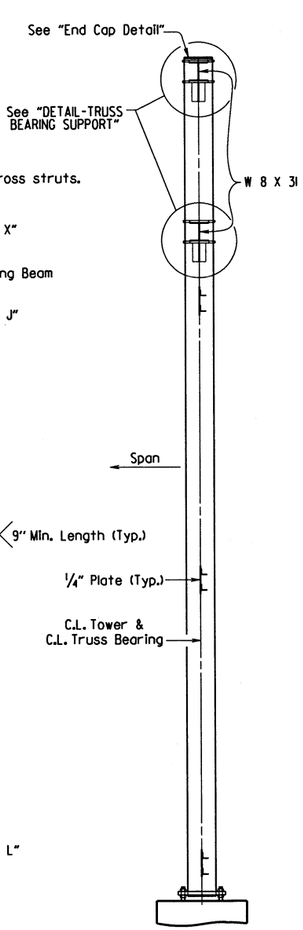


VIEW A-A - FOUNDATION A

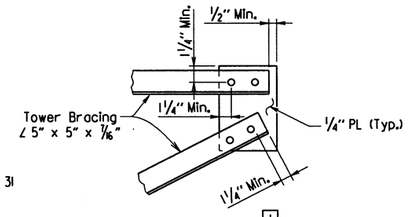


SECTION D-D

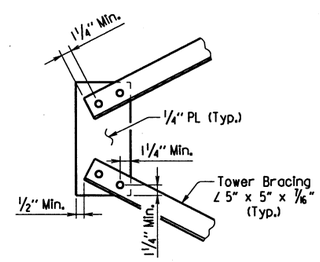
Note: For details of "View A-A - Foundation B", see Sheet 3 of 5.



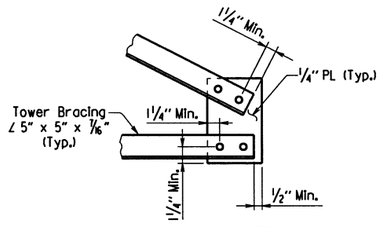
VIEW B-B



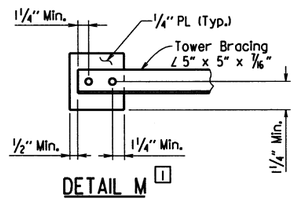
DETAIL J [1]



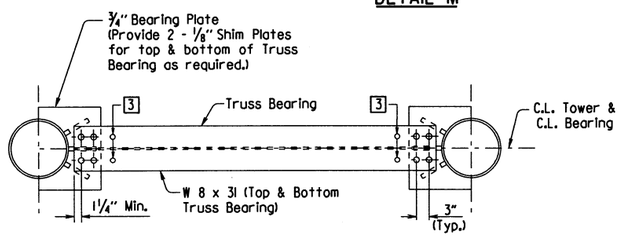
DETAIL K [1]



DETAIL L [1]



DETAIL M [1]

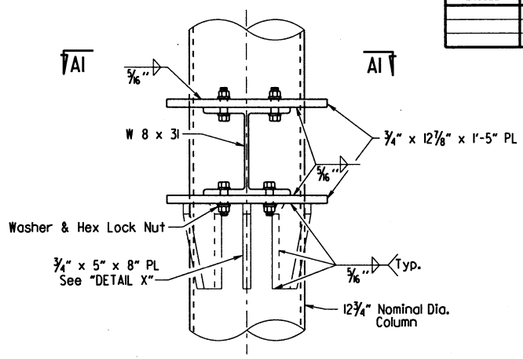


PLAN AT TRUSS BEARING

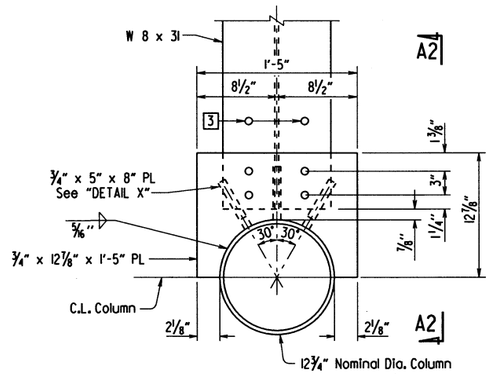
[1] Bolts shall be ¾" ø and open holes shall be 15/16". Minimum center to center bolt spacing shall be 2½". Dimensions shown are typical.

[2] 11/16" x 2" Slotted Hole in Gusset Plate and Chord Angle. Use plate washer on Gusset plate side. 11/16" ø holes in ¾" shim plate and beam flange.

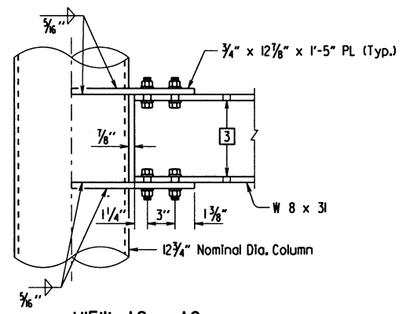
[3] 11/16" ø holes at top and bottom flanges of W 8 x 31.



DETAIL - TRUSS BEARING SUPPORT

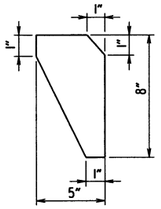


VIEW A1 - A1

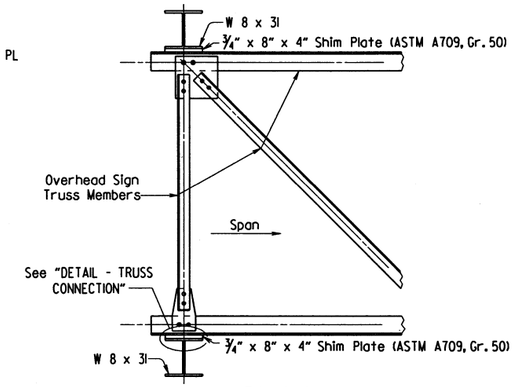


VIEW A2 - A2

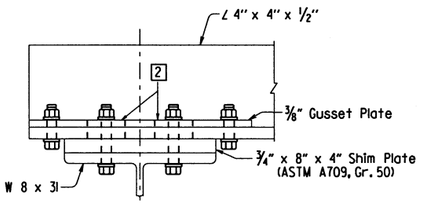
¾" x 5" x 8" Plate not shown for clarity



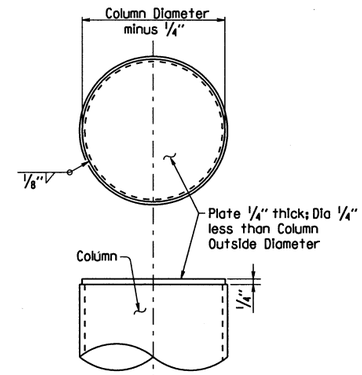
DETAIL X



VIEW C-C



DETAIL - TRUSS CONNECTION



END CAP DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 55' TO 69'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

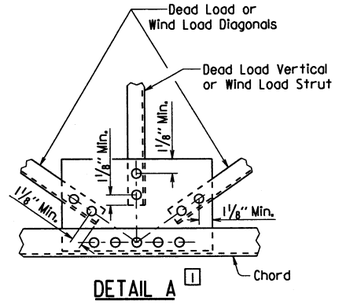
LITTLE ROCK, ARK.

DRAWN BY:	A.M.S.	DATE:	7/24/15	FILENAME:	OH Sign 55-69.dgn
CHECKED BY:	ACP	DATE:	4/8/16	SCALE:	No Scale
DESIGNED BY:	TMG	DATE:	9/15		

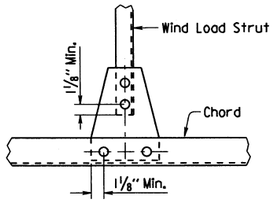
STR. NO. SEE TABLE DRAWING NO. 59274

PRINT DATE: 5/13/2019

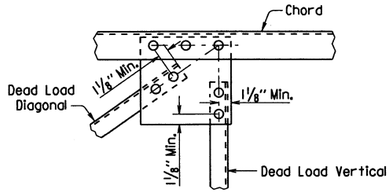
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				6	ARK.			
				JOB NO.		CA0903	288	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59275



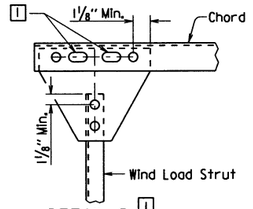
DETAIL A [1]



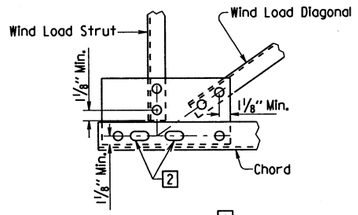
DETAIL B [1]



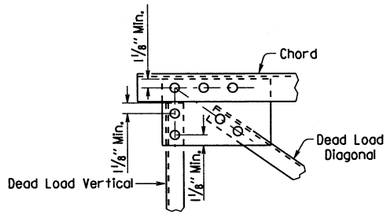
DETAIL C [1]



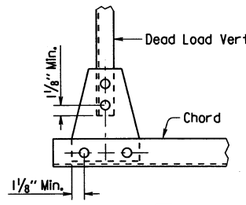
DETAIL D [1]



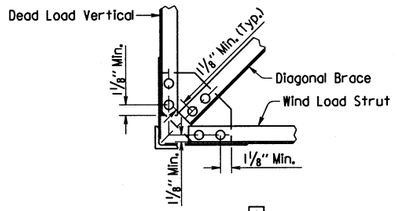
DETAIL E [1]



DETAIL F [1]

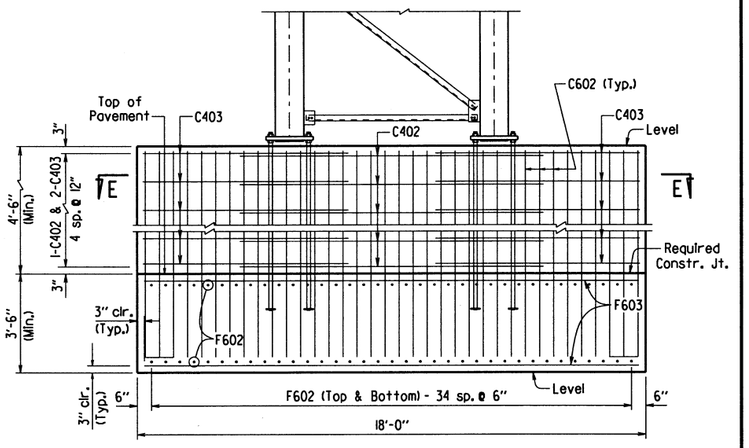


DETAIL G [1]

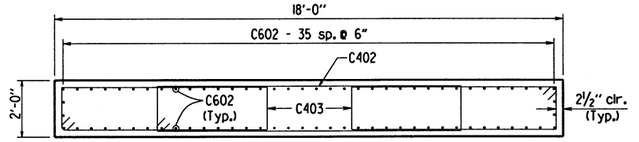


DETAIL N [1]

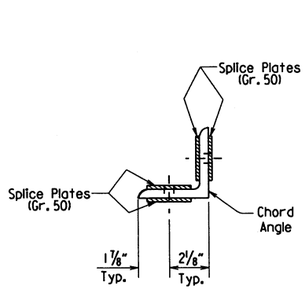
Note:
For details of column not shown, see "View A-A - Foundation A" on Sheet 2 of 5.



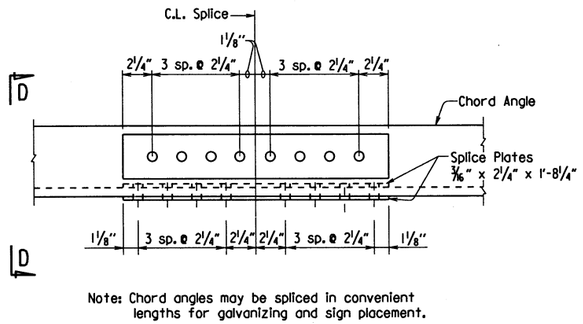
VIEW A-A - FOUNDATION B



SECTION E-E

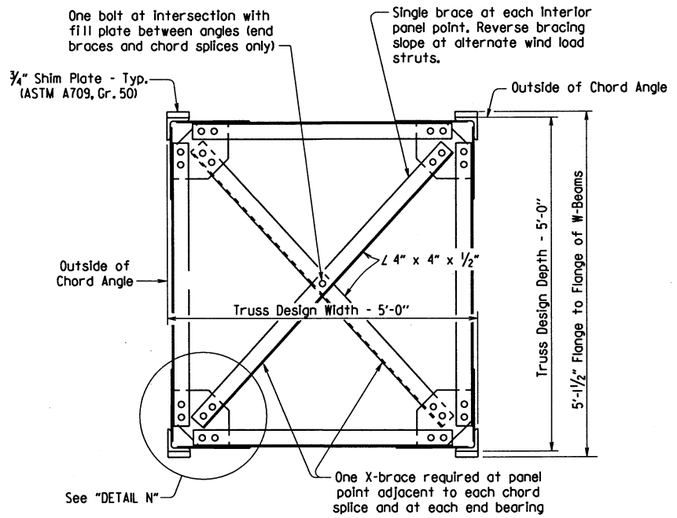


VIEW D-D



Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.

CHORD SPLICE



TRUSS SECTION

Note: Unless otherwise noted, thickness of all Gusset Plates shall be ⅜".

[1] Dimensions shown are typical.

[2] 11/16" x 2" Slotted Holes in Gusset Plate and Chord Angle. Use plate washer on Gusset Plate side. 11/16" ø holes in ¾" shim plate and beam flange.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-10-19

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 55' TO 69' STEEL OVERHEAD SIGN STRUCTURES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

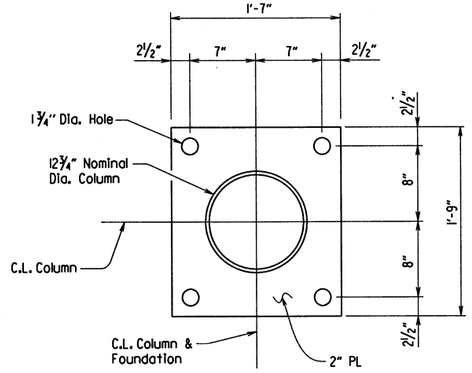
DRAWN BY: A.M.S. DATE: 7/24/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: TMG DATE: 9/15

FILENAME: OH Sign 55-69.dgn
SCALE: No Scale

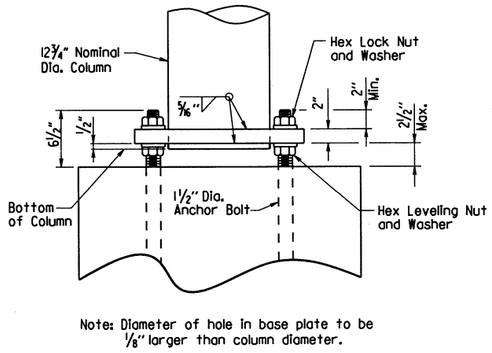
STR. NO. SEE TABLE DRAWING NO. 59275

PRINT DATE: 5/13/2019

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.		CA0903	289	452
				① SEE TABLE		OVERHEAD SIGN STR.		59276

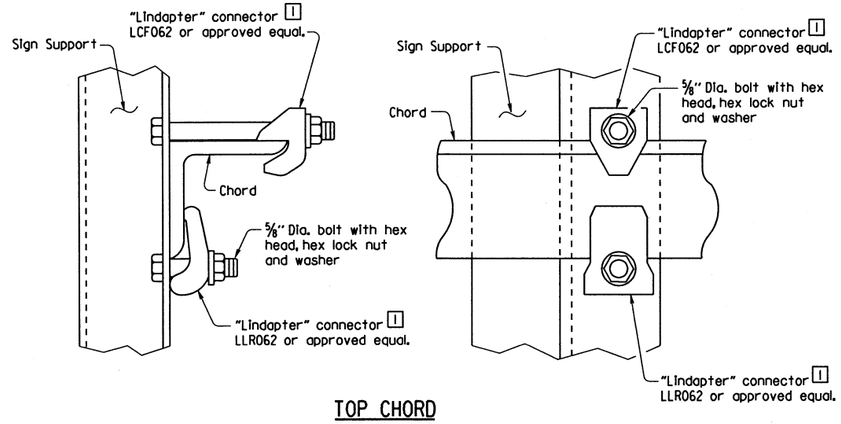


PLAN - COLUMN BASE

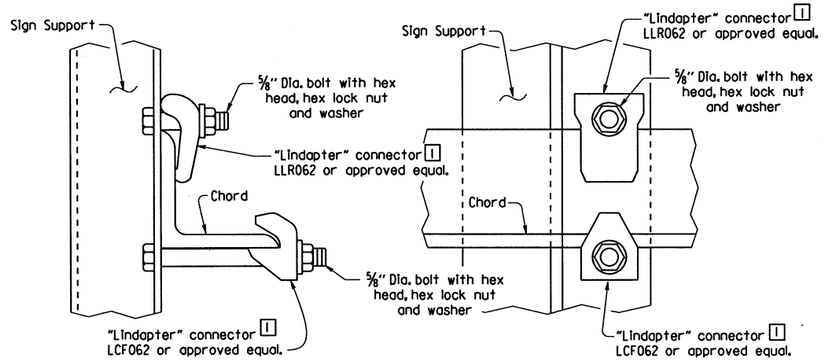


Note: Diameter of hole in base plate to be 1/8" larger than column diameter.

ELEVATION - COLUMN BASE



TOP CHORD

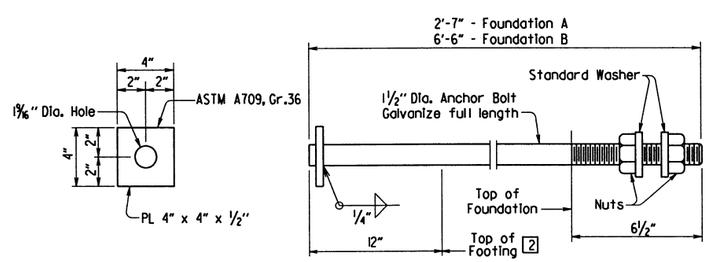


BOTTOM CHORD

[1] All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

Note: Install all support connectors clear of the gusset plates and splice locations.

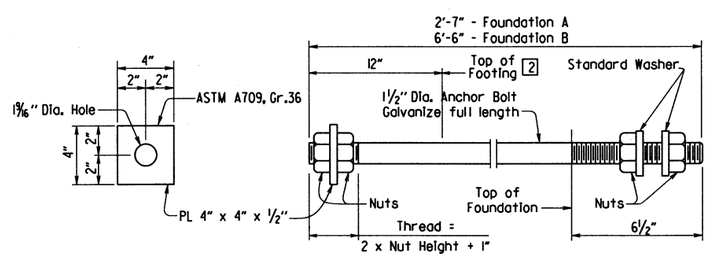
DETAILS OF SIGN SUPPORT CONNECTION TO TRUSS



Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

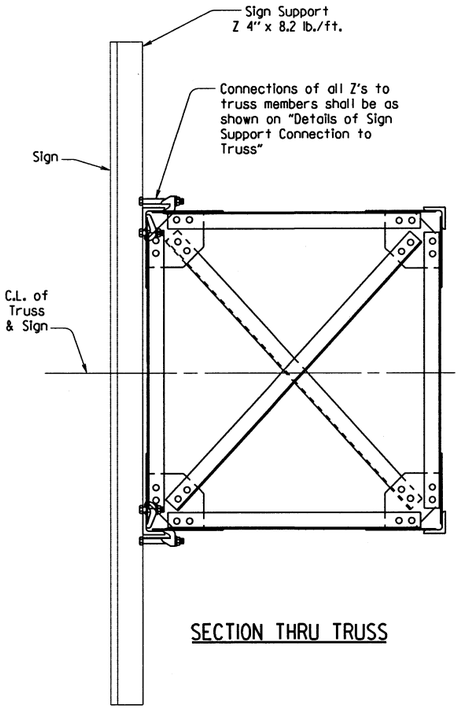
[2] Foundation B Only

ANCHOR BOLT DETAIL

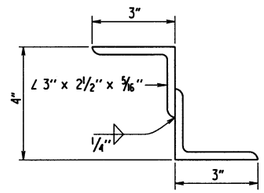


Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

ALTERNATE ANCHOR BOLT DETAIL



SECTION THRU TRUSS



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
E-14119
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 55' TO 69'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 7/24/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: TMG DATE: 9/15
FILENAME: OH Sign 55-69.dgn
SCALE: No Scale

STR. NO. SEE TABLE DRAWING NO. 59276

PRINT DATE: 5/14/2019

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.		CA0903	296	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59211

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition, 2013 with current interim revisions.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet. Use of additional sign area must be approved by the Engineer. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	ASTM A709, Grade 50 (Fy = 50,000 psi)
(1) Pipe:	ASTM A139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A500, Gr. B (Fy = 42,000 psi), ASTM A501, Gr. B (Fy = 50,000 psi), ASTM A714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-Shapes:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM F3125, Grade A325, Type I
Locknuts - Approved Type:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H
Washers:	ASTM F436
Nuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

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 the 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.

All steel shall be galvanized according to Subsection 807.19. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

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. All welding shall conform to Subsection 807.26 except welding of tubular sections shall conform to AWS D1.1 Structural Welding Code.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

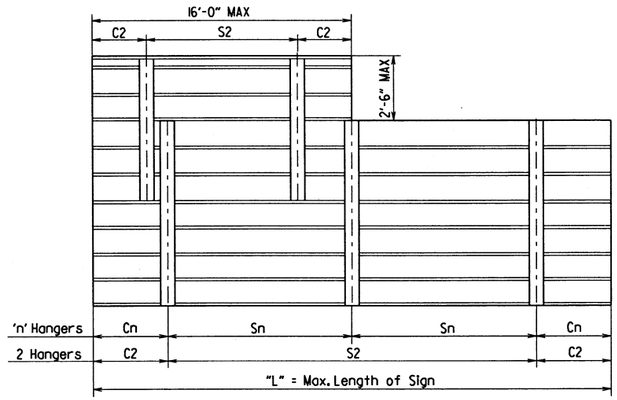
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ⅝" diameter and open holes shall be 11/16". Bolt spacing shall be 2¼" for ⅞" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM F3125, Gr. A325 Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM F3125, Gr. A325 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07. Anchor bolts shall be pretensioned in accordance with Special Provision Job No. CA0903 "Steel Sign Structures".

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Sign Structure". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



Note: See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

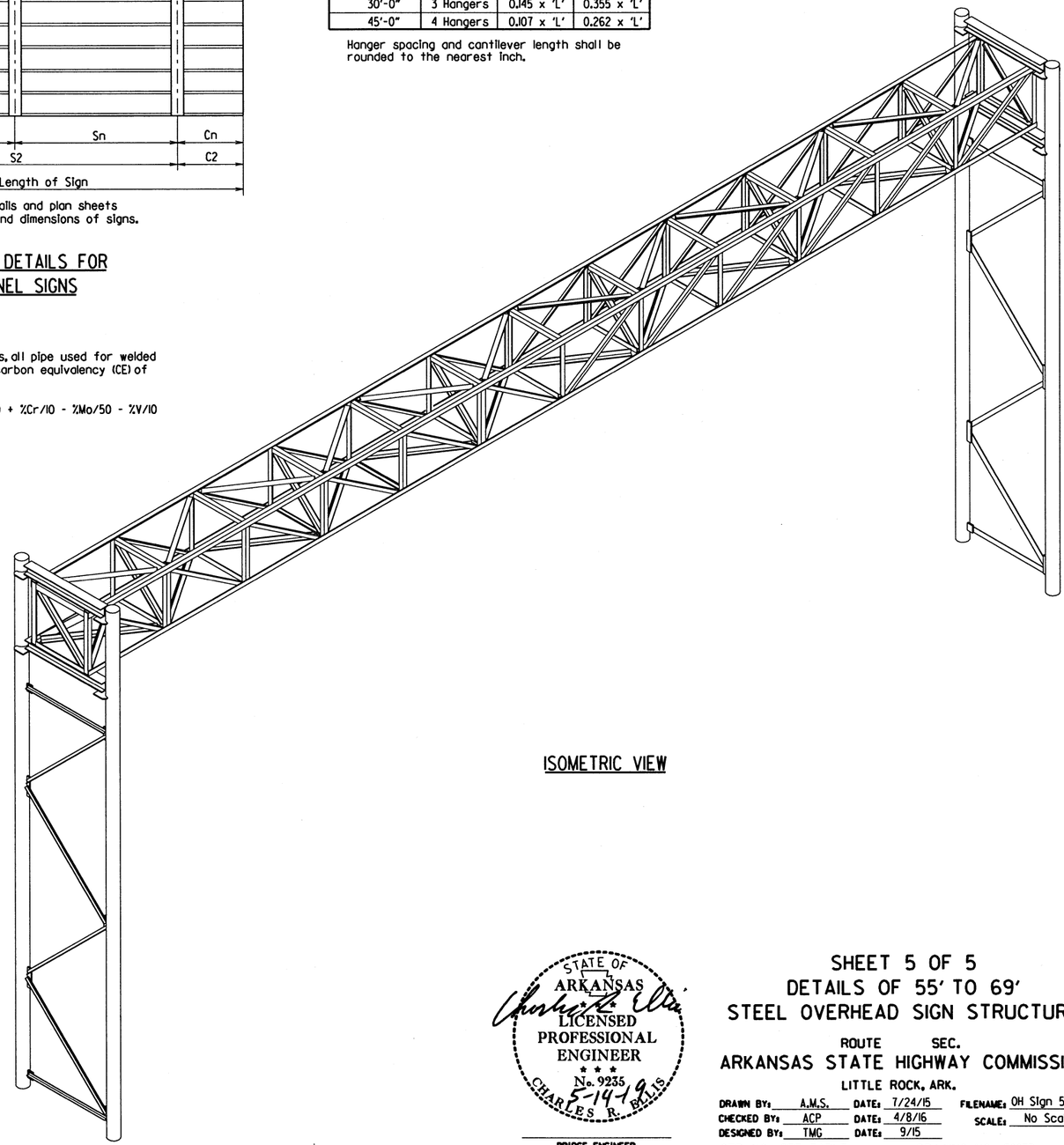
(1) In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation:

CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21 x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'
45'-0"	4 Hangers	0.107 x 'L'	0.262 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.



ISOMETRIC VIEW

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 55' TO 69'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 7/24/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: TMG DATE: 9/15
FILENAME: OH Sign 55-69.dgn
SCALE: No Scale

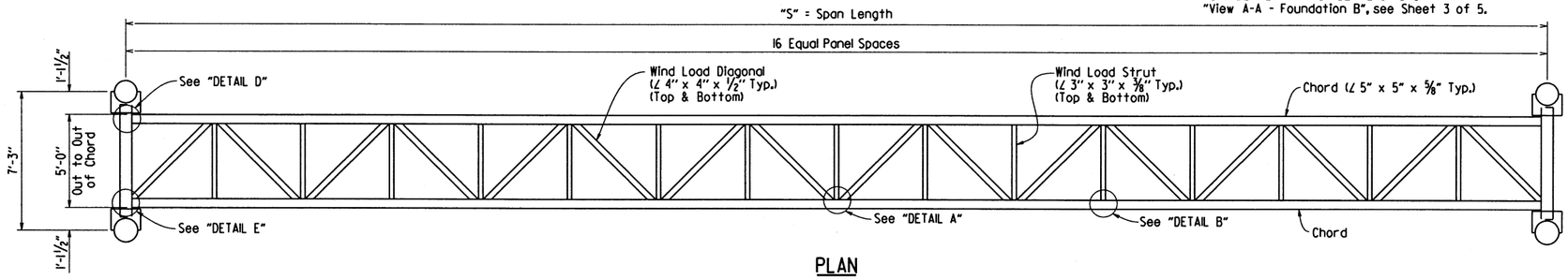
STR. NO. SEE TABLE DRAWING NO. 59211

PRINT DATE: 5/14/2019

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.		CA0903	291	452
				①	SEE TABLE	OVERHEAD SIGN STR.		59671

Notes:
For "View A-A - Foundation A", see Sheet 2 of 5.

For "DETAIL A" thru "DETAIL G" and "View A-A - Foundation B", see Sheet 3 of 5.



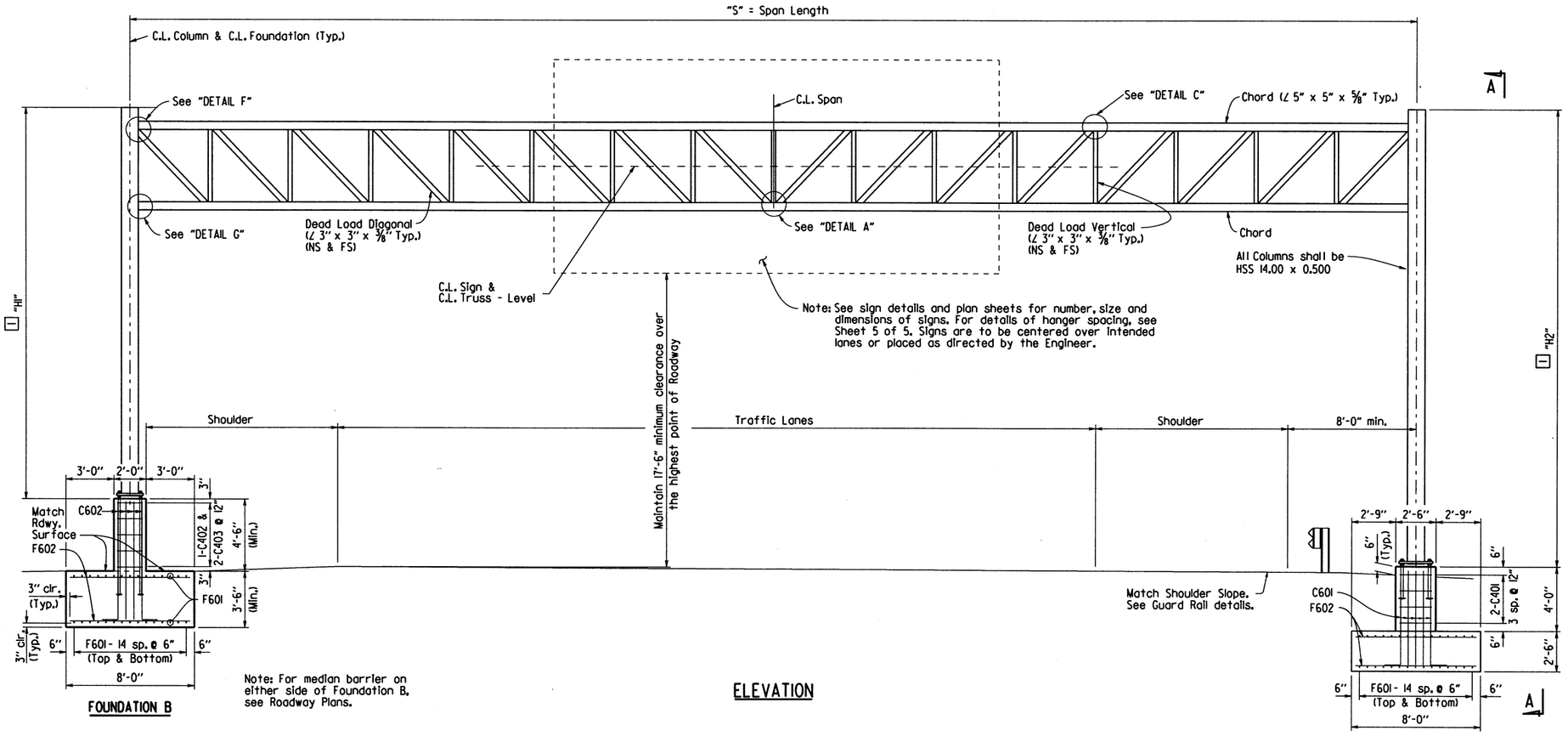
PLAN

[1] Note: The Contractor shall make field measurements to determine the column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (70'-0" to 85'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

TABLE OF VARIABLES

SIGN STRUCTURE	SPAN LENGTH "S"	FOUNDATION	
		MEDIAN	OUTSIDE SHOULDER
OH-049-04-32	74'-0"	A	A

TABULAR DATA BY: KAW DATE: 3-26-2019
CHECKED BY: SWP DATE: 5-13-19



ELEVATION

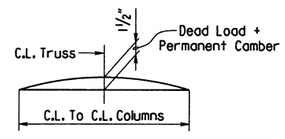
FOUNDATION B

Note: For median barrier on either side of Foundation B, see Roadway Plans.

FOUNDATION A

APPROXIMATE QUANTITIES FOR FOUNDATION (FOR INFORMATION ONLY)

STRUCTURE	CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
FOUNDATION A	17.22	2,161	51
FOUNDATION B	24.67	2,748	30



TRUSS CAMBER DIAGRAM

BAR LIST-FOUNDATION B

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C402	10	25'-2"	3"	10'-9", 1'-7", 5" (Typ.), 45° — C402
C403	5	18'-2"	3"	7'-3", 1'-7", 5" (Typ.), 45° — C403
C602	76	8'-3"	4½"	7'-5", 12" — C602
F601	30	17'-6"	Str.	
F602	70	7'-6"	Str.	

BAR LIST-FOUNDATION A

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C401	8	18'-2"	3"	6'-9", 2'-1", 5" (Typ.), 45° — C401
C601	48	6'-9"	4½"	5'-11", 12" — C601
F601	30	17'-6"	Str.	
F602	70	7'-6"	Str.	

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-13-19
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS FOR 70' TO 85' STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

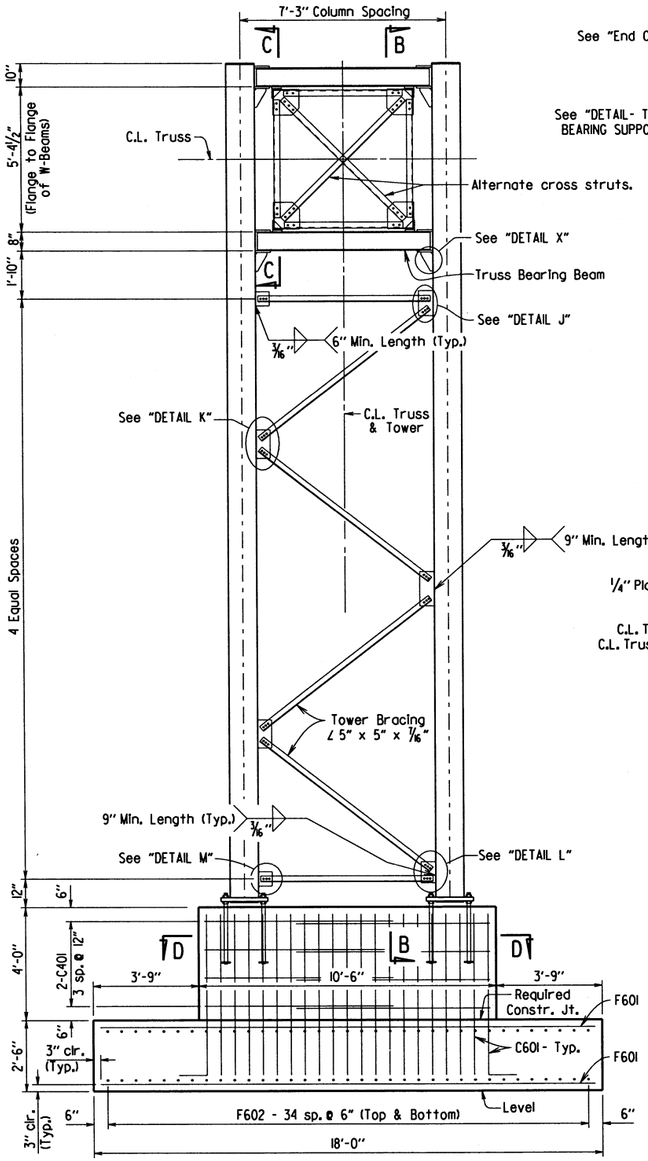
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CHECKED BY: KWY DATE: 4/8/16
DESIGNED BY: RBR DATE: 8/11

FILENAME: OH Sign 70-85.dgn
SCALE: No Scale

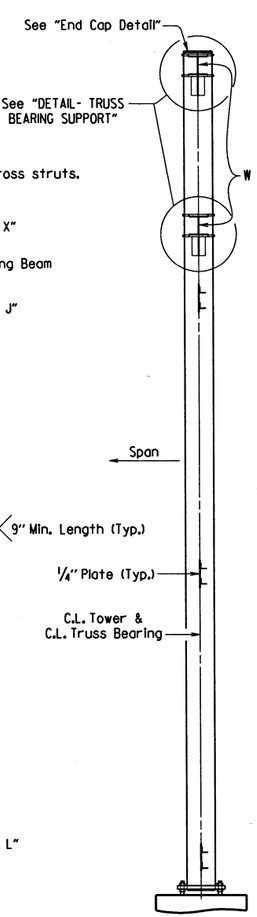
STR. NO. SEE TABLE DRAWING NO. 59671

PRINT DATE: 5/13/2019

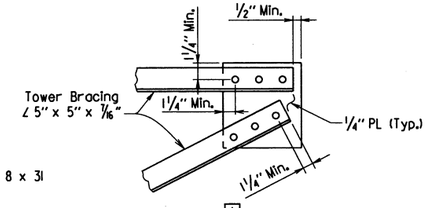
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				6	ARK.			
				JOB NO.		CA0903	292	452
				① SEE TABLE		OVERHEAD SIGN STR.		59672



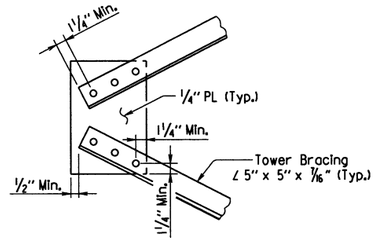
VIEW A-A - FOUNDATION A



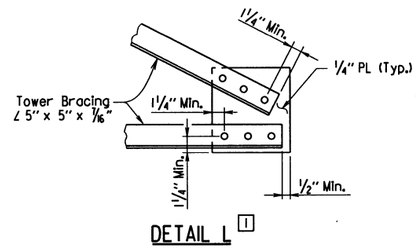
VIEW B-B



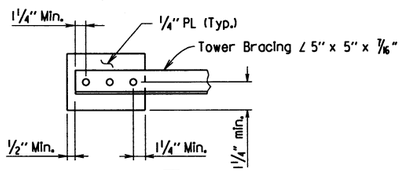
DETAIL J [1]



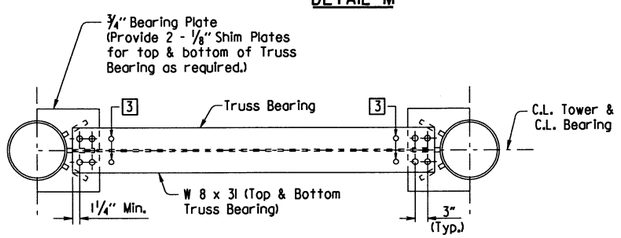
DETAIL K [1]



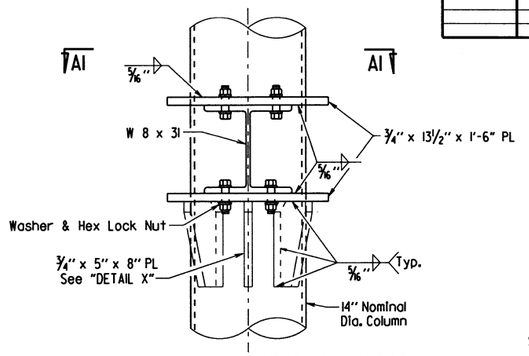
DETAIL L [1]



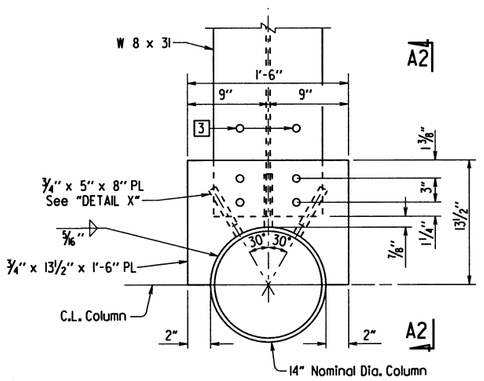
DETAIL M [1]



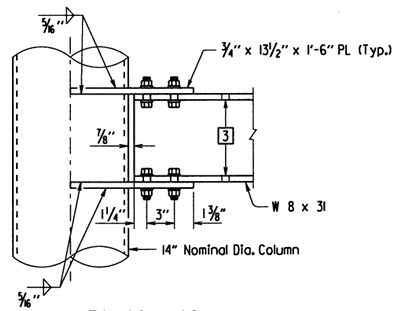
PLAN AT TRUSS BEARING



DETAIL - TRUSS BEARING SUPPORT

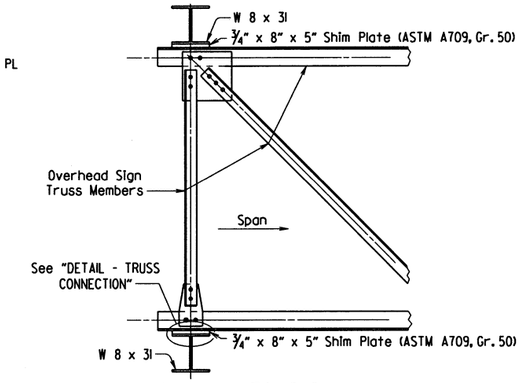


VIEW A1 - A1

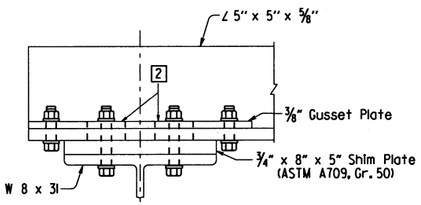


VIEW A2 - A2

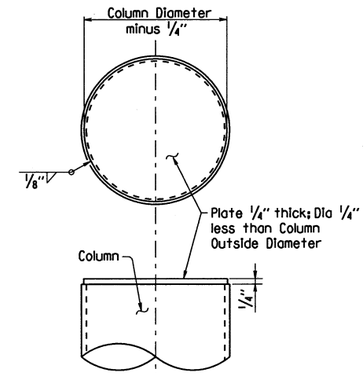
¾" x 5" x 8" Plate not shown for clarity



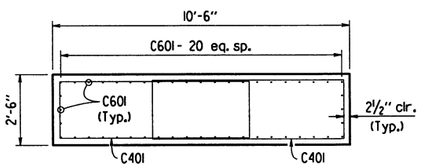
VIEW C-C



DETAIL - TRUSS CONNECTION

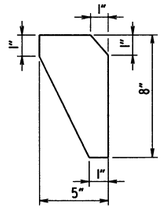


END CAP DETAIL



SECTION D-D

Note: For details of "View A-A - Foundation B", see Sheet 3 of 5.



DETAIL X

[1] Bolts shall be ¾" ø and open holes shall be 15/16". Minimum center to center bolt spacing shall be 2½". Dimensions shown are typical.

[2] 11/16" x 2" Slotted Hole in Gusset Plate and Chord Angle. Use plate washer on Gusset plate side. 11/16" ø holes in ¾" shim plate and beam flange.

[3] 11/16" ø holes at top and bottom flanges of W 8 x 31.

STATE OF ARKANSAS
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5-14-19
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SHEET 2 OF 5
DETAILS OF 70' TO 85'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

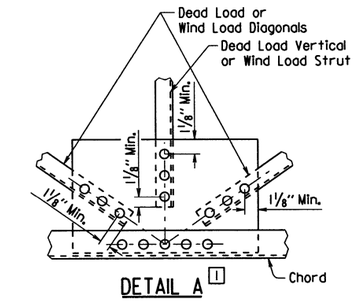
LITTLE ROCK, ARK.

DRAWN BY: ACP	DATE: 01/08/16	FILENAME: OH Sign 70-85.dgn
CHECKED BY: KWY	DATE: 4/8/16	SCALE: No Scale
DESIGNED BY: RBR	DATE: 8/11	

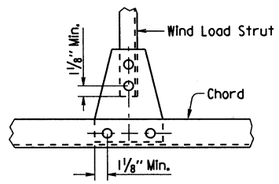
STR. NO. SEE TABLE DRAWING NO. 59672

PRINT DATE: 5/13/2019

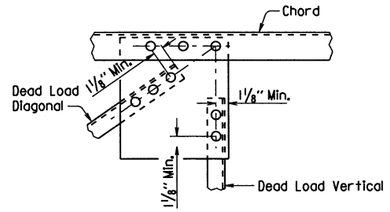
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	293	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59673



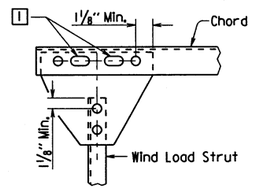
DETAIL A [1]



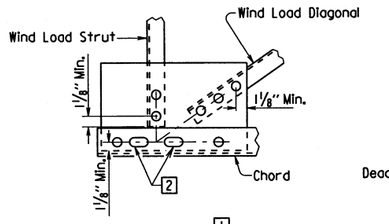
DETAIL B [1]



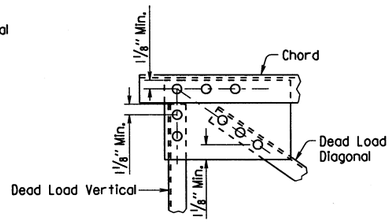
DETAIL C [1]



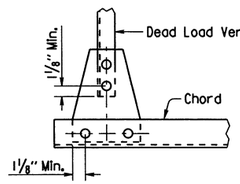
DETAIL D [1]



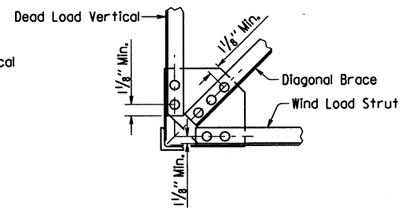
DETAIL E [1]



DETAIL F [1]

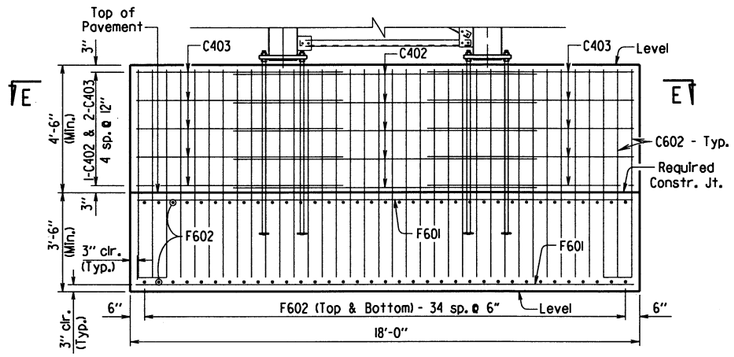


DETAIL G [1]

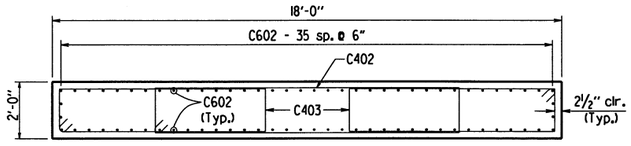


DETAIL N [1]

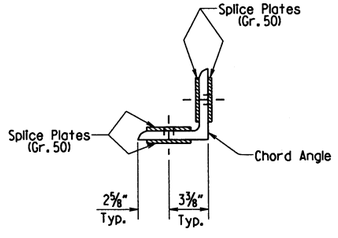
Note:
For details of column not shown, see "View A-A - Foundation A" on Sheet 2 of 5.



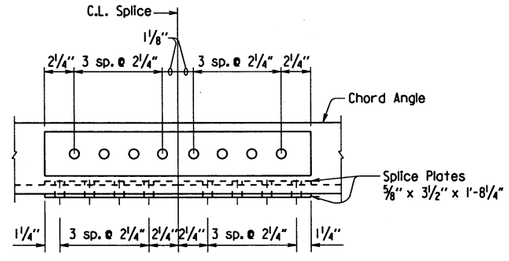
VIEW A-A - FOUNDATION B



SECTION E-E

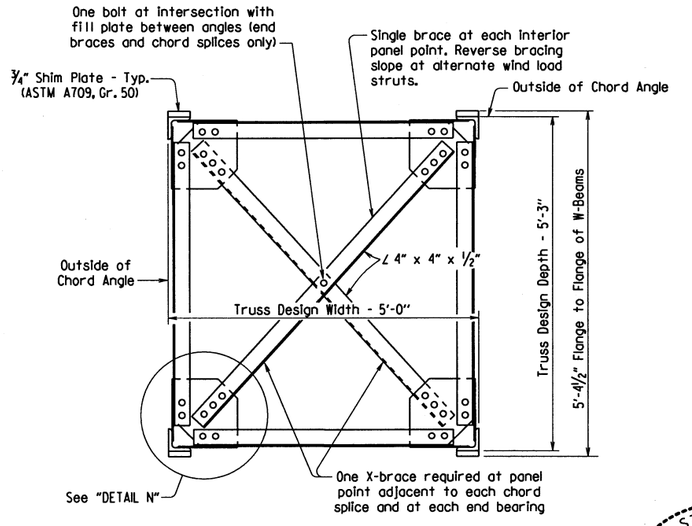


VIEW D-D



Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.

CHORD SPLICE



TRUSS SECTION

Note: Unless otherwise noted, thickness of all Gusset Plates shall be ⅜".

[1] Dimensions shown are typical.

[2] 11/16 " x 2" Slotted Holes in Gusset Plate and Chord Angle. Use plate washer on Gusset Plate side. 11/16 " ø holes in ¾" shim plate and beam flange.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 70' TO 85'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

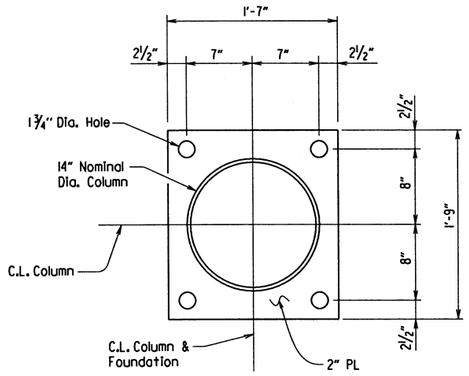
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 01/08/16 FILENAME: OH Sign 70-85.dgn
CHECKED BY: KWY DATE: 4/8/16 SCALE: No Scale
DESIGNED BY: RBR DATE: 8/11

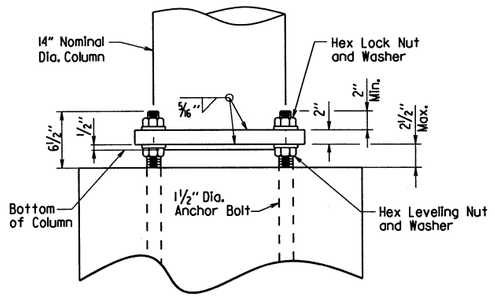
STR. NO. SEE TABLE DRAWING NO. 59673

PRINT DATE: 5/13/2019

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.		CA0903	294	452
				① SEE TABLE		OVERHEAD SIGN STR.		59674

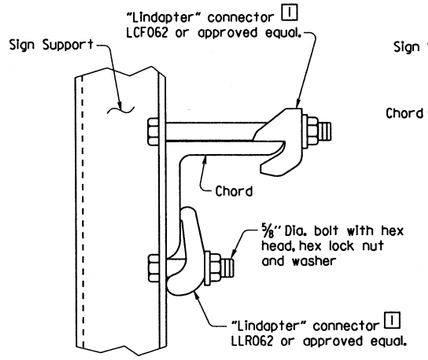


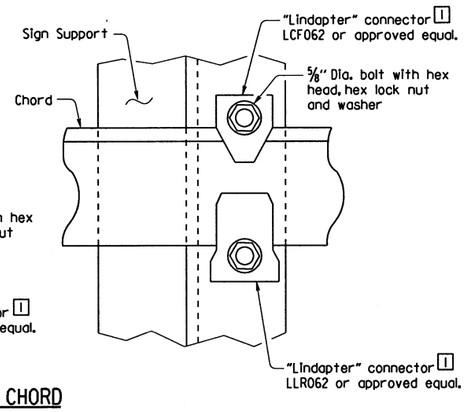
PLAN - COLUMN BASE



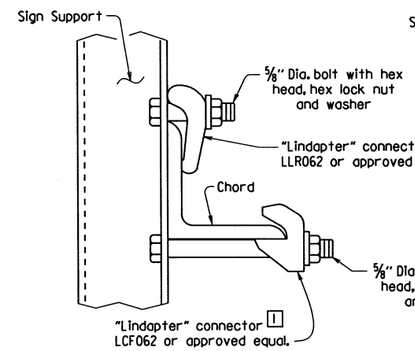
Note: Diameter of hole in base plate to be 1/8" larger than column diameter.

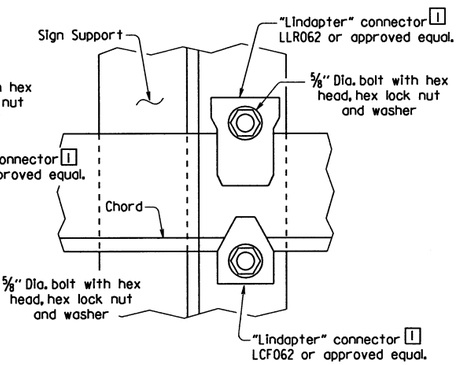
ELEVATION - COLUMN BASE





TOP CHORD



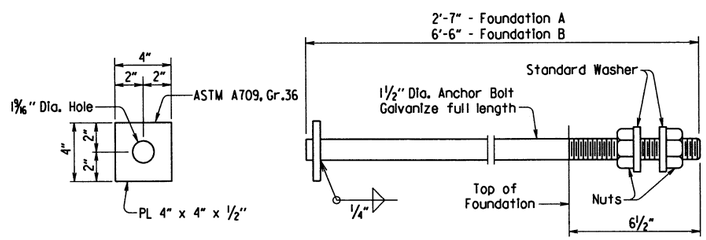


BOTTOM CHORD

[1] All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

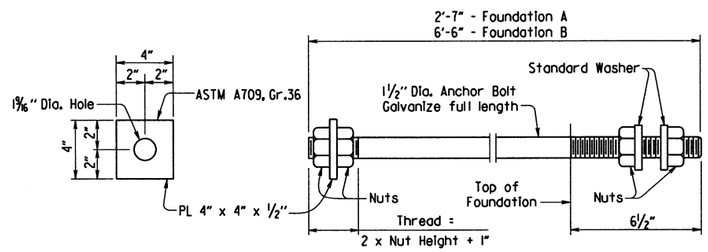
Note: Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTION TO TRUSS



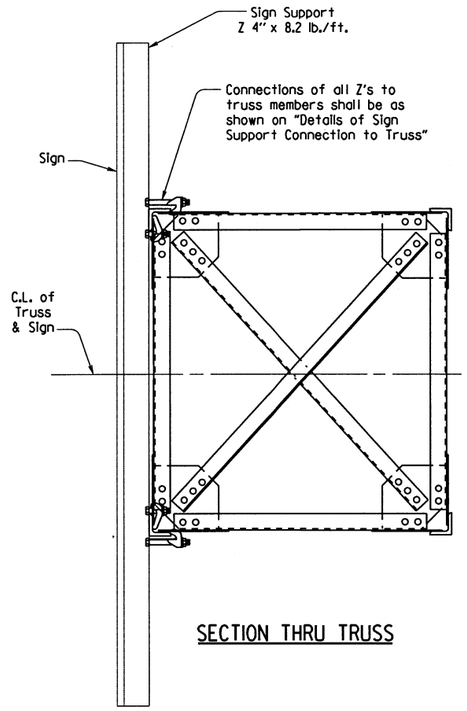
Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

ANCHOR BOLT DETAIL

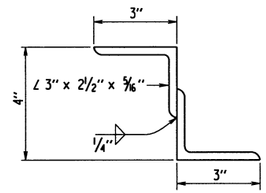


Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

ALTERNATE ANCHOR BOLT DETAIL



SECTION THRU TRUSS



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5/14/19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 70' TO 85'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 01/08/16
CHECKED BY: KWY DATE: 4/8/16
DESIGNED BY: RBR DATE: 8/11
FILENAME: OH Sign 70-85.dgn
SCALE: No Scale

STR. NO. SEE TABLE DRAWING NO. 59674

PRINT DATE: 5/14/2019

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.		CA0903	295	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59675

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition, 2013 with current interim revisions.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet. Use of additional sign area must be approved by the Engineer. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	ASTM A709, Grade 50 (Fy = 50,000 psi)
[1] Pipe:	ASTM A139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A500, Gr. B (Fy = 42,000 psi), ASTM A501, Gr. B (Fy = 50,000 psi), ASTM A714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-Shapes:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM F3125, Grade A325, Type I
Locknuts - Approved Type:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H
Washers:	ASTM F436
Nuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

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 the 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.

All steel shall be galvanized according to Subsection 807.19. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than 1/2" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

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. All welding shall conform to Subsection 807.26 except welding of tubular sections shall conform to AWS D1.1 Structural Welding Code.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

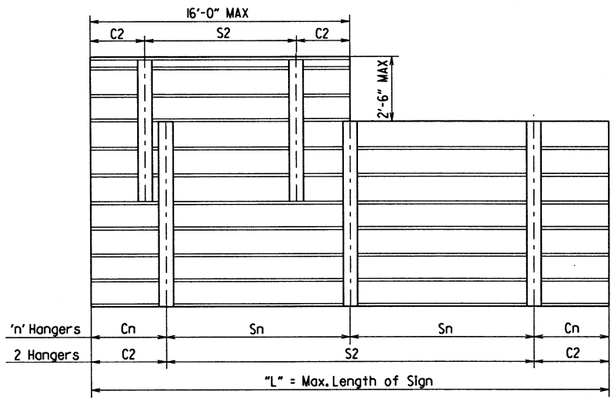
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be 5/8" diameter and open holes shall be 11/16". Bolt spacing shall be 2 1/4" for 5/8" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM F3125, Gr. A325 Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM F3125, Gr. A325 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07. Anchor bolts shall be pretensioned in accordance with Special Provision Job No. CA0903 "Steel Sign Structures".

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Sign Structure". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



Note: See sign details and plan sheets for number, size and dimensions of signs.

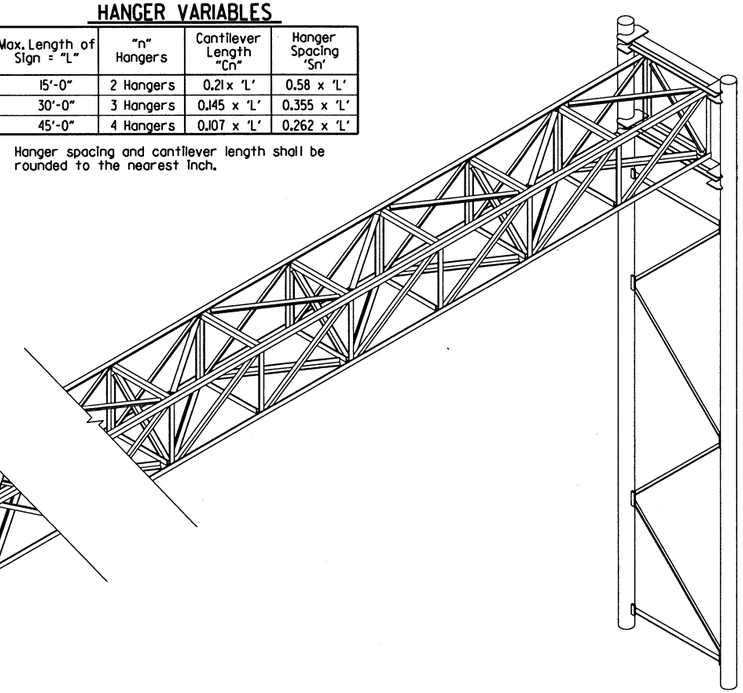
HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

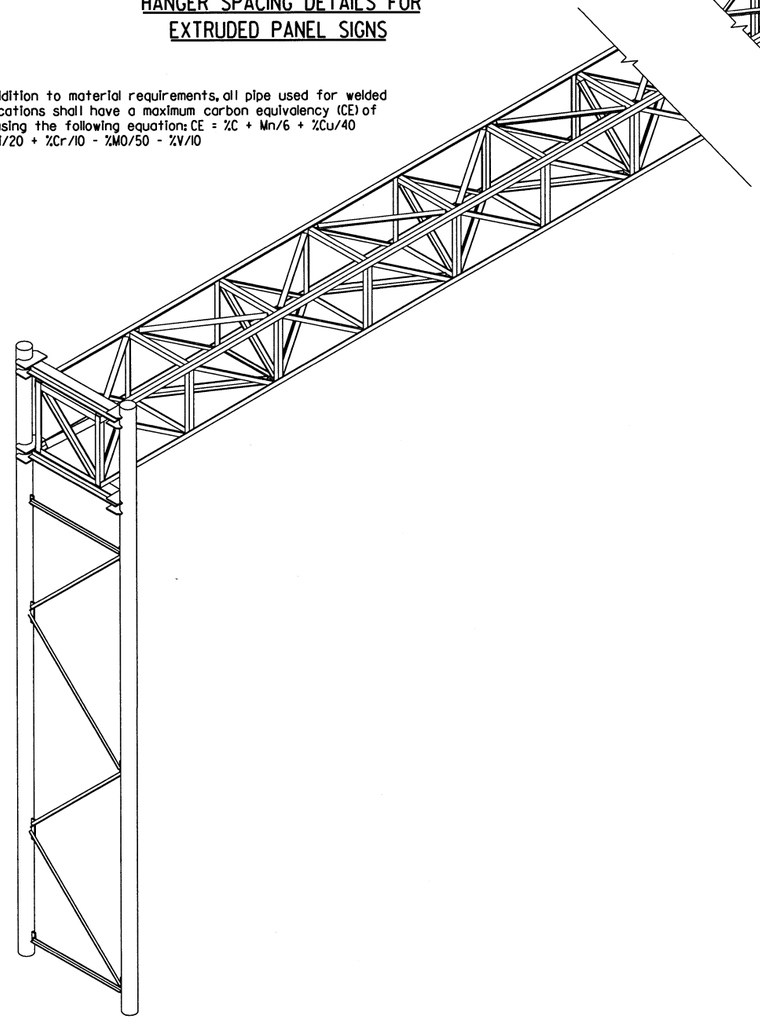
[1] In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation: CE = %C + Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21 x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'
45'-0"	4 Hangers	0.107 x 'L'	0.262 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.





ISOMETRIC VIEW

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 70' TO 85'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 01/08/16 FILENAME: OH Sign 70-85.dgn
CHECKED BY: KWY DATE: 4/8/16 SCALE: No Scale
DESIGNED BY: RBR DATE: 8/11

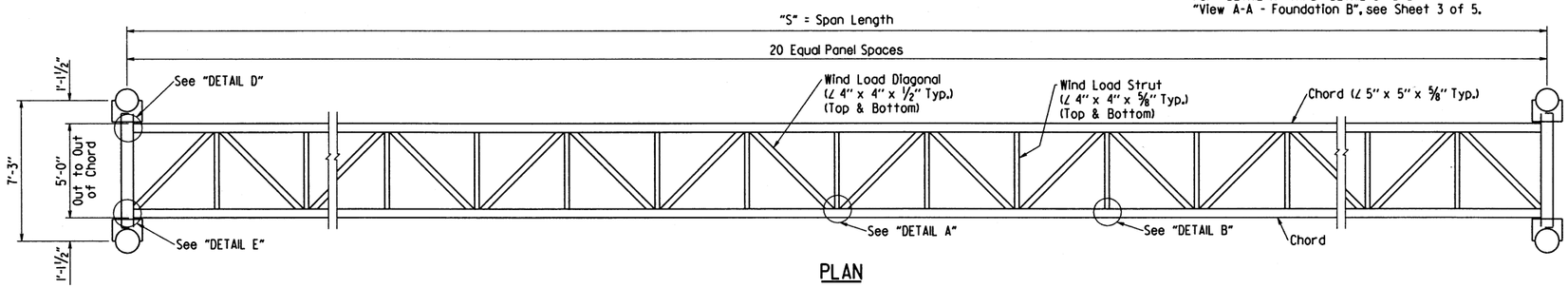
STR. NO. SEE TABLE DRAWING NO. 59675

PRINT DATE: 5/14/2019

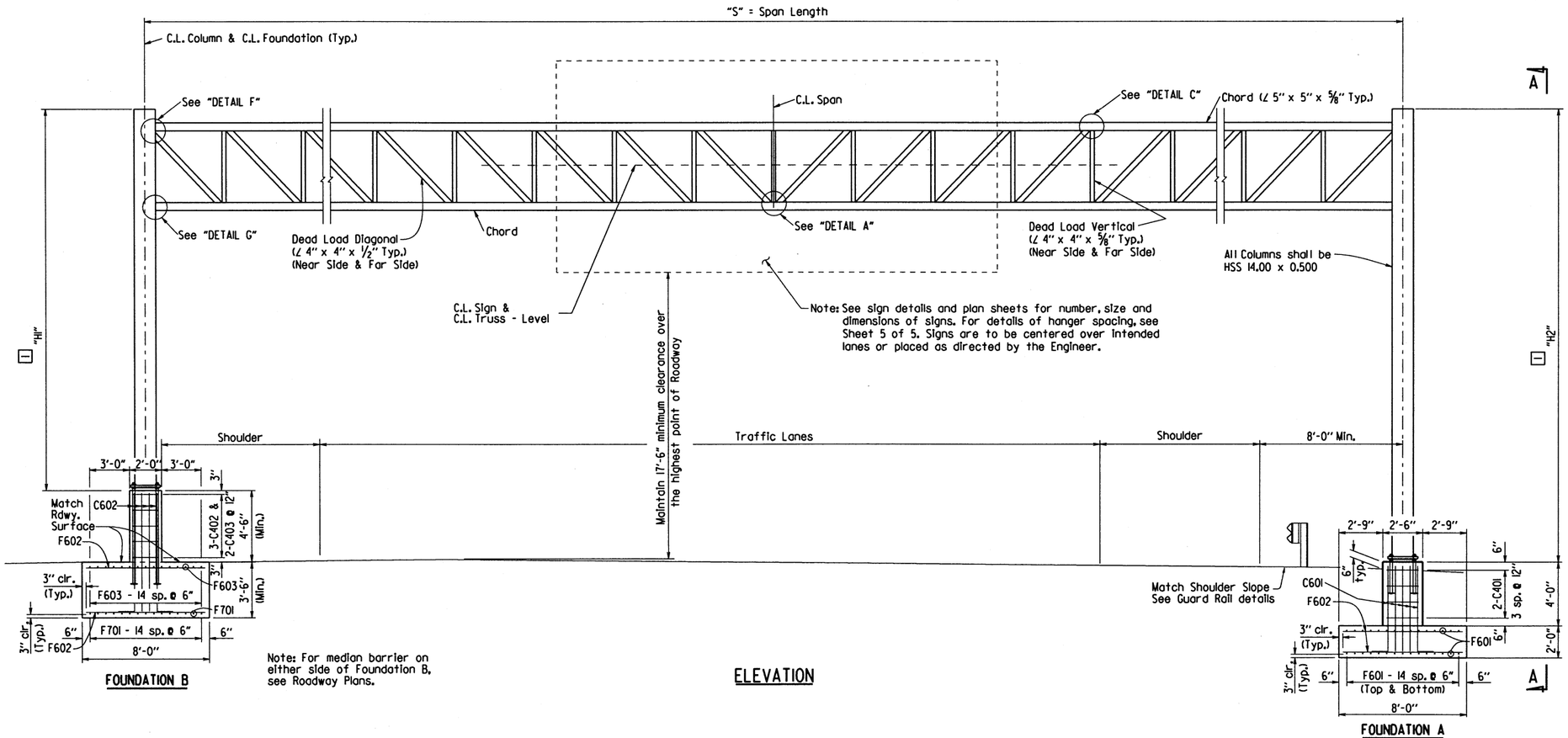
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				6	ARK.			
				JOB NO.		CA0903	296	452
				①	SEE TABLE	OVERHEAD SIGN STR.		59676

Notes:
For "View A-A - Foundation A", see Sheet 2 of 5.

For "DETAIL A" thru "DETAIL G" and "View A-A - Foundation B", see Sheet 3 of 5.



PLAN



FOUNDATION B

Note: For median barrier on either side of Foundation B, see Roadway Plans.

ELEVATION

FOUNDATION A

① Note: The Contractor shall make field measurements to determine the column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (86'-0" to 100'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

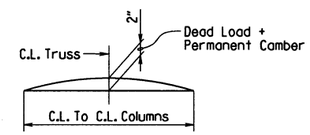
TABLE OF VARIABLES

SIGN STRUCTURE	SPAN LENGTH "S"	FOUNDATION	
		MEDIAN	OUTSIDE SHOULDER
OH-049-04-33	89'-6"	A	B

TABULAR DATA BY: KAW DATE: 3-28-2019
CHECKED BY: SWP DATE: 5-13-19

APPROXIMATE QUANTITIES FOR FOUNDATION (FOR INFORMATION ONLY)

STRUCTURE	CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
FOUNDATION A	14.37	2,101	47
FOUNDATION B	32.89	3,807	39



TRUSS CAMBER DIAGRAM

BAR LIST-FOUNDATION B

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C402	15	24'-2"	3"	10'-3", 1'-7", 5" (Typ.), 45°, C402
C403	10	2'-7"	3"	1'-7", 5" (Typ.), 8", C403
C602	100	8'-3"	4½"	7'-5", 12", C602
F602	94	7'-6"	Str.	
F603	15	23'-6"	Str.	
F701	15	23'-6"	Str.	

BAR LIST-FOUNDATION A

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
				Dimensions are out to out of bars.
C401	8	17'-2"	3"	6'-3", 2'-1", 5" (Typ.), 45°, C401
C601	46	6'-3"	4½"	5'-5", 12", C601
F601	30	17'-6"	Str.	
F602	70	7'-6"	Str.	

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 86' TO 100'
STEEL OVERHEAD SIGN STRUCTURE

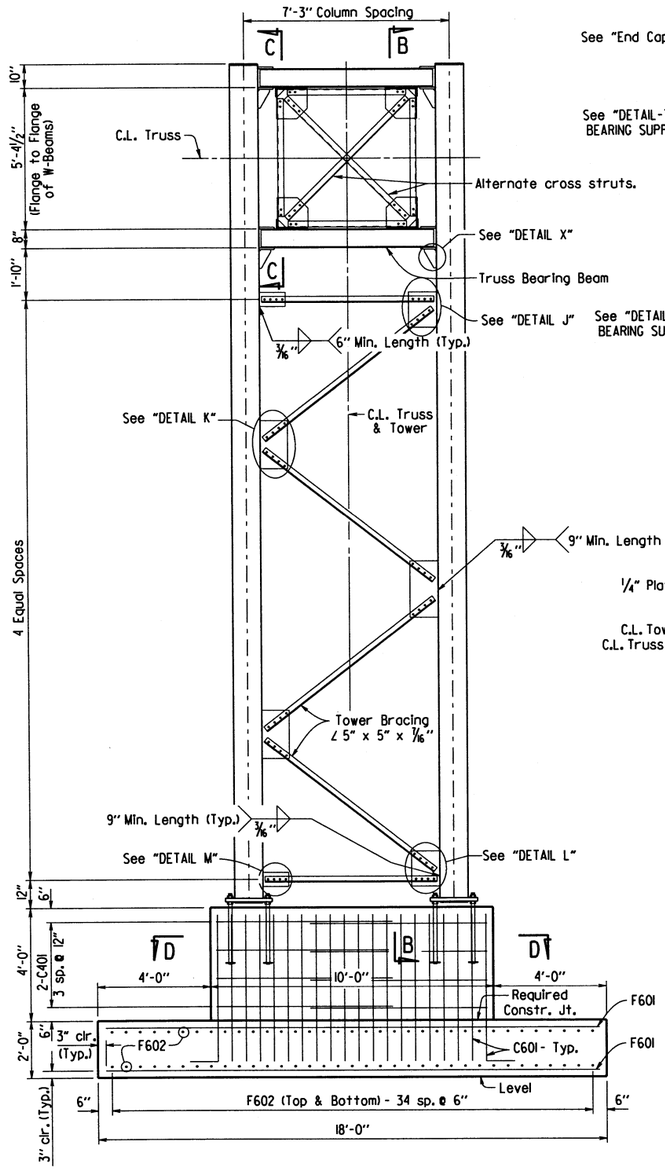
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 9/3/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: ACP DATE: 1/12
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SCALE: No Scale

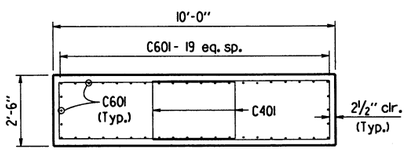
STR. NO. SEE TABLE DRAWING NO. 59676

PRINT DATE: 5/13/2019

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				JOB NO.		CA0903	297	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59677

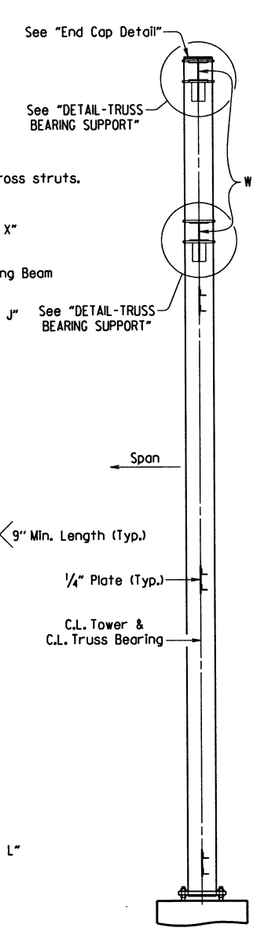


VIEW A-A - FOUNDATION A

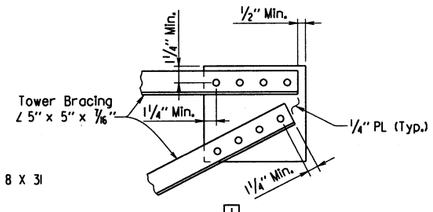


SECTION D-D

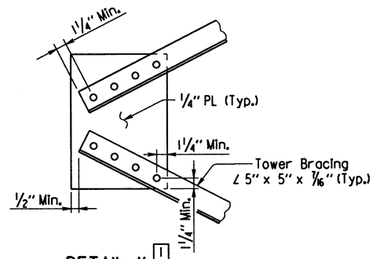
Note: For details of "View A-A - Foundation B", see Sheet 3 of 5.



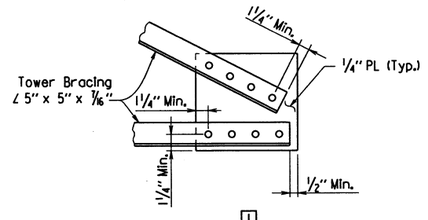
VIEW B-B



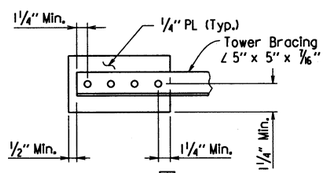
DETAIL J [1]



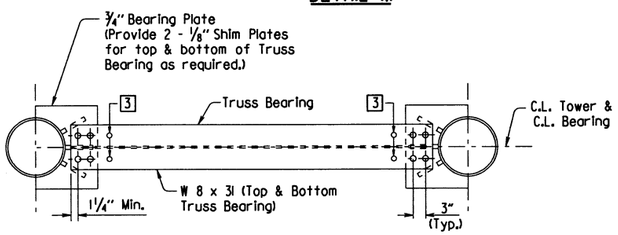
DETAIL K [1]



DETAIL L [1]



DETAIL M [1]

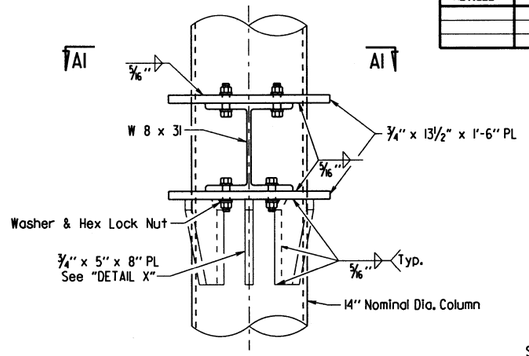


PLAN AT TRUSS BEARING

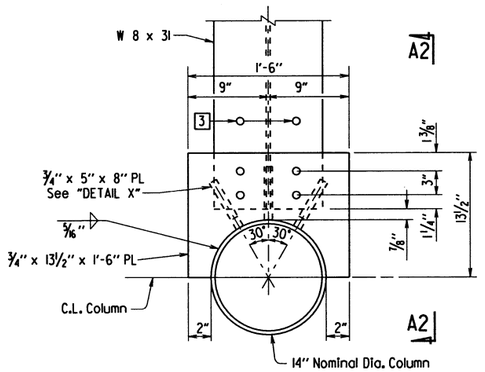
[1] Bolts shall be 3/4" ø and open holes shall be 15/16". Minimum center to center bolt spacing shall be 2½". Dimensions shown are typical.

[2] 15/16" x 2" Slotted Hole in Gusset Plate and Chord Angle. Use plate washer on Gusset plate side. 15/16" ø holes in 3/4" shim plate and beam flange.

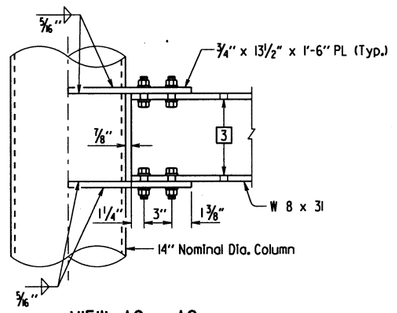
[3] 15/16" ø holes at top and bottom flanges of W 8 x 31.



DETAIL - TRUSS BEARING SUPPORT

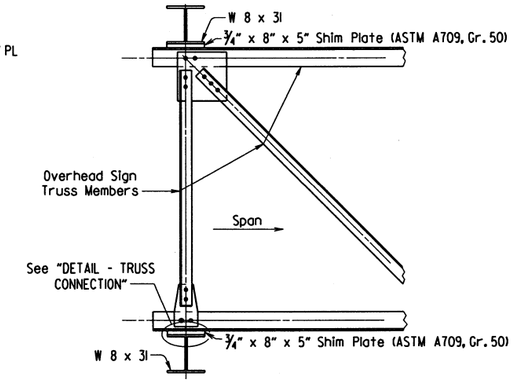


VIEW A1 - A1

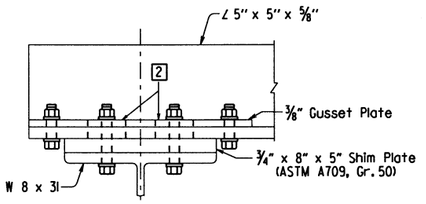


VIEW A2 - A2

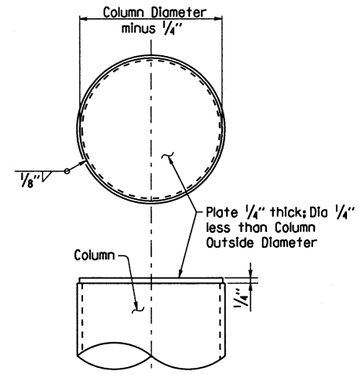
3/4" x 5" x 8" Plate not shown for clarity



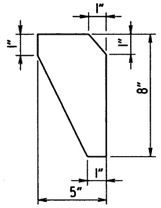
VIEW C-C



DETAIL - TRUSS CONNECTION



END CAP DETAIL



DETAIL X

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 86' TO 100'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

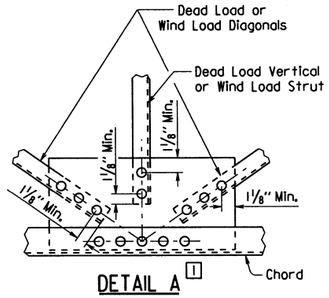
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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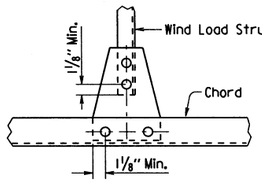
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PRINT DATE: 5/13/2019

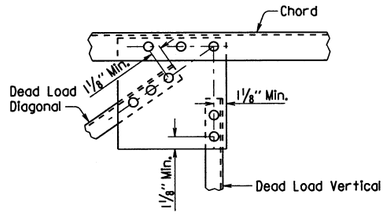
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				JOB NO.		CA0903	298	452
				① SEE TABLE		OVERHEAD SIGN STR.		59678



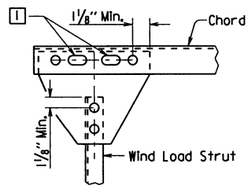
DETAIL A [1]



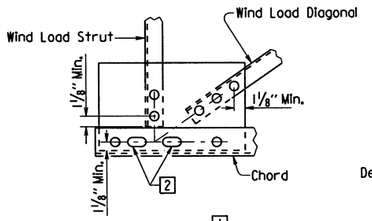
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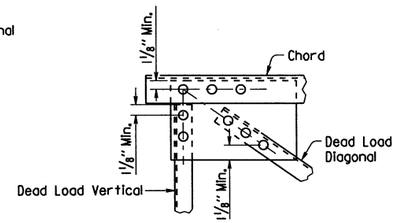
DETAIL C [1]



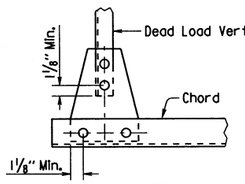
DETAIL D [1]



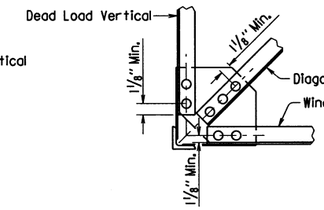
DETAIL E [1]



DETAIL F [1]

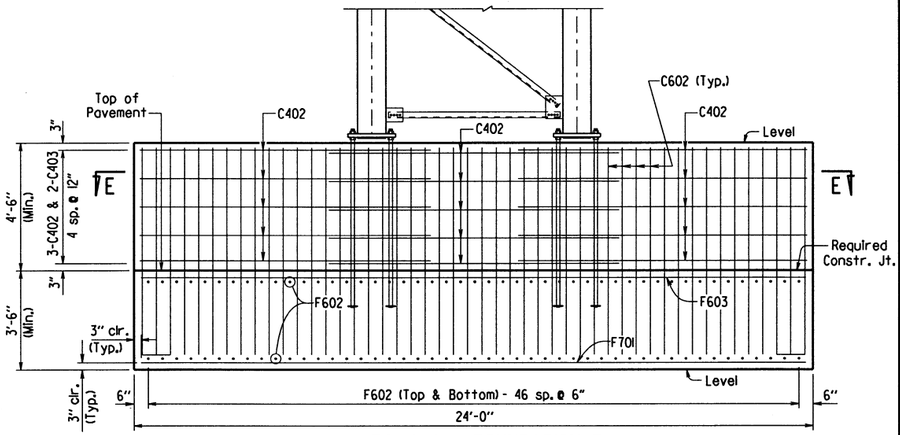


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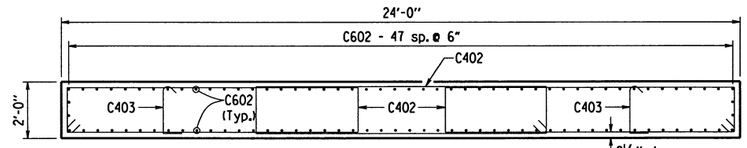


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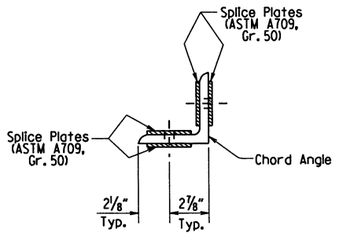
Note:
For details of column not shown, see "View A-A - Foundation A" on Sheet 2 of 5.



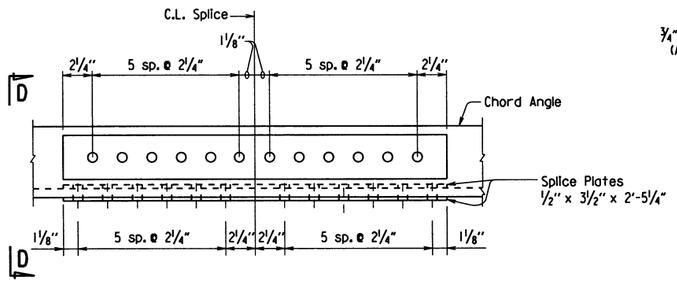
VIEW A-A - FOUNDATION B



SECTION E-E

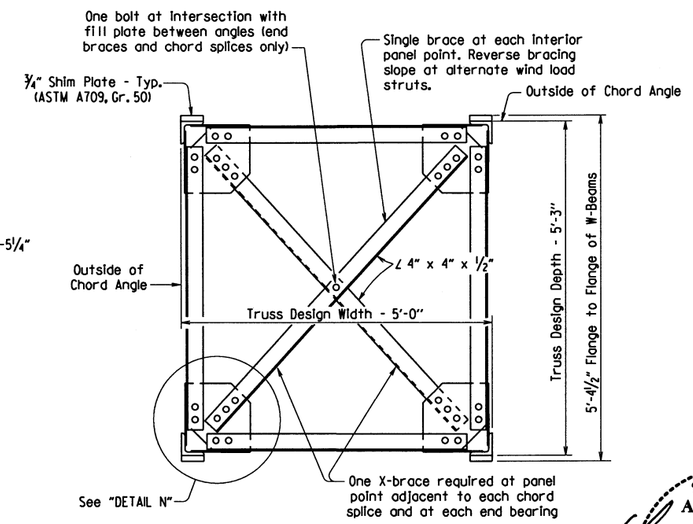


VIEW D-D



Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.

CHORD SPLICE



TRUSS SECTION

Note: Unless otherwise noted, thickness of all Gusset Plates shall be ⅜".

[1] Dimensions shown are typical.

[2] 11/16" x 2" Slotted Holes in Gusset Plate and Chord Angle. Use plate washer on Gusset Plate side. 11/16" ø holes in ¾" shim plate and beam flange.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-1-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 86' TO 100' STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

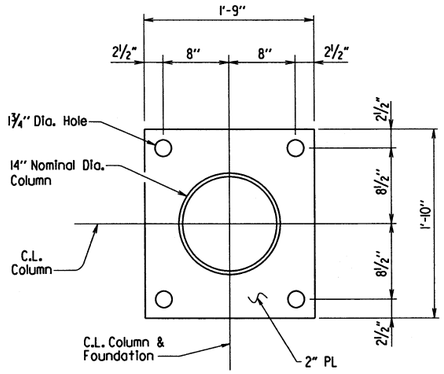
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 9/3/15
CHECKED BY: ACP DATE: 4/8/16
DESIGNED BY: ACP DATE: 1/12
FILENAME: OH Sign 86-100.dgn
SCALE: No Scale

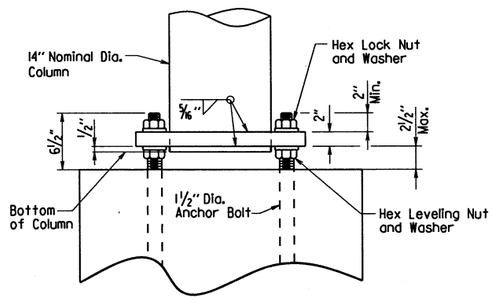
STR. NO. SEE TABLE DRAWING NO. 59678

PRINT DATE: 5/13/2019

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.		CA0903	299	452
				① SEE TABLE		OVERHEAD SIGN STR.		59679

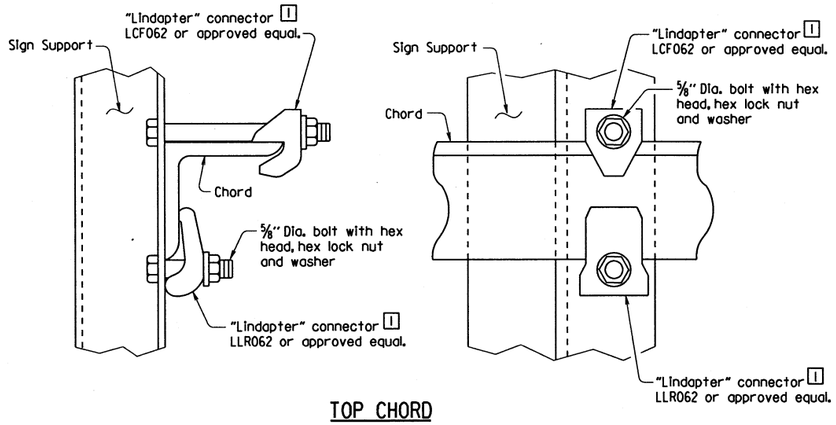


PLAN - COLUMN BASE

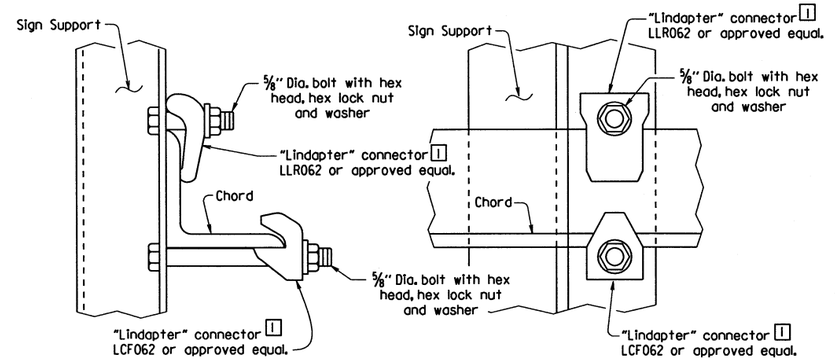


Note: Diameter of hole in base plate to be 1/8" larger than column diameter.

ELEVATION - COLUMN BASE



TOP CHORD

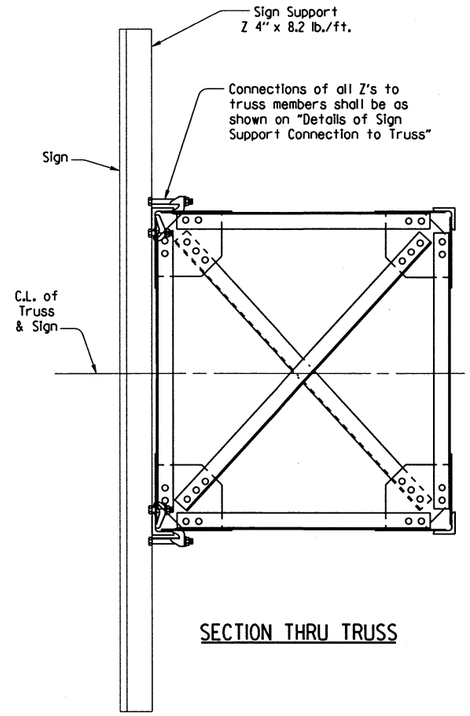


BOTTOM CHORD

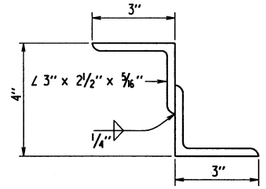
[1] All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

Note: Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTION TO TRUSS

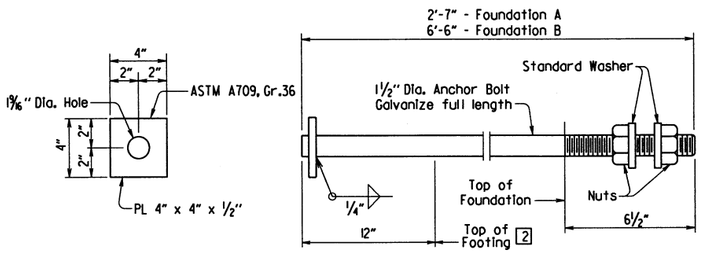


SECTION THRU TRUSS



NOTE: Structural Z support may be fabricated from angles as shown.

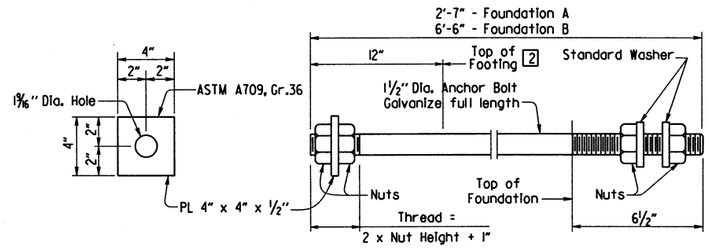
DETAILS OF ALTERNATE Z SUPPORT



Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

[2] Foundation B only.

ANCHOR BOLT DETAIL



Anchor bolts shall comply with AASHTO M 314, Grade 55 with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts for bolts shall be as specified in Subsection 807.07.

ALTERNATE ANCHOR BOLT DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
5-14-19
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 86' TO 100'
STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EOR DATE: 9/3/15 FILENAME: OH Sign 86-100.dgn
CHECKED BY: ACP DATE: 4/8/16 SCALE: No Scale
DESIGNED BY: ACP DATE: 1/12

STR. NO. SEE TABLE DRAWING NO. 59679

PRINT DATE: 5/14/2019

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.		CA0903	300	452
				(1) SEE TABLE		OVERHEAD SIGN STR.		59680

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition, 2013 with current interim revisions.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet. Use of additional sign area must be approved by the Engineer. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	ASTM A709, Grade 50 (Fy = 50,000 psi)
(1) Pipe:	ASTM A139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A500, Gr. B (Fy = 42,000 psi), ASTM A501, Gr. B (Fy = 50,000 psi), ASTM A714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-Shapes:	ASTM A709, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM F3125, Grade A325, Type I
Locknuts - Approved Type:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H
Washers:	ASTM F436
Nuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

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 the 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.

All steel shall be galvanized according to Subsection 807.19. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone I minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

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. All welding shall conform to Subsection 807.26 except welding of tubular sections shall conform to AWS D1.1 Structural Welding Code.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

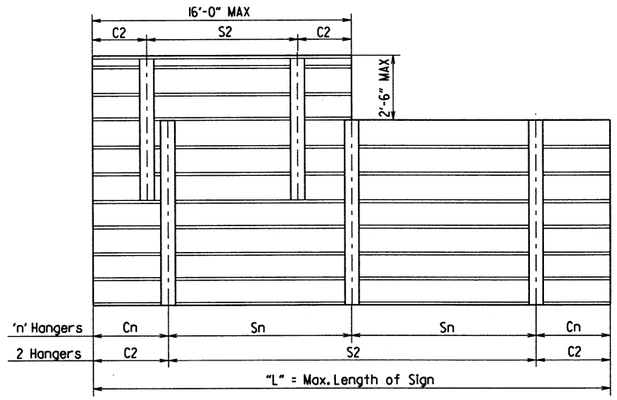
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ⅝" diameter and open holes shall be 11/16". Bolt spacing shall be 2¼" for ⅝" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM F3125, Gr. A325 Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM F3125, Gr. A325 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07. Anchor bolts shall be pretensioned in accordance with Special Provision Job No. CA0903 "Steel Sign Structures".

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Sign Structure". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



Note: See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

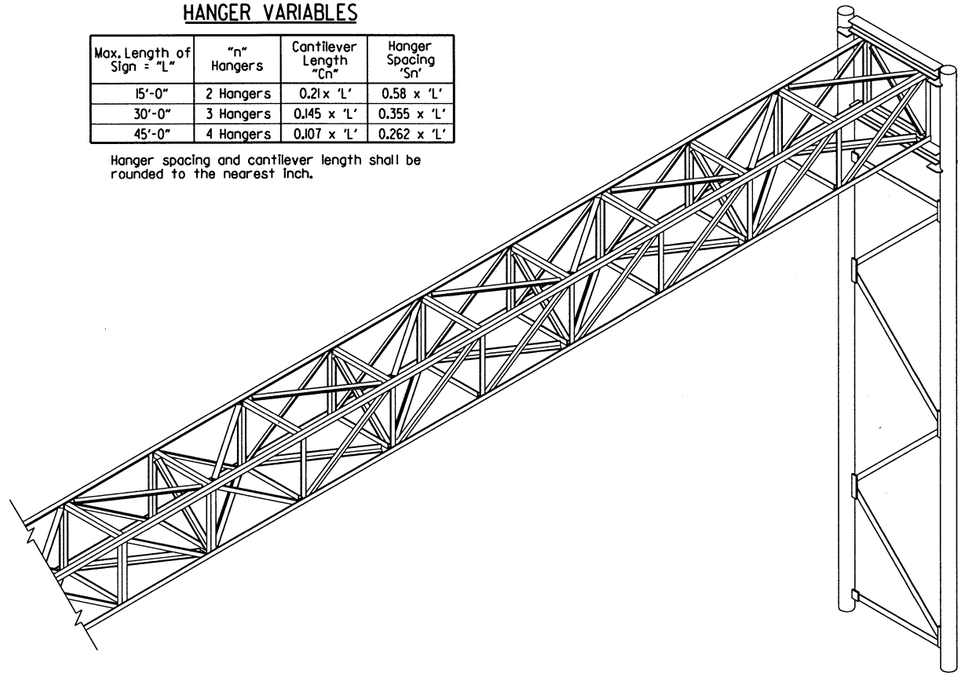
(1) In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation:

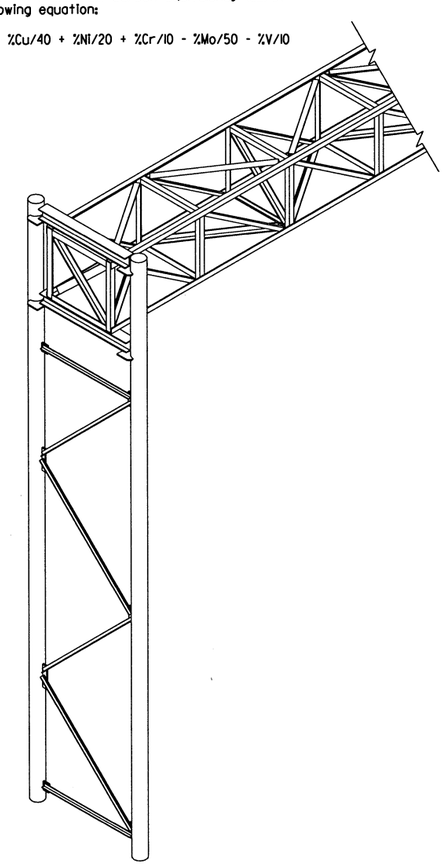
CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'
45'-0"	4 Hangers	0.107 x 'L'	0.262 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.





ISOMETRIC VIEW

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
5-14-19

BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 86' TO 100' STEEL OVERHEAD SIGN STRUCTURE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

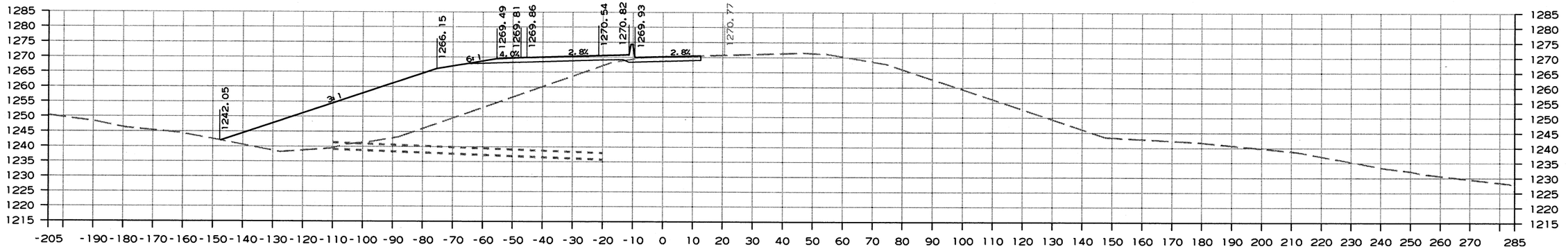
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CHECKED BY: ACP DATE: 4/8/16 SCALE: No Scale
DESIGNED BY: ACP DATE: 1/12

STR. NO. SEE TABLE DRAWING NO. 59680

PRINT DATE: 5/14/2019

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.		CA0903	301	452

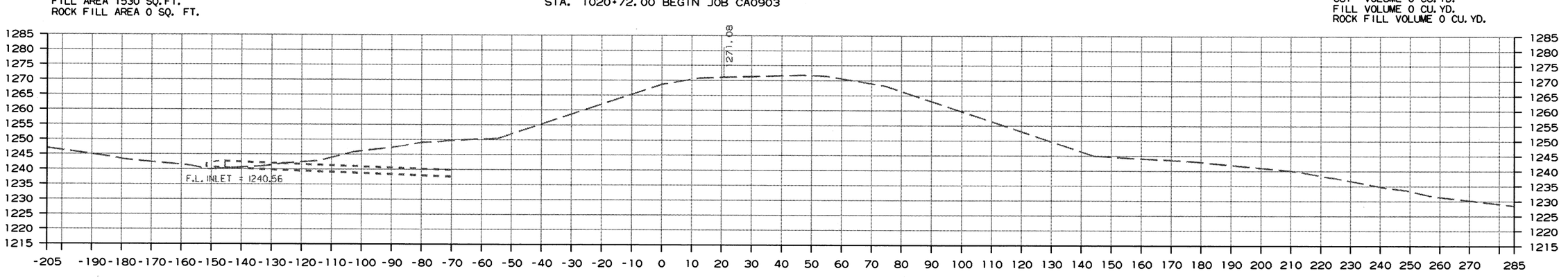
(2) CROSS SECTIONS



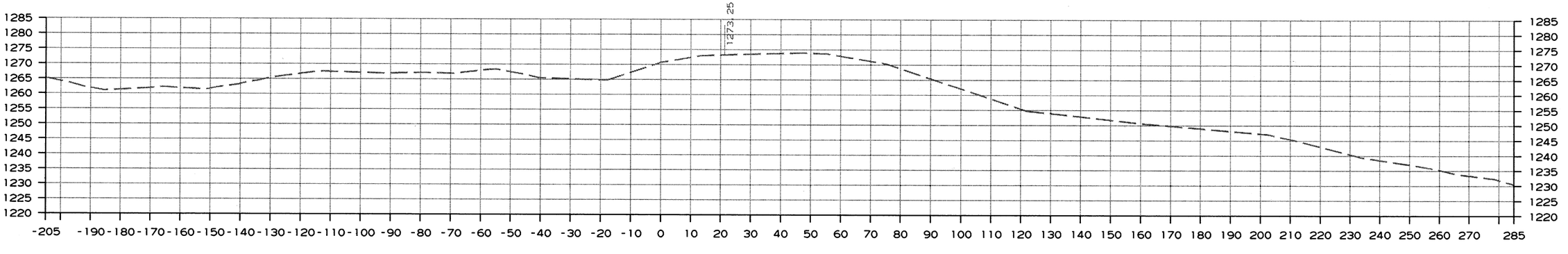
CUT AREA 35 SQ.FT.
FILL AREA 1530 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1020+72.00 BEGIN JOB CA0903

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



1020+63.00



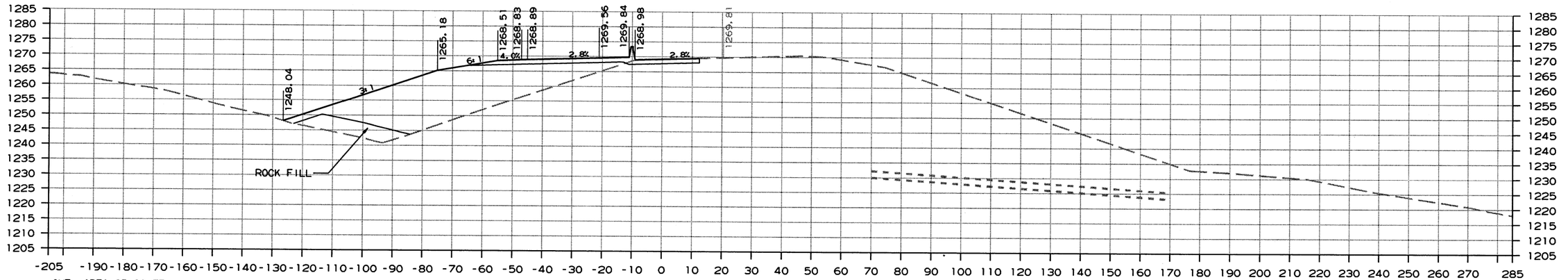
1020+00.00

HWY. 549
CROSS SECTION STA. 1020+00 TO STA. 1020+72

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	302	452

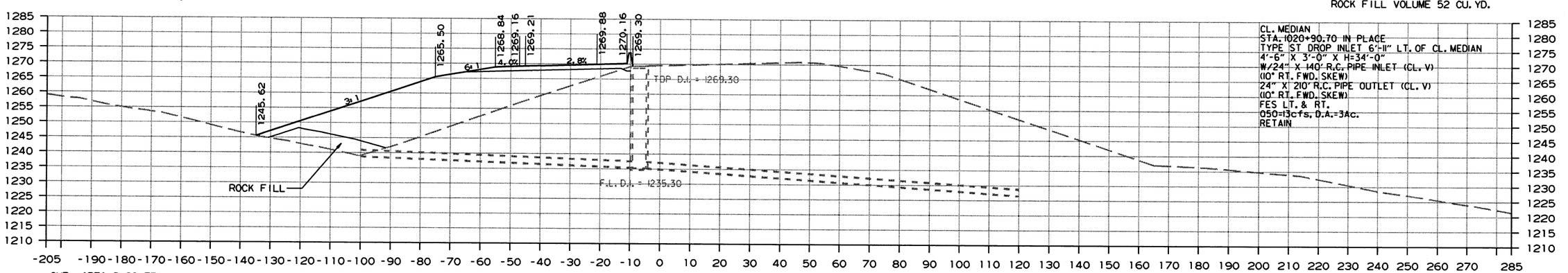
(2) CROSS SECTIONS



CUT AREA 35 SQ.FT.
FILL AREA 1107 SQ.FT.
ROCK FILL AREA 151 SQ. FT.

1021+00.00

CUT VOLUME 6 CU. YD.
FILL VOLUME 402 CU. YD.
ROCK FILL VOLUME 52 CU. YD.



CUT AREA 2 SQ.FT.
FILL AREA 1226 SQ.FT.
ROCK FILL AREA 151 SQ. FT.

1020+90.70

CL. MEDIAN
STA. 1020+90.70 IN PLACE
TYPE ST DROP INLET 6'-11" LT. OF CL. MEDIAN
4'-6" X 3'-0" X H=34'-0"
W/24" X 140' R.C. PIPE INLET (CL. V)
(10° RT. FWD. SKEW)
24" X 210' R.C. PIPE OUTLET (CL. V)
(10° RT. FWD. SKEW)
FES LT. & RT.
050=13cfs, D.A.=3Ac.
RETAIN

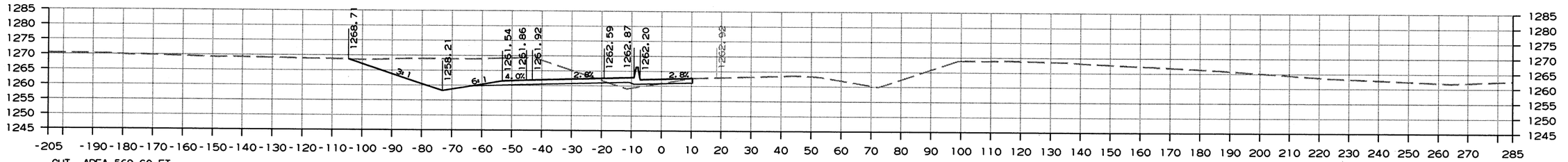
CUT VOLUME 13 CU. YD.
FILL VOLUME 955 CU. YD.
ROCK FILL VOLUME 52 CU. YD.

HWY. 549
CROSS SECTION STA. 1020+91 TO STA. 1021+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	303	452

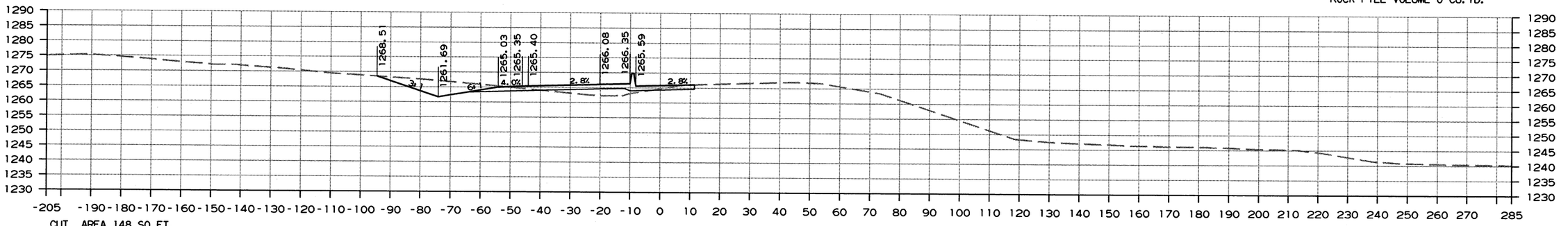
(2) CROSS SECTIONS



CUT AREA 569 SQ.FT.
FILL AREA 17 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1023+00.00

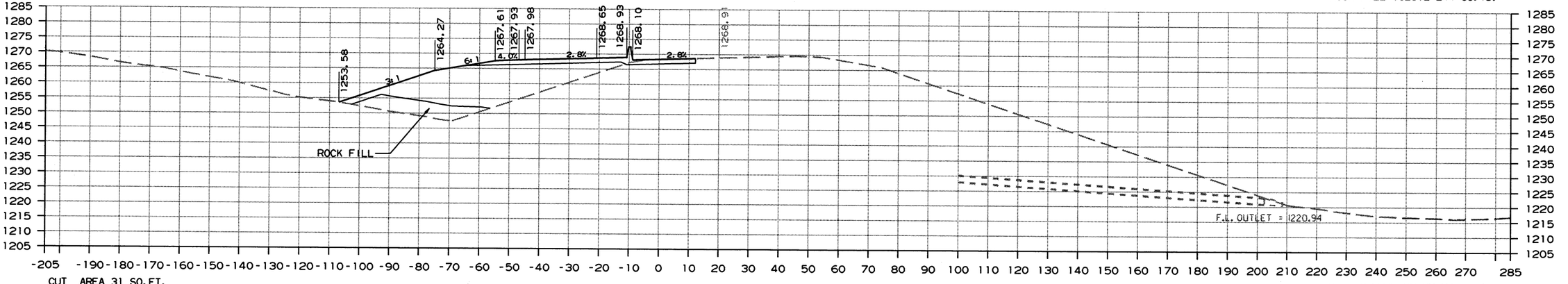
CUT VOLUME 1328 CU.YD.
FILL VOLUME 122 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 148 SQ.FT.
FILL AREA 49 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1022+00.00

CUT VOLUME 246 CU.YD.
FILL VOLUME 1057 CU.YD.
ROCK FILL VOLUME 244 CU.YD.



CUT AREA 31 SQ.FT.
FILL AREA 722 SQ.FT.
ROCK FILL AREA 178 SQ. FT.

1021+26.00

CUT VOLUME 32 CU.YD.
FILL VOLUME 881 CU.YD.
ROCK FILL VOLUME 158 CU.YD.

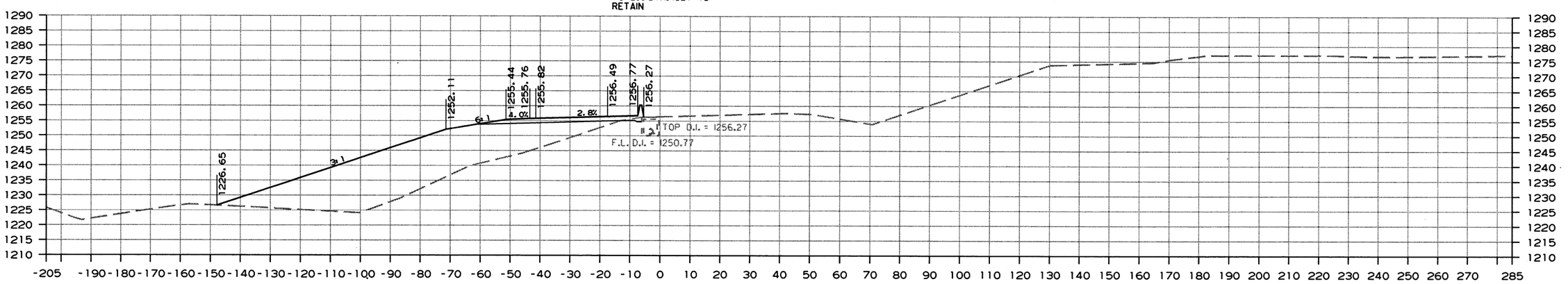
HWY. 549
CROSS SECTION STA. 1021+26 TO STA. 1023+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	304	452

(2) CROSS SECTIONS

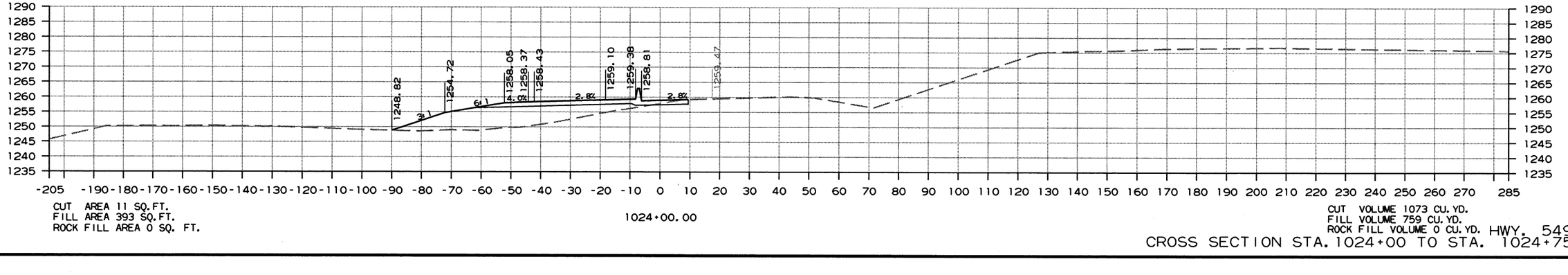
CL. MEDIAN
STA. 1024+75 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
4'-6" X 3'-0" X H=5'-6"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
TO D.I. STA. 1027+75
RETAIN



CUT AREA 4 SQ.FT.
FILL AREA 1431 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1024+75.00

CUT VOLUME 21 CU. YD.
FILL VOLUME 2533 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



CUT AREA 11 SQ.FT.
FILL AREA 393 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1024+00.00

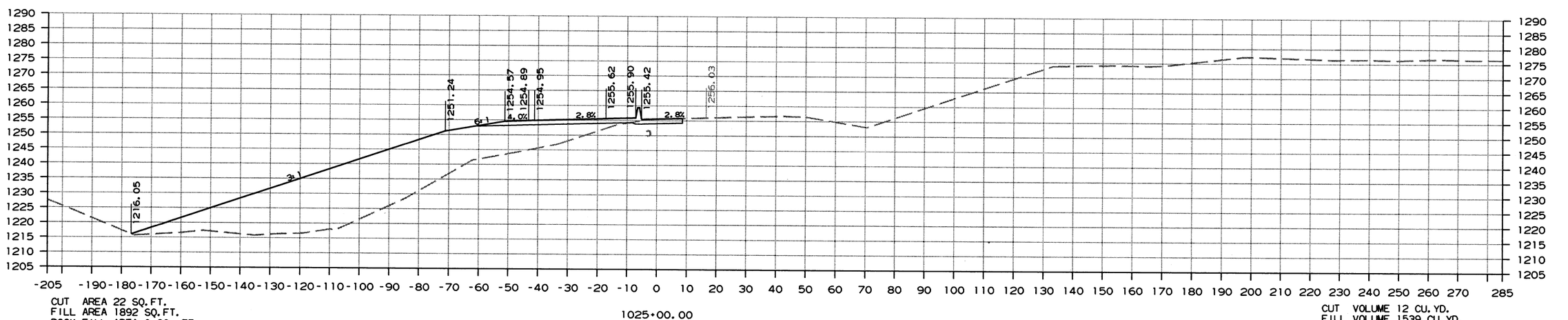
CUT VOLUME 1073 CU. YD.
FILL VOLUME 759 CU. YD.
ROCK FILL VOLUME 0 CU. YD.

HWY. 549
CROSS SECTION STA. 1024+00 TO STA. 1024+75

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	305	452

(2) CROSS SECTIONS



CUT AREA 22 SQ.FT.
FILL AREA 1892 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1025+00.00

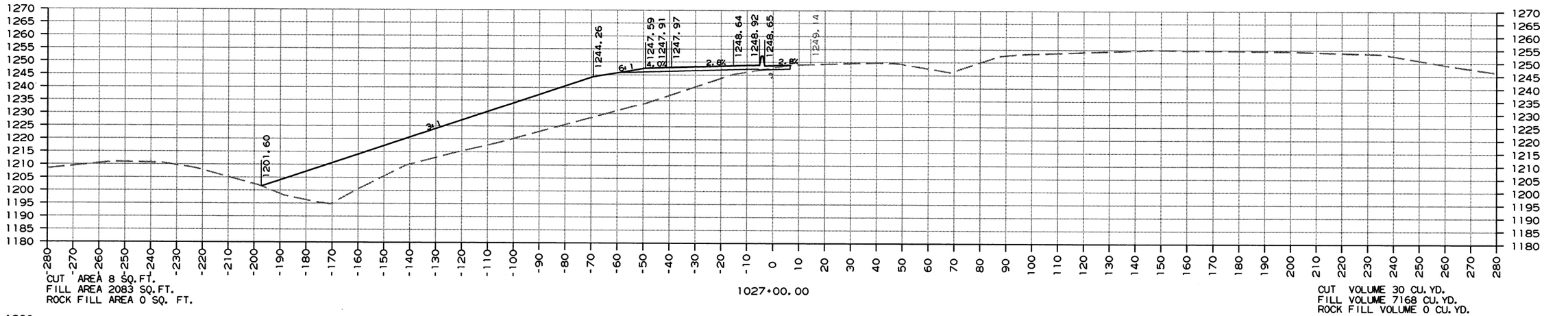
CUT VOLUME 12 CU.YD.
FILL VOLUME 1539 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

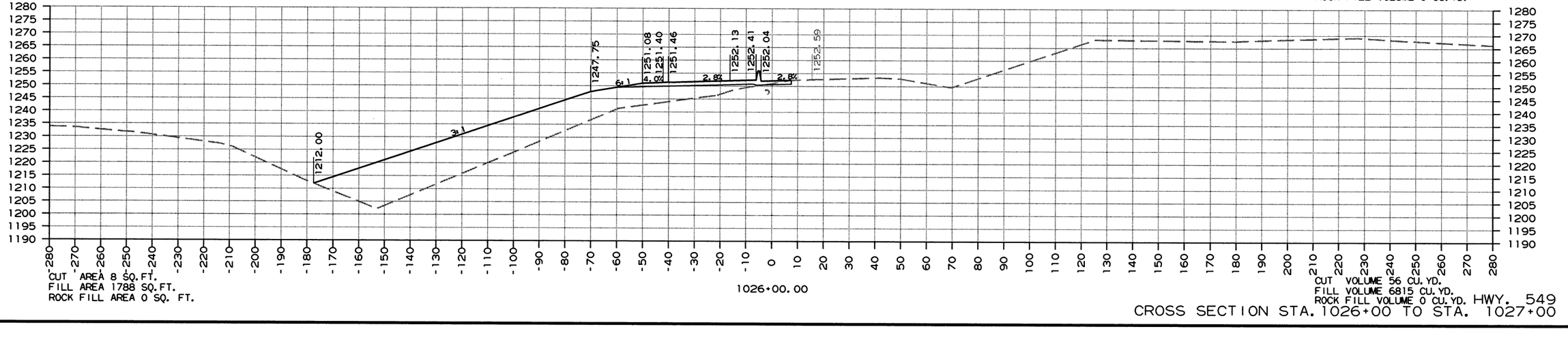
CROSS SECTION STA. 1025+00 TO STA. 1025+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	306	452

(2) CROSS SECTIONS





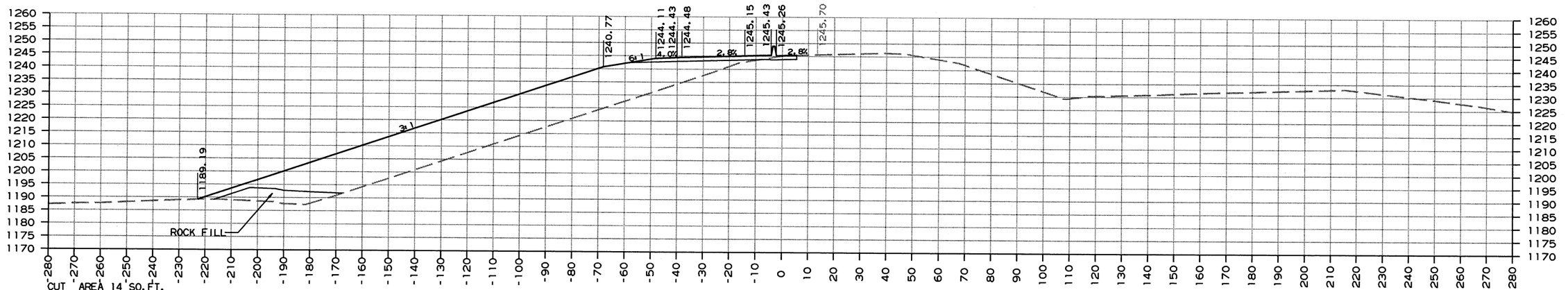
CROSS SECTION STA. 1026+00 TO STA. 1027+00

HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	307	452

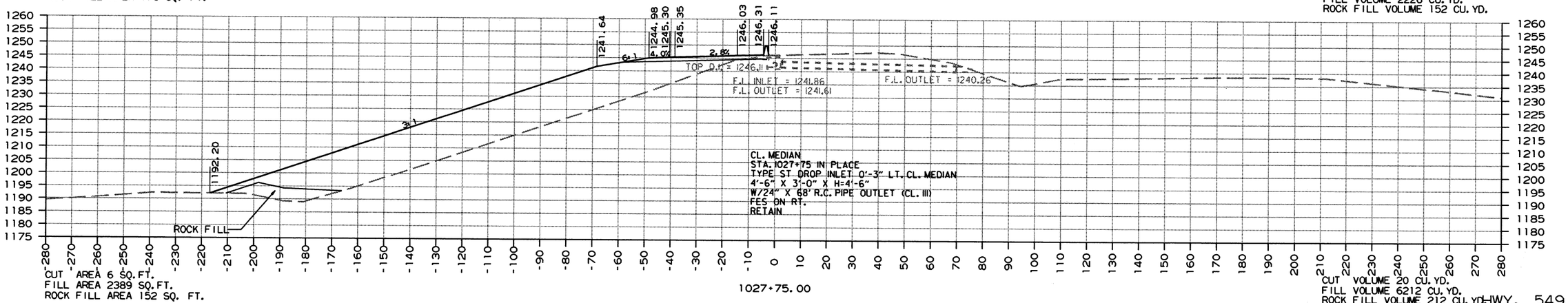
(2) CROSS SECTIONS



CUT AREA 14 SQ. FT.
FILL AREA 2418 SQ. FT.
ROCK FILL AREA 176 SQ. FT.

1028+00.00

CUT VOLUME 9 CU. YD.
FILL VOLUME 2226 CU. YD.
ROCK FILL VOLUME 152 CU. YD.



CUT AREA 6 SQ. FT.
FILL AREA 2389 SQ. FT.
ROCK FILL AREA 152 SQ. FT.

1027+75.00

CUT VOLUME 20 CU. YD.
FILL VOLUME 6212 CU. YD.
ROCK FILL VOLUME 212 CU. YD.

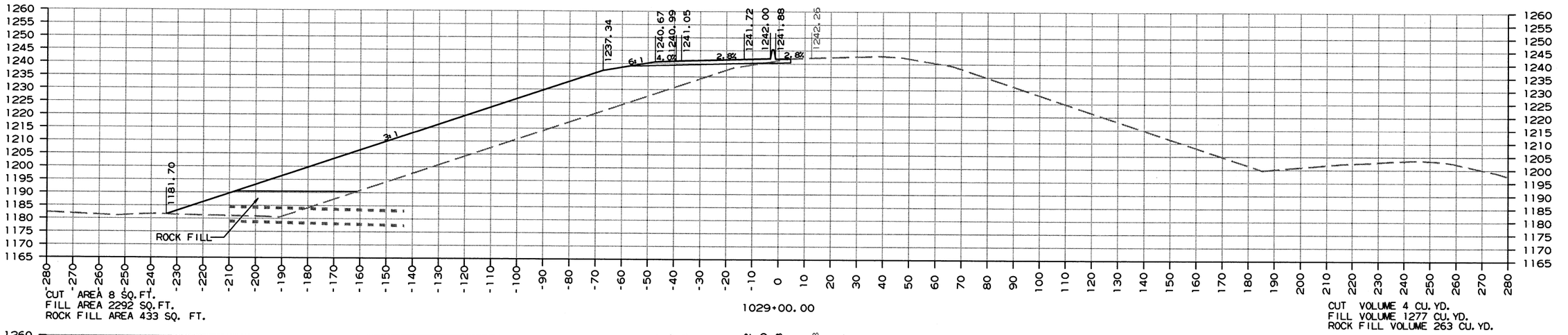
HWY. 549

CROSS SECTION STA. 1027+75 TO STA. 1028+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	308	452

(2) CROSS SECTIONS



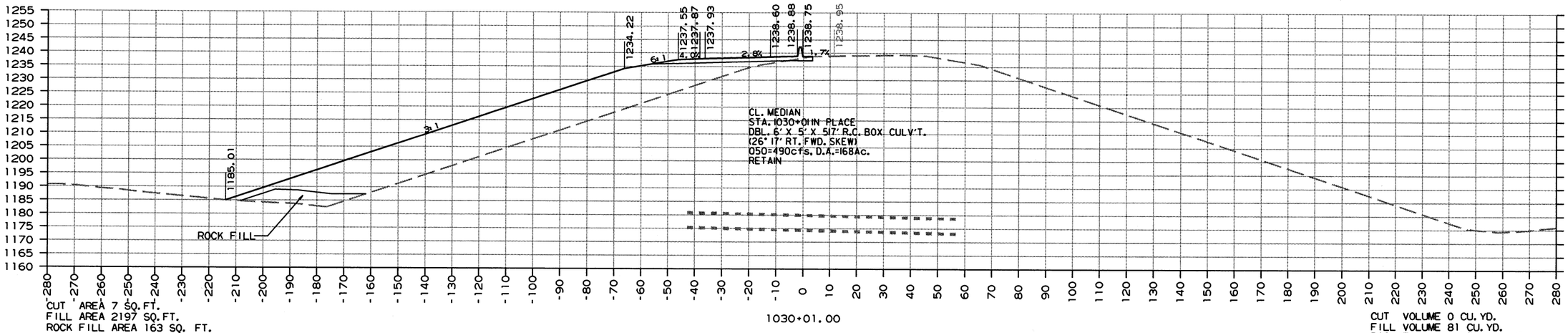
HWY. 549

CROSS SECTION STA. 1028+85 TO STA. 1029+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	309	452

(2) CROSS SECTIONS



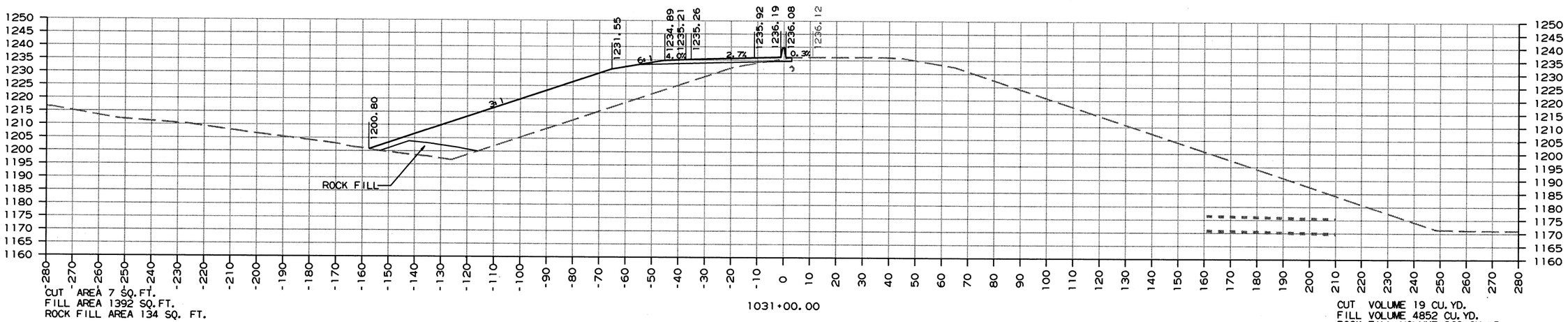
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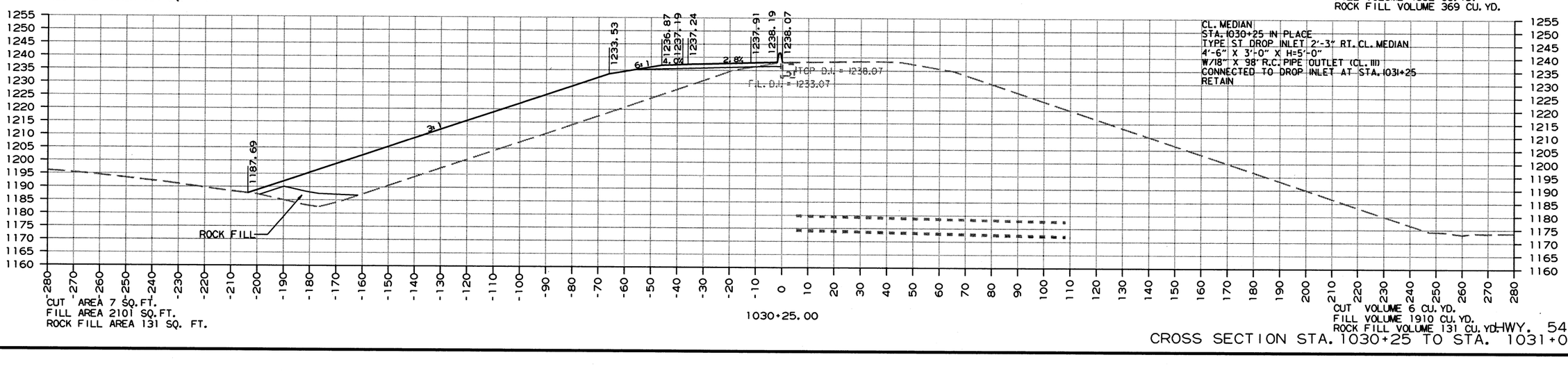
HWY. 549

CROSS SECTION STA. 1030+00 TO STA. 1030+01

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0903	310	452

(2) CROSS SECTIONS





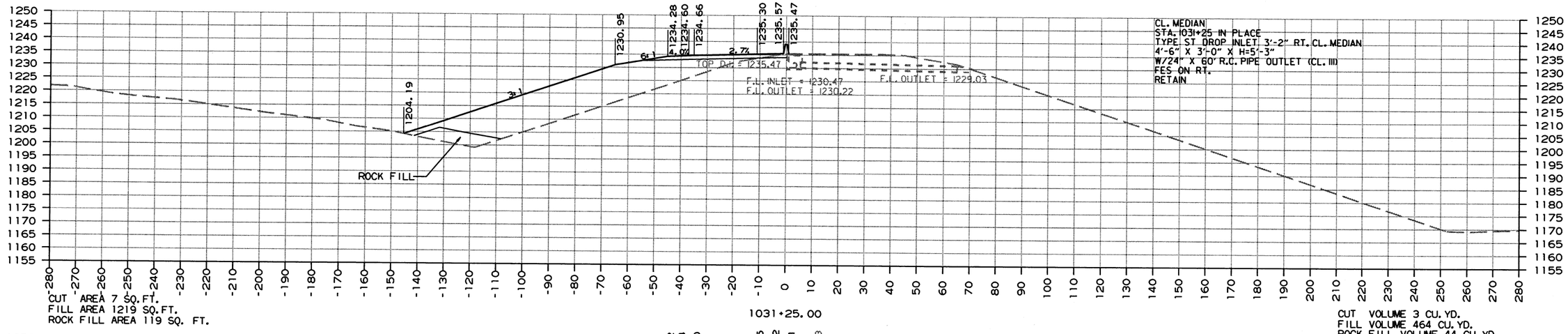
HWY. 549

CROSS SECTION STA. 1030+25 TO STA. 1031+00

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS

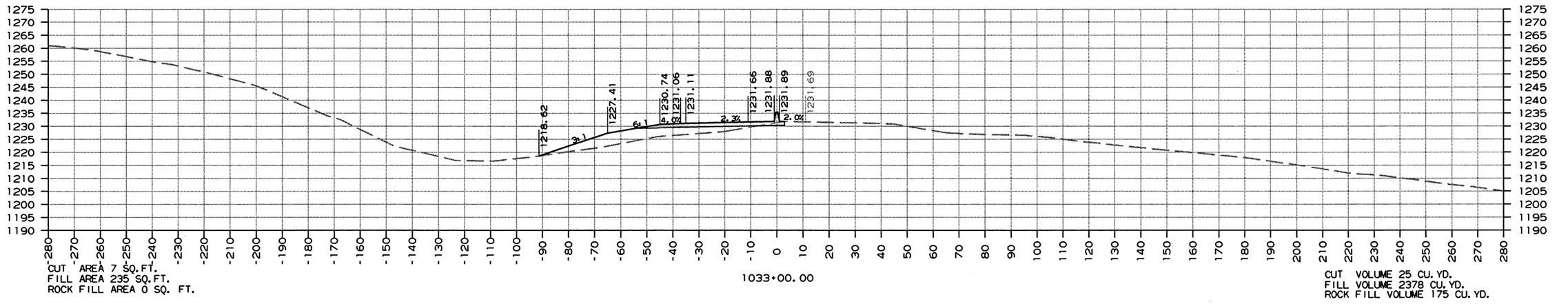


CROSS SECTION STA. 1031+15 TO STA. 1031+25 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS

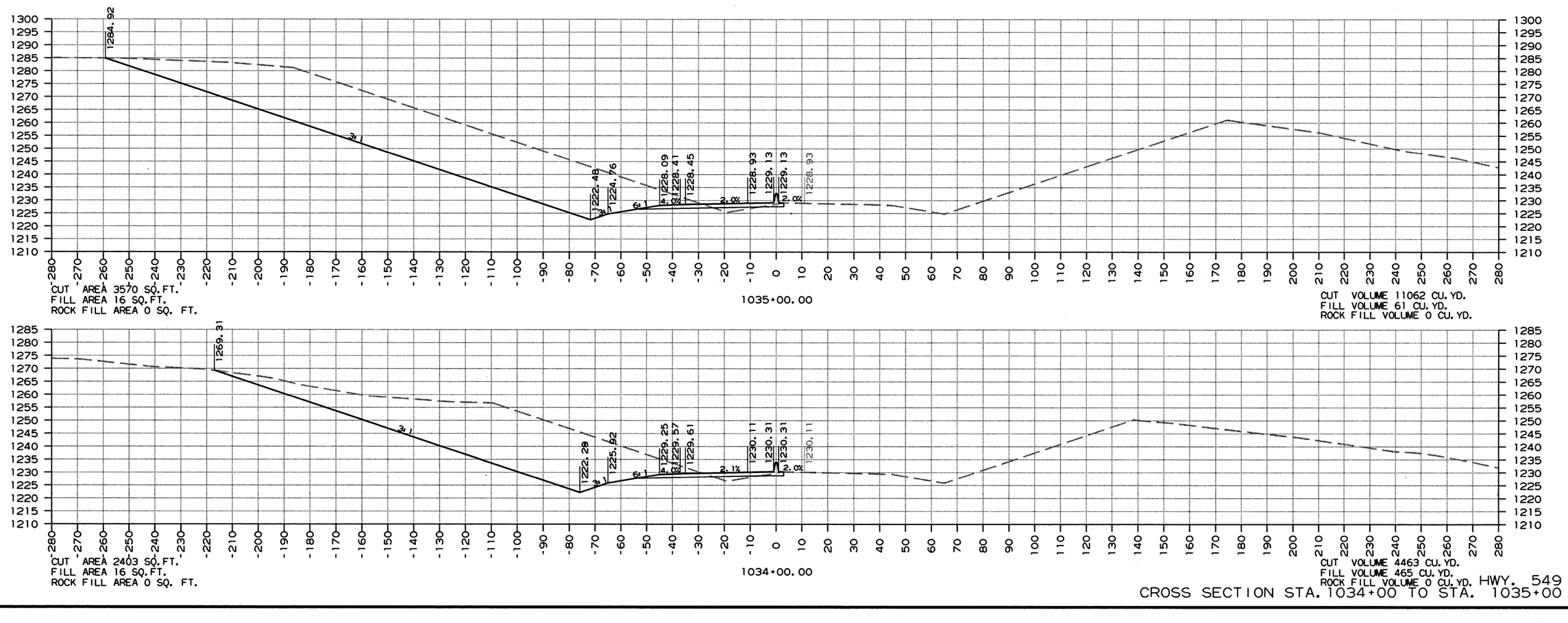


HWY. 549
CROSS SECTION STA. 1032+00 TO STA. 1033+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	313	452

(2) CROSS SECTIONS

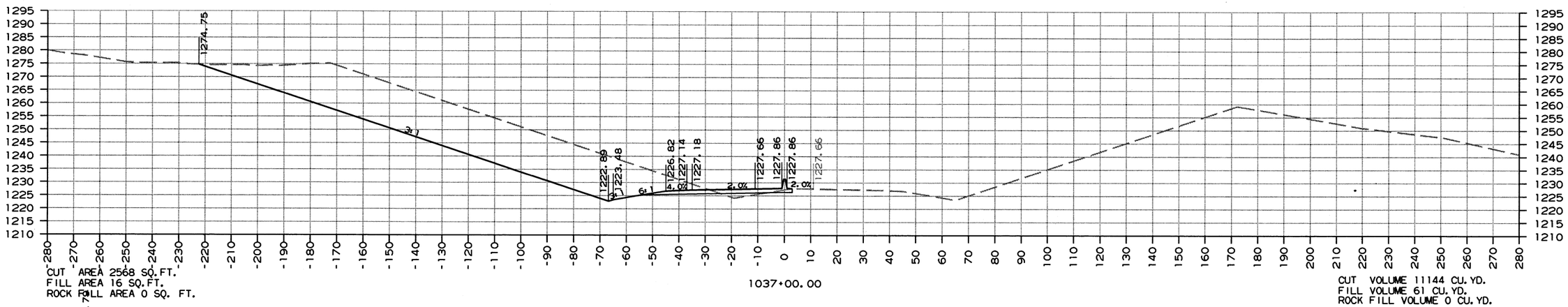


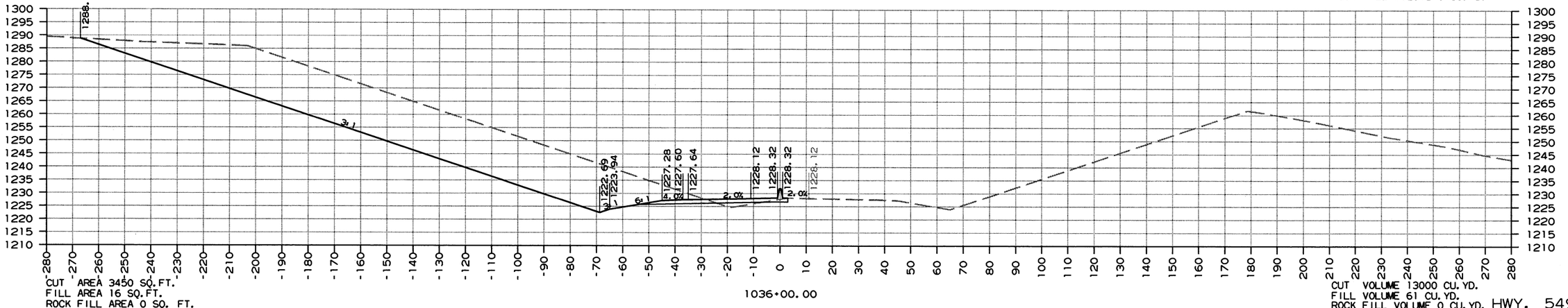
CROSS SECTION STA. 1034+00 TO STA. 1035+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS





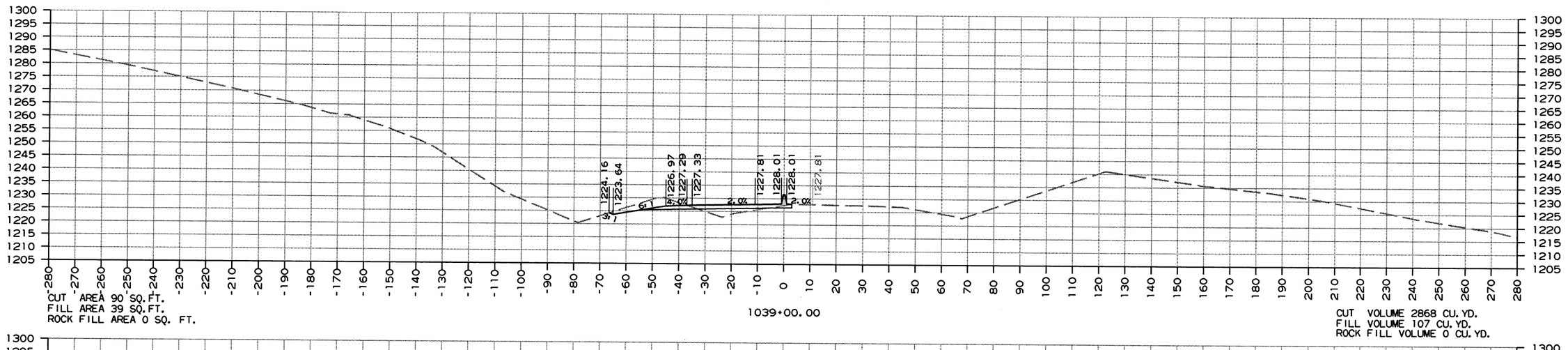
HWY. 549

CROSS SECTION STA. 1036+00 TO STA. 1037+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	315	452

(2) CROSS SECTIONS

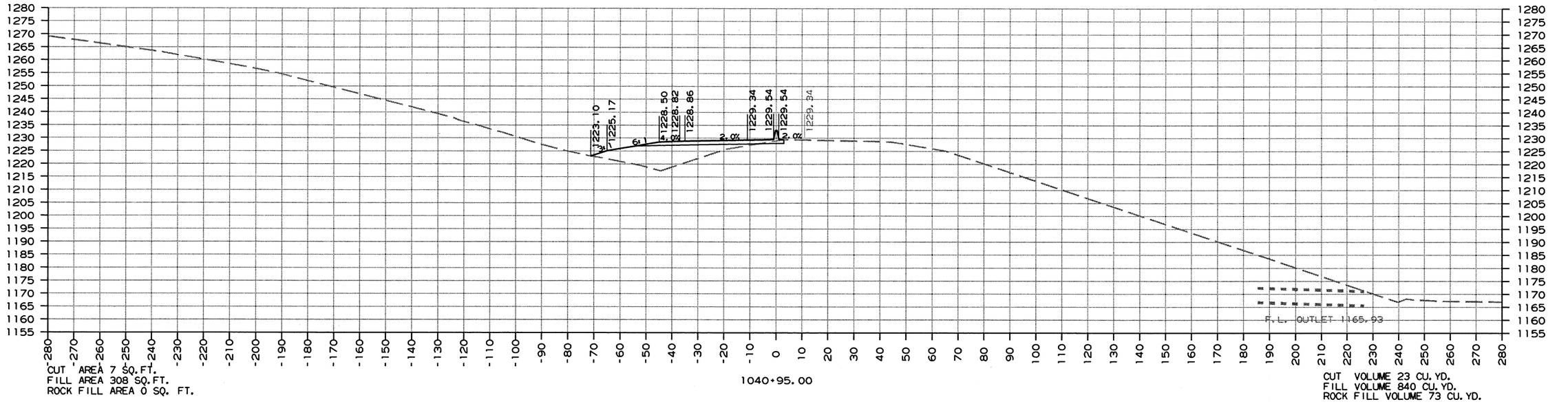


CROSS SECTION STA. 1038+00 TO STA. 1039+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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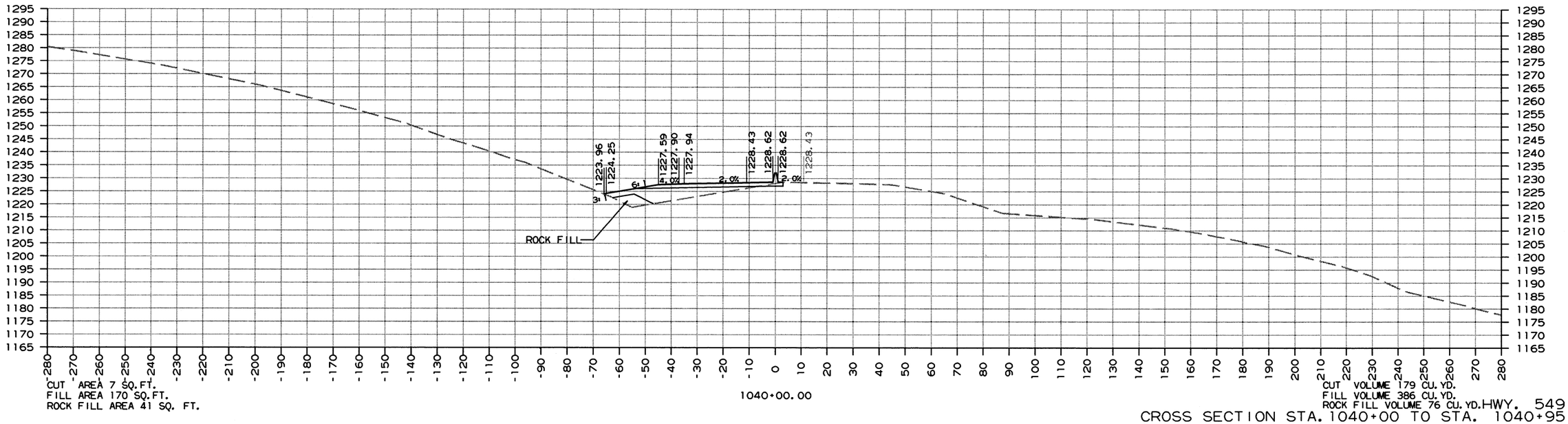
(2) CROSS SECTIONS



CUT AREA 7 SQ.FT.
FILL AREA 308 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1040+95.00

CUT VOLUME 23 CU.YD.
FILL VOLUME 840 CU.YD.
ROCK FILL VOLUME 73 CU.YD.



CUT AREA 7 SQ.FT.
FILL AREA 170 SQ.FT.
ROCK FILL AREA 41 SQ. FT.

1040+00.00

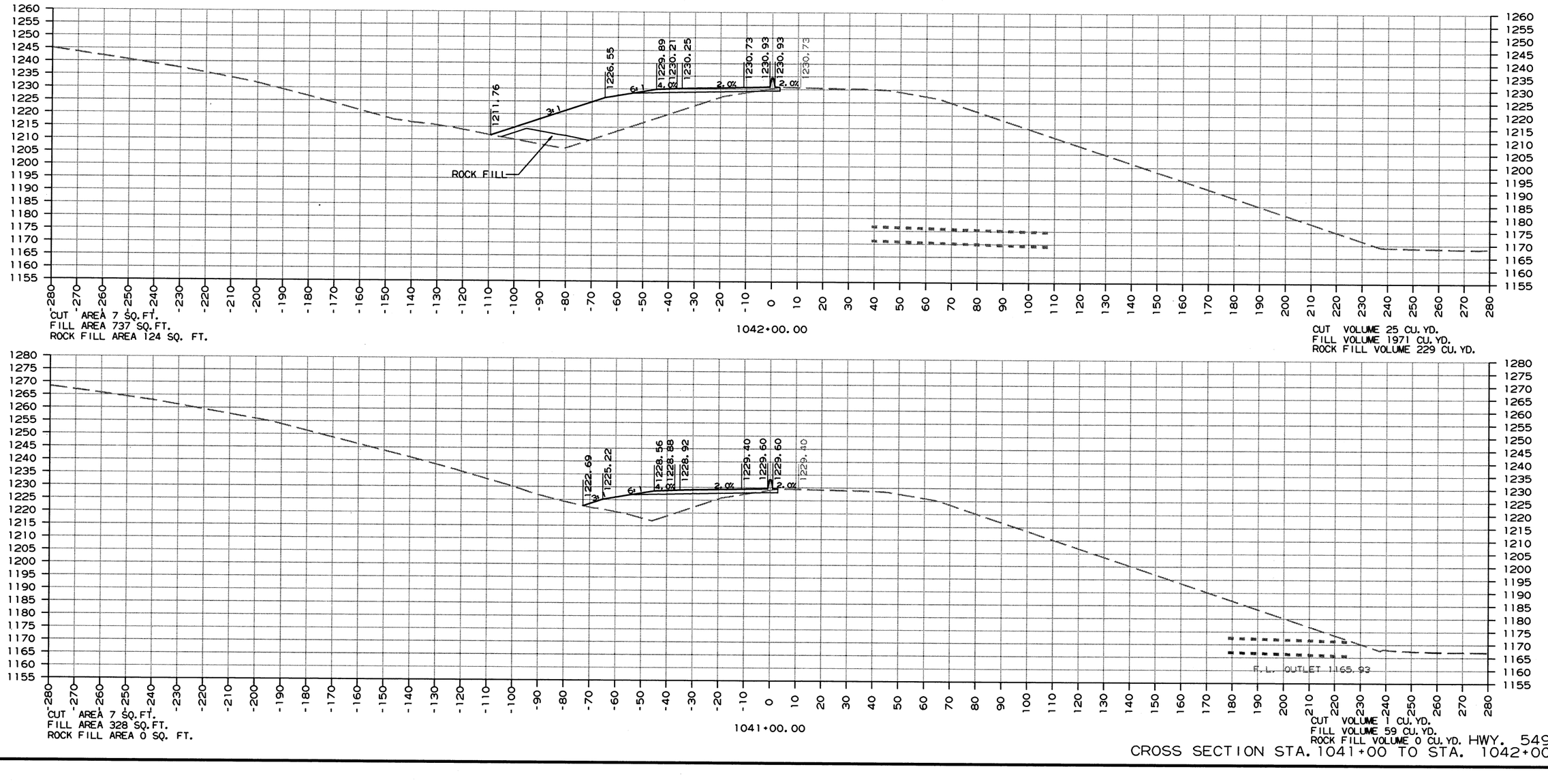
CUT VOLUME 179 CU.YD.
FILL VOLUME 386 CU.YD.
ROCK FILL VOLUME 76 CU.YD.

HWY. 549
CROSS SECTION STA. 1040+00 TO STA. 1040+95

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				6	ARK.			
				JOB NO.		CA0903	317	452

(2) CROSS SECTIONS



CUT AREA 7 SQ. FT.
FILL AREA 737 SQ. FT.
ROCK FILL AREA 124 SQ. FT.

1042+00.00

CUT VOLUME 25 CU. YD.
FILL VOLUME 1971 CU. YD.
ROCK FILL VOLUME 229 CU. YD.

CUT AREA 7 SQ. FT.
FILL AREA 328 SQ. FT.
ROCK FILL AREA 0 SQ. FT.

1041+00.00

CUT VOLUME 1 CU. YD.
FILL VOLUME 59 CU. YD.
ROCK FILL VOLUME 0 CU. YD.

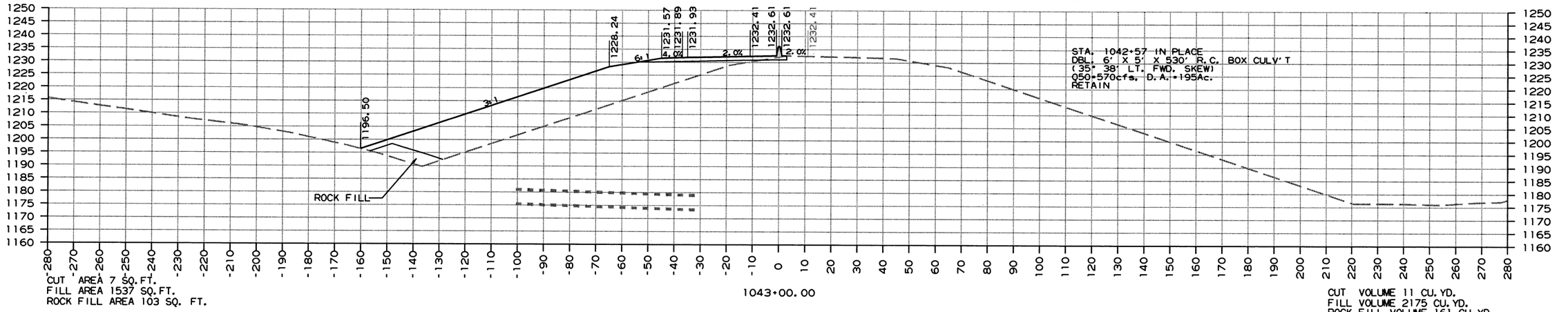
CROSS SECTION STA. 1041+00 TO STA. 1042+00

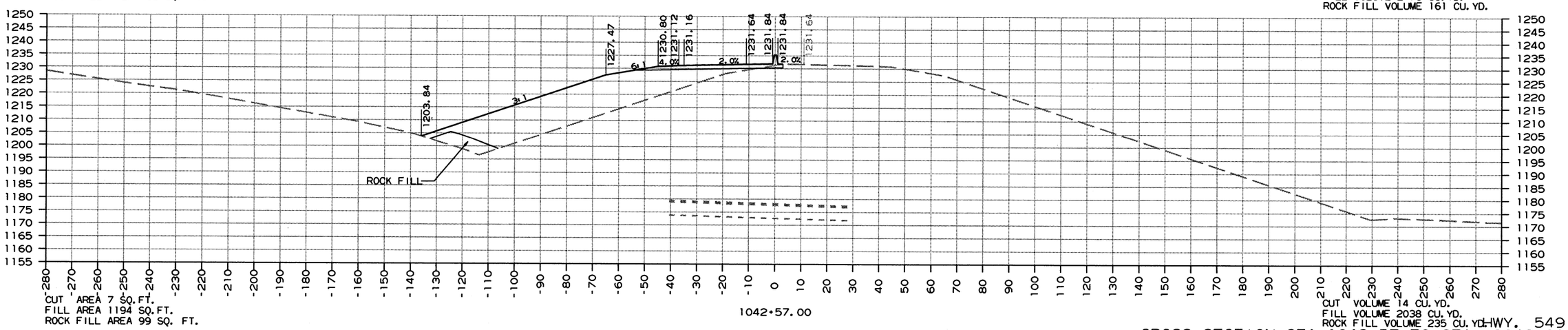
HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	318	452

(2) CROSS SECTIONS



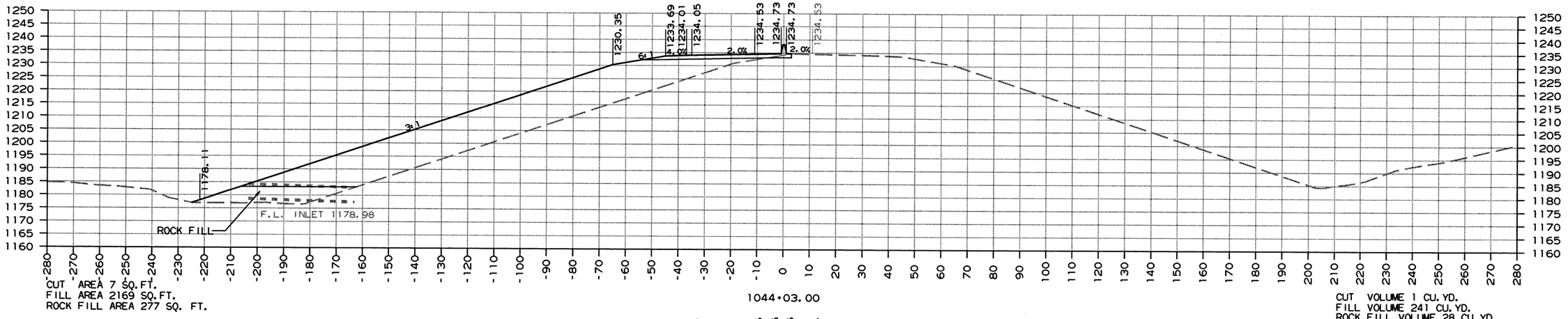


CROSS SECTION STA. 1042+57 TO STA. 1043+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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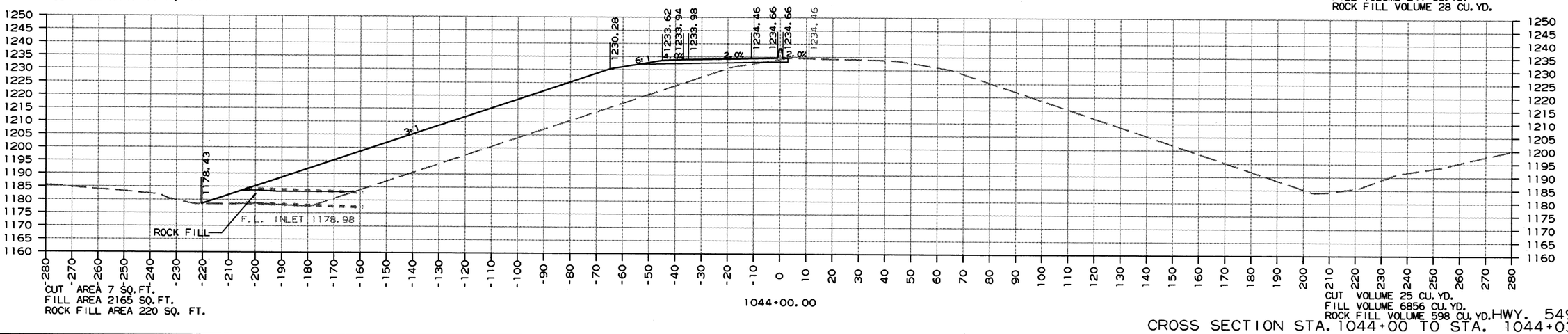
(2) CROSS SECTIONS



CUT AREA 7 SQ.FT.
FILL AREA 2169 SQ.FT.
ROCK FILL AREA 277 SQ. FT.

1044+03.00

CUT VOLUME 1 CU. YD.
FILL VOLUME 241 CU. YD.
ROCK FILL VOLUME 28 CU. YD.



CUT AREA 7 SQ.FT.
FILL AREA 2165 SQ.FT.
ROCK FILL AREA 220 SQ. FT.

1044+00.00

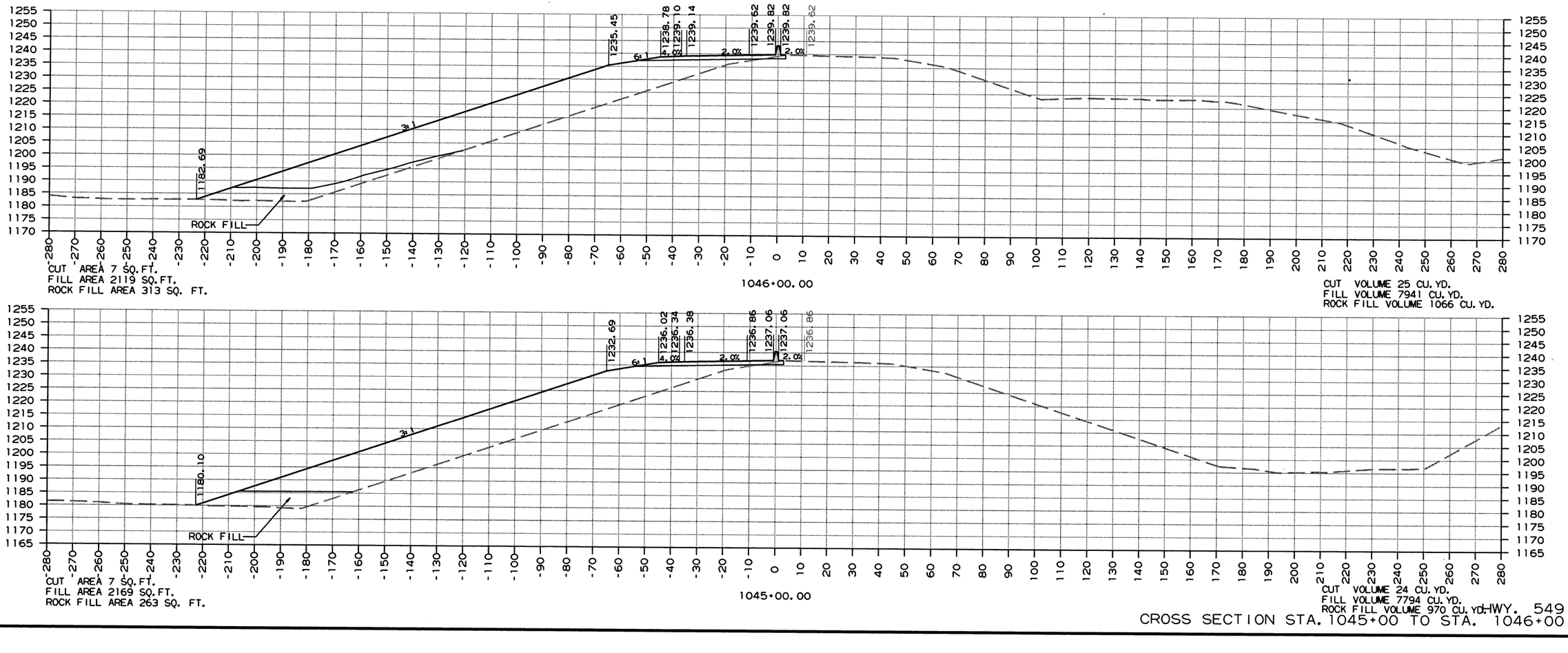
CUT VOLUME 25 CU. YD.
FILL VOLUME 6856 CU. YD.
ROCK FILL VOLUME 598 CU. YD.

HWY. 549
CROSS SECTION STA. 1044+00 TO STA. 1044+03

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				6	ARK.			
				JOB NO.		CA0903	320	452

(2) CROSS SECTIONS



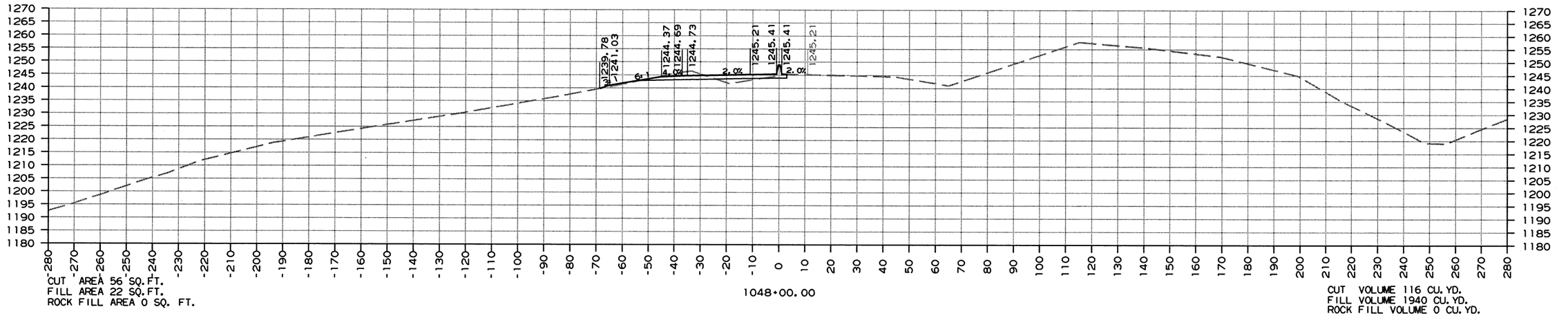
HWY. 549

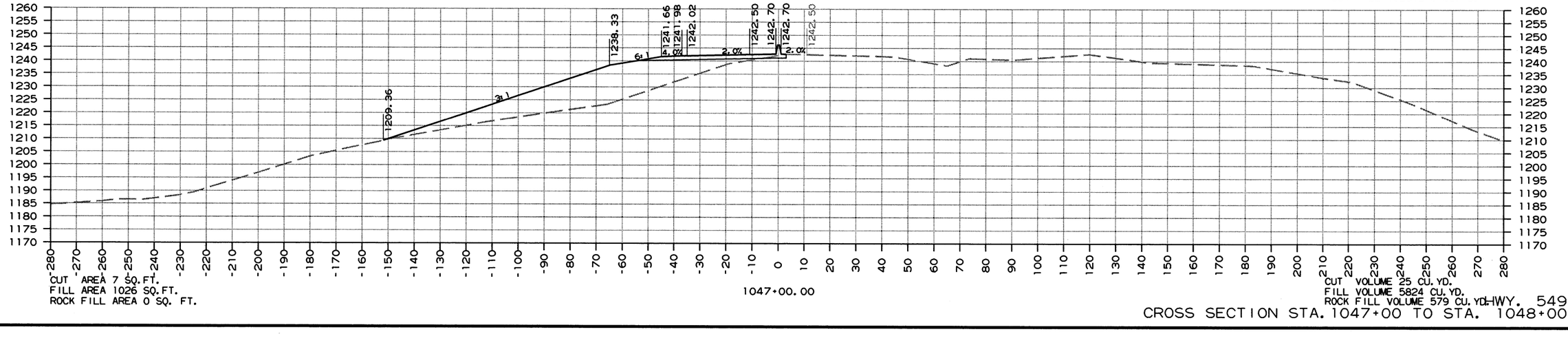
CROSS SECTION STA. 1045+00 TO STA. 1046+00

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS





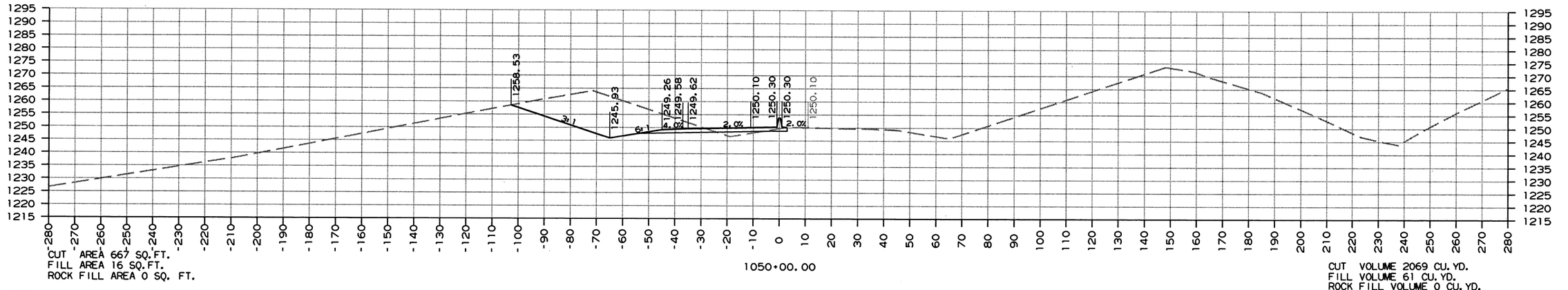
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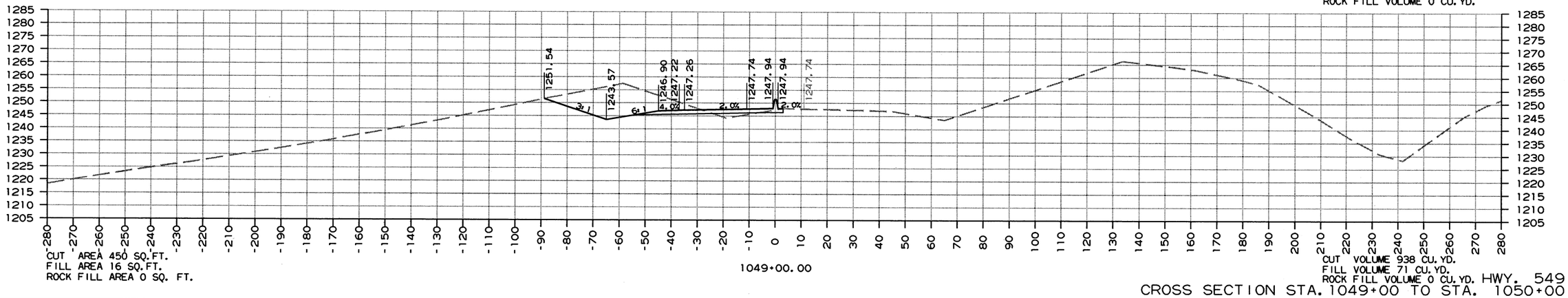
CROSS SECTION STA. 1047+00 TO STA. 1048+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	322	452

(2) CROSS SECTIONS





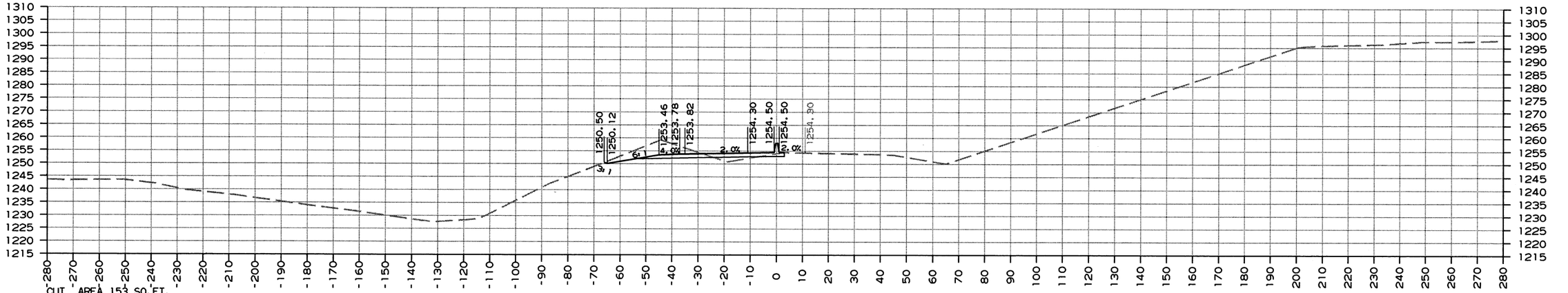
CROSS SECTION STA. 1049+00 TO STA. 1050+00

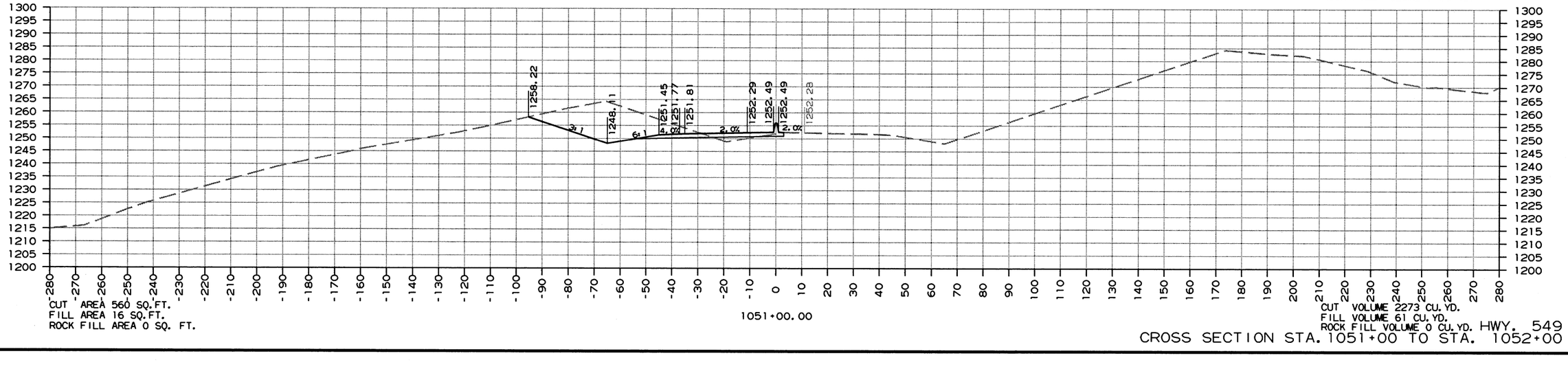
HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS





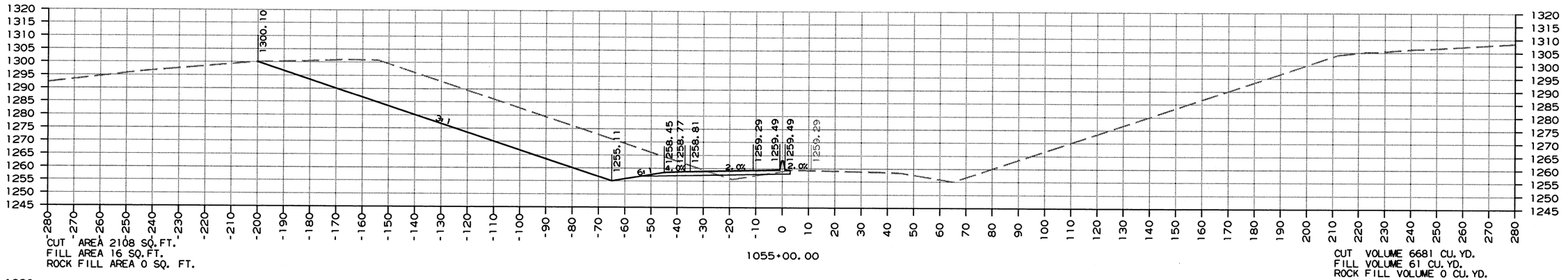
CROSS SECTION STA. 1051+00 TO STA. 1052+00

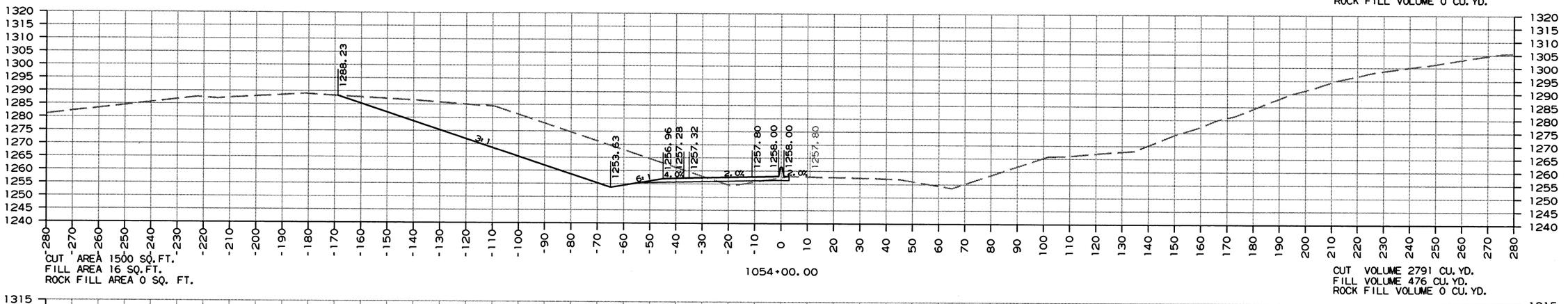
HWY. 549

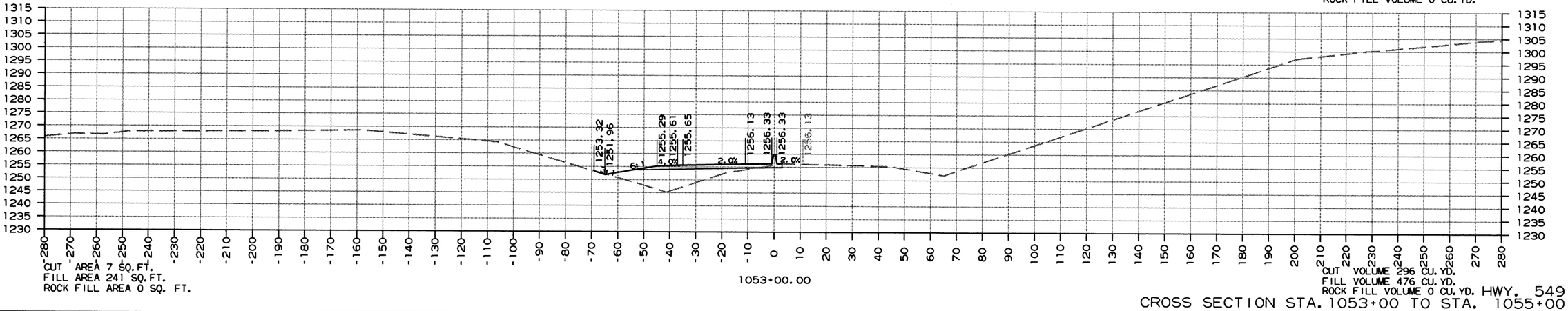
RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	324	452

(2) CROSS SECTIONS





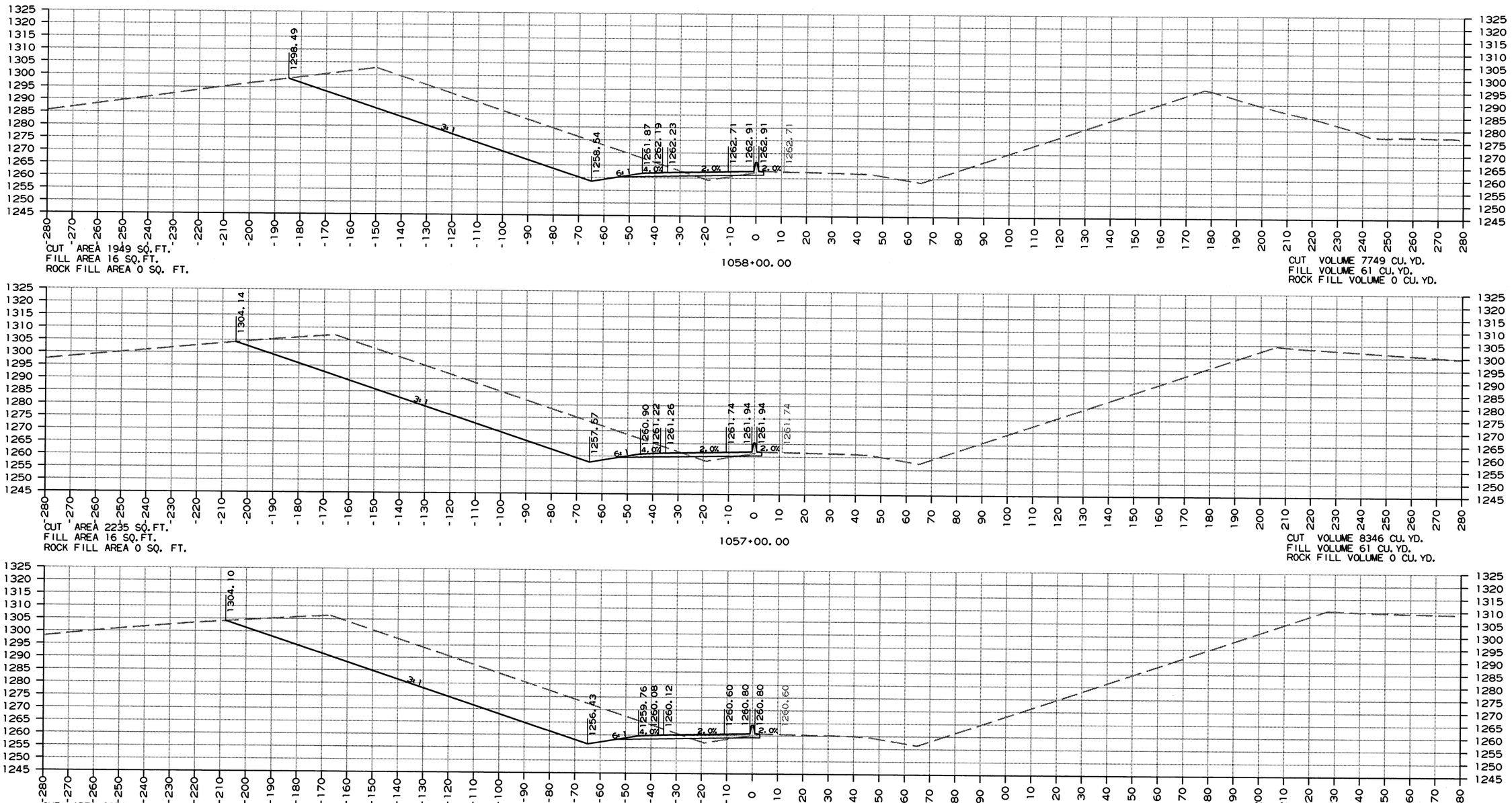


CROSS SECTION STA. 1053+00 TO STA. 1055+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	325	452

(2) CROSS SECTIONS

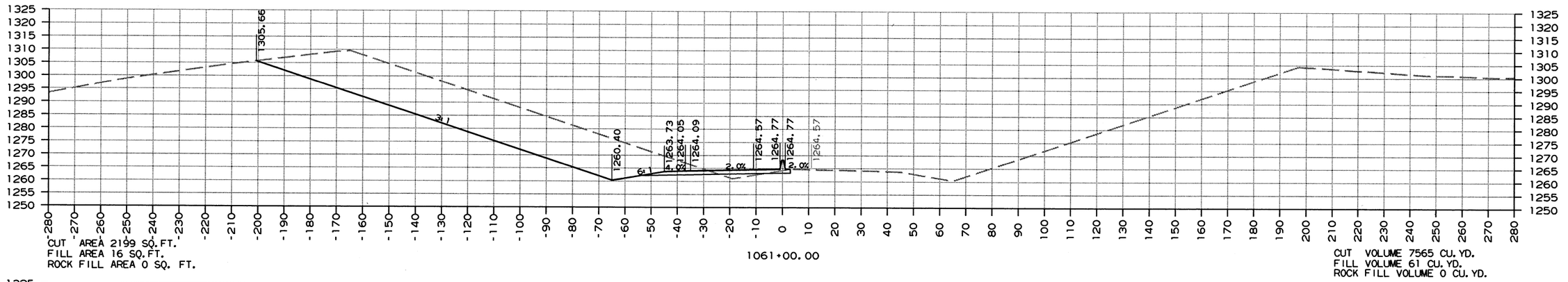


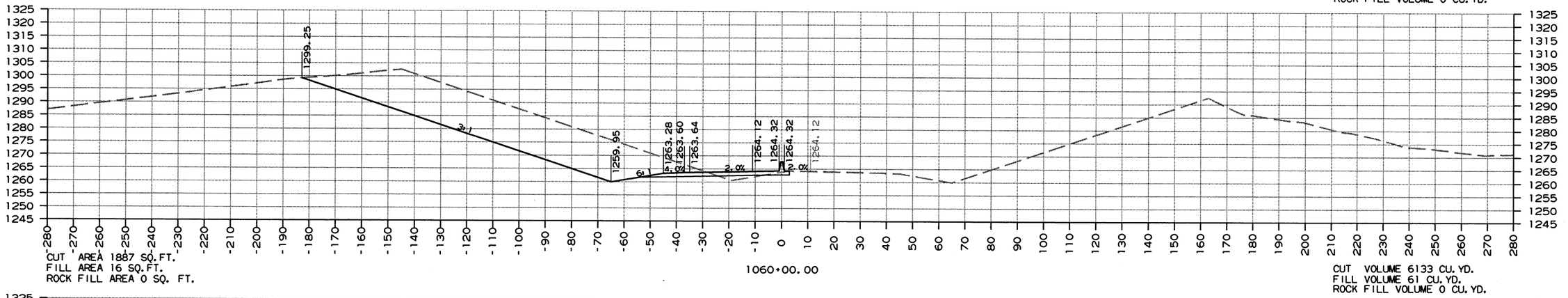
CROSS SECTION STA. 1056+00 TO STA. 1058+00 HWY. 549

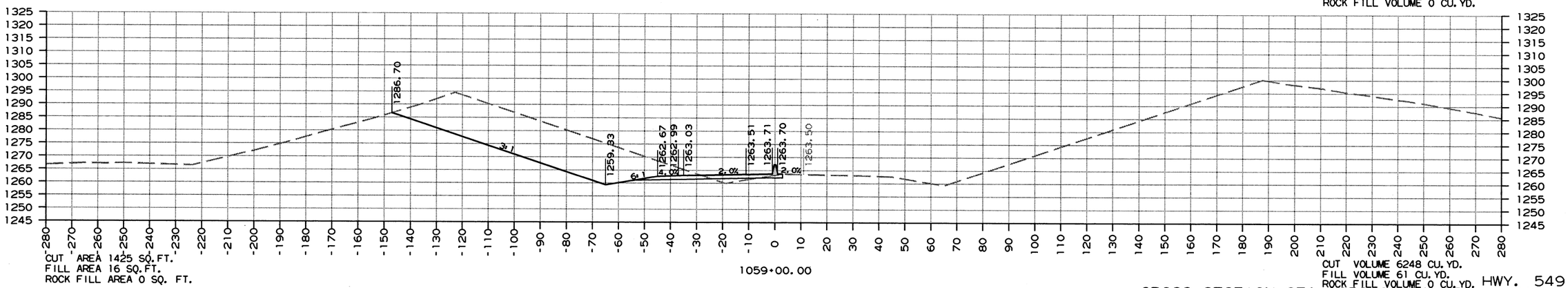
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







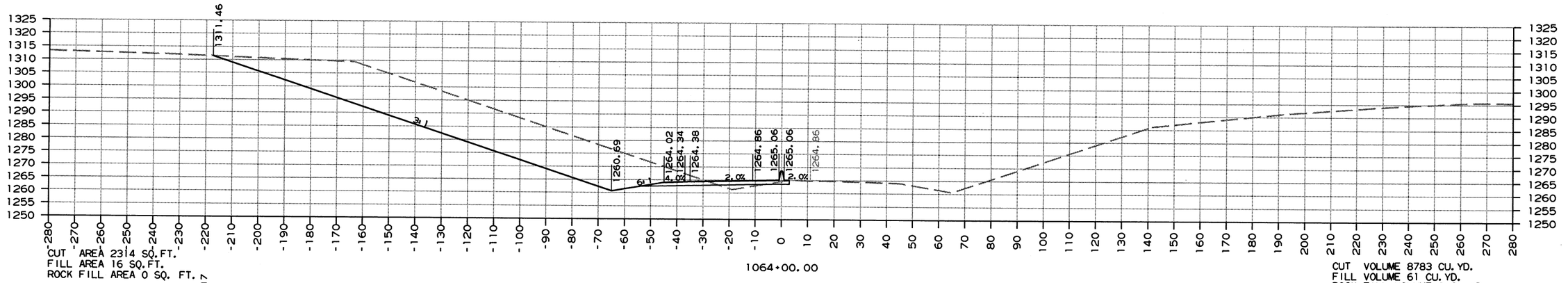
CROSS SECTION STA. 1059+00 TO STA. 1061+00

HWY. 549

RCA0903_REVISED.DGN 10/19/2016

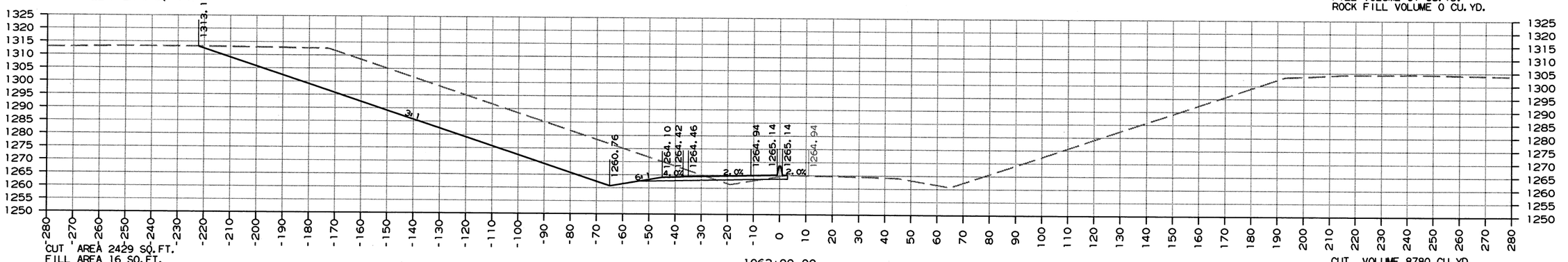
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	327	452

(2) CROSS SECTIONS



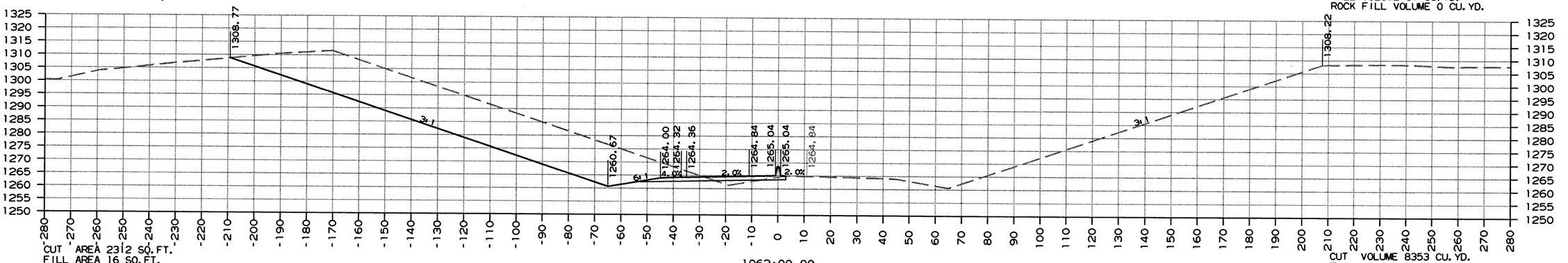
CUT AREA 2314 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 8783 CU. YD.
FILL VOLUME 61 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



CUT AREA 2429 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 8780 CU. YD.
FILL VOLUME 61 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



CUT AREA 2312 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

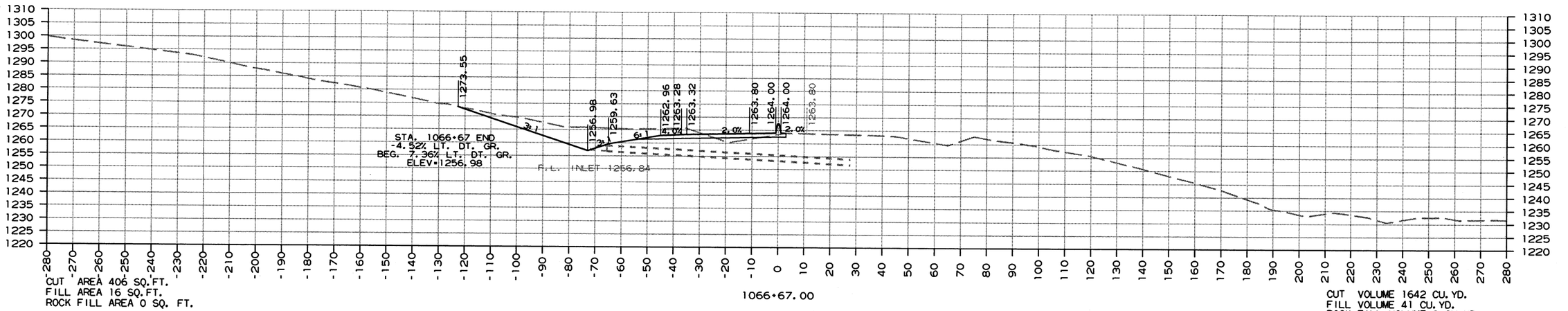
CUT VOLUME 8353 CU. YD.
FILL VOLUME 61 CU. YD.
ROCK FILL VOLUME 0 CU. YD.

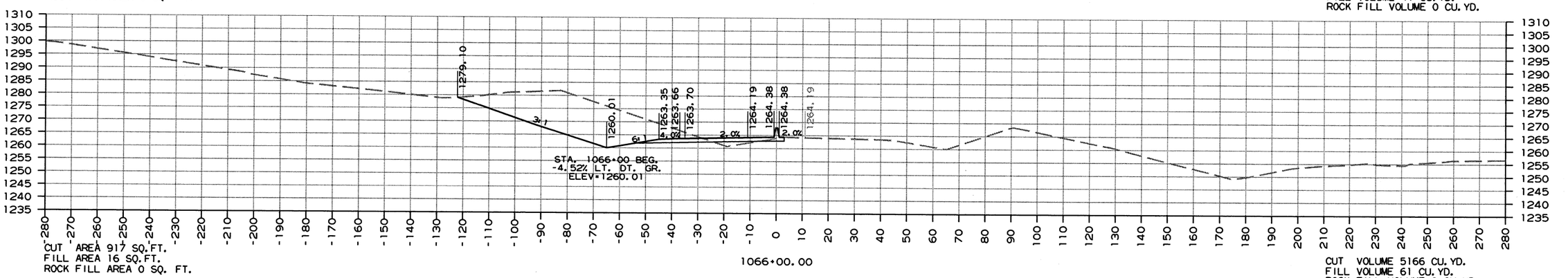
HWY. 549
CROSS SECTION STA. 1062+00 TO STA. 1064+00

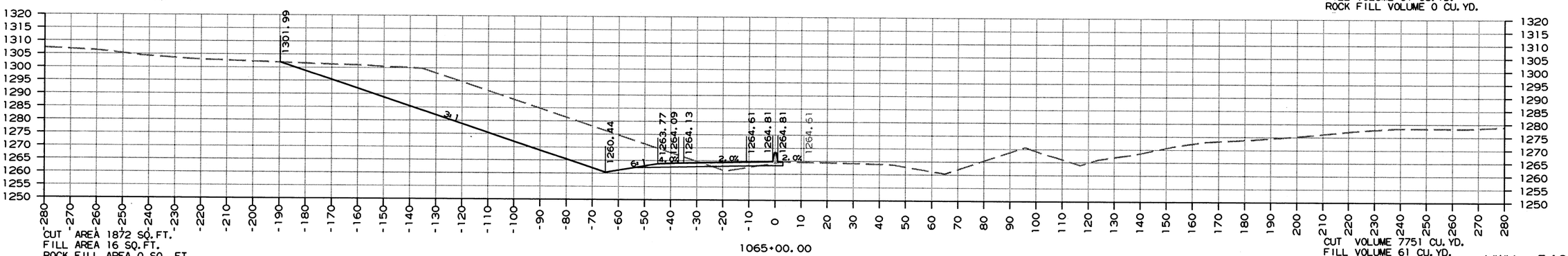
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	328	452

(2) CROSS SECTIONS





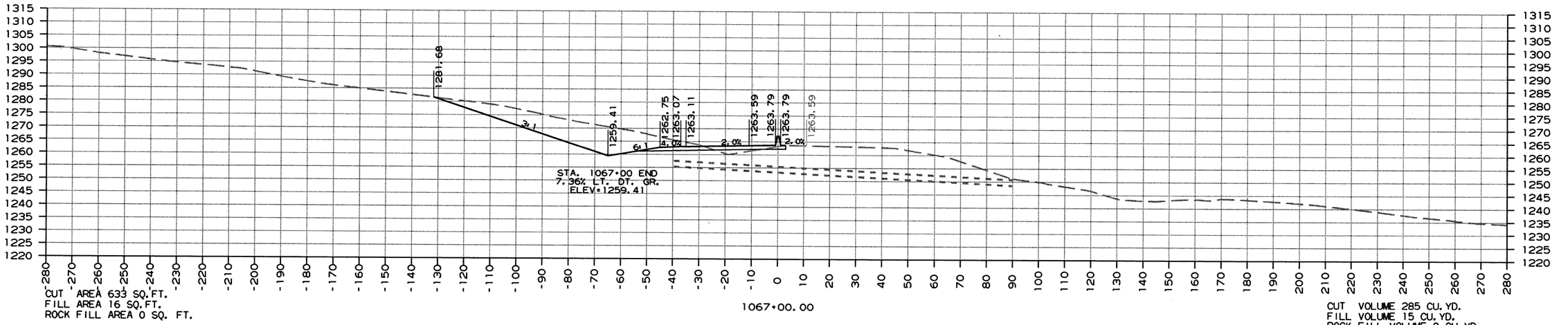


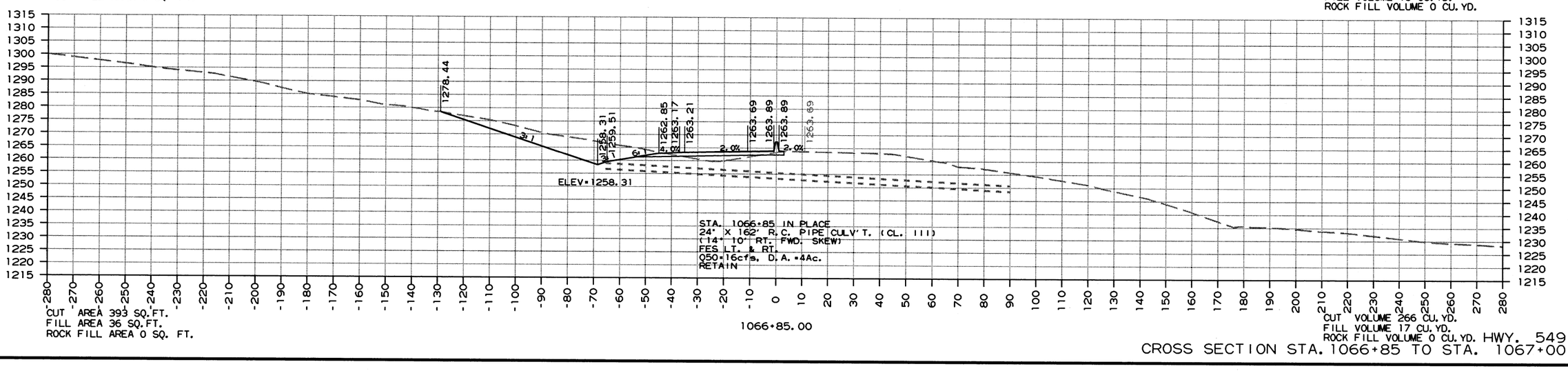
RCA0903_REVISED.DGN 10/19/2016

CROSS SECTION STA. 1065+00 TO STA. 1066+67 HWY. 549

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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				JOB NO.		CA0903	329	452

(2) CROSS SECTIONS



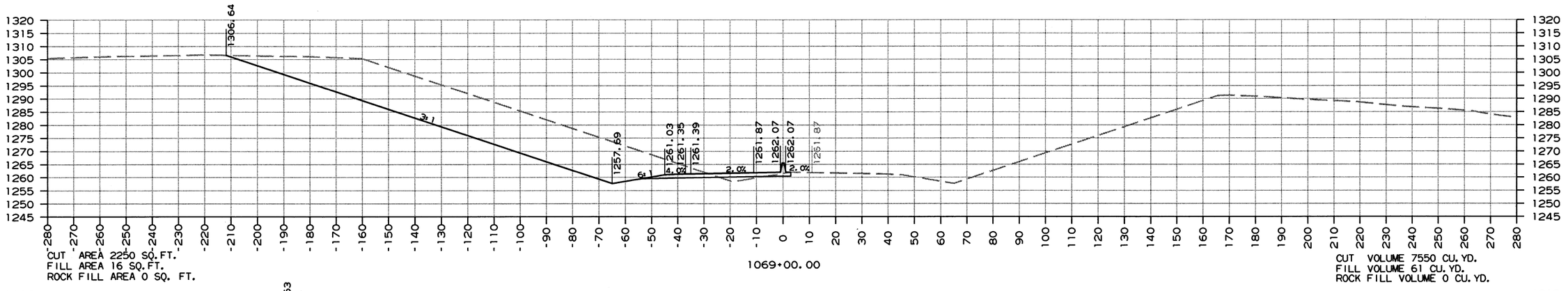


CROSS SECTION STA. 1066+85 TO STA. 1067+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	330	452

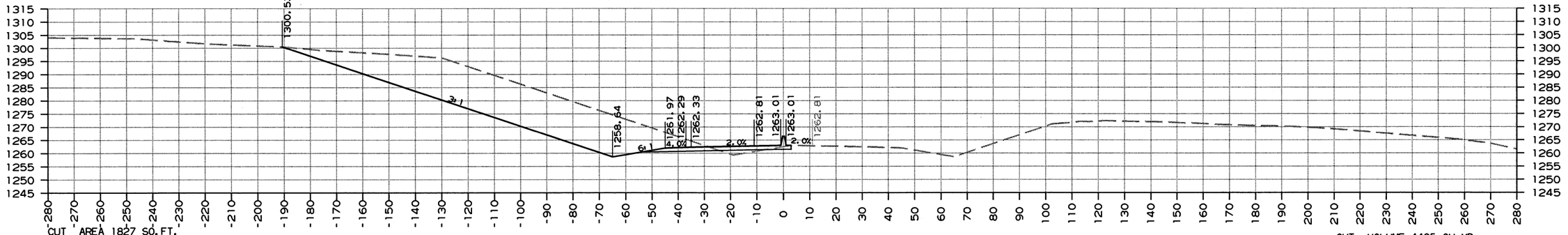
(2) CROSS SECTIONS



CUT AREA 2250 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1069+00.00

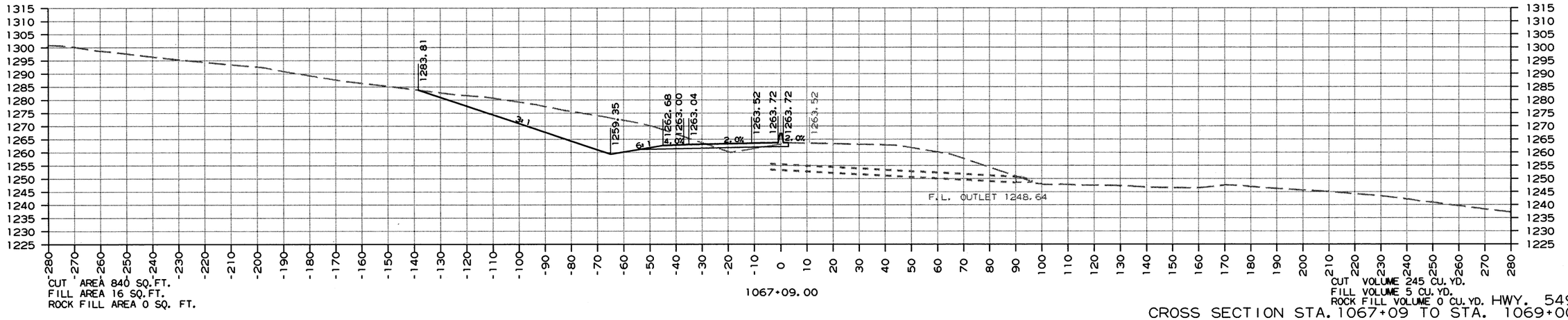
CUT VOLUME 7550 CU.YD.
FILL VOLUME 61 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 1827 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1068+00.00

CUT VOLUME 4495 CU.YD.
FILL VOLUME 55 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 840 SQ.FT.
FILL AREA 16 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1067+09.00

CUT VOLUME 245 CU.YD.
FILL VOLUME 5 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

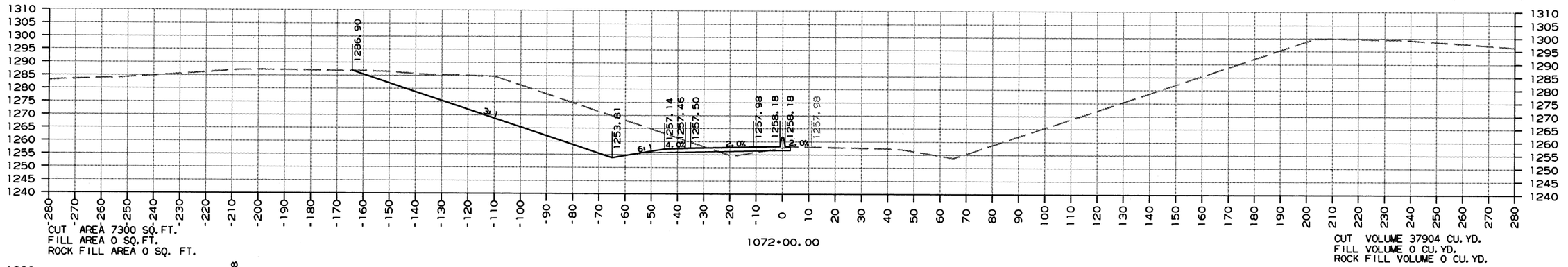
HWY. 549

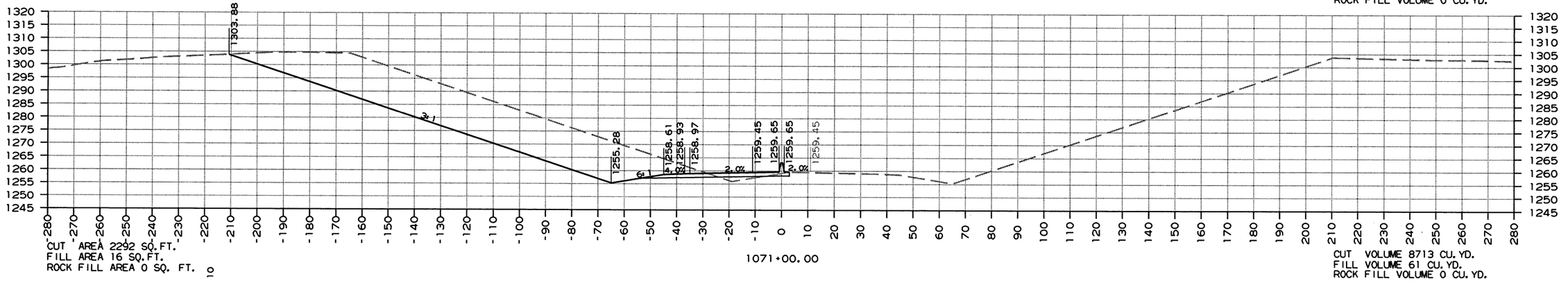
CROSS SECTION STA. 1067+09 TO STA. 1069+00

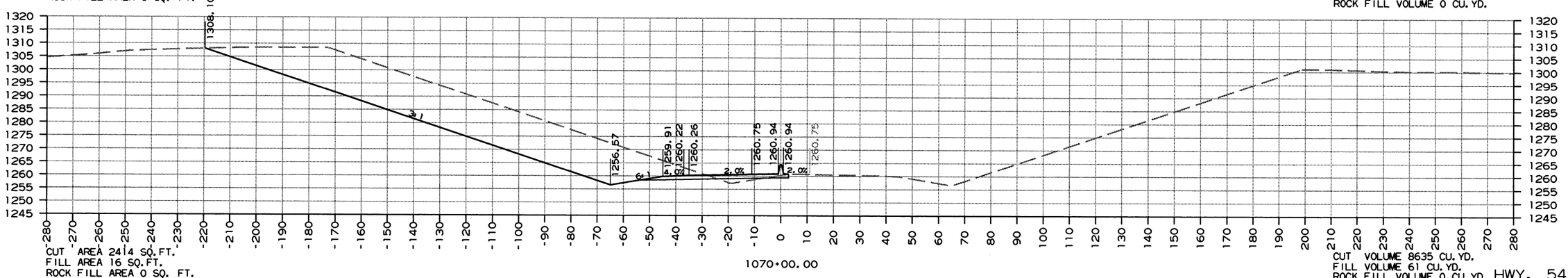
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	331	452

(2) CROSS SECTIONS







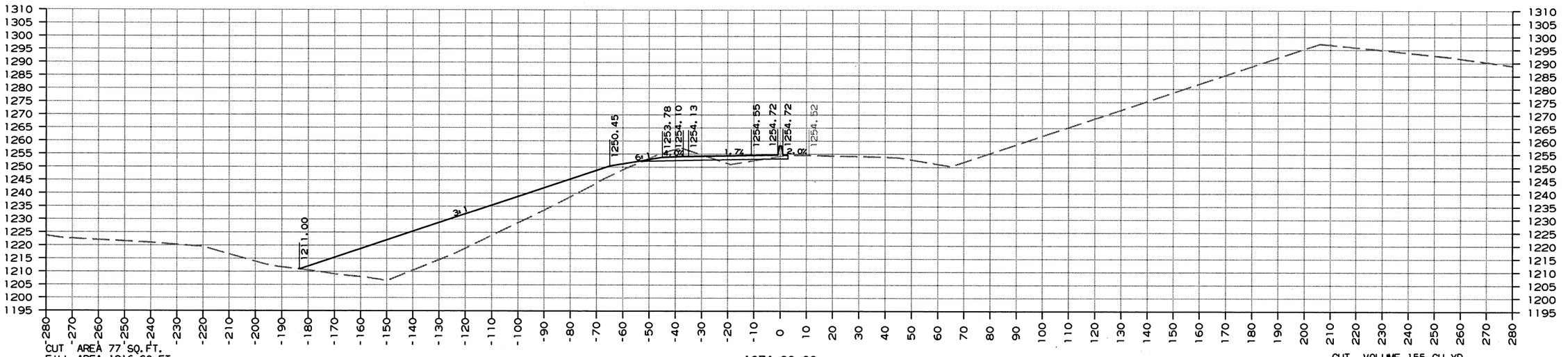
CROSS SECTION STA. 1070+00 TO STA. 1072+00

HWY. 549

RCA0903_REVISED.DGN 10/19/2016

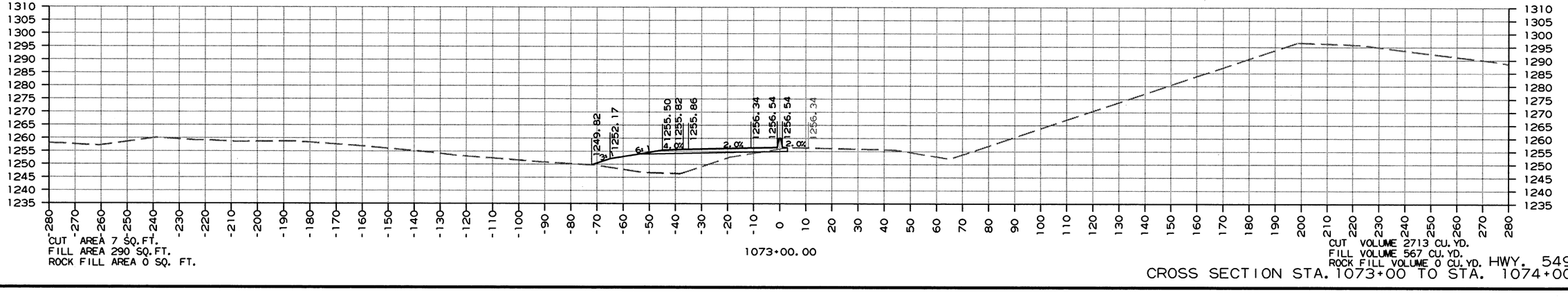
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	332	452

(2) CROSS SECTIONS



CUT AREA 77 SQ.FT.
FILL AREA 1216 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 155 CU.YD.
FILL VOLUME 2788 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 7 SQ.FT.
FILL AREA 290 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

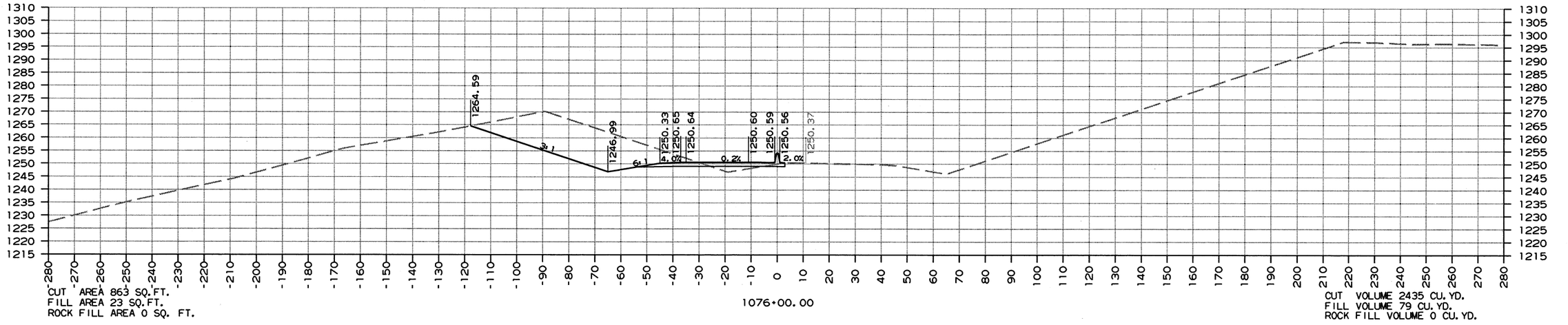
CUT VOLUME 2713 CU.YD.
FILL VOLUME 567 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

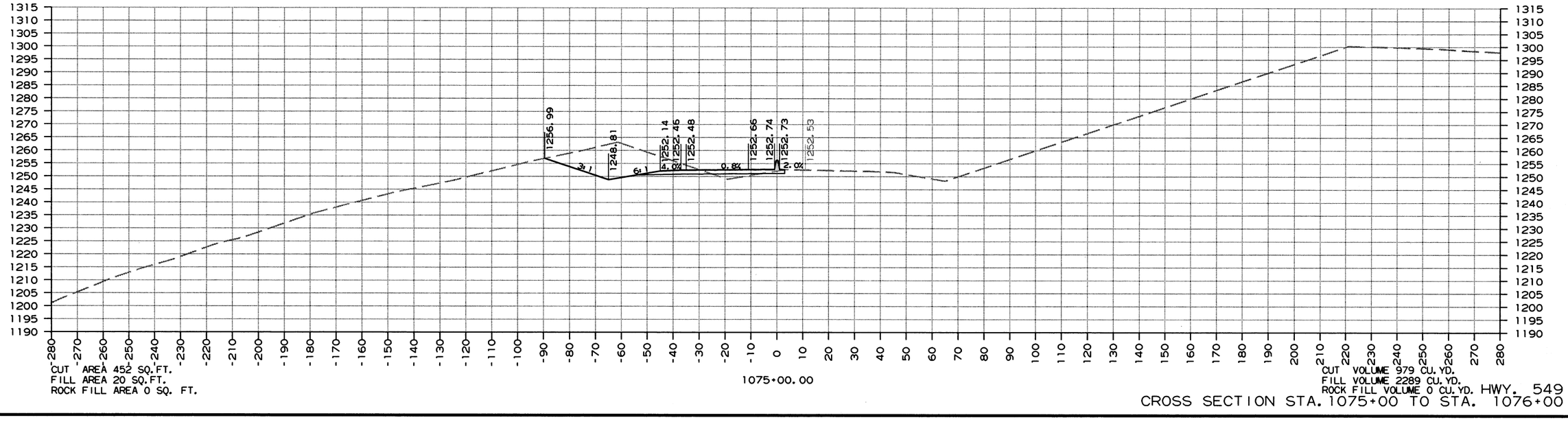
HWY. 549
CROSS SECTION STA. 1073+00 TO STA. 1074+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	333	452

(2) CROSS SECTIONS





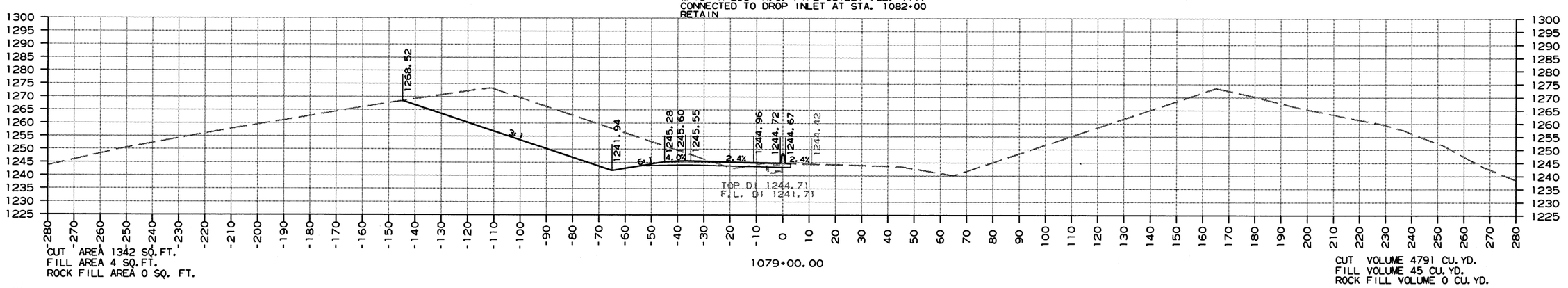
HWY. 549
CROSS SECTION STA. 1075+00 TO STA. 1076+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	334	452

(2) CROSS SECTIONS

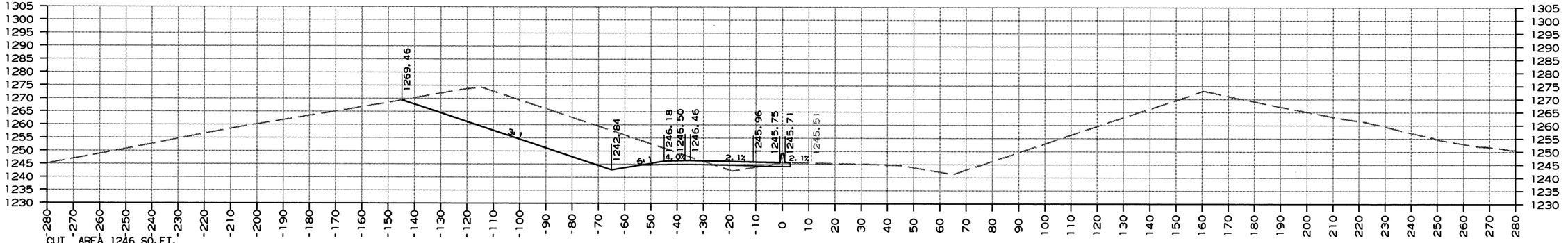
STA. 1079+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-0"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1082+00
RETAIN



'CUT ' AREA 1342 SQ.FT.'
FILL AREA 4 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1079+00.00

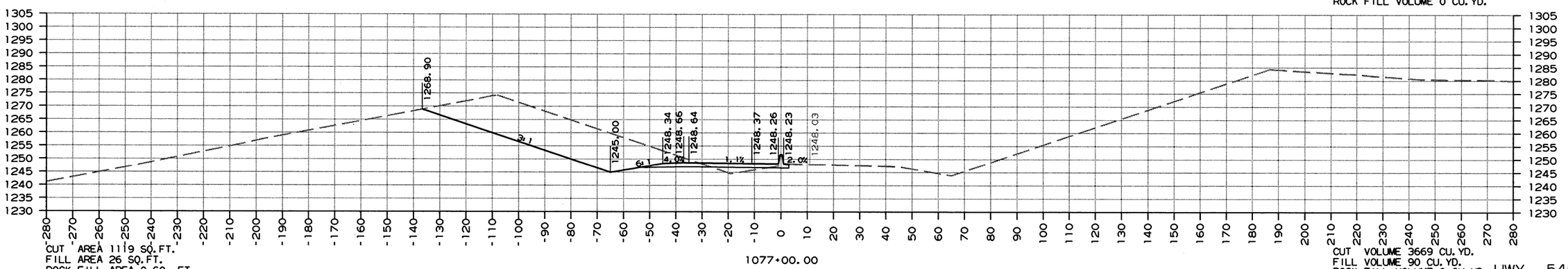
CUT VOLUME 4791 CU.YD.
FILL VOLUME 45 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



'CUT ' AREA 1246 SQ.FT.'
FILL AREA 20 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1078+00.00

CUT VOLUME 4379 CU.YD.
FILL VOLUME 85 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



'CUT ' AREA 1119 SQ.FT.'
FILL AREA 26 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1077+00.00

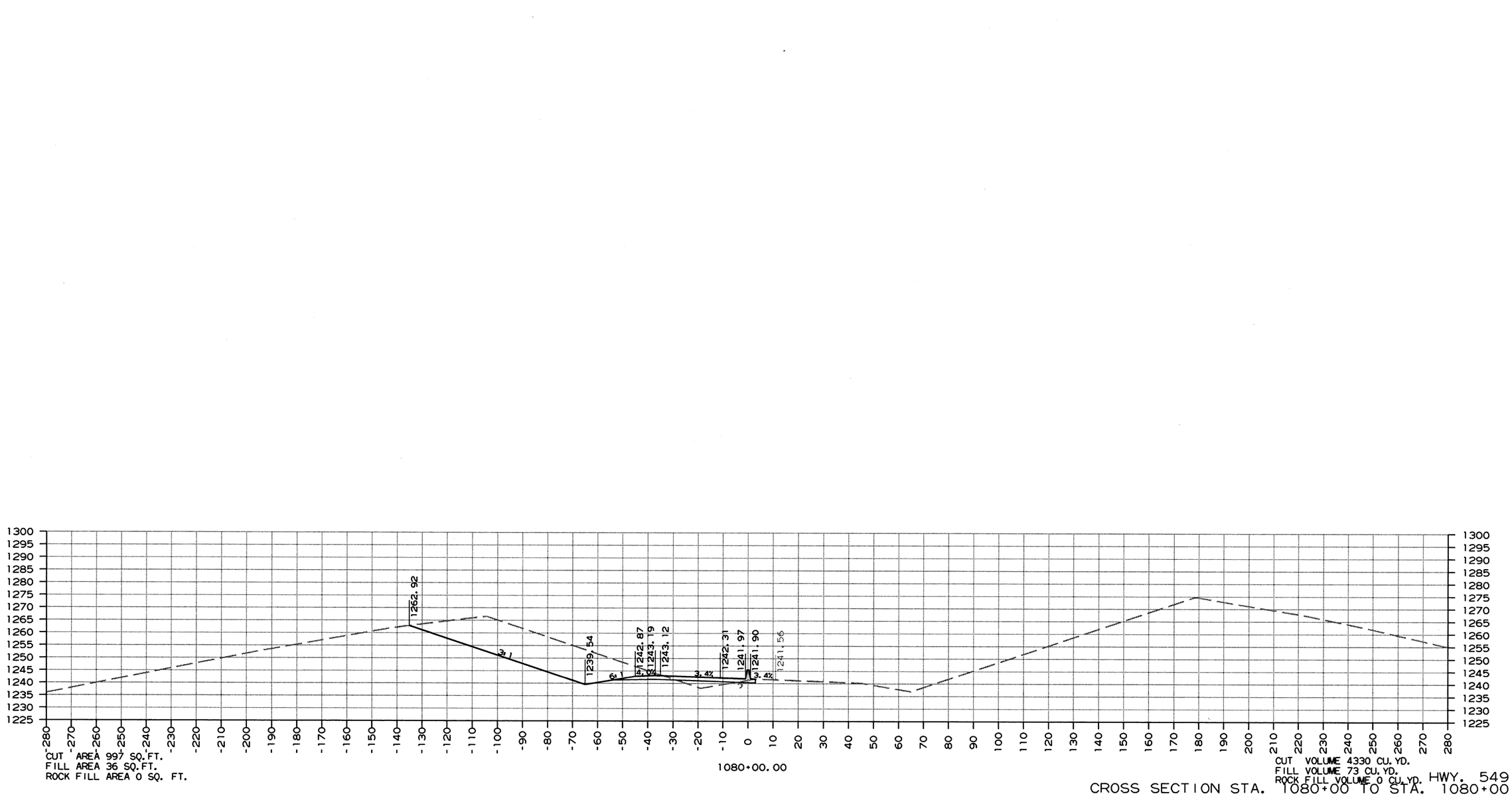
CUT VOLUME 3669 CU.YD.
FILL VOLUME 90 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

HWY. 549
CROSS SECTION STA. 1077+00 TO STA. 1079+00

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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.		CA0903	335	452

(2) CROSS SECTIONS



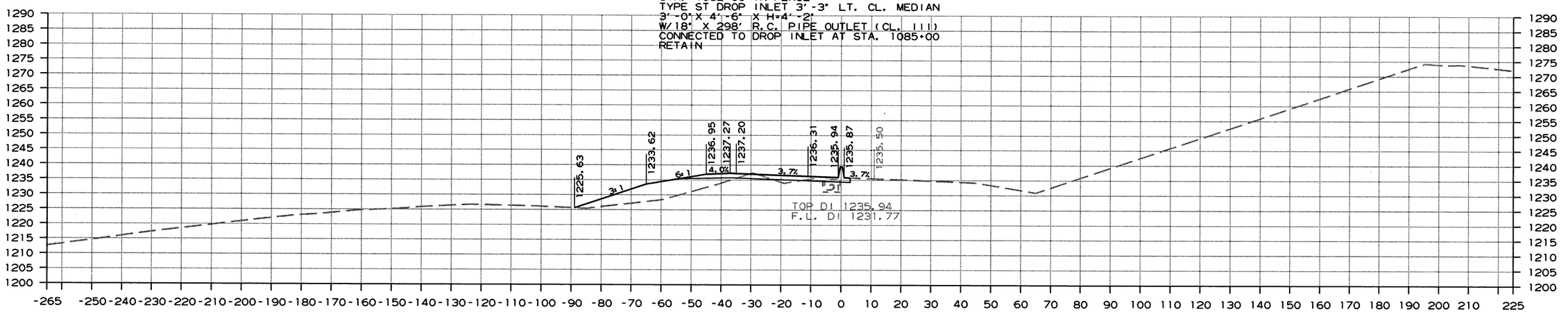
CROSS SECTION STA. 1080+00 TO STA. 1080+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	336	452

(2) CROSS SECTIONS

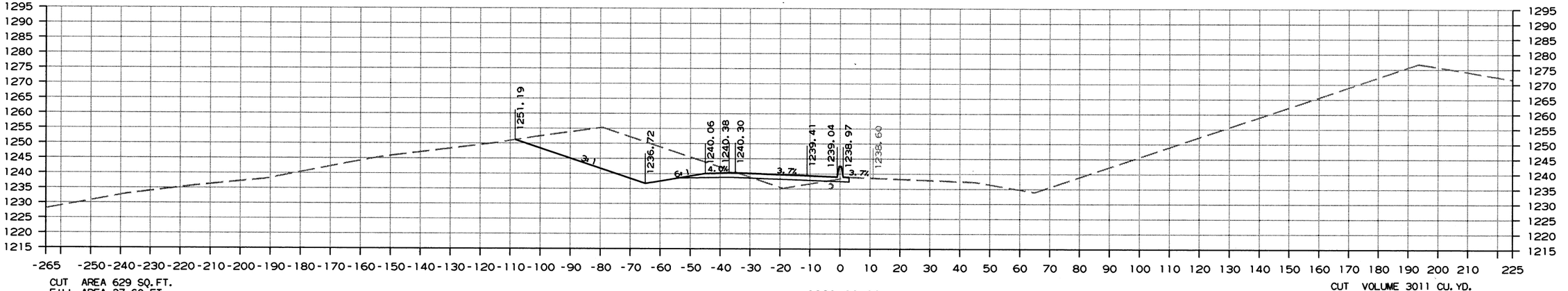
STA. 1082+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=4'-2"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1085+00
RETAIN



CUT AREA 31 SQ.FT.
FILL AREA 201 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1082+00.00

CUT VOLUME 1222 CU. YD.
FILL VOLUME 441 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



CUT AREA 629 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1081+00.00

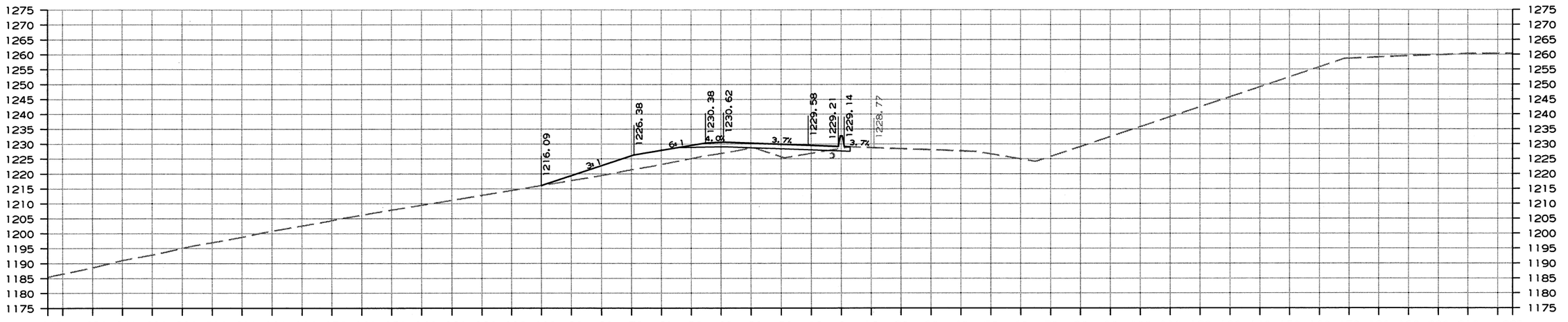
CUT VOLUME 3011 CU. YD.
FILL VOLUME 134 CU. YD.
ROCK FILL VOLUME 0 CU. YD.

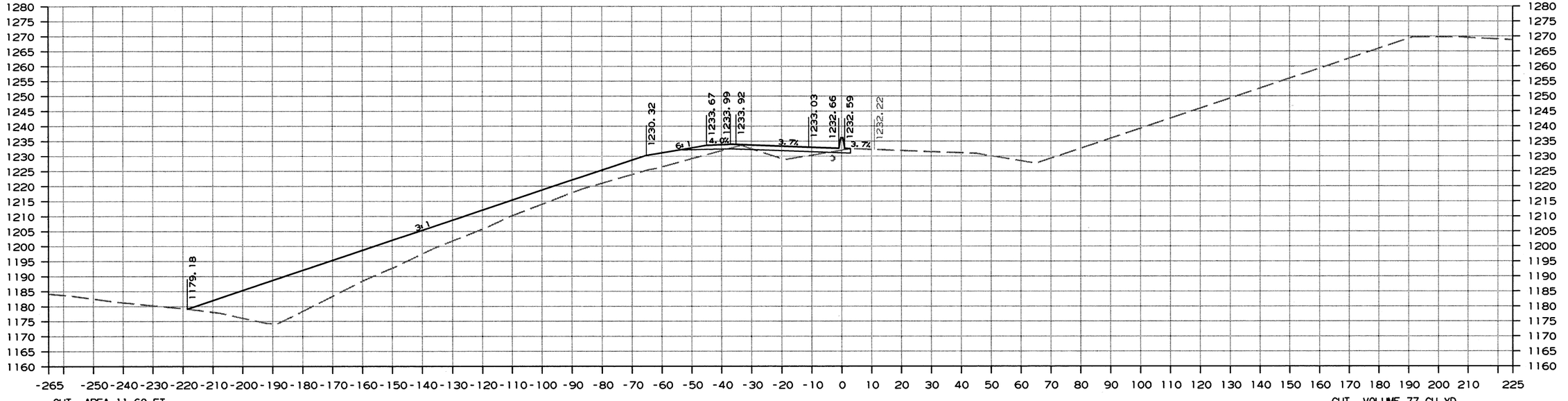
HWY. 549
CROSS SECTION STA. 1081+00 TO STA. 1082+00

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	337	452

(2) CROSS SECTIONS





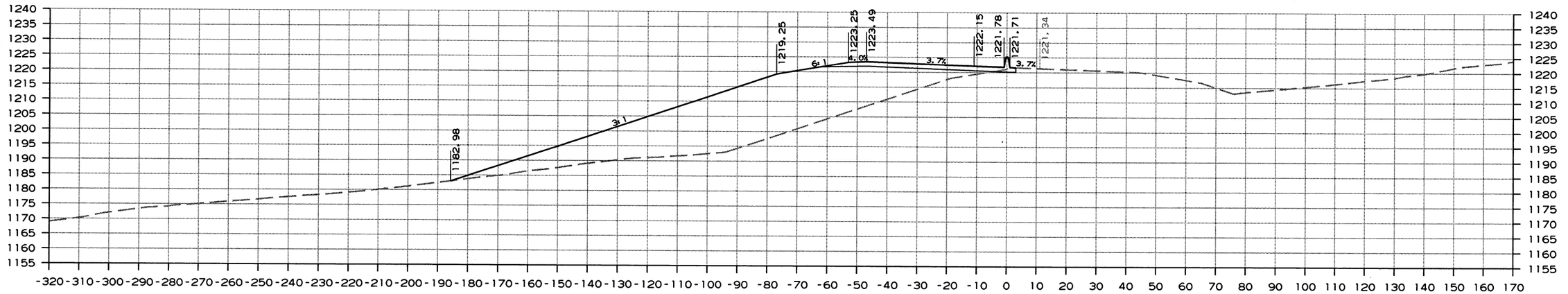
CROSS SECTION STA. 1083+00 TO STA. 1084+00

HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	338	452

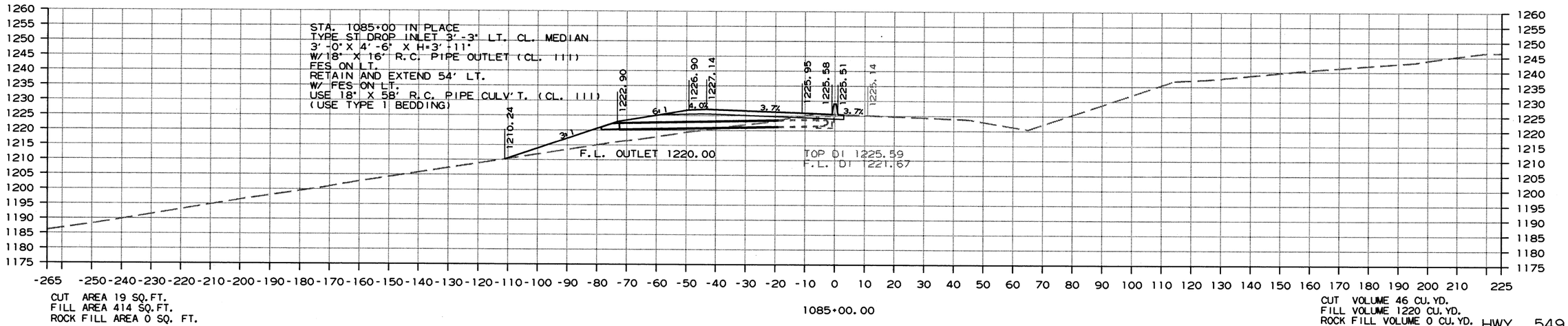
(2) CROSS SECTIONS



CUT AREA 6 SQ.FT.
FILL AREA 2010 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1086+00.00

CUT VOLUME 45 CU.YD.
FILL VOLUME 4488 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 19 SQ.FT.
FILL AREA 414 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1085+00.00

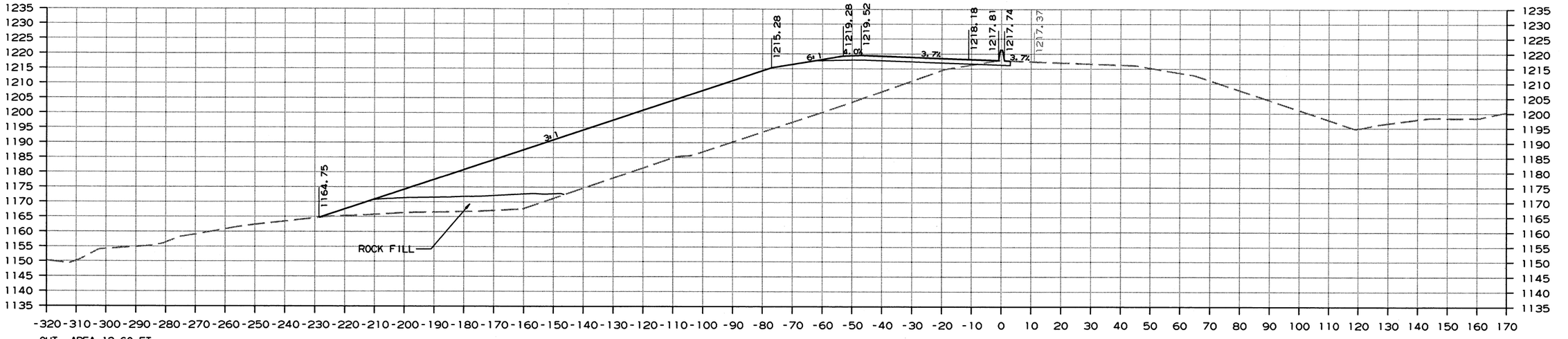
CUT VOLUME 46 CU.YD.
FILL VOLUME 1220 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

CROSS SECTION STA. 1085+00 TO STA. 1086+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	339	452

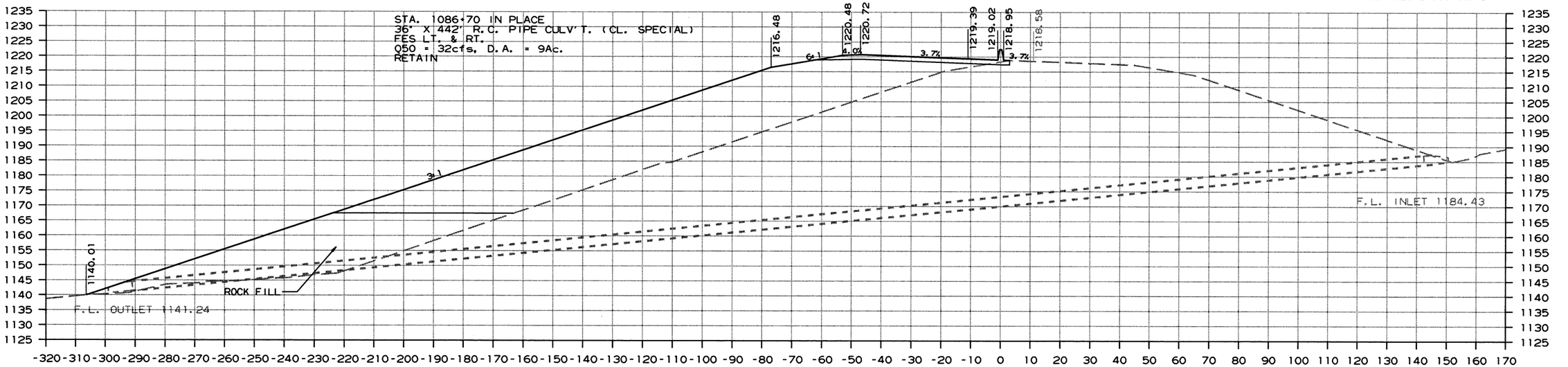
(2) CROSS SECTIONS



CUT AREA 12 SQ.FT.
FILL AREA 2747 SQ.FT.
ROCK FILL AREA 331 SQ. FT.

1087+00.00

CUT VOLUME 9 CU.YD.
FILL VOLUME 3269 CU.YD.
ROCK FILL VOLUME 980 CU.YD.



CUT AREA 6 SQ.FT.
FILL AREA 3136 SQ.FT.
ROCK FILL AREA 1432 SQ. FT.

1086+70.00

CUT VOLUME 14 CU.YD.
FILL VOLUME 6671 CU.YD.
ROCK FILL VOLUME 1857 CU.YD.

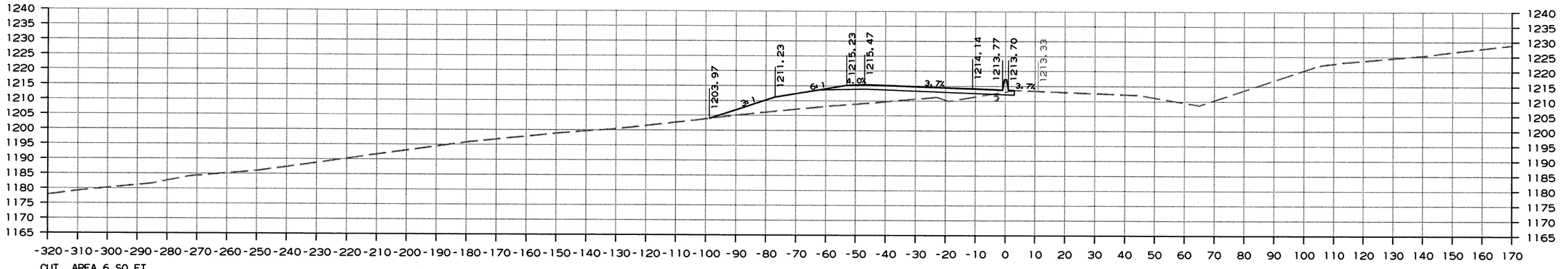
HWY. 549

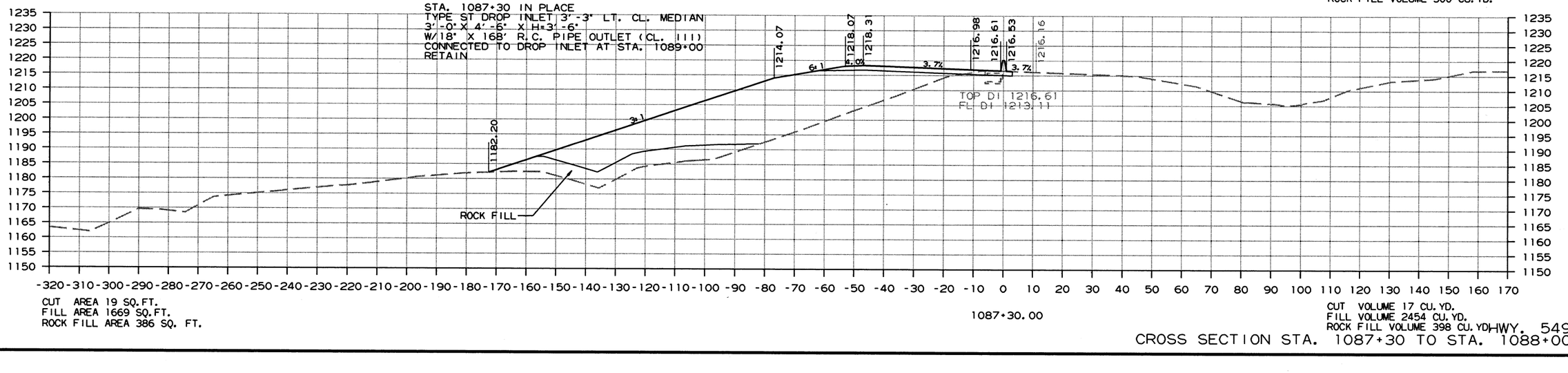
CROSS SECTION STA. 1086+70 TO STA. 1087+00

RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS



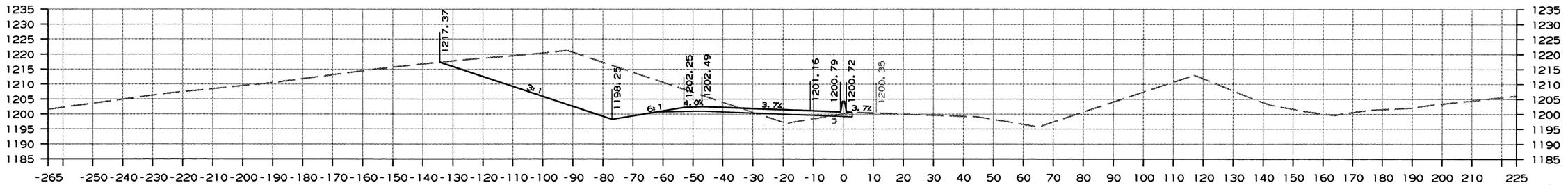


HWY. 549
CROSS SECTION STA. 1087+30 TO STA. 1088+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	341	452

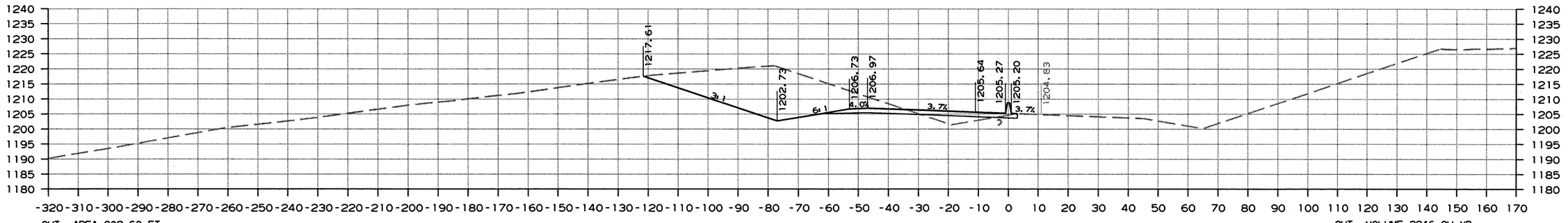
(2) CROSS SECTIONS



CUT AREA 1037 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1091+00.00

CUT VOLUME 3407 CU.YD.
FILL VOLUME 136 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

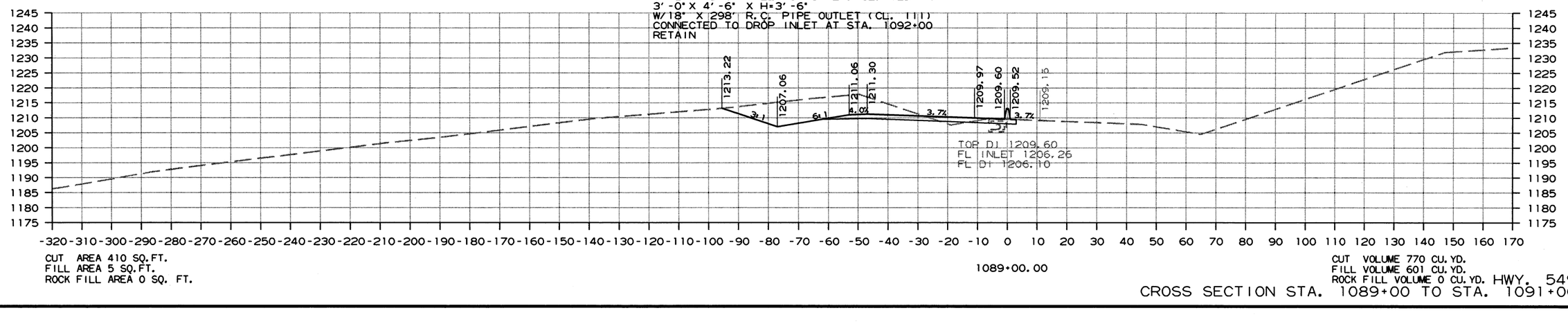


CUT AREA 802 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1090+00.00

CUT VOLUME 2246 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

STA. 1089+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/18" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1092+00
RETAIN



CUT AREA 410 SQ.FT.
FILL AREA 5 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1089+00.00

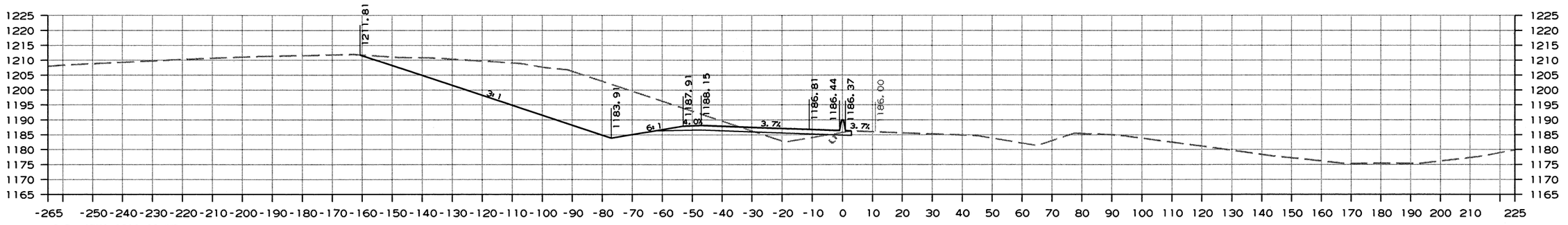
CUT VOLUME 770 CU.YD.
FILL VOLUME 601 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

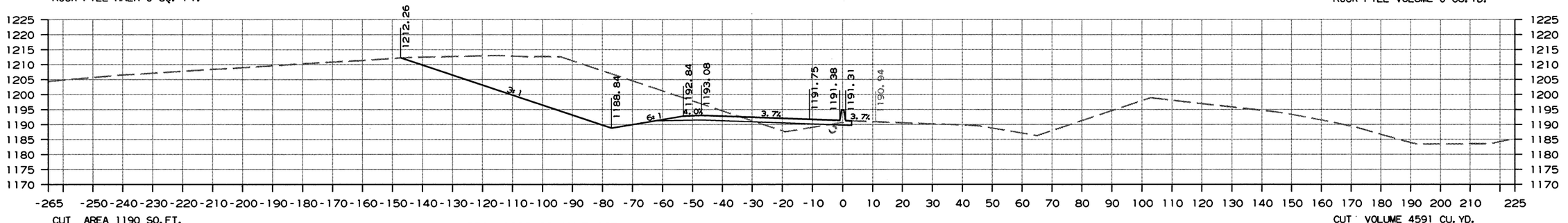
HWY. 549
CROSS SECTION STA. 1089+00 TO STA. 1091+00

RCA0903_REVISED.DGN 10/19/2016

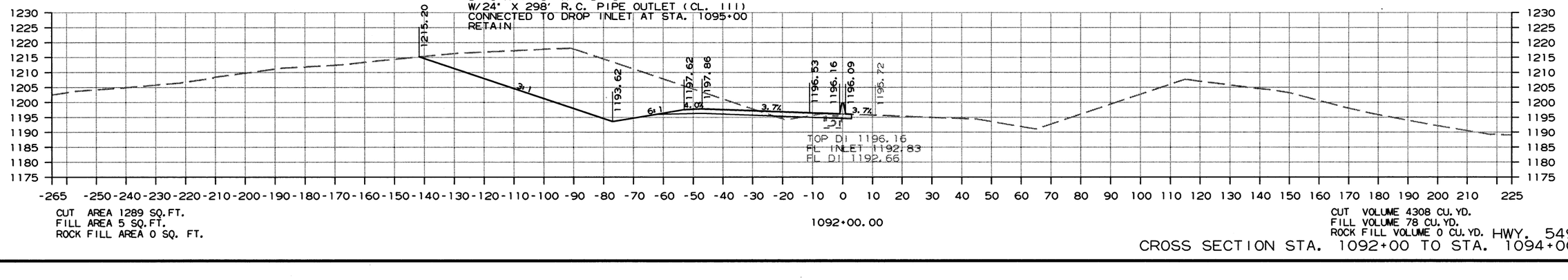
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	342	452

(2) CROSS SECTIONS





STA. 1092+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1095+00
RETAIN

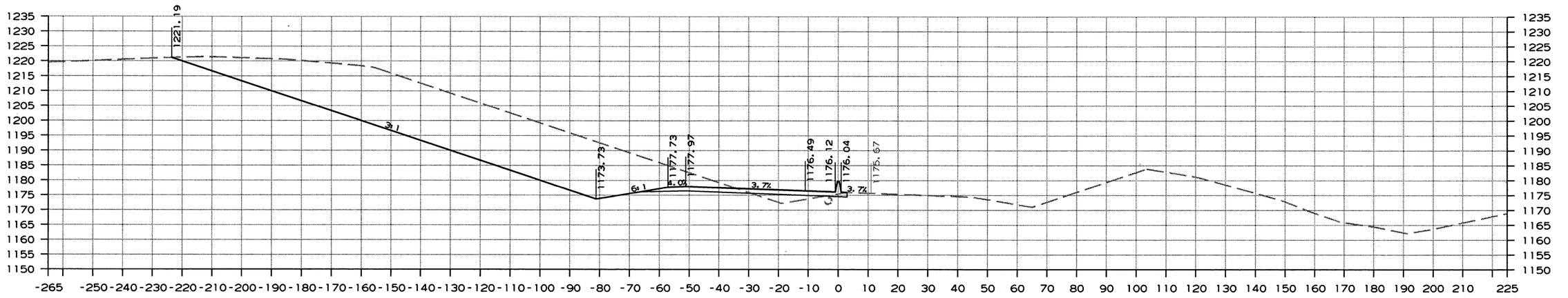


CROSS SECTION STA. 1092+00 TO STA. 1094+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	343	452

(2) CROSS SECTIONS



CUT AREA 2598 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 8633 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

STA. 1095+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1098+00
RETAIN

CUT AREA 2063 SQ.FT.
FILL AREA 5 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 6247 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

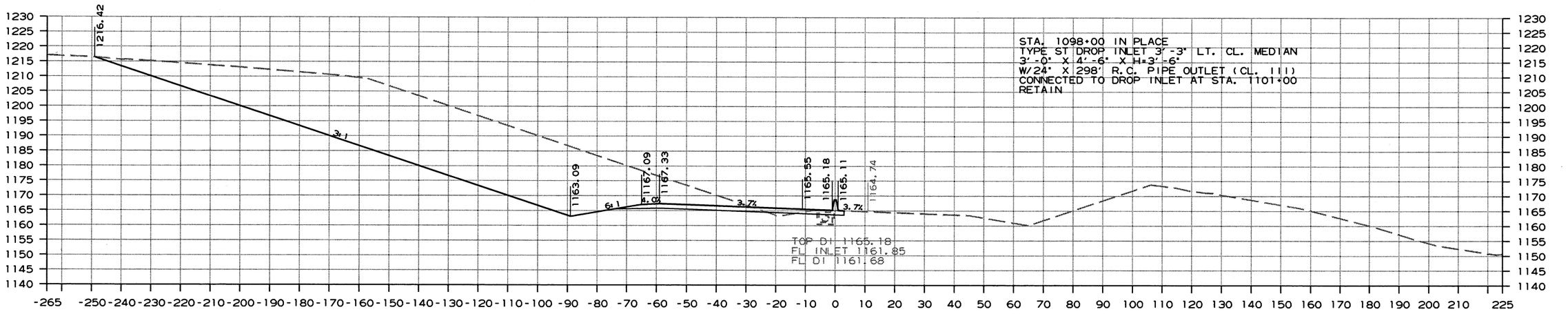
CROSS SECTION STA. 1095+00 TO STA. 1096+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	344	452

(2) CROSS SECTIONS

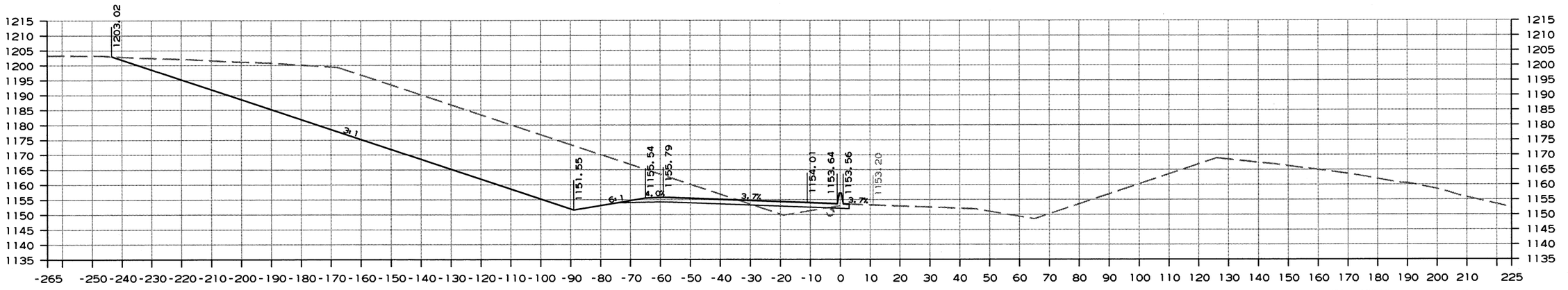


HWY. 549
CROSS SECTION STA. 1097+00 TO STA. 1098+00

RCA0903_REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	345	452

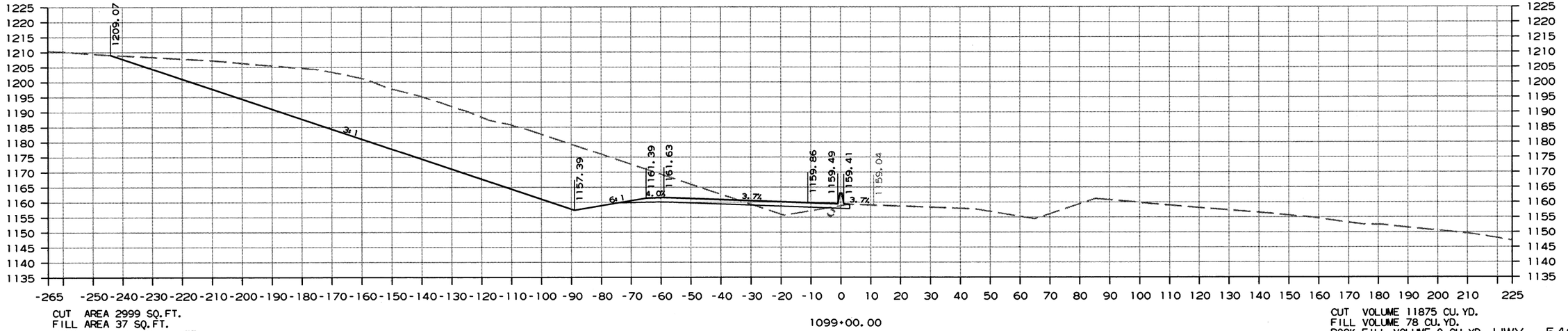
(2) CROSS SECTIONS



CUT AREA 3109 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1100+00.00

CUT VOLUME 11312 CU.YD.
FILL VOLUME 136 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 2999 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1099+00.00

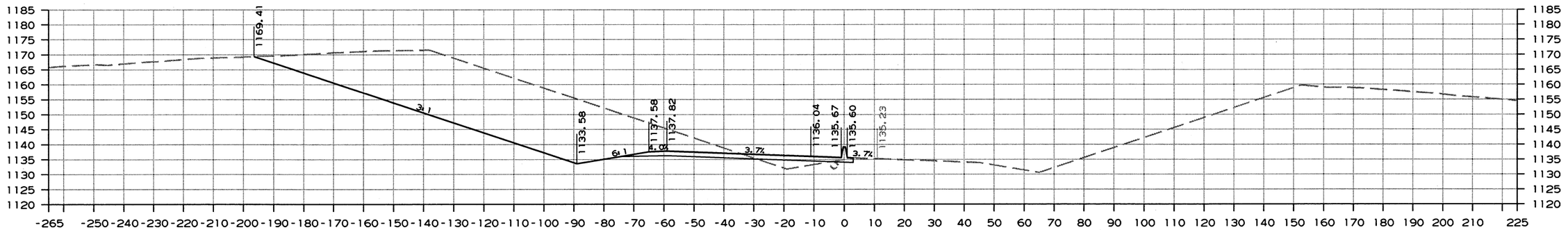
CUT VOLUME 11875 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

CROSS SECTION STA. 1099+00 TO STA. 1100+00 HWY. 549

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	346	452

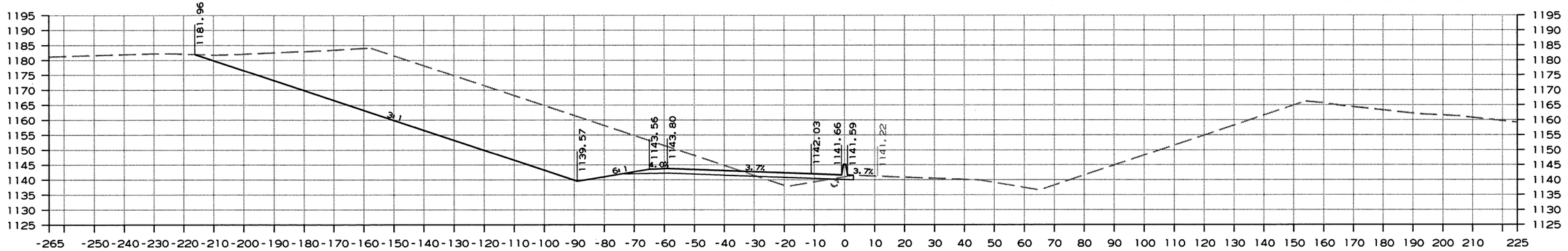
(2) CROSS SECTIONS



CUT AREA 2281 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1103+00.00

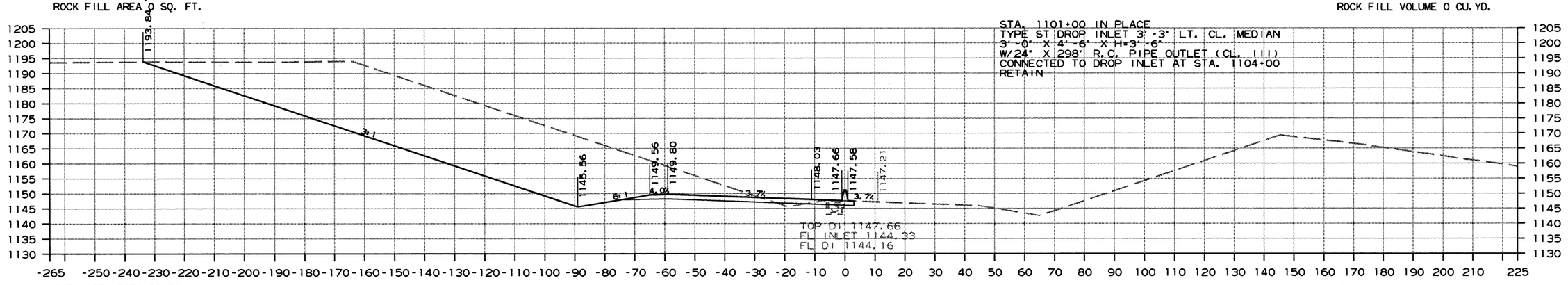
CUT VOLUME 9185 CU. YD.
FILL VOLUME 136 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



CUT AREA 2679 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1102+00.00

CUT VOLUME 11034 CU. YD.
FILL VOLUME 78 CU. YD.
ROCK FILL VOLUME 0 CU. YD.



STA. 1101+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1104+00
RETAIN

CUT AREA 3279 SQ.FT.
FILL AREA 5 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1101+00.00

CUT VOLUME 11831 CU. YD.
FILL VOLUME 78 CU. YD.
ROCK FILL VOLUME 0 CU. YD.

CROSS SECTION STA. 1101+00 TO STA. 1103+00 HWY. 549

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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.		CA0903	347	452

(2) CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1107+85
TOE OF SLOPE

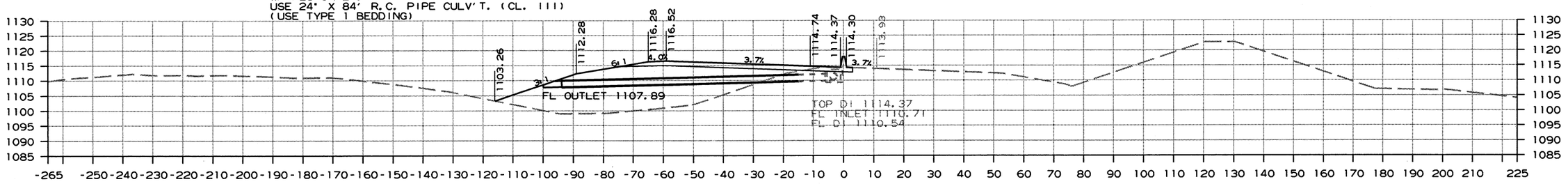
CUT VOLUME 15 CU.YD.
FILL VOLUME 749 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

STA. 1107+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/ 24" X 10' R.C. PIPE OUTLET (CL. III)
FES ON LT.
RETAIN AND EXTEND 80' LT.
W/ FES ON LT.
USE 24" X 84' R.C. PIPE CULV'T. (CL. III)
(USE TYPE 1 BEDDING)

CUT AREA 19 SQ.FT.
FILL AREA 964 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1107+43.06
BRIDGE END

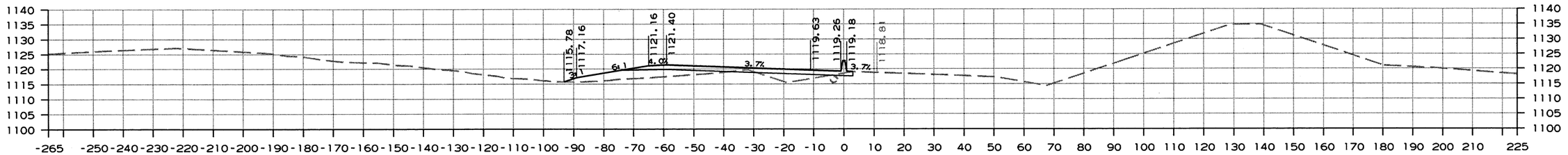
CUT VOLUME 30 CU.YD.
FILL VOLUME 1538 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 19 SQ.FT.
FILL AREA 964 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1107+00.00

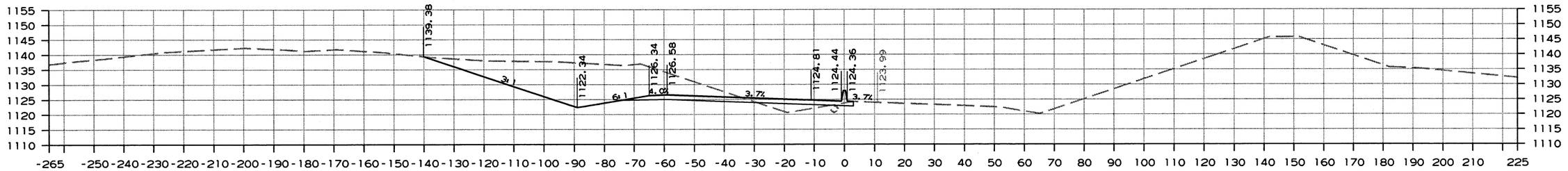
CUT VOLUME 53 CU.YD.
FILL VOLUME 2049 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 9 SQ.FT.
FILL AREA 142 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1106+00.00

CUT VOLUME 1629 CU.YD.
FILL VOLUME 331 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

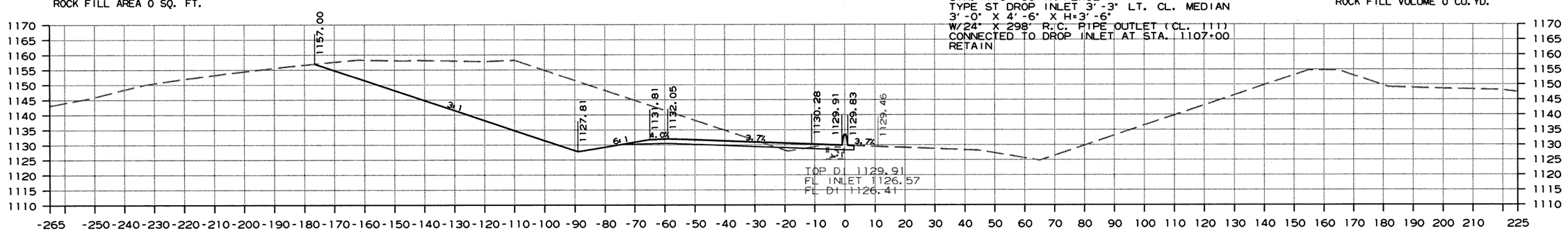


CUT AREA 870 SQ.FT.
FILL AREA 37 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1105+00.00

CUT VOLUME 5313 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

STA. 1104+00 IN PLACE
TYPE ST DROP INLET 3'-3" LT. CL. MEDIAN
3'-0" X 4'-6" X H=3'-6"
W/ 24" X 298' R.C. PIPE OUTLET (CL. III)
CONNECTED TO DROP INLET AT STA. 1107+00
RETAIN



CUT AREA 1998 SQ.FT.
FILL AREA 5 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

1104+00.00

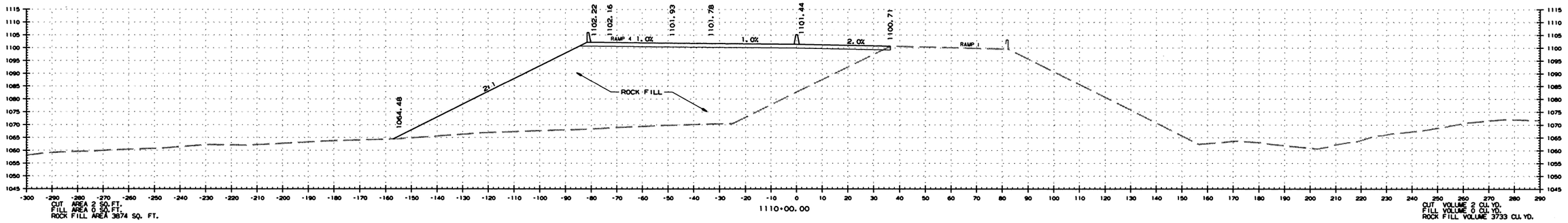
CUT VOLUME 7924 CU.YD.
FILL VOLUME 78 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

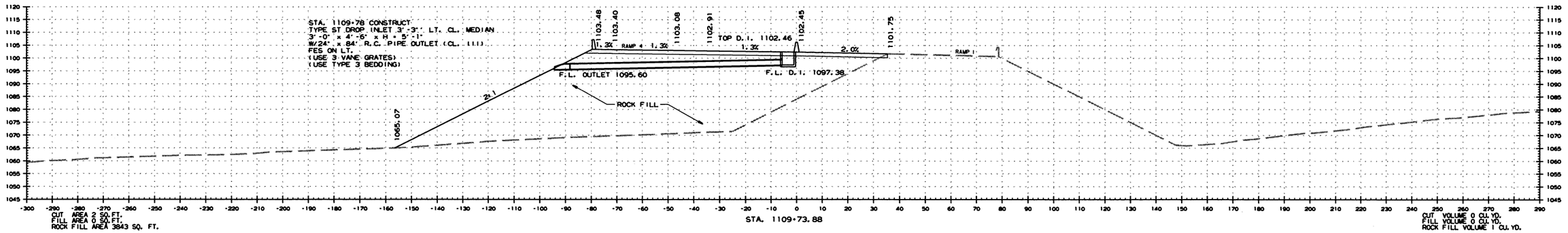
CROSS SECTION STA. 1104+00 TO STA. 1107+00 HWY. 549

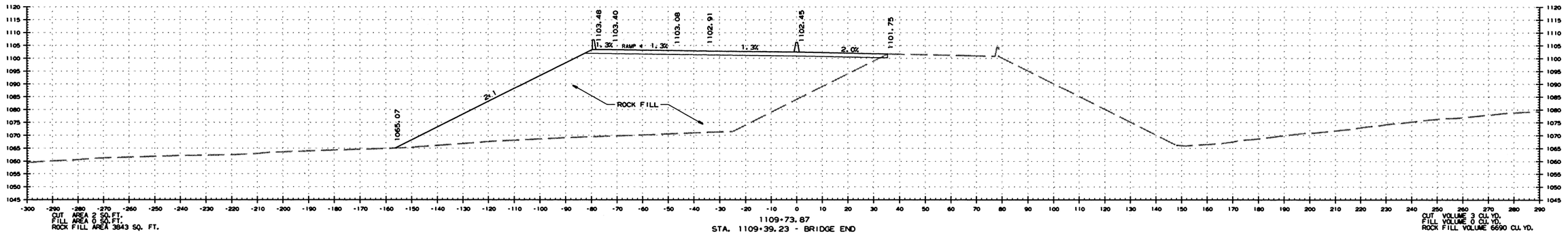
RCA0903_REVISED.DGN 10/19/2016

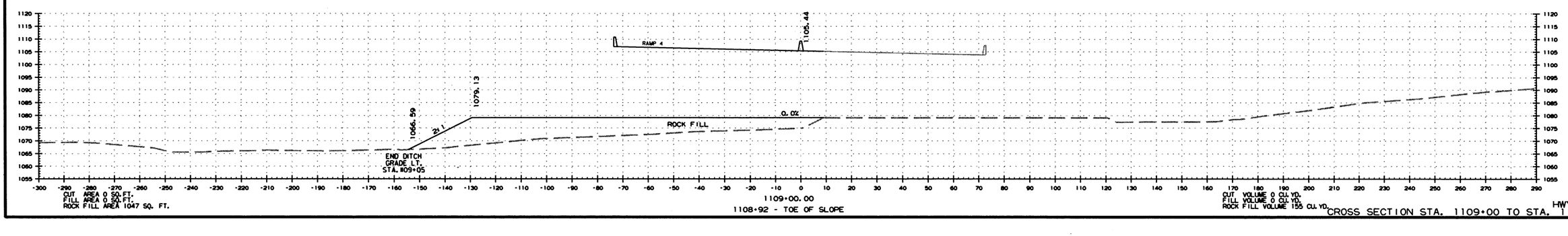
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	348	452

(2) HWY. 71 CROSS SECTIONS









RCA0903_REVISED.DGN 10/19/2016

HWY. 549
CROSS SECTION STA. 1109+00 TO STA. 1110+00

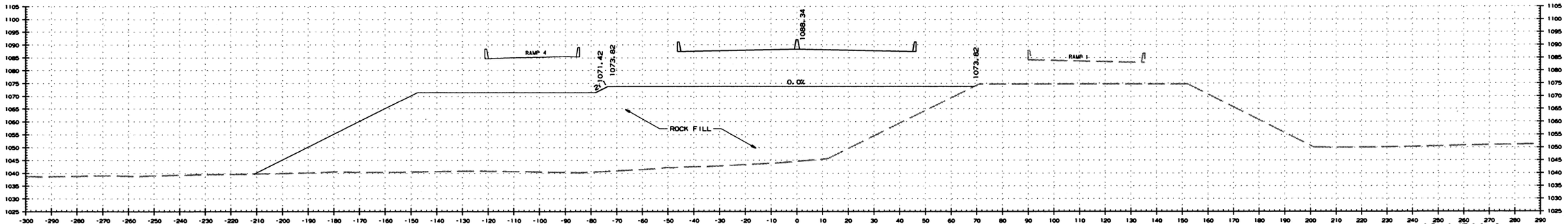
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	349	452

(2) HWY. 71 CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1114+65 - TOE OF SLOPE

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 4327 CU.YD.

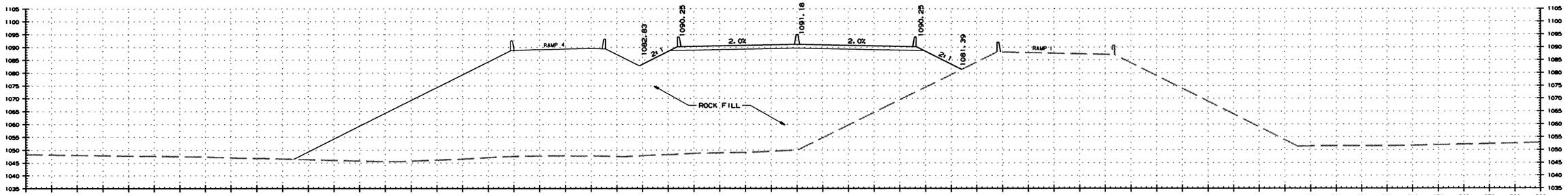


CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 3595 SQ. FT.

1114+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 13828 CU.YD.

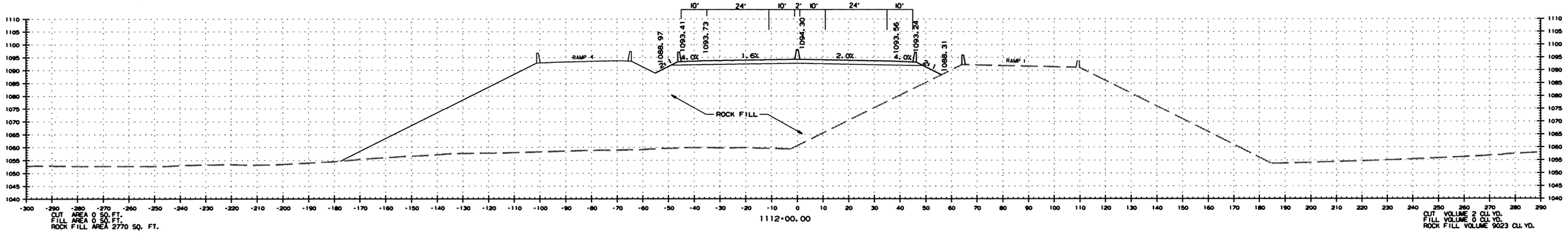
STA. 1113+77.94 - BRIDGE END



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 3873 SQ. FT.

1113+00.00

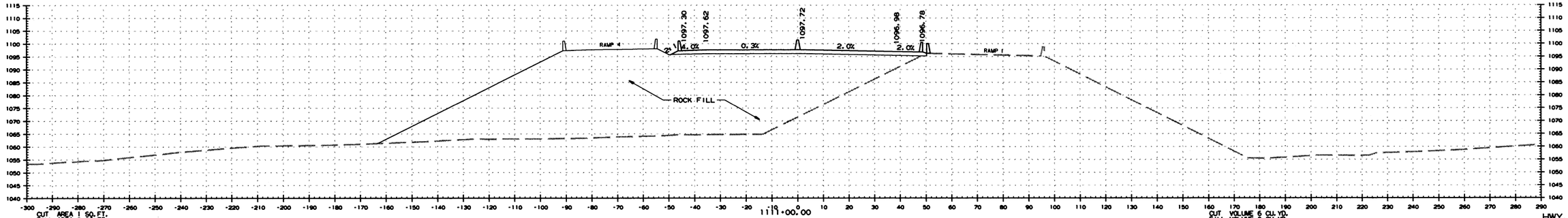
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 12302 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 2770 SQ. FT.

1112+00.00

CUT VOLUME 2 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 9023 CU.YD.



CUT AREA 1 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 2102 SQ. FT.

1111+00.00

CUT VOLUME 6 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 11068 CU.YD.

STA. 1110+29.56 - RAMP 4 NOSE

CROSS SECTION STA. 1111+00 TO STA. 1114+00

HWY. 549

RCA0903_REVISED.DGN 10/19/2016

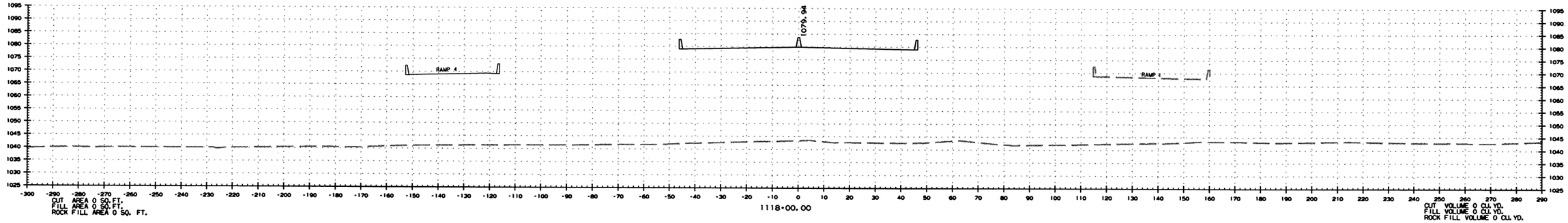
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	350	452

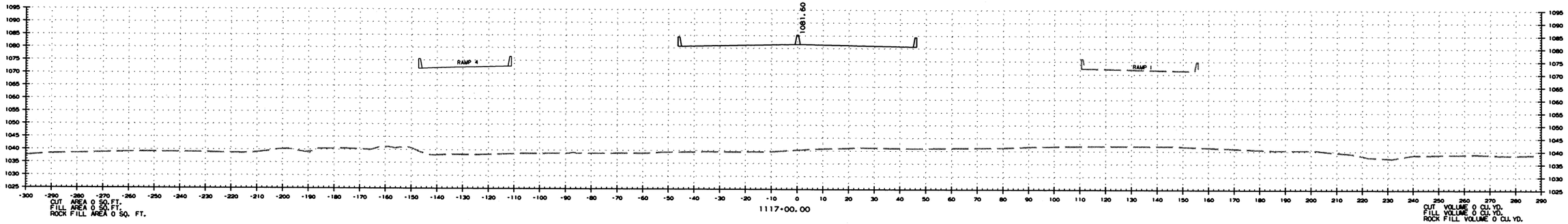
(2) HWY. 71 CROSS SECTIONS

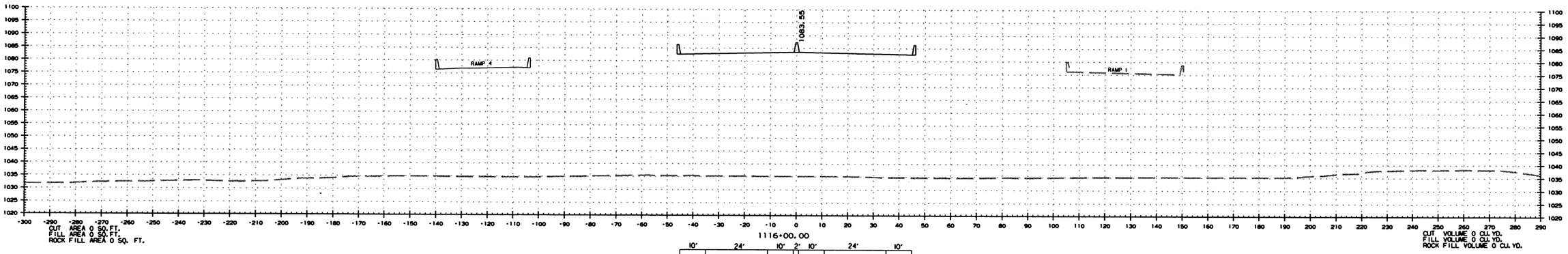
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

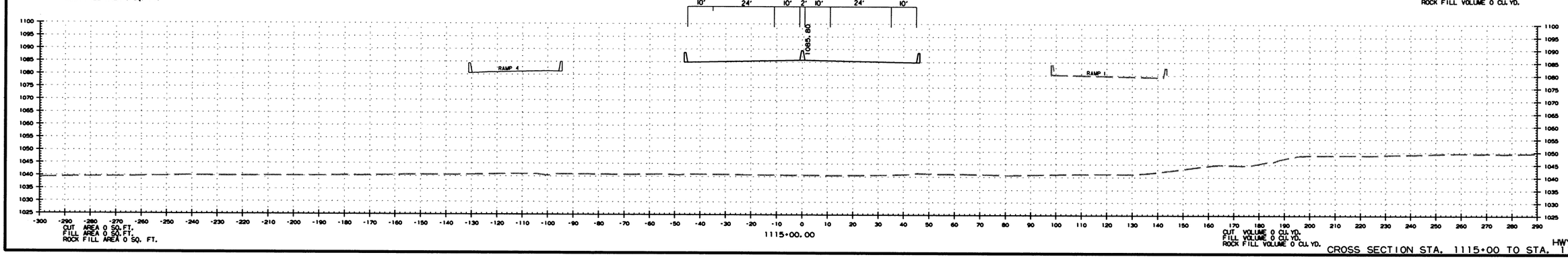
1118+09 - TOE OF SLOPE

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 0 CU.YD.







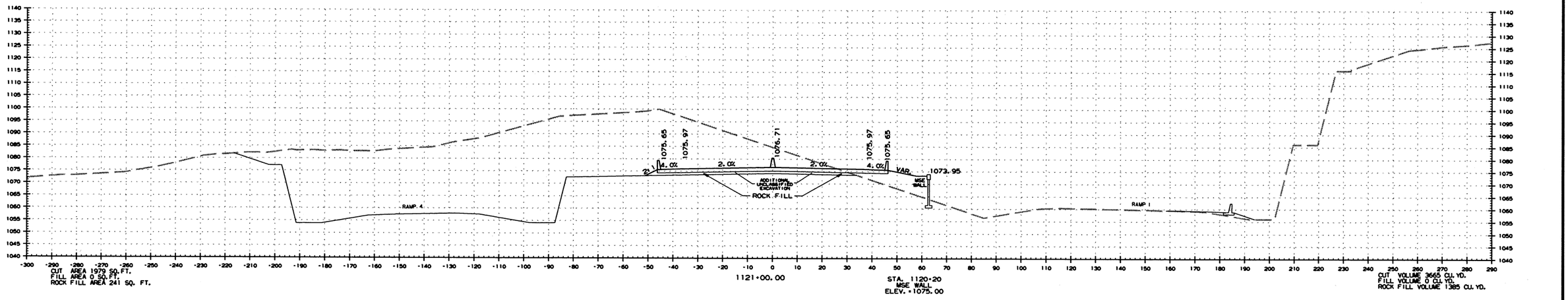


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HWY. 549
CROSS SECTION STA. 1115+00 TO STA. 1118+00

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.		CA0903	351	452

(2) HWY. 71 CROSS SECTIONS

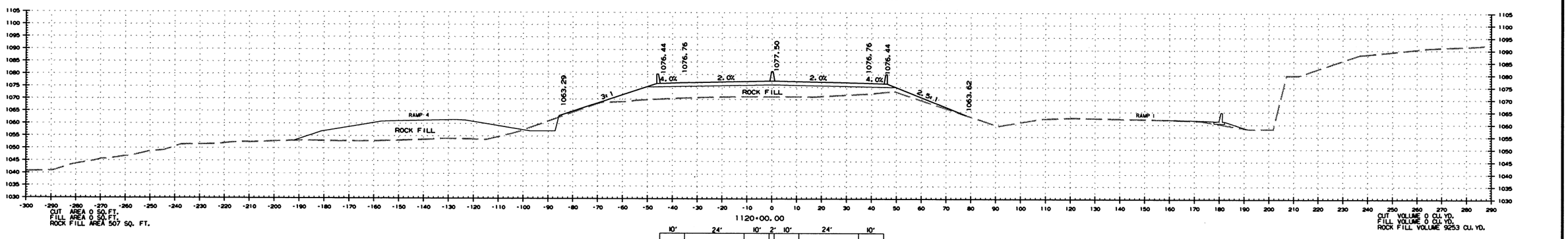


CUT AREA 1979 SQ. FT.
FILL AREA 0 SQ. FT.
ROCK FILL AREA 241 SQ. FT.

1121+00.00

STA. 1120+20
MSE WALL
ELEV. = 1075.00

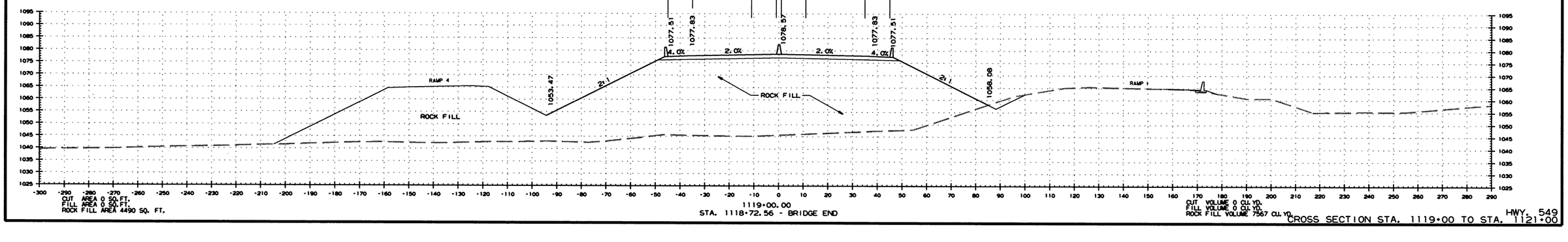
CUT VOLUME 3665 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 1385 CU. YD.



CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.
ROCK FILL AREA 507 SQ. FT.

1120+00.00

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 9253 CU. YD.



CUT AREA 0 SQ. FT.
FILL AREA 0 SQ. FT.
ROCK FILL AREA 4490 SQ. FT.

1119+00.00

STA. 1118+72.56 - BRIDGE END

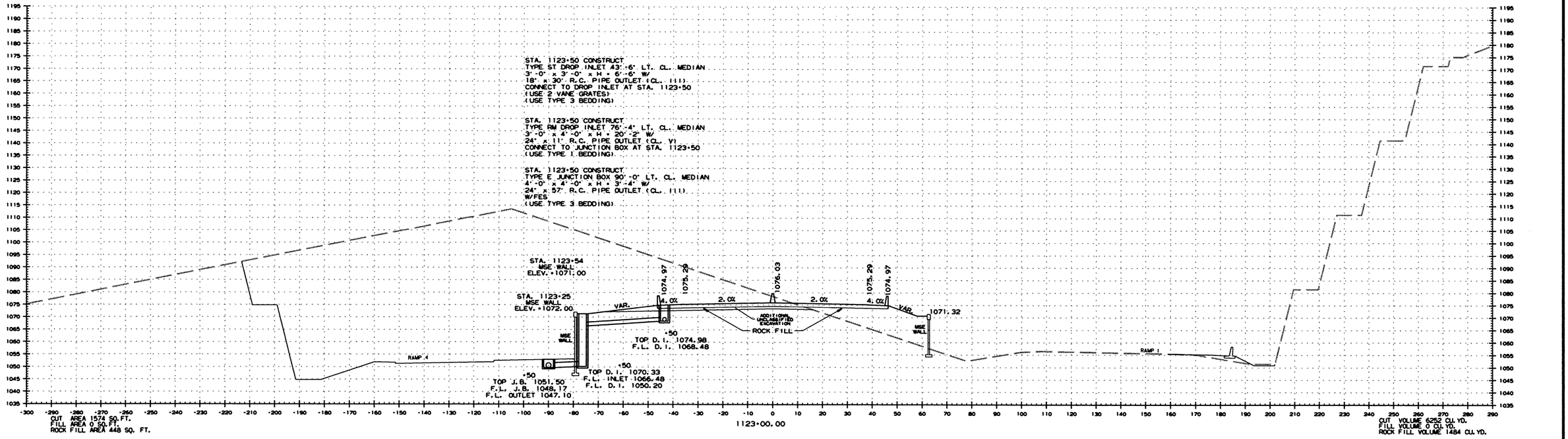
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 7567 CU. YD.

HWY. 549
CROSS SECTION STA. 1119+00 TO STA. 1121+00

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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.		CA0903	352	452

(2) HWY. 71 CROSS SECTIONS

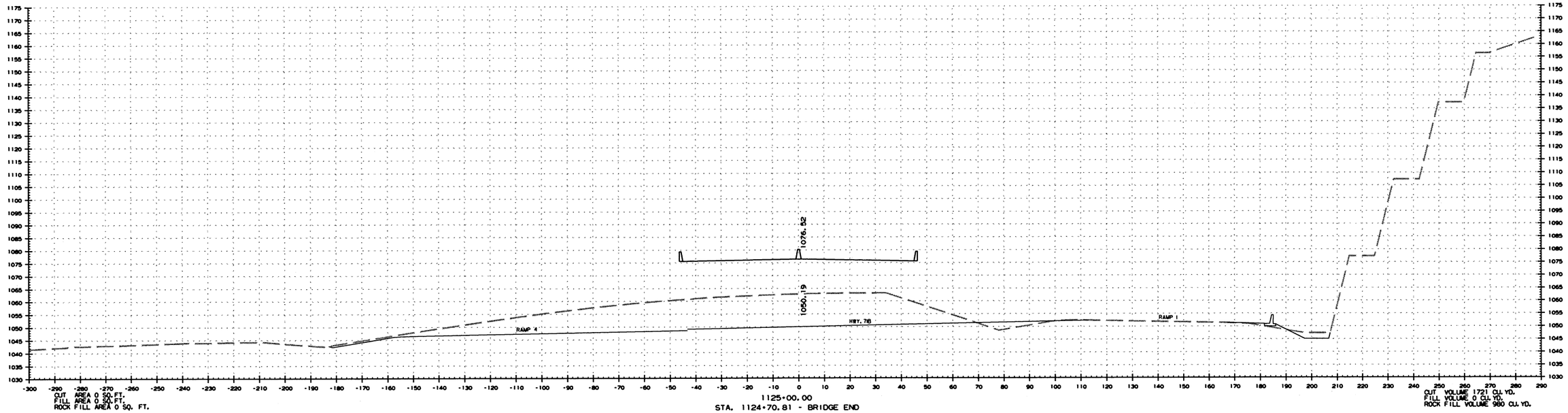


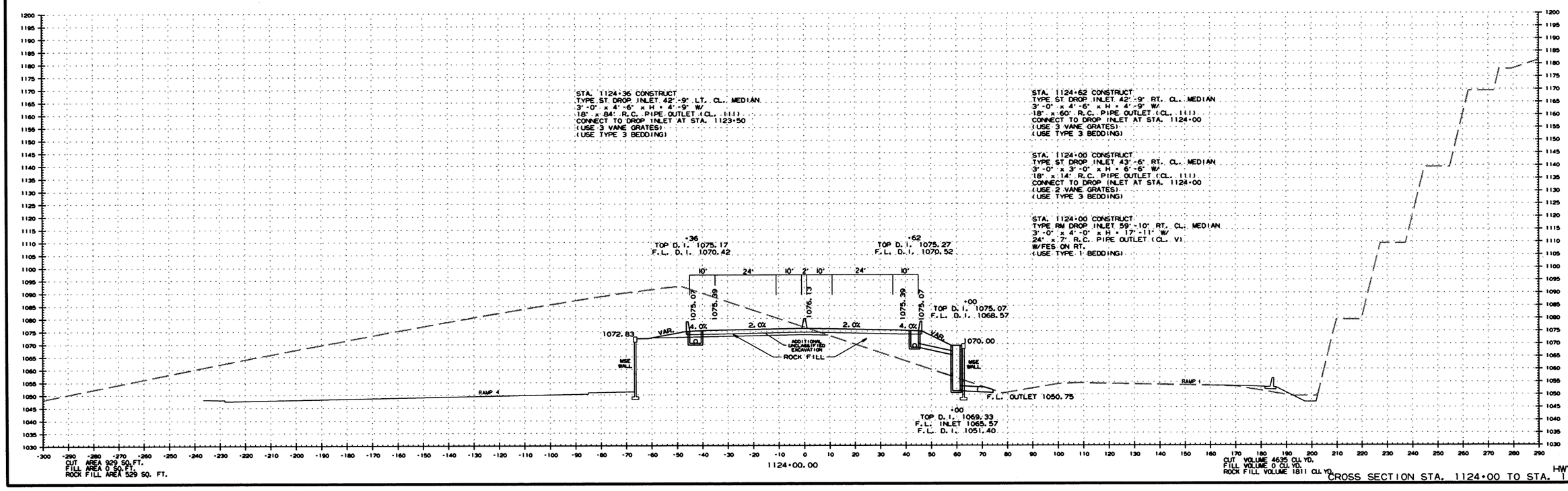
HWY. 549
CROSS SECTION STA. 1122+00 TO STA. 1123+00

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	353	452

(2) HWY. 71 CROSS SECTIONS



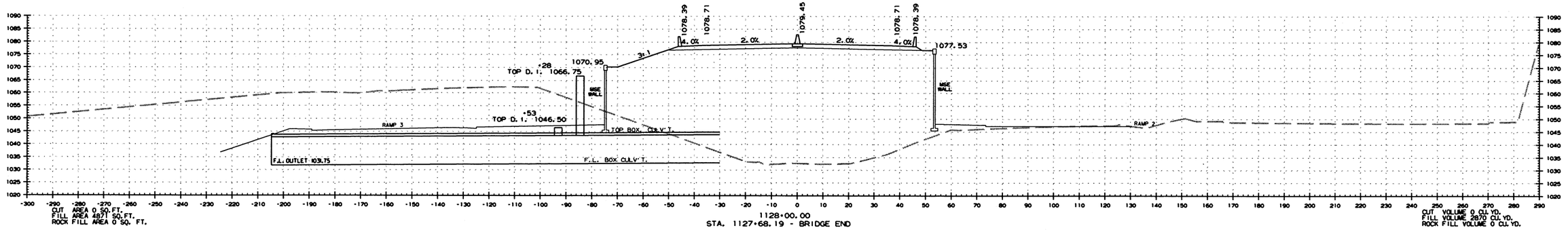


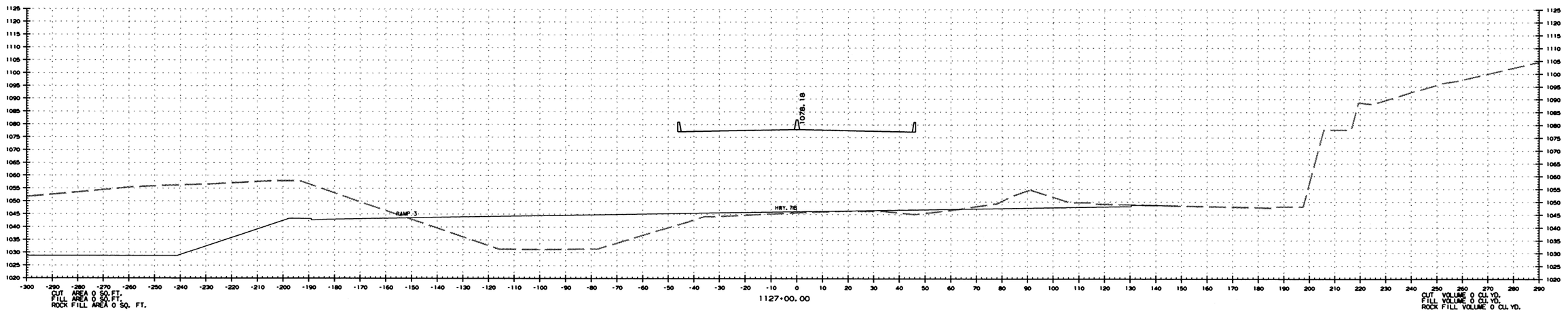
RCA0903.REVISED.DGN 10/19/2016

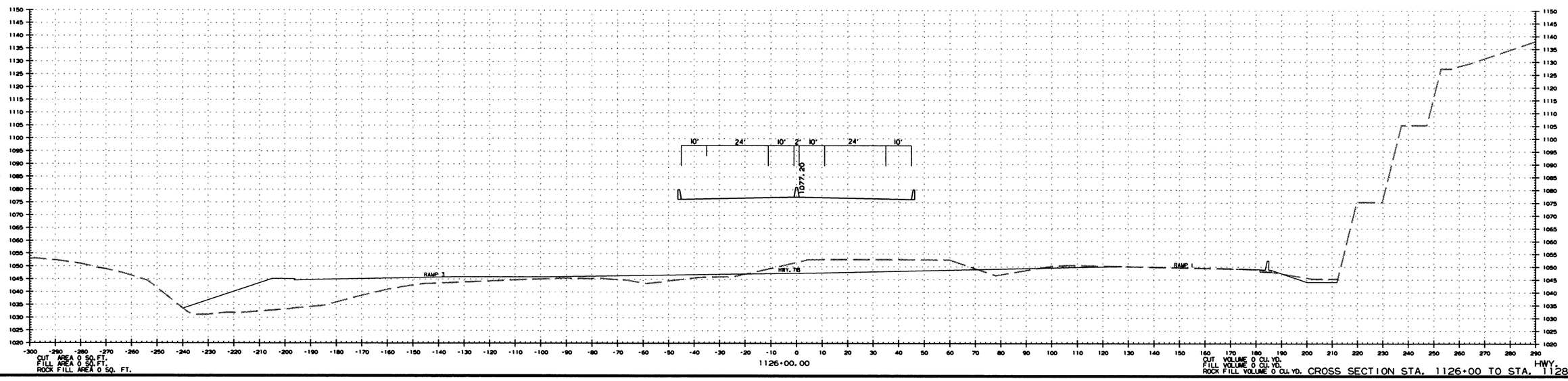
HWY. 549
CROSS SECTION STA. 1124+00 TO STA. 1125+00

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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				JOB NO.		CA0903	354	452

(2) HWY. 71 CROSS SECTIONS





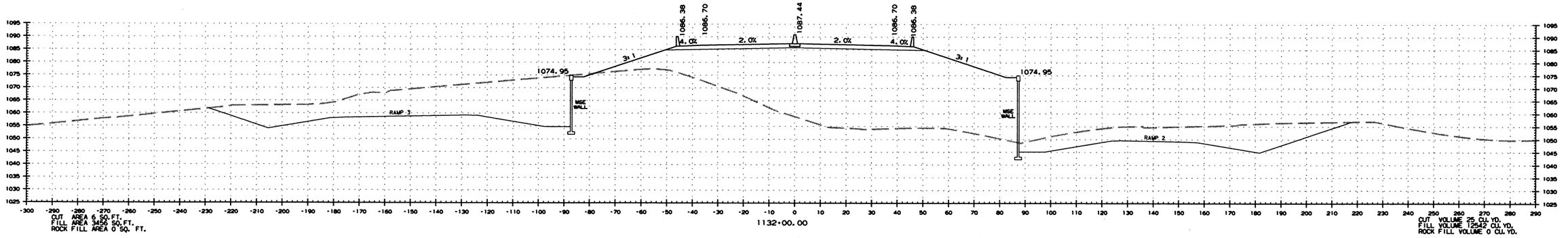


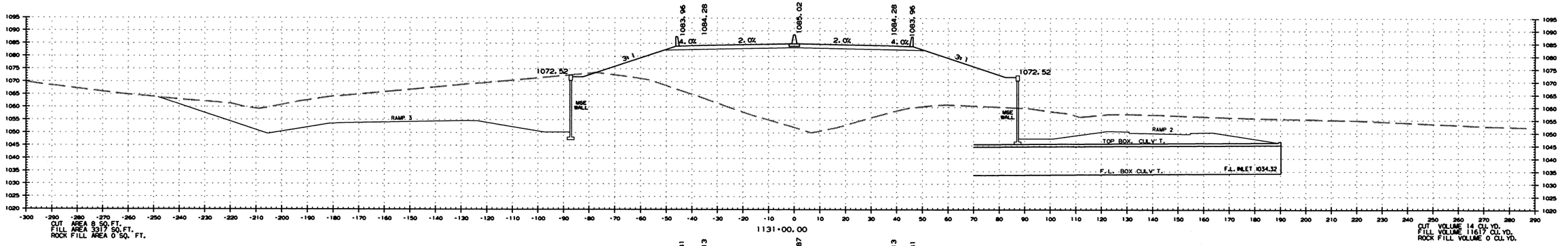
RCA0903_REVISED.DGN 10/19/2016

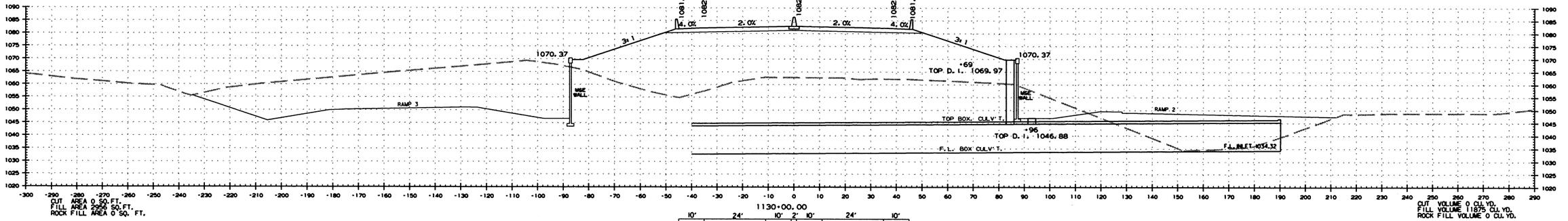
HWY. 549 CROSS SECTION STA. 1126+00 TO STA. 1128+00

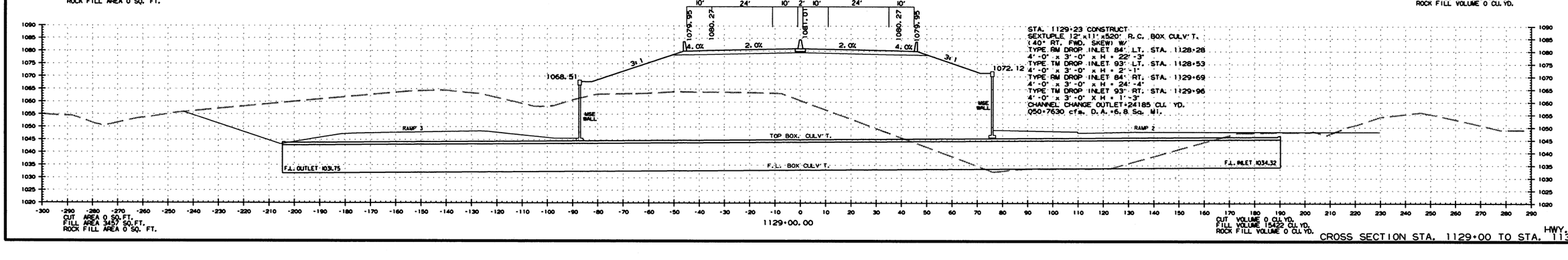
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	355	452

(2) HWY. 71 CROSS SECTIONS







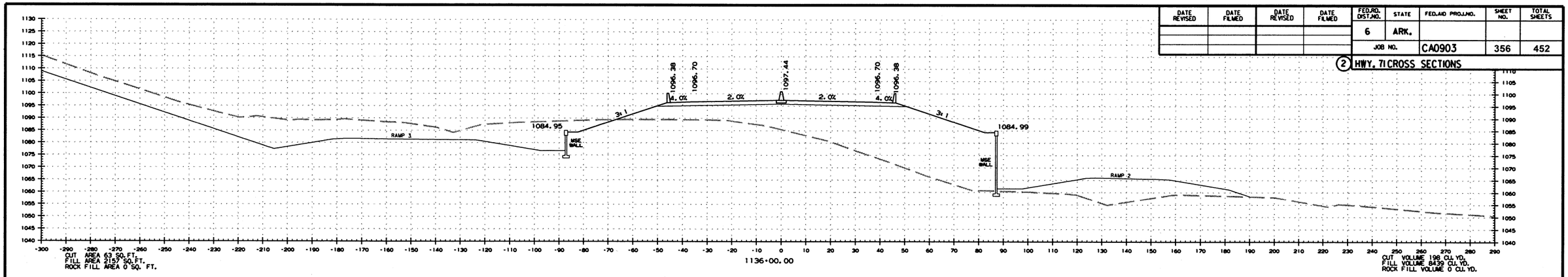


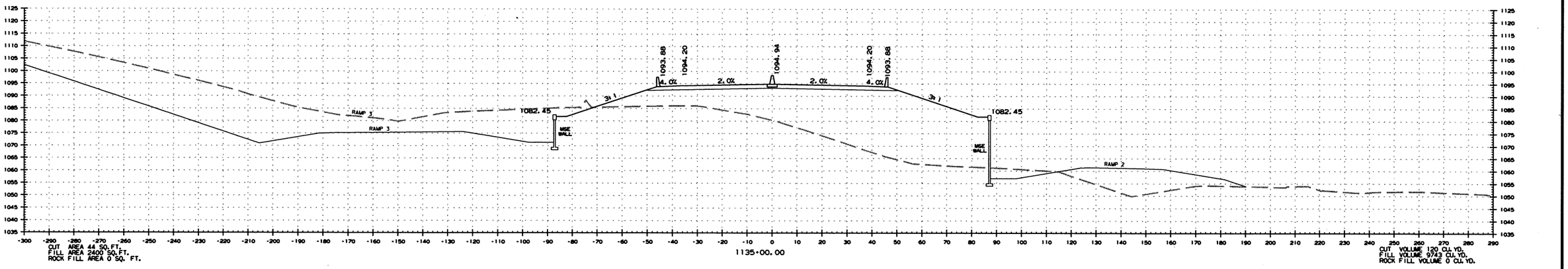
RCA0903_REVISED.DGN 10/19/2016

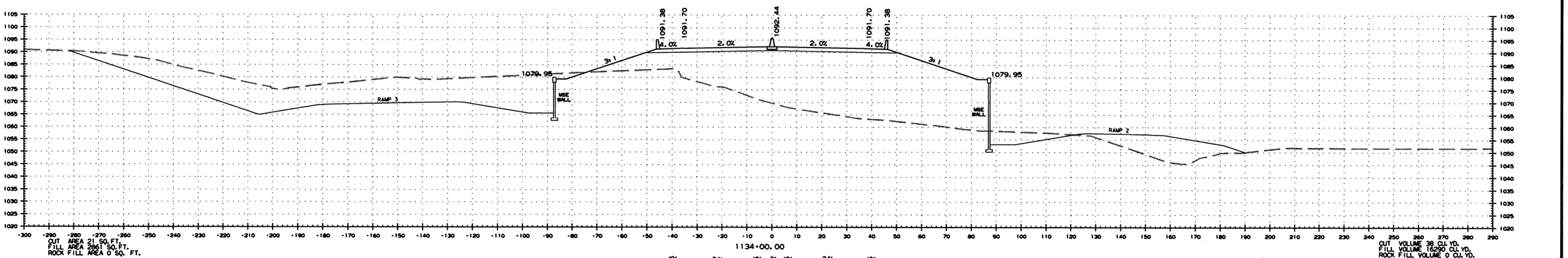
HWY. 549
CROSS SECTION STA. 1129+00 TO STA. 1132+00

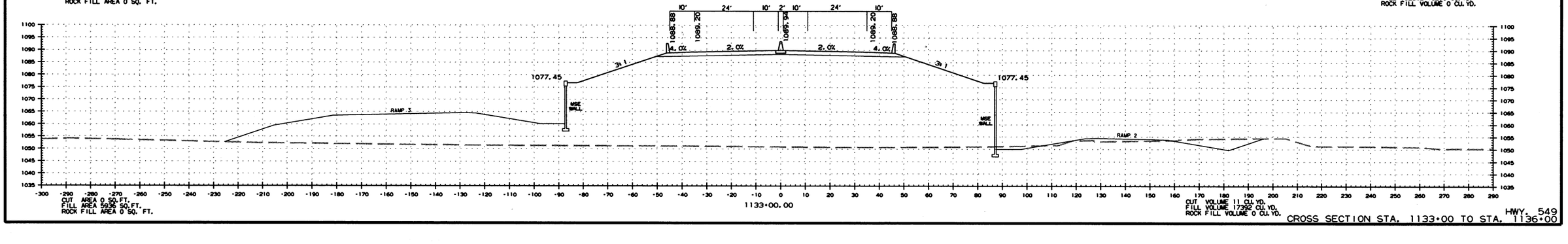
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	356	452

(2) HWY. 71 CROSS SECTIONS







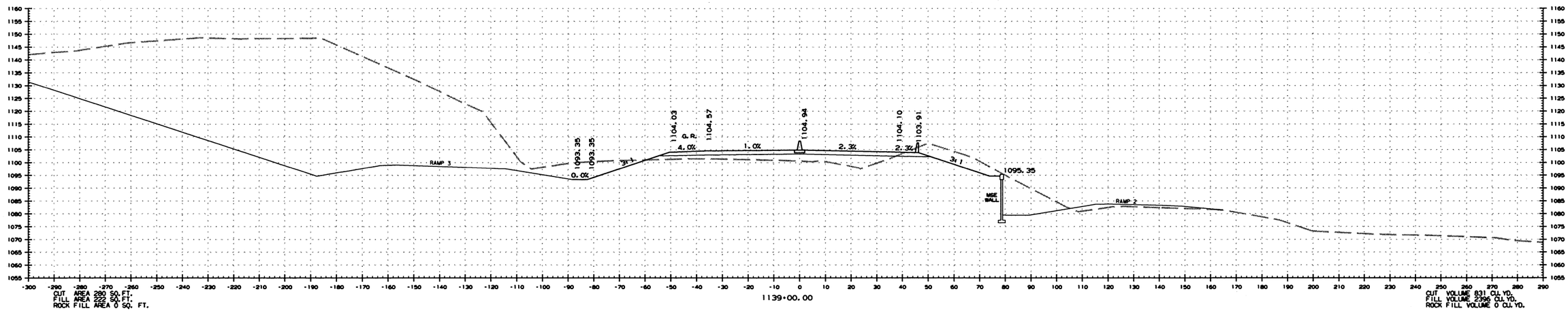


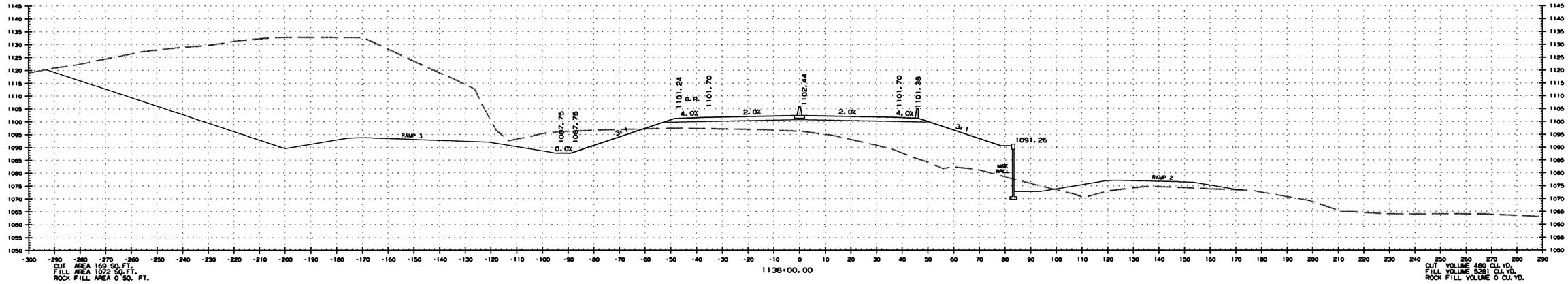
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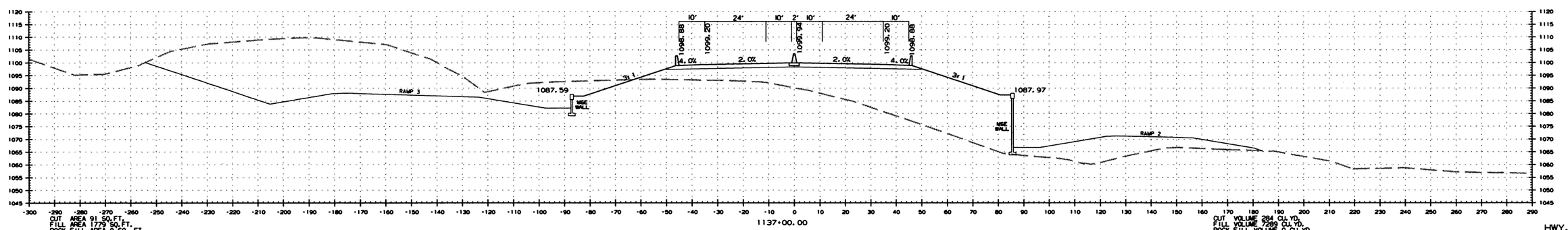
HWY. 549
CROSS SECTION STA. 1133+00 TO STA. 1136+00

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.		CA0903	357	452

(2) HWY. 71 CROSS SECTIONS





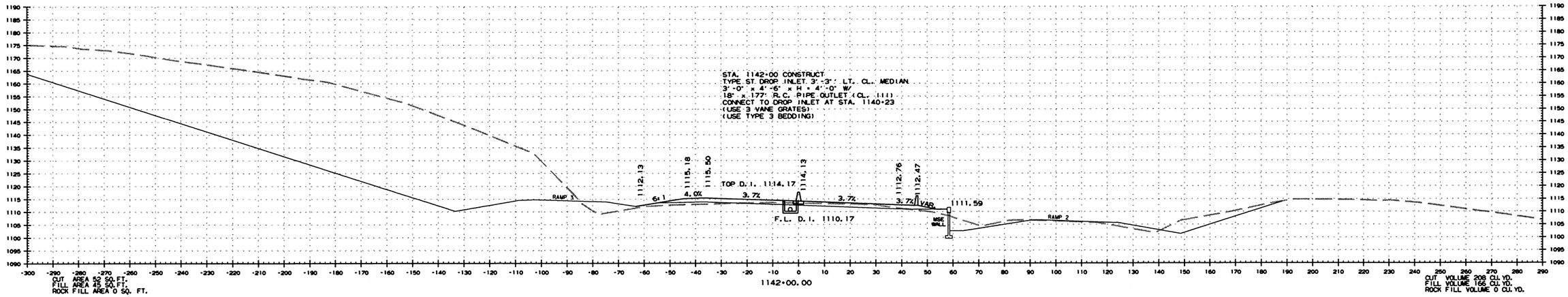


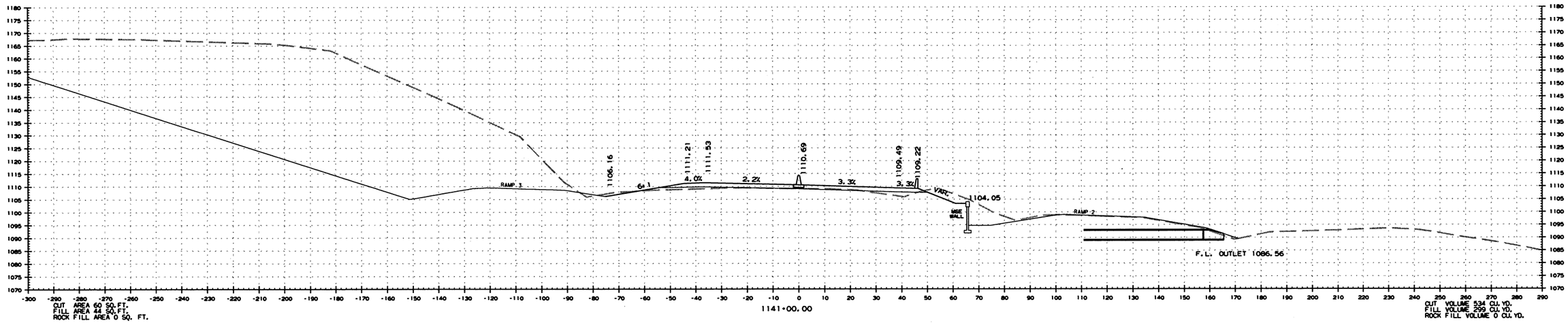
RCA0903_REVISED.DGN 10/19/2016

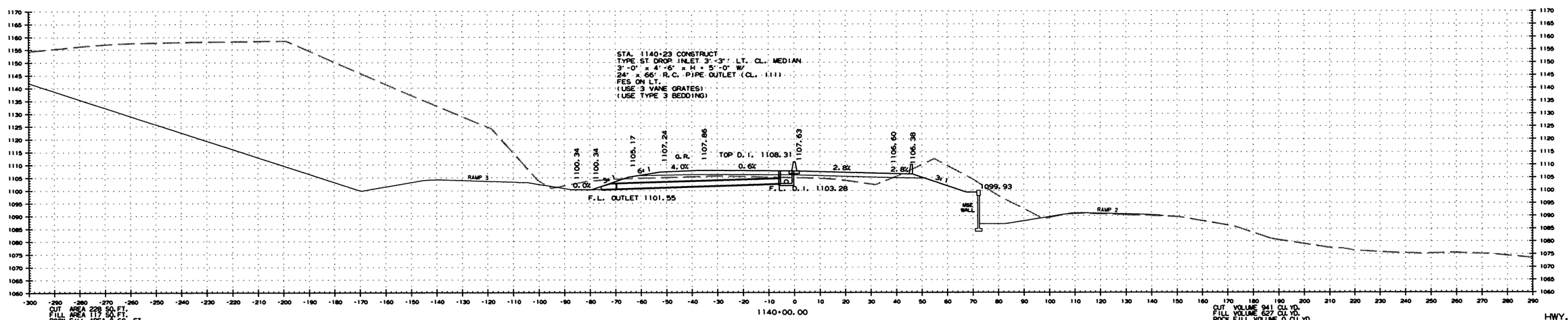
HWY. 549
CROSS SECTION STA. 1137+00 TO STA. 1139+00

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.		CA0903	358	452

(2) HWY. 71 CROSS SECTIONS





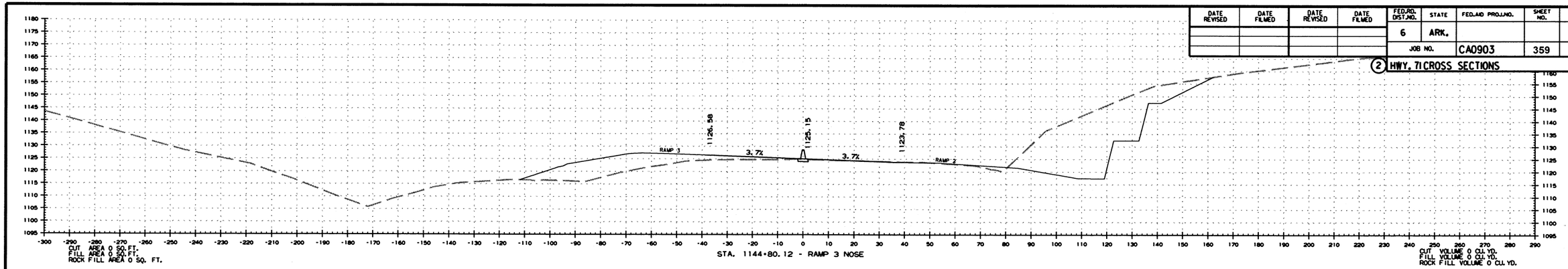


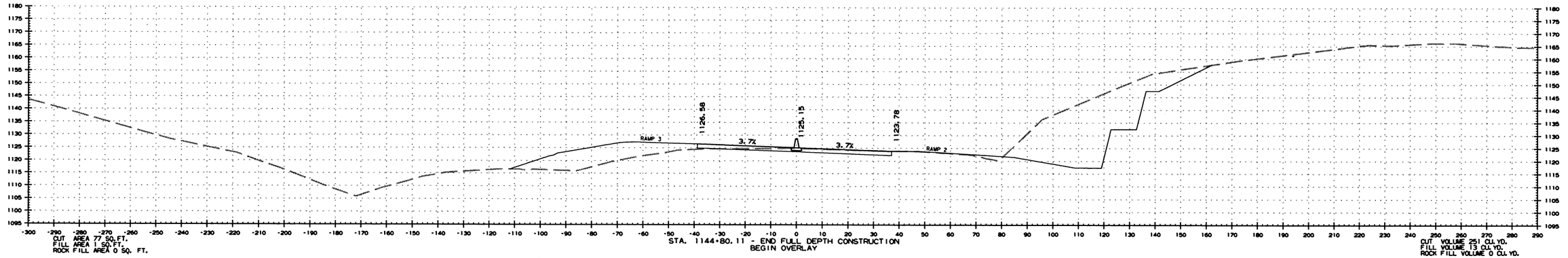
RCA0903.REVISED.DGN 10/19/2016

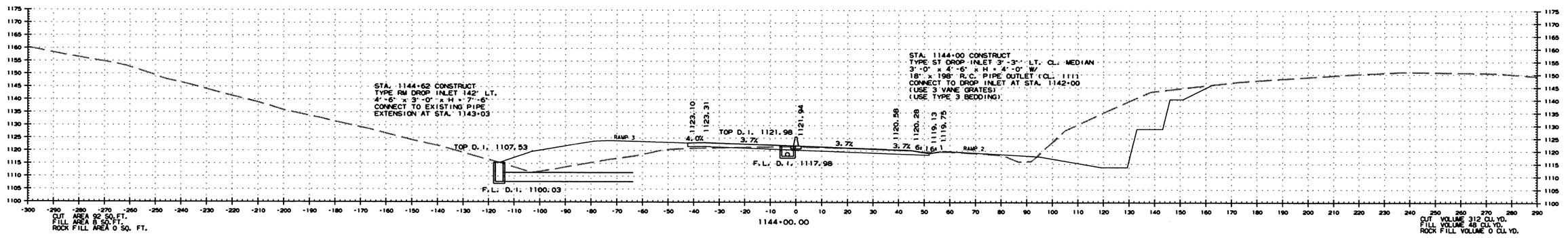
HWY. 549
CROSS SECTION STA. 1140+00 TO STA. 1142+00

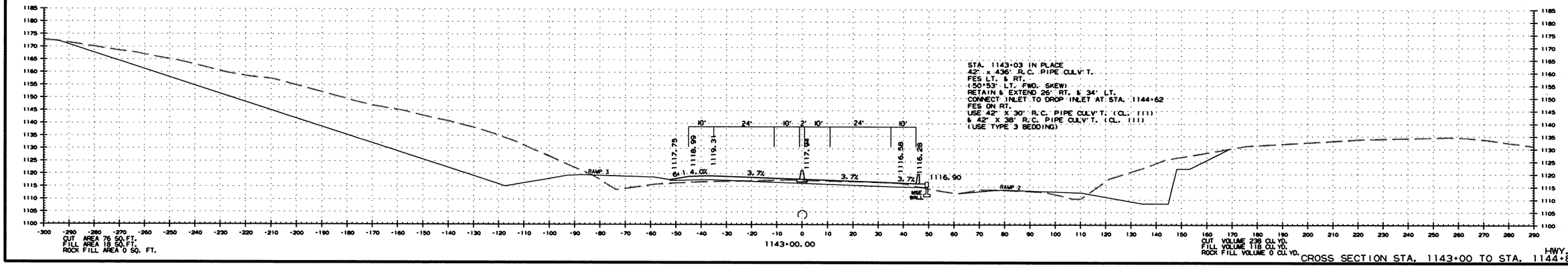
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	359	452

(2) HWY. 71 CROSS SECTIONS







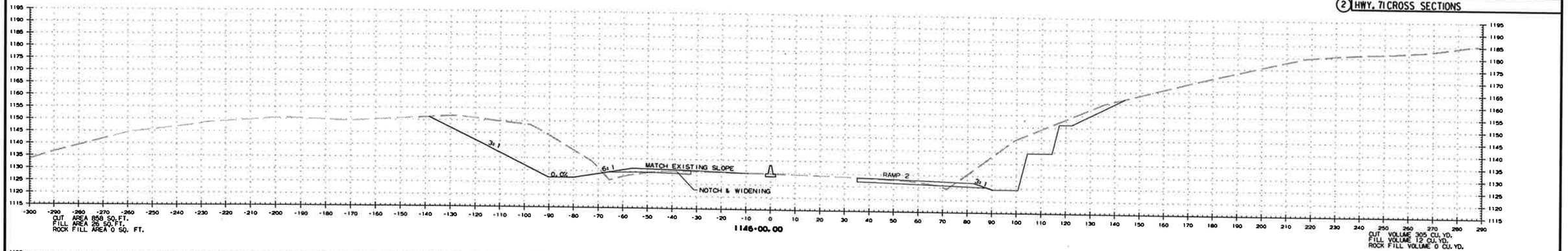


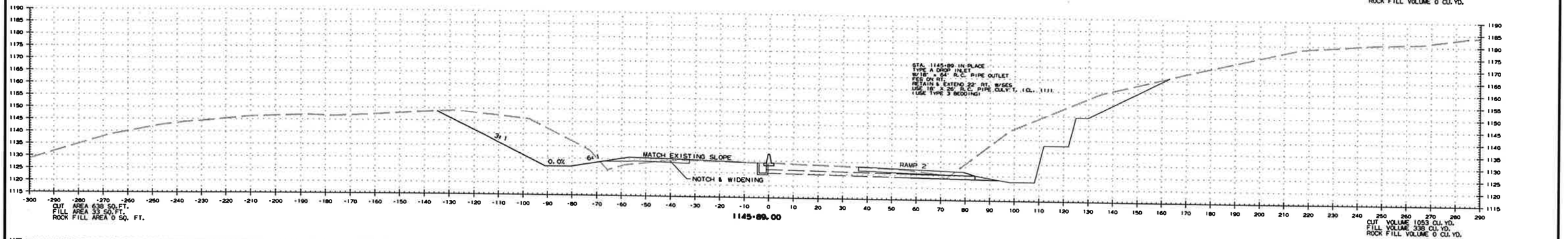
HWY. 549
CROSS SECTION STA. 1143+00 TO STA. 1144+80.12

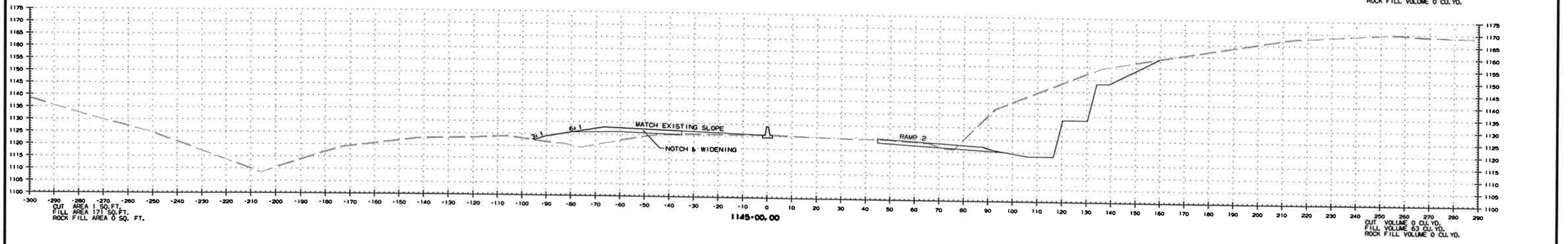
RCA0903.REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	360	452

(2) HWY. 71 CROSS SECTIONS



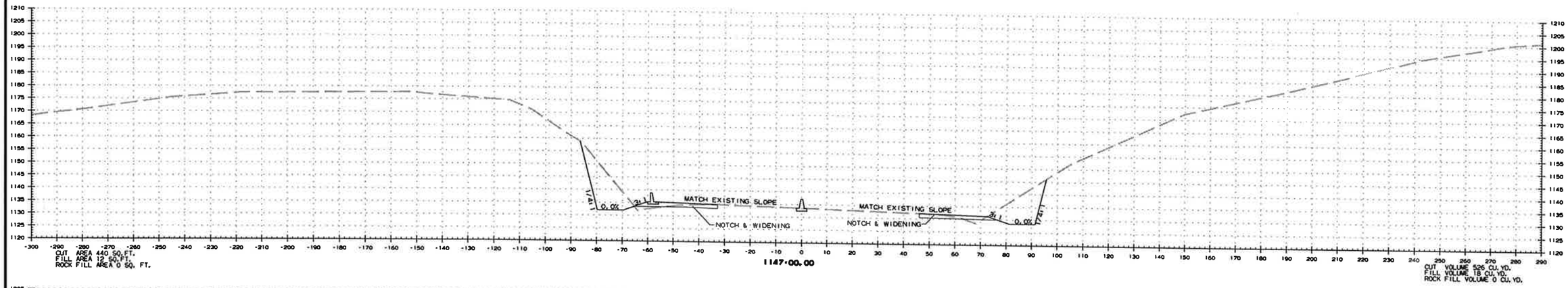


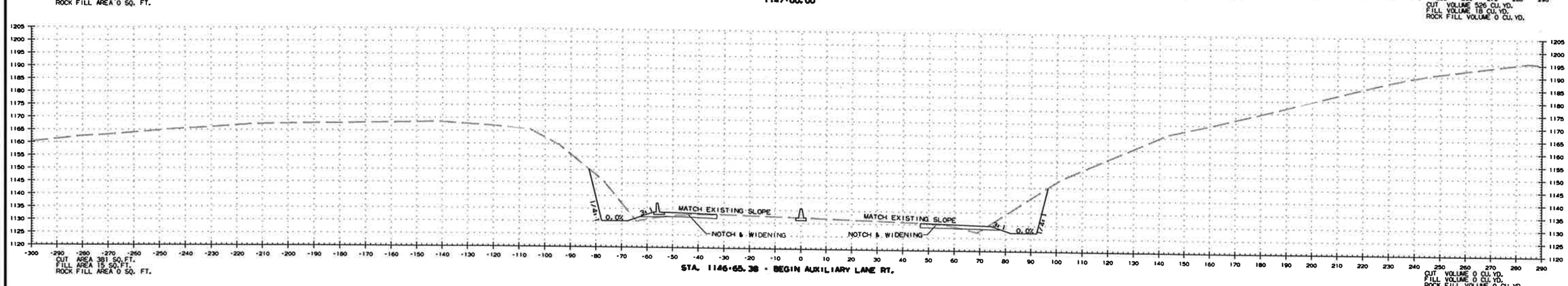


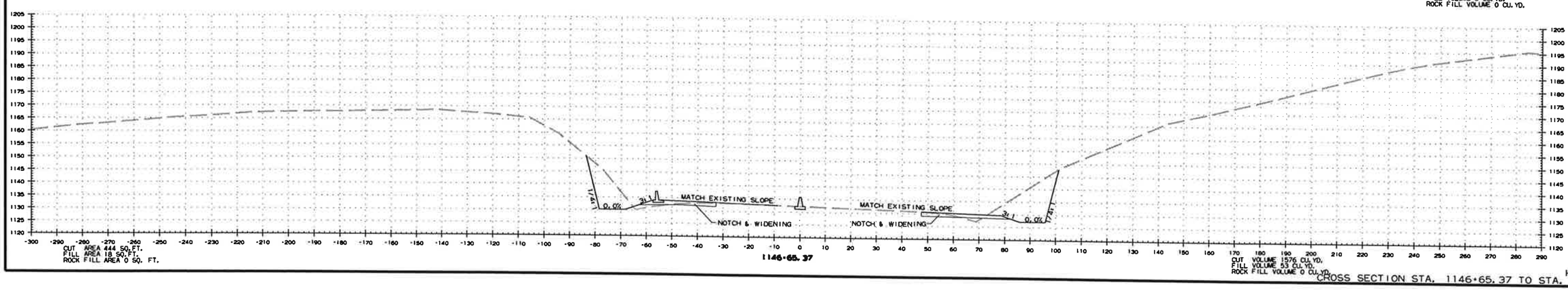
RCA0903_REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	361	452

(2) HWY. 71 CROSS SECTIONS





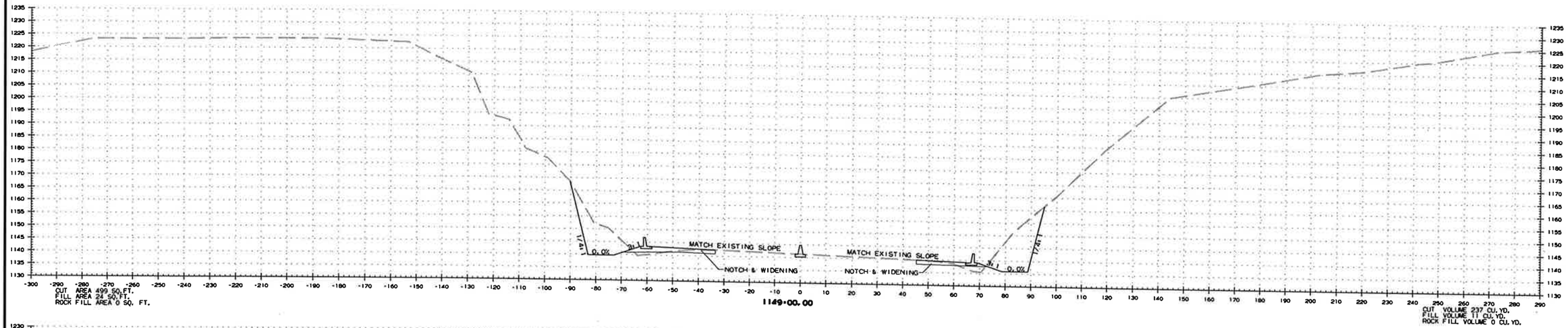


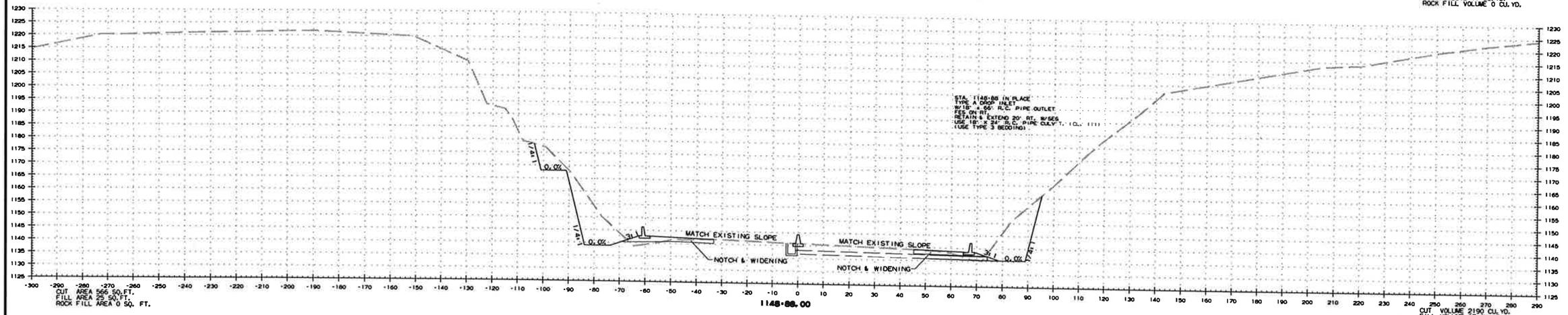
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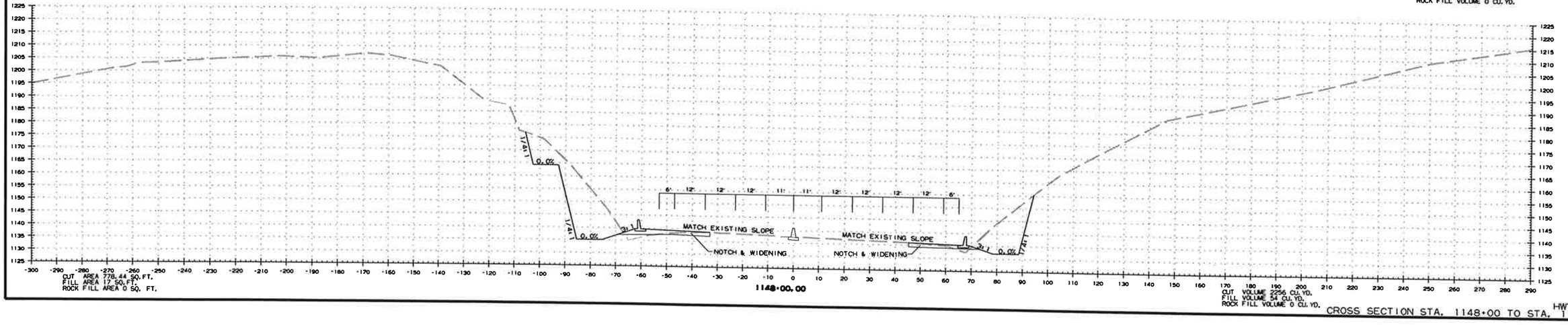
HWY. 549
CROSS SECTION STA. 1146+65.37 TO STA. 1147+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	362	452

(2) HWY. 71 CROSS SECTIONS





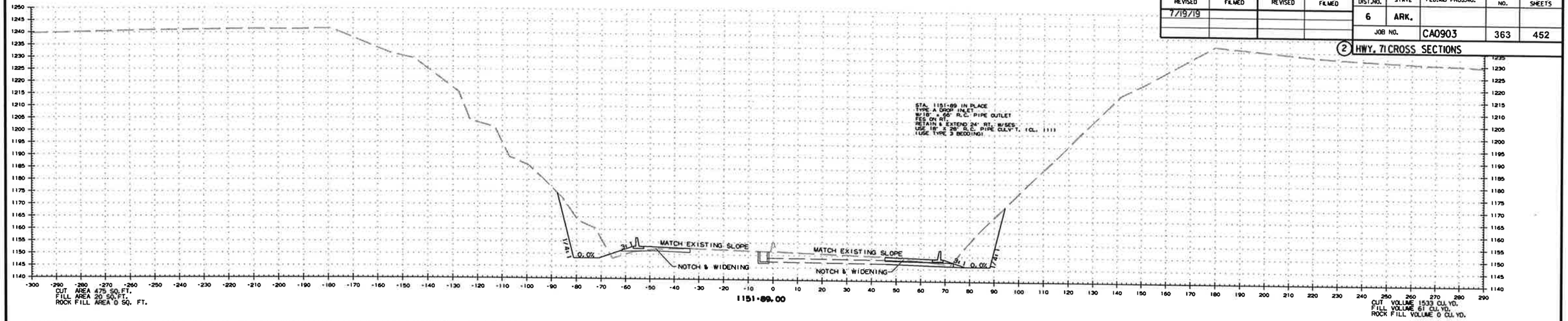


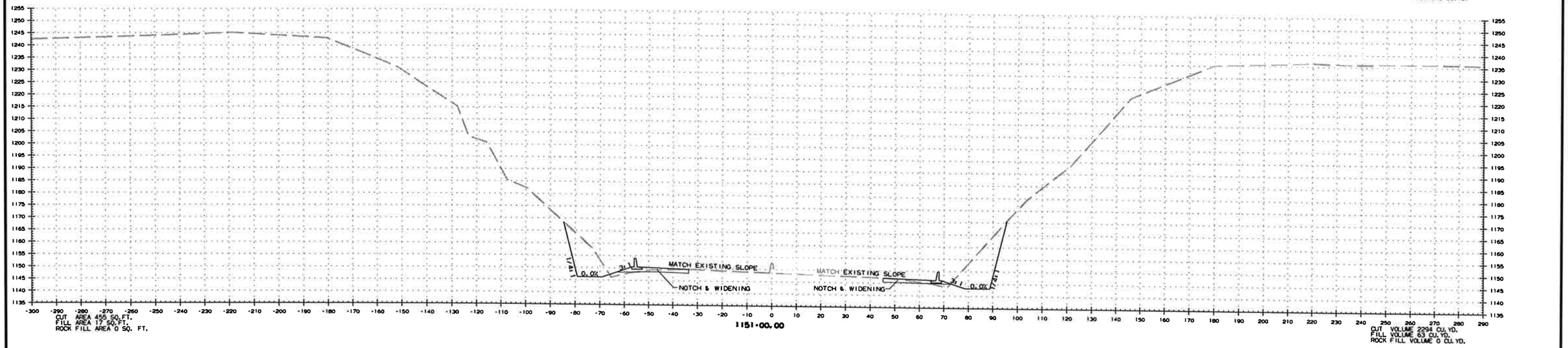
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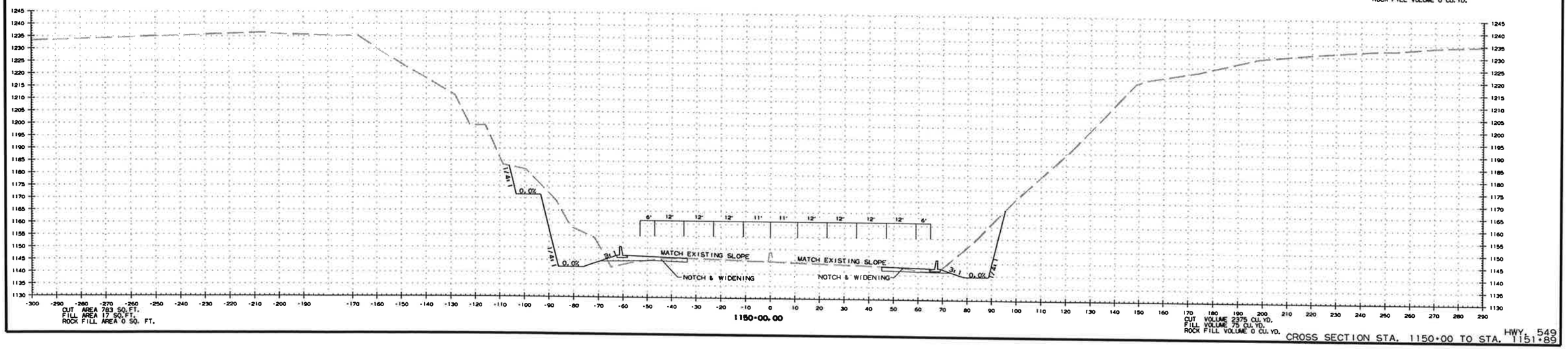
HWY. 549
CROSS SECTION STA. 1148+00 TO STA. 1149+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	363	452

(2) HWY. 71 CROSS SECTIONS





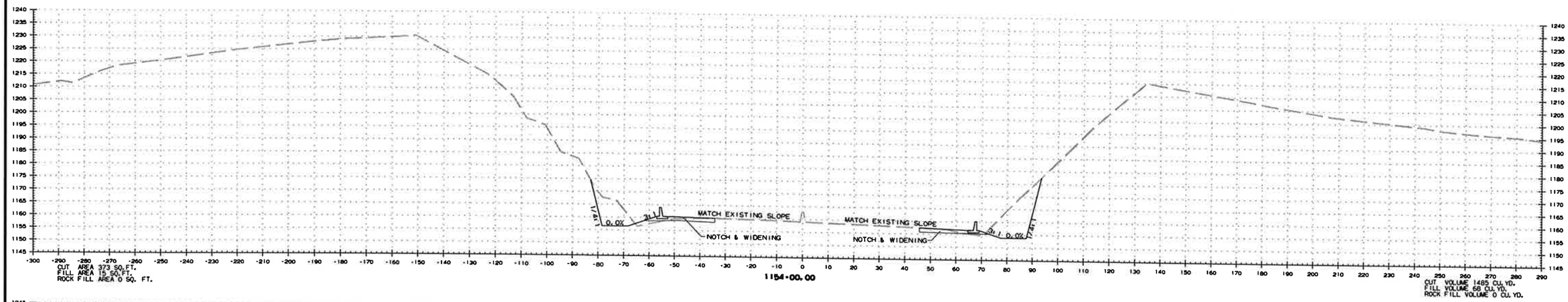


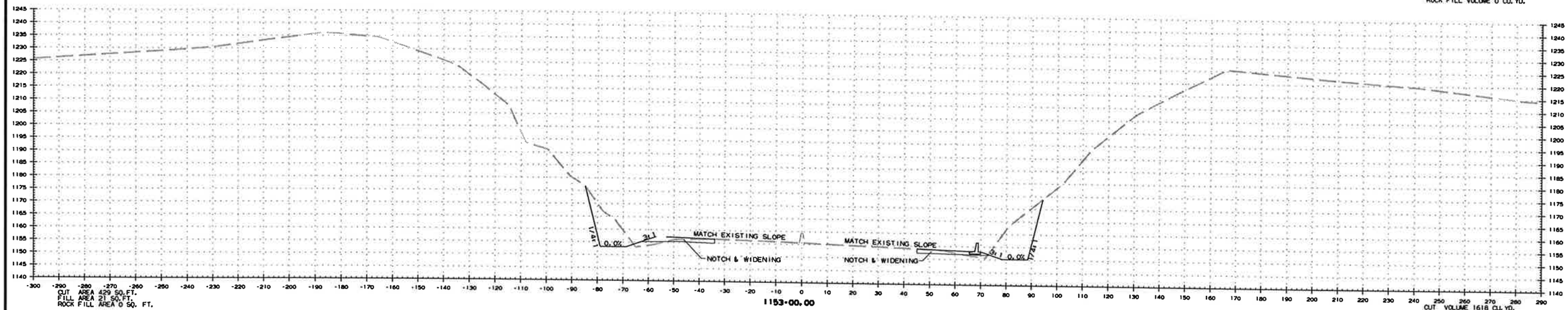
RCA0903_REVISED.DGN 10/19/2016

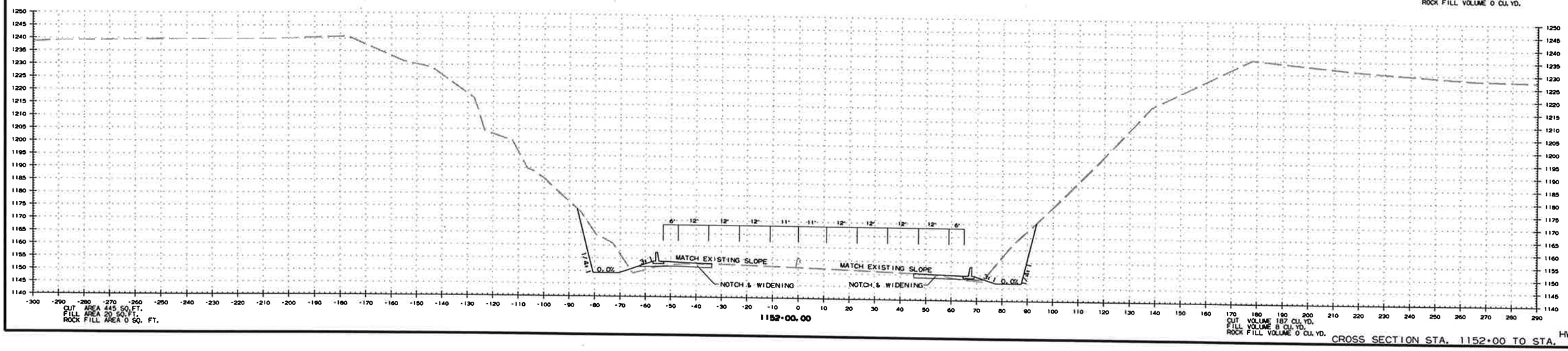
HWY. 549
CROSS SECTION STA. 1150+00 TO STA. 1151+89

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	364	452

(2) HWY. 71 CROSS SECTIONS





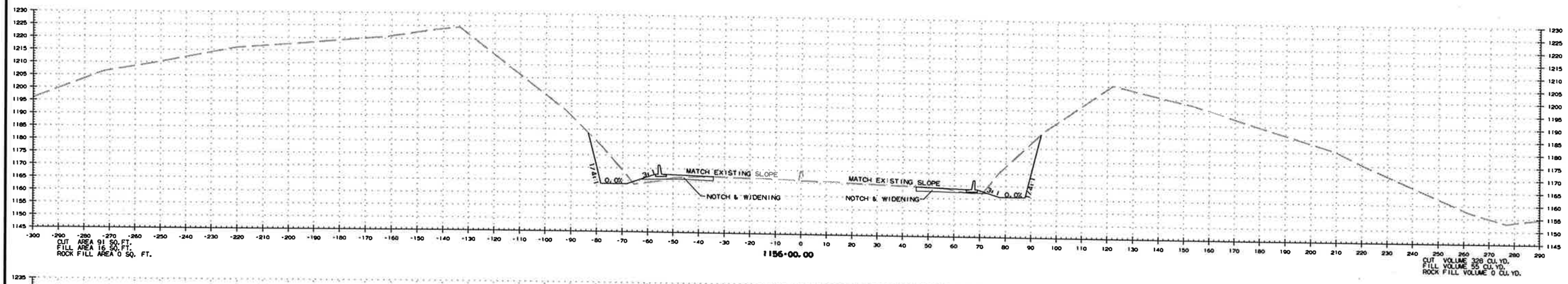


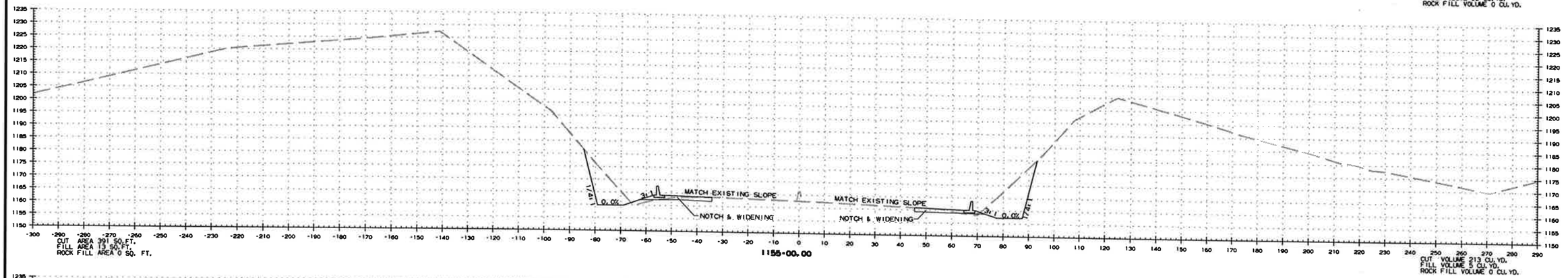
HWY. 549
CROSS SECTION STA. 1152+00 TO STA. 1154+00

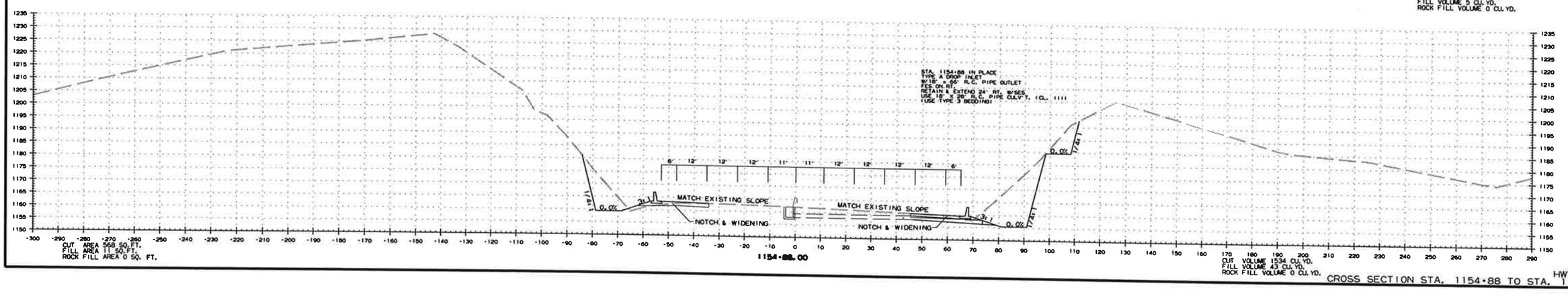
RCA0903.REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	365	452

(2) HWY. 71 CROSS SECTIONS





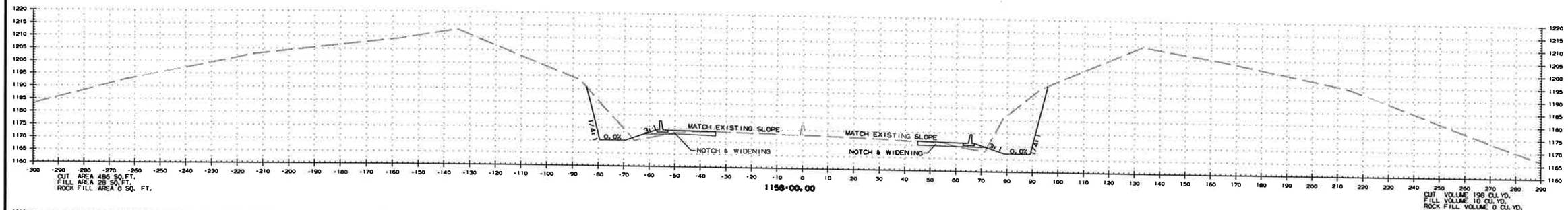


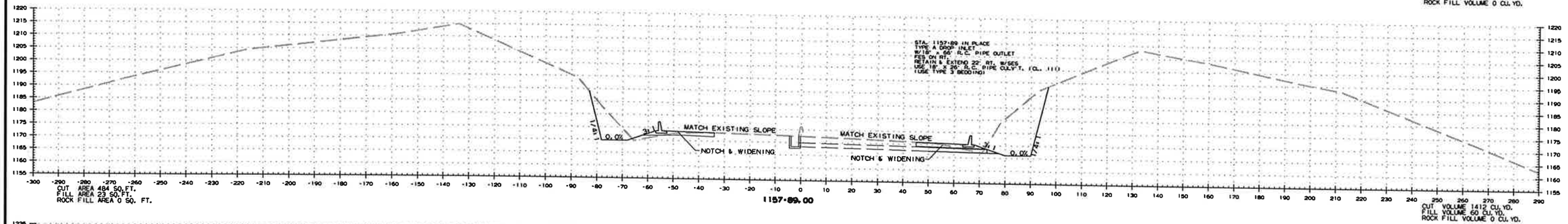
RCA0903_REVISED.DGN 10/19/2016

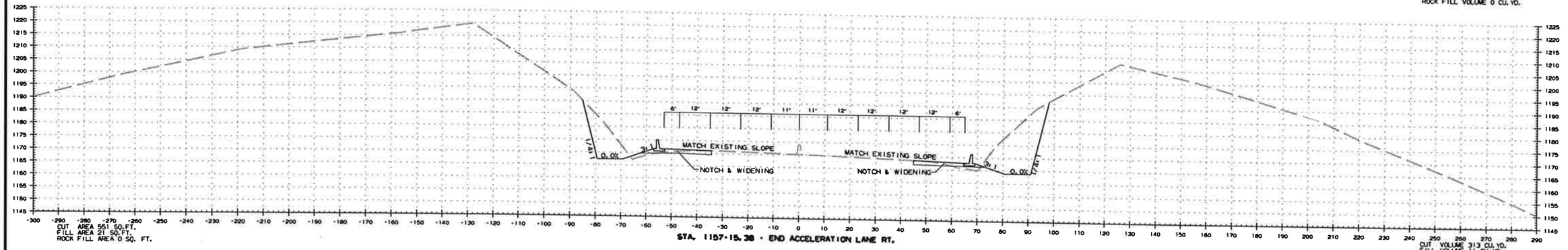
HWY. 549
CROSS SECTION STA. 1154+88 TO STA. 1156+00

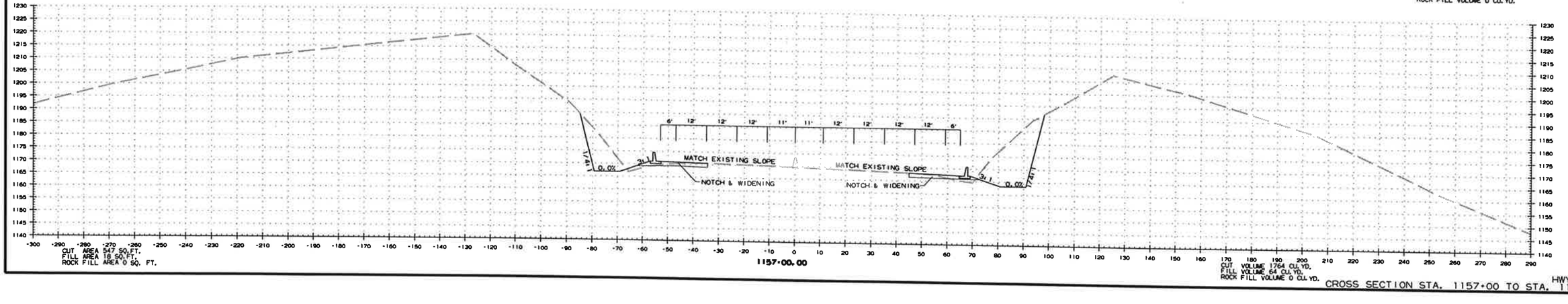
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	366	452

(2) HWY. 71 CROSS SECTIONS







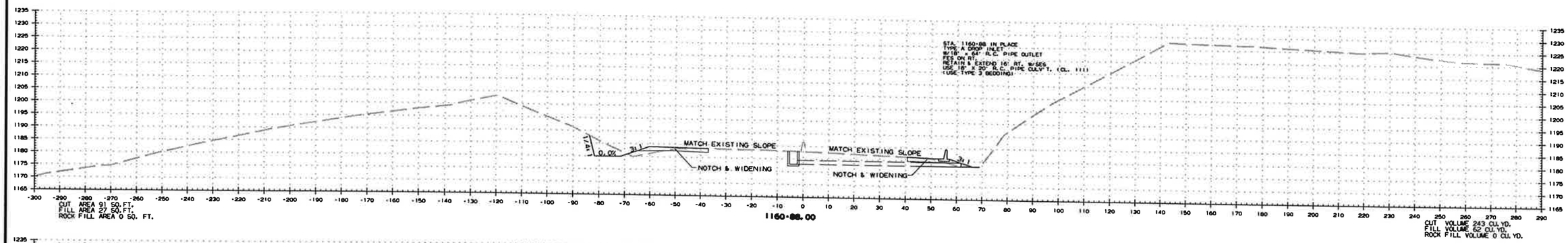


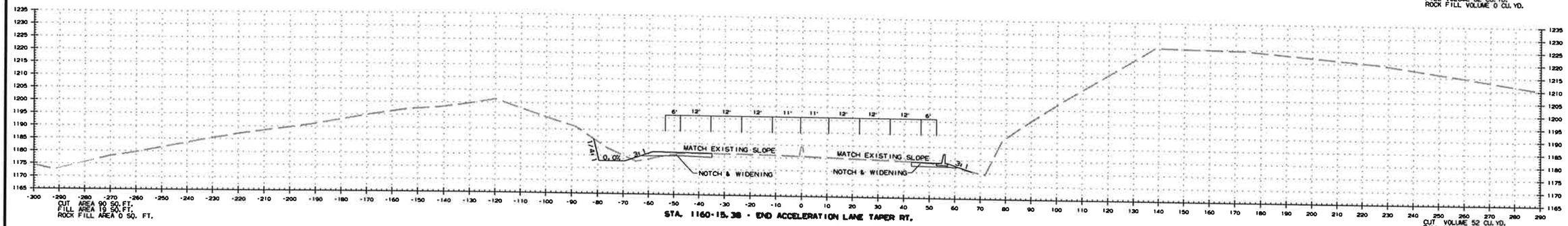
RCA0903_REVISED.DGN 10/19/2016

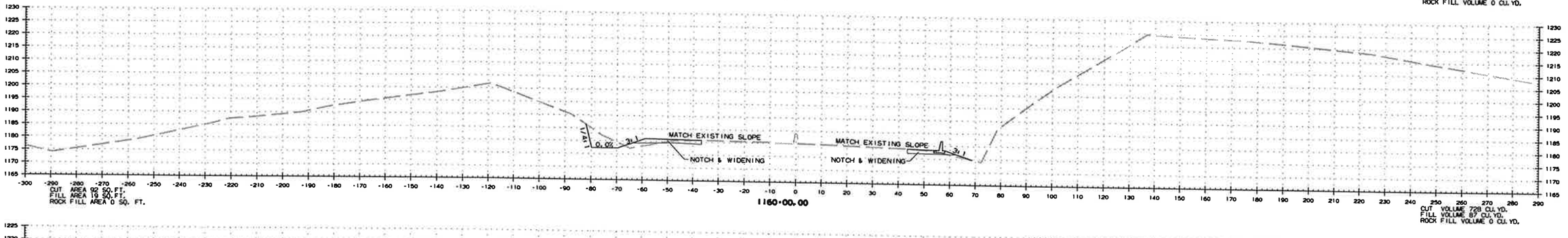
HWY. 549
CROSS SECTION STA. 1157+00 TO STA. 1158+00

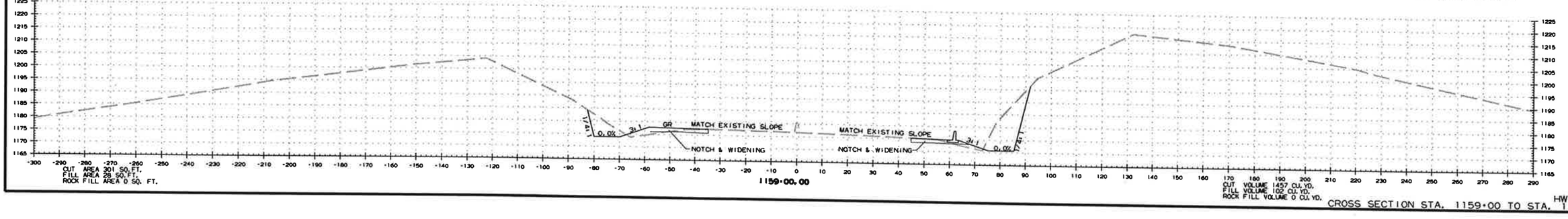
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	367	452

(2) HWY. 71 CROSS SECTIONS







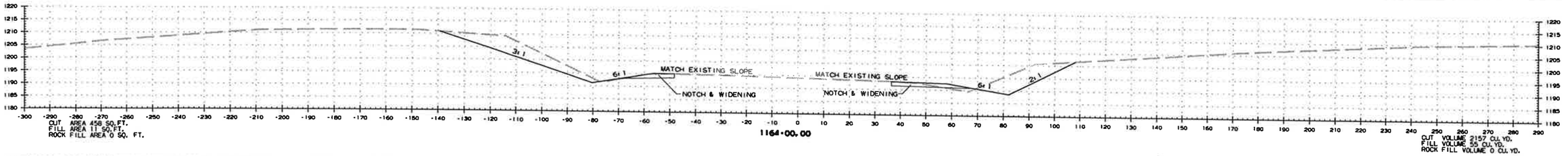


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HWY. 549
CROSS SECTION STA. 1159+00 TO STA. 1160+88

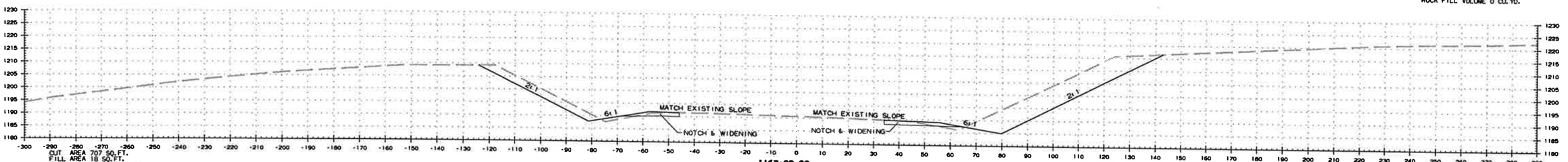
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
7/19/19				6	ARK.			
				JOB NO.		CA0903	368	452

(2) HWY. 71 CROSS SECTIONS



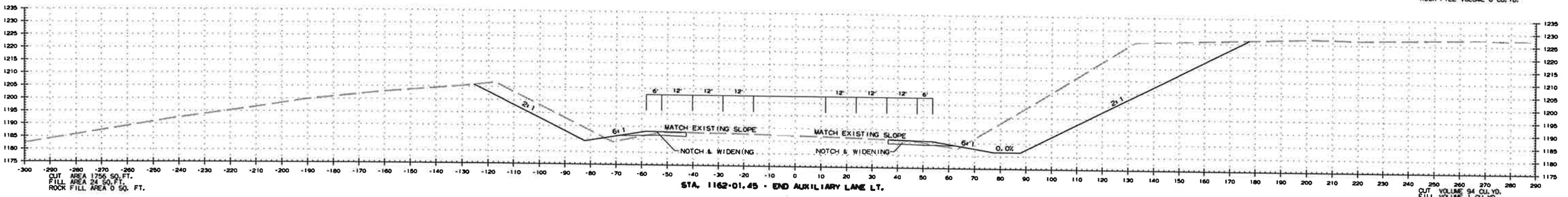
CUT AREA 458 SQ.FT.
FILL AREA 11 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 2157 CU.YD.
FILL VOLUME 55 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



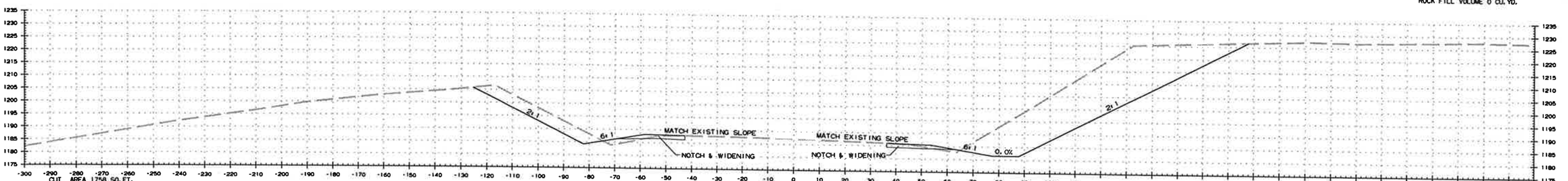
CUT AREA 707 SQ.FT.
FILL AREA 18 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 4495 CU.YD.
FILL VOLUME 77 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



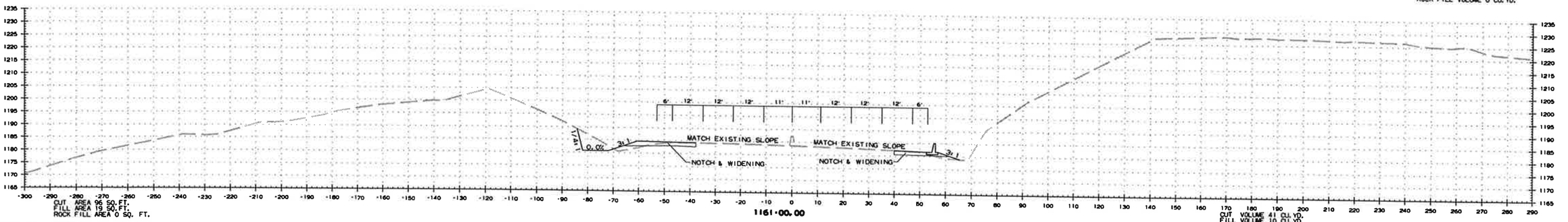
CUT AREA 1756 SQ.FT.
FILL AREA 24 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 94 CU.YD.
FILL VOLUME 1 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 1758 SQ.FT.
FILL AREA 24 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

CUT VOLUME 3433 CU.YD.
FILL VOLUME 80 CU.YD.
ROCK FILL VOLUME 0 CU.YD.



CUT AREA 96 SQ.FT.
FILL AREA 19 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

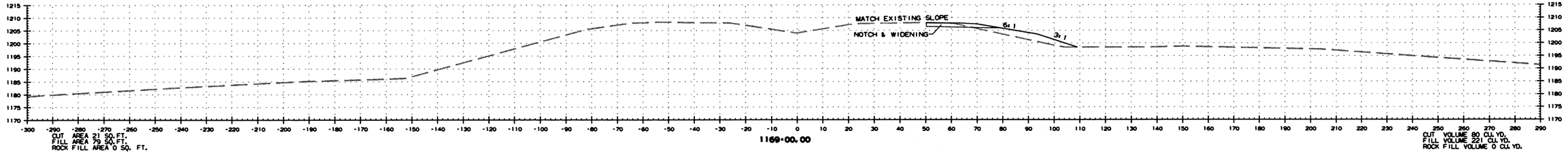
CUT VOLUME 41 CU.YD.
FILL VOLUME 10 CU.YD.
ROCK FILL VOLUME 0 CU.YD.

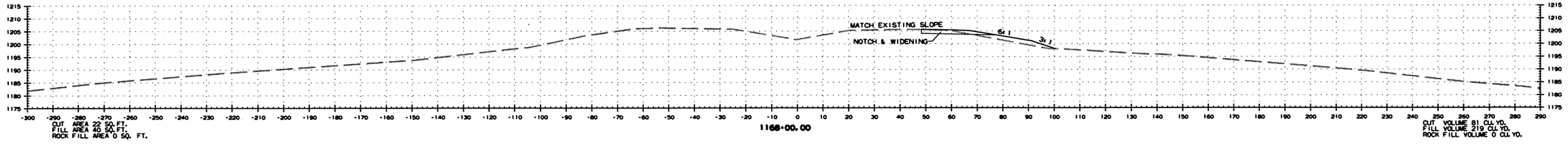
RCA0903_REVISED.DGN 10/19/2016

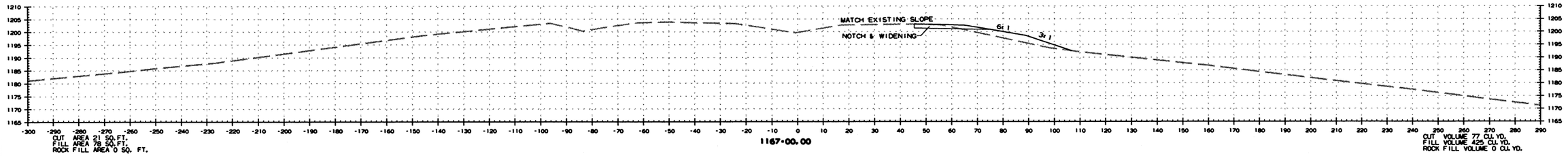
HWY. 549
CROSS SECTION STA. 1161+00 TO STA. 1164+00

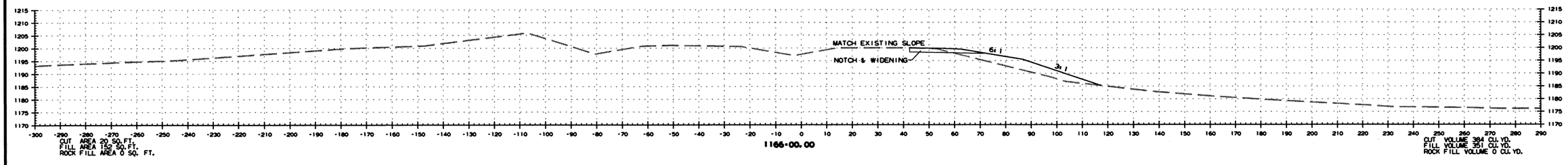
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	369	452

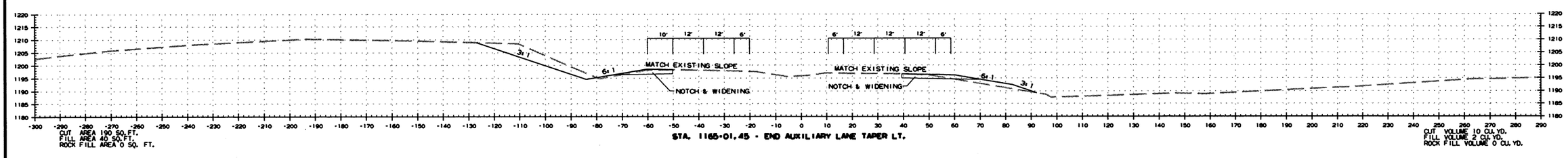
(2) HWY. 71 CROSS SECTIONS

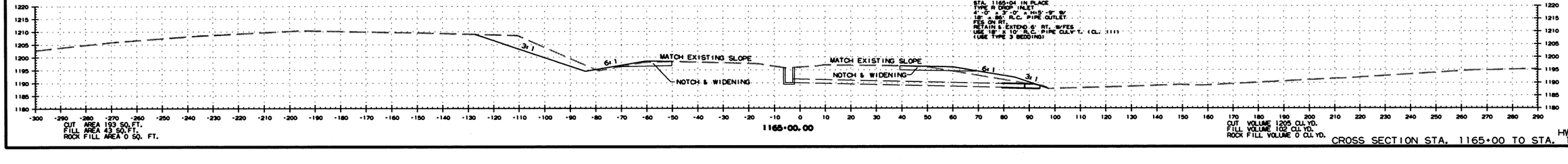










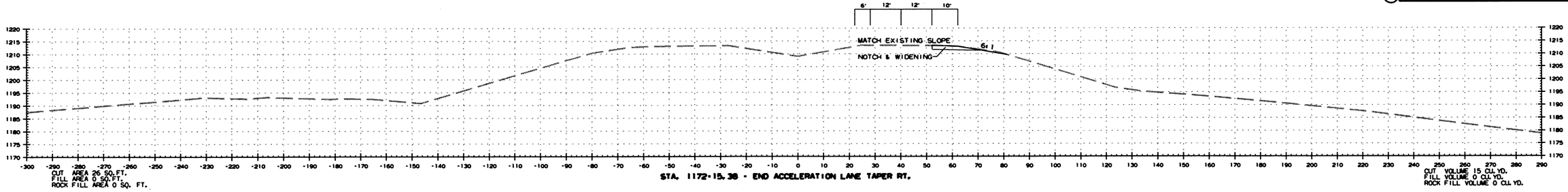


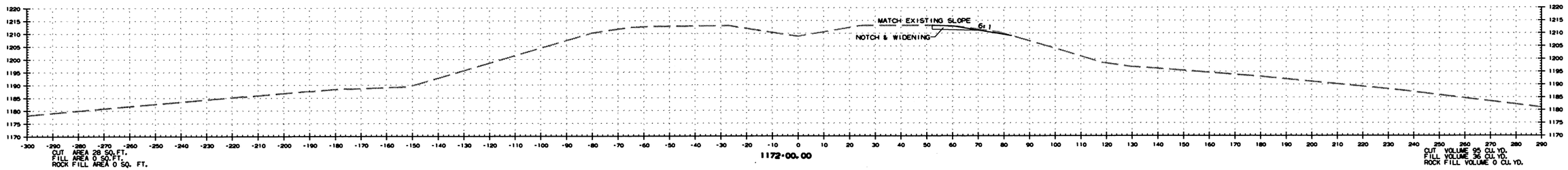
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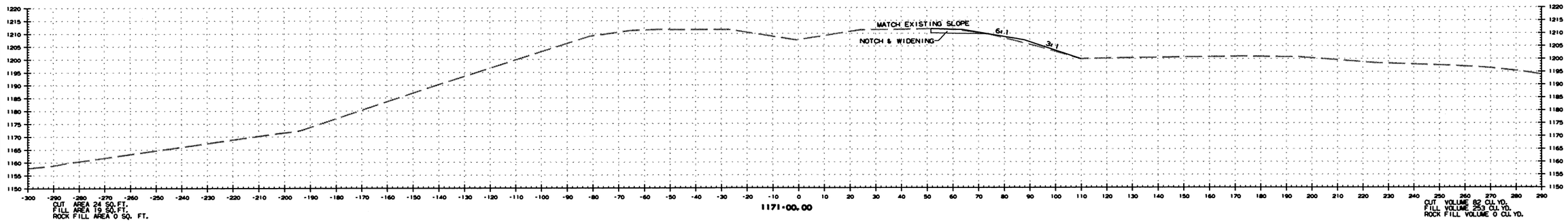
HWY. 549
CROSS SECTION STA. 1165+00 TO STA. 1169+00

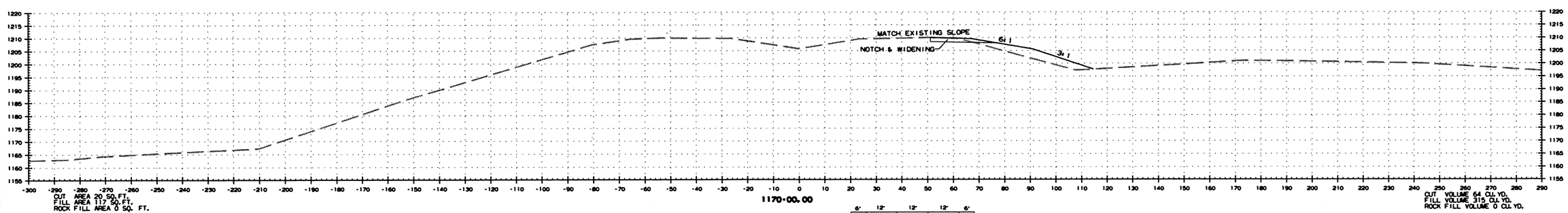
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	370	452

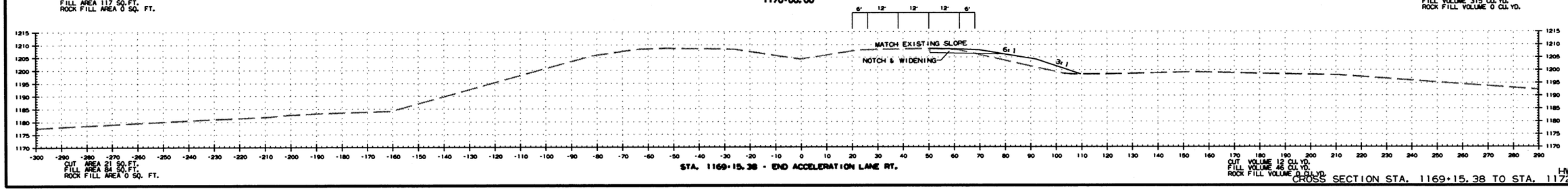
(2) HWY. 71 CROSS SECTIONS









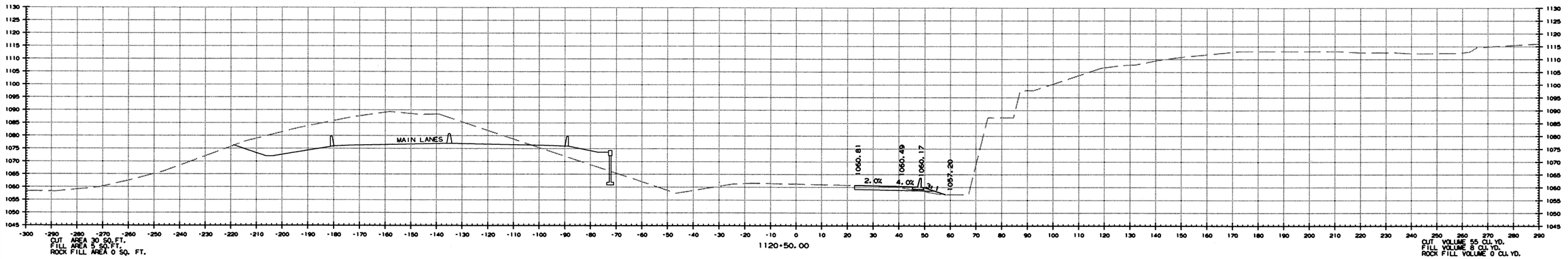


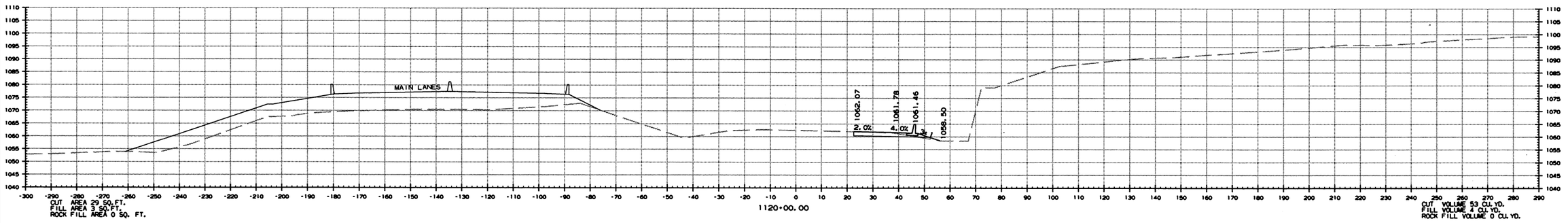
RCA0903.REVISED.DGN 10/19/2016

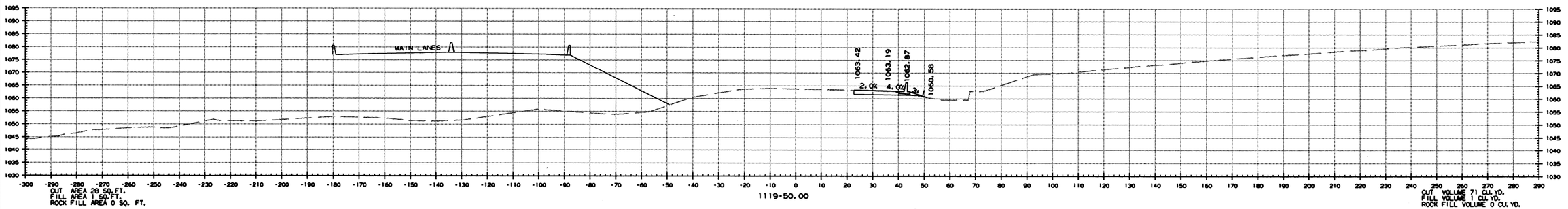
HWY. 549
CROSS SECTION STA. 1169+15.38 TO STA. 1172+15.38

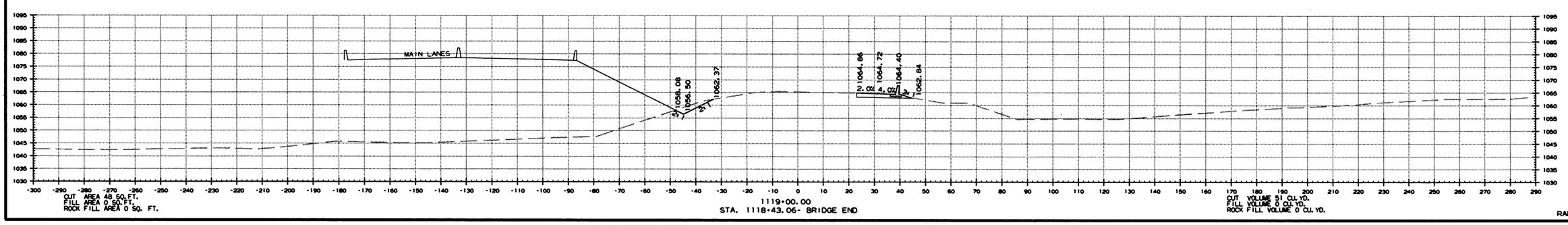
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







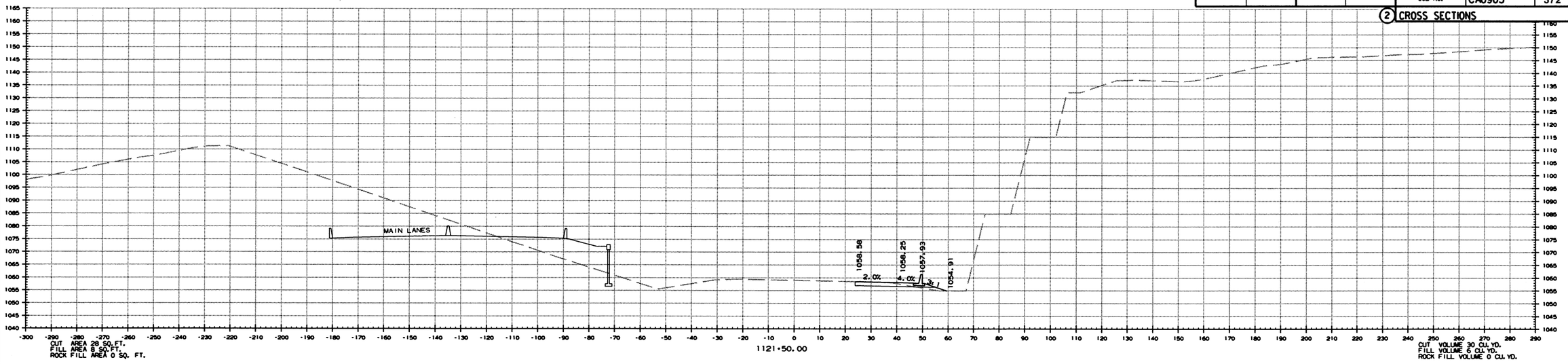


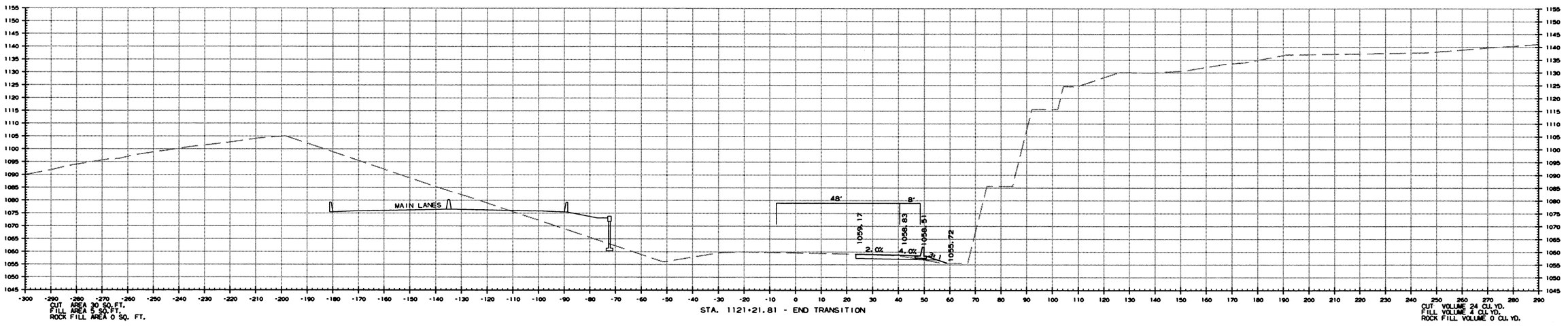
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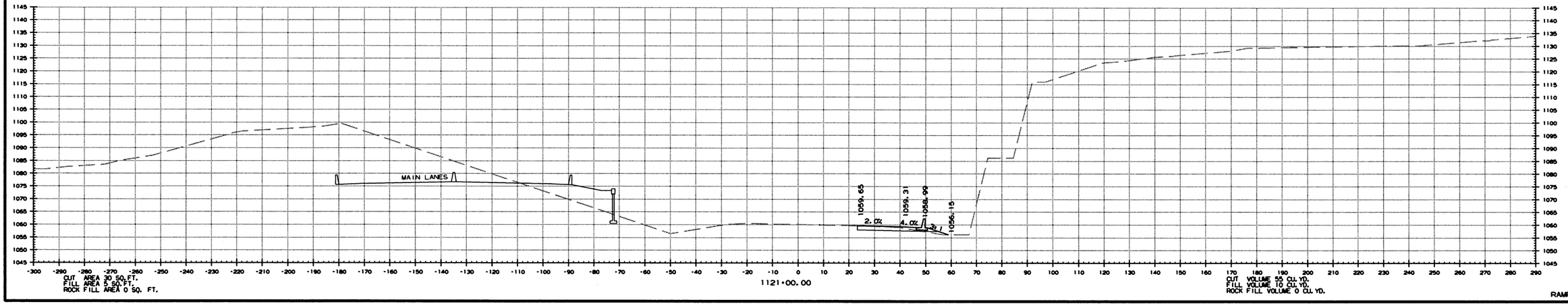
RAMP 1 SPUI

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.		CA0903	372	452

(2) CROSS SECTIONS





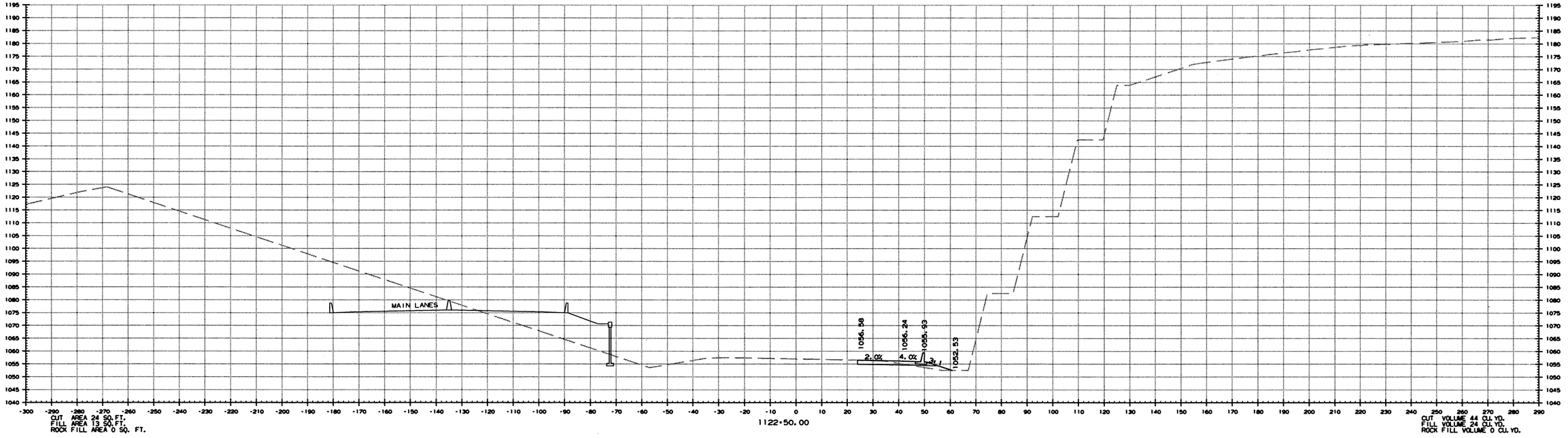


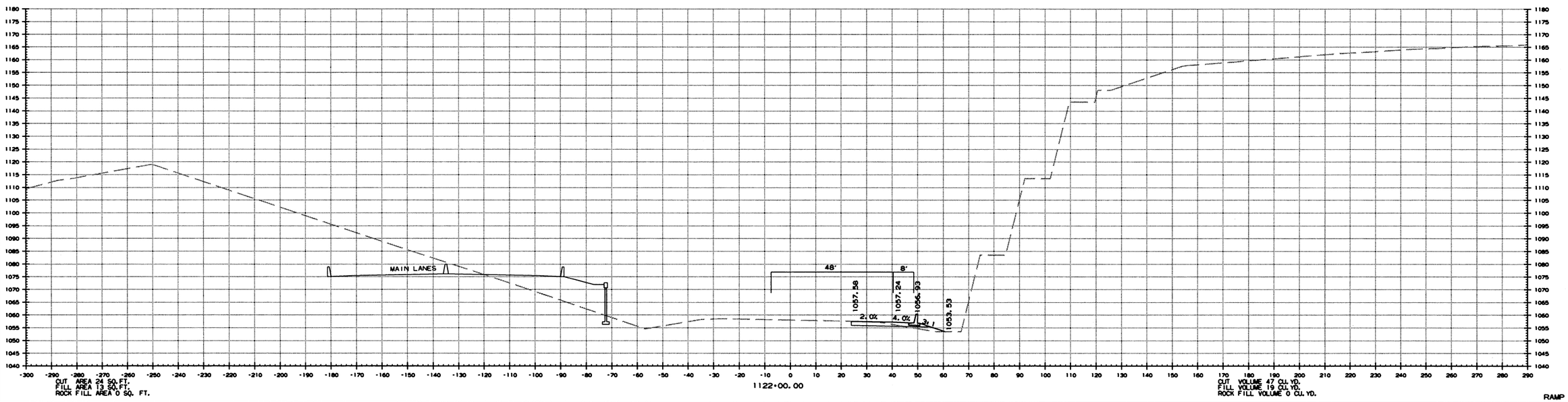
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



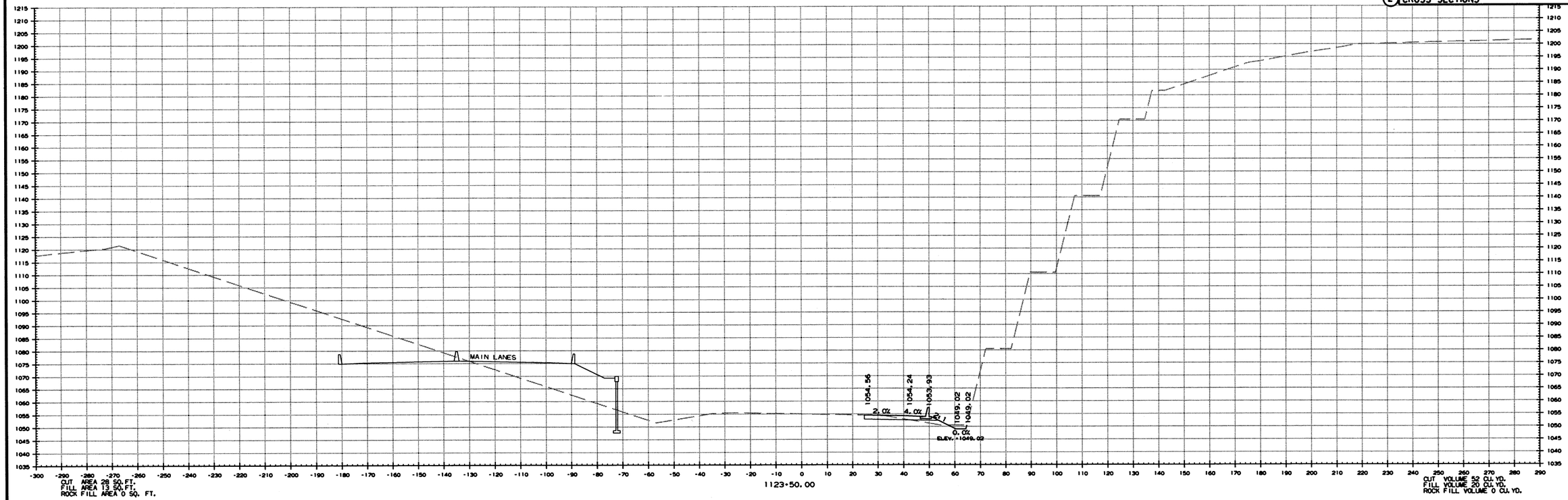


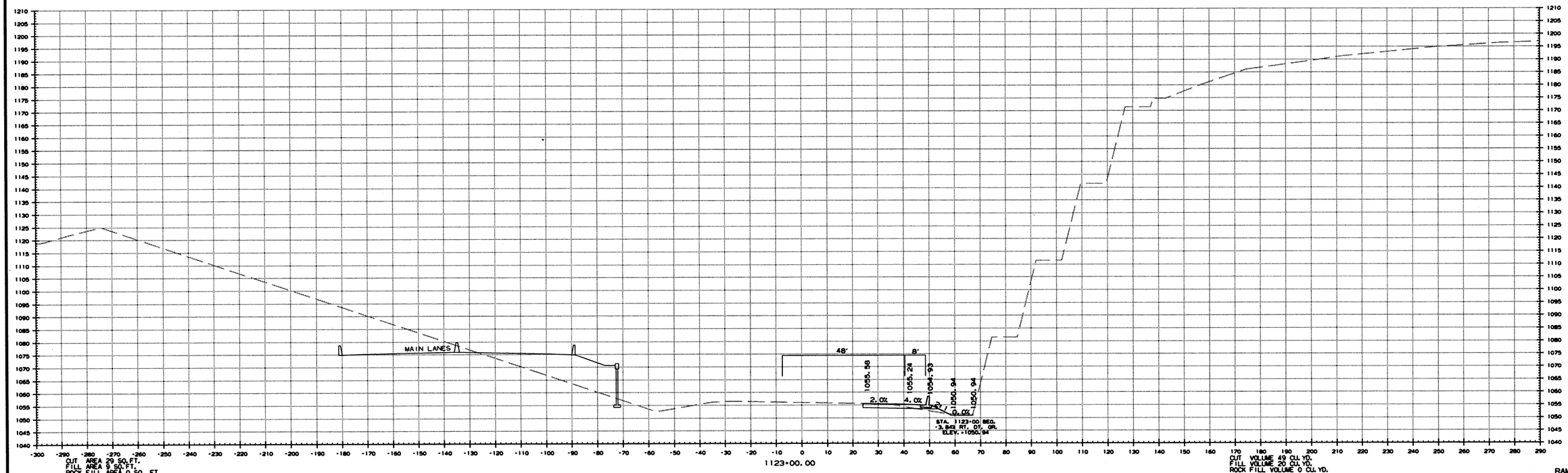
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0903	374	452

(2) CROSS SECTIONS



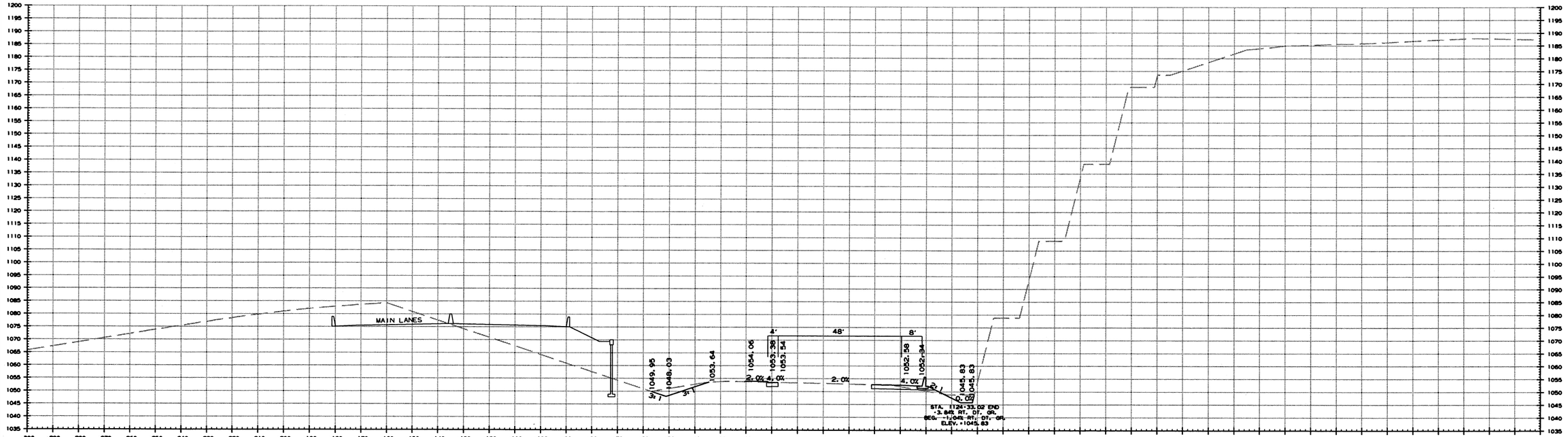


RCA0903.REVISED.DGN 10/19/2016

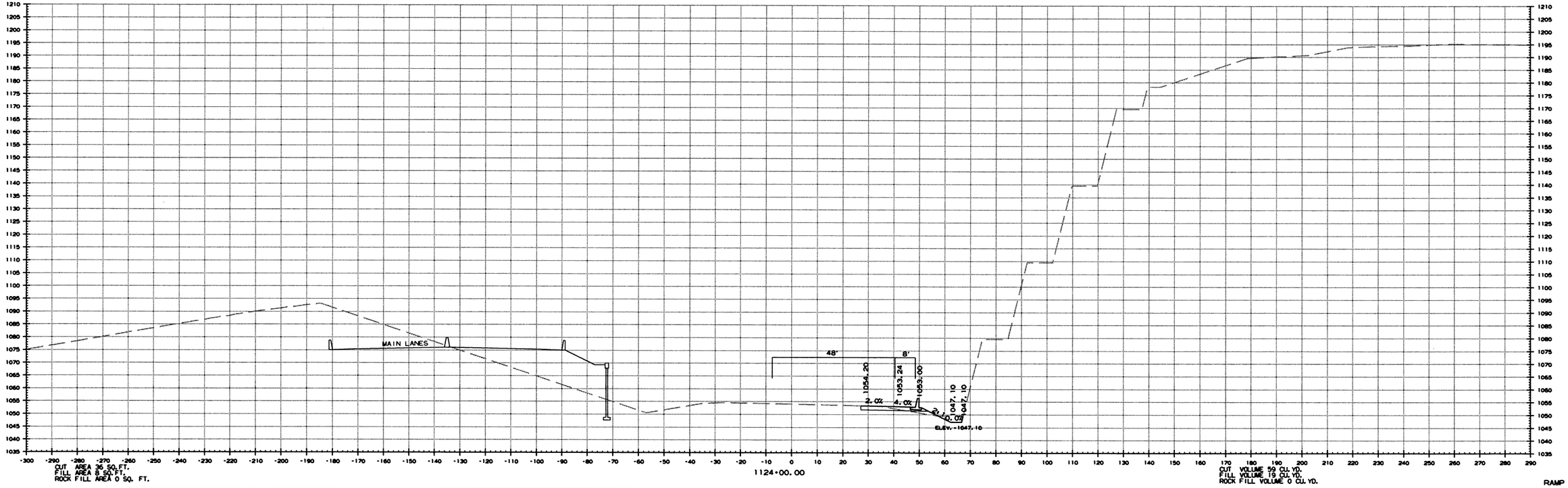
RAMP 1 SPUI

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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(2) CROSS SECTIONS



STA. 1124+33.02 - BEGIN CURB & GUTTER ON LT.



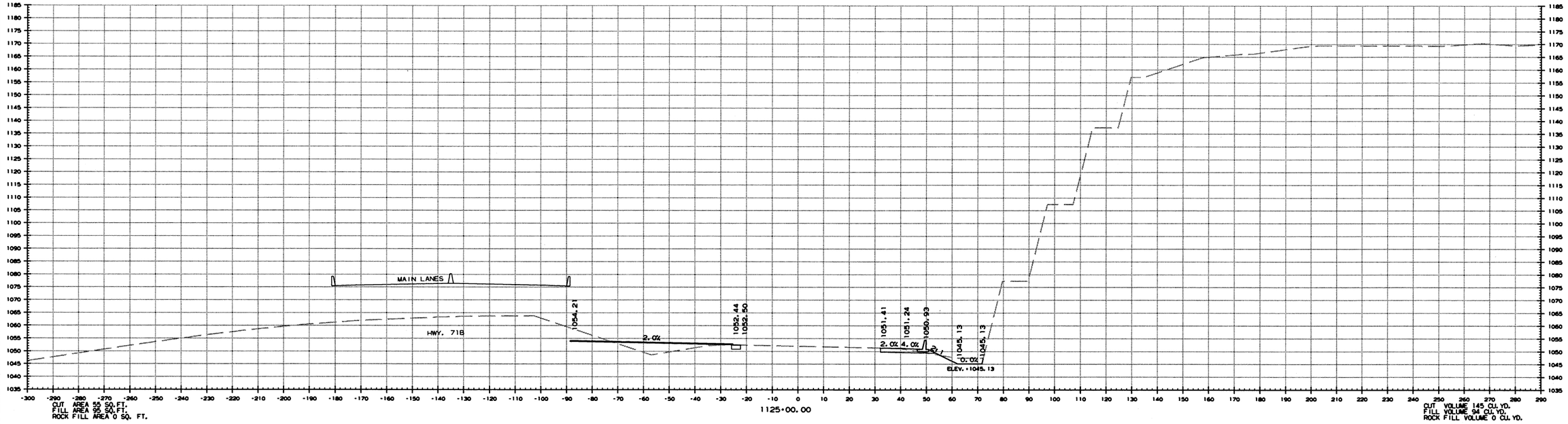
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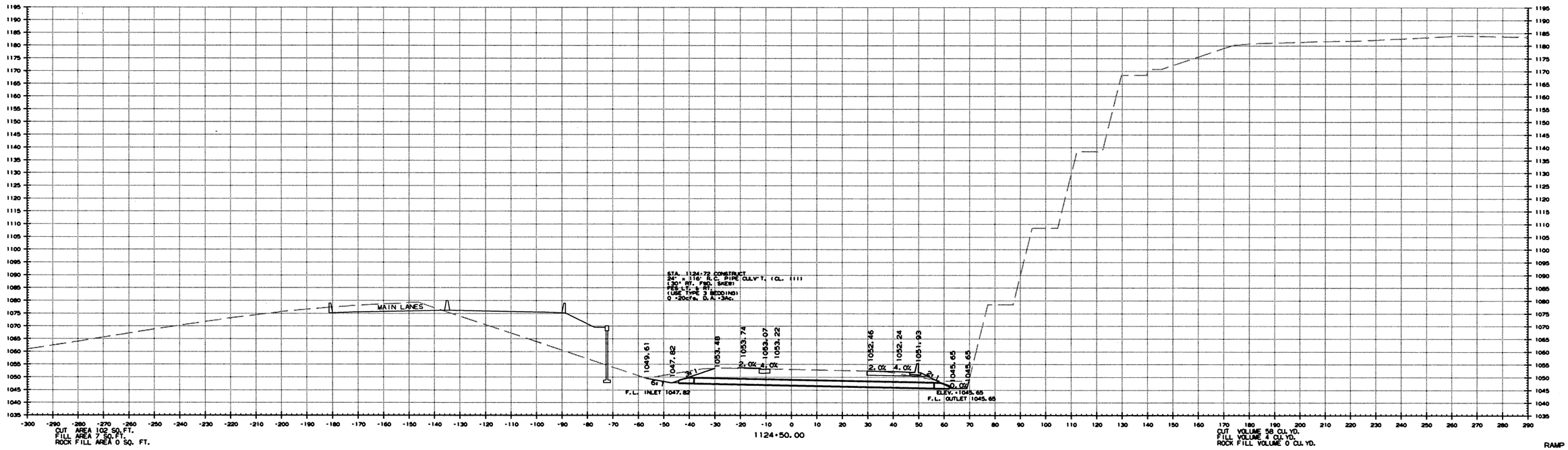
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0903	376	452

(2) CROSS SECTIONS



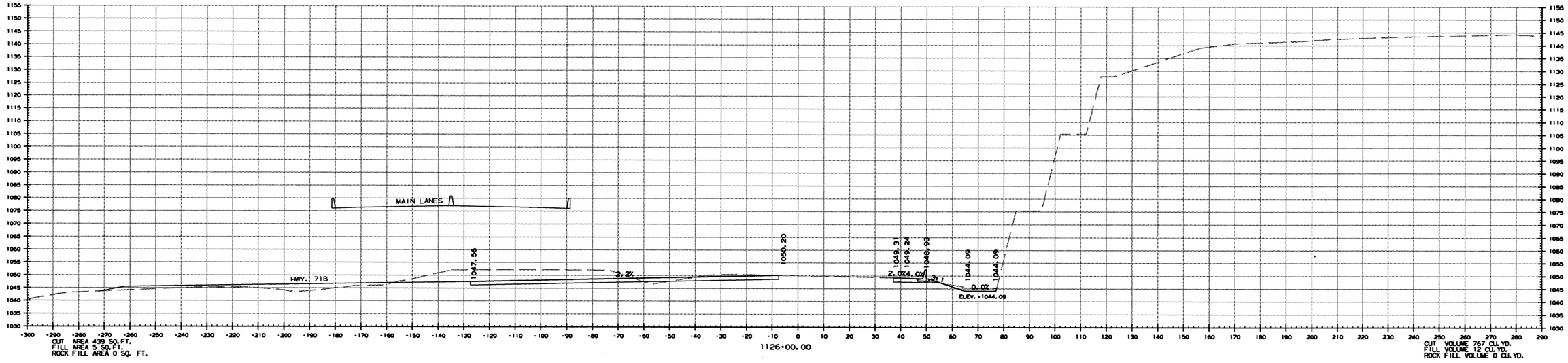


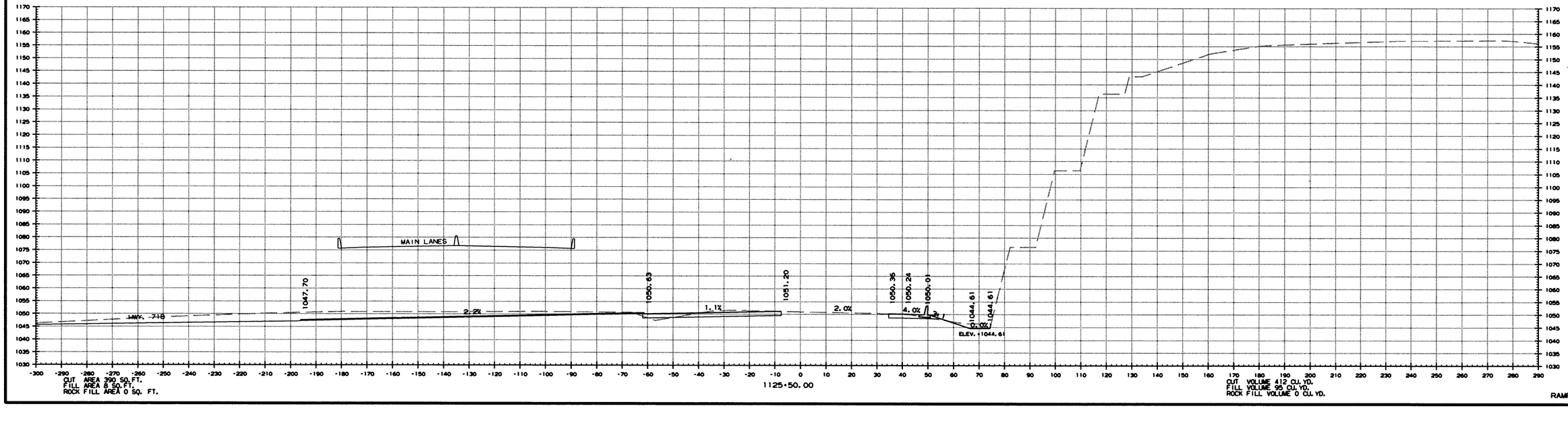
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS



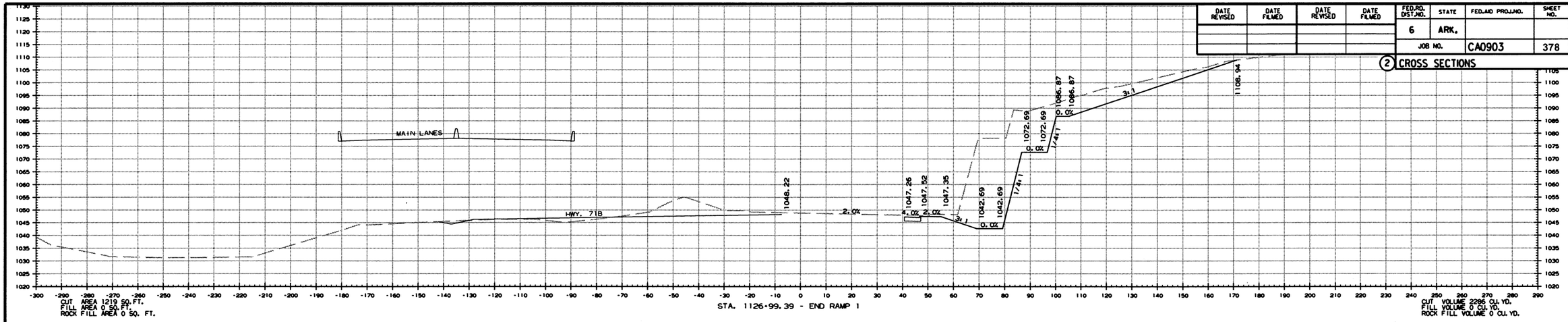


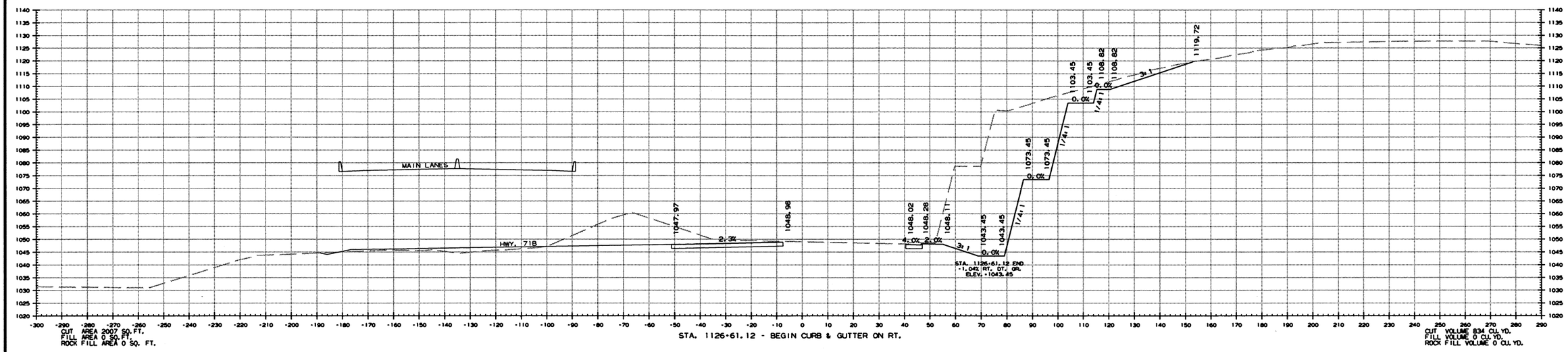
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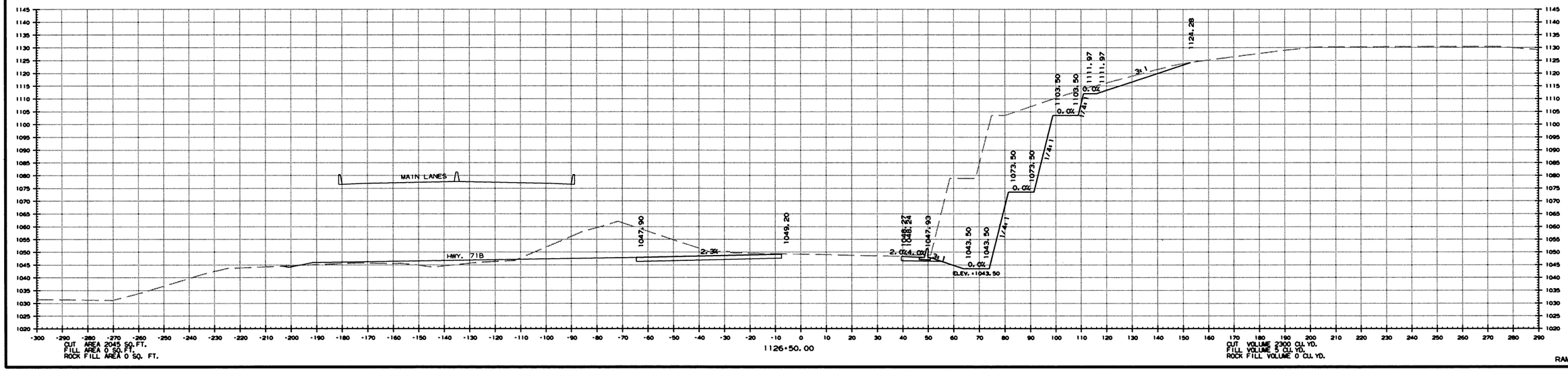
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	378	452

(2) CROSS SECTIONS





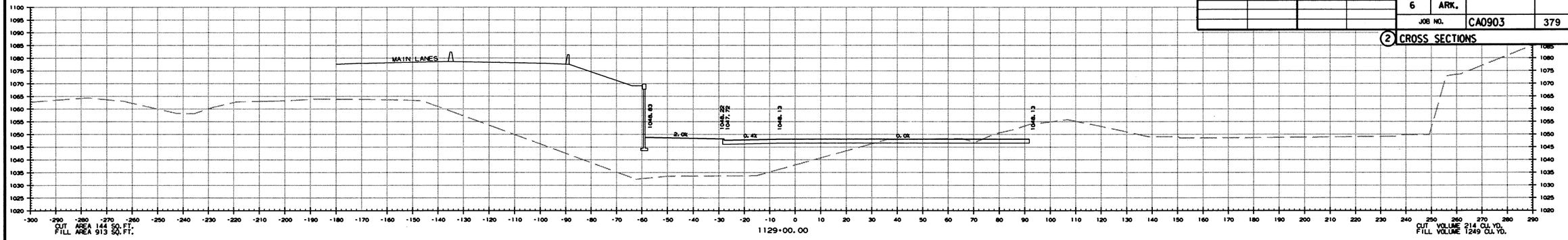


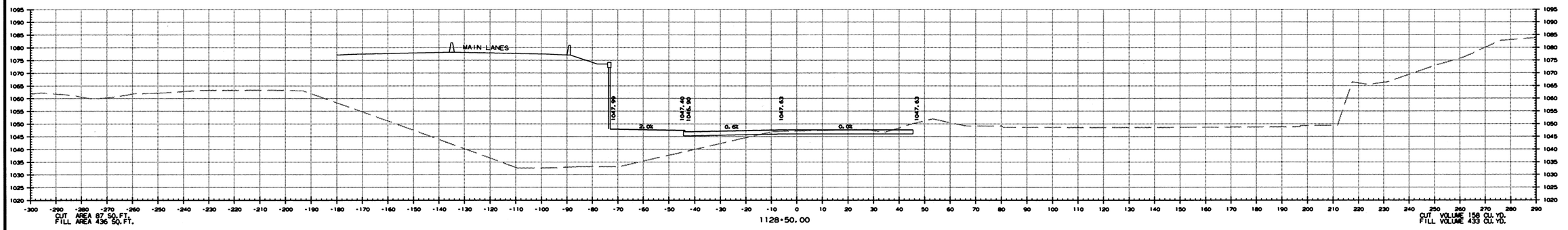
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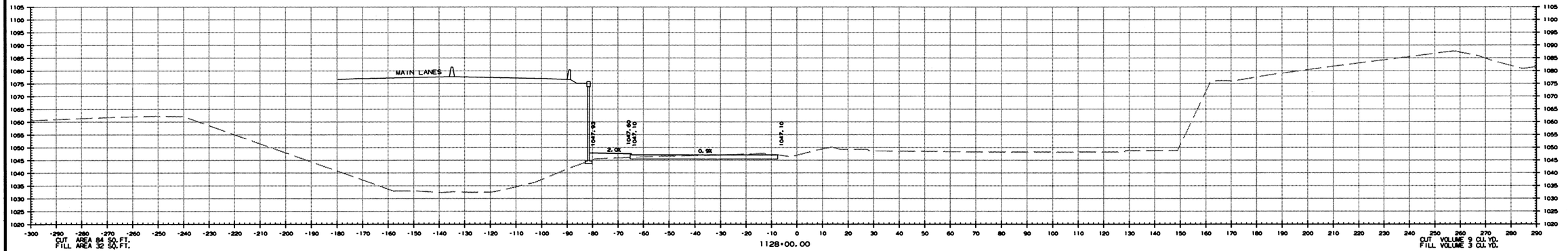
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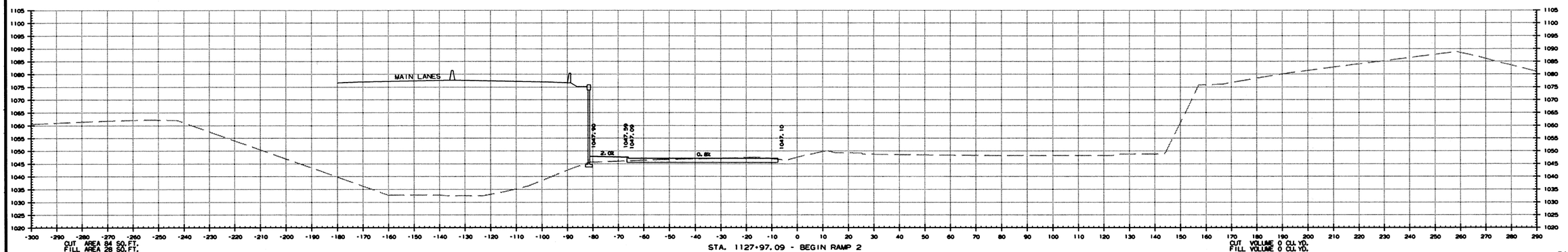
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







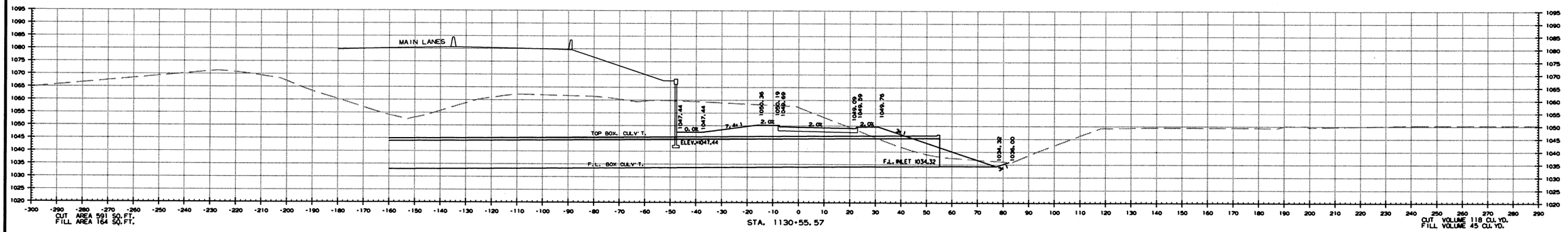


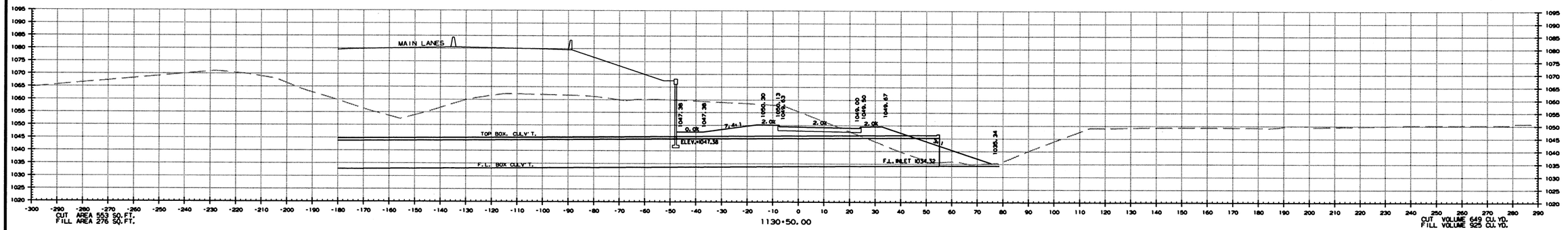
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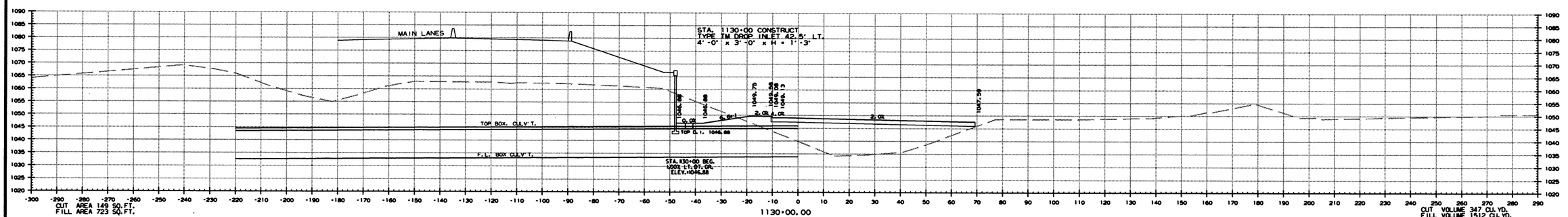
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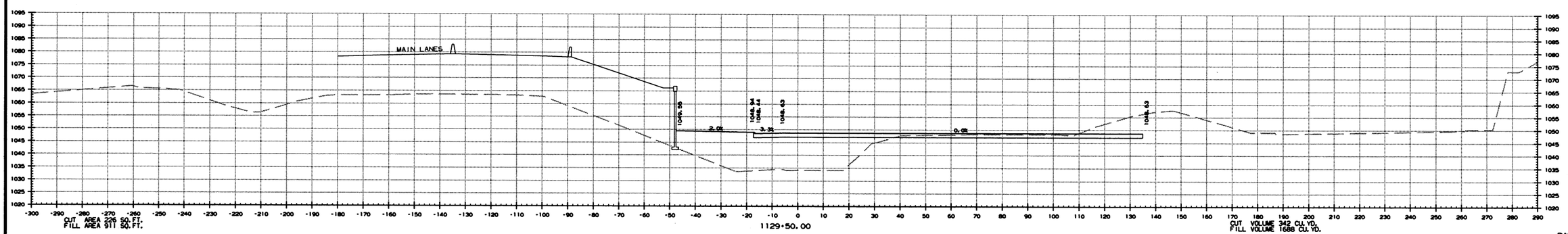
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







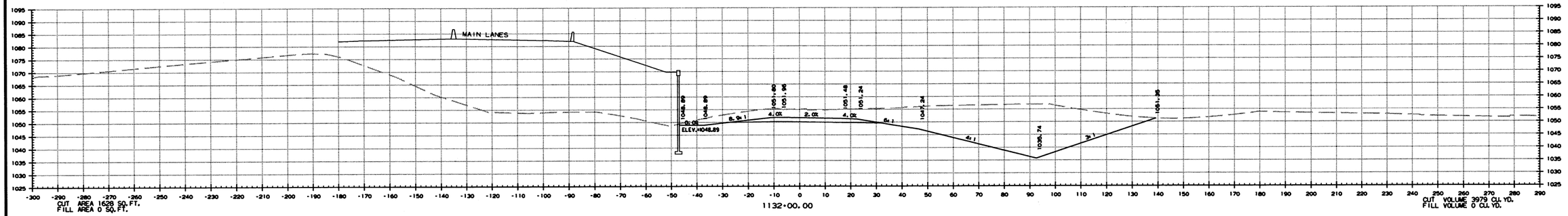


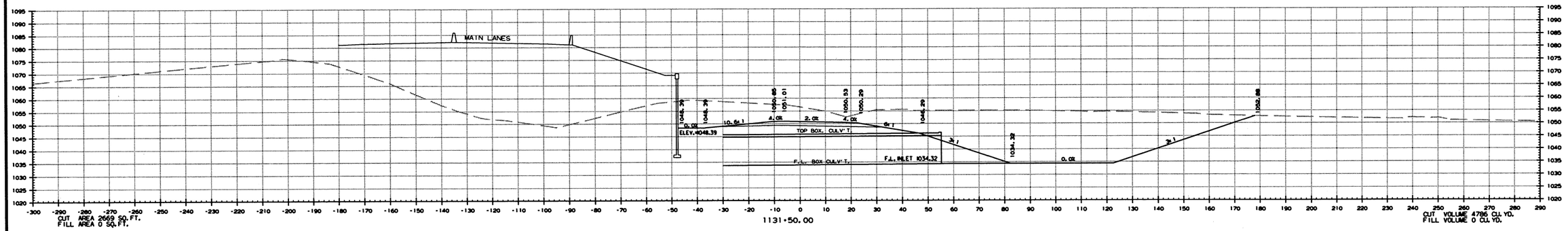
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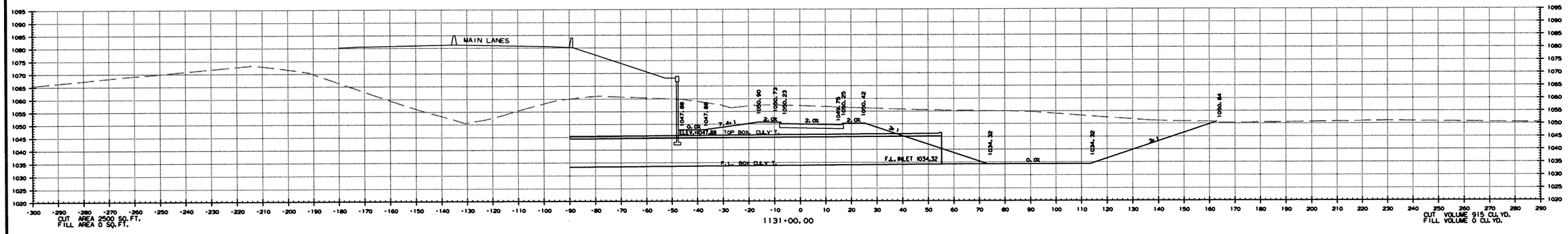
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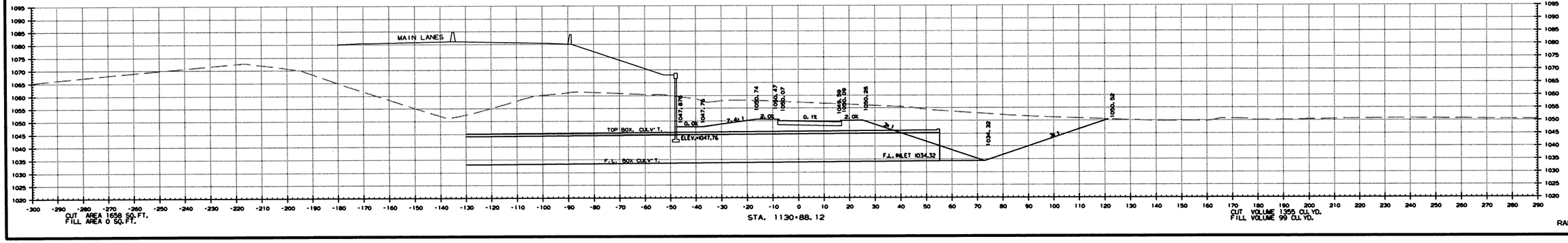
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0903	381	452

(2) CROSS SECTIONS







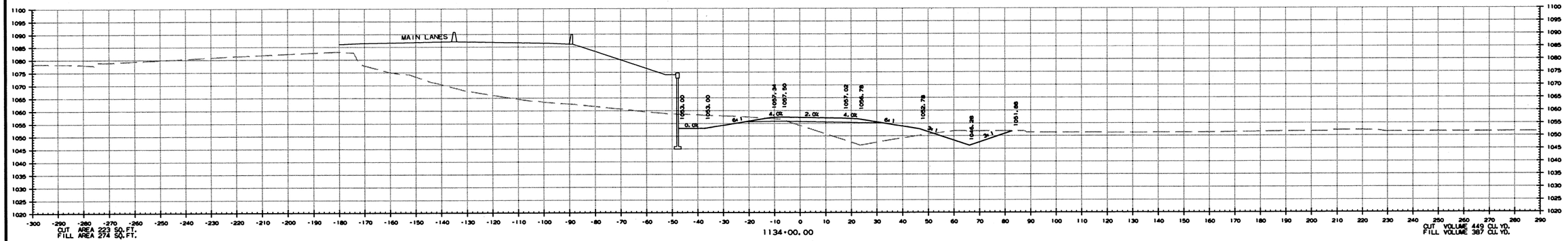


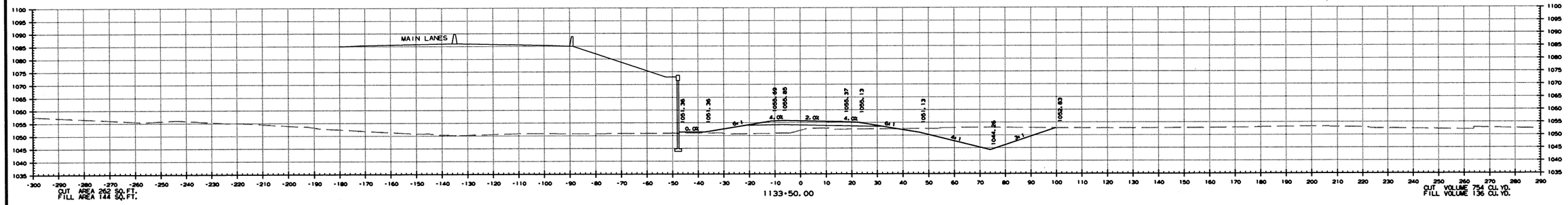
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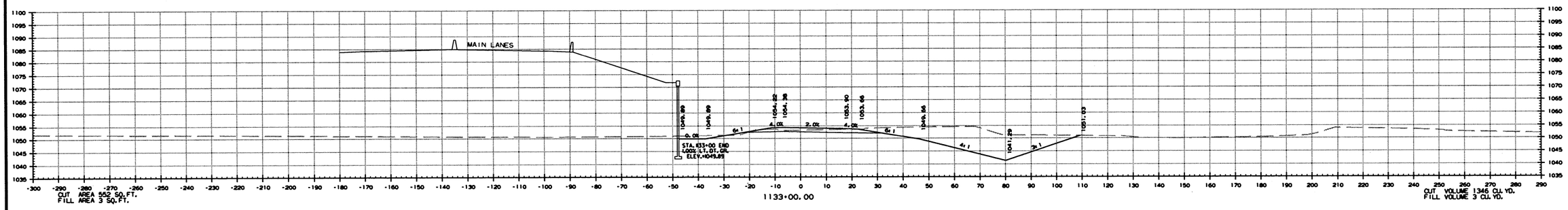
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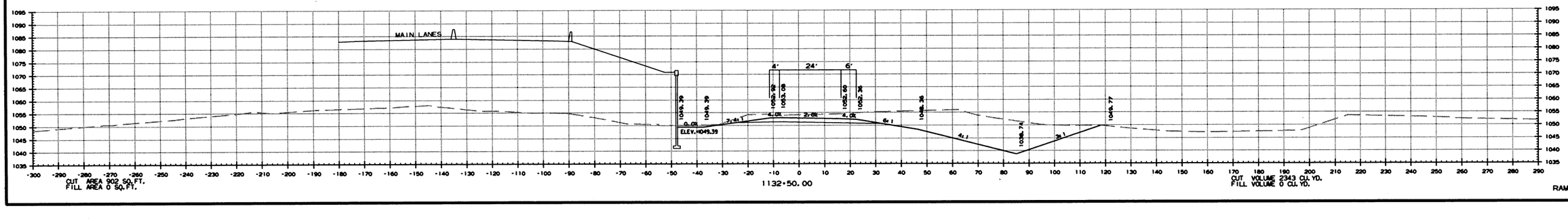
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS







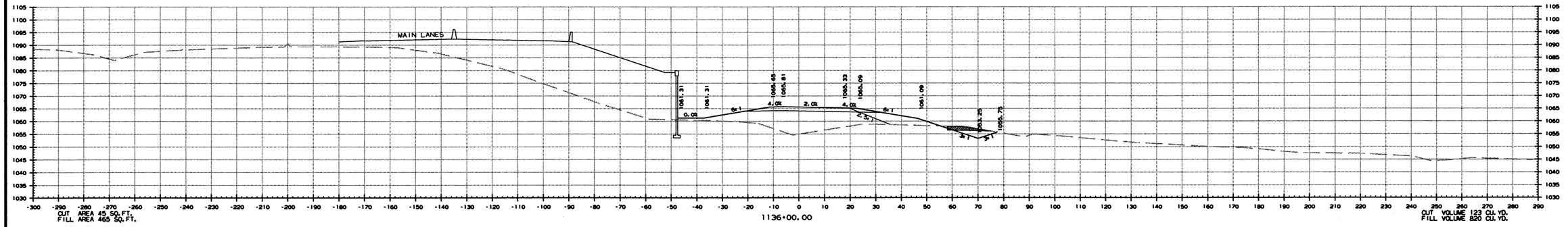


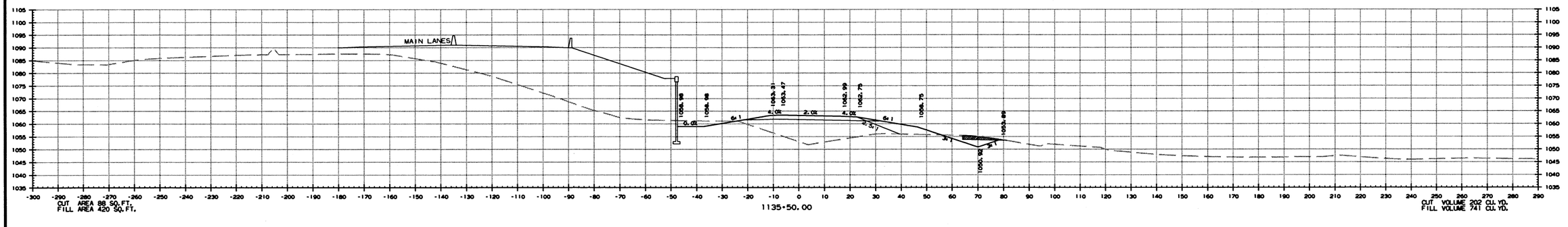
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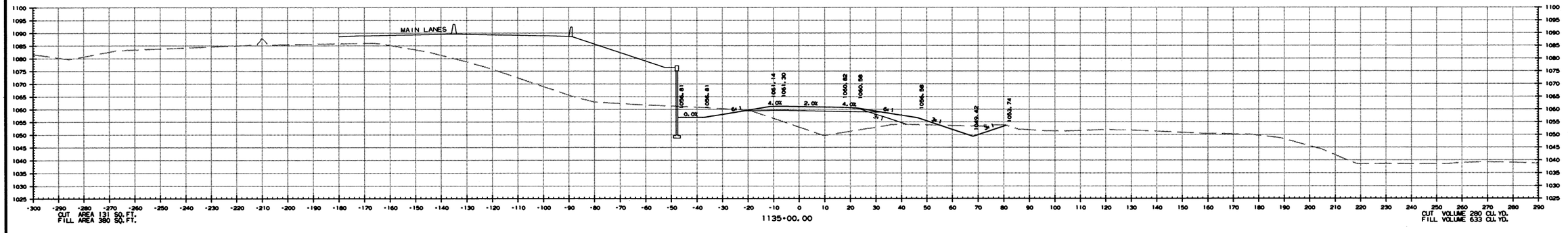
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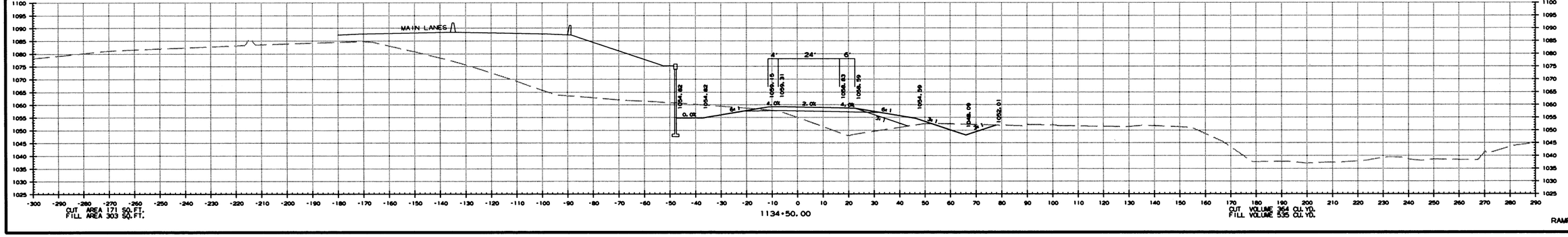
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







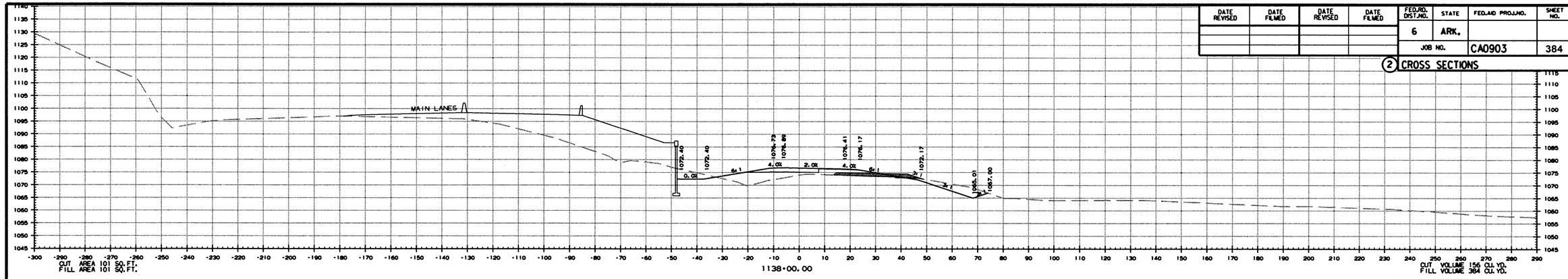


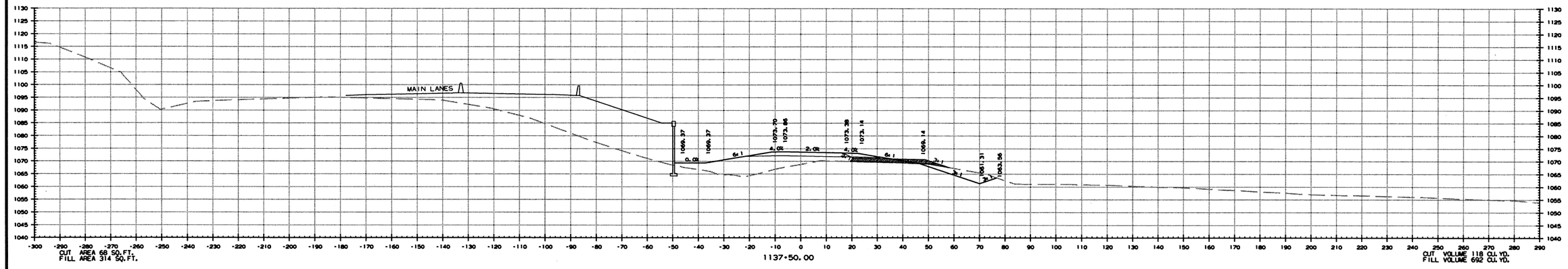
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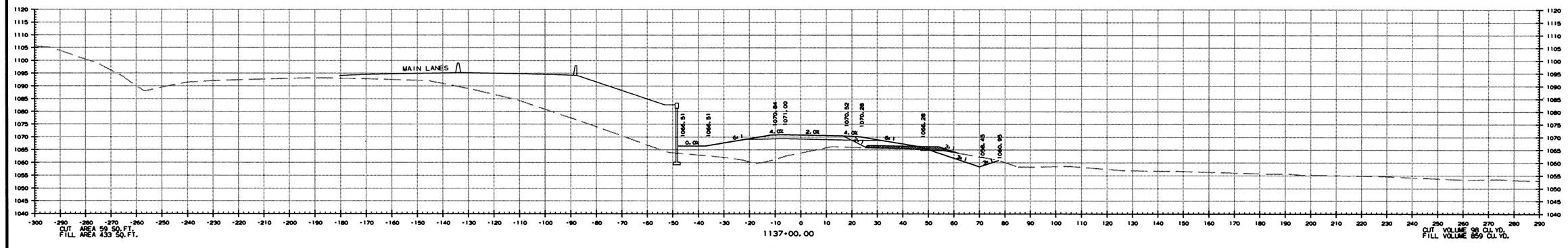
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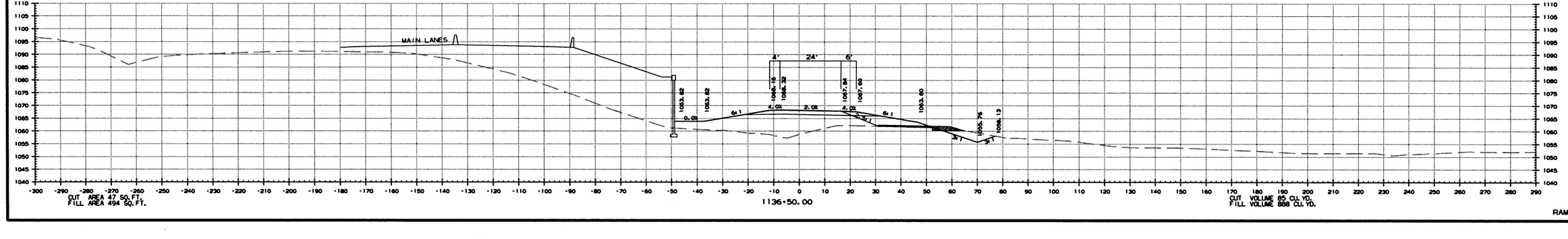
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS







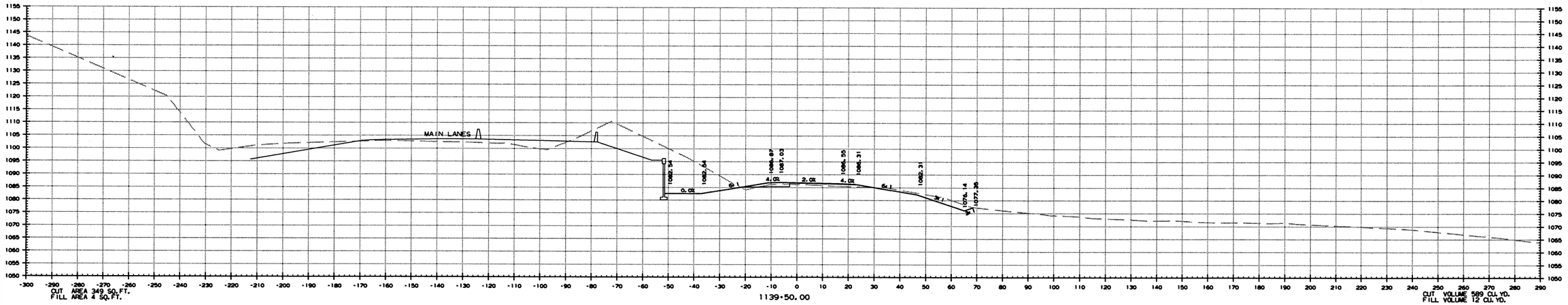


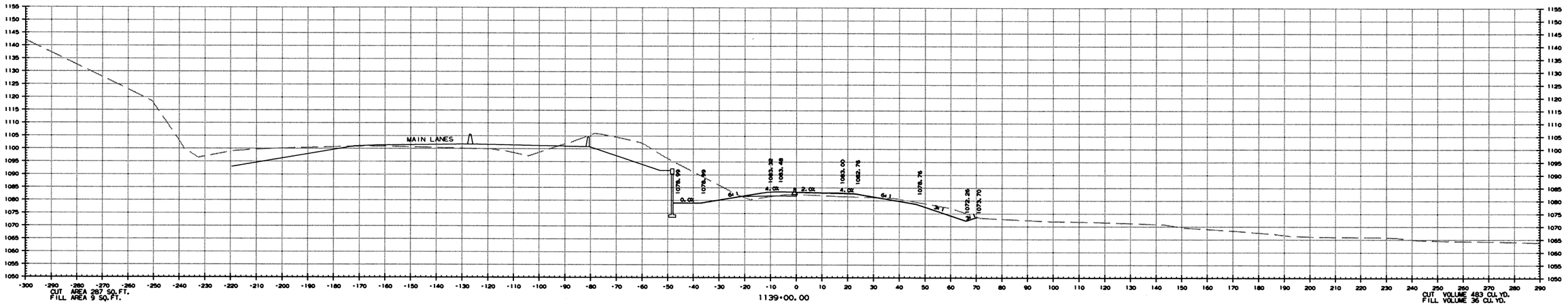
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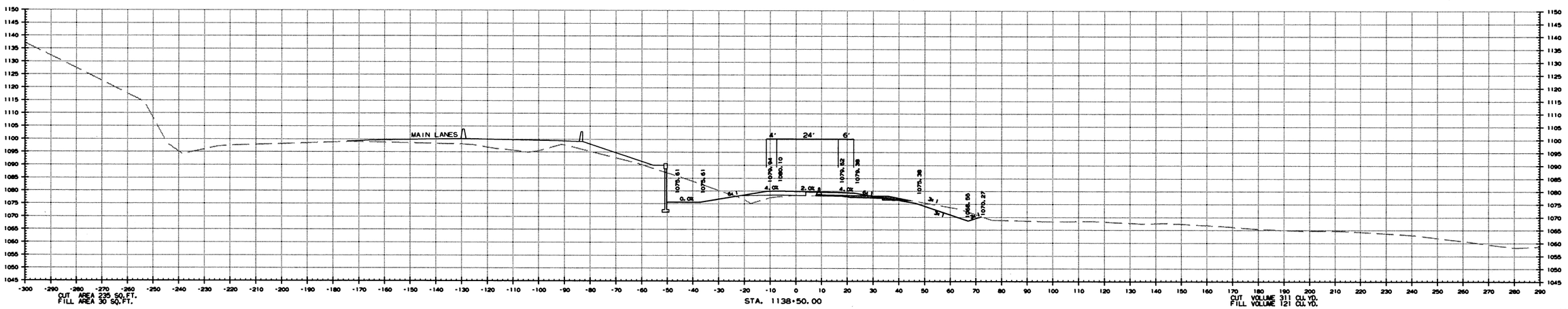
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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(2) CROSS SECTIONS





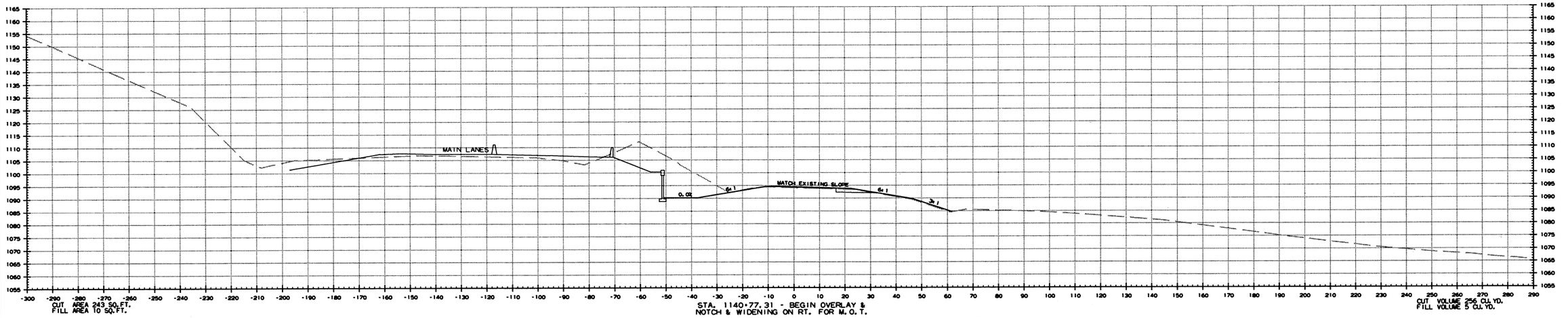


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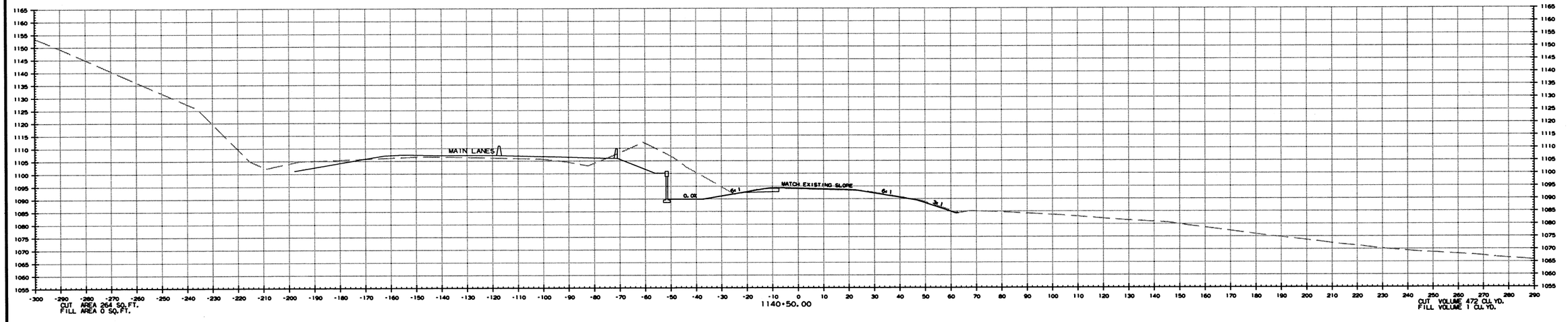
(2) CROSS SECTIONS



CUT AREA 243 SQ.FT.
FILL AREA 10 SQ.FT.

STA. 1140+77.31 - BEGIN OVERLAY & NOTCH & WIDENING ON RT. FOR M.O.T.

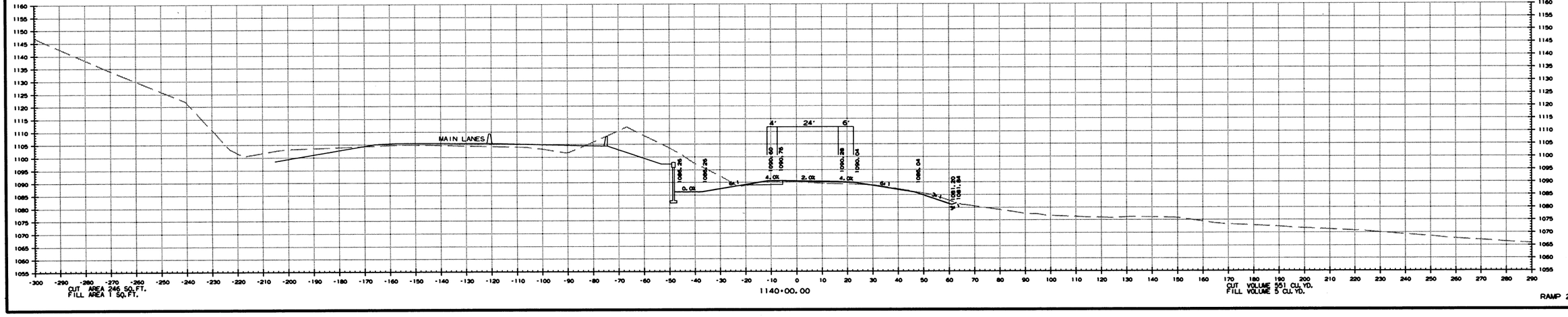
CUT VOLUME 256 CU.YD.
FILL VOLUME 5 CU.YD.



CUT AREA 264 SQ.FT.
FILL AREA 0 SQ.FT.

1140+50.00

CUT VOLUME 472 CU.YD.
FILL VOLUME 1 CU.YD.



CUT AREA 246 SQ.FT.
FILL AREA 1 SQ.FT.

1140+00.00

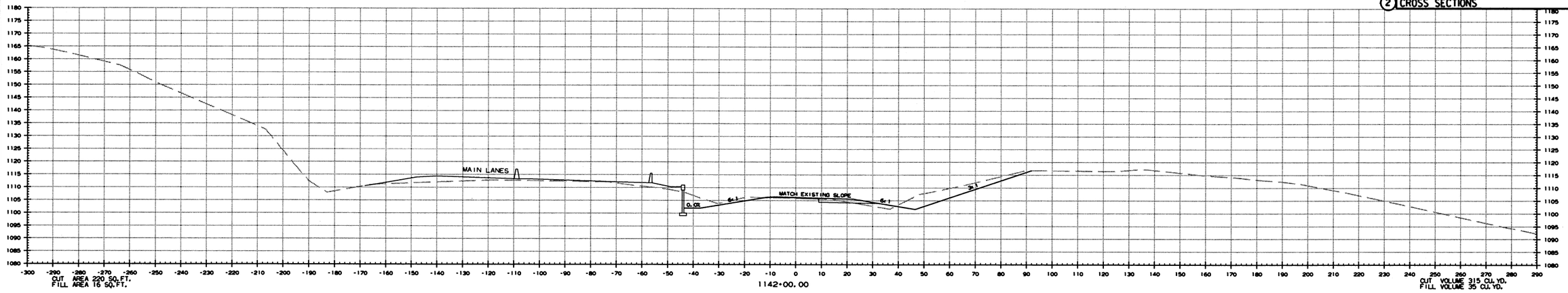
CUT VOLUME 551 CU.YD.
FILL VOLUME 5 CU.YD.

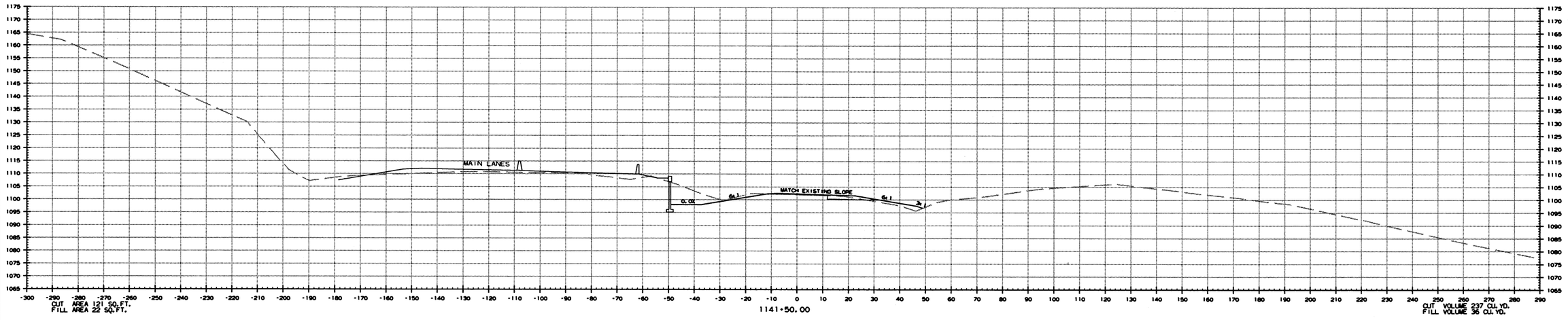
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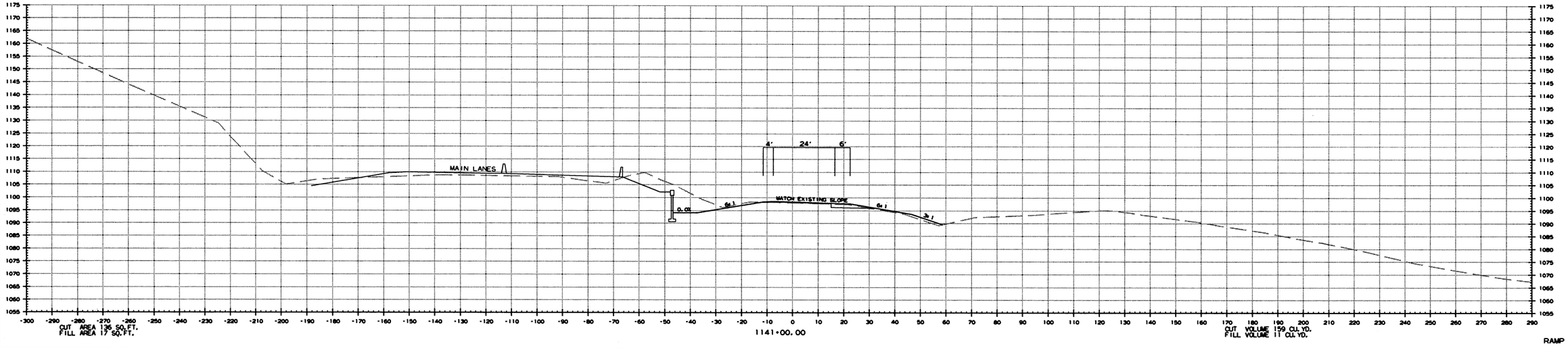
RCA0903_REVISED.DGN 10/19/2016

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) CROSS SECTIONS





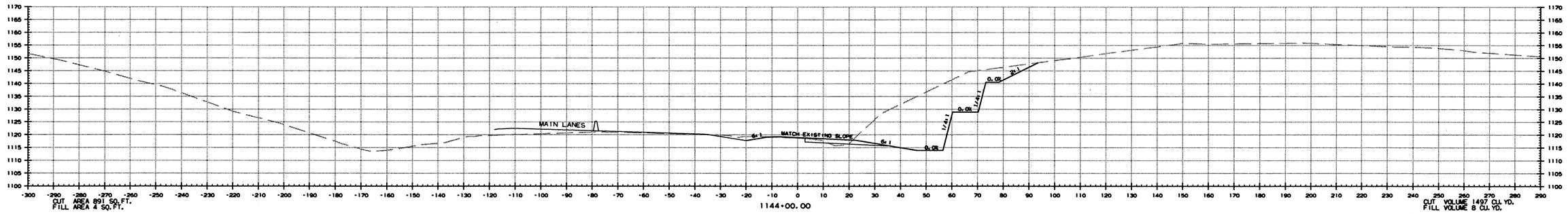


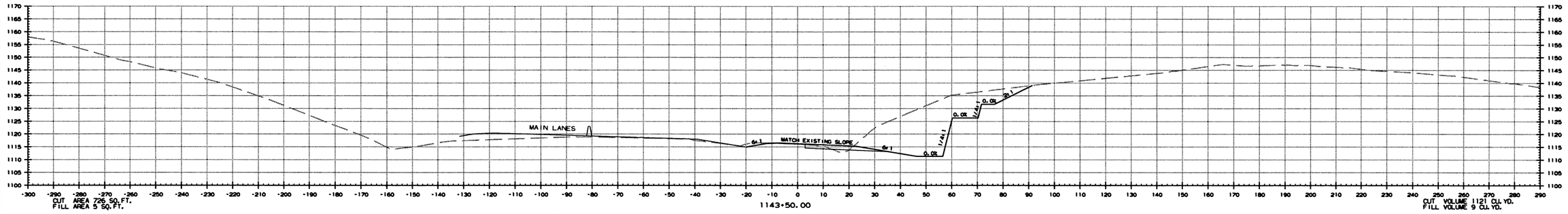
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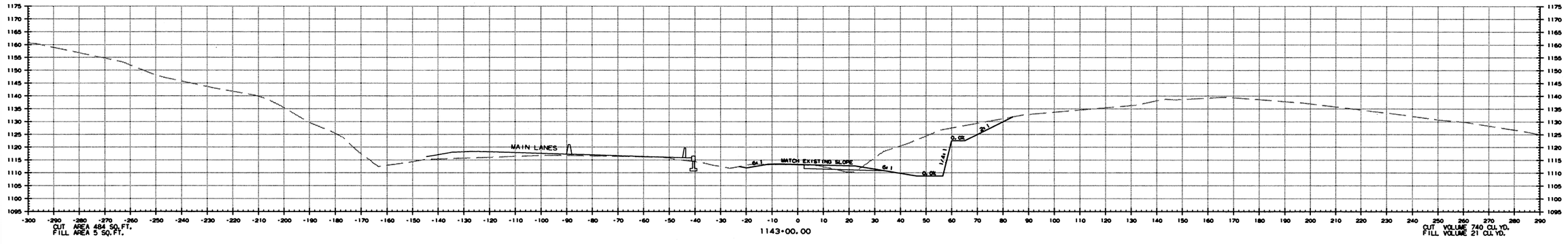
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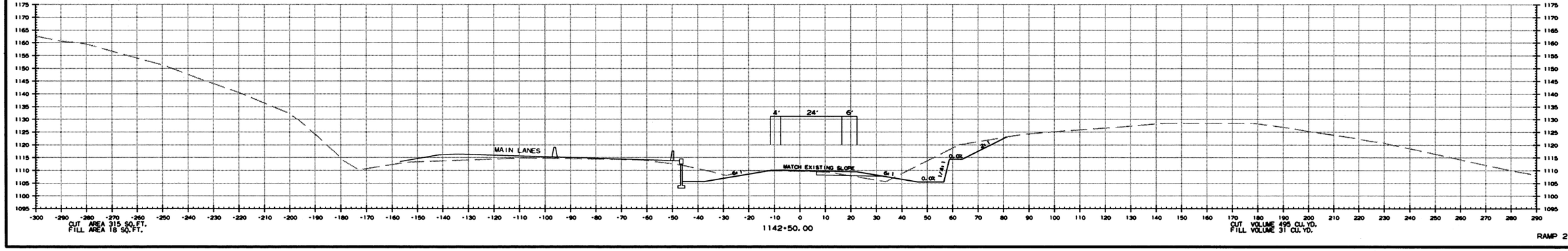
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(2) CROSS SECTIONS







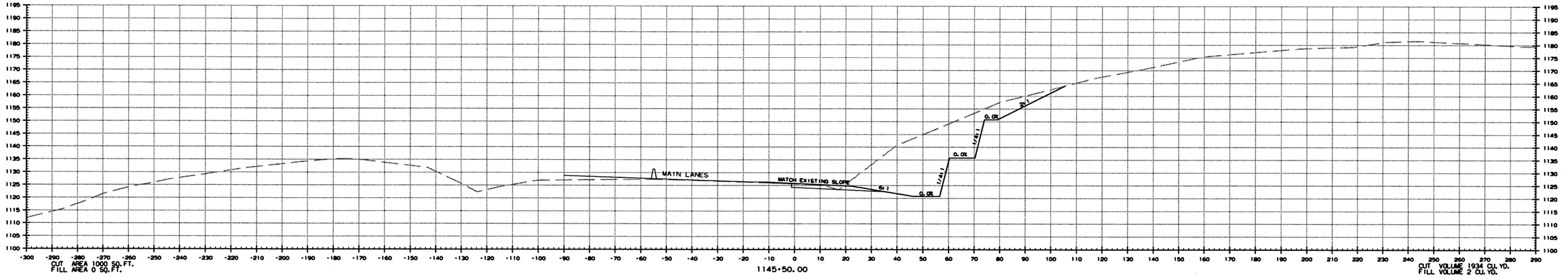


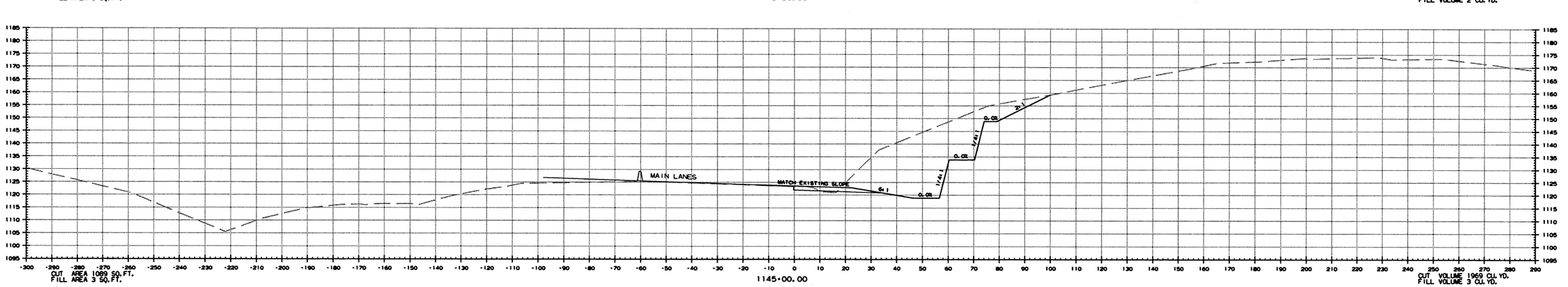
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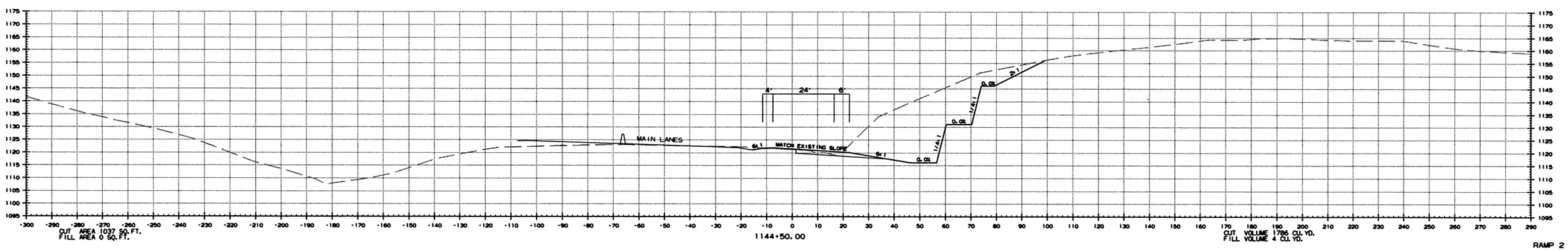
RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS





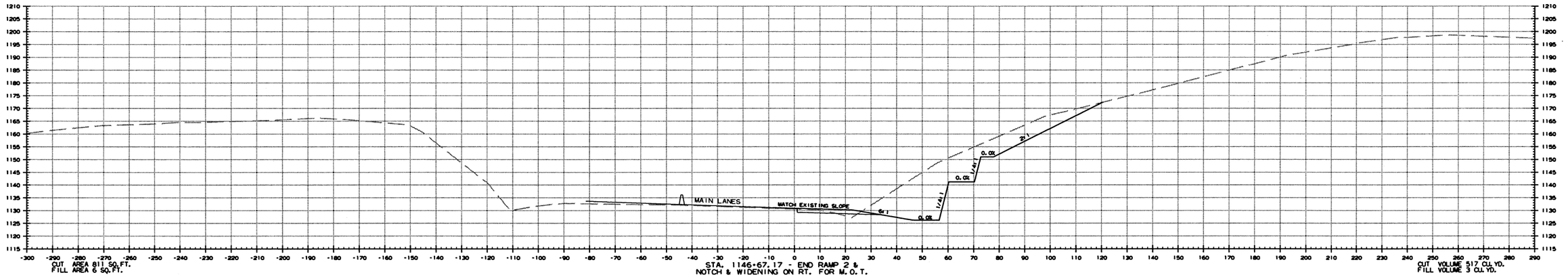


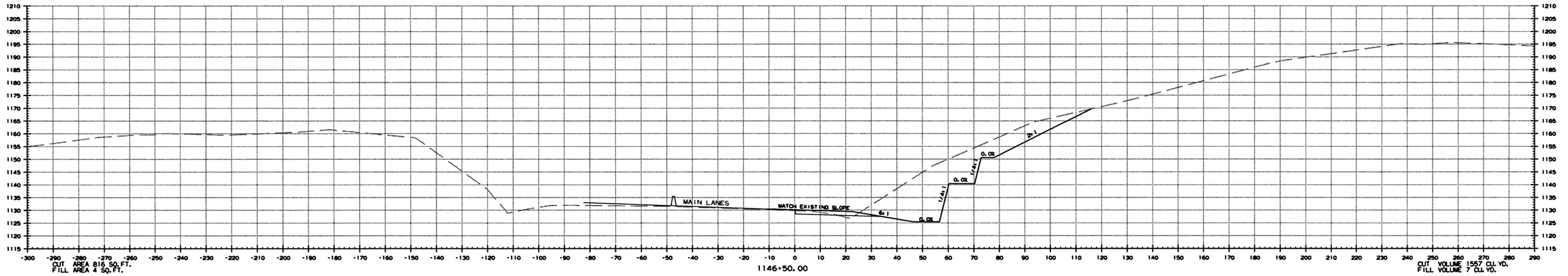
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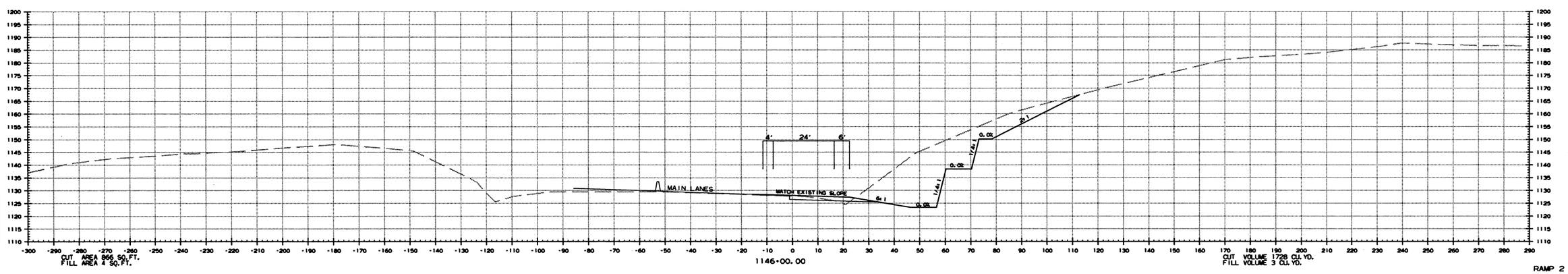
RCA0903_REVISED.DGN 10/19/2016

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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				JOB NO.		CA0903	390	452

(2) CROSS SECTIONS





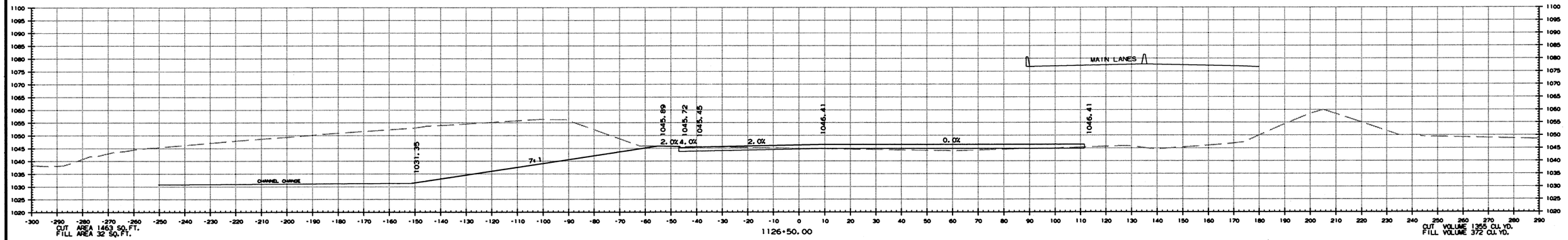


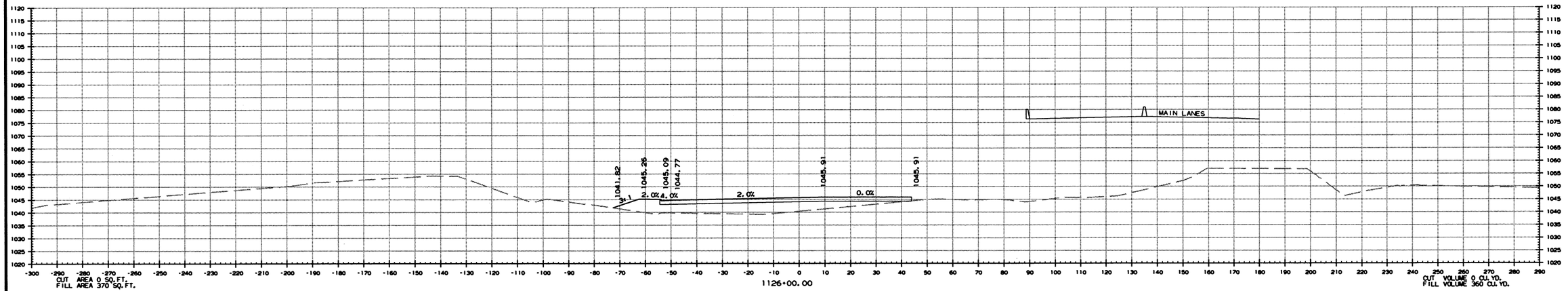
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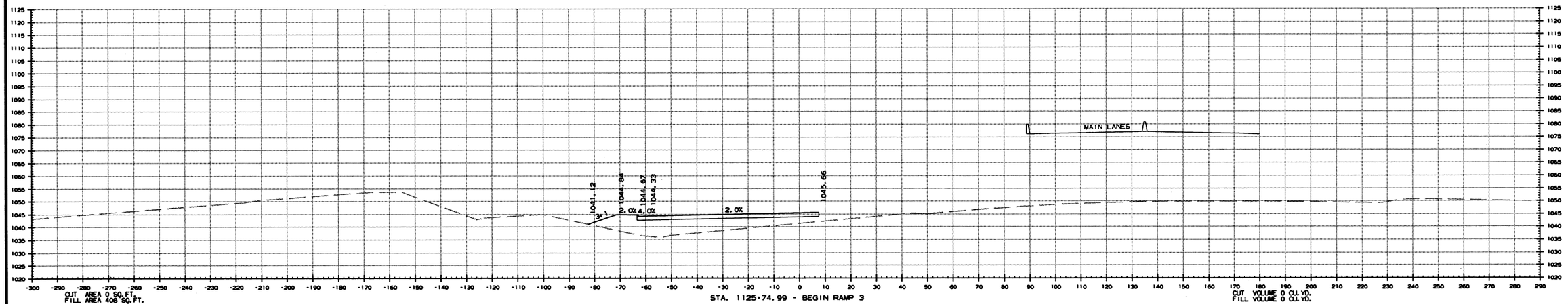
RCA0903_REVISED.DGN 10/19/2016

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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(2) CROSS SECTIONS





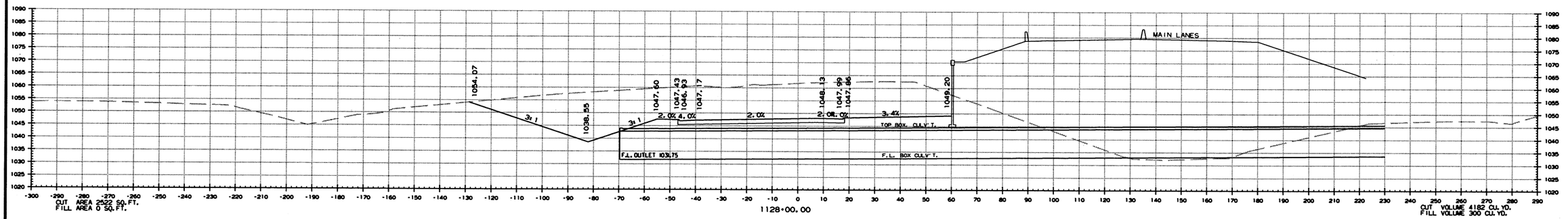


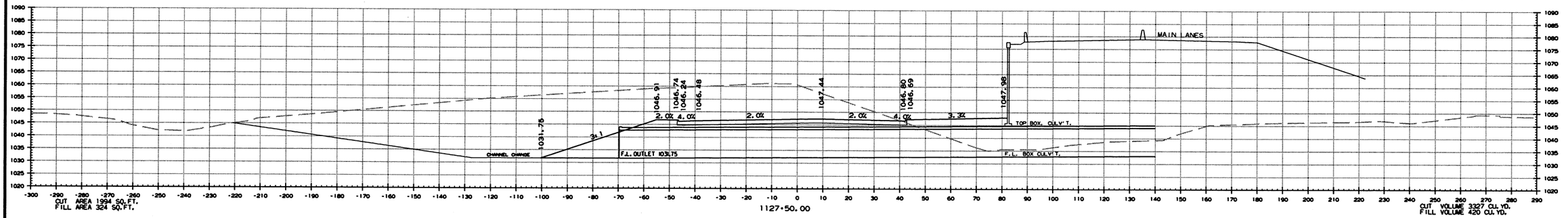
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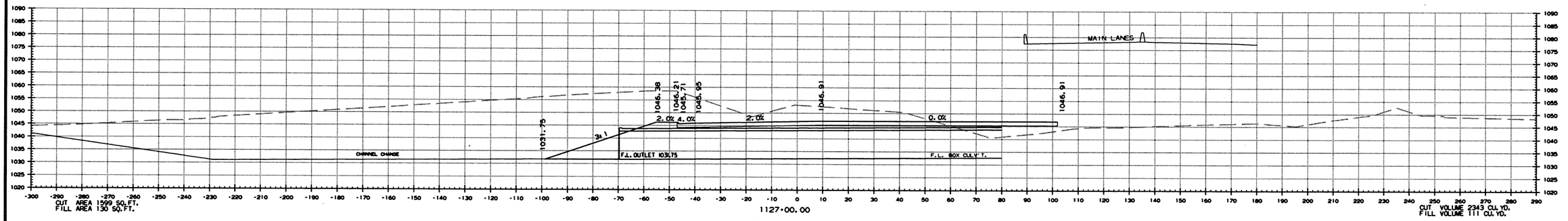
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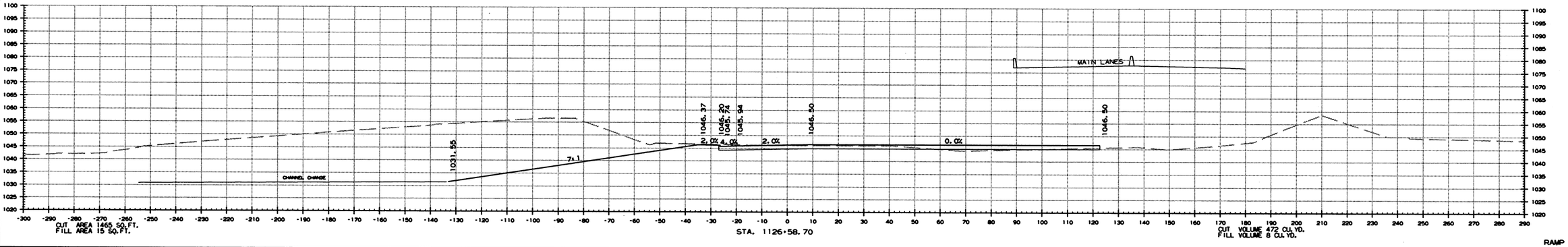
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(2) CROSS SECTIONS







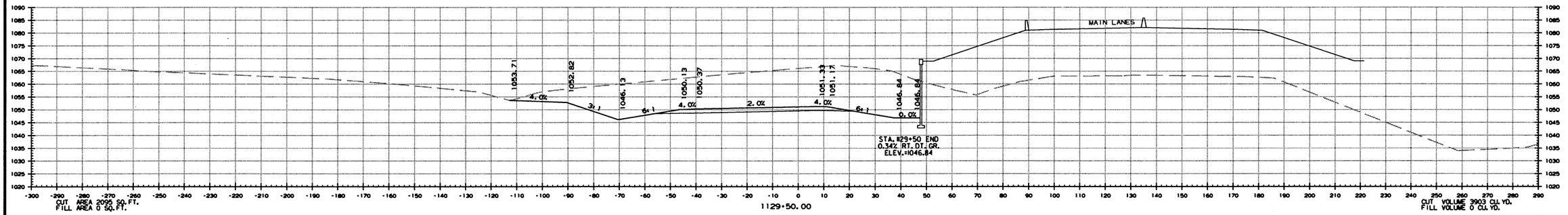


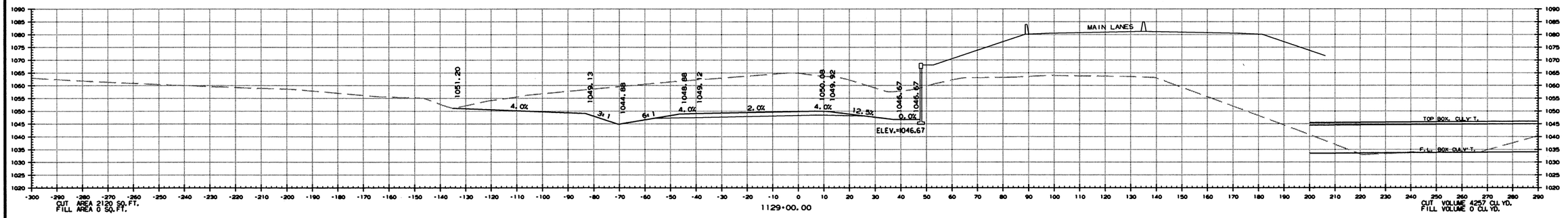
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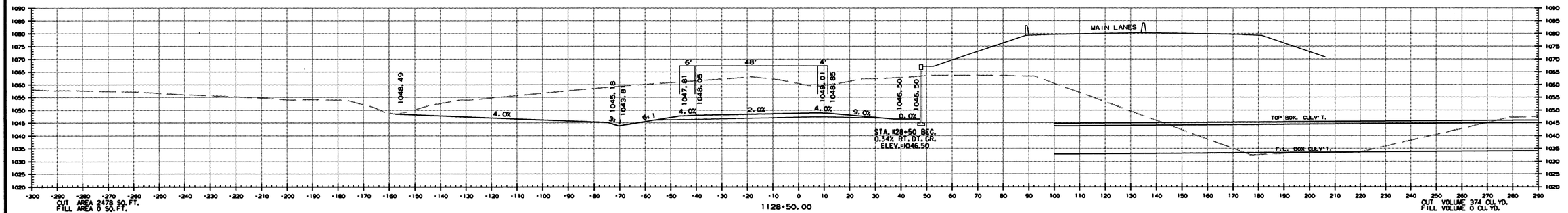
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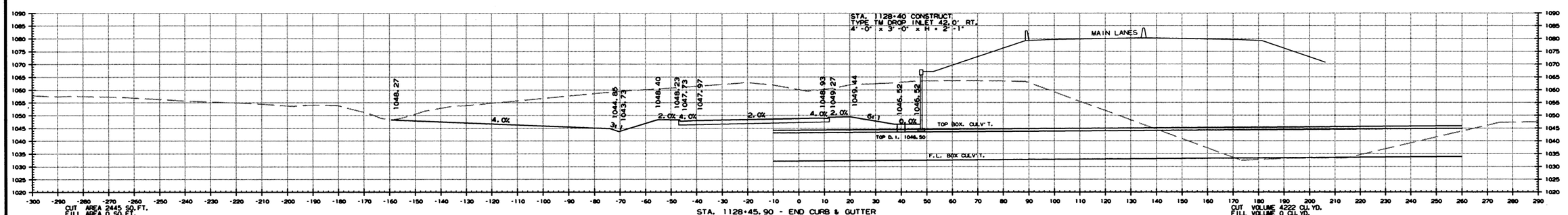
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(2) CROSS SECTIONS







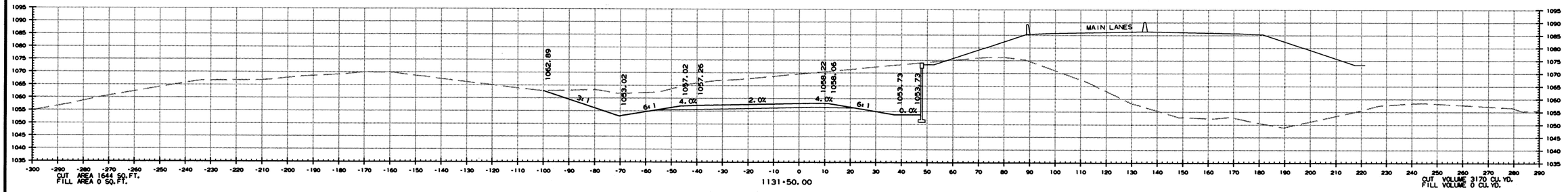


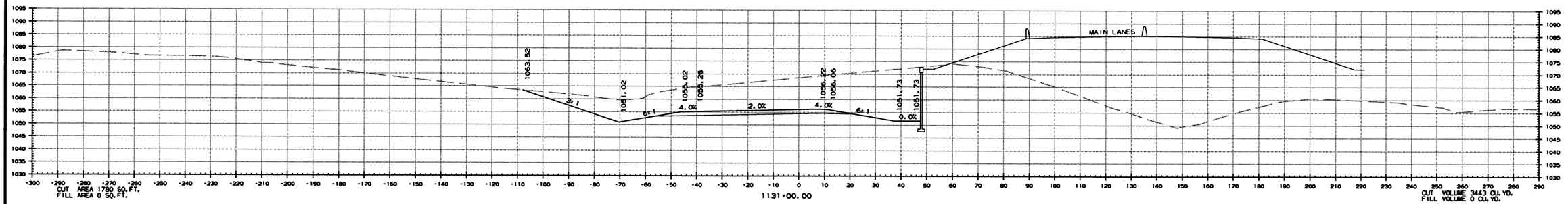
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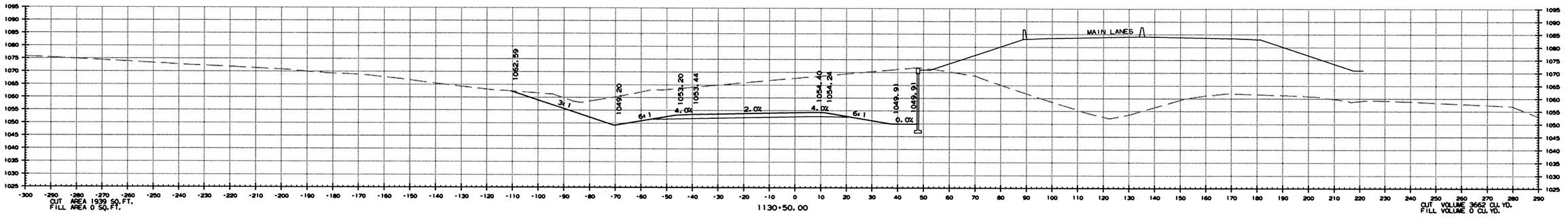
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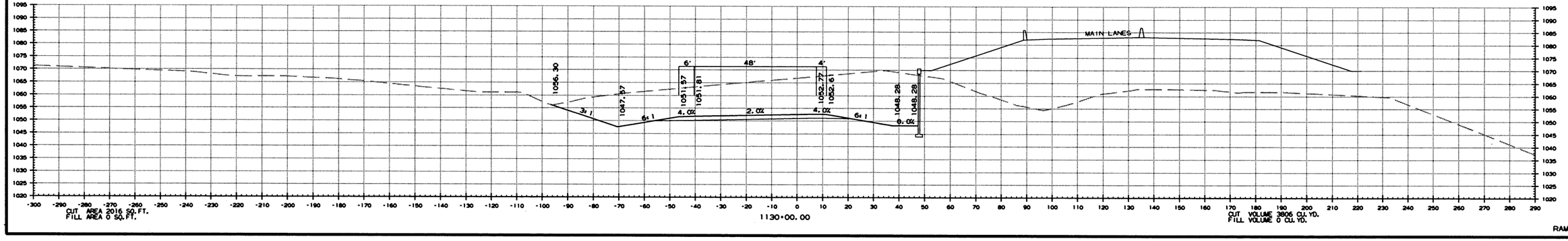
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(2) CROSS SECTIONS







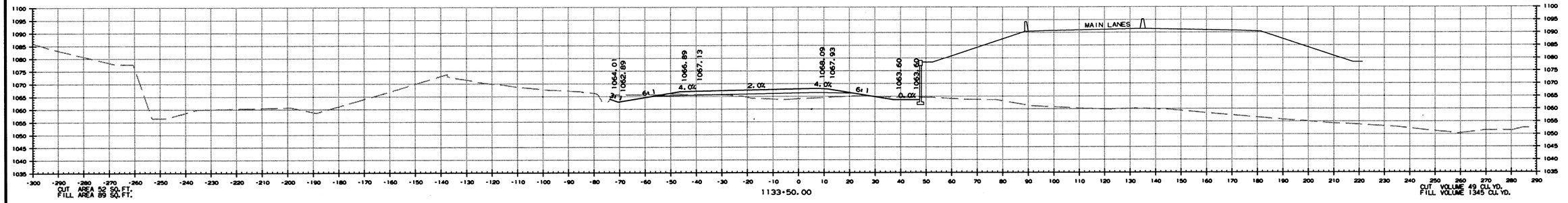


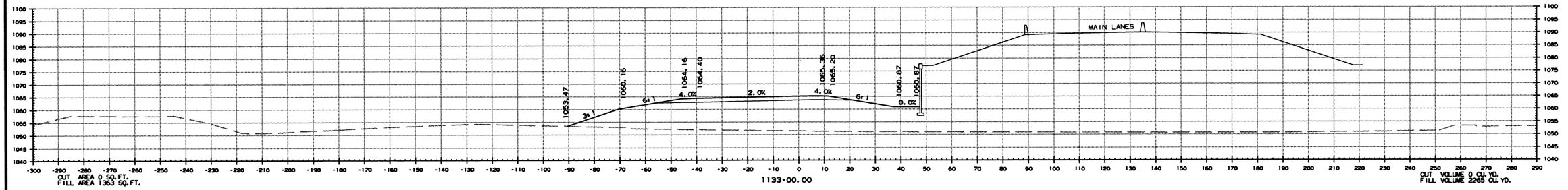
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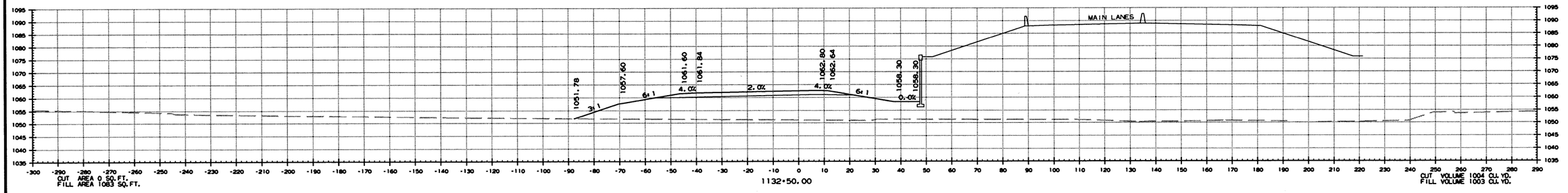
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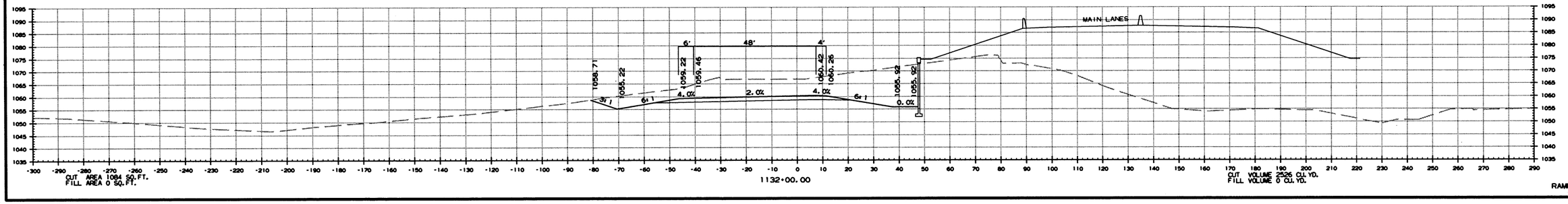
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(2) CROSS SECTIONS







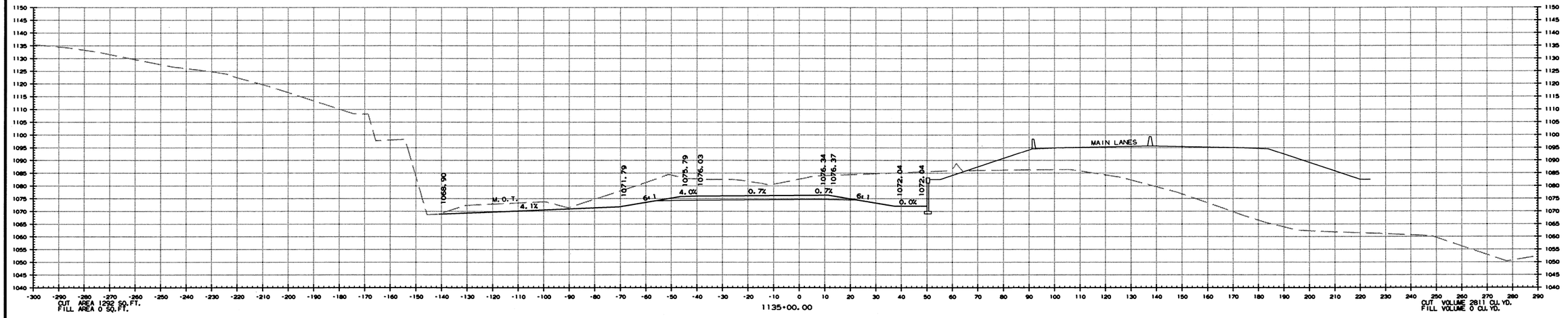


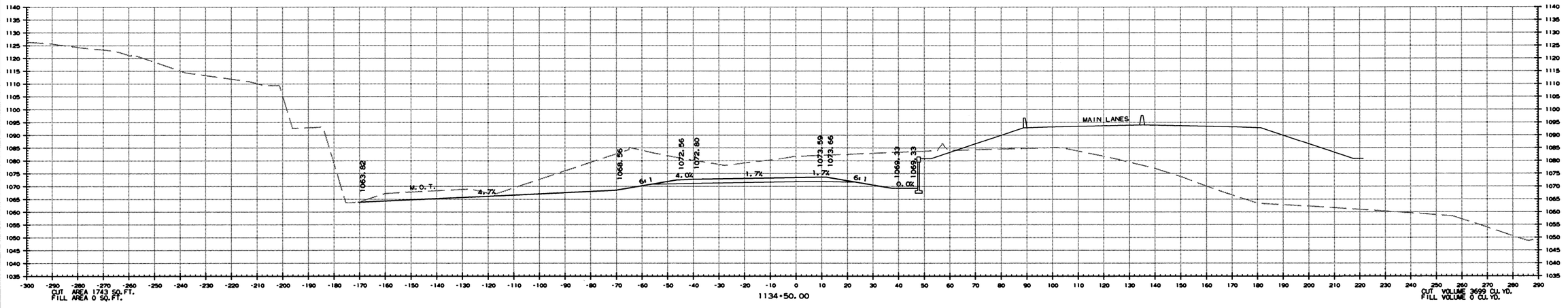
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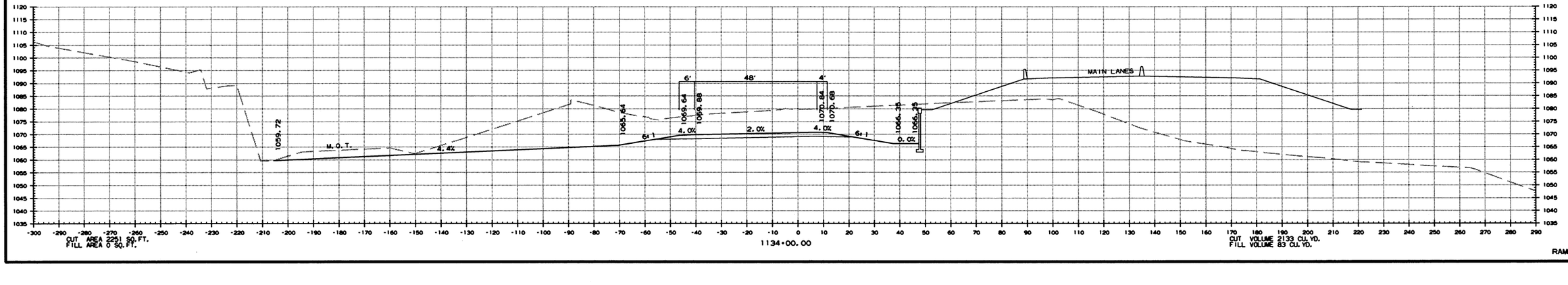
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(2) CROSS SECTIONS





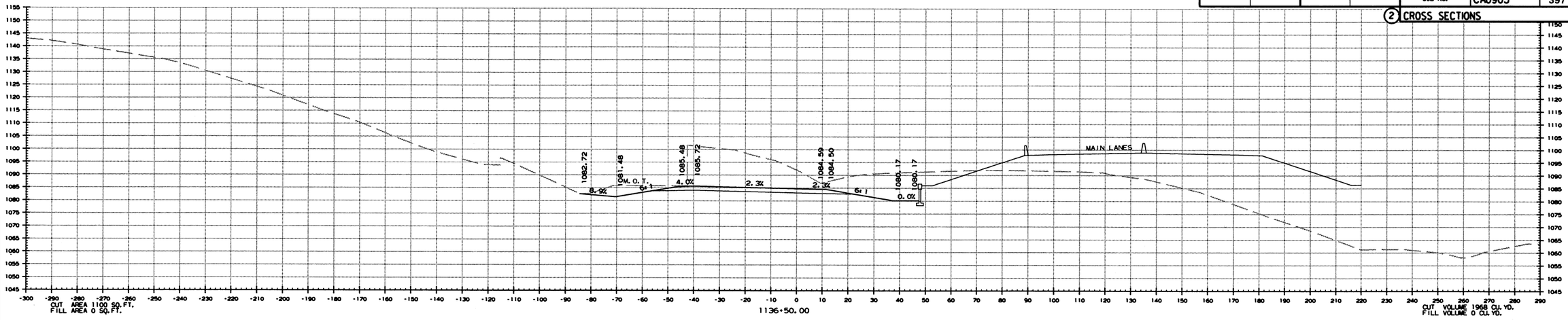


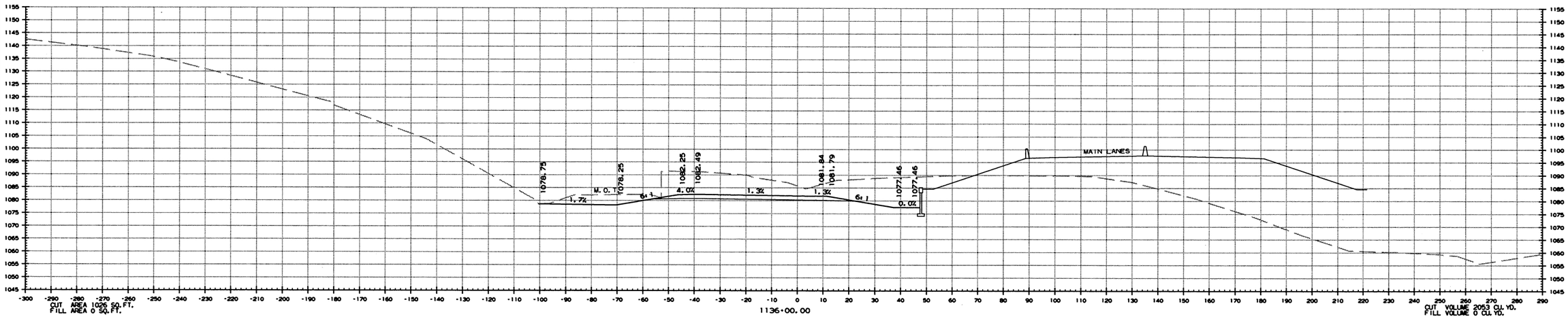
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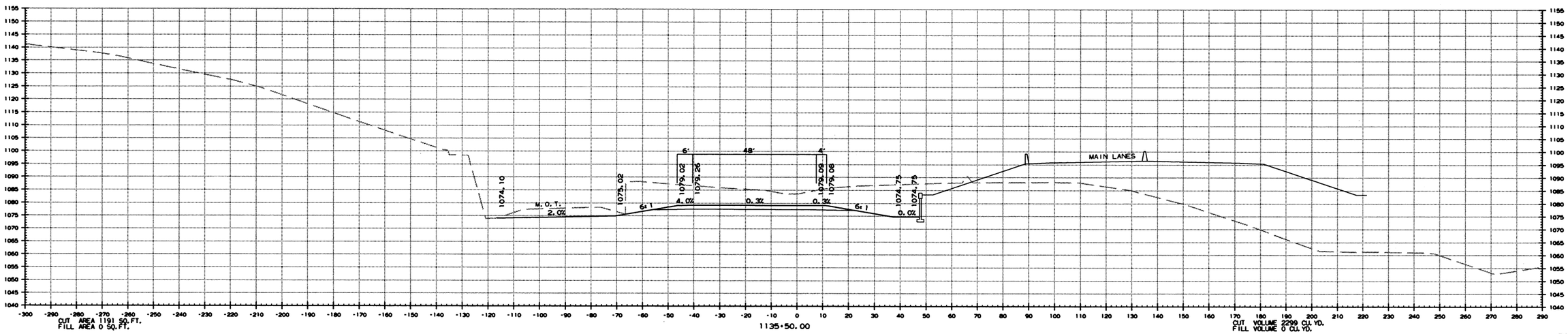
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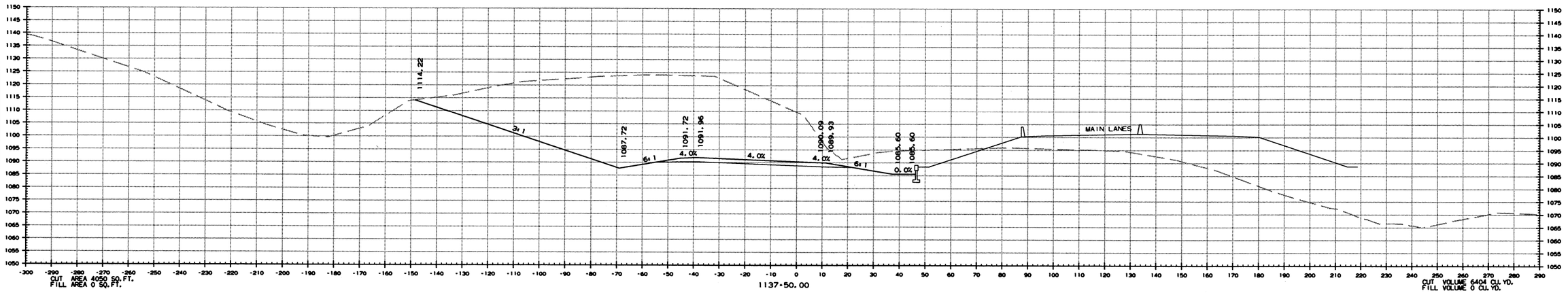


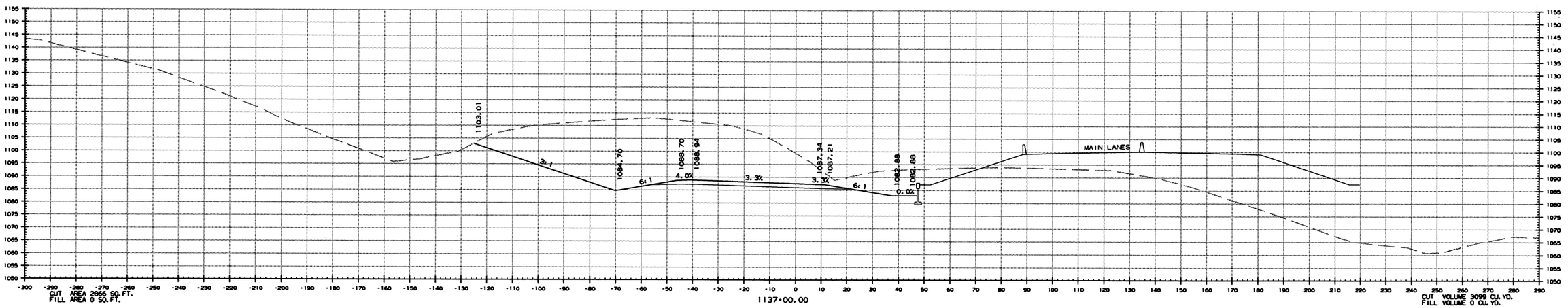
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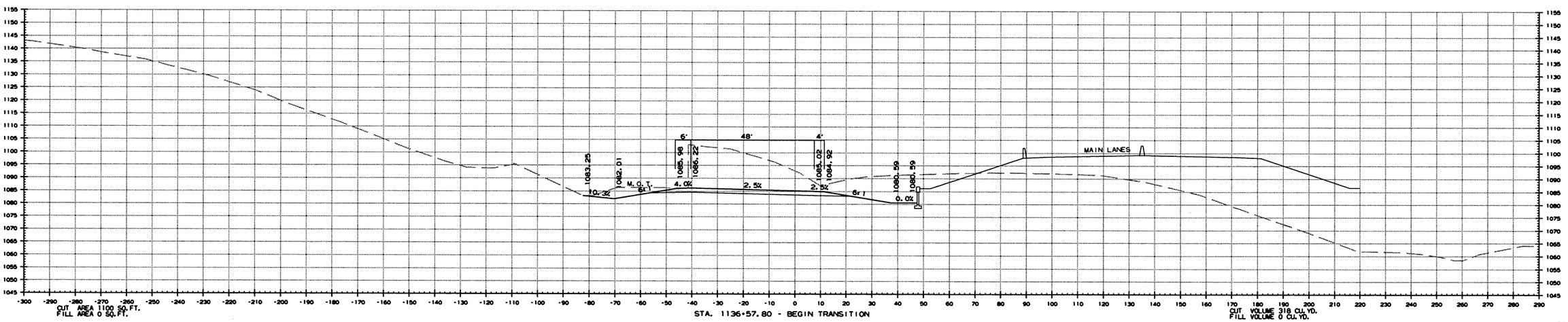
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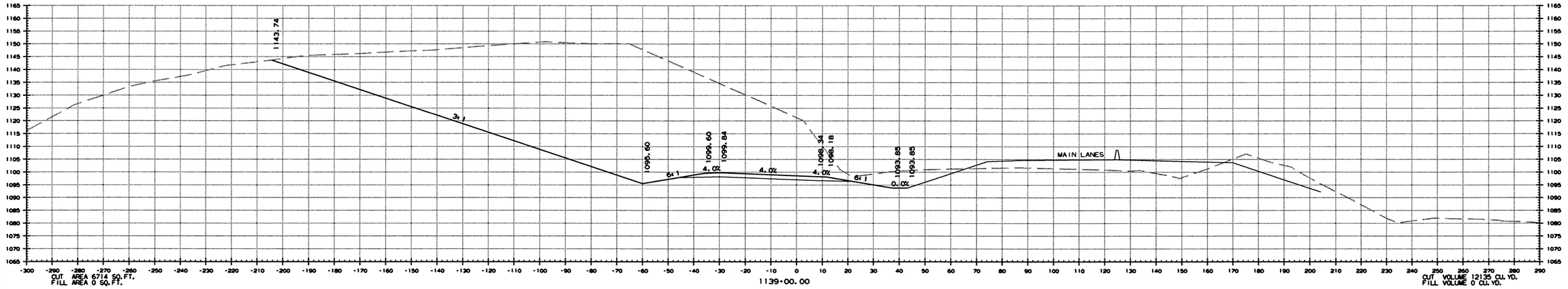


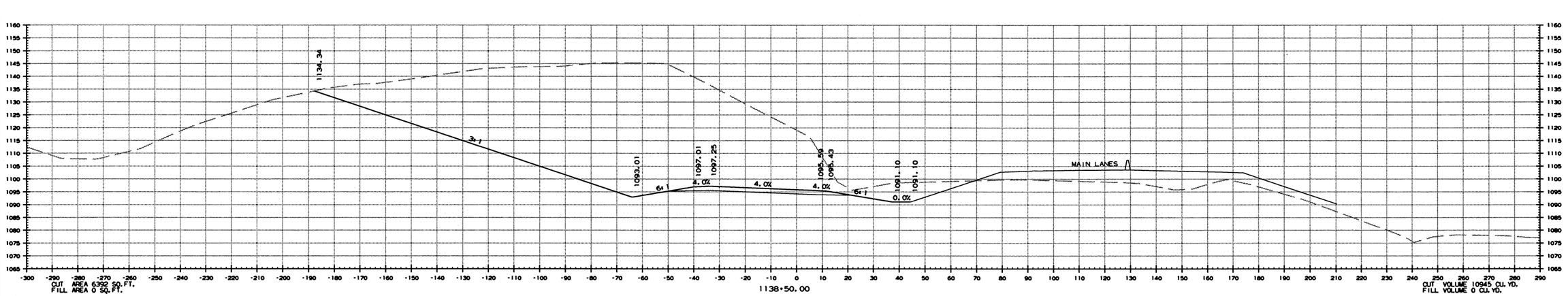
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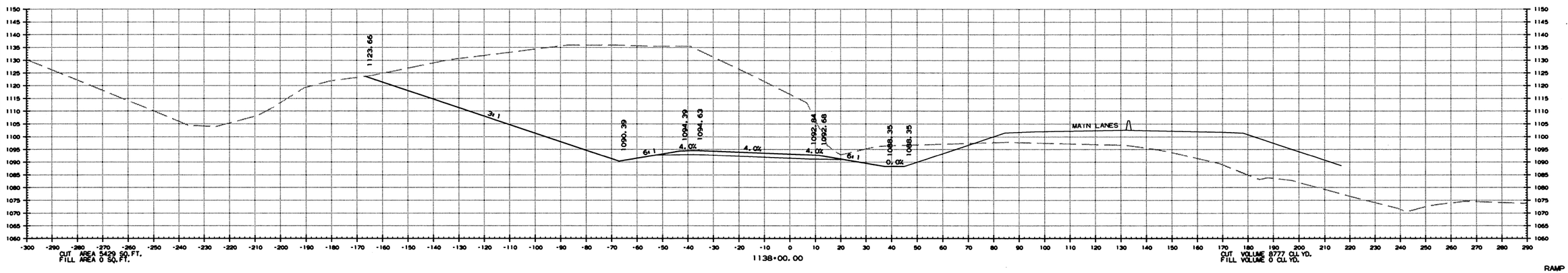
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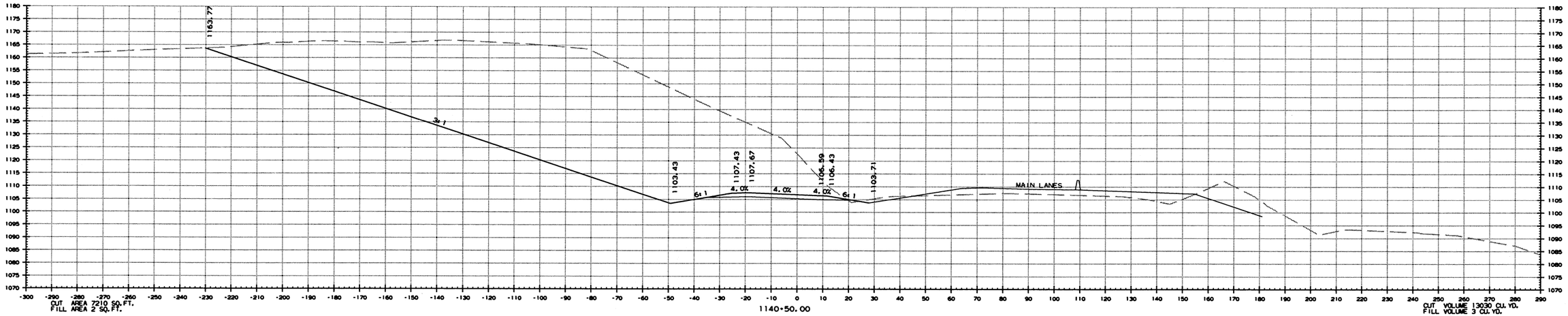


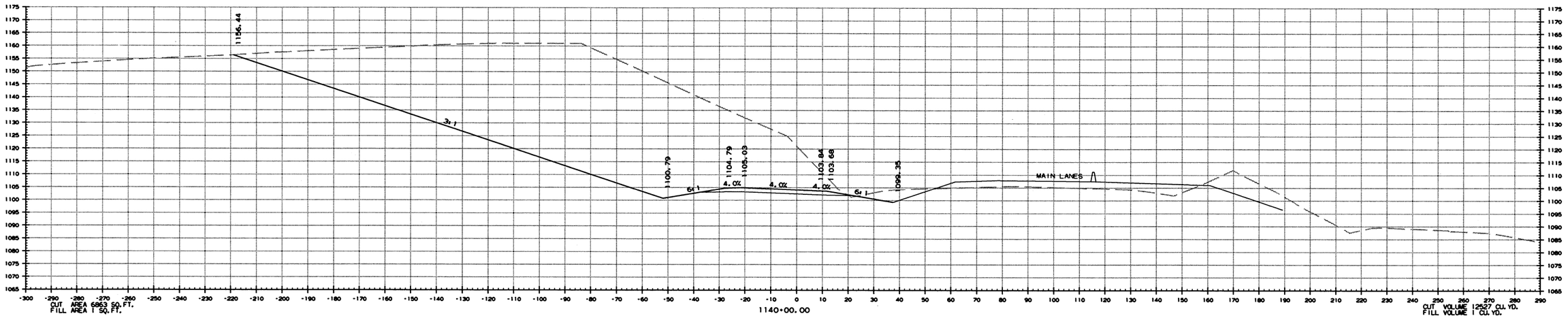
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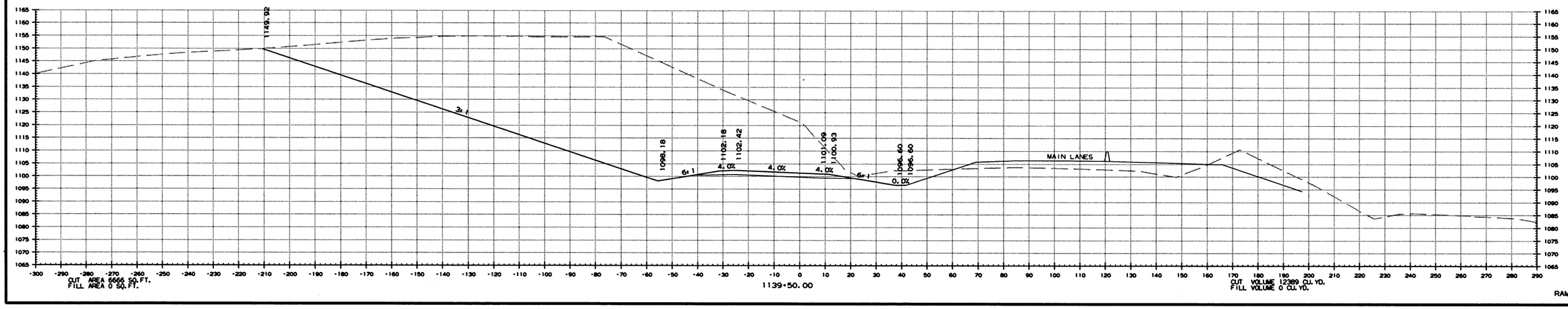
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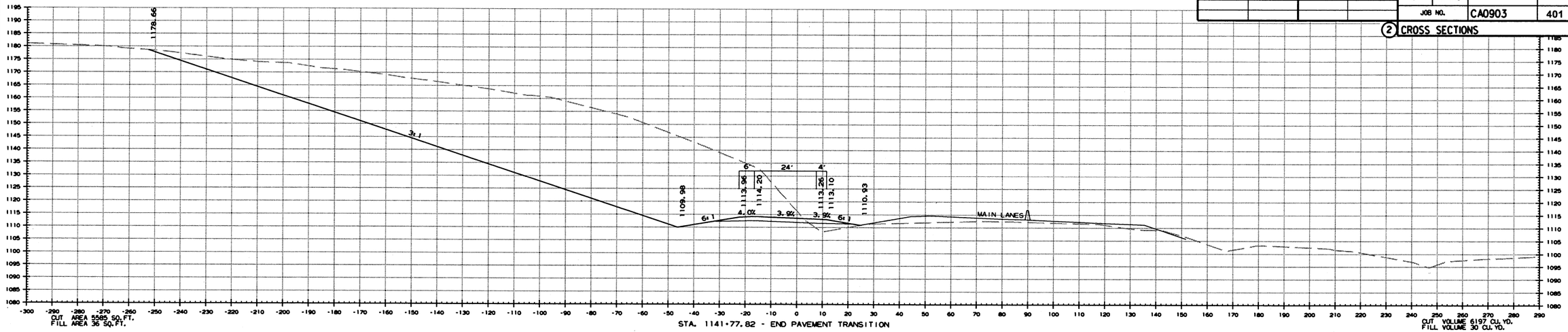


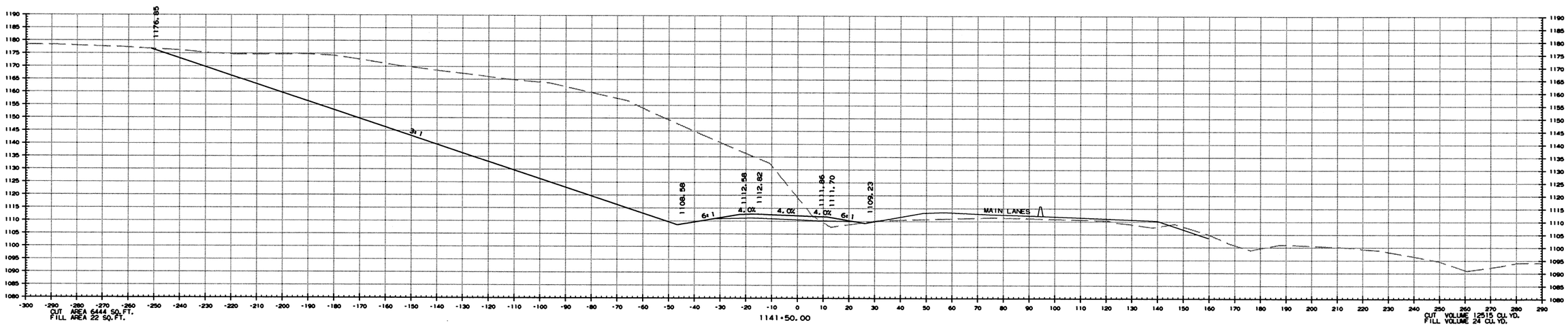
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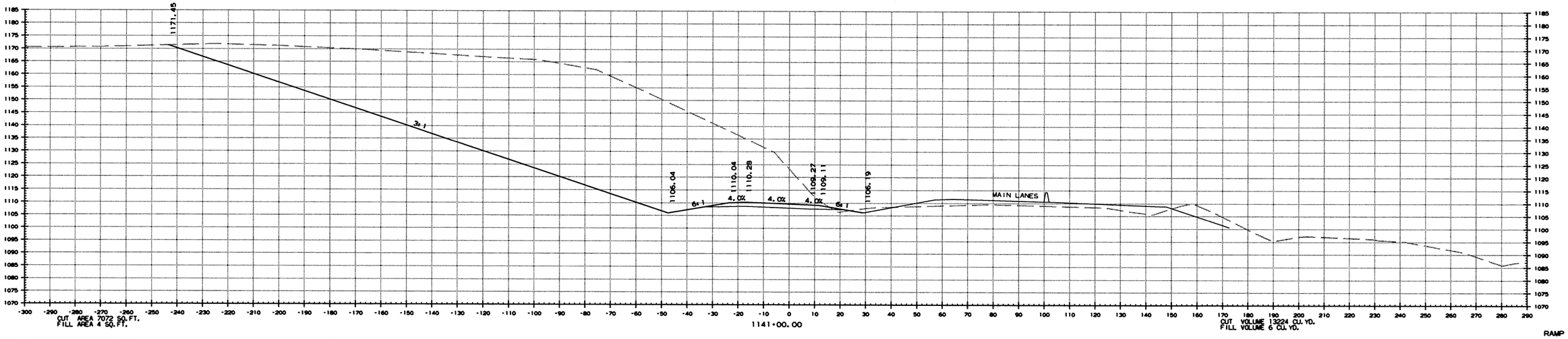
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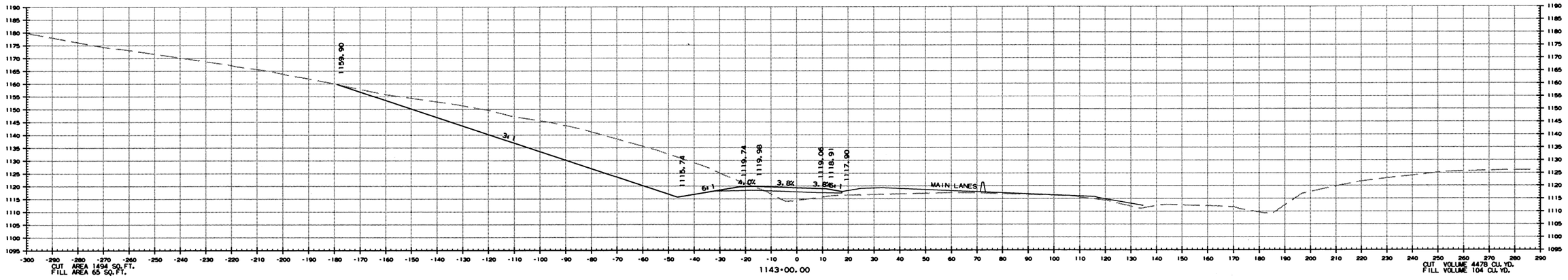


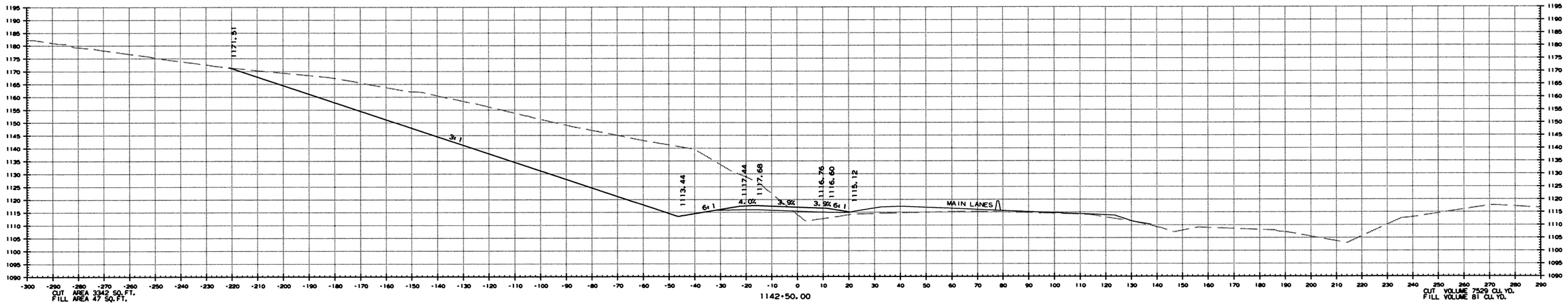
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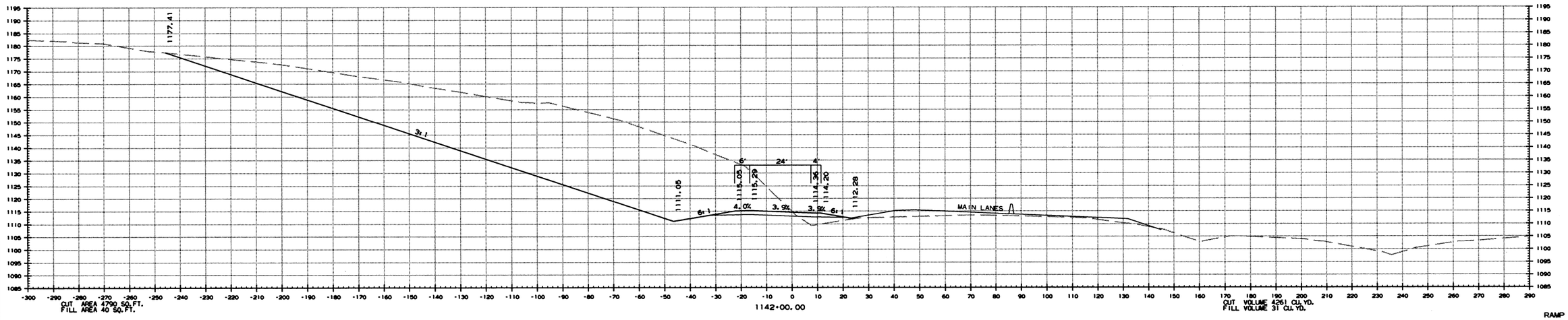
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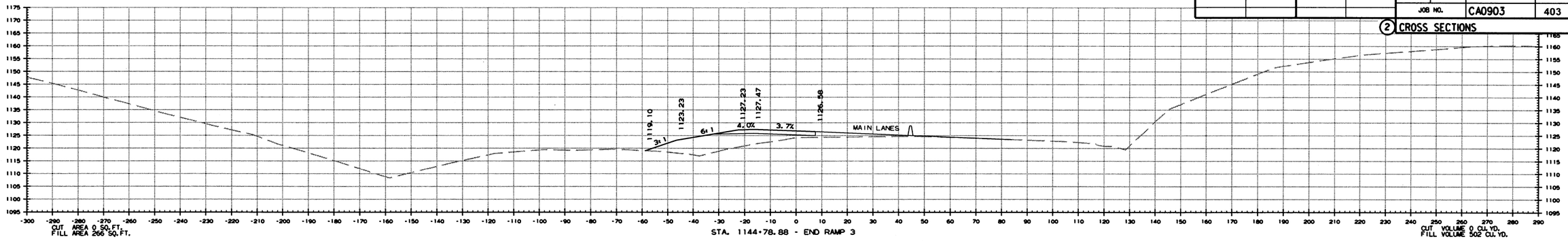


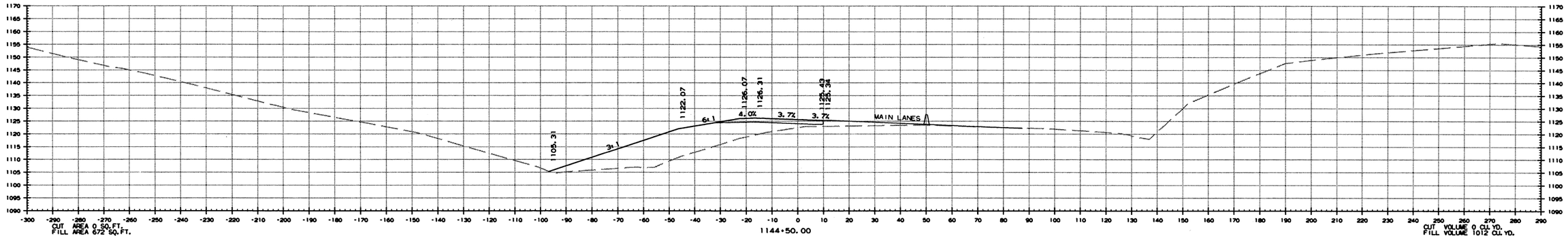
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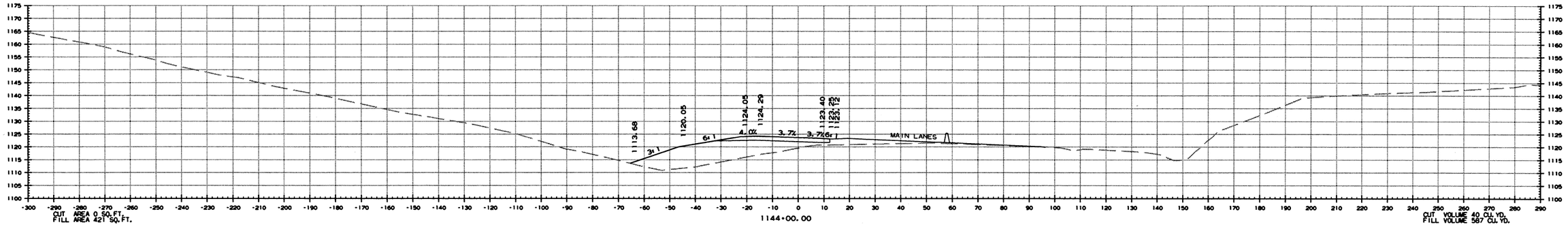
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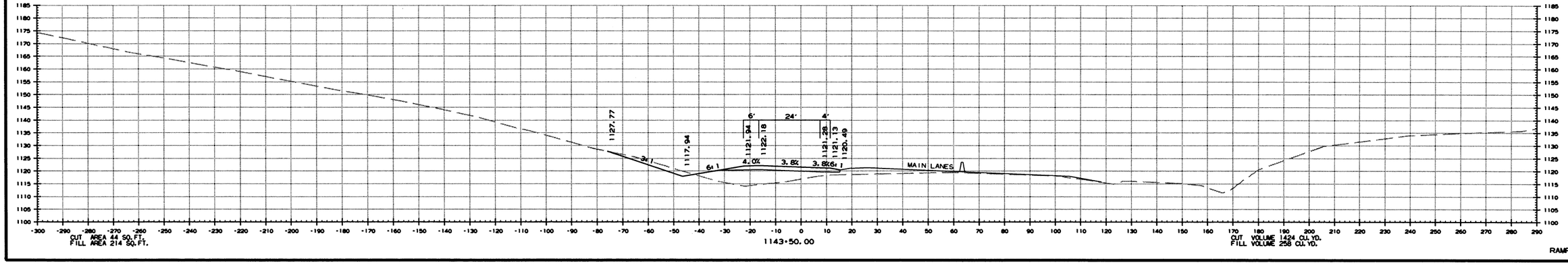
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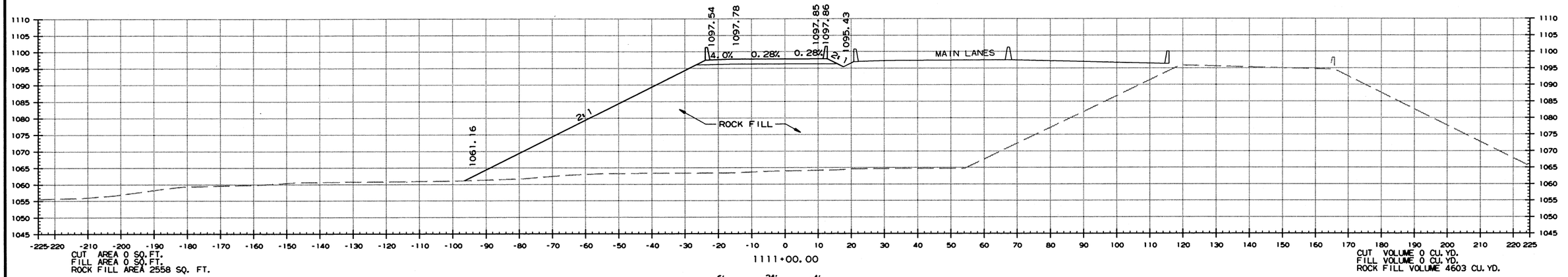


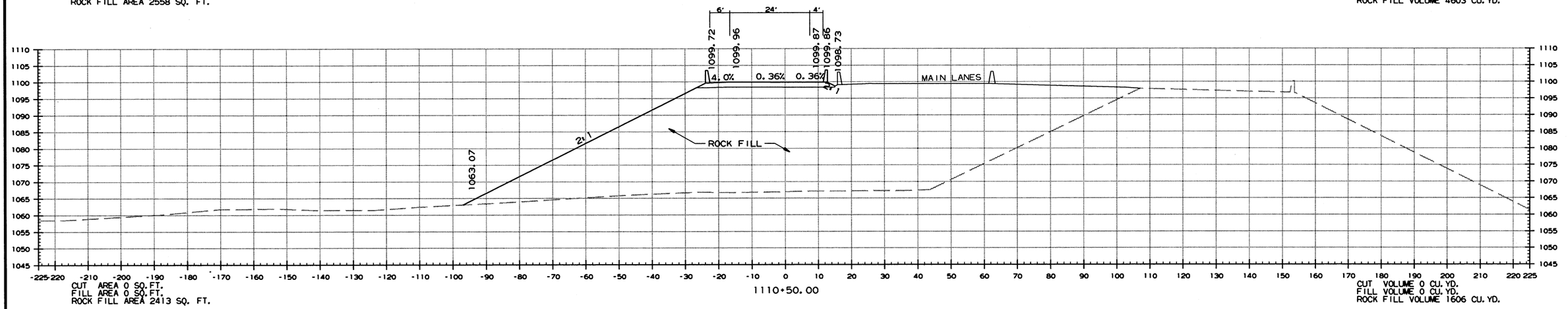
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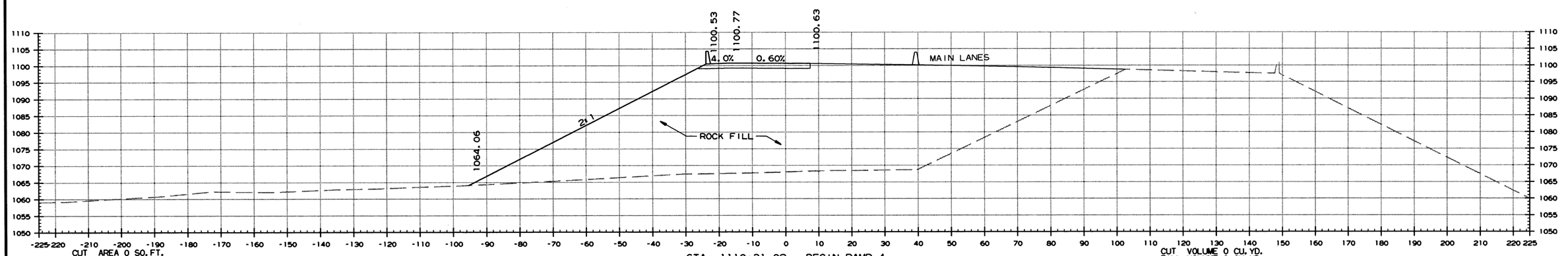
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	404	452

(2) CROSS SECTIONS





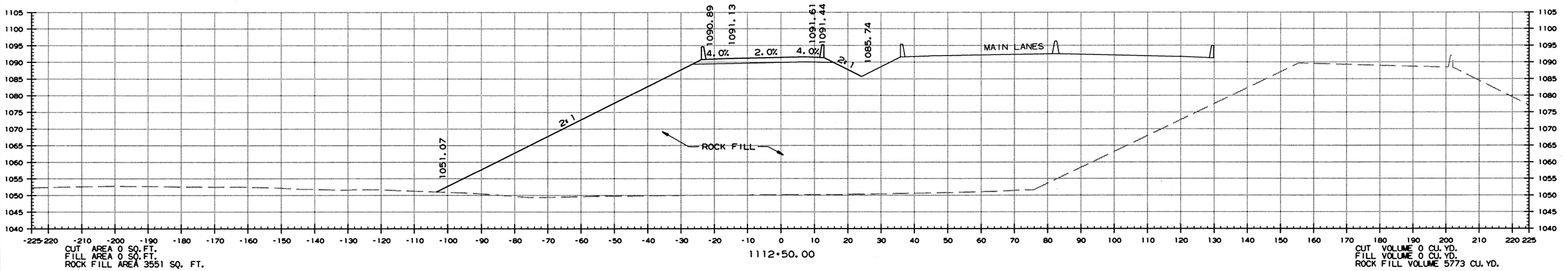


RAMP 4 SPUI

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	405	452

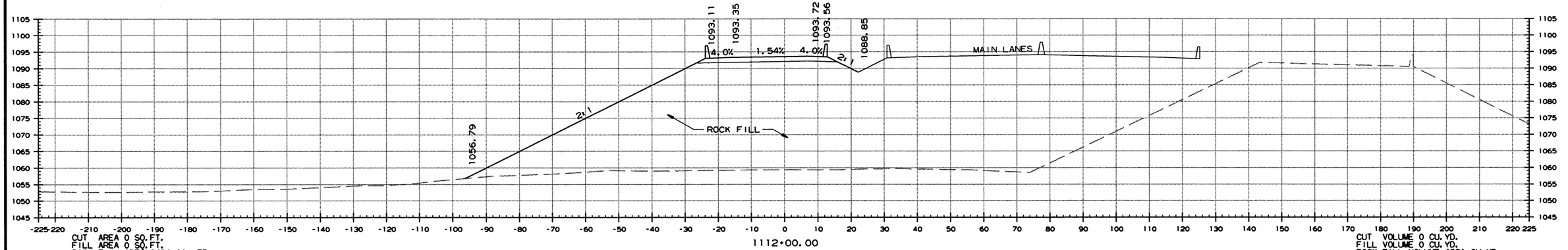
(2) CROSS SECTIONS



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 3551 SQ. FT.

1112+50.00

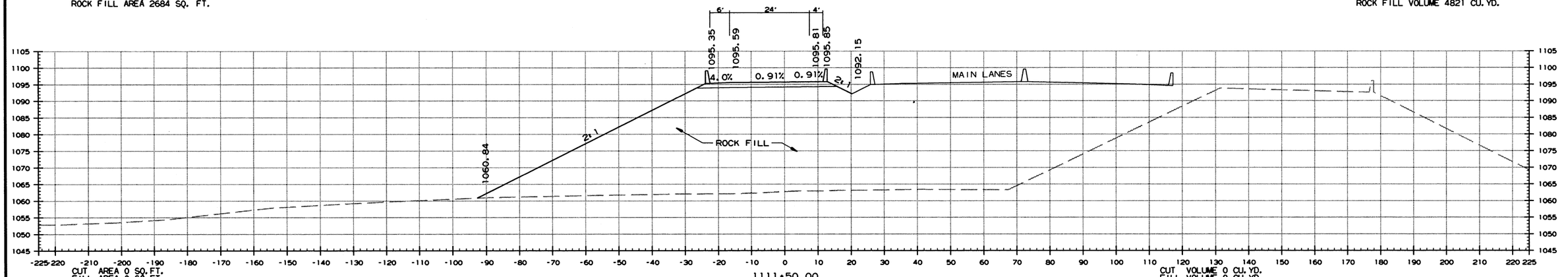
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 5773 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 2684 SQ. FT.

1112+00.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 4821 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 2523 SQ. FT.

1111+50.00

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 4705 CU.YD.

RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

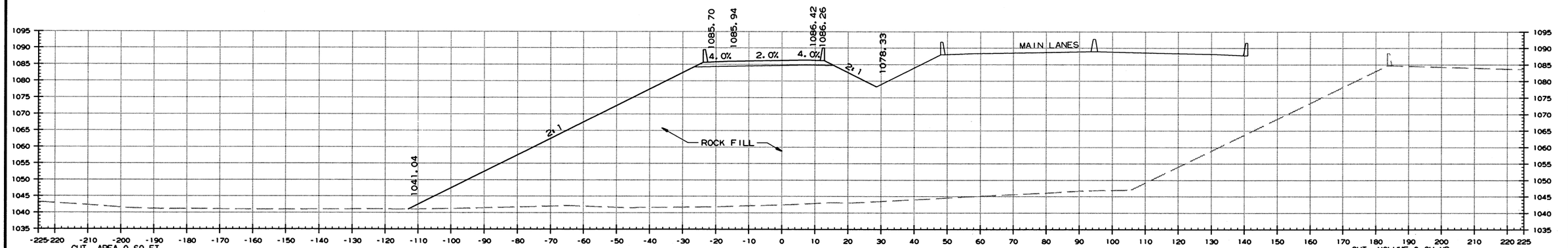
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	406	452

(2) CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1114+63 - TOE OF SLOPE

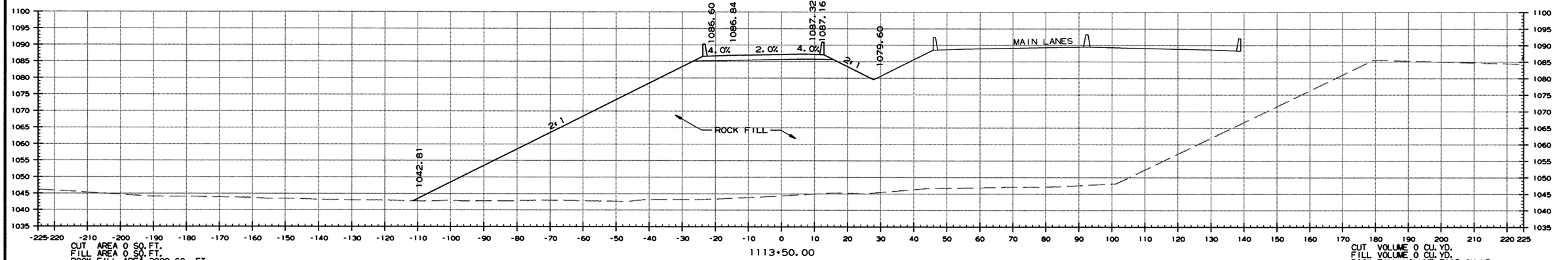
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 6985 CU. YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 4098 SQ. FT.

STA. 1113+70.94 - BRIDGE END

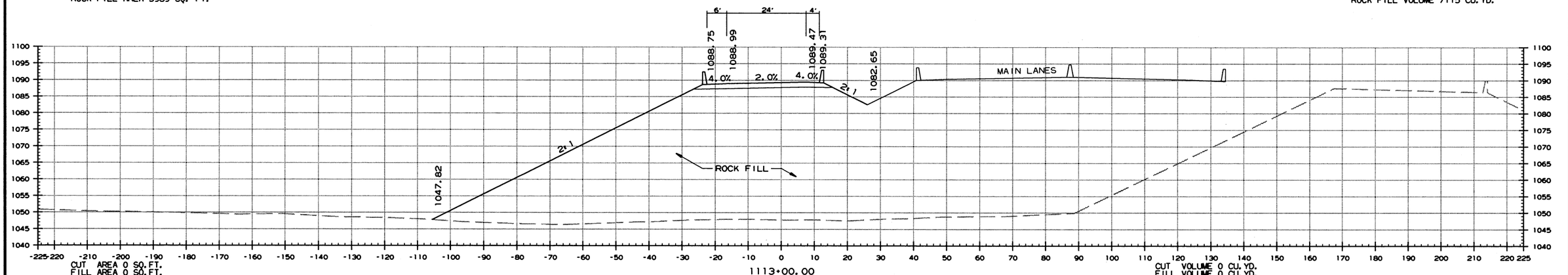
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 3136 CU. YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 3989 SQ. FT.

1113+50.00

CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 7115 CU. YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 3695 SQ. FT.

1113+00.00

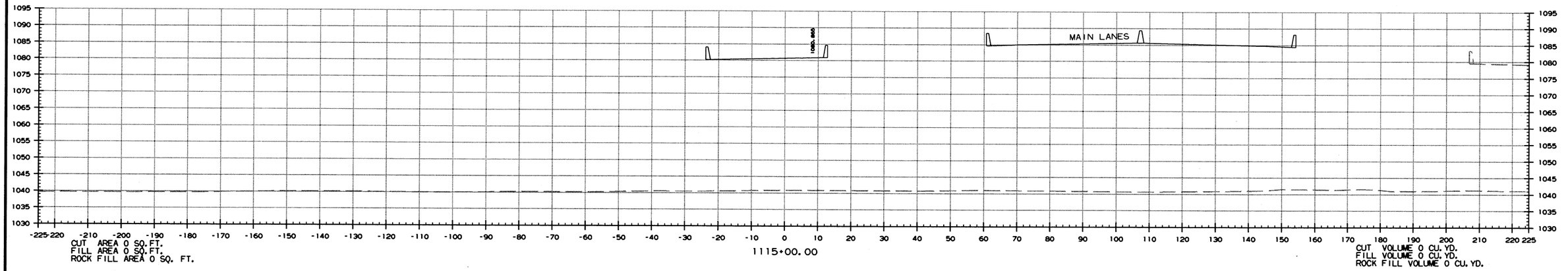
CUT VOLUME 0 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 6710 CU. YD.

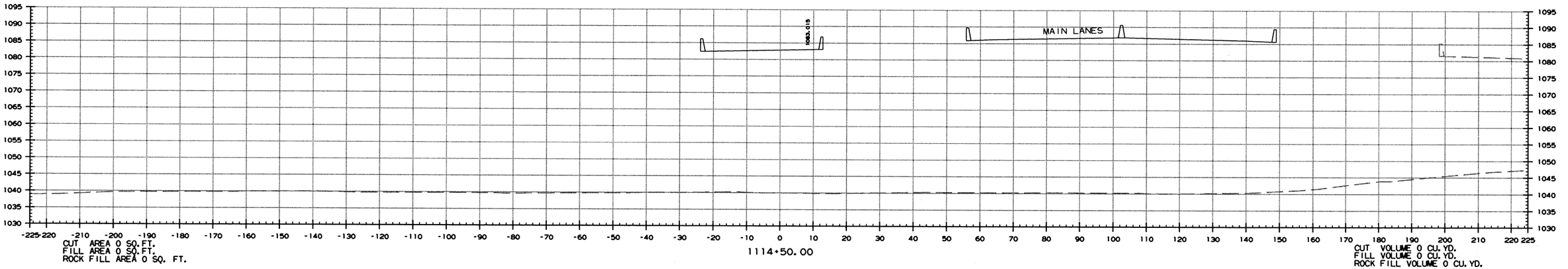
RAMP 4 SPUI

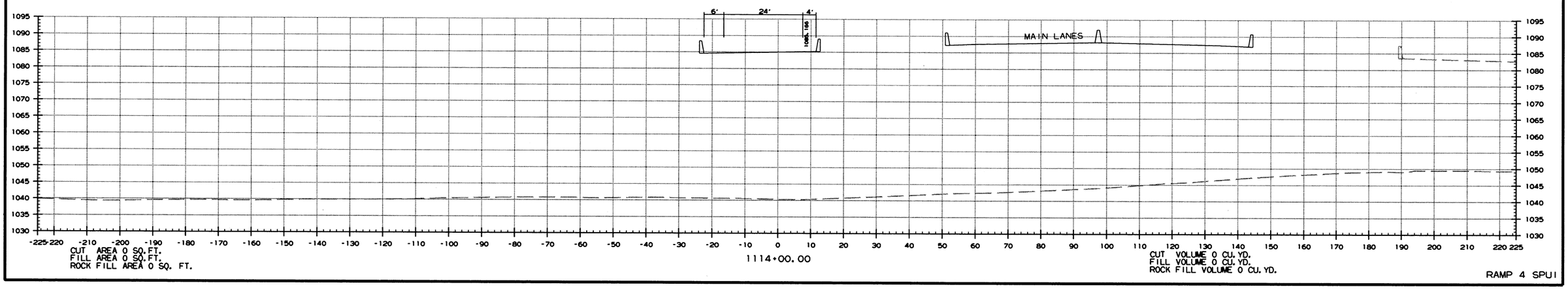
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	407	452

(2) CROSS SECTIONS





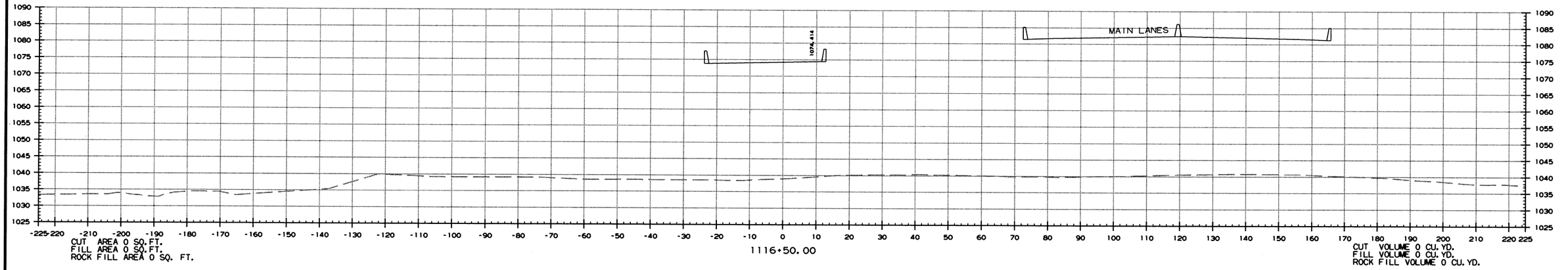


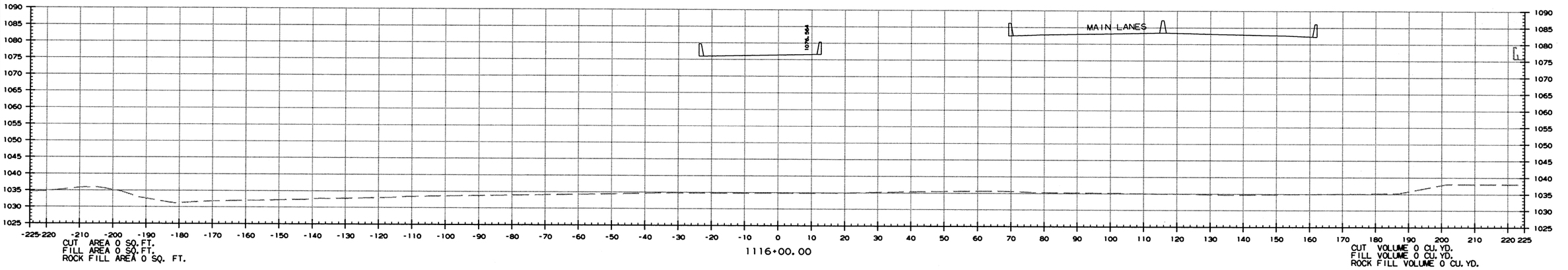
RAMP 4 SPUI

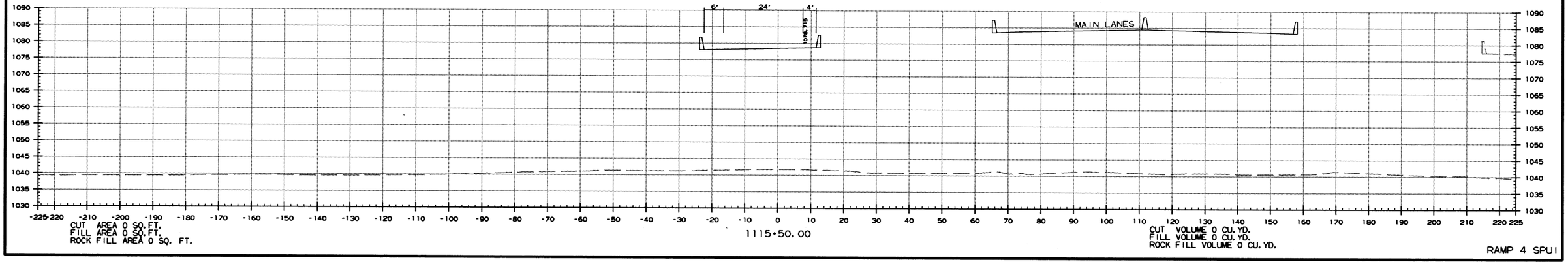
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	408	452

(2) CROSS SECTIONS







RAMP 4 SPUI

RCA0903.REVISED.DGN 10/19/2016

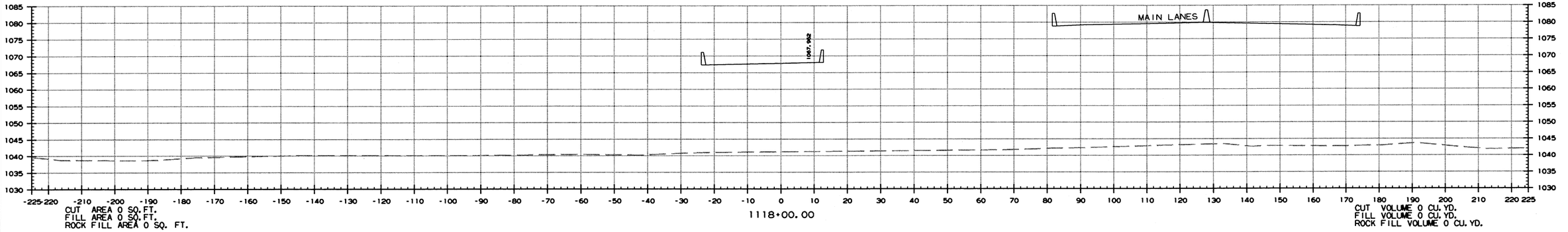
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	409	452

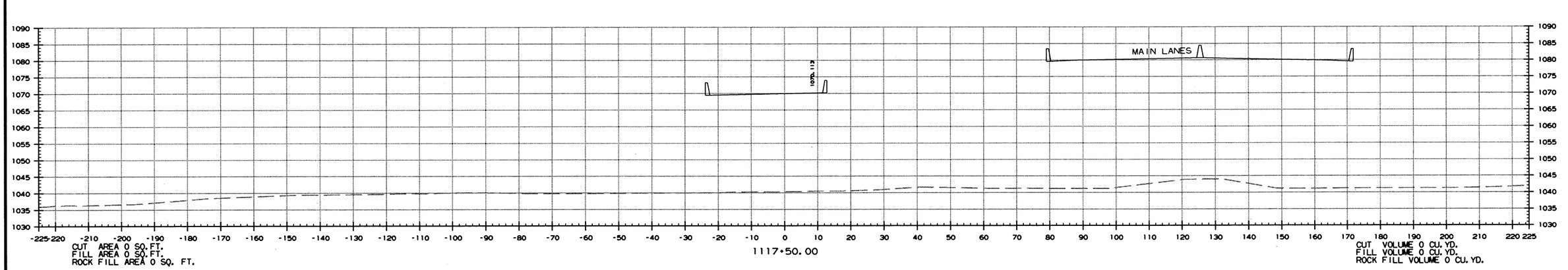
(2) CROSS SECTIONS

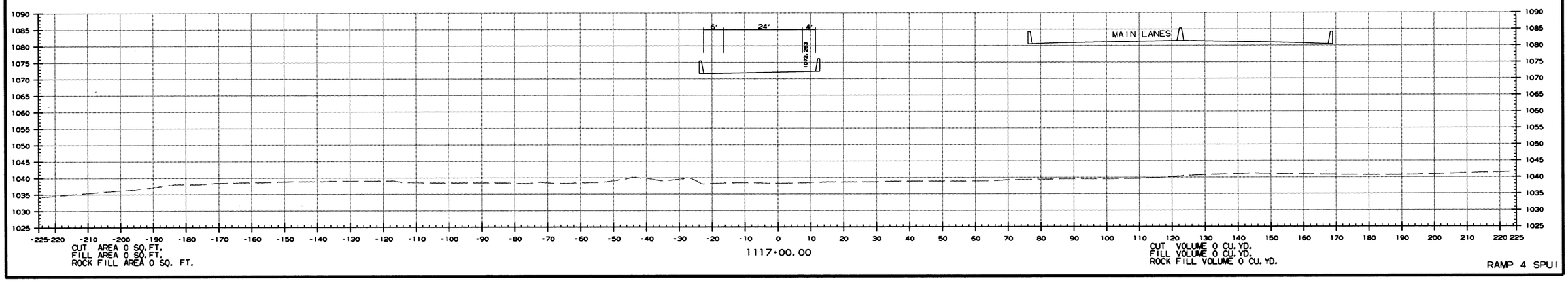
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 0 SQ. FT.

STA. 1118+39 - TOE OF SLOPE

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 0 CU.YD.





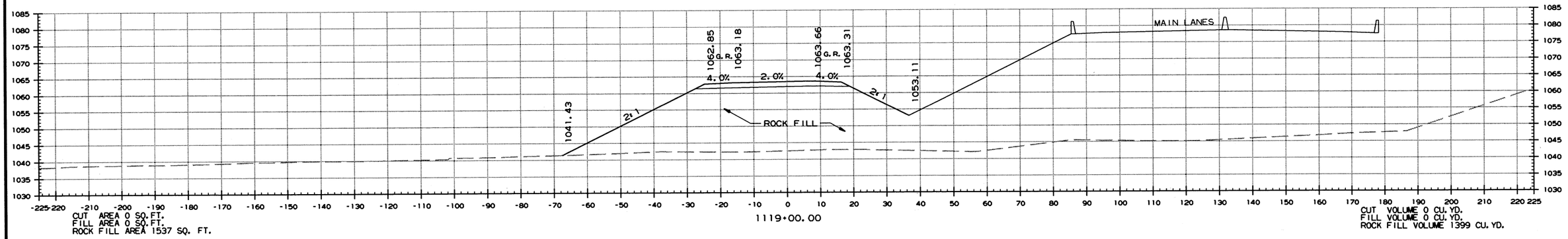


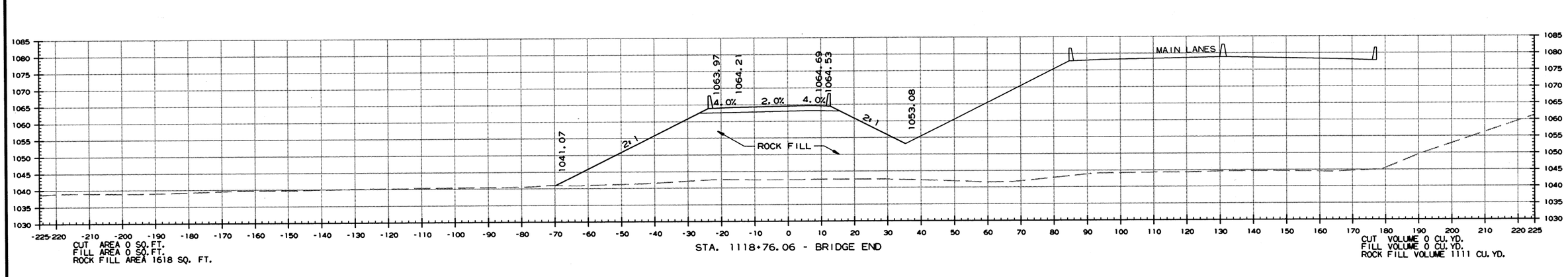
RAMP 4 SPUI

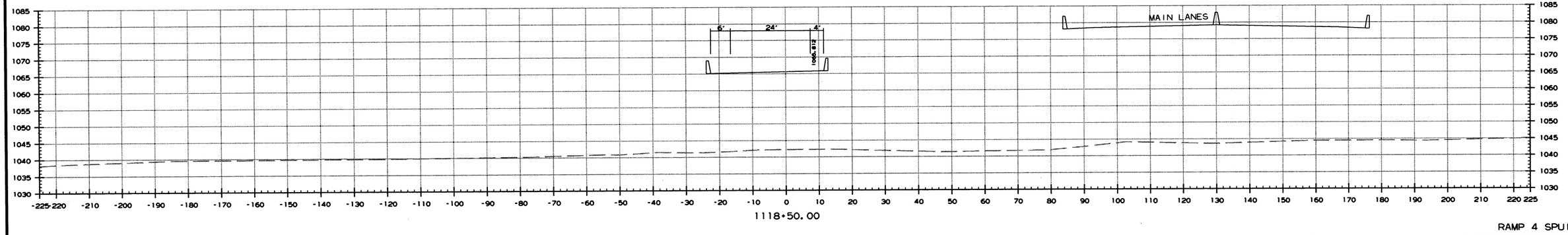
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	410	452

(2) CROSS SECTIONS





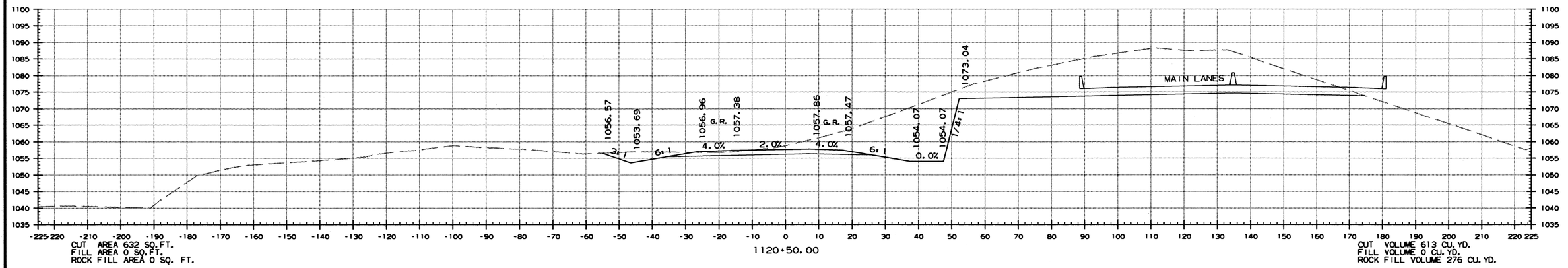


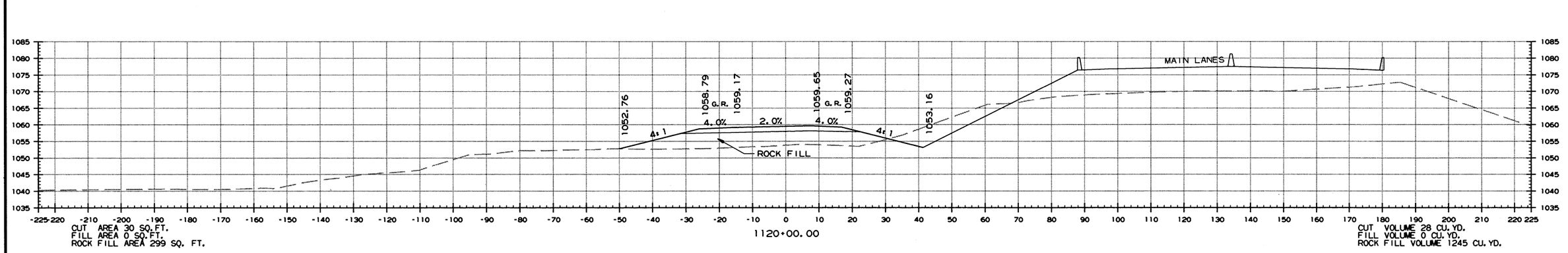
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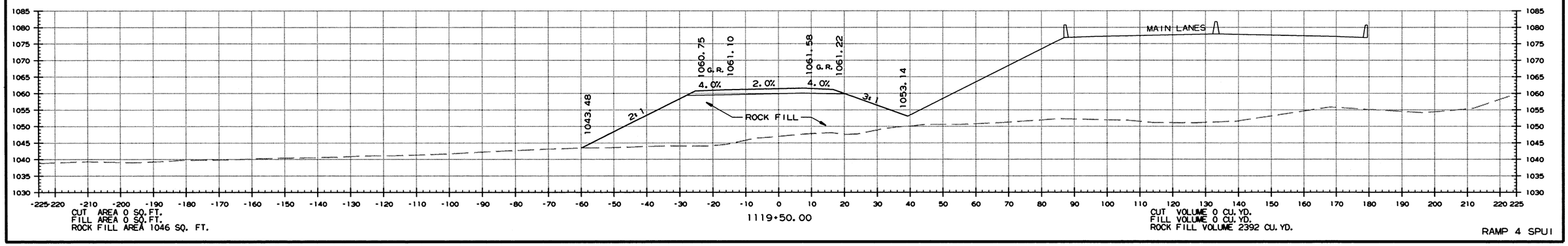
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	411	452

(2) CROSS SECTIONS





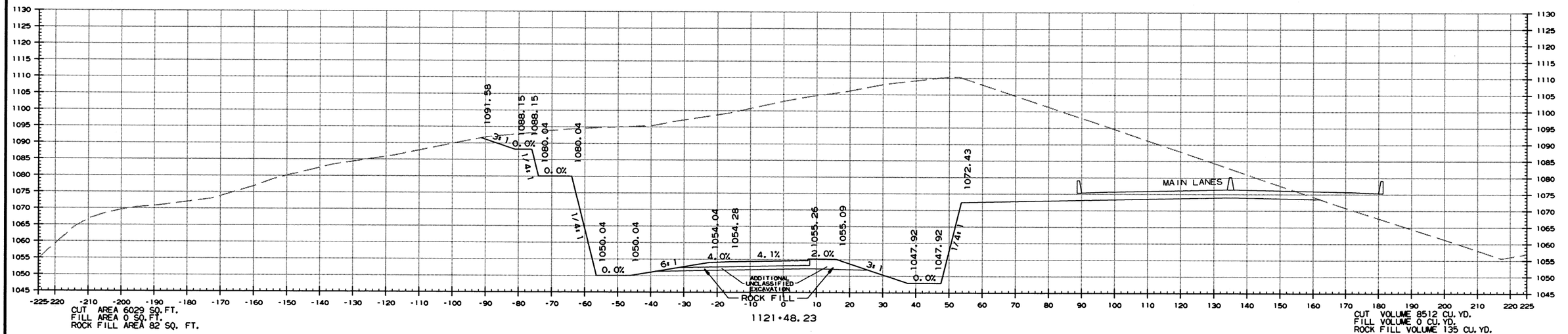


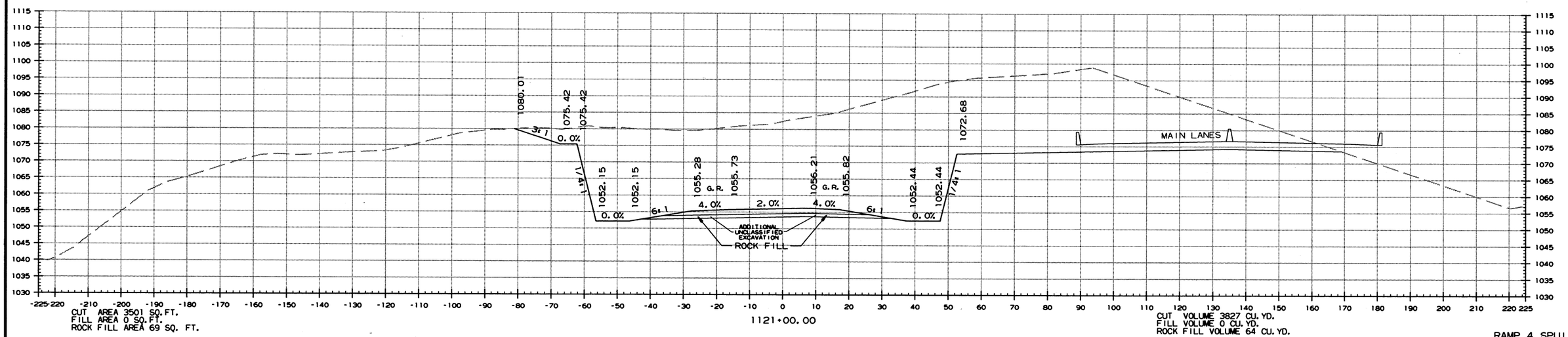
RCA0903.REVISED.DGN 10/19/2016

RAMP 4 SPUI

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.		CA0903	412	452

(2) CROSS SECTIONS



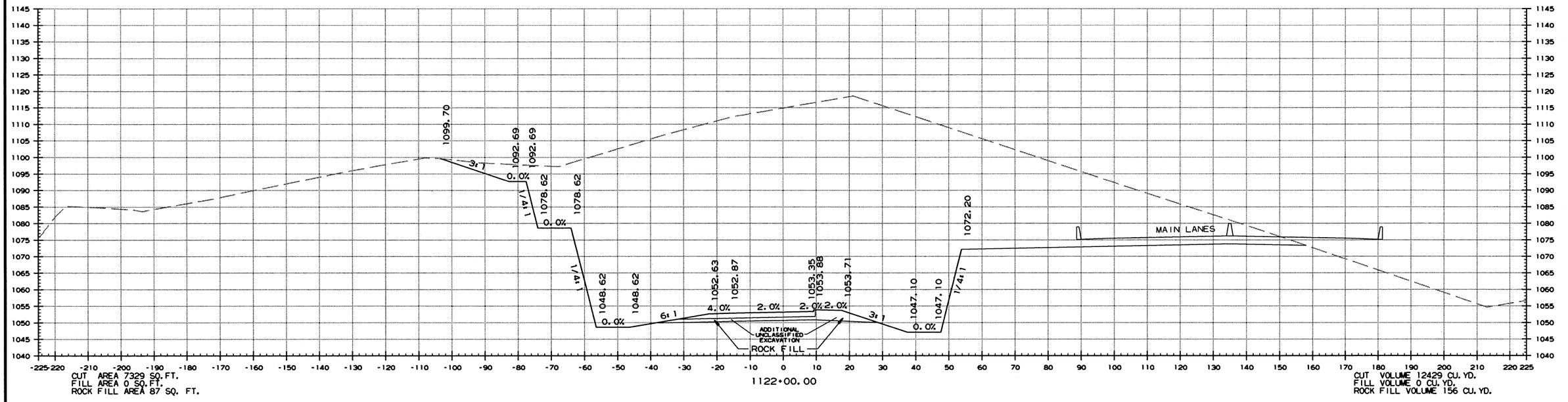


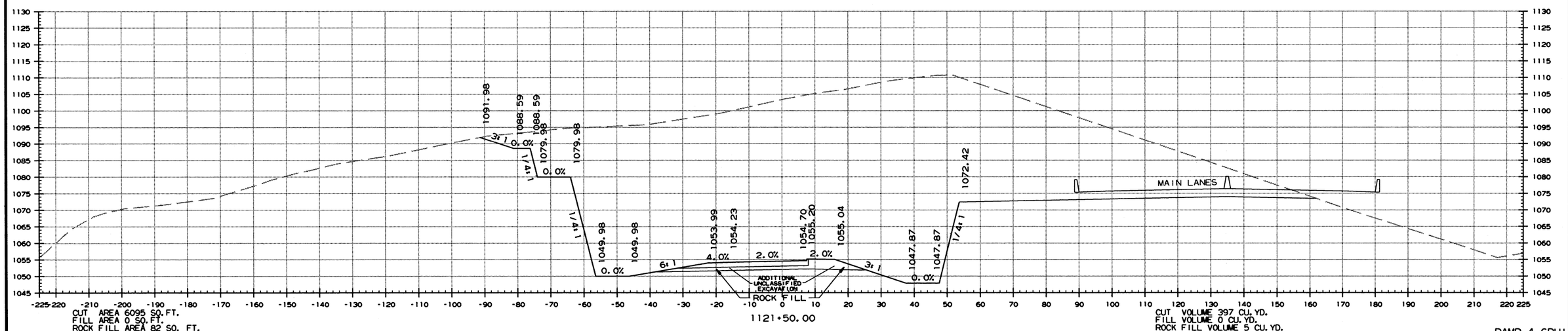
RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	413	452

(2) CROSS SECTIONS



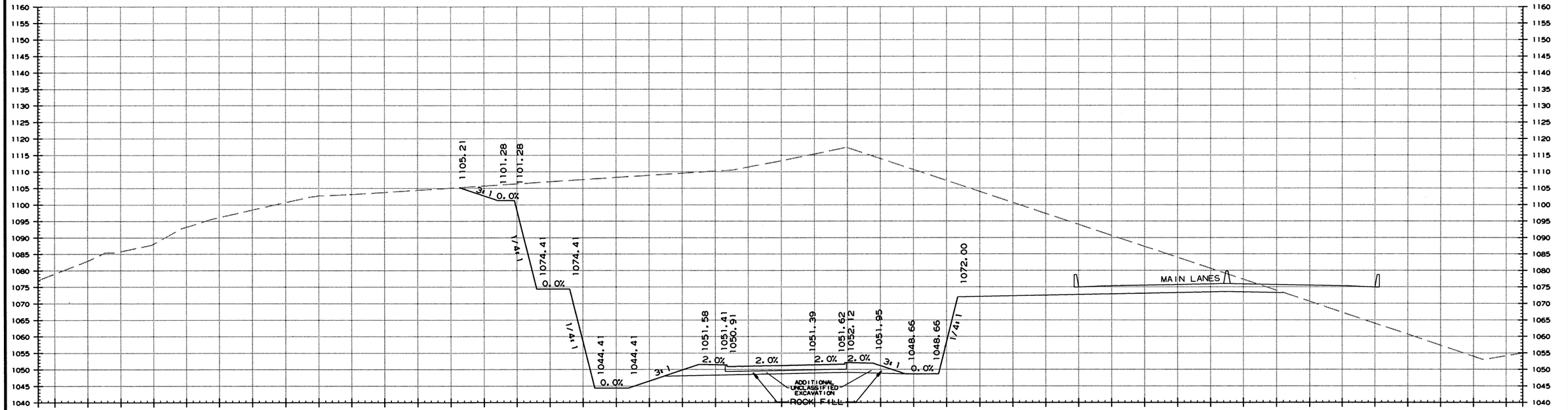


RAMP 4 SPUI

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	414	452

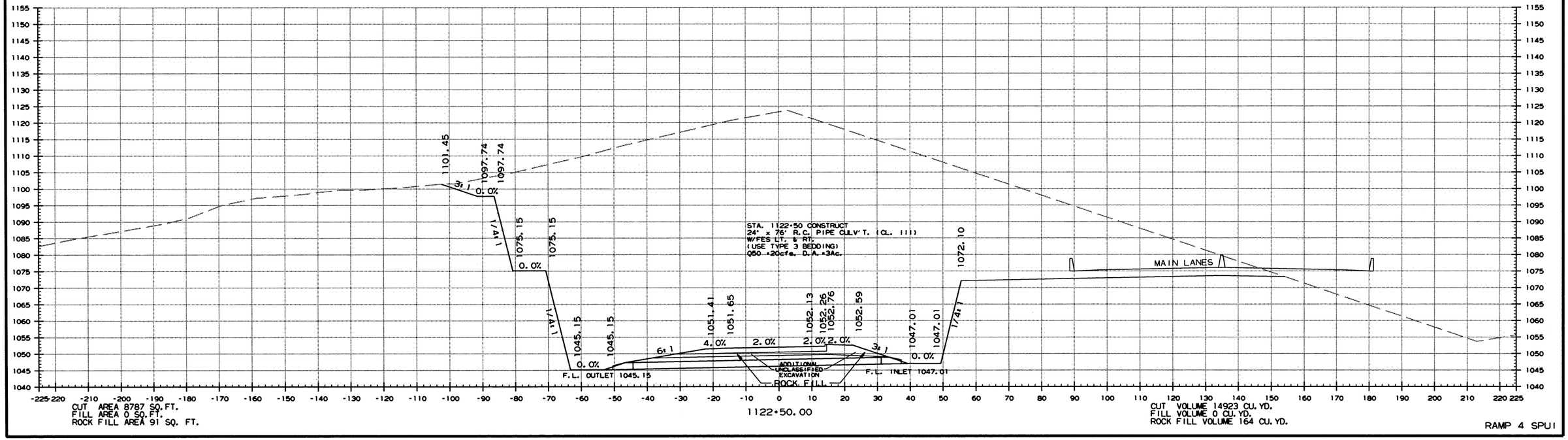
(2) CROSS SECTIONS



CUT AREA 7765 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 119 SQ. FT.

1122+84.07

CUT VOLUME 10443 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 132 CU. YD.



CUT AREA 8787 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 91 SQ. FT.

1122+50.00

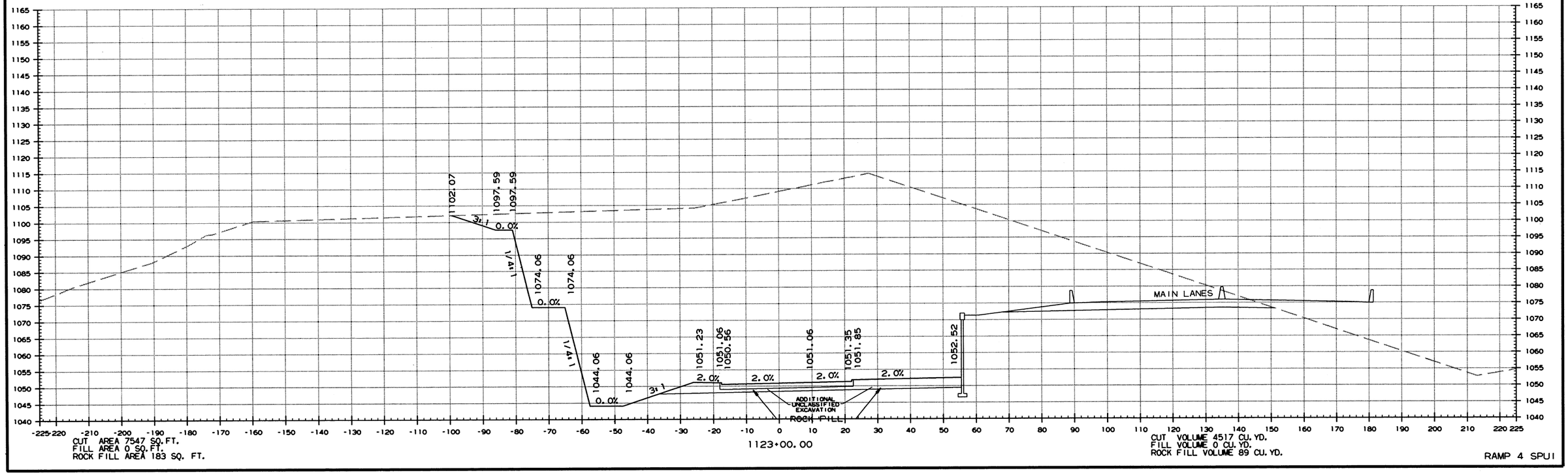
CUT VOLUME 14923 CU. YD.
FILL VOLUME 0 CU. YD.
ROCK FILL VOLUME 164 CU. YD.

RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	415	452

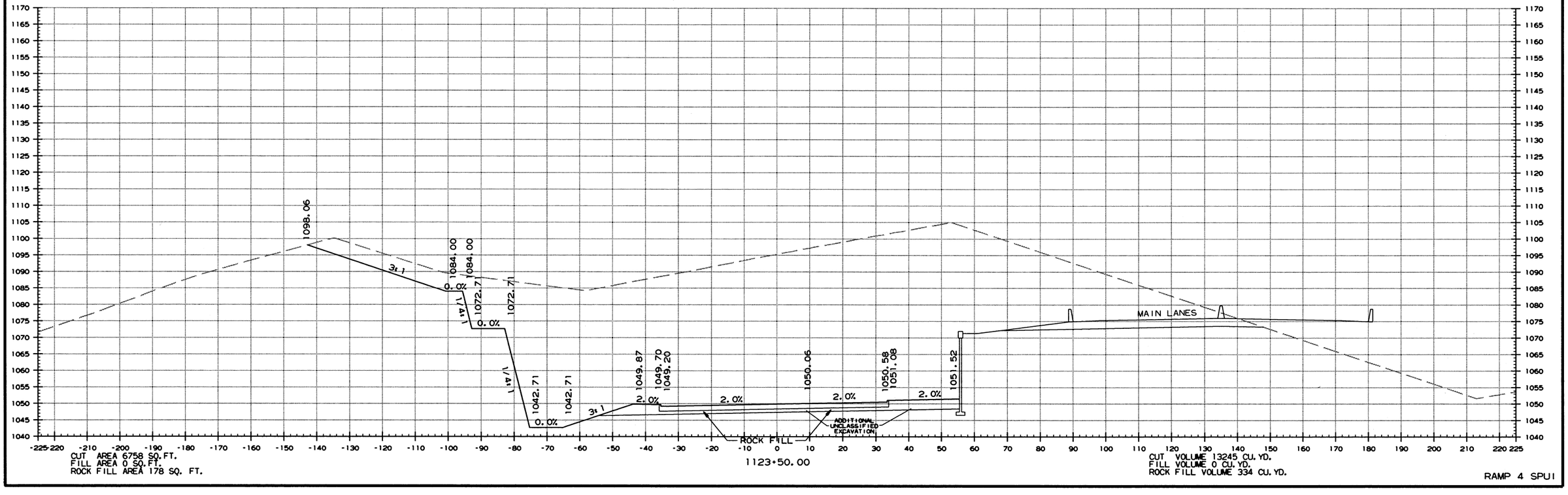
(2) CROSS SECTIONS



RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	416	452

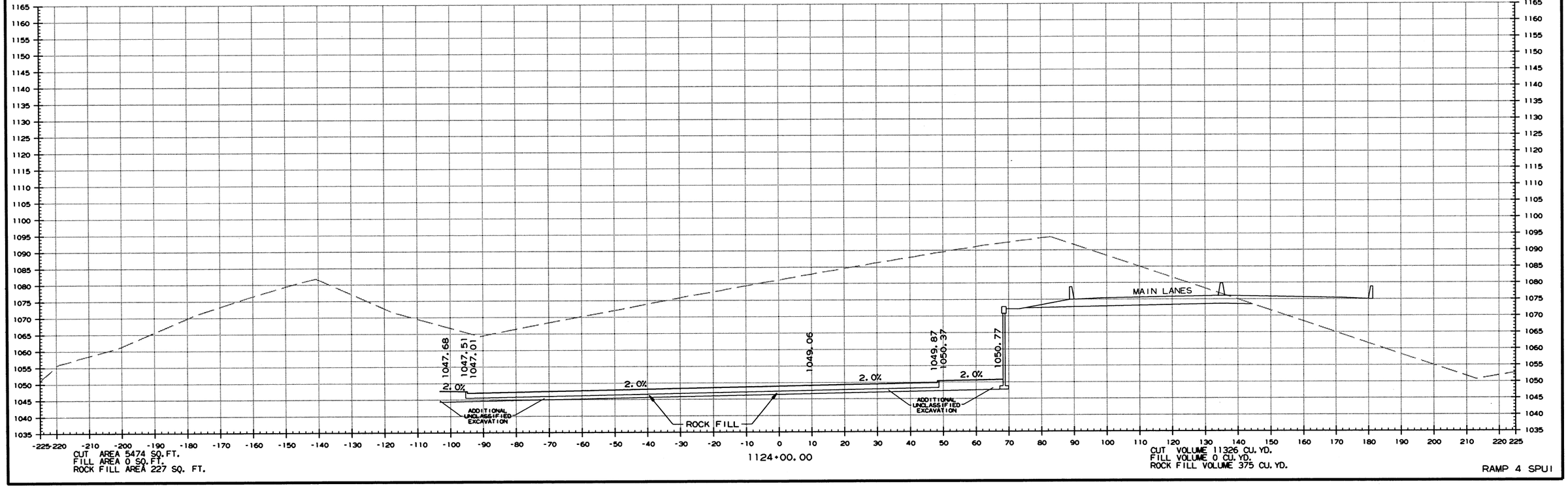
(2) CROSS SECTIONS



RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	417	452

(2) CROSS SECTIONS

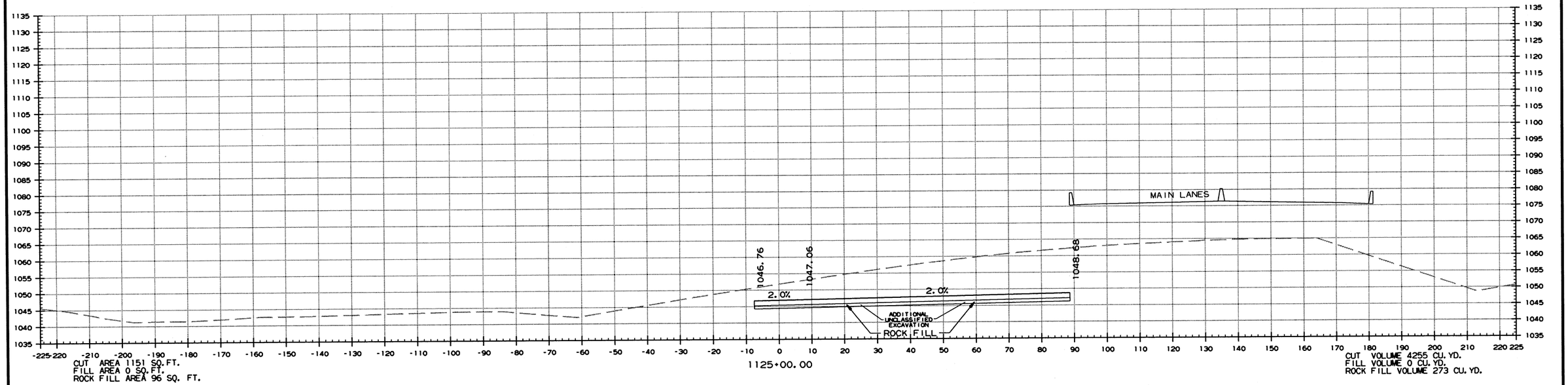


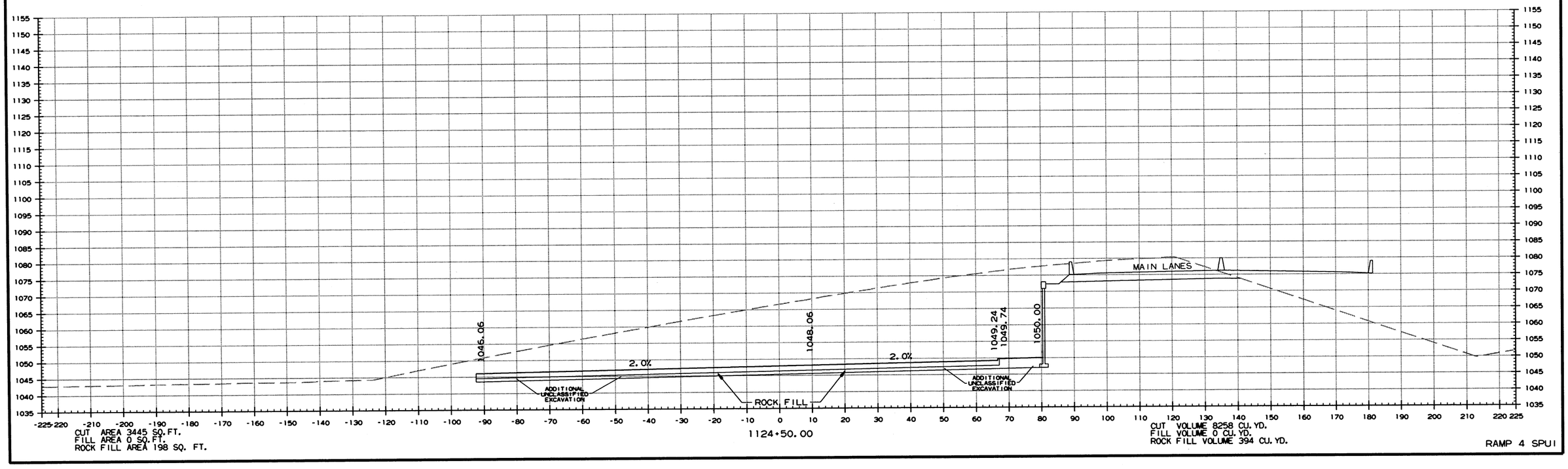
RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	418	452

(2) CROSS SECTIONS



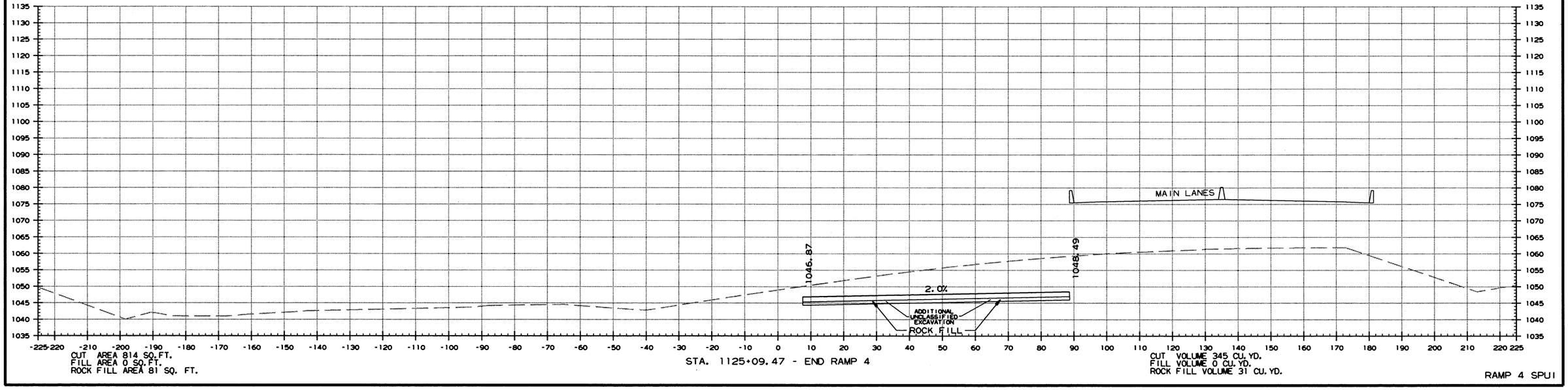


RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	419	452

(2) CROSS SECTIONS



CUT AREA 814 SQ.FT.
FILL AREA 0 SQ.FT.
ROCK FILL AREA 81 SQ. FT.

STA. 1125+09.47 - END RAMP 4

CUT VOLUME 345 CU.YD.
FILL VOLUME 0 CU.YD.
ROCK FILL VOLUME 31 CU.YD.

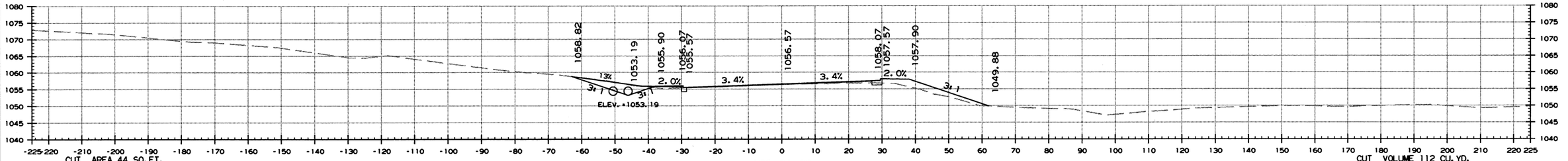
RAMP 4 SPUI

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	420	452

(2) CROSS SECTIONS

STA. 123+00 IN PLACE
18" x 33' PIPE CULV'T.
REMOVE & INSTALL
DBL. 30" x 30' PIPE CULV'T.
LT. SIDE DRAIN
CONST. APPR. =
5 CU. YD. COMP. EMB.

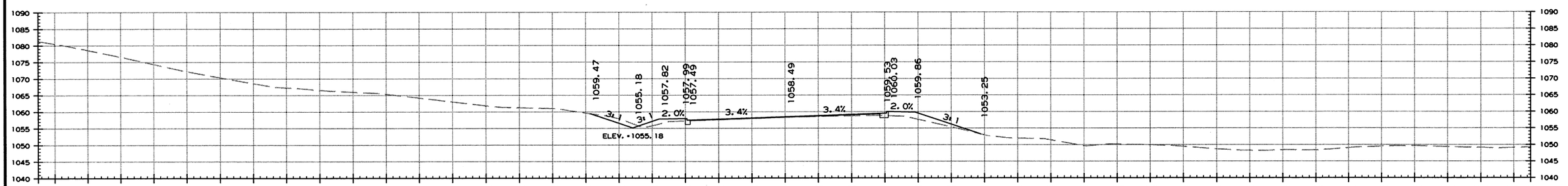


CUT AREA 44 SQ.FT.
FILL AREA 51 SQ.FT.

123+00.00

CUT VOLUME 112 CU.YD.
FILL VOLUME 177 CU.YD.

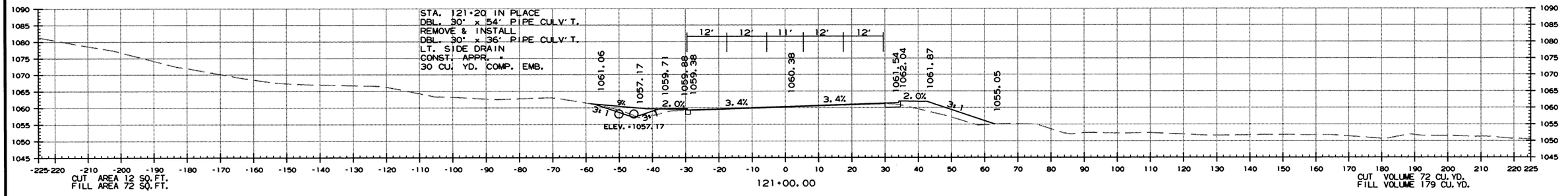
STA. 122+50 - BEGIN NEW VERTICAL ALIGNMENT



CUT AREA 17 SQ.FT.
FILL AREA 45 SQ.FT.

122+00.00

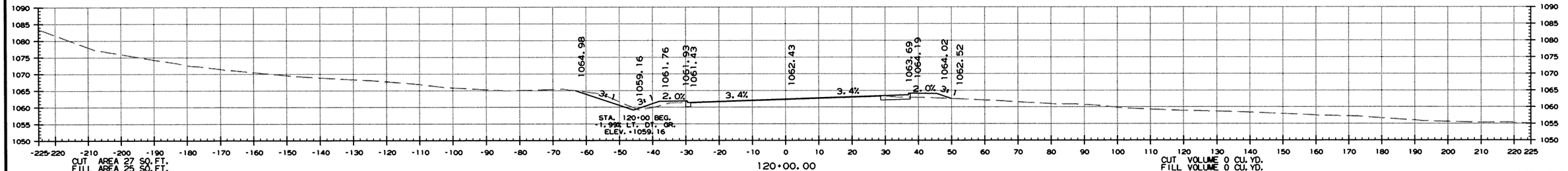
CUT VOLUME 53 CU.YD.
FILL VOLUME 216 CU.YD.



CUT AREA 12 SQ.FT.
FILL AREA 72 SQ.FT.

121+00.00

CUT VOLUME 72 CU.YD.
FILL VOLUME 179 CU.YD.



CUT AREA 27 SQ.FT.
FILL AREA 25 SQ.FT.

120+00.00

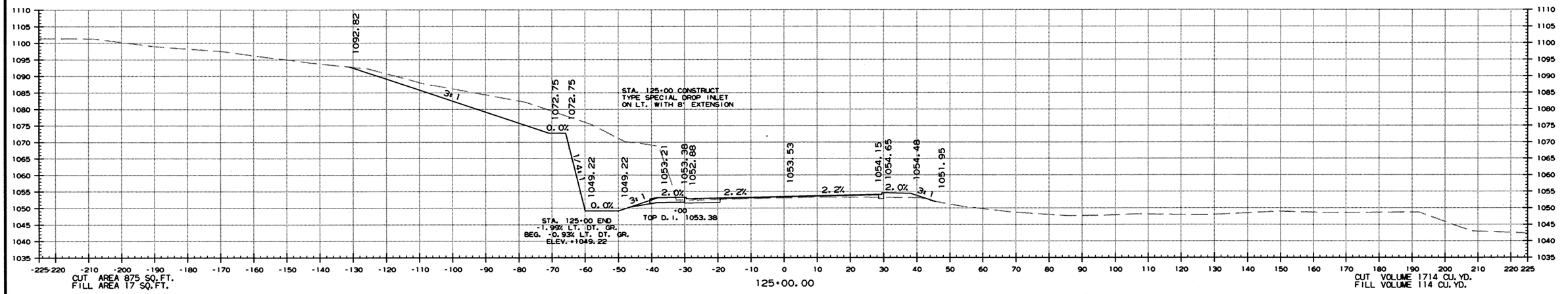
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

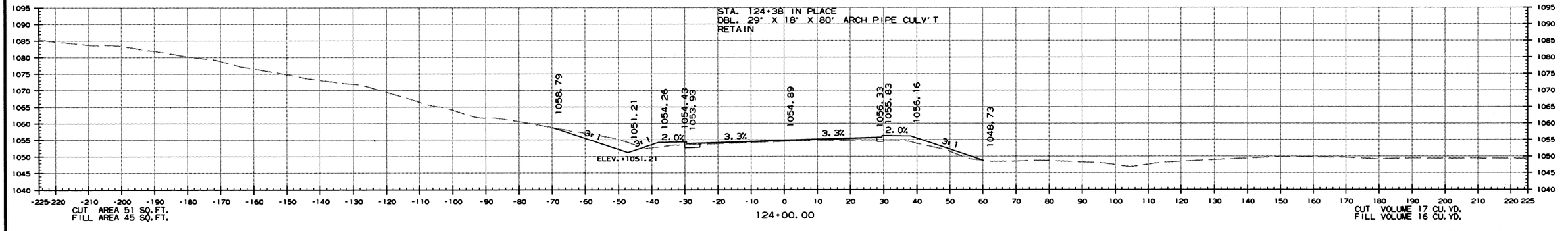
HWY. 71B

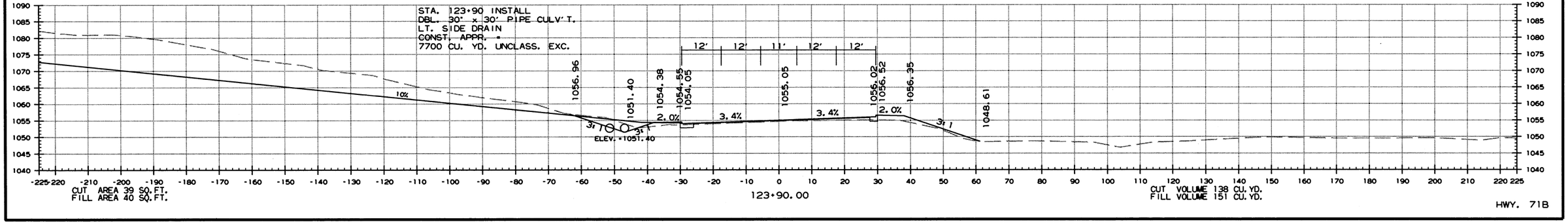
RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	421	452

(2) CROSS SECTIONS





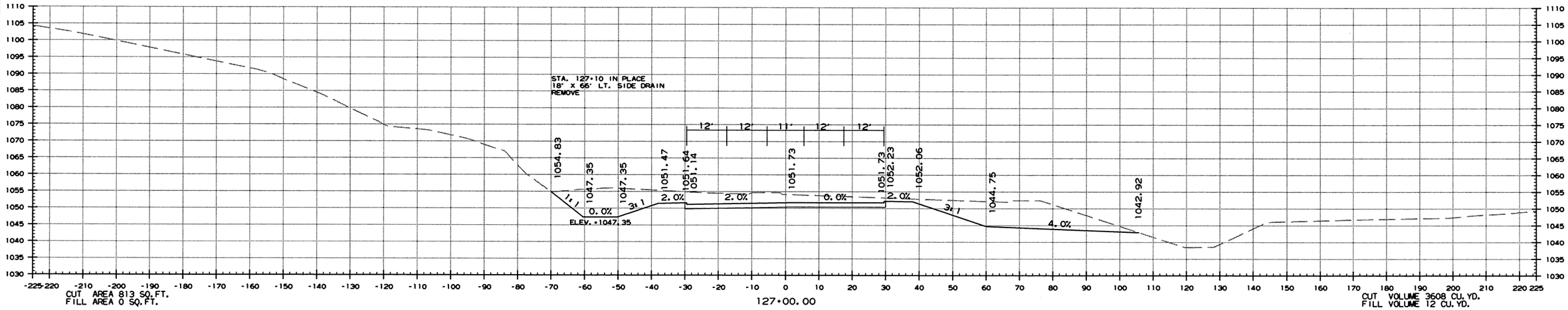


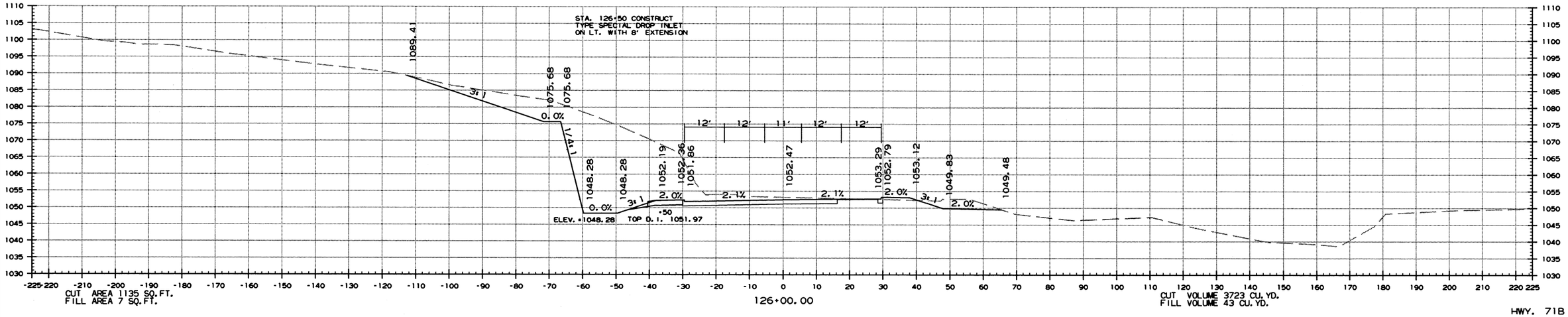
HWY. 71B

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				6	ARK.			
				JOB NO.		CA0903	422	452

(2) CROSS SECTIONS



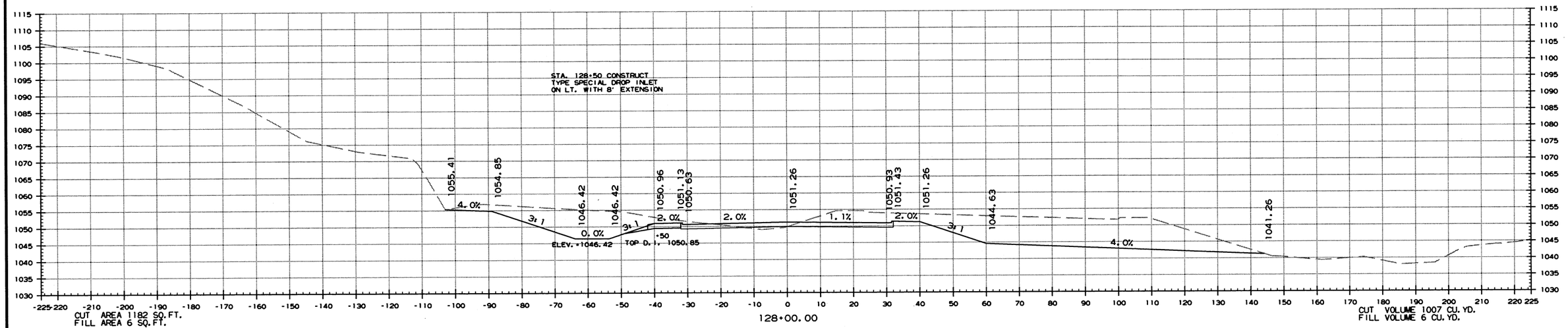


HWY. 71B

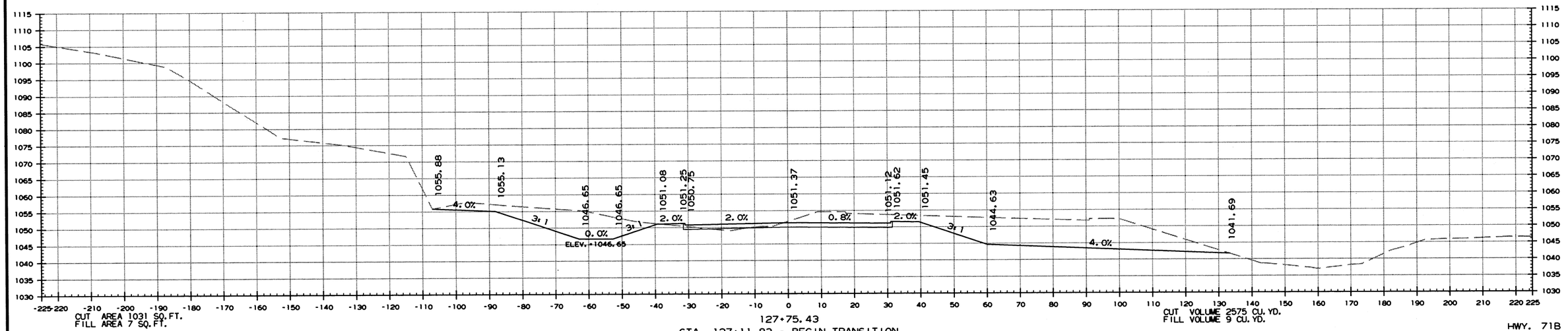
RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	423	452

(2) CROSS SECTIONS



128+00.00



127+75.43

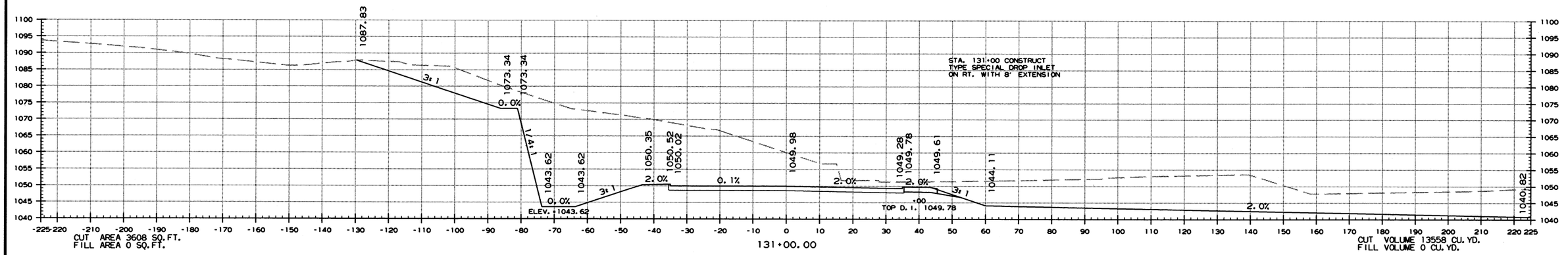
STA. 127+11.83 - BEGIN TRANSITION

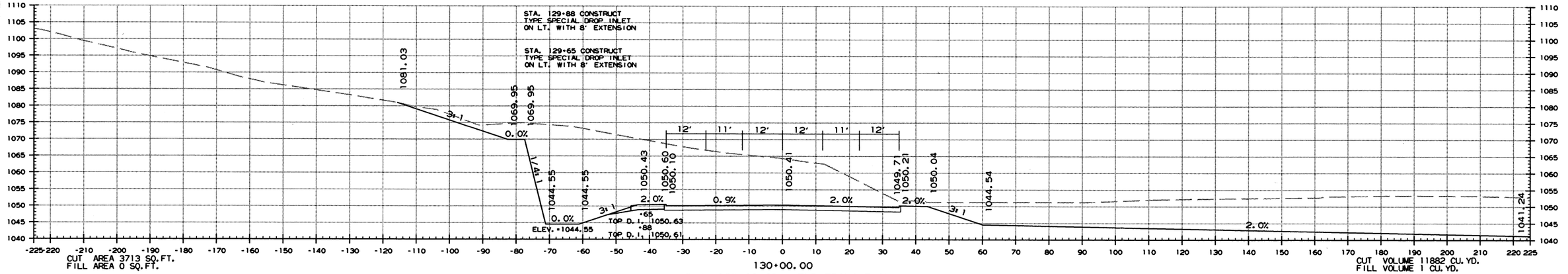
HWY. 71B

RCA0903.REVISED.DGN 10/19/2016

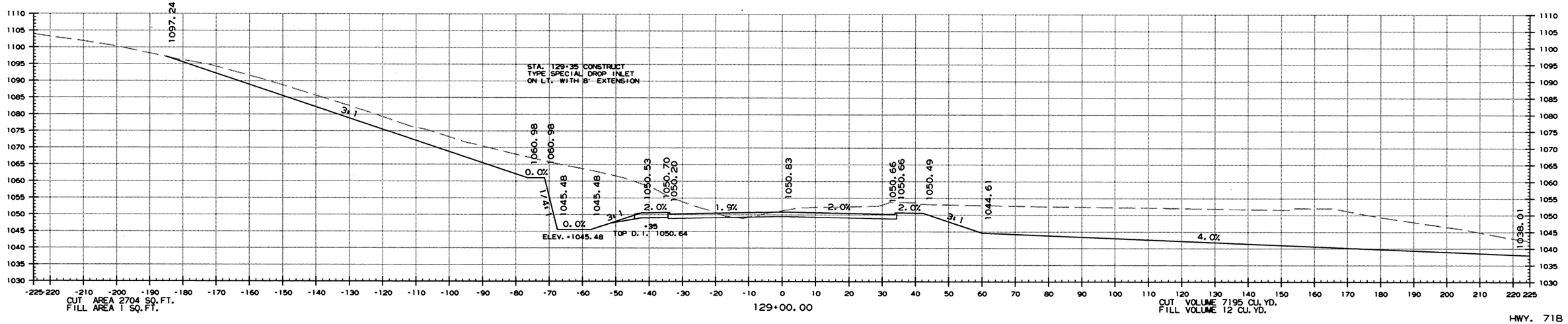
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	424	452

(2) CROSS SECTIONS





STA. 129+48.60 - END TRANSITION

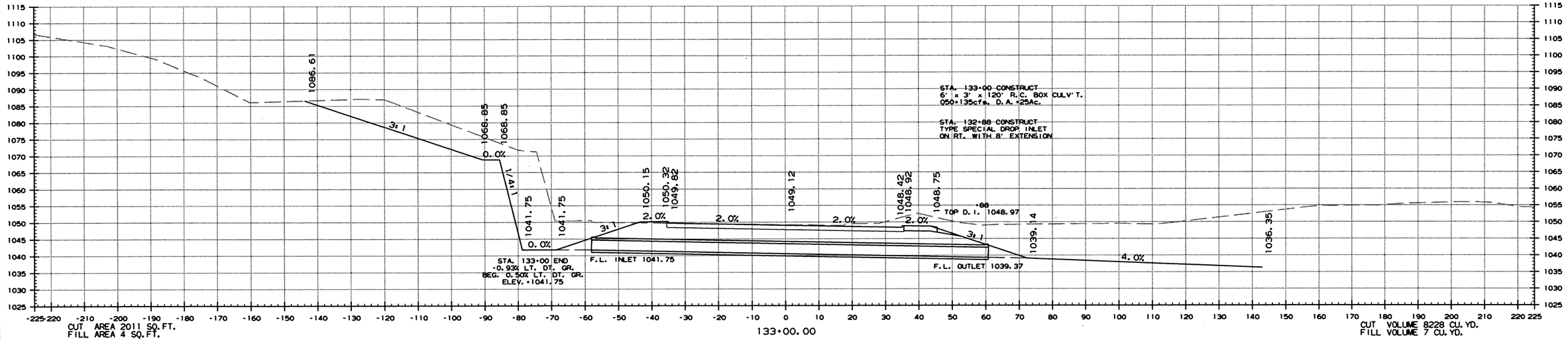


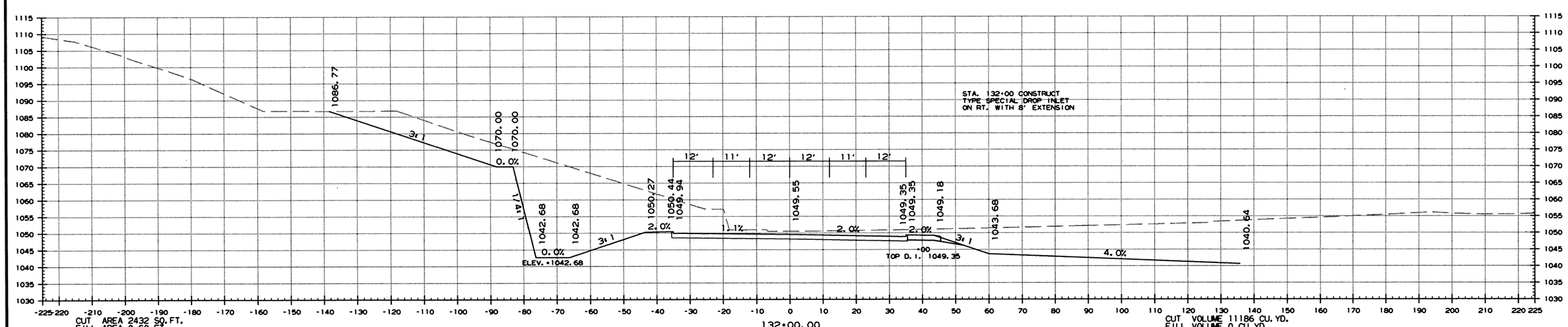
RCA0903_REVISED.DGN 10/19/2016

HWY. 71B

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.		CA0903	425	452

(2) CROSS SECTIONS



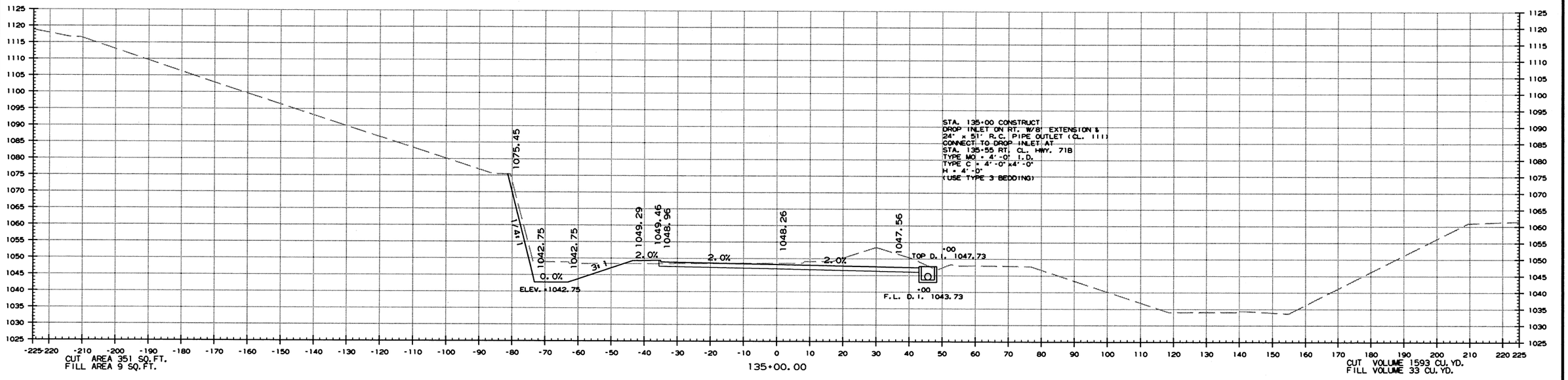


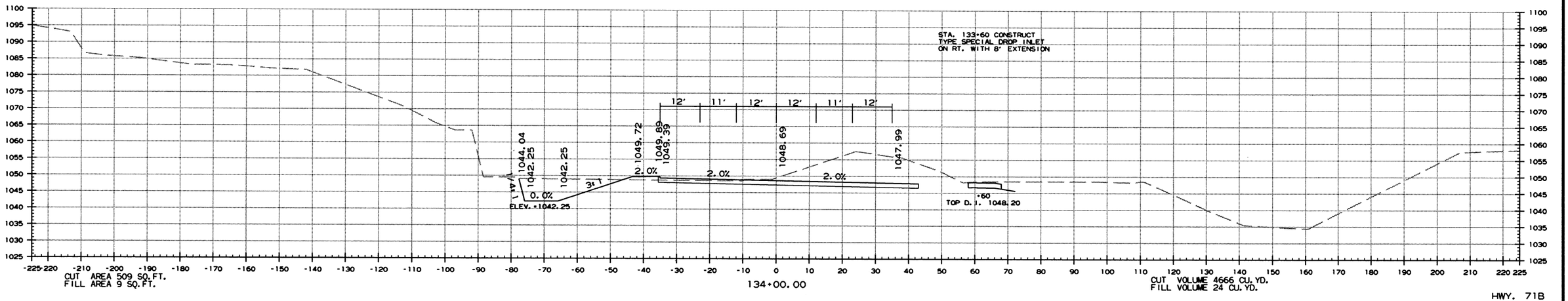
HWY. 71B

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	426	452

(2) CROSS SECTIONS



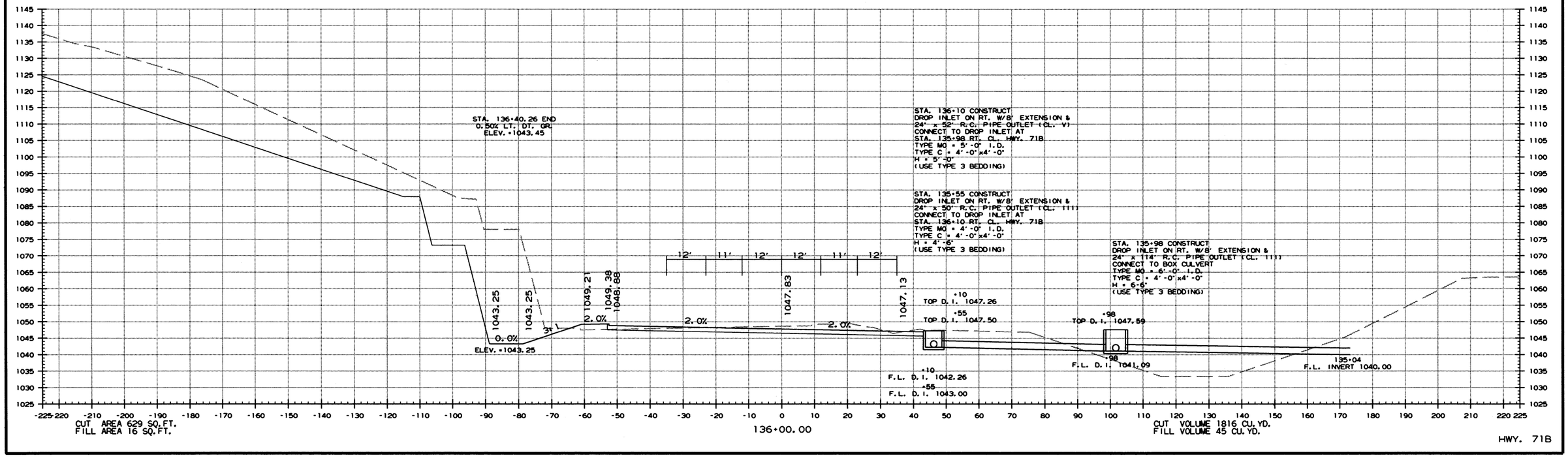


HWY. 71B

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	427	452

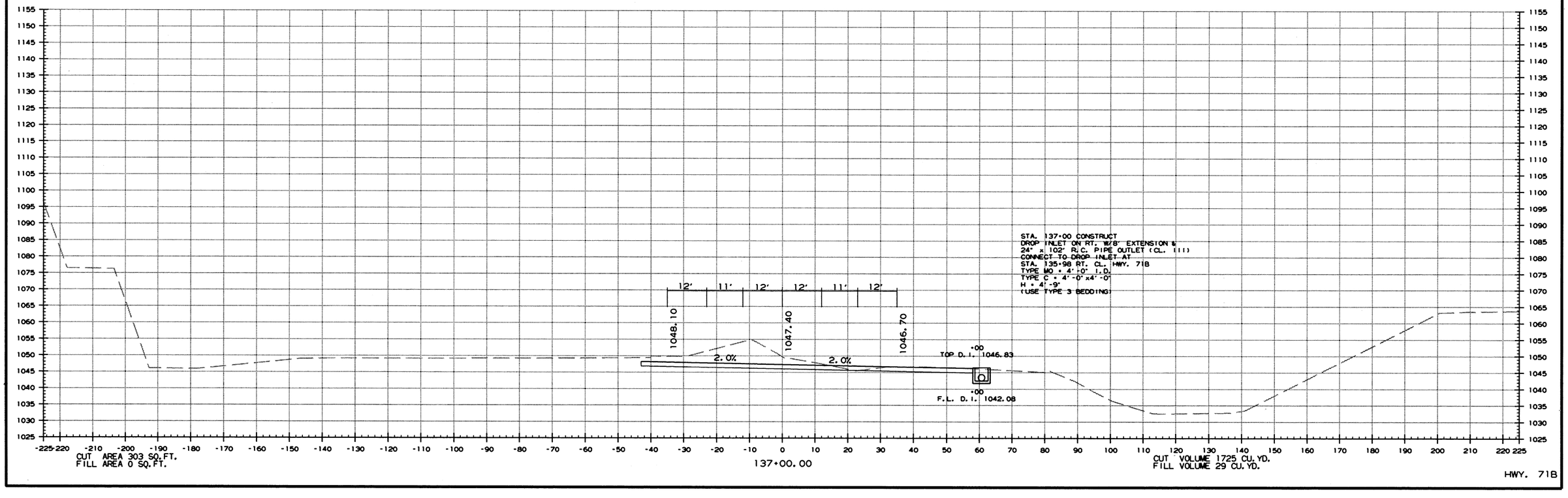
(2) CROSS SECTIONS



RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	428	452

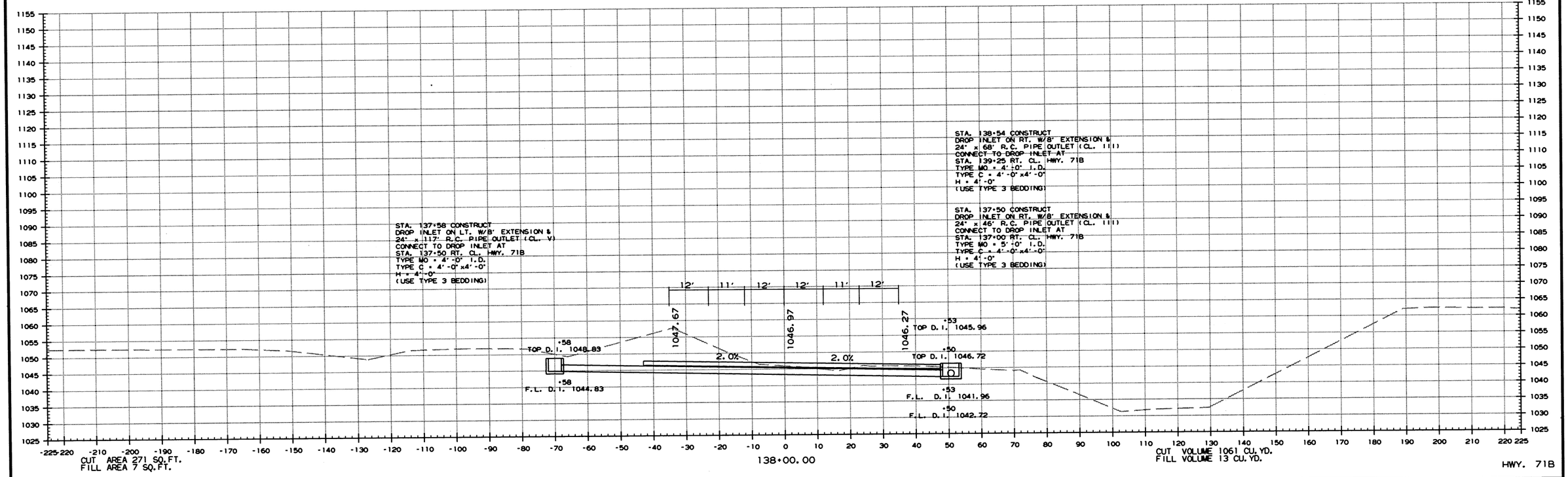
(2) CROSS SECTIONS



RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	429	452

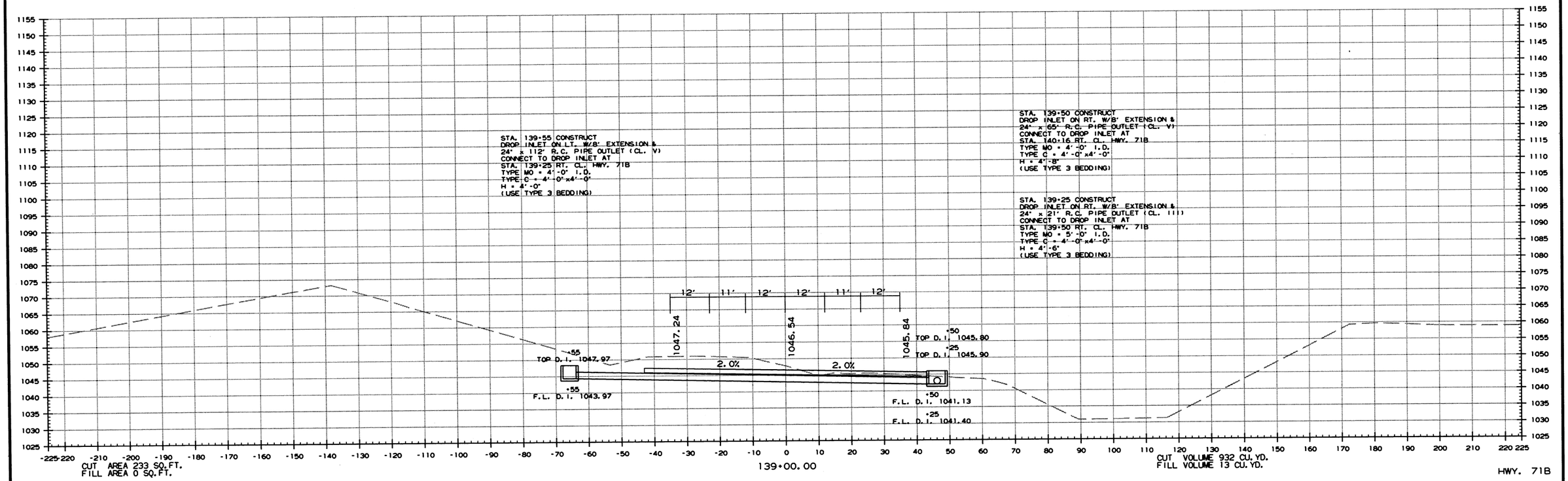
(2) CROSS SECTIONS



RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	430	452

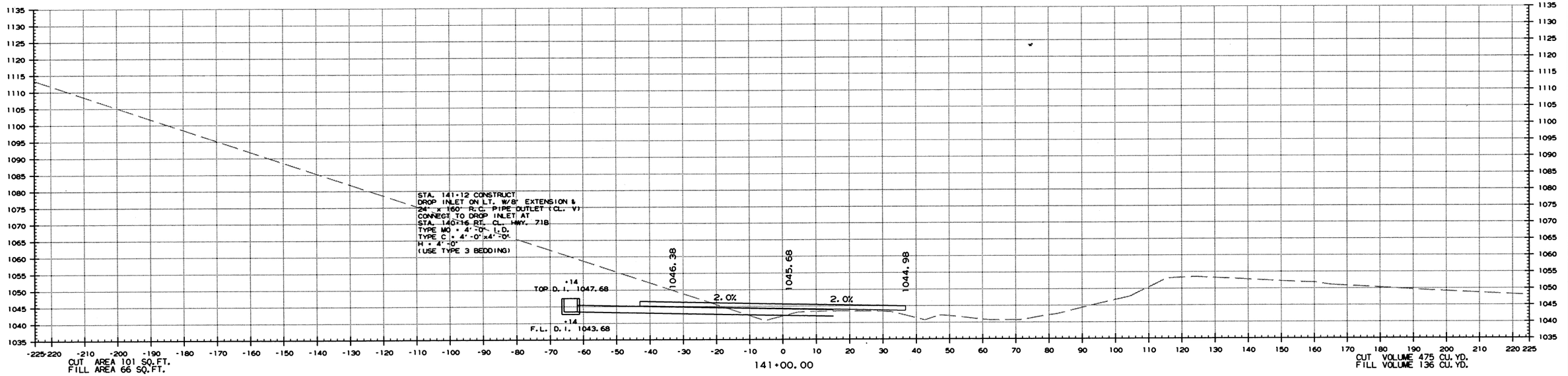
(2) CROSS SECTIONS

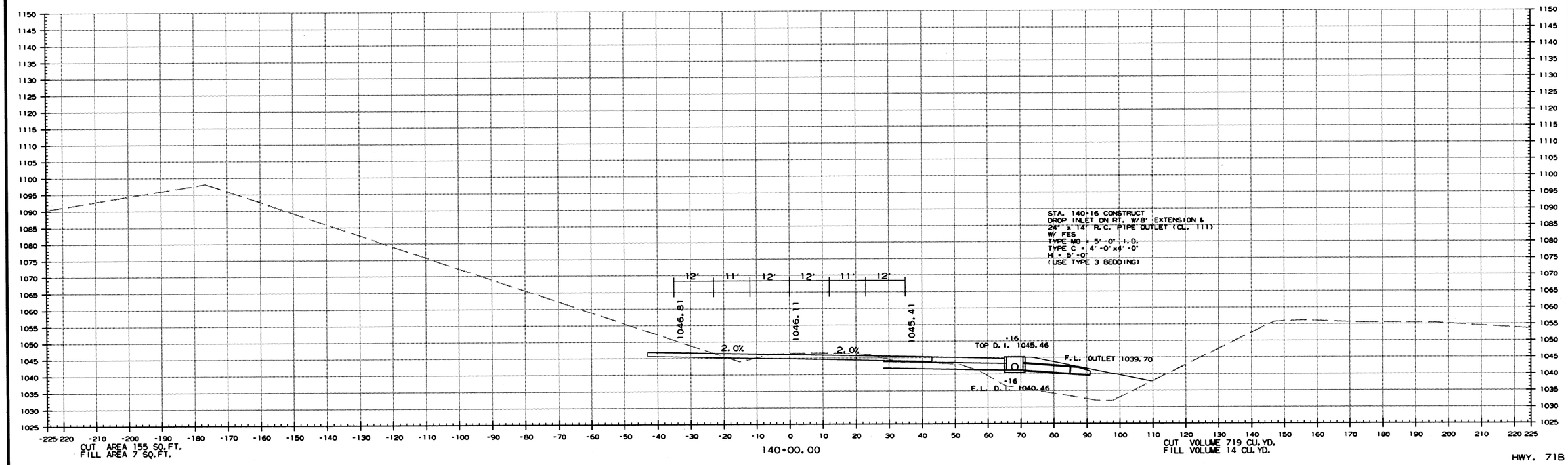


RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	431	452

(2) CROSS SECTIONS

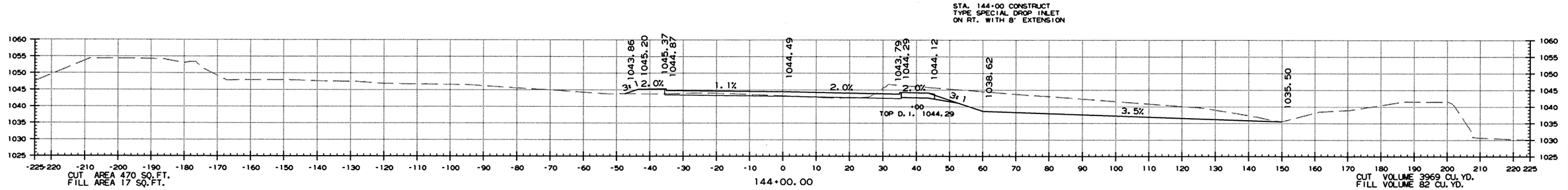


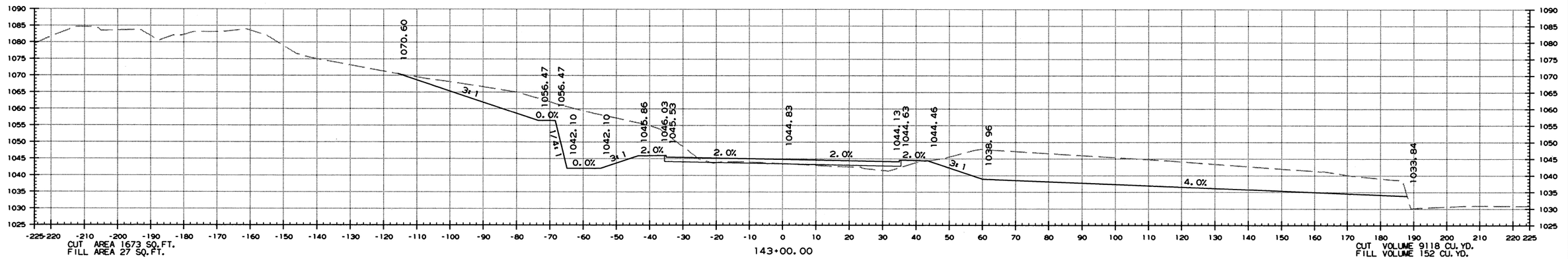


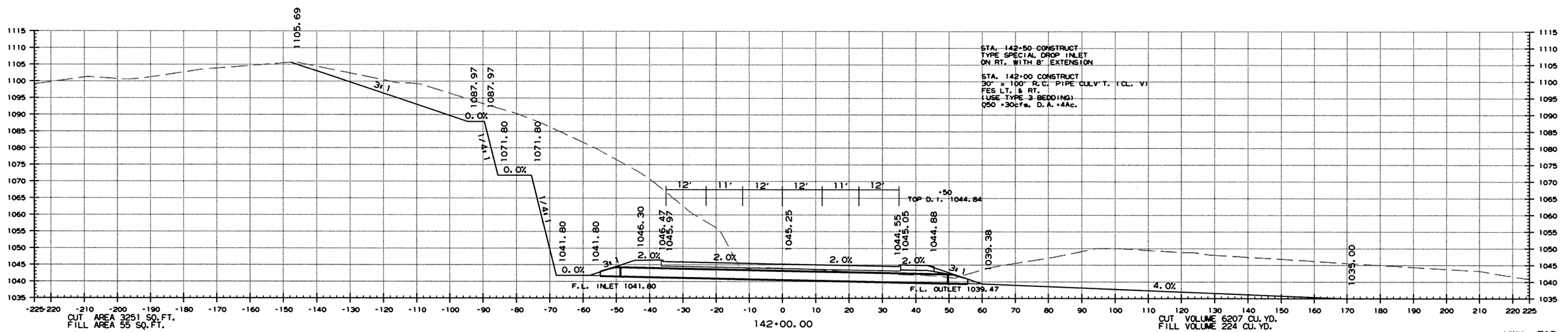
RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	432	452

(2) CROSS SECTIONS







HWY. 71B

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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.		CA0903	433	452

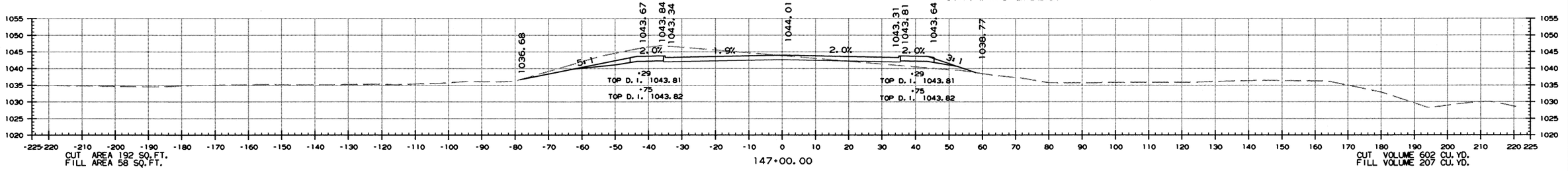
(2) CROSS SECTIONS

STA. 147+29 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 2-8' EXTENSIONS

STA. 146+75 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 147+29 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 2-8' EXTENSIONS

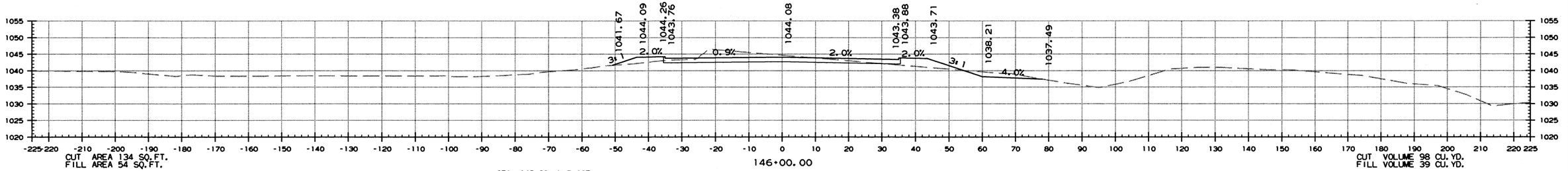
STA. 146+75 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION



CUT AREA 192 SQ.FT.
FILL AREA 58 SQ.FT.

147+00.00

CUT VOLUME 602 CU. YD.
FILL VOLUME 207 CU. YD.

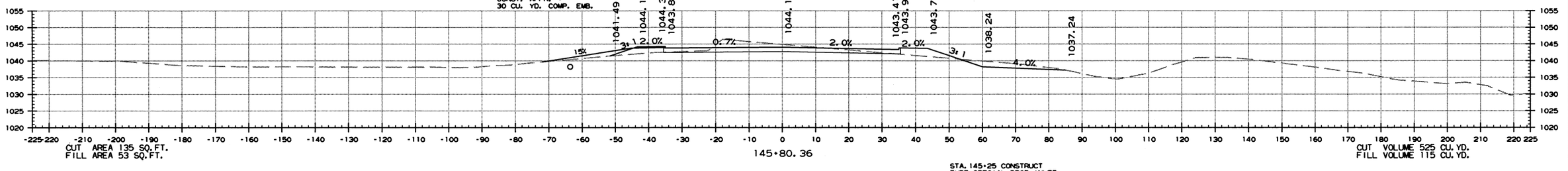


CUT AREA 134 SQ.FT.
FILL AREA 54 SQ.FT.

146+00.00

CUT VOLUME 98 CU. YD.
FILL VOLUME 39 CU. YD.

STA. 145+80 IN PLACE
18" x 60' PIPE CULV'T
REMOVE & INSTALL
18" X 48' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. +
30 CU. YD. COMP. EMB.

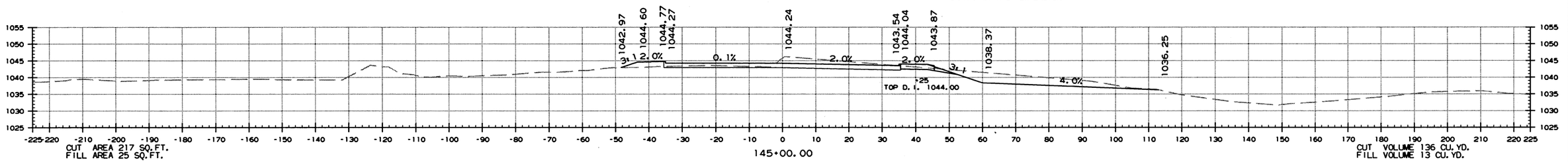


CUT AREA 135 SQ.FT.
FILL AREA 53 SQ.FT.

145+80.36

CUT VOLUME 525 CU. YD.
FILL VOLUME 115 CU. YD.

STA. 145+25 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

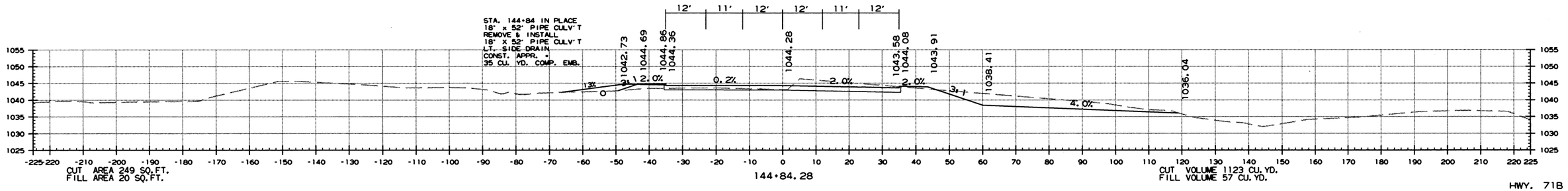


CUT AREA 217 SQ.FT.
FILL AREA 25 SQ.FT.

145+00.00

CUT VOLUME 136 CU. YD.
FILL VOLUME 13 CU. YD.

STA. 144+84 IN PLACE
18" x 52' PIPE CULV'T
REMOVE & INSTALL
18" X 52' PIPE CULV'T
LT. SIDE DRAIN
CONST. APPR. +
35 CU. YD. COMP. EMB.



CUT AREA 249 SQ.FT.
FILL AREA 20 SQ.FT.

144+84.28

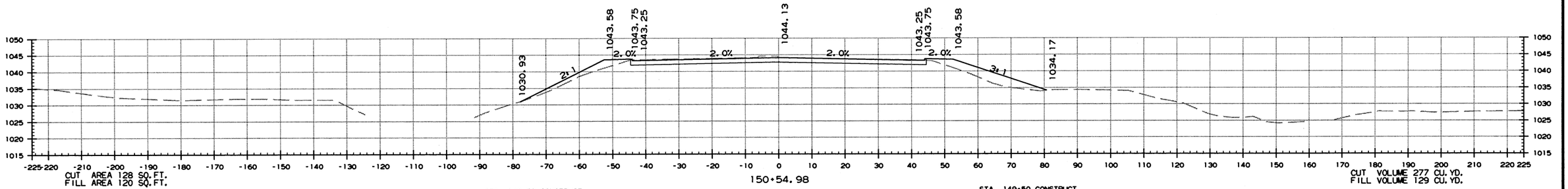
CUT VOLUME 1123 CU. YD.
FILL VOLUME 57 CU. YD.

HWY. 71B

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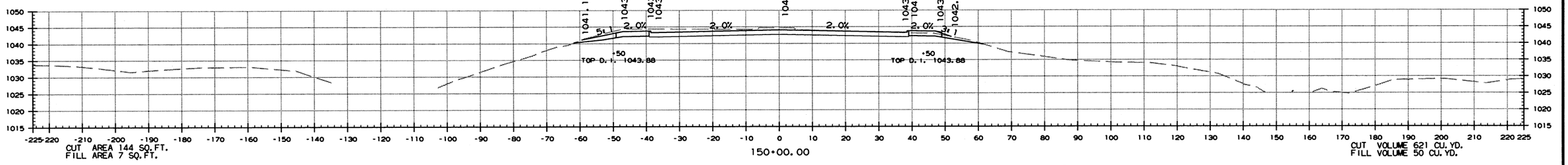
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	434	452

(2) CROSS SECTIONS



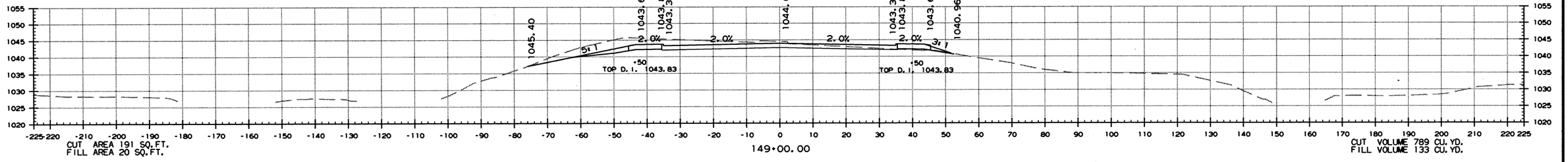
STA. 149+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 149+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION



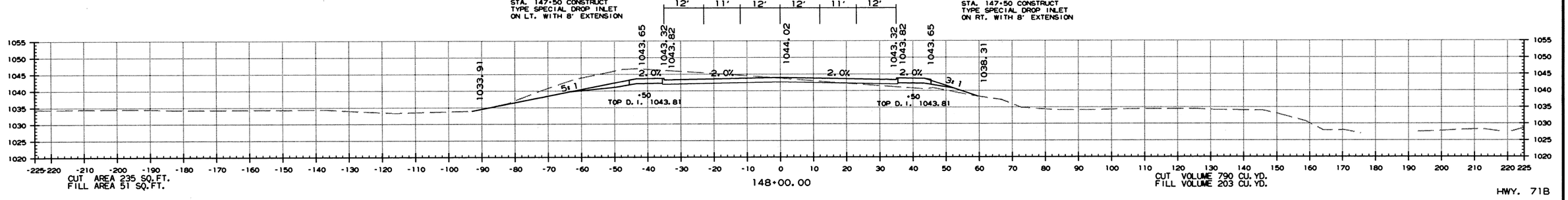
STA. 148+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 148+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION



STA. 147+50 CONSTRUCT TYPE SPECIAL DROP INLET ON LT. WITH 8' EXTENSION

STA. 147+50 CONSTRUCT TYPE SPECIAL DROP INLET ON RT. WITH 8' EXTENSION

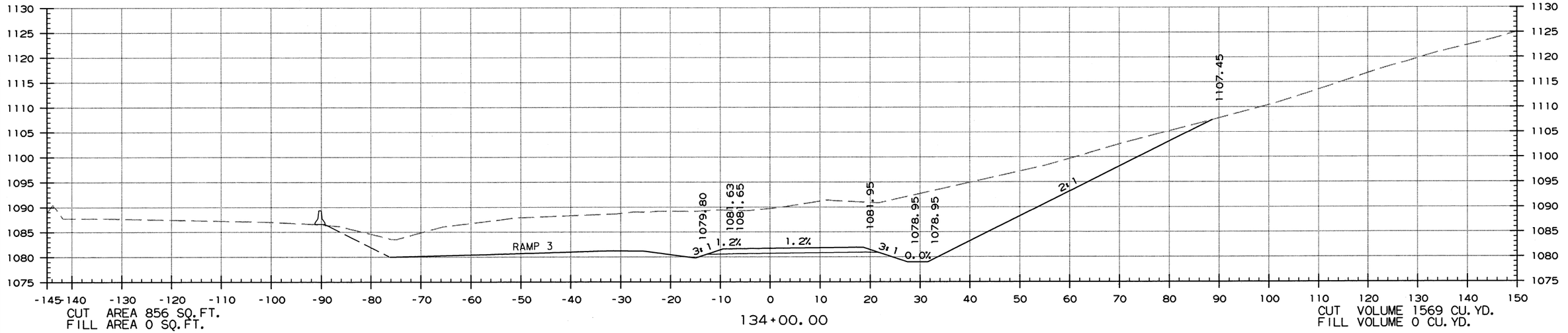


HWY. 71B

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	435	452

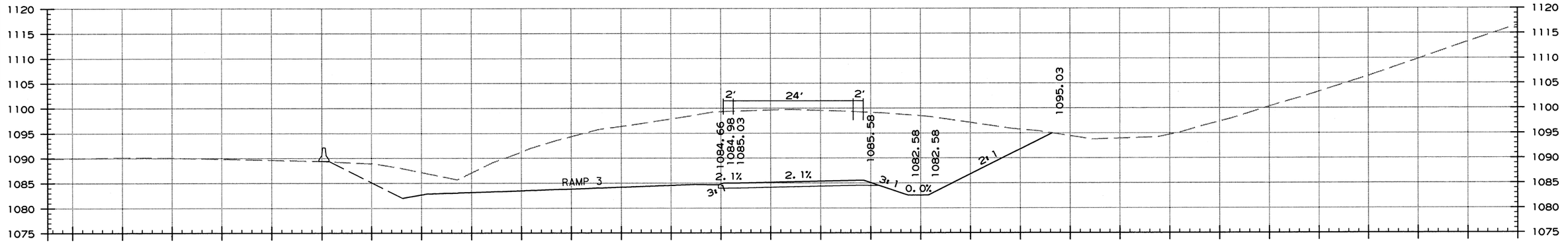
(2) STAGE IB AND IC X-SECTS



CUT AREA 856 SQ.FT.
FILL AREA 0 SQ.FT.

134+00.00

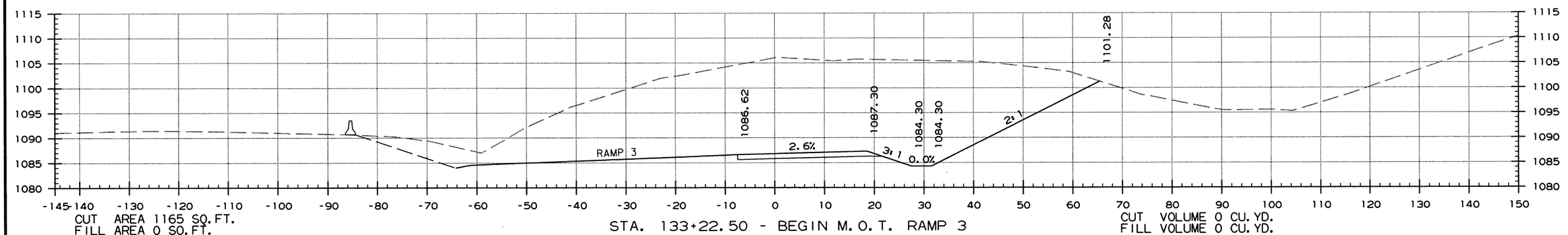
CUT VOLUME 1569 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 839 SQ.FT.
FILL AREA 0 SQ.FT.

133+50.00

CUT VOLUME 1020 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 1165 SQ.FT.
FILL AREA 0 SQ.FT.

STA. 133+22.50 - BEGIN M.O.T. RAMP 3

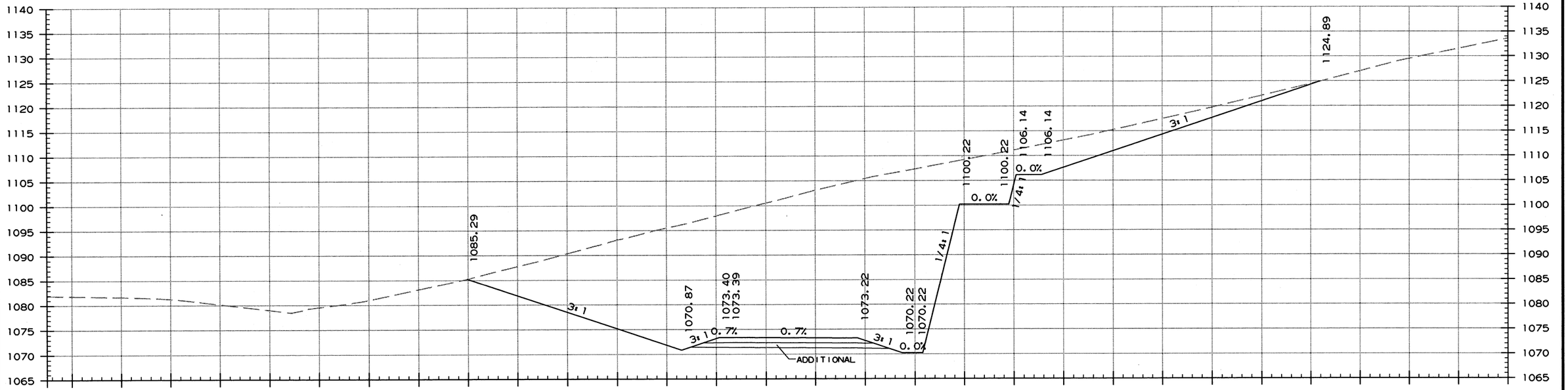
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	436	452

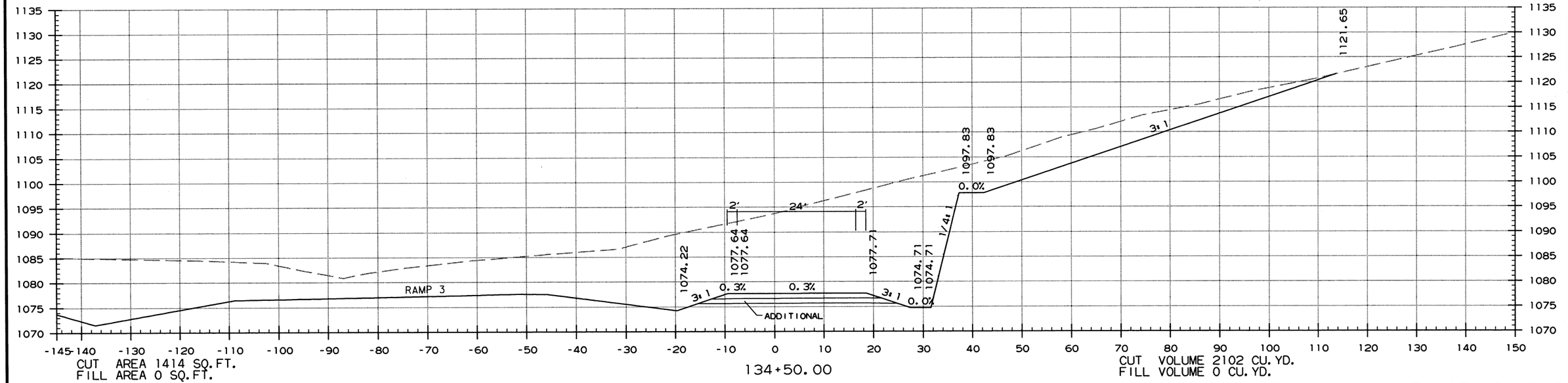
(2) STAGE IB AND IC X-SECTS



CUT AREA 2526 SQ.FT.
FILL AREA 0 SQ.FT.

135+00.00

CUT VOLUME 3649 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 1414 SQ.FT.
FILL AREA 0 SQ.FT.

134+50.00

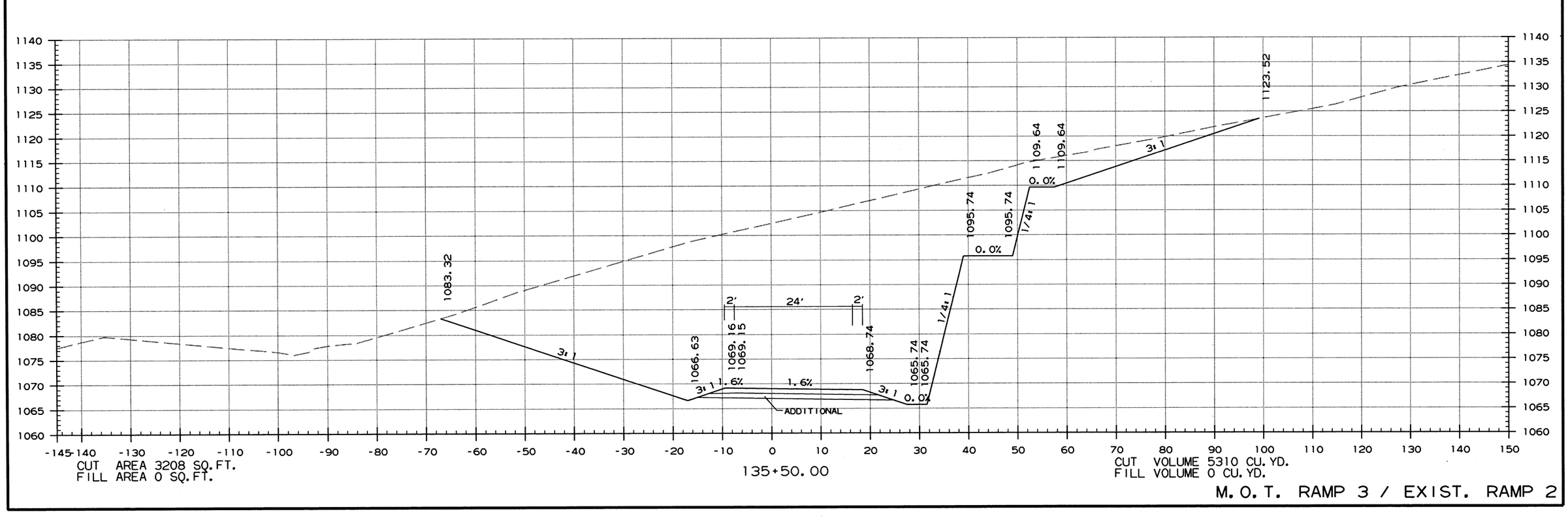
CUT VOLUME 2102 CU.YD.
FILL VOLUME 0 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

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				6	ARK.			
				JOB NO.		CA0903	437	452

(2) STAGE 1B AND 1C X-SECTS

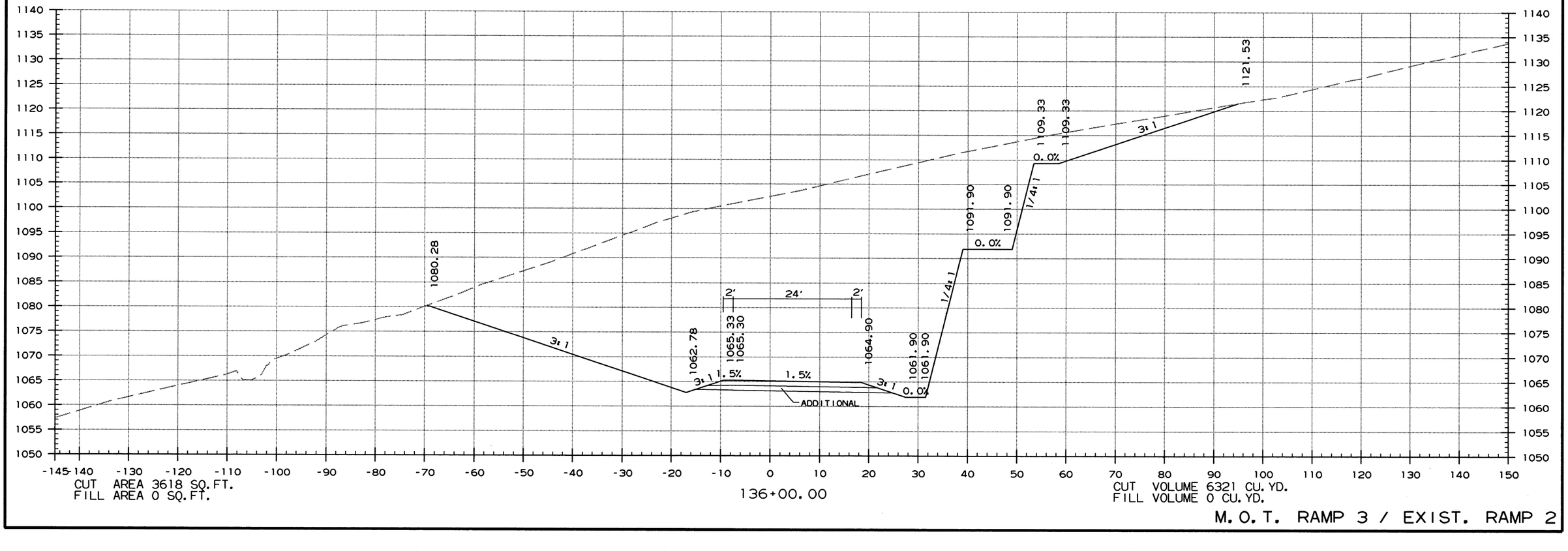


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	438	452

(2) STAGE IB AND IC X-SECTS

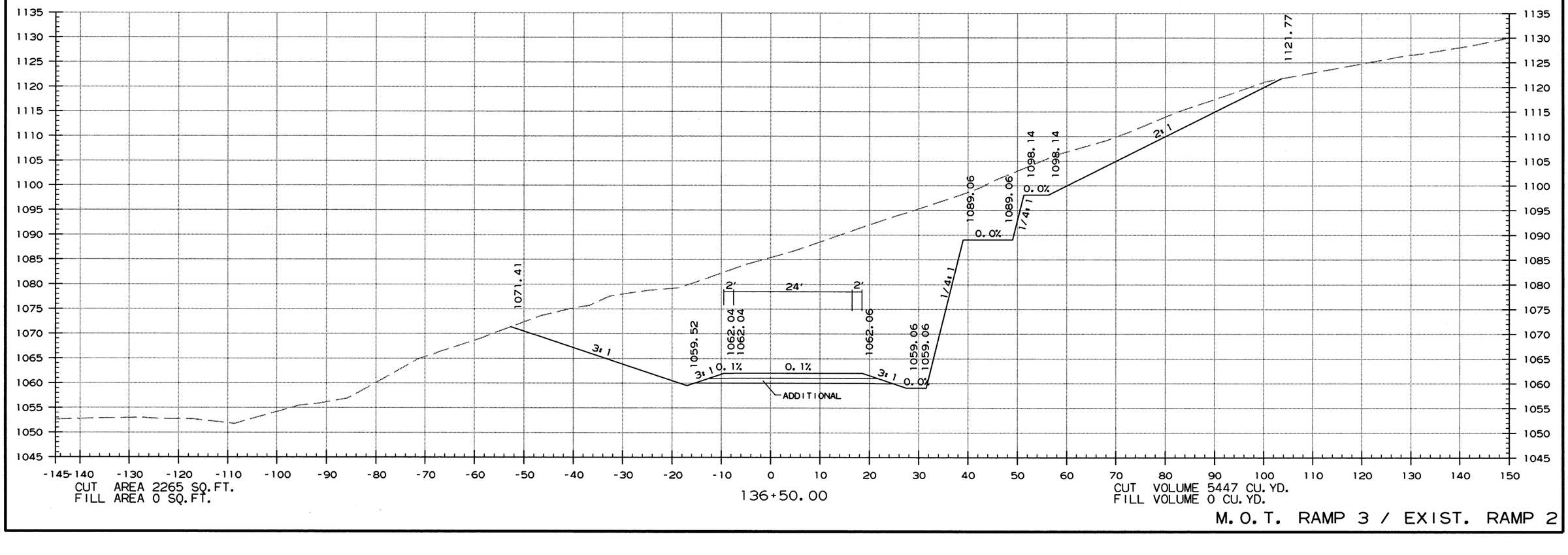


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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				6	ARK.			
				JOB NO.		CA0903	439	452

(2) STAGE IB AND IC X-SECTS

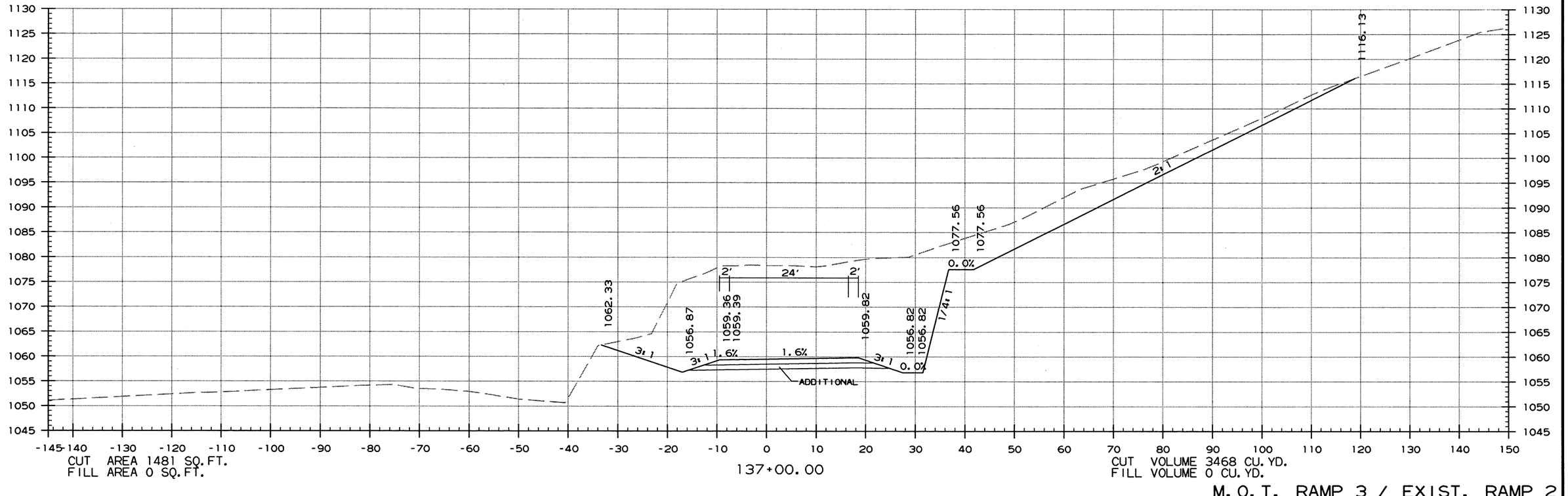


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	440	452

(2) STAGE IB AND IC X-SECTS



CUT AREA 1481 SQ.FT.
FILL AREA 0 SQ.FT.

137+00.00

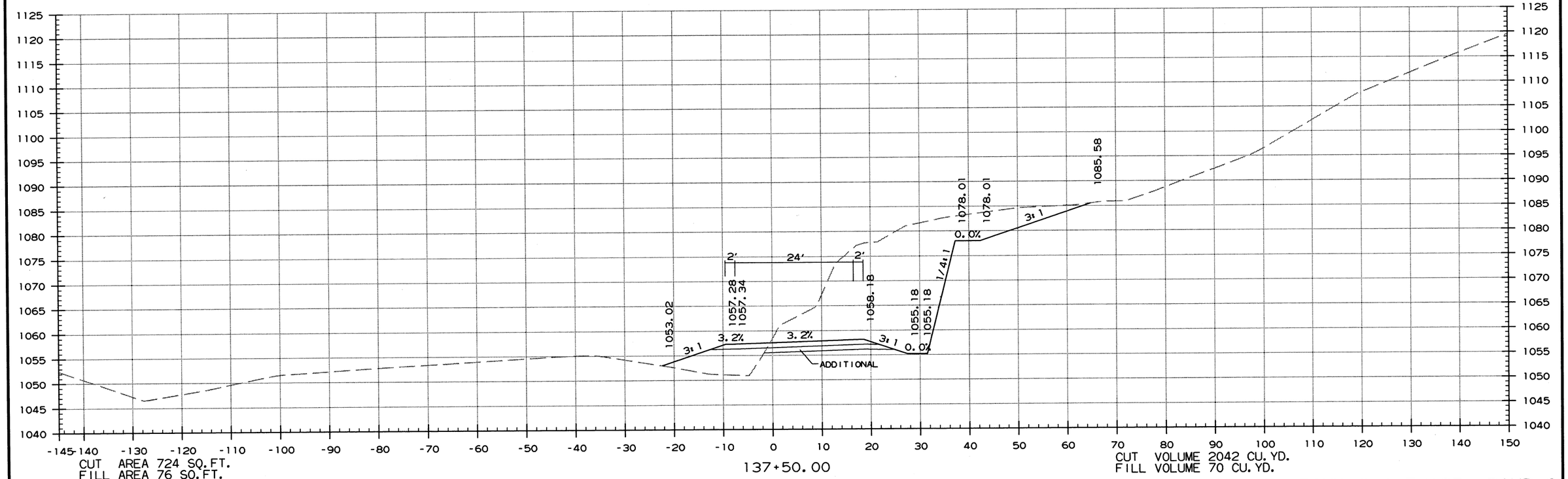
CUT VOLUME 3468 CU.YD.
FILL VOLUME 0 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

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				6	ARK.			
				JOB NO.		CA0903	441	452

(2) STAGE IB AND IC X-SECTS

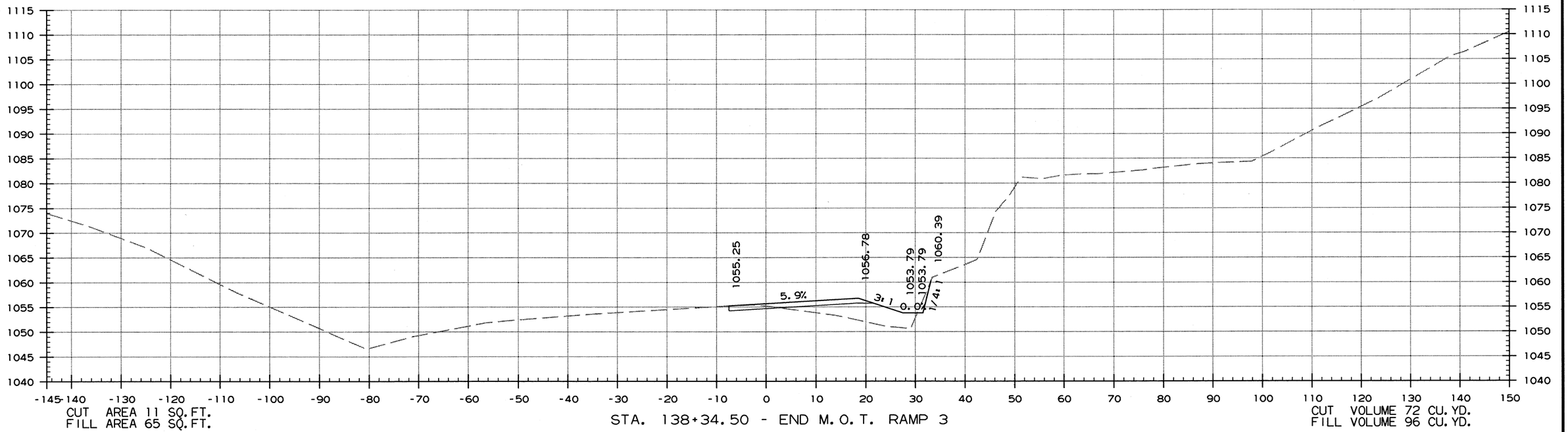


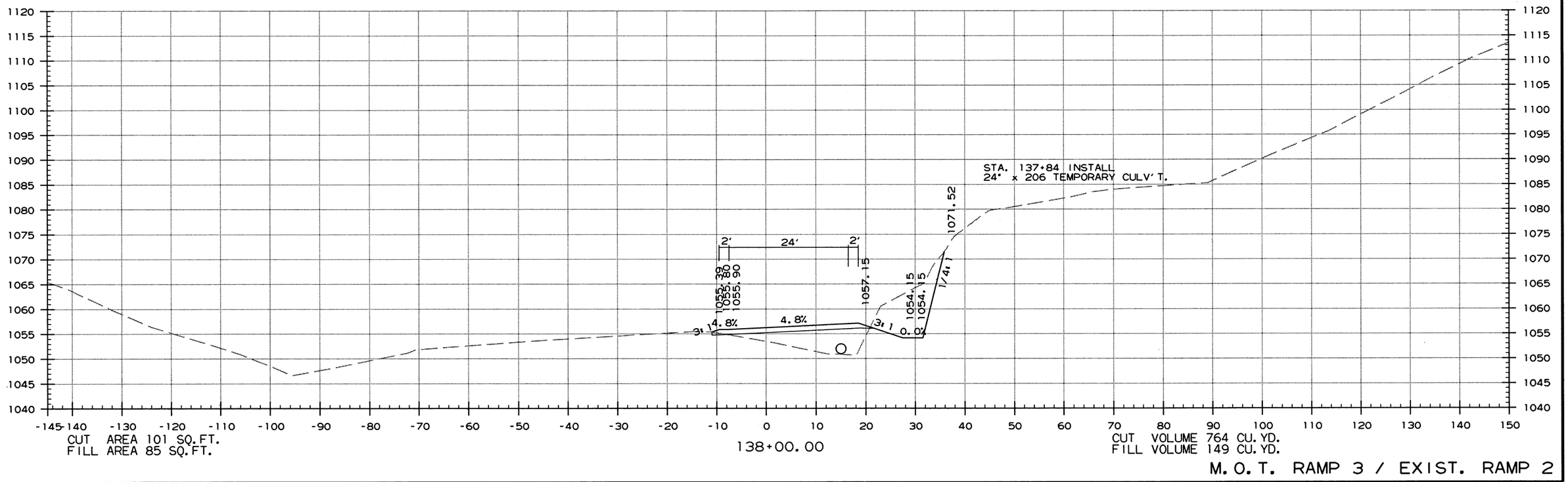
M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	442	452

(2) STAGE IB AND IC X-SECTS



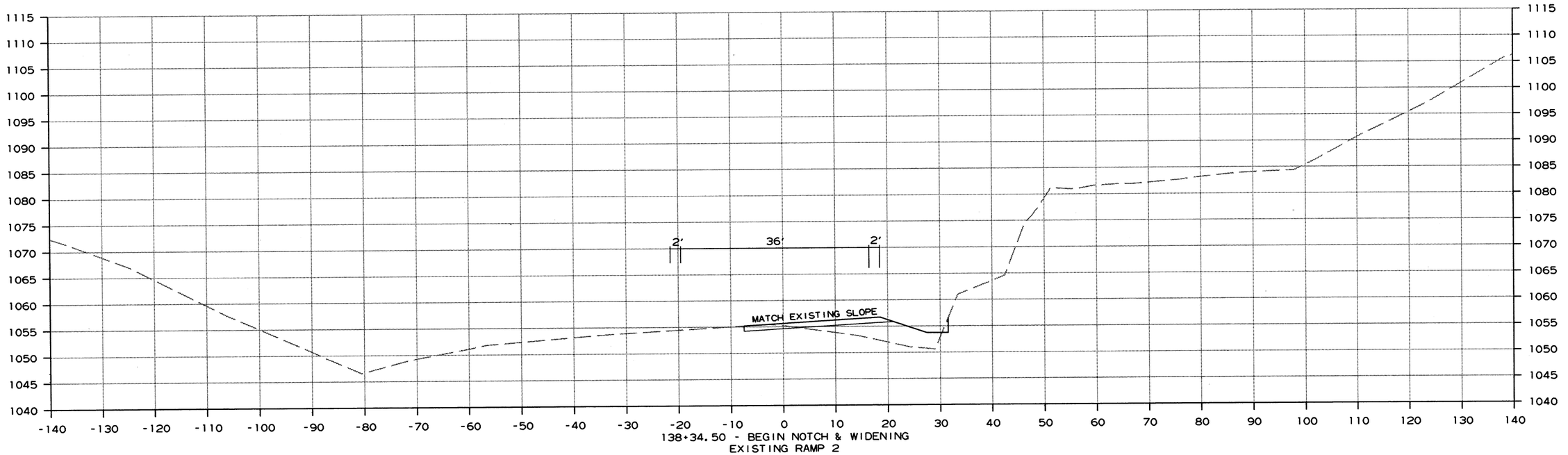


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	443	452

(2) STAGE 1B AND 1C X-SECTS

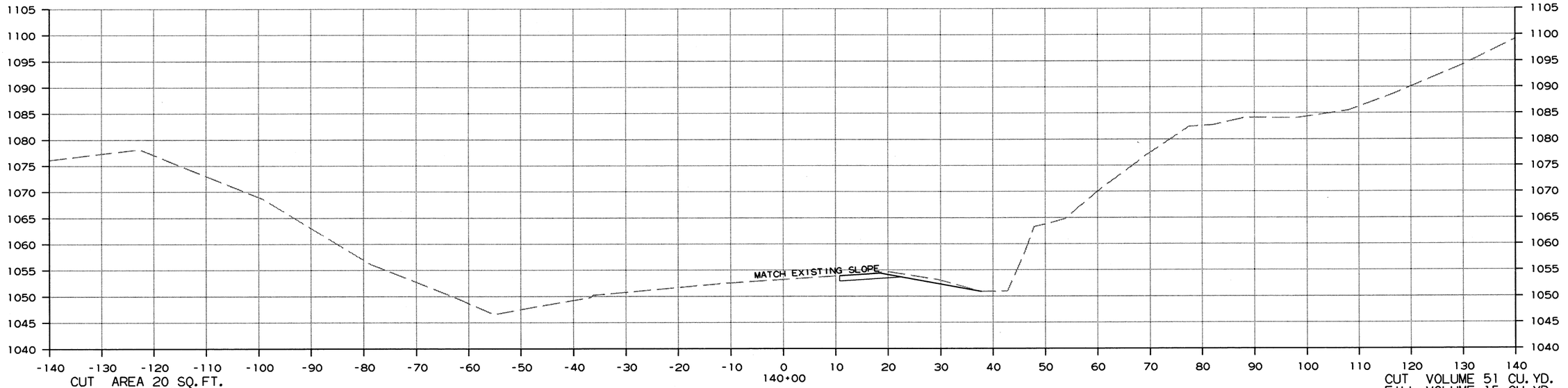


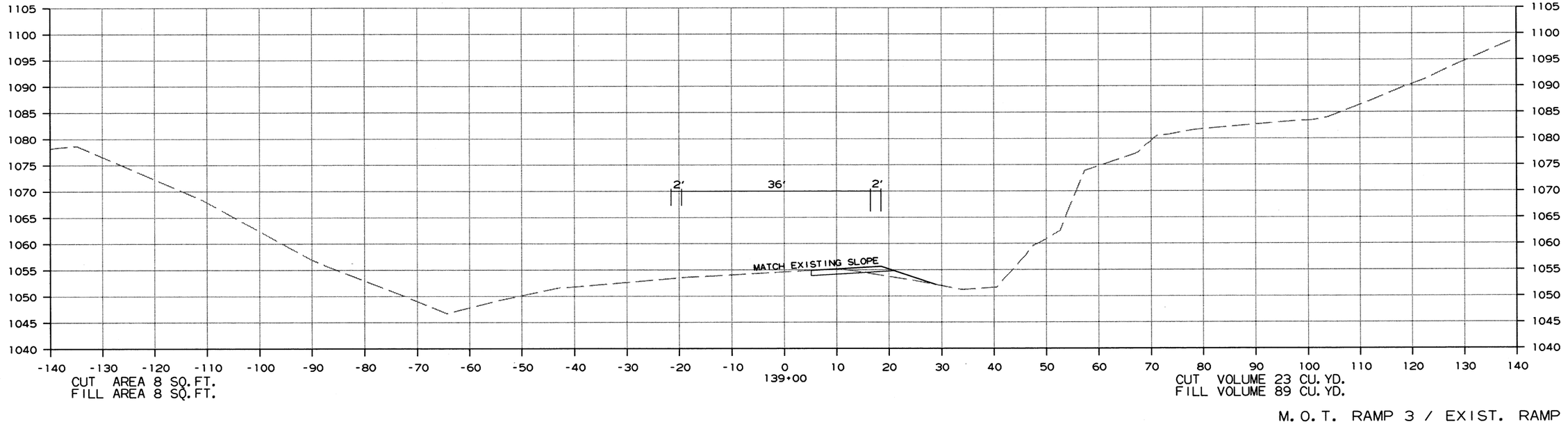
M. O. T. RAMP 3 / EXIST. RAMP 2

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	444	452

(2) STAGE IB AND IC X-SECTS



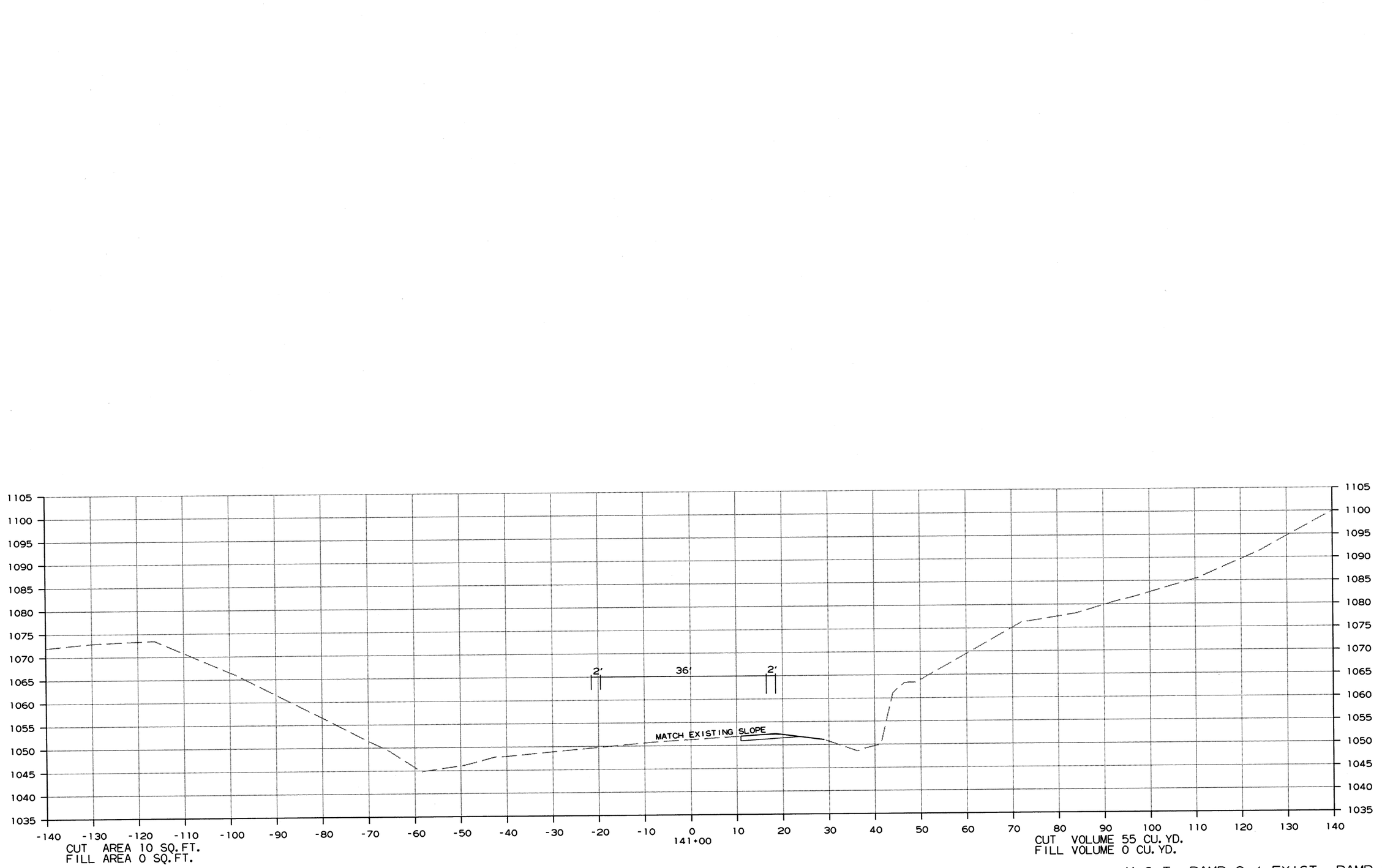


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903.REVISED.DGN 10/19/2016

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.		CA0903	445	452

(2) STAGE 1B AND 1C X-SECTS



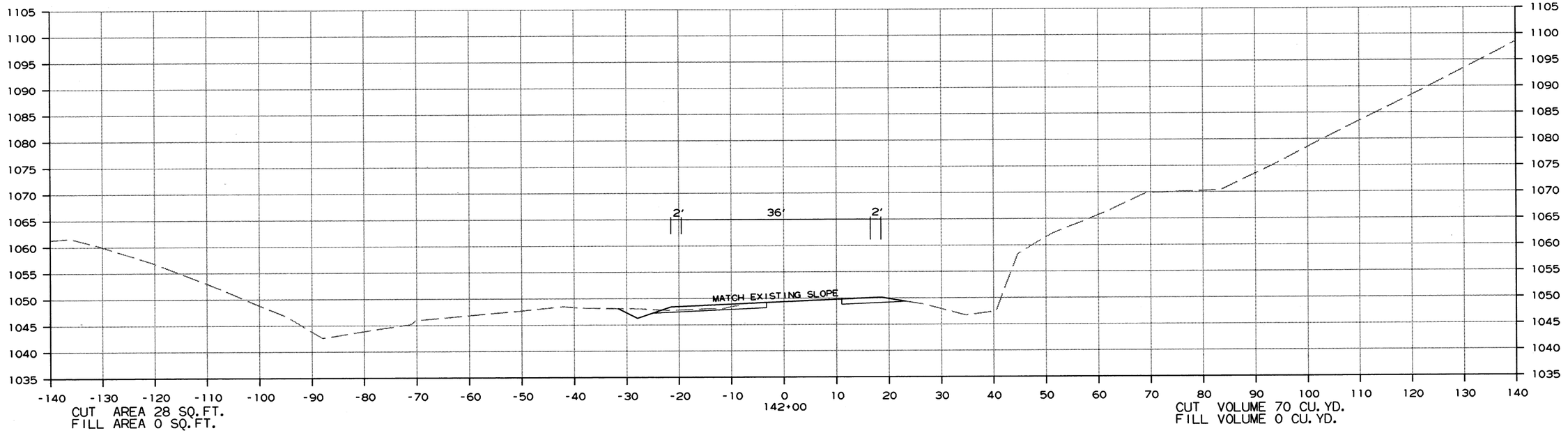
M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

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.		CA0903	446	452

(2) STAGE 1B AND 1C X-SECTS

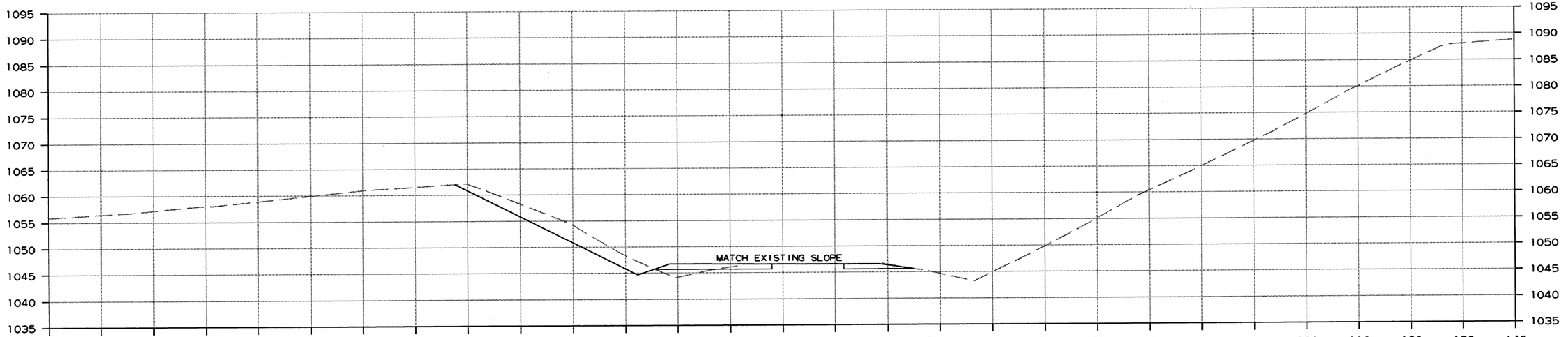


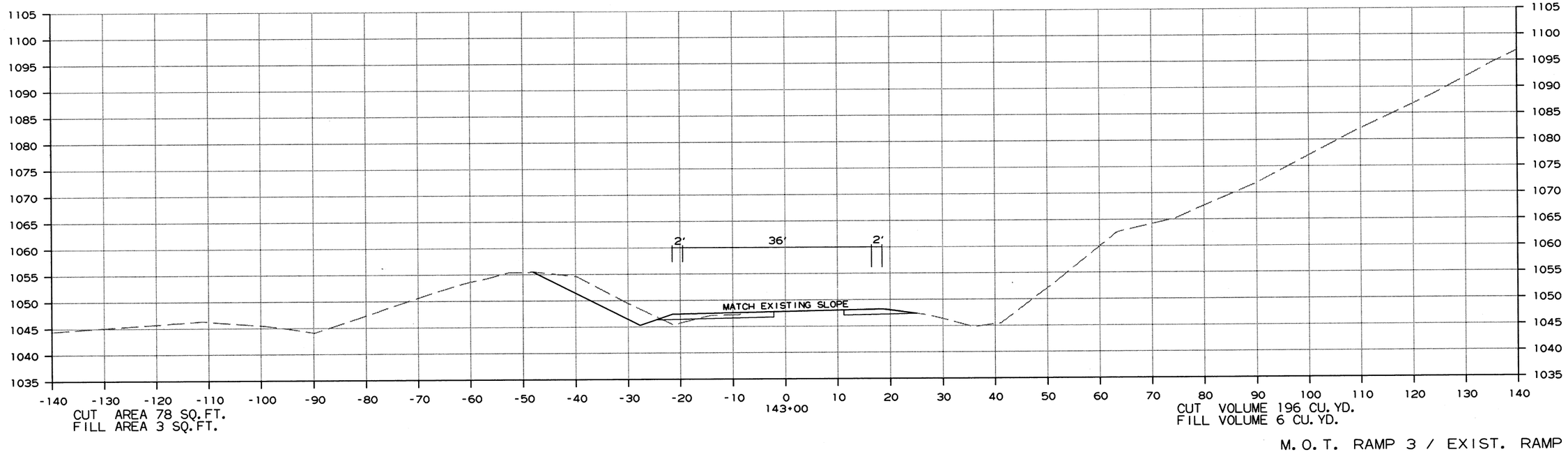
M. O. T. RAMP 3 / EXIST. RAMP 2

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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.		CA0903	447	452

(2) STAGE IB AND IC X-SECTS



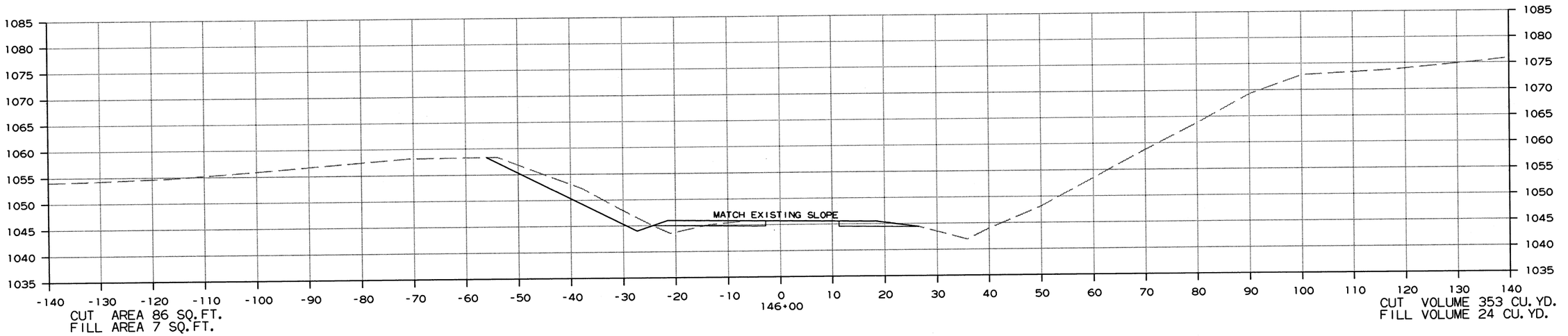


M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

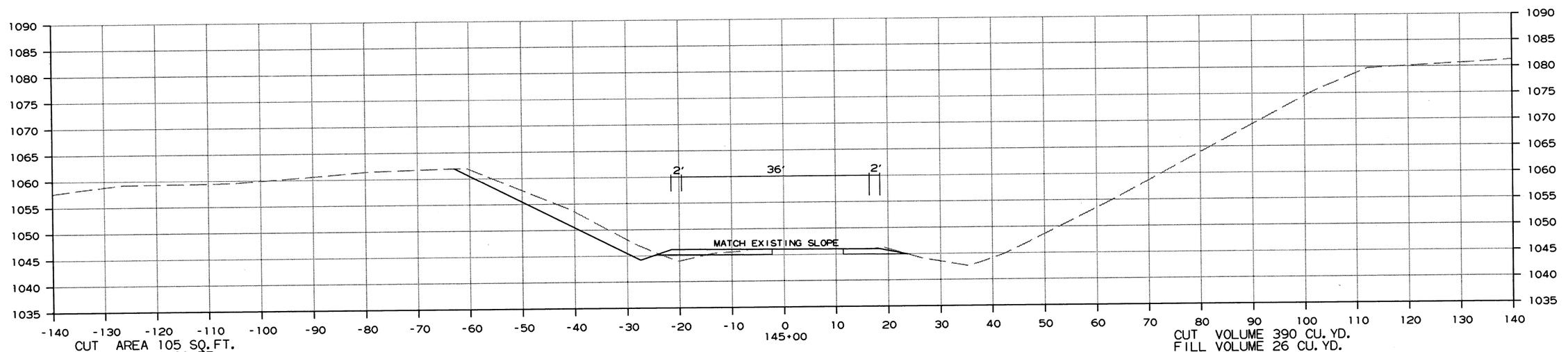
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	448	452

(2) STAGE IB AND IC X-SECTS



CUT AREA 86 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 353 CU.YD.
FILL VOLUME 24 CU.YD.



CUT AREA 105 SQ.FT.
FILL AREA 6 SQ.FT.

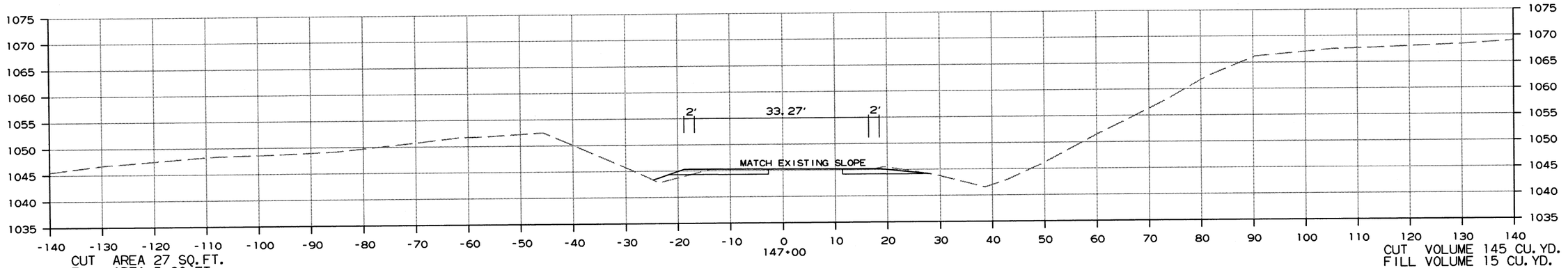
CUT VOLUME 390 CU.YD.
FILL VOLUME 26 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

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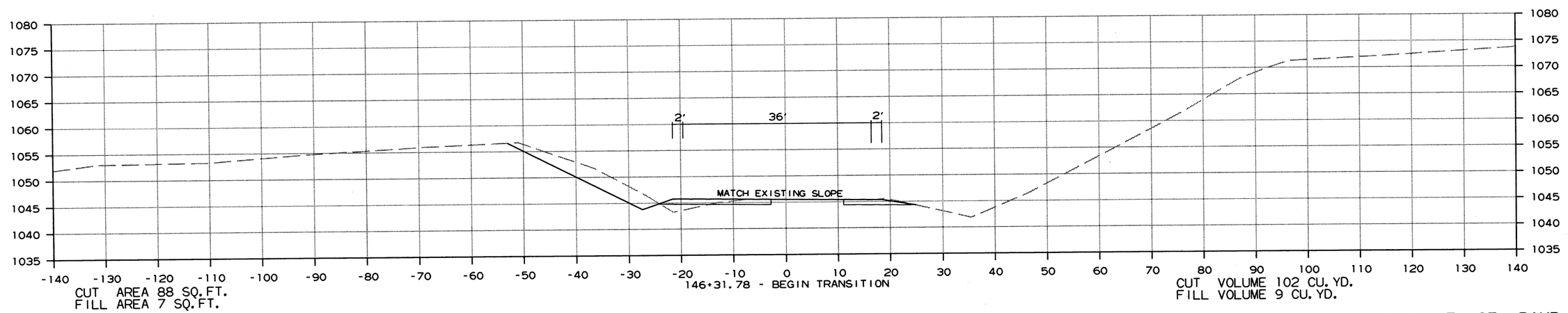
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	449	452

(2) STAGE 1B AND 1C X-SECTS



CUT AREA 27 SQ.FT.
FILL AREA 5 SQ.FT.

CUT VOLUME 145 CU.YD.
FILL VOLUME 15 CU.YD.



CUT AREA 88 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 102 CU.YD.
FILL VOLUME 9 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

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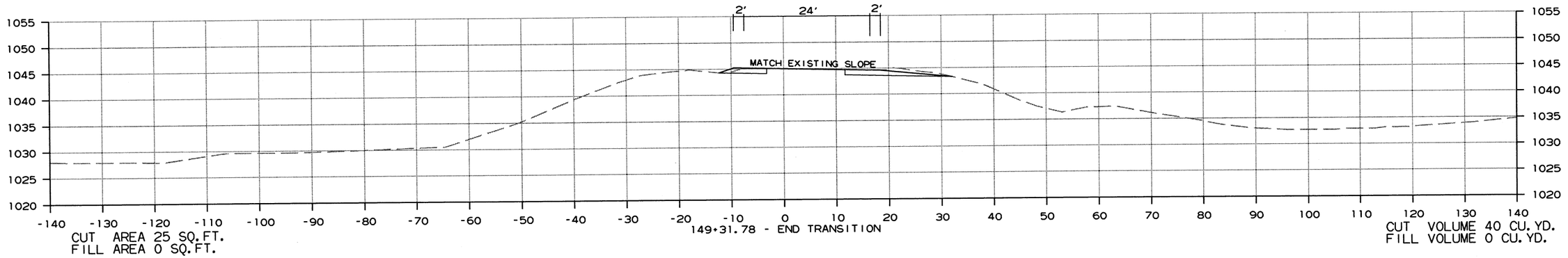
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0903	450	452

(2) STAGE IB AND IC X-SECTS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

149+41 - BRIDGE END

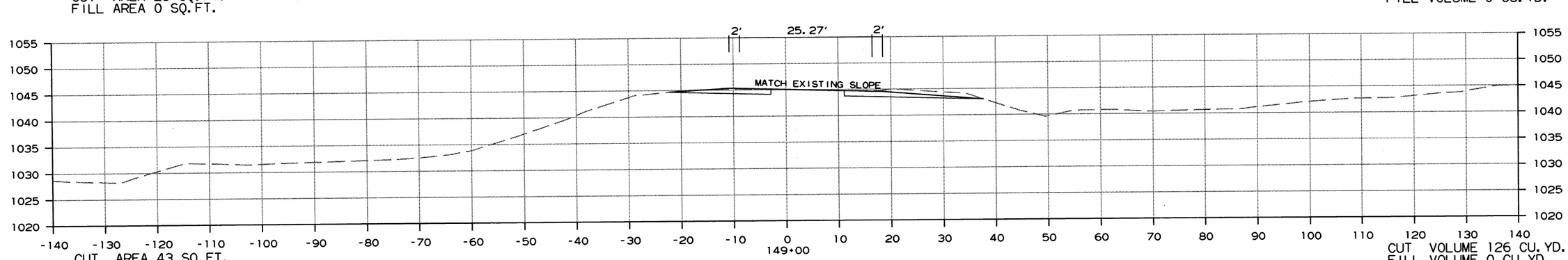
CUT VOLUME 4 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 25 SQ.FT.
FILL AREA 0 SQ.FT.

149+31.78 - END TRANSITION

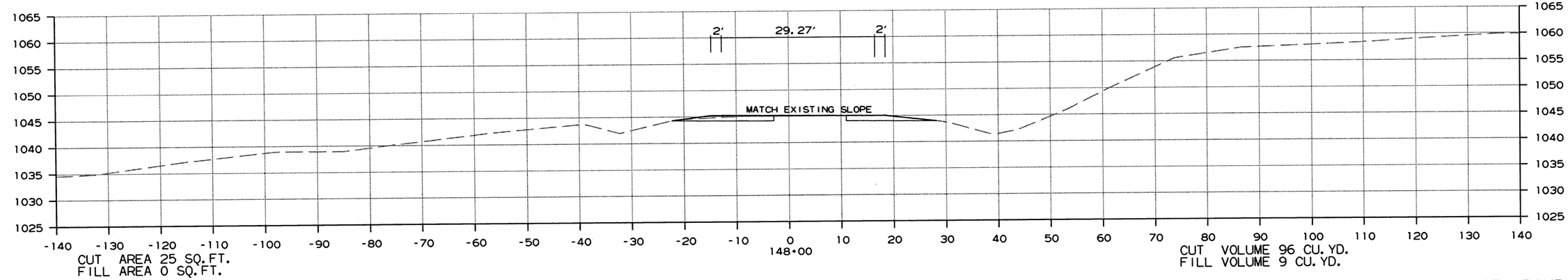
CUT VOLUME 40 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 43 SQ.FT.
FILL AREA 0 SQ.FT.

149+00

CUT VOLUME 126 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 25 SQ.FT.
FILL AREA 0 SQ.FT.

148+00

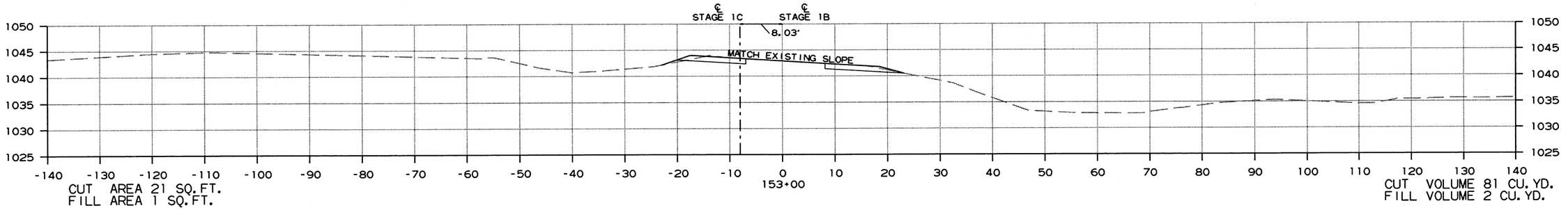
CUT VOLUME 96 CU.YD.
FILL VOLUME 9 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

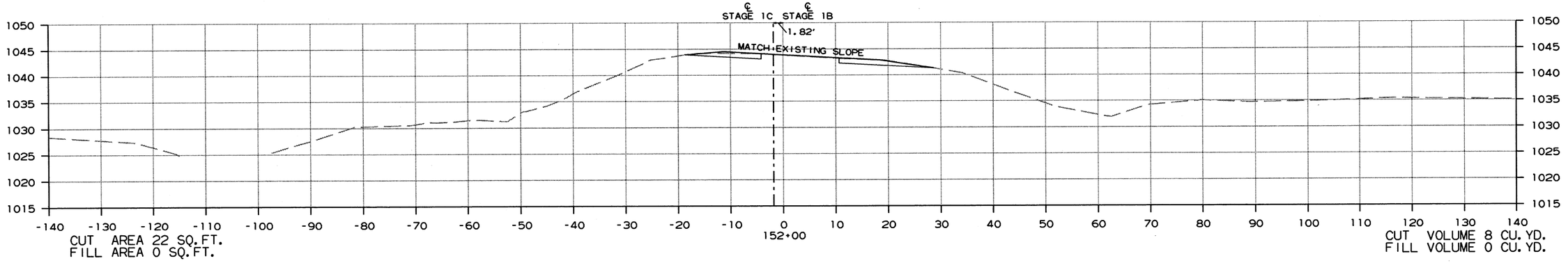
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) STAGE IB AND IC X-SECTS



CUT AREA 21 SQ.FT.
FILL AREA 1 SQ.FT.

CUT VOLUME 81 CU.YD.
FILL VOLUME 2 CU.YD.



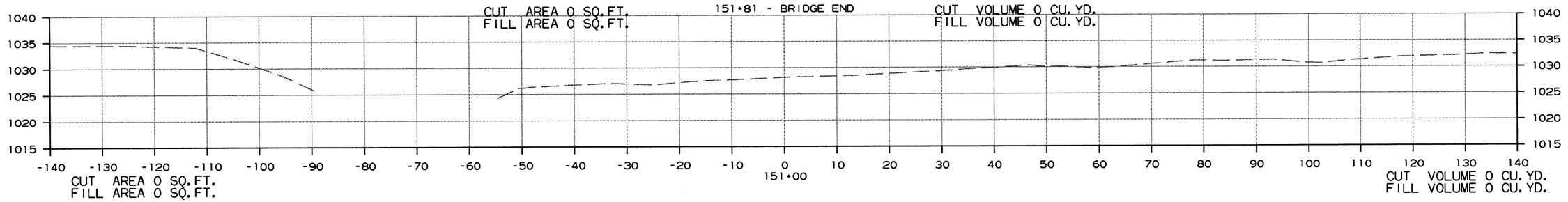
CUT AREA 22 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 8 CU.YD.
FILL VOLUME 0 CU.YD.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

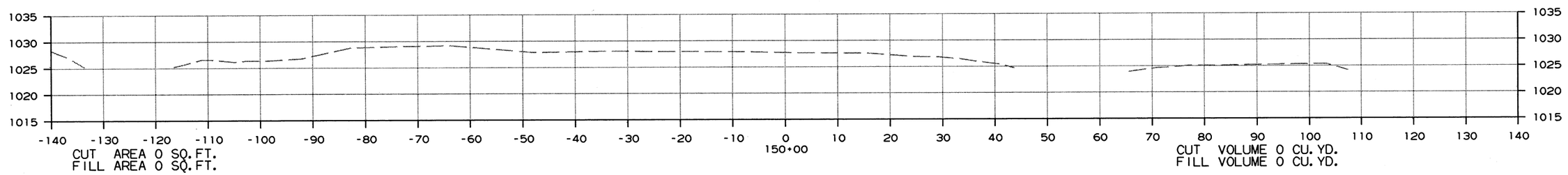
151+81 - BRIDGE END

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

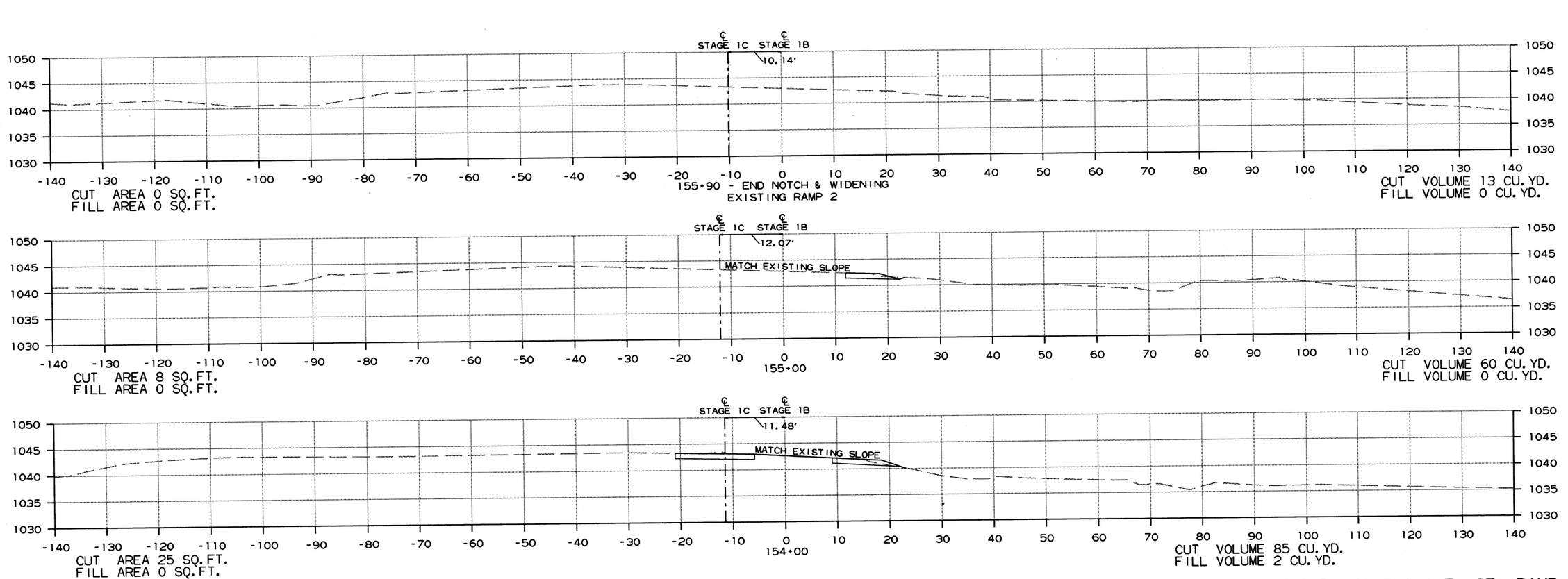
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

M.O.T. RAMP 3 / EXIST. RAMP 2

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				6	ARK.			
				JOB NO.		CA0903	452	452

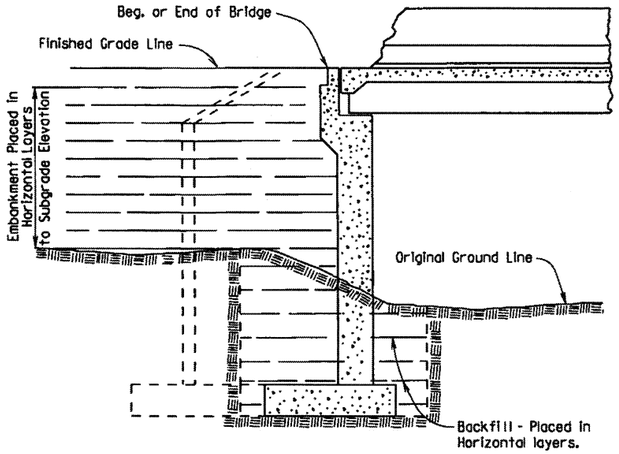
(2) STAGE 1B AND 1C X-SECTS



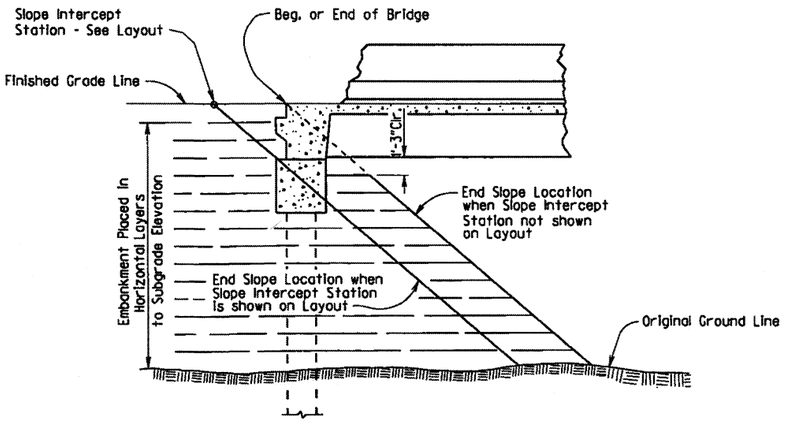
M.O.T. RAMP 3 / EXIST. RAMP 2

RCA0903_REVISED.DGN 10/19/2016

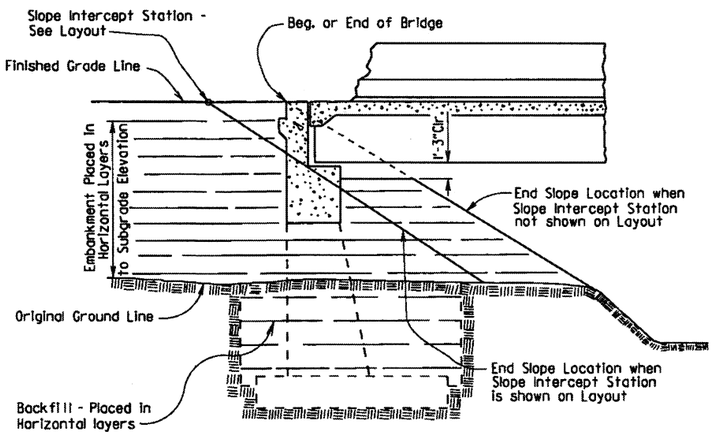
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	EMBANKMENT & BACKFILL		55000	



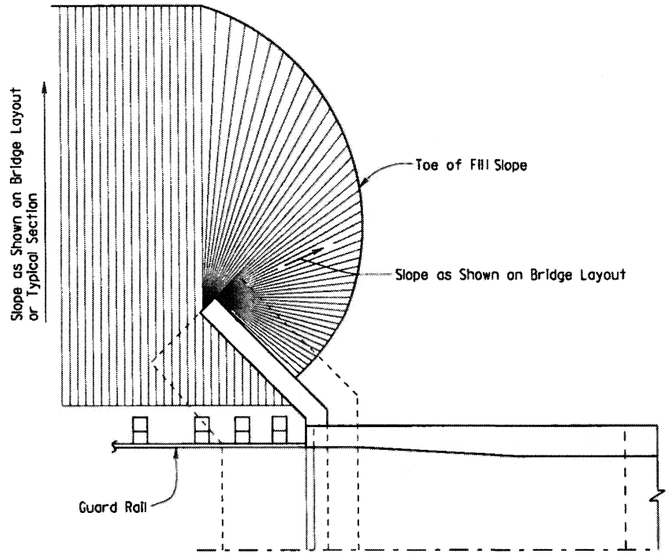
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



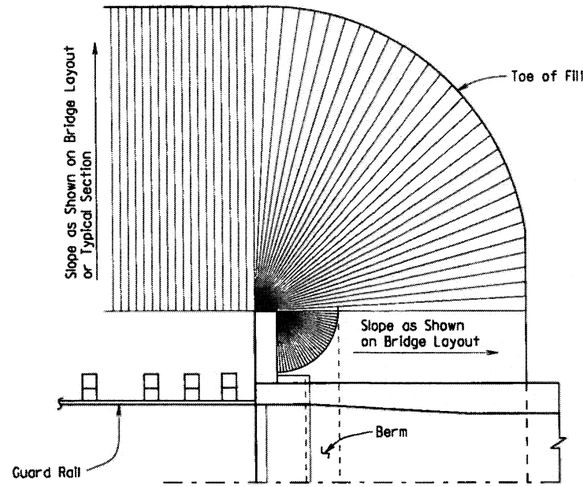
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



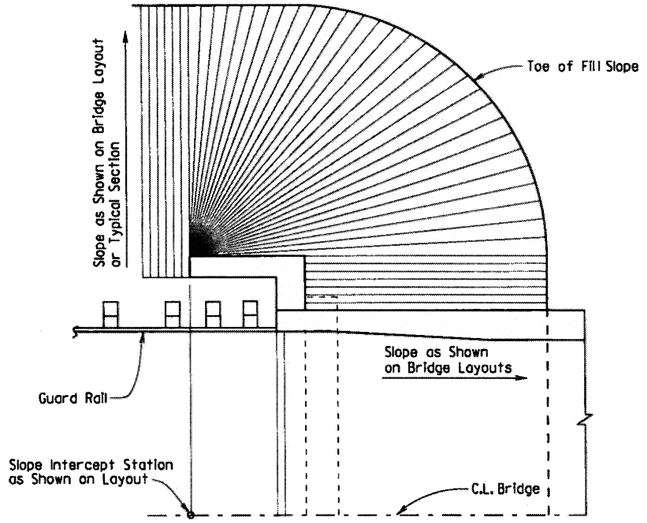
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



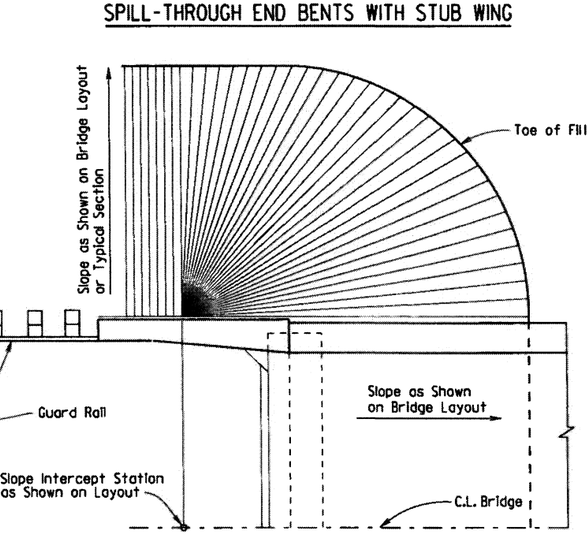
VERTICAL WALL ABUTMENTS



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

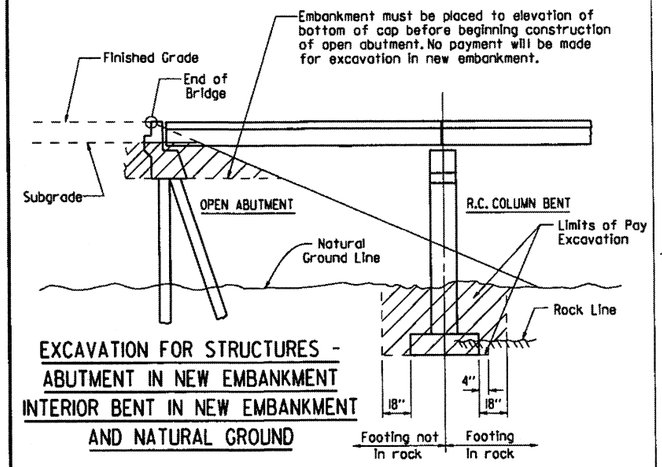
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

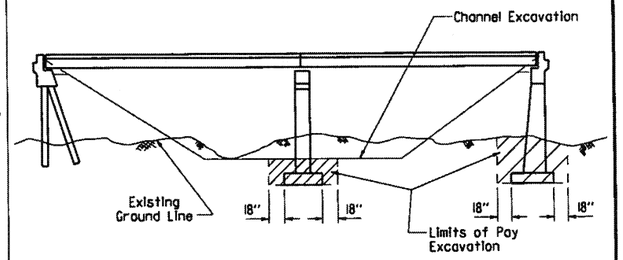
DRAWING NO. 55000

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

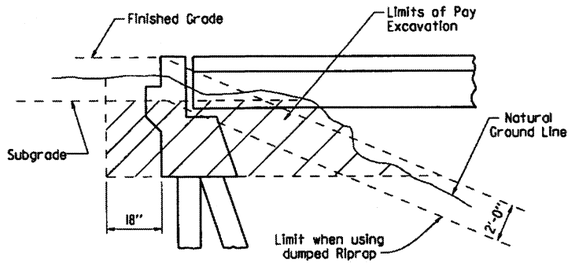
① RIPRAP & EXCAV. 55001



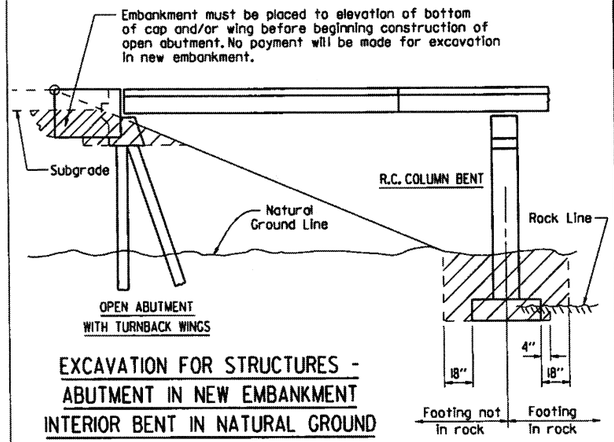
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



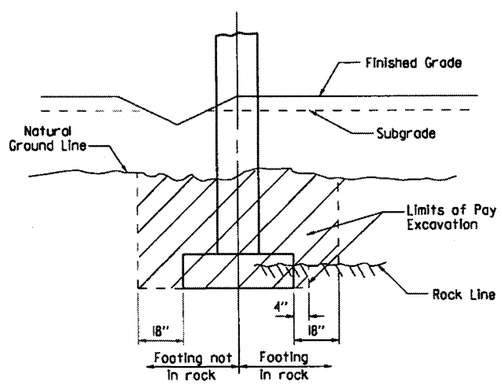
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



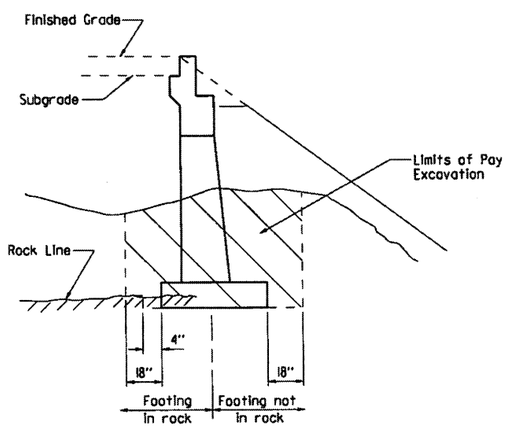
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



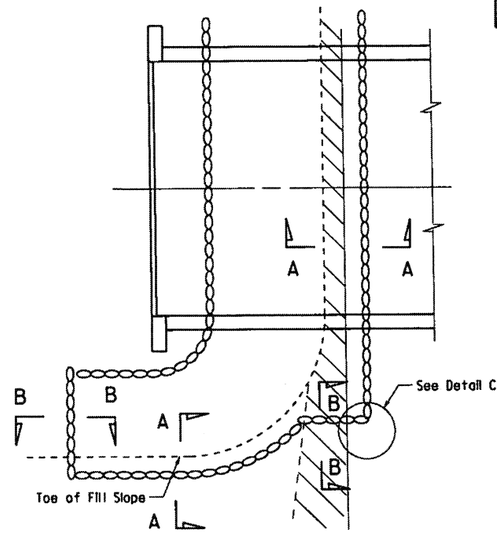
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



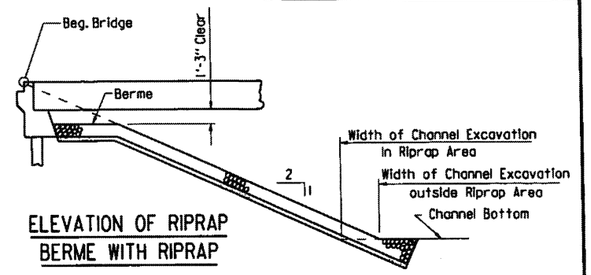
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



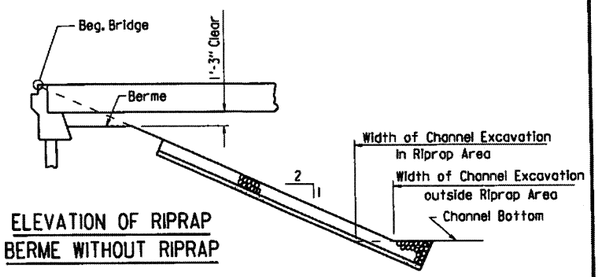
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



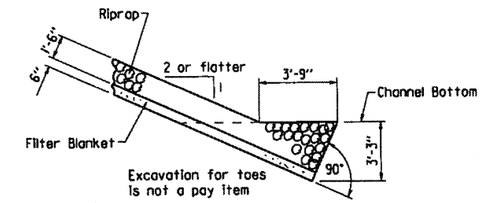
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP

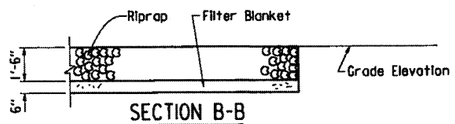


ELEVATION OF RIPRAP BERME WITHOUT RIPRAP

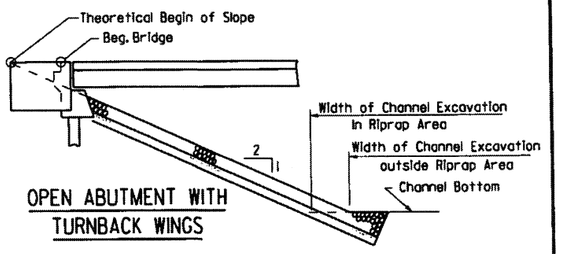


SECTION A-A

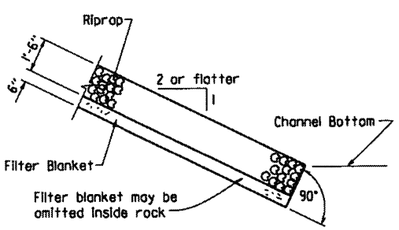
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



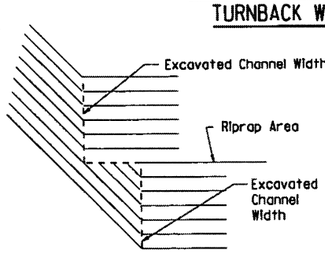
SECTION A-A

(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.



DETAIL C

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: b5500l.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

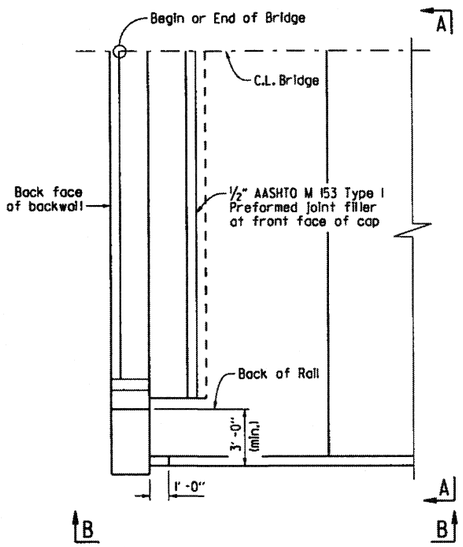
DESIGNED BY: STD. DATE:

DRAWING NO. 55001

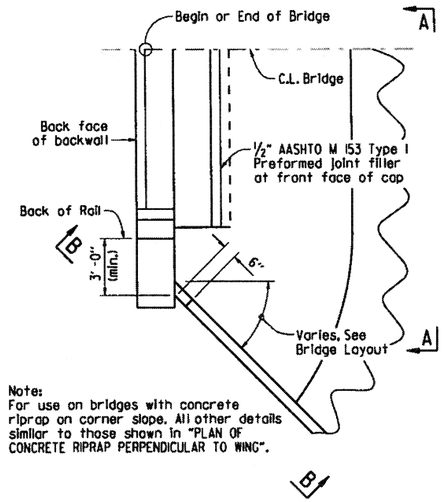
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

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.



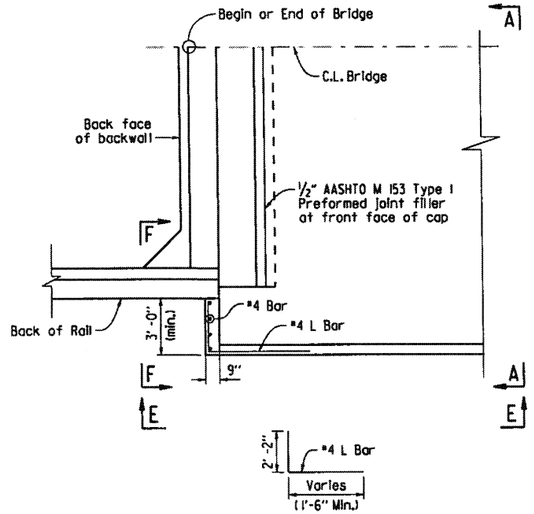
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO WING
¼" = 1'-0"



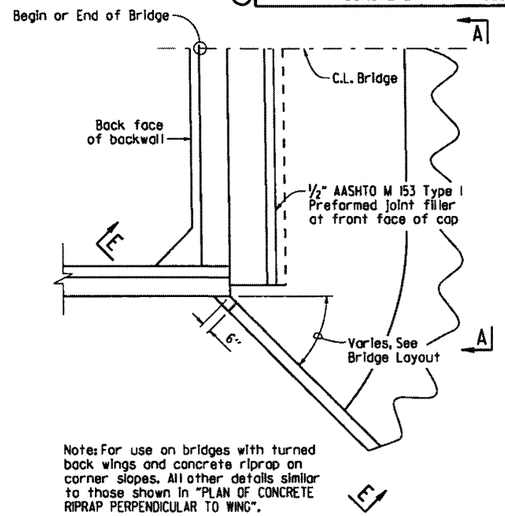
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE TO WING
¼" = 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".



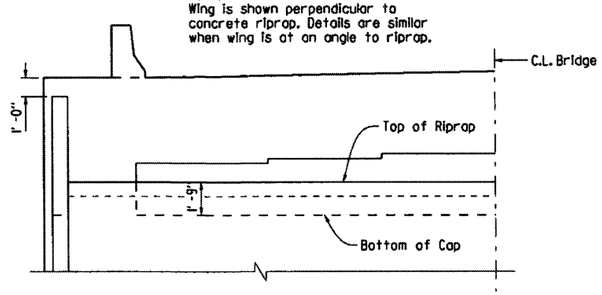
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO TURNED BACK WING
¼" = 1'-0"



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".

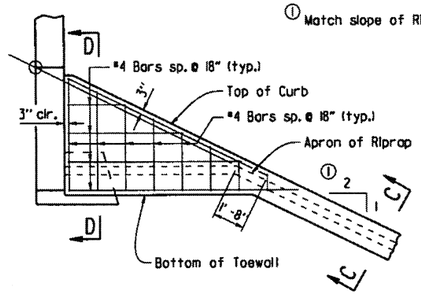
PLAN OF CONCRETE RIPRAP
AT ANGLE FROM TURNED BACK WING
¼" = 1'-0"

Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.

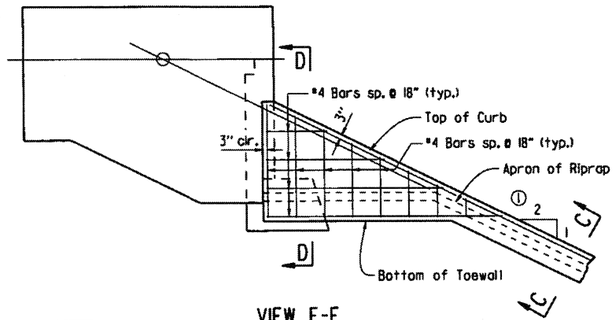


VIEW A-A
¼" = 1'-0"

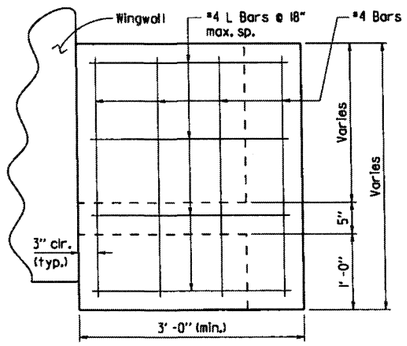
① Match slope of Riprap Apron.



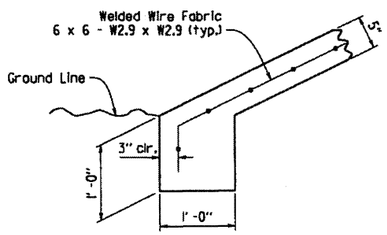
VIEW B-B
¼" = 1'-0"



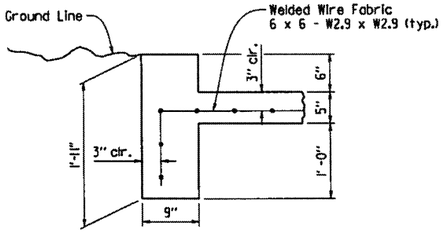
VIEW E-E
¼" = 1'-0"



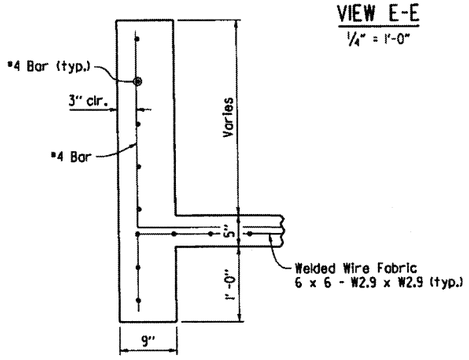
VIEW F-F
1" = 1'-0"



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 = 2,000 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

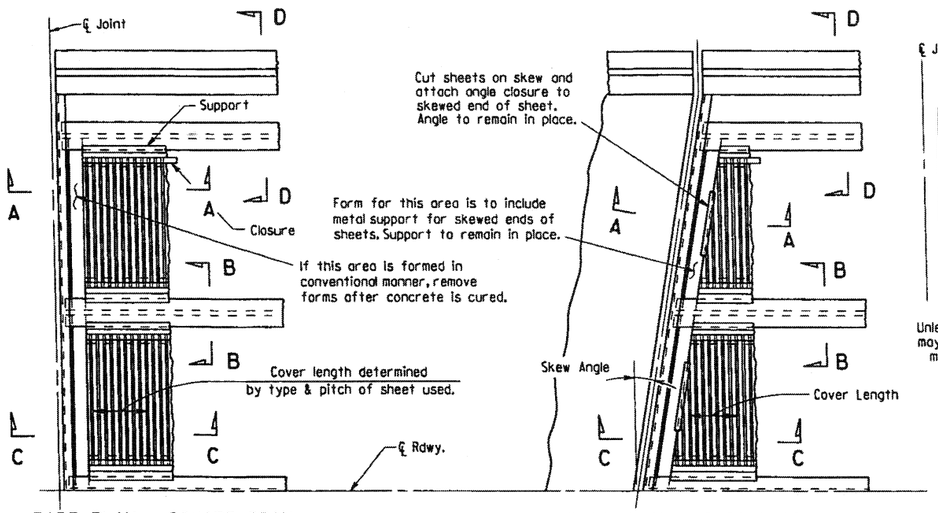
ARKANSAS STATE HIGHWAY COMMISSION

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
3/24/16				6	ARK.			
				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

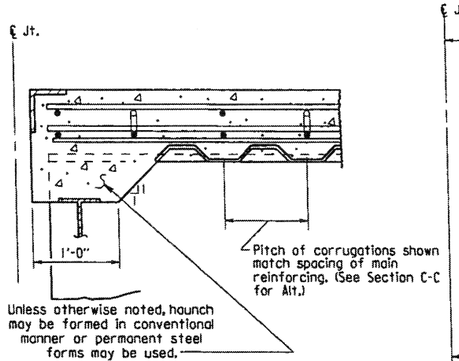


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

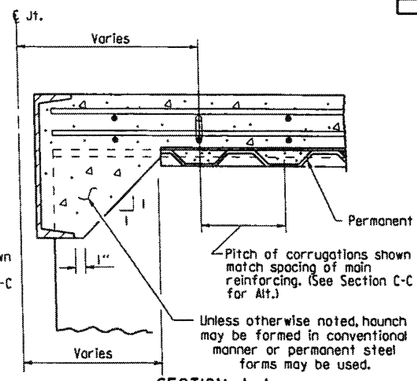
3/8" = 1'-0"



SECTION A-A

N.T.S.

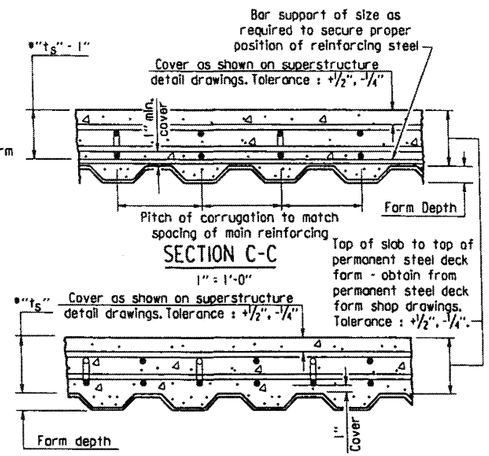
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



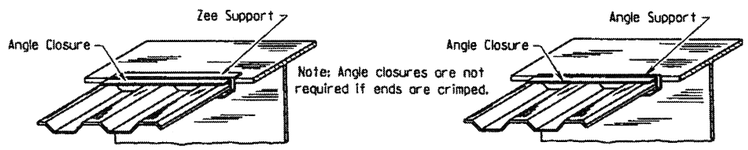
SECTION C-C

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.

$^{8}t_{s}$ = 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.

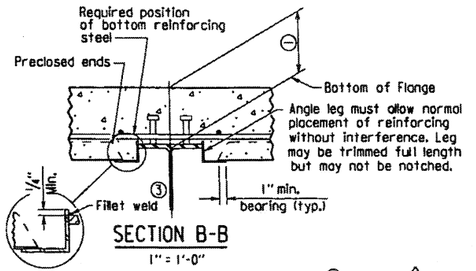
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

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.

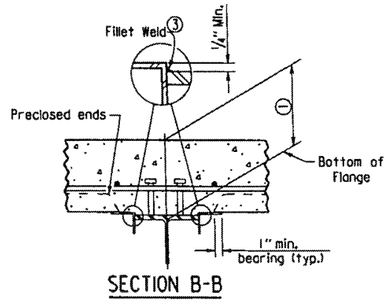


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

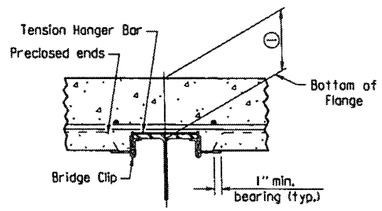
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

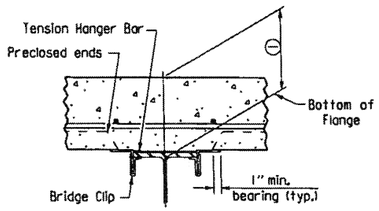
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

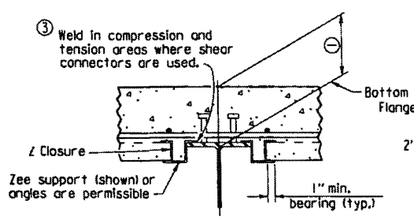
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

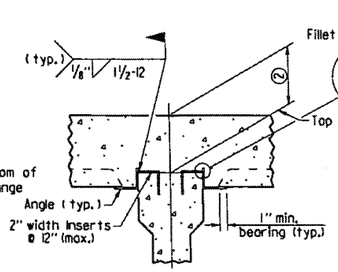
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

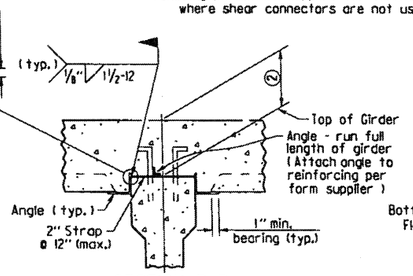


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

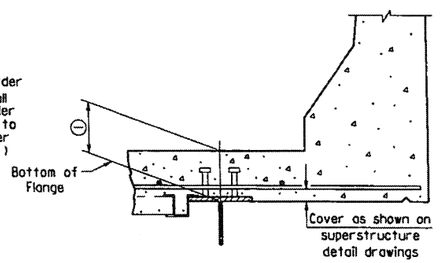


SECTION B-B

(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.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

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:	—		

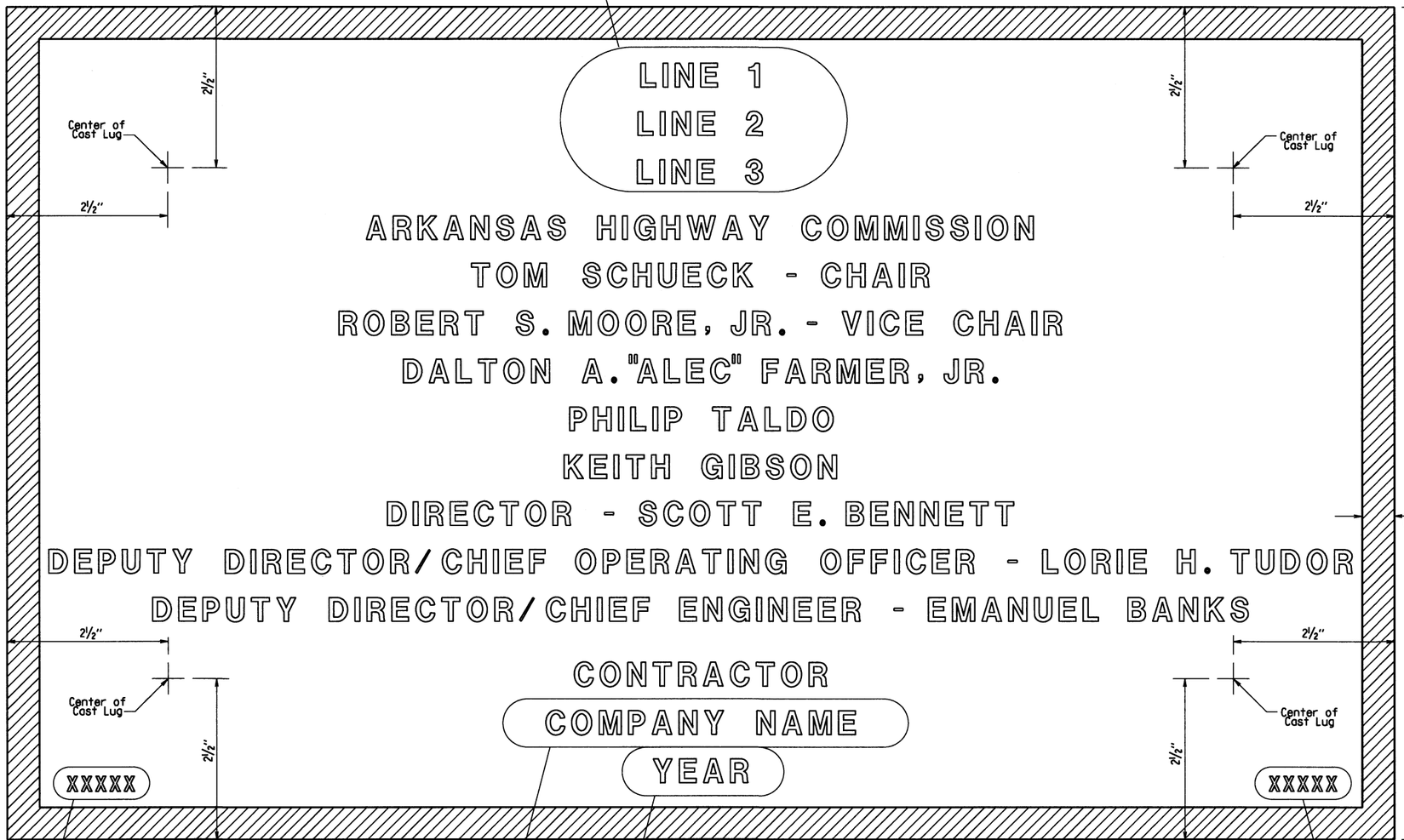
DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14		1-15-19		6	ARK.			
1-14-15				JOB NO.				
1-17-17								

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	



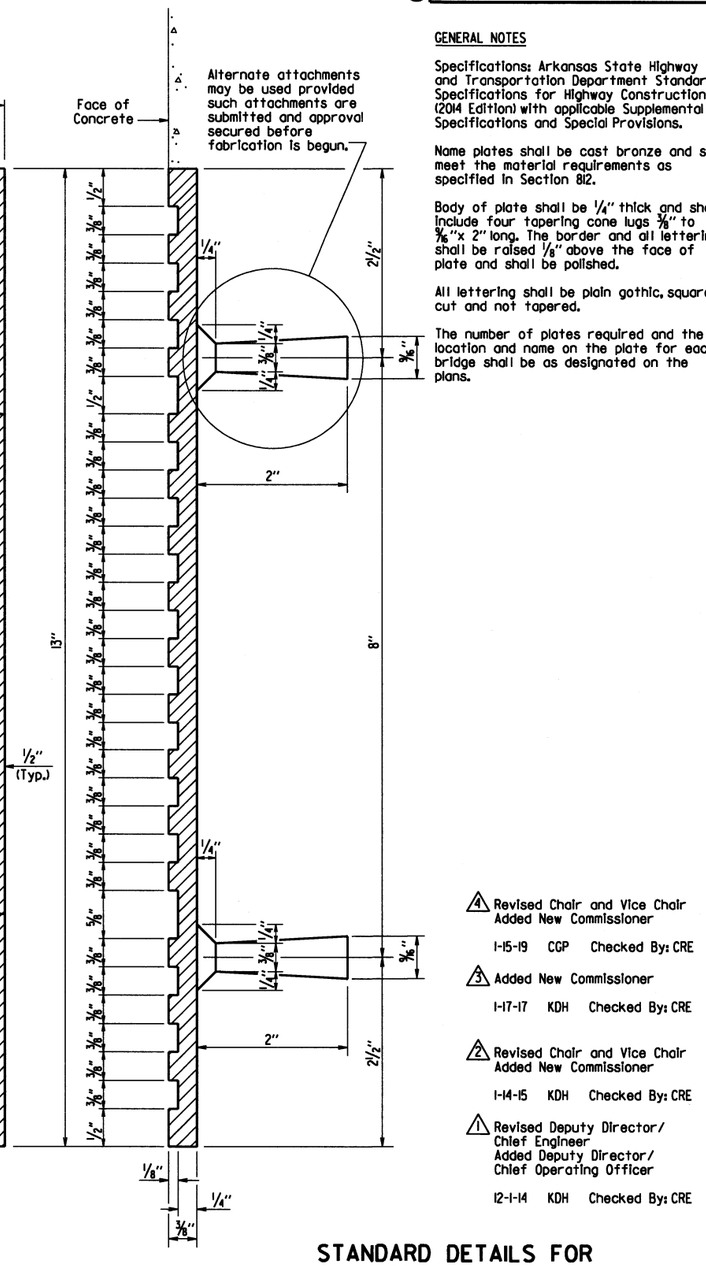
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

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 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 3/16" 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.

④ Revised Chair and Vice Chair Added New Commissioner
1-15-19 CGP Checked By: CRE

③ Added New Commissioner
1-17-17 KDH Checked By: CRE

② Revised Chair and Vice Chair Added New Commissioner
1-14-15 KDH Checked By: CRE

① Revised Deputy Director/ Chief Engineer Added Deputy Director/ Chief Operating Officer
12-1-14 KDH Checked By: CRE

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
3/24/16				6	ARK.			
				JOB NO.				
				①	STEEL H-PILES			55020

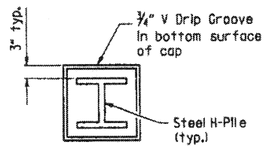
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

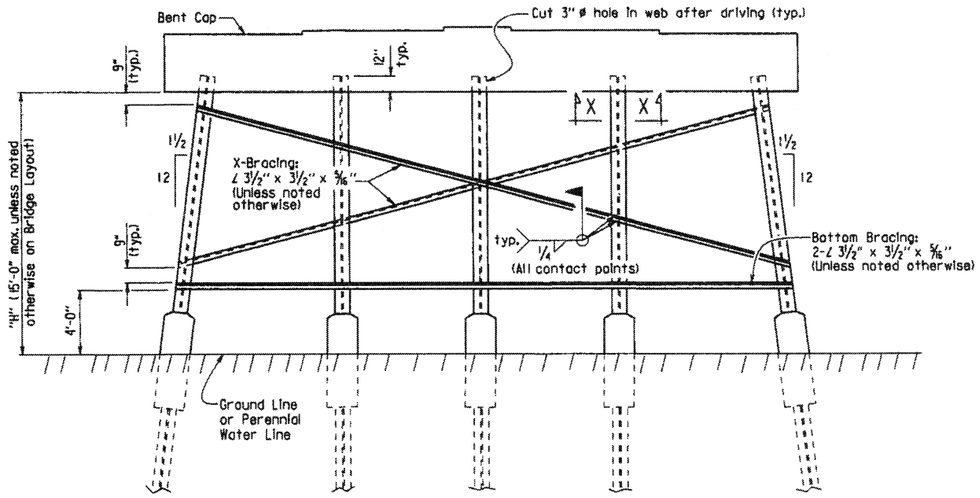
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

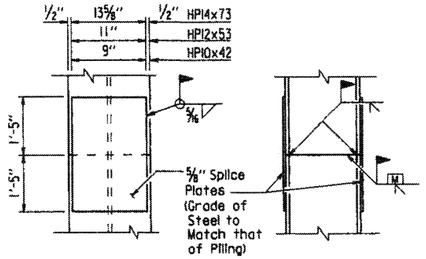
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



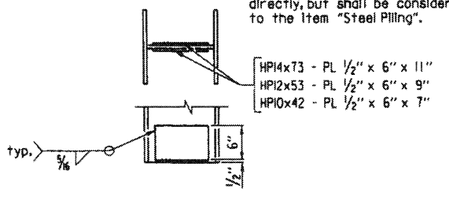
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

⚠ H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a 5/16" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifcations for Highway Construction (2014 Edition).

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

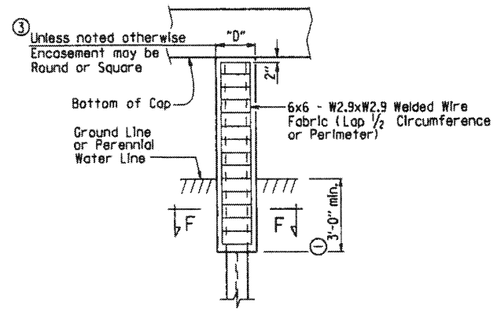
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

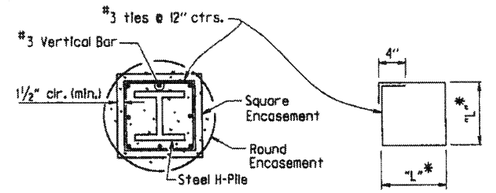
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

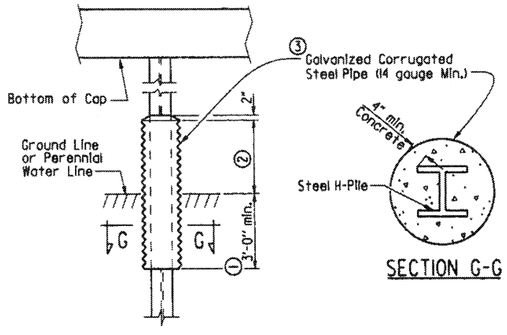


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HP10x42	1'-7"	2'-0"	1'-4"
HP12x53	1'-8"	2'-2"	1'-5"
HP14x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

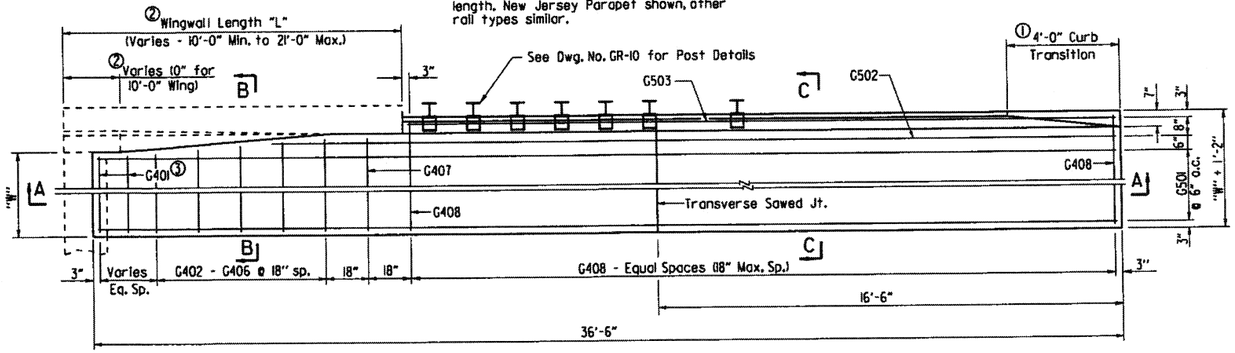
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CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

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				6	ARK.			
				JOB NO.				

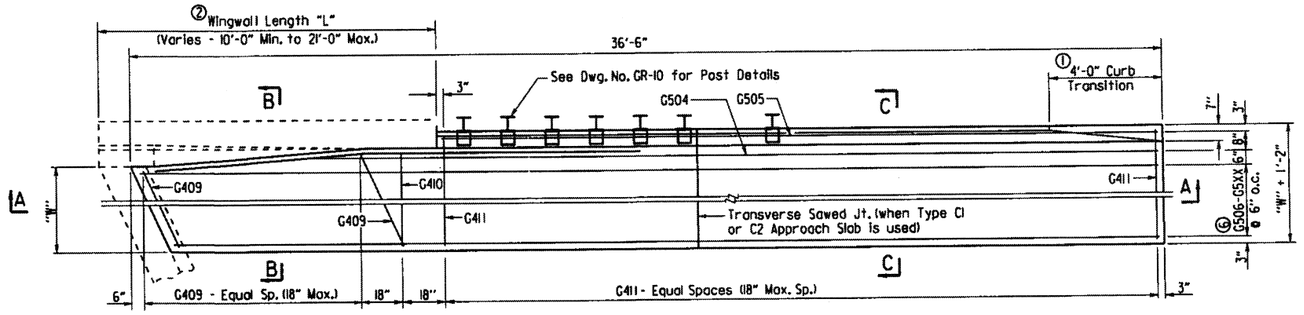
① TYPE C GUTTERS 55030C

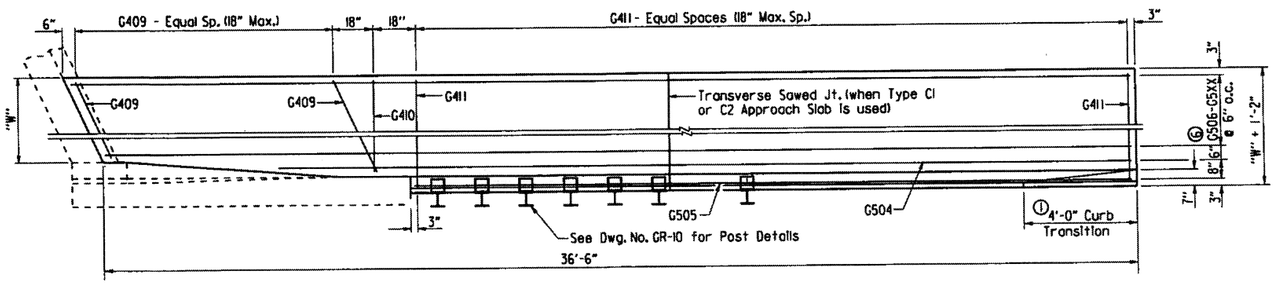
② See End Bent Details for actual wingwall length. New Jersey Parapet shown, other rail types similar.



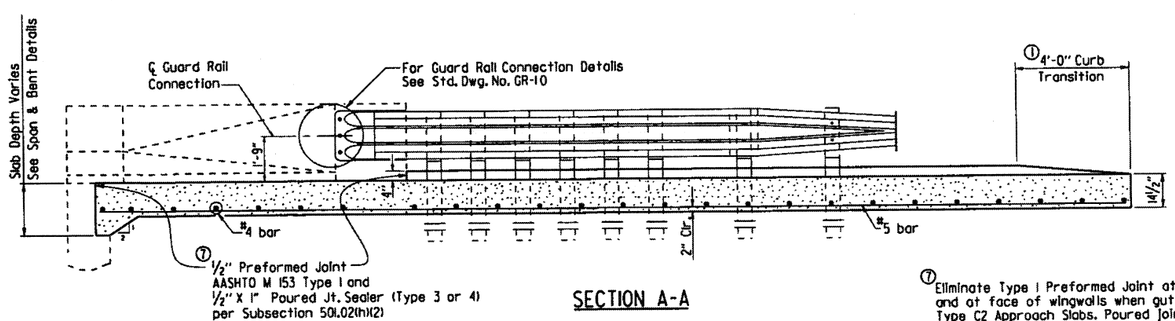
HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

③ Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.





PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

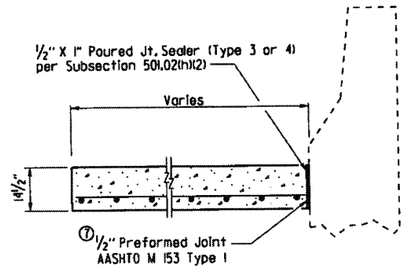


SECTION A-A

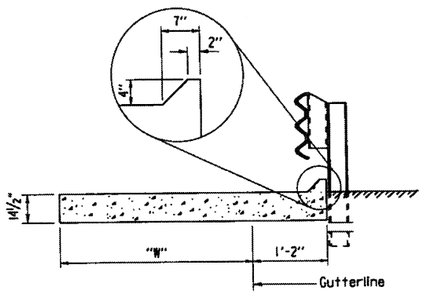
⑦ Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

BAR LIST FOR ONE TYPE C GUTTER

	Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'-0"	Length
Square Bridge	G401	④	④	④	④	"W"- 4"
	G402-G406	1 each	1 each	1 each	1 each	"W"-3" to "W"+2"
	G407	1	1	1	1	"W"+3"
	G408	④	④	④	④	"W"+ 10"
	G501	8	12	16	20	36'-2"
	G502	1	1	1	1	(41'-1") - "L"
	G503	1	1	1	1	(37'-2") - "L"
Skewed Bridge	G409	④	④	④	④	⑤
	G410	1	1	1	1	"W"+3"
	G411	④	④	④	④	"W"+ 10"
	G504	1	1	1	1	⑤
	G505	1	1	1	1	⑤
	G506 - G5XX ⑥	1 each	1 each	1 each	1 each	⑤

④ No. Req'd. varies with Skew and Wingwall Length.

⑤ Bar Lengths vary with Skew and Wingwall Length.

⑥ G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	445	8.30
6	630	11.55
8	810	14.80
10	995	18.10

Quantities are based on "L" = 10'-0".

Note:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: ⅜" = 1'-0" or As Shown
DESIGNED BY: STD. DATE:

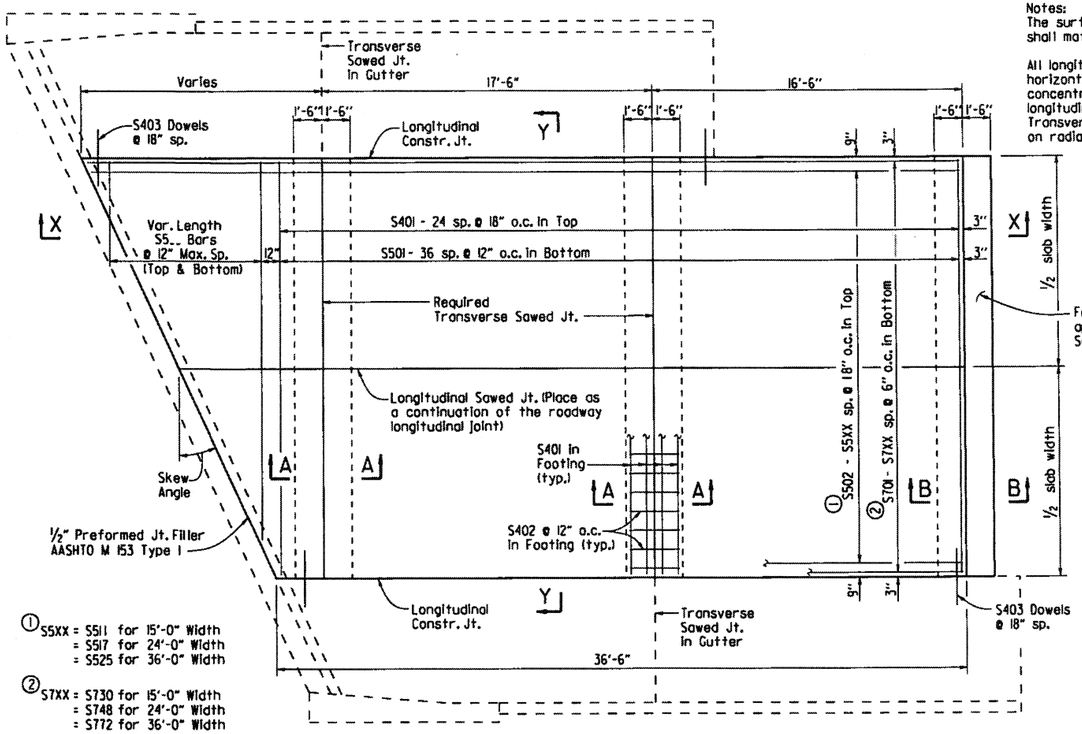
DRAWING NO. 55030C

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				6	ARK.			
				JOB NO.				

TYPE CI APPROACH SLAB 55040CI

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

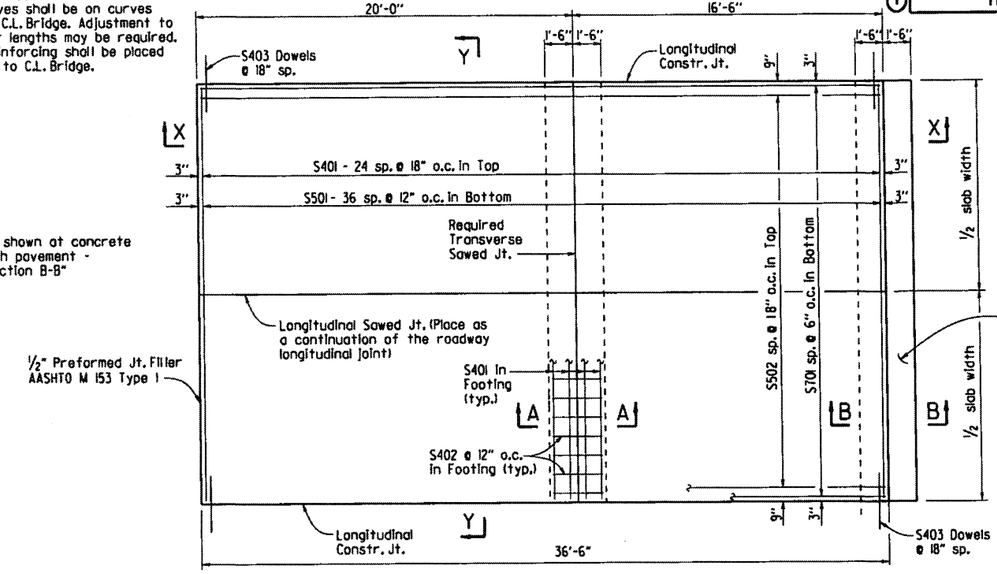


①S5XX = S511 for 15'-0" Width
= S517 for 24'-0" Width
= S525 for 36'-0" Width

②S7XX = S730 for 15'-0" Width
= S748 for 24'-0" Width
= S772 for 36'-0" Width

PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

1/4" = 1'-0"



PLAN - SQUARE APPROACH SLAB

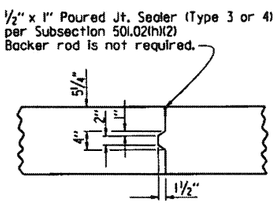
1/4" = 1'-0"

BAR LIST

(Square & Skewed Approach Slabs)

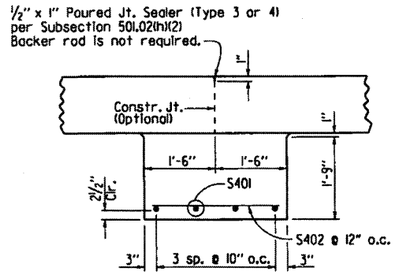
	Mark	Square No. Req'd.	Square Length	Skewed No. Req'd.	Skewed Length
15'-0" Slab Width	S401	33	14'-8"	37	14'-8"
	S402	30	2'-8"	45	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	14'-8"	37	14'-8"
	S502	10	36'-2"	—	—
	S502 - S511	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle)
	S5..	—	—	2 Ea.	14.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	30	36'-2"	—	—
	S701 - S730	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle)
24'-0" Slab Width	S401	33	23'-8"	37	23'-8"
	S402	48	2'-8"	72	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	23'-8"	37	23'-8"
	S502	16	36'-2"	—	—
	S502 - S517	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle)
	S5..	—	—	2 Ea.	23.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	48	36'-2"	—	—
	S701 - S748	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle)
36'-0" Slab Width	S401	33	35'-8"	37	35'-8"
	S402	72	2'-8"	108	2'-8"
	S403	50	3'-0"	*	3'-0"
	S501	37	35'-8"	37	35'-8"
	S502	24	36'-2"	—	—
	S502 - S525	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle)
	S5..	—	—	2 Ea.	35.7' - 0.75'/(tan skew angle) to 2'-0" Min.
	S701	72	36'-2"	—	—
	S701 - S772	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle)

* Varies with skew angle



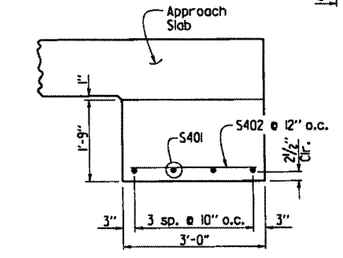
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION A-A

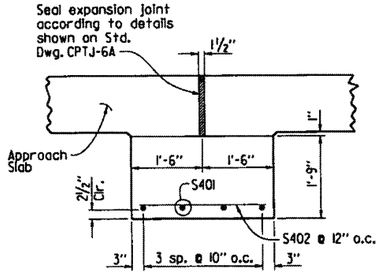
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SECTION B-B

AT ASPHALT APPROACH PAVEMENT

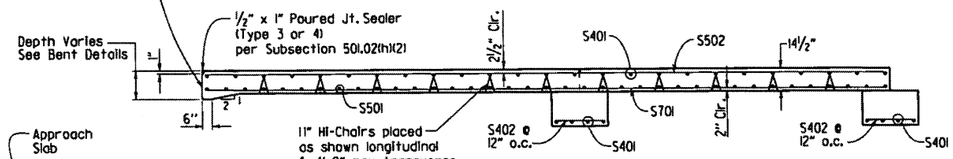
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SECTION B-B

AT CONCRETE APPROACH PAVEMENT

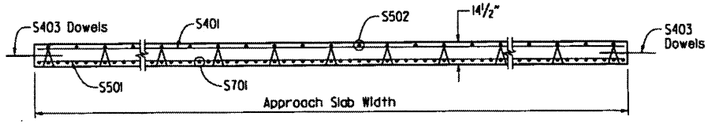
N.T.S.



SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" = 1'-0"



SECTION Y-Y

N.T.S.

TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
15'-0"	3640	30.75
24'-0"	5775	49.15
36'-0"	8620	73.75

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone 1 and for the maximum skew angles shown below:

15'-0" Slab Width: Maximum Skew Angle = 50°
24'-0" Slab Width: Maximum Skew Angle = 40°
36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

STANDARD DETAILS FOR TYPE CI APPROACH SLAB

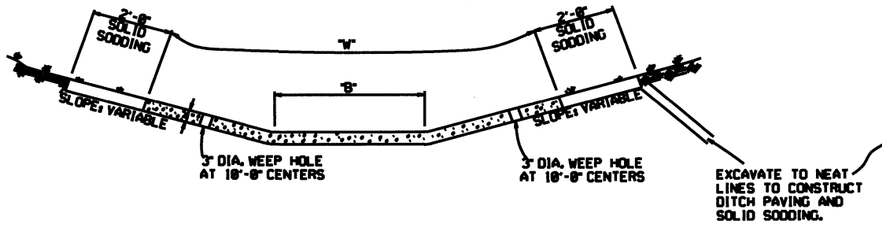
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

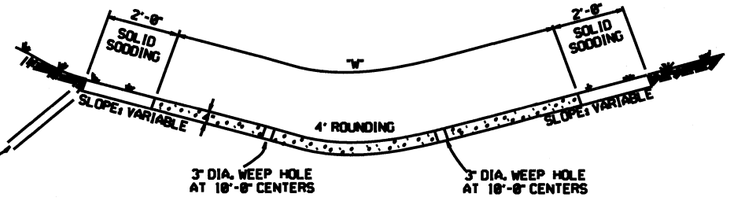
DRAWING NO. 55040CI

REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



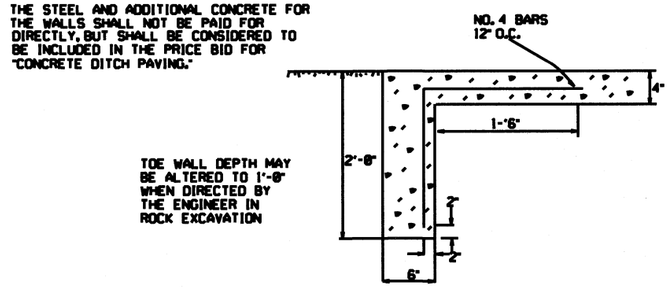
TYPE A

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS

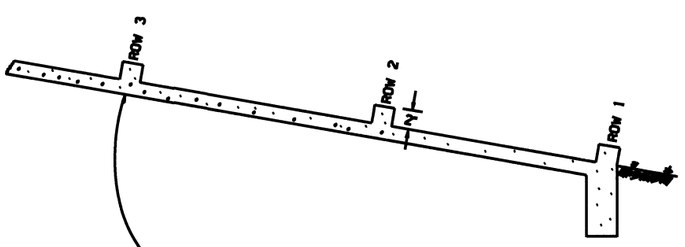


TYPE B

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."

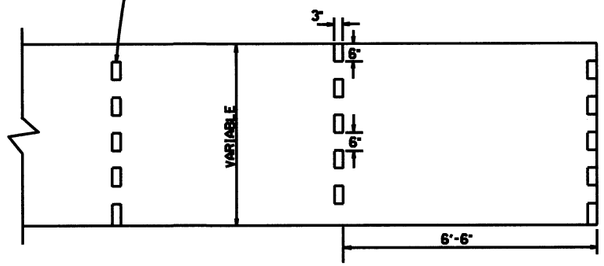


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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 INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

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.

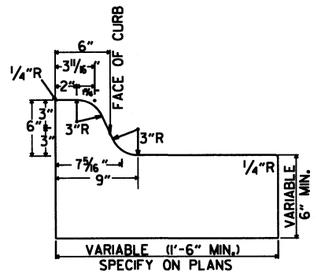
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	111-11-30-89
7-15-88	REVISED DISSIPATOR NOTE	663-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
6-6-87	MODIFIED NOTE ON ENERGY DISS.	642-6-6-87
12-1-86	ADDED NOTE TO ENERGY DISS.	595-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

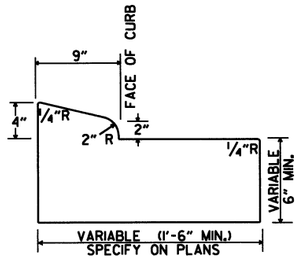
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

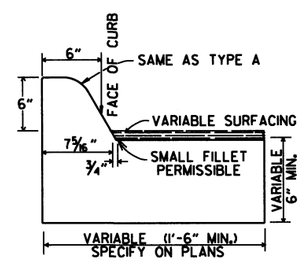
STANDARD DRAWING CDP-1



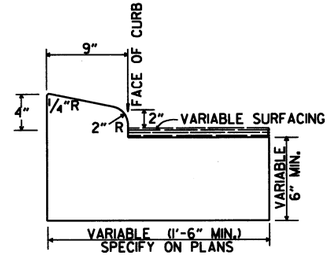
TYPE A



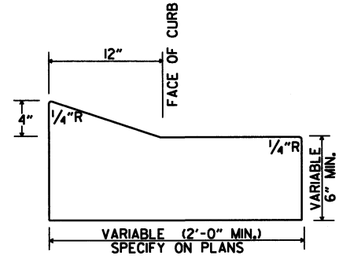
TYPE B-I



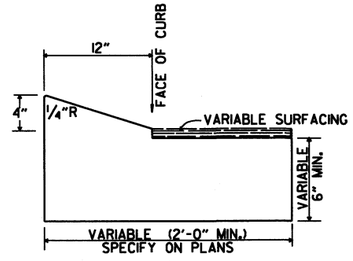
TYPE C



TYPE B-2

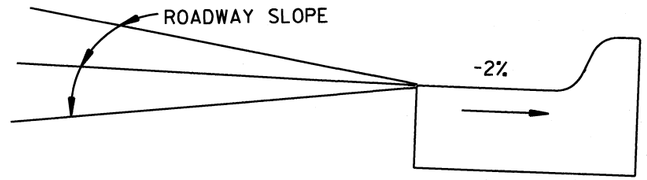


TYPE E-1



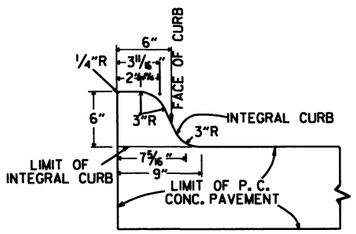
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

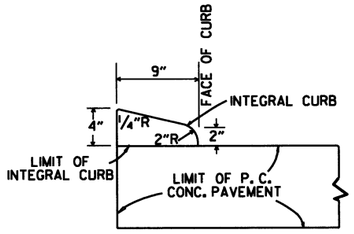


DETAIL OF GUTTER SLOPE

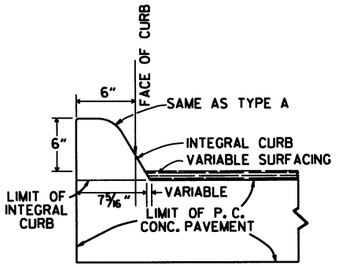
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

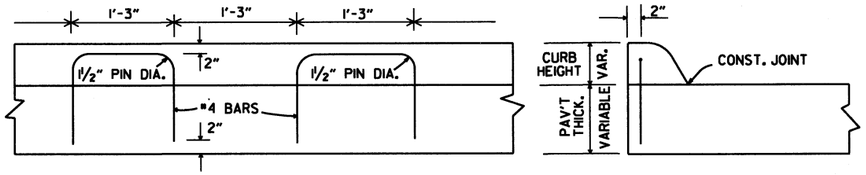


TYPE B



TYPE C

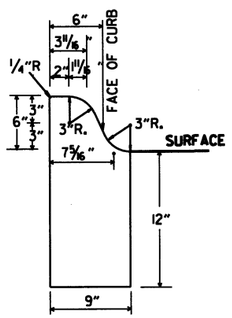
INTEGRAL CURB



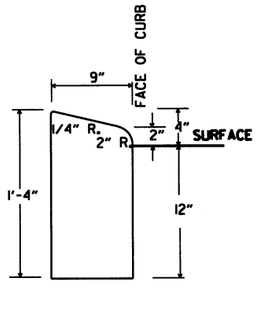
LONGITUDINAL SECTION

ELEVATION

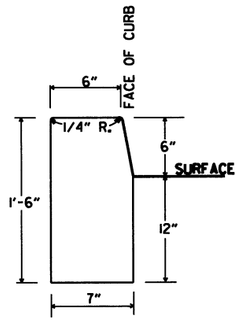
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



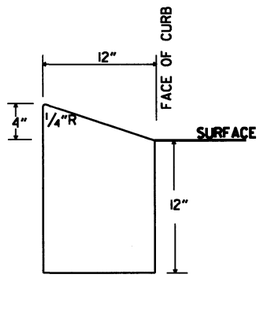
TYPE A



TYPE B

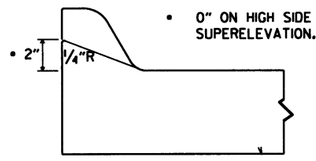


TYPE D



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.

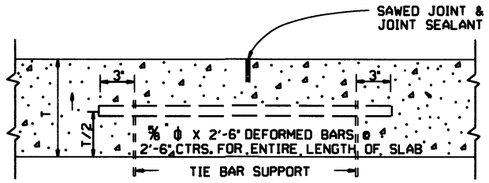
DETAILS OF MODIFIED CURB

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 I	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
1-1-79	REVISED MODIFIED CURB	500-1-1-79
10-2-72	REVISED AND REDRAWN	52-10-2-72

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CURBING DETAILS

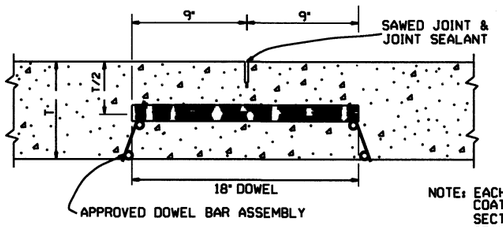
STANDARD DRAWING CG-1



LONGITUDINAL JOINT

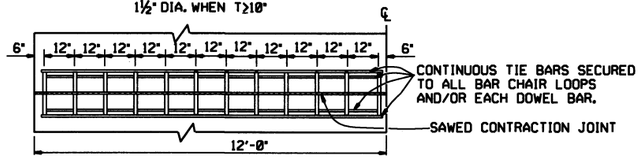
NOTE: THE TIE BAR SUPPORT SHOWN ABOVE MAY BE ELIMINATED IF OTHER APPROVED METHODS FOR PLACING AND SUPPORTING THE TIE BARS ARE PROVIDED.

TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.



NOTE: EACH DOWEL TO BE COATED ACCORDING TO SECTION 502 OF THE STANDARD SPECIFICATIONS.

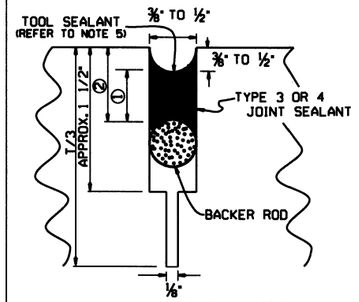
ROUND STEEL BAR DOWEL
1¼" DIA. WHEN T<10"
1½" DIA. WHEN T≥10"



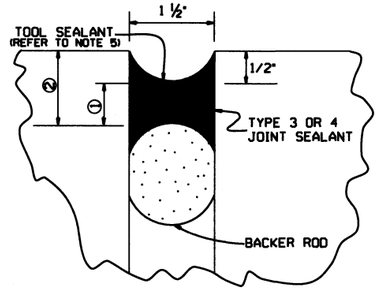
ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

NOTE: FOR 20' PAVEMENT USE 20 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 15' PAVEMENT USE 15 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 26' PAVEMENT USE 26 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12" CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12" DOWEL BAR SPACING

CONTRACTION JOINT DETAILS



DETAIL OF SAWED CONTRACTION JOINT



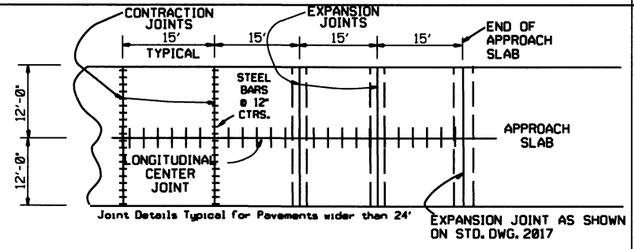
DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR TYPE 3 OR 4 JOINT SEALANT

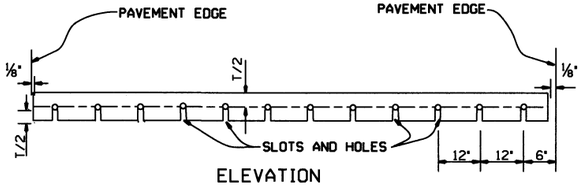
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
⅛	¼	⅜	½
¼	¼	½	½
⅜	¼	⅝	½
½	¼	¾	½
⅝	⅜	⅞	⅝
¾	⅜	1	⅝
1 ½	¾	2	1 ¼

JOINT CONFIGURATION FOR TYPE 5 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
¼	½	⅜	¾
⅜	¾	½	1

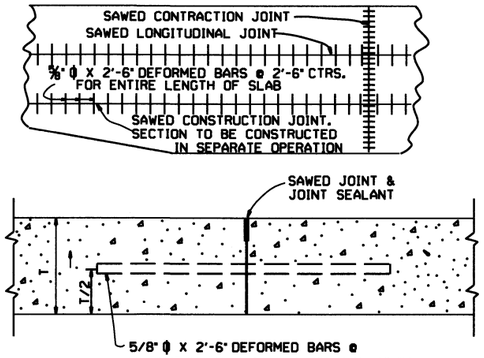


PLAN SHOWING EXPANSION JOINTS AT BRIDGE APPROACH SLABS



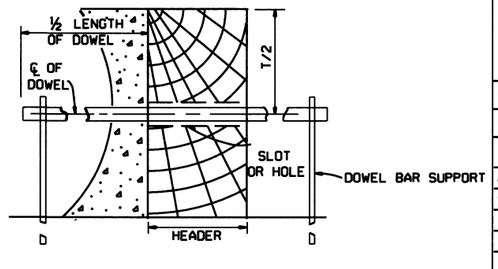
ELEVATION

NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



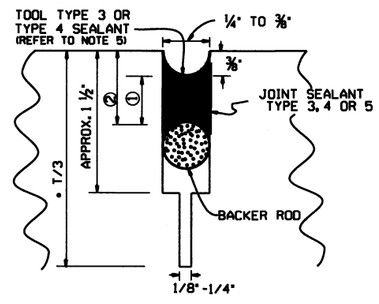
NOTE: TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.

LONGITUDINAL CONSTRUCTION JOINT



SECTION

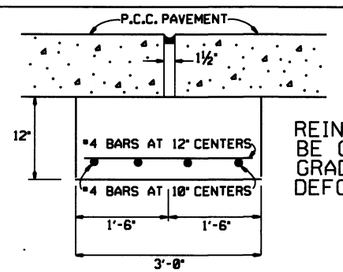
TRANSVERSE CONSTRUCTION JOINT



*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

DETAIL OF SAWED LONGITUDINAL JOINT AND LONGITUDINAL CONSTRUCTION JOINT

DATE	REVISION	DATE FILMED
5-25-06	ADDED GENERAL NOTE 7	
10-9-03	REMOVED TIE BAR COATING & REVISED GENERAL NOTES	
11-16-01	ADDED TOOL SEALANT AND NOTE 5; REVISED NOTE 3	
4-26-96	REVISED CONTRACTION JOINT NOTE	
11- 3-94	ADDED NOTE RE: REINF. BARS	
4- 1-93	REVISED DOWEL BARS & GEN. NOTES	4- 1-93
10- 1-92	REVISED DOWEL SPACING	10- 1-92
8- 15-91	ADDED SPAC FOR CONTR JTS & DEL KEYWAY	
05-24-90	REVISED TIE BAR, DOWEL & JOINT SIZE	
01-25-90	ADDED EXPANSION JOINT	01-25-90
11-30-89	CHANGED T/4+1 TO T/3+1	11-30-89
03-23-89	ALTERED SAWED JOINT & ADDED NOTE	512-03-23-89
07-15-88	REVISED AND REDRAWN	632-07-15-88



DETAIL OF JOINT SUPPORT FOR EXPANSION JOINTS

REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

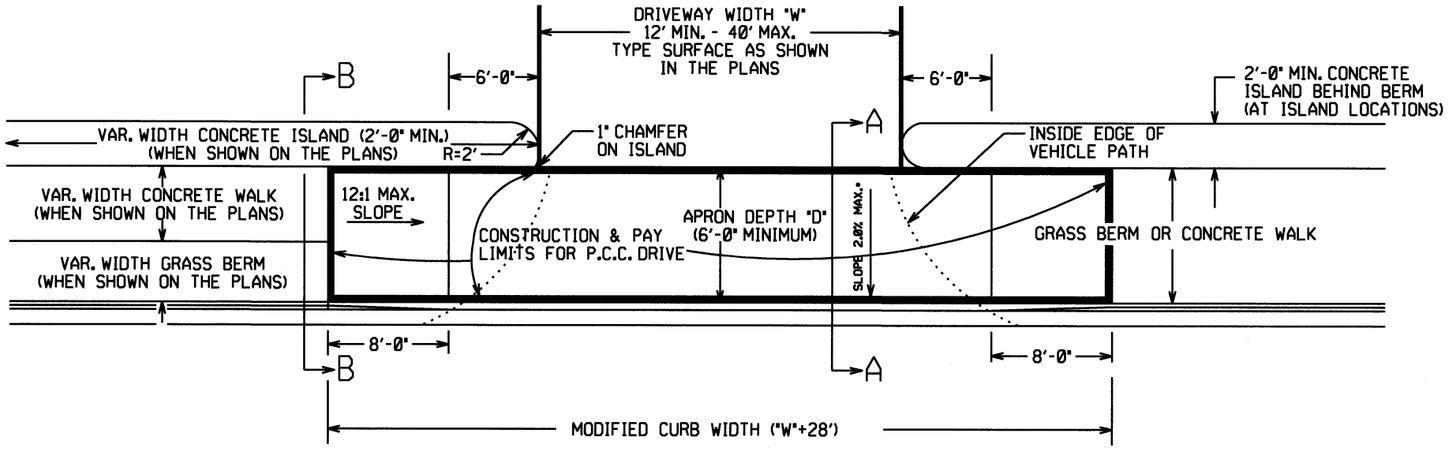
GENERAL NOTES

1. "T" DENOTES THICKNESS OF SLAB.
2. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS ¼" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL BE FIELD COATED FOR A MINIMUM DISTANCE OF 2" GREATER THAN HALF THE LENGTH OF THE BAR WITH AN APPROVED GREASE AS A BOND BREAKER JUST PRIOR TO PLACEMENT OF CONCRETE.
3. THE EXPANSION 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 SPECIFIED IN THE PLANS. PAYMENT FOR ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.
4. CONTRACTION JOINTS SHALL BE CONSTRUCTED ON 15' CENTERS.
5. TOOLING NOT REQUIRED FOR SELF-LEVELING SILICONE.
6. UNLESS OTHERWISE SPECIFIED IN THE PLANS, CONCRETE SHOULDERS SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN HEREON. CONTRACTION JOINTS SHALL MATCH CONTRACTION JOINTS IN THE LANES.
7. TIE WIRES IN DOWEL BAR ASSEMBLIES SHALL NOT BE CUT PRIOR TO PLACEMENT OF PAVING CONCRETE.

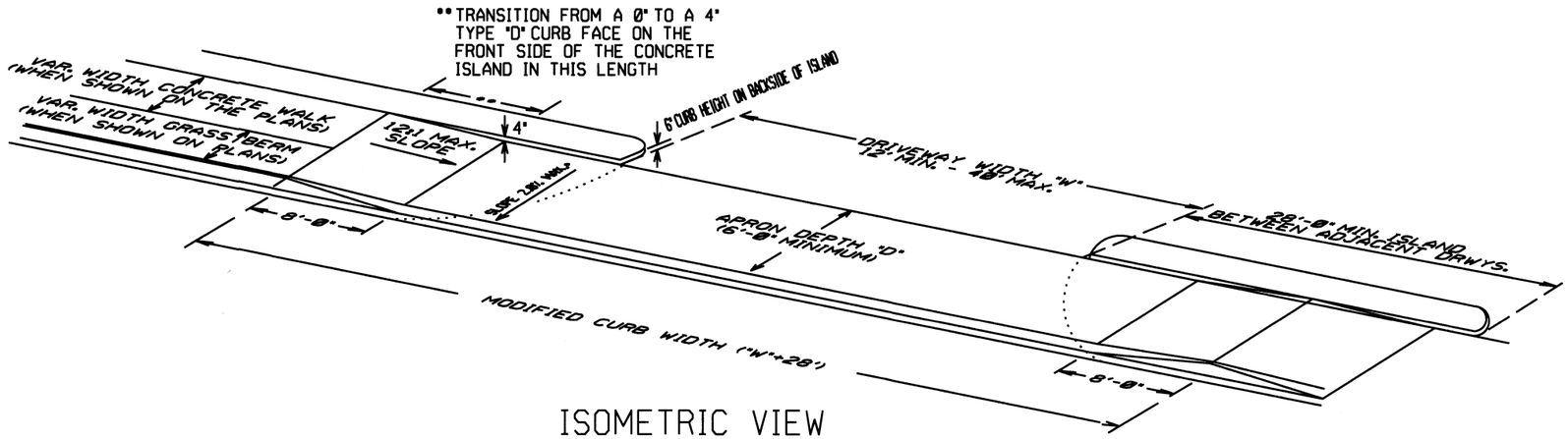
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)

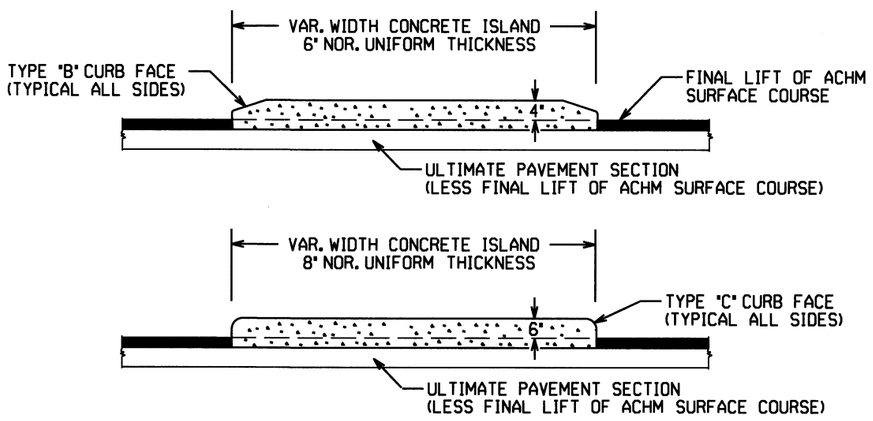
STANDARD DRAWING CPTJ - 6A



PLAN VIEW

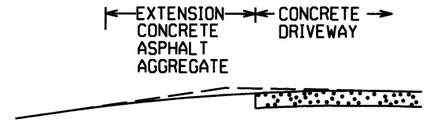


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

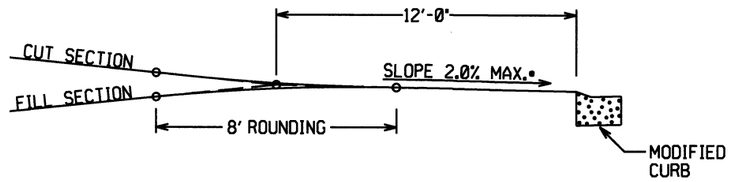
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

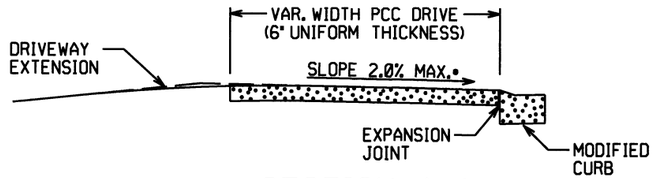
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

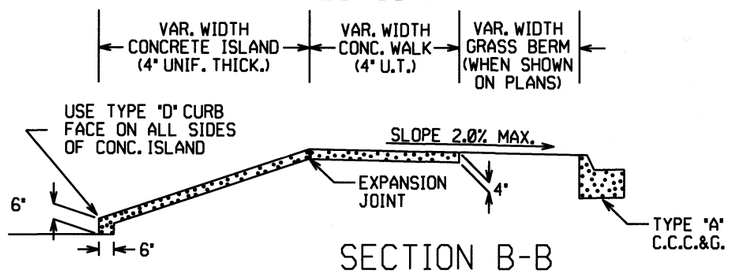


DRIVEWAY VERTICAL ALIGNMENT DETAILS

• NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



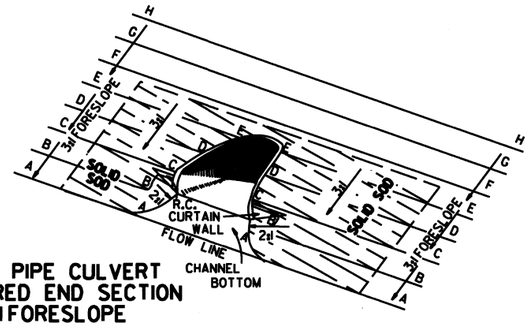
SECTION B-B
CURBED ISLAND BEHIND WALK

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

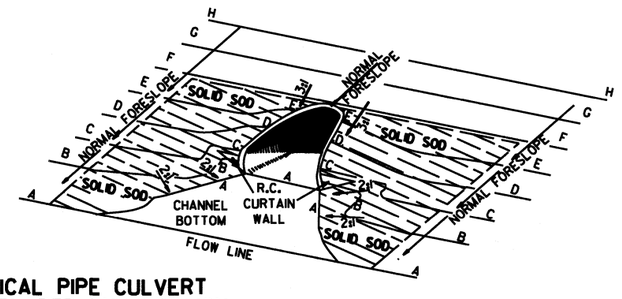
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

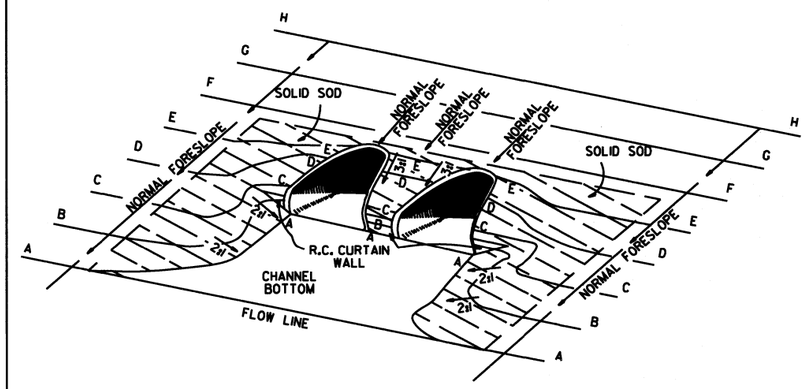
STANDARD DRAWING DR-1



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

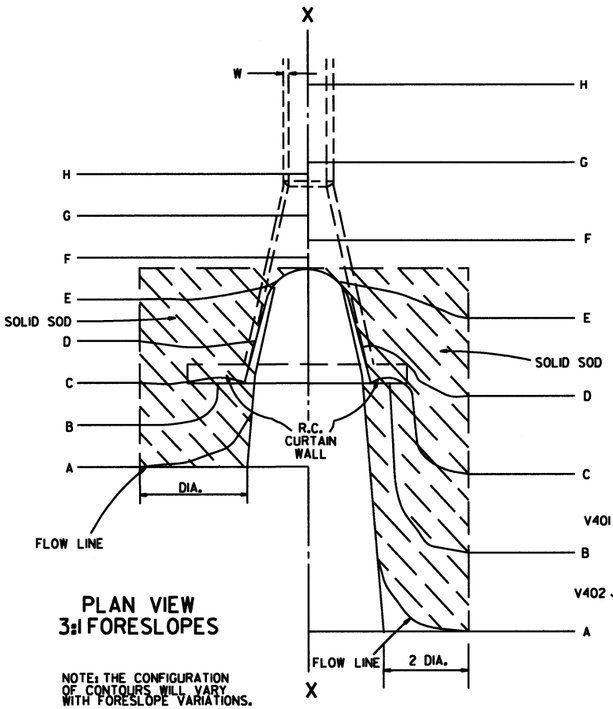
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	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								DOUBLE R.C. PIPE CULVERT											
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	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"	17	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

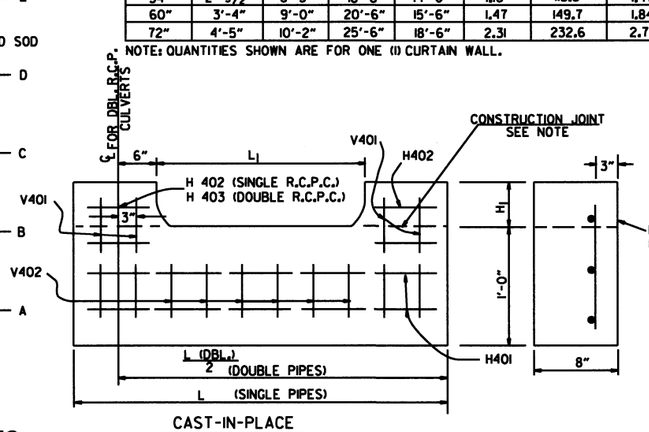
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

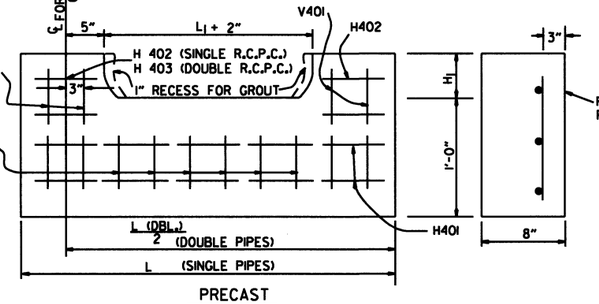
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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.

R.C. CURTAIN WALL DETAILS

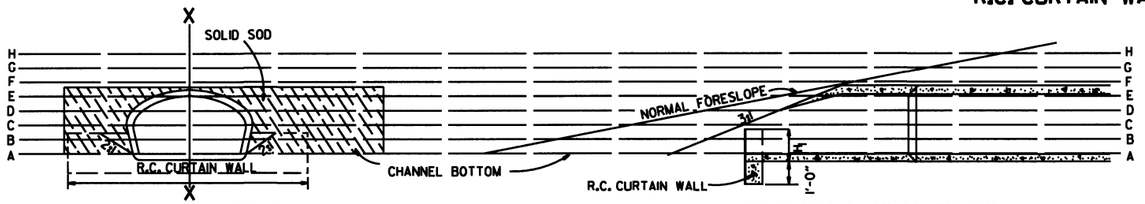
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.			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"	36	57	85	37	59	87
60"	45	69	104	48	65	107
72"	64	92	136	67	95	139

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 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
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.	
3-27-91	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-90	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

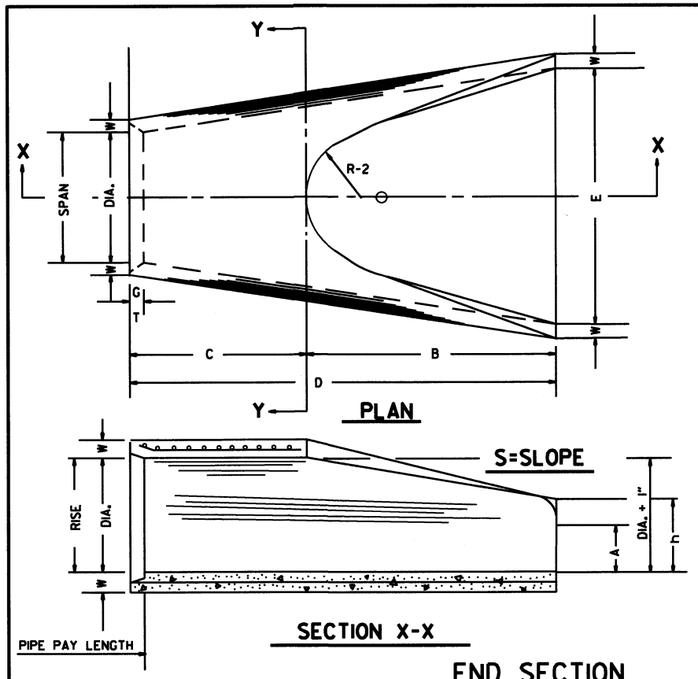
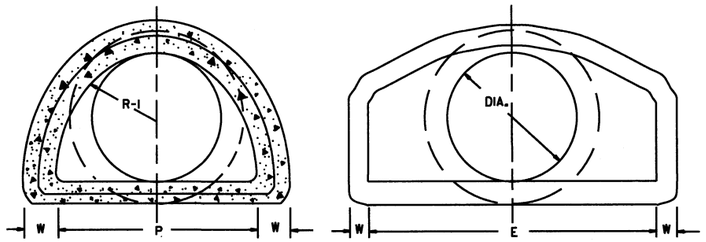


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3sl	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3sl	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7⅜"	6'-1¾"	5'-0"	3sl	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¼"	8'-1¾"	6'-0"	3sl	37"	47¼"	24⅛"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3sl	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3sl	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3sl	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3sl	61"	72½"	36⅞"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3sl	73"	77⅝"	38⅝"	24"	5"	13250	4'-6"



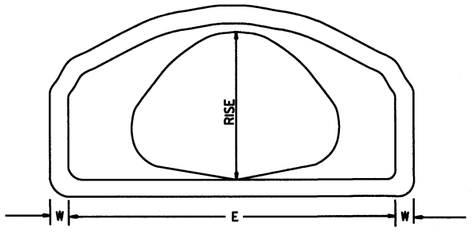
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

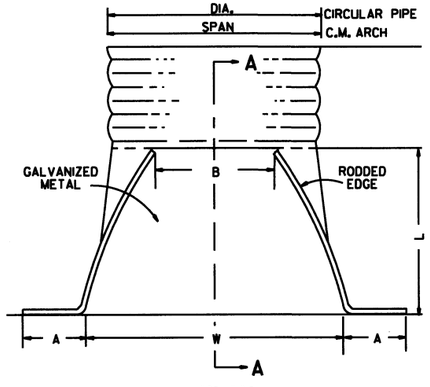
ARCH PIPE

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"	2¼sl
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2¼sl
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2¼sl
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2¼sl
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2¼sl
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅞"	22"	3½"	2¼sl
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2¼sl
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2¼sl
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅞"	24"	4¾"	2¼sl
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2¼sl

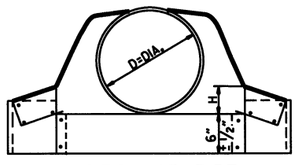
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE



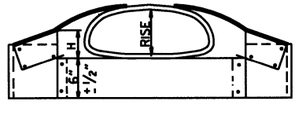
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE

CIRCULAR PIPE

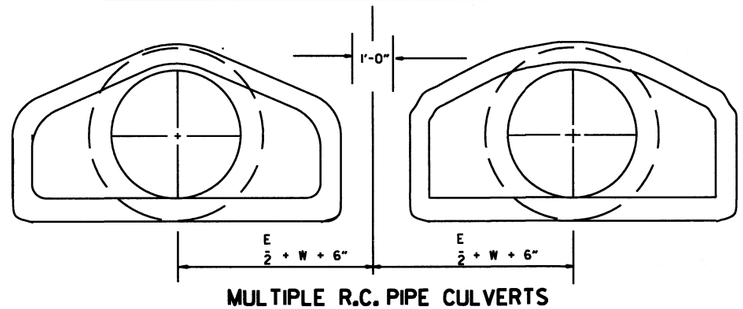
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2¼sl
15	16	7	8	6	26	30	2¼sl
18	16	8	10	6	31	36	2¼sl
21	16	9	12	6	36	42	2¼sl
24	16	10	13	6	41	48	2¼sl
30	14	12	16	8	51	60	2¼sl
36	14	14	19	9	60	72	2¼sl
42	12	16	22	11	69	84	2¼sl
48	12	18	27	12	78	90	2¼sl
54	12	18	30	12	84	102	2sl
60	12	18	33	12	87	114	1¾sl
66	12	18	36	12	87	120	1½sl
72	12	18	39	12	87	126	1 1/3sl



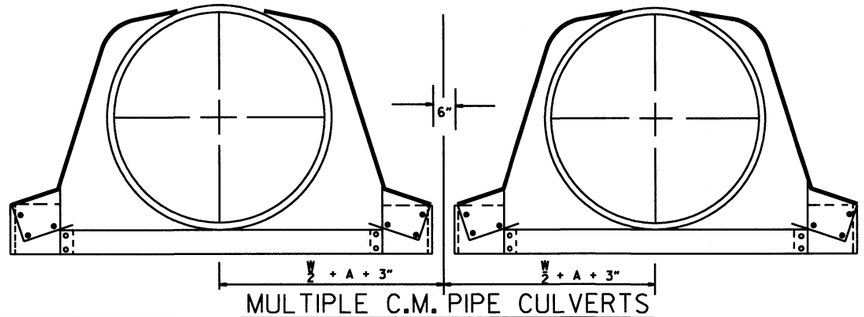
C.M. ARCH PIPE

C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2¼sl	16
18"	21	15	7	10	6	23	36	2¼sl	16
21"	24	18	8	12	6	28	42	2¼sl	16
24"	28	20	9	14	6	32	48	2¼sl	16
30"	35	24	10	16	6	39	60	2¼sl	14
36"	42	29	12	18	8	46	75	2¼sl	14
42"	49	33	13	21	9	53	85	2¼sl	12
48"	57	38	18	26	12	63	90	2¼sl	12
54"	64	43	18	30	12	70	102	2¼sl	12
60"	71	47	18	33	12	77	114	2¼sl	12



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

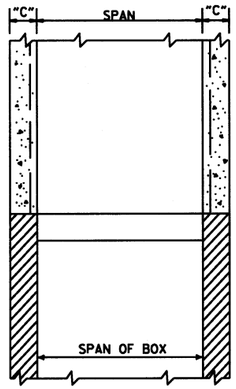
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
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

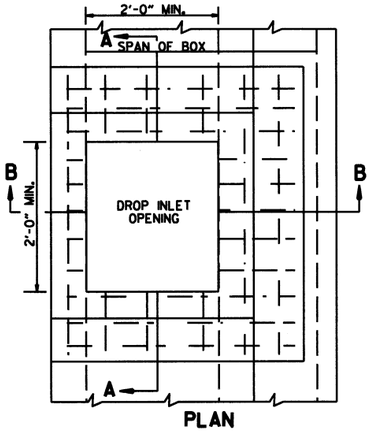
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

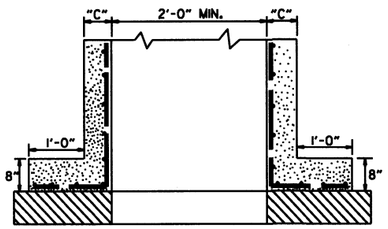
STANDARD DRAWING FES-2



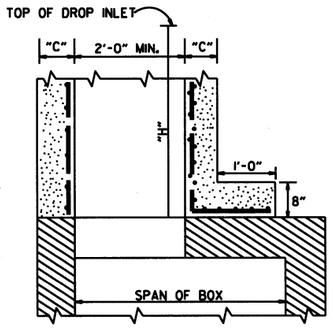
SECTION B-B



PLAN

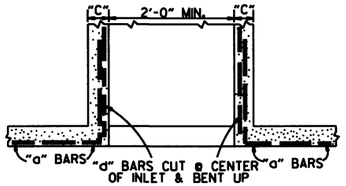


SECTION A-A

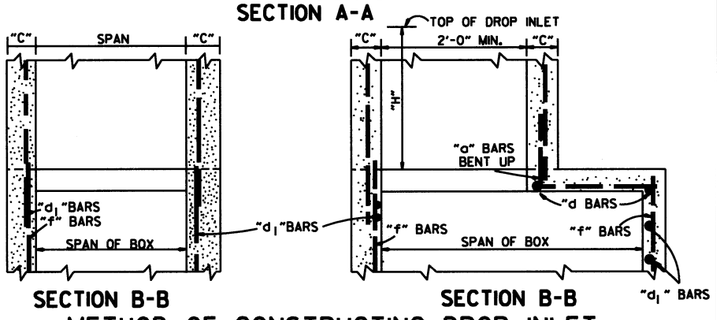


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



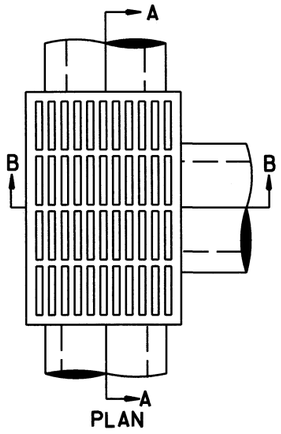
SECTION A-A



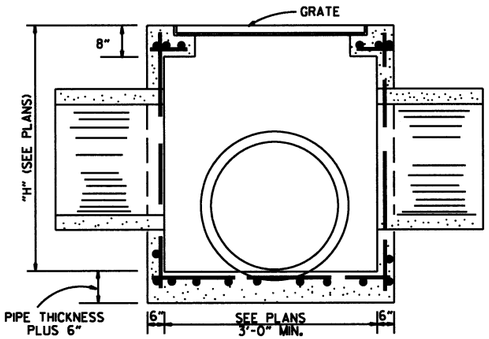
SECTION B-B SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

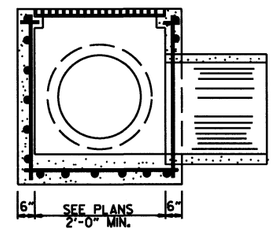
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



PLAN



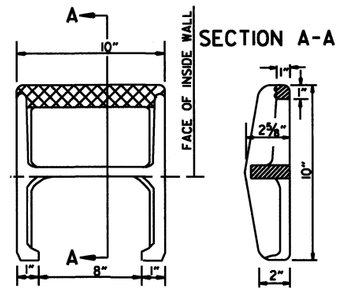
SECTION A-A



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)

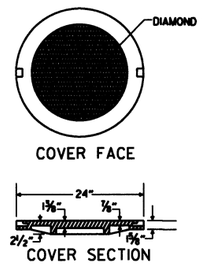


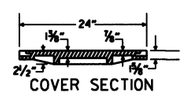
APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

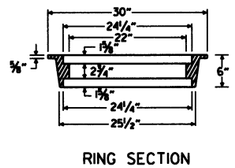
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET





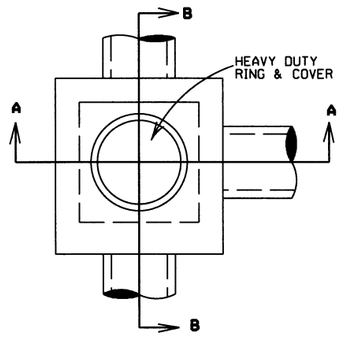
COVER SECTION



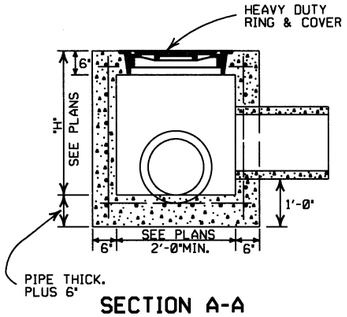
RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

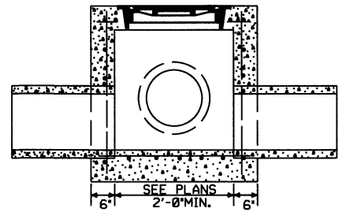


PLAN



SECTION A-A

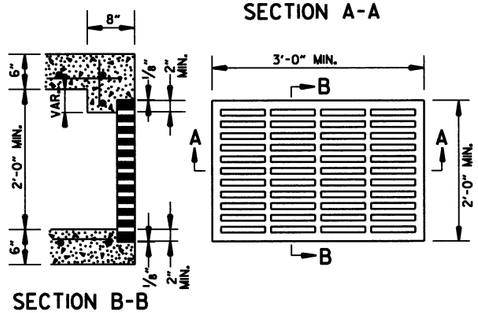
NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

JUNCTION BOX (TYPE E)

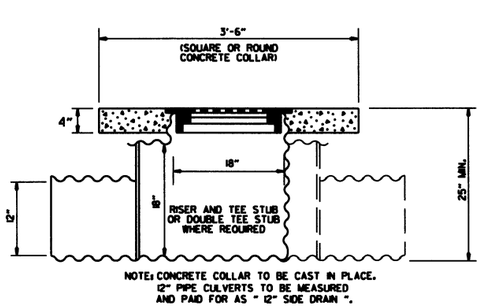
SECTION A-A



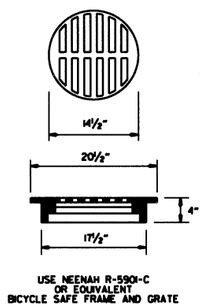
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



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:

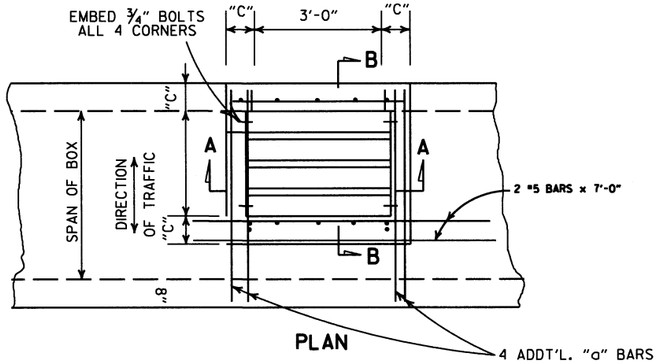
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS 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	

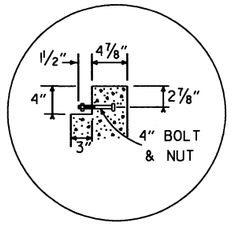
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

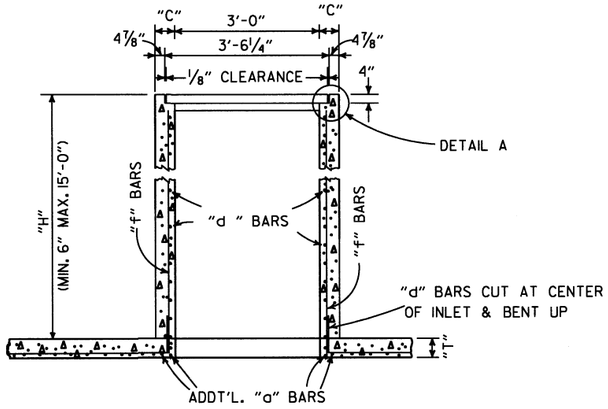
STANDARD DRAWING FPC-9



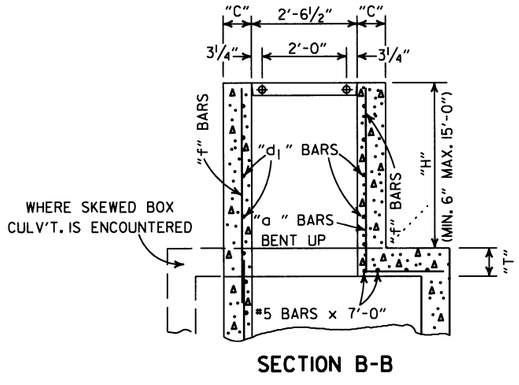
PLAN



DETAIL A



SECTION A-A

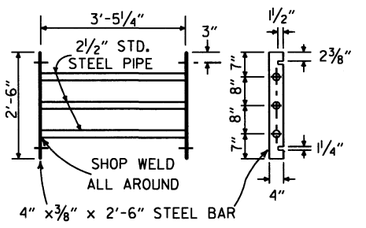


SECTION B-B

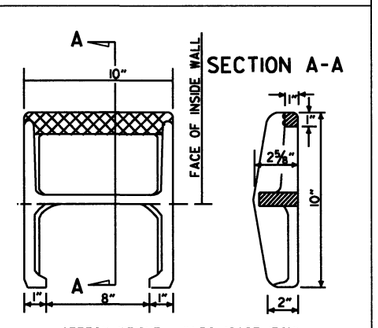
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM"
FOR REINFORCED CONC. BOX CULVERTS



GRATE DETAIL



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

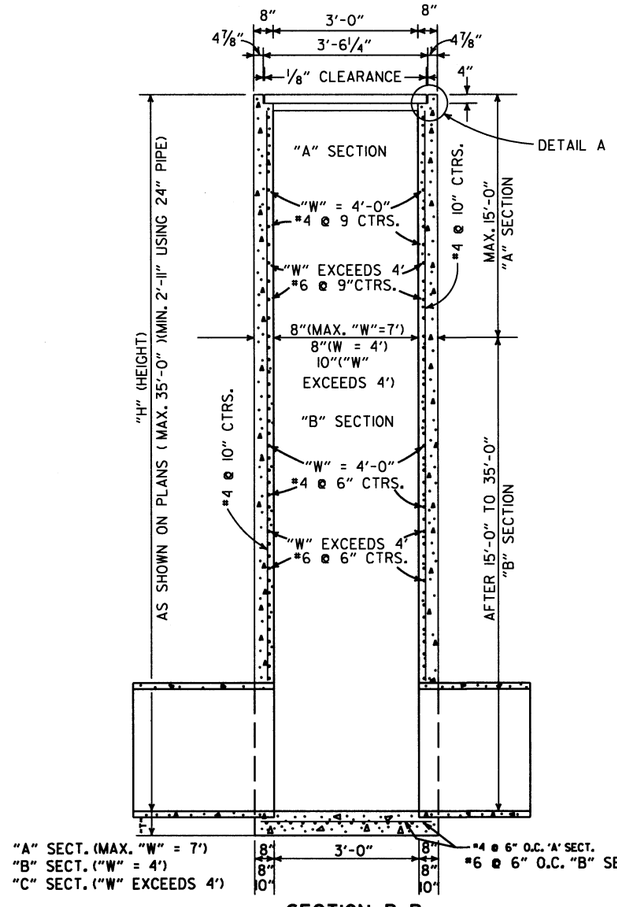
GENERAL NOTES:

1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

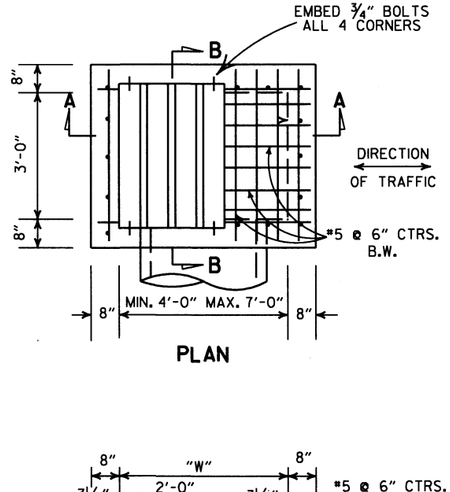
TABLE OF "W" DIMENSIONS

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
	"W"	"W"	"W"
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-11"	6'-1"
48"	4'-10"	5'-7"	6'-11"

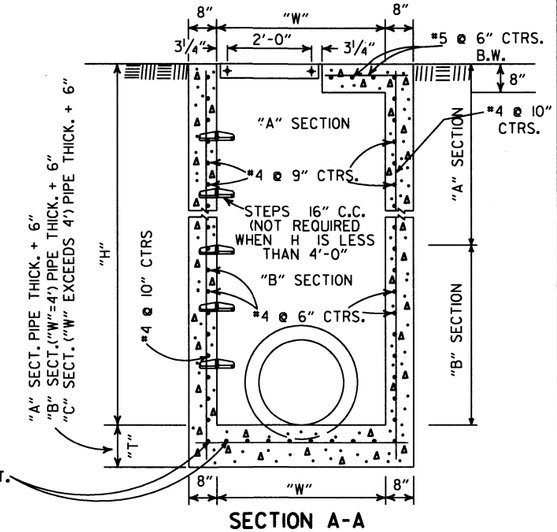
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

DROP INLET(TYPE RM)

8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL,TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72
REVISED		DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

STANDARD DRAWING FPC-9D

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

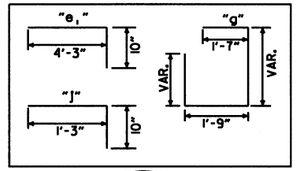
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.

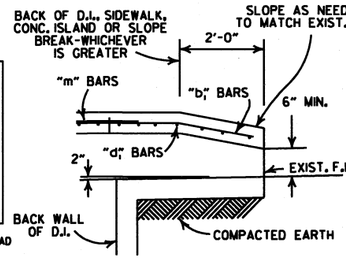
0.04	3		

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

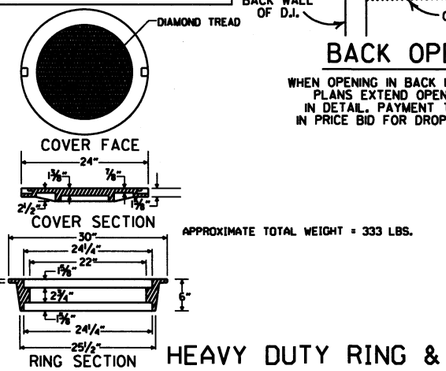
BAR DIAMETER





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).

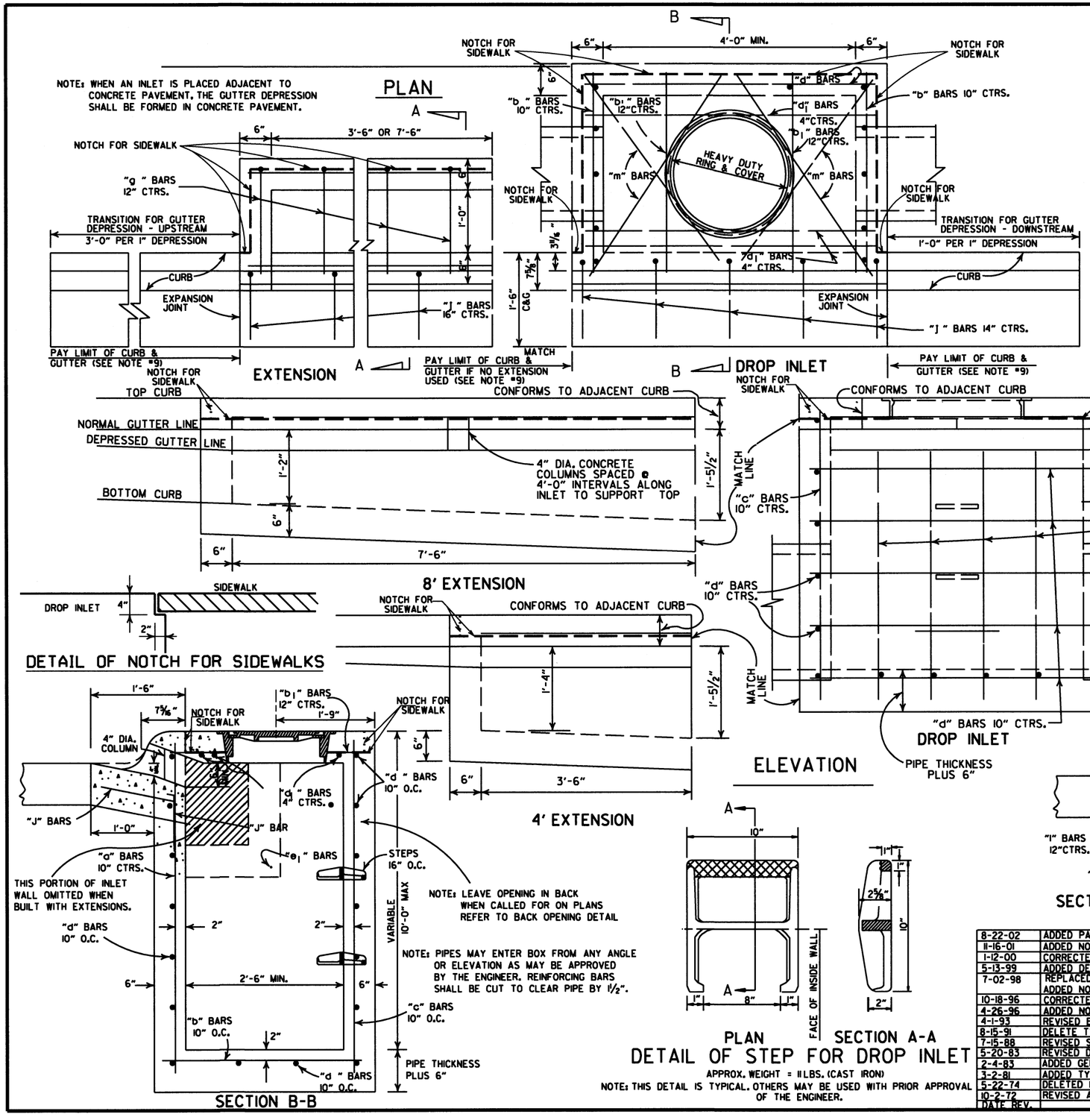


APPROXIMATE TOTAL WEIGHT = 333 LBS.

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.



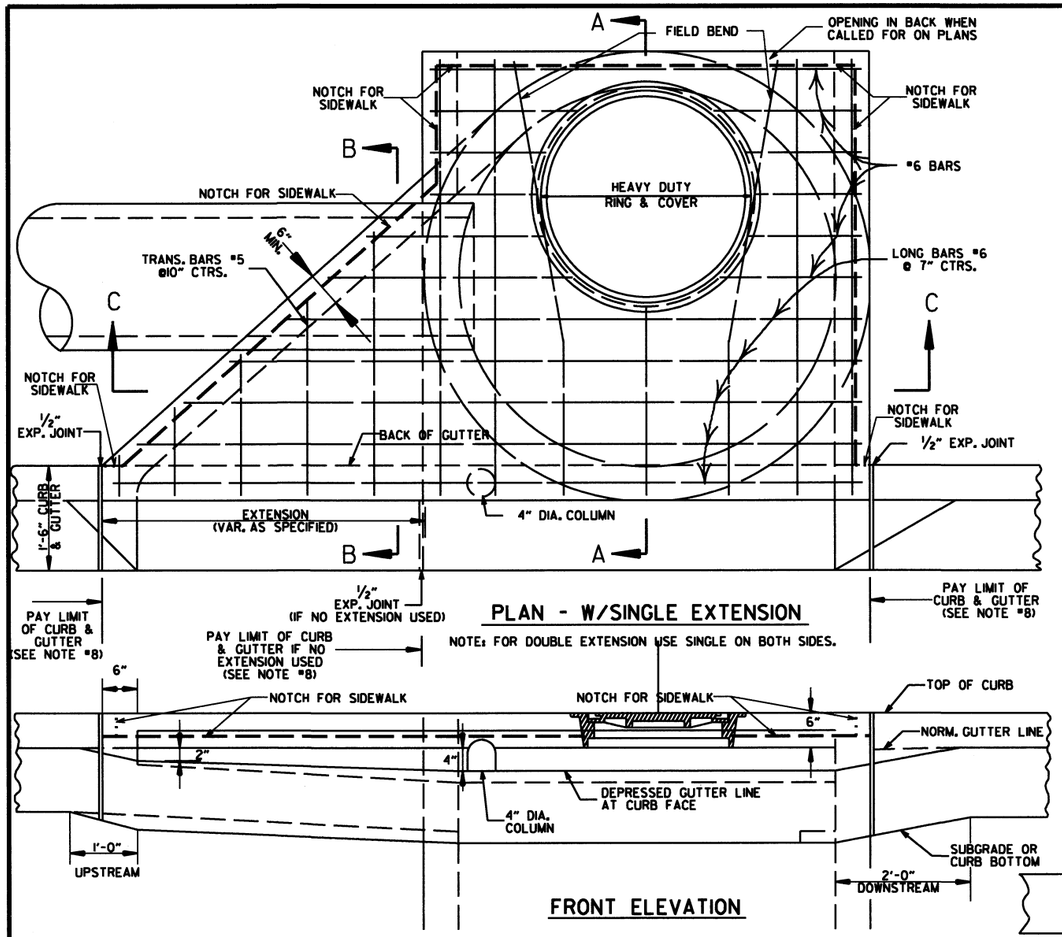
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4'X8') 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)

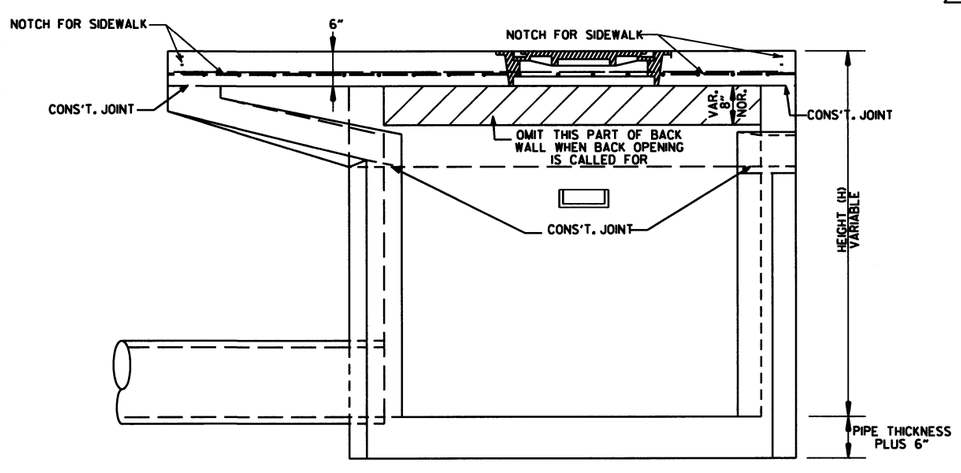
STANDARD DRAWING FPC-9E



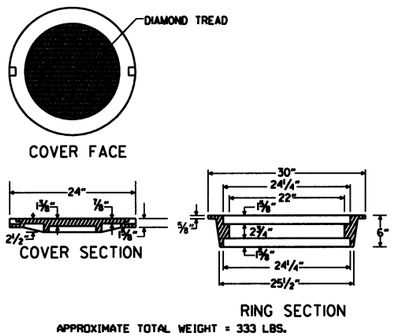
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



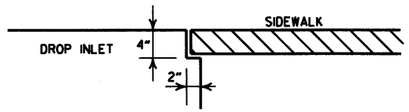
SECTION C-C



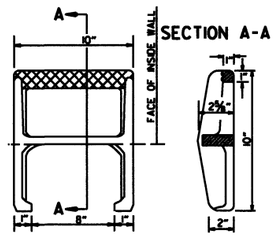
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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



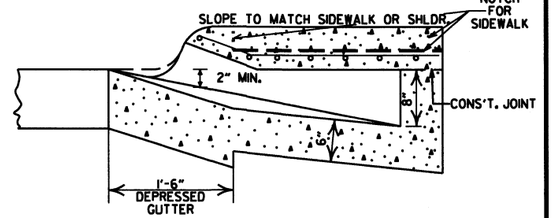
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

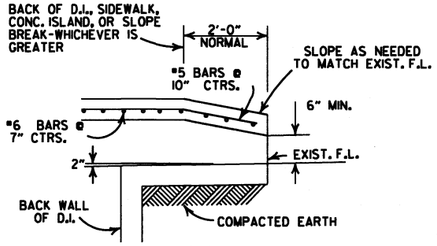
PLAN

NOTE: THIS DETAIL IS TYPICAL, OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

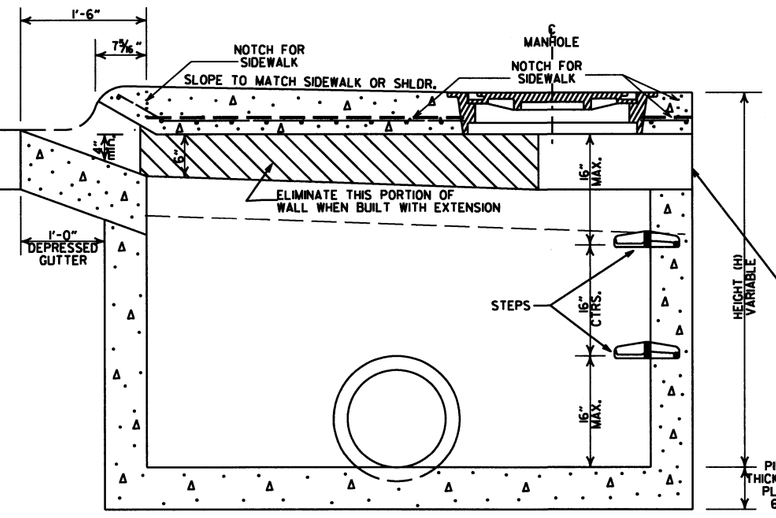


BACK OPENING

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).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" 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. 1½" 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.



SECTION A-A

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

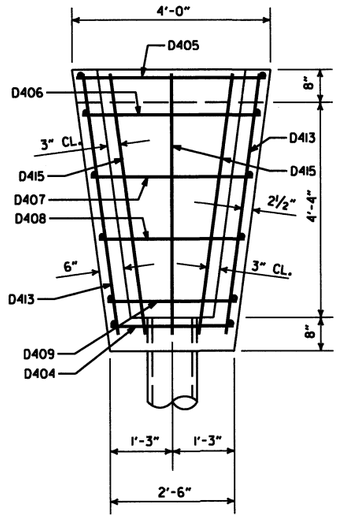
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
8-16-01	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, REW. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-28-95	ADDED NOTE 11 ALL OPENING DIMENSION	
10-12-95	CORRECTED #5 BAR SPACING	
7-24-95	CORRECTED DIAMETER OF D.I. IN BOX	
7-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-11-93	REV. BACK OPEN DETAIL & NOTE	4-11-93
8-14-91	REVISED NOTES 12 & ADDED BK OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-24-89	ADD NOTE 4, MINIMUM WALL THICKNESS	SUL-5-24-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	SUL-7-15-88
1-14-87	REVISED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	783-12-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

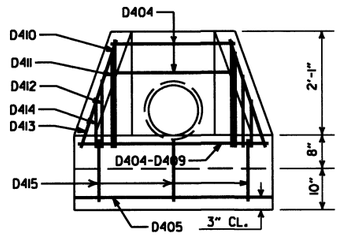
STANDARD DRAWING FPC-9M



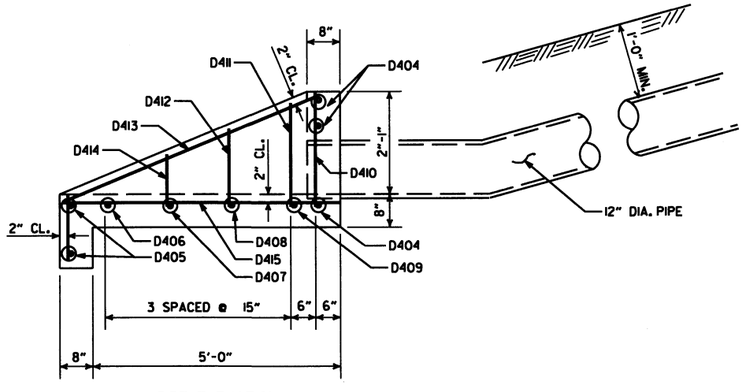
PLAN

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	5'-4", 1'-2", 2" P.D., D415
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	

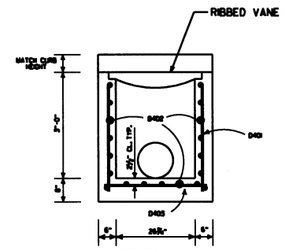


FRONT ELEVATION



SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

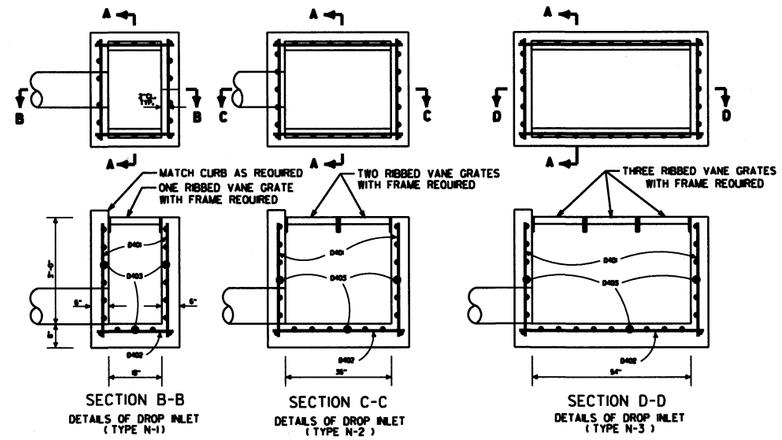


SECTION A-A

BAR LIST (DROP INLET)

MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

ALL BARS #4 @ 6" SPACING

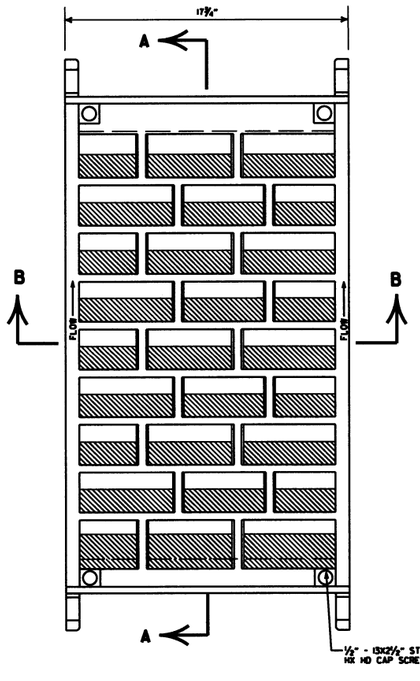


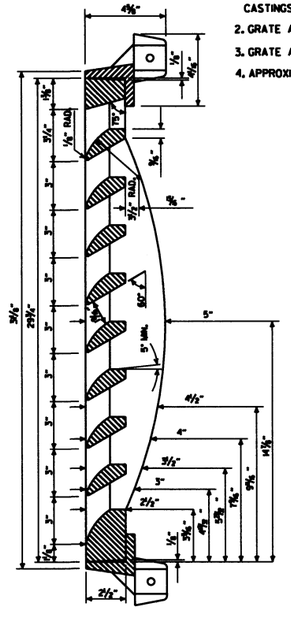
SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

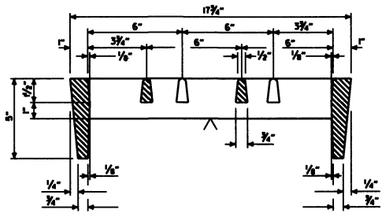




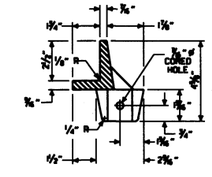
SECTION A-A

GENERAL NOTES (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.



SECTION B-B



SECTION THRU FRAME

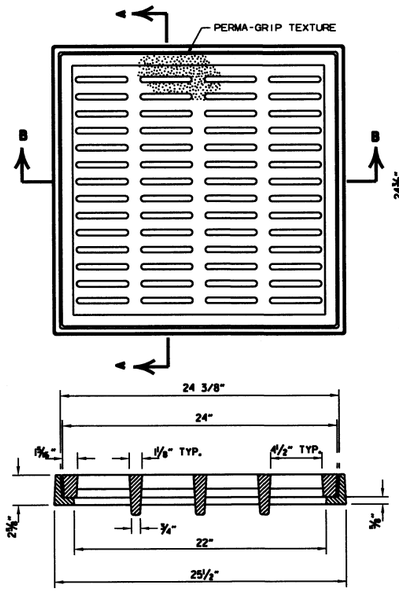
DETAILS OF RIBBED VANE GRATE AND FRAME

DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98		REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

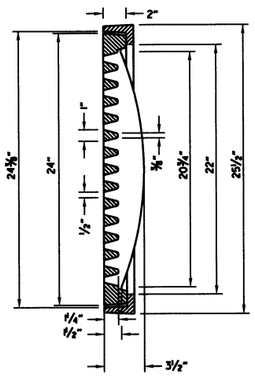
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N



SECTION B-B

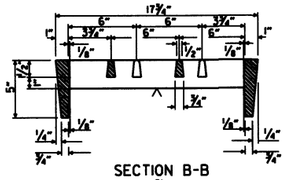


SECTION A-A

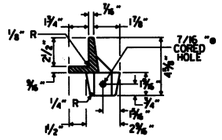
DETAILS OF PEDESTRIAN GRATE AND FRAME

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

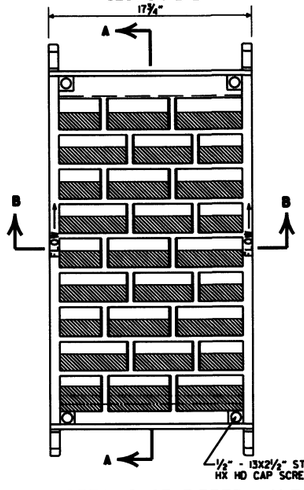
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS 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 28 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

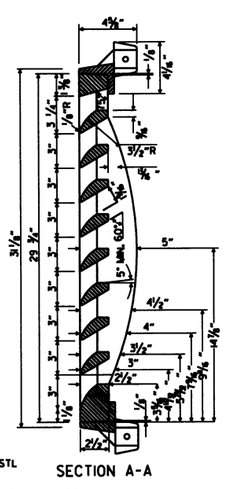


SECTION B-B



SECTION THRU FRAME



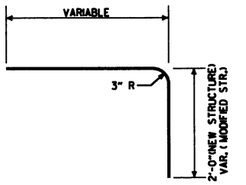


SECTION A-A

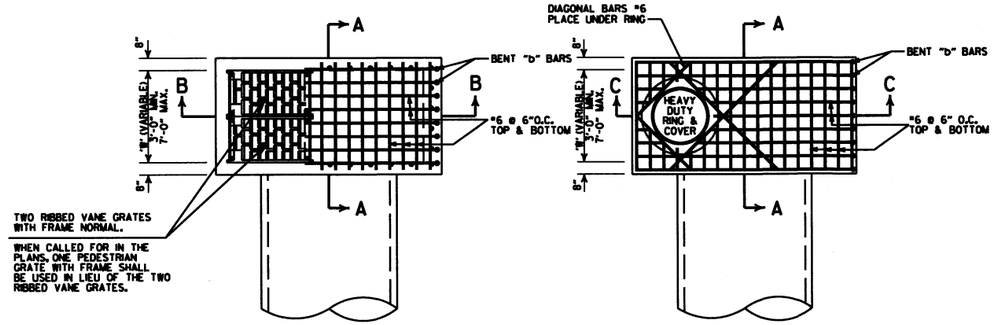
DETAILS OF RIBBED VANE GRATE AND FRAME

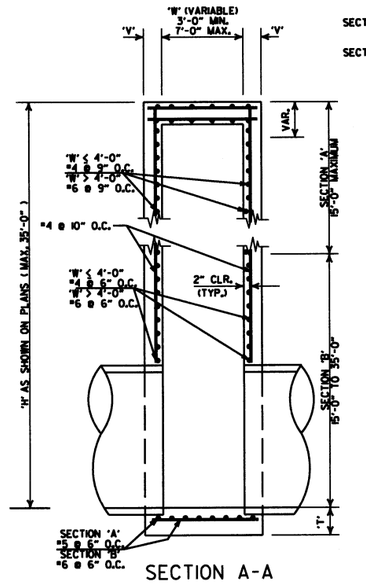
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

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



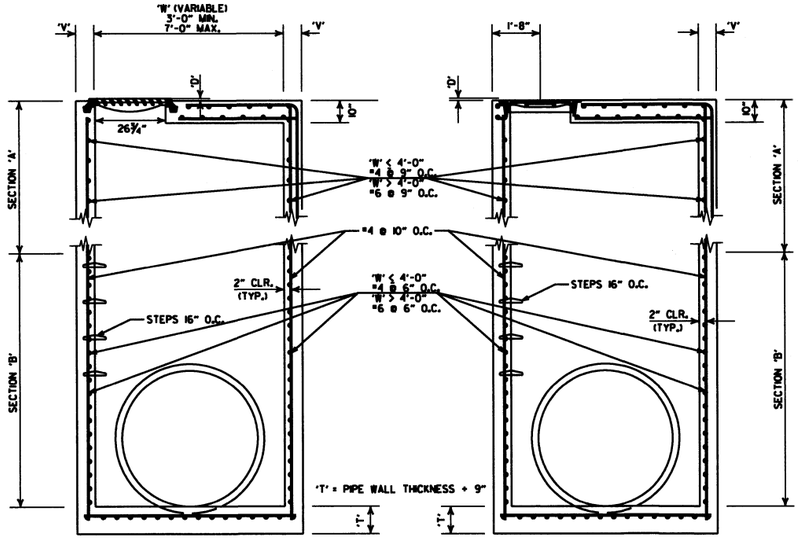


SECTION A-A

SECTION 'A'
'V' = 8"

SECTION 'B' (H)≤4'-0"
'V' = 8"

SECTION 'B' (H)>4'-0"
'V' = 10"



SECTION B-B

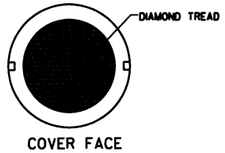
SECTION C-C

DETAILS OF DROP INLET (TYPE ST)

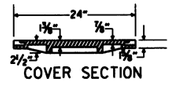
DETAILS OF JUNCTION BOX (TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

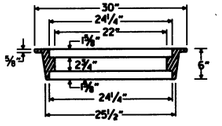
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (HEAVY DUTY RING & COVER):

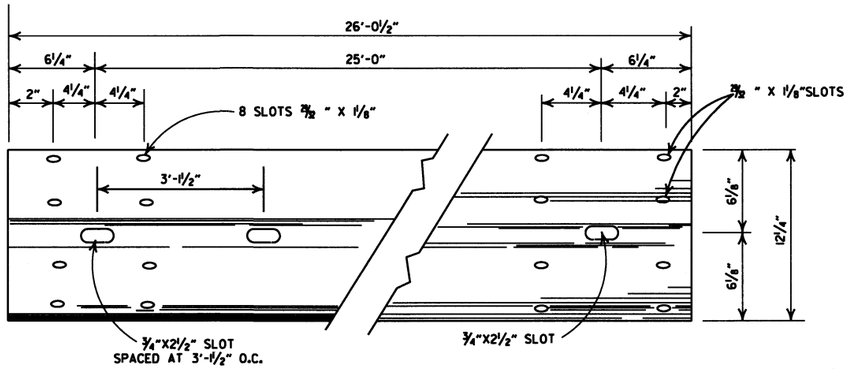
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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.

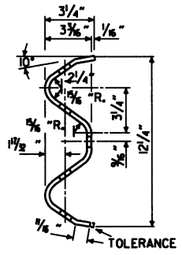
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED 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)

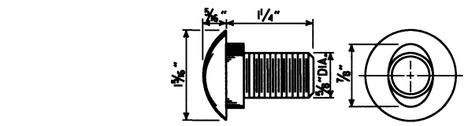
STANDARD DRAWING FPC-9S



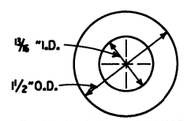


DETAILS OF W-BEAM GUARD RAIL

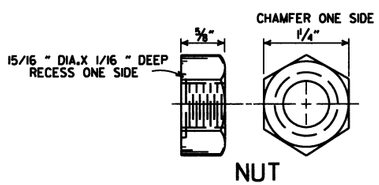
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



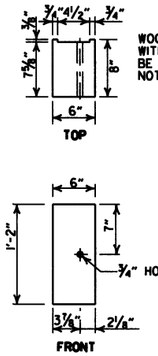
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

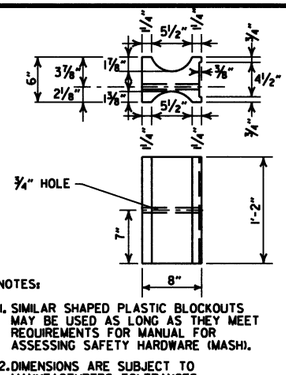


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

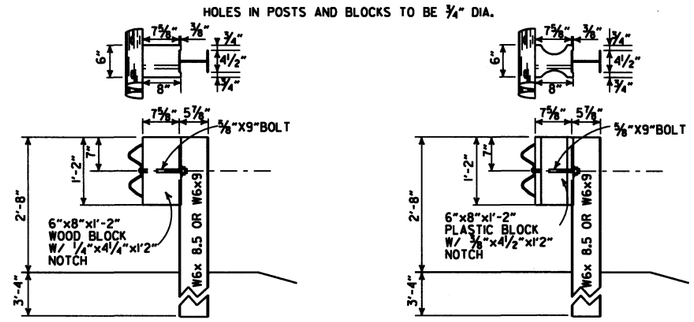
WOOD BLOCKOUT (W-BEAM)



NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

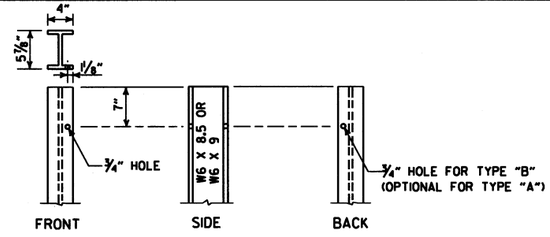
HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



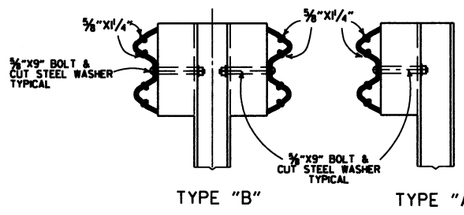
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¼" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

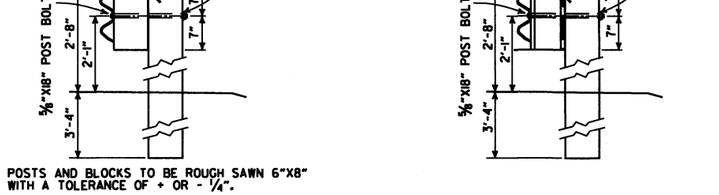
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

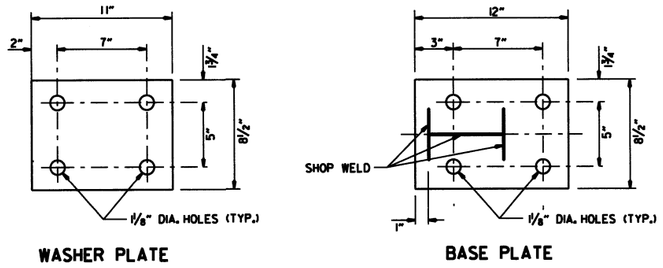
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
11-16-17	REVISED GENERAL NOTES AND RAISED GUARD RAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK. & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST ,ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

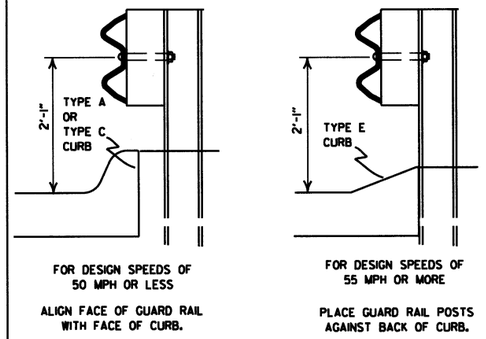
STANDARD DRAWING GR-8



WASHER PLATE

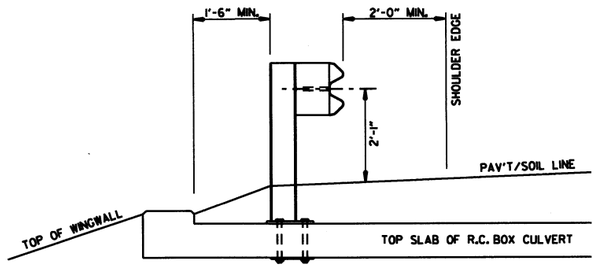
BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

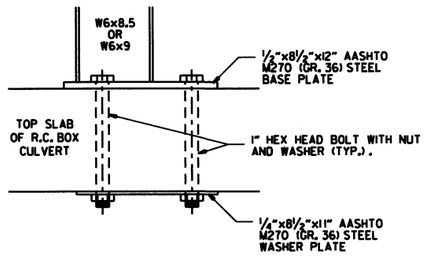


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

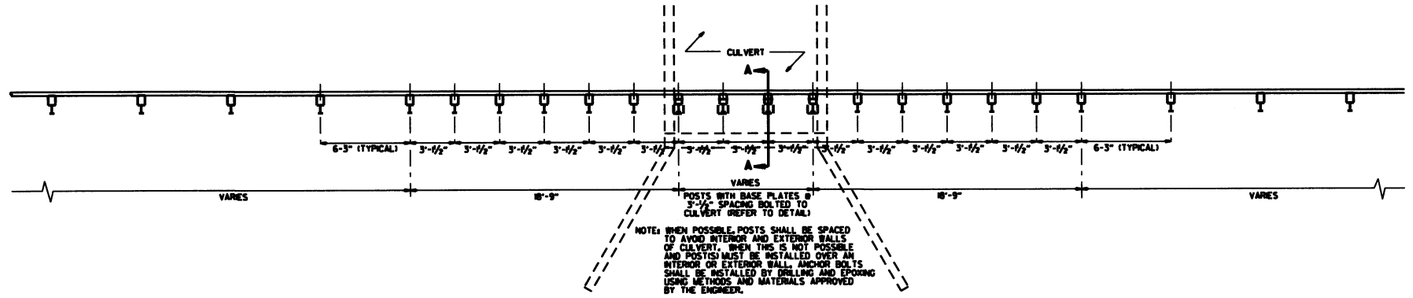
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



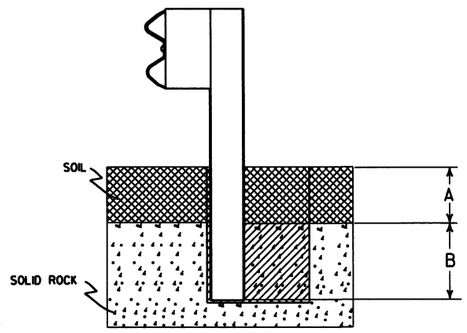
DETAIL OF CONNECTION



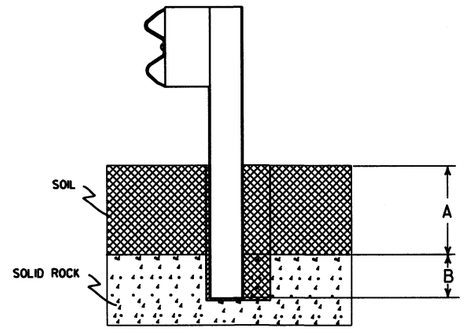
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

Case 1

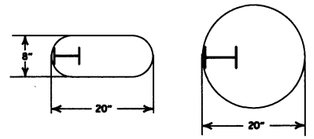


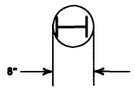
Case 2



Plan View Steel Posts

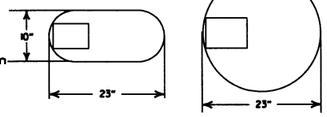
Either hole configuration acceptable

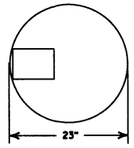


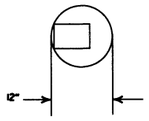


Plan View Wood Posts

Either hole configuration acceptable







Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

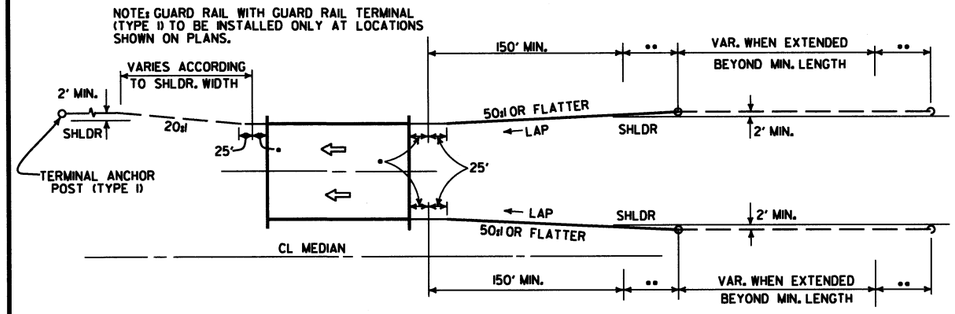
DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-95	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

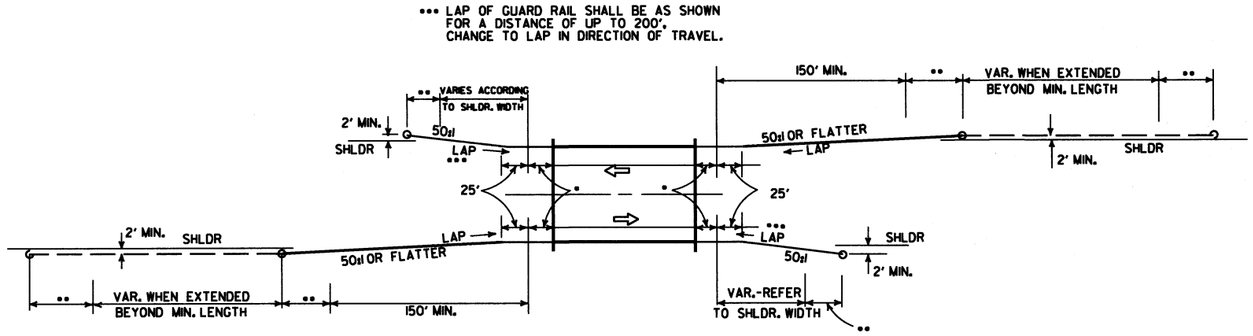
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



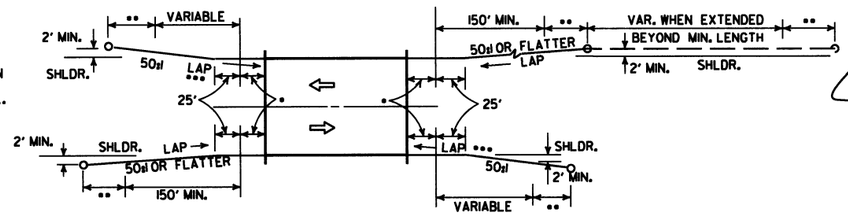
ONE-WAY TRAFFIC



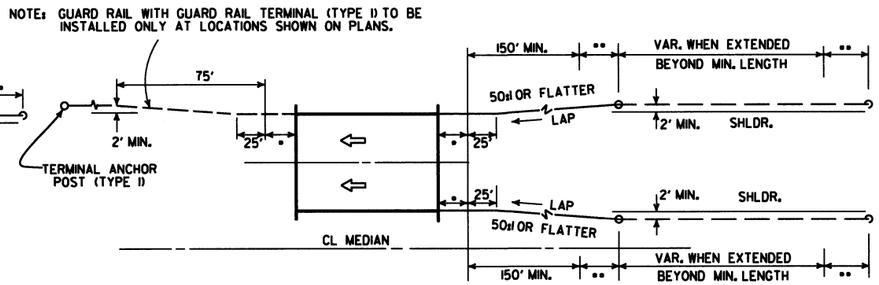
TWO-WAY TRAFFIC

METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



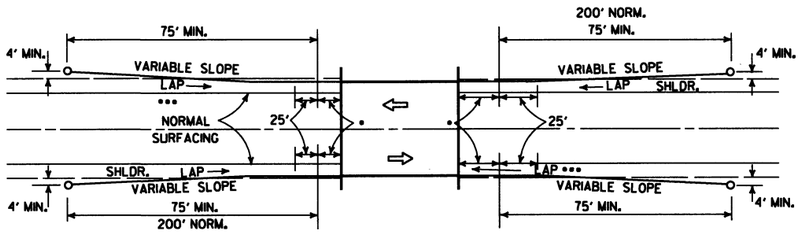
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

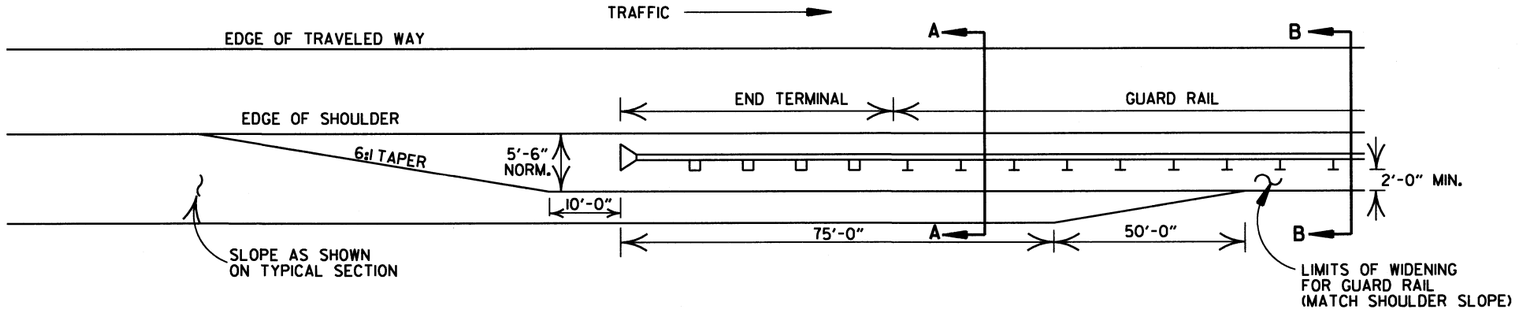
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

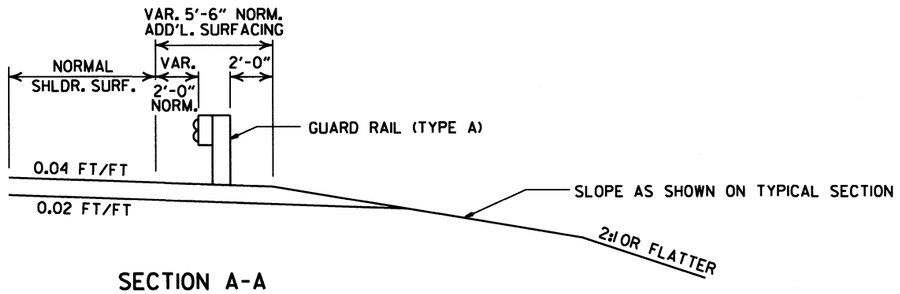
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

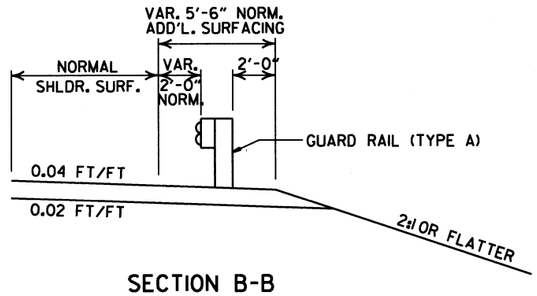
GUARD RAIL DETAILS

STANDARD DRAWING GR-9



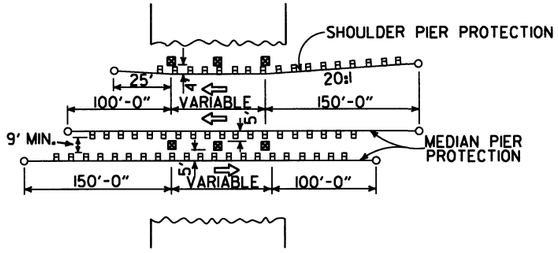


SECTION A-A



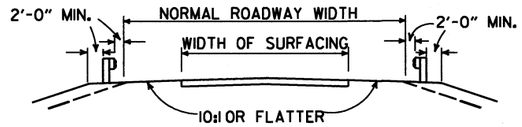
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

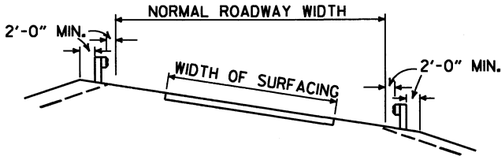


METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.



SECTION ON TANGENT



SECTION ON CURVE

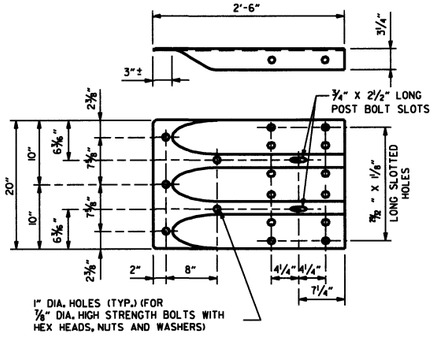
DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

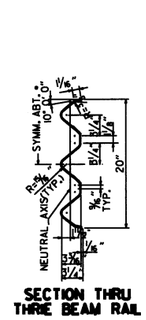
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

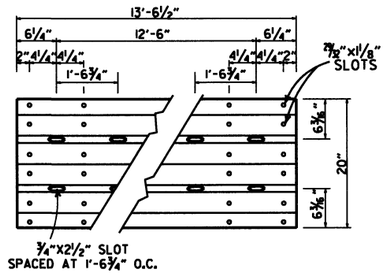
STANDARD DRAWING GR-9A



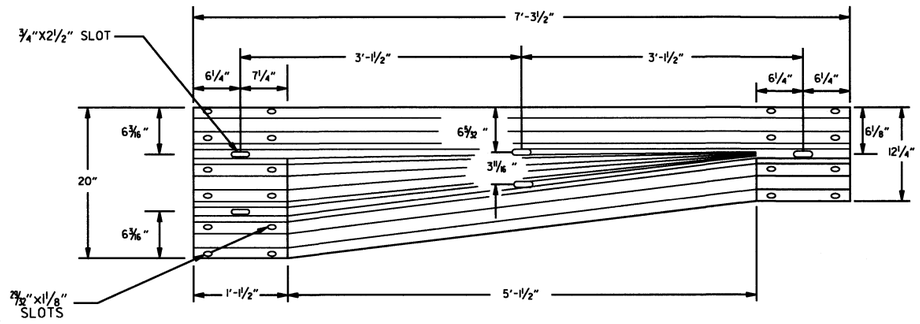
SPECIAL END SHOE



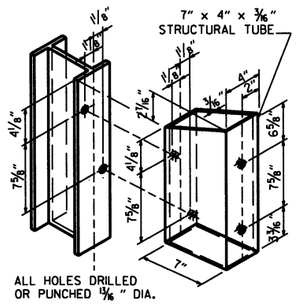
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

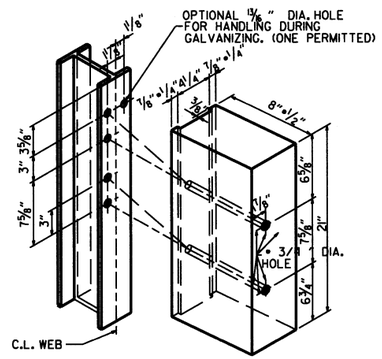


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

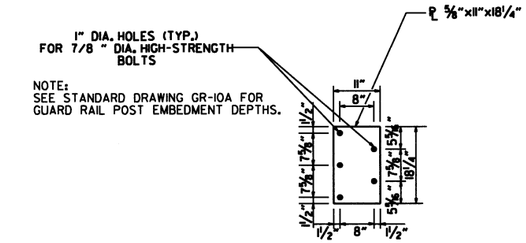
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

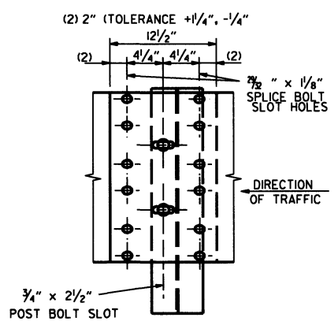
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

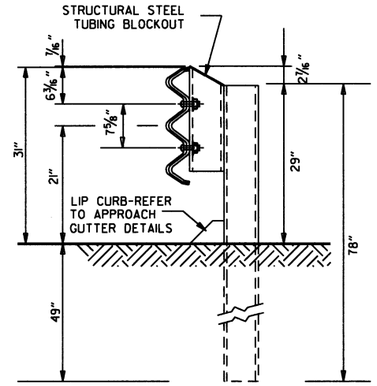
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

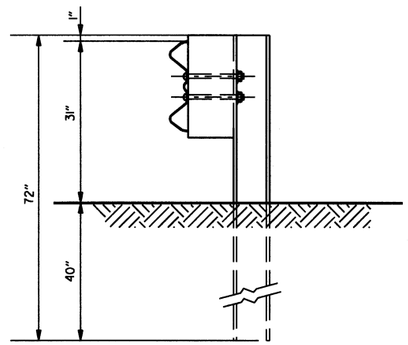
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

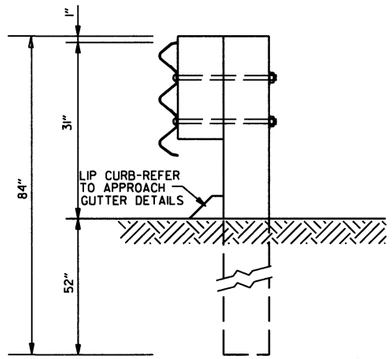
STANDARD DRAWING GR-10



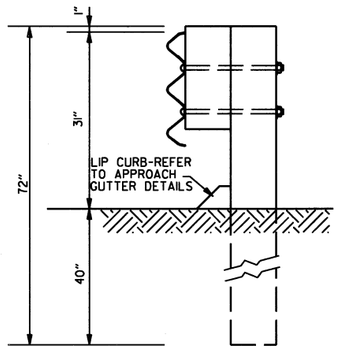
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



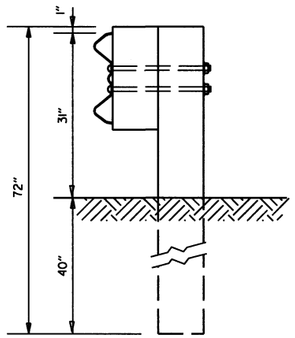
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

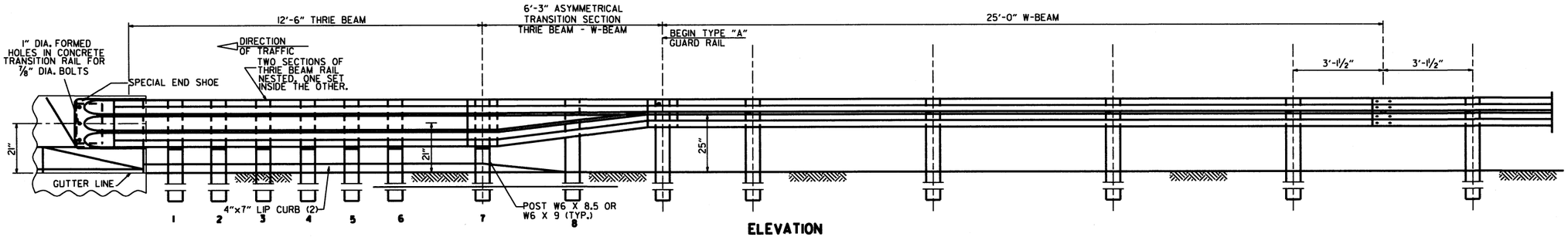
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

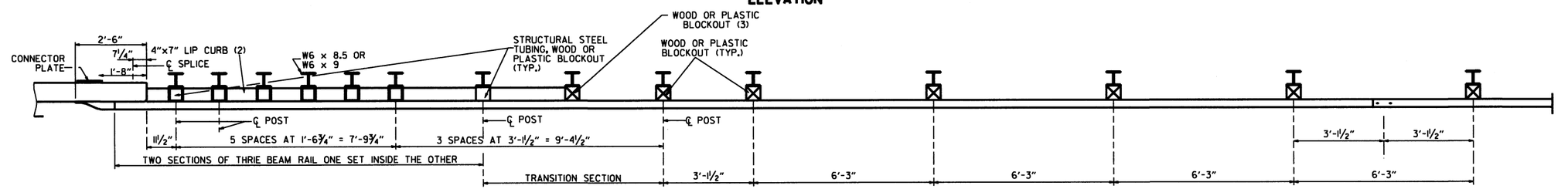
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

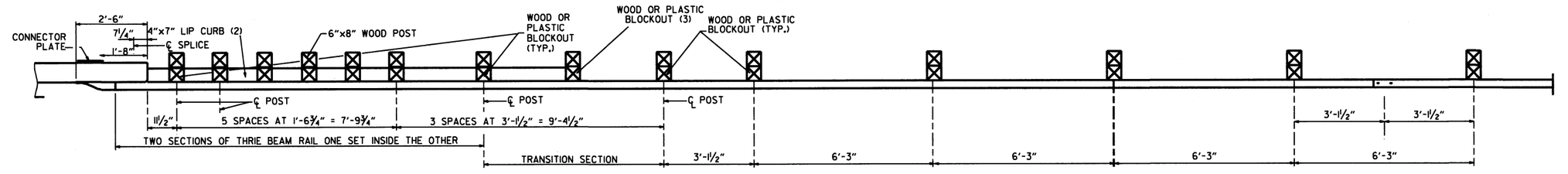
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3*4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

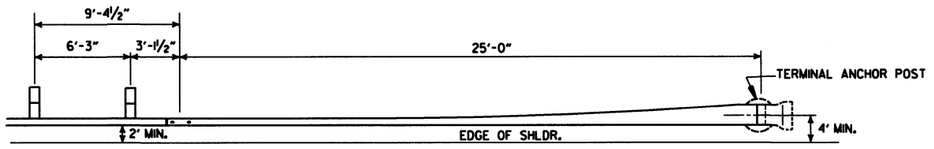
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

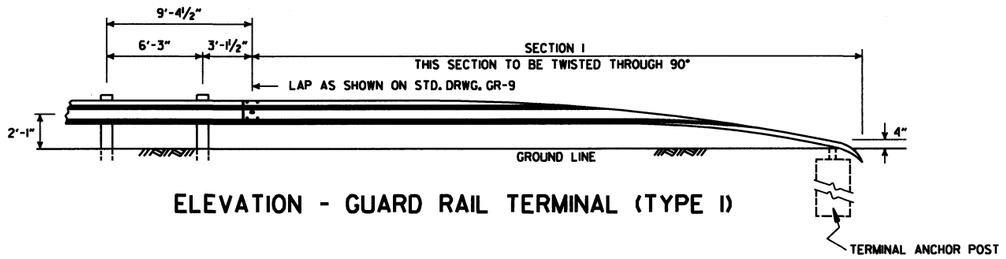
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

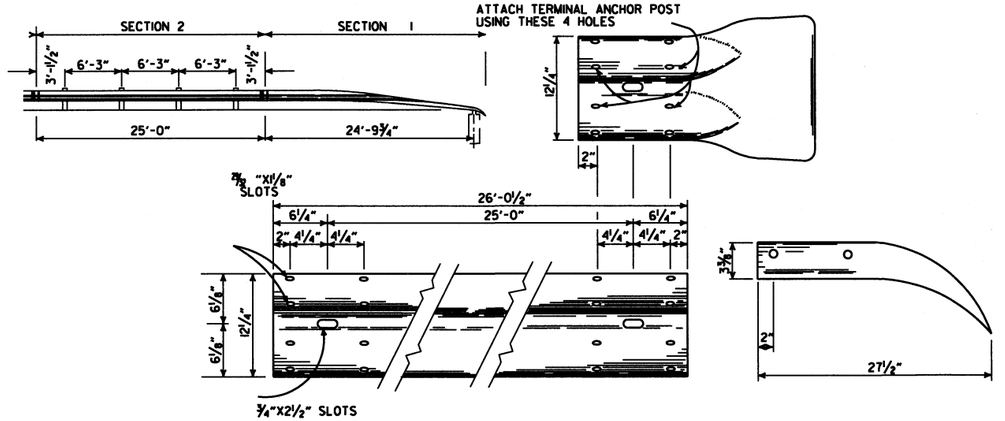


PLAN - GUARD RAIL TERMINAL (TYPE I)



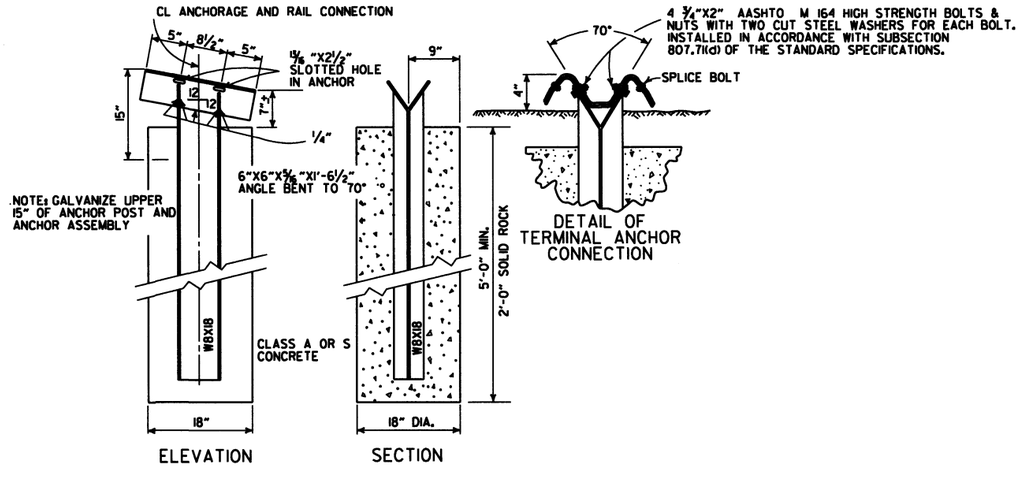
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION I

TERMINAL SECTION



NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

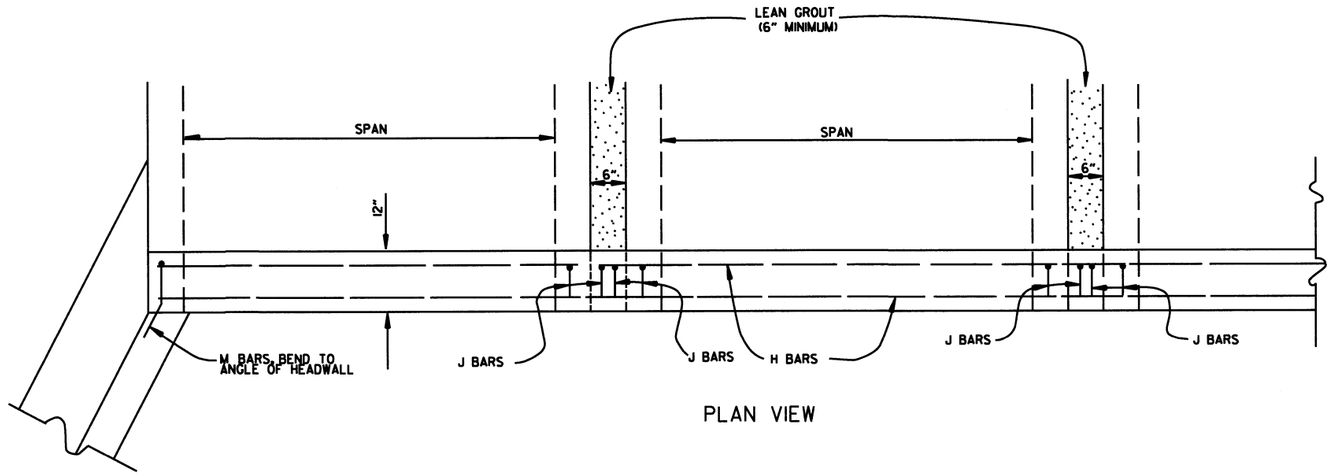
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT AND LOCATION OF POSTS	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
06-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-03-94	DIMENSION TERMINAL DETAIL	
11-1-92	ADDED NOTE FOR PAYMENT	11-1-92
10-01-92	DRAWN & ISSUED	10-1-92

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

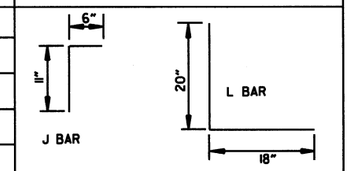
STANDARD DRAWING GRT-1



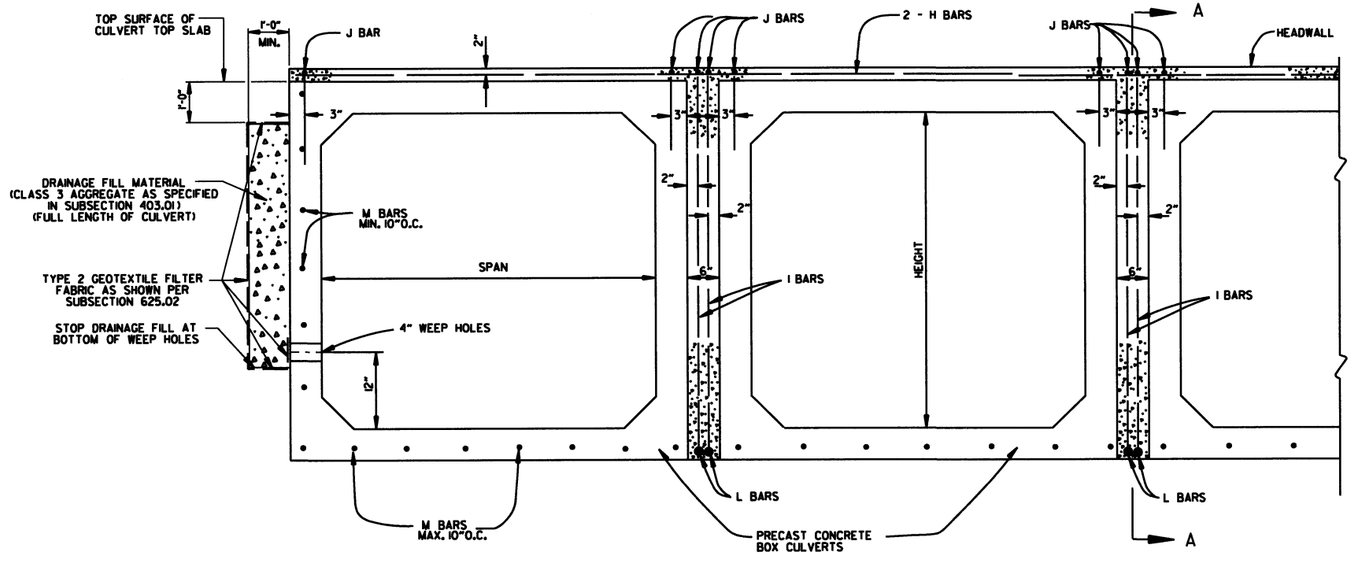
PLAN VIEW

BAR LIST

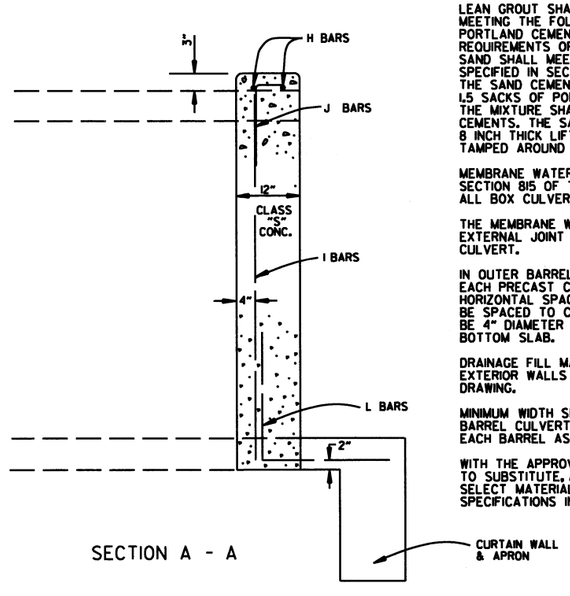
BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT



END VIEW



SECTION A - A

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING, STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT), ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

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.

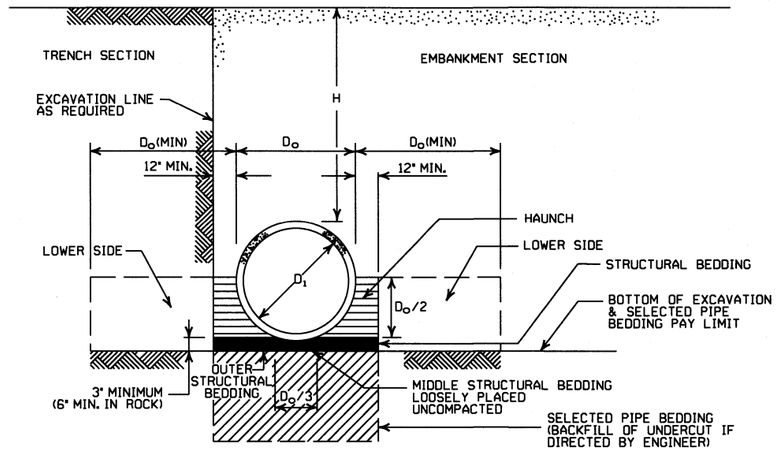
- LEGEND -

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
		2⅔ 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

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.

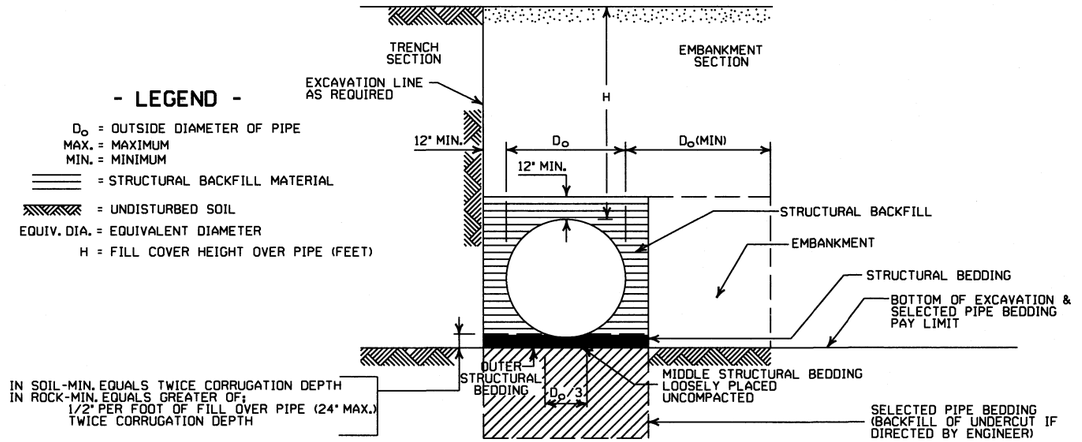
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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. INSTALAALTION 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."

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.)		MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION		INSTALLATION		INSTALLATION		INSTALLATION
				TYPE 1		TYPE 1		TYPE 1		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			

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

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

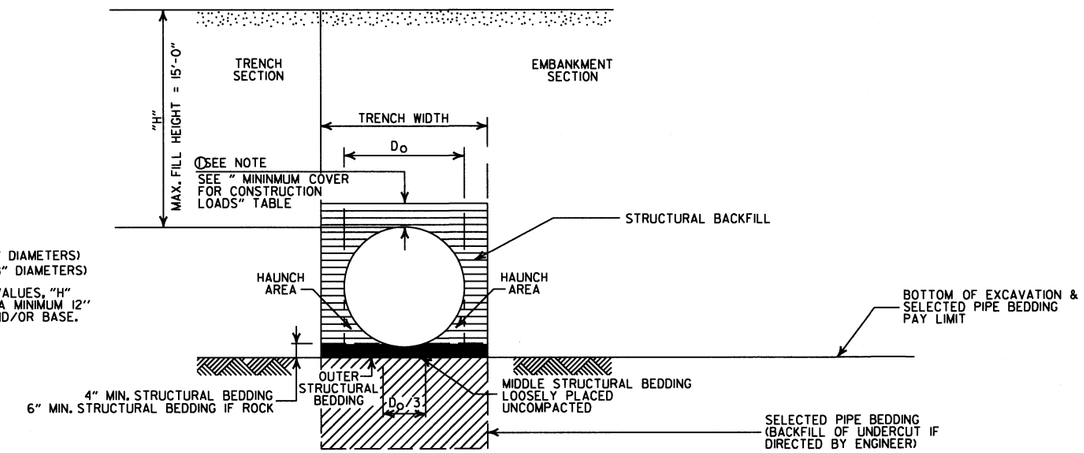
MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

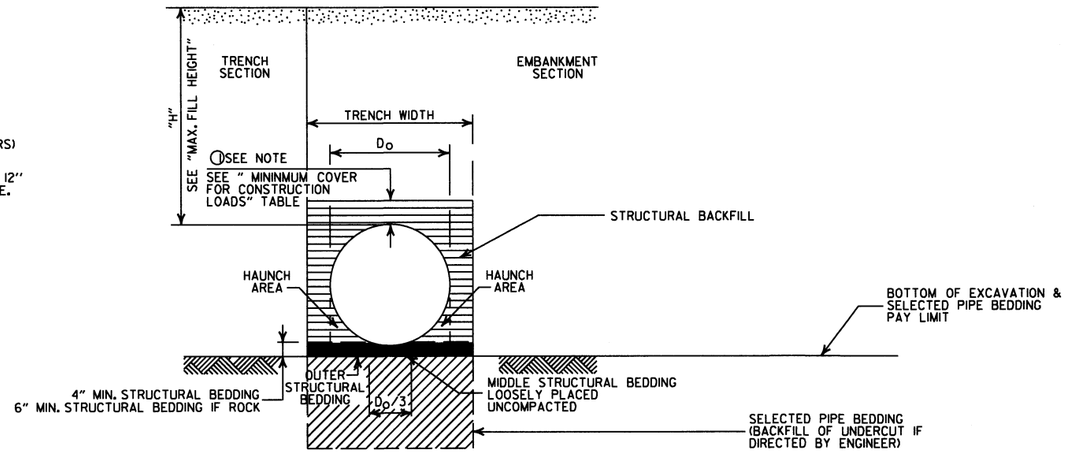
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

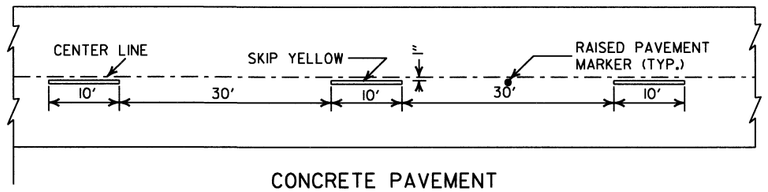
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

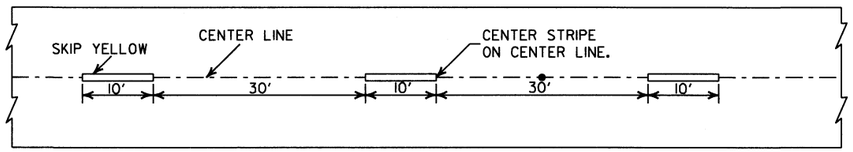
PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

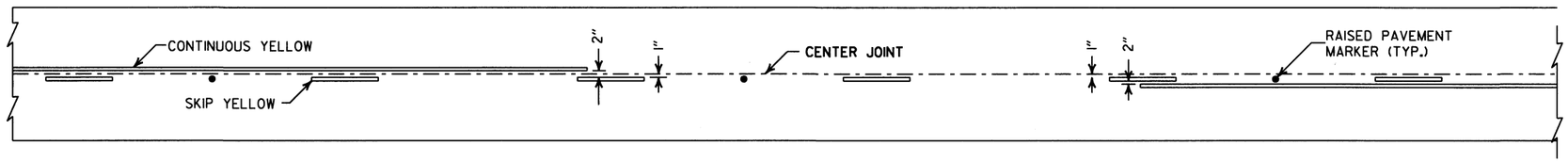


CONCRETE PAVEMENT

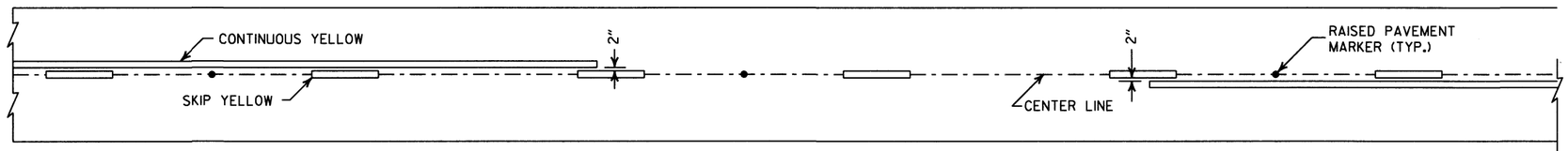


ASPHALT PAVEMENT

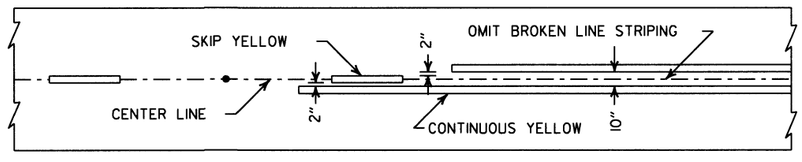
BROKEN LINE STRIPING



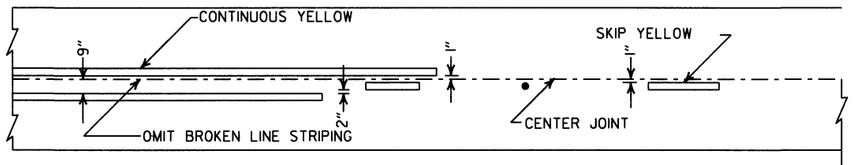
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

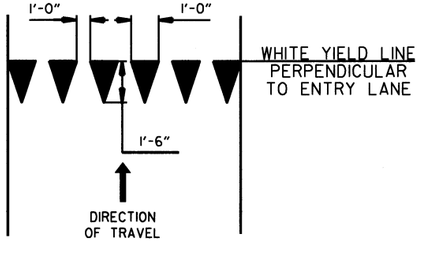


ASPHALT PAVEMENT

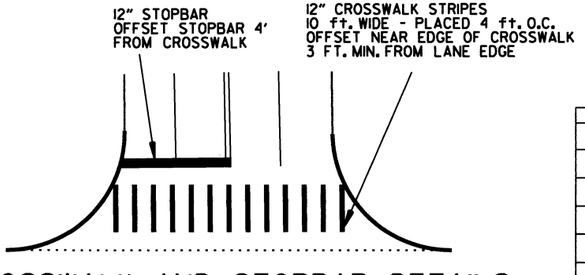


CONCRETE PAVEMENT

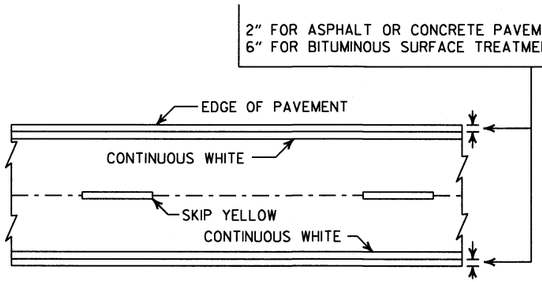
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



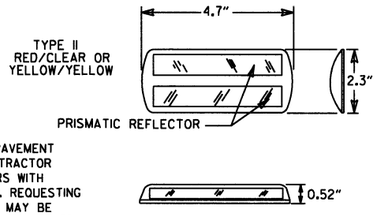
CROSSWALK AND STOPBAR DETAILS



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

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.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

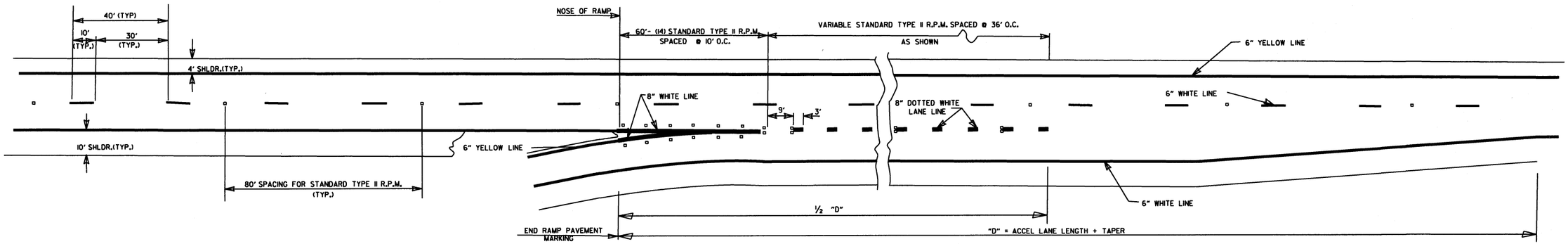
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

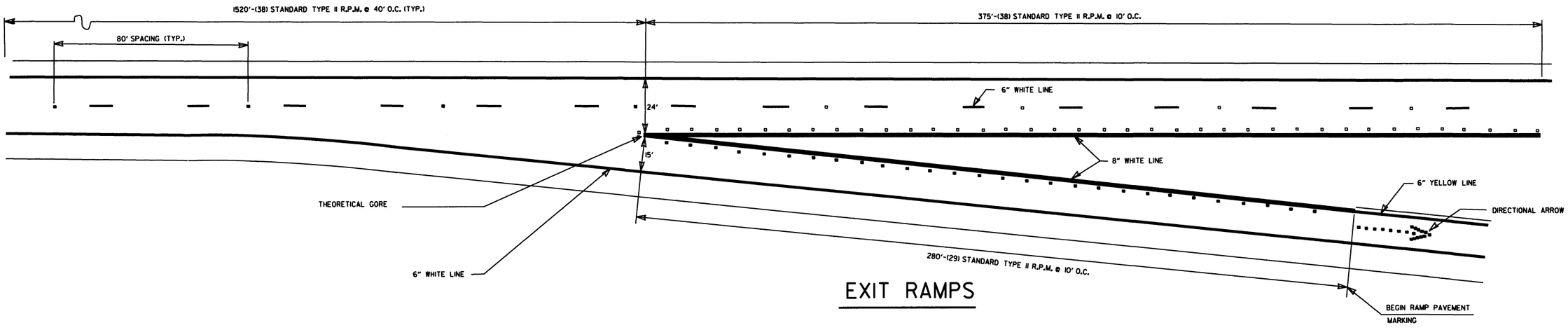
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

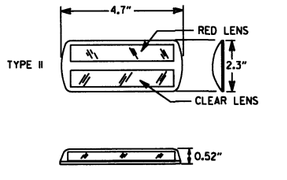
6" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

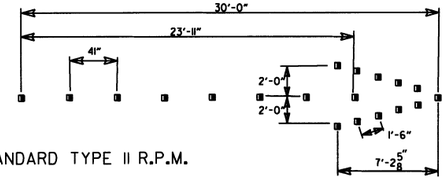


EXIT RAMPS



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
12-8-16	REVISED RAISED PAV'T MARKERS FOR 80' SPACING; REVISED WIDTH OF STRIPING	
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

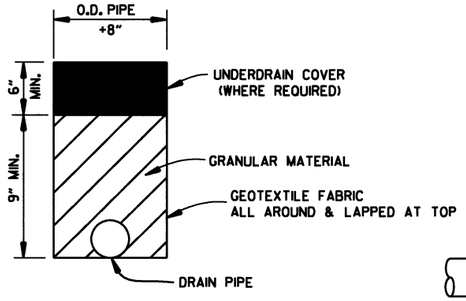
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

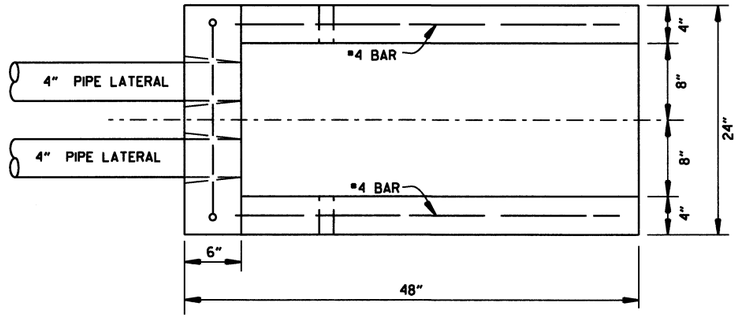
STANDARD DRAWING PM-2

NOTE:

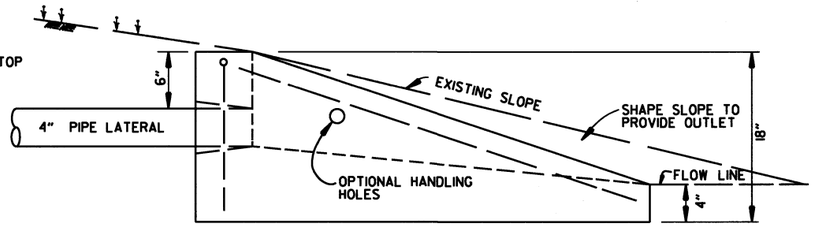
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

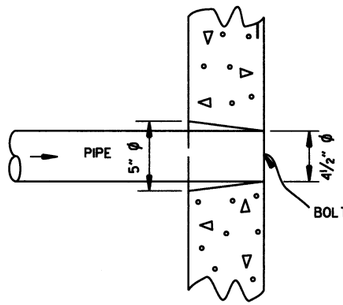




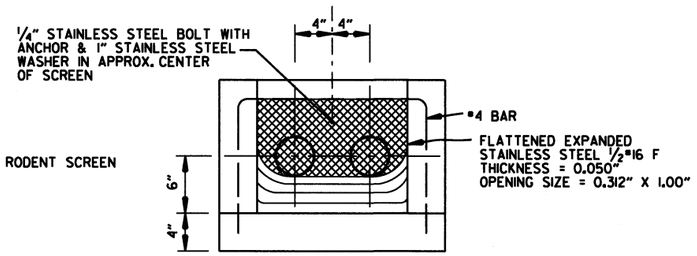
PLAN VIEW



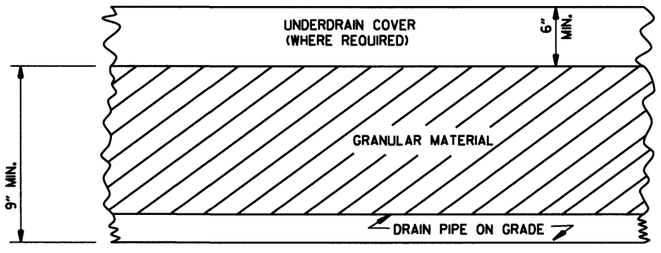
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

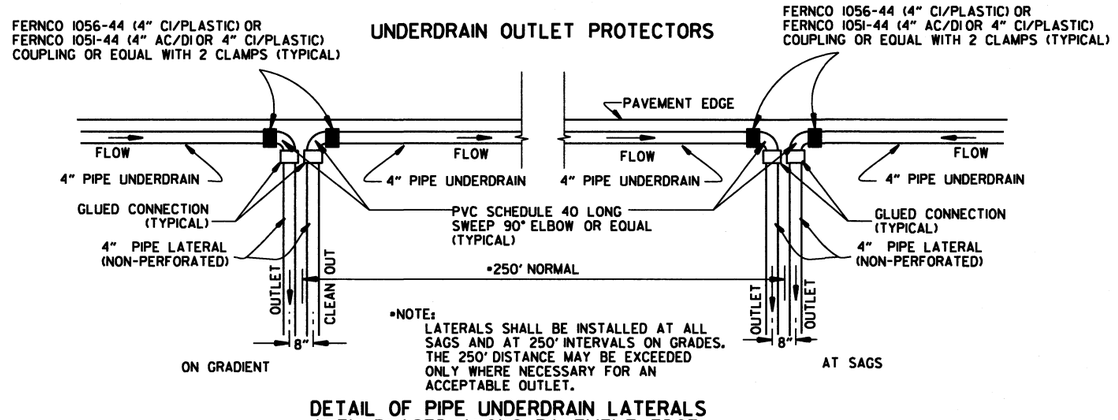


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



*NOTE:
LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

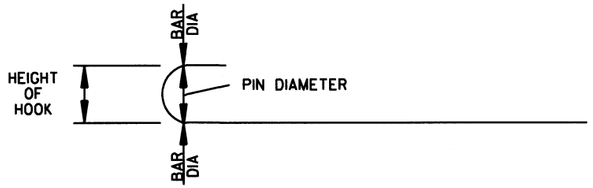
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

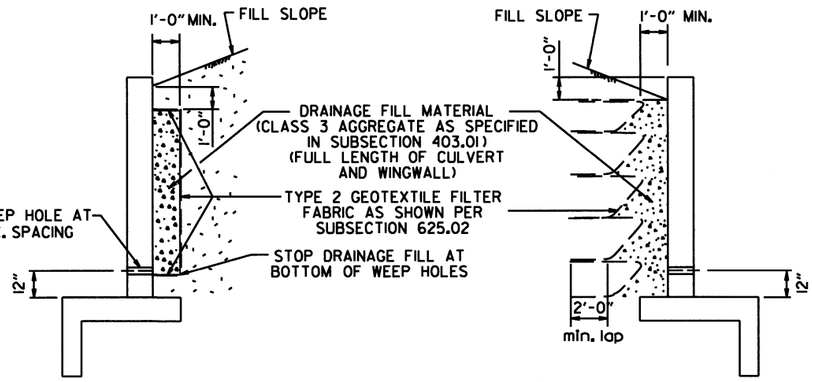
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

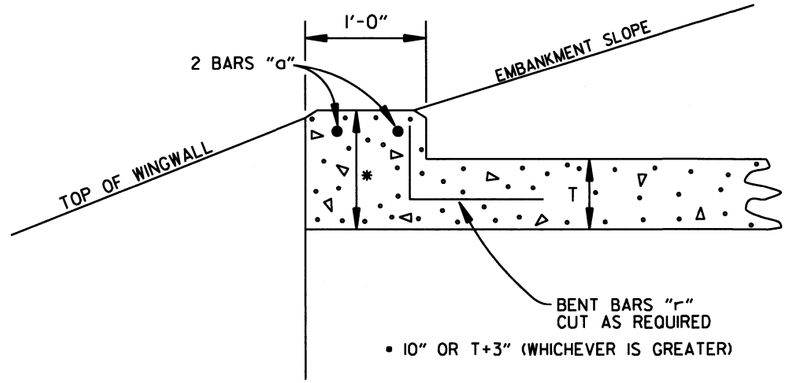
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

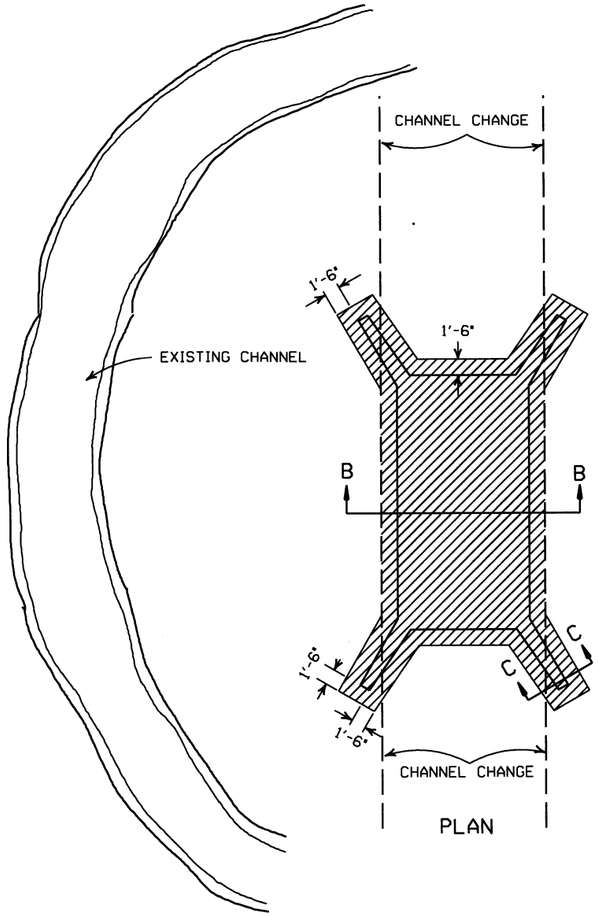
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

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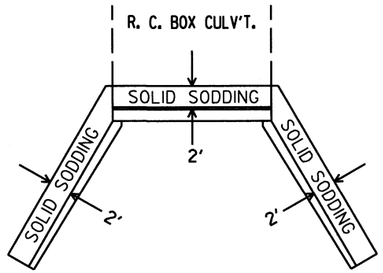
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

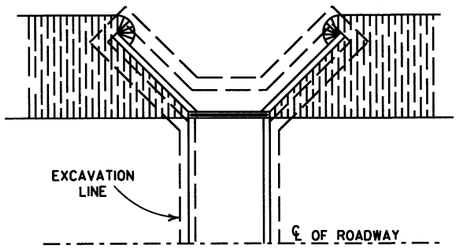
SOLID SODDING



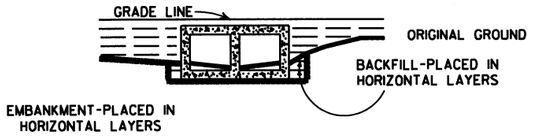
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

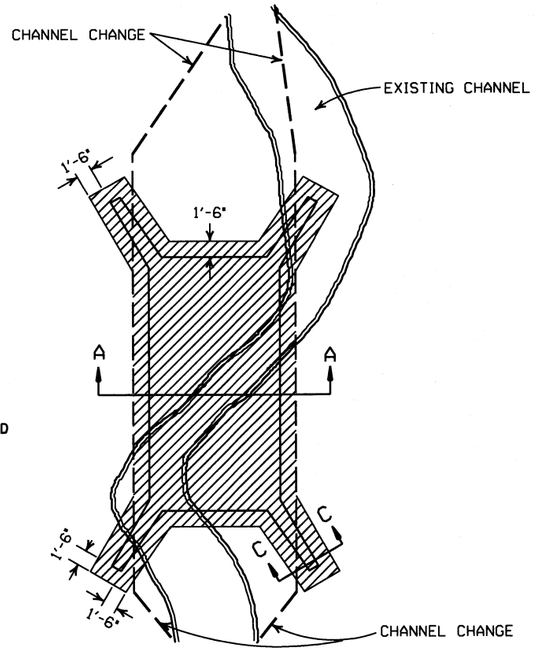


PLAN

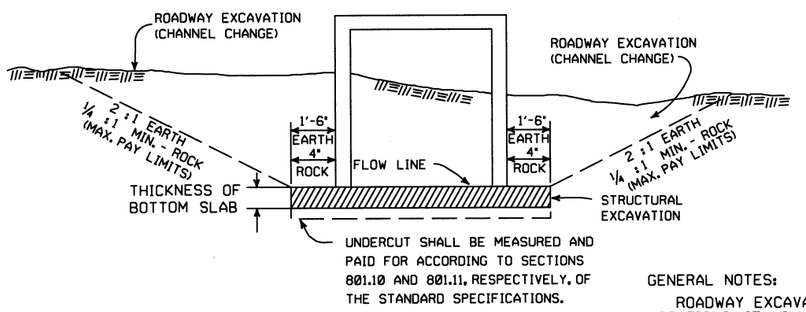


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

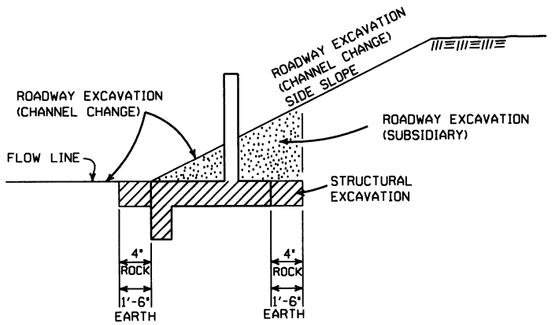


PLAN

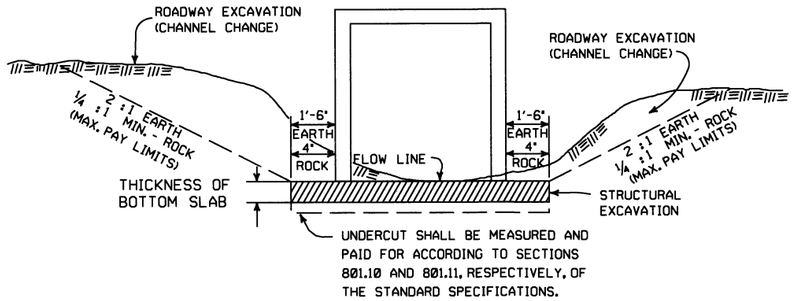


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

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.

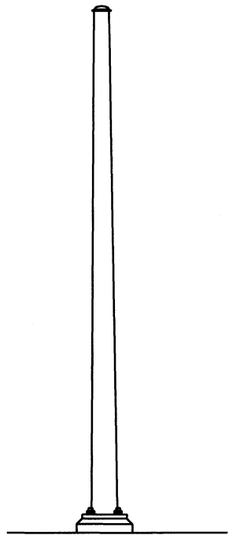
USE FATIGUE CATEGORY II.

CONSTRUCTION SPECIFICATIONS: 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 ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

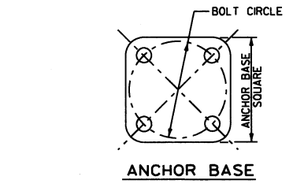
THE GROUND ROD SHALL BE FUSION WELDED TO A IC/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX PAID FOR SEPARATELY AS SHOWN ON THE PLANS.



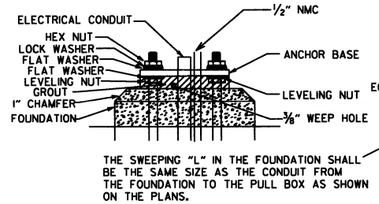
ANTENNA POLE

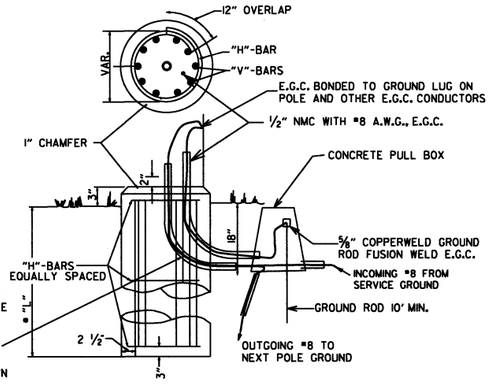
NOTE:

COMMUNICATION CABLE SHIELD SHALL BE TIED TO THE GROUND AT ONE ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.



ANCHOR BASE





TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING.

POLE HEIGHT	FOUNDATION DIAMETER	DEPTH "L"	VERTICAL	HORIZONTAL	TIE SPACING
20.0'	30"	5'-6"	12-#7	#4	5 SP @ 12"
25.0'	30"	6'-0"	12-#7	#4	6 SP @ 11"
30.0'	30"	6'-6"	12-#7	#4	6 SP @ 12"
35.0'	30"	7'-0"	12-#7	#4	7 SP @ 11"
40.0'	30"	7'-6"	12-#7	#4	7 SP @ 12"
45.0'	36"	8'-6"	13-#8	#4	8 SP @ 12"
50.0'	36"	9'-6"	13-#8	#4	9 SP @ 12"
55.0'	36"	10'-0"	13-#8	#4	10 SP @ 11"
60.0'	36"	10'-6"	13-#8	#4	10 SP @ 12"
65.0'	36"	11'-0"	13-#8	#4	12 SP @ 10 ½"
70.0'	36"	11'-6"	13-#8	#4	11 SP @ 12"
75.0'	42"	13'-0"	18-#8	#4	14 SP @ 10 ½"
80.0'	42"	13'-6"	18-#8	#4	13 SP @ 12"
85.0'	42"	14'-6"	18-#8	#4	14 SP @ 12"
90.0'	42"	15'-0"	18-#8	#4	18 SP @ 9 ½"

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 ¾" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

PROVIDE 3" CLEAR TIES. DETAIL 3" TO FIRST TIE AT TOP OF SHAFT.

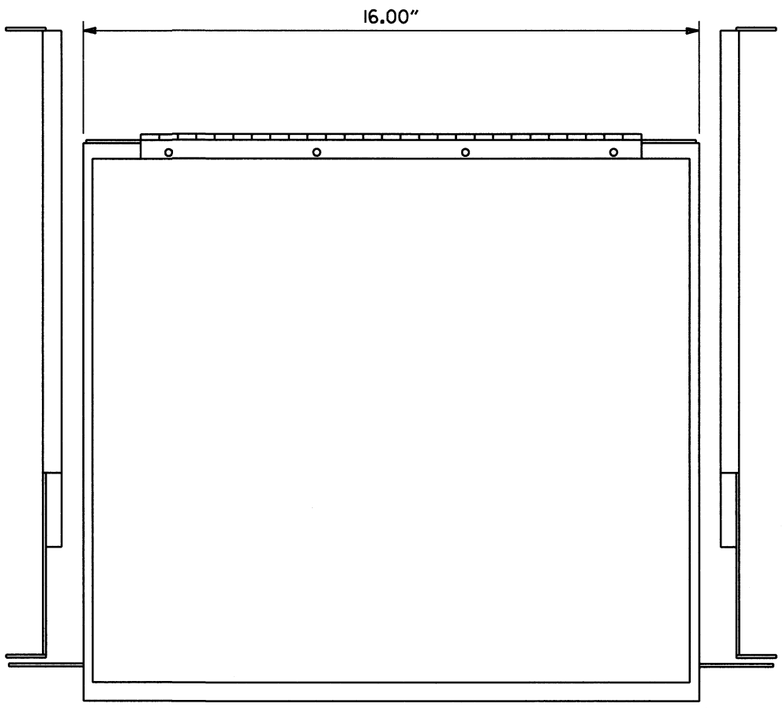
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
09-06-00	ISSUED	

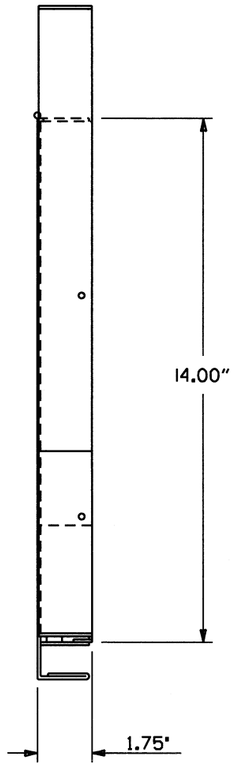
ARKANSAS STATE HIGHWAY COMMISSION

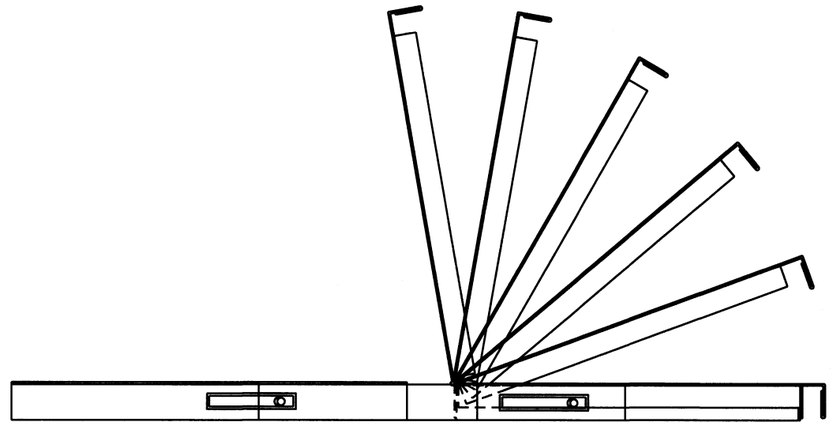
ANTENNA POLE

STANDARD DRAWING SD-1

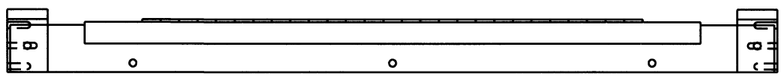
DRAWER PLAN VIEW



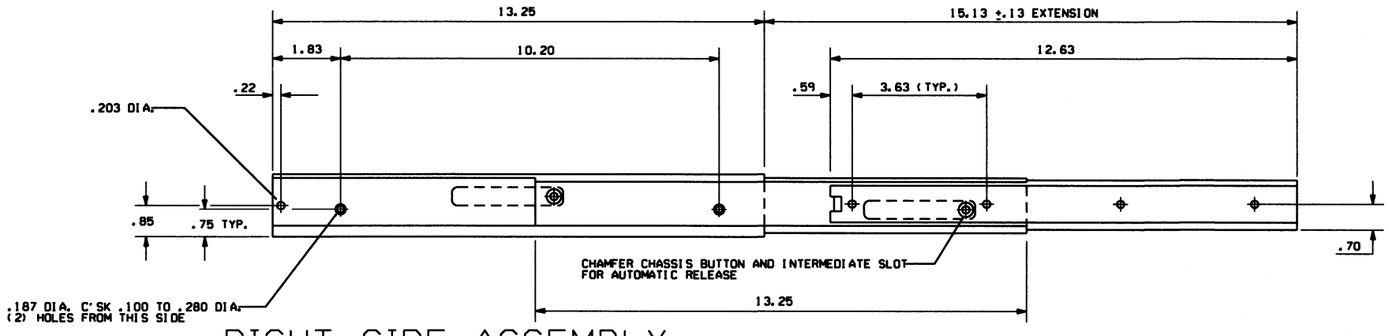




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

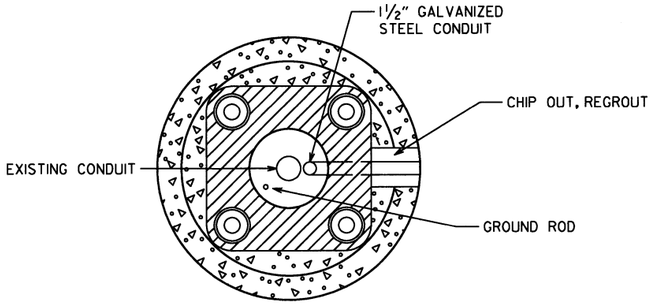
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

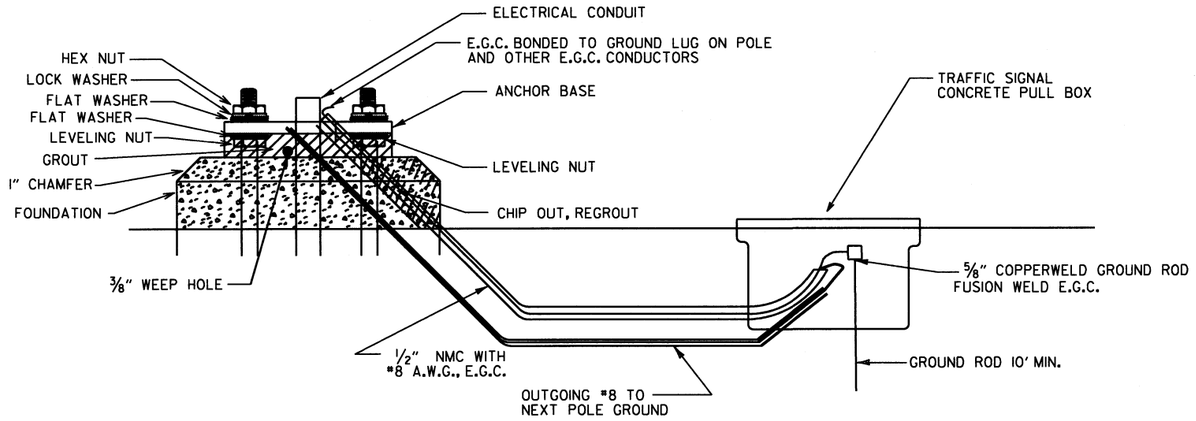
CONTROLLER CABINET UTILITY DRAWER

STANDARD DRAWING SD-5

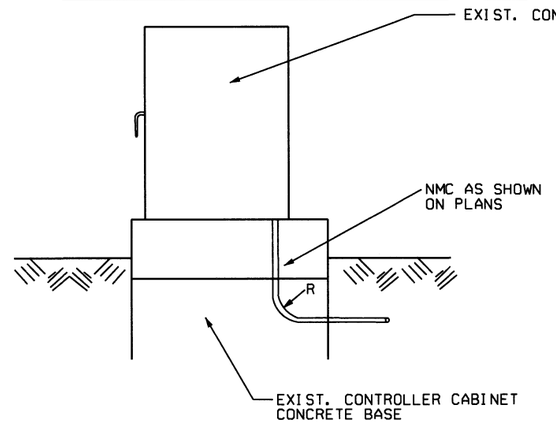
CONDUIT ENTRY TO EXISTING POLE BASE



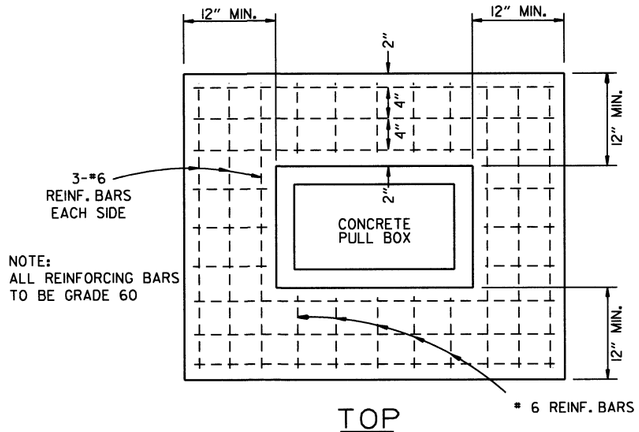
ANCHOR BASE



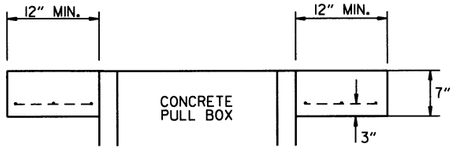
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

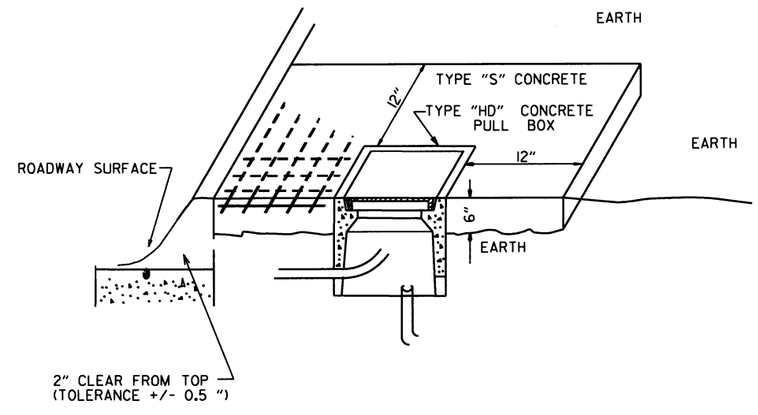


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



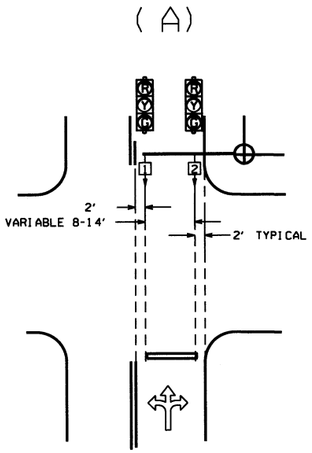
NOTE:
ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

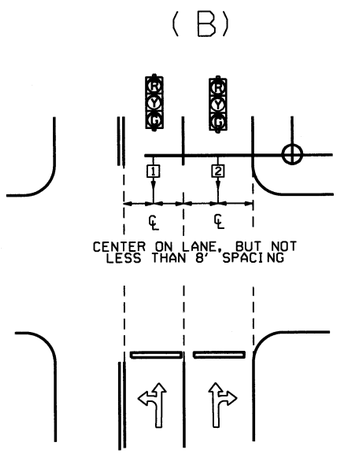
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-02-15	REVISED PULL BOX DEPTH	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	ADDED & REVISED CONDUIT ENTRY	
06-23-04	REVISED CLEARANCE AT CURB ENTRY	
01-04-02	ADDED REINFORCING TO BOX APRON	
07-02-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

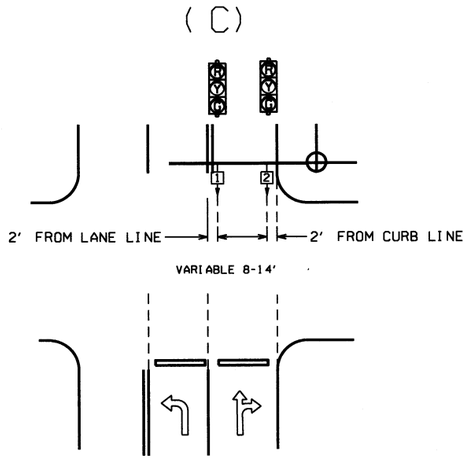
ARKANSAS STATE HIGHWAY COMMISSION

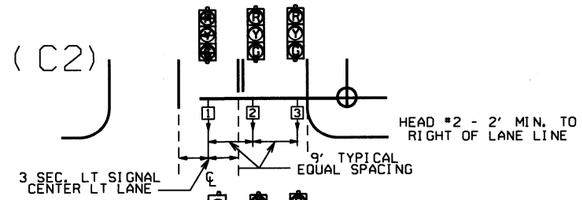
HEAVY DUTY PULL BOX

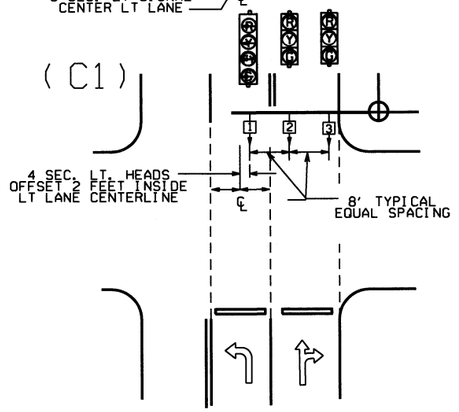
STANDARD DRAWING SD-6

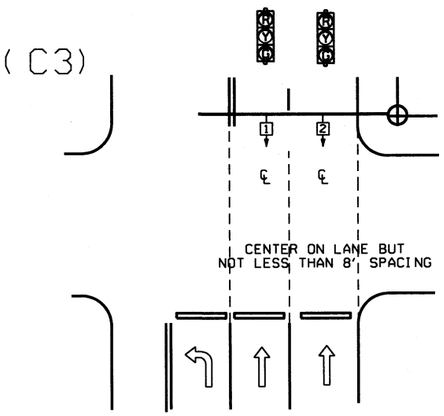


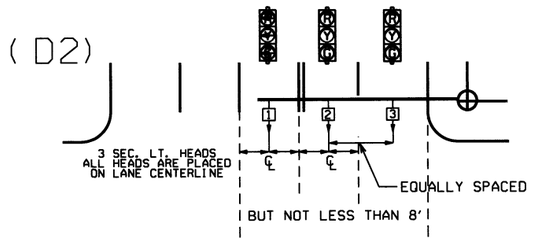


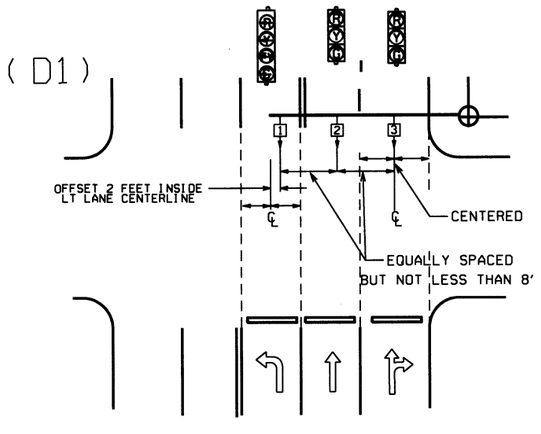




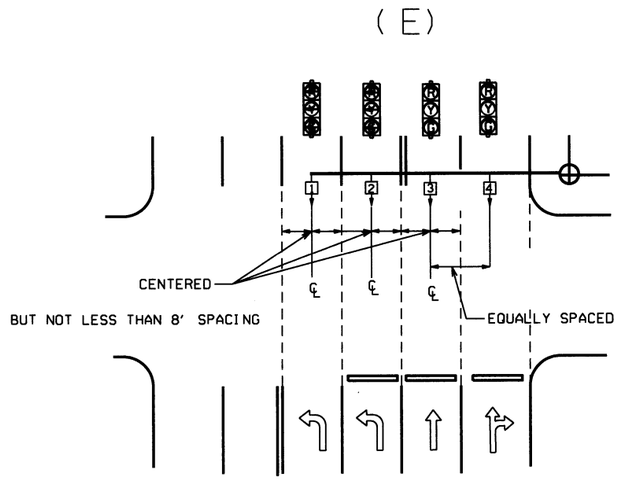








NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.



℄ = 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-5 OF 2009 MUTCD.

12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	
DATE	REVISION	DATE FILM

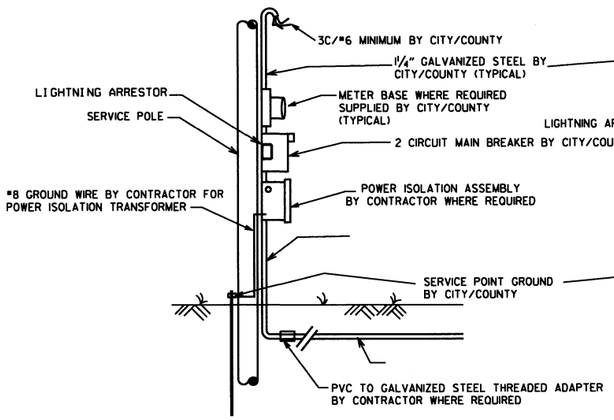
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

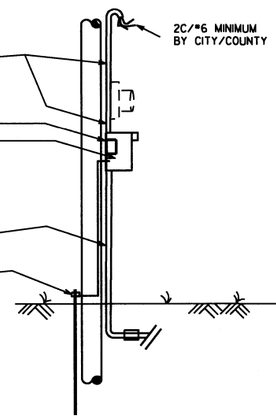
STANDARD DRAWING SD-8

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/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

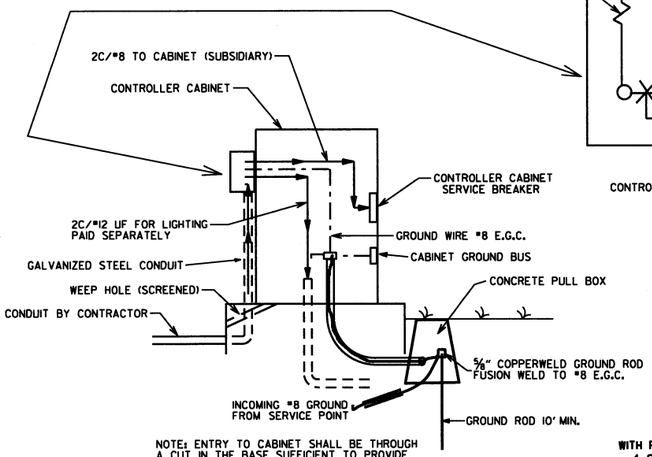
ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY COMPANY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION STREET LIGHTING CIRCUIT (2C/#12 A.W.G. 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.

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.

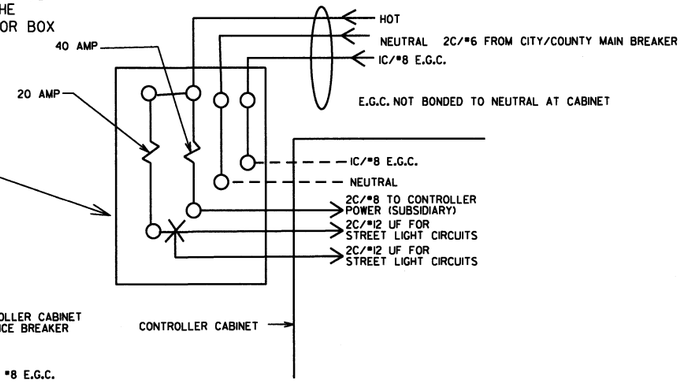
MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



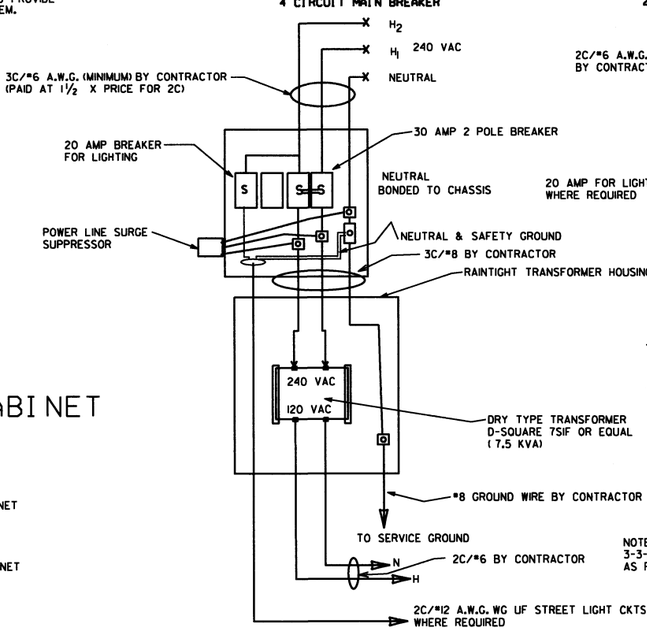
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



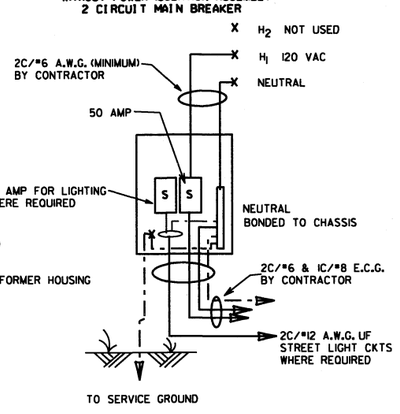
MAIN BREAKER WIRING (TYPICAL)

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

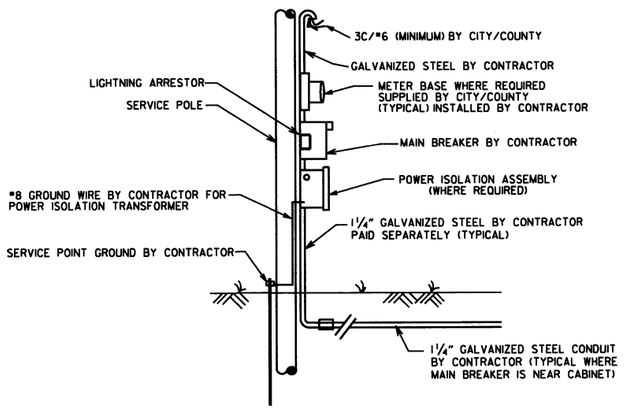


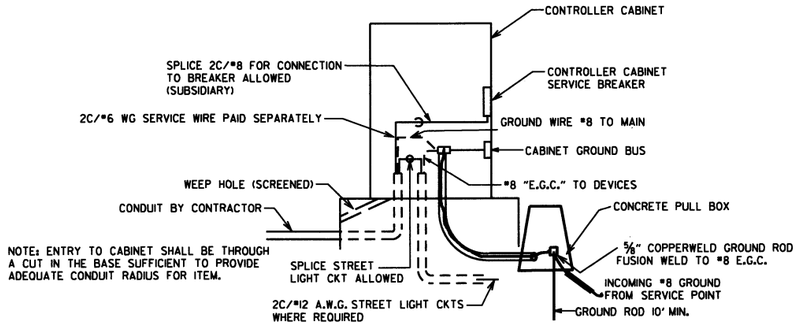
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (E.C.G.) ADDED 3-3-2003, CONSISTING OF A IC/#8 A.W.G. CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES:
PEDESTRIAN 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 SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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 FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS 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 THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
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 ½" 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, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES:

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6"; 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (3 SEC., 56 LB., 8.3 SQ. FT.):
DESIGN TO ACCOMMODATE:
2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAT 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. WT. 75 LB., 3.3 SQ. FT.)
PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

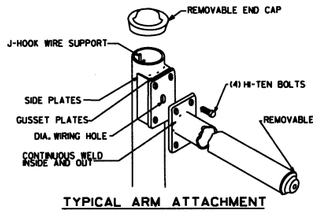
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACCUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

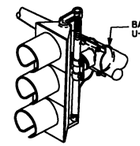
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

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 MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

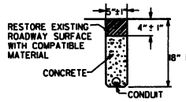
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



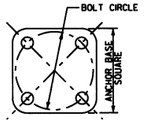
TYPICAL ARM ATTACHMENT



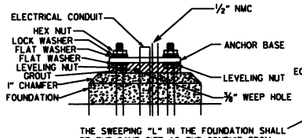
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



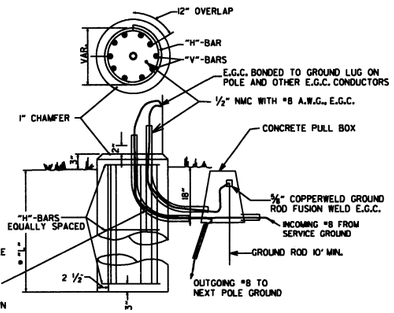
TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



ANCHOR BASE



THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

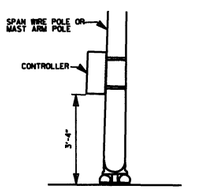


THE GROUND ROD SHALL BE FUSION WELDED TO A 10'/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE GROUND ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

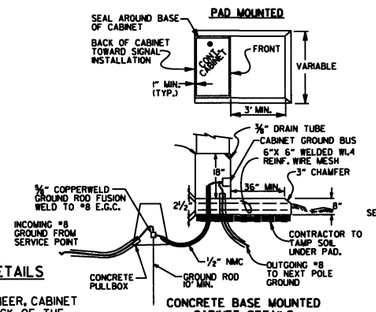
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL VERTICAL	STEEL HORIZONTAL	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



CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

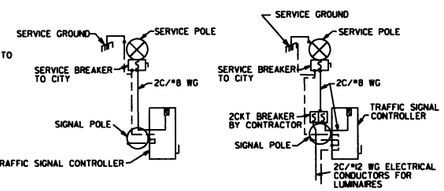
NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

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 ¼" 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 PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 707 PEDESTRIAN SIGNAL HEAD.

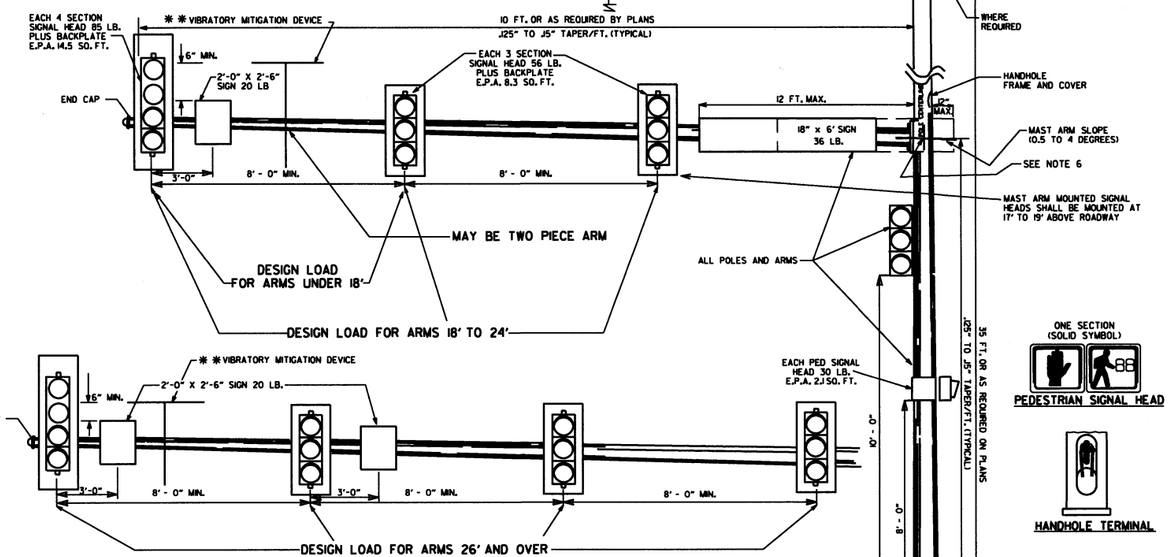


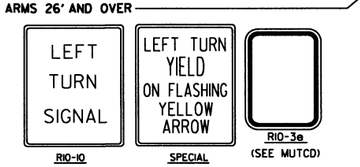
SERVICE DISCONNECT
NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

* 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 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION 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" X 16" X 0.125" 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 THE HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OF 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.





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 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 ALTERATION IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

DATE	REVISION	FILMED
11-16-17	REVISED NOTES, ADDED PEDESTRIAN SIGNAL HEAD DETAIL, ADDED HANDHOLE TERMINAL DETAIL, ADDED TRENCHING DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
12-08-16	REVISED NOTES	
02-27-14	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED VMD, SIGNAL HEADS	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
06-23-04	REVISED	
05-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
06-11-01	REV. NOTES & POLE MAST ARM SLOPE	
04-11-01	REVISED POLE TAPERS	
04-25-00	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

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			N.C.			N.C.			N.C.			N.C.		
1° 00'	N.C.			N.C.			0.021			N.C.			N.C.			N.C.			N.C.		
1° 15'	N.C.			R.C.			0.026			0.022			0.023			0.025			0.028		
1° 30'	N.C.			0.021			0.031			0.026			0.030			0.033			0.037		
1° 45'	N.C.			0.025			0.036			0.032			0.037			0.041			0.046		
2° 00'	R.C.			0.028	175		0.040	200		0.037	225		0.043	250		0.048	250		0.054	275	
2° 15'	0.021			0.031			0.045			0.043			0.049			0.055			0.062		
2° 30'	0.023			0.034			0.049			0.048			0.055			0.062			0.070		
2° 45'	0.025			0.037			0.053			0.053			0.061			0.069	265		0.078	300	
3° 00'	0.028	150		0.040		250	0.057			0.058			0.067			0.075	280		0.085	315	400
3° 15'	0.029			0.043			0.061			0.063			0.072			0.081	300		0.091	335	
3° 30'	0.029			0.046			0.065	205		0.067	230		0.077	260		0.087	315	400	0.096	350	
3° 45'	0.031			0.049			0.069	215		0.072	245		0.082	275		0.090	325		0.098	360	450
4° 00'	0.033			0.051			0.072	225		0.076	255		0.086	285		0.095	340		0.100	360	
4° 30'	0.037			0.056			0.078	240		0.080	265		0.090	295		0.097	345				
5° 00'	0.040			0.061			0.083	250		0.083	270		0.093	305		0.099	350				
5° 30'	0.043			0.066	185		0.088	260		0.087	280		0.096	315							
6° 00'	0.046			0.070	190		0.092	270		0.091	295		0.098	320							
6° 30'	0.049			0.074	195		0.095	280		0.094	300										
7° 00'	0.053			0.078	210		0.098	285		0.098	315										
7° 30'	0.056			0.081	215		0.099	290		0.100	315										
8° 00'	0.058			0.084	220																
8° 30'	0.061			0.087	225																
9° 00'	0.063			0.089	230																
10° 00'	0.068	160		0.094	235																
11° 00'	0.072	170		0.097	250																
12° 00'	0.076	175		0.099	250																
13° 00'	0.080	180		0.100	250																
14° 00'	0.083	190																			
15° 00'	0.086	195																			
16° 00'	0.089	200																			
17° 00'	0.091	200																			
18° 00'	0.093	205																			
19° 00'	0.095	210																			
20° 00'	0.097	215	300																		
21° 00'	0.098	215																			
22° 00'	0.099	215																			
23° 00'	0.099	215																			
24° 00'	0.100	220																			

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 4° 15' | D MAX = 3° 30'

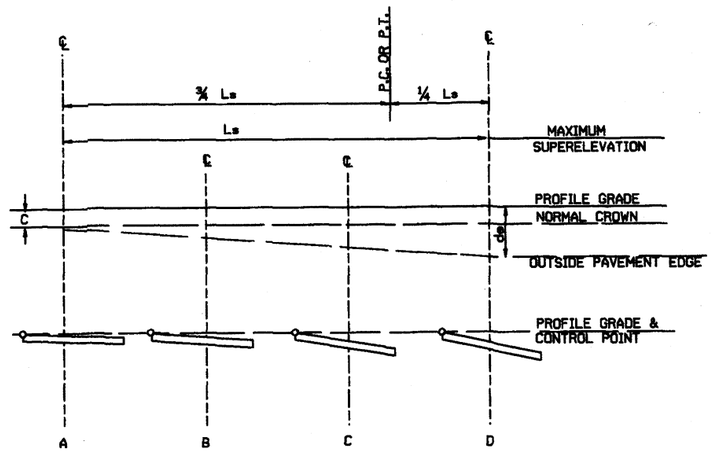
GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%

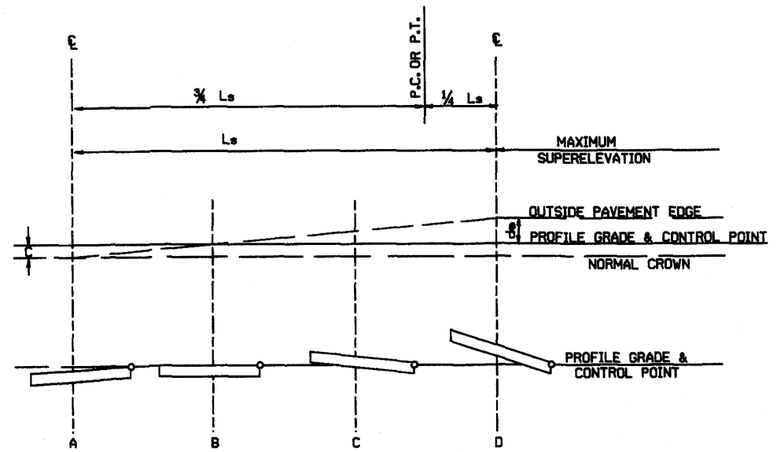
ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
S - SUPERELEVATION
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT
e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
C - NORMAL CROWN (FT.)



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

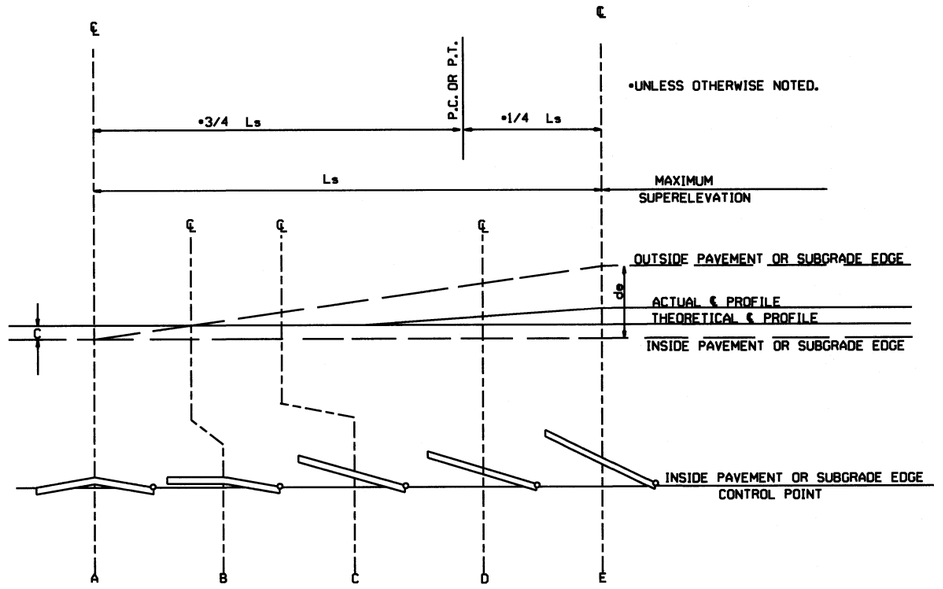
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.032			0.037	250	300	0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225	300	0.043			0.054		
1° 45'	N.C.			0.025	175		0.036			0.043			0.049			0.062		
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.070		
2° 15'	R.C.			0.031			0.045			0.053			0.061			0.078	300	350
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	
2° 45'	0.023			0.037			0.053			0.063			0.072			0.091	335	
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.096	350	
3° 15'	0.027	150		0.043		200	0.061			0.072	245		0.082	275		0.098	360	400
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.100	360	
3° 45'	0.031		200	0.049			0.069	215		0.080	265		0.090	295	350			
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305				
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.091	295		0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300	350						
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220	250	0.100	290										
8° 30'	0.061			0.087	225													
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190																
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 3° 30'

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

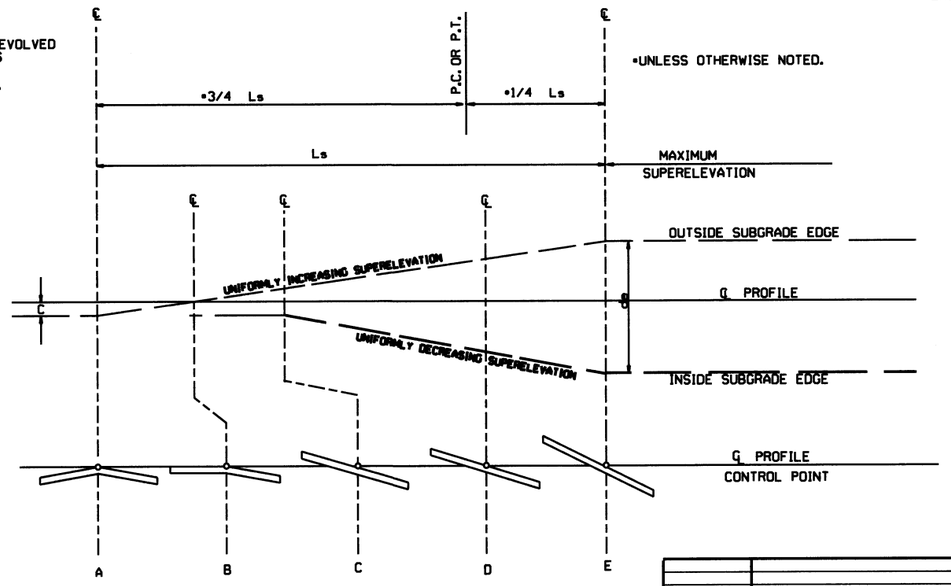
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

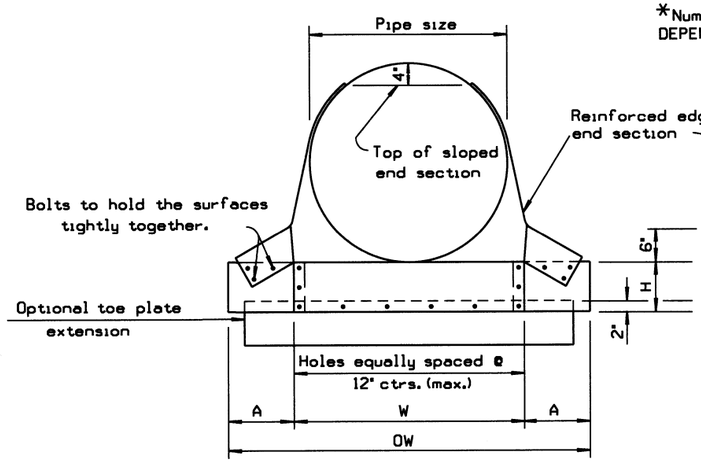
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

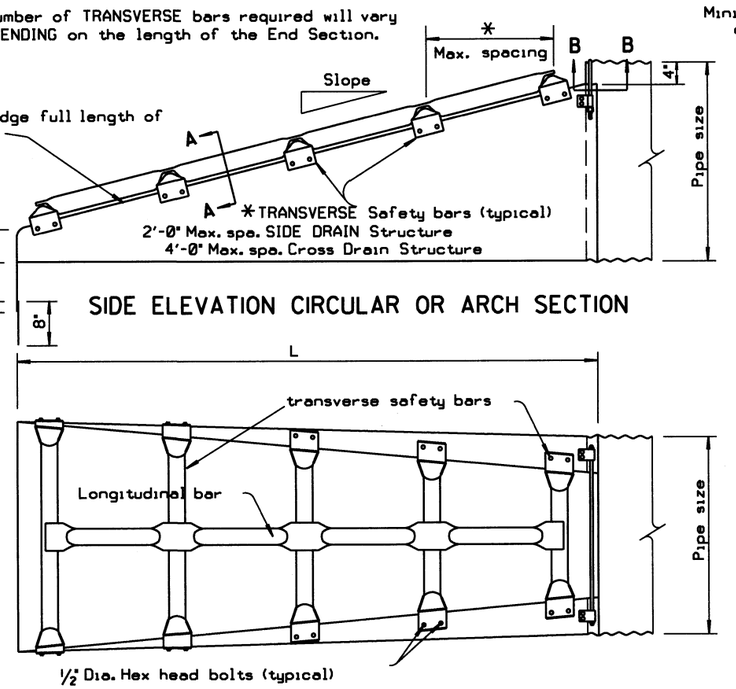
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

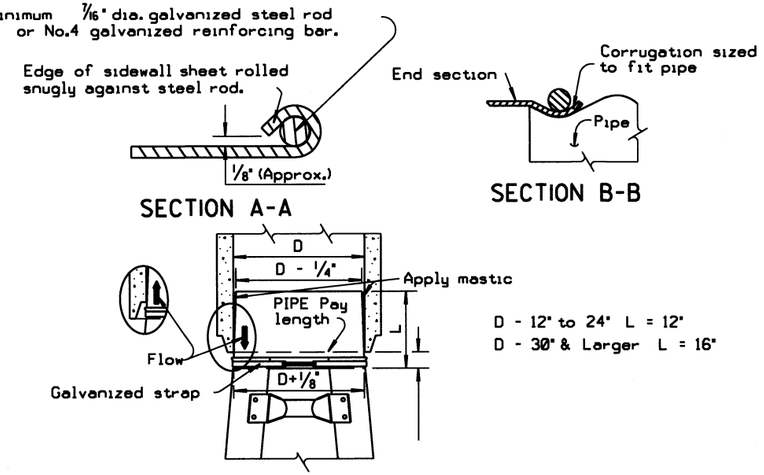


FRONT VIEW CIRCULAR PIPE



SIDE ELEVATION CIRCULAR OR ARCH SECTION

TOP VIEW CIRCULAR OR ARCH SECTION



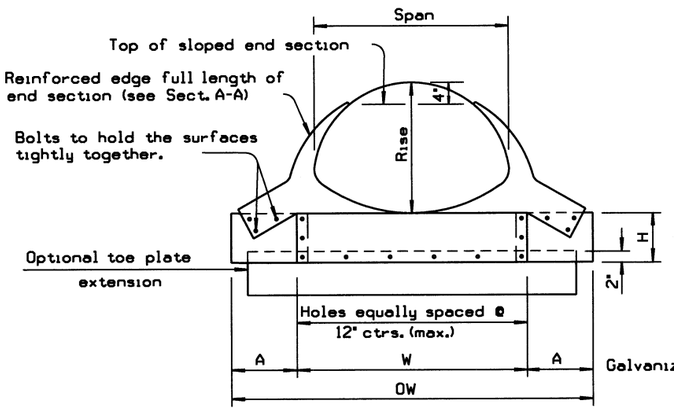
SECTION A-A

SECTION B-B

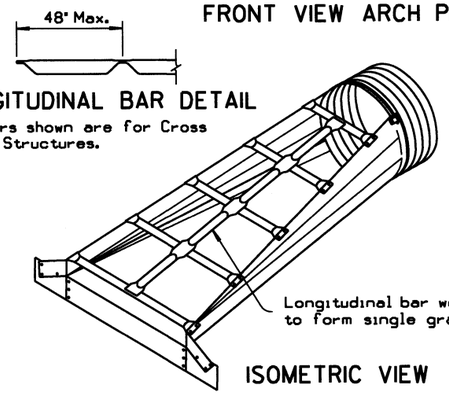
Note: Metal end section to be firmly wedged INTO PIPE END BEFORE BACKFILLING PIPE.

(Tapered sleeve to be 12 Ga. smooth galvanized steel in accordance with AASHTO M 218.)

STEEL END SECTION FOR CONCRETE PIPE
(Alternate for Concrete End Section)



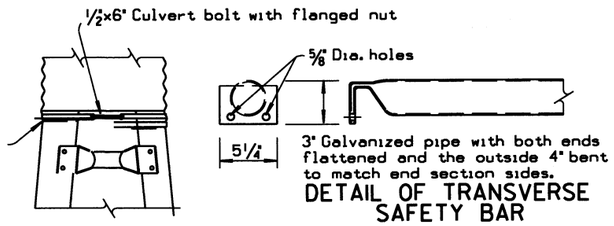
FRONT VIEW ARCH PIPE



LONGITUDINAL BAR DETAIL

Note: Bars shown are for Cross Drain Structures.

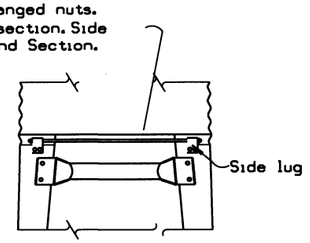
ISOMETRIC VIEW



TYPE #1 CONNECTOR DETAIL

For 15" thru 24" pipe

DETAIL OF TRANSVERSE SAFETY BAR



TYPE #2 CONNECTOR DETAIL

For 30" and larger round pipes & 21"x15" thru 64"x43" arch pipes

GENERAL NOTES

End sections shall be fabricated from galvanzied steel meeting the requirements of SUBSECTION 606.02(c)(1) OF THE STANDARD SPECIFICATIONS.
When specified optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section.
Dimensions shall be overall width less 6" by 8" high.
Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.
Safety bars shall be fabricated from steel pipe meeting the requirements of ASTM A-53 Schedule 40 Specifications. Safety bars shall be hot dipped galvanized after fabrication.

All work and materials required for construction and installation of safety end section shall be included in the PRICE BID EACH FOR SAFETY END SECTIONS FOR PIPE CULVERTS.
Longitudinal and transverse bars will be required for cross drain structures when span is greater than 30". no safety bars will be REQUIRED FOR 30" SPAN OR LESS WHEN USED ON CROSS DRAIN STRUCTURES.
Transverse bars will be required for all sizes of side drain structures.
Class I safety end sections shall be end sections with a 4:1 slope.
Class 2 safety end sections shall be end sections with a 6:1 slope.

SAFETY END SECTIONS FOR ARCH PIPES

Equv. Dia.	Nom. W.W. Area Sq Ft	Pipe Arch Span (In.)	Pipe Arch Rise (In.)	Min. Gauge End Sect.	Dimensions in Inches A	H	W	OW	Slope	L (In)	Slope	L (In)
18"	1.6	21	15	16	8	6	27	43	4:1	20	6:1	30
21"	2.2	24	18	16	8	6	30	46	4:1	32	6:1	48
24"	2.9	28	20	16	8	6	34	50	4:1	40	6:1	60
30"	4.5	35	24	14	12	9	41	65	4:1	56	6:1	84
36"	6.5	42	29	12	12	9	48	72	4:1	76	6:1	114
42"	8.9	49	33	12	16	12	55	87	4:1	92	6:1	138
48"	11.6	57	38	12	16	12	63	95	4:1	112	6:1	168
54"	14.7	64	43	12	16	12	70	102	4:1	132	6:1	198
60"	18.1	71	47	12	16	12	77	109	4:1	148	6:1	222
72"	26.0	83	57	12	16	12	89	121	4:1	188	6:1	282

SAFETY END SECTIONS FOR CIRCULAR PIPES

Pipe Dia.	Min. Gauge Ends	Dimensions in Inches A 1"Tol	H 1"Tol	W 2"Tol	OW	L Dimensions in Inches Slope	L	Slope	L
15"	16	8	6	21	37	4:1	20	6:1	30
18"	16	8	6	24	40	4:1	32	6:1	48
21"	16	8	6	27	43	4:1	44	6:1	66
24"	16	8	6	30	46	4:1	56	6:1	84
30"	12	12	9	36	60	4:1	80	6:1	120
36"	12	12	9	42	66	4:1	104	6:1	156
42"	12	16	12	48	80	4:1	128	6:1	192
48"	12	16	12	54	86	4:1	152	6:1	228
54"	12	16	12	60	92	4:1	176	6:1	264
60"	12	16	12	66	98	4:1	200	6:1	300

DATE	REVISION	DATE FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
8-15-91	DRAWN & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SAFETY END SECTION FOR CIRCULAR AND ARCH PIPES

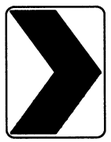
STANDARD DRAWING SES-1



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"

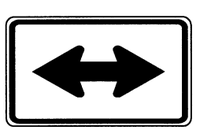


W3-2
36"X36"



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"



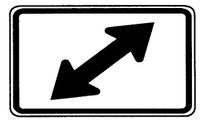
W5-2
36"X36"



W8-3
36"X36"



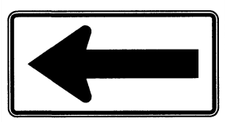
R1-3P
18"X6"



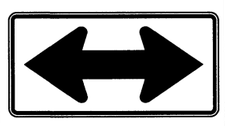
M6-5
21"X15"



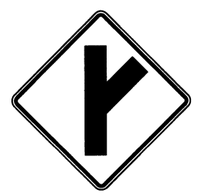
W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"



W1-7
48"X24"



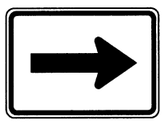
W2-3
30"X30"
(LT. or RT.)



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"



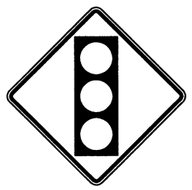
W1-2
30"X30"
(LT. or RT.)



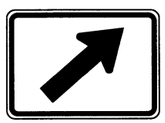
W2-4
30"X30"



W10-1
36" DIAMETER



W3-3
36"X36"

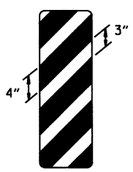


M6-2
21"X15"



S4-3P
24"X8"

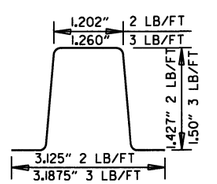
S4-2P
24"X10"



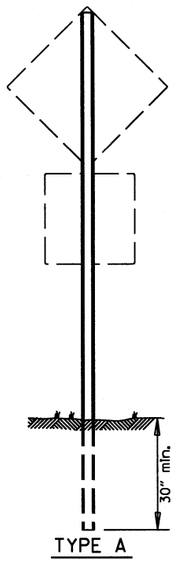
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

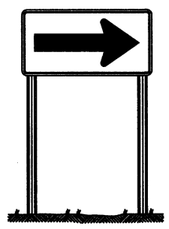


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

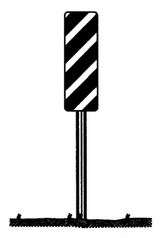


TYPE A

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

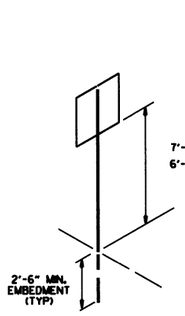
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-2-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

SUPPORT ASSEMBLIES

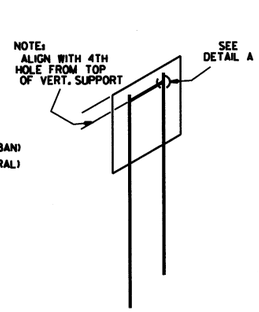
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

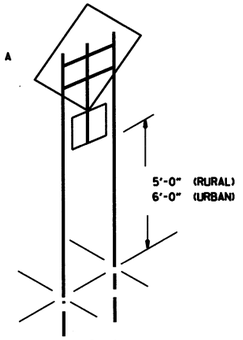
STANDARD DRAWING SHS-1



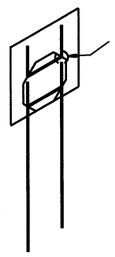
U-1



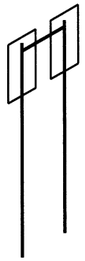
U-2



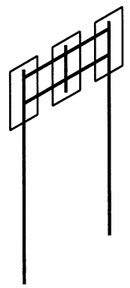
U-2 (A)



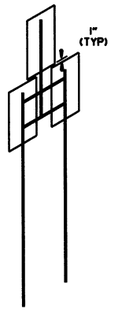
U-2 (B)



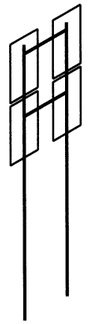
U-2 (1)



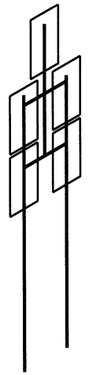
U-2 (2)



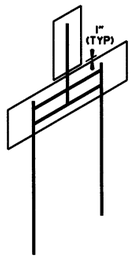
U-2 (3)



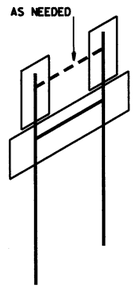
U-2 (4)



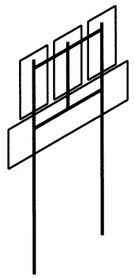
U-2 (5)



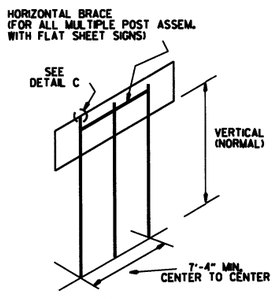
U-2 (6)



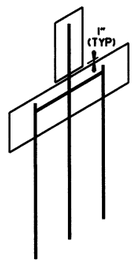
U-2 (7)



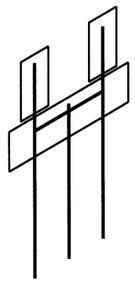
U-2 (8)



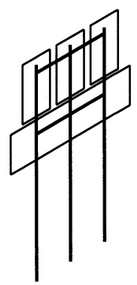
U-3



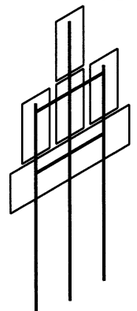
U-3 (1)



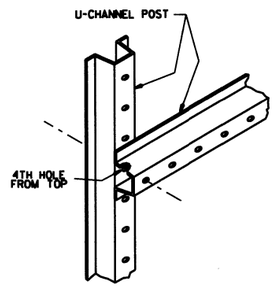
U-3 (2)



U-3 (3)

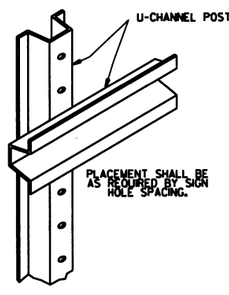


U-3 (4)



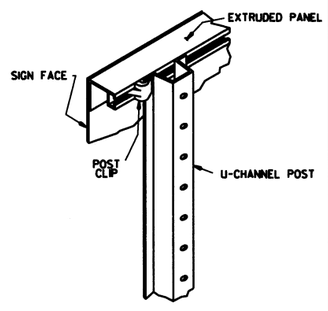
DETAIL A

SHOWING HORIZONTAL BRACE



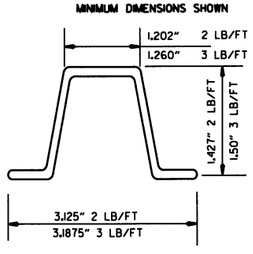
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



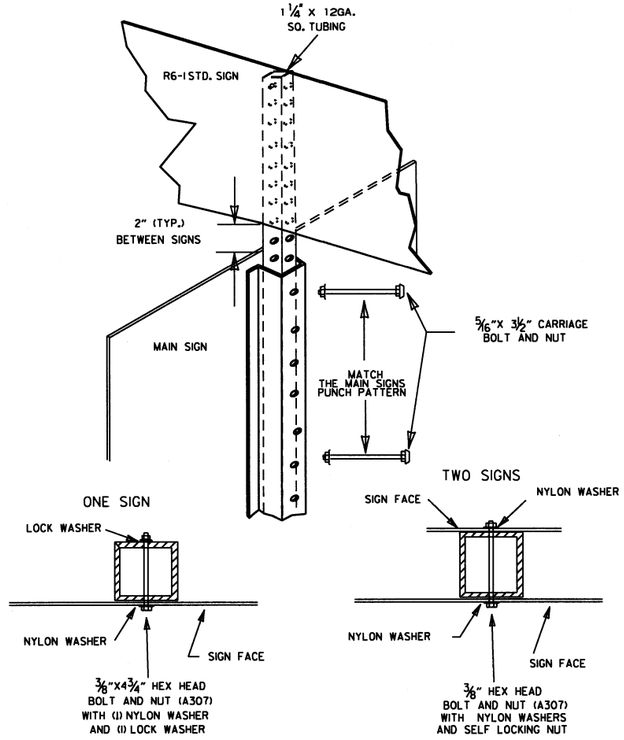
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



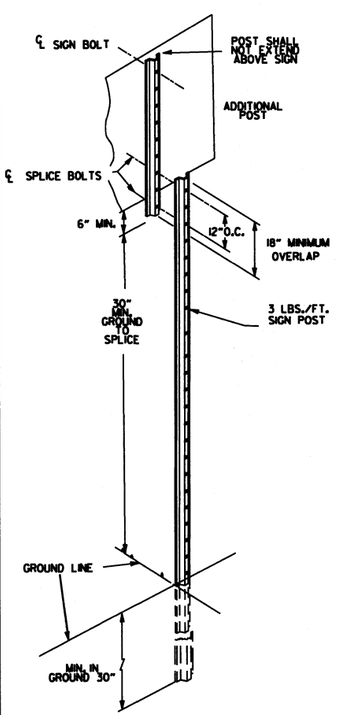
DETAIL D

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

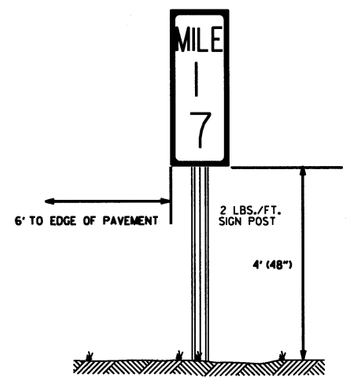
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

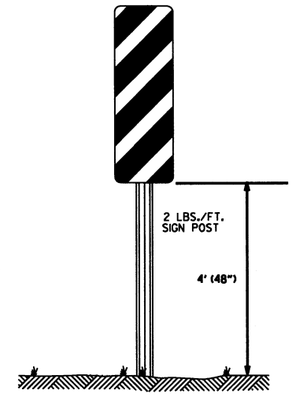
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

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

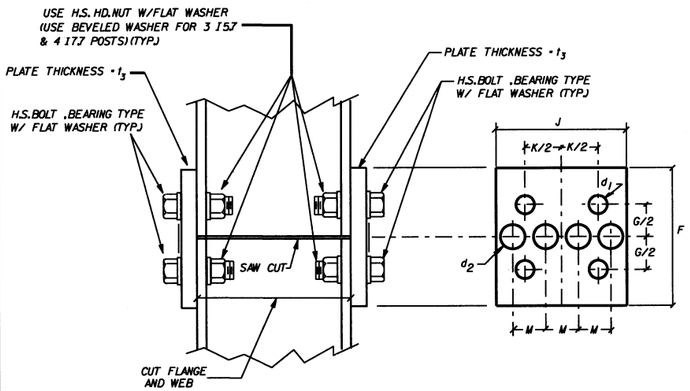
DATE	REVISION	FILMED
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

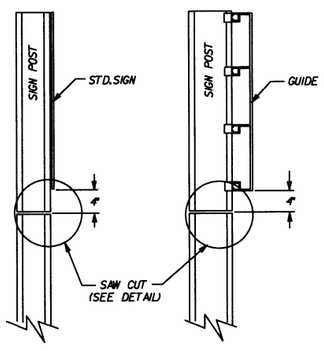
STANDARD DRAWING SHS-2

POST SIZE	BASE CONNECTION DATA										FUSE PLATE DATA									
	BOLT SIZE	BOLT TORQUE (INCH/LBS)	A	B	C	D	E	t_1	t_2	W	R	F	G	J	K	M	d_1	d_2	t_3	BOLT SIZE	WT. OF EACH FUSE PLATE LBS.
W 6X9												4¼"	2"	4"	2¼"	1"	9/16"	¾"	¼"	½" x 1½"	1.01
W 6X12	⅝" x 2¾"	450"-680"	5"	2"	1¼"	2¾"	1⅛"	¾"	½"	¼"	1/32"										
W 6X15												5"	2½"	6"	3½"	1½"	11/16"	1¼"	⅜"	⅝" x 2¼"	2.51
W 8X18												5"	2½"	5¼"	2¾"	1¼"	15/16"	1¼"	⅜"	¾" x 2¼"	2.26
W 8X21												5½"	2½"	5¼"	2¾"	1¼"	15/16"	1"	½"	¾" x 2¼"	3.35
W 10X22	¾" x 3½"	750"-1050"	6"	2¼"	1⅜"	3½"	1¼"	1"	¾"	5/16"	1/32"	6"	3"	5¾"	2¾"	1⅜"	1⅜"	1⅛"	½"	¾" x 2¼"	4.03
W 10X26																					
W 12X26												6"	3"	6½"	3½"	1⅝"	1⅜"	1⅜"	½"	¾" x 2¼"	4.47



NOTE: USE H.S. HEX HEAD BOLTS, HEX HEAD NUTS AND BEVEL OR FLAT WASHERS (WHERE REQ.) UNDER NUTS. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS, HOWEVER FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A36, ASTM-A441, ASTM-572 GRADE 50, OR ASTM-A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.

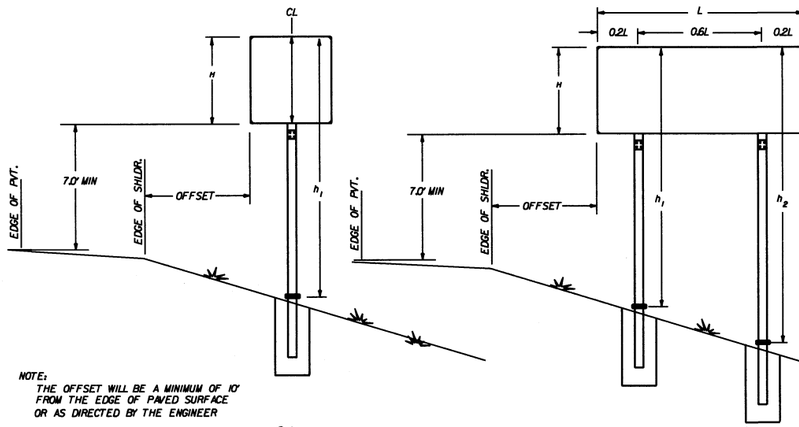
NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE NEAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



NOTE: POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED, AFTER PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED, WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. O-G-93 (STICK ONLY).

STANDARD SIGNS GUIDE SIGNS

FUSE PLATE DETAILS

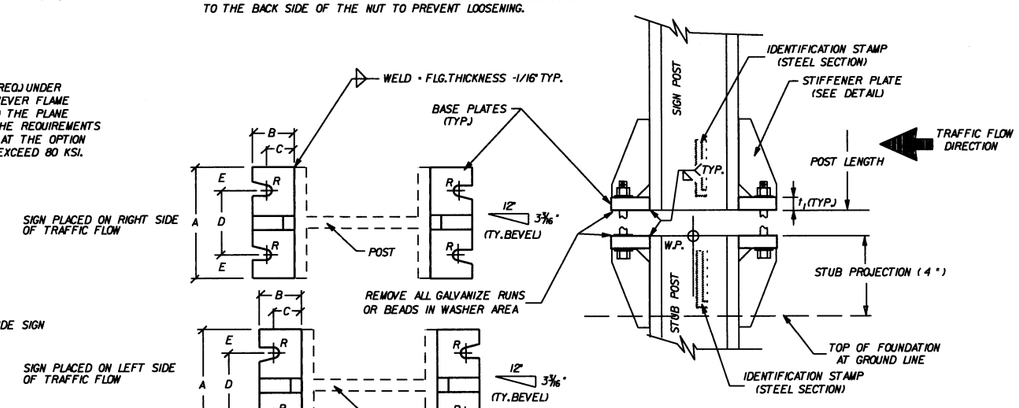


NOTE: THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER

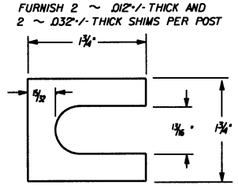
G-1 G-2 G-3

NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S. BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.

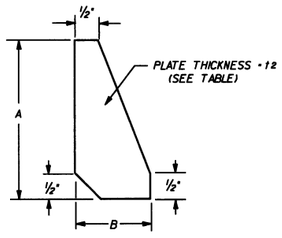
NOTE: ASSEMBLE SIGN POST TO STUB POST USING THE BOLTS SPEC. IN THE TABLE AND AS SHOWN IN THE ELEVATION DETAILS. THERE SHALL BE THREE FLAT WASHERS ON EACH BOLT LOCATED AS SHOWN IN THE ELEVATIONS. USE A SHIM TO PLUMB THE SIGN POST, THEN TIGHTEN THE BOLTS USING A 12" TO 15" WRENCH UNTIL THE WASHERS AND SHIMS ARE SEATED AND THE BOLT THREADS ARE CLEAR, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE), THE BURR THREADS ADJACENT TO THE BACK SIDE OF THE NUT TO PREVENT LOOSENING.



FURNISH 2 ~ .012"+/- THICK AND 2 ~ .032"+/- THICK SHIMS PER POST



SHIM DETAIL



STIFFENER PLATE DETAIL

GENERAL NOTES

TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

BASE PLATES AND STIFFENER PLATES SHALL BE OF THE SAME MATERIAL AS THE PRIMARY SUPPORT POSTS WHICH THEY ARE WELDED.

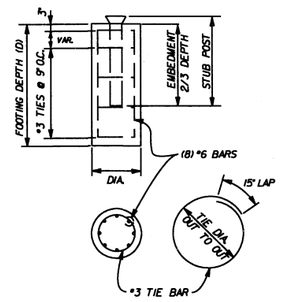
REFER TO THE PLANS FOR FOOTING DIMENSIONS.

EACH STUB POST AND SIGN POST SHALL HAVE A PERMANENT IDENTIFYING STAMP WHICH SPECIFIES THE STEEL SECTION USED. IF THE CONTRACTOR ELECTS TO SHIP THE STUB POST SEPARATE FROM THE SIGN POST A MATCH MARK SYSTEM WILL BE REQUIRED.

STEEL SCHEDULE

FOOTING DIAMETER	#3 TIE BARS DIAMETER	BAR LENGTH	POUNDS
INCHES	INCHES	FEET	
18	12	4.39	1.65
24	18	5.96	2.24
30	24	7.53	2.83
36	30	9.1	3.42

FOOTINIG DEPTH	#6 STRAIGHT BARS BAR LENGTH	NUMBER REQ'D.	POUNDS
FEET	FEET		
2.50	2.00	8	24.03
3.00	2.50	8	30.04
3.50	3.00	8	36.05
4.00	3.50	8	42.06
4.50	4.00	8	48.06
5.00	4.50	8	54.07
5.50	5.00	8	60.08
6.00	5.50	8	66.09
6.50	6.00	8	72.10
7.00	6.50	8	78.10
7.50	7.00	8	84.11
8.00	7.50	8	90.12



FOOTING QUANTITIES

FOOTINIG DEPTH	NUMBER TIE BARS REQ'D	18" DIAMETER CLASS S CONCRETE	18" DIAMETER REINF STEEL	24" DIAMETER CLASS S CONCRETE	24" DIAMETER REINF STEEL	30" DIAMETER CLASS S CONCRETE	30" DIAMETER REINF STEEL	36" DIAMETER CLASS S CONCRETE	36" DIAMETER REINF STEEL
FEET		CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)
2.50	4	0.16	31						
3.00	4	0.20	37						
3.50	5	0.23	44						
4.00	6	0.26	52	0.47	56				
4.50	6	0.29	58	0.52	62				
5.00	7	0.33	66	0.58	70	0.91	74		
5.50	8			0.64	78	1.00	83		
6.00	8			0.70	84	1.09	89	1.57	93
6.50	9					1.18	98	1.70	103
7.00	10					1.27	106	1.83	112
7.50	10							1.96	118
8.00	11							2.09	128

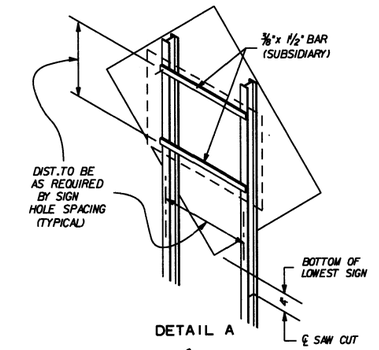
SIGN POST AND STUB POST

DATE	REVISION	FILMED
9-12-13	ISSUED	

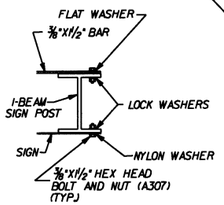
ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

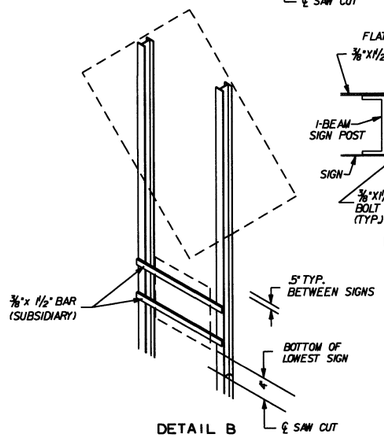
STANDARD DRAWING SHS-3



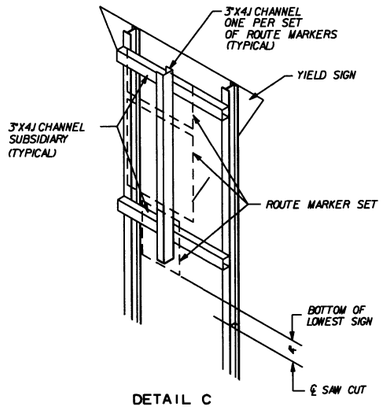
DETAIL A



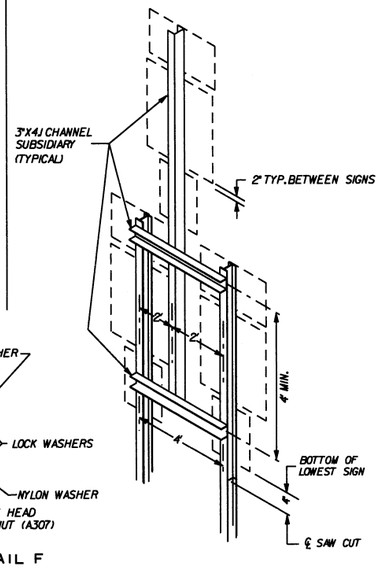
DETAIL F



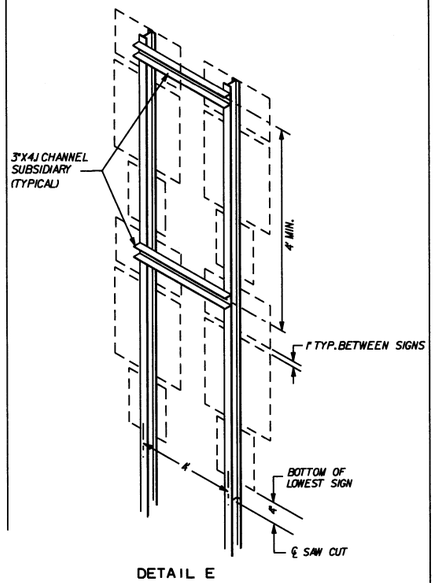
DETAIL B



DETAIL C



DETAIL D



DETAIL E

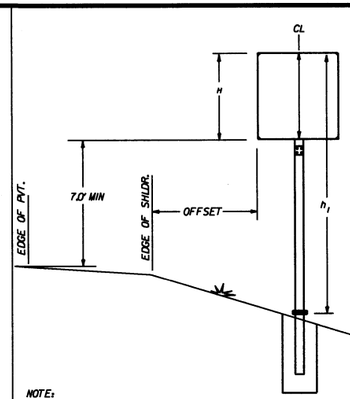
NOTE

ALL ADDITIONAL MOUNTING HARDWARE, BOLTS, NUTS, CHANNELS AND BAR STRAPS REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED SUBSIDIARY TO THE MAIN SUPPORT.

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

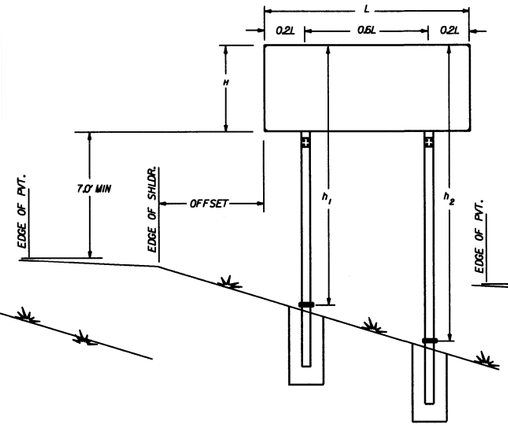
REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE 1/8" DIA. UNLESS OTHERWISE SHOWN.

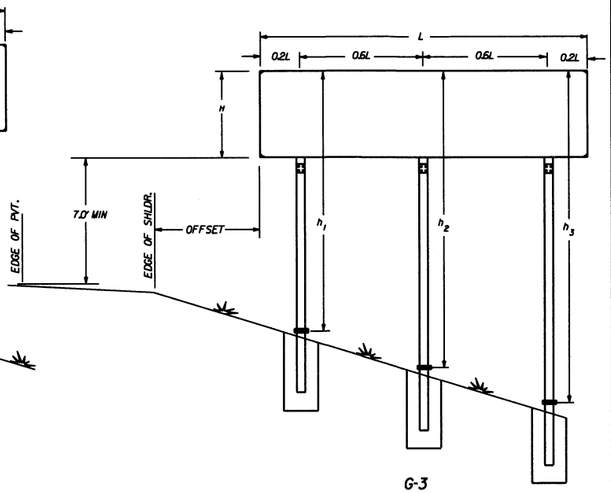


NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER.

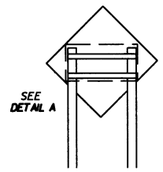
G-1



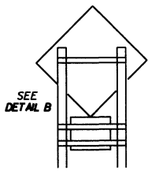
G-2



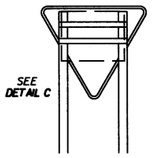
G-3



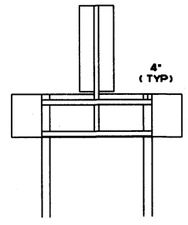
G2-1



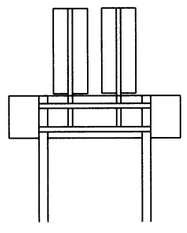
G2-2



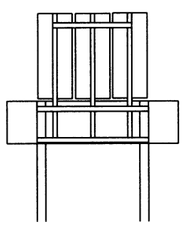
G2-3



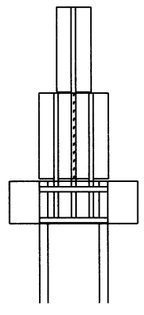
G2-4



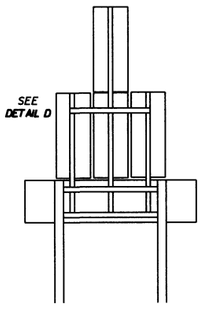
G2-5



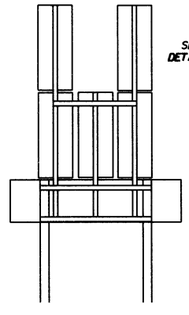
G2-6



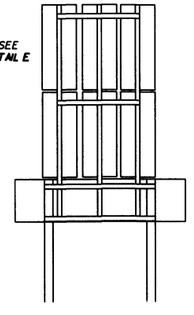
G2-7



G2-8



G2-9



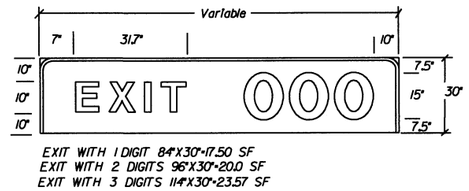
G2-10

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS
9-12-13	ISSUED		STANDARD DRAWING SHS-4
DATE	REVISION	FILMED	



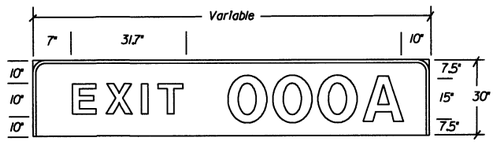
TYPICAL DETAIL

TYPE A



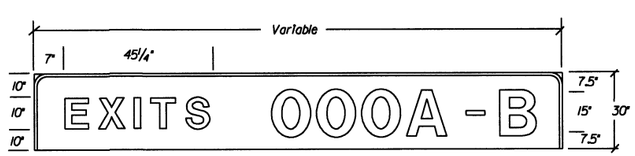
EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



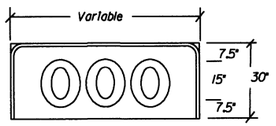
EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



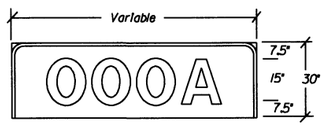
EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D



1 DIGIT 24"X30"=5.0 SF
2 DIGITS 42"X30"=8.75 SF
3 DIGITS 60"X30"=12.50 SF

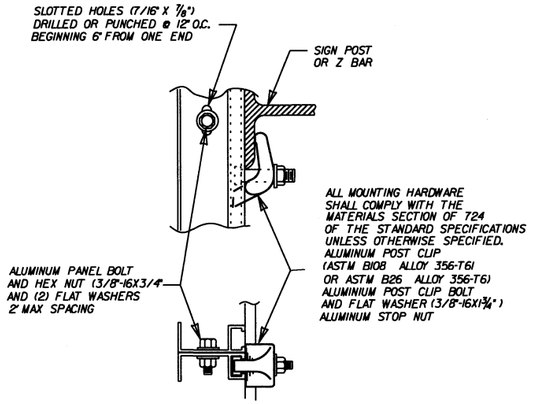
TYPE E

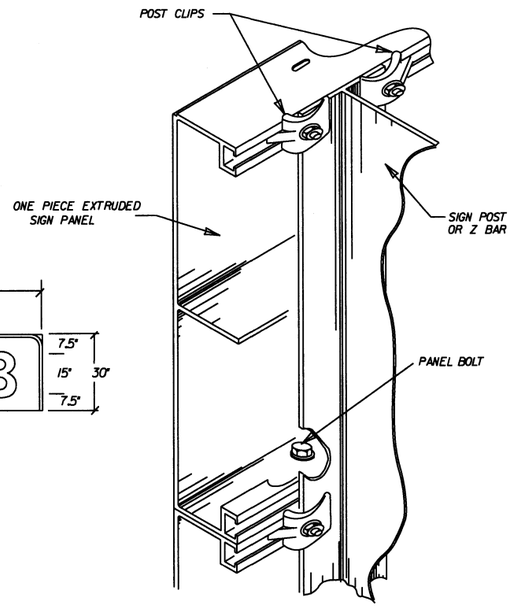


1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

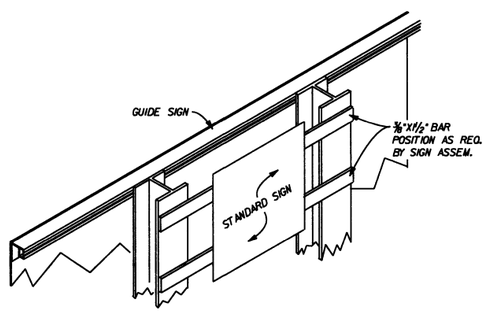
EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL".

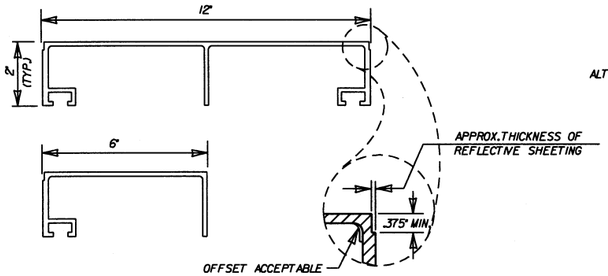




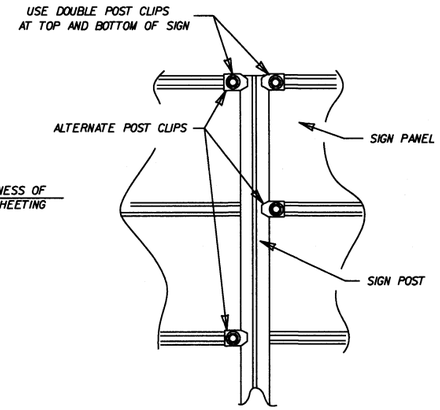
MOUNTING HARDWARE



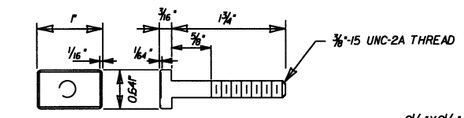
SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



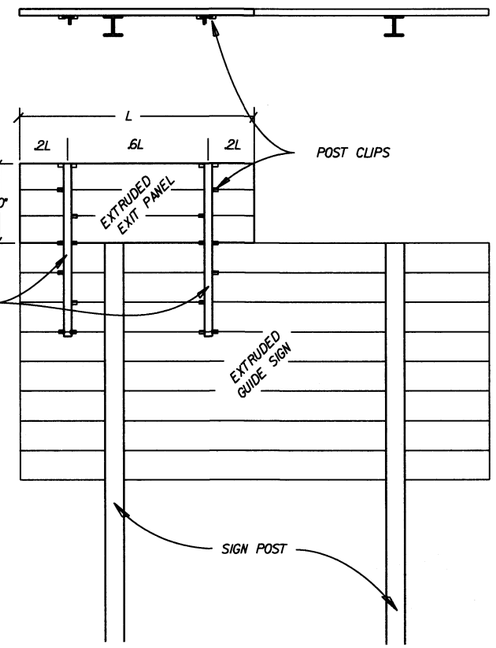
ONE PIECE EXTRUDED SIGN PANELS



POST CLIP PLACEMENT



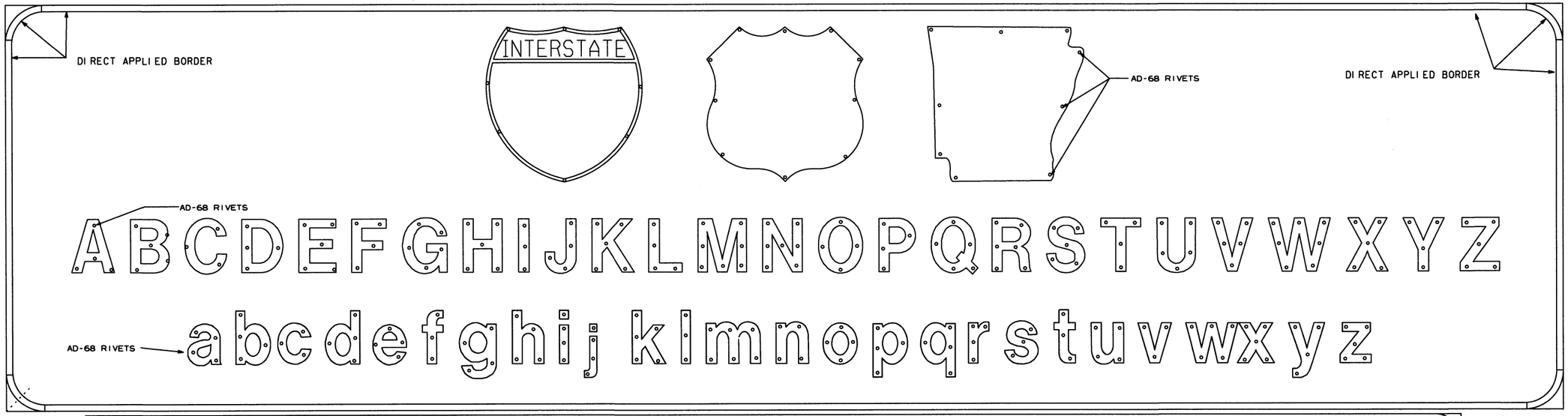
POST CLIP BOLT

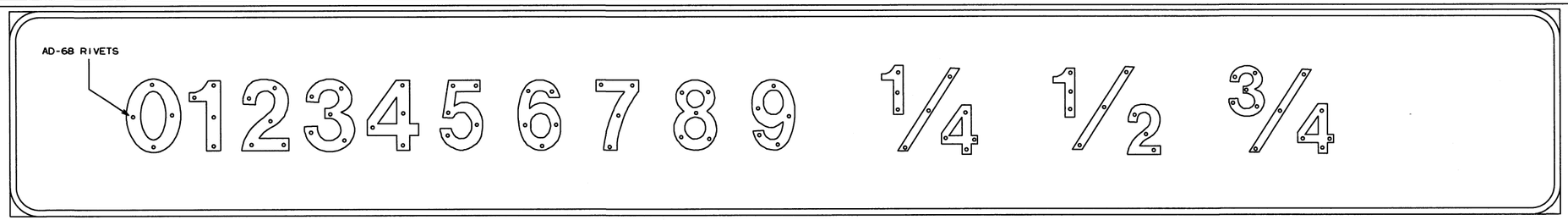


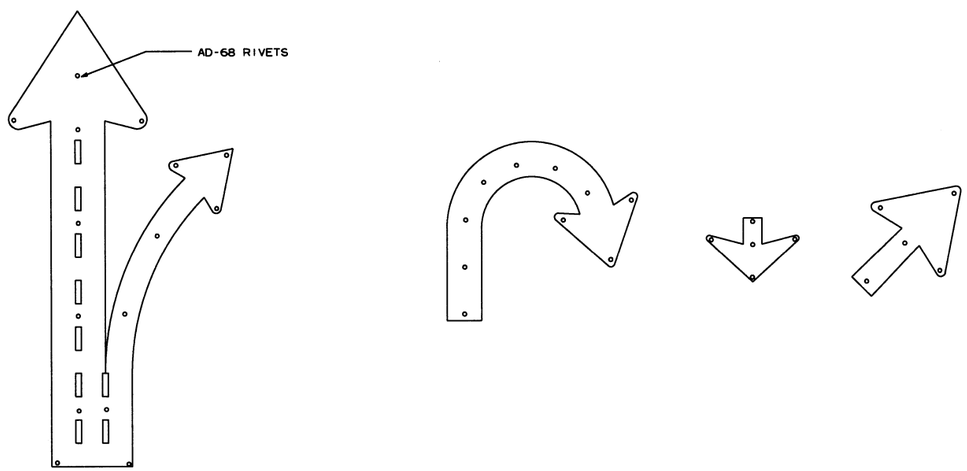
			ARKANSAS STATE HIGHWAY COMMISSION
			DETAILS OF GUIDE SIGN PANELS
9-12-13	ISSUED		STANDARD DRAWING SHS-5
DATE	REVISION	FILMED	

THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.

MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS







NOTES:

LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND. LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED. THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

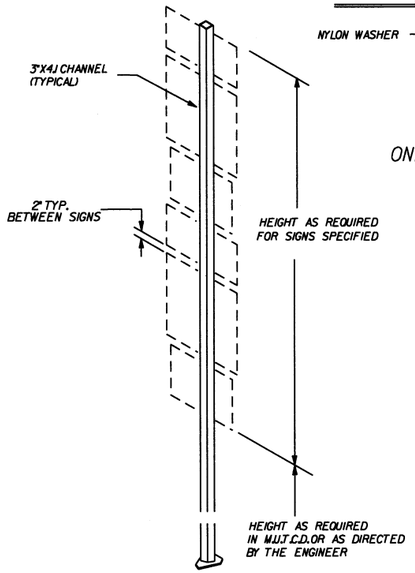
THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED USING TYPE III SHEETING.

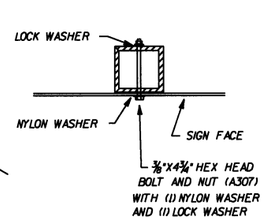
TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURERS' DATUM MARKS, ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH RIVETS ONLY.

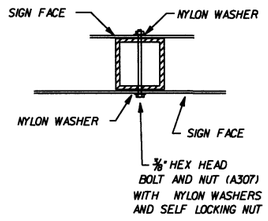
NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.

			ARKANSAS STATE HIGHWAY COMMISSION
			MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS
9-12-13	ISSUED		STANDARD DRAWING SHS-6
DATE	REVISION	FILMED	





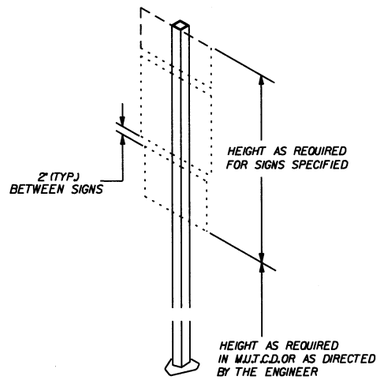
ONE SIGN



TWO SIGNS

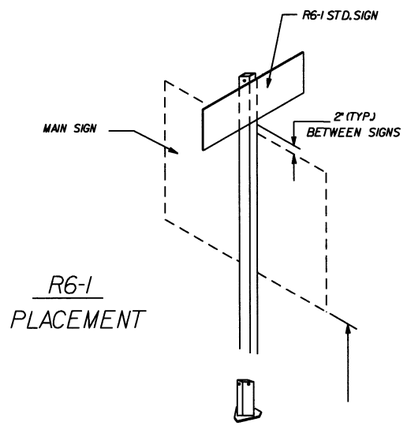
CHANNEL SHALL BE FULL LENGTH OF RECTANGULAR AND SQUARE SIGNS AND SHALL EXTEND 1½" BEYOND BOLT HOLES ON DIAMOND OR IRREGULAR SHAPED SIGNS.

MOUNTING HARDWARE

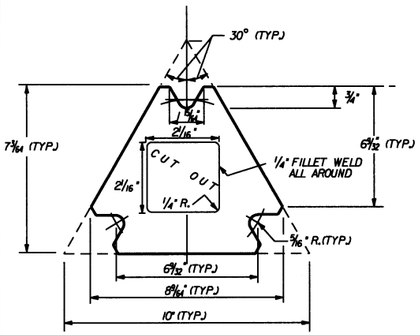


TYPE-I

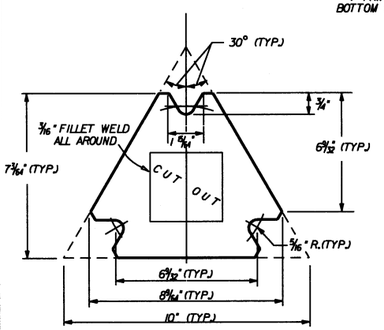
BASIS OF ESTIMATE
APPROX. 100 lbs STEEL



R6-1 PLACEMENT



TOP PLATE



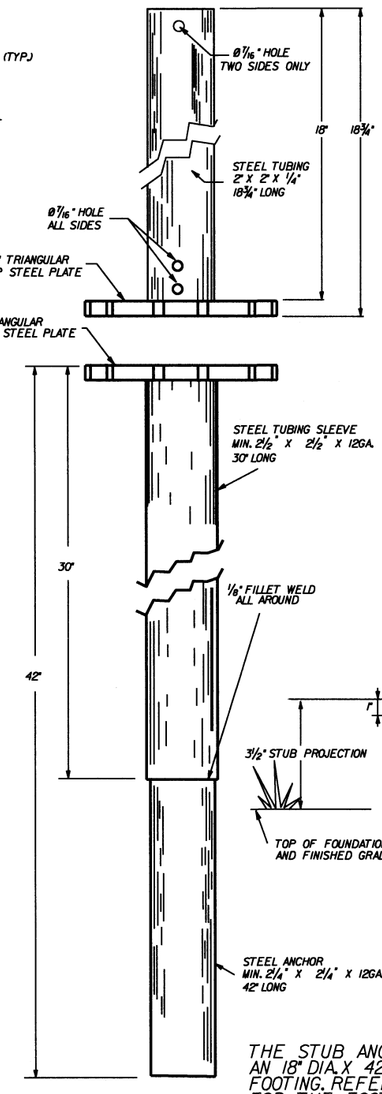
BOTTOM PLATE

GENERAL NOTES:

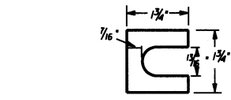
THE TOP PLATE OF TRIANGULAR SUP BASES SHALL HAVE THE SAME EXTERIOR DIMENSIONS AS THE BOTTOM PLATE.

INSIDE DIAMETER OF THE SIGN POST SHALL BE CUT THROUGH THE CENTER OF THE TOP PLATE WITH THE HOLE EDGE BEVELED AS SHOWN. THE BEVEL END SHALL BE TANGENT TO THE BOLT HOLE. ANY MISALIGNMENT SHALL BE REMOVED BY GRINDING. FACE OF BEVEL SHALL BE FINISHED TO A MINIMUM SMOOTHNESS OF 1·500.

OTHER MASH COMPLIANT BREAKAWAY SIGN SUPPORTS THAT HAVE THE SAME TOP PLATE DIMENSIONS AND SUPPORT 2¼" X 2¼" SQUARE TUBE SIGN POSTS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

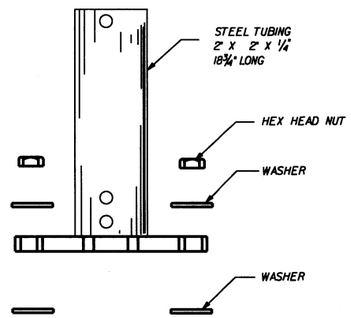


THE STUB ANCHOR SHALL BE SET IN AN 18" DIA. X 42" DEEP CONCRETE FOOTING. REFER TO STD. DRWG. SHS-3 FOR THE FOOTING DETAILS.



FURNISH (2) .012" THICK AND (2) .032" THICK SHIMS PER POST

SHIM DETAIL



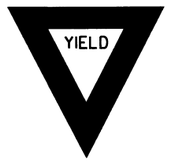
			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
9-12-13 DATE	ISSUED REVISION	FILMED	STANDARD DRAWING SHS-7

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"

W3-5



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



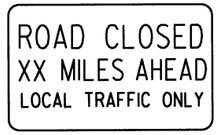
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



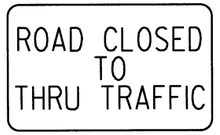
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W21-5a



STD. 36"X36"
FWY. 48"X48"

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



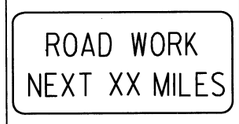
STD. 36"X36"
FWY. 48"X48"

W8-9



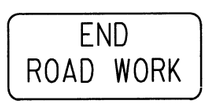
STD. 36"X36"
FWY. 48"X48"

G20-1



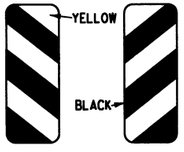
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



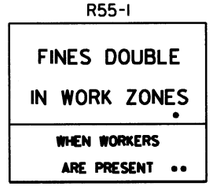
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

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.

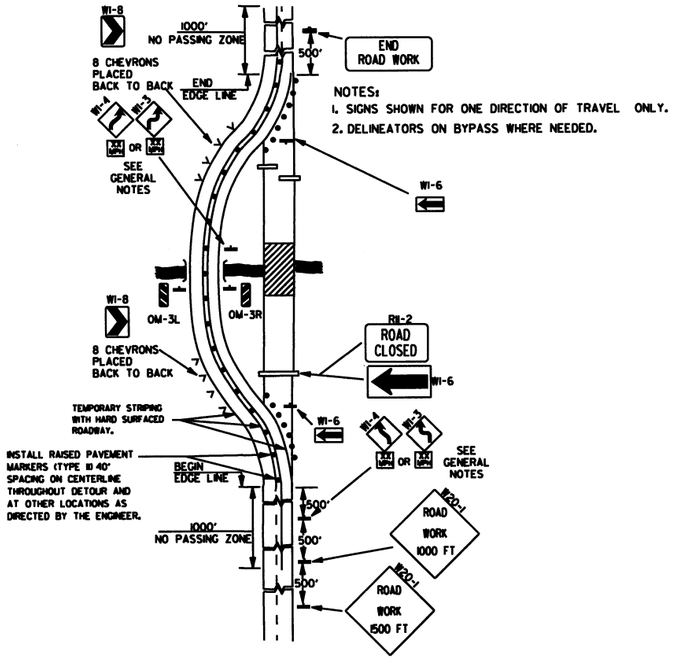
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
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	
8-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
8-18-98	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

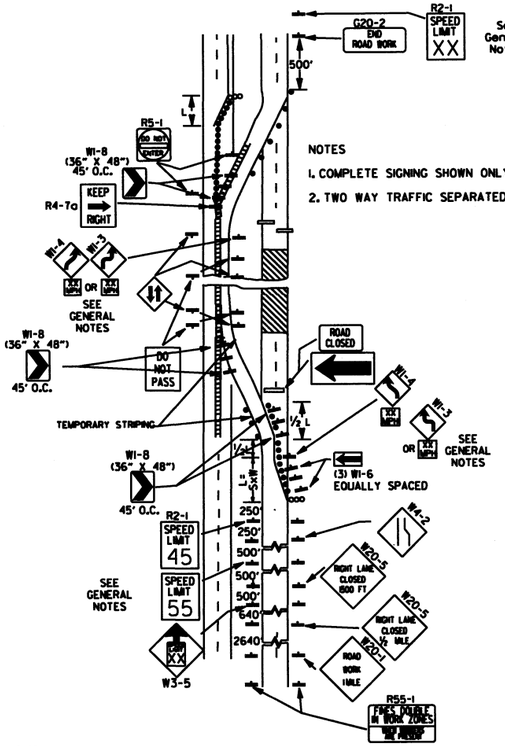
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



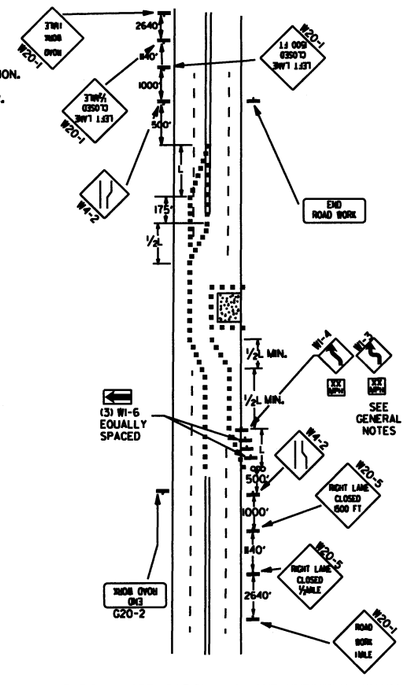
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

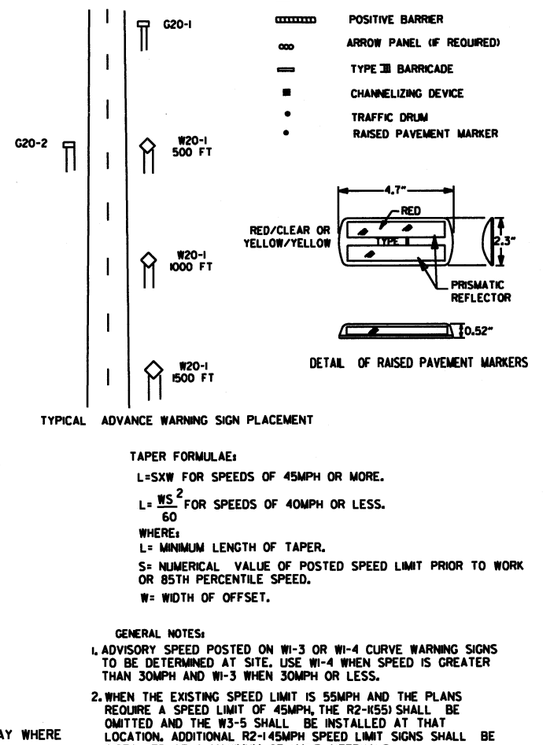


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

KEY:
- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER

DETAIL OF RAISED PAVEMENT MARKERS

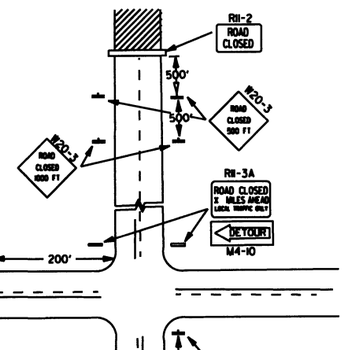
TAPER FORMULAE:

$L = SXW$ FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

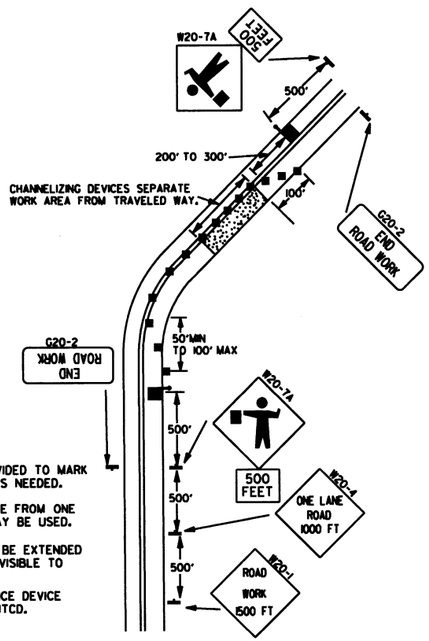
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

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 W3-5 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.
8. 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.



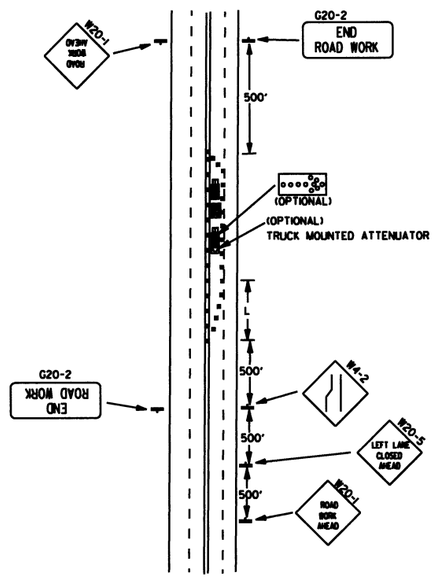
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



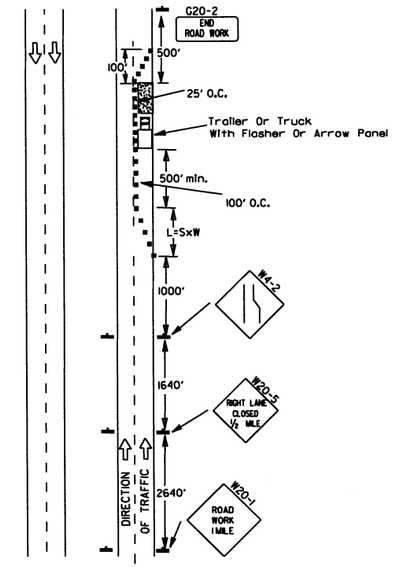
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
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	

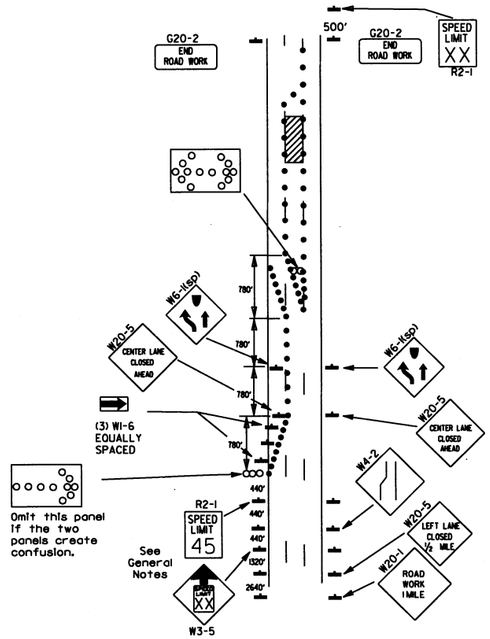
ARKANSAS STATE HIGHWAY COMMISSION

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.



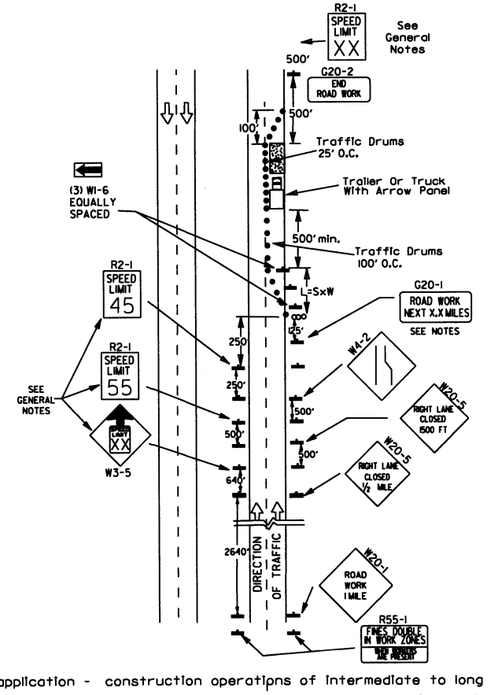
(B) Typical application - 3-lane oneway roadway where center lane is closed.

KEY:

- ○○○ Arrow Panel (if Required)
- ■ Channelizing Device
- ● Traffic drum

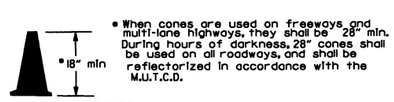
GENERAL NOTES:

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 W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile 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 1 mile 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.



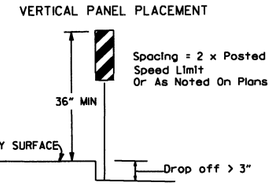
(C) Typical application - construction operatipns of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

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.

NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



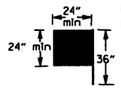
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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.

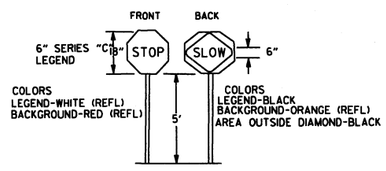
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

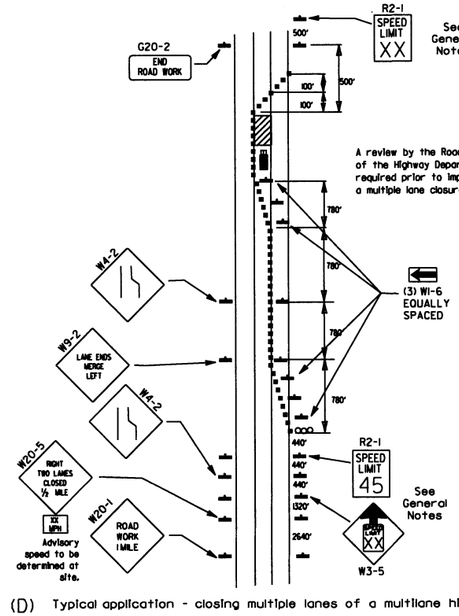
FLAG



Flag shall be of good grade red material

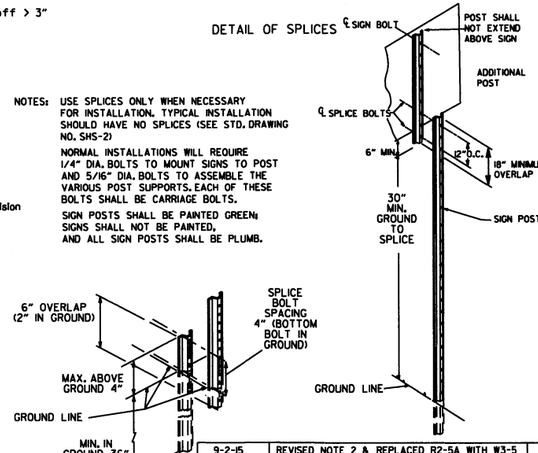
STOP SLOW PADDLE





(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
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
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	

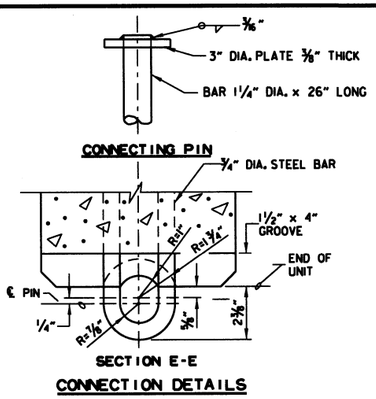
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

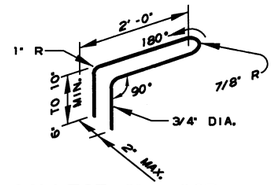
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

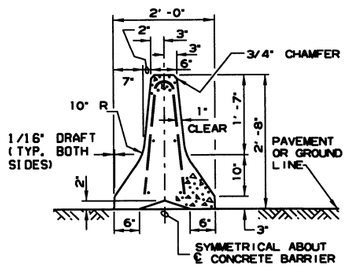
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. 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"



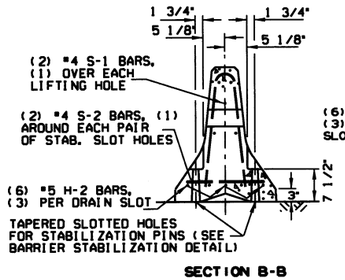
CONNECTION DETAILS



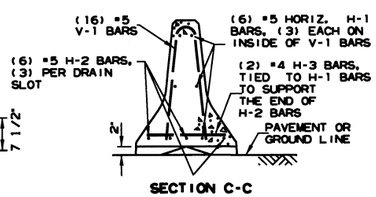
CONNECTION LOOP



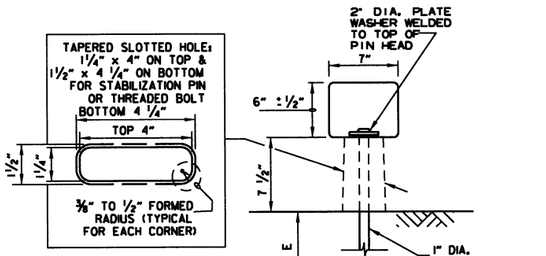
SECTION A-A



SECTION B-B



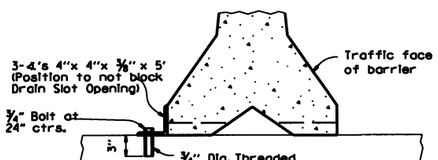
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

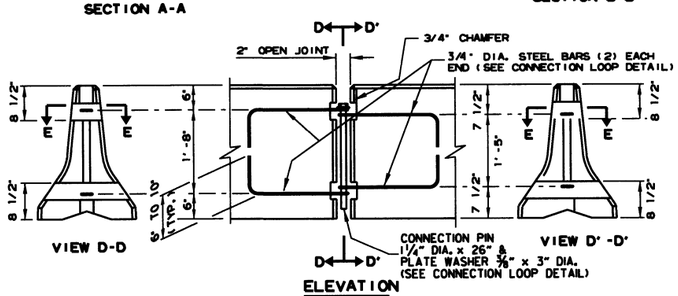
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

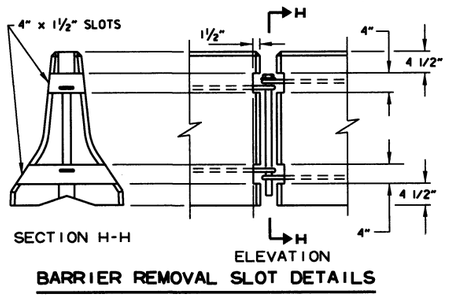
BRIDGE DECKS



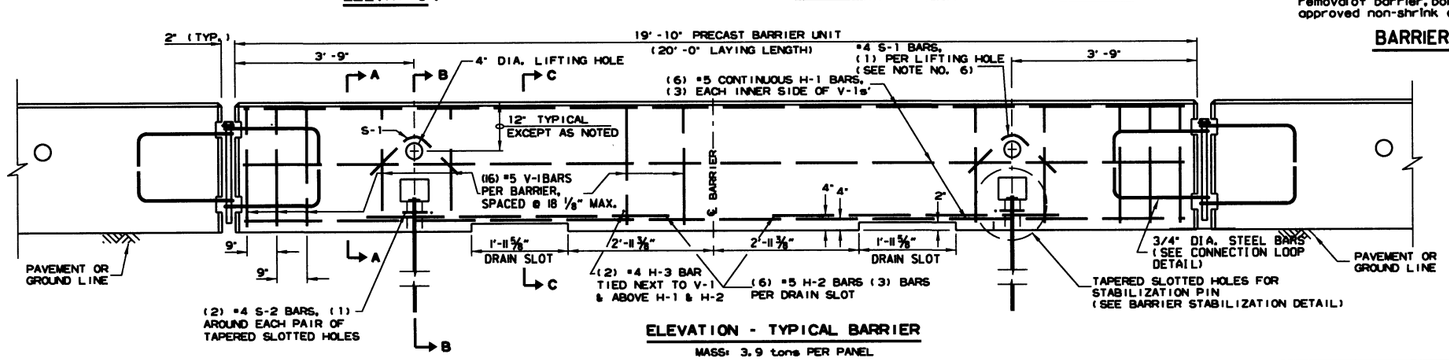
VIEW D-D

VIEW D'-D'

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.

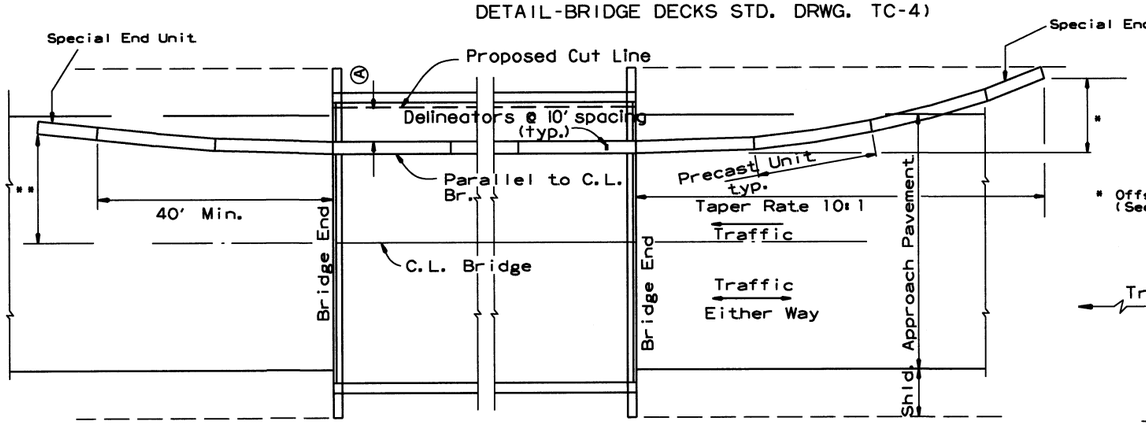
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	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)

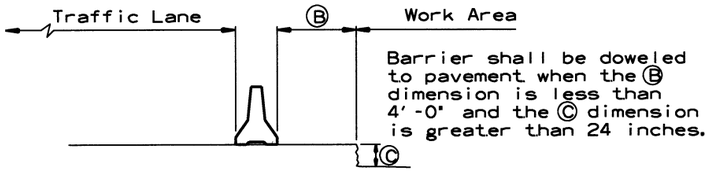


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

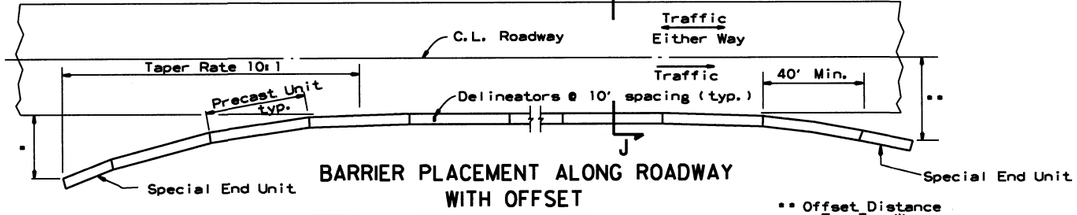
* Offset Distance (See Table)



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

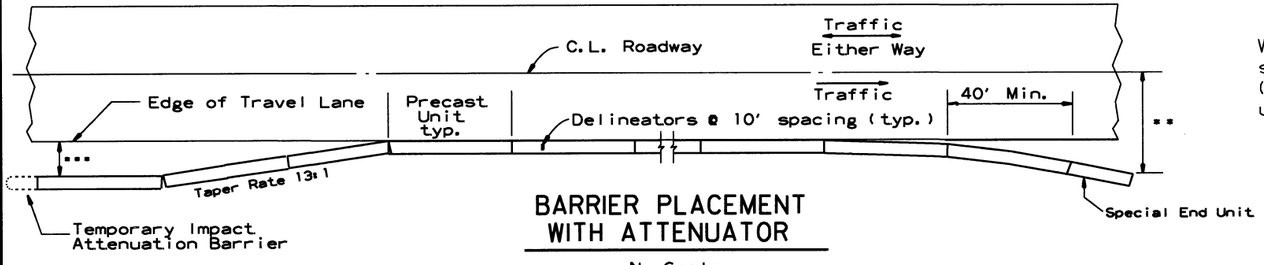
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

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.

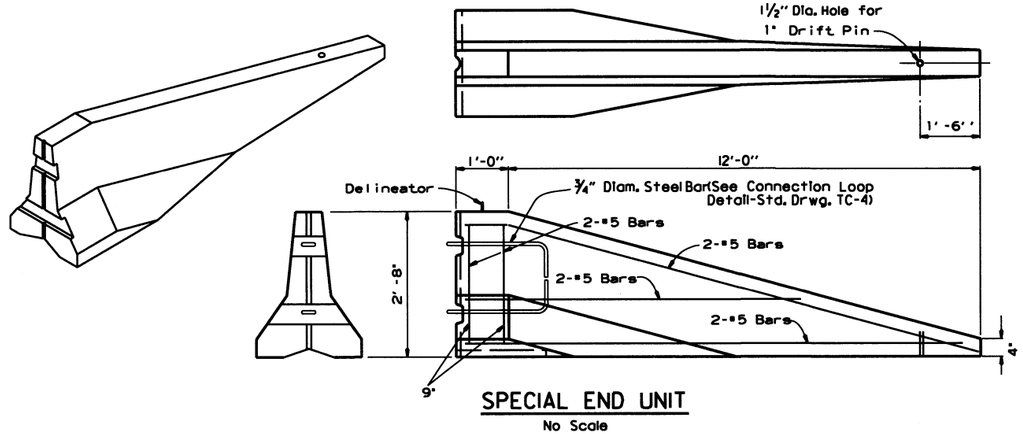


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



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	

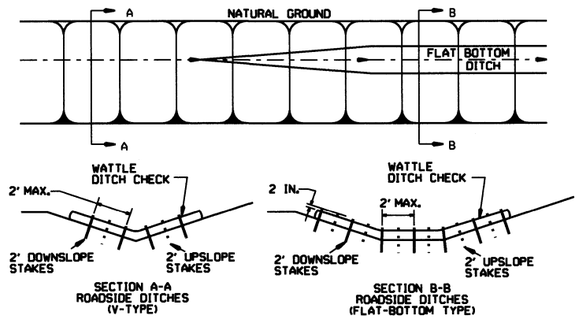
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

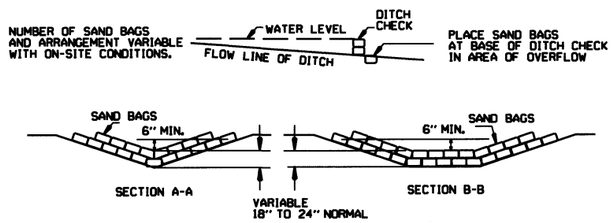
STANDARD DRAWING TC-5

GENERAL NOTES

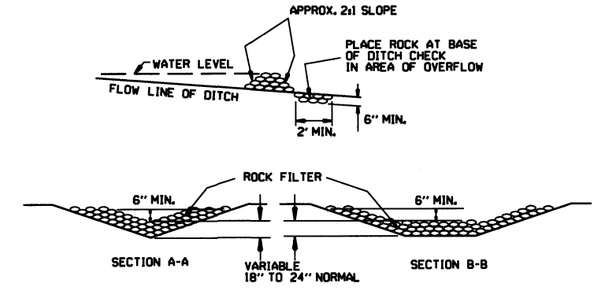
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

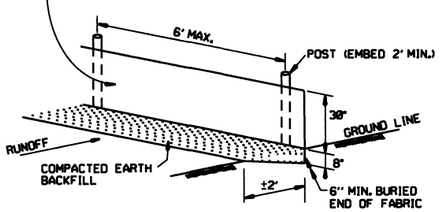


ROCK DITCH CHECK (E-6)

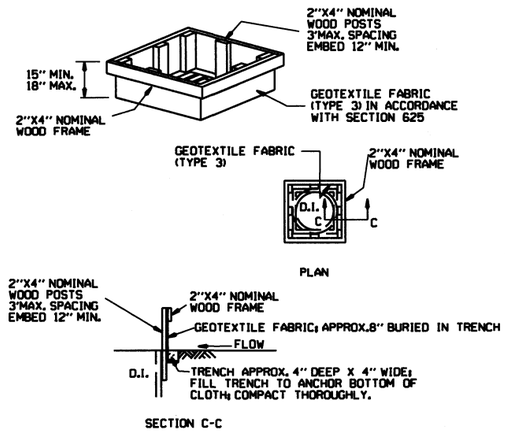
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

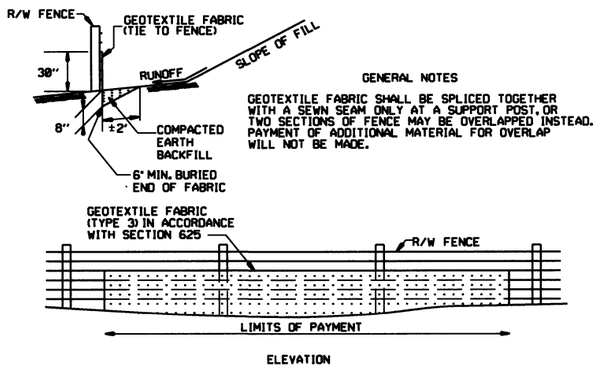
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



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.

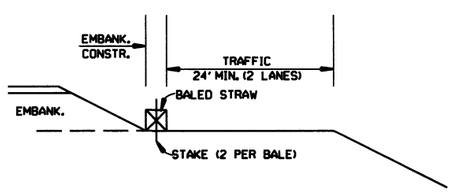
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

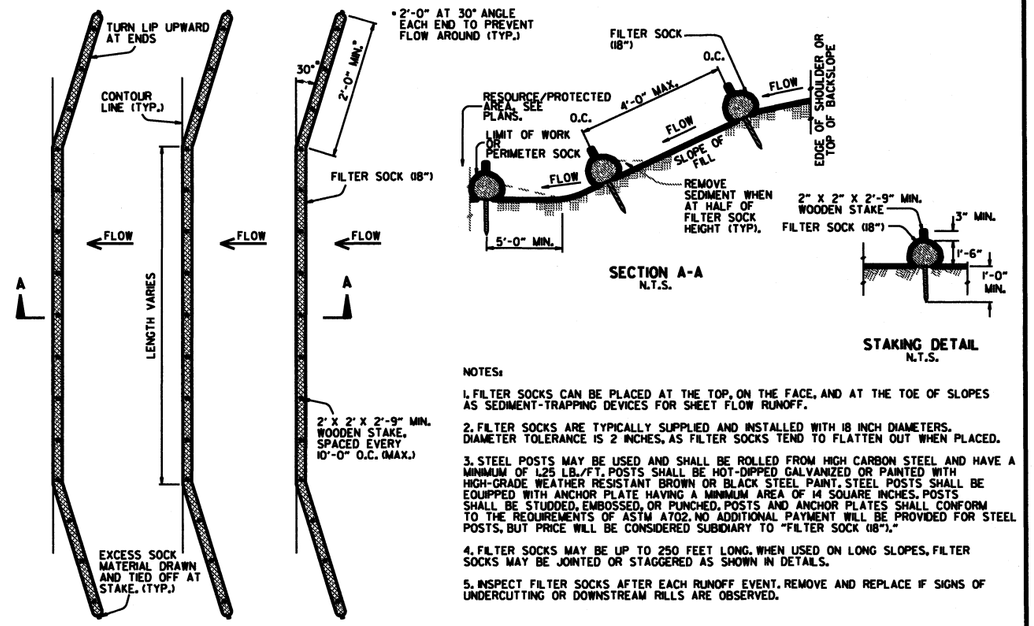
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

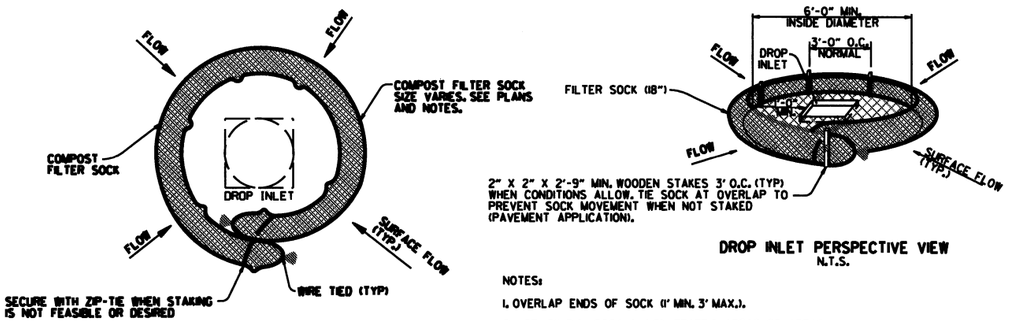
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

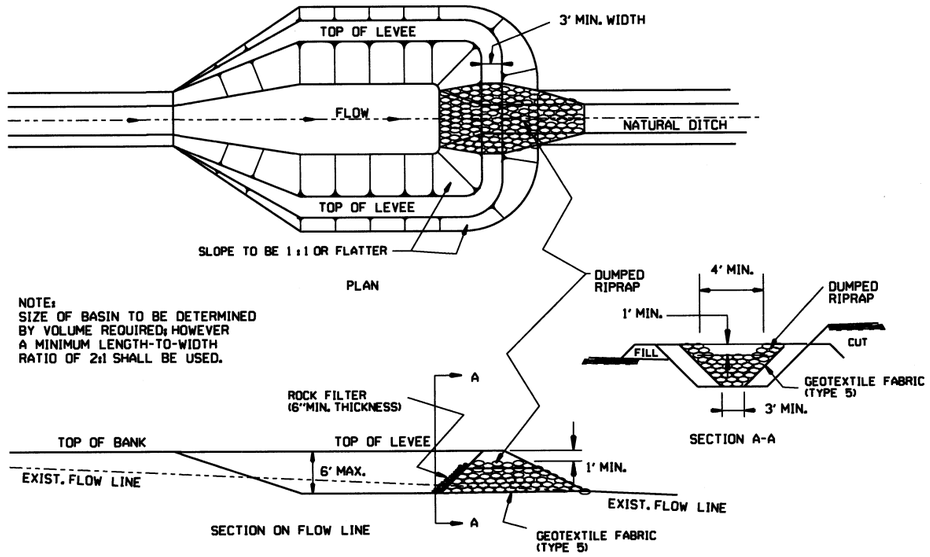
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

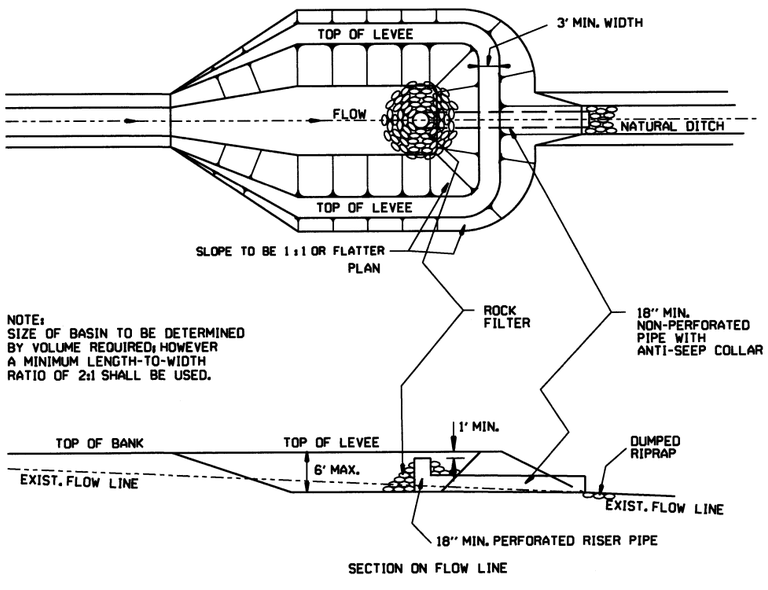
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

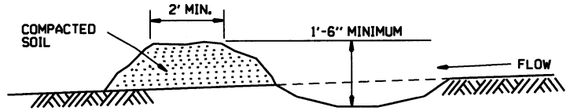
STANDARD DRAWING TEC-1



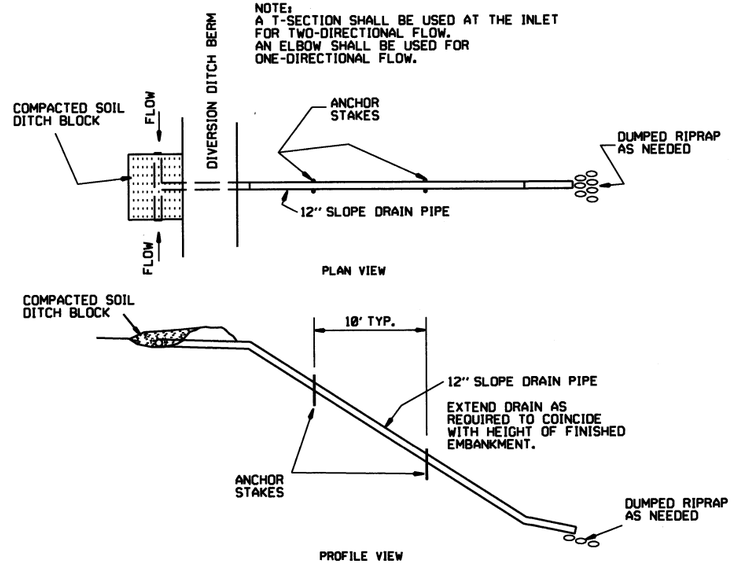
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



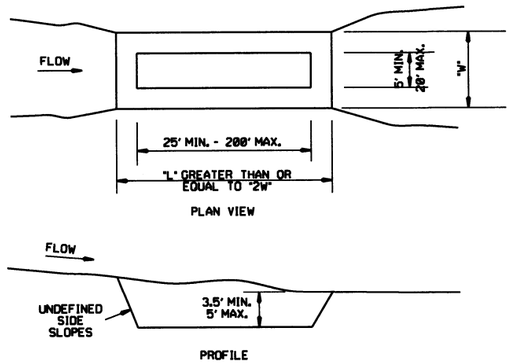
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

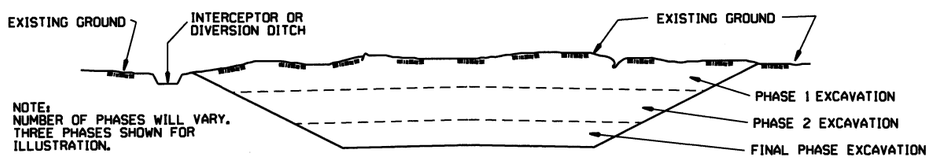
STANDARD DRAWING TEC-2

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



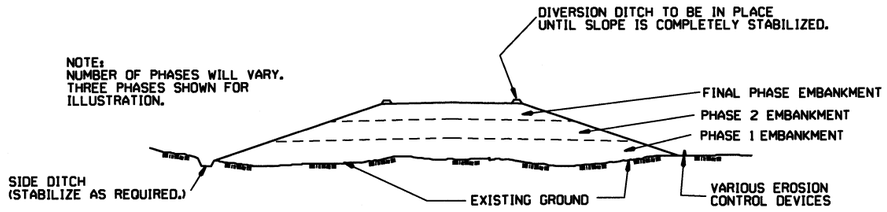
GENERAL NOTE

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

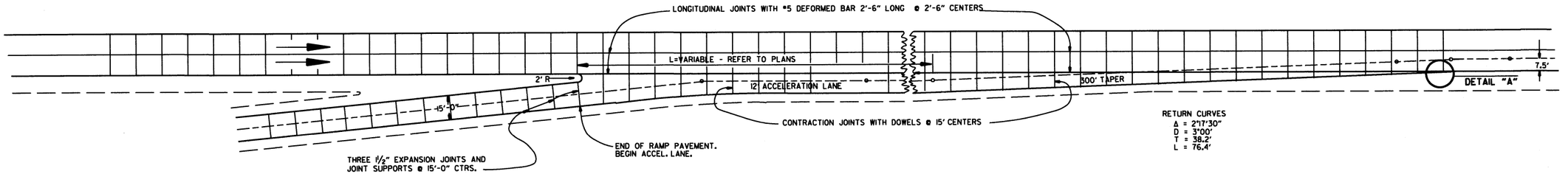
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

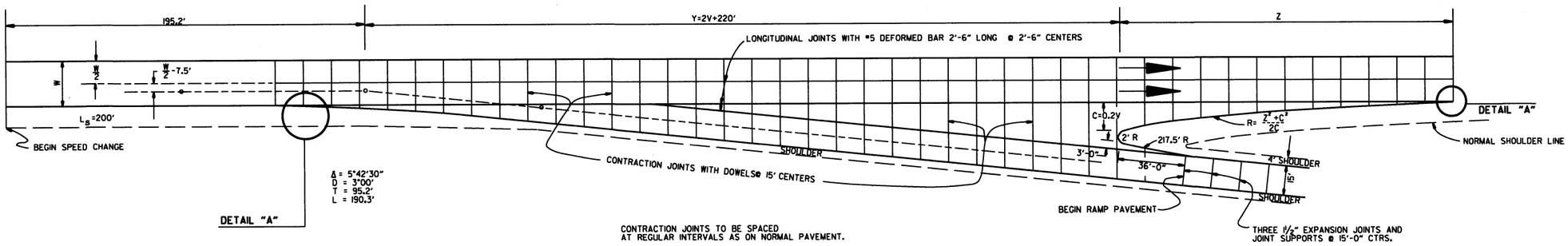
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



ENTRANCE RAMP

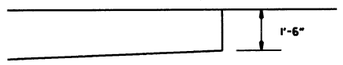
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



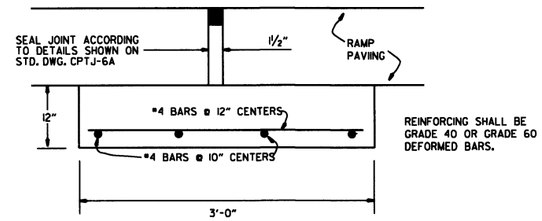
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	X Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.25
60	340.0	12.0	168.0	1182.0	750.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

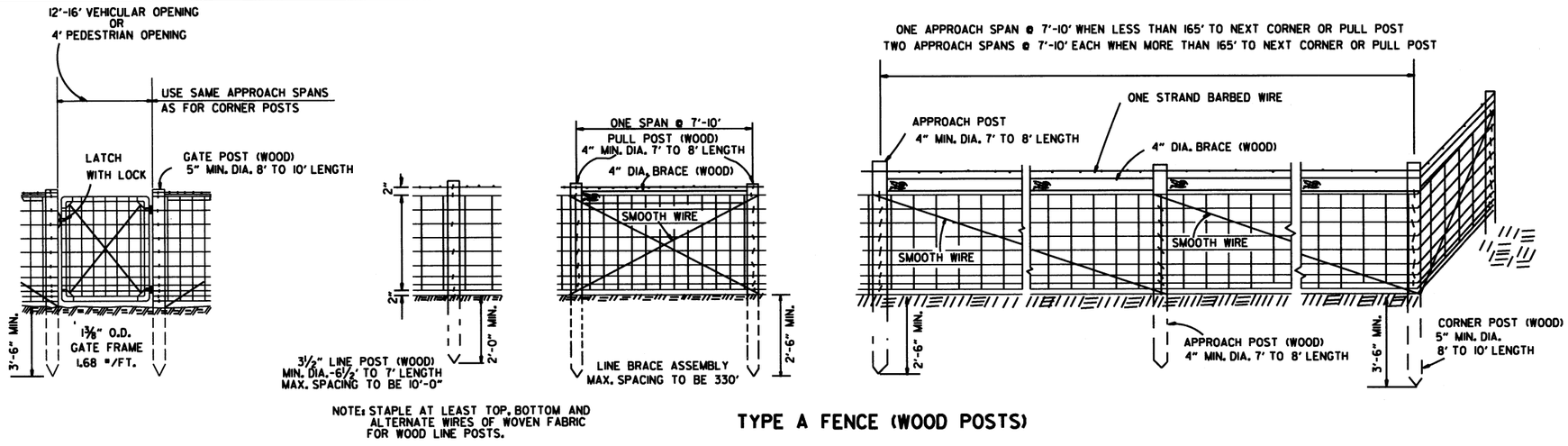
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORMED TO 1988 SPECIFICATIONS	ESC-7-15-88
3-2-81	ISSUED	ESU-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

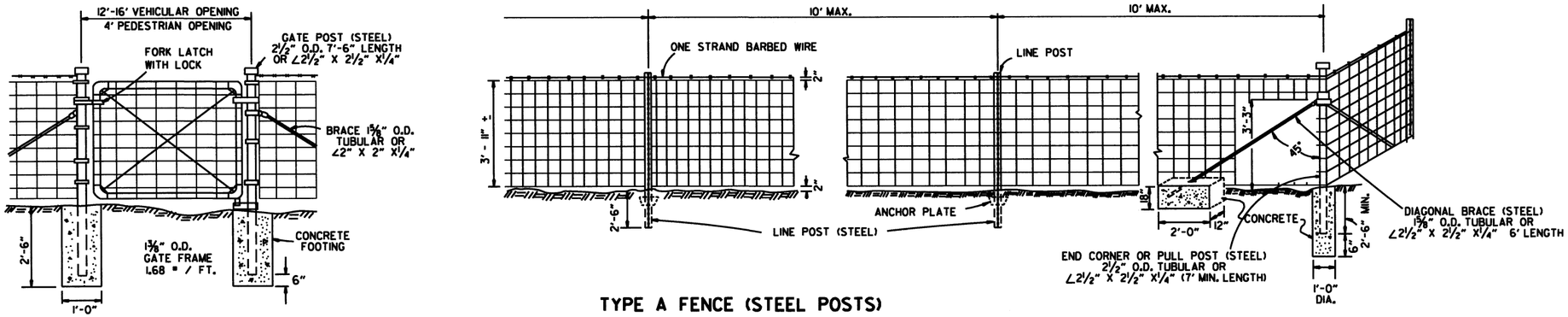
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A

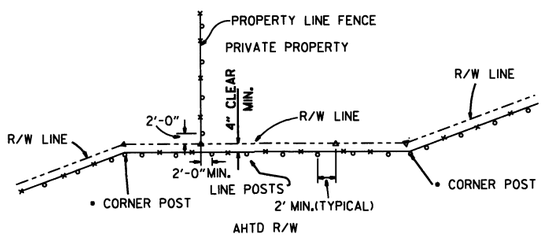


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



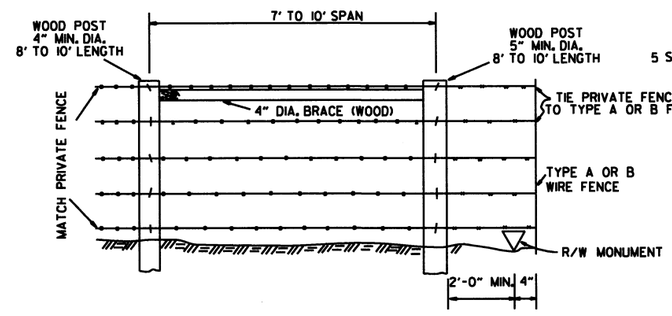
TYPE A FENCE (STEEL POSTS)



•NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

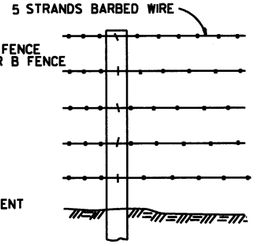
▲ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



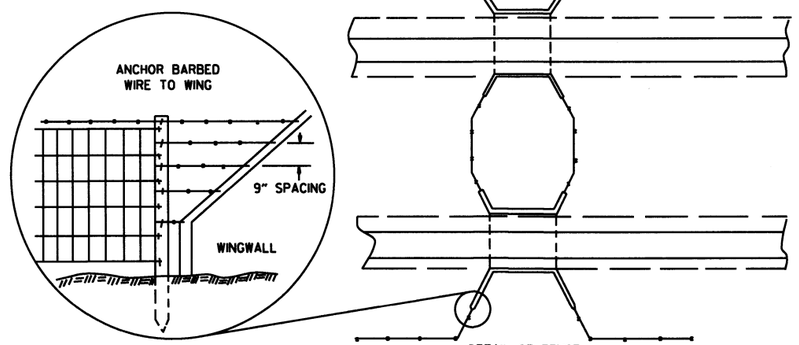
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

PRIVATE FENCE TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF WOOD LINE POSTS OF 7' LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

GATE HINGES AND LATCHES WITH LOCKS TO BE OF A TYPE APPROVED BY THE ENGINEER. DRIVEWAY GATES, EITHER SINGLE 12' OR 16' OR DOUBLE 6' TO 8' OPENINGS OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE FOR USE BY MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF BANK TO THE BRIDGE STRUCTURE, A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFIEICNT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO THE BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

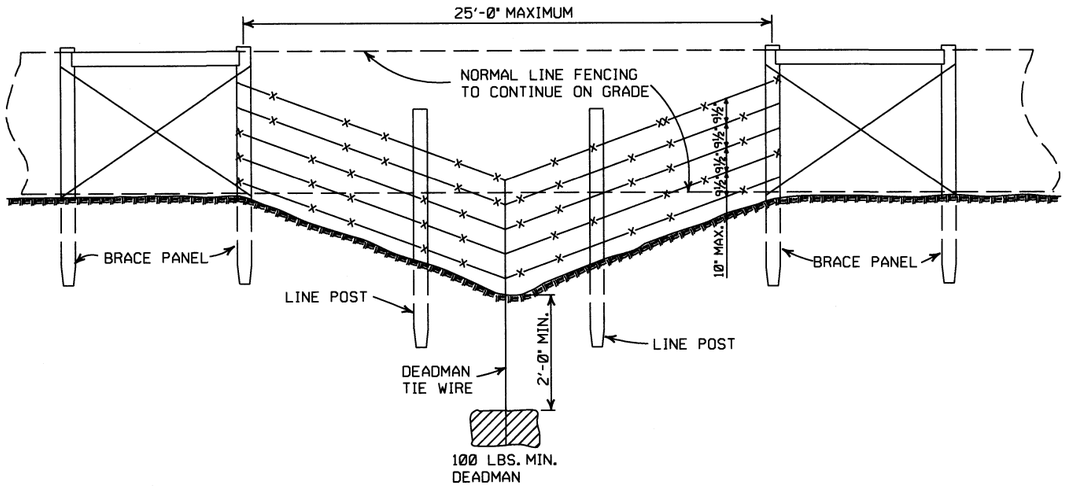
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

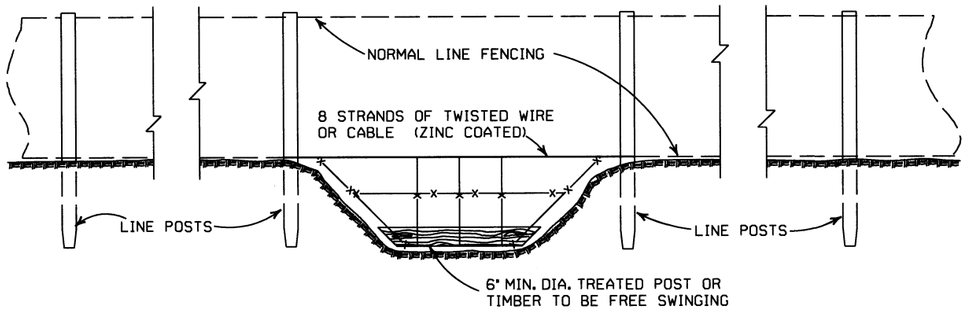
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

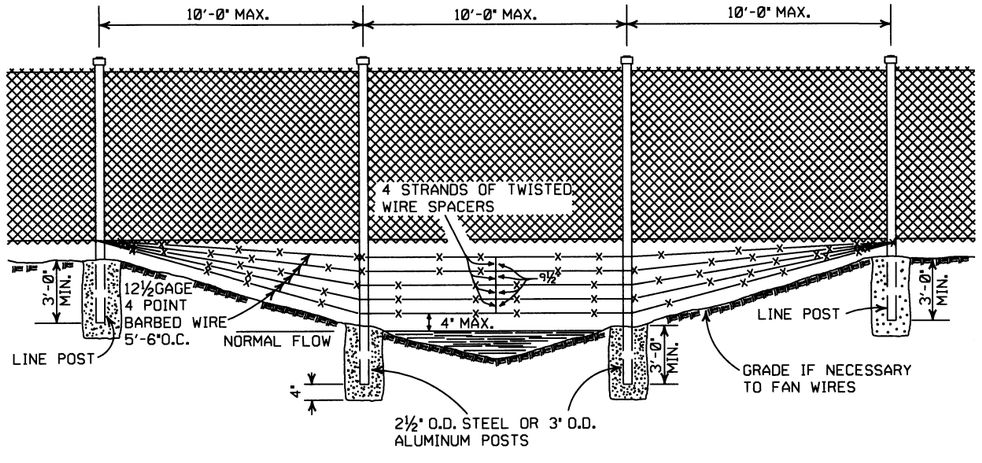
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

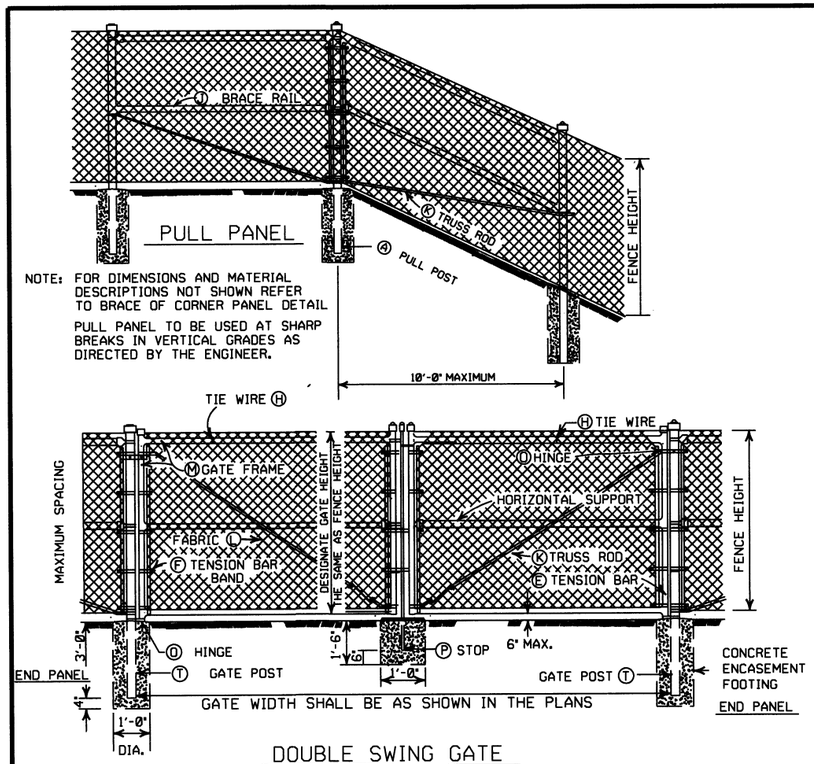
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2

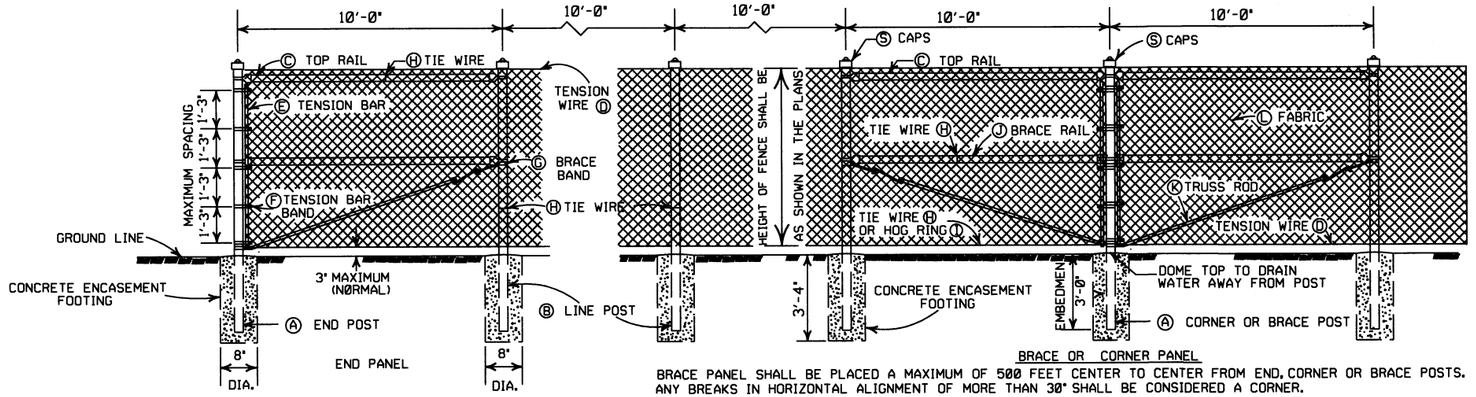


NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.

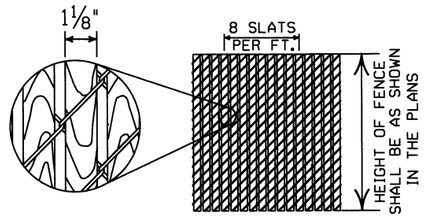
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS (LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

HEIGHT OF FENCE FABRIC	Ⓐ END, PULL CORNER OR BRACE POST	Ⓑ LINE POSTS SIZE	Ⓑ LINE POSTS TIE SPACING	Ⓒ TOP RAIL SIZE	Ⓒ TOP RAIL TIE SPACING	Ⓒ TOP RAIL MIN. LENGTH	Ⓓ TENSION WIRE SIZE	Ⓓ TENSION WIRE TIE SPACING	Ⓔ TENSION BAR SIZE	Ⓔ TENSION BAR LENGTH	Ⓕ TENSION BAR BAND SIZE	Ⓕ TENSION BAR BAND BOLT SIZE	Ⓕ TENSION BAR BAND SPACING	Ⓖ BRACE BAND SIZE	Ⓖ BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	Ⓗ TIE WIRE	Ⓘ HOG RING	Ⓙ BRACE RAIL SIZE	Ⓙ BRACE RAIL TIE SPACING	Ⓚ TRUSS ROD	Ⓛ FABRIC SIZE	Ⓛ FABRIC MESH	Ⓛ FABRIC SELVAGE	Ⓜ GATE FRAME SIZE	Ⓜ GATE FRAME TIE SPACING	Ⓝ HORIZONTAL SUPPORT SIZE	Ⓝ HORIZONTAL SUPPORT TIE SPACING	Ⓞ HINGE TYPE 180° SWING	Ⓣ GATE POST GATE WIDTH 12' AND LESS	Ⓣ GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK-ING AND/OR TWIST-ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

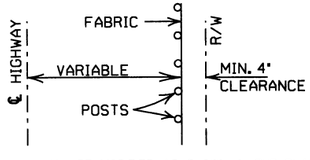
OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

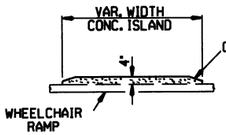
EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

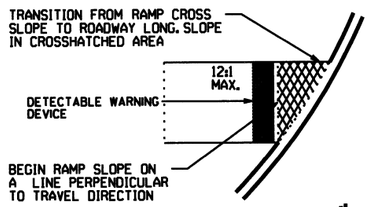
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

STANDARD DRAWING WF-3



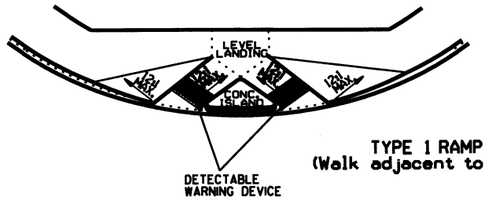
CONCRETE ISLAND DETAIL



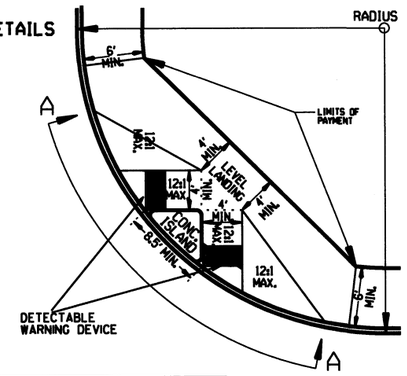
SLOPE TRANSITION DETAILS

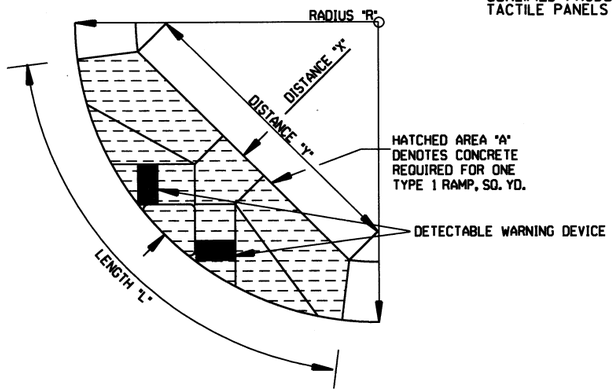
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R" FEET	DISTANCE "X" FEET	DISTANCE "Y" FEET	LENGTH "L" FEET	RAMP AREA "A" 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



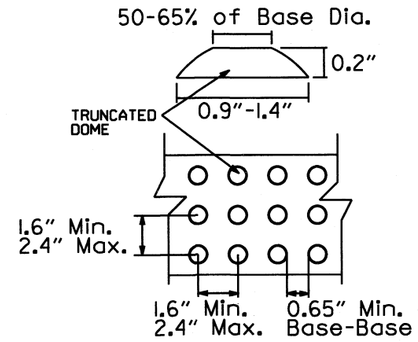
TYPE 1 RAMP
(Walk adjacent to curb)



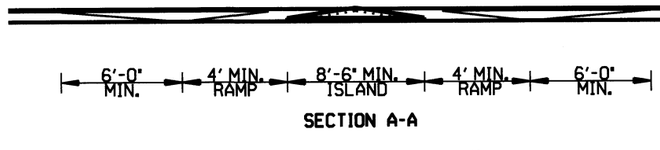


GENERAL NOTES FOR DETECTABLE WARNING DEVICES

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

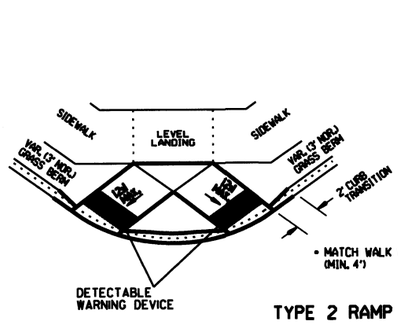


SECTION A-A

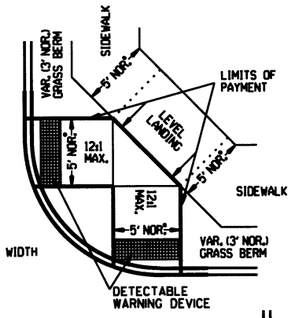
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

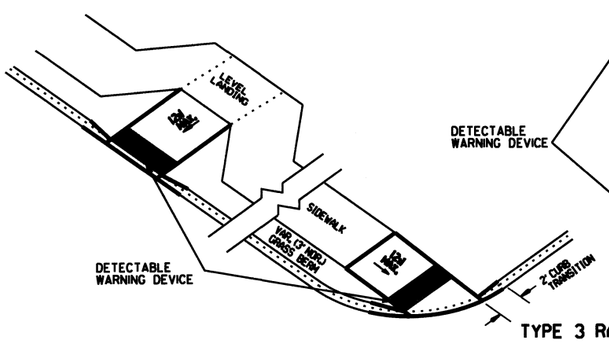
GENERAL NOTES:

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.

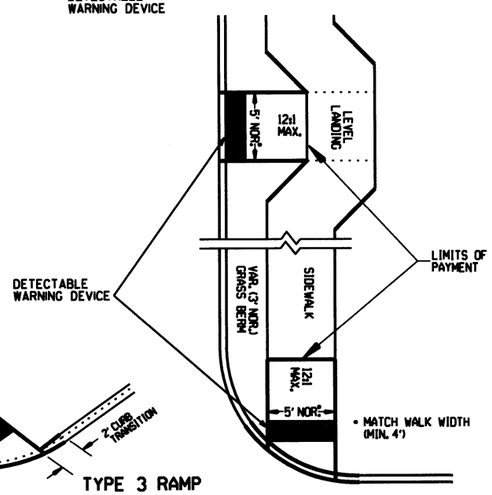


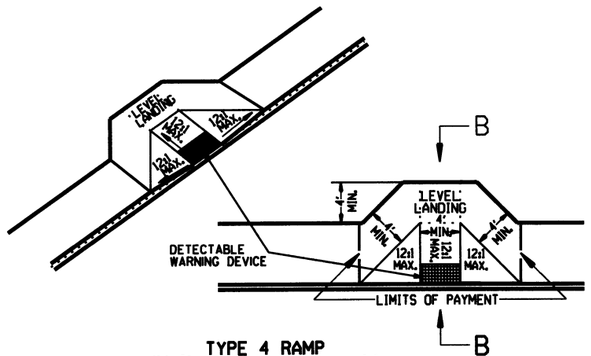
TYPE 2 RAMP



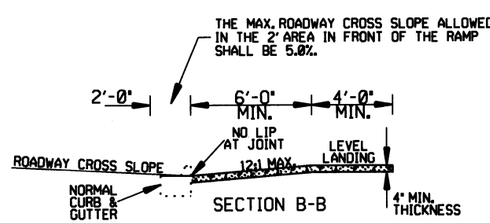


TYPE 3 RAMP





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.

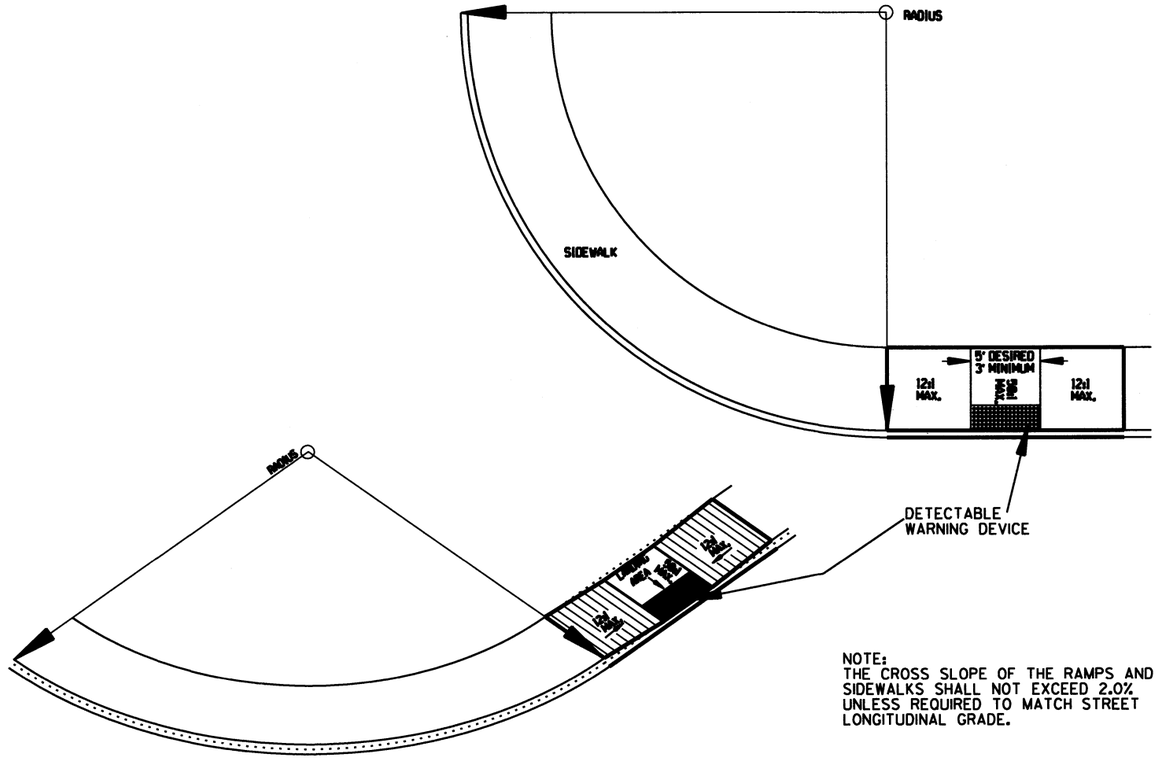
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

1-10-05	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.	
8-8-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM/BITOC/AWAY 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.H.D.	299-7-28-76
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

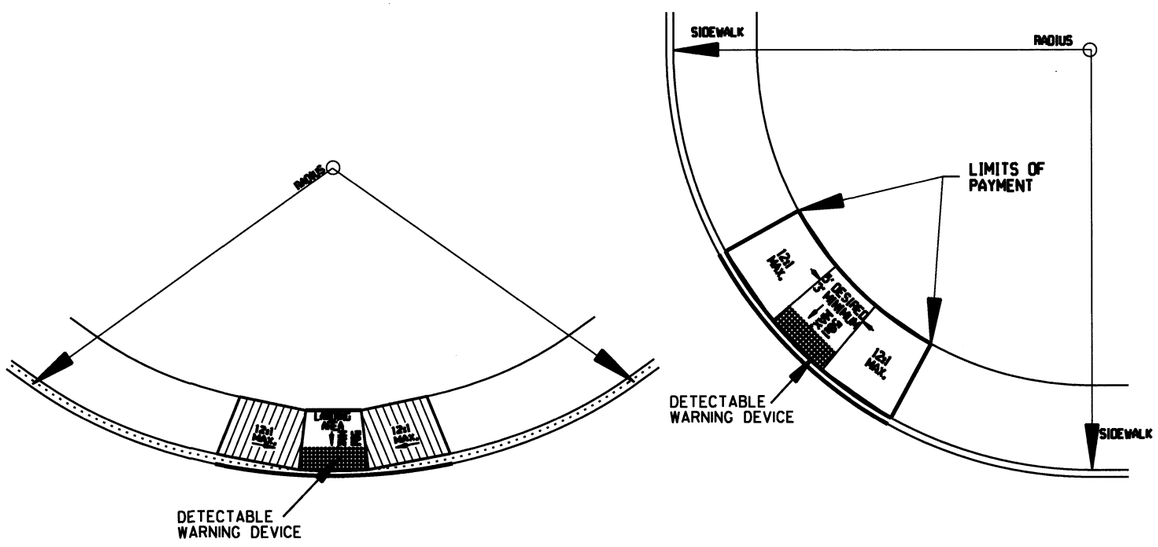
WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1



NOTE:
THE CROSS SLOPE OF THE RAMPS AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGITUDINAL GRADE.

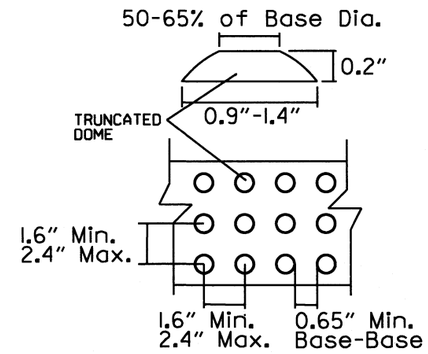
TYPE 5 RAMP



TYPE 6 RAMP

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 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 EXISTING WALK WIDTH OR 36", WHICHEVER IS GREATER.
MINOR MODIFICATIONS OF THESE DETAILS, AS APPPROVED BY THE ENGINEER, MAY BE MADE TO ADJUST TO LOCAL CONDITIONS.

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 CONSTRUCTED.

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.

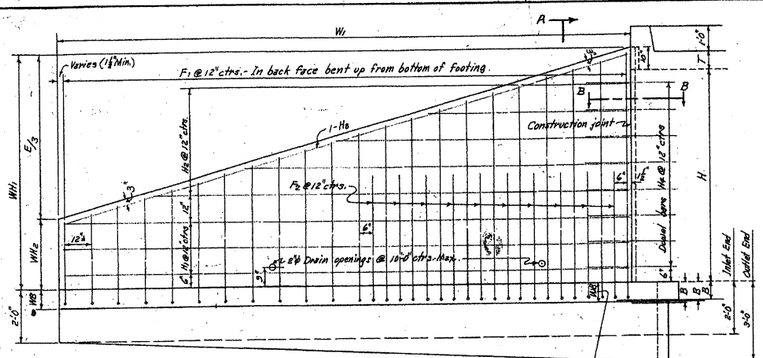
DATE	REVISION	DATE FILM
10-9-03	REVISED GENERAL NOTES & ADDED NOTE.	
4-10-03	REVISED DETECTABLE WARNING DEVICE DETAIL	
8-22-02	ADDED DETECTABLE WARNING DEVICES DETAILS	
11-18-98	REV. FOURTH CHOICE NOTE	
8-12-98	REVISED TEXTURE	
7-02-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

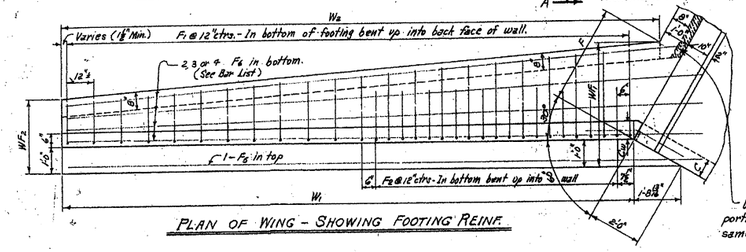
WHEELCHAIR RAMPS ALTERATIONS ONLY

STANDARD DRAWING WR-2

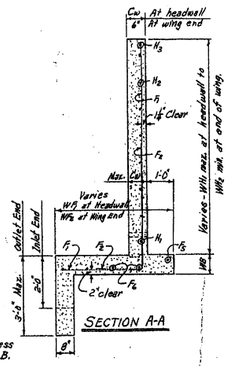
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
8	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

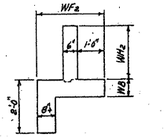


PLAN OF WING - SHOWING FOOTING REINF.

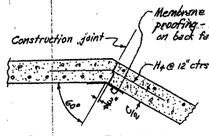


SECTION A-A

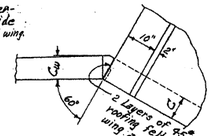
When B is more than W8, the shaded portion of the apron shall be made the same thickness as the barrel base B.



END VIEW OF WING



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = W1	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTH OF WINGWALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
											INLET END	OUTLET END
H	WB	Cw	WH1	WH2	W5	W5	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1⅝"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1⅝"	1'-4⅜"	8'-6"	9'-3⅝"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-9"	10'-6"	12'-1⅝"	12'-1⅛"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅝"	12'-6"	14'-11⅝"	14'-11⅝"	2.978	2.668
		7"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅝"	12'-6"	14'-5⅛"	14'-7⅛"	2.882	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅜"	14'-6"	16'-9"	17'-1⅝"	3.990	3.661
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅜"	14'-6"	16'-9"	17'-1⅝"	3.811	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6⅜"	14'-6"	16'-9"	17'-1⅝"	3.588	3.803
7'	8½"	7½"	7'-10"	2'-8"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-8"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-0⅛"	22'-4"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

W3 = (OW - 2F)

CLEAR SPAN	CLEAR HEIGHT	FOOTING DIMENSION	SINGLE BARREL CULVERT		DOUBLE BARREL CULVERT		TRIPLE BARREL CULVERT		QUADRUPLE BARREL CULVERT		QUINTUPLE BARREL CULVERT	
S	H	2F	OW	W3	OW	W3	OW	W3	OW	W3	OW	W3
4'	2'	1'-11⅛"	5'-0"	3'-0⅛"	9'-8"	7'-8⅛"	14'-4"	12'-4⅛"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-8⅜"	5'-0"	2'-3¼"	9'-8"	6'-11⅞"	14'-4"	11'-7⅝"	19'-0"	16'-3¾"	23'-8"	20'-11⅝"
	4'	3'-5"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-1⅜"	5'-0"	0'-8⅝"	9'-8"	5'-4⅝"	14'-4"	10'-0⅝"	19'-0"	14'-8⅝"	23'-8"	19'-8⅝"
	6'	5'-0⅛"	5'-2"	0'-1⅞"	9'-11"	4'-10⅛"	14'-8"	9'-7⅛"	19'-5"	14'-2⅛"	24'-2"	19'-1⅛"
5'	3'	2'-8⅜"	6'-0"	3'-3⅛"	11'-8"	8'-11⅛"	17'-4"	14'-1⅞"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-5"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-1⅜"	6'-0"	1'-8⅜"	11'-8"	7'-4⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-4⅜"
	6'	5'-0⅛"	6'-2"	1'-1⅞"	11'-11"	6'-10⅛"	17'-8"	12'-7⅛"	23'-5"	18'-2⅛"	29'-2"	24'-1⅛"
	7'	6'-2⅝"	6'-5"	0'-10⅝"	12'-1"	5'-11⅝"	17'-11"	11'-10⅝"	23'-9"	17'-3⅝"	29'-7"	23'-4⅝"
6'	3'	2'-8⅜"	7'-0"	4'-3⅛"	13'-8"	10'-11⅛"	20'-4"	17'-6⅞"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-5"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-1⅜"	7'-0"	2'-8⅜"	13'-8"	9'-4⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-4⅜"
	6'	5'-0⅛"	7'-2"	2'-1⅞"	13'-11"	8'-10⅛"	20'-8"	15'-7⅛"	27'-5"	22'-2⅛"	34'-2"	29'-1⅛"
	7'	6'-2⅝"	7'-5"	1'-10⅝"	14'-1"	7'-11⅝"	20'-11"	14'-10⅝"	27'-9"	21'-3⅝"	34'-7"	28'-8⅝"
	8'	7'-1"	7'-9"	2'-0"	14'-8"	8'-1"	21'-10"	15'-3"	28'-11"	22'-4"	36'-0"	29'-5"
7'	4'	3'-5"	8'-0"	4'-6"	15'-6"	12'-8"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-1⅜"	8'-0"	3'-8⅜"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-4⅜"
	6'	5'-0⅛"	8'-2"	3'-1⅞"	15'-11"	10'-10⅛"	23'-8"	18'-7⅛"	31'-5"	26'-2⅛"	39'-2"	34'-1⅛"
	7'	6'-2⅝"	8'-5"	2'-10⅝"	16'-1"	9'-11⅝"	23'-11"	17'-10⅝"	31'-9"	25'-3⅝"	39'-7"	33'-8⅝"
	8'	7'-1"	8'-9"	3'-0"	16'-8"	10'-1"	24'-10"	18'-3"	33'-0"	25'-6"	41'-0"	34'-5"
9'	5'	4'-1⅜"	10'-2"	5'-0⅛"	19'-11"	15'-7⅛"	29'-8"	25'-4⅛"	39'-5"	35'-1⅛"	49'-2"	44'-10⅛"
	6'	5'-0⅛"	10'-3"	5'-1⅜"	20'-1"	15'-0⅜"	29'-11"	24'-10⅜"	39'-9"	34'-4⅜"	49'-7"	44'-4⅜"
	7'	6'-2⅝"	10'-3"	4'-0⅛"	20'-1"	13'-10⅛"	29'-11"	23'-6⅛"	39'-9"	33'-1⅛"	49'-7"	43'-0⅛"
	8'	7'-1"	10'-6"	3'-10"	20'-6"	13'-10"	30'-6"	23'-8"	39'-10"	32'-6"	49'-10"	43'-0"
10'	5'	4'-1⅜"	11'-2"	6'-0⅛"	21'-1"	17'-7⅛"	32'-8"	28'-4⅛"	43'-5"	39'-1⅛"	54'-2"	49'-10⅛"
	6'	5'-0⅛"	11'-3"	6'-1⅜"	22'-1"	17'-0⅜"	32'-11"	27'-10⅜"	43'-9"	38'-8⅜"	54'-7"	49'-5⅜"
	7'	6'-2⅝"	11'-3"	5'-0⅛"	22'-1"	15'-10⅛"	32'-11"	26'-6⅛"	43'-9"	37'-4⅛"	54'-7"	48'-0⅛"
	8'	7'-1"	11'-6"	4'-10"	22'-6"	15'-10"	33'-8"	26'-8"	43'-10"	36'-6"	54'-8"	47'-10"
11'	6'	5'-0⅛"	12'-4"	7'-3⅛"	24'-2"	19'-1⅛"	36'-0"	30'-11⅛"	47'-10"	42'-3⅛"		
	7'	6'-2⅝"	12'-4"	6'-1⅜"	24'-2"	17'-11⅜"	36'-0"	29'-6⅜"	47'-10"	41'-0⅜"		
	8'	7'-1"	12'-9"	5'-10"	24'-8"	16'-10"	36'-10"	28'-8"	49'-0"	40'-6"		
12'	6'	5'-0⅛"	13'-4"	8'-3⅛"	26'-2"	21'-1⅛"	39'-0"	33'-11⅛"	51'-10"	46'-3⅛"		
	7'	6'-2⅝"	13'-4"	7'-1⅜"	26'-2"	19'-11⅜"	39'-0"	32'-5⅜"	51'-10"	45'-0⅜"		
	8'	7'-1"	13'-4"	6'-10"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	® REINFORCING STEEL - FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS					
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT	
S	H	C_W	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	
4'	2'	6"	7"	108.0	4.50	5.96	6.42	7.38	8.34	
	3'	6"	7"	164.6	6.26	7.21	8.17	9.13	10.09	
	4'	6"	7"	224.6	8.32	9.28	10.24	11.20	12.16	
	5'	6"	7"	327.8	10.72	11.68	12.64	13.60	14.56	
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49	
5'	3'	6"	7"	164.9	6.97	7.63	8.29	9.96	11.12	
	4'	6"	7"	224.6	8.56	9.70	10.87	10.03	13.20	
	5'	6"	7"	327.8	10.94	12.10	13.26	14.98	15.59	
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54	
	7'	7½"	8½"	1134.6	18.94	20.16	21.37	22.59	23.80	
6'	3'	6"	7"	164.9	6.68	8.06	9.42	10.80	12.18	
	4'	6"	7"	224.6	8.75	10.18	11.49	12.87	14.25	
	5'	6"	7"	327.8	11.15	12.53	13.89	15.27	16.65	
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59	
	7'	7½"	8½"	1134.6	19.18	20.58	22.00	23.43	24.86	
	8'	8"	9"	1925.6	24.09	25.53	26.96	28.39	29.83	
7'	4'	6"	7"	224.6	8.97	10.58	12.15	13.76	15.35	
	5'	6"	7"	327.8	11.36	12.97	14.54	16.15	17.75	
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66	
	7'	7½"	8½"	1134.6	19.38	21.02	22.64	24.28	25.92	
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89	
8'	4'	6"	7"	224.6	9.19	11.03	12.82	14.65	16.45	
	5'	7"	7"	327.8	12.03	13.89	15.70	17.55	19.36	
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75	
	7'	7½"	8½"	1134.6	19.59	21.46	23.30	25.16	26.99	
	8'	8"	9"	1925.6	24.54	26.41	28.24	30.11	31.96	
9'	5'	7"	7"	327.8	12.26	14.39	16.87	18.95	20.97	
	6'	7½"	8"	583.1	15.94	18.04	20.09	22.19	24.23	
	7'	7½"	8½"	1134.6	19.81	21.91	23.96	26.06	28.10	
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05	
10'	5'	7"	7"	327.8	12.99	14.80	17.05	19.24	21.52	
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28	
	7'	7½"	8½"	1134.6	20.09	22.37	24.64	26.87	29.15	
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10	
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23		
	7'	8"	8½"	1134.6	20.64	23.22	25.71	28.18		
	8'	8"	9"	1925.6	25.19	27.77	30.27	32.74		
12'	6'	8"	8"	583.1	16.92	19.75	22.45	25.18		
	7'	8"	8½"	1134.6	20.87	23.69	26.40	29.19		
	8'	8"	9"	1925.6	25.92	28.25	30.96	33.69		

® For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

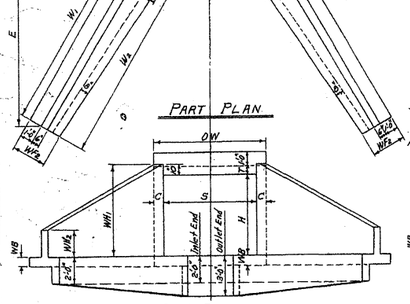
UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

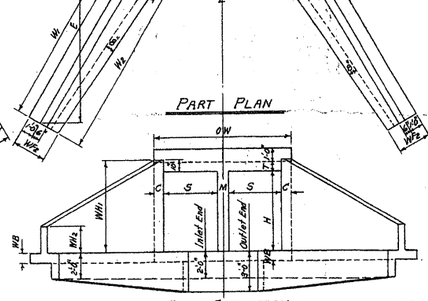
NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

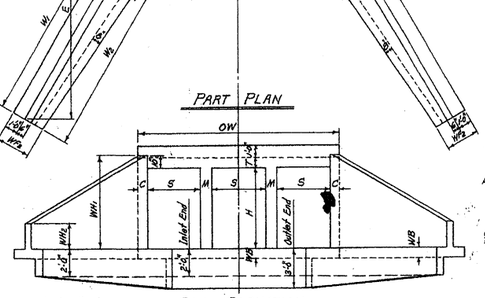


END ELEVATION
SINGLE BARREL CULVERT

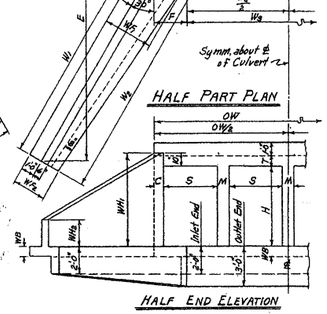


END ELEVATION
DOUBLE BARREL CULVERT

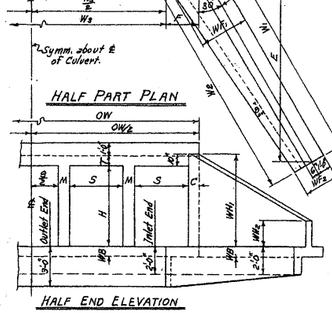
NOTE:- Plans and Elevations are not to scale.



END ELEVATION
TRIPLE BARREL CULVERT



HALF END ELEVATION
QUADRUPLE BARREL CULVERT



HALF END ELEVATION
QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT	F1 BENT: In bottom of footing, bent up into back face of wing. One bar of each length.							F2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars.						F3 STRAIGHT: Longitudinal in top of wing footing heel.		F4 STRAIGHT: Longitudinal in bottom of wing footing toe.			H1 STRAIGHT: Horizontal in back face of wing.				H2 STRAIGHT: Horizontal in back face of wing. One bar of each length.						H3 STRAIGHT: In back face of wing at top-on slope.			H4 BENT: Dowels thru construction joint at headwall.					QUANTITY REINFORCING STEEL PER WING	BAR BENDING DIAGRAMS
				LENGTHS VARY																		LENGTHS VARY																	
H	SIZE	SPACING	NO. REQD	MIN.	MAX.	X	Y	SIZE	SPACING	NO. REQD	LENGTH	X	Y	SIZE	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	MAX.	MIN.	SIZE	SPACING	NO. REQD	LENGTH	SIZE	NO. REQD	LENGTH	SIZE	SPACING	NO. REQD	LENGTH	X		LB.	
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-11"	2'-11"	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	——	4'-0"	#8	1	7'-4"	#3	12"	2	2'-8"	1'-4"		27.0	
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	1'-5"	4'-0"	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	4'-0"	#8	1	9'-9"	#3	12"	3	2'-8"	1'-4"		41.1	
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	1'-8"	5'-0"	—	—	—	—	#3	1	14'-8"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	4'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-4"		63.7	
5'	#3	12"	15	3'-5"	7'-10"	1'-1"	1'-11"	2'-1"	6'-0"	#3	12"	4	3'-6"	#3	1	16'-8"	#3	3	16'-0"	#8	12"	2	14'-2"	#3	12"	3	10'-11"	4'-0"	#3	1	14'-7"	#3	12"	5	2'-8"	1'-4"		89.5	
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-6"	#3	12"	4	14'-6"	4'-0"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-4"		145.8	
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	#3	1	21'-4"	#4	4	21'-0"	#8	12"	2	18'-9"	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"		283.7	
8'	#4	12"	22	4'-6"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	#3	1	23'-8"	#4	4	23'-8"	#4	12"	3	21'-1"	#4	12"	5	17'-9"	4'-0"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"		356.4	

NOTE:- Dimensions are to bar centers.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RWS - 1-3-63
Drawn By:- W.C.H. 12-7-62. Checked By:- RWS - 1-31-63
Quantities By:- W.C.H. 12-19-62. Rechecked By:- RWS - 3-29-63

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MYLAR

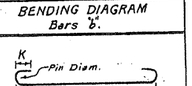
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60:0" IN LENGTH

DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. 2 Reqd. in Apron and Headwall- Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars BENT - See Diagram below. In Top and Bottom Slabs of Barrel. Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars STRAIGHT. Longitudinal in Top Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	"d1" bars STRAIGHT. Longitudinal in Sidewalls SIZE	SPACING	No. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel SIZE	SPACING	No. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Side walls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
D	S	H																											
0'-0" TO 5'-0" MAXIMUM	4'@1'	2'	#5	13"	120	120	4'-9"	#6	13"	110	110	5'-10"	4'-8"	#5	10½"	6	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	120	120	2'-11"
		3'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			6			5			5			120	120	3'-11"
		4'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			8			5			5			120	120	4'-11"
		5'			120	120	4'-9"			110	110	5'-10"	4'-8"			6			10			5			5			120	120	5'-11"
		6'			120	120	4'-11"			110	110	6'-0"	4'-10"			6			12			5			5			120	120	6'-11"
	4'@1'	2'			120	120	5'-8"			110	110	6'-10"	5'-8"			7			6			6			6			120	120	4'-0"
		3'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			8			6			6			120	120	5'-0"
		4'			120	120	5'-9"			110	110	6'-10"	5'-8"			7			10			6			6			120	120	6'-0"
		5'			120	120	5'-11"			110	110	7'-0"	5'-10"			7			12			6			6			120	120	7'-0"
		6'			120	120	6'-0"			110	110	7'-1"	5'-11"			7			14			6			6			120	120	8'-0"
		7'																											
	4'@2'	3'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			6			7			7			120	120	4'-1"
		4'			128	128	6'-9"			118	118	7'-10"	6'-8"			8			8			7			7			120	120	5'-1"
		5'	#6	12"	128	128	6'-9"	#6	12"	118	118	7'-10"	6'-8"	#5	10½"	8	#4	12"	10	#4	12"	7	#4	12"	7	#4	12"	120	120	6'-1"
		6'			128	128	6'-11"			118	118	8'-1"	6'-11"			8			12			7			7			120	120	7'-1"
		7'			128	128	7'-0"			118	118	8'-1"	6'-11"			8			14			7			7	#5	12"	120	120	8'-1"
		8'			128	128	7'-1"			118	118	8'-2"	7'-0"			8			16			7			7			120	120	9'-1"
	4'@3'	4'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			8			8			8			120	120	5'-2"
		5'			140	140	7'-9"			130	130	8'-10"	7'-8"			9			10			8			8			120	120	6'-2"
		6'			140	140	7'-11"			130	130	9'-0"	7'-10"			9			12			8			8			120	120	7'-2"
		7'	#6	11"	140	140	8'-0"	#6	11"	130	130	9'-1"	7'-11"	#5	10"	9	#4	12"	14	#4	12"	8	#4	12"	8	#4	12"	120	120	8'-2"
		8'			140	140	8'-1"			130	130	9'-2"	8'-0"			9			16			8			8			120	120	9'-2"
		9'			140	140	8'-3"			130	130	9'-2"	8'-2"			9			18			8			8	#5	12"	120	120	10'-2"
	4'@4'	4'			128	128	8'-5"			118	118	9'-10"	8'-8"			11			8			9			9			120	120	5'-3"
		5'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			10			9			9			120	120	6'-3"
		6'			128	128	8'-11"			118	118	10'-0"	8'-10"			11			12			9			9			120	120	7'-3"
	4'@5'	7'	#7	12"	128	128	9'-0"	#6	11"	118	118	10'-1"	8'-11"	#5	10"	11	#4	12"	14	#4	12"	9	#4	12"	9	#4	12"	120	120	8'-3"
		8'			128	128	9'-2"			118	118	10'-1"	9'-0"			11			16			9			9			120	120	9'-3"
		9'			128	128	9'-3"			118	118	10'-2"	9'-0"			11			18			9			9			120	120	10'-3"
		10'			128	128	9'-5"			118	118	10'-4"	9'-2"			11			20			9			9			120	120	11'-3"
	4'@6'	5'			140	140	9'-11"			130	130	11'-0"	9'-10"			12			10			10			10			120	120	6'-5"
		6'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			12			10			10			120	120	7'-5"
		7'			140	140	10'-0"			130	130	11'-1"	9'-11"			12			14			10			10			120	120	8'-5"
	4'@7'	8'	#7	11"	140	140	10'-1"	#6	11"	130	130	11'-2"	10'-0"	#5	10"	12	#4	12"	16	#4	12"	10	#4	12"	10	#4	12"	144	144	9'-5"
		9'			140	140	10'-3"			130	130	11'-4"	10'-2"			12			18			10			10			120	120	10'-5"
		10'			140	140	10'-5"			130	130	11'-4"	10'-4"			12			20			10			10	#5	11"	132	132	11'-5"
		11'			140	140	10'-7"			130	130	11'-5"	10'-5"			12			22			10			10			144	144	12'-5"
	4'@8'	5'			128	128	10'-11"			118	118	12'-2"	10'-10"			13			10			11			11			120	120	6'-6"
		6'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			12			11			11			120	120	7'-6"
		7'			128	128	11'-0"			118	118	12'-3"	10'-11"			13			14			11			11			120	120	8'-6"
	4'@9'	8'	#7	12"	128	128	11'-1"	#7	12"	118	118	12'-4"	11'-0"	#5	10"	13	#4	12"	16	#4	12"	11	#4	12"	11	#4	12"	144	144	9'-6"
		9'			128	128	11'-3"			118	118	12'-6"	11'-2"			13			18			11			11			144	144	10'-6"
		10'			128	128	11'-5"			118	118	12'-8"	11'-4"			13			20			11			11	#5	11"	132	132	11'-6"
		11'			128	128	11'-7"			118	118	12'-10"	11'-6"			13			22			11			11			144	144	12'-6"
	4'@10'	5'			128	128	11'-11"			118	118	13'-0"	11'-8"			13			24			11			11	#6	12"	120	120	13'-6"
		6'			140	140	12'-1"			130	130	13'-5"	12'-0"			15			12			12			12			120	120	7'-7"
		7'			140	140	12'-1"			130	130	13'-6"	12'-0"			15			14			12			12	#4	12"	120	120	8'-7"
	4'@11'	8'	#7	11"	140	140	12'-1"	#7	11"	130	130	13'-6"	12'-0"	#5	9½"	15	#4	12"	16	#4	12"	12	#4	12"	12			144	144	9'-7"
		9'			140	140	12'-3"			130	130	13'-6"	12'-2"			15			18			12			12			120	120	10'-7"
		10'			140	140	12'-5"			130	130	13'-8"	12'-4"			15			20			12			12	#5	11"	132	132	11'-7"
		11'			140	140	12'-7"			130	130	13'-10"	12'-6"			15			22			12			12			144	144	12'-7"
		12'			140	140	12'-9"			130	130	14'-0"	12'-8"			15			24			12			12	#6	12"	120	120	13'-7"
	4'@12'	6'			128	128	13'-1"			118	118	14'-2"	13'-0"			16			12			13			13					
		7'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			14			13			13	#4	12"	120	120	8'-7"
		8'			128	128	13'-1"			118	118	14'-4"	13'-0"			16			16			13			13			144	144	9'-7"
		9'	#8	12"	128	128	13'-3"	#7	12"	118	118	14'-6"	13'-2"	#5	9½"	16	#4	12"	18	#4	12"	13	#4	12"	13					
		10'			128	128	13'-5"			118	118	14'-8"	13'-4"			16			20			13			13					
		11'			128	128	13'-7"			118	118	14'-10"	13'-6"			16			22			13			13					
		12'			128	128	13'-9"			118	118	15'-0"	13'-8"			16			24			13			13					

BAR SIZE	PIN DIAM.	K	ADD FOR 2 HOOKS
#6	3"	5"	1'-2"
#7	3½"	5⅝"	1'-4"

BENDING DIAGRAM Bars "b".

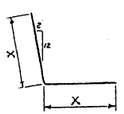


NOTE:- Dimensions are to centers of bars.

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	No. REQ'D	LENGTH	X
4'	#4	11⅛"	12	2'-6"	1'-3"
5'	#4	11⅛"	14	2'-7"	1'-3⅝"
6'	#4	11⅛"	16	2'-8"	1'-4"
7'	#4	11⅛"	18	2'-9"	1'-4⅝"
8'	#4	11⅛"	20	2'-11"	1'-5⅝"
9'	#4	11⅛"	22	3'-0"	1'-6"
10'	#4	11⅛"	24	3'-1"	1'-6⅝"
11'	#4	12"	26	3'-2"	1'-7"
12'	#4	12"	28	3'-3"	1'-7⅝"

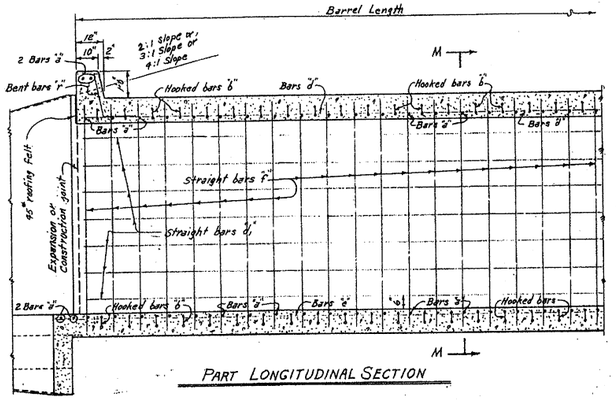
Bars "r" Dowel bars in Headwalls.



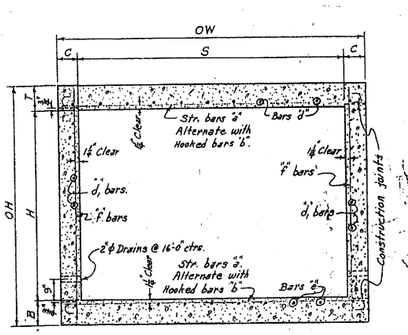
DIMENSIONS — QUANTITIES

MRK. DESIGN DEPTH OF COVER	CLEAR SPAN	BARREL DIMENSIONS CLEAR HEIGHT	50 Ft. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	ADDITIONAL PER LAP	ADDITIONAL TWO HEADWALLS & APRONS
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
5'-0"	4'@1'	2'	8	5'-0"	7"	6"	6½"	3'-1½"	0.282	41.99	17.98	66.35
		3'	12	5'-0"		6"		4'-1½"	0.319	44.16	19.62	66.35
		4'	16	5'-0"		6"		5'-1½"	0.356	46.83	21.29	66.35
		5'	20	5'-0"		6"		6'-1½"	0.394	49.50	22.96	66.35
		6'	24	5'-2"		7"		7'-1½"	0.474	52.96	24.63	67.75
	4'@2'	3'	15	6'-0"	7½"	6"	7"	4'-2½"	0.380	55.55	22.19	101.27
		4'	20	6'-0"		6"		5'-2½"	0.417	58.23	23.86	101.27
		5'	25	6'-0"		6"		6'-2½"	0.454	60.90	25.53	101.27
		6'	30	6'-2"		7"		7'-2½"	0.535	64.49	27.20	103.27
		7'	35	6'-3"		7½"		8'-2½"	0.604	67.63	28.87	104.27
	4'@3'	3'	18	7'-0"	8"	6"	7½"	4'-3½"	0.496	66.29	24.76	118.96
		4'	24	7'-0"		6"		5'-3½"	0.985	68.96	26.93	118.96
		5'	30	7'-0"		6"		6'-3½"	0.520	71.64	28.10	118.96
		6'	36	7'-2"		7"		7'-3½"	0.602	75.31	29.77	120.96
		7'	42	7'-3"		7½"		8'-3½"	0.671	78.98	31.44	121.97
		8'	48	7'-4"		8"		9'-3½"	0.746	82.97	33.11	122.97
	4'@4'	4'	28	8'-0"	8½"	6"	8½"	5'-5"	0.568	81.32	29.01	136.88
		5'	35	8'-0"		6"		6'-5"	0.605	84.00	30.68	136.88
		6'	42	8'-2"		7"		7'-5"	0.688	87.76	32.35	138.88
		7'	49	8'-3"		7½"		8'-5"	0.757	90.98	34.02	139.88
		8'	56	8'-4"		8"		9'-5"	0.832	96.65	35.69	140.88
		9'	63	8'-6"		9"		10'-5"	0.946	105.59	37.36	142.89
	4'@5'	4'	32	9'-0"	9½"	6"	9½"	5'-7"	0.676	95.26	33.32	159.07
		5'	40	9'-2"		7"		6'-7"	0.754	99.12	34.99	196.80
		6'	48	9'-2"		7"		7'-7"	0.797	101.79	36.66	196.80
		7'	56	9'-3"		7½"		8'-7"	0.867	105.05	38.33	198.16
		8'	64	9'-4"		8"		9'-7"	0.992	110.81	40.00	199.52
		9'	72	9'-6"		9"		10'-7"	1.057	119.92	41.67	202.25
		10'	80	9'-8"		10"		11'-7"	1.184	126.67	43.34	204.97
	4'@6'	5'	45	10'-2"	10"	7"	10"	6'-8"	0.844	119.72	37.56	219.61
		6'	54	10'-3"		7½"		7'-8"	0.910	118.04	39.23	220.97
		7'	63	10'-3"		7½"		8'-8"	0.957	120.71	40.90	220.97
		8'	72	10'-4"		8"		9'-8"	1.033	126.56	42.57	222.33
		9'	81	10'-4"		9"		10'-8"	1.198	135.80	44.24	224.08
		10'	90	10'-8"		10"		11'-8"	1.276	142.68	45.91	227.28
		11'	99	10'-10"		11"		12'-8"	1.696	180.90	47.58	230.51
	4'@7'	5'	50	11'-2"	11"	7"	11"	6'-9½"	0.957	130.64	40.18	242.64
		6'	60	11'-3"		7½"		7'-9½"	1.024	133.99	41.80	244.00
		7'	70	11'-3"		7½"		8'-9½"	1.071	136.66	43.47	244.00
		8'	80	11'-4"		8"		9'-9½"	1.147	142.55	45.14	245.36
	4'@8'	9'	90	11'-6"	10½"	9"	11⅛"	10'-9½"	1.263	151.92	96.81	248.09
		10'	100	11'-8"		10"		11'-9½"	1.391	158.89	98.98	250.81
		11'	110	11'-10"		11"		12'-9½"	1.532	164.71	50.15	253.54
		12'	120	12'-0"		12"		13'-9½"	1.685	170.67	51.82	256.26
	4'@9'	6'	66	12'-3"	11"	8"	11⅝"	7'-10⅛"	1.153	156.16	96.12	268.62
		7'	77	12'-4"		8"		8'-10⅛"	1.202	157.83	97.79	268.62
		8'	88	12'-4"		8"		9'-10⅛"	1.252	163.06	99.96	268.62
		9'	99	12'-6"		9"		10'-10⅛"	1.368	172.60	51.18	271.34
	4'@10'	10'	110	12'-8"		10"		11'-10⅛"	1.497	179.70	52.80	274.07
		11'	121	12'-10"		11"		12'-10⅛"	1.638	187.67	54.97	276.79
		12'	132	13'-0"		12"		13'-10⅛"	1.792	195.79	56.14	279.52
	4'@11'	6'	72	13'-6"	11½"	8"	12⅝"	8'-0"	1.284	172.20	98.69	357.62
		7'	84	13'-6"		8"		9'-0"	1.333	179.87	50.86	357.62
		8'	96	13'-9"		8"		10'-0"	1.383	180.15	52.031	357.62
		9'	108	13'-9"		9"		11'-0"	1.500	189.85	58.70	361.18
	4'@12'	10'	120	13'-9"		10"		12'-0"	1.630	197.07	55.37	364.74
		11'	132	13'-10"		11"		13'-0"	1.772	205.16	57.04	368.30
		12'	144	14'-0"		12"		14'-0"	1.926	217.95	58.71	371.86

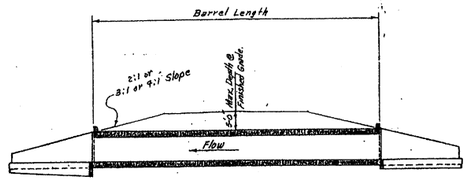
W-X002-1, W-X003-2, W-X004-2.
W-X002-1 or W-X003-1 or W-X004-1 or
Note:- For details of wings and bar info., see Drawing Nos. and



PART LONGITUDINAL SECTION



TYPICAL SECTION M-M



LONGITUDINAL SECTION

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.

BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 35'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.

CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 9'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/in²
Reinforcing Steel 24,000 #/in²

Note:- This drawing to be used in conjunction with Standard Drawing Nos. W-X003-1 or W-X003-2 and W-X004-1 or W-X004-2. Also Drawing Nos. W-X002-1 or W-X002-2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

4,5,6,7,8,9,10,11&12' SPANS SINGLES — 3:1 OR 4:1 SLOPES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-100X-0

Designed By:- W.C.H. 1-23-63. Checked By:- BBG 5-6-63
Drawn By:- W.C.H. 2-8-63. Checked By:- BBG 5-24-63
Quantities By:- W.C.H. 2-12-63. Checked By:- BBG 5-24-63