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.		100824	1	346
				②	BNSF RAILROAD OVERPASS (HWY. 18) (JONESBORO) (S)			

10:56:51 AM 9/12/2018 mbinkley

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

BNSF RAILROAD OVERPASS (HWY. 18) (JONESBORO) (S)

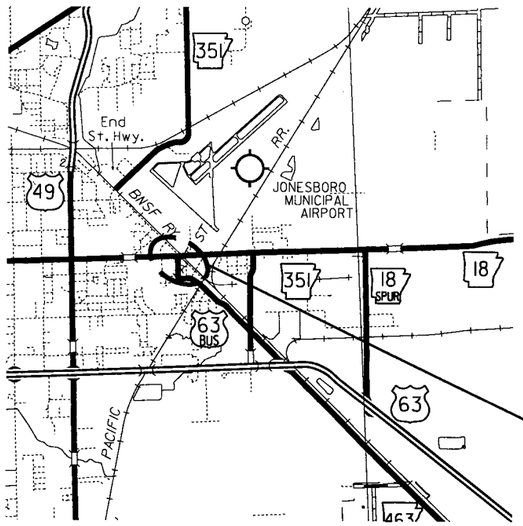
CRAIGHEAD COUNTY

ROUTE 18 SECTION 4

JOB 100824

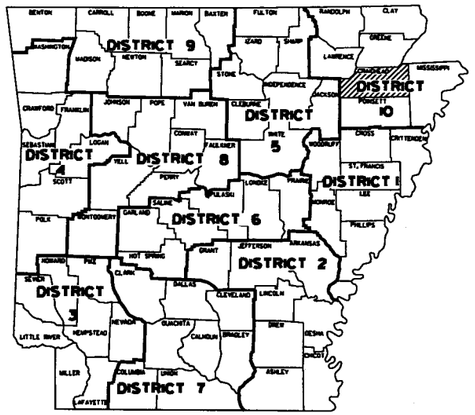
F.A.P. NHPP-9227(80)

NOT TO SCALE



PROJECT LOCATION

VICINITY MAP



ARK. HWY. DIST. NO. 10

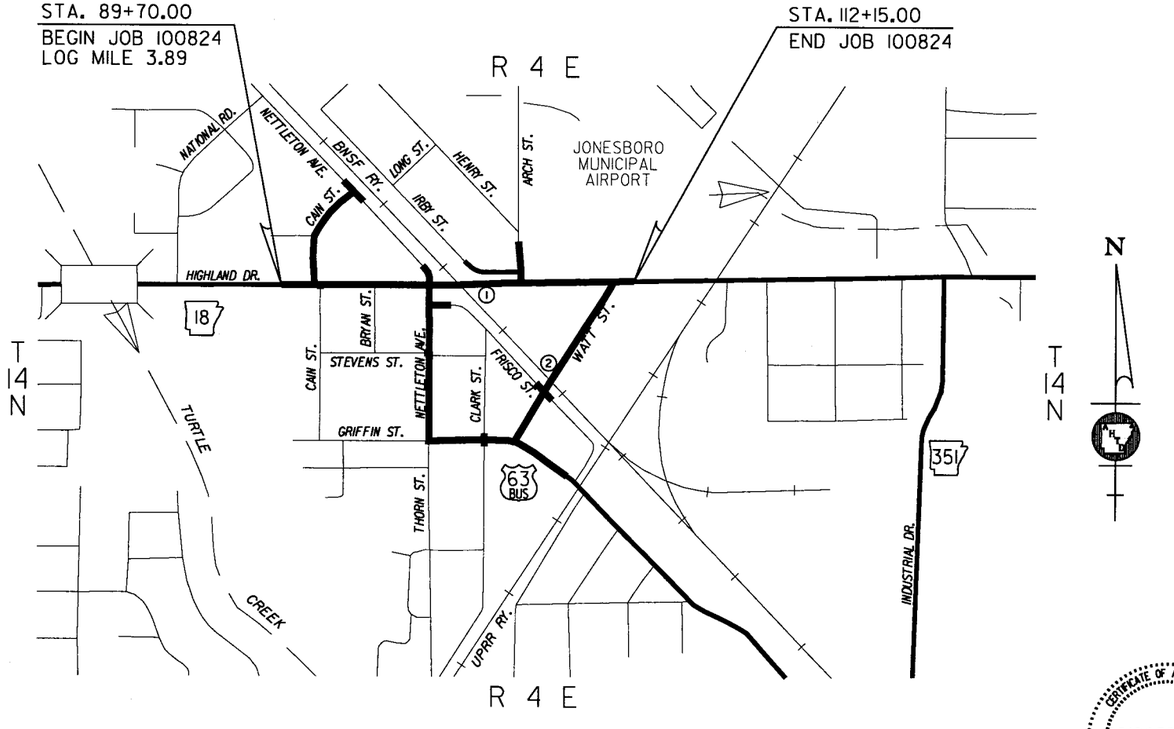
· DESIGN TRAFFIC DATA ·

DESIGN YEAR	2038
2018 ADT	14,500
2038 ADT	17,000
2038 DHV	1,870
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	17%
DESIGN SPEED	40 MPH

BRIDGE DATA

① STA. 98+33.83 BR. END
BR. NO. 07407
254'-0" CONT. COMP. PL. GIRDER UNIT
(102'-152')
58'-0" CLEAR ROADWAY
256'-10 1/16" BR. LENGTH
STA. 100+90.66 BR. END

② STA. 8+77.89 BR. END
BR. NO. 07408
241'-0" CONT. COMP. PL. GIRDER UNIT
(68'-103'-70')
27'-0" CLEAR ROADWAY
243'-2 5/8" BR. LENGTH
STA. 11+21.10 BR. END



	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	35°49'16" N	35°49'16" N	35°49'16" N
LONGITUDE	90°39'19" W	90°39'05" W	90°38'52" W

PROJECT LENGTH COMPUTED ALONG C.L. CONSTRUCTION

GROSS LENGTH OF PROJECT	2245.00 FEET	OR	0.425 MILES
NET LENGTH OF ROADWAY	1988.17 FEET	OR	0.376 MILES
NET LENGTH OF BRIDGES	256.83 FEET	OR	0.049 MILES
NET LENGTH OF PROJECT	2245.00 FEET	OR	0.425 MILES

CERTIFICATE OF AUTHORIZATION
BRIDGEFARMER & ASSOCIATES ENGINEERING
No. 945
ARKANSAS ENGINEER

P.E. JOB 100824

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-09-12

\\bridgefarmer_internal\bashares\Projects\14408\01\DGN\Plans\01_General\r100824_01_GN_01_TP.dgn

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 22404
SHAHRIAR SHAHID
2018-06-06

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.		100824	2	346

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

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55007	STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	2-11-16
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	2-11-16
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55013	STANDARD DETAILS FOR TRANSITIONAL APPROACH RAILING	2-11-16
55014	STANDARD DETAILS FOR TYPE H RAILING	2-11-16
55018	STANDARD DETAILS FOR CHAIN LINK FENCE	2-11-16
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	3-24-16

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CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	2-27-14
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-9E	DETAILS OF DROP INLETS (TYPE C)	8-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	8-22-02
FPC-9S	DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)	7-26-12
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PM-1	PAVEMENT MARKING DETAILS	6-01-17
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SD-3	SPAN WIRE ASSEMBLY STEEL POLE	11-16-17
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-7	SPAN WIRE ASSEMBLY WOOD POLE	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-16-17
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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
10-23-18				6	ARK.			
				JOB NO.		100824	3	346

(2) GOV. SPECS. & GEN NOTES

GOVERNING SPECIFICATIONS

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 100824
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
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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
400-1	TACK COATS
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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
505-1	PORTLAND CEMENT CONCRETE DRIVEWAY
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
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620-1	MULCH COVER
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633-1	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1	CURBING
800-1	STRUCTURES
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JOB 100824	ARCHITECTURAL FINISH
JOB 100824	ASSESSMENT OF WORKING DAYS-MAINTENANCE OF TRAFFIC
JOB 100824	BIDDING REQUIREMENTS AND CONDITIONS
JOB 100824	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 100824	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100824	CABINET DRAWER ASSEMBLY
JOB 100824	CARGO PREFERENCE ACT REQUIREMENTS
JOB 100824	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 100824	CONCRETE BARRIER WALL
JOB 100824	CONCRETE WALKS (TYPE SPECIAL)
JOB 100824	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 100824	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 100824	CULVERT CLEAN OUT
JOB 100824	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 100824	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
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JOB 100824	ELECTRICAL CONDUCTORS FOR LUMINARIES
JOB 100824	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 100824	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM
JOB 100824	ELECTRICAL CONDUCTORS-IN-CONDUIT, COPPER
JOB 100824	EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
JOB 100824	EXTENSION FOR PIPE CULVERTS
JOB 100824	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 100824	FOUNDATION IMPROVEMENT - AGGREGATE PIER
JOB 100824	GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
JOB 100824	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100824	INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY
JOB 100824	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 100824	LED LUMINAIRE ASSEMBLY (BUG UO TYPE)
JOB 100824	LED ROADWAY ILLUMINATION POLE
JOB 100824	LED TRAFFIC SIGNAL HEAD
JOB 100824	LIGHT POLE FOUNDATION
JOB 100824	MAINTENANCE OF TRAFFIC
JOB 100824	MANDATORY ELECTRONIC CONTRACT
JOB 100824	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 100824	NESTING SITES OF MIGRATORY BIRDS
JOB 100824	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB 100824	PARTNERING REQUIREMENTS
JOB 100824	PEDESTAL TYPE SERVICE POINT
JOB 100824	PLASTIC PIPE
JOB 100824	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 100824	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB 100824	RELOCATION OF TRAFFIC SIGNAL HEAD
JOB 100824	REMOVAL AND DISPOSAL OF PETROLEUM CONTAMINATED SOILS
JOB 100824	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 100824	RETAINING WALLS
JOB 100824	SEQUENCE OF CONSTRUCTION
JOB 100824	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 100824	SETTLEMENT AGREEMENTS
JOB 100824	SHORING
JOB 100824	SHORING FOR CULVERTS

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018

GOVERNING SPECIFICATIONS

NUMBER	TITLE
JOB 100824	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB 100824	SOIL STABILIZATION
JOB 100824	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 100824	STORM WATER POLLUTION PREVENTION PLAN
JOB 100824	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 100824	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100824	SYSTEM LOCAL CONTROLLER
JOB 100824	TAMPER RESISTANT PULL BOX INSERT
JOB 100824	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 100824	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)
JOB 100824	UTILITY ADJUSTMENTS
JOB 100824	VALUE ENGINEERING
JOB 100824	VIDEO DETECTOR (COLOR)
JOB 100824	WARM MIX ASPHALT
JOB 100824	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 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. THIS PROJECT IS COVERED UNDER A NATIONWIDE 14 SECTION 404 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT MATERIALS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING PAVEMENT TO BE REMOVED 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 PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL VERIFY THE PIPE SIZE OF EXISTING DRAINAGE PIPES WHERE CONNECTIONS BETWEEN NEW PIPES AND EXISTING PIPES ARE PROPOSED AND COORDINATE WITH THE ENGINEER IF THE VERIFIED EXISTING SIZE DIFFERS FROM WHAT IS CALLED OUT ON THE PLANS BEFORE ORDERING PIPES AND PROCEEDING WITH CONSTRUCTION. THE COST FOR VERIFICATION AND COORDINATION FOR EXISTING DRAINAGE PIPES WILL BE SUBSIDIARY TO OTHER DRAINAGE ITEMS.

GOVERNING SPECIFICATIONS & GENERAL NOTES

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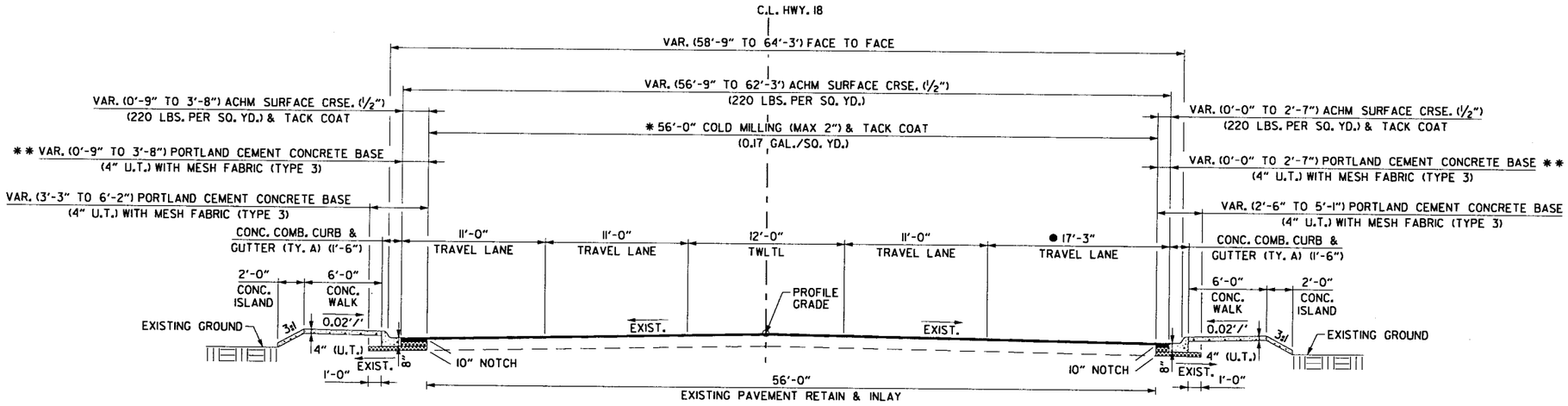
				6	ARK.			
				JOB NO.		100824	4	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 89+70.00 TO STA. 90+70.00

● TRANSITION LANE FROM 11'-9" AT STA. 89+70.00 TO 17'-3" AT STA. 90+70.00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13404
SHAHRIAR AZAD
2019-05-29

NOTES

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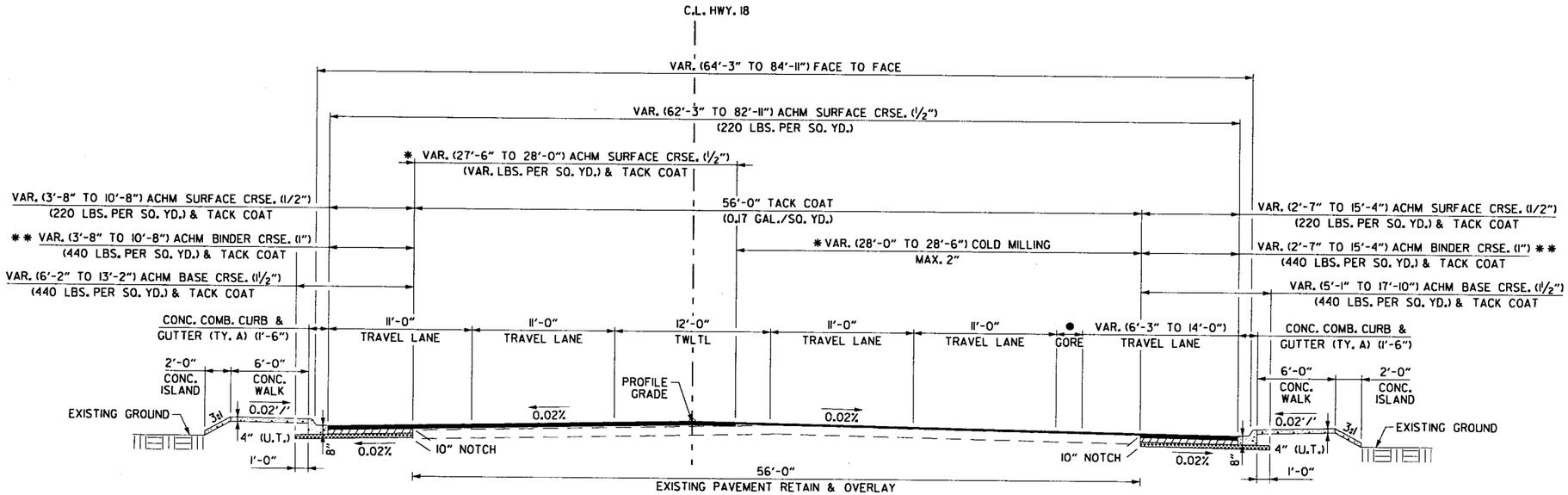
(4) THE FINAL 2 INCHES OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT THE LANE LINES.



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 90+70.00 TO STA. 92+48.53

● PAINTED GORE FROM 0'-0" AT STA. 91+39.57 TO 12'-11"' AT STA. 92+48.53

TYPICAL SECTIONS OF IMPROVEMENT

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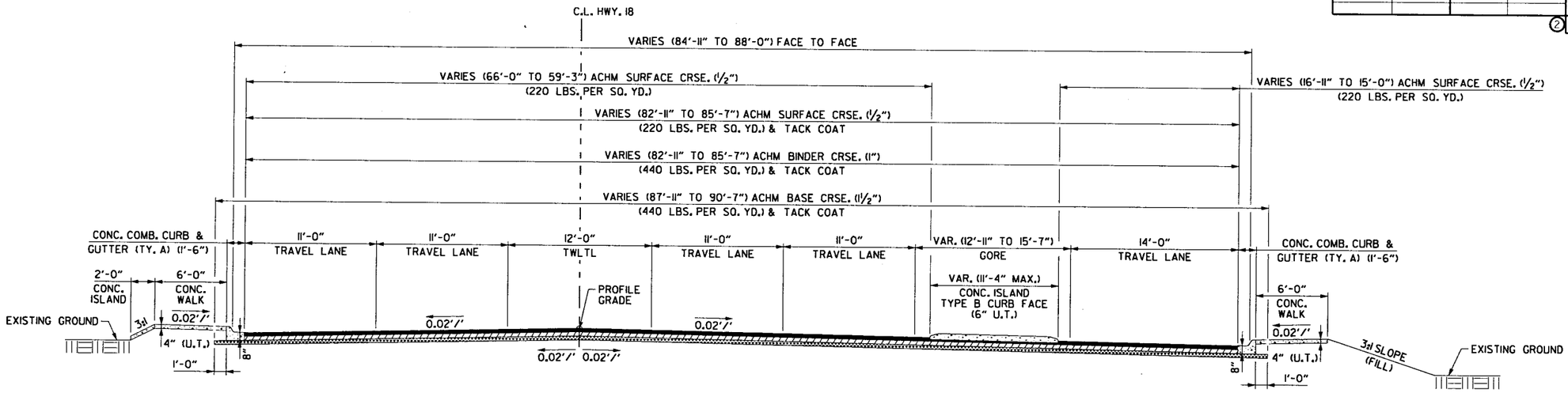
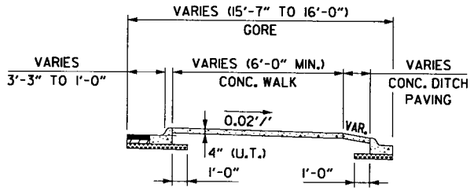


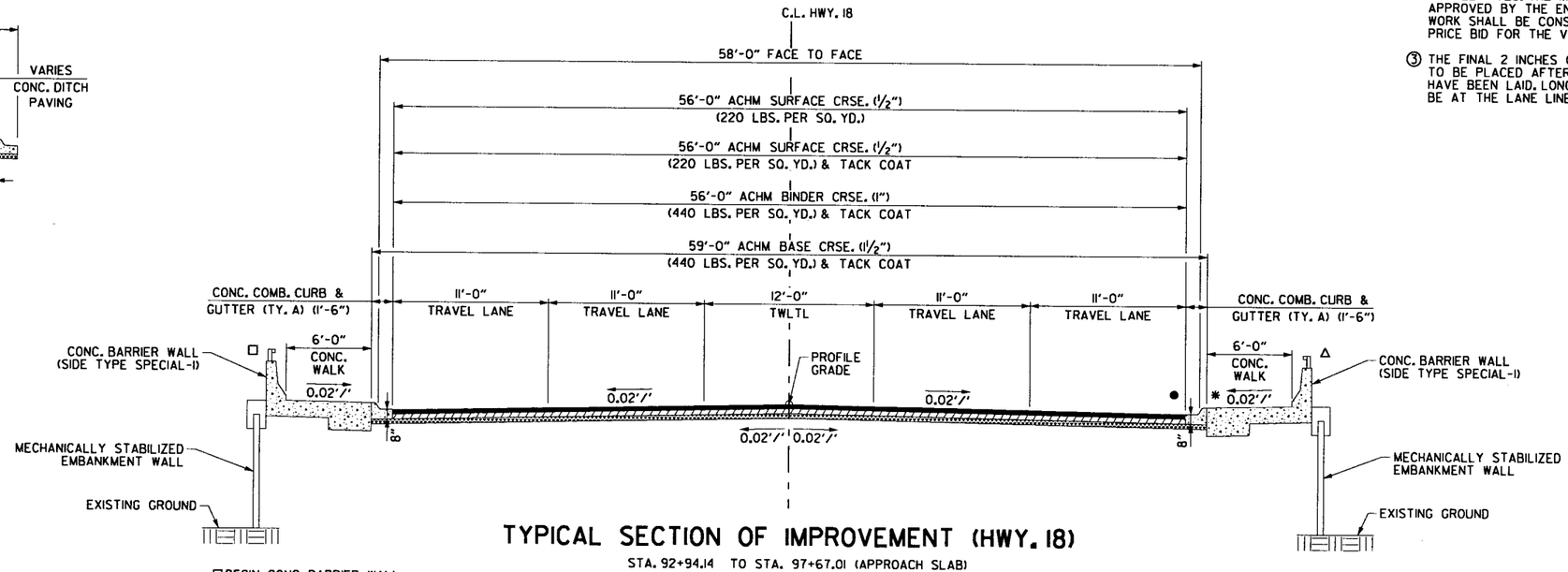
TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 92+48.53 TO STA. 92+94.14



GORE DETAIL 'A'

STA. 92+94.14 TO STA. 93+45.36



TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 92+94.14 TO STA. 97+67.01 (APPROACH SLAB)

□ BEGIN CONC. BARRIER WALL (TYPE SPECIAL-I) AT STA. 93+49.23

● PAINTED GORE FROM 2'-3" AT STA. 92+94.14 TO 0'-0" AT STA. 93+45.36

△ BEGIN CONC. BARRIER WALL (TYPE SPECIAL-I) AT STA. 93+50.24

✱ REFER TO GORE DETAIL 'A'

NOTES

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

TYPICAL SECTIONS OF IMPROVEMENT

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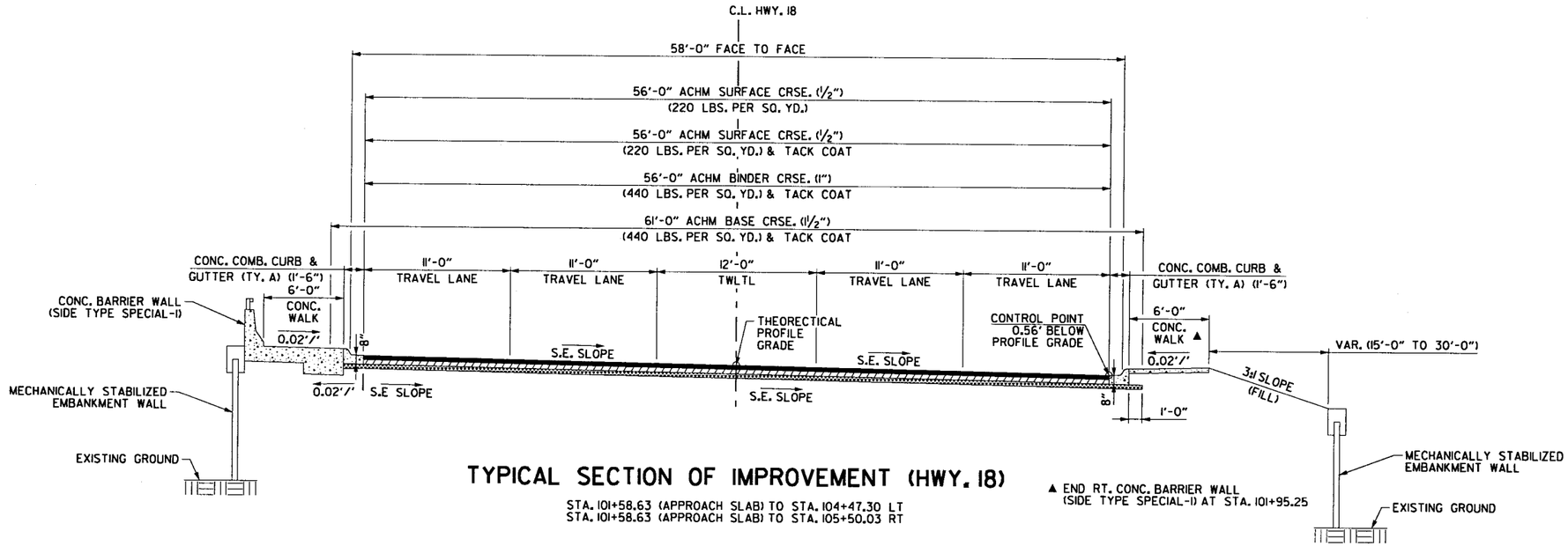
② TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19404
SHAHRIAR AZAD
2018-05-29



TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 101+58.63 (APPROACH SLAB) TO STA. 104+47.30 LT
STA. 101+58.63 (APPROACH SLAB) TO STA. 105+50.03 RT

▲ END RT. CONC. BARRIER WALL (SIDE TYPE SPECIAL-I) AT STA. 101+95.25

NOTES

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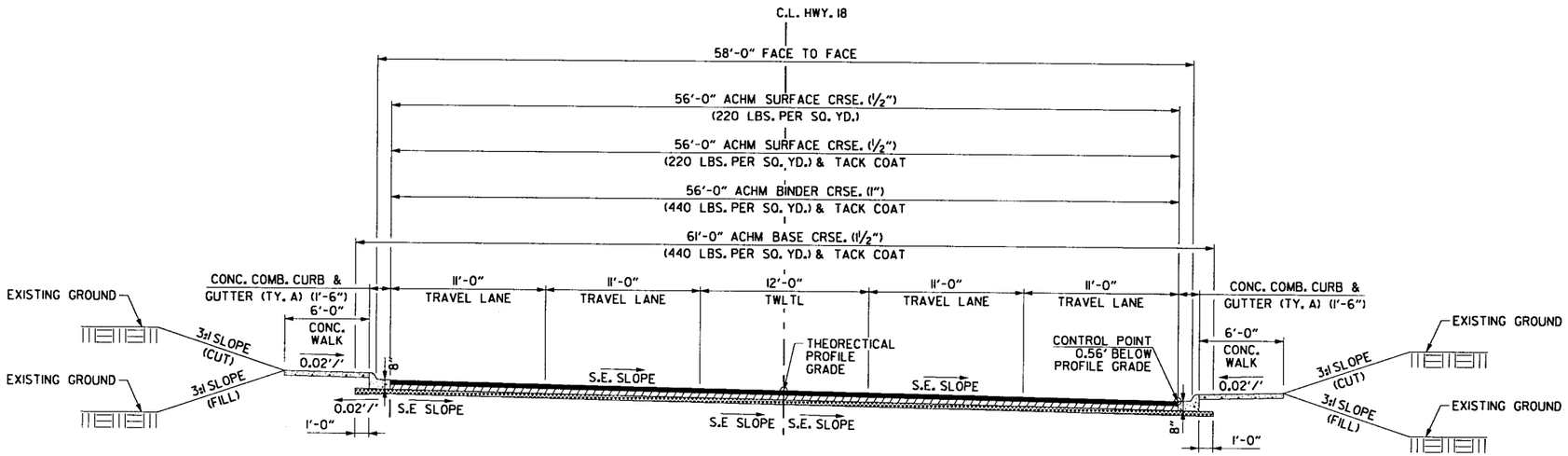

TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 104+47.30 TO STA. 107+61.49 LT
STA. 105+50.03 TO STA. 107+61.49 RT

TYPICAL SECTIONS OF IMPROVEMENT

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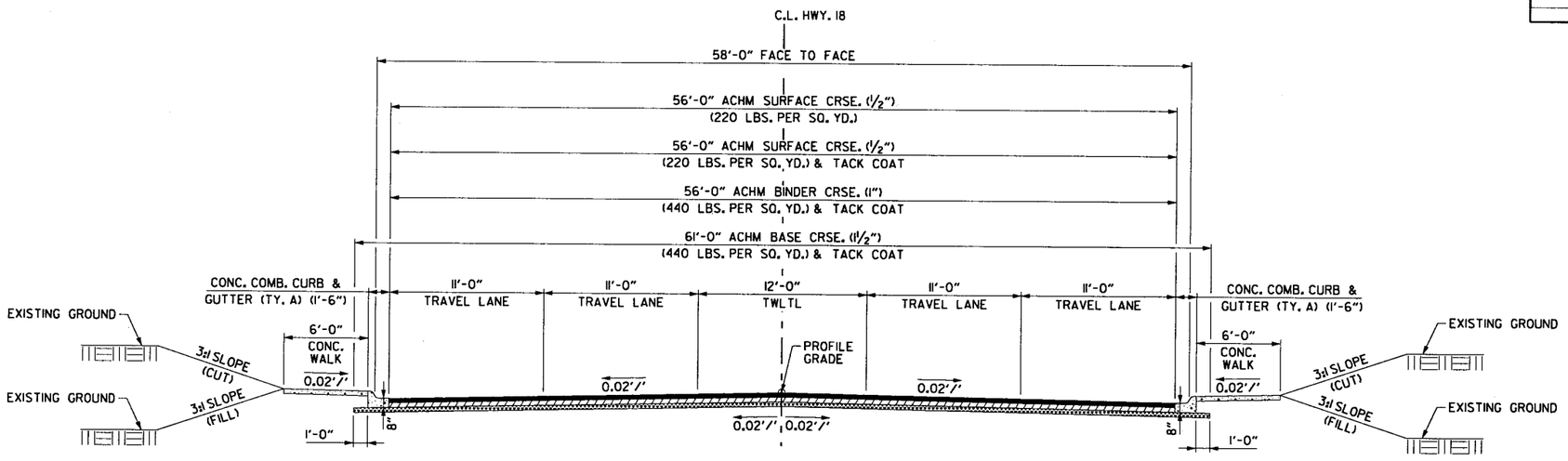
(2) TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 107+61.49 TO STA. 108+49.19

NOTES

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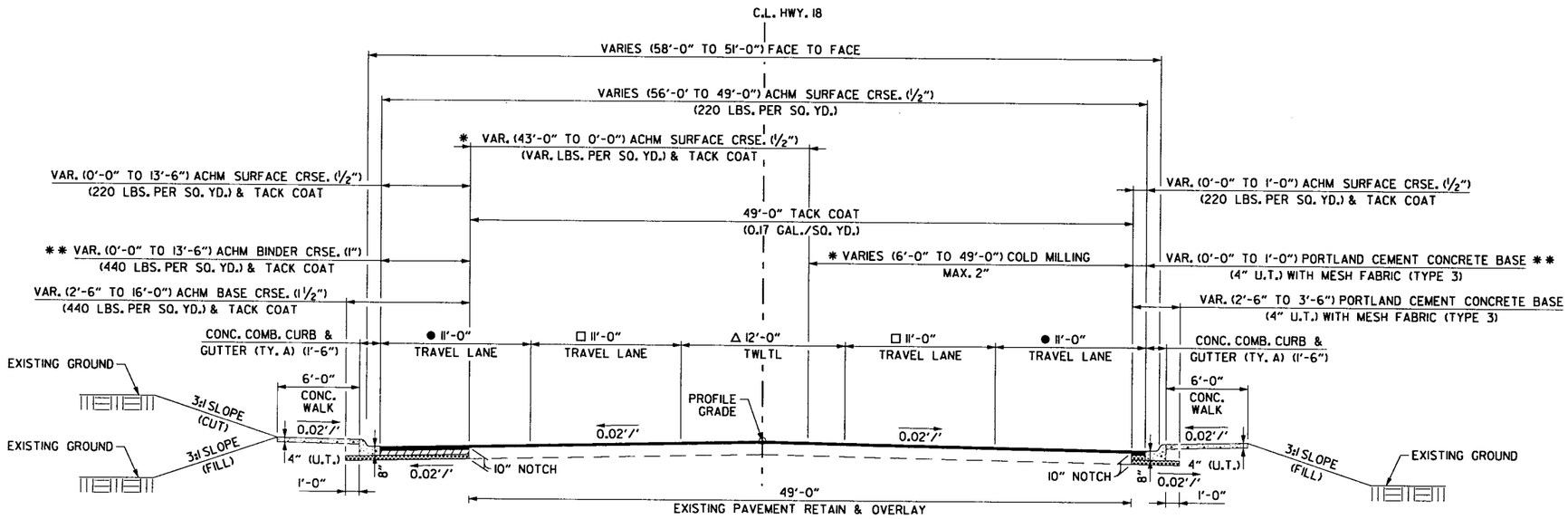
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



TYPICAL SECTION OF IMPROVEMENT (HWY. 18)

STA. 108+49.19 TO STA. 112+15.00

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

● TRANSITION LANE FROM 11'-0" AT STA. 110+65.00 TO 9'-0" AT STA. 112+15.00

□ TRANSITION LANE FROM 11'-0" AT STA. 110+65.00 TO 10'-0" AT STA. 112+15.00

△ TRANSITION LANE FROM 12'-0" AT STA. 110+65.00 TO 11'-0" AT STA. 112+15.00

TYPICAL SECTIONS OF IMPROVEMENT

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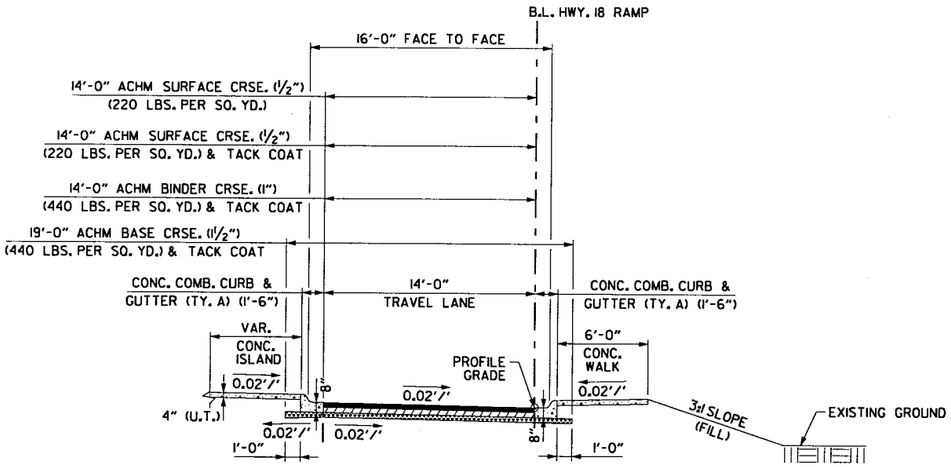
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNON HEAD
2018-05-29



TYPICAL SECTION OF IMPROVEMENT (HWY. 18 CONNECTOR)

STA. 92+51.28 TO STA. 95+45.53

NOTES

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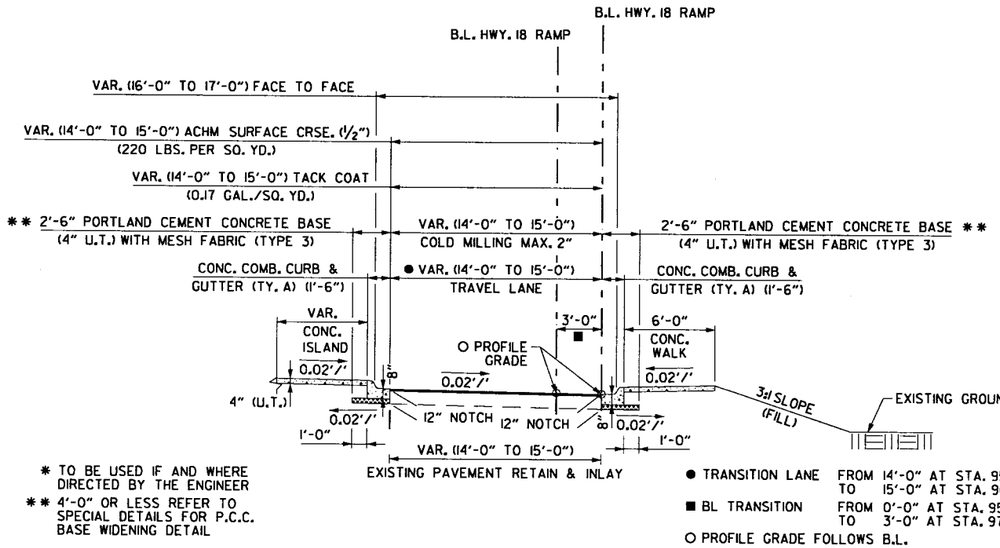


* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

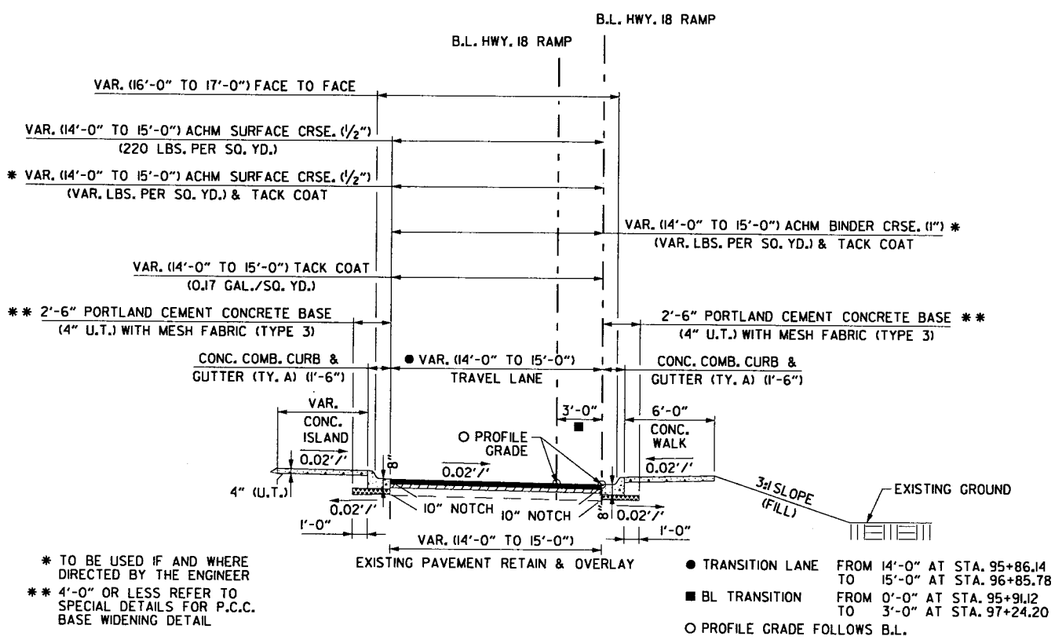
● TRANSITION LANE FROM 14'-0" AT STA. 95+86.14 TO 15'-0" AT STA. 96+85.78

■ BL TRANSITION FROM 0'-0" AT STA. 95+91.12 TO 3'-0" AT STA. 97+24.20

O PROFILE GRADE FOLLOWS B.L.

TYPICAL SECTION OF IMPROVEMENT (HWY. 18 CONNECTOR)

STA. 96+06.18 TO STA. 97+64.01



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O PROFILE GRADE FOLLOWS B.L.

TYPICAL SECTION OF IMPROVEMENT (HWY. 18 CONNECTOR)

STA. 95+45.53 TO STA. 96+06.18
STA. 97+64.01 TO STA. 99+00.62

TYPICAL SECTIONS OF IMPROVEMENT

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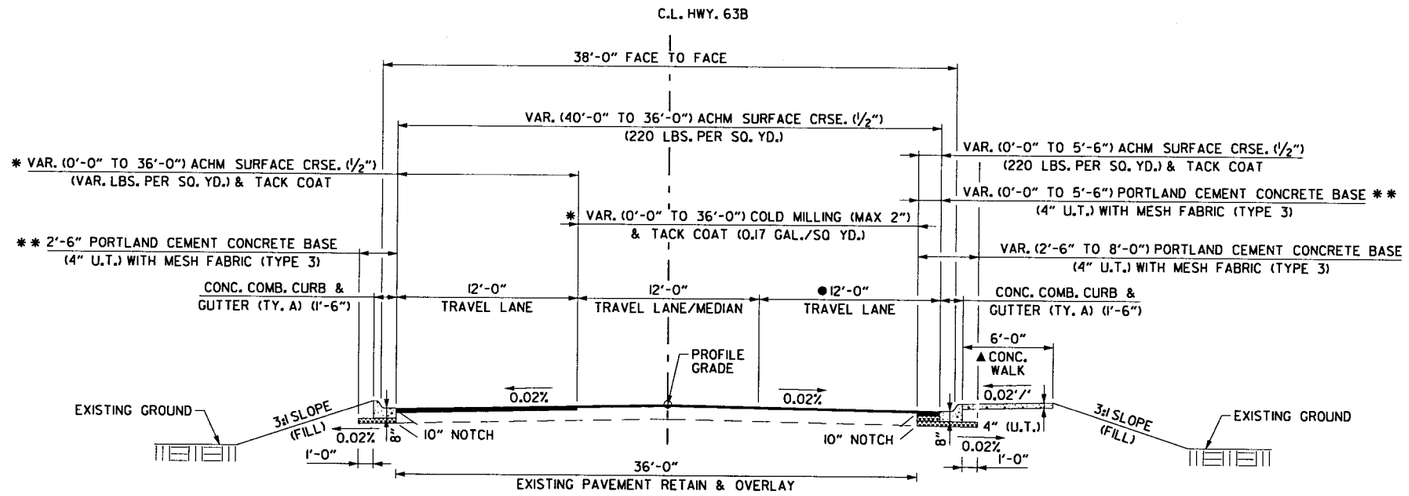
				JOB NO.		100824	9	346

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 24014
SHAWN R. AZAR
2018-05-29



*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

TYPICAL SECTION OF IMPROVEMENT (NETTLETON AVE.)

STA. 55+40.00 TO STA. 59+10.00

■REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

●12' LANE FROM STA. 55+40.00 TO STA. 55+90.95

●12' LANE FROM STA. 58+45.04 TO STA. 59+10.00

NOTES

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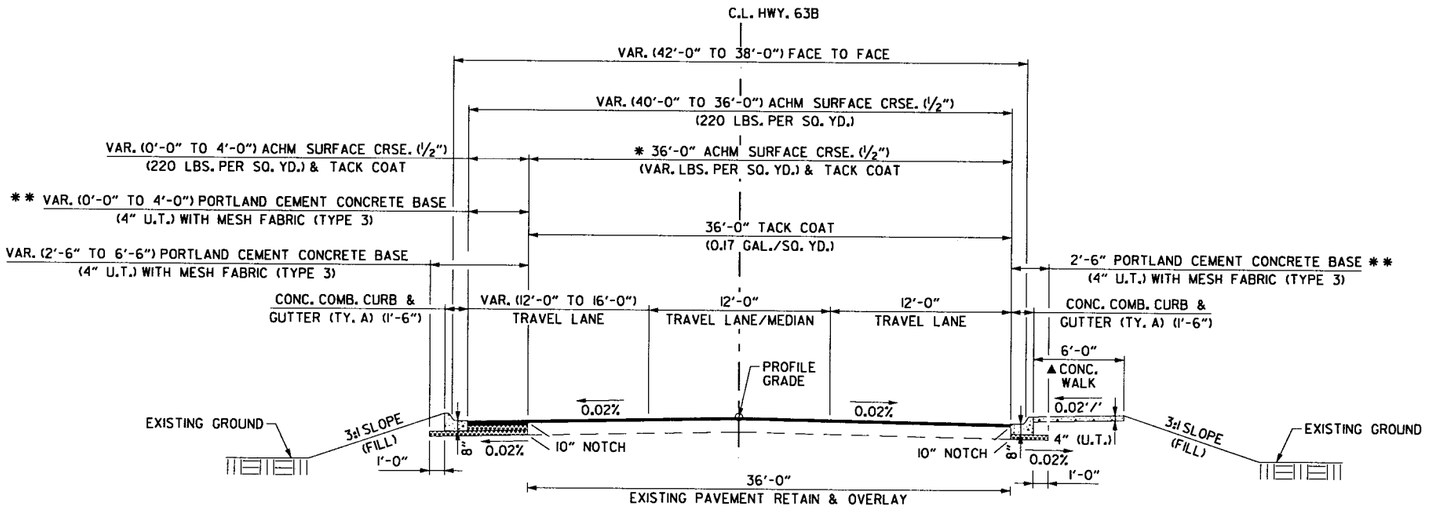

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

TYPICAL SECTION OF IMPROVEMENT (NETTLETON AVE. & HWY. 63B)

STA. 64+00.00 TO STA. 66+46.69

▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

■REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTIONS OF IMPROVEMENT

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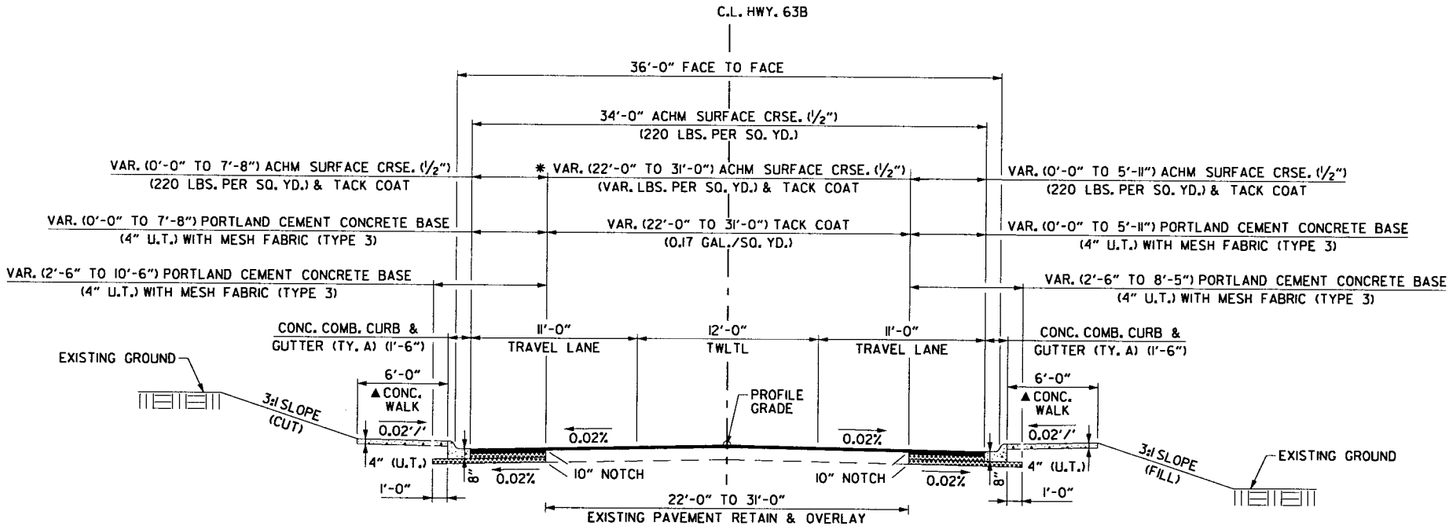
(2) TYPICAL SECTIONS OF IMPROVEMENT



▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

TYPICAL SECTION OF IMPROVEMENT (HWY. 63B)

STA. 66+46.69 TO STA. 72+81.55

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

**REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12405
SHAHRIAR AZAD
2018-05-29

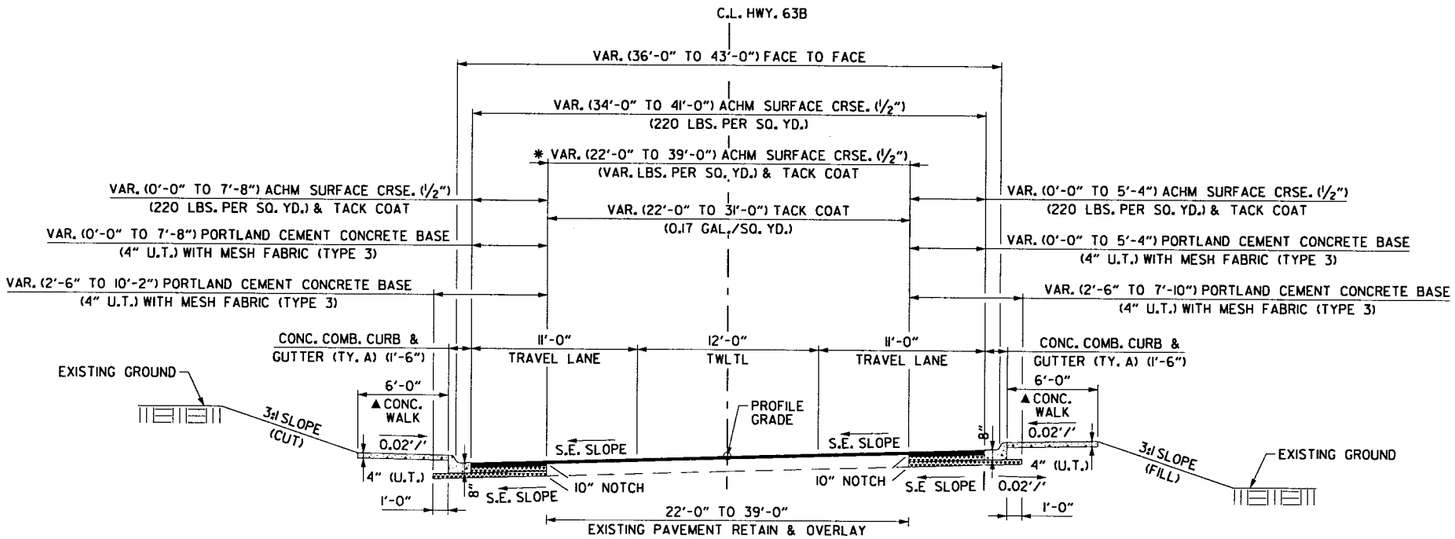
NOTES

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

(3) REFER TO SPECIAL DETAILS FOR ADDITIONAL INFORMATION REGARDING METHOD OF RAISING GRADE. METHOD OF RAISING GRADE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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



▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

TYPICAL SECTION OF IMPROVEMENT (HWY. 63B)

(REVERSE TYPICAL FOR RT. TURN SUPERELEVATION)

STA. 72+81.55 TO STA. 76+40.13

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

**REFER TO SPECIAL DETAIL FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTIONS OF IMPROVEMENT

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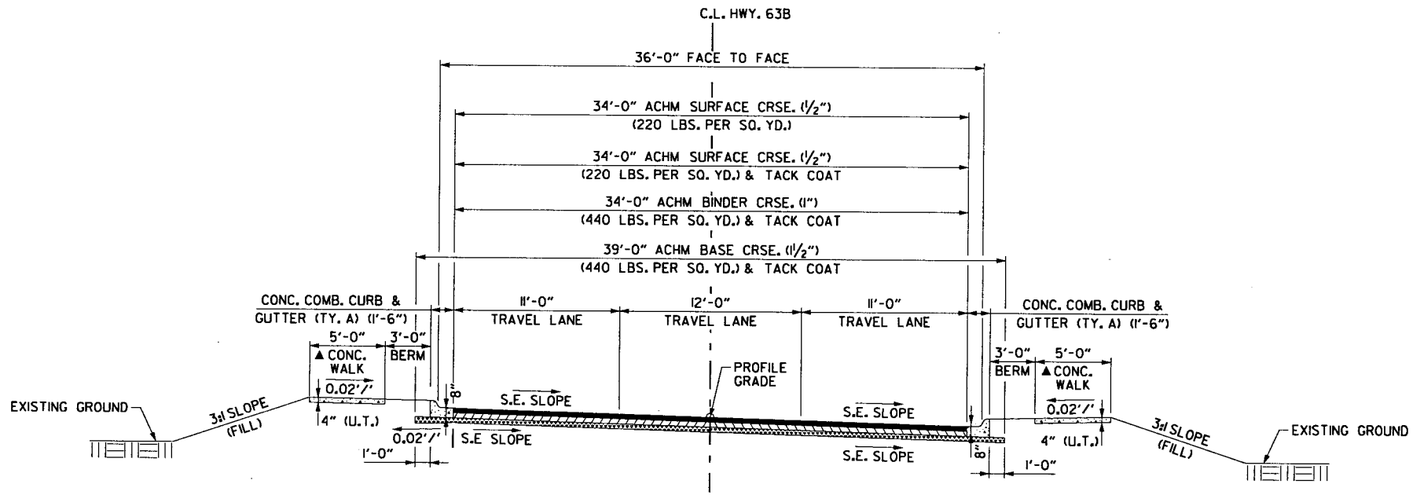
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	11	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

■REFER TO SPECIAL DETAIL FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTION OF IMPROVEMENT (HWY. 63B)

STA. 76+40.13 TO STA. 79+22.93

NOTES

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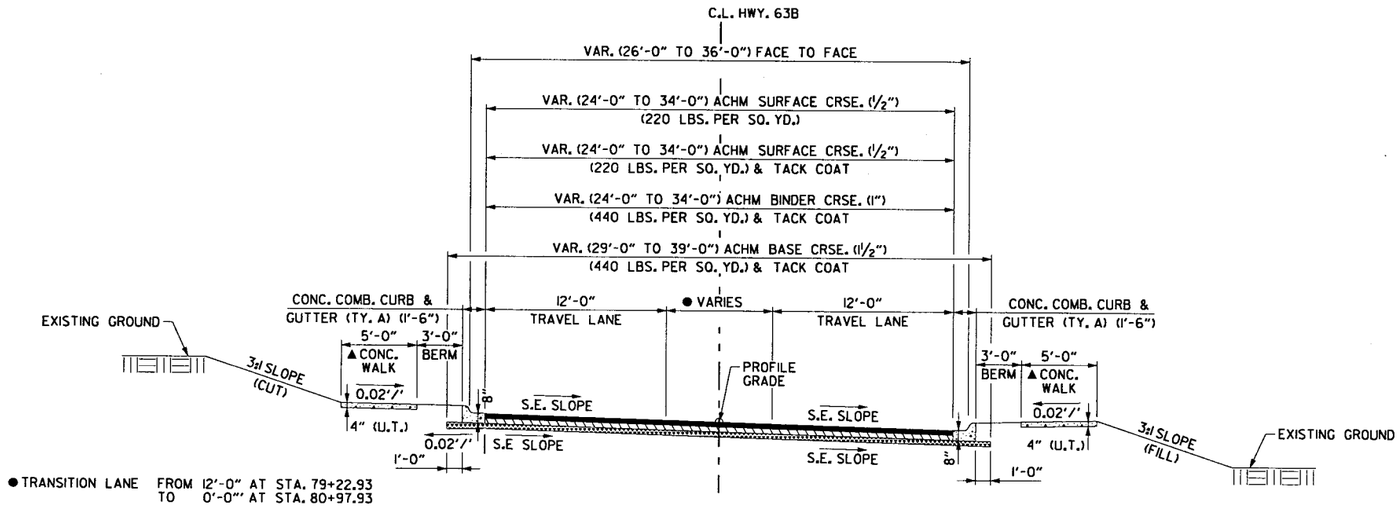

● TRANSITION LANE FROM 12'-0" AT STA. 79+22.93
TO 0'-0"' AT STA. 80+97.93

▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

■REFER TO SPECIAL DETAIL FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTION OF IMPROVEMENT (HWY. 63B)

STA. 79+22.93 TO STA. 83+00.66

TYPICAL SECTIONS OF IMPROVEMENT

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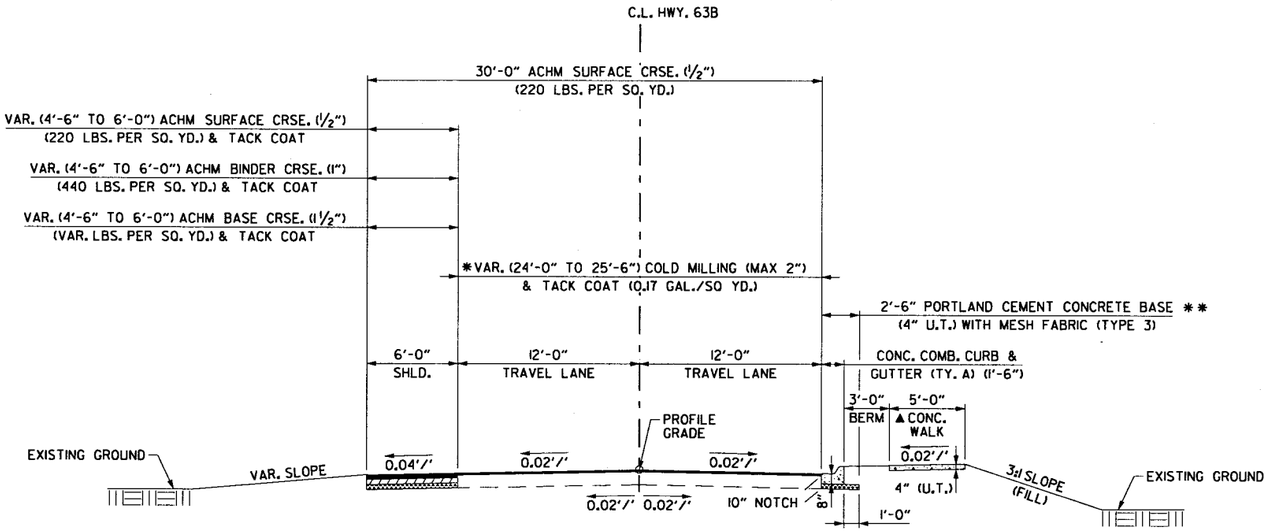
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	12	346

② TYPICAL SECTIONS OF IMPROVEMENT



▲REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS
*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION OF IMPROVEMENT (HWY. 63B)

STA. 83+00.66 TO STA. 83+60.00

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

NOTES

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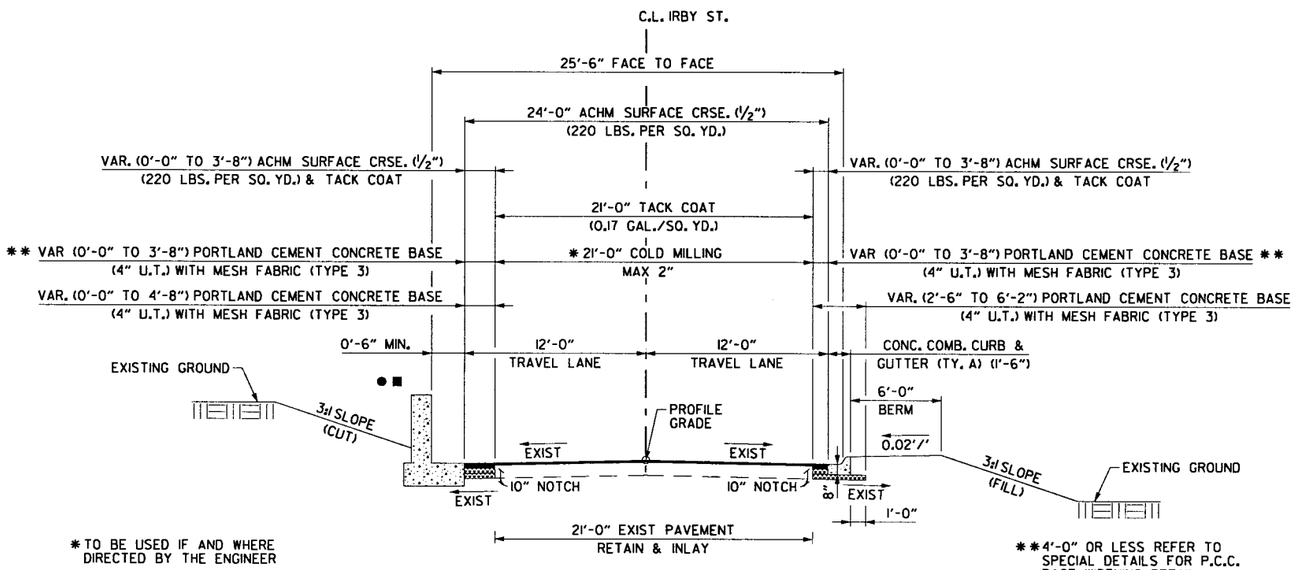

*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
■REFER TO BRIDGE PLAN FOR BRIDGE CRASH WALL LOCATION
● TRANSITIONAL APPROACH RAILING BEGINS AT STA. 16+41.09 AND ENDS AT STA. 17+41.60

**4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

TYPICAL SECTION OF IMPROVEMENT (FRISCO ST.)

STA. 15+95.00 TO STA. 17+66.54

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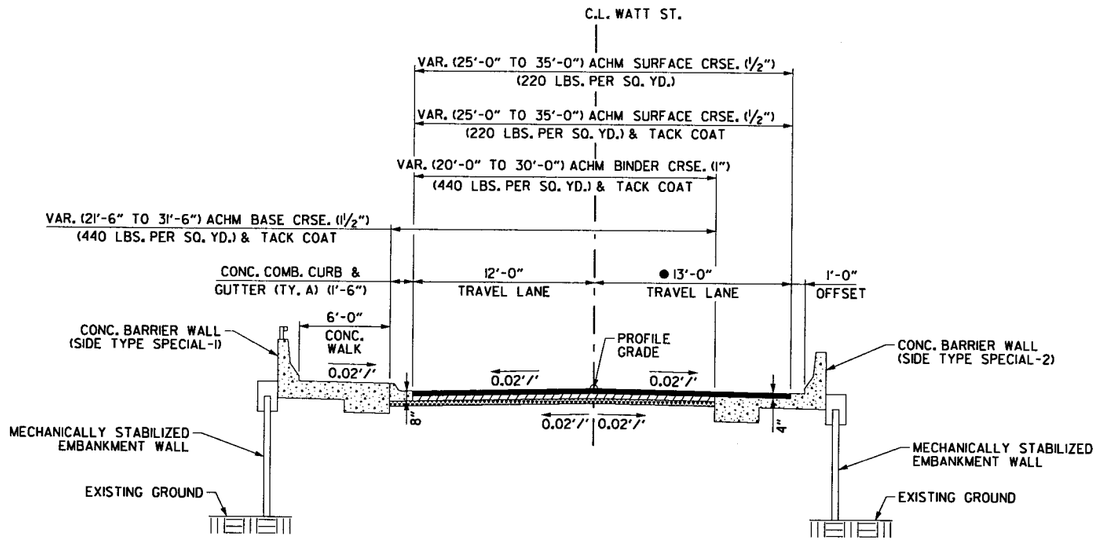
TYPICAL SECTIONS OF IMPROVEMENT

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.		100824	13	346

② TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12402
SHAHRIAR AZAD
2018-05-29



TYPICAL SECTION OF IMPROVEMENT (WATT ST.)

STA. 7+05.78 TO STA. 8+38.14 (APPROACH SLAB)

● TRANSITION LANES FROM 23'-0" AT STA. 7+05.78
TO 13'-0" AT STA. 7+80.92

■ REFER TO SPECIAL DETAIL FOR INTERSECTION SPECIAL DETAILS

NOTES

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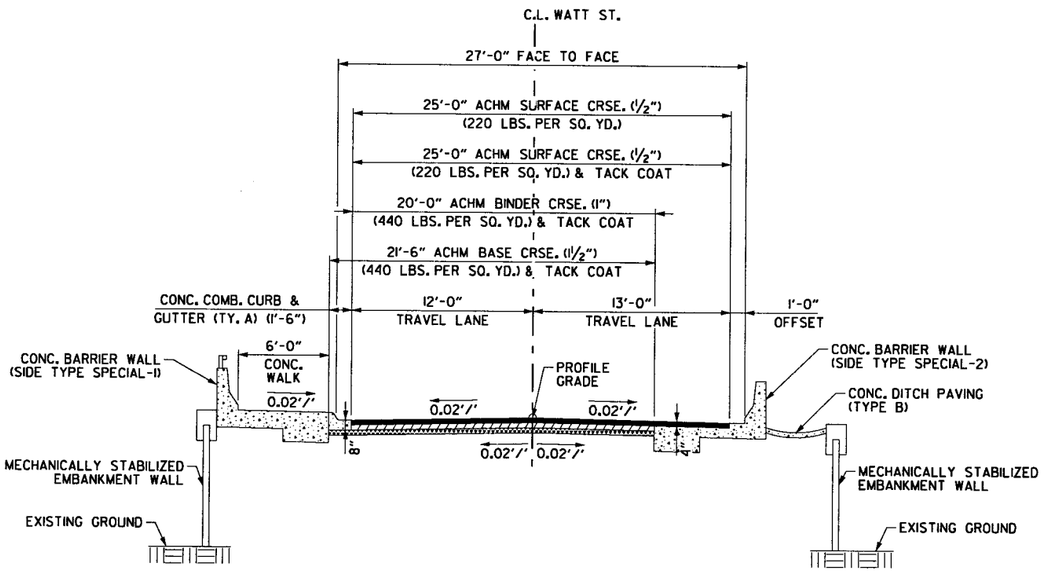
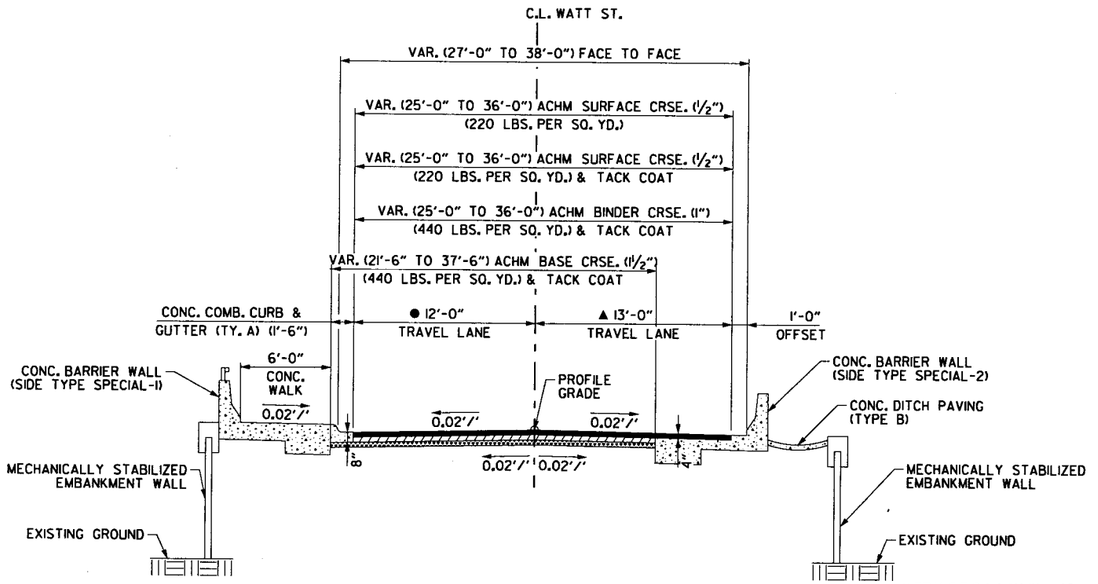


TYPICAL SECTION OF IMPROVEMENT (WATT ST.)

STA. 11+60.69 (APPROACH SLAB) TO STA. 12+50.00



TYPICAL SECTION OF IMPROVEMENT (WATT ST.)

STA. 12+50.00 TO STA. 14+00.00

● TRANSITION LANES FROM 12'-0" AT STA. 12+50.00
TO 18'-0" AT STA. 14+00.00

▲ TRANSITION LANES FROM 13'-0" AT STA. 12+50.00
TO 18'-0" AT STA. 14+00.00

TYPICAL SECTIONS OF IMPROVEMENT

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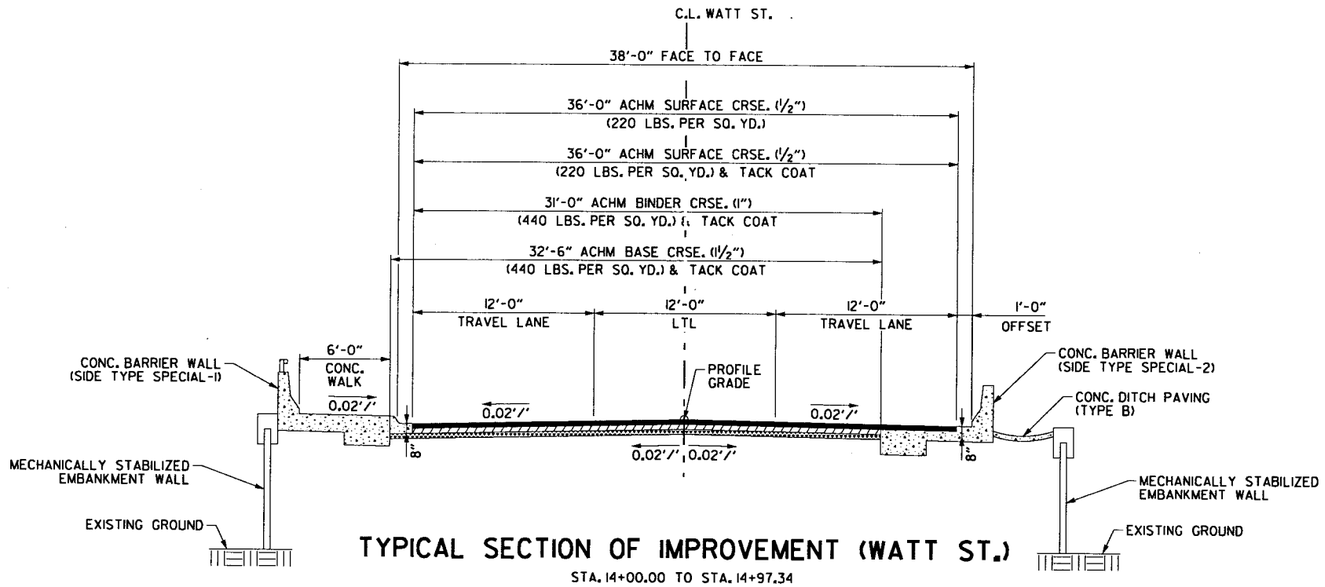
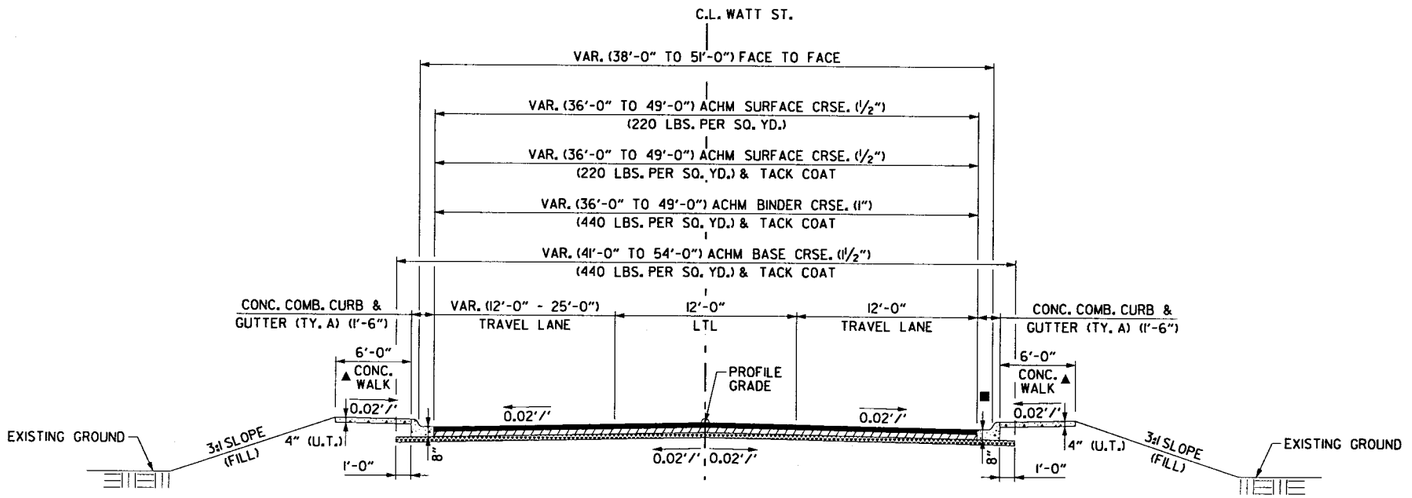
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	14	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT (WATT ST.)

STA. 14+00.00 TO STA. 14+97.34



TYPICAL SECTION OF IMPROVEMENT (WATT ST.)

STA. 14+97.34 TO STA. 16+86.00

▲ REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

● REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

■ REFER TO RETAINING WALL PLAN FOR WALL LOCATIONS

NOTES

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TYPICAL SECTIONS OF IMPROVEMENT

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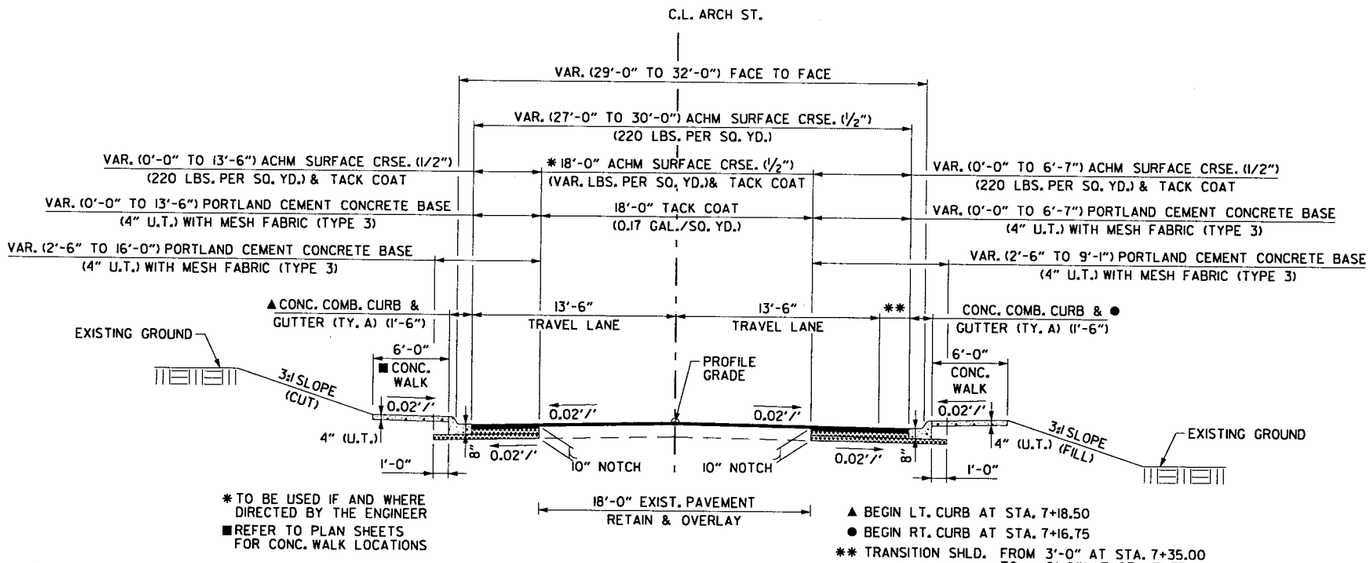
				6	ARK.			
				JOB NO.		100824	15	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT (ARCH ST.)

STA. 6+85.00 TO STA. 7+81.54

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

NOTES

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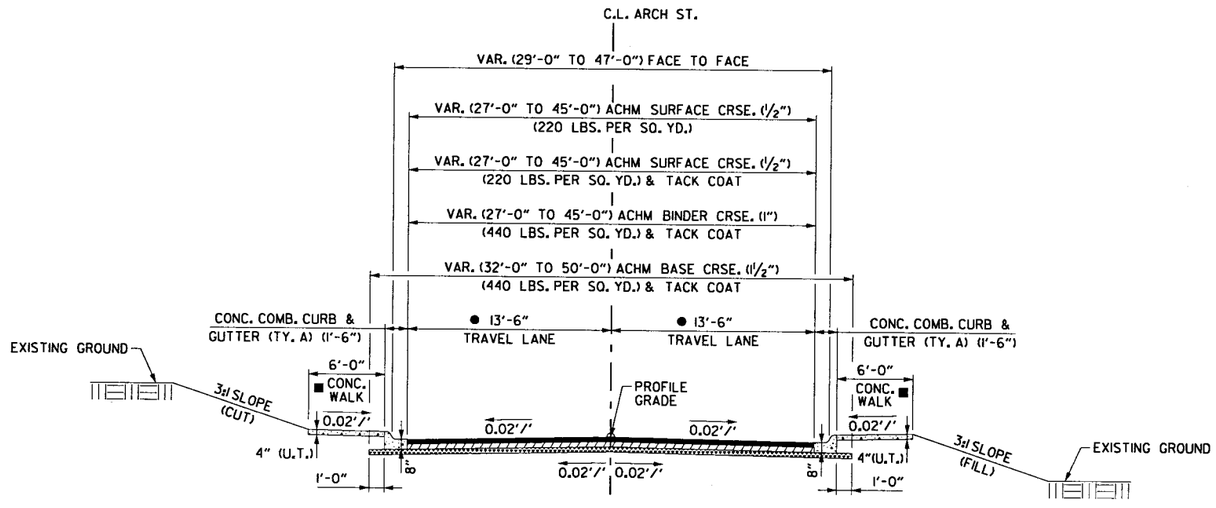

TYPICAL SECTION OF IMPROVEMENT (ARCH ST.)

STA. 7+81.54 TO STA. 8+15.00

● TRANSITION LANE FROM 13'-6" AT STA. 8+09.48
TO 22'-6" AT STA. 9+59.48
■ REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS
▲ REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

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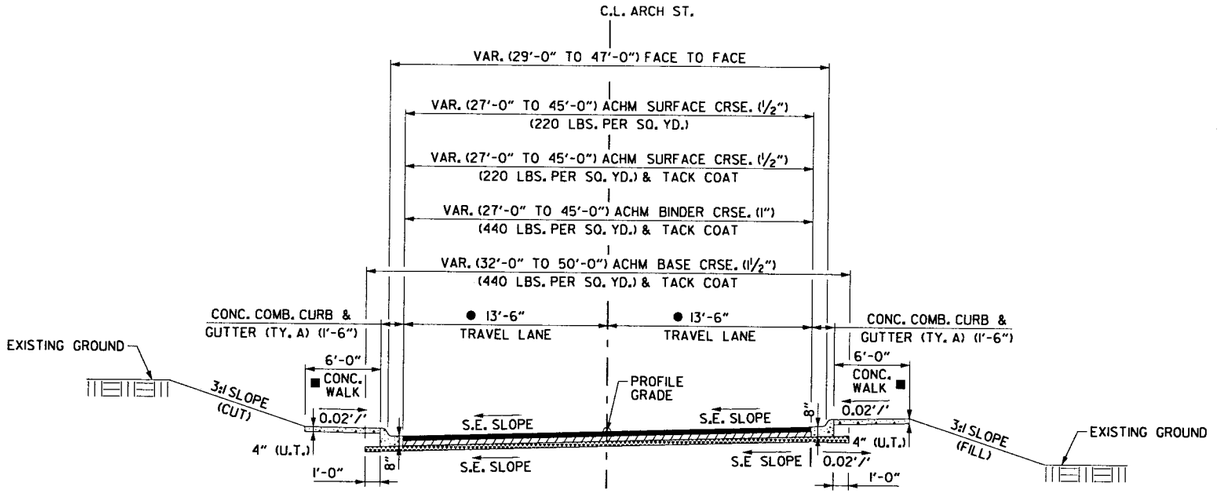
TYPICAL SECTIONS OF IMPROVEMENT

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.		100824	16	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



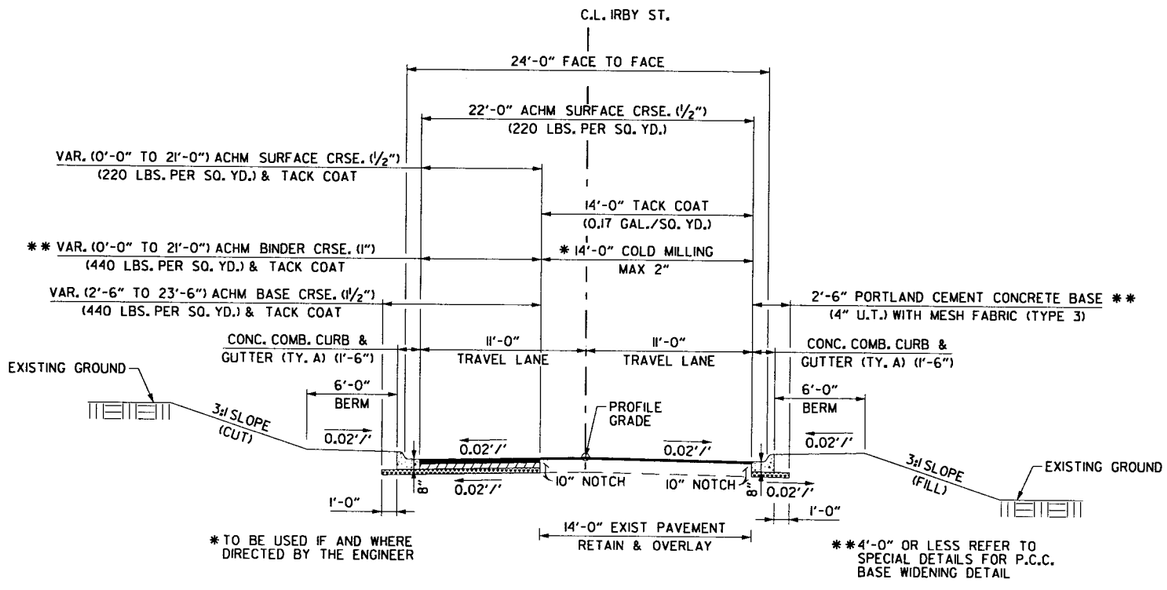
TYPICAL SECTION OF IMPROVEMENT (ARCH ST.)

STA. 8+15.00 TO STA. 9+26.87

● TRANSITION LANE FROM 13'-6" AT STA. 8+09.48 TO 22'-6"' AT STA. 9+59.48

■ REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

▲ REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 4'-0" OR LESS REFER TO SPECIAL DETAILS FOR P.C.C. BASE WIDENING DETAIL

TYPICAL SECTION OF IMPROVEMENT (IRBY ST.)

STA. 15+50.00 TO STA. 16+00.00

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12426
SHAHRIAR AZAD
2018-05-29

NOTES

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TYPICAL SECTIONS OF IMPROVEMENT

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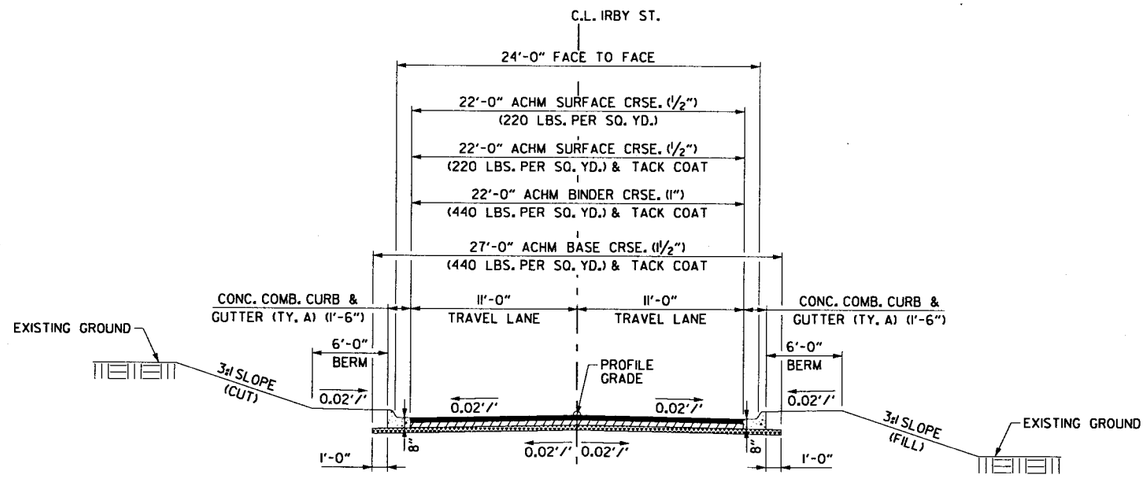
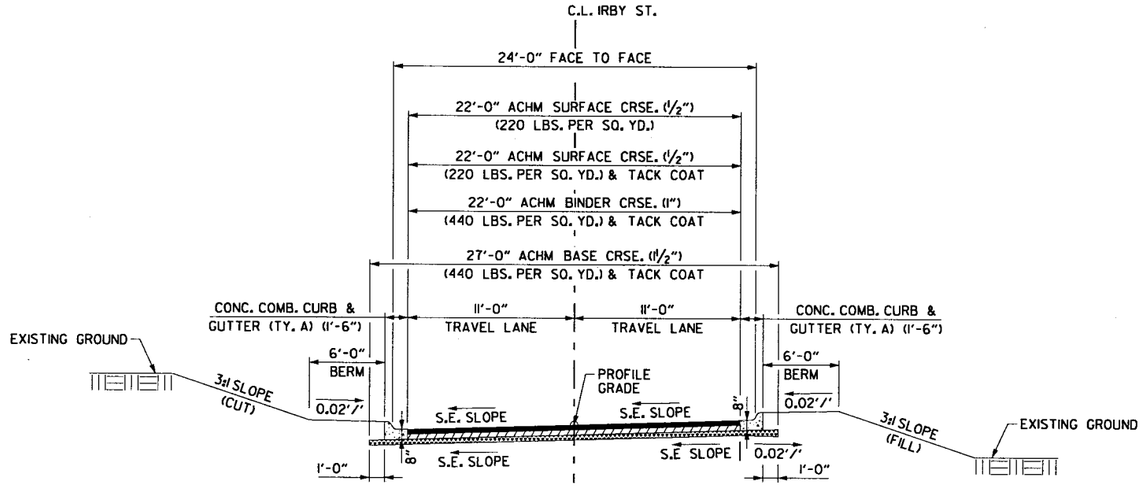
				6	ARK.			
				JOB NO.		100824	17	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT (IRBY ST.)

STA. 16+00.00 TO STA. 17+88.00



TYPICAL SECTION OF IMPROVEMENT (IRBY ST.)

STA. 17+88.00 TO STA. 19+50.57

NOTES

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13404
BHAHRIAR AZAD
2018-05-29

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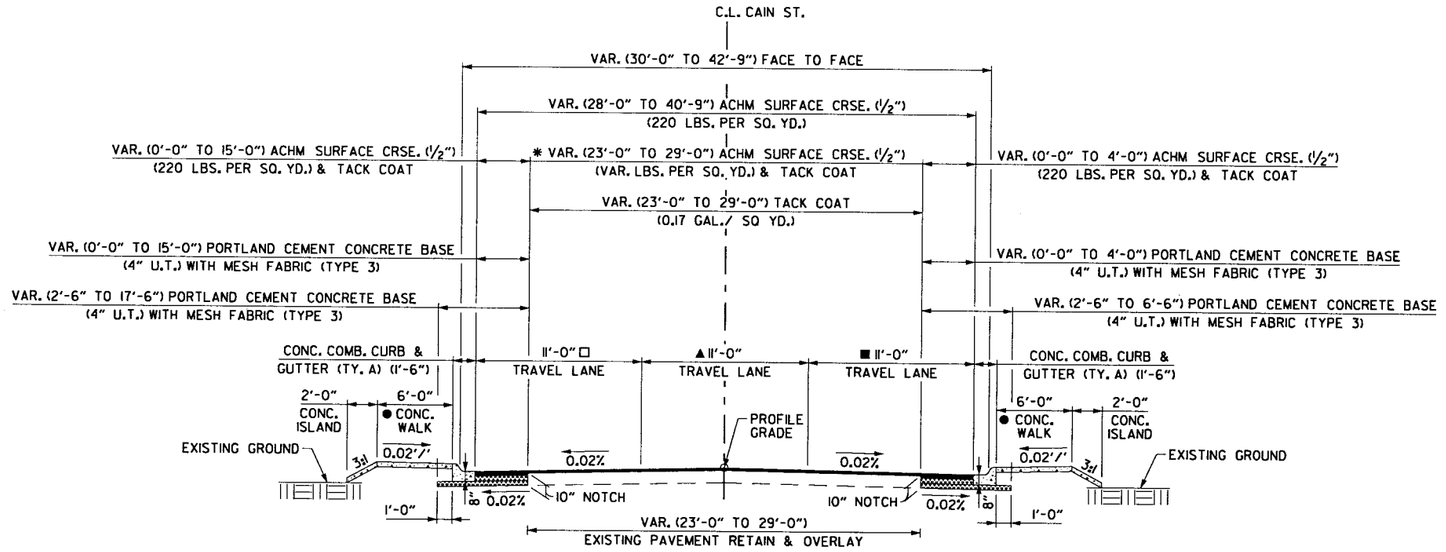
TYPICAL SECTIONS OF IMPROVEMENT

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.		100824	18	346

(2) TYPICAL SECTIONS OF IMPROVEMENT



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTION OF IMPROVEMENT (CAIN ST.)

STA. 20+28.02 TO STA. 25+09.24

▲ TRANSITION FROM 11'-0" AT STA. 22+00.00 TO 0'-0" AT STA. 23+25.00

■ TRANSITION FROM 11'-0" AT STA. 22+00.00 TO 14'-0" AT STA. 23+25.00

□ TRANSITION FROM 11'-0" AT STA. 24+45.80 TO 14'-0" AT STA. 25+45.80

● REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

NOTES

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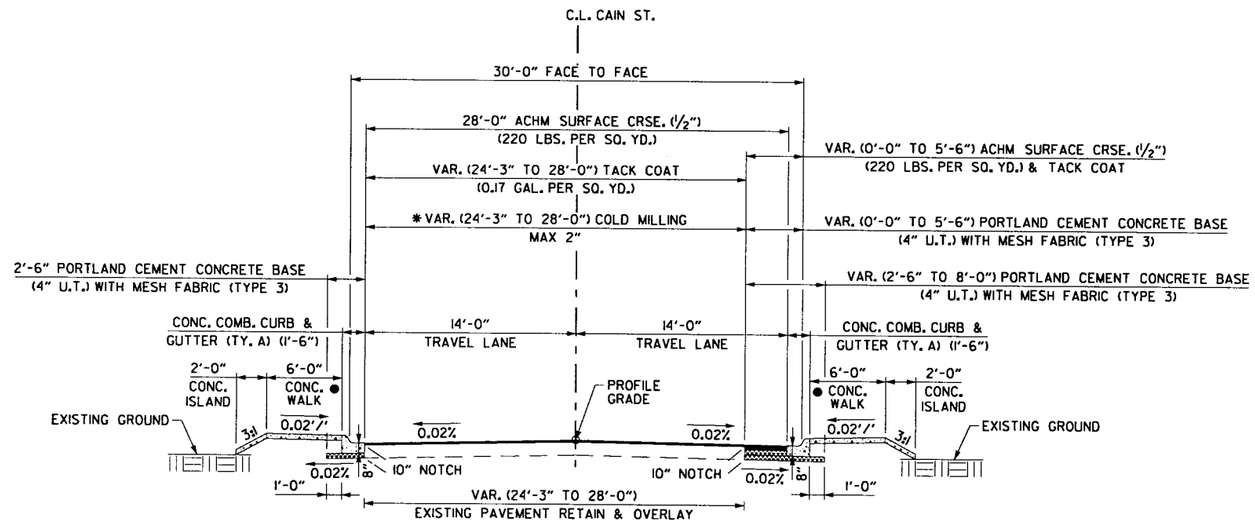
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12904
SHAHRIAR AZAD
2018-05-29



● REFER TO PLAN SHEETS FOR CONC. WALK LOCATIONS

TYPICAL SECTION OF IMPROVEMENT (CAIN ST.)

STA. 25+09.24 TO STA. 27+07.12

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** REFER TO SPECIAL DETAIL SHEETS FOR INTERSECTION SPECIAL DETAILS

TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.		100824	19	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12403
SHAHRIAR AZAD
2018-05-29

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

C.L. HWY. 18

C.L. CAIN ST.

35' F-F

P.T. 21+67.01, 20.00' RT.

R 350'

P.C.C. 20+95.17, 27.45' RT.

R 125'

P.C.C. 20+57.14, 42.23' RT.

P.C. 91+88.93, 29.00' LT.

R 50'

P.T. 20+80.53, 15.00' LT.

P.C.C. 20+51.24, 25.84' LT.

R 45'

P.C. 90+23.26, 29.00' LT.

R 70'

22'

40'

30'

2'

+15.8

STA. 91+00.08 C.L. HWY. 18=
STA. 20+00.00 C.L. CAIN ST.
∠ = 87°59'36"

STA. 91+20.11 C.L. HWY. 18=
STA. 10+00.00 C.L. CAIN ST.
∠ = 91°05'21"

STA. 91+21.94 C.L. HWY. 18=
STA 9+60.40 C.L CAIN ST.
∠ = 95°51'18"

C.L. HWY. 18 CONNECTOR

R 30'

R 75'

P.C. 90+82.41, 1' RT.

P.C. 91+63.82, 1' RT.

P.T. 9+33.17, 14' LT.

+25.00

P.T. 8+28.22, 15.08' RT.

+28

CONC. ISLAND (TYP.)

50' TRANSITION

+70

+20

CAIN ST.

26' F-F

14'

25' TRANSITION

+03

+78

R 364.89'

R 519'

+48.20

+85.89

NOSE R1' +48.53

CONC. ISLAND (TYP.)

58' F-F

16' F-F

RETAINING WALL

INTERSECTION DETAIL
HWY. 18 & CAIN ST.

SPECIAL DETAILS

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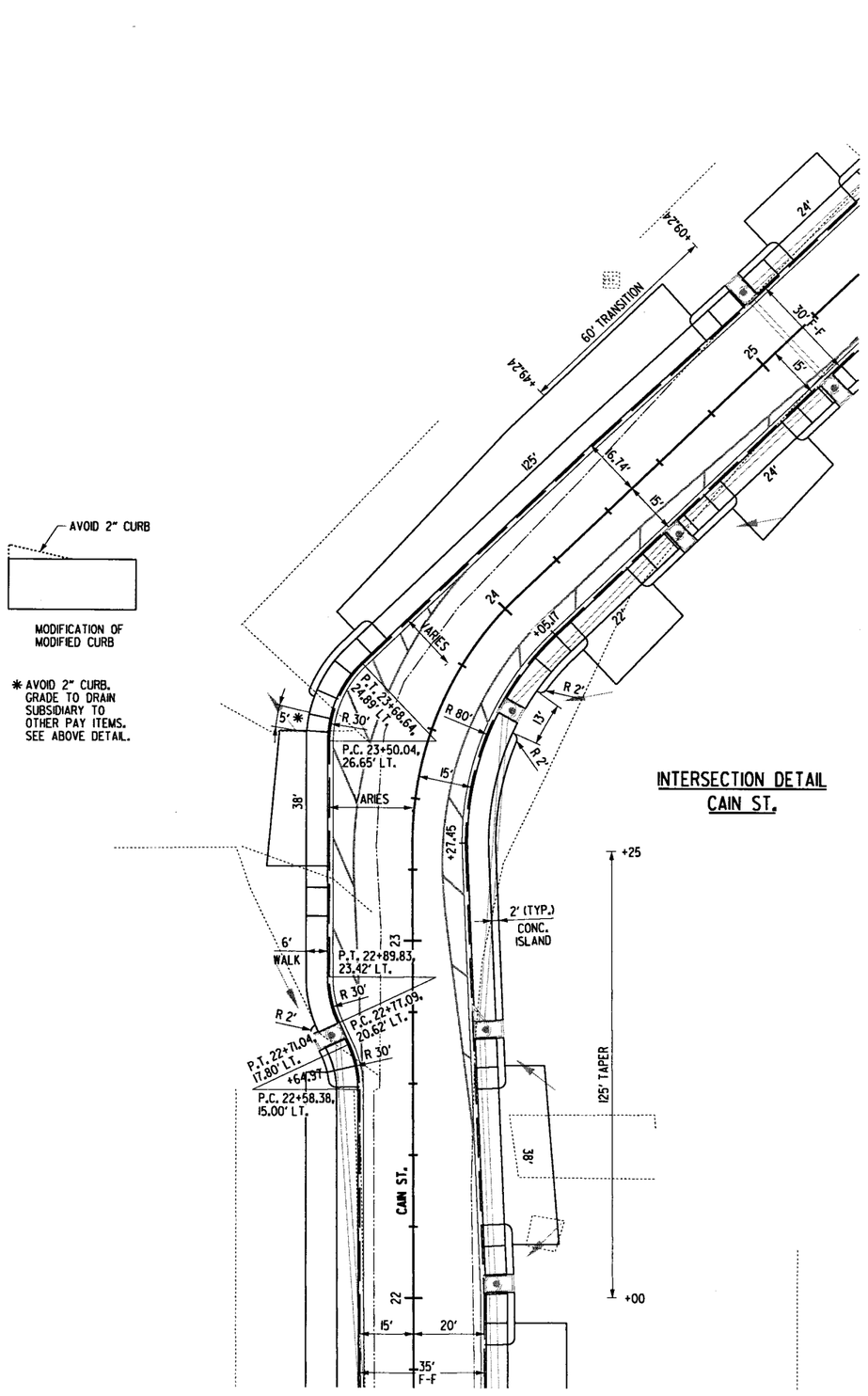
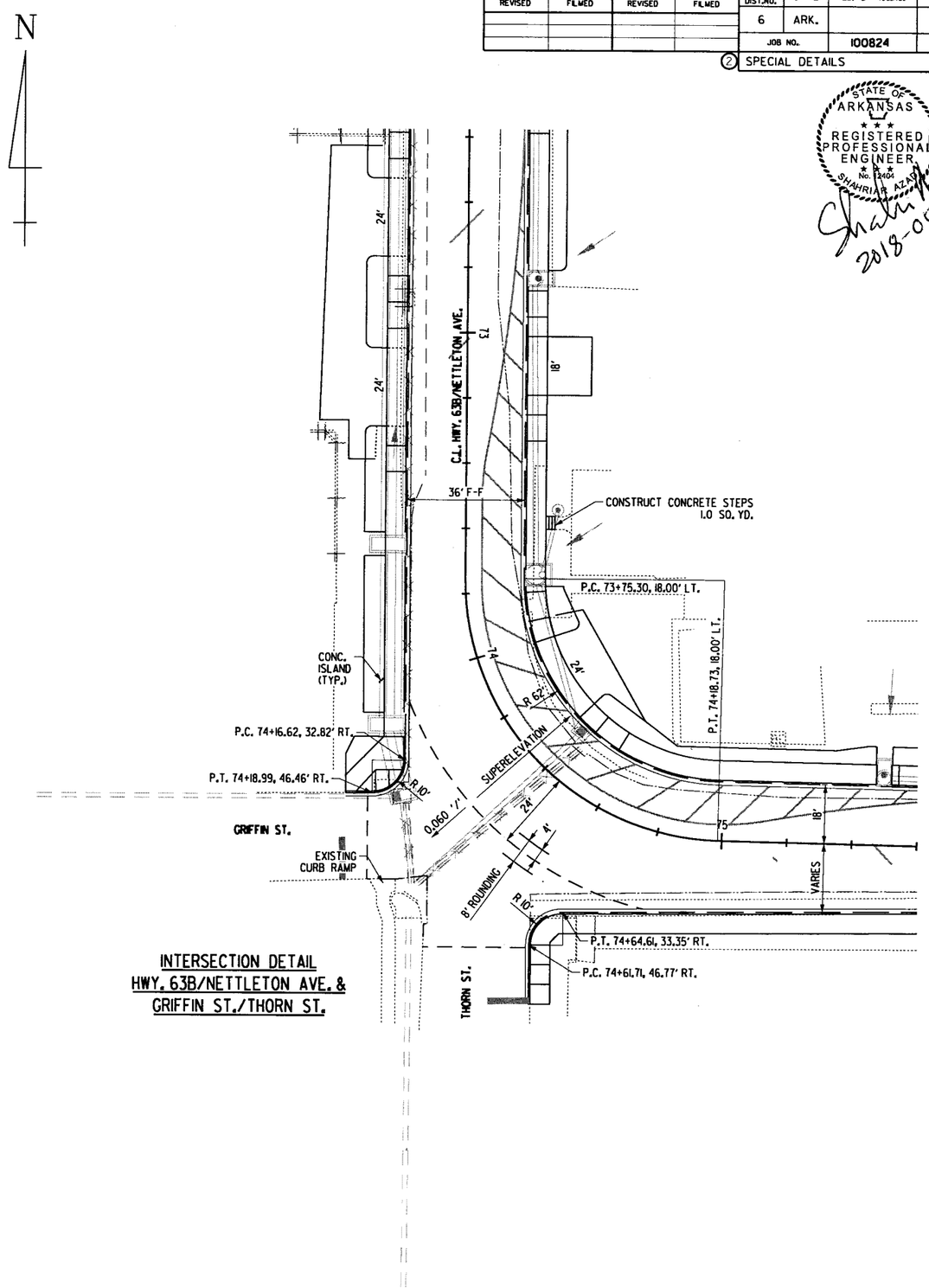
				6	ARK.			
				JOB NO.		100824	20	346

(2) SPECIAL DETAILS



INTERSECTION DETAIL
CAIN ST.



INTERSECTION DETAIL
HWY. 63B/NETTLETON AVE. &
GRIFFIN ST./THORN ST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

SPECIAL DETAILS

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				JOB NO.		100824	21	346
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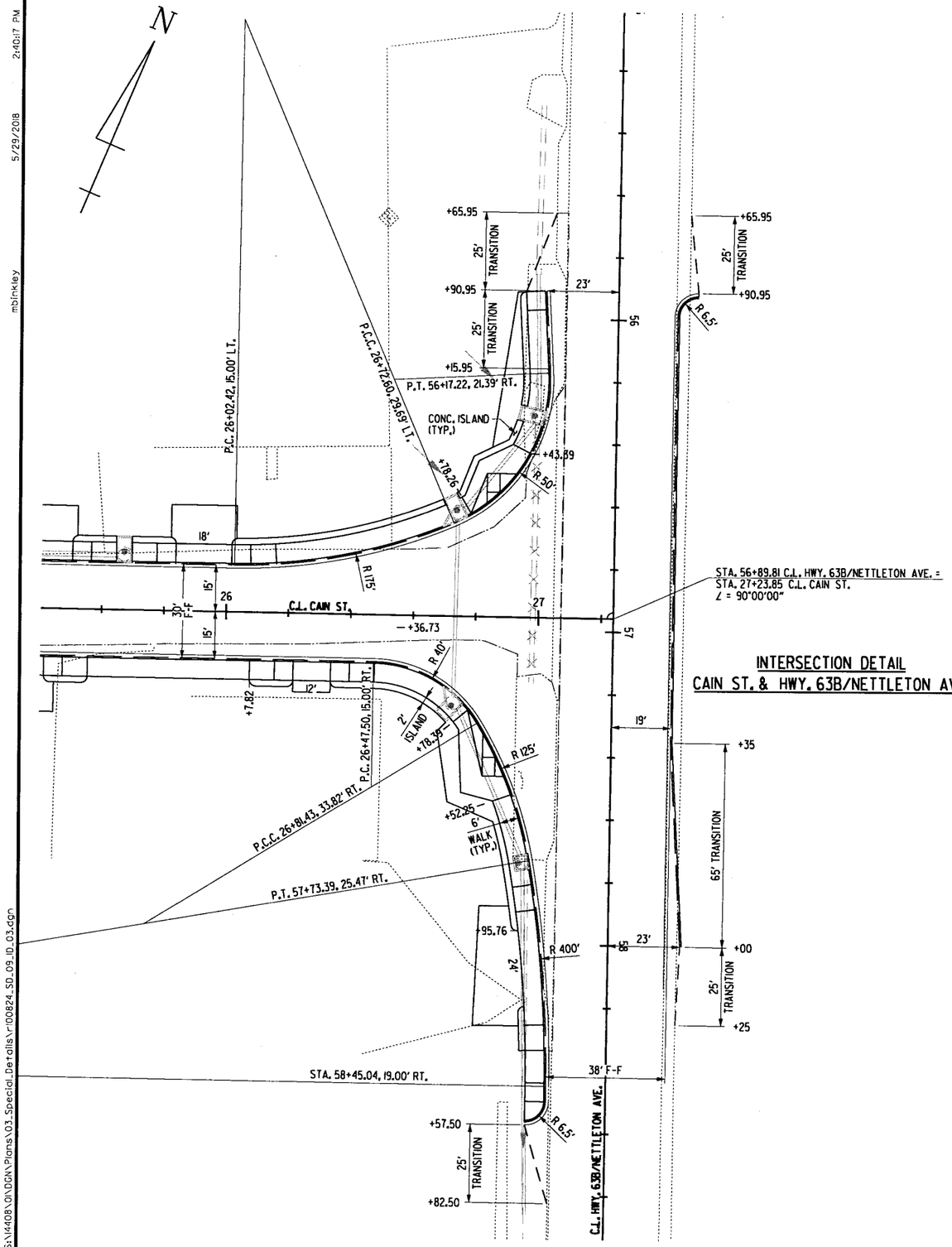
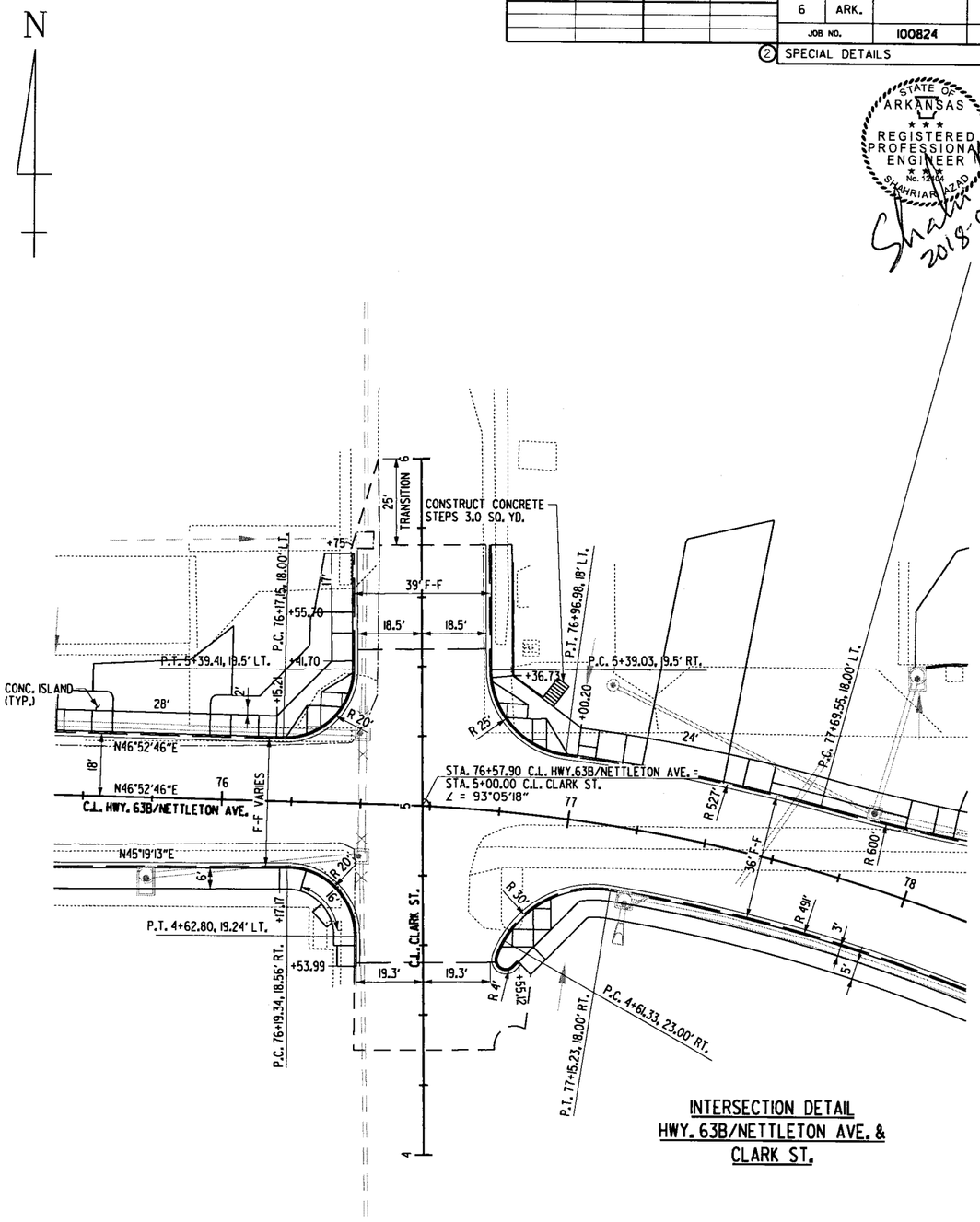


INTERSECTION DETAIL
CAIN ST. & HWY. 63B/NETTLETON AVE.



INTERSECTION DETAIL
HWY. 63B/NETTLETON AVE. &
CLARK ST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12446
SHAHRIAR AZAD
2018-05-29

SPECIAL DETAILS

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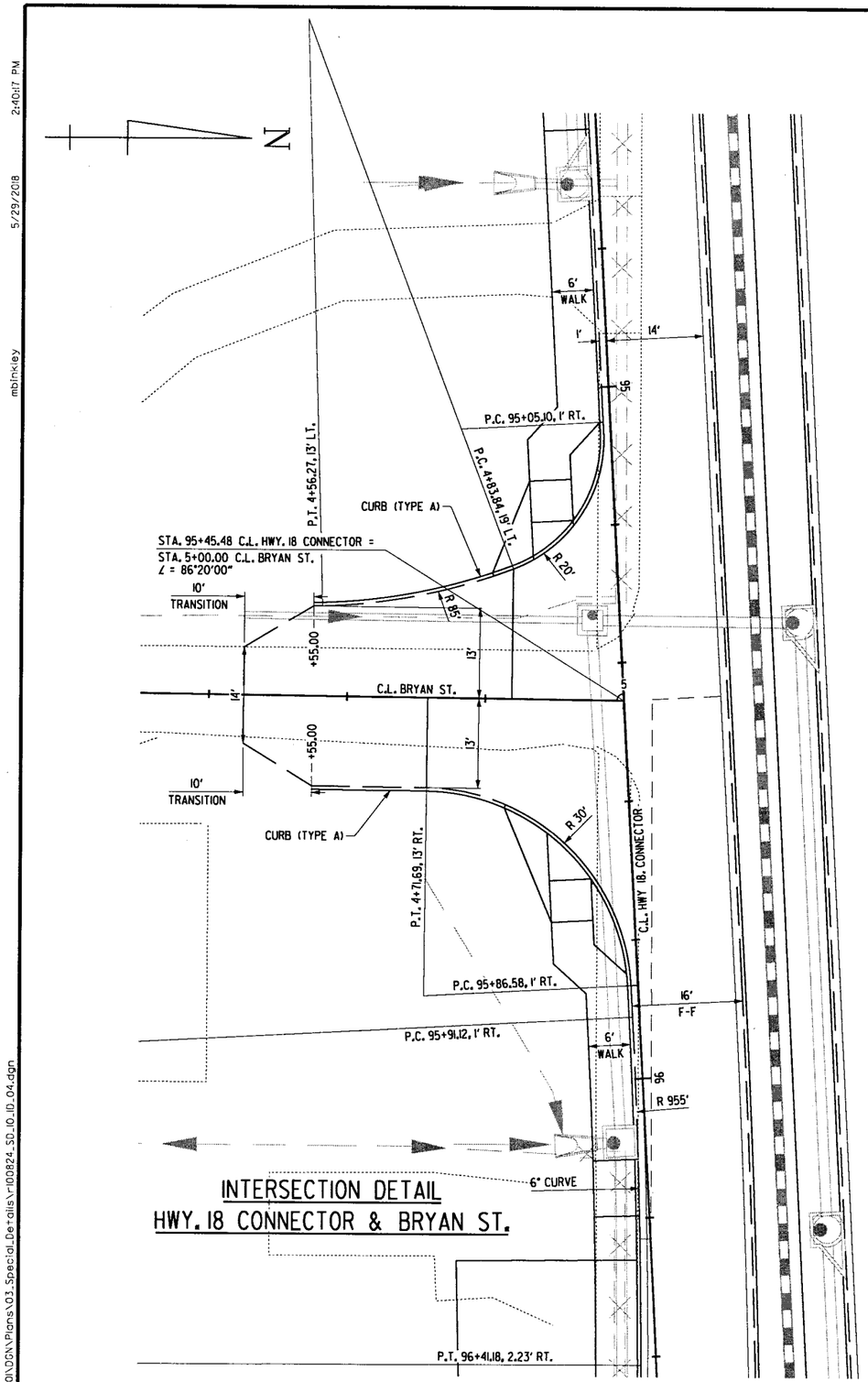
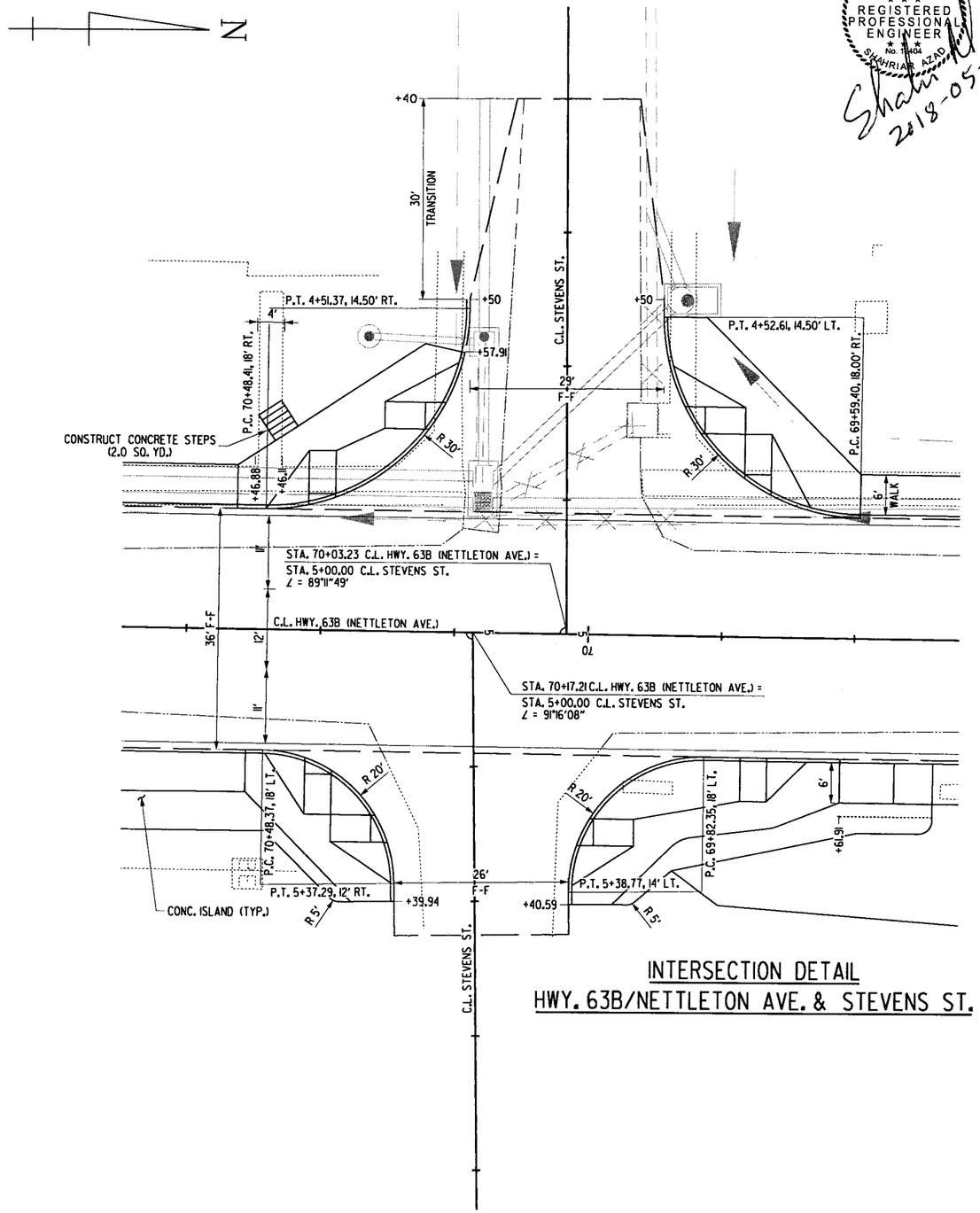
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	22	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 19404
2018-05-29



INTERSECTION DETAIL
HWY. 18 CONNECTOR & BRYAN ST.



INTERSECTION DETAIL
HWY. 63B/NETTLETON AVE. & STEVENS ST.

SPECIAL DETAILS

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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.		100824	23	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANKAR AZAD
2018-05-29

N

TRANSITION 25' +96 +00
TRANSITION 48'
100' TAPER +44 L
63
18'
64+00
20'
17.7'
20'
37.7' F-F
99+00
65+00
STA. 64+87.53 HWY. 63B/NETTLETON AVE. =
STA. 99+10.24 HWY. 18
∠ = 130°49'04"
C.L. HWY. 18
100+00
101+00
102+00
103
58' F-F
97
98+00
P.C.C. 98+69.71, 14.04' LT.
P.C.C. 65+04.54, 20.76' RT.
P.C. 98+35.19, 13' LT.
R 5'
R 25'
R 59'
10' CURVE
STA. 65+87.15 HWY. 63B/NETTLETON AVE. =
STA. 99+73.77 HWY. 18 CONNECTOR
∠ = 123°24'54"
97
13'
98
17' F-F
C.L. HWY. 18 CONNECTOR
99
STA. 65+95.02, 28.30' LT.
STA. 66+14.23, 27.76' LT.
R 45'
R 60'
2' ISLAND
CONC. ISLAND (TYP.)
STA. 99+00.62, 4.00' RT.
STA. 66+39.86, 26.19' RT.
6' WALK
R 275'
31'
STA. 67+06.47, 18.00' RT.
2'R +30.50
36' F-F
C.L. HWY. 63B/NETTLETON AVE.
00+29
STA. 5+33.82, 20.22' LT.
STA. 66+24.50, 28.36' LT.
T +32
R 20'
40' TRANS.
90°
R 20'
STA. 66+54.44 HWY. 63B/NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.
∠ = 90°00'00"
STA. 5+55.55, 19.59' RT.
R 18'
R 4'
94.48
STA. 66+98.16, 18' RT.
40'
6'
28'
33' TRANS.
+72
+05
C.L. FRISCO ST.

INTERSECTION DETAIL
HWY. 63B/NETTLETON AVE. & HWY. 18 CONNECTOR

INTERSECTION DETAIL
HWY. 63B/NETTLETON AVE. & FRISCO ST.

SPECIAL DETAILS

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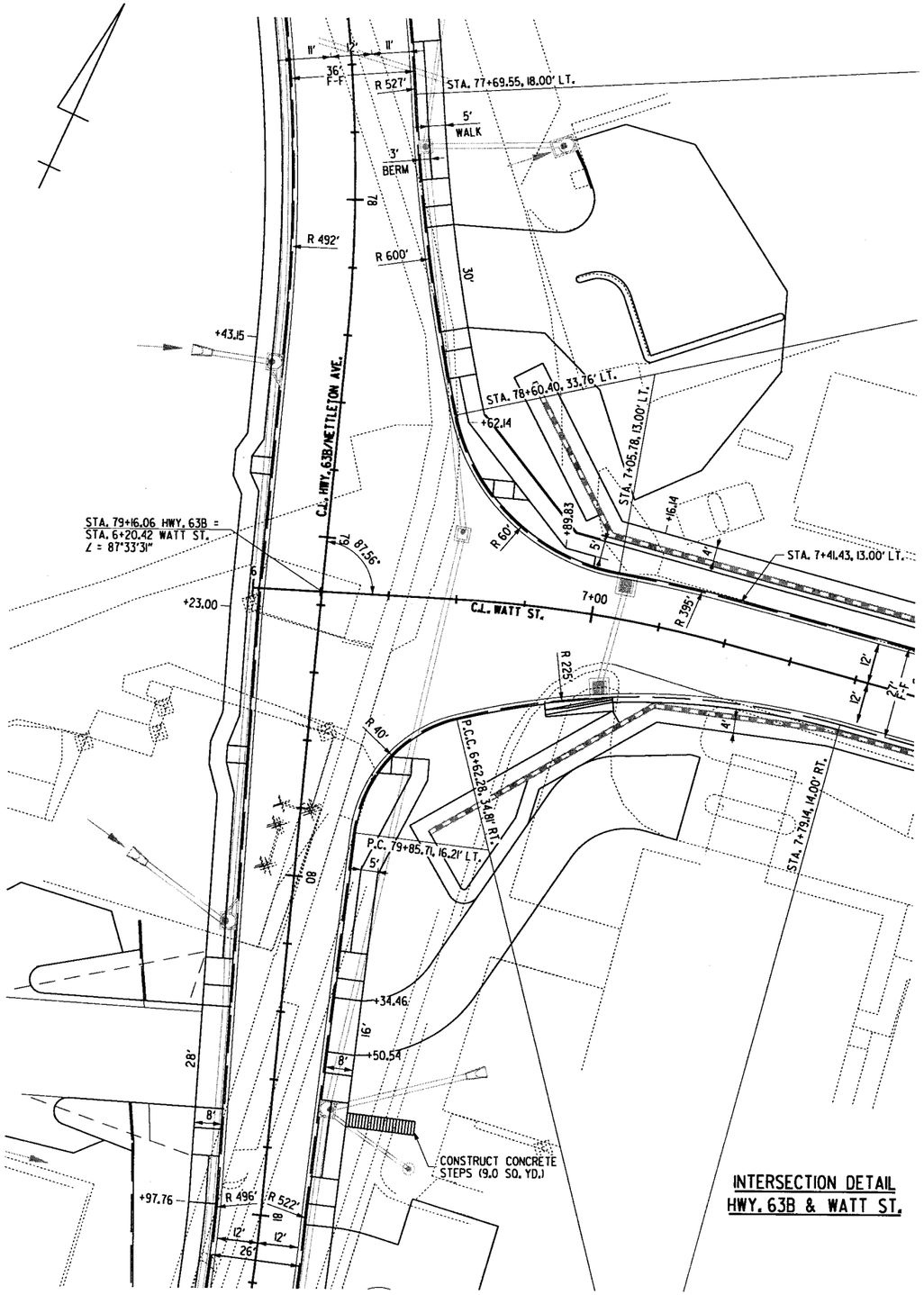
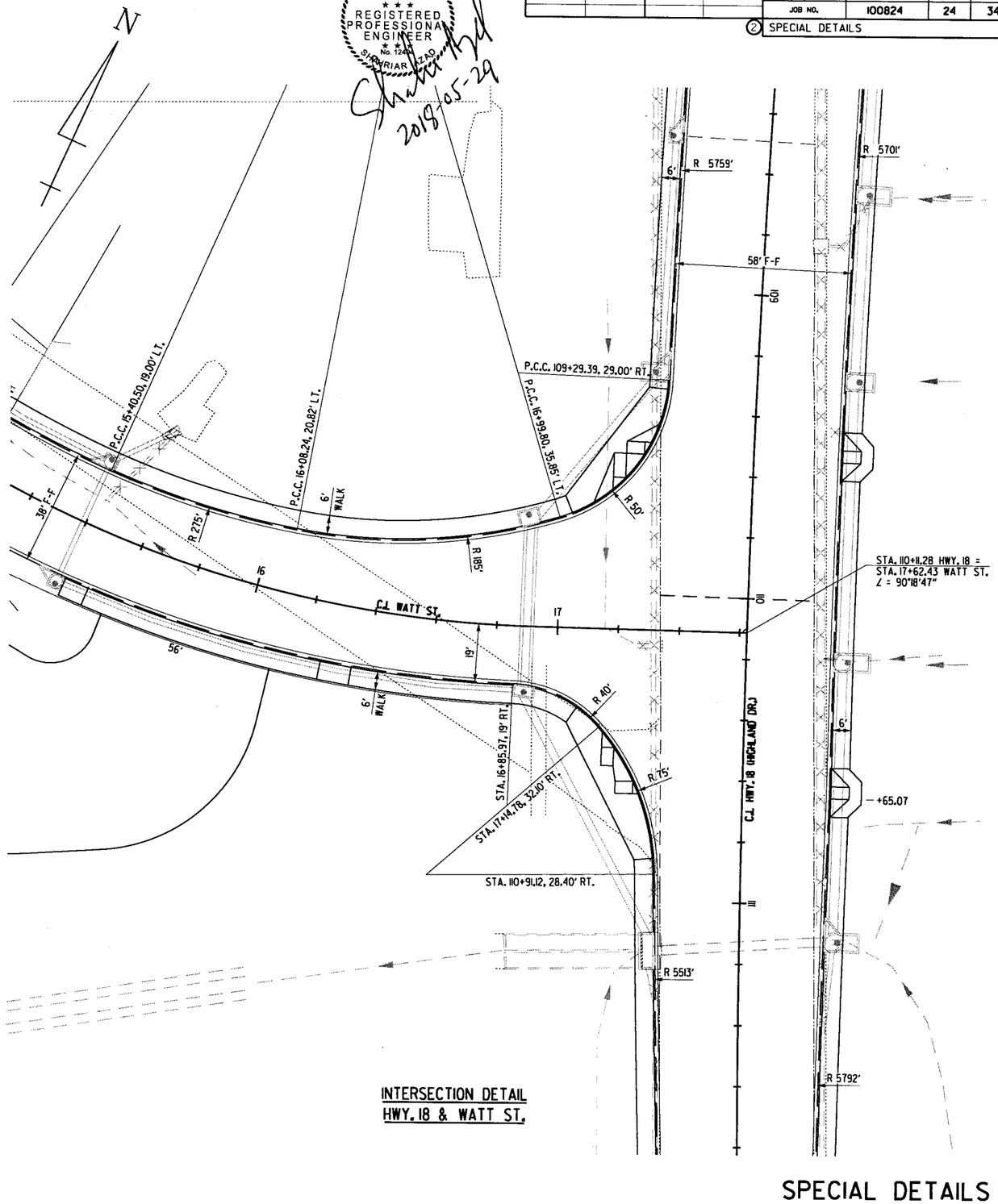
				6	ARK.			
				JOB NO.		100824	24	346

(2) SPECIAL DETAILS



INTERSECTION DETAIL
HWY. 63B & WATT ST.



INTERSECTION DETAIL
HWY. 18 & WATT ST.

SPECIAL DETAILS

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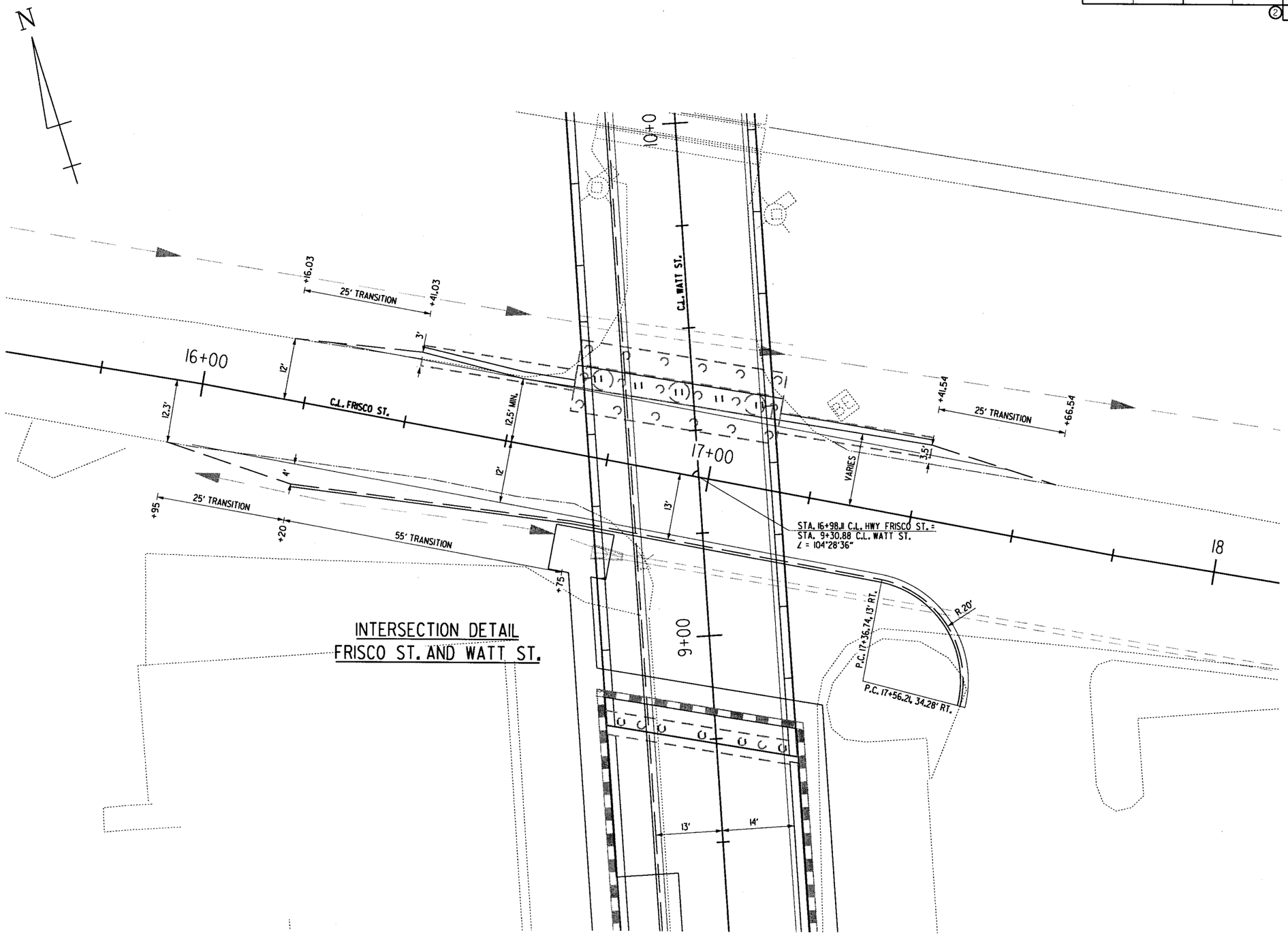
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	25	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



INTERSECTION DETAIL
FRISCO ST. AND WATT ST.

SPECIAL DETAILS

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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.		100824	26	346
				(2) SPECIAL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZIZ
2018-05-29

19
+97.28
R 213'
+50.57
R 30'
STA. 104+62.09, 53.45' LT.
+10.98
R 15'
+28.14
R 75'
STA. 104+08.47, 29.00' LT.
R 2894'
+12.76
6'
11'
11'
58' F-F
12'
11'
C.L. HWY. 18 (HIGHLAND DR.)
104
C.L. ARCH ST.
82.5°
STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.
105
10
6'
+46.83
STA. 9+59.48, 34.83' LT.
R 30'
STA. 105+55.63, 29.00' LT.
+50.14
6'
11'
11'
12'
56' F-F
106
R 2836'
+61.49
6'
+71.00
11'
11'
30'
+29.00
4'
STA. 105+85.00, 44.99' RT.
STA. 105+55.61, 74.98' RT.
R 30'

N

INTERSECTION DETAIL
HWY. 18 (HIGHLAND DR.) AND ARCH ST.

SPECIAL DETAILS

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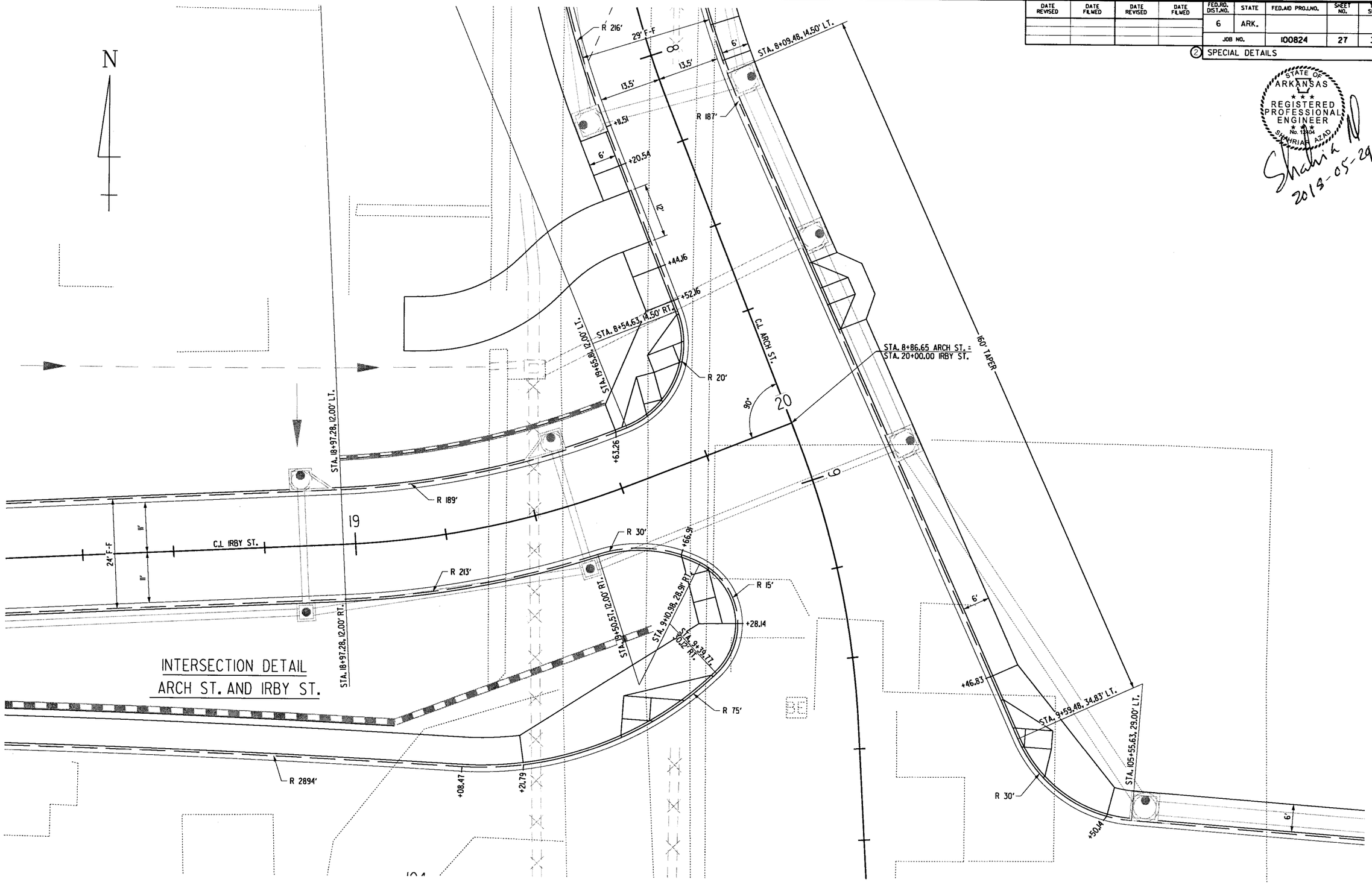
				6	ARK.			
				JOB NO.		100824	27	346
				(2) SPECIAL DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13404
SHAHRIAR AZAD
2019-05-29



SPECIAL DETAILS

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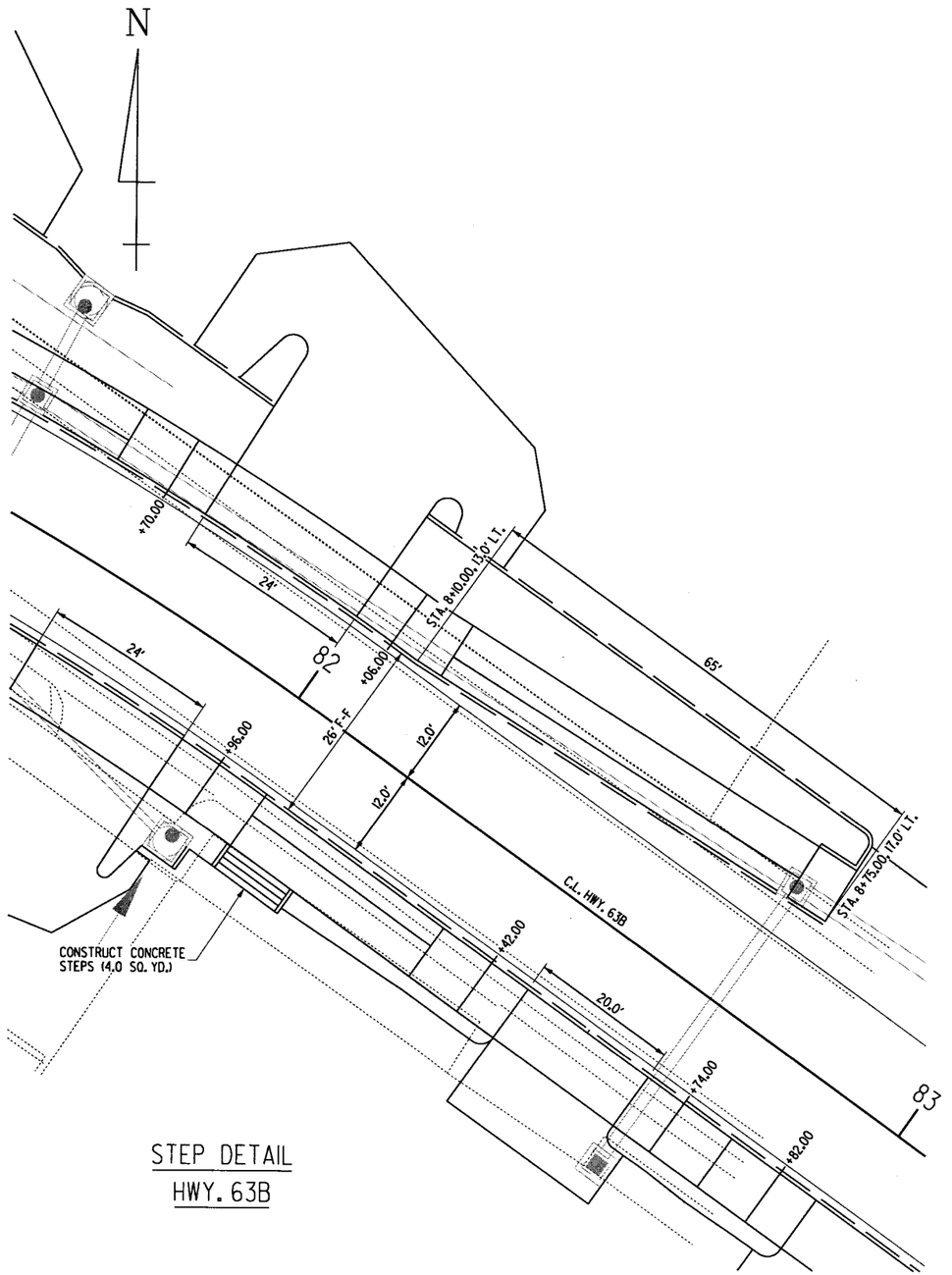
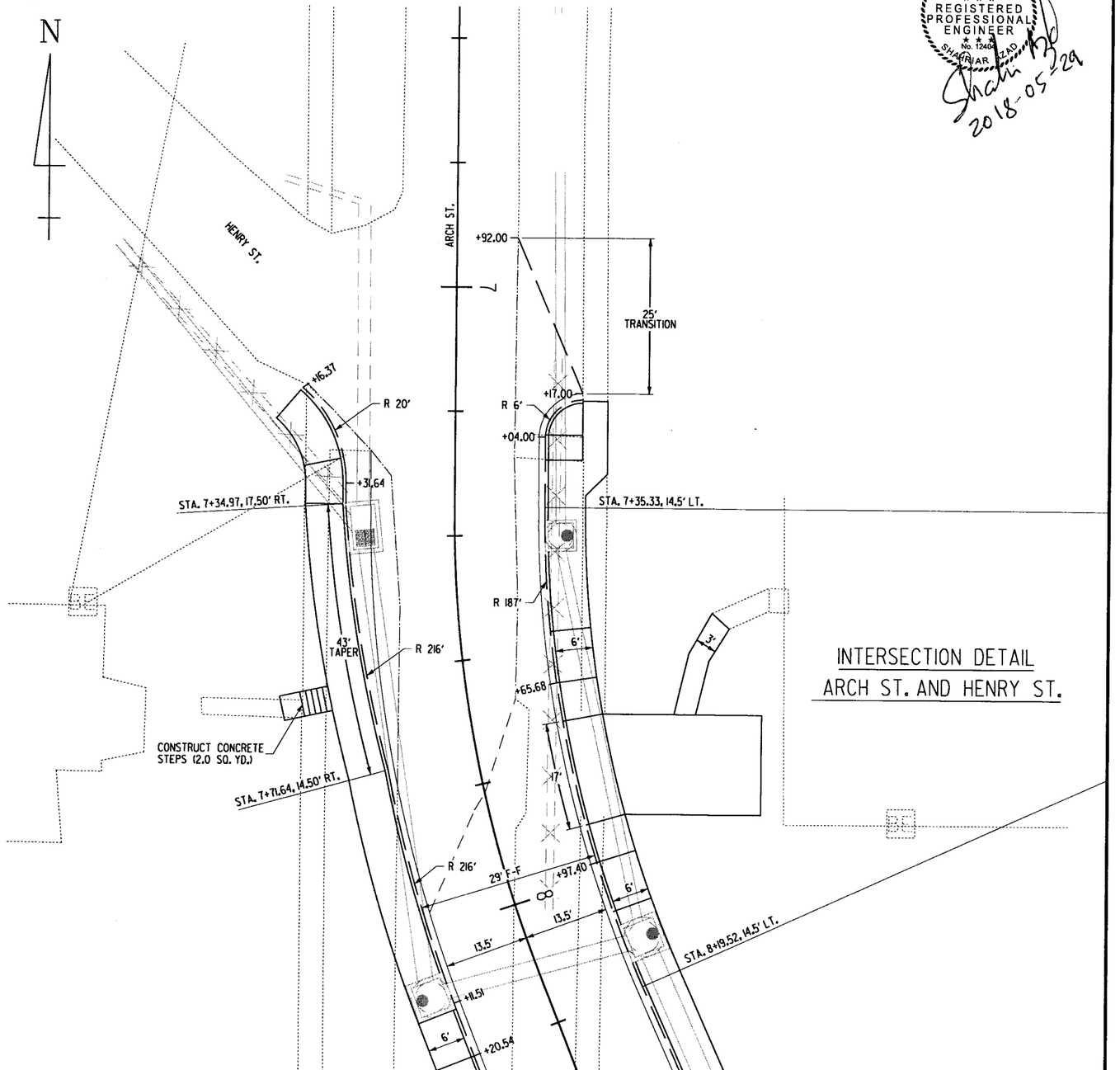
				6	ARK.			
				JOB NO.		100824	28	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



STEP DETAIL
HWY. 63B



INTERSECTION DETAIL
ARCH ST. AND HENRY ST.

SPECIAL DETAILS

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5/30/2018
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				6	ARK.			
				JOB NO.		100824	29	346

(2) SPECIAL DETAILS

STATE OF ARKANSAS
STEPHEN T. SMILEY
REGISTERED PROFESSIONAL ENGINEER
No. 13072
30 May 2018

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 @ 30'-0" MAXIMUM SPACING.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. CONTRACTION JOINTS ARE NOT PERMITTED AT THE DOWEL BAR LOCATIONS.
5. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
6. THE DESIGN OF BARRIER WALL 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.
7. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
8. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT, UNLESS NOTED OTHERWISE.
9. TYPE "H" METAL RAIL SHALL BE PAID FOR AS "METAL BRIDGE RAILING (TYPE H)". PROVIDE CONCRETE TERMINAL "DETAIL X" FOR BARRIER WALL ENDS ADJACENT TO "TRANSITIONAL APPROACH RAILINGS". FOR DETAILS, SEE STD. DWG. 55014.
10. CONSTRUCTION OF LIGHT BRACKET BLISTERS ATTACHED TO SPECIAL BARRIERS ARE SUBSIDIARY TO SIDE TYPE SPECIAL BARRIERS.
11. FOR SIDE TYPE SPECIAL-2 ONLY: CONSTRUCT DRAINAGE OPENINGS AT EVERY 30' O.C AND AT SAGS IF SHOWN ON THE PLANS. BARS P502 SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.

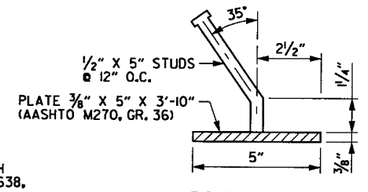
TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

SIDE TYPE	LIN. FT.	REINFORCING STEEL - ROADWAY (GR. 60) (LBS.)	CLASS S(AE) CONCRETE - ROADWAY (CU. YD.)	METAL BRIDGE RAILING (TYPE H) (LIN. FT.)	ARCHITECTURAL FINISH (SQ. FT.)	STRUCTURAL STEEL (M270, GR. 36) (LBS.)
SP-1	1,565	86,691	811.49	1,550	3,783	-
SP-2	484	27,373	266.38	-	1,170	454

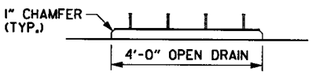
NOTE:
PARAPET STUDS SHALL BE 5" LONG, GRANULAR FLUX FILLED, SOLID FLUXED, OR EQUAL, AND AUTOMATICALLY END WELDED TO THE PLATE. STUDS AND PLATE SHALL MEET THE REQUIREMENTS OF SECTION 807. STUDS AND PLATE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-2).

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 CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-2).



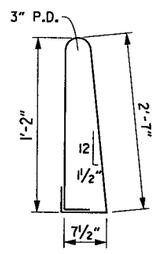
DETAIL Y

NTS

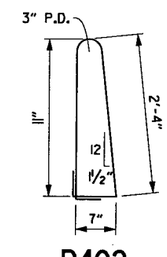


DRAIN DETAIL

NTS



P401



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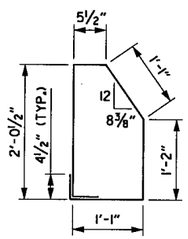
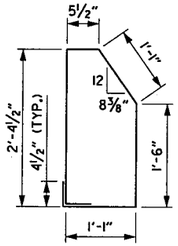


P501



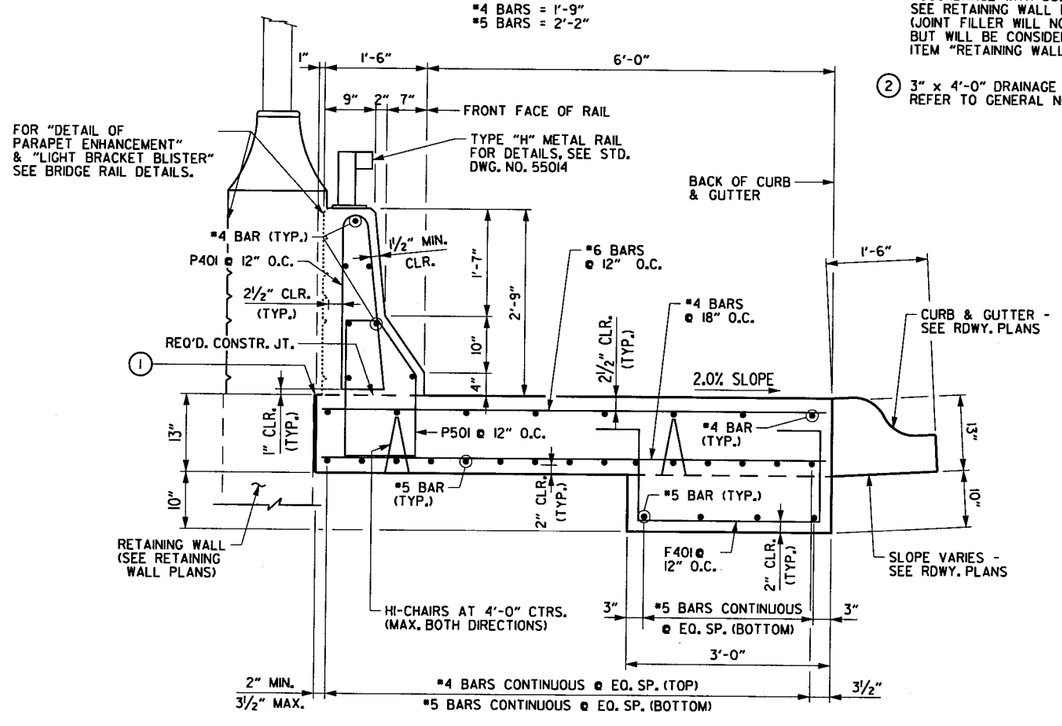
P502

NOTE:
MIN. LAP LENGTH FOR LONGITUDINAL BARS ARE AS FOLLOWS:

#4 BARS = 1'-9"
#5 BARS = 2'-2"

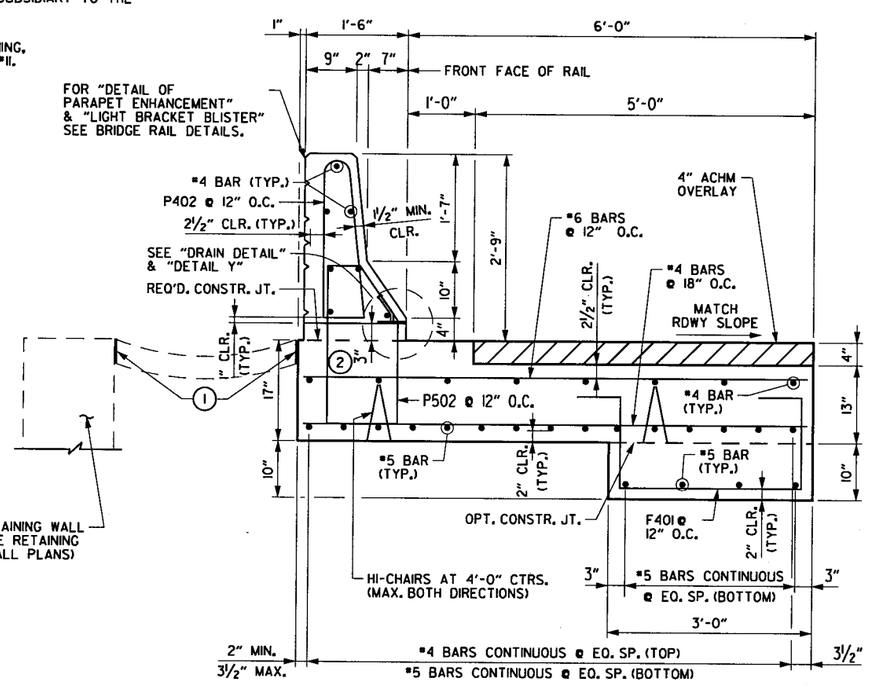
(1) JOINT FILLER (AASHTO M153, TYPE I) IN ACCORDANCE WITH SUBSECTION 501.02 (h)(1) WITH TYPE 3 OR 4 JOINT SEALER IN ACCORDANCE WITH SUBSECTION 501.02 (h)(2). SEE RETAINING WALL PLANS FOR SIZE. (JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "RETAINING WALLS".)

(2) 3" x 4'-0" DRAINAGE OPENING. REFER TO GENERAL NOTE #11.



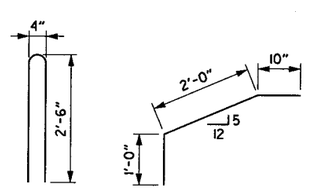
CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-1)

(LOOKING AHEAD - WITH SIDEWALK)



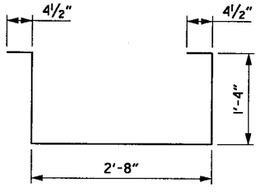
CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-2)

(LOOKING BACK - NO SIDEWALK)



H401E (3) H402E (3)

(3) SEE CONCRETE TERMINAL "DETAIL X" ON STD. DWG. NO. 55014.



F401

SPECIAL DETAILS

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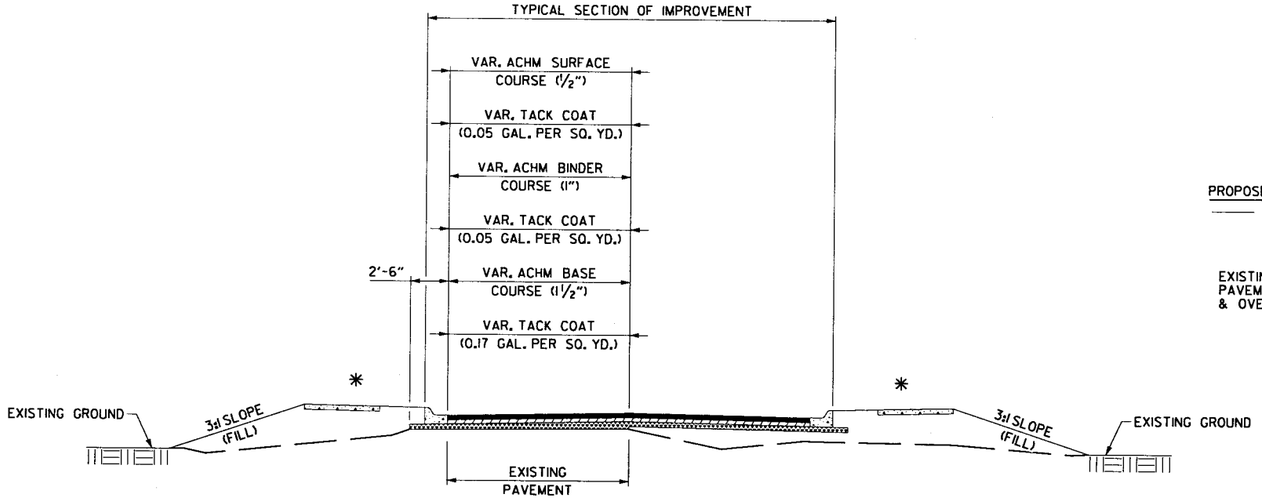


METHOD OF RAISING GRADE

NOTES:

(1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

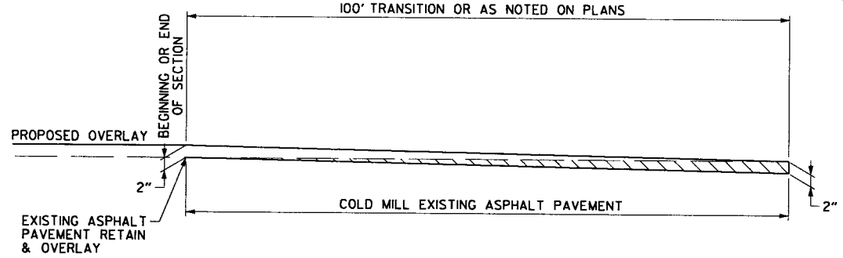
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

(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.

* VARIATIONS ARE NOTED ON PLANS

** TO DETERMINE THE OVERLAY PAVEMENT LAYERS THE PRIORITY LIST BELOW SHALL BE USED. EACH LAYER WILL BE USED UP TO ITS MAXIMUM THICKNESS BEFORE INCLUDING THE LAYER BELOW.

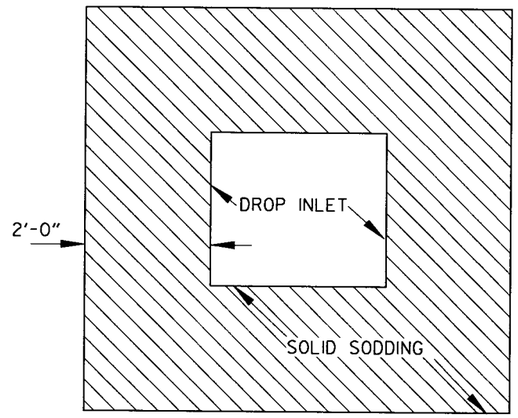
1. TOP ACHM SURFACE COURSE (2")
2. BOTTOM ACHM SURFACE COURSE (MAX 2")
3. ACHM BINDER COURSE (MAX 4")
4. ACHM BASE COURSE (MAX 16")



COLD MILLING DETAIL AT EXISTING PAVEMENT TIE-INS

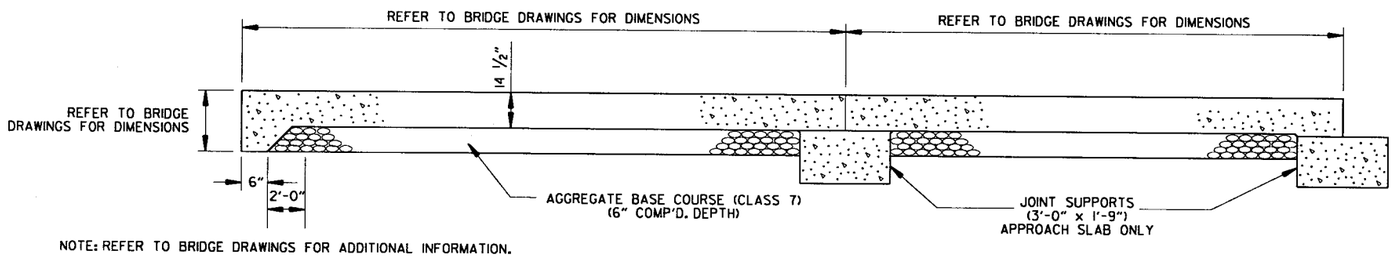
NOTE: 50' PER 1" OF OVERLAY FOR MAIN LANES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12444
SHAHRIAR AZAD
2019-05-29



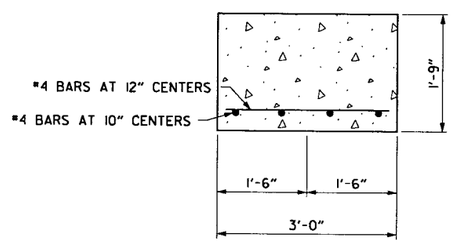
DETAIL FOR SOLID SODDING AROUND DROP INLETS (TYPE RM)

N.T.S.



NOTE: REFER TO BRIDGE DRAWINGS FOR ADDITIONAL INFORMATION.

LONGITUDINAL SECTION OF APPROACH SLABS



* REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS

DETAIL OF JOINT SUPPORT

N.T.S.

SPECIAL DETAILS

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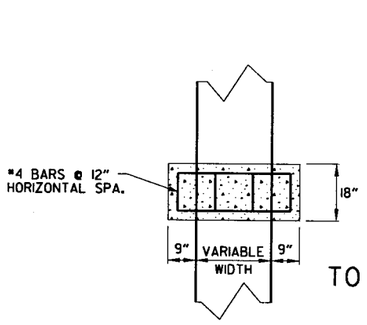
				6	ARK.			
				JOB NO.		100824	31	346

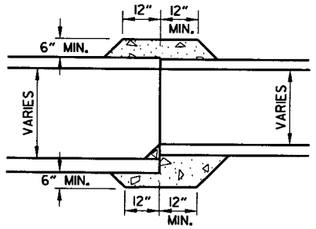
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAWKAT RIAZ
2018-06-06

6/5/2018 7:20:39 PM mblinkley

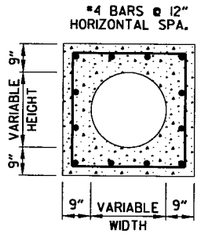


TOP VIEW

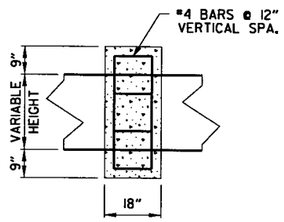


CONCRETE COLLAR DETAIL
TO CONNECT R.C. PIPE W/30°∠45° TURNS
TO CONNECT EXISTING PIPE
(SUBSIDIARY TO PIPE CULVERT)

N.T.S.



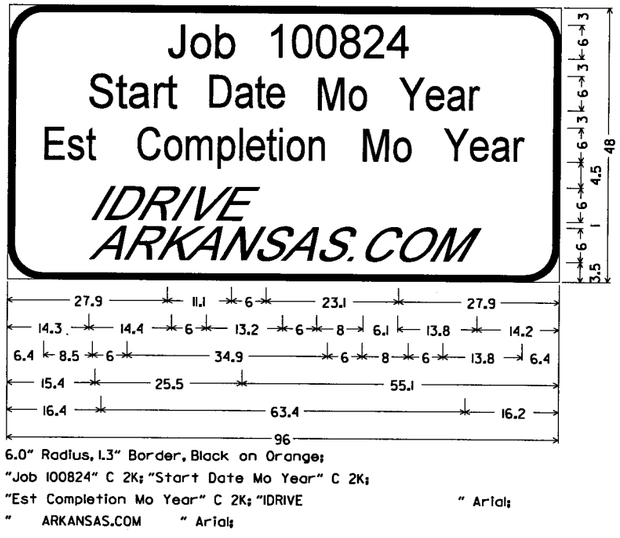
FRONT VIEW



SIDE VIEW

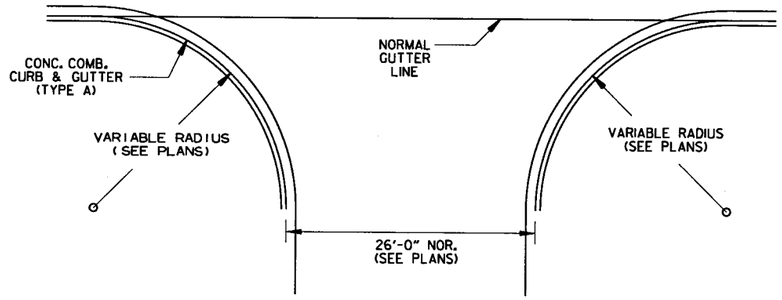
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL
(SUBSIDIARY TO PIPE CULVERT)

N.T.S.



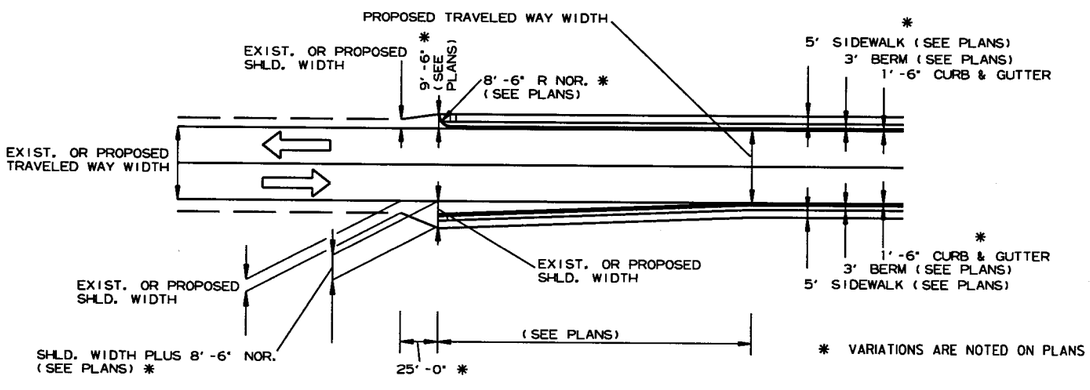
6.0" Radius, 1.3" Border, Black on Orange;
"Job 100824" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

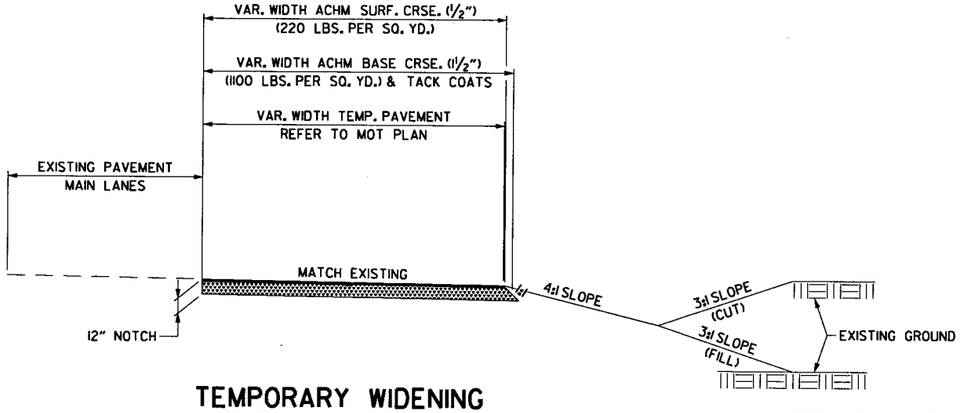


NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS, & STATE HIGHWAYS
CURB & GUTTER SECTION



TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION



TEMPORARY WIDENING
TYPICAL SECTION
REFER TO PLANS FOR LOCATION

SPECIAL DETAILS

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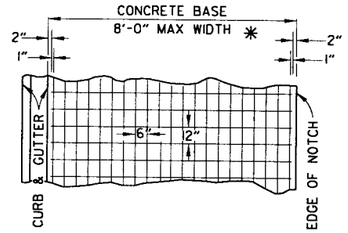
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	32	346

(2) SPECIAL DETAILS



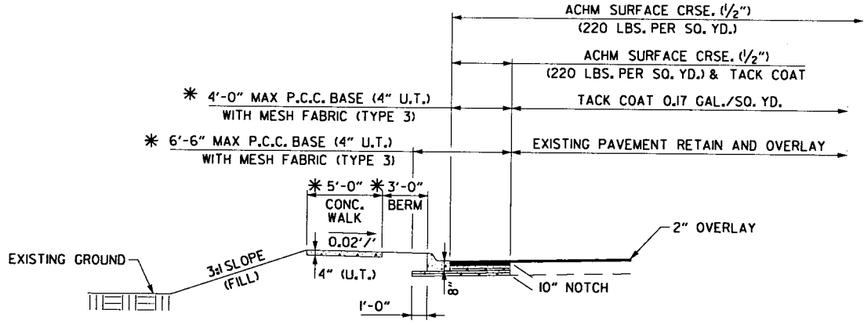
DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)

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

N.T.S.

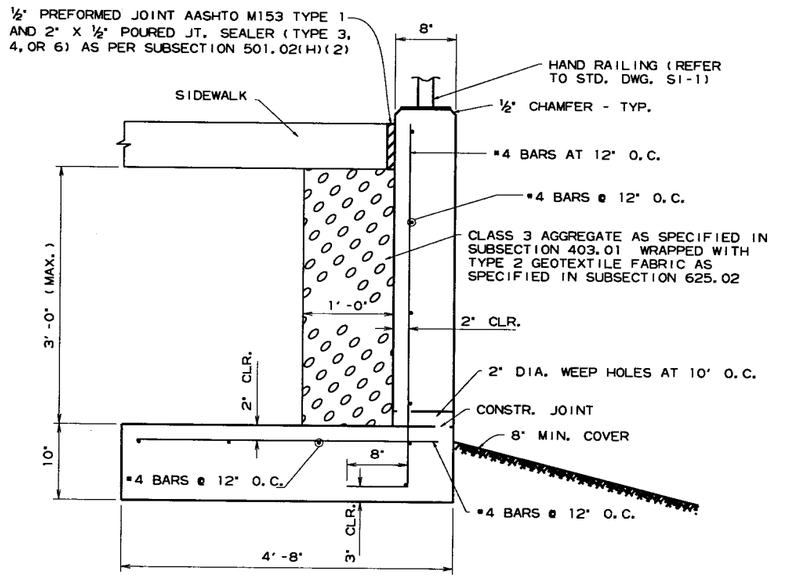
NOTES:

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 (4" U.T.).



P.C.C. BASE WIDENING DETAIL

* VARIATIONS ARE NOTED ON PLANS



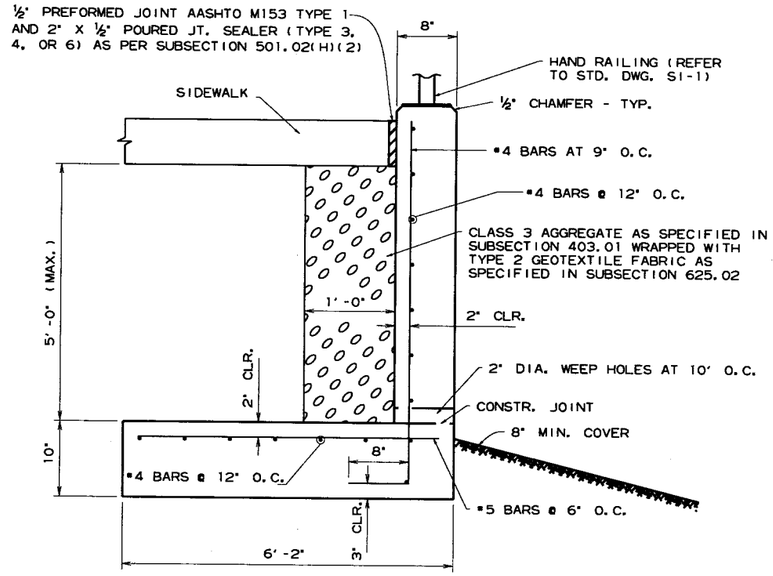
NOTES:
JOINTS IN THE WALL SHALL MATCH THE TYPE AND SPACING OF THE JOINTS IN THE WALK.

ALL CONCRETE SHALL BE CLASS S (F'C=3,500 PSI) AND SHALL BE POURED IN THE DRY.

REINFORCING STEEL SHALL BE AASHTO M31 OR M53, GRADE 60 (FY=60,000 PSI).

PAYMENT FOR THE WEEP HOLES, CLASS 3 AGGREGATE, TYPE 2 GEOTEXTILE FABRIC, PREFORMED JOINT FILLER, POURED JOINT SEALER, REINF. STEEL, AND CONCRETE SHALL BE SUBSIDIARY TO OTHER ITEMS.

CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 3'-0"



NOTES:
JOINTS IN THE WALL SHALL MATCH THE TYPE AND SPACING OF THE JOINTS IN THE WALK.

ALL CONCRETE SHALL BE CLASS S (F'C=3,500 PSI) AND SHALL BE POURED IN THE DRY.

REINFORCING STEEL SHALL BE AASHTO M31 OR M53, GRADE 60 (FY=60,000 PSI).

PAYMENT FOR THE WEEP HOLES, CLASS 3 AGGREGATE, TYPE 2 GEOTEXTILE FABRIC, PREFORMED JOINT FILLER, POURED JOINT SEALER, REINF. STEEL, AND CONCRETE SHALL BE SUBSIDIARY TO OTHER ITEMS.

CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 5'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHROKH ASADI
2018-05-29

SPECIAL DETAILS

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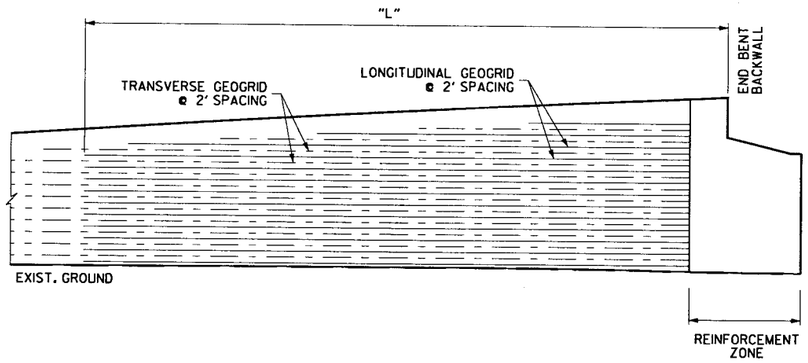
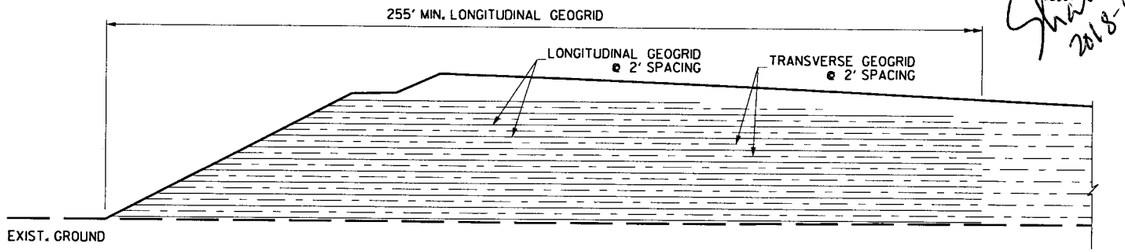
				6	ARK.			
				JOB NO.		100824	33	346
				(2)	SPECIAL DETAILS			



MINIMUM LENGTH OF LONGITUDINAL GEOGRID BEHIND BRIDGE END BENTS

HWY. 18 END BENT 1	"L" = 230'
HWY. 18 END BENT 3	"L" = 135'
WATT ST. END BENT 1	"L" = 115'

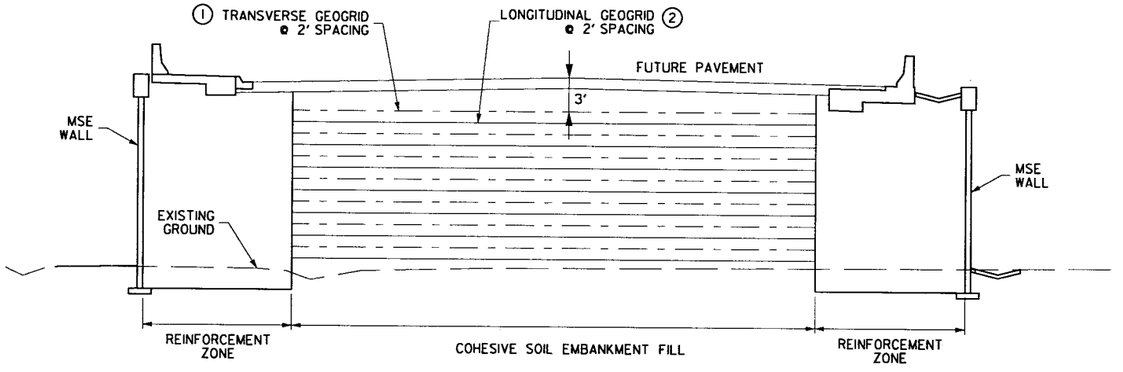


WATT ST. BRIDGE END BENT 4

NOTE: SEE SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION" FOR ADDITIONAL INFORMATION.

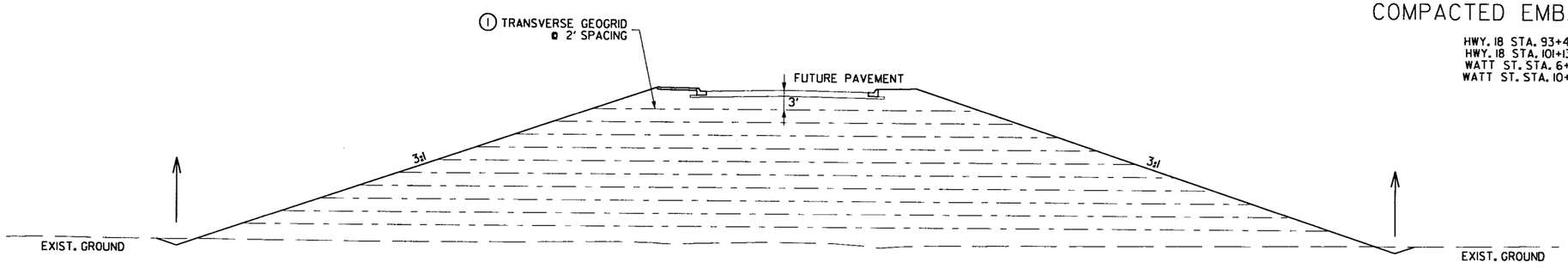
(1) PLACE TRANSVERSE GEOGRID FOR THE ENTIRE LENGTH OF COHESIVE SOIL EMBANKMENT FILL.

(2) FOR LENGTH OF LONGITUDINAL GEOGRID BEHIND BRIDGE END BENTS, SEE ABOVE DETAILS.



COMPACTED EMBANKMENT (SPECIAL)

HWY. 18 STA. 93+49.23 - STA. 97+96.33
HWY. 18 STA. 101+13.34 - STA. 105+49.92
WATT ST. STA. 6+51.09 - STA. 8+07.60
WATT ST. STA. 10+52.30 - STA. 15+09.12



COMPACTED EMBANKMENT (SPECIAL)

WATT ST. STA. 15+09.12 - STA. 15+35.54
HWY. 18 STA. 105+49.92 - STA. 107+00.00

SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12400
BRIAN K. HEAD
2018-05-29

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mbinkley
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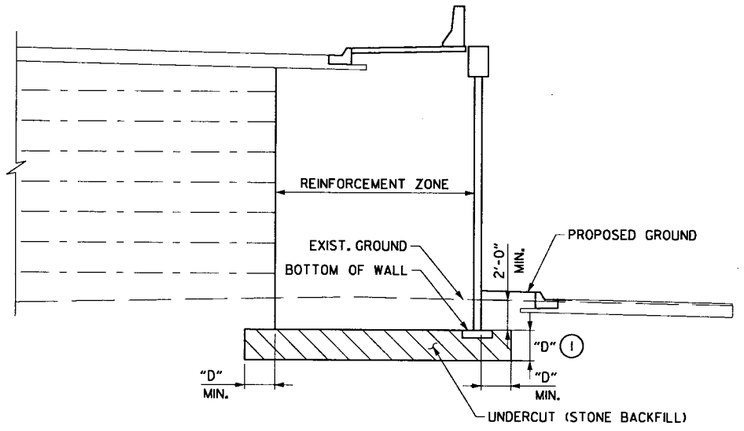
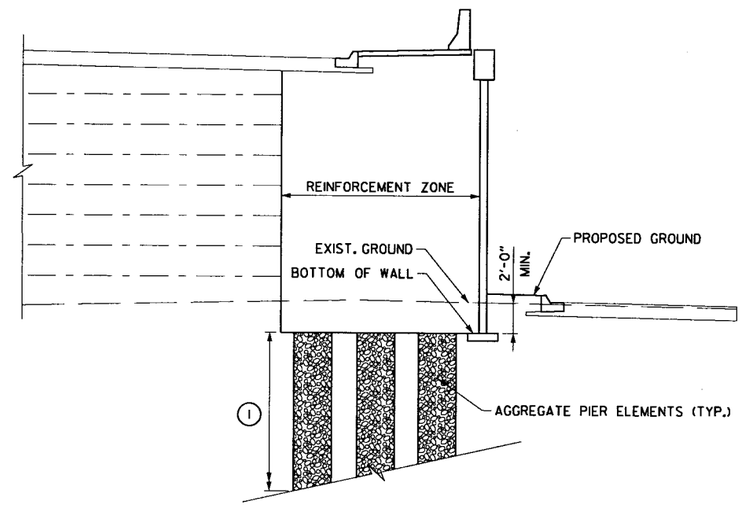
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



UNDERCUT DETAIL
N.T.S.



AGGREGATE PIER
N.T.S.

(1) FOR DEPTH OF UNDERCUT AND AGGREGATE PIER LENGTH SEE RETAINING WALL SECTION DRAWINGS

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				6	ARK.			
				JOB NO.		100824	35	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SYDNEY RIAD WELLS
2018-09-04

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

C.L. CAIN ST.

BNSF RAILWAY

NETTLETON AVE.

C.L. HWY. 63B/NETTLETON AVE.

IRBY ST.

BRYAN ST.

C.L. BRYAN ST.

C.L. HWY. 18 CONNECTOR

C.L. HWY. 18

STA. 91+00.08 C.L. HWY. 18= STA. 20+00.00 C.L CAIN ST.

STA. 91+20.11 C.L. HWY. 18= STA. 10+00.00 C.L CAIN ST.

EXISTING R/W

PROPOSED R/W

PROP. R/W

T.C.E.

100 YR. FLOODPLAIN LIMIT

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE IA

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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.		100824	36	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRAM AZAD
2018-05-29

[1] INLET SHALL REMAIN OUT OF SERVICE, BY A METHOD APPROVED BY THE ENGINEER, UNTIL THE DOWNSTREAM SIDE OF THE DRAINAGE SYSTEM IS CONSTRUCTED. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

N

ARCH ST.
HENRY ST.
IRBY ST.
CONVEYOR ST.
HWY. 18 (HIGHLAND DR.)
HWY. 63B (NETTLETON AVE.)
FRISCO ST.
CLARK ST.
WATT ST.
BNSF RAILWAY

EXISTING R/W
EXIST. R/W PROPOSED R/W
PROPOSED R/W
PROP. R/W
T.C.E.
C.L. IRBY ST.
C.L. HWY. 18
C.L. FRISCO ST.
C.L. WATT ST.
100 YR. FLOODPLAIN LIMIT

STA. 8+86.65 ARCH ST. = STA. 20+00.00 IRBY ST.
STA. 105+00.00 HWY. 18 (HIGHLAND DR.) = STA. 10+00.00 ARCH ST.
STA. 110+11.28 HWY. 18 (HIGHLAND DR.) = STA. 17+62.43 WATT ST.
STA. 65+87.15 NETTLETON AVE. = STA. 99+73.77 HWY. 18
STA. 66+54.44 NETTLETON AVE. = STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE IA

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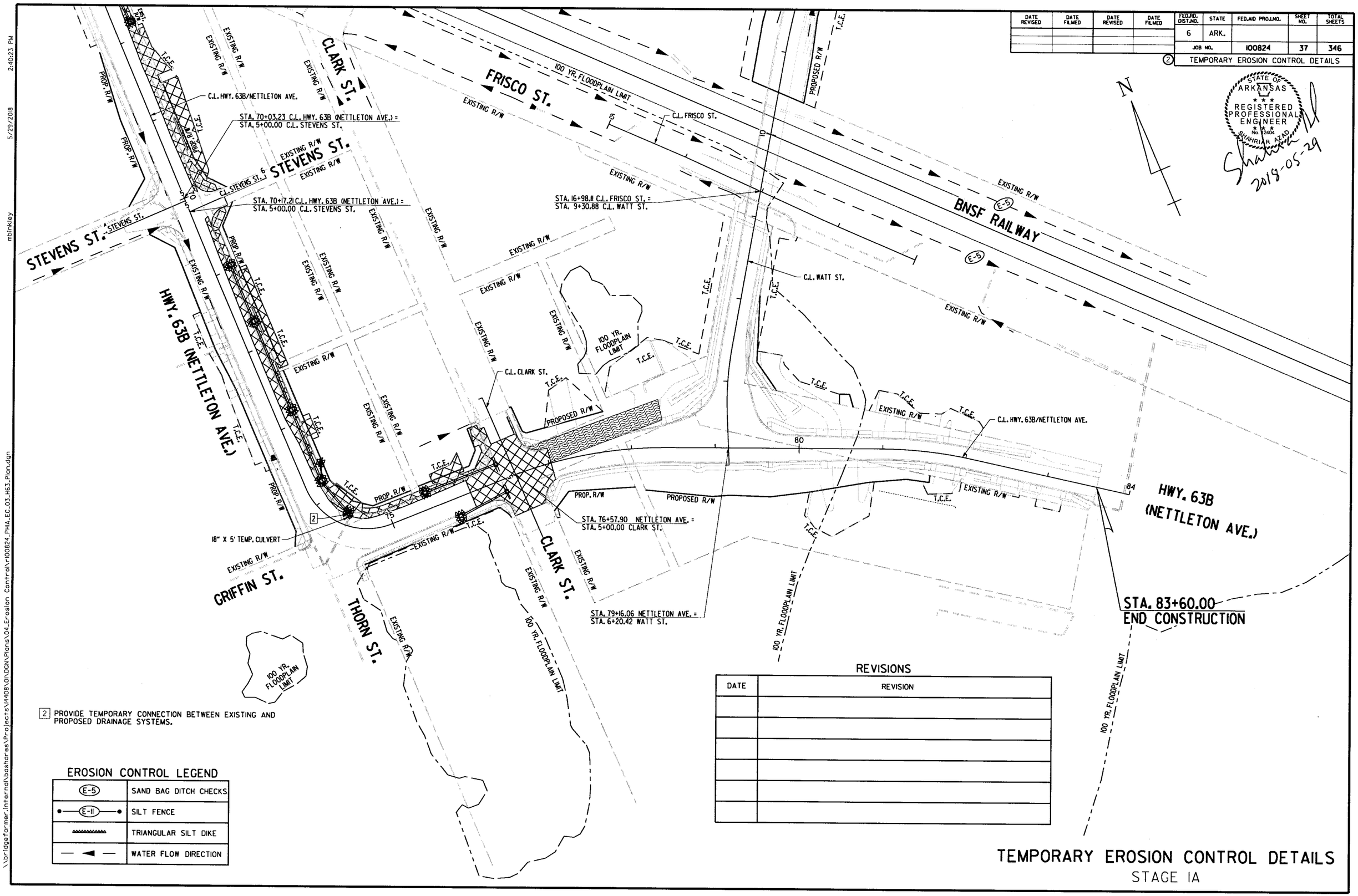
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	37	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



2 PROVIDE TEMPORARY CONNECTION BETWEEN EXISTING AND PROPOSED DRAINAGE SYSTEMS.

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE IA

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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.		100824	38	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12464
SHAHRIAR AZAD
2018-09-04

N

[2] PROVIDE TEMPORARY CONNECTION BETWEEN EXISTING AND PROPOSED DRAINAGE SYSTEMS.

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

BNSF RAILWAY

NETTLETON AVE.

BRYAN ST.

C.L. CAIN ST.

C.L. HWY. 63B/NETTLETON AVE.

C.L. HWY. 18

C.L. HWY. 18 CONNECTOR

C.L. BRYAN ST.

EXISTING R/W

PROPOSED R/W

PROP. R/W

T.C.E.

25

50

65

85

90

95

100

105

18" X 4' TEMP. CULVERT

STA. 91+00.08 C.L. HWY. 18=
STA 20+00.00 C.L CAIN ST.

STA. 91+20.11 C.L. HWY. 18=
STA. 10+00.00 C.L CAIN ST.

100 YR. FLOODPLAIN LIMIT

REVISIONS

DATE	REVISION

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE IB

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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.		100824	39	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 12404
SHANE M. HAAR
2018-05-29

3 CONSTRUCT THE CROSS DRAINAGE SYSTEM ACCORDING TO STANDARD DRAWING TC-2 DETAIL 'E'. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

N

IRBY ST.

HENRY ST.

ARCH ST.

CONVEYOR ST.

HWY. 63B (NETTLETON AVE.)

FRISCO ST.

CLARK ST.

BNSF RAILWAY

WATT ST.

HWY. 18 (HIGHLAND DR.)

EXISTING R/W

EXIST. R/W

PROPOSED R/W

PROP. R/W

T.C.E.

C.L. IRBY ST.

C.L. FRISCO ST.

C.L. HWY. 18

C.L. WATT ST.

100 YR. FLOODPLAIN LIMIT

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 WATT ST.

STA. 65+87.15 NETTLETON AVE. =
STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE IB

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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.		100824	40	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
NO. 12404
2018-05-29

3 CONSTRUCT THE CROSS DRAINAGE SYSTEM ACCORDING TO STANDARD DRAWING TC-2 DETAIL 'E'. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

STEVENS ST.
CLARK ST.
FRISCO ST.
BNSF RAILWAY
HWY. 63B (NETTLETON AVE.)
GRIFFIN ST.
THORN ST.
C.L. STEVENS ST.
C.L. CLARK ST.
C.L. FRISCO ST.
C.L. WATT ST.
C.L. HWY. 63B/NETTLETON AVE.
STA. 70+03.23 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.
STA. 70+17.21 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.
STA. 16+98.11 C.L. FRISCO ST. = STA. 9+30.88 C.L. WATT ST.
STA. 76+57.90 NETTLETON AVE. = STA. 5+00.00 CLARK ST.
STA. 79+16.06 NETTLETON AVE. = STA. 6+20.42 WATT ST.
STA. 83+60.00 END CONSTRUCTION
100 YR. FLOODPLAIN LIMIT
EXISTING R/W
PROP. R/W
PROPOSED R/W
T.C.E.

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE IB

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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.		100824	41	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12104
SHAHRIAR AZAD
2018-05-29

N

IRBY ST.

HENRY ST.

ARCH ST.

CONVEYOR ST.

HWY. 18 (HIGHLAND DR.)

HWY. 63B (NETTLETON AVE.)

FRISCO ST.

CLARK ST.

WATT ST.

BNSF RAILWAY

EXISTING R/W

PROPOSED R/W

EXIST. R/W PROPOSED R/W

PROP. R/W

T.C.E.

EXIST. R/W

C.L. IRBY ST.

C.L. FRISCO ST.

C.L. HWY. 18

C.L. WATT ST.

100 YR. FLOODPLAIN LIMIT

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 WATT ST.

STA. 65+87.15 NETTLETON AVE. =
STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

18" X 40' TEMP. CULVERT

18" X 12' TEMP. CULVERT

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE 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.		100824	42	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 12404
2018-05-29

N

STEVENS ST.

CLARK ST.

FRISCO ST.

BNSF RAILWAY

HWY. 63B (NETTLETON AVE.)

GRIFFIN ST.

THORN ST.

EXISTING R/W

PROP. R/W

PROPOSED R/W

T.C.E.

100 YR. FLOODPLAIN LIMIT

C.L. HWY. 63B/NETTLETON AVE.

STA. 70+03.23 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.

STA. 70+17.21 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.

C.L. STEVENS ST.

C.L. FRISCO ST.

STA. 16+98.11 C.L. FRISCO ST. = STA. 9+30.88 C.L. WATT ST.

C.L. WATT ST.

C.L. CLARK ST.

STA. 76+57.90 NETTLETON AVE. = STA. 5+00.00 CLARK ST.

STA. 79+16.06 NETTLETON AVE. = STA. 6+20.42 WATT ST.

STA. 83+60.00 END CONSTRUCTION

5 INLET SHALL REMAIN OUT OF SERVICE, BY A METHOD APPROVED BY THE ENGINEER, UNTIL THE CURB AND GUTTER IS CONSTRUCTED. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 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.		100824	43	346

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 18404
2019-05-29

[1] INLET SHALL REMAIN OUT OF SERVICE, BY A METHOD APPROVED BY THE ENGINEER, UNTIL THE DOWNSTREAM SIDE OF THE DRAINAGE SYSTEM IS CONSTRUCTED. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

N

ARCH ST.
HENRY ST.
IRBY ST.
CONVEYOR ST.
HWY. 18 (HIGHLAND DR.)
HWY. 63B (NETTLETON AVE.)
FRISCO ST.
CLARK ST.
WATT ST.
BNSF RAILWAY
100 YR. FLOODPLAIN LIMIT
C.L. IRBY ST.
C.L. FRISCO ST.
C.L. HWY. 18
C.L. WATT ST.
EXISTING R/W
PROPOSED R/W
EXIST. R/W PROPOSED R/W
PROP. R/W
T.C.E.

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 WATT ST.

STA. 65+87.65 NETTLETON AVE. =
STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

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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.		100824	44	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

N

FRISCO ST.
CLARK ST.
STEVENS ST.
BNSF RAILWAY
HWY. 63B (NETTLETON AVE.)
GRIFFIN ST.
THORN ST.
EXISTING R/W
PROP. R/W
PROPOSED R/W
T.C.E.
100 YR. FLOODPLAIN LIMIT
C.L. FRISCO ST.
C.L. CLARK ST.
C.L. STEVENS ST.
C.L. WATT ST.
C.L. HWY. 63B/NETTLETON AVE.
STA. 70+03.23 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.
STA. 70+17.21 C.L. HWY. 63B (NETTLETON AVE.) = STA. 5+00.00 C.L. STEVENS ST.
STA. 16+98.11 C.L. FRISCO ST. = STA. 9+30.88 C.L. WATT ST.
STA. 76+57.90 NETTLETON AVE. = STA. 5+00.00 CLARK ST.
STA. 79+16.06 NETTLETON AVE. = STA. 6+20.42 WATT ST.
STA. 83+60.00 END CONSTRUCTION
E-11
E-5
80
75
84

EROSION CONTROL LEGEND

E-5	SAND BAG DITCH CHECKS
E-11	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 3

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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.		100824	44A	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

N

[1] INLET SHALL REMAIN OUT OF SERVICE, BY A METHOD APPROVED BY THE ENGINEER, UNTIL THE DOWNSTREAM SIDE OF THE DRAINAGE SYSTEM IS CONSTRUCTED. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

[2] PROVIDE TEMPORARY CONNECTION BETWEEN EXISTING AND PROPOSED DRAINAGE SYSTEMS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12451
SHAHRIAR SHAHZAD
2018-09-07

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

C.L. CAIN ST.

EXISTING R/W

PROPOSED R/W

T.C.E.

PROP. R/W

18" X 6' TEMP. CULVERT

STA. 91+20.11 C.L. HWY. 18=
STA. 10+00.00 C.L CAIN ST.

STA. 91+00.08 C.L. HWY. 18=
STA. 20+00.00 C.L CAIN ST.

C.L. HWY. 18

C.L. HWY. 63B/NETTLETON AVE.

BNSF RAILWAY

NETTLETON AVE.

IRBY ST.

C.L. HWY. 18 CONNECTOR

C.L. BRYAN ST.

BRYAN ST.

100 YR. FLOODPLAIN LIMIT

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 3A

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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.		100824	44B	346

(2) TEMPORARY EROSION CONTROL DETAILS

N

1. JUNCTION BOX SHALL BE COVERED, BY A METHOD APPROVED BY THE ENGINEER, UNTIL THE DOWNSTREAM SIDE OF THE DRAINAGE SYSTEM IS CONSTRUCTED. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)
2. PROVIDE TEMPORARY CONNECTION BETWEEN EXISTING AND PROPOSED DRAINAGE SYSTEMS.
3. CONSTRUCT THE CROSS DRAINAGE SYSTEM ACCORDING TO STANDARD DRAWING TC-2 DETAIL 'E'. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)
4. CONSTRUCT THE DRAINAGE SYSTEM WITHOUT INLETS AND JUNCTION BOXES. PROVIDE TEMPORARY CONNECTION THROUGH INLET AND JUNCTION BOX LOCATIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNON RIAD
2018-09-04

CAIN ST.
EXISTING R/W
25'
C.L. CAIN ST.
T.C.E.
PROP. R/W
60
C.L. HWY. 63B/NETTLETON AVE.
BNSF RAILWAY
NETTLETON AVE.

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

24" X 6' TEMP. CULVERT
24" X 6' TEMP. CULVERT
24" X 30' TEMP. CULVERT
PROPOSED R/W

STA. 91+20.11 C.L. HWY. 18=
STA. 10+00.00 C.L CAIN ST.
C.L. HWY. 18
PROP. R/W.
EXISTING R/W
85
90
95
65
20
10
HWY. 18 (HIGHLAND DR.)
STA. 91+00.08 C.L. HWY. 18=
STA 20+00.00 C.L CAIN ST.
C.L. HWY. 18 CONNECTOR
C.L. BRYAN ST.
BRYAN ST.
100 YR. FLOODPLAIN LIMIT

REVISIONS

DATE	REVISION

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION
	100 YR. FLOODPLAIN LIMIT

TEMPORARY EROSION CONTROL DETAILS
STAGE 3B

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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.		100824	45	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
12404
SHAWN A. AKIN
2018-09-04

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

BNSF RAILWAY

NETTLETON AVE.

IRBY ST.

FRISCO ST.

BRYAN ST.

C.L. CAIN ST.
C.L. HWY. 18
C.L. HWY. 63B/NETTLETON AVE.
C.L. IRBY ST.
C.L. HWY. 18 CONNECTOR
C.L. BRYAN ST.
C.L. FRISCO ST.

EXISTING R/W
PROPOSED R/W
PROP. R/W
T.C.E.
EXIST. R/W

STA. 91+20.11 C.L. HWY. 18 = STA 10+00.00 C.L. CAIN ST.
STA. 91+00.08 C.L. HWY. 18 = STA 20+00.00 C.L. CAIN ST.
STA. 65+87.15 NETTLETON AVE. = STA. 99+73.77 HWY. 18
STA. 66+54.44 NETTLETON AVE. = STA. 5+00.00 FRISCO ST.

100 YR. FLOODPLAIN LIMIT

[3] CONSTRUCT THE CROSS DRAINAGE SYSTEM ACCORDING TO STANDARD DRAWING TC-2 DETAIL 'E'. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 4A

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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.		100824	46	346
				(2)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19404
SHAWN RAY AZLIN
2018-05-29

N

IRBY ST.

HENRY ST.

ARCH ST.

CONVEYOR ST.

HWY. 18 (HIGHLAND DR.)

HWY. 63B (NETTLETON AVE.)

FRISCO ST.

CLARK ST.

WATT ST.

BNSF RAILWAY

STA. 8+86.65 ARCH ST. = STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) = STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) = STA. 17+62.43 WATT ST.

STA. 65+87.15 NETTLETON AVE. = STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. = STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

C.L. IRBY ST.
C.L. FRISCO ST.
C.L. HWY. 18
C.L. WATT ST.

EXISTING R/W
EXIST. R/W
PROPOSED R/W
PROP. R/W
T.C.E.
100 YR. FLOODPLAIN LIMIT

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE 4A

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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.		100824	47	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12405
STANLEY R. LAD
2018-09-04

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

BNSF RAILWAY

NETTLETON AVE.

IRBY ST.

BRYAN ST.

FRISCO ST.

C.L. HWY. 63B/NETTLETON AVE.

STA. 91+20.11 C.L. HWY. 18 = STA 10+00.00 C.L. CAIN ST.

STA. 91+00.08 C.L. HWY. 18 = STA 20+00.00 C.L. CAIN ST.

STA. 66+87.15 NETTLETON AVE. = STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. = STA. 5+00.00 FRISCO ST.

C.L. HWY. 18 CONNECTOR

C.L. HWY. 18

C.L. CAIN ST.

C.L. BRYAN ST.

C.L. IRBY ST.

C.L. FRISCO ST.

18" X 25' TEMP. CULVERT

PROPOSED R/W

EXISTING R/W

EXIST. R/W

PROP. R/W

T.C.E.

100 YR. FLOODPLAIN LIMIT

[2] PROVIDE TEMPORARY CONNECTION BETWEEN EXISTING AND PROPOSED DRAINAGE SYSTEMS.

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
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.		100824	48	346

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANE A. AD
2018-05-29

N

ARCH ST.

HENRY ST.

IRBY ST.

EXISTING R/W

EXIST. R/W PROPOSED R/W

C.L. IRBY ST.

PROP. R/W

PROPOSED R/W

T.C.E.

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 WATT ST.

CONVEYOR ST.

HWY. 18 (HIGHLAND DR.)

C.L. HWY. 18

STA. 65+87.15 NETTLETON AVE. =
STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.

HWY. 63B (NETTLETON AVE.)

C.L. FRISCO ST.

FRISCO ST.

BNSF RAILWAY

CLARK ST.

100 YR. FLOODPLAIN LIMIT

C.L. WATT ST.

WATT ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
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.		100824	49	346

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AHMAD
2018-09-04

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

CAIN ST.

BNSF RAILWAY

NETTLETON AVE.

IRBY ST.

FRISCO ST.

BRYAN ST.

C.L. HWY. 63B/NETTLETON AVE.

C.L. CAIN ST.

C.L. IRBY ST.

C.L. HWY. 18

C.L. HWY. 18 CONNECTOR

C.L. BRYAN ST.

C.L. FRISCO ST.

EXISTING R/W

PROPOSED R/W

PROP. R/W

T.C.E.

EXIST. R/W

100 YR. FLOODPLAIN LIMIT

3 CONSTRUCT THE CROSS DRAINAGE SYSTEM ACCORDING TO STANDARD DRAWING TC-2 DETAIL 'E'. (SUBSIDIARY TO ITEM 603 MAINTENANCE OF TRAFFIC.)

STA. 91+20.11 C.L. HWY. 18 = STA 10+00.00 C.L. CAIN ST.

STA. 91+00.08 C.L. HWY. 18 = STA 20+00.00 C.L. CAIN ST.

STA. 65+87.15 NETTLETON AVE. = STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. = STA. 5+00.00 FRISCO ST.

EROSION CONTROL LEGEND

E-5	SAND BAG DITCH CHECKS
E-11	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE 5

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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.		100824	50	346

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRAM AZAD
No. 12404
2018-05-29

N

IRBY ST.

HENRY ST.

ARCH ST.

CONVEYOR ST.

HWY. 18 (HIGHLAND DR.)

HWY. 63B (NETTLETON AVE.)

FRISCO ST.

CLARK ST.

WATT ST.

BNSF RAILWAY

EXISTING R/W

PROPOSED R/W

EXIST. R/W PROPOSED R/W

PROP. R/W

T.C.E.

C.L. IRBY ST.

C.L. HWY. 18

C.L. FRISCO ST.

C.L. WATT ST.

100 YR. FLOODPLAIN LIMIT

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.

STA. 105+00.00 HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 ARCH ST.

STA. 110+11.28 HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 WATT ST.

STA. 65+87.15 NETTLETON AVE. =
STA. 99+73.77 HWY. 18

STA. 66+54.44 NETTLETON AVE. =
STA. 5+00.00 FRISCO ST.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

EROSION CONTROL LEGEND

(E-5)	SAND BAG DITCH CHECKS
(E-11)	SILT FENCE
	TRIANGULAR SILT DIKE
	WATER FLOW DIRECTION

TEMPORARY EROSION CONTROL DETAILS
STAGE 5

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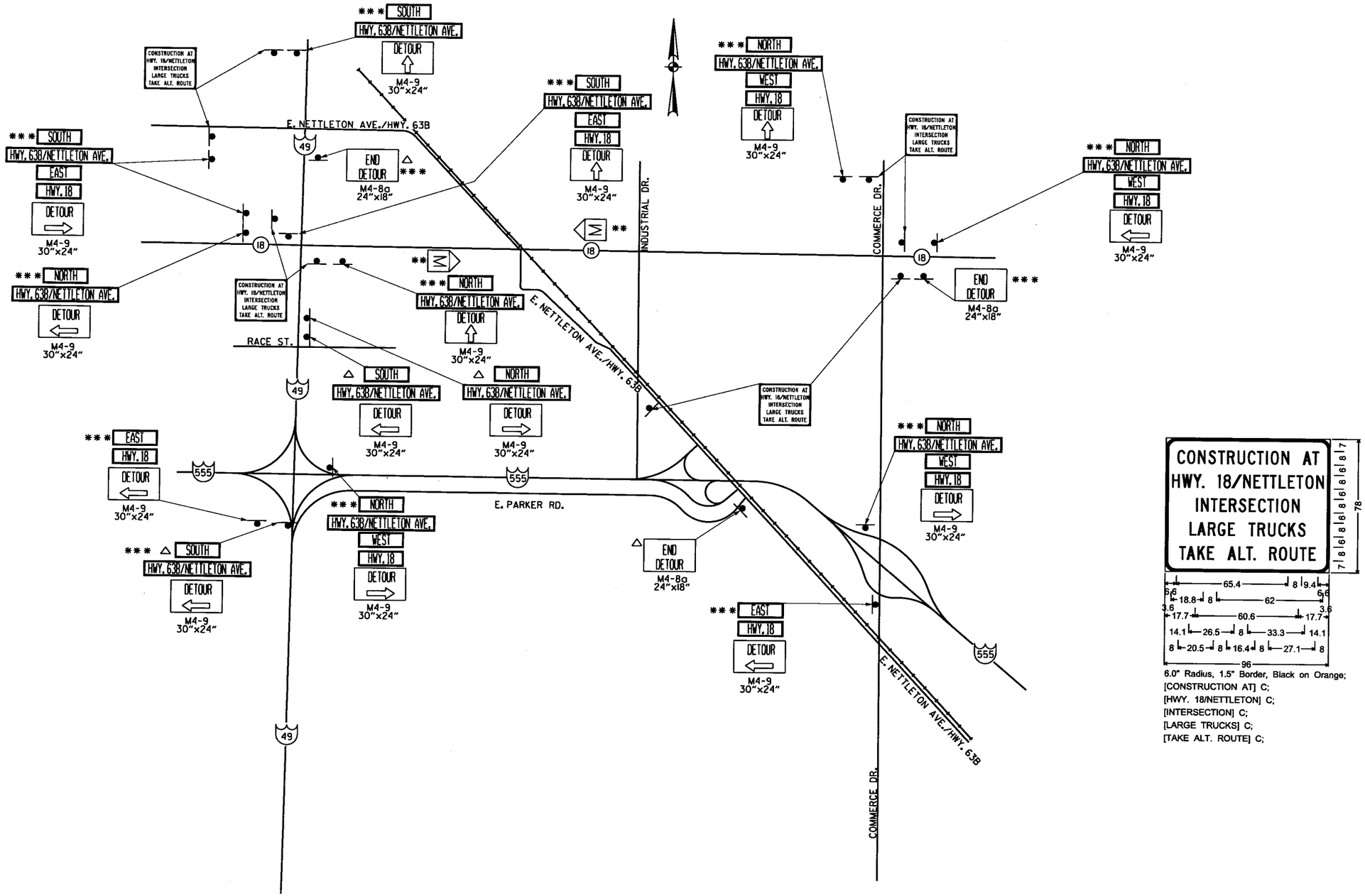
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	51	346
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHIRIAR AZAD
2018-05-30



** CONTRACTOR SHALL PLACE PORTABLE CHANGEABLE MESSAGE SIGN 2 WEEKS PRIOR TO DETOURING HWY. 18 AND 2 WEEKS PRIOR TO REOPENING HWY. 18.

△ CONTRACTOR SHALL PLACE THESE SIGNS DURING STAGE 1 AND 2.

*** CONTRACTOR SHALL PLACE THESE SIGNS DURING STAGE 4 AND 5.

6.0" Radius, 1.5" Border, Black on Orange;
[CONSTRUCTION AT] C;
[HWY. 18/NETTLETON] C;
[INTERSECTION] C;
[LARGE TRUCKS] C;
[TAKE ALT. ROUTE] C;

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE WARNING

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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.		100824	52	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11404
SHAHRIAR AZAD
2018-06-06

HWY. 49/RED WOLF BLVD.

Job 100824
Start Date Mo Year
Est Completion Mo Year
IDRIVEARKANSAS.COM
CONSTRUCTION PROJECT INFORMATION SIGN
96"x48"

ROAD WORK 500 ft W20-1 48"x48"
ROAD WORK 1000 ft W20-1 48"x48"
ROAD WORK 500 ft W20-1 48"x48"
500' 500' 500'
END ROAD WORK G20-2 48"x24"
LIMITS OF WORK AREA @ STA 89+50
HWY. 18
ROAD WORK 500 FT W20-1 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
ROAD WORK 500 FT W20-1 48"x48"

CAIN ST.
NETTLETON AVE./HWY. 63B
ROAD WORK AHEAD W20-1 48"x48"
500' 500' 500'
END ROAD WORK G20-2 48"x24"
HENRY ST.
ROAD WORK AHEAD W20-1 48"x48"
IRBY ST.
END ROAD WORK G20-2 48"x24"
ARCH ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
LIMITS OF WORK AREA @ STA 113+00
HWY. 18
ROAD WORK 500 FT W20-1 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
ROAD WORK 500 FT W20-1 48"x48"
500' 500' 500'
END ROAD WORK G20-2 48"x24"
Job 100824
Start Date Mo Year
Est Completion Mo Year
IDRIVEARKANSAS.COM
CONSTRUCTION PROJECT INFORMATION SIGN
96"x48"

END ROAD WORK G20-2 48"x24"
CAIN ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
STEVENS ST.
ROAD WORK AHEAD W20-1 48"x48"
CLARK ST.
END ROAD WORK G20-2 48"x24"
BNSF
FRISCO ST.
WAITS ST.
UPRR
END ROAD WORK G20-2 48"x24"
LIMITS OF WORK AREA @ STA 83+00
GRIFFIN ST.
DEWEY ST.
SCHOOL ST.
SCHOOL ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
ROAD WORK AHEAD W20-1 48"x48"
ROAD WORK AHEAD W20-1 48"x48"
UNA ST.
ROAD WORK 500 FT W20-1 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
ROAD WORK 500 FT W20-1 48"x48"
500' 500' 500'
NETTLETON AVE./HWY. 63B
CENTRAL ST.
WILLOW ST.
BOYDSTON ST.
COURT ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
THORN ST.
CLARK ST.
MANILA ST.

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1-3 ADVANCE WARNING SIGNS

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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.		100824	53	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAWHIAR LEAD
2018-06-06

HWY. 49 / RED WOLF BLVD.
ROAD WORK 500 FT W20-1 48"x48"
RIGHT LANE CLOSED 1500 FT W20-5 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
W4-2 48"x48"
500' 500' 500' 500' 1000' 500'
END ROAD WORK G20-2 48"x24"
LIMITS OF TAPER @ STA 83+00
HWY. 18
Job 100824 Start Date Mo Year Est Completion Mo Year IDRIVEARKANSAS.COM
CONSTRUCTION PROJECT INFORMATION SIGN 96"x48"
** CONTRACTOR SHALL PLACE PORTABLE CHANGEABLE MESSAGE SIGN 2 WEEKS PRIOR TO DETOURING HWY. 18 AND 2 WEEKS PRIOR TO REOPENING HWY. 18.
ROAD WORK 1500 FT W20-1 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
ROAD WORK 500 FT W20-1 48"x48"
500' 500' 500'
END ROAD WORK G20-2 48"x24"
LIMITS OF WORK AREA @ STA 61+20
CAIN ST.
ROAD WORK AHEAD W20-1 48"x48"
NETTLETON AVE./HWY. 63B
HENRY ST.
IRBY ST.
ARCH ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
END ROAD WORK G20-2 48"x24"
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
CAIN ST.
STEVENS ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
CLARK ST.
BNSF
FRISCO ST.
WATT ST.
UPRR
GRIFFIN ST.
DEWEY ST.
SCHOOL ST.
SCHOOL ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
ROAD WORK AHEAD W20-1 48"x48"
ROAD WORK AHEAD W20-1 48"x48"
UNA ST.
THORN ST.
CLARK ST.
CENTRAL ST.
WILLOW ST.
ROAD WORK AHEAD W20-1 48"x48"
END ROAD WORK G20-2 48"x24"
BOYDSTON ST.
COURT ST.
NETTLETON AVE./HWY. 63B
MANILA ST.
LIMITS OF TAPER
HWY. 18
3860'
500'
END ROAD WORK G20-2 48"x24"
SPEED LIMIT 30 R2-1 36"x48"
REDUCED SPEED AHEAD. R2-5A 36"x48"
W4-2 48"x48"
RIGHT TWO LANES CLOSED 1/2 MILE W20-5 48"x48"
ROAD WORK 1 MILE W20-1 48"x48"
440' 440' 440' 1320' 2640' 500'
Job 100824 Start Date Mo Year Est Completion Mo Year IDRIVEARKANSAS.COM
CONSTRUCTION PROJECT INFORMATION SIGN 96"x48"
ROAD WORK 500 FT W20-1 48"x48"
ROAD WORK 1000 FT W20-1 48"x48"
ROAD WORK 1500 FT W20-1 48"x48"
500' 500' 500'

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4-5 ADVANCE WARNING SIGNS

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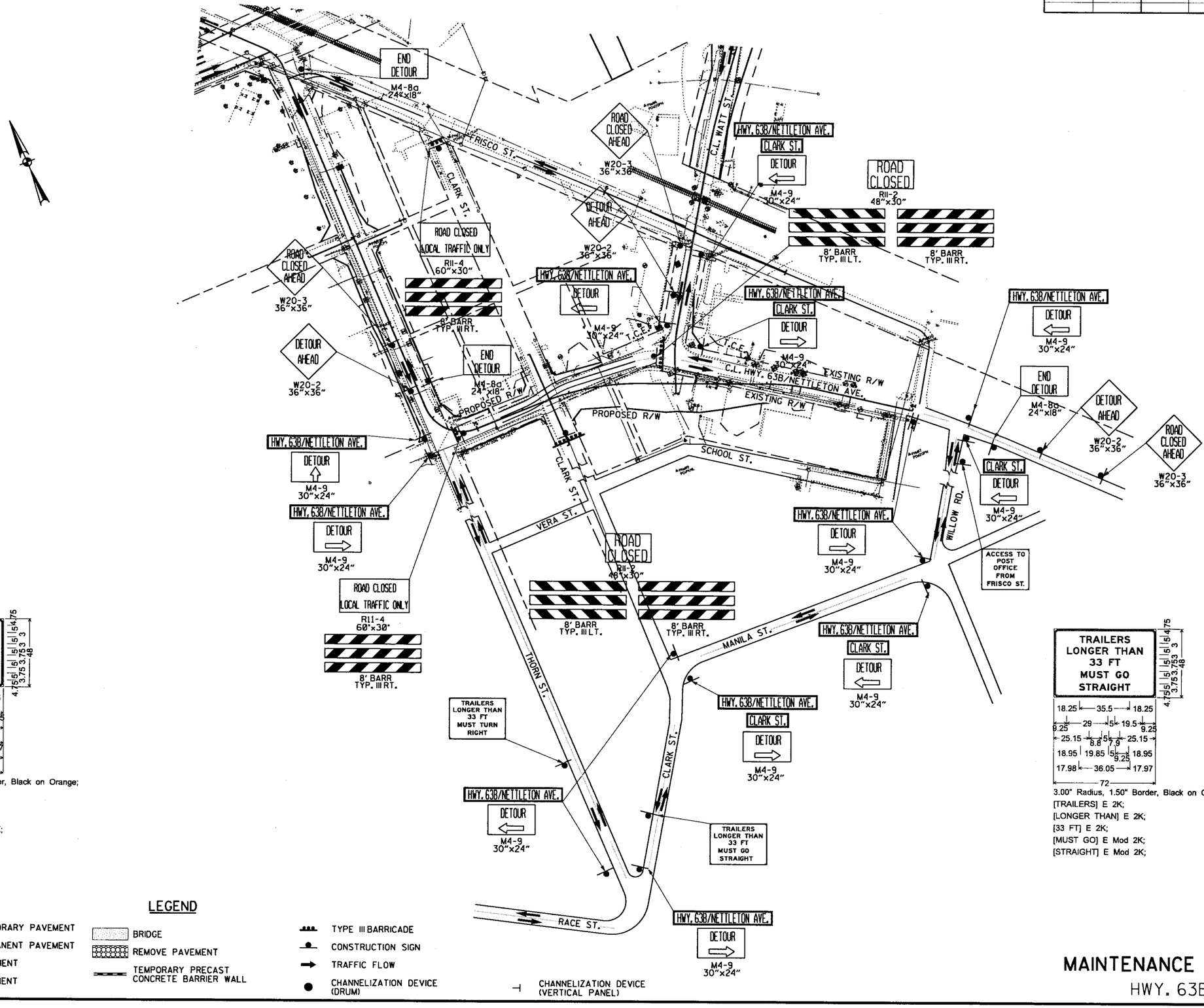
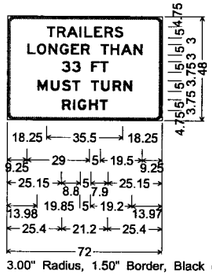
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	54	346

(2) MAINTENANCE OF TRAFFIC DETAILS

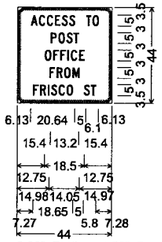
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29





3.00" Radius, 1.50" Border, Black on Orange;
[TRAILERS] E 2K;
[LONGER THAN] E 2K;
[33 FT] E 2K;
[MUST TURN] E Mod 2K;
[RIGHT] E Mod 2K;

3.00" Radius, 1.50" Border, Black on Orange;
[TRAILERS] E 2K;
[LONGER THAN] E 2K;
[33 FT] E 2K;
[MUST GO] E Mod 2K;
[STRAIGHT] E Mod 2K;



3.00" Radius, 1.50" Border, Black on Orange;
[ACCESS TO] C 2K;
[POST] C 2K;
[OFFICE] C 2K;
[FROM] C 2K;
[FRISCO ST] C 2K;

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS

HWY. 63B DETOUR - STAGE I

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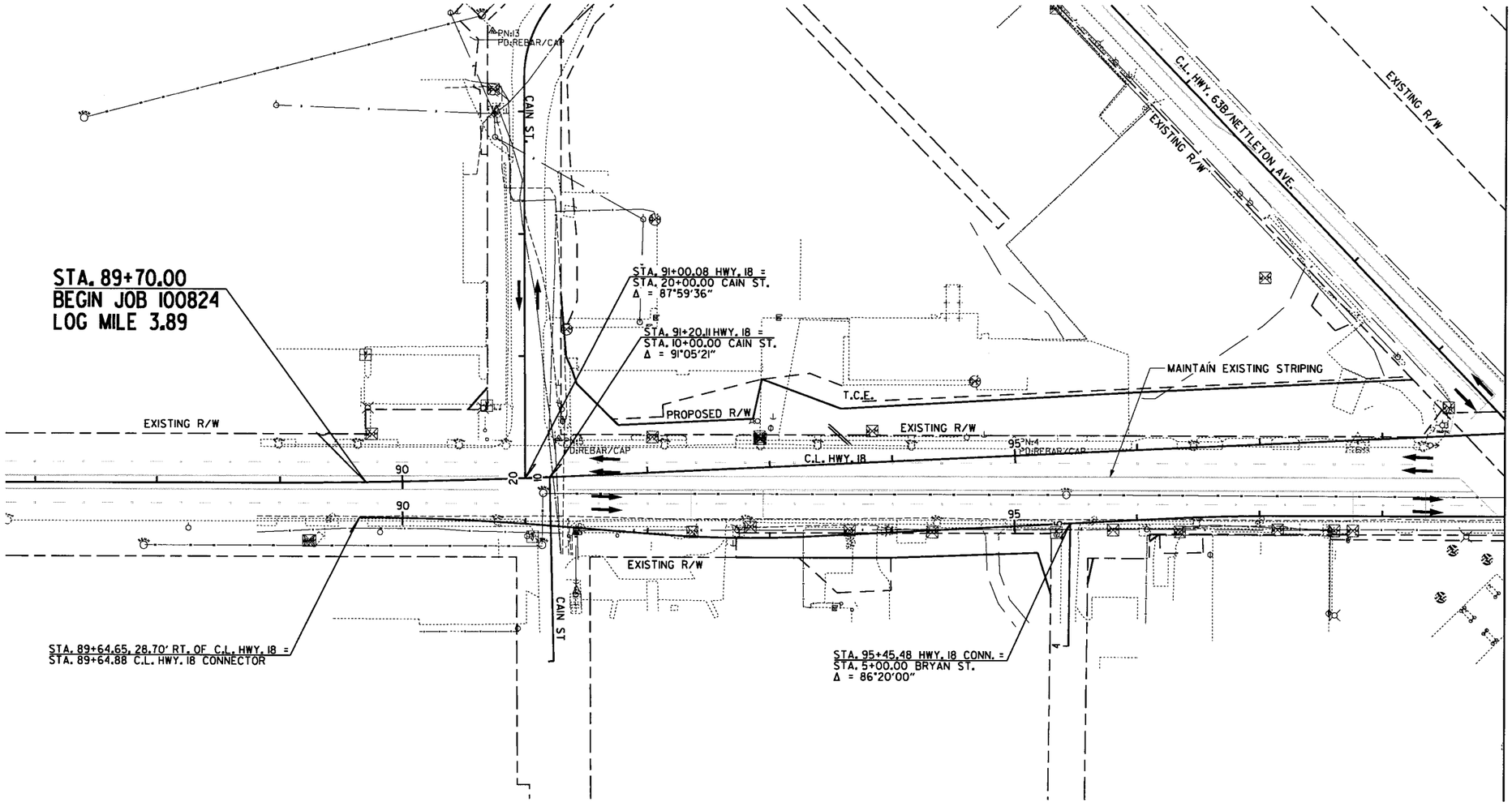
				6	ARK.			
				JOB NO.		100824	55	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHANNAHAN, REID
2018-09-04



STAGE IA

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT LEFT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE IA

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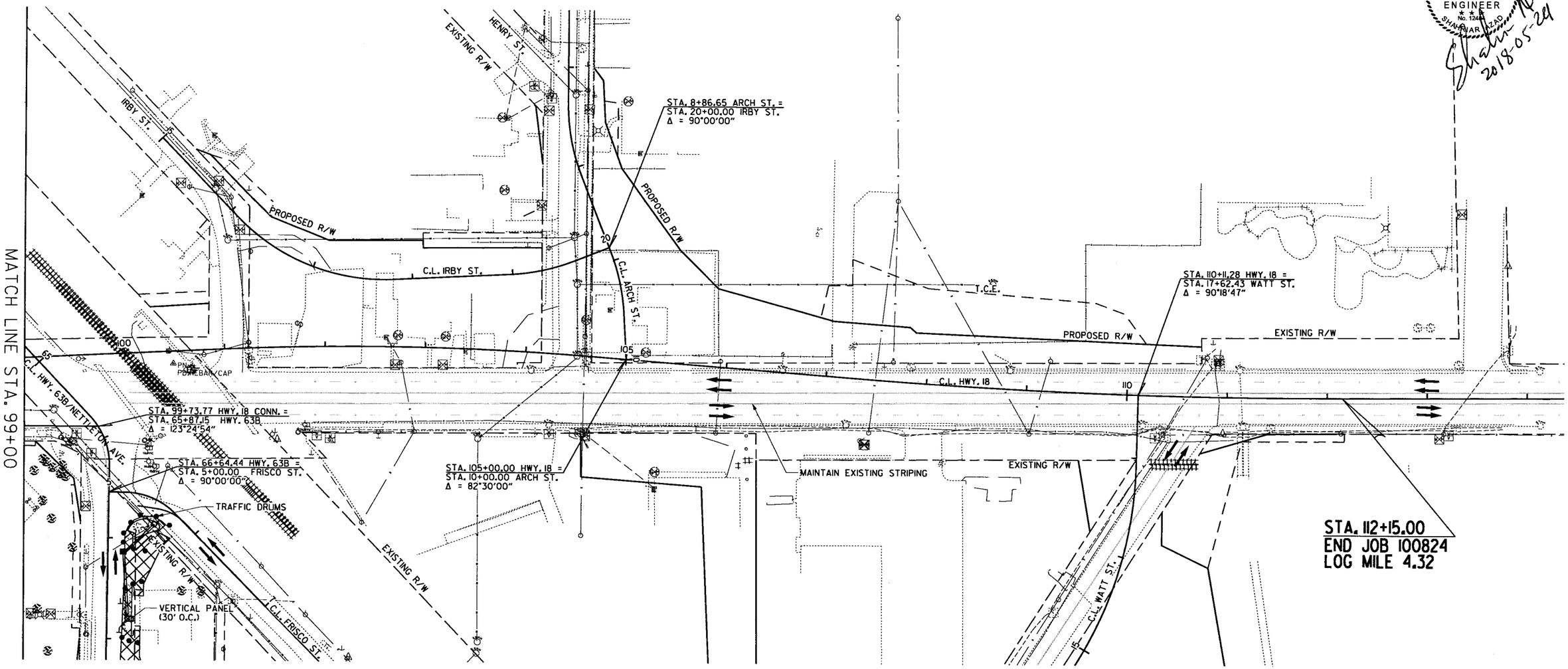
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	56	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12400
SHAHRIAR AZAD
2018-05-24

MATCH LINE STA. 99+00



STAGE IA

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT LEFT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE IA

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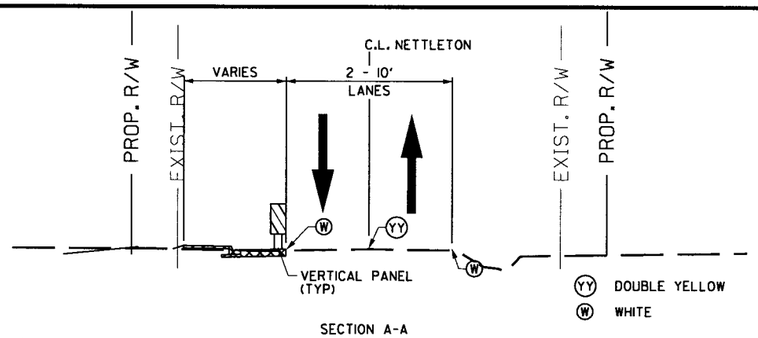
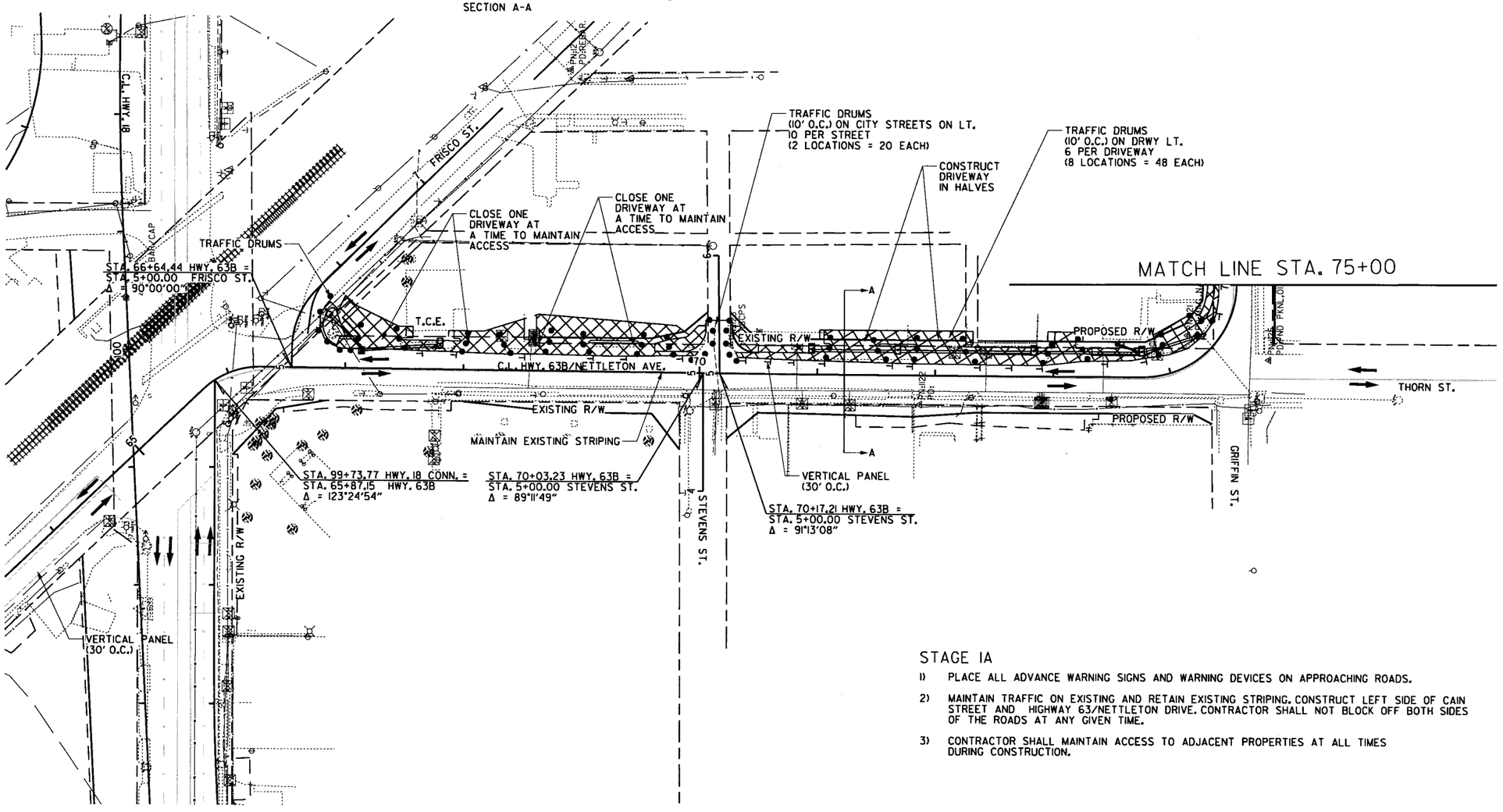
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	57	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11404
STEPHEN A. ZAPP
2018-09-04



SECTION A-A



STAGE IA

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT LEFT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 63B - STAGE IA

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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.		100824	58	346
				②	MAINTENANCE OF TRAFFIC DETAILS			

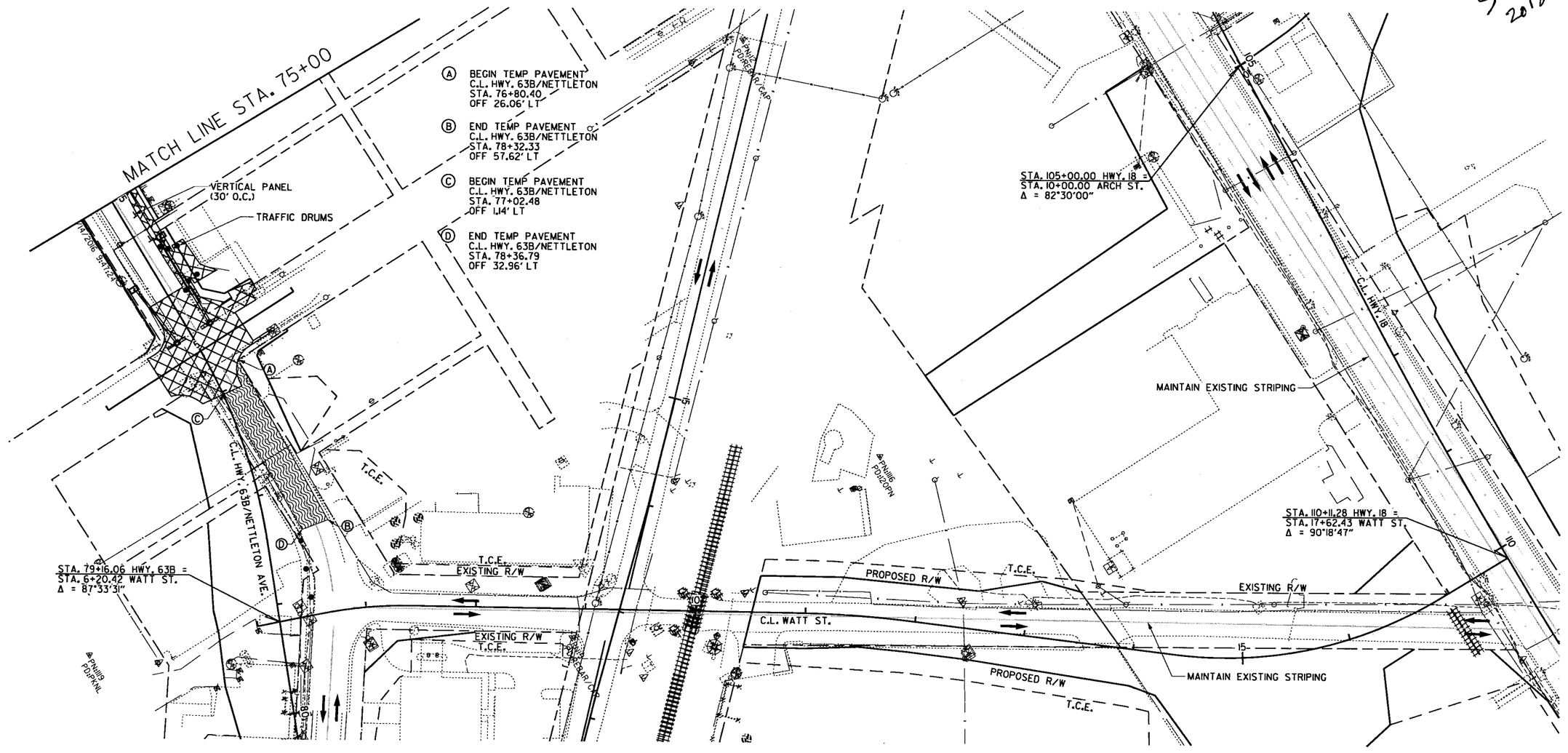
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12444
SYAMRIA AZAD
2018-05-29

STAGE IA

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT LEFT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.



LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. - STAGE IA

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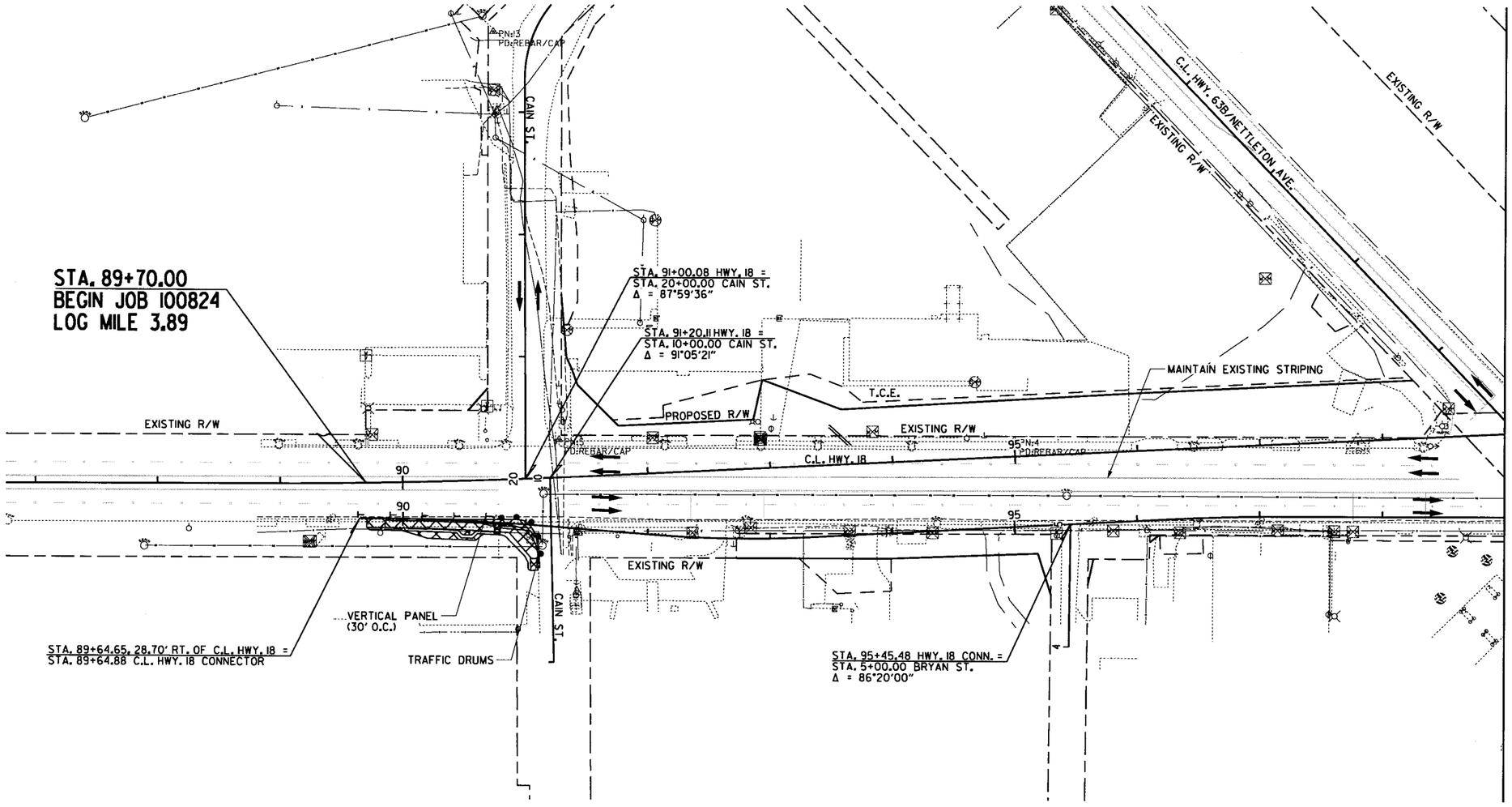
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	59	346
				② MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 12406
2018-09-04



STAGE IB

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT RIGHT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) AFTER CONSTRUCTION OF HIGHWAY 63B AND CLARK STREET INTERSECTION SHIFT TRAFFIC AND RESTRIPE AS SHOWN IN PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE IB

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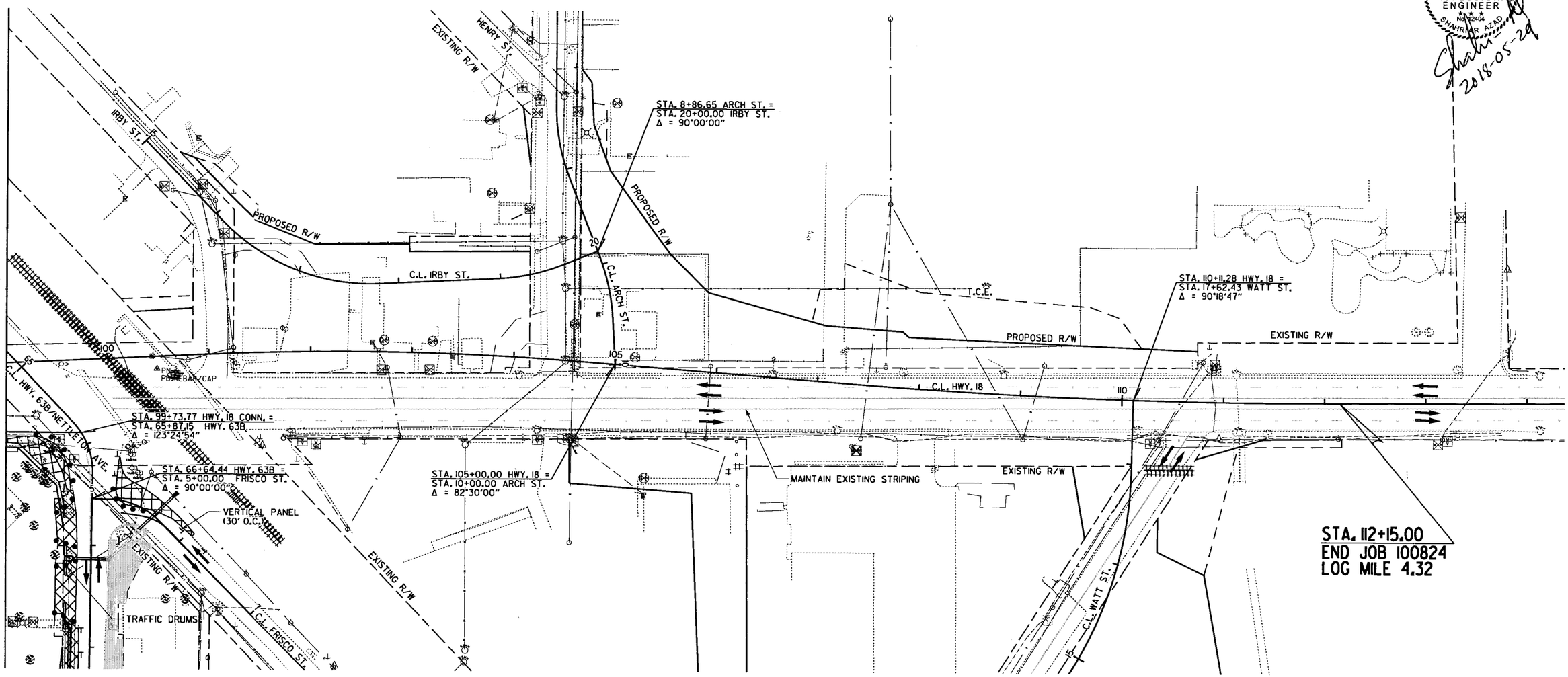
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	60	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 23404
2018-05-29

MATCH LINE STA. 99+00



STAGE IB

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT RIGHT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) AFTER CONSTRUCTION OF HIGHWAY 63B AND CLARK STREET INTERSECTION SHIFT TRAFFIC AND RESTRIPE AS SHOWN IN PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE IB

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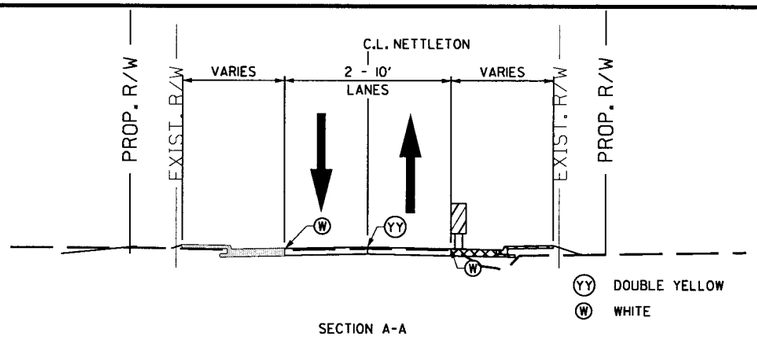
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

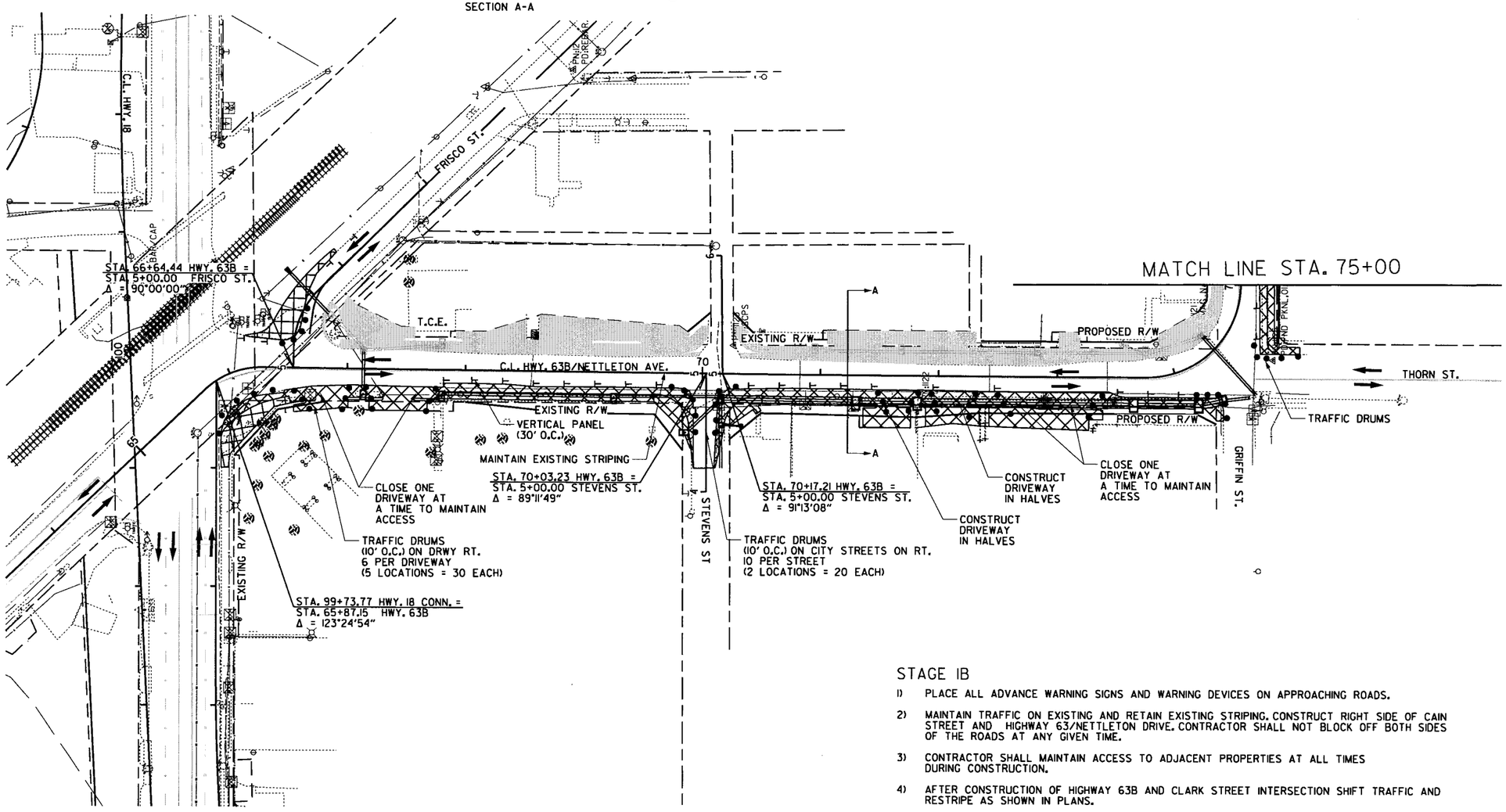
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	61	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHARRIAR NAZAD
2018-09-04



SECTION A-A



STAGE IB

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT RIGHT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) AFTER CONSTRUCTION OF HIGHWAY 63B AND CLARK STREET INTERSECTION SHIFT TRAFFIC AND RESTRIPE AS SHOWN IN PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 63B - STAGE IB

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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.		100824	62	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STAGE IB

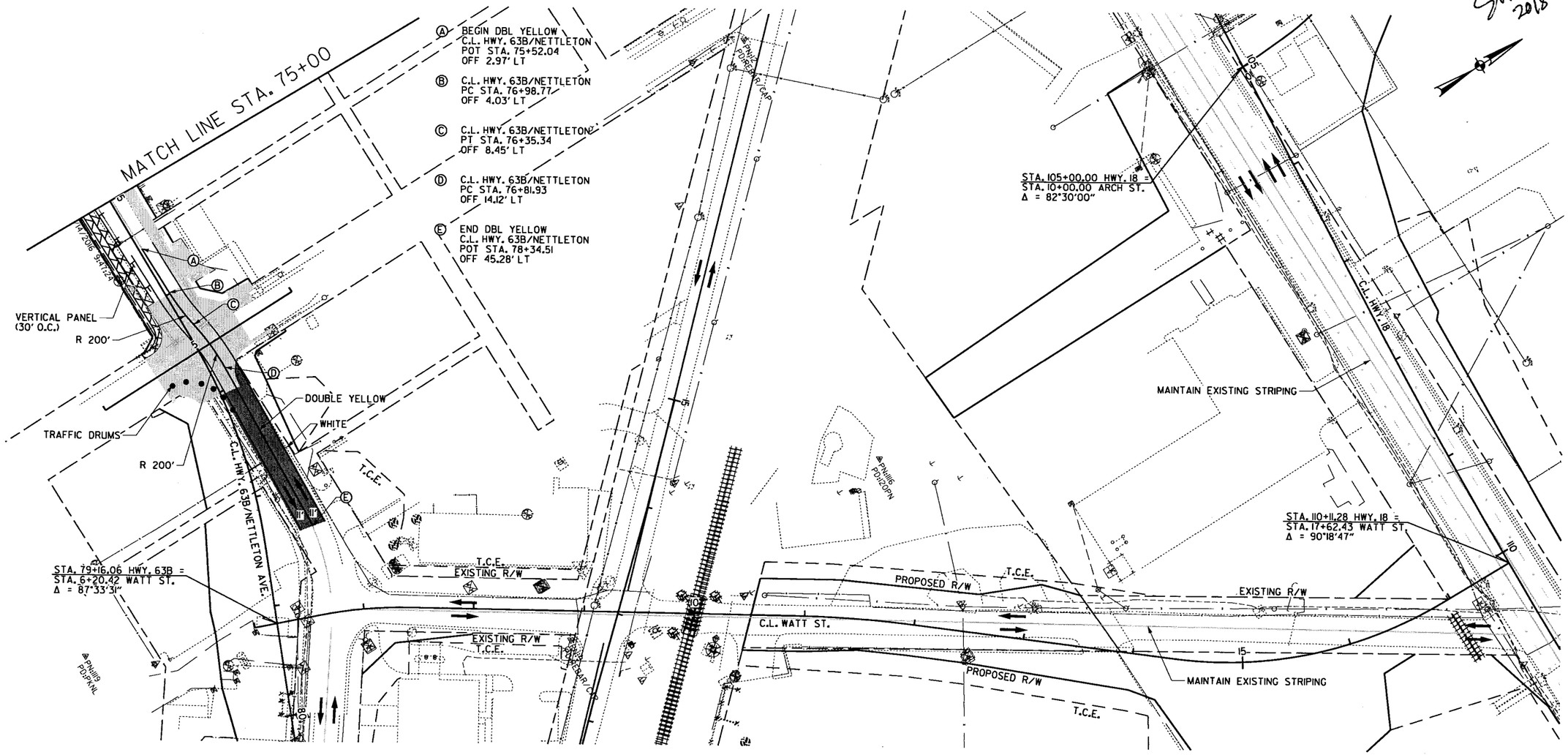
1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT RIGHT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) AFTER CONSTRUCTION OF HIGHWAY 63B AND CLARK STREET INTERSECTION SHIFT TRAFFIC AND RESTRIPE AS SHOWN IN PLANS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 17404
CHRISTOPHER READ
2018-05-29



LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. - STAGE IB

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.		100824	63	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13404
SYLVIA AZAD
2018-05-29

Ⓐ BEGIN TEMP PAVEMENT
C.L. HWY. 63B/NETTLETON
STA. 76+95.57
OFF 27.50' RT

Ⓑ PT TEMP PAVEMENT
C.L. HWY. 63B/NETTLETON
STA. 78+43.15
OFF 27.50' RT

Ⓒ PI TEMP PAVEMENT
C.L. HWY. 63B/NETTLETON
STA. 79+23.14
OFF 27.50' RT

Ⓓ PI TEMP PAVEMENT
C.L. HWY. 63B/NETTLETON
STA. 79+34.64
OFF 27.17' RT

Ⓔ PT END TEMP PAVEMENT
C.L. HWY. 63B/NETTLETON
STA. 79+34.41
OFF 18.17' RT

CLARK ST.

ROAD CLOSED
LOCAL TRAFFIC ONLY
R11-4
60"x30"

8' BARR
TYP. III RT.

HWY. 63B/NETTLETON AVE.
DETOUR
M4-9
30"x24"

C.L. WATT ST.

FRISCO ST.

HWY. 63B/NETTLETON AVE.
DETOUR
M4-9
30"x24"

HWY. 63B/NETTLETON AVE.
DETOUR
M4-9
30"x24"

TRAFFIC DRUMS
(30' O.C.)

T.C.E.

CONSTRUCTION PAVEMENT MARKINGS

VERTICAL PANELS
(30' O.C.)

PROPOSED R/W

TRAFFIC DRUMS
(10' O.C.) ON CITY STREETS
10 PER STREET
(LOCATIONS = 10 EACH)

R 482.7958'

80'

EXISTING R/W

C.L. HWY. 63B/NETTLETON AVE.

HWY. 63B/NETTLETON AVE.
DETOUR
M4-9
30"x24"

ROAD CLOSED
LOCAL TRAFFIC ONLY
R11-2
(48"x30")

PROPOSED R/W

STA. 79+16.06 HWY. 63B
STA. 6+20.42 WATT ST.
Δ = 87°33'31"

ROAD CLOSED
LOCAL TRAFFIC ONLY
R11-4
60"x30"

8' BARR
TYP. III LT.

8' BARR
TYP. III RT.

8' BARR
TYP. III RT.

EXISTING R/W

PN:1119
PD:PKNL

PN:1117
PD:12OPN

CLARK ST.

SCHOOL ST.

MATCH LINE STA. 75+00

14/2016 5:41:24

ACCESS TO BUSINESS ON SOUTH SIDE NETTLETON FROM SCHOOL ST.

ACCESS TO BUSINESS ON SOUTH SIDE NETTLETON FROM SCHOOL ST

11.52 29.3 5 8.65 11.53
7.82 35.95 5 9.4 7.83
10.5 23.8 5 16.2 10.5
12.5 41 12.5
23.15 19.7 23.15
1.35 29.8 5 8.5 11.35
66
54

6.00" Radius, 1.50" Border, Black on Orange;
[ACCESS TO] E 2K;
[BUSINESS ON] E 2K;
[SOUTH SIDE] E 2K;
[NETTLETON] E Mod 2K;
[FROM] E Mod 2K;
[SCHOOL ST] E Mod 2K;

STAGE 2

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

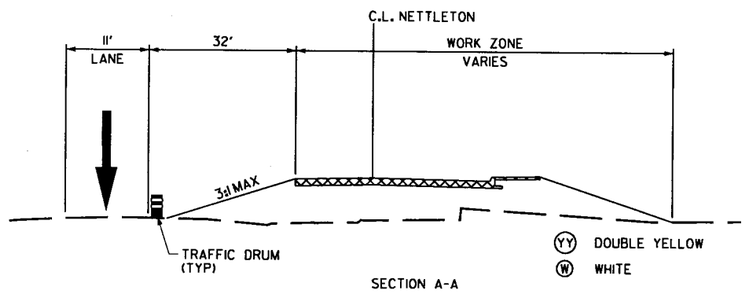
2) CONTRACTOR SHALL MAINTAIN THE TRAFFIC DETOUR SIGNS ALONG THORN STREET, CLARK STREET, MANILA STREET, AND WILLOW STREET FROM STAGE 1 FOR STAGE 2.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) RESTRIPE CAIN STREET. CONSTRUCT HIGHWAY 63B BETWEEN CLARK STREET AND FRISCO STREET. CONSTRUCT DRIVEWAY AND TEMPORARY DRIVEWAY TO MAINTAIN ACCESS TO PROPERTY ALONG WATT STREET.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)



SECTION A-A

MAINTENANCE OF TRAFFIC DETAILS
HWY. 63B - STAGE 2

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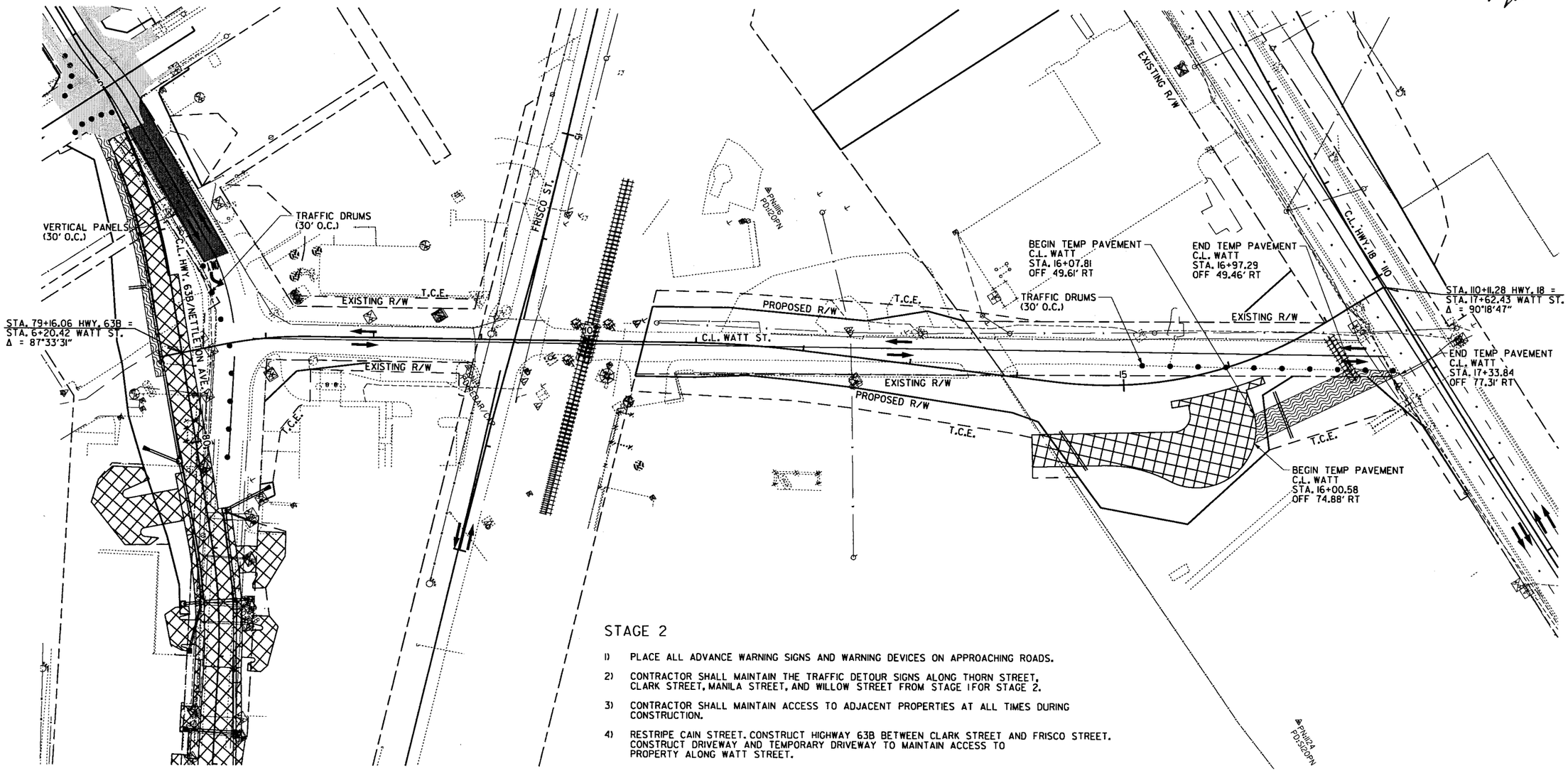
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	64	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19404
SHAHRIAR AZAD
2019-05-29



STAGE 2

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) CONTRACTOR SHALL MAINTAIN THE TRAFFIC DETOUR SIGNS ALONG THORN STREET, CLARK STREET, MANILA STREET, AND WILLOW STREET FROM STAGE 1 FOR STAGE 2.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
4) RESTRIPE CAIN STREET. CONSTRUCT HIGHWAY 63B BETWEEN CLARK STREET AND FRISCO STREET. CONSTRUCT DRIVEWAY AND TEMPORARY DRIVEWAY TO MAINTAIN ACCESS TO PROPERTY ALONG WATT STREET.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. - STAGE 2

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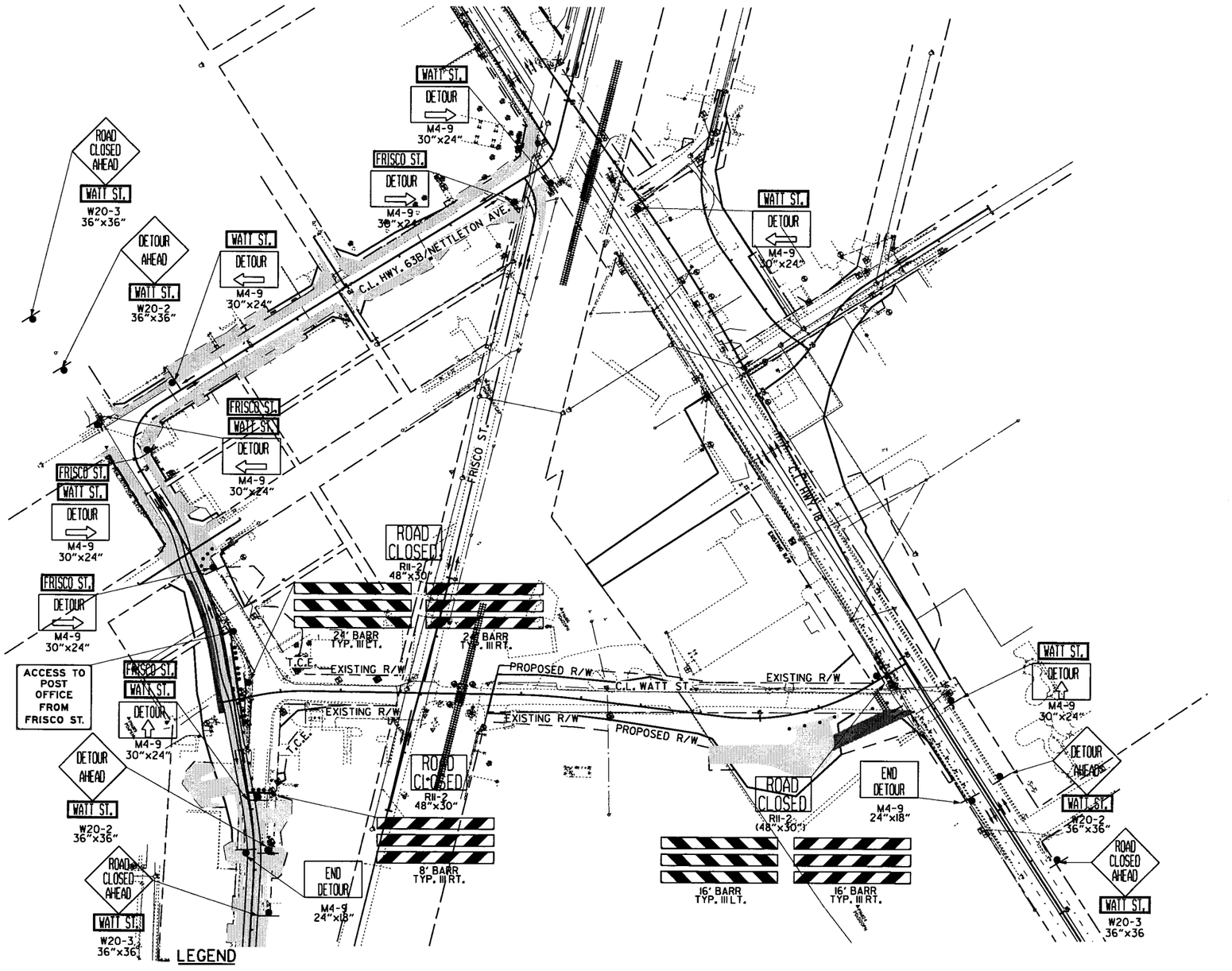
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	65	346
				②	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-09-04



LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. DETOUR - STAGE 3

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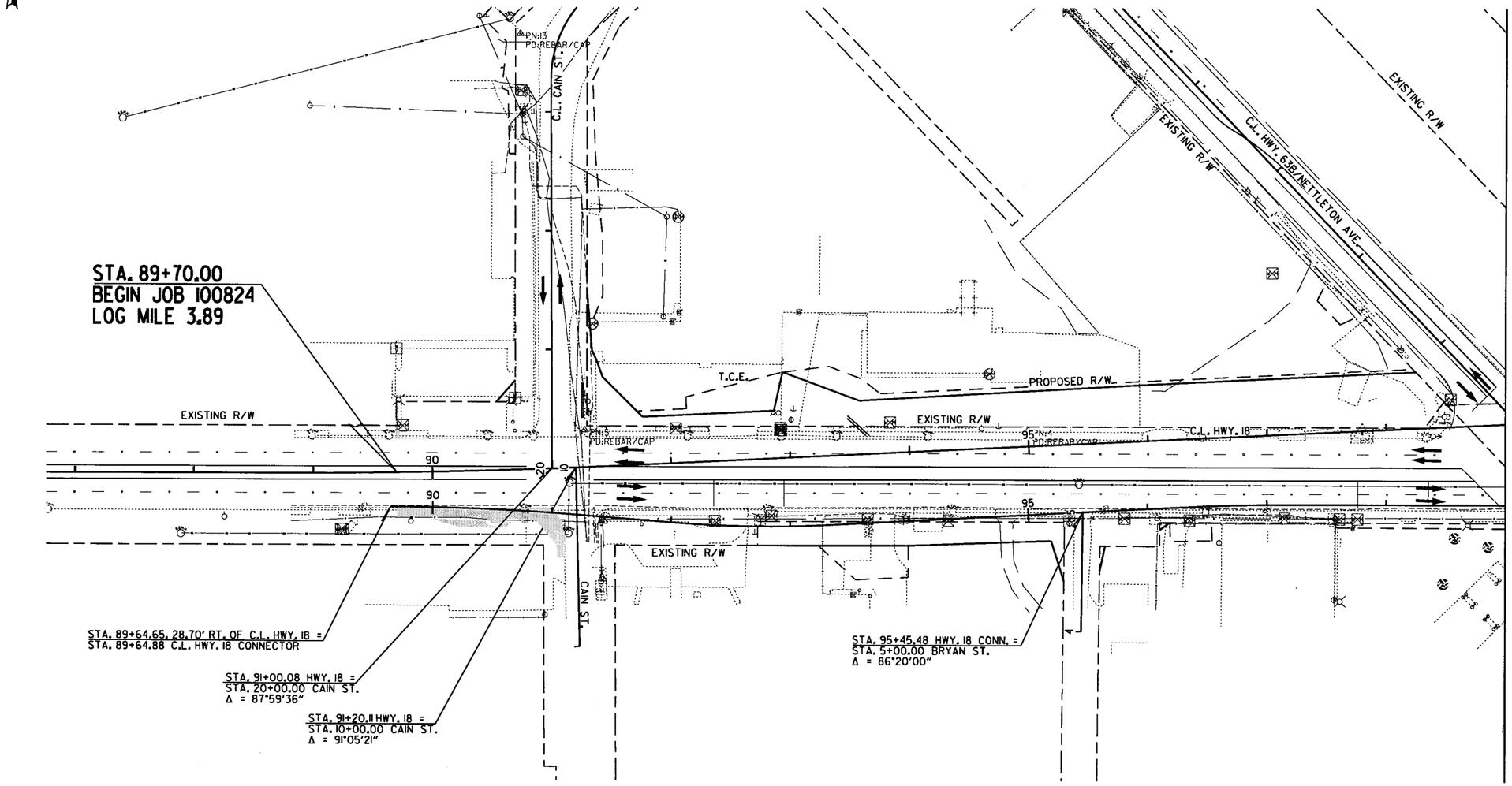
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	66	346
				② MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHANNAN ARAD
No. 12404
2018-09-04



STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

MATCH LINE STA. 99+00

STAGE 3

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING WATT STREET AND CLOSE WATT STREET.
3) CONSTRUCT WATT STREET INCLUDING THE BRIDGE OVER BNSF TRACKS BETWEEN HIGHWAY 63B AND HIGHWAY 18. CONSTRUCT TEMPORARY DRIVEWAY ALONG CAIN STREET AND HIGHWAY 18 TO MAINTAIN ACCESS DURING CONSTRUCTION OF HIGHWAY 18.
4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIME DURING CONSTRUCTION.
5) CONTRACTOR SHALL CLOSE FRISCO STREET UNDER WATT STREET DURING ANY SUPERSTRUCTURE AND FOUNDATION WORK WITH THE APPROVAL FROM THE ENGINEER. NO CLOSURE WILL BE ALLOWED DURING THE NIGHT HOURS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 3

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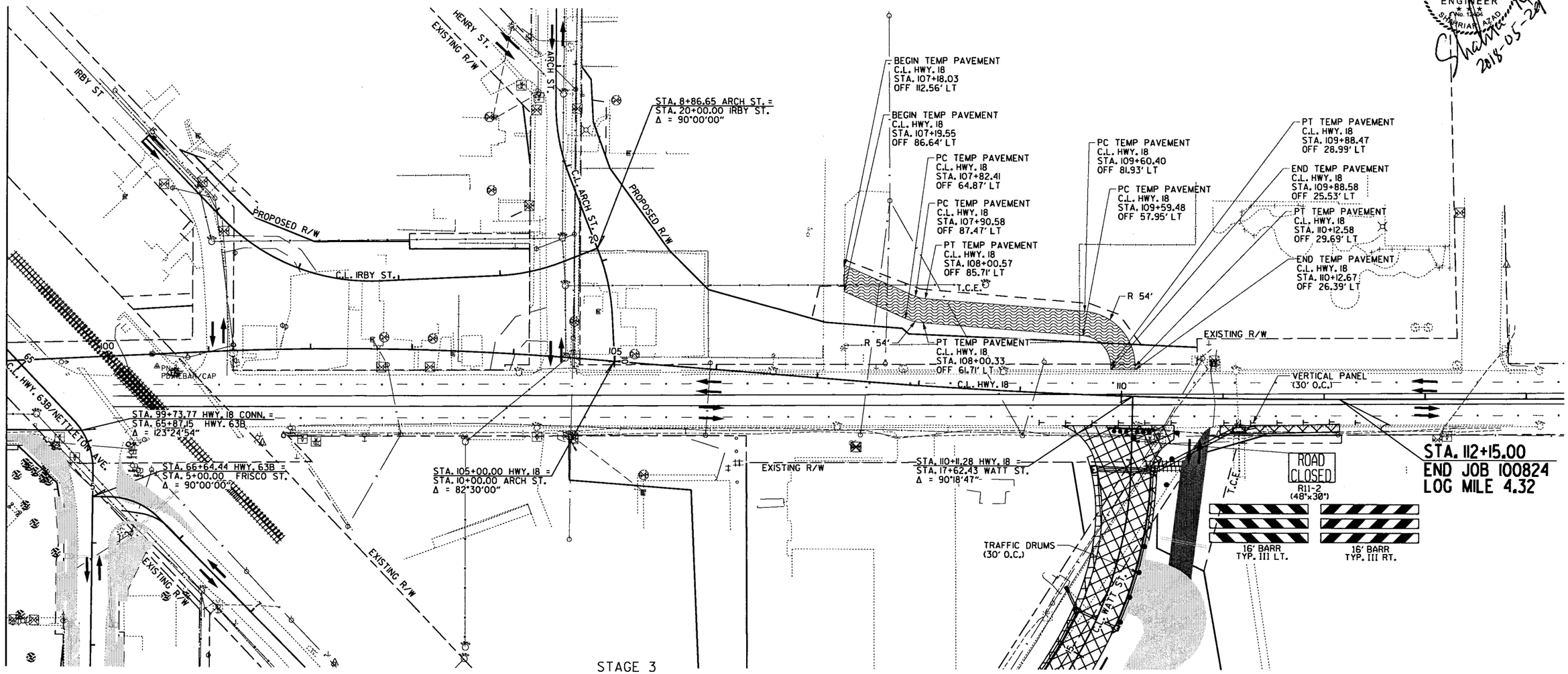
				6	ARK.			
				JOB NO.		100824	67	346

(2) MAINTENANCE OF TRAFFIC DETAILS

COORDINATE WITH PROPERTY OWNERS TO MAINTAIN ACCESS AT ALL TIMES DURING CONSTRUCTION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
ST. NO. 12404
SHAHRIAR AZAD
2018-05-29



STAGE 3

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING WATT STREET AND CLOSE WATT STREET.

3) CONSTRUCT WATT STREET INCLUDING THE BRIDGE OVER BNSF TRACKS BETWEEN HIGHWAY 63B AND HIGHWAY 18. CONSTRUCT TEMPORARY DRIVEWAY ALONG CAIN STREET AND HIGHWAY 18 TO MAINTAIN ACCESS DURING CONSTRUCTION OF HIGHWAY 18.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONTRACTOR SHALL CLOSE FRISCO STREET UNDER WATT STREET DURING ANY SUPERSTRUCTURE AND FOUNDATION WORK WITH THE APPROVAL FROM THE ENGINEER. NO CLOSURE WILL BE ALLOWED DURING THE NIGHT HOURS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 3

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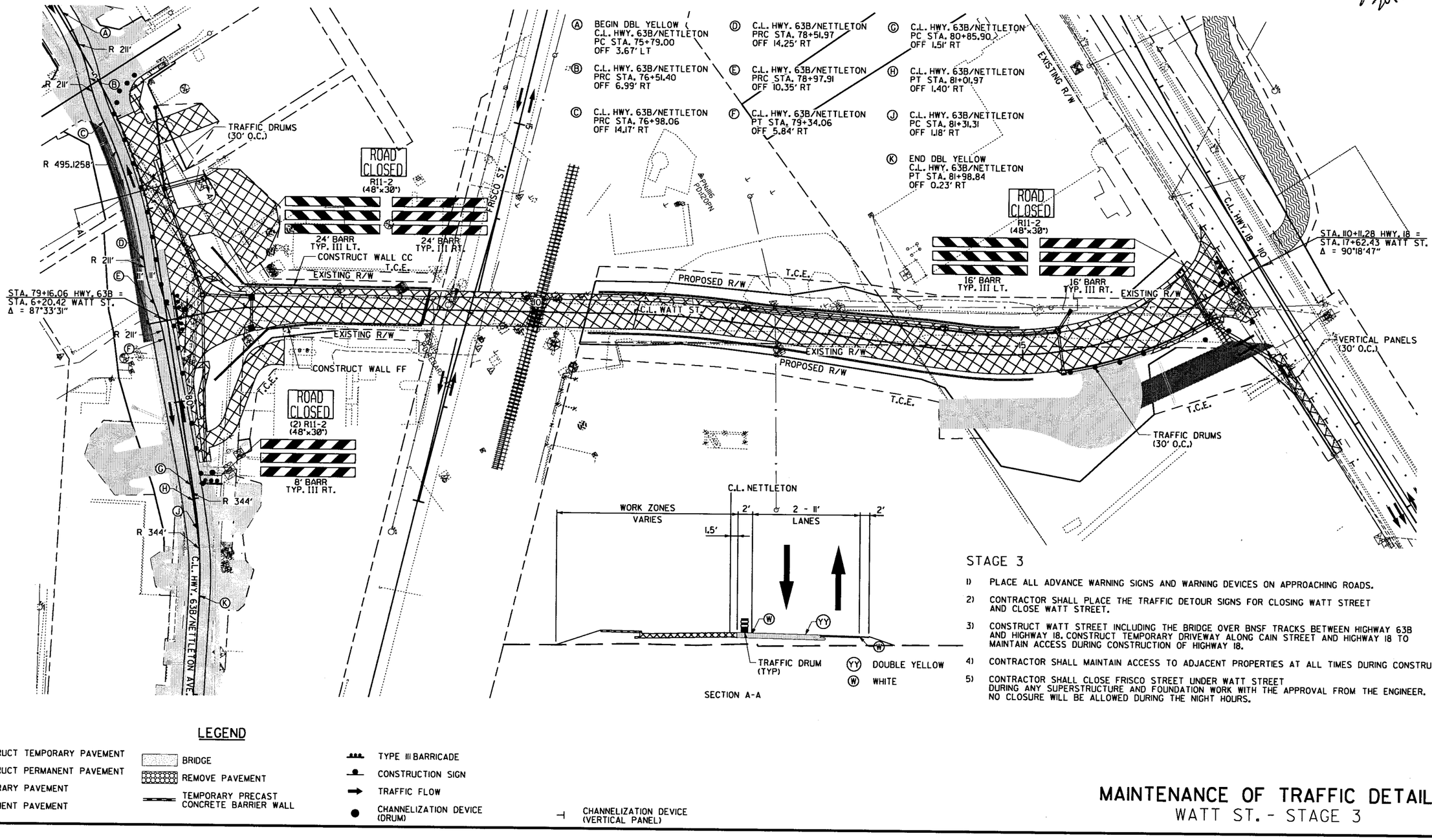
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	68	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12804
SHAHRIAR AZAD
2018-05-29



STAGE 3

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING WATT STREET AND CLOSE WATT STREET.
3) CONSTRUCT WATT STREET INCLUDING THE BRIDGE OVER BNSF TRACKS BETWEEN HIGHWAY 63B AND HIGHWAY 18. CONSTRUCT TEMPORARY DRIVEWAY ALONG CAIN STREET AND HIGHWAY 18 TO MAINTAIN ACCESS DURING CONSTRUCTION OF HIGHWAY 18.
4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
5) CONTRACTOR SHALL CLOSE FRISCO STREET UNDER WATT STREET DURING ANY SUPERSTRUCTURE AND FOUNDATION WORK WITH THE APPROVAL FROM THE ENGINEER. NO CLOSURE WILL BE ALLOWED DURING THE NIGHT HOURS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. - STAGE 3

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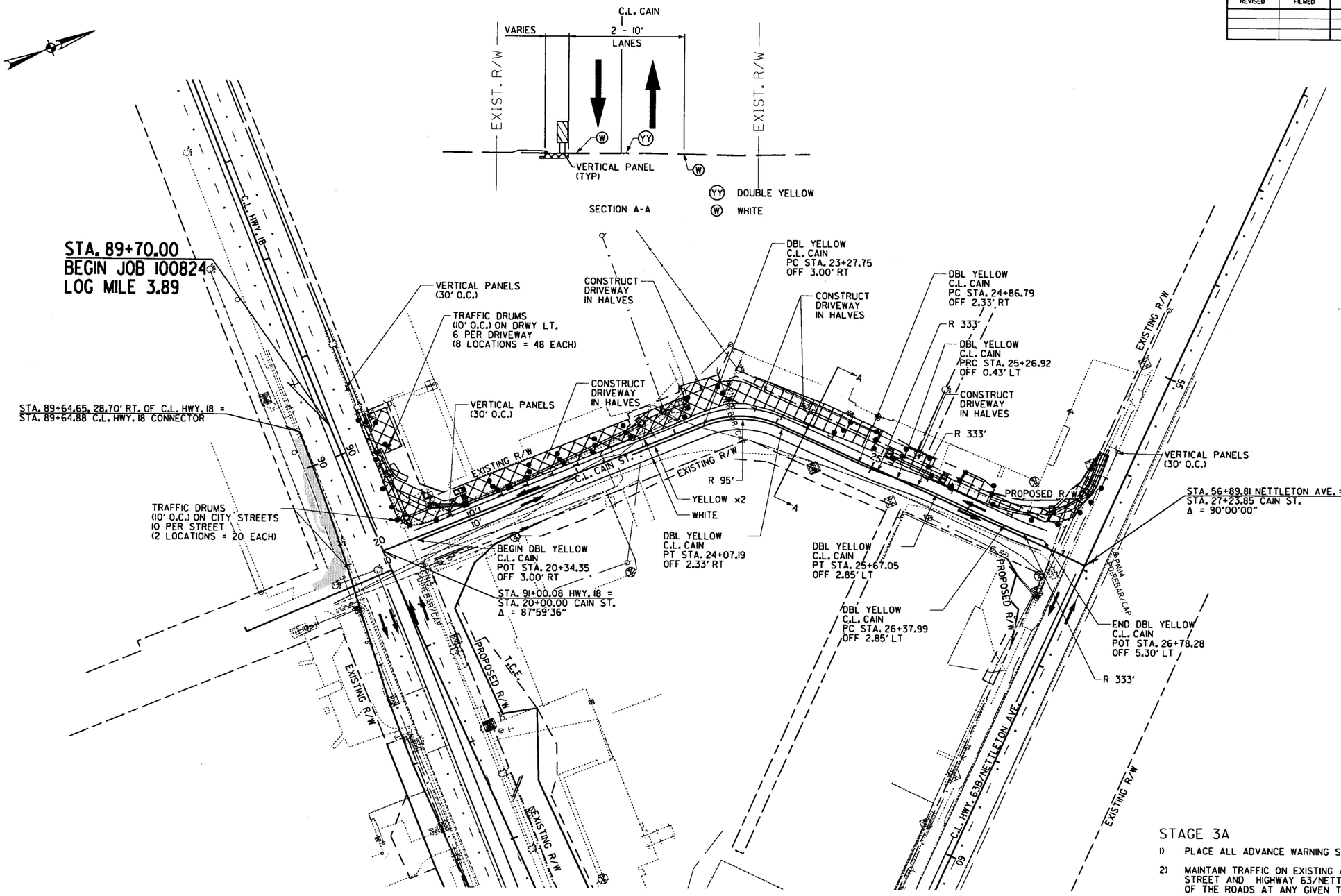
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	69	346
				②	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12486
SHANNON L. BARRIAR
2018-05-29



STAGE 3A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT LEFT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
CAIN ST. - STAGE 3A

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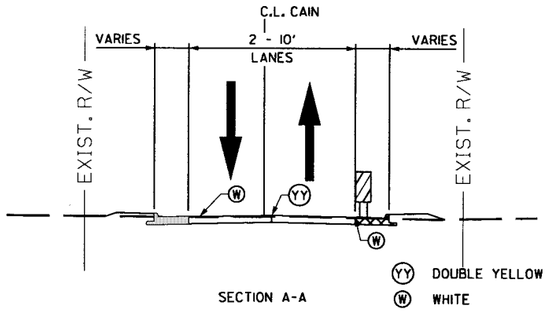
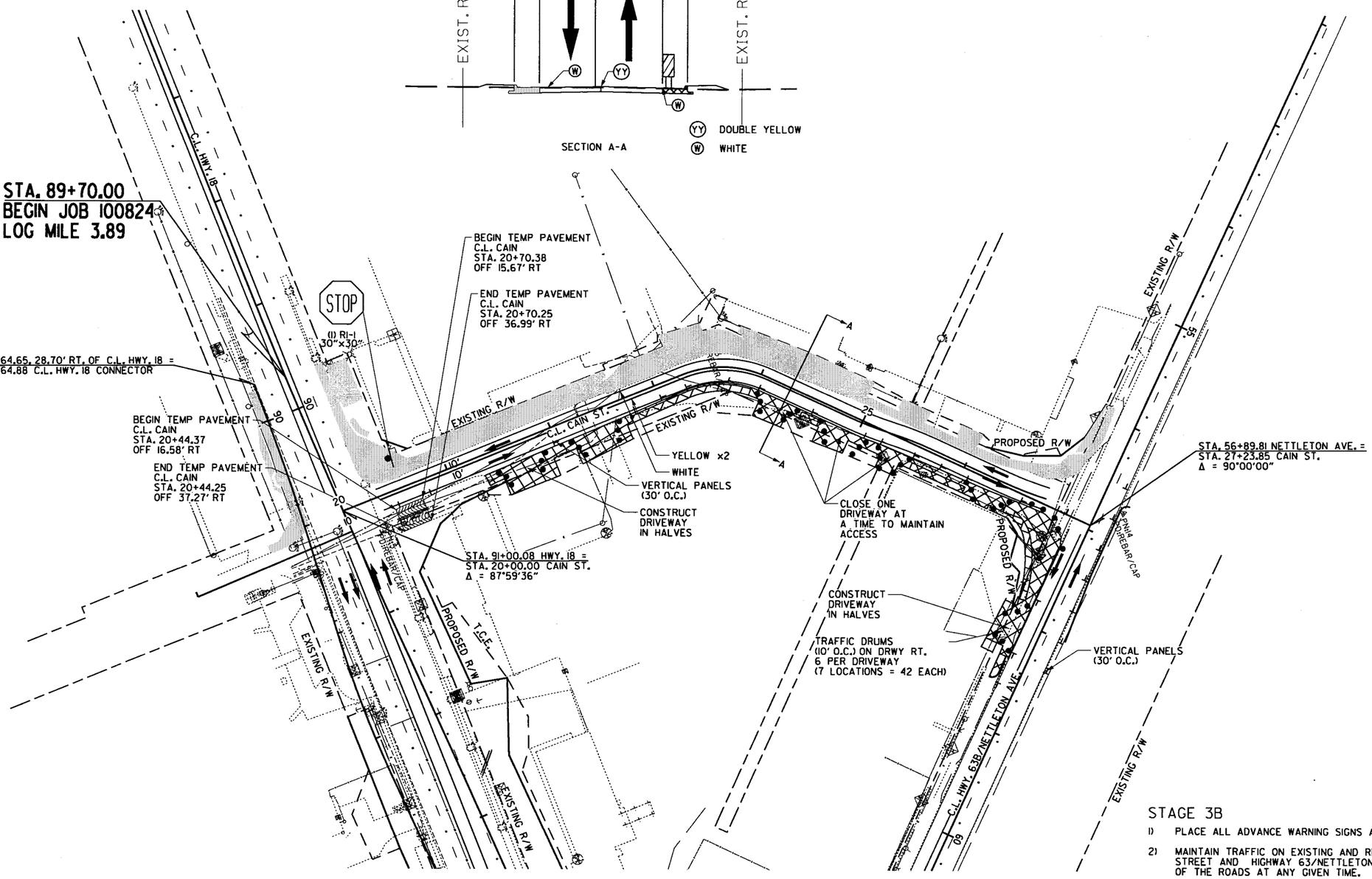
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	70	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29



SECTION A-A



STAGE 3B

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) MAINTAIN TRAFFIC ON EXISTING AND RETAIN EXISTING STRIPING. CONSTRUCT RIGHT SIDE OF CAIN STREET AND HIGHWAY 63/NETTLETON DRIVE. CONTRACTOR SHALL NOT BLOCK OFF BOTH SIDES OF THE ROADS AT ANY GIVEN TIME.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
CAIN ST. - STAGE 3B

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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.		100824	71	346
				②	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12426
SHAHRIAR AZAD
2018-09-04

PERMANENT SIGNAL

HWY. 18 DETOUR M4-9 30"×24"

C.L. CAIN ST.

END DETOUR M4-9 24"×18"

STOP (2) R1-1* 30"×30"

HWY. 18 DETOUR M4-9 30"×24"

C.L. HWY. 18

ROAD CLOSED R11-2 48"×30"

16' BARR TYP. III LT.

16' BARR TYP. III RT.

HWY. 18 DETOUR AHEAD W20-2* 36"×36"

HWY. 18 ROAD CLOSED AHEAD W20-3* 36"×36"

MUST TURN RIGHT R3-7* 30"×30"

TEMPORARY SIGNAL

HWY. 18 DETOUR M4-9 30"×24"

STOP (4) R1-1* 30"×30"

HWY. 18 DETOUR M4-9 30"×24"

HWY. 18 DETOUR AHEAD W20-2* 36"×36"

HWY. 18 ROAD CLOSED AHEAD W20-3* 36"×36"

END DETOUR M4-9 24"×18"

ROAD CLOSED (3) R11-2 48"×30"

(5) 24" BARR TYP. III LT.

(5) 24" BARR TYP. III RT.

C.L. WATT ST.

HWY. 18 DETOUR M4-9 30"×24"

C.L. HWY. 63B/NETTLETON AVE.

MUST TURN RIGHT R3-7 30"×30"

ONLY R3-5R 30"×36"

HWY. 18 DETOUR M4-9 30"×24"

HWY. 18 DETOUR M4-9 30"×24"

TEMPORARY SIGNAL

THIS SHEET IS INTENDED TO SHOW AN OVERALL DETOUR PLAN FOR HWY. 18 TO BE USED DURING STAGES 4A, 4B, AND 5. SEE STAGE SHEETS FOR MORE DETAILS.

* LOCATION OF THESE SIGNS SHALL BE ADJUSTED DURING STAGE 4A, 4B, AND 5 AS DIRECTED BY THE ENGINEER.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - DETOUR DURING STAGE 4 & 5

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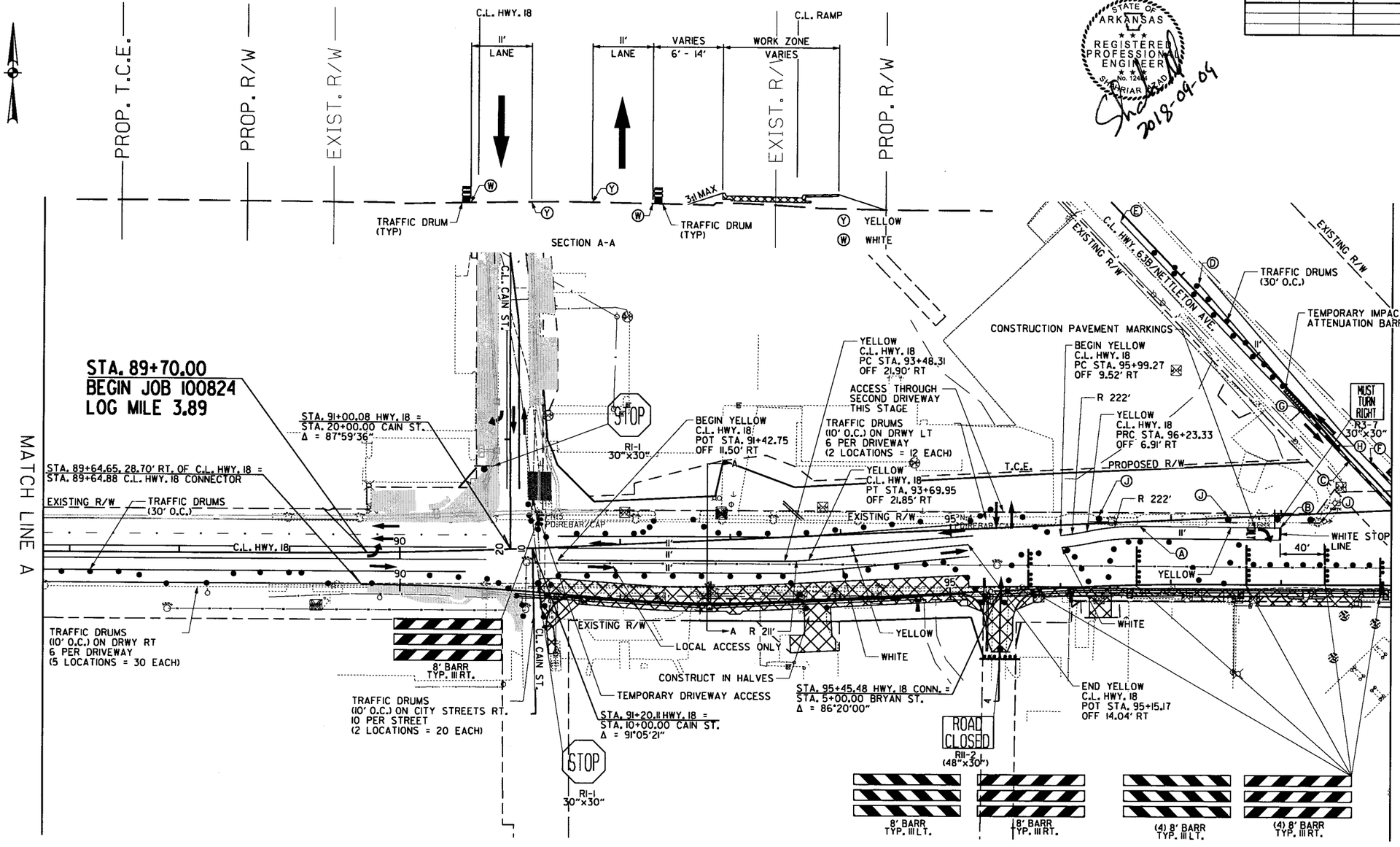
				6	ARK.			
				JOB NO.		100824	72	346

② MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR BAIDAR
2018-09-04

SEE HWY. 18 DETOUR SHEET FOR OVERALL THROUGH TRAFFIC MOVEMENT DURING STAGES 4 AND 5



Ⓐ YELLOW C.L. HWY. 18 PT STA. 96+71.48 OFF 4.31' RT

Ⓑ END YELLOW C.L. HWY. 18 STA. 97+98.60 OFF 11.29' RT

Ⓒ BEGIN 211' TAPER YELLOW C.L. HWY. 63B PI STA. 64+27.63 OFF 4.08' RT

Ⓓ END 211' TAPER YELLOW C.L. HWY. 63B PT STA. 62+16.82 OFF 6.46' LT

Ⓔ END YELLOW C.L. HWY. 63B PT STA. 61+26.95 OFF 6.08' RT

Ⓕ BEGIN PCCB C.L. HWY. 18 STA. 64+43.61 OFF 7.92' LT

Ⓖ BEGIN PCCB C.L. HWY. 63B STA. 63+67.90 OFF 4.09' RT

Ⓗ PI PCCB C.L. HWY. 63B STA. 64+07.90 OFF 6.08' RT

Ⓙ ONE WAY R6-1R (36"X18")

STAGE 4A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.

3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREET AS SHOWN ON THE PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 4A

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				6	ARK.			
				JOB NO.		100824	73	346

② MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 24404
SHAHRYAR AZAM
2018-05-24

SEE HWY. 18 DETOUR SHEET FOR OVERALL THROUGH TRAFFIC MOVEMENT DURING STAGES 4 AND 5

MATCH LINE STA. 99+00

MATCH LINE STA. 114+00

ROAD CLOSED
LOCAL TRAFFIC ONLY
RII-4
60"x30"
8' BARR TYP. III RT.

IRBY ST

HENRY ST.

ARCH ST.

EXISTING R/W

PROPOSED R/W

DETOUR TRAFFIC THROUGH IRBY ST. WHILE THIS AREA IS BEING CONSTRUCTED

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.
Δ = 90°00'00"

CONSTRUCT WALL EE

PARTIALLY CONSTRUCT WALL BB

BEGIN DBL YELLOW
C.L. HWY. 18
PC STA. 101+08.51
OFF 12.47' LT

TRAFFIC DRUMS
30' O.C.)

DBL YELLOW
C.L. HWY. 18
PT STA. 101+83.13
OFF 64.11' RT

R 76'

R 42'

C.L. IRBY ST.

C.L. ARCH ST.

C.L. HWY. 18

SHORING

PIPCCB
C.L. HWY. 63B
STA. 65+63.61
OFF 7.92' LT

END PCCB
C.L. HWY. 63B
STA. 65+96.26
OFF 22.62' LT

STA. 99+73.77 HWY. 18 CONN. =
STA. 65+87.15 HWY. 63B
Δ = 123°24'54"

STA. 66+64.44 HWY. 63B =
STA. 5+00.00 FRISCO ST.
Δ = 90°00'00"

C.L. HWY. 63B/NETTLETON AVE.

ROAD CLOSED
(2) RII-2
(48"x30")

(2) 16' BARR TYP. III LT.

(2) 16' BARR TYP. III RT.

STA. 105+00.00 HWY. 18 =
STA. 10+00.00 ARCH ST.
Δ = 82°30'00"

TEMPORARY IMPACT ATTENUATION BARRIER

WHITE

YELLOW

YELLOW x2

PREVIOUS MARKINGS

EXISTING R/W

DBL YELLOW
C.L. HWY. 18
PT STA. 108+00.45
OFF 73.71' LT

DBL YELLOW
C.L. HWY. 18
PC STA. 107+86.48
OFF 76.17' LT

BEGIN DBL YELLOW
C.L. HWY. 18
POT STA. 107+18.68
OFF 99.28' LT

T.C.E.

YELLOW x2

WHITE

DBL YELLOW
C.L. HWY. 18
PC STA. 109+59.92
OFF 69.60' LT

ROAD CLOSED
RII-2
(48"x30")

8' BARR TYP. III RT.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

END DBL YELLOW
C.L. HWY. 18
PT STA. 110+00.53
OFF 29.35' LT

EXISTING R/W

PROPOSED R/W

DBL YELLOW
C.L. HWY. 18
PI STA. 110+84.57
OFF 7.33' RT

TRAFFIC DRUMS
(10' O.C.) ON DRWY LT.
6 PER DRIVEWAY
(2 LOCATIONS = 12 EACH)

DETOUR HWY. 18 THROUGH TRAFFIC THROUGH WATT AND NETTLETON. SEE HIGHLAND DETOUR FOR ADDITIONAL INFORMATION.

STOP
RI-1
30"x30"

DBL YELLOW
C.L. HWY. 18
PI STA. 109+74.16
OFF 17.04' RT

STA. 110+11.28 HWY. 18 =
STA. 17+62.43 WATT ST.
Δ = 90°18'47"

C.L. WATT ST.

WHITE SKIP

CONSTRUCTION PAVEMENT MARKINGS

Ⓐ PIPCCB
C.L. HWY. 63B
STA. 65+27.90
OFF 6.08' RT

Ⓑ PIPCCB
C.L. HWY. 63B
STA. 66+11.54
OFF 4.72' RT

Ⓒ PIPCCB
C.L. HWY. 63B
STA. 66+32.56
OFF 3.21' RT

Ⓓ PIPCCB
C.L. HWY. 63B
STA. 66+72.52
OFF 1.38' RT

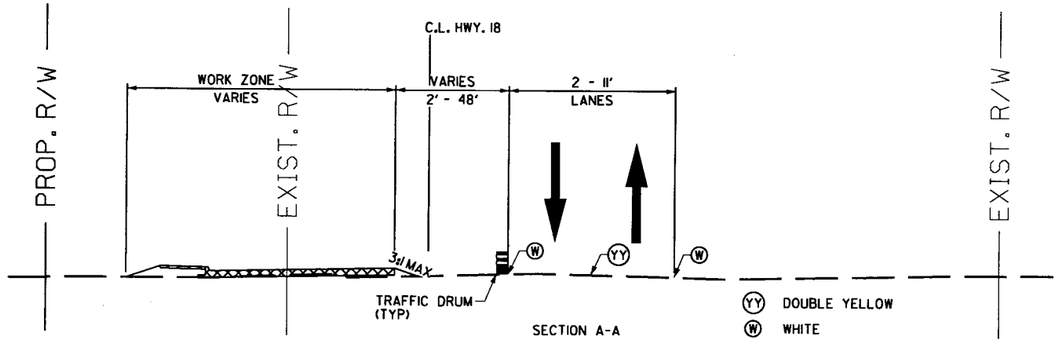
Ⓔ END PCCB
C.L. HWY. 63B
STA. 66+92.66
OFF 0.85' LT

Ⓕ BEGIN TEMP PVMT
C.L. HWY. 18
STA. 101+76.18
OFF 26.36' RT

Ⓖ PC TEMP PVMT
C.L. HWY. 18
STA. 101+88.11
OFF 26.57' RT

Ⓗ PRC TEMP PVMT
C.L. HWY. 18
STA. 103+09.52
OFF 3.20' RT

Ⓘ END TEMP PVMT
C.L. HWY. 18
STA. 104+65.42
OFF 28.50' LT



SECTION A-A

(YY) DOUBLE YELLOW
(W) WHITE

STAGE 4A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.

3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- ⊥ CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 4A

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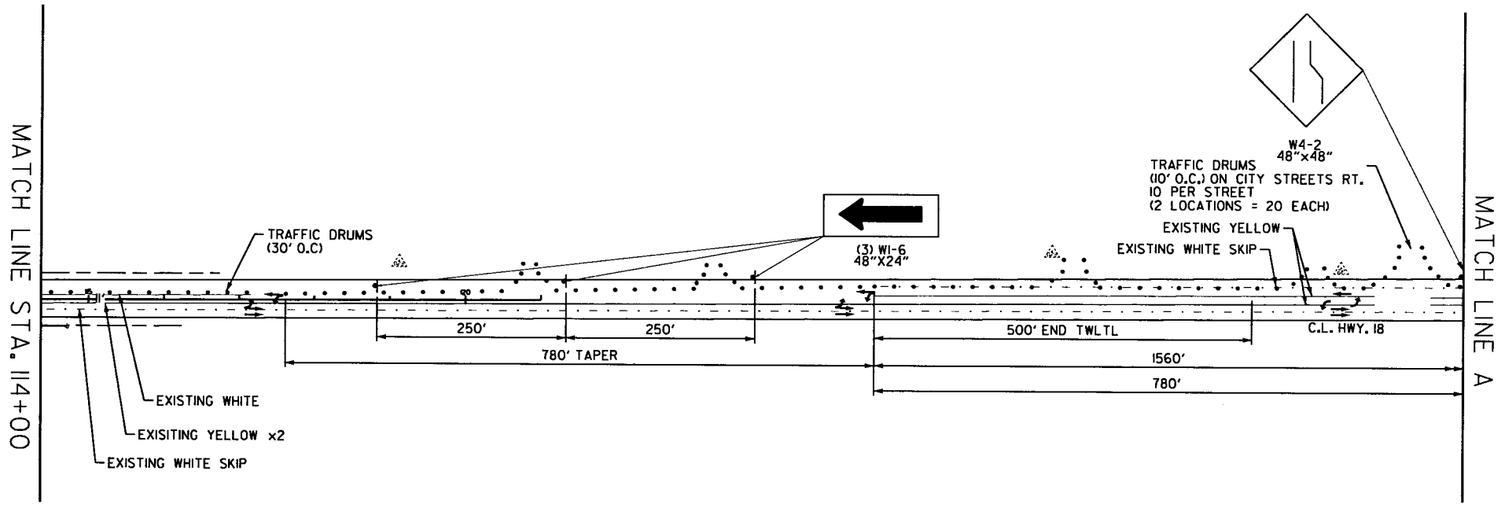
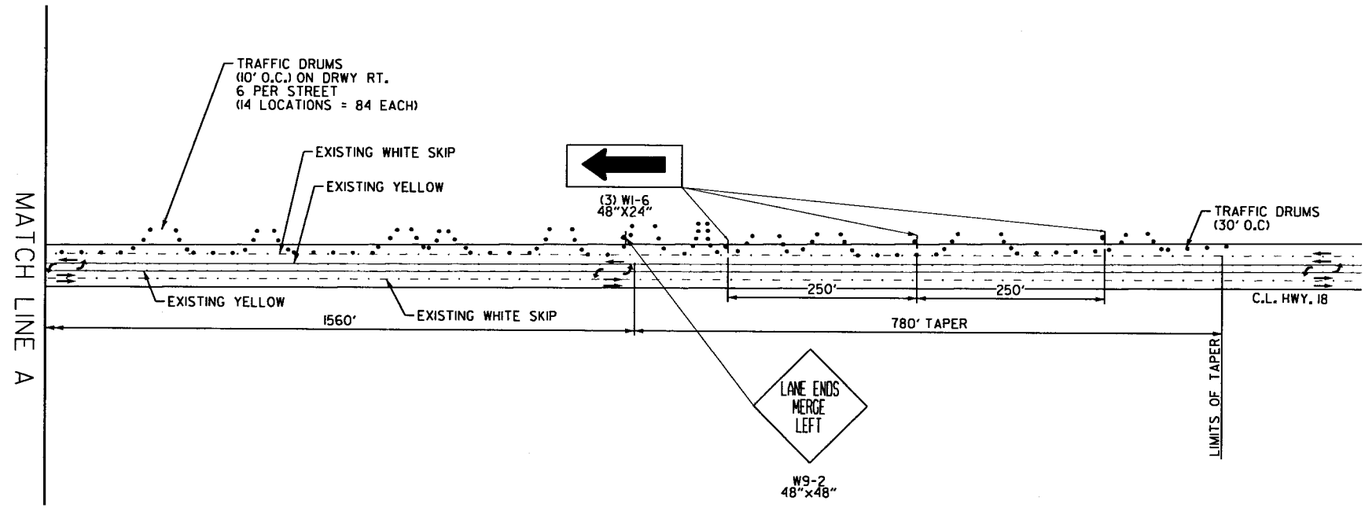
				6	ARK.			
				JOB NO.		100824	74	346
				②	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12408
SHAHRIAR SHAHIDEH
2018-05-29





STAGE 4A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.
3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.
4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 4A

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				6	ARK.			
				JOB NO.		100824	75	346
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 12844
2018-09-04

STAGE 4A

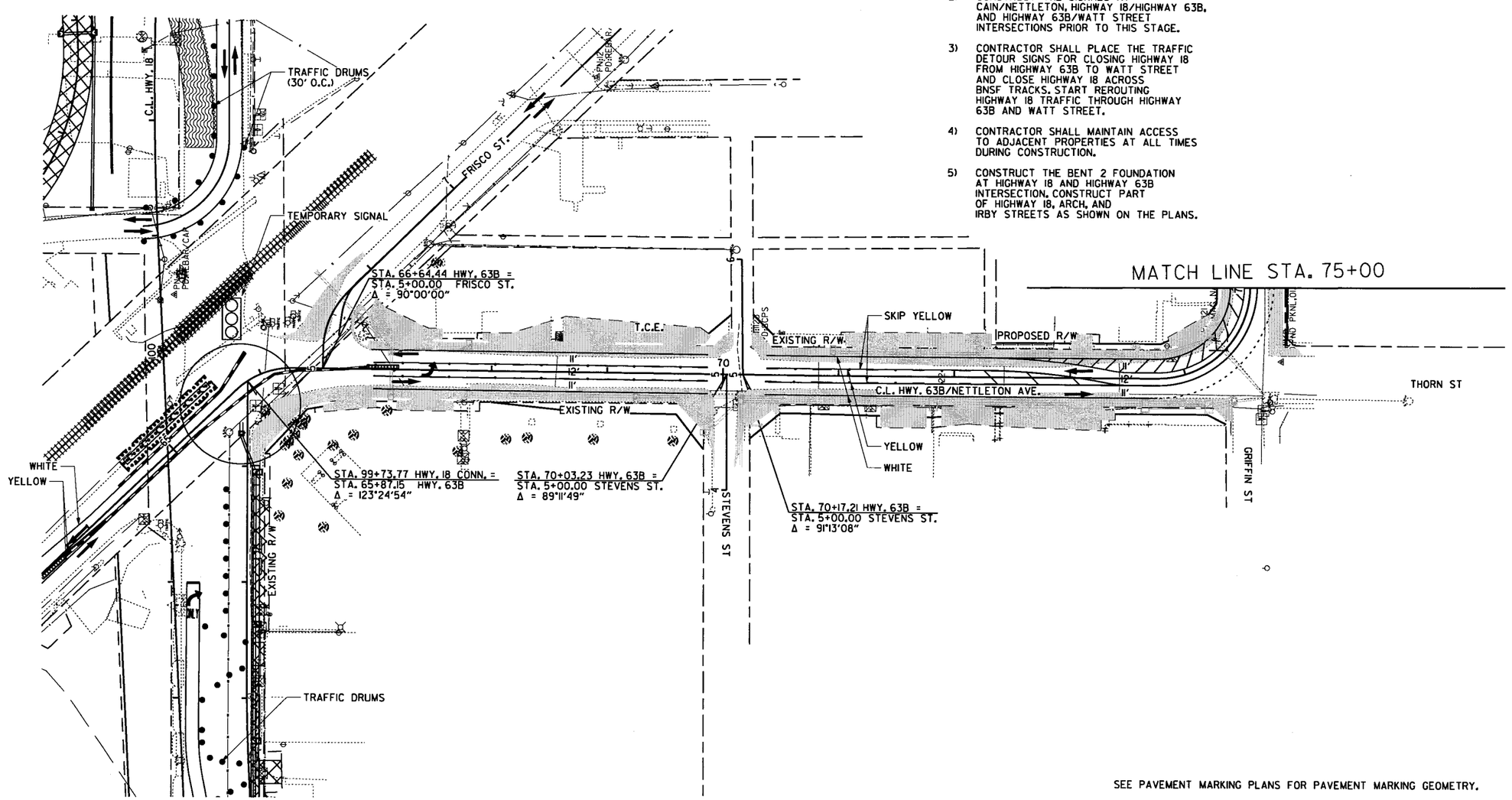
1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.

3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.



SEE PAVEMENT MARKING PLANS FOR PAVEMENT MARKING GEOMETRY.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 63B - STAGE 4A

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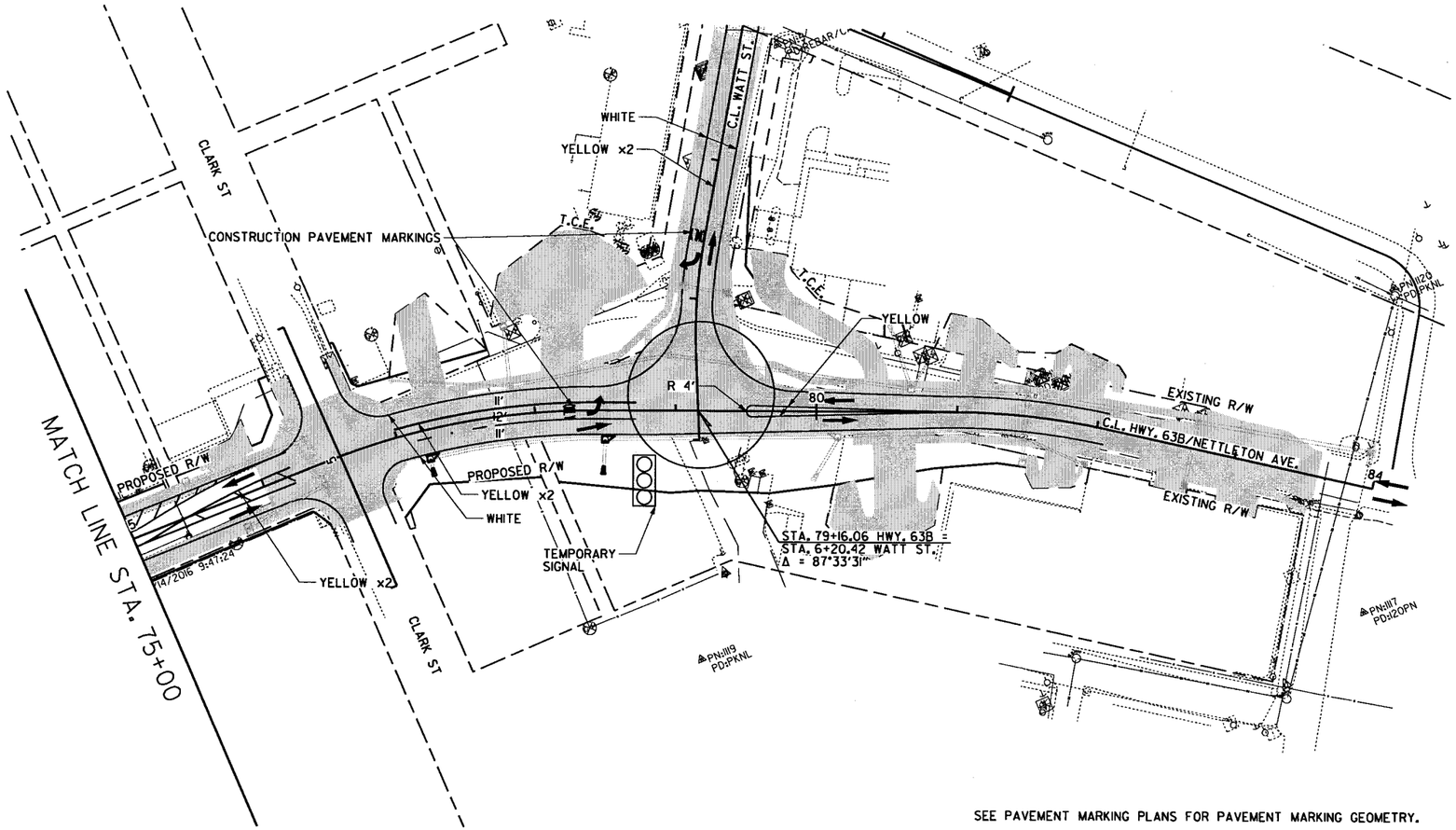
				6	ARK.			
				JOB NO.		100824	76	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZIMI
2018-05-29



SEE PAVEMENT MARKING PLANS FOR PAVEMENT MARKING GEOMETRY.

STAGE 4A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.
3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.
4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 63B - STAGE 4A

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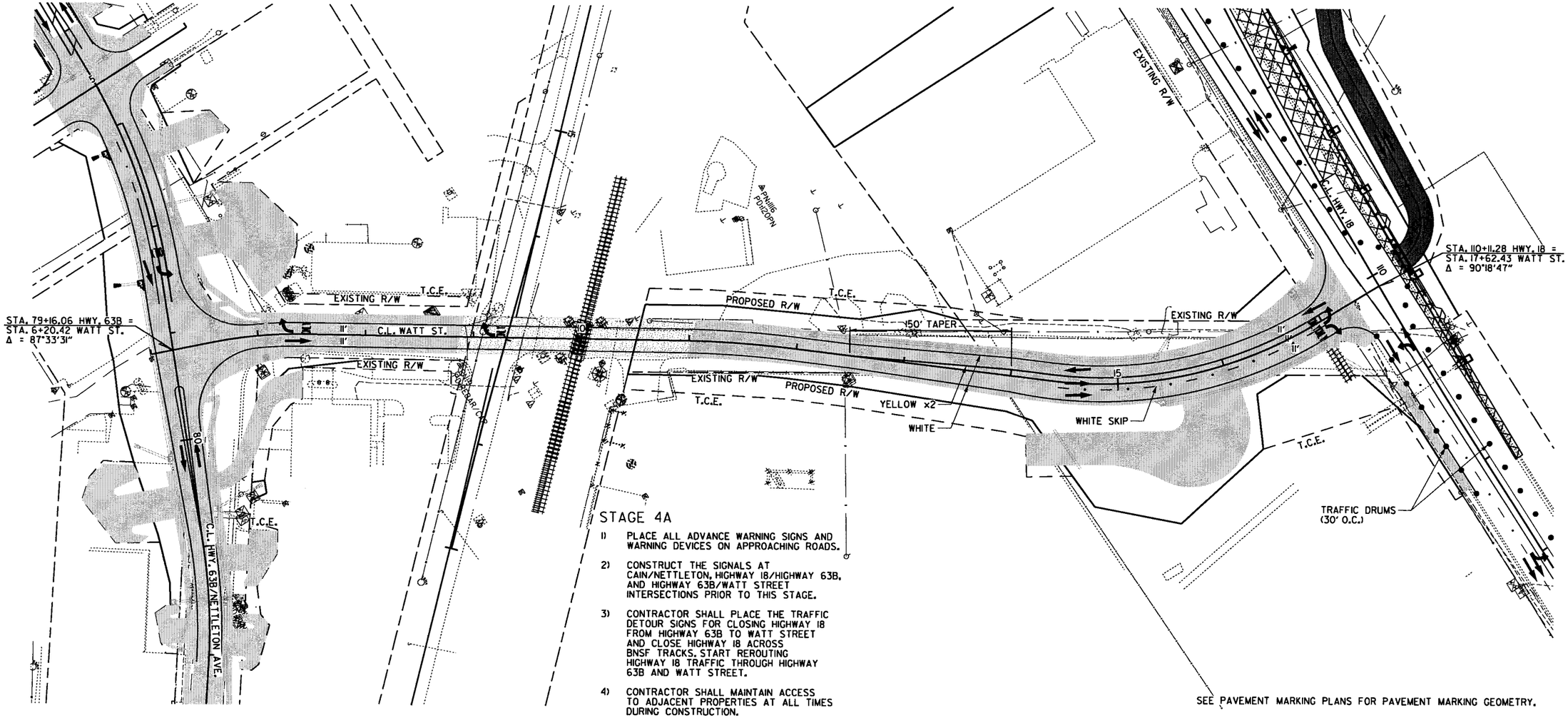
				JOB NO.		100824	77	346
				(2) MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17404
2018-05-29



STAGE 4A

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B, AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.

3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
WATT ST. - STAGE 4A

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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.		100824	78	346
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANE R. KELLEY
2018-05-29

STAGE 4A

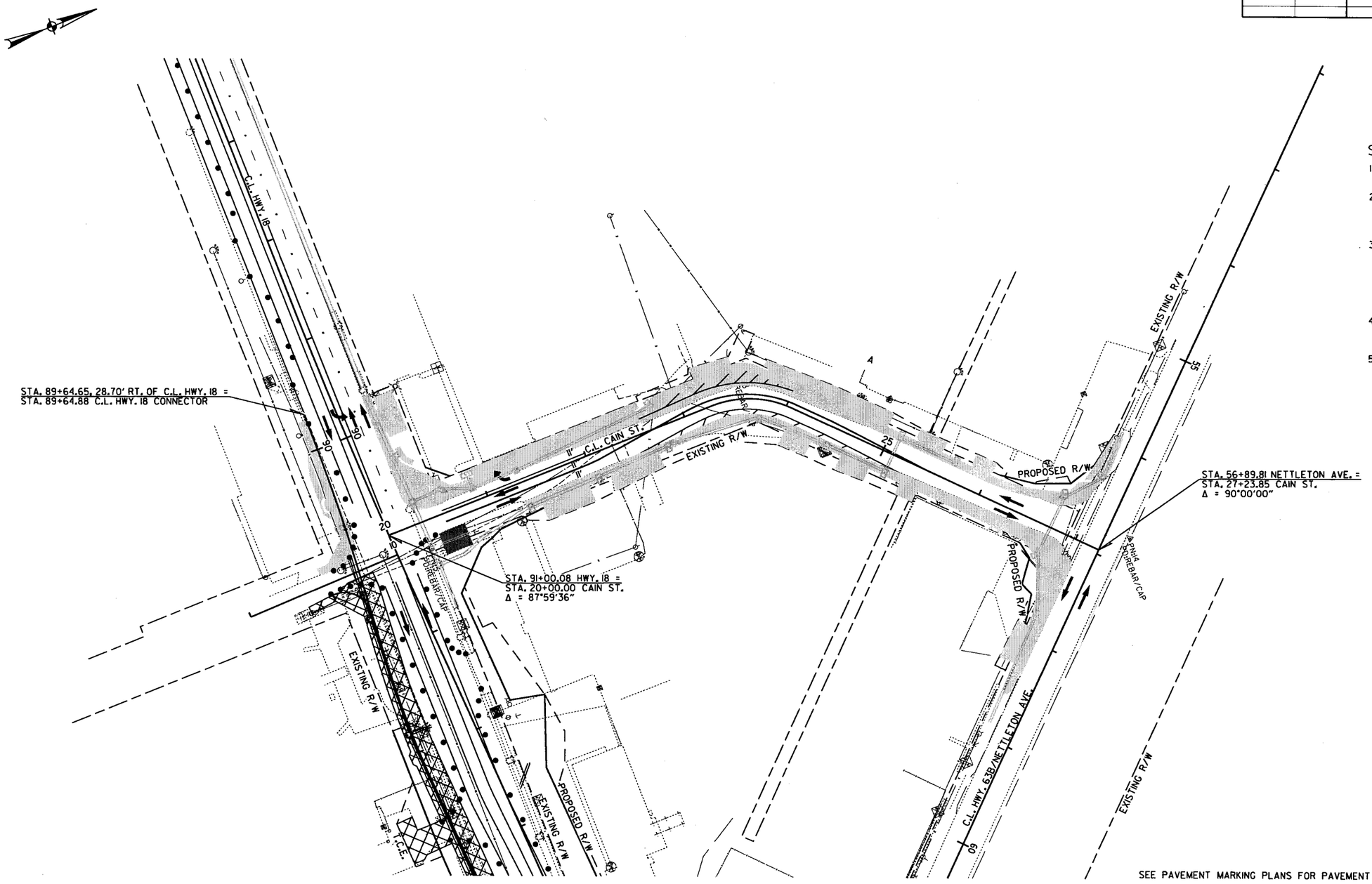
1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

2) CONSTRUCT THE SIGNALS AT CAIN/NETTLETON, HIGHWAY 18/HIGHWAY 63B AND HIGHWAY 63B/WATT STREET INTERSECTIONS PRIOR TO THIS STAGE.

3) CONTRACTOR SHALL PLACE THE TRAFFIC DETOUR SIGNS FOR CLOSING HIGHWAY 18 FROM HIGHWAY 63B TO WATT STREET AND CLOSE HIGHWAY 18 ACROSS BNSF TRACKS. START REROUTING HIGHWAY 18 TRAFFIC THROUGH HIGHWAY 63B AND WATT STREET.

4) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

5) CONSTRUCT THE BENT 2 FOUNDATION AT HIGHWAY 18 AND HIGHWAY 63B INTERSECTION. CONSTRUCT ALSO PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS.



LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
CAIN ST. - STAGE 4A

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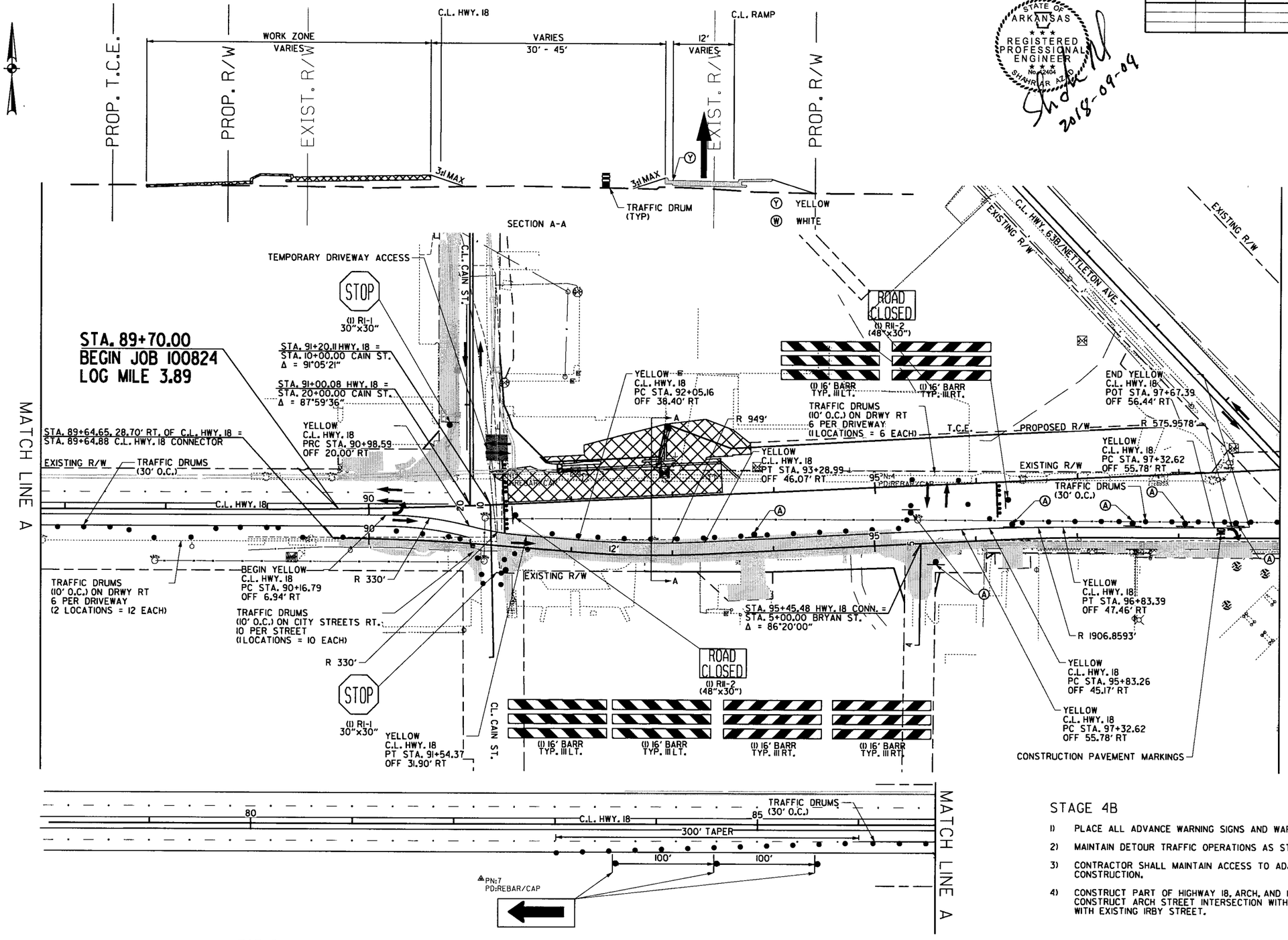
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	79	346

(2) MAINTENANCE OF TRAFFIC DETAILS

SEE HWY. 18 DETOUR SHEET FOR OVERALL THROUGH TRAFFIC MOVEMENT DURING STAGES 4 AND 5

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 24041
SHAHRIAR AZIZ
2018-09-04



STAGE 4B

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) MAINTAIN DETOUR TRAFFIC OPERATIONS AS STAGE 4A.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
4) CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS. CONSTRUCT ARCH STREET INTERSECTION WITH HENRY STREET FIRST BEFORE IRBY'S CONNECTION WITH EXISTING IRBY STREET.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - 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.		100824	80	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZIMI
2018-05-29

SEE HWY. 18 DETOUR SHEET FOR OVERALL THROUGH TRAFFIC MOVEMENT DURING STAGES 4 AND 5

CONSTRUCT THESE PORTIONS AT DIFFERENT TIMES TO MAINTAIN TRAFFIC.

MATCH LINE STA. 99+00

IRBY ST.

ROAD CLOSED LOCAL TRAFFIC ONLY
RII-4
60"×30"
8' BARR TYP. III RT.

T.C.E.

PROPOSED R/W

STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.
Δ = 90°00'00"

C.L. IRBY ST.

TRAFFIC DRUMS (30' O.C.)

WHITE

YELLOW ×2

R 345'

R 20'

PINE BAR CAP

R 50'

STA. 99+73.77 HWY. 18 CONN. =
STA. 65+87.15 HWY. 63B
Δ = 123°24'54"

C.L. HWY. 63B/NETTLETON AVE.

STA. 66+64.44 HWY. 63B =
STA. 5+00.00 FRISCO ST.
Δ = 90°00'00"

EXISTING R/W

ROAD CLOSED
(3) RII-2
(48"×30")

(5) 24' BARR TYP. III LT.

(5) 24' BARR TYP. III RT.

HENRY ST.

ARCH ST.

ROAD CLOSED LOCAL TRAFFIC ONLY
RII-4
60"×30"
8' BARR TYP. III RT.

EXISTING R/W

C.L. ARCH ST.

PROPOSED R/W

STOP
(3) RI-1
30"×30"

STA. 105+00.00 HWY. 18 =
STA. 10+00.00 ARCH ST.
Δ = 82°30'00"

PARTIALLY CONSTRUCT WALL BB

USE TEMPORARY PAVEMENT TO ACCESS PROPERTY

CONSTRUCT DRIVEWAY IN HALVES. MAINTAIN ACCESS THE PROPERTY

TRAFFIC DRUMS (30' O.C.)

YELLOW ×2

WHITE

R 345'

T.C.E.

PROPOSED R/W

EXISTING R/W

R 350'

ROAD CLOSED
RII-2
(48"×30")

16' BARR TYP. III LT.

16' BARR TYP. III RT.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

TRAFFIC DRUMS (30' O.C.)

C.L. HWY. 18

STA. 110+11.28 HWY. 18 =
STA. 17+62.43 WATT ST.
Δ = 90°18'47"

C.L. WATT ST.

STOP
(1) RI-1
30"×30"

R 50'

DETOUR HWY. 18 THROUGH TRAFFIC THROUGH WATT AND NETTLETON. SEE HWY. 18 DETOUR FOR ADDITIONAL INFORMATION.

Ⓐ BEGIN TEMP PVMT
C.L. HWY. 18
STA. 101+35.11
OFF 49.27' RT

Ⓑ BEGIN TEMP PVMT
C.L. HWY. 18
STA. 102+39.72
OFF 47.25' RT

Ⓒ END TEMP PVMT
C.L. HWY. 18
STA. 101+78.97
OFF 86.35' RT

Ⓓ END TEMP PVMT
C.L. HWY. 18
STA. 101+99.59
OFF 86.69' RT

Ⓔ BEGIN DBL YELLOW
C.L. HWY. 18
PC STA. 101+09.22
OFF 17.02' RT

Ⓕ DBL YELLOW
C.L. HWY. 18
PT STA. 101+28.28
OFF 37.02' RT

Ⓖ DBL YELLOW
C.L. HWY. 18
PC STA. 101+87.91
OFF 38.90' RT

Ⓗ DBL YELLOW
C.L. HWY. 18
PRC STA. 103+14.33
OFF 14.56' RT

Ⓘ END DBL YELLOW
C.L. HWY. 18
STA. 104+65.42
OFF 16.50' LT

Ⓙ BEGIN DBL YELLOW
C.L. HWY. 18
STA. 105+55.63
OFF 17.83' LT

Ⓚ DBL YELLOW
C.L. HWY. 18
PC STA. 107+33.13
OFF 17.83' LT

Ⓛ DBL YELLOW
C.L. HWY. 18
PRC STA. 109+17.96
OFF 17.50' LT

Ⓜ DBL YELLOW
C.L. HWY. 18
PRC STA. 110+04.35
OFF 6.03' LT

Ⓝ DBL YELLOW
C.L. HWY. 18
PT STA. 110+98.12
OFF 6.91' RT

STAGE 4B

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.

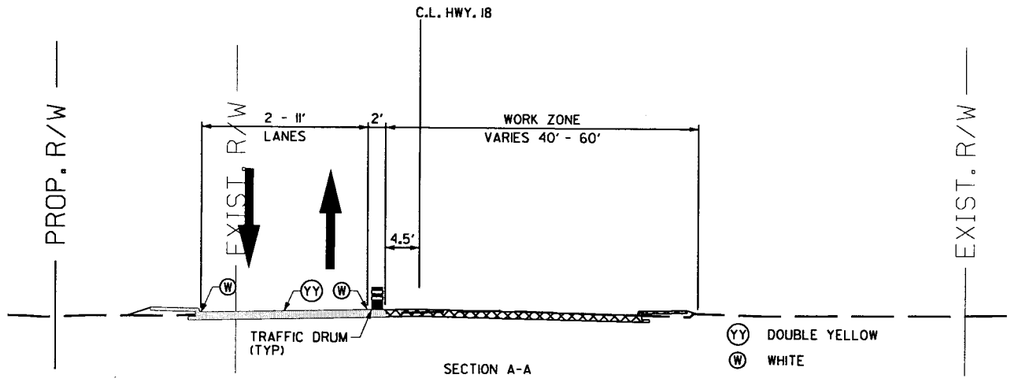
2) MAINTAIN DETOUR TRAFFIC OPERATIONS AS STAGE 4A.

3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.

4) CONSTRUCT PART OF HIGHWAY 18, ARCH, AND IRBY STREETS AS SHOWN ON THE PLANS. CONSTRUCT ARCH STREET INTERSECTION WITH HENRY STREET FIRST BEFORE IRBY'S CONNECTION WITH EXISTING IRBY STREET.

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)



SECTION A-A

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 4B

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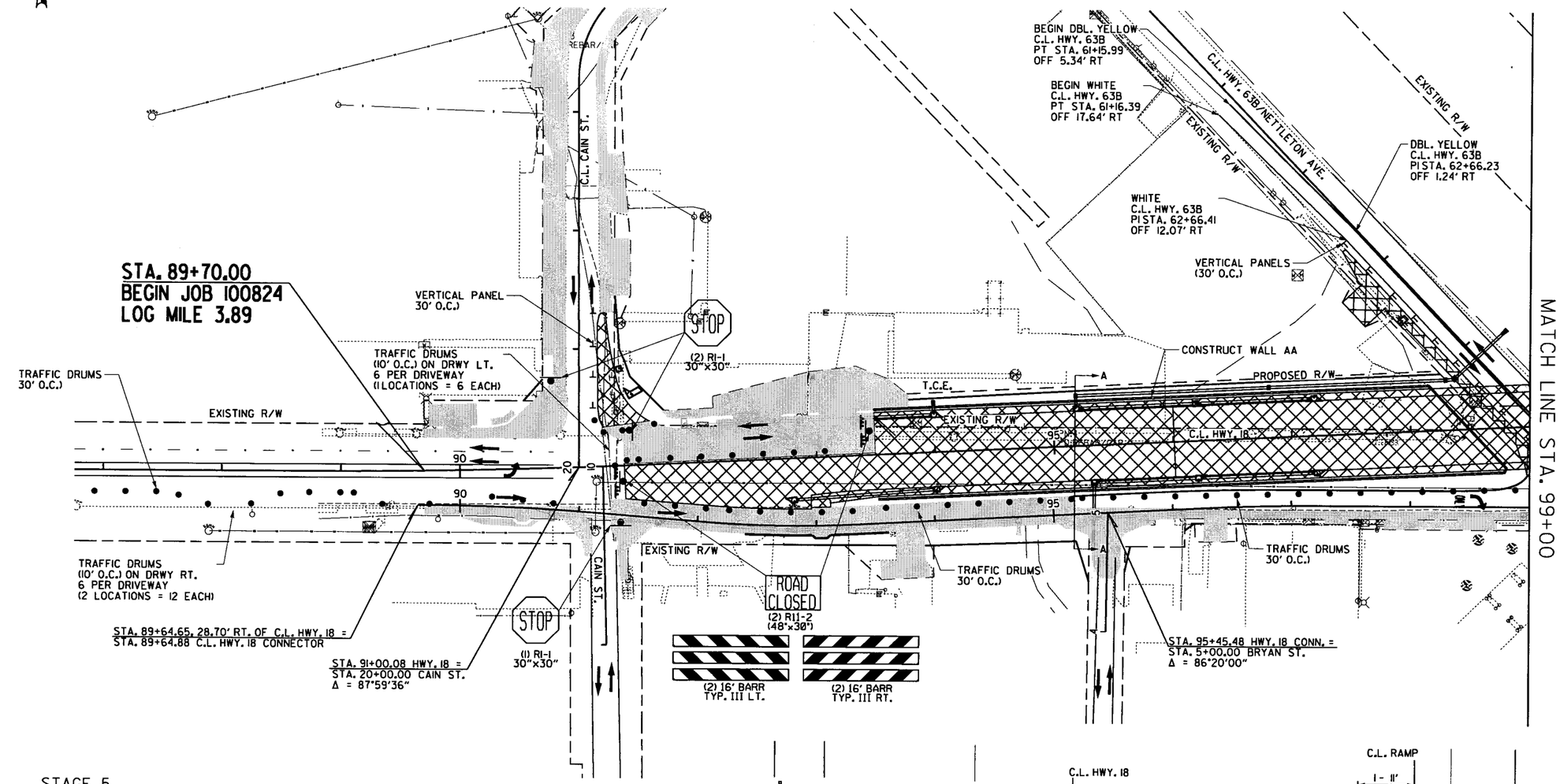
				6	ARK.			
				JOB NO.		100824	81	346

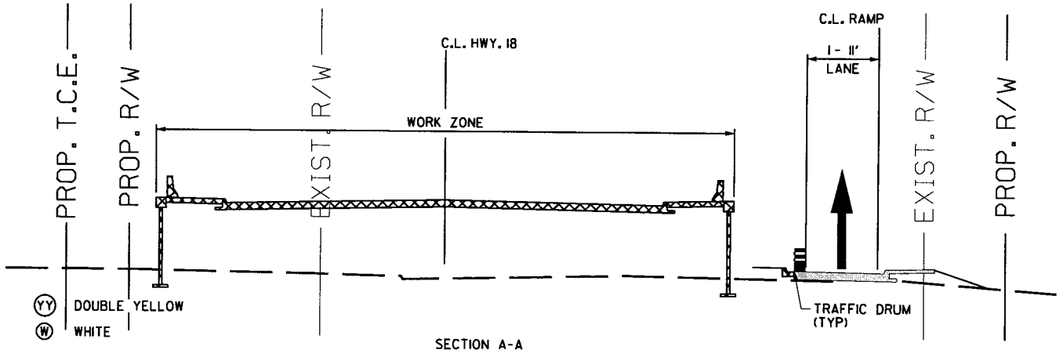
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAWN R. HEAD
2018-09-04



STAGE 5

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) MAINTAIN DETOUR TRAFFIC OPERATIONS AS STAGE 4A.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
4) CONSTRUCT REMAINING PART OF HIGHWAY 18 INCLUDING THE BRIDGE OVER BNSF TRACKS.



SECTION A-A

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 5

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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.		100824	82	346

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAWN R. ATCHLEY
2018-05-24

STAGE 5

1) PLACE ALL ADVANCE WARNING SIGNS AND WARNING DEVICES ON APPROACHING ROADS.
2) MAINTAIN DETOUR TRAFFIC OPERATIONS AS STAGE 4A.
3) CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
4) CONSTRUCT REMAINING PART OF HIGHWAY 18 INCLUDING THE BRIDGE OVER BNSF TRACKS.

MATCH LINE STA. 99+00

HENRY ST.
EXISTING R/W
IRBY ST.
PROPOSED R/W
C.L. IRBY ST.
C.L. ARCH ST.
STA. 8+86.65 ARCH ST. =
STA. 20+00.00 IRBY ST.
Δ = 90°00'00"
STOP
(4) R1-1
30"x30"
TRAFFIC DRUMS
(10' O.C.) ON DRWY RT.
6 PER DRIVEWAY
(2 LOCATIONS = 12 EACH)
YELLOW x2
T.C.E.
WHITE
PROPOSED R/W
ROAD CLOSED
R11-2
(48"x30")
16' BARR TYP. III LT
16' BARR TYP. III RT.
EXISTING R/W
TRAFFIC DRUMS
(10' O.C.) ON DRWY LT.
6 PER DRIVEWAY
(1 LOCATIONS = 6 EACH)
C.L. HWY. 18
STA. 99+73.77 HWY. 18 CONN. =
STA. 65+87.15 HWY. 63B
Δ = 123°24'54"
CONSTRUCT WALL BB
STA. 66+64.44 HWY. 63B =
STA. 5+00.00 FRISCO ST.
Δ = 90°00'00"
STA. 105+00.00 HWY. 18 =
STA. 10+00.00 ARCH ST.
Δ = 82°30'00"
ROAD CLOSED
R11-2
(48"x30")
EXISTING R/W
STA. 110+11.28 HWY. 18 =
STA. 17+62.43 WATT ST.
Δ = 90°18'47"
C.L. WATT ST.
T.C.E.
(2) 24' BARR TYP. III LT.
(2) 24' BARR TYP. III RT.
EXISTING R/W
C.L. NETTLETON
EXISTING R/W

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

C.L. HWY. 18
WORK ZONE
C.L. IRBY
2 - 11'
LANES
PROP. R/W
EXIST. R/W
EXIST. R/W
(YY) DOUBLE YELLOW
SECTION A-A

LEGEND

- CONSTRUCT TEMPORARY PAVEMENT
- CONSTRUCT PERMANENT PAVEMENT
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT
- BRIDGE
- REMOVE PAVEMENT
- TEMPORARY PRECAST CONCRETE BARRIER WALL
- TYPE III BARRICADE
- CONSTRUCTION SIGN
- TRAFFIC FLOW
- CHANNELIZATION DEVICE (DRUM)
- CHANNELIZATION DEVICE (VERTICAL PANEL)

MAINTENANCE OF TRAFFIC DETAILS
HWY. 18 - STAGE 5

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				6	ARK.			
				JOB NO.		100824	83	346

(2) PERMANENT PAVEMENT MARKING DETAILS

N

[1] RT. TURNOUT PAVEMENT MARKING
P.C. = 23+15.04, 5.10' LT
P.T. = 24+05.17, 4.25' LT
DELTA = 48°37'7"
DOC = 10°6'5"
L = 93.5683

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

CAIN ST.

HWY. 18 (HIGHLAND DR.)

C.L. HWY. 63B/NETTLETON AVE.

BNSF RAILWAY

NETTLETON AVE.

C.L. IRBY ST.

IRBY ST.

C.L. HWY. 18 (HIGHLAND DR.)

C.L. HWY. 18 CONNECTOR

CAIN ST. C.L. CAIN ST.

BRYAN ST. C.L. BRYAN ST.

C.L. FRISCO ST.

FRISCO ST.

HWY. 63B

STA. 91+00.08 C.L. HWY. 18= STA 20+00.00 C.L CAIN ST.

STA. 95+45.48 C.L. HWY. 18 CONNECTOR = STA. 5+00.00 C.L. BRYAN ST.

STA. 65+87.15 HWY. 63B = STA. 99+73.77 HWY. 18 CONNECTOR

STA. 91+20.11 C.L. HWY. 18= STA 10+00.00 C.L CAIN ST.

STA. 66+54.44 HWY. 63B = STA. 5+00.00 FRISCO ST.

TURN ARROW WHITE THERMOPLASTIC PAVEMENT MARKING (TYP.)

WORD "ONLY" THERMOPLASTIC PAVEMENT MARKING (TYP.)

100' TAPER

25'

33'

56'

22'

34'

HWY. 18 CONNECTOR

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
91+40	92+96	8" CONTINUOUS WHITE W/R.P.M. (TYPE II) @ 10' O.C. ON LT.	155	14
92+96	98+90	6" CONTINUOUS YELLOW ON LT.	596	
98+90	99+10	8" CONTINUOUS WHITE ON LT.	22	
98+90	99+12	8" CONTINUOUS WHITE (DIAGONALS) ON LT. & RT.	18	
99+00	99+27	8" CONTINUOUS WHITE ON RT.	27	
99+04		24" CONTINUOUS WHITE FOR STOP LINE	29	

IRBY ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
15+51	19+63	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	824	5
15+51	15+58	6" CONTINUOUS WHITE ON LT.	8	
15+51	15+83	6" CONTINUOUS WHITE ON RT.	32	

HWY. 18

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
97+67	101+59	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	196	10
97+67	101+59	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON RT. & LT.	196	10
97+67	101+59	6" CONTINUOUS YELLOW ON LT. & RT.	784	

HWY. 18

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
88+75	89+06	6" CONTINUOUS YELLOW ON LT. & RT.	62	
88+75	89+06	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	16	2
88+75	90+48	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON RT. & LT.	87	4
89+06	90+48	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	283	2
89+56	90+48	6" CONTINUOUS WHITE ON RT.	92	
89+65	91+40	6" DOTTED WHITE 2'IN LENGTH @ 8'O.C. ON RT.	44	
91+40	93+45	8" CONTINUOUS WHITE W/R.P.M. (TYPE II)@ 10' O.C. ON RT.	205	20
91+62	97+67	6" CONTINUOUS YELLOW ON LT. & RT.	1210	
91+62	97+67	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	303	16
91+62	97+67	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	303	16
101+59	104+42	6" CONTINUOUS YELLOW ON LT. & RT.	567	
101+59	104+42	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	142	7
101+59	104+42	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	142	7

NETTLETON AVE.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
57+37	60+39	8" CONTINUOUS WHITE ON LT.	302	
57+24	65+77	6" CONTINUOUS WHITE ON LT.	857	
57+37	62+94	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	1114	7
58+45	63+96	6" CONTINUOUS WHITE ON RT.	551	
60+39	65+08	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	118	6
62+94	64+77	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	730	5
62+94	64+77	8" CONTINUOUS YELLOW (DIAGONALS)	80	
65+02	65+16	8" CONTINUOUS WHITE ON RT.	14	
65+32	65+77	8" CONTINUOUS WHITE ON LT.	45	
65+57	65+77	8" CONTINUOUS WHITE ON RT.	20	

HWY. 63B

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
65+77	66+38	8" CONTINUOUS WHITE ON LT.	61	
65+77	66+67	8" CONTINUOUS WHITE ON RT.	90	
65+77	66+60	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	332	2
65+77	66+32	8" CONTINUOUS YELLOW (DIAGONALS)	64	
65+77	66+67	8" CONTINUOUS WHITE (DIAGONALS) ON LT. & RT.	115	
66+40	66+64	6" CONTINUOUS WHITE ON LT.	24	
66+98	69+83	6" CONTINUOUS YELLOW ON LT. & RT.	570	
66+98	69+83	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	143	7

CAIN ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
9+05	9+35	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
9+35		24" CONTINUOUS WHITE FOR STOP LINE	11	
20+54		24" CONTINUOUS WHITE FOR STOP LINE	31	
20+55	26+73	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	1236	8
20+55	22+00	6" CONTINUOUS WHITE ON LT.	145	
22+44	25+44	8" CONTINUOUS WHITE ON RT.	300	
22+60	24+00	8" CONTINUOUS WHITE ON LT.	140	
22+44	25+44	8" CONTINUOUS WHITE (DIAGONALS) ON LT. AND RT.	145	

BRYAN ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
4+62	4+81	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	38	1
4+81		24" CONTINUOUS WHITE FOR STOP LINE	11	

FRISCO ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
5+17	5+72	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	220	2
5+26		24" CONTINUOUS WHITE FOR STOP LINE	14	
5+26	6+12	6" CONTINUOUS WHITE ON LT.	86	

LEGEND

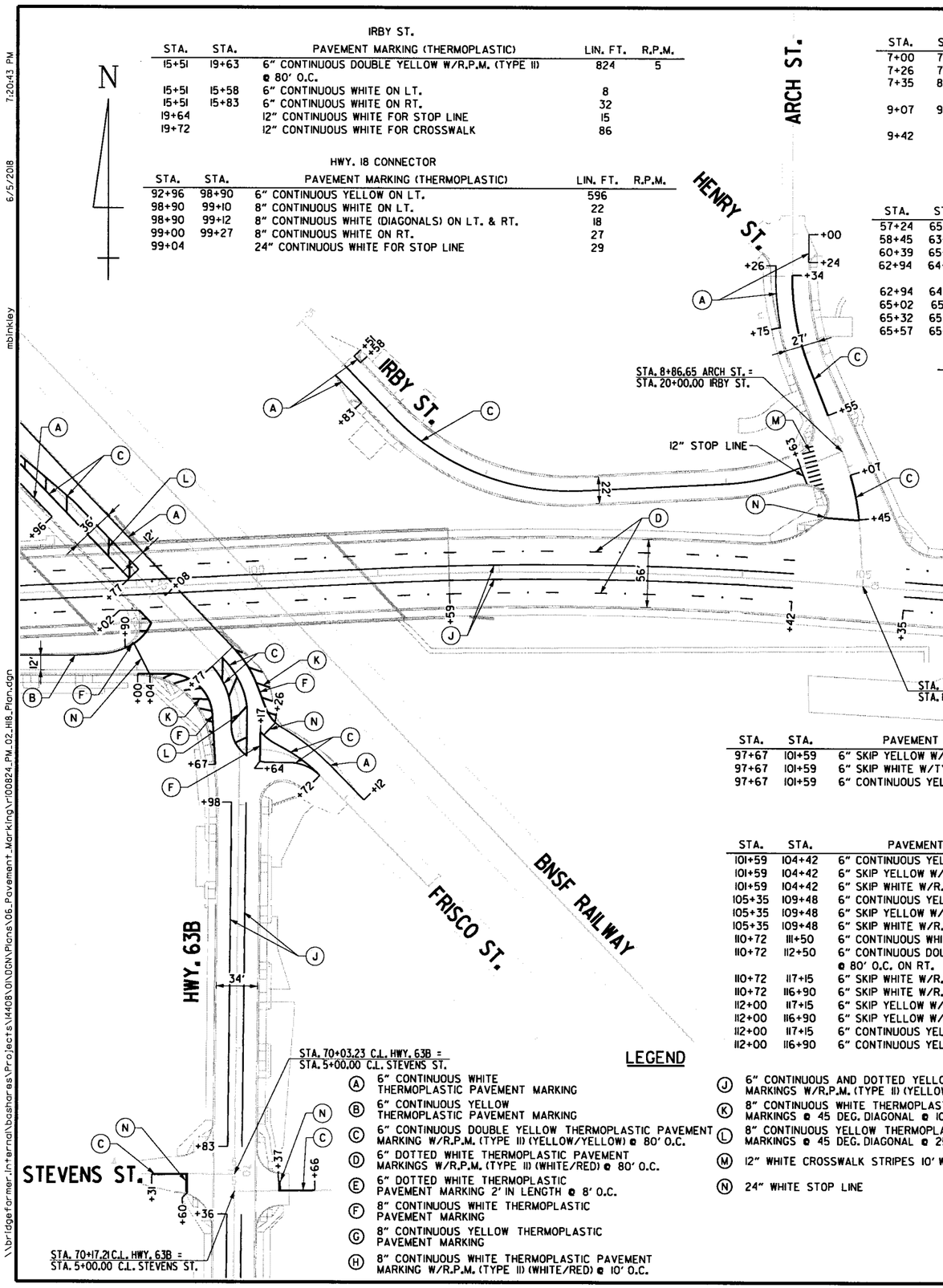
- (A) 6" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (B) 6" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (C) 6" CONTINUOUS DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (D) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (WHITE/RED) @ 80' O.C.
- (E) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING 2' IN LENGTH @ 8' O.C.
- (F) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (G) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (H) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (WHITE/RED) @ 10' O.C.
- (J) 6" CONTINUOUS AND DOTTED YELLOW THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (K) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 10' O.C.
- (L) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 25' O.C.
- (M) 12" WHITE CROSSWALK STRIPES 10' WIDE - PLACED 4' O.C.
- (N) 24" WHITE STOP LINE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ANAM
2018-09-04

PERMANENT PAVEMENT MARKING 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.		100824	84	346

(2) PERMANENT PAVEMENT MARKING DETAILS



IRBY ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
15+51	19+63	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	824	5
15+51	15+58	6" CONTINUOUS WHITE ON LT.	8	
15+51	15+83	6" CONTINUOUS WHITE ON RT.	32	
19+64		12" CONTINUOUS WHITE FOR STOP LINE	15	
19+72		12" CONTINUOUS WHITE FOR CROSSWALK	86	

HWY. 18 CONNECTOR

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
92+96	98+90	6" CONTINUOUS YELLOW ON LT.	596	
98+90	99+10	8" CONTINUOUS WHITE ON LT.	22	
98+90	99+12	8" CONTINUOUS WHITE (DIAGONALS) ON LT. & RT.	18	
99+00	99+27	8" CONTINUOUS WHITE ON RT.	27	
99+04		24" CONTINUOUS WHITE FOR STOP LINE	29	

ARCH ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
7+00	7+24	6" CONTINUOUS WHITE ON LT.	24	
7+26	7+75	6" CONTINUOUS WHITE ON RT.	49	
7+35	8+55	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	240	2
9+07	9+45	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	76	1
9+42		24" CONTINUOUS WHITE FOR STOP LINE	30	

NETTLETON AVE.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
57+24	65+77	6" CONTINUOUS WHITE ON LT.	857	
58+45	63+96	6" CONTINUOUS WHITE ON RT.	551	
60+39	65+08	6" SKIP WHITE W/TYPE II R.P.M. @ 80' O.C. ON LT.	118	6
62+94	64+77	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	730	5
62+94	64+77	8" CONTINUOUS YELLOW (DIAGONALS)	80	
65+02	65+16	8" CONTINUOUS WHITE ON RT.	14	
65+32	65+77	8" CONTINUOUS WHITE ON LT.	45	
65+57	65+77	8" CONTINUOUS WHITE ON RT.	20	

HWY. 63B

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
65+77	66+38	8" CONTINUOUS WHITE ON LT.	61	
65+77	66+67	8" CONTINUOUS WHITE ON RT.	90	
65+77	66+60	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	332	2
65+77	66+32	8" CONTINUOUS YELLOW (DIAGONALS)	64	
65+77	66+67	8" CONTINUOUS WHITE (DIAGONALS) ON LT. & RT.	115	
66+40	66+64	6" CONTINUOUS WHITE ON LT.	24	
66+98	69+83	6" CONTINUOUS YELLOW ON LT. & RT.	570	
66+98	69+83	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	143	7
70+36	72+26	6" CONTINUOUS YELLOW ON LT. & RT.	380	
70+36	72+26	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	95	5

HWY. 18

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
97+67	101+59	6" SKIP YELLOW W/TYPE II R.P.M. @ 80' O.C. ON LT. & RT	196	10
97+67	101+59	6" SKIP WHITE W/TYPE II R.P.M. @ 80' O.C. ON RT. & LT.	196	10
97+67	101+59	6" CONTINUOUS YELLOW ON LT. & RT.	784	

HWY. 18

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
101+59	104+42	6" CONTINUOUS YELLOW ON LT. & RT.	567	
101+59	104+42	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	142	7
101+59	104+42	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	142	7
105+35	109+48	6" CONTINUOUS YELLOW ON LT. & RT.	826	
105+35	109+48	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	207	10
105+35	109+48	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	207	10
110+72	111+50	6" CONTINUOUS WHITE ON LT.	78	
110+72	112+50	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	256	2
110+72	117+15	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	161	8
110+72	116+90	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	155	8
112+00	117+15	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	129	7
112+00	116+90	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	123	7
112+00	117+15	6" CONTINUOUS YELLOW ON LT.	516	
112+00	116+90	6" CONTINUOUS YELLOW ON RT.	490	

STEVENS ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
4+31	4+59	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
4+60		24" CONTINUOUS WHITE FOR STOP LINE	14	
5+37		24" CONTINUOUS WHITE FOR STOP LINE	8	
5+38	5+66	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	56	1

FRISCO ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
5+17	5+72	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	220	2
5+26		24" CONTINUOUS WHITE FOR STOP LINE	14	
5+26	6+12	6" CONTINUOUS WHITE ON LT.	86	

WATT ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
6+66	8+38	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	345	2
6+89	11+81	6" CONTINUOUS WHITE ON RT.	492	
11+61	17+08	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	1091	7
14+00	17+08	6" CONTINUOUS WHITE ON RT.	308	
17+09		24" CONTINUOUS WHITE FOR STOP LINE	30	

WATT ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
8+38	11+61	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	645	4

LEGEND

- (A) 6" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (B) 6" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (C) 6" CONTINUOUS DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (D) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (WHITE/RED) @ 80' O.C.
- (E) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING 2' IN LENGTH @ 8' O.C.
- (F) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (G) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (H) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (WHITE/RED) @ 10' O.C.
- (J) 6" CONTINUOUS AND DOTTED YELLOW THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (K) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 10' O.C.
- (L) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 25' O.C.
- (M) 12" WHITE CROSSWALK STRIPES 10' WIDE - PLACED 4' O.C.
- (N) 24" WHITE STOP LINE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12406
JANUARY 22, 2018
2018-06-06

PERMANENT PAVEMENT MARKING DETAILS

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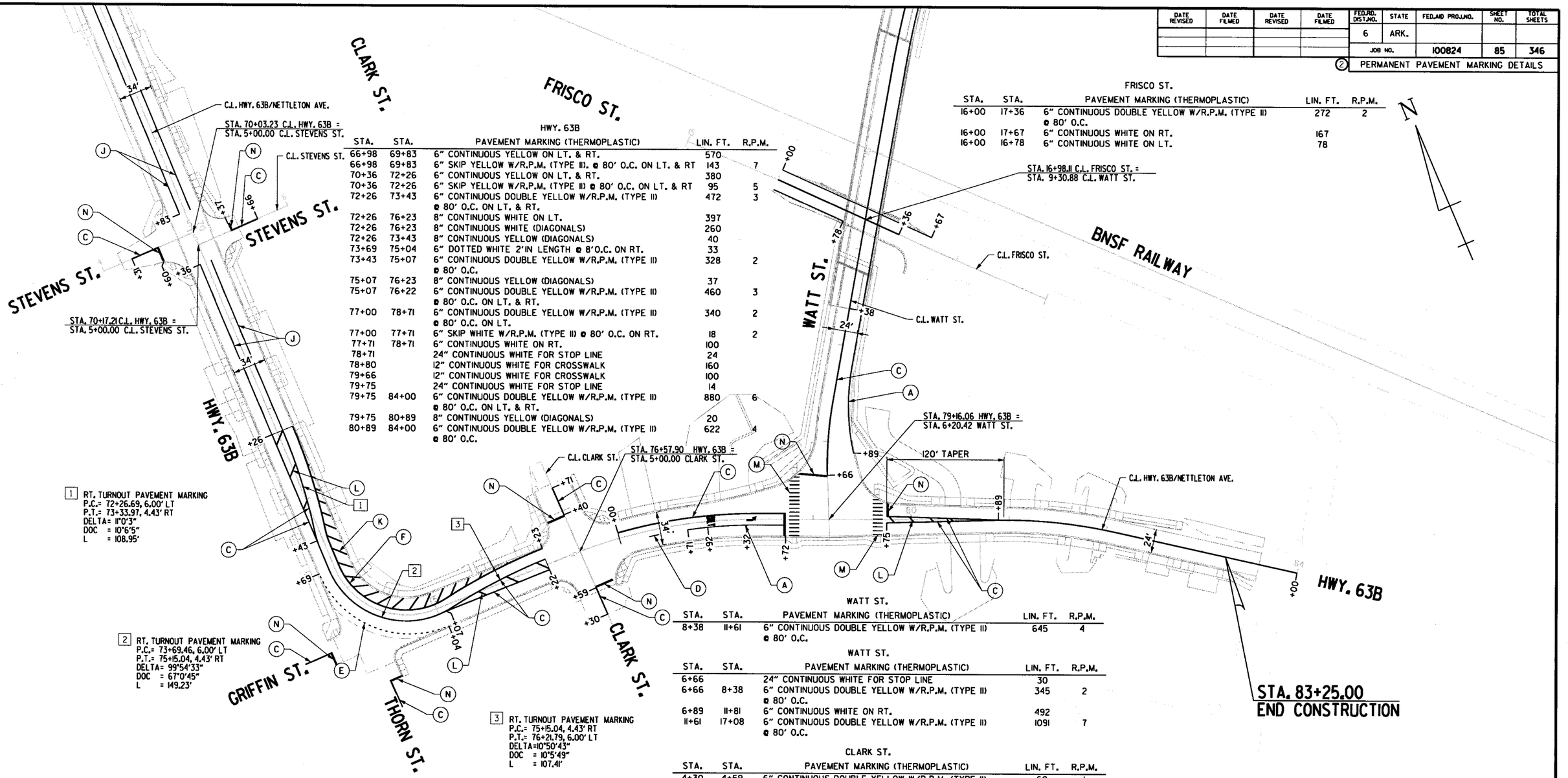
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	85	346

(2) PERMANENT PAVEMENT MARKING DETAILS



1 RT. TURNOUT PAVEMENT MARKING
P.C.= 72+26.69, 6.00' LT
P.T.= 73+33.97, 4.43' RT
DELTA= 11°0'3"
DOC = 10°6'5"
L = 108.95'

2 RT. TURNOUT PAVEMENT MARKING
P.C.= 73+69.46, 6.00' LT
P.T.= 75+15.04, 4.43' RT
DELTA= 99°54'33"
DOC = 67°0'45"
L = 149.23'

3 RT. TURNOUT PAVEMENT MARKING
P.C.= 75+15.04, 4.43' RT
P.T.= 76+21.79, 6.00' LT
DELTA=10°50'43"
DOC = 10°5'49"
L = 107.41'

HWY. 63B

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
66+98	69+83	6" CONTINUOUS YELLOW ON LT. & RT.	570	
66+98	69+83	6" SKIP YELLOW W/R.P.M. (TYPE II). @ 80' O.C. ON LT. & RT	143	7
70+36	72+26	6" CONTINUOUS YELLOW ON LT. & RT.	380	
70+36	72+26	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	95	5
72+26	73+43	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	472	3
72+26	76+23	8" CONTINUOUS WHITE ON LT.	397	
72+26	76+23	8" CONTINUOUS WHITE (DIAGONALS)	260	
72+26	73+43	8" CONTINUOUS YELLOW (DIAGONALS)	40	
73+69	75+04	6" DOTTED WHITE 2'IN LENGTH @ 8'O.C. ON RT.	33	
73+43	75+07	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	328	2
75+07	76+23	8" CONTINUOUS YELLOW (DIAGONALS)	37	
75+07	76+22	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	460	3
77+00	78+71	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	340	2
77+00	77+71	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	18	2
77+71	78+71	6" CONTINUOUS WHITE ON RT.	100	
78+71		24" CONTINUOUS WHITE FOR STOP LINE	24	
78+80		12" CONTINUOUS WHITE FOR CROSSWALK	160	
79+66		12" CONTINUOUS WHITE FOR CROSSWALK	100	
79+75		24" CONTINUOUS WHITE FOR STOP LINE	14	
79+75	84+00	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	880	6
79+75	80+89	8" CONTINUOUS YELLOW (DIAGONALS)	20	
80+89	84+00	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	622	4

FRISCO ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
16+00	17+36	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	272	2
16+00	17+67	6" CONTINUOUS WHITE ON RT.	167	
16+00	16+78	6" CONTINUOUS WHITE ON LT.	78	

WATT ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
8+38	11+61	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	645	4

WATT ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
6+66		24" CONTINUOUS WHITE FOR STOP LINE	30	
6+66	8+38	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	345	2
6+89	11+81	6" CONTINUOUS WHITE ON RT.	492	
11+61	17+08	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	1091	7

CLARK ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
4+30	4+59	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
4+59		24" CONTINUOUS WHITE FOR STOP LINE	19	
5+40		24" CONTINUOUS WHITE FOR STOP LINE	19	
5+41	5+71	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1

STEVENS ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
4+31	4+59	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
4+60		24" CONTINUOUS WHITE FOR STOP LINE	14	
5+37		24" CONTINUOUS WHITE FOR STOP LINE	8	
5+38	5+66	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	56	1

GRIFFIN ST.

PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
24" CONTINUOUS WHITE FOR STOP LINE	12	

THORN ST.

PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
24" CONTINUOUS WHITE FOR STOP BAR	12	

LEGEND

- (A) 6" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (B) 6" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (C) 6" CONTINUOUS DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (D) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (WHITE/RED) @ 80' O.C.
- (E) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING 2' IN LENGTH @ 8' O.C.
- (F) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
- (G) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
- (H) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (WHITE/RED) @ 10' O.C.
- (J) 6" CONTINUOUS AND DOTTED YELLOW THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
- (K) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 10' O.C.
- (L) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 25' O.C.
- (M) 12" WHITE CROSSWALK STRIPES 10' WIDE - PLACED 4' O.C.
- (N) 24" WHITE STOP LINE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
STEVEN R. AZLIN
2018-06-06

PERMANENT PAVEMENT MARKING DETAILS

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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.		100824	86	346

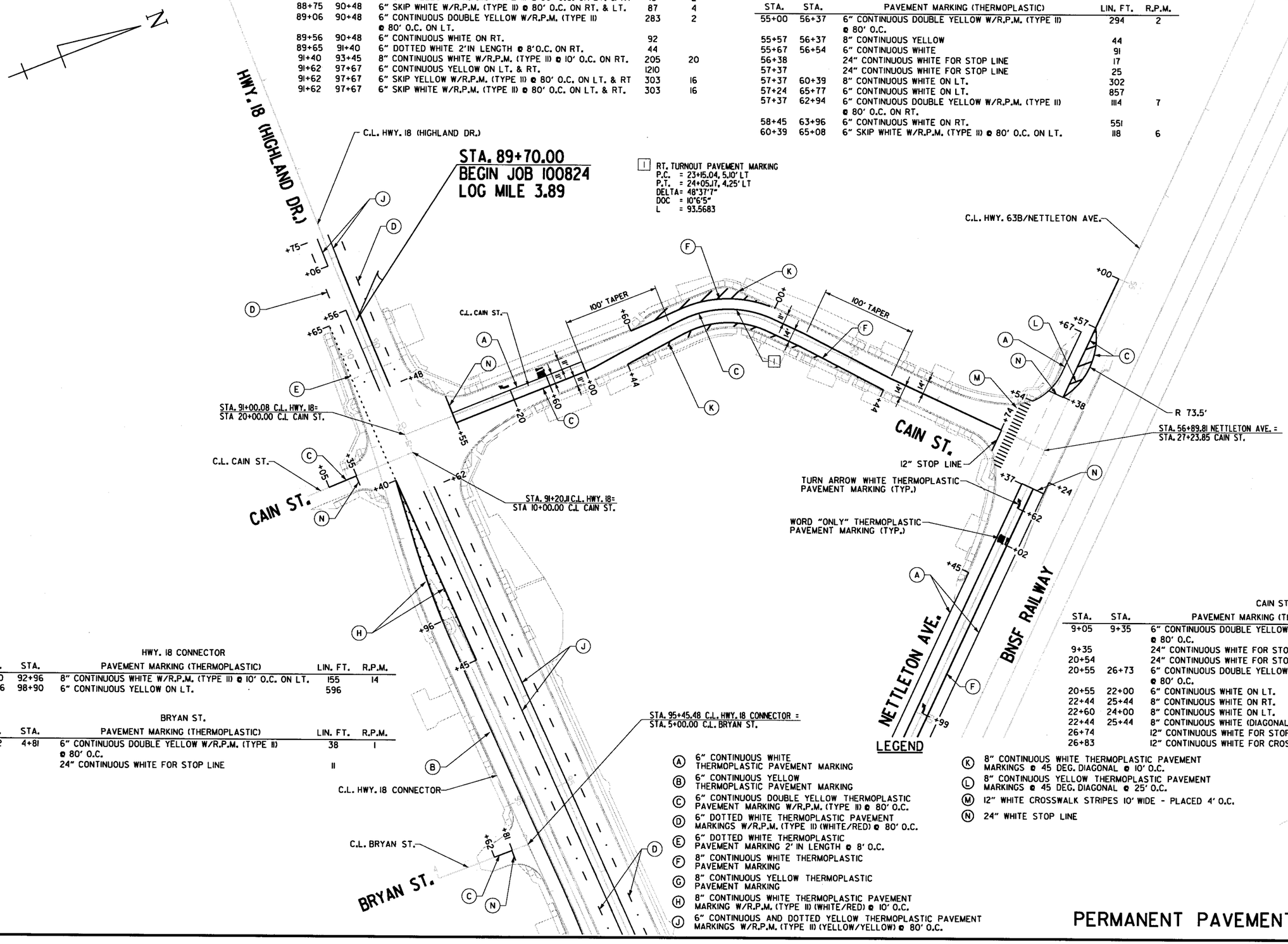
(2) PERMANENT PAVEMENT MARKING DETAILS

HWY. 18

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
88+75	89+06	6" CONTINUOUS YELLOW ON LT. & RT.	62	
88+75	89+06	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	16	2
88+75	90+48	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON RT. & LT.	87	4
89+06	90+48	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	283	2
89+56	90+48	6" CONTINUOUS WHITE ON RT.	92	
89+65	91+40	6" DOTTED WHITE 2'IN LENGTH @ 8'O.C. ON RT.	44	
91+40	93+45	8" CONTINUOUS WHITE W/R.P.M. (TYPE II) @ 10' O.C. ON RT.	205	20
91+62	97+67	6" CONTINUOUS YELLOW ON LT. & RT.	1210	
91+62	97+67	6" SKIP YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT	303	16
91+62	97+67	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT. & RT.	303	16

NETTLETON AVE.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
55+00	56+37	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	294	2
55+57	56+37	8" CONTINUOUS YELLOW	44	
55+67	56+54	6" CONTINUOUS WHITE	91	
56+38		24" CONTINUOUS WHITE FOR STOP LINE	17	
57+37		24" CONTINUOUS WHITE FOR STOP LINE	25	
57+37	60+39	8" CONTINUOUS WHITE ON LT.	302	
57+24	65+77	6" CONTINUOUS WHITE ON LT.	857	
57+37	62+94	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C. ON RT.	1114	7
58+45	63+96	6" CONTINUOUS WHITE ON RT.	551	
60+39	65+08	6" SKIP WHITE W/R.P.M. (TYPE II) @ 80' O.C. ON LT.	118	6



HWY. 18 CONNECTOR

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
91+40	92+96	8" CONTINUOUS WHITE W/R.P.M. (TYPE II) @ 10' O.C. ON LT.	155	14
92+96	98+90	6" CONTINUOUS YELLOW ON LT.	596	

BRYAN ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
4+62	4+81	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	38	1
4+81		24" CONTINUOUS WHITE FOR STOP LINE	II	

CAIN ST.

STA.	STA.	PAVEMENT MARKING (THERMOPLASTIC)	LIN. FT.	R.P.M.
9+05	9+35	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	60	1
9+35		24" CONTINUOUS WHITE FOR STOP LINE	II	
20+54		24" CONTINUOUS WHITE FOR STOP LINE	31	
20+55	26+73	6" CONTINUOUS DOUBLE YELLOW W/R.P.M. (TYPE II) @ 80' O.C.	1236	8
20+55	22+00	6" CONTINUOUS WHITE ON LT.	145	
22+44	25+44	8" CONTINUOUS WHITE ON RT.	300	
22+60	24+00	8" CONTINUOUS WHITE ON LT.	140	
22+44	25+44	8" CONTINUOUS WHITE (DIAGONALS) ON LT. AND RT.	145	
26+74		12" CONTINUOUS WHITE FOR STOP LINE	24	
26+83		12" CONTINUOUS WHITE FOR CROSSWALK	226	

LEGEND

(A) 6" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
(B) 6" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
(C) 6" CONTINUOUS DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) @ 80' O.C.
(D) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (WHITE/RED) @ 80' O.C.
(E) 6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING 2' IN LENGTH @ 8' O.C.
(F) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING
(G) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKING
(H) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKING W/R.P.M. (TYPE II) (WHITE/RED) @ 10' O.C.
(J) 6" CONTINUOUS AND DOTTED YELLOW THERMOPLASTIC PAVEMENT MARKINGS W/R.P.M. (TYPE II) (YELLOW/YELLOW) @ 80' O.C.
(K) 8" CONTINUOUS WHITE THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 10' O.C.
(L) 8" CONTINUOUS YELLOW THERMOPLASTIC PAVEMENT MARKINGS @ 45 DEG. DIAGONAL @ 25' O.C.
(M) 12" WHITE CROSSWALK STRIPES 10' WIDE - PLACED 4' O.C.
(N) 24" WHITE STOP LINE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12404 SHANNON L. READ
2018-06-06

PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAWN R. AZLIN
2018-09-12

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.		100824	87	346
				(2) QUANTITIES				

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	STAGE 2	STAGE 3		STAGE 3A	STAGE 3B	STAGE 4A		STAGE 4B		STAGE 5		MAXIMUM NUMBER REQUIRED		TOTAL SIGNS REQUIRED				CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	PORTABLE CHANGEABLE MESSAGE SIGN	VERTICAL PANELS		TRAFFIC DRUMS		BARRICADES (TYPE III)				FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
																												RIGHT		LEFT					
			•	•	•	•	••	••	••	•	••	•	••	•	••	•	••					•	•	•	••	•	••	•	••	•	••	•	••	•	•	•
			LIN. FT. - EACH															NO.	SQ. FT.	NO.	SQ. FT.	EACH	WEEKS	EACH				LIN. FT.						EACH		
G20-2	END ROAD WORK	48"x24"	12	12	12	12		12	12	12		12		12		12		12	96.0																
M3-1	NORTH	24"x12"	1	1	1					6		6		6		6		6	12.0																
M3-2	EAST	24"x12"								5		5		5		5		5	10.0																
M3-3	SOUTH	24"x12"	2	2	2					5		5		5		5		5	10.0																
M3-4	WEST	24"x12"								4		4		4		4		4	8.0																
M4-8A	END DETOUR	24"x18"	5	5	2		2	2	2	4		4		4		5		5	15.0																
M4-9S	DETOUR STRAIGHT	30"x24"	1	1			2	2	2	5		5		5		5		5	25.0																
M4-9R	DETOUR RIGHT	30"x24"	6	6	3		4	4	4	7		7		7		7		7	35.0																
M4-9L	DETOUR LEFT	30"x24"	8	8	4		3	3	3	8		8		8		8		8	40.0																
R1-1	STOP	30"x30"								1	5	1	5	2	5	2	5	2	60.4	5	150.9														
R2-1	SPEED LIMIT 30MPH	36"x48"								1		1		1		1		1	12.0																
R2-5A	REDUCE SPEED AHEAD	36"x48"								1		1		1		1		1	12.0																
R3-5R	RIGHT ONLY	30"x36"								2		2		2		2		2	15.0																
R3-7	MUST TURN RIGHT	30"x30"								3		3		3		3		3	18.8																
R6-1R	ONE WAY	36"X18"								3		7				7		7	31.5																
R11-2	ROAD CLOSED	48"x30"	2	2	1		3	3	3	7	1	6		7		7	1	7	70.0	1	10.0														
R11-4	ROAD CLOSED LOCAL TRAFFIC	60"x30"	2	2	2						1		2			2		2	25.0																
W1-6	LARGE ARROW	48"x24"								9		3				9		9	72.0																
W4-2	LANE ENDS	48"x48"								4		3		3		4		4	64.0																
W9-2	LANE ENDS MERGE LEFT	48"x48"								1						1		1	16.0																
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4		4	4	2		2		2		4		4	64.0																
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4		4	4	3		3		3		4		4	64.0																
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4		4	4	3		3		3		4		4	64.0																
W20-1	ROAD WORK AHEAD	48"x48"	9	9	9	9		9	9	9		9		9		9		9	144.0																
W20-1	ROAD WORK 1 MILE	48"x48"								1		1		1		1		1	16.0																
W20-2	DETOUR AHEAD	36"x36"	3	3			3	3	3	2		2		2		3		3	27.0																
W20-3	ROAD CLOSED AHEAD	36"x36"	3	3			3	3	3	2		2		2		3		3	27.0																
W20-5	RIGHT TWO LANES CLOSED 1/2 MILE	48"x48"								1		1		1		1		1	16.0																
W20-5	RIGHT LANE CLOSED 1500FT	48"x48"								1		1		1		1		1	16.0																
SPECIAL	CONSTRUCTION IN HWY. 18 / NETTLETON INTERSECTION, LARGE TRUCKS TAKE ALTERNATE ROUTE.	96"x78"	8	8	8	8		8	8	8		8		8		8		8	416.0																
SPECIAL	CLARK ST.	12"x36"	5	5												5		5	15.0																
SPECIAL	HWY. 63B / NETTLETON AVE.	12"x48"	14	14	8					11		11		11		14		14	56.0																
SPECIAL	FRISCO ST.	12"x42"					5	5	5								5			5	17.5														
SPECIAL	WATT ST.	12"x36"					13	13	13								13			13	39.0														
SPECIAL	HWY. 18	12"x36"								20		20		20		20		20	60.0																
SPECIAL	ACCESS TO POST OFFICE FROM FRISCO ST.	44"x44"	1	1			1	1	1								1			1	13.4														
SPECIAL	TRAILERS LONGER THAN 33 FT MUST TURN RIGHT	72"x48"	1	1												1		1	24.0																
SPECIAL	TRAILERS LONGER THAN 33 FT MUST GO STRAIGHT	72"x48"	1	1												1		1	24.0																
SPECIAL	ACCESS TO BUSINESS' ON SOUTH SIDE NETTLETON FROM SCHOOL ST.	66"x54"			1											1		1	24.8																
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2				2		2		2		2		2	64.0																
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE																					10													
	PORTABLE CHANGEABLE MESSAGE SIGN									2				2		2							8												
	VERTICAL PANELS		21	34	6		12	32	39					9	4	34	5							34	5										
	TRAFFIC DRUMS		72	76	28	21	7	86	75	407	5	359		311		402	10									402	10								
	TYPE III BARRICADE-RT. (8')		4	4	3		1	1	1	7	1		2			7	1											56	8					
	TYPE III BARRICADE-LT. (8')		2	2	1					5						5														40				
	TYPE III BARRICADE-RT. (16')						1	1	1	2	1	4			3	3	1											48	16					
	TYPE III BARRICADE-LT. (16')						1	1	1	2	1	4			3	3	1													48	16			
	TYPE III BARRICADE-RT. (24')						1	1	1	5		5		5		4	1															96	24		
	TYPE III BARRICADE-LT. (24')						1	1	1	5		5		5		5																120			
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER									480						480																480		
	TEMPORARY IMPACT ATTENUATION BARRIER									2						2																	2	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)									2						2																		2
TOTALS:																		1769.5		230.8	10	8	34	5	402	10	200	48	208	16	480	2	2	

• NHPP-9227(80) (STATE)
•• NHPP-9227(80) (LOCAL)
NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

QUANTITIES

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9/12/2018
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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHRIAR AZAD
2018-09-12

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.		100824	88	346
				(2)	QUANTITIES			

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS - NHPP-9227(80) (STATE)

DESCRIPTION	STAGE 1A	STAGE 1B	STAGE 2	STAGE 3	STAGE 3A	STAGE 4A	STAGE 4B	STAGE 5	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WORDS)	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							
																TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	6" WHITE	6" YELLOW	8" WHITE	8" YELLOW	12" WHITE	24" WHITE	WORDS	ARROWS
	LIN. FT. - EACH									LIN. FT.		LIN. FT.		EACH	EACH	EACH		LIN. FT.						EACH	
REMOVAL OF PERMANENT PAVEMENT MARKINGS		510		600		7741	745			9596														
CONSTRUCTION PAVEMENT MARKINGS		593		223		1235	1179				3230													
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS			593			223	1235	1179				3230												
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2842	592		3097		13219	6238	3168					29156											
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WORDS)			1			2	1							4										
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (ARROWS)			1			18	2								21									
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)									99							99								
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)									97								97							
THERMOPLASTIC PAVEMENT MARKING WHITE (6")									1640									1640						
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")									11368										11368					
THERMOPLASTIC PAVEMENT MARKING WHITE (8")									1370											1370				
THERMOPLASTIC PAVEMENT MARKING YELLOW (8")									161												161			
THERMOPLASTIC PAVEMENT MARKING WHITE (12")									260													260		
THERMOPLASTIC PAVEMENT MARKING WHITE (24")									67														67	
THERMOPLASTIC PAVEMENT MARKING (WORDS)									1															1
THERMOPLASTIC PAVEMENT MARKING (ARROWS)									1															1
TOTALS:										9596	3230	3230	29156	4	21	99	97	1640	11368	1370	161	260	67	1	1

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS - NHPP-9227(80) (LOCAL)

DESCRIPTION	STAGE 1A	STAGE 1B	STAGE 2	STAGE 3	STAGE 3A	STAGE 4A	STAGE 4B	STAGE 5	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WORDS)	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							
																TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	6" WHITE	6" YELLOW	8" WHITE	8" YELLOW	12" WHITE	24" WHITE	WORDS	ARROWS
	LIN. FT. - EACH									LIN. FT.		LIN. FT.		EACH	EACH	EACH		LIN. FT.						EACH	
REMOVAL OF PERMANENT PAVEMENT MARKINGS																								
CONSTRUCTION PAVEMENT MARKINGS																								
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS																								
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS					2568	7547	3901	1880					15896											
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WORDS)						4								4										
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (ARROWS)						5									5									
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)									6							6								
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)									55								55							
THERMOPLASTIC PAVEMENT MARKING WHITE (6")									3006									3006						
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")									7541										7541					
THERMOPLASTIC PAVEMENT MARKING WHITE (8")									946											946				
THERMOPLASTIC PAVEMENT MARKING YELLOW (8")									124												124			
THERMOPLASTIC PAVEMENT MARKING WHITE (12")									351													351		
THERMOPLASTIC PAVEMENT MARKING WHITE (24")									283														283	
THERMOPLASTIC PAVEMENT MARKING (WORDS)									5															5
THERMOPLASTIC PAVEMENT MARKING (ARROWS)									5															5
TOTALS:													15896	4	5	6	55	3006	7541	946	124	351	283	5	5

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

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QUANTITIES

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12428
STANLEY A. TAD
2018-09-12

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.		100824	88A	346
				(2)	QUANTITIES			

EROSION CONTROL - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL											
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	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)	TRIANGULAR SILT DIKES	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	•SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE IA	0.01	0.02	0.01	1.5	0.01	38	0.04	0.04	0.8		44			352	237			24
ENTIRE	PROJECT	STAGE IB	0.01	0.02	0.01	1.1	0.01	4								416				15
ENTIRE	PROJECT	STAGE 2	0.05	0.10	0.05	6.3	0.05	94	0.02	0.02	0.4					288				11
ENTIRE	PROJECT	STAGE 3	0.03	0.06	0.03	3.7	0.03	47								96	254			13
ENTIRE	PROJECT	STAGE 3A							0.04	0.04	0.8					288				11
ENTIRE	PROJECT	STAGE 3B																		
ENTIRE	PROJECT	STAGE 4A	0.20	0.40	0.20	21.8	0.20	115	0.05	0.05	1.0					608	774			51
ENTIRE	PROJECT	STAGE 4B	0.52	1.04	0.52	53.0	0.52		0.01	0.01	0.2		22			480	214			27
ENTIRE	PROJECT	STAGE 5	0.19	0.38	0.19	19.4	0.19									576	588			43
•ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.									1.00	1.00	20.4	45	44	15	200		500	30	30	149
TOTALS:			1.01	2.02	1.01	106.8	1.01	298	1.16	1.16	23.6	45	110	15	200	3104	2567	30	30	344

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

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.

EROSION CONTROL - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL											
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	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)	TRIANGULAR SILT DIKES	SILT FENCE (E-11)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	•SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	STAGE IA											66							3
ENTIRE	PROJECT	STAGE IB															173			6
ENTIRE	PROJECT	STAGE 2							0.02	0.02	0.4						382			14
ENTIRE	PROJECT	STAGE 3	0.59	1.18	0.59	60.6	0.59	32					22			320	790			42
ENTIRE	PROJECT	STAGE 3A														288	298			22
ENTIRE	PROJECT	STAGE 3B														256				9
ENTIRE	PROJECT	STAGE 4A	0.51	1.02	0.51	52.0	0.51									288	440			27
ENTIRE	PROJECT	STAGE 4B	0.05	0.10	0.05	5.2	0.05	4								96				4
ENTIRE	PROJECT	STAGE 5	0.03	0.06	0.03	3.1	0.03	4								64				2
TOTALS:			1.18	2.36	1.18	120.9	1.18	40	0.02	0.02	0.4		88			1312	2083			129

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

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.

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QUANTITIES

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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.		100824	89	346
				②	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHANNIAR RAHAD
2018-09-12

CLEARING AND GRUBBING

STATION	STATION	LOCATION	NHPP-9227(80) (STATE)		NHPP-9227(80) (LOCAL)		9930	
			CLEARING	GRUBBING	CLEARING	GRUBBING	CLEARING	GRUBBING
			STATION		STATION		STATION	
106+00	118+00	HWY. 18	12	12				
55+00	59+00	NETTLETON AVE.			4	4		
15+00	20+00	IRBY ST.					5	5
8+00	10+00	ARCH ST.					2	2
TOTALS:			12	12	4	4	7	7

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	NHPP-9227(80) (STATE)	
	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	40	80
TOTALS:	40	80

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

CULVERT CLEAN OUT

STATION	LOCATION	NHPP-9227(80) (STATE)
		EACH
ENTIRE PROJECT	TO BE USED IF AND WHERE DIRECTED BY ENGINNER	10
TOTAL:		10

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

BENCH MARKS

STATION	LOCATION	NHPP-9227(80) (STATE)
		BENCH MARKS
		EACH
ENTIRE PROJECT	TO BE USED IF AND WHERE DIRECTED BY ENGINEER	4
TOTAL:		4

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	NHPP-9227(80) (STATE)
	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:	50

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

TRANSITIONAL APPROACH RAILING

STATION	LOCATION	NHPP-9227(80) (STATE)	NHPP-9227(80) (LOCAL)
		TRANSITIONAL APPROACH RAILING	TRANSITIONAL APPROACH RAILING
		EACH	EACH
93+30	HWY. 18 RT.	1	
6+90	WATT ST. RT.		1
TOTAL:		1	1

MAILBOXES

LOCATION	NHPP-9227(80) (STATE)		NHPP-9227(80) (LOCAL)	
	MAILBOXES	MAILBOX SUPPORTS (SINGLE)	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH		EACH	
ENTIRE PROJECT	10	10	1	1
TOTALS:	10	10	1	1

CONCRETE DITCH PAVING - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
93+79.22	93+93.57	HWY. 18 ON LEFT	14.35	4.00	6.38	3.19	0.04
93+93.57	94+06.43	HWY. 18 ON LEFT	12.86	5.80	8.29	2.86	0.04
94+06.43	95+12.25	HWY. 18 ON LEFT	105.82	4.00	47.03	23.52	0.30
95+12.25	95+27.59	HWY. 18 ON LEFT	15.34	6.27	10.69	3.41	0.04
95+27.59	96+74.64	HWY. 18 ON LEFT	147.05	4.00	65.36	32.68	0.41
96+74.64	96+89.97	HWY. 18 ON LEFT	15.33	6.61	11.26	3.41	0.04
96+89.97	98+27.58	HWY. 18 ON LEFT	137.61	4.00	61.16	30.58	0.39
98+27.58	98+34.08	HWY. 18 ON LEFT	6.50	7.50	5.42	1.44	0.02
101+16.16	101+23.95	HWY. 18 ON RIGHT	11.65	2.81	3.64	2.59	0.03
101+23.95	101+40.97	HWY. 18 ON RIGHT	25.21	4.00	11.20	5.60	0.07
101+40.97	105+56.15	HWY. 18 ON RIGHT	408.80	4.00	181.69	90.84	1.14
105+56.15	105+57.07	HWY. 18 ON RIGHT	11.17	4.00	4.96	2.48	0.03
64+08.90	65+13.95	HWY. 63B ON RIGHT	105.05	17.17	200.41		
TOTALS:					617.49	202.60	2.55

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

CONCRETE DITCH PAVING - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
6+73.60	9+13.53	WATT ST. ON LEFT	314.97	4.00	139.99	69.99	0.88
6+52.84	8+83.55	WATT ST. ON RIGHT	329.73	4.00	146.55	78.57	0.99
7+10.89	7+76.13	WATT ST. ON RIGHT	65.24	1.80	13.05	14.50	0.18
11+03.46	14+18.33	WATT ST. ON RIGHT	312.78	4.00	139.01	72.11	0.91
11+29.42	15+12.88	WATT ST. ON RIGHT	486.50	4.00	216.22	25.82	0.33
16+85.70	17+28.37	FRISCO ST. ON RIGHT	42.67	4.00	18.96	9.48	0.12
16+72.62	16+84.03	FRISCO ST. ON RIGHT	11.41	8.85	11.22	2.54	0.03
TOTALS:					685.00	273.01	3.44

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

SOIL LOG

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION
		FEET			
93+60	35' LT. HWY. 18	6	40	22	A-6
95+00	30' RT. HWY. 18	3.5	45	25	A-7-6
96+50	40' LT. HWY. 18	3.5	59	41	A-7-6
99+10	35' LT. HWY. 18	3.5	45	28	A-7-6
101+05	5' LT. HWY 18	5.5	48	28	A-7-6
101+65	50' RT. HWY. 18	4.5	41	22	A-7-6
103+40	40' LT. HWY. 18	5.5	41	23	A-7-6
103+70	55' RT. HWY. 18	2.5	49	33	A-7-6
105+10	40' LT. HWY. 18	2	30	10	A-4
6+95	50' RT. WATT ST.	3.5	50	32	A-7-6
8+55	25' LT. WATT ST.	5.5	38	21	A-6
9+40	20' LT. WATT ST.	10	52	35	A-7-6
10+50	20' RT. WATT ST.	7.5	37	19	A-6
12+50	20' RT. WATT ST.	4	57	39	A-7-6
13+10	15' LT. WATT ST.	3.5	52	32	A-7-6
14+50	25' LT. WATT ST.	6	43	24	A-7-6

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.

S:\1408\01\DGN\Plans\09_Quantity_Sheets\100824_Quantities_03.dgn

QUANTITIES

10:56:53 AM
9/12/2018
mbinkley

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9403
SHAHRIAR AZAD
2018-09-12

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.		100824	90	346

(2) QUANTITIES

BASE AND SURFACING - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	LENGTH	TACK COAT 0.17 GAL. / SQ. YD.			TACK COAT 0.05 GAL. / SQ. YD.			ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
				AVG. WIDTH	SQ.YD.	GAL.	AVG. WIDTH	SQ.YD.	GAL.	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 70-22	TOTAL PG 70-22
			FEET	FEET			FEET			FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
89+70.00	90+70.00	HIGHWAY 18	100.00	57.28	636.44	108.19	1.77	19.67	0.98									1.77	19.67	220.00	2.16	59.05	656.11	220.00	72.17	74.33
90+70.00	92+48.53	HIGHWAY 18	178.53	59.60	1182.27	200.99	64.97	1288.78	64.44	14.45	286.64	440.00	63.06	12.48	247.56	440.00	54.46	13.08	259.46	220.00	28.54	72.72	1442.52	220.00	158.68	187.22
92+48.53	93+45.36	HIGHWAY 18	96.83				317.80	3419.18	170.96	66.56	716.11	440.00	157.54	62.81	675.77	440.00	148.67	62.81	675.77	220.00	74.33	59.18	636.71	220.00	70.04	144.37
93+45.36	97+67.01	HIGHWAY 18	421.65				285.00	13352.25	667.61	61.00	2857.85	440.00	628.73	56.00	2623.60	440.00	577.19	56.00	2623.60	220.00	288.60	56.00	2623.60	220.00	288.60	577.20
101+58.63	107+61.49	HIGHWAY 18	602.86				285.00	19090.57	954.53	61.00	4086.05	440.00	898.93	56.00	3751.13	440.00	825.25	56.00	3751.13	220.00	412.62	56.00	3751.13	220.00	412.62	825.24
107+61.49	108+49.19	HIGHWAY 18	87.70				285.00	2777.17	138.86	61.00	594.41	440.00	130.77	56.00	545.69	440.00	120.05	56.00	545.69	220.00	60.03	56.00	545.69	220.00	60.03	120.06
108+49.19	110+67.08	HIGHWAY 18	217.89	47.81	1157.48	196.77	43.30	1048.29	52.41	10.54	255.17	440.00	56.14	8.19	198.28	440.00	43.62	8.19	198.28	220.00	21.81	56.00	1355.76	220.00	149.13	170.94
110+67.08	112+15.00	HIGHWAY 18	147.92	50.76	834.27	141.83	1.67	27.45	1.37									1.67	27.45	220.00	3.02	52.43	861.72	220.00	94.79	97.81
92+51.28	96+06.18	HIGHWAY 18 CONNECTOR	354.90	1.96	77.29	13.14	63.15	2490.21	124.52	15.40	607.27	440.00	133.60	11.89	468.86	440.00	103.15	12.08	476.35	220.00	52.40	14.00	552.07	220.00	60.73	113.13
96+06.18	98+88.33	HIGHWAY 18 CONNECTOR	282.15	15.00	470.25	79.94																15.60	489.06	220.00	53.80	53.80
96+06.18	98+88.33	HIGHWAY 18 CONNECTOR	282.15	15.00	470.25	79.94																15.60	489.06	220.00	53.80	53.80
62+60.00	66+46.69	HWY. 63B	386.69	39.19	1683.82	286.25	5.00	214.83	10.74																	
66+46.69	72+81.55	HWY. 63B	634.86	26.80	1890.47	321.38	7.67	541.04	27.05									5.00	214.83	220.00	23.63	44.32	1904.23	220.00	209.47	233.10
72+81.55	75+72.79	HWY. 63B	291.24	38.46	1244.57	211.58	6.59	213.25	10.66									7.67	541.04	220.00	59.51	34.53	2435.75	220.00	267.93	327.44
75+72.79	76+40.13	HWY. 63B	67.34	28.34	212.05	36.05	6.48	48.48	2.42									6.59	213.25	220.00	23.46	45.08	1458.79	220.00	160.47	183.93
76+40.13	79+22.93	HWY. 63B	282.80				175.00	5498.89	274.95	39.00	1225.47	440.00	269.60	34.00	1068.36	440.00	235.04	6.48	48.48	220.00	5.33	35.09	262.55	220.00	28.88	34.21
79+22.93	83+00.66	HWY. 63B	377.73				140.90	5913.57	295.68	31.62	1327.09	440.00	291.96	27.32	1146.62	440.00	252.26	34.00	1068.36	220.00	117.52	34.00	1068.36	220.00	117.52	235.04
83+00.66	83+60.00	HWY. 63B	59.34	31.26	206.11	35.04	15.00	98.90	4.95	3.00	19.78	440.00	4.35	3.00	19.78	440.00	4.35	27.32	1146.62	220.00	126.13	27.32	1146.62	220.00	126.13	252.26
9+26.99	9+60.40	SOUTH CAIN STREET FLARE	33.41	24.02	89.17	15.16	47.04	174.62	8.74	8.76	32.52	440.00	7.15	3.00	19.78	440.00	4.35	3.00	19.78	220.00	2.18	31.26	206.11	220.00	22.67	24.85
4+45.00	5+00.00	BRYAN STREET FLARE	55.00				157.55	962.81	48.14	35.22	215.23	440.00	47.35	6.14	22.79	440.00	5.01	19.86	73.72	220.00	8.11	43.89	162.93	220.00	17.92	26.03
5+16.87	6+05.00	FRISCO STREET	88.13	22.38	219.15	37.26	10.82	105.95	5.30					30.55	186.69	440.00	41.07	30.68	187.49	220.00	20.62	30.68	187.49	220.00	20.62	41.24
4+20.00	4+82.00	STEVENS STREET WEST FLARE	62.00	19.37	133.44	22.68	11.34	78.12	3.91									10.82	105.95	220.00	11.65	35.25	345.18	220.00	37.97	49.62
5+18.00	5+45.00	STEVENS STREET EAST FLARE	27.00	21.37	64.11	10.90	8.00	24.00	1.20									11.34	78.12	220.00	8.59	30.71	211.56	220.00	23.27	31.86
4+30.00	4+82.98	CLARK STREET SOUTH FLARE	52.98	39.93	235.05	39.96	130.64	769.04	38.45	28.79	169.48	440.00	37.29	25.24	148.58	440.00	32.69	8.00	24.00	220.00	2.64	26.13	78.39	220.00	8.62	11.26
5+17.02	5+75.00	CLARK STREET NORTH FLARE	57.98	30.14	194.17	33.01	131.49	847.09	42.36	44.34	285.65	440.00	62.84	20.33	130.97	440.00	28.81	26.13	153.82	220.00	16.92	48.22	283.86	220.00	31.22	48.14
																		26.16	168.53	220.00	18.54	41.75	268.96	220.00	29.59	48.13
MAINTENANCE OF TRAFFIC																										
76+80.40	77+02.48	HWY. 63B WIDENING (STAGE 1A)	22.08				28.61	70.19	3.51	7.32	17.96	1100.00	9.88													
77+02.48	78+32.33	HWY. 63B (STAGE 1A)	129.85				99.35	1433.40	71.67	25.17	363.15	1100.00	199.73									6.82	16.73	220.00	1.84	1.84
76+91.57	79+34.67	HWY. 63B WIDENING (STAGE 2)	243.10				36.81	994.28	49.71	9.37	253.09	1100.00	139.20									24.17	348.72	220.00	38.36	38.36
101+76.18	104+65.42	HWY. 18 (STAGE 4A)	296.61				99.35	3274.24	163.71	25.17	829.52	1100.00	456.24									8.87	239.59	220.00	26.35	26.35
																						24.17	796.56	220.00	87.62	87.62
ADDITIONAL FOR LEVELING																										
90+70.00	92+48.53	HIGHWAY 18	178.53				44.80	888.68	44.43									44.80	888.68	220.00	97.75					97.75
108+49.19	110+67.08	HIGHWAY 18	217.89				43.07	1042.72	52.14									43.07	1042.72	220.00	114.70					114.70
110+67.08	112+15.00	HIGHWAY 18	147.92				3.48	57.20	2.86									3.48	57.20	220.00	6.29					6.29
95+45.53	96+06.18	HIGHWAY 18 CONNECTOR	60.65				11.48	77.36	3.87									11.48	77.36	220.00	8.51					8.51
97+59.22	98+88.33	HIGHWAY 18 CONNECTOR	129.11				15.98	229.24	11.46									15.98	229.24	220.00	25.22					25.22
63+10.00	66+46.69	HWY. 63B	336.69				39.61	1481.81	74.09									39.61	1481.81	220.00	163.00					163.00
66+46.69	72+81.55	HWY. 63B	634.86				26.80	1890.47	94.52									26.80	1890.47	220.00	207.95					207.95
72+81.55	75+72.79	HWY. 63B	291.24				38.46	1244.57	62.23									38.46	1244.57	220.00	136.90					136.90
75+72.79	76+40.13	HWY. 63B	67.34				28.34	212.05	10.60									28.34	212.05	220.00	23.33					23.33
83+00.66	83+60.00	HWY. 63B	59.34				16.56	109.19	5.46									16.56	109.19	220.00	12.01					12.01
5+16.87	6+05.00	FRISCO STREET	88.13				7.02	68.74	3.44									7.02	68.74	220.00	7.56					7.56
4+20.00	4+82.00	STEVENS STREET WEST FLARE	62.00				7.76	53.46	2.67									7.76	53.46	220.00	5.88					5.88
4+40.00	4+55.00	CLARK STREET SOUTH FLARE	15.00				39.72	66.20	3.31									39.72	66.20	220.00	7.28					7.28
5+45.00	5+65.00	CLARK STREET NORTH FLARE	20.00				30.26	67.24	3.36									30.26	67.24	220.00	7.40					7.40
ADDITIONAL FOR GRADE RAISE																										
91+25.58	92+48.53	HWY. 18	122.95		1908.64	324.46				VAR.	391.35	VAR.	129.15	VAR.	562.97	VAR.	123.85									
108+49.19	110+00.00	HWY. 18	150.81		635.04	107.96				VAR.	72.94	VAR.	16.05	VAR.	244.58	VAR.	53.81									
95+45.53	96+06.18	HIGHWAY 18 CONNECTOR	60.65		154.74	26.30								VAR.	77.37	VAR.	17.02									
97+79.25	98+88.33	HIGHWAY 18 CONNECTOR	109.08		410.34	69.76								VAR.	205.17	VAR.	31.37									
64+00.00	76+43.13	HWY. 63B	1243.13		9200.70	1564.12				VAR.	1227.20	VAR.	404.98	VAR.	3373.15	VAR.	742.09									
83+00.66	83+60.00	HWY. 63B	59.34		172.80	29.38				VAR.	25.31	VAR.	5.57	VAR.	61.09	VAR.	13.44									
TOTALS:					23482.62	3992.05		72265.20	3613.27		15859.24		4150.11		15759.01		3453.20		20110.32		2212.12		24825.81		2730.84	4942.96

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% 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 = 160 FOR PG 70-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

FOR TEMPORARY DRIVES REFER TO DRIVEWAY QUANTITY TABLE.

S:\1408\01\DGN\Plans\09_Quantity_Sheets\100824_Quantities_05.dgn

QUANTITIES

10:56:53 AM
9/12/2018
mbinkley

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SYLVAN AZ
2018-09-12

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.		100824	91	346
				(2) QUANTITIES				

BASE AND SURFACING - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	LENGTH	TACK COAT 0.17 GAL. / SQ. YD.			TACK COAT 0.05 GAL. / SQ. YD.			ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				AVG. WIDTH	SQ.YD.	GAL.	AVG. WIDTH	SQ.YD.	GAL.	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WIDTH	SQ.YD.	POUND / SQ.YD.	PG 70-22	TOTAL PG 70-22
			FEET	FEET			FEET			FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																										
55+40.00	59+10.00	NETTLETON AVE.	370.00	35.02	1439.71	244.75	1.44	59.20	2.96									1.44	59.20	220.00	6.51	36.44	1498.09	220.00	164.79	171.30
6+37.44	7+80.92	WATT STREET FLARE	143.48				210.11	3349.62	167.49	45.56	726.33	440.00	159.79	40.96	652.99	440.00	143.66	41.67	664.31	220.00	73.07	41.67	664.31	220.00	73.07	146.14
7+80.92	8+38.14	WATT STREET	57.22				114.50	727.97	36.40	24.50	155.77	440.00	34.27	22.00	139.87	440.00	30.77	24.00	152.59	220.00	16.78	24.00	152.59	220.00	16.78	33.56
11+60.69	12+50.00	WATT STREET	89.31				106.50	1056.83	52.84	21.50	213.35	440.00	46.94	20.00	198.47	440.00	43.66	25.00	248.08	220.00	27.29	25.00	248.08	220.00	27.29	54.58
12+50.00	14+00.00	WATT STREET	150.00				134.00	2233.33	111.67	27.00	450.00	440.00	99.00	25.50	425.00	440.00	93.50	30.50	508.33	220.00	55.92	30.50	508.33	220.00	55.92	111.84
14+00.00	14+97.35	WATT STREET	97.35				161.50	1746.89	87.34	32.50	351.54	440.00	77.34	31.00	335.32	440.00	73.77	36.00	389.40	220.00	42.83	36.00	389.40	220.00	42.83	85.66
14+97.35	16+86.00	WATT STREET	188.65				195.90	4106.29	205.32	42.67	894.41	440.00	196.77	38.20	800.71	440.00	176.16	38.63	809.73	220.00	89.07	38.63	809.73	220.00	89.07	178.14
16+86.00	17+34.43	WATT STREET FLARE	48.43				365.95	1969.21	98.46	77.21	415.48	440.00	91.41	71.23	383.30	440.00	84.33	75.05	403.85	220.00	44.42	75.05	403.85	220.00	44.42	88.84
20+28.02	21+67.00	CAIN STREET FLARE	138.98	27.41	423.27	71.96	79.22	1223.34	61.16	15.86	244.91	440.00	53.88	13.71	211.71	440.00	46.58	22.23	343.28	220.00	37.76	49.64	766.55	220.00	84.32	122.08
21+67.00	22+00.00	CAIN STREET	33.00	28.06	102.89	17.49	4.93	18.08	0.90									4.93	18.08	220.00	1.99	33.00	121.00	220.00	13.31	15.30
22+00.00	24+05.17	CAIN STREET	205.17	25.44	579.95	98.59	9.65	219.99	11.00									9.65	219.99	220.00	24.20	35.09	799.94	220.00	87.99	112.19
24+05.17	25+09.24	CAIN STREET	104.07	26.58	307.35	52.25	2.32	26.83	1.34									2.32	26.83	220.00	2.95	28.90	334.18	220.00	36.76	39.71
25+09.24	27+07.12	CAIN STREET FLARE	197.88	30.86	678.51	115.35	12.06	265.16	13.26									12.06	265.16	220.00	29.17	42.91	943.45	220.00	103.78	132.95
6+85.00	7+81.54	ARCH STREET	96.54	26.10	279.97	47.59	7.13	76.48	3.82									7.13	76.48	220.00	8.41	33.48	359.13	220.00	39.50	47.91
7+81.54	8+11.15	ARCH STREET	29.61				123.29	405.63	20.28	26.48	87.12	440.00	19.17	23.27	76.56	440.00	16.84	27.00	88.83	220.00	9.77	27.00	88.83	220.00	9.77	19.54
8+11.15	9+25.67	ARCH STREET	114.52				171.76	2185.55	109.28	37.28	474.37	440.00	104.36	33.62	427.80	440.00	94.12	33.62	427.80	220.00	47.06	33.62	427.80	220.00	47.06	94.12
9+25.67	9+67.21	ARCH STREET FLARE	41.54				397.37	1834.08	91.70	86.53	399.38	440.00	87.86	77.71	358.67	440.00	78.91	77.71	358.67	220.00	39.45	77.71	358.67	220.00	39.45	78.90
15+50.00	16+00.00	IRBY STREET	50.00	17.29	96.06	16.33	9.69	53.83	2.69									9.69	53.83	220.00	5.92	26.98	149.89	220.00	16.49	22.41
16+00.00	19+50.57	IRBY STREET	350.57				115.00	4479.51	223.98	27.00	1051.71	440.00	231.38	22.00	856.95	440.00	188.53	22.00	856.95	220.00	94.26	22.00	856.95	220.00	94.26	188.52
19+50.57	19+79.23	IRBY STREET FLARE	28.66				150.58	479.51	23.98	34.70	110.50	440.00	24.31	28.97	92.25	440.00	20.30	28.97	92.25	220.00	10.15	28.97	92.25	220.00	10.15	20.30
15+95.00	17+66.54	FRISCO STREET	171.54	19.30	367.86	62.54	3.88	73.95	3.70									3.88	73.95	220.00	8.13	22.02	419.70	220.00	46.17	54.30
ADDITIONAL FOR LEVELING																										
55+90.00	58+60.00	NETTLETON AVE.	270.00				7.64	229.20	11.46									7.64	229.20	220.00	25.21					25.21
20+28.02	21+67.00	CAIN STREET FLARE	138.98				27.41	423.27	21.16									27.41	423.27	220.00	46.56					46.56
21+67.00	22+00.00	CAIN STREET	33.00				28.06	102.89	5.14									28.06	102.89	220.00	11.32					11.32
22+00.00	24+05.17	CAIN STREET	205.17				25.44	579.95	29.00									25.44	579.95	220.00	63.79					63.79
24+05.17	25+09.24	CAIN STREET	104.07				26.58	307.35	15.37									26.58	307.35	220.00	33.81					33.81
6+85.00	7+81.54	ARCH STREET	96.54				9.28	99.54	4.98									9.28	99.54	220.00	10.95					10.95
ADDITIONAL FOR GRADE RAISE																										
20+28.02	22+36.44	CAIN STREET	208.42		758.92	129.02								VAR.	379.46	VAR.	83.48									
7+34.79	7+81.54	ARCH STREET	46.75		252.88	42.98				VAR.	56.26	VAR.	12.38	VAR.	70.18	VAR.	15.44									
TOTALS:					5287.37	898.85		28333.48	1416.68		5631.13		1238.86		5409.24		1190.05		7879.79		866.75		10392.72		1143.18	2009.93

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% 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 = 160 FOR PG 70-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

FOR TEMPORARY DRIVES REFER TO DRIVEWAY QUANTITY TABLE.

CONCRETE BASE - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE			
				AVG. WID.	IN FRONT OF CURB 4" U.T.	AVG. WID.	UNDER CURB 4" U.T.
			FEET	FEET	SQ. YD.	FEET	SQ. YD.
55+65.95	56+21.05	NETTLETON AVE. RT.	55.10	6.25	38.26	7.62	46.65
57+21.96	58+82.50	NETTLETON AVE. RT.	160.54	6.32	112.73	8.26	147.34
55+65.95	58+25.00	NETTLETON AVE. LT.	259.05	0.19	5.47	2.50	71.96
20+24.27	25+09.24	CAIN ST. LT.	484.97	4.83	260.27	9.12	491.44
25+09.24	27+07.12	CAIN ST. LT.	197.88	1.20	26.38	3.84	84.43
21+29.33	25+09.24	CAIN ST. RT.	379.91	0.57	24.06	2.87	121.15
25+09.24	27+07.12	CAIN ST. RT.	197.88	6.43	141.37	12.47	274.17
15+50.00	16+00.00	IRBY ST. RT.	50.00	0.82	4.56	2.50	13.89
15+25.83	16+00.00	IRBY ST. LT.	74.17	5.98	49.28	7.71	63.54
6+92.00	7+81.54	ARCH ST. LT.	89.54	5.28	52.53	6.96	69.24
7+15.61	7+81.54	ARCH ST. RT.	65.93	3.43	25.13	5.99	43.88
15+95.00	17+66.54	FRISCO ST. RT.	171.54	1.48	28.21	3.71	70.71
16+16.03	17+66.54	FRISCO ST. LT.	150.51	2.94	49.17	3.11	52.01
TOTALS:					817.42		1550.41

CONCRETE BASE - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE			
				AVG. WID.	IN FRONT OF CURB 4" U.T.	AVG. WID.	UNDER CURB 4" U.T.
			FEET	FEET	SQ. YD.	FEET	SQ. YD.
89+70.00	90+70.00	HWY. 18 LT.	100.00	3.00	33.33	5.20	57.78
89+70.00	90+70.00	HWY. 18 RT.	100.00	0.46	5.11	2.97	33.00
90+70.00	91+06.61	HWY. 18 RT.	36.61	4.51	18.35	6.86	27.90
108+49.19	109+52.58	HWY. 18 RT.	103.39	0.14	1.61	2.52	28.95
110+71.31	112+15.00	HWY. 18 RT.	143.69	0.52	8.30	2.91	46.46
110+67.00	112+15.00	HWY. 18 LT.	148.00	1.30	21.38	3.67	60.35
95+45.53	98+88.33	HWY. 18 CONNECTOR LT.	342.80			2.50	95.22
95+45.53	96+23.06	HWY. 18 CONNECTOR RT.	77.53	0.90	7.75	2.50	21.54
96+23.06	99+43.98	HWY. 18 CONNECTOR RT.	320.92	0.43	15.33	2.83	100.91
64+61.37	65+60.87	HWY. 63B LT. ALONG BENT FOUNDATION	99.50	5.50	60.81	5.50	60.81
65+60.87	65+87.57	HWY. 63B LT.	26.70	5.23	15.52	5.23	15.52
62+71.38	64+00.00	HWY. 63B RT.	128.62	1.22	17.44	3.24	46.30
65+73.15	66+46.69	HWY. 63B RT.	73.54	4.77	38.98	6.38	52.13
66+46.69	69+92.33	HWY. 63B RT.	345.64	4.39	168.60	6.78	260.38
66+94.63	69+98.61	HWY. 63B LT.	303.98	2.38	80.39	4.82	162.80
70+13.27	72+81.55	HWY. 63B RT.	268.28	5.28	157.39	7.62	227.14
70+29.58	72+81.55	HWY. 63B LT.	251.97	6.18	173.02	8.59	240.49
72+81.55	76+37.51	HWY. 63B LT.	355.96	2.99	118.26	5.20	205.67
72+81.55	74+21.02	HWY. 63B RT.	139.47	2.34	36.26	5.28	81.82
74+56.61	76+39.01	HWY. 63B RT.	182.40	5.90	119.57	8.84	179.16
5+45.00	5+75.00	CLARK ST. RT.	30.00	0.73	2.43	3.23	10.77
5+45.00	6+00.00	CLARK ST. LT.	55.00	4.78	29.21	6.04	36.91
4+20.00	4+78.76	STEVENS ST. WEST LT.	58.76	3.05	19.91	3.92	25.59
4+20.00	4+78.63	STEVENS ST. WEST RT.	58.63	4.67	30.42	5.57	36.29
5+18.41	5+40.56	STEVENS ST. EAST LT.	22.15	3.21	7.90	5.57	13.71
5+19.53	5+45.00	STEVENS ST. EAST RT.	25.47	3.76	10.64	5.65	15.99
9+25.00	9+49.98	CAIN ST. (SOUTH) LT.	24.98	0.87	2.41	3.56	9.88
8+78.20	9+36.35	CAIN ST. (SOUTH) RT.	58.15	6.08	39.28	7.51	48.52
5+03.57	6+05.00	FRISCO ST. LT.	101.43	14.61	164.65	17.52	197.45
5+18.91	6+04.92	FRISCO ST. RT.	86.01	0.75	7.17	2.71	25.90
TOTALS:					1411.42		2425.34

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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
10-23-18				6	ARK.			
				JOB NO.		100824	92	346

(2) QUANTITIES

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018

DRIVEWAYS & TURNOUTS - NHPP-9227(80) (STATE)

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)	STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	
84+03	LEFT	HWY. 18	33	83+85.21	84+18.42	31.33				CG-1, DR-1
85+72	LEFT	HWY. 18	31	85+55.90	85+86.85	30.00				CG-1, DR-1
86+01	LEFT	HWY. 18	32	87+83.65	88+15.58	30.67				CG-1, DR-1
88+70	LEFT	HWY. 18	30	88+54.28	88+84.72	29.33				CG-1, DR-1
89+29	LEFT	HWY. 18	32	89+13.39	89+45.50	30.67				CG-1, DR-1
89+98	LEFT	HWY. 18	22	89+72.95	90+23.21	33.33	110.26	12.13	45.02	CG-1, DR-1
92+51	LEFT	HWY. 18	40	92+17.35	92+85.35	45.33	249.87	27.49	102.03	CG-1, DR-1
93+19	LEFT	HWY. 18	30	92+90.35	93+48.35	325.28				CG-1, DR-1
93+79	RIGHT	HWY. 18 CONNECTOR	24	93+52.61	94+04.61	168.86				CG-1, DR-1
94+34	RIGHT	HWY. 18 CONNECTOR	30	94+04.62	94+62.62	38.67				CG-1, DR-1
96+36	RIGHT	HWY. 18 CONNECTOR	20	96+11.72	96+59.72	76.33				CG-1, DR-1
97+38	RIGHT	HWY. 18 CONNECTOR	20	97+14.00	97+62.00	32.00	10.13	1.11	4.14	CG-1, DR-1
97+90	RIGHT	HWY. 18 CONNECTOR	26	97+63.00	98+12.62	59.73				CG-1, DR-1
98+34	RIGHT	HWY. 18 CONNECTOR	30	98+12.62	98+63.24	77.30				CG-1, DR-1
106+00	RIGHT	HWY. 18	30	105+71.00	106+29.00	38.67	658.85	72.47	269.03	CG-1, DR-1
107+13	LEFT	HWY. 18	20	106+89.45	107+37.45	156.09				CG-1, DR-1
108+00	RIGHT	HWY. 18	36	107+68.00	108+32.00	146.43				CG-1, DR-1
63+17	RIGHT	HWY. 63B	28	62+89.00	63+45.00	32.00	72.46	7.97	29.59	CG-1, DR-1
66+81	RIGHT	HWY. 63B	32	66+50.57	67+10.57	79.23				CG-1, DR-1
67+47	RIGHT	HWY. 63B	33	67+16.46	67+77.46	92.88				CG-1, DR-1
71+56	RIGHT	HWY. 63B	16	71+34.32	71+78.32	89.77				CG-1, DR-1
72+12	RIGHT	HWY. 63B	25	71+85.69	72+38.69	35.33	66.05	7.27	26.97	CG-1, DR-1
72+65	RIGHT	HWY. 63B	24	72+38.76	72+90.76	116.43				CG-1, DR-1
73+17	RIGHT	HWY. 63B	24	72+90.76	73+42.76	113.03				CG-1, DR-1
80+55	RIGHT	HWY. 63B	30	80+26.04	80+84.04	51.56	405.84	44.64	165.72	CG-1, DR-1
81+78	RIGHT	HWY. 63B	24	81+52.00	82+04.00	46.22	84.25	9.27	34.40	CG-1, DR-1
82+58	RIGHT	HWY. 63B	20	82+34.00	82+82.00	42.67	24.43	2.69	9.98	CG-1, DR-1
83+08	RIGHT	HWY. 63B	24	82+82.00	83+34.00	46.22	53.74	5.91	21.94	CG-1, DR-1
67+28	LEFT	HWY. 63B	40	66+92.52	67+61.50	173.76				CG-1, DR-1
68+13	LEFT	HWY. 63B	32	67+83.23	68+43.23	105.93				CG-1, DR-1
68+82	LEFT	HWY. 63B	28	68+53.91	69+09.91	146.55				CG-1, DR-1
69+36	LEFT	HWY. 63B	24	69+09.91	69+61.91	149.01				CG-1, DR-1
71+32	LEFT	HWY. 63B	40	70+97.72	71+65.72	45.33	81.21	8.93	33.16	CG-1, DR-1
72+05	LEFT	HWY. 63B	40	71+70.73	72+38.73	127.44				CG-1, DR-1
73+10	LEFT	HWY. 63B	18	72+87.00	73+33.00	30.67	27.00	2.97	11.03	CG-1, DR-1
74+18	LEFT	HWY. 63B	35	73+80.72	74+56.16	78.27				CG-1, DR-1
75+82	LEFT	HWY. 63B	28	75+54.00	76+10.00	102.59				CG-1, DR-1
5+64	LEFT	CLARK ST.	17	5+41.70	5+72.70	36.72				CG-1, DR-1
77+30	LEFT	HWY. 63B	24	77+05.28	77+54.72	215.23				CG-1, DR-1
78+20	LEFT	HWY. 63B	30	77+94.03	78+49.81	688.71				CG-1, DR-1
80+43	LEFT	HWY. 63B	16	80+20.58	80+64.58	292.77				CG-1, DR-1
81+13	LEFT	HWY. 63B	24	80+87.29	81+39.29	219.21				CG-1, DR-1
81+88	LEFT	HWY. 63B	24	81+62.00	82+14.00	173.18				CG-1, DR-1
83+54	LEFT	HWY. 63B	80				131.25	14.44	53.59	CG-1, DR-2
* ENTIRE PROJECT TEMPORARY DRIVES (NOT INCLUDED BELOW)									250.00	
110+71	RIGHT	HWY. 18 (STAGE 2)	24						117.83	
110+00	LEFT	HWY. 18 (STAGE 3)	24						288.13	
101+89	RIGHT	HWY. 18 (STAGE 4B)	20						52.00	
TOTALS:						4680.73	1975.34	217.29	1514.56	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% 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.

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	NHPP-9227(80) (STATE) COLD MILLING ASPHALT PAVEMENT	NHPP-9227(80) (LOCAL) COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.	SQ. YD.
89+70.00	90+70.00	HWY. 18	57.28	636	
90+70.00	91+65.25	HWY. 18	27.81	294	
110+00.00	111+15.00	HWY. 18	25.78	329	
111+15.00	112+15.00	HWY. 18	50.62	562	
96+06.18	97+59.22	HWY. 18 CONNECTOR	15.0	255	
55+40.00	55+90.00	NETTLETON AVE.	35.23		196
55+90.00	58+60.00	NETTLETON AVE.	13.64		409
58+60.00	59+10.00	NETTLETON AVE.	35.31		196
62+60.00	63+10.00	HWY. 63B	36.37	202	
83+00.66	83+60.00	HWY. 63B	11.70	77	
6+85.00	7+40.24	ARCH ST.	29.64		182
15+50.00	16+00.00	IRBY ST.	17.29		96
9+26.99	9+60.40	CAIN ST. SOUTH	24.02	89	
25+09.24	27+07.12	CAIN ST.	30.86		679
5+42.00	6+05.00	FRISCO ST.	21.48	150	
15+95.00	17+66.54	FRISCO ST.	19.30		368
4+30.00	4+40.00	CLARK ST.	40.24	45	
5+65.00	5+75.00	CLARK ST.	29.89	33	
4+20.00	4+58.66	STEVENS ST.	18.61	80	
5+18.00	5+45.00	STEVENS ST.	22.10	66	
TOTAL:				2818	2126

NOTE: AVERAGE MILLING DEPTH 1".
MAX MILLING DEPTH 2".

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	NHPP-9227(80) (STATE) SIDE TY SP-1	NHPP-9227(80) (STATE) SIDE TY SP-2	NHPP-9227(80) (STATE) ARCHITECTURAL FINISH	NHPP-9227(80) (LOCAL) SIDE TY SP-1	NHPP-9227(80) (LOCAL) SIDE TY SP-2	NHPP-9227(80) (LOCAL) ARCHITECTURAL FINISH
			LIN. FT.	LIN. FT.	SQ. FT.	LIN. FT.	LIN. FT.	SQ. FT.
93+49	97+67	HWY. 18 LT.	418		1010			
93+50	97+67	HWY. 18 RT.	417		1008			
101+59	101+75	HWY. 18 RT.	16		39			
101+59	103+93	HWY. 18 LT.	239		578			
6+99	8+38	WATT ST. LT				142		343
7+10	8+38	WATT ST. RT.					128	310
11+61	14+97	WATT ST. LT				333		805
11+61	15+13	WATT ST. RT.					356	860
TOTALS:			1090		2635	475	484	2318

QUANTITIES

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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.		100824	92A	346
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-09-12

DRIVEWAYS & TURNOUTS - NHPP-9227(80) (LOCAL)

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)	STANDARD DRAWINGS
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON	
21+77	LEFT	CAIN ST.	164	20+80.77	22+72.77	290.44				CG-1, DR-1
23+37	LEFT	CAIN ST.	38	23+04.26	23+70.26	44.00	39.23	4.32	16.02	CG-1, DR-1
24+34	LEFT	CAIN ST.	123	23+58.58	25+09.58	100.67	176.12	19.37	71.92	CG-1, DR-1
25+39	LEFT	CAIN ST.	24	25+12.50	25+64.50	34.67	35.07	3.86	14.32	CG-1, DR-1
25+93	LEFT	CAIN ST.	18	25+69.50	26+15.50	30.67	54.45	5.99	22.23	CG-1, DR-1
21+69	RIGHT	CAIN ST.	36	21+36.93	22+00.93	42.67	84.87	9.34	34.66	CG-1, DR-1
22+39	RIGHT	CAIN ST.	38	22+06.47	22+72.47	44.00	75.83	8.34	30.96	CG-1, DR-1
24+22	RIGHT	CAIN ST.	22	23+96.77	24+46.77	33.33	44.08	4.85	18.00	CG-1, DR-1
24+81	RIGHT	CAIN ST.	24	24+54.76	25+06.76	34.67	42.58	4.68	17.39	CG-1, DR-1
25+36	RIGHT	CAIN ST.	12	25+15.76	25+55.76	26.67	21.86	2.40	8.93	CG-1, DR-1
26+28	RIGHT	CAIN ST.	12	26+07.81	26+47.81	40.33				CG-1, DR-1
58+07	RIGHT	NETTLETON AVE.	24	57+81.18	58+33.18	92.44				CG-1, DR-1
15+82	RIGHT	WATT ST.	58	15+38.95	16+35.22	1403.41				CG-1, DR-1
7+82	LEFT	ARCH ST.	16	7+59.50	8+03.50	71.54				CG-1, DR-1
8+32	RIGHT	ARCH ST.	12	8+12.16	8+52.16	96.35				CG-1, DR-1
15+73	LEFT	IRBY ST.	18	15+58.36	15+96.36	30.67	29.73	3.27	12.14	CG-1, DR-1
16+09	LEFT	IRBY ST.	24	15+82.63	16+34.63	91.01				CG-1, DR-1
16+17	RIGHT	IRBY ST.	12	15+97.08	16+37.08	26.67	22.30	2.45	9.11	CG-1, DR-1
• ENTIRE PROJECT TEMPORARY DRIVES (NOT INCLUDED BELOW)										
20+57	RIGHT	CAIN ST. (STAGE 3B)	26						21.52	
TOTALS:						2534.21	626.12	68.87	277.20	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% 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.

CONCRETE CURB - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	TYPE D (6")
			LIN. FT.
67+73.80	•	RIGHT OF HWY. 63B	4
77+86.05	77+96.08	RIGHT OF HWY. 63B	12
80+17.61	80+40.77	RIGHT OF HWY. 63B	23
80+70.81	81+47.12	RIGHT OF HWY. 63B	73
81+52.99	81+65.32	RIGHT OF HWY. 63B	12
81+26.07	81+75.99	LEFT OF HWY. 63B	49
81+99.99	82+68.52	LEFT OF HWY. 63B	85
82+03.53	•	RIGHT OF HWY. 63B	4
82+14.67	•	RIGHT OF HWY. 63B	4
TOTAL:			266

• PERPENDICULAR TO THE CENTERLINE STATIONING.

METAL BRIDGE RAILING

STATION	STATION	LOCATION	NHPP-9227(80) (STATE) METAL BRIDGE RAILING (TYPE H)	NHPP-9227(80) (LOCAL) METAL BRIDGE RAILING (TYPE H)
			LIN. FT.	LIN. FT.
93+49	98+03	HWY. 18 LT	454	
100+61	103+93	HWY. 18 LT	336	
93+50	98+64	HWY. 18 RT	514	
101+46	101+75	HWY. 18 RT	30	
6+99	8+82	WATT ST. LT		188
11+39	14+97	WATT ST. LT		356
TOTAL:			1334	544

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QUANTITIES

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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.		100824	93	346
				②	QUANTITIES			

CONCRETE ISLAND

STATION	STATION	LOCATION	CURB FACE TYPE	SQ. FT.	NHPP-9227(80) (STATE) CONCRETE ISLAND SQ.YD.	NHPP-9227(80) (LOCAL) CONCRETE ISLAND SQ.YD.
89+71.17	90+73.00	RIGHT OF HWY. 18	D	246.39	27.38	
89+72.90	89+87.00	LEFT OF HWY. 18	D	24.76	2.75	
90+09.12	90+31.44	LEFT OF HWY. 18	D	55.92	6.21	
91+75.12	91+87.50	LEFT OF HWY. 18	D	44.71	4.97	
91+92.50	92+31.35	LEFT OF HWY. 18	D	173.97	19.33	
92+71.35	93+04.35	LEFT OF HWY. 18	D	187.77	20.86	
93+34.35	93+49.23	LEFT OF HWY. 18	D	35.64	3.96	
92+48.53	92+94.14	GORE OF HWY. 18 & HWY. 18 CONNECTOR	B	327.87	36.43	
93+12.47	99+00.52	LEFT OF HWY. 18 CONNECTOR	N/A	3540.06	393.34	
97+07.91	97+28.00	RIGHT OF HWY. 18 CONNECTOR	D	89.97	10.00	
97+48.00	97+61.00	RIGHT OF HWY. 18 CONNECTOR	D	58.47	6.50	
97+66.00	97+80.00	RIGHT OF HWY. 18 CONNECTOR	D	63.02	7.00	
98+06.00	98+19.24	RIGHT OF HWY. 18 CONNECTOR	D	58.67	6.52	
98+49.24	98+92.50	RIGHT OF HWY. 18 CONNECTOR	D	194.97	21.66	
98+97.50	99+12.32	RIGHT OF HWY. 18 CONNECTOR	D	60.03	6.67	
9+25.00	9+56.41	LEFT OF CAIN ST.	D	97.2025	10.80	
20+34.96	20+94.53	LEFT OF CAIN ST.	D	165.84		18.43
20+83.48	20+94.53	LEFT OF CAIN ST.	D	17.32		1.92
22+59.02	22+69.99	LEFT OF CAIN ST.	D	21.36		2.37
22+74.52	22+76.36	LEFT OF CAIN ST.	D	3.19		0.35
23+58.35	23+77.47	LEFT OF CAIN ST.	D	52.4		5.82
24+93.17	25+07.11	LEFT OF CAIN ST.	D	27.76		3.08
25+12.50	25+26.50	LEFT OF CAIN ST.	D	27.14		3.02
25+50.47	25+64.50	LEFT OF CAIN ST.	D	27.21		3.02
25+69.50	25+83.50	LEFT OF CAIN ST.	D	27.14		3.02
26+01.50	26+69.82	LEFT OF CAIN ST.	D	138.72		15.41
26+33.82	26+68.65	RIGHT OF CAIN ST.	D	70.77		7.86
27+07.82	27+21.82	RIGHT OF CAIN ST.	D	26.28		2.92
25+41.77	25+55.77	RIGHT OF CAIN ST.	D	26.28		2.92
25+12.50	25+29.77	RIGHT OF CAIN ST.	D	33.68		3.74
24+92.77	25+07.50	RIGHT OF CAIN ST.	D	28.6		3.18
24+52.50	24+68.77	RIGHT OF CAIN ST.	D	31.68		3.52
24+32.77	24+47.50	RIGHT OF CAIN ST.	D	28.59		3.18
23+86.09	24+10.77	RIGHT OF CAIN ST.	D	38.69		4.30
22+77.76	23+68.69	RIGHT OF CAIN ST.	D	161.61		17.96
22+58.69	22+72.76	RIGHT OF CAIN ST.	D	27.3		3.03
22+06.56	22+20.69	RIGHT OF CAIN ST.	D	27.43		3.05
21+86.93	22+01.57	RIGHT OF CAIN ST.	D	28.5		3.17
21+37.12	21+51.21	RIGHT OF CAIN ST.	D	27.27		3.03
21+20.00	21+32.16	RIGHT OF CAIN ST.	D	23.56		2.62
20+67.00	20+89.60	RIGHT OF CAIN ST.	D	51.87		5.76
20+40.80	20+63.27	RIGHT OF CAIN ST.	D	60.7		6.74
55+91.32	56+28.03	RIGHT OF NETTLETON AVE.	D	72.17		8.02
56+32.89	56+57.95	RIGHT OF NETTLETON AVE.	D	66.49		7.39
57+28.22	57+95.74	RIGHT OF NETTLETON AVE.	D	285.33		31.70
58+19.76	58+33.76	RIGHT OF NETTLETON AVE.	D	27.1		3.01
62+96.55	63+02.54	RIGHT OF NETTLETON AVE.	D	10.27	1.14	
63+30.54	63+45.92	RIGHT OF NETTLETON AVE.	D	29.85	3.32	
63+50.92	63+55.92	RIGHT OF NETTLETON AVE.	D	9.14	1.02	
65+53.23	66+65.63	RIGHT OF HWY. 63B	D	284.12	31.57	
66+96.72	67+10.96	RIGHT OF HWY. 63B	D	44.92	4.99	
67+15.96	67+30.50	RIGHT OF HWY. 63B	D	44.57	4.95	
67+63.50	67+77.50	RIGHT OF HWY. 63B	D	38.06	4.23	
67+82.50	67+84.96	RIGHT OF HWY. 63B	D	6.6	0.73	
66+94.45	67+07.50	LEFT OF HWY. 63B	D	32.69	3.63	
67+41.41	67+77.50	LEFT OF HWY. 63B	D	112.5	12.50	
67+82.50	67+97.23	LEFT OF HWY. 63B	D	48.65	5.41	
68+29.23	68+67.91	LEFT OF HWY. 63B	D	144.76	16.08	
68+95.91	69+23.91	LEFT OF HWY. 63B	D	116.43	12.94	
69+47.91	69+95.81	LEFT OF HWY. 63B	D	187.77	20.86	
70+74.96	71+26.33	RIGHT OF HWY. 63B	D	460.93	51.21	
71+33.67	71+48.32	RIGHT OF HWY. 63B	D	141.58	15.73	
71+64.32	71+78.32	RIGHT OF HWY. 63B	D	143.63	15.96	
71+85.65	71+99.65	RIGHT OF HWY. 63B	D	133.81	14.87	
72+24.73	72+52.76	RIGHT OF HWY. 63B	D	184.08	20.45	
72+76.76	73+04.76	RIGHT OF HWY. 63B	D	178.9	19.88	
73+28.76	73+61.30	RIGHT OF HWY. 63B	D	207.46	23.05	
73+68.63	74+05.30	RIGHT OF HWY. 63B	D	304.46	33.83	
74+10.02	74+13.58	RIGHT OF HWY. 63B	D	61.94	6.88	
70+34.80	70+92.50	LEFT OF HWY. 63B	D	280.18	31.13	
70+97.50	71+11.72	LEFT OF HWY. 63B	D	78.37	8.71	
71+51.72	71+65.72	LEFT OF HWY. 63B	D	76.13	8.46	
71+70.72	71+84.72	LEFT OF HWY. 63B	D	76.13	8.46	
72+24.75	72+80.75	LEFT OF HWY. 63B	D	306.25	34.03	
73+78.53	74+00.96	LEFT OF HWY. 63B	D	103.82	11.54	
74+35.92	75+47.00	LEFT OF HWY. 63B	D	392.15	43.57	
75+52.00	75+68.00	LEFT OF HWY. 63B	D	88.06	9.78	
75+96.00	76+30.57	LEFT OF HWY. 63B	D	254.26	28.25	
78+17.53	78+39.70	LEFT OF HWY. 63B	D	157.92	17.55	
81+90.00	82+03.53	RIGHT OF HWY. 63B	D	68.41	7.60	
82+03.53	82+04.05	RIGHT OF HWY. 63B	D	1.83	0.20	
82+14.17	82+14.67	RIGHT OF HWY. 63B	D	1.83	0.20	
82+14.67	82+48.01	RIGHT OF HWY. 63B	D	73.58	8.18	
82+68.00	82+96.00	RIGHT OF HWY. 63B	D	67.74	7.53	
83+20.00	83+41.04	RIGHT OF HWY. 63B	D	34.18	3.80	
5+41.70	5+55.70	LEFT OF CLARK ST.	D	73.01	8.11	
TOTAL:					1146.71	183.54

CONCRETE COMBINATION CURB AND GUTTER (BOX 1 OF 2)

STATION	STATION	LOCATION	NHPP-9227(80) (STATE) TYPE A (1' 6") LIN. FT.	NHPP-9227(80) (LOCAL) TYPE A (1' 6") LIN. FT.	9930 TYPE A (1' 6") LIN. FT.
89+69.99	90+74.88	RIGHT OF HWY. 18 CONN.	105		
90+79.88	91+12.24	RIGHT OF HWY. 18 CONN.	46		
91+39.39	91+64.34	RIGHT OF HWY. 18 CONN.	41		
91+74.05	92+78.88	RIGHT OF HWY. 18 CONN.	105		
92+83.87	94+63.63	RIGHT OF HWY. 18 CONN.	180		
94+72.96	95+25.24	RIGHT OF HWY. 18 CONN.	58		
95+57.15	96+06.54	RIGHT OF HWY. 18 CONN.	64		
96+65.39	97+61.00	RIGHT OF HWY. 18 CONN.	96		
97+66.00	98+20.51	RIGHT OF HWY. 18 CONN.	55		
98+25.51	98+92.50	RIGHT OF HWY. 18 CONN.	67		
98+84.00	98+92.50	RIGHT OF HWY. 18 CONN.	9		
98+97.50	99+58.51	RIGHT OF HWY. 18 CONN.	83		
92+96.08	99+02.10	LEFT OF HWY. 18 CONN.	626		
83+70.82	83+85.21	LEFT OF HWY. 18	14		
84+18.42	84+66.72	LEFT OF HWY. 18	48		
84+72.88	85+55.90	LEFT OF HWY. 18	83		
85+86.86	86+69.88	LEFT OF HWY. 18	83		
86+75.61	87+83.66	LEFT OF HWY. 18	108		
88+15.58	88+31.05	LEFT OF HWY. 18	15		
88+36.23	88+54.28	LEFT OF HWY. 18	18		
88+84.67	88+96.56	LEFT OF HWY. 18	12		
89+01.48	89+13.18	LEFT OF HWY. 18	12		
89+45.63	89+61.87	LEFT OF HWY. 18	16		
89+66.22	90+32.44	LEFT OF HWY. 18	66		
90+37.40	90+77.84	LEFT OF HWY. 18	48		
91+44.80	91+87.50	LEFT OF HWY. 18	53		
91+96.83	92+85.35	LEFT OF HWY. 18	89		
92+90.35	93+97.50	LEFT OF HWY. 18	107		
94+06.83	95+17.30	LEFT OF HWY. 18	110		
95+26.63	96+17.50	LEFT OF HWY. 18	91		
96+26.83	97+13.17	LEFT OF HWY. 18	86		
97+26.83	97+67.00	LEFT OF HWY. 18	40		
101+58.63	104+61.72	LEFT OF HWY. 18	313		
92+94.12	93+97.50	RIGHT OF HWY. 18	103		
94+06.83	95+30.00	RIGHT OF HWY. 18	123		
95+39.34	96+17.50	RIGHT OF HWY. 18	78		
96+26.83	97+13.17	RIGHT OF HWY. 18	86		
97+26.83	97+67.00	RIGHT OF HWY. 18	40		
105+61.49	106+26.83	LEFT OF HWY. 18	65		
106+33.17	107+69.79	LEFT OF HWY. 18	137		
107+81.18	108+61.82	LEFT OF HWY. 18	81		
108+68.18	109+23.82	LEFT OF HWY. 18	56		
109+30.18	110+16.78	LEFT OF HWY. 18	87		
110+23.15	111+04.04	LEFT OF HWY. 18	81		
111+15.43	112+15.00	LEFT OF HWY. 18	100		
101+58.63	101+93.59	RIGHT OF HWY. 18	35		
102+07.37	103+90.58	RIGHT OF HWY. 18	183		
104+04.37	105+60.67	RIGHT OF HWY. 18	156		
105+70.00	107+18.17	RIGHT OF HWY. 18	148		
107+31.83	108+42.42	RIGHT OF HWY. 18	111		
108+51.70	109+20.10	RIGHT OF HWY. 18	68		
109+29.39	109+75.69	RIGHT OF HWY. 18	61		
110+31.69	111+10.00	RIGHT OF HWY. 18	96		
111+22.00	112+15.00	RIGHT OF HWY. 18	93		
9+25.00	9+33.17	LEFT OF CAIN ST.	8		
9+03.24	9+30.72	RIGHT OF CAIN ST.	27		
20+66.10	22+72.52	LEFT OF CAIN ST.		207	
22+77.06	25+07.50	LEFT OF CAIN ST.		247	
25+15.50	25+64.50	LEFT OF CAIN ST.		49	
25+69.50	26+68.90	LEFT OF CAIN ST.		101	
26+76.98	27+00.03	LEFT OF CAIN ST.		38	
20+66.90	20+80.12	RIGHT OF CAIN ST.		14	
20+84.89	21+31.56	RIGHT OF CAIN ST.		47	
21+36.53	22+01.35	RIGHT OF CAIN ST.		65	
22+06.34	22+72.52	RIGHT OF CAIN ST.		66	
22+81.85	23+72.59	RIGHT OF CAIN ST.		83	
23+78.56	24+47.50	RIGHT OF CAIN ST.		65	
24+52.50	25+07.50	RIGHT OF CAIN ST.		55	
25+12.50	26+69.83	RIGHT OF CAIN ST.		158	
4+55.00	4+83.66	LEFT OF BRYAN ST.	29		
4+55.00	4+71.56	RIGHT OF BRYAN ST.	17		
6+57.00	7+02.34	LEFT OF WATT ST.			67
7+15.50	8+38.14	LEFT OF WATT ST.			123
11+60.69	12+08.17	LEFT OF WATT ST.			47
12+17.50	14+08.17	LEFT OF WATT ST.			191
14+17.50	15+31.85	LEFT OF WATT ST.			114
15+41.70	16+86.49	LEFT OF WATT ST.			145
16+93.68	16+99.64	LEFT OF WATT ST.			6
6+34.15	6+89.78	RIGHT OF WATT ST.			74
15+41.44	16+86.44	RIGHT OF WATT ST.			152
SUBTOTAL (BOX 1 OF 2):			5016	1195	919

CONCRETE COMBINATION CURB AND GUTTER (BOX 2 OF 2)

STATION	STATION	LOCATION	NHPP-9227(80) (STATE) TYPE A (1' 6") LIN. FT.	NHPP-9227(80) (LOCAL) TYPE A (1' 6") LIN. FT.	9930 TYPE A (1' 6") LIN. FT.
55+90.95	56+29.41	RIGHT OF NETTLETON AVE.		39	
57+23.85	57+71.21	RIGHT OF NETTLETON AVE.		52	
57+76.12	58+56.00	RIGHT OF NETTLETON AVE.		50	
62+96.39	63+45.92	RIGHT OF HWY. 63B	50		
63+50.92	65+04.28	RIGHT OF HWY. 63B	153		
66+39.99	67+10.96	RIGHT OF HWY. 63B	72		
67+15.95	67+77.50	RIGHT OF HWY. 63B	62		
67+82.50	69+22.95	RIGHT OF HWY. 63B	140		
69+27.95	69+88.89	RIGHT OF HWY. 63B	77		
55+92.45	58+00.00	LEFT OF NETTLETON AVE.		211	
65+89.18	66+36.58	LEFT OF HWY. 63B	68		
66+82.63	67+73.16	LEFT OF HWY. 63B	111		
67+82.50	70+01.81	LEFT OF HWY. 63B	232		
70+28.81	70+92.50	LEFT OF HWY. 63B	77		
70+27.40	71+26.33	RIGHT OF HWY. 63B	101		
70+18.93	71+26.33	RIGHT OF HWY. 63B	126		
71+33.67	71+78.32	RIGHT OF HWY. 63B	45		
71+85.65	73+61.30	RIGHT OF HWY. 63B	176		
73+68.63	74+06.95	RIGHT OF HWY. 63B	48		
74+11.87	74+16.22	RIGHT OF HWY. 63B	30		
70+97.50	71+65.72	LEFT OF HWY. 63B	68		
71+70.72	72+80.74	LEFT OF HWY. 63B	110		
72+85.74	73+72.58	LEFT OF HWY. 63B	87		
73+78.28	75+47.00	LEFT OF HWY. 63B	141		
75+52.00	76+36.64	LEFT OF HWY. 63B	96		
74+61.75	75+76.27	RIGHT OF HWY. 63B	140		
75+81.27	76+39.37	RIGHT OF HWY. 63B	69		
76+83.66	77+17.40	RIGHT OF HWY. 63B	43		
77+27.02	78+47.50	RIGHT OF HWY. 63B	116		
78+56.83	80+08.19	RIGHT OF HWY. 63B	151		
80+17.52	81+42.01	RIGHT OF HWY. 63B	124		
81+51.56	83+53.95	RIGHT OF HWY. 63B	202		
76+74.46	76+98.07	LEFT OF HWY. 63B	36		
77+01.93	77+82.74	LEFT OF HWY. 63B	84		
77+86.59	78+60.25	LEFT OF HWY. 63B	78		
79+85.72	80+64.50	LEFT OF HWY. 63B	79		
80+69.50	81+47.04	LEFT OF HWY. 63B	78		
81+50.93	82+67.38	LEFT OF HWY. 63B	116		
82+71.37	82+75.00	LEFT OF HWY. 63B	4		
5+33.91	5+71.93	LEFT OF FRISCO ST.	48		
5+43.02	5+70.62	RIGHT OF FRISCO ST.	32		
16+20.32	17+55.75	RIGHT OF FRISCO ST.			148
4+54.00	4+62.54	LEFT OF CLARK ST.	9		
4+53.17	4+56.60	RIGHT OF CLARK ST.	9		
5+39.41	5+72.70	LEFT OF CLARK ST.	33		
5+39.03	5+75.00	RIGHT OF CLARK ST.	36		
7+16.75	8+06.19	RIGHT OF ARCH ST.			97
8+12.16	8+74.13	RIGHT OF ARCH ST.			73
7+18.50	7+37.54	LEFT OF ARCH ST.			22
7+42.94	8+08.91	LEFT OF ARCH ST.			61
8+15.41	8+46.96	LEFT OF ARCH ST.			32
8+53.28	8+96.11	LEFT OF ARCH ST.			43
9+01.88	9+77.95	LEFT OF ARCH ST.			97
15+52.36	17+86.00	LEFT OF IRBY ST.			226
17+95.33	18+86.00	LEFT OF IRBY ST.			91
18+95.33	19+40.91	LEFT OF IRBY ST.			43
19+50.89	19+65.79	LEFT OF IRBY ST.			15
15+76.43	17+81.67	RIGHT OF IRBY ST.			219
17+95.33	19+64.60	RIGHT OF IRBY ST.			209
SUBTOTAL (BOX 2 OF 2):			3557	352	1376
SUBTOTAL (BOX 1 OF 2):			5016	1195	919
TOTAL:			8573	1547	2295

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNAR A. HO
2018-09-12

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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
				6	ARK.			
				JOB NO.		100824	94	346
				②	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNAR AZAD
2018-09-12

CONCRETE WALKS, HAND RAILING, & CONCRETE STEPS (BOX 1 OF 2) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	CONCRETE WALKS (TYPE SPECIAL)	HAND RAILING	CONCRETE STEPS
			LIN. FT.	SQ.YD.	SQ.YD.	LIN. FT.	SQ. YD.
89+85.66	90+44.82	RIGHT OF HWY. 18 CONNECTOR	59	39			
90+60.83	90+74.88	RIGHT OF HWY. 18 CONNECTOR	14	9			
90+79.88	90+81.90	RIGHT OF HWY. 18 CONNECTOR	2	1			
91+64.34	92+96.20	RIGHT OF HWY. 18 CONNECTOR	132	82			
93+12.20	93+52.61	RIGHT OF HWY. 18 CONNECTOR	40	27			
94+62.61	95+13.12	RIGHT OF HWY. 18 CONNECTOR	51	31			
95+76.92	96+11.54	RIGHT OF HWY. 18 CONNECTOR	35	21			
96+65.20	97+13.94	RIGHT OF HWY. 18 CONNECTOR	49	33			
98+63.24	99+13.03	RIGHT OF HWY. 18 CONNECTOR	50	30			
83+70.82	83+82.94	LEFT OF HWY. 18	12	8			
84+20.51	84+66.72	LEFT OF HWY. 18	46	31			
84+72.88	85+55.90	LEFT OF HWY. 18	83	55			
85+86.85	86+69.87	LEFT OF HWY. 18	83	55			
86+75.61	87+83.65	LEFT OF HWY. 18	108	72			
88+15.57	88+31.05	LEFT OF HWY. 18	15	10			
88+36.22	88+54.28	LEFT OF HWY. 18	18	12			
88+84.68	88+96.56	LEFT OF HWY. 18	12	8			
89+01.48	89+13.17	LEFT OF HWY. 18	12	8			
89+45.63	89+61.87	LEFT OF HWY. 18	16	11			
89+66.22	89+70.00	LEFT OF HWY. 18	4	3			
89+70.00	89+72.95	LEFT OF HWY. 18	3	2			
90+23.21	90+31.94	LEFT OF HWY. 18	9	6			
90+36.90	90+42.65	LEFT OF HWY. 18	6	4			
91+74.08	91+87.50	LEFT OF HWY. 18	13	9			
91+92.50	92+17.35	LEFT OF HWY. 18	21	13			
92+85.35	92+90.35	LEFT OF HWY. 18	5	1			
92+93.94	93+50.24	RIGHT OF HWY. 18	57	40			
101+75.00	105+71.00	RIGHT OF HWY. 18	396	253			
103+93.35	104+21.14	LEFT OF HWY. 18	28	19			
105+50.73	106+89.45	LEFT OF HWY. 18	139	84			
106+29.00	107+68.00	RIGHT OF HWY. 18	139	89			
107+37.45	108+61.82	LEFT OF HWY. 18	124	77			
108+32.00	109+32.17	RIGHT OF HWY. 18	100	59			
108+68.18	109+23.82	LEFT OF HWY. 18	56	37			
109+30.18	109+43.94	LEFT OF HWY. 18	14	9			
109+60.02	110+16.78	LEFT OF HWY. 18	57	38			
110+23.15	110+55.02	LEFT OF HWY. 18	32	21			
110+71.10	111+04.04	LEFT OF HWY. 18	33	24			
111+15.43	112+15.00	LEFT OF HWY. 18	100	67			
110+86.16	112+15.00	RIGHT OF HWY. 18	129	79			
9+09.45	9+30.72	RIGHT OF CAIN ST.	21	14			
4+57.53	4+70.19	RIGHT OF CLARK ST.	13	7			
5+31.11	5+70.00	RIGHT OF CLARK ST.	39		22	43	
5+70.00	5+74.99	RIGHT OF CLARK ST.	5	3			
55+97.14	56+28.78	RIGHT OF HWY. 63B	32	21			
56+33.64	56+41.89	RIGHT OF HWY. 63B	8	5			
57+26.12	57+27.41	RIGHT OF HWY. 63B	1	1			
57+53.38	57+81.38	RIGHT OF HWY. 63B	28	16			
58+33.67	58+44.00	RIGHT OF HWY. 63B	10	7			
63+44.57	64+92.92	RIGHT OF HWY. 63B	148	95			
64+92.92	65+03.68	RIGHT OF HWY. 63B	12	8			
65+74.33	66+37.19	RIGHT OF HWY. 63B	63	41			
66+37.19	66+51.52	RIGHT OF HWY. 63B	14	9			
67+10.50	67+10.96	RIGHT OF HWY. 63B	---	1			
67+15.96	67+16.50	RIGHT OF HWY. 63B	1	1			
67+70.50	67+77.50	RIGHT OF HWY. 63B	7	5			
67+82.50	69+22.96	RIGHT OF HWY. 63B	140	93			
69+27.96	69+59.40	RIGHT OF HWY. 63B	31	21			
67+61.50	67+83.23	LEFT OF HWY. 63B	22	11			
68+43.23	68+53.91	LEFT OF HWY. 63B	11	7			
SUBTOTAL (BOX 1 OF 2):				1843	22	43	

CONCRETE WALKS, HAND RAILING & CONCRETE STEPS (BOX 2 OF 2) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	CONCRETE WALKS (TYPE SPECIAL)	HAND RAILING	CONCRETE STEPS
			LIN. FT.	SQ.YD.	SQ.YD.	LIN. FT.	SQ. YD.
70+45.34		RIGHT OF HWY. 63B				5	2
70+50.91	70+92.50	LEFT OF HWY. 63B	42	28			
70+52.66	71+26.33	RIGHT OF HWY. 63B	74	49			
71+33.67	71+34.32	RIGHT OF HWY. 63B	1	1			
72+38.75	72+80.75	LEFT OF HWY. 63B	42	28			
72+85.75	72+87.00	LEFT OF HWY. 63B	1	1			
73+33.00	73+72.58	LEFT OF HWY. 63B	40	27			
73+58.02		LEFT OF HWY. 63B				3	1
73+42.76	73+61.30	RIGHT OF HWY. 63B	19	13			
73+68.63	74+06.17	RIGHT OF HWY. 63B	38	25			
73+78.28	73+80.72	LEFT OF HWY. 63B	2	1			
74+56.16	75+47.00	LEFT OF HWY. 63B	91	61			
74+63.30	74+65.40	RIGHT OF HWY. 63B	2	7			
74+65.40	75+76.27	RIGHT OF HWY. 63B	111	74			
75+52.00	75+54.00	LEFT OF HWY. 63B	2	1			
75+81.27	76+17.25	RIGHT OF HWY. 63B	36	24			
76+10.00	76+15.21	LEFT OF HWY. 63B	5	3			
76+90.34		LEFT OF HWY. 63B				8	3
77+00.20	77+05.28	LEFT OF HWY. 63B	5	2			
77+08.28	80+26.21	RIGHT OF HWY. 63B	318	174			
77+54.72	77+93.55	LEFT OF HWY. 63B	39	21			
78+48.26	78+60.80	LEFT OF HWY. 63B	13	7			
79+62.13	80+20.75	LEFT OF HWY. 63B	59	33			
80+64.66	80+87.38	LEFT OF HWY. 63B	23	12			
80+69.57		LEFT OF HWY. 63B				21	9
80+84.18	81+52.00	RIGHT OF HWY. 63B	68	37			
81+38.32	81+59.84	LEFT OF HWY. 63B	22		12	22	
82+04.00	82+34.00	RIGHT OF HWY. 63B	30	17			
82+04.00	82+14.17	RIGHT OF HWY. 63B	10	4			
82+09.17		LEFT OF HWY. 63B				3	4
82+13.46	82+68.67	LEFT OF HWY. 63B	55	30			
83+34.00	83+57.28	RIGHT OF HWY. 63B	23	13			
SUBTOTAL (BOX 2 OF 2):				693	12	62	19
SUBTOTAL (BOX 1 OF 2):				1843	22	43	
TOTALS:				2536	34	105	19

NOTE: HANDRAILING IS ESTIMATED FOR ONE SIDE OF CONCRETE STEPS.

CONCRETE WALKS, HAND RAILING, & CONCRETE STEPS - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	CONCRETE WALKS (TYPE SPECIAL)	HAND RAILING	CONCRETE STEPS
			LIN. FT.	SQ.YD.	SQ.YD.	LIN. FT.	SQ. YD.
6+64.71	6+98.95	LEFT OF WATT ST.				51	
7+18.20	7+56.75	LEFT OF ARCH ST.	39	21			
7+34.99	8+12.16	RIGHT OF ARCH ST.	77	51			
7+58.05	7+75.30	LEFT OF ARCH ST.	17	6			
7+63.25		RIGHT OF ARCH ST.					2
7+64.00		RIGHT OF ARCH ST.	---	1			
8+06.34	8+55.20	LEFT OF ARCH ST.	49	24			
8+71.19	9+45.87	LEFT OF ARCH ST.	75	46			
9+20.50	9+26.93	RIGHT OF ARCH ST.	6	3			
TOTALS:				152		51	2

CONCRETE WALKS, HAND RAILING, & CONCRETE STEPS - 9930

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	CONCRETE WALKS (TYPE SPECIAL)	HAND RAILING	CONCRETE STEPS
			LIN. FT.	SQ.YD.	SQ.YD.	LIN. FT.	SQ. YD.
20+75.17	20+80.53	LEFT OF CAIN ST.	5	3			
22+75.80	23+07.00	LEFT OF CAIN ST.	31	21			
25+07.08	25+07.50	LEFT OF CAIN ST.	---	1			
26+15.74	26+76.59	LEFT OF CAIN ST.	61	37			
20+73.34	21+31.86	RIGHT OF CAIN ST.	59	37			
21+36.50	21+37.00	RIGHT OF CAIN ST.	1	1			
22+00.93	22+01.35	RIGHT OF CAIN ST.	---	1			
22+77.63	23+72.47	RIGHT OF CAIN ST.	95	63			
23+78.67	23+94.92	RIGHT OF CAIN ST.	16	11			
24+47.00	24+47.50	RIGHT OF CAIN ST.	1	1			
24+52.50	24+54.76	RIGHT OF CAIN ST.	2	1			
25+06.76	25+07.50	RIGHT OF CAIN ST.	1	1			
25+12.50	25+15.76	RIGHT OF CAIN ST.	3	2			
25+55.77	26+07.82	RIGHT OF CAIN ST.	52	35			
26+47.82	26+70.37	RIGHT OF CAIN ST.	23	15			
6+62.55	6+98.66	LEFT OF WATT ST.	36	20			
6+98.66	7+41.43	LEFT OF WATT ST.	43	4			
14+97.35	17+02.71	LEFT OF WATT ST.	205	133			
16+25.33	17+05.46	RIGHT OF WATT ST.	80	51			
TOTALS:				438			

QUANTITIES

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STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	95	346

② QUANTITIES

FENCING - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	• 6' CHAIN LINK FENCE	• 10'-0" GATES	• 16'-0" GATES
			LIN. FT.	EACH	EACH
104+80	107+01	HWY. 18 LT.	272	1	
107+22	109+57	HWY. 18 LT.	270	1	
96+07	96+26	HWY. CONNECTOR RT.	20	1	
96+46	96+50	HWY. CONNECTOR RT.	4	1	
97+24	97+28	HWY. CONNECTOR RT.	4	1	
97+48	97+52	HWY. CONNECTOR RT.	4	1	
70+76	71+48	HWY. 63B RT.	73		1
71+64	71+81	HWY. 63B RT.	17		
72+26	72+86	HWY. 63B LT.	60		
TOTALS:			724	6	1

• DENOTES ALTERNATE BID ITEM.

FENCING - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	• 6' CHAIN LINK FENCE	• 16'-0" GATES
			LIN. FT.	EACH
10+81	14+20	WATT ST. RT.	350	1
14+25	14+57	WATT ST. RT.	36	1
TOTALS:			386	2

• DENOTES ALTERNATE BID ITEM.

ILLUMINATION SUMMARY - 9930

PLAN SHEET NO.	STATION TO STATION	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM (2C/6 A.W.G., E.G.C.)	NON-METALLIC CONDUIT (2")	CONCRETE PULL BOX (TYPE 2 HD)	TAMPER RESISTANT PULL BOX INSERT	LIGHT POLE FOUNDATION	ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 16')	ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 13')	PEDESTAL TYPE SERVICE POINT (100 AMP)
		LIN.FT.	LIN.FT.	EACH	EACH	EACH	EACH	EACH	EACH
	ILLUMINATION								
SHEET 1	93+00 TO 102+25 (HWY. 18)	1872	1760	2	2	1	1	27	
SHEET 2	102+25 TO 105+00 (HWY. 18)	489	445	6	6	3	3	3	1
SHEET 4	6+00 TO 13+00 (WATT ST.)	709	657	2	2			10	1
TOTALS:		3070	2862	10	10	4	4	40	2

APPROACH GUTTERS AND SLABS - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE SP-5)	APPROACH GUTTERS (TYPE SP-6)	APPROACH GUTTERS (TYPE SP-7)	APPROACH GUTTERS (TYPE SP-8)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)	ARCHITECTURAL FINISH
			CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	POUND	TON	SQ. FT.
08+38.14	08+82.78	WATT ST. APPROACH GUTTER LT	22.37					2696	15.40	107
08+38.14	08+80.67	WATT ST. APPROACH GUTTER RT.		16.42				3124	10.93	89
08+38.14	08+76.03	WATT ST. APPROACH SLAB					39.88	5868	31.27	
11+23.47	11+60.69	WATT ST. APPROACH GUTTER LT			16.33			1876	12.21	55
11+19.49	11+60.69	WATT ST. APPROACH GUTTER RT.				15.96		2838	11.36	68
11+18.26	11+60.69	WATT ST. APPROACH SLAB					38.84	5742	30.53	
TOTALS:			22.37	16.42	16.33	15.96	78.72	22144	111.70	319

APPROACH GUTTERS AND SLABS - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	APPROACH GUTTERS (TYPE SP-1)	APPROACH GUTTERS (TYPE SP-2)	APPROACH GUTTERS (TYPE SP-3)	APPROACH GUTTERS (TYPE SP-4)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)	ARCHITECTURAL FINISH
			CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	POUND	TON	SQ. FT.
97+67.01	98+09.64	HWY. 18 APPROACH GUTTER LT.	20.02					2314	13.73	87
97+67.01	98+64.49	HWY. 18 APPROACH GUTTER RT.		49.04				5693	33.48	235
97+67.01	98+58.01	HWY. 18 APPROACH SLAB					208.99	29040	145.52	
100+60.00	101+58.63	HWY. 18 APPROACH GUTTER LT			50.09			5876	34.14	239
100+66.48	101+58.63	HWY. 18 APPROACH GUTTER RT.				15.64		1776	12.44	32
101+15.04	101+58.63	HWY. 18 APPROACH SLAB					183.99	28273	148.01	
TOTALS:			20.02	49.04	50.09	15.64	392.98	72972	387.32	593

WHEELCHAIR RAMPS - NHPP-9227(80) (STATE)

STATION	LOCATION	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
		SQ.YD.					
90+52	RIGHT OF HWY. 18				15.7		
90+57	LEFT OF HWY. 18	67.5					
91+00	RIGHT OF HWY. 18	44.6					
91+43	RIGHT OF HWY. 18	36.8					
91+60	LEFT OF HWY. 18	48.2					
109+52	RIGHT OF HWY. 18	55.2					
109+61	LEFT OF HWY. 18				15.8		
110+63	LEFT OF HWY. 18				15.7		
110+63	RIGHT OF HWY. 18	55.6					
9+06	RIGHT OF CAIN			4.0			
93+04	LEFT OF HWY. 18 CONNECTOR				14.0		
93+04	RIGHT OF HWY. 18 CONNECTOR				14.1		
99+02	LEFT OF HWY. 18 CONNECTOR			5.0			
99+24	RIGHT OF HWY. 18 CONNECTOR				28.1		
4+93	LEFT OF BRYAN ST.				13.4		
4+95	RIGHT OF BRYAN ST.				14.3		
63+33	RIGHT OF HWY. 63B			4.0			
69+75	RIGHT OF HWY. 63B	44.6					
69+75	LEFT OF HWY. 63B	49.3					
70+39	RIGHT OF HWY. 63B	42.4					
70+39	LEFT OF HWY. 63B	30.0					
74+17	RIGHT OF HWY. 63B	23.0					
74+64	RIGHT OF HWY. 63B					12.1	
76+26	LEFT OF HWY. 63B	30.1					
76+33	RIGHT OF HWY. 63B						20.5
76+88	LEFT OF HWY. 63B	33.7					
76+95	RIGHT OF HWY. 63B		9.9				
78+81	LEFT OF HWY. 63B			5.6			
78+81	RIGHT OF HWY. 63B			3.3			
79+66	LEFT OF HWY. 63B			4.4			
79+66	RIGHT OF HWY. 63B			3.3			
82+75	LEFT OF HWY. 63B			4.1			
4+53	RIGHT OF CLARK ST.			3.3			
4+57	LEFT OF CLARK ST.			3.3			
TOTALS:		561.0	9.9	40.3	131.1	12.1	20.5

WHEELCHAIR RAMPS - NHPP-9227(80) (LOCAL)

STATION	LOCATION	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
		SQ.YD.					
55+91	RIGHT OF NETTLETON AVE.			4.0			
56+59	RIGHT OF NETTLETON AVE.				24.9		
57+33	RIGHT OF NETTLETON AVE.				32.2		
58+50	RIGHT OF NETTLETON AVE.			7.1			
7+26	LEFT OF ARCH ST.			2.4			
7+30	RIGHT OF ARCH ST.						11.8
8+63	LEFT OF ARCH ST.				15.9		
9+48	RIGHT OF ARCH ST.				61.4		
9+59	LEFT OF ARCH ST.				36.3		
TOTALS:				13.5	170.7		11.8

WHEELCHAIR RAMPS - 9930

STATION	LOCATION	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
		SQ.YD.					
15+52	LEFT OF IRBY ST.			3.1			
15+76	RIGHT OF IRBY ST.			3.1			
19+69	RIGHT OF IRBY ST.			4.6			
19+74	LEFT OF IRBY ST.	30.0					
TOTALS:		30.0		10.8			

QUANTITIES

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REMOVAL AND DISPOSAL OF ITEMS (BOX 1 OF 4) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	STEPS	WALKS	FOUNDATIONS	SIGN FOUNDATIONS	BUILDINGS	BILLBOARDS	SIGNS	RAILROAD RAILS	HANDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.
83+71	83+83	HWY. 18 ON LEFT						10							
83+71	84+67	HWY. 18 ON LEFT		96											
84+00		HWY. 18 ON LEFT				28									
84+21	84+67	HWY. 18 ON LEFT						34							
84+73	85+56	HWY. 18 ON LEFT						61							
84+73	86+70	HWY. 18 ON LEFT		197											
85+70		HWY. 18 ON LEFT				24									
85+87	86+70	HWY. 18 ON LEFT						68							
86+76	87+84	HWY. 18 ON LEFT						89							
86+76	88+31	HWY. 18 ON LEFT		155											
87+93		HWY. 18 ON LEFT				25									
88+16	88+31	HWY. 18 ON LEFT						12							
88+36	88+54	HWY. 18 ON LEFT						14							
88+36	88+97	HWY. 18 ON LEFT		60											
88+69		HWY. 18 ON LEFT				21									
88+85	88+97	HWY. 18 ON LEFT						8							
89+01	89+13	HWY. 18 ON LEFT						8							
89+01	89+62	HWY. 18 ON LEFT		59											
89+29		HWY. 18 ON LEFT				21									
89+46	89+62	HWY. 18 ON LEFT						11							
89+66	90+45	HWY. 18 ON LEFT		78											
89+66	89+97	HWY. 18 ON LEFT						20							
90+17		HWY. 18 ON LEFT				27									
90+38	90+45	HWY. 18 ON LEFT						5							
90+50	90+86	HWY. 18 ON LEFT		38				21							
90+69		HWY. 18 ON LEFT								1			1		
91+19	92+13	HWY. 18 ON LEFT		92											
91+25	91+48	HWY. 18 ON LEFT						13							
91+38		HWY. 18 ON LEFT								1			1		
91+68		HWY. 18 ON LEFT				27									
91+88	92+13	HWY. 18 ON LEFT	32					17							
92+17	92+91	HWY. 18 ON LEFT		74											
92+17	92+33	HWY. 18 ON LEFT	23					11							
92+53		HWY. 18 ON LEFT				27									
92+73	92+91	HWY. 18 ON LEFT	23					12							
92+96	93+37	HWY. 18 ON LEFT		42											
92+96	93+02	HWY. 18 ON LEFT						5							
93+02	95+94	HWY. 18 ON LEFT				1105									
93+37	93+42	HWY. 18 ON LEFT	7												
93+42	94+14	HWY. 18 ON LEFT		72				51							
94+14	94+19	HWY. 18 ON LEFT	7												
94+19	96+43	HWY. 18 ON LEFT		225											
94+19	95+23	HWY. 18 ON LEFT						73							
94+65		HWY. 18 ON LEFT								2			1		
95+71	95+95	HWY. 18 ON LEFT						17							
96+33	96+43	HWY. 18 ON LEFT						8							
96+48	98+31	HWY. 18 ON LEFT		183											
96+48	96+70	HWY. 18 ON LEFT			8			15							
97+09	97+32	HWY. 18 ON LEFT			7			16							
97+71	97+89	HWY. 18 ON LEFT						12							
97+73		HWY. 18 ON LEFT							50						
97+91		HWY. 18 ON LEFT								2			1		
98+26	98+31	HWY. 18 ON LEFT						3							
98+41		HWY. 18 ON LEFT								1					
98+35	98+51	HWY. 18 ON LEFT						16							
89+70	90+74	HWY. 18 ON RIGHT		105											
89+70	89+71	HWY. 18 ON RIGHT				1									
89+71	90+74	HWY. 18 ON RIGHT						69							
89+71	91+08	HWY. 18 ON RIGHT			52										
89+99	91+08	HWY. 18 ON RIGHT				104									
90+79	91+08	HWY. 18 ON RIGHT		44											
90+79	91+03	HWY. 18 ON RIGHT						14							
91+30	91+46	HWY. 18 ON RIGHT			27										
91+30	92+63	HWY. 18 ON RIGHT													
91+36		HWY. 18 ON RIGHT								1			1		
91+34		HWY. 18 ON RIGHT								1					
91+36	92+77	HWY. 18 ON RIGHT	9	143											
91+36	92+39	HWY. 18 ON RIGHT						65							
91+43		HWY. 18 ON RIGHT								1			2		
91+66		HWY. 18 ON RIGHT								1					
92+00		HWY. 18 ON RIGHT								2			1		
92+36		HWY. 18 ON RIGHT								1					
92+43	92+62	HWY. 18 ON RIGHT			5										
92+62		HWY. 18 ON RIGHT								2			1		
92+62	92+77	HWY. 18 ON RIGHT						10							
92+68		HWY. 18 ON RIGHT								2			1		
92+82	94+32	HWY. 18 ON RIGHT		151											
92+82	93+08	HWY. 18 ON RIGHT						18							
93+18		HWY. 18 ON RIGHT				23									
93+28	93+64	HWY. 18 ON RIGHT						24							
93+44		HWY. 18 ON RIGHT								2			3		
93+64		HWY. 18 ON RIGHT								2			1		
SUBTOTALS (BOX 1 OF 4):			101	1814	99	1433		830	50	22			14		

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.		100824	96	346
				② QUANTITIES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNAR LEAD
2018-09-12

REMOVAL AND DISPOSAL OF FENCE - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	FENCE
			LIN. FT.
93+24	93+25	HWY. 18 ON RIGHT	20
96+05	96+47	HWY. 18 ON RIGHT	48
97+21	97+28	HWY. 18 ON RIGHT	28
103+43	103+50	HWY. 18 ON LEFT	70
104+57	104+61	HWY. 18 ON LEFT	60
104+57	105+83	HWY. 18 ON LEFT	127
105+83	105+91	HWY. 18 ON LEFT	105
105+05	105+91	HWY. 18 ON LEFT	90
105+91	109+55	HWY. 18 ON LEFT	414
70+75	71+80	HWY. 63B ON RIGHT	121
72+26	72+34	HWY. 63B ON LEFT	64
82+46	82+93	HWY. 63B ON RIGHT	52
TOTAL:			1199

- CONTRACTOR SHALL TEMPORARILY REMOVE THIS FENCE IF NEEDED DURING CONSTRUCTION AND PLACE IT BACK AFTER THE CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO THE FENCE DURING CONSTRUCTION AND SHALL RESTORE THE FENCE TO ORIGINAL OR BETTER CONDITION.

REMOVAL AND DISPOSAL OF FENCE - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	FENCE
			LIN. FT.
10+81	14+56	WATT ST. ON RIGHT	420
8+07	8+83	ARCH ST. ON LEFT & RIGHT	111
TOTAL:			531

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QUANTITIES

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REMOVAL AND DISPOSAL OF ITEMS (BOX 2 OF 4) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	STEPS	WALKS	FOUNDATIONS	SIGN FOUNDATIONS	BUILDINGS	BILLBOARDS	SIGNS	RAILROAD RAILS	HANDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.
93+75		HWY. 18 ON RIGHT				167									
93+86	94+02	HWY. 18 ON RIGHT						11							
93+88		HWY. 18 ON RIGHT								2			1		
94+26	94+32	HWY. 18 ON RIGHT						4							
94+37	95+35	HWY. 18 ON RIGHT		102											
94+37	94+70	HWY. 18 ON RIGHT						23							
94+90	95+35	HWY. 18 ON RIGHT						29							
95+49	96+43	HWY. 18 ON RIGHT		101											
95+50	96+09	HWY. 18 ON RIGHT						38							
95+50		HWY. 18 ON RIGHT								1			1		
95+54		HWY. 18 ON RIGHT								1			2		
96+01		HWY. 18 ON RIGHT								1			3		
96+23		HWY. 18 ON RIGHT				43									
96+36	96+43	HWY. 18 ON RIGHT						5							
96+47	99+19	HWY. 18 ON RIGHT		266											
96+47	97+30	HWY. 18 ON RIGHT			19			56							
97+40		HWY. 18 ON RIGHT				14									
97+49	97+72	HWY. 18 ON RIGHT			6			15							
97+90		HWY. 18 ON RIGHT				65									
98+08	98+22	HWY. 18 ON RIGHT			4			10							
98+26	98+31	HWY. 18 ON RIGHT													
98+35	98+51	HWY. 18 ON RIGHT													
98+40		HWY. 18 ON RIGHT				71									
98+59	99+13	HWY. 18 ON RIGHT						28							
98+59	99+08	HWY. 18 ON RIGHT			24	1									
98+99		HWY. 18 ON RIGHT								1			3		
99+09	99+19	HWY. 18 ON RIGHT			8										
99+86		HWY. 18 ON RIGHT								1			2		
101+23	104+04	HWY. 18 ON LEFT		281											
101+72		HWY. 18 ON LEFT								3			1		
102+69		HWY. 18 ON LEFT													
103+03		HWY. 18 ON LEFT							142		1				
103+41		HWY. 18 ON LEFT								2		1			
103+59		HWY. 18 ON LEFT							66						
104+09	104+30	HWY. 18 ON LEFT		32											
104+55	106+54	HWY. 18 ON LEFT		209											
104+74		HWY. 18 ON LEFT									1				
104+84	105+39	HWY. 18 ON LEFT				144									
104+85		HWY. 18 ON LEFT							224		1				
105+16		HWY. 18 ON LEFT									1				
105+39		HWY. 18 ON LEFT								1			1		
106+21		HWY. 18 ON LEFT								1			3		
106+59	108+80	HWY. 18 ON LEFT		222											
106+59	107+06	HWY. 18 ON LEFT						22							
107+13		HWY. 18 ON LEFT				198									
107+27	108+80	HWY. 18 ON LEFT						68							
107+44		HWY. 18 ON LEFT								1			1		
107+83		HWY. 18 ON LEFT								2			1		
108+86	111+09	HWY. 18 ON LEFT		223				100							
110+09		HWY. 18 ON LEFT								1			2		
111+16	112+15	HWY. 18 ON LEFT		99				45							
100+79		HWY. 18 ON RIGHT								3			2		
100+90		HWY. 18 ON RIGHT								1			1		
101+00	104+25	HWY. 18 ON RIGHT		317											
101+23	104+04	HWY. 18 ON RIGHT						147							
101+24		HWY. 18 ON RIGHT								1			2		
101+26		HWY. 18 ON RIGHT								1			2		
101+39		HWY. 18 ON RIGHT							6						
101+80	102+59	HWY. 18 ON RIGHT						36							
101+83		HWY. 18 ON RIGHT								1			2		
102+73		HWY. 18 ON RIGHT				31									
102+88	103+52	HWY. 18 ON RIGHT						29							
102+88	103+52	HWY. 18 ON RIGHT				24									
103+86		HWY. 18 ON RIGHT				95									
104+09	104+30	HWY. 18 ON RIGHT													
104+09	104+24	HWY. 18 ON RIGHT						6							
104+17	104+35	HWY. 18 ON RIGHT				12									
104+22	104+70	HWY. 18 ON RIGHT						20							
104+30	107+21	HWY. 18 ON RIGHT		291											
104+55	106+53	HWY. 18 ON RIGHT						39							
104+62	105+46	HWY. 18 ON RIGHT													
104+90		HWY. 18 ON RIGHT				29									
105+31		HWY. 18 ON RIGHT					2								
105+33	105+46	HWY. 18 ON RIGHT						62							
105+33		HWY. 18 ON RIGHT					1								3
105+35		HWY. 18 ON RIGHT							10						
105+39	106+08	HWY. 18 ON RIGHT						41							
105+66	106+53	HWY. 18 ON RIGHT						42							
105+85		HWY. 18 ON RIGHT							970		1				
107+26	110+14	HWY. 18 ON RIGHT		290											
107+76	107+84	HWY. 18 ON RIGHT	20												
108+00		HWY. 18 ON RIGHT				111									
108+19	108+23	HWY. 18 ON RIGHT	19												
SUBTOTALS (BOX 2 OF 4)₂			39	2433	61	1005	3	876	1418	25	5	1	30		3

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.		100824	97	346
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHANNON ARAZADY
No. 12494
2018-09-12

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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
				6	ARK.			
				JOB NO.		100824	98	346
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
No. 12481
2018-09-12

REMOVAL AND DISPOSAL OF ITEMS (BOX 3 OF 4) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	STEPS	WALKS	FOUNDATIONS	SIGN FOUNDATIONS	BUILDINGS	BILLBOARDS	SIGNS	RAILROAD RAILS	HANDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.
108+45		HWY. 18 ON RIGHT								1			1		
108+60		HWY. 18 ON RIGHT								2			1		
110+19	110+45	HWY. 18 ON RIGHT		38											
110+34		HWY. 18 ON RIGHT								1			2		
110+75	111+10	HWY. 18 ON RIGHT		43											
111+23	112+15	HWY. 18 ON RIGHT		93											
111+44		HWY. 18 ON RIGHT								2			1		
63+30	63+42	HWY. 63B ON RIGHT			4										
63+78	63+89	HWY. 63B ON RIGHT			4										
64+30	64+53	HWY. 63B ON RIGHT			25										
64+30	64+53	HWY. 63B ON RIGHT		52											
65+12		HWY. 63B ON LEFT								1			3		
65+54	66+39	HWY. 63B ON RIGHT				22									
65+58	66+62	HWY. 63B ON RIGHT		87											
65+58	65+65	HWY. 63B ON RIGHT			130										
65+92		HWY. 63B ON RIGHT								1					
66+86		HWY. 63B ON RIGHT				117									
67+07	67+31	HWY. 63B ON RIGHT			11										
67+13		HWY. 63B ON RIGHT								1			2		
67+51		HWY. 63B ON RIGHT				130									
67+70	67+74	HWY. 63B ON RIGHT			5										
67+70	69+93	HWY. 63B ON RIGHT						100							
67+81	67+89	HWY. 63B ON RIGHT		15											
68+68		HWY. 63B ON RIGHT								1			2		
68+81	69+86	HWY. 63B ON RIGHT			13										
4+44	4+76	STEVENS ST. ON LEFT						15							
4+74		STEVENS ST. ON LEFT								1			1		
4+38	4+75	STEVENS ST. ON RIGHT						16							
4+80		STEVENS ST. ON RIGHT								1			1		
66+20	66+60	HWY. 63B ON LEFT		52											
5+32		FRISCO ST. ON LEFT								1			1		
5+45		FRISCO ST. ON LEFT								1			1		
5+60		FRISCO ST. ON LEFT								1			1		
5+19	5+70	FRISCO ST. ON RIGHT		47											
66+89		HWY. 63B ON LEFT								1			2		
66+92		HWY. 63B ON LEFT								2			6		
67+22		HWY. 63B ON LEFT				196									
67+48	67+93	HWY. 63B ON LEFT		48											
68+12		HWY. 63B ON LEFT				159									
68+34	68+49	HWY. 63B ON LEFT	18												
68+50	68+52	HWY. 63B ON LEFT	20												
68+59		HWY. 63B ON LEFT								1			2		
68+61	68+69	HWY. 63B ON LEFT			2										
68+89		HWY. 63B ON LEFT				232									
69+09	69+47	HWY. 63B ON LEFT			10										
69+67		HWY. 63B ON LEFT				213									
69+87	69+94	HWY. 63B ON LEFT			2										
70+02		HWY. 63B ON LEFT								1			1		
70+13	73+54	HWY. 63B ON RIGHT						162							
70+22	71+61	HWY. 63B ON RIGHT			32										
70+76	71+80	HWY. 63B ON RIGHT				122									
71+55		HWY. 63B ON RIGHT								1			3		
71+70		HWY. 63B ON RIGHT				16									
72+12		HWY. 63B ON RIGHT				126									
72+40	73+54	HWY. 63B ON RIGHT				198									
73+34		HWY. 63B ON RIGHT								1			1		
73+36	73+52	HWY. 63B ON RIGHT			3										
73+52		HWY. 63B ON RIGHT								1			1		
73+89		HWY. 63B ON RIGHT				125									
72+00		HWY. 63B ON LEFT				70									
72+59		HWY. 63B ON LEFT				15									
72+86	73+95	HWY. 63B ON LEFT						23							
73+92	75+90	HWY. 63B ON LEFT				281									
73+95	76+37	HWY. 63B ON LEFT		222											
75+90	76+37	HWY. 63B ON LEFT						21							
74+58	76+35	HWY. 63B ON RIGHT		194											
74+60	76+35	HWY. 63B ON RIGHT						106							
74+60		HWY. 63B ON RIGHT								1			3		
74+60	74+66	HWY. 63B ON RIGHT						15							
74+62	74+68	HWY. 63B ON RIGHT			16										
74+66		HWY. 63B ON RIGHT								1			2		
SUBTOTALS (BOX 3 OF 4)1			38	891	257	2022		458		25			38		

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REMOVAL AND DISPOSAL OF ITEMS (BOX 4 OF 4) - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	STEPS	WALKS	FOUNDATIONS	SIGN FOUNDATIONS	BUILDINGS	BILLBOARDS	SIGNS	RAILROAD RAILS	HANDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.
74+68		HWY. 63B ON RIGHT						6							13
74+73		HWY. 63B ON RIGHT													11
4+55	4+87	CLARK ST. ON LEFT						17							
5+32		CLARK ST. ON LEFT								1			2		
5+36		CLARK ST. ON LEFT								1			1		
5+38	5+73	CLARK ST. ON LEFT						13							
4+64	4+82	CLARK ST. ON RIGHT			12										
4+75		CLARK ST. ON RIGHT								1			1		
4+80		CLARK ST. ON RIGHT								1			2		
5+21	5+75	CLARK ST. ON RIGHT						23							
77+02		HWY. 63B ON LEFT				70									
77+82	78+08	HWY. 63B ON LEFT	35												
77+83	78+52	HWY. 63B ON LEFT				433									
78+20	78+38	HWY. 63B ON LEFT		38											
78+26	78+40	HWY. 63B ON LEFT			9										
78+36	78+49	HWY. 63B ON LEFT	38												
76+73	79+31	HWY. 63B ON RIGHT						183							
79+12	83+56	HWY. 63B ON LEFT		447											
79+18		HWY. 63B ON RIGHT							52		1				
79+47		HWY. 63B ON LEFT				40									
79+60	79+81	HWY. 63B ON LEFT			12										
79+60	80+36	HWY. 63B ON LEFT						109							
79+64		HWY. 63B ON RIGHT							120		1				
79+92		HWY. 63B ON RIGHT							304		1				
80+25		HWY. 63B ON RIGHT								1			1		
80+60		HWY. 63B ON RIGHT				59									
80+82	82+46	HWY. 63B ON RIGHT						117							
80+88	80+93	HWY. 63B ON RIGHT	10		1										
81+03		HWY. 63B ON RIGHT				14									
81+13	81+19	HWY. 63B ON RIGHT	8												
81+13	81+75	HWY. 63B ON RIGHT			30										
81+70	81+75	HWY. 63B ON RIGHT	8												
81+85		HWY. 63B ON RIGHT				15									
81+96	81+99	HWY. 63B ON RIGHT	8												
82+57		HWY. 63B ON RIGHT				27									
82+68	82+92	HWY. 63B ON RIGHT			15										
82+68	83+58	HWY. 63B ON RIGHT						34							
82+85	82+93	HWY. 63B ON RIGHT	10												
83+19	83+26	HWY. 63B ON RIGHT	10												
83+06		HWY. 63B ON RIGHT				20									
79+31	80+90	HWY. 63B ON LEFT		179				224							
80+87	82+51	HWY. 63B ON LEFT		170											
80+93	80+96	HWY. 63B ON LEFT		26											
81+59		HWY. 63B ON LEFT				431									
83+75		HWY. 63B ON LEFT								1			2		
83+94		HWY. 63B ON LEFT								1			1		
SUBTOTALS (BOX 4 OF 4):			127	860	79	1109		726	476	7	3		10		24
SUBTOTALS (BOX 3 OF 4):			38	891	257	2022		458		25			38		
SUBTOTALS (BOX 2 OF 4):			39	2433	61	1005	3	876	1418	25	5	1	30		3
SUBTOTALS (BOX 1 OF 4):			101	1814	99	1433		830	50	22			14		
TOTALS:			305	5998	496	5569	3	2890	1944	79	8	1	92		27

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.

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.		100824	99	346

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12481
SYLVAN RIARI
2018-09-12

QUANTITIES

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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.		100824	99A	346
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12406
STEVEN RIAR LAZLO
2018-09-12

REMOVAL AND DISPOSAL OF ITEMS - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	STEPS	WALKS	FOUNDATIONS	SIGN FOUNDATIONS	BUILDINGS	BILLBOARDS	SIGNS	RAILROAD RAILS	HANDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.
20+31	20+57	CAIN ST. ON LEFT		27											
20+31	20+60	CAIN ST. ON LEFT	29												
20+36		CAIN ST. ON LEFT								1			1		
20+57	20+60	CAIN ST. ON LEFT	25												
20+57	22+85	CAIN ST. ON LEFT				426									
20+41		CAIN ST. ON RIGHT								1			2		
26+72		CAIN ST. ON RIGHT				175									
26+95		CAIN ST. ON RIGHT								1			1		
27+00		CAIN ST. ON RIGHT								1			2		
57+96		NETTLETON AVE. ON RIGHT				110									
7+09		WATT ST. ON LEFT								3			5		
7+24		WATT ST. ON LEFT							1						
7+09	7+42	WATT ST. ON RIGHT		60											
7+26		WATT ST. ON RIGHT				101									
7+41	8+07	WATT ST. ON RIGHT		82											
7+44		WATT ST. ON RIGHT								2			1		
10+39	14+50	WATT ST. ON RIGHT				542									
13+09		WATT ST. ON LEFT								1			1		
13+49		WATT ST. ON LEFT								1			1		
16+92	16+98	WATT ST.												100	
17+26		WATT ST. ON RIGHT								1			1		
6+80	7+72	ARCH ST. ON LEFT						43							
6+81		ARCH ST. ON LEFT								1			1		
6+88		ARCH ST. ON RIGHT								1			2		
7+27		ARCH ST. ON RIGHT								1			1		
7+17	8+36	ARCH ST. ON RIGHT						60							
7+58	7+75	ARCH ST. ON LEFT						7							
7+78		ARCH ST. ON LEFT				66									
7+89	9+92	ARCH ST. ON LEFT & RIGHT						81							
8+02		ARCH ST. ON LEFT								1			3		
8+48	9+36	ARCH ST. ON RIGHT						31							
8+48		ARCH ST. ON RIGHT				44									
9+91		ARCH ST. ON RIGHT								1			2		
9+93		ARCH ST. ON RIGHT								1			1		
9+93		ARCH ST. ON RIGHT								1			1		
9+99		ARCH ST. ON RIGHT								1			2		
16+73		FRISCO ST. ON RIGHT								1			1		
16+80		FRISCO ST. ON RIGHT								1			2		
17+31	17+57	FRISCO ST. ON RIGHT		47											
17+24		FRISCO ST. ON LEFT								1			1		
16+05		IRBY ST. ON RIGHT				24									
16+37		IRBY ST. ON RIGHT								1			1		
TOTALS:			54	216		1488		222	1	24			33	100	

QUANTITIES

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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.		100824	100	346
				(2) QUANTITIES				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
2018-09-12

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS - NHPP-9227(80) (STATE) (BOX 1 OF 2)

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	JUNCTION BOXES	DROP INLETS
				EACH	EACH	EACH
83+68	84+66	HWY. 18 ON LEFT	98' x 24" RC PIPE SIDE DRAIN	1		
84+71	86+71	HWY. 18 ON LEFT	200' x 24" RC PIPE SIDE DRAIN	1		
86+76	88+31	HWY. 18 ON LEFT	156' x 18" RC PIPE SIDE DRAIN	1		
88+36	88+97	HWY. 18 ON LEFT	61' x 18" RC PIPE SIDE DRAIN	1		
89+00	89+62	HWY. 18 ON LEFT	60' x 18" RC PIPE SIDE DRAIN	1		
89+67	90+45	HWY. 18 ON LEFT	78' x 18" RC PIPE SIDE DRAIN	1		
90+47		HWY. 18 ON LEFT	DROP INLET			1
90+49	90+82	HWY. 18 ON LEFT	32' x 18" RC PIPE SIDE DRAIN	1		
90+85		HWY. 18 ON LEFT	GRATE INLET WITH 32' x 18" RC PIPE INLET	1		1
90+88	91+24	HWY. 18 ON LEFT	36' x 18" RC PIPE SIDE DRAIN	1		
91+26		HWY. 18 ON LEFT	GRATE INLET WITH 10' x 18" RC PIPE INLET	1		1
91+28	92+13	HWY. 18 ON LEFT	85' x 18" RC PIPE SIDE DRAIN	1		
92+15		HWY. 18 ON LEFT	DROP INLET WITH BACK OPENING			1
92+17	92+91	HWY. 18 ON LEFT	74' x 18" RC PIPE SIDE DRAIN	1		
92+93		HWY. 18 ON LEFT	DROP INLET WITH BACK OPENING			1
92+96	93+37	HWY. 18 ON LEFT	42' x 18" RC PIPE SIDE DRAIN	1		
93+40		HWY. 18 ON LEFT	DROP INLET WITH BACK OPENING			1
93+42	94+13	HWY. 18 ON LEFT	72' x 18" RC PIPE SIDE DRAIN	1		
94+16		HWY. 18 ON LEFT	DROP INLET WITH BACK OPENING			1
90+63	90+74	HWY. 18 ON RIGHT	12' x 18" RC PIPE SIDE DRAIN	1		
90+76		HWY. 18 ON RIGHT	DROP INLET WITH BACK OPENING			1
90+78	92+77	HWY. 18 ON RIGHT	199' x 18" RC PIPE SIDE DRAIN	1		
92+79		HWY. 18 ON RIGHT	DROP INLET WITH BACK OPENING			1
92+81	94+32	HWY. 18 ON RIGHT	151' x 18" RC PIPE SIDE DRAIN	1		
93+43		HWY. 18 ON RIGHT	6' x 12" CM PIPE INLET	1		
94+34		HWY. 18 ON RIGHT	DROP INLET			1
94+36	95+29	HWY. 18 ON RIGHT	92' x 18" RC PIPE SIDE DRAIN	1		
94+68		HWY. 18 ON RIGHT	7' x 12" CM PIPE INLET	1		
95+28		HWY. 18 ON RIGHT	6' x 12" CM PIPE INLET	1		
96+07	96+43	HWY. 18 ON RIGHT	35' x 18" RC PIPE SIDE DRAIN	1		
96+08		HWY. 18 ON RIGHT	6' x 12" CM PIPE INLET	1		
96+45		HWY. 18 ON RIGHT	DROP INLET			1
96+47	99+19	HWY. 18 ON RIGHT	272' x 18" RC PIPE SIDE DRAIN	1		
99+21		HWY. 18 ON RIGHT	DROP INLET WITH BACK OPENING			1
99+22	99+25	HWY. 18 ON RIGHT	10' x 18" RC PIPE CROSS DRAIN	1		
99+27	99+35	HWY. 18 ON RIGHT	9' x 24" CM PIPE	1		
96+46		HWY. 18 ON RIGHT	DROP INLET			1
96+48	98+30	HWY. 18 ON RIGHT	183' x 18" RC PIPE SIDE DRAIN	1		
98+33		HWY. 18 ON RIGHT	DROP INLET			1
98+33		HWY. 18 ON RIGHT	6' x 18" RC PIPE CROSS DRAIN	1		
98+32		HWY. 18 ON RIGHT	GRATE INLET			1
98+33	98+88	HWY. 18 ON RIGHT	55' x 18" RC PIPE CROSS DRAIN	1		
98+90		HWY. 18 ON RIGHT	JUNCTION BOX		1	
98+92	99+58	HWY. 18 ON RIGHT	66' x 18" RC PIPE CROSS DRAIN	1		
99+59		HWY. 18 ON RIGHT	GRATE INLET			1
99+59	99+73	HWY. 18 ON RIGHT	12' x 18" RC PIPE	1		
56+17	57+17	HWY. 63B ON RIGHT	100' x 18" RC PIPE SIDE DRAIN	1		
57+72	58+53	HWY. 63B ON RIGHT	81' x 12" RC PIPE SIDE DRAIN	1		
64+11	64+92	HWY. 63B ON RIGHT	81' x 18" RC PIPE SIDE DRAIN	1		
67+86		HWY. 63B ON RIGHT	DROP INLET WITH 11' x 18" CM PIPE INLET	1		1
67+87	68+82	HWY. 63B ON RIGHT	96' x 15" RCP SIDE DRAIN	1		
69+84	70+14	HWY. 63B ON RIGHT	31' x 18" RCP	1		
4+43	4+66	STEVENS ST. ON LEFT	29' x 18" CMP SIDE DRAIN	1		
4+68		STEVENS ST. ON LEFT	DROP INLET			1
4+69	4+81	STEVENS ST.	24' x 18" RCP CROSS DRAIN	1		
4+56	4+80	STEVENS ST. ON LEFT	24' x 12" RCP SIDE DRAIN	1		
4+82		STEVENS ST. ON LEFT	JUNCTION BOX WITH 4' x 18" RCP OUTLET	1	1	
71+57	71+81	HWY. 63B ON RIGHT	24' x 18" RCP SIDE DRAIN	1		
71+83		HWY. 63B ON RIGHT	GRATE INLET WITH 14' x 15" RCP INLET	1		1
71+85	72+30	HWY. 63B ON RIGHT	45' x 18" RC PIPE SIDE DRAIN	1		
72+31		HWY. 63B ON RIGHT	GRATE INLET			1
72+33	72+88	HWY. 63B ON RIGHT	56' x 18" RC PIPE SIDE DRAIN	1		
72+90		HWY. 63B ON RIGHT	GRATE INLET			1
72+91	73+37	HWY. 63B ON RIGHT	46' x 18" RC PIPE SIDE DRAIN	1		
73+52	74+22	HWY. 63B ON RIGHT	89' RC PIPE SIDE DRAIN	1		
74+23		HWY. 63B ON RIGHT	GRATE INLET			1
74+24	74+34	HWY. 63B ON RIGHT	25' x 18" RC PIPE CROSS DRAIN	1		
74+44		HWY. 63B ON LEFT	GRATE INLET			1
74+40		HWY. 63B	65' x 18" RC PIPE CROSS DRAIN	1		
4+76	4+85	CLARK ST. ON LEFT	9' x 12" RC PIPE SIDE DRAIN	1		
4+86		CLARK ST. ON LEFT	GRATE INLET			1
4+87	4+95	CLARK ST. ON LEFT	9' x 24" RC PIPE CROSS DRAIN	1		
5+11	5+30	CLARK ST. ON LEFT	19' x 24" RC PIPE CROSS DRAIN	1		
83+93		HWY. 63B ON LEFT	9' x 12" RC PIPE CROSS DRAIN	1		
83+93		HWY. 63B ON LEFT	9' x 12" RC PIPE CROSS DRAIN	1		
SUBTOTALS (BOX 1 OF 2):				54	2	24

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS - NHPP-9227(80) (STATE) (BOX 2 OF 2)

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	JUNCTION BOXES	DROP INLETS
				EACH	EACH	EACH
104+07		HWY. 18 ON RIGHT	DROP INLET			1
104+09	104+27	HWY. 18 ON RIGHT	24' x 18" RC PIPE SIDE DRAIN	1		
104+28		HWY. 18 ON RIGHT	GRATE INLET WITH 131' x 24" RC PIPE INLET	1		1
104+30	104+56	HWY. 18	26' x 24" RC PIPE CROSS DRAIN	1		
104+57		HWY. 18 ON RIGHT	GRATE INLET WITH 51' x 24" RC PIPE INLET	1		1
104+59	106+54	HWY. 18 ON RIGHT	196' x 24" RC PIPE SIDE DRAIN	1		
105+91		HWY. 18 ON RIGHT	6' x 8" PIPE INLET	1		
106+56		HWY. 18 ON LEFT	DROP INLET WITH 14' x 18" RC PIPE INLET WITH FES	1		1
106+58	108+80	HWY. 18 ON LEFT	222' x 30" RC PIPE SIDE DRAIN	1		
107+80		HWY. 18 ON LEFT	25' x 8" RC PIPE INLET	1		
108+83		HWY. 18 ON LEFT	DROP INLET WITH 23' x 8" RC PIPE INLET	1		1
108+85	111+09	HWY. 18 ON LEFT	224' x 30" RC PIPE SIDE DRAIN	1		
111+12		HWY. 18 ON LEFT	DROP INLET WITH 6' x 18" RC PIPE INLET	1		1
109+44		HWY. 18 ON LEFT	8' x 8" RC PIPE INLET	1		
110+19		HWY. 18 ON LEFT	5' x 4" PIPE INLET	2		
111+13		HWY. 18 ON LEFT	3' x 36" RC PIPE CROSS DRAIN	1		
111+15	111+44	HWY. 18 ON LEFT	29' x 18" RC PIPE SIDE DRAIN	1		
104+28		HWY. 18 ON RIGHT	DROP INLET ON RIGHT			1
104+30	104+38	HWY. 18 ON RIGHT	8' x 18" RC PIPE SIDE DRAIN	1		
105+31	105+51	HWY. 18 ON RIGHT	20' x 18" RC PIPE SIDE DRAIN	1		
107+14	107+21	HWY. 18 ON RIGHT	7' x 18" RC PIPE SIDE DRAIN	1		
107+24		HWY. 18 ON RIGHT	DROP INLET			1
107+26	110+14	HWY. 18 ON RIGHT	291' x 18" RC PIPE SIDE DRAIN	1		
110+17		HWY. 18 ON RIGHT	DROP INLET WITH 4' x 18" RC PIPE INLET	1		1
110+19	111+10	HWY. 18 ON RIGHT	91' x 18" RC PIPE SIDE DRAIN			
111+16		HWY. 18 ON RIGHT	DROP INLET WITH 6' x 36" RC PIPE INLET	1		1
111+22	111+33	HWY. 18 ON RIGHT	11' x 18" RC PIPE SIDE DRAIN	1		
SUBTOTALS (BOX 2 OF 2):				24		10
SUBTOTALS (BOX 1 OF 2):				54	2	24
TOTALS:				78	2	34

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

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION	DESCRIPTION	PIPE CULVERTS	JUNCTION BOXES	DROP INLETS
				EACH	EACH	EACH
20+61	22+58	CAIN ST. ON LEFT	198' TRENCH DRAIN (PAID AS PIPE CULVERT)	1		
13+48	13+98	WATT ST. ON RIGHT	52' x 18" RC PIPE SIDE DRAIN	1		
13+86		WATT ST.	41' x 15" RC PIPE CROSS DRAIN ON A 33 DEG. RIGHT FWD. SKEW	1		
15+50		WATT ST.	29' x 12" RC PIPE CROSS DRAIN ON A 13 DEG. LEFT FWD. SKEW	1		
16+85	16+94	FRISCO ST. ON RIGHT	9' x 12" RC PIPE SIDE DRAIN	1		
7+11	8+04	ARCH ST. ON LEFT	90' x 15" RC PIPE SIDE DRAIN	1		
7+25	7+30	ARCH ST. ON RIGHT	5' x 24" RC PIPE CROSS DRAIN	1		
6+93	7+34	ARCH ST. ON RIGHT	55' x 18" RC PIPE SIDE DRAIN	1		
TOTALS:				8		

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

QUANTITIES

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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.		100824	101	346
				(2)	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR NEJATI
2018-09-12

EARTHWORK - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	COMPACTED EMBANKMENT (SPECIAL)	• SOIL STABILIZATION
			CU. YD.			TON
ENTIRE	PROJECT	HWY. 18 - STAGE 1	104	38		
ENTIRE	PROJECT	HWY. 18 - STAGE 4	461	1274	8829	
ENTIRE	PROJECT	HWY. 18 - STAGE 5	3241	316	27739	
ENTIRE	PROJECT	HWY. 63B - STAGE 1	544	725		
ENTIRE	PROJECT	HWY. 63B - STAGE 2	37	5497		
ENTIRE	PROJECT	HWY. 63B - STAGE 3	5	3779		
76+80.40	78+32.33	STAGE 1 HWY. 63B/NETTLETON AVE.		118		
76+80.40	78+32.33	STAGE 1 HWY. 63B/NETTLETON AVE.	118			
101+76.18	104+65.42	STAGE 4A HWY. 18		1724		
101+76.18	104+65.42	STAGE 4A HWY. 18	1724			
ENTIRE	PROJECT	APPROACHES	385	2085		
ENTIRE	PROJECT	TEMPORARY APPROACHES	245	60		
• ENTIRE	PROJECT	TO BE USED IF AND WHERE				100
		DIRECTED BY THE ENGINEER				
TOTALS:			6864	15616	36568	100

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

EARTHWORK - NHPP-9227(80) (LOCAL)

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	COMPACTED EMBANKMENT (SPECIAL)
			CU. YD.		
ENTIRE	PROJECT	WATT ST. - STAGE 3	2312	237	6456
ENTIRE	PROJECT	CAIN ST. - STAGE 1	230	100	
ENTIRE	PROJECT	CAIN ST. - STAGE 5	43	10	
ENTIRE	PROJECT	ARCH ST. - STAGE 4	11	2755	
ENTIRE	PROJECT	ARCH ST. - STAGE 5		93	
ENTIRE	PROJECT	IRBY ST. - STAGE 4	224	1440	
ENTIRE	PROJECT	APPROACHES	110	505	
ENTIRE	PROJECT	TEMPORARY APPROACHES	15	5	
TOTALS:			2945	5145	6456

RETAINING WALLS - NHPP-9227(80) (LOCAL)

RETAINING WALL NAME	BEGIN	END	BASELINE	HAND RAILING	RETAINING WALL	SELECT GRANULAR BACKFILL	STONE BACKFILL	• GEOGRID	UNCLASSFIED EXCAVATION	AGGREGATE PIER	CLASS S CONCRETE-ROADWAY	REINFORCING STEEL -ROADWAY (GRADE 60)	CONCRETE DITCH PAVING (TYPE B)
				LIN. FT.	SQ. FT.	CU. YD.	TON	SQ. YD.	CU. YD.	SQ. YD.	CU. YD.	LBS.	SQ. YD.
CC	2+35.00	7+50.00	RW_CC		11368	6155.44	161.91	4586		209			
FF	5+00.00	5+59.59	RW_FF	60.0		164.26			83.10		23.17	1860.00	
GG	0+10.00	0+52.86	RW_GG	42.7					6.00		8.00	474.00	
JJ	5+40.00	9+72.91	RW_JJ		8086	4023.48	974.79	4068		283			
KK	5+05.86	9+65.40	RW_KK		8335	4227.92	742.25	4160		256			
	TOTALS:			103	27789	14571.10	1878.95	12814	89.10	748	31.17	2334.00	

UNCLASSIFIED EXCAVATION QUANTIFIED UNDER THE CROSS SECTION TABULATED QUANTITIES.
• QUANTITY ESTIMATED FOR BIDDING PURPOSES ONLY. NOT FOR PAYMENT. SEE SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION".

SHORING - NHPP-9227(80) (STATE)

STATION	STATION	LOCATION / DESCRIPTION	SHORING (SITE NO. 2)
			LUMP SUM
101+76.18	104+65.42	MOT STAGE 4A	1.00

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	NHPP-9227(80) (STATE)	NHPP-9227(80) (LOCAL)
		FEET		TON	TON
20+33	CAIN ST.	9.67	37		26
25+10	CAIN ST.	7.92	31		18
26+74	CAIN ST.	7.92	31		18
5+64	FRISCO ST.	7.92	21	12	
67+13	HWY. 63B	7.92	29	17	
74+39	HWY. 63B	7.92	62	36	
64+14	HWY. 63B	7.92	46	27	
TOTAL:				92	62

AVG. DEPTH = 12"

RETAINING WALLS - NHPP-9227(80) (STATE)

RETAINING WALL NAME	BEGIN	END	BASELINE	HAND RAILING	RETAINING WALL	SELECT GRANULAR BACKFILL	STONE BACKFILL	• GEOGRID	UNCLASSFIED EXCAVATION	AGGREGATE PIER	CLASS S CONCRETE-ROADWAY	REINFORCING STEEL -ROADWAY (GRADE 60)	CONCRETE DITCH PAVING (TYPE B)
				LIN. FT.	SQ. FT.	CU. YD.	TON	SQ. YD.	CU. YD.	SQ. YD.	CU. YD.	LBS.	SQ. YD.
AA	1+00.00	11+96.11	RW_AA		21224	12629.10	634.82	24427		574			77.11
BB	2+00.00	11+46.20	RW_BB		23021	15779.07	760.77	50005		972			23.39
EE	4+00.00	5+23.06	RW_EE	128		172.46			171.70		37.61	3076.00	
	TOTALS:			128	44245	28580.63	1395.59	74432	171.70	1546	37.61	3076.00	100.50

UNCLASSIFIED EXCAVATION QUANTIFIED UNDER THE CROSS SECTION TABULATED QUANTITIES.
• QUANTITY ESTIMATED FOR BIDDING PURPOSES ONLY. NOT FOR PAYMENT. SEE SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION".

SELECTED PIPE BEDDING NHPP-9227(80) (STATE)

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	200
ENGINEER	
TOTAL:	200

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

QUANTITIES

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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
SHAHRIAR AZAD
12408
2018-09-12

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.		100824	102	346
				(2) QUANTITIES				

STRUCTURES - NHPP-9227(80) (STATE) (BOX 1 OF 4)

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	(CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS IV) 12"	(CLASS IV) 18"	(CLASS IV) 24"	(CLASS IV) 30"	(CLASS V) 12"	(CLASS V) 18"	(CLASS V) 24"	(CLASS V) 30"	(CLASS V) 36"	SIDE DRAIN 12"	SIDE DRAIN 18"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	E	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	(TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																					EACH			LIN. FT.		EACH										SO.YD.	M.GAL.	
83+68	84+68	HWY. 18 LT.																																						
84+68	86+71	30"X98' PIPE CULVERT																				98																		PCC-1, PCM-1
86+71	88+33	30"X200' PIPE CULVERT																				200																		PCC-1, PCM-1
88+33	88+99	30"X156' PIPE CULVERT																				156																		PCC-1, PCM-1
88+99	89+64	30"X60' PIPE CULVERT																				60																		PCC-1, PCM-1
89+64	90+35	30"X66' PIPE CULVERT																				60																		PCC-1, PCM-1
90+35		DROP INLET																				66																		PCC-1, PCM-1
90+35	90+80	30"X41' R.C. PIPE CULVERT												41															1										FPC-9M
90+80		JUNCTION BOX																																						PCC-1
90+80	91+45	30"X61' R.C. PIPE CULVERT												61																					1				FPC-9S
91+45		JUNCTION BOX																																						PCC-1
91+45	91+90	18"X42' R.C. PIPE CULVERT						42																											1				FPC-9S
91+90		DROP INLET																																						PCC-1
91+90	92+88	18"X94' PIPE CULVERT																											1			1							FPC-9M
92+88		DROP INLET																				94																		PCC-1, PCM-1
92+88	92+99	18"X35' R.C. PIPE CULVERT										35																	1										FPC-9M
92+99		DROP INLET																																						PCC-1
92+88	94+00	18"X109' PIPE CULVERT																													1								FPC-9S
94+00		DROP INLET																				109																		PCC-1, PCM-1
94+00	94+00	18"X7' R.C. PIPE CULVERT		7																									1			1							FPC-9M
94+00		DROP INLET																																						PCC-1
		HWY. 18 LT.																												1										FPC-9
95+20		DROP INLET																																						
95+20	95+20	18"X8' R.C. PIPE CULVERT						8																											1				FPC-9M
95+20		DROP INLET																																						PCC-1
95+20	96+20	18"X159' PIPE CULVERT																													1								FPC-9
96+20		DROP INLET																				159																		PCC-1, PCM-1
95+20	96+82	18"X145' PIPE CULVERT																																	1				FPC-9M
96+82		DROP INLET																				145																		PCC-1, PCM-1
96+20	97+20	18"X96' PIPE CULVERT																													1								FPC-9
96+82	98+31	18"X145' PIPE CULVERT																				96																		PCC-1, PCM-1
97+20		DROP INLET																				145																		PCC-1, PCM-1
98+31		DROP INLET																																						FPC-9M
98+31	98+39	18"X6' PIPE CULVERT																													1								FPC-9
98+39		JUNCTION BOX																				6																		PCC-1, PCM-1
98+31	98+84	18"X53' R.C. PIPE CULVERT						53																												1				FPC-9
		HWY. 18 CONNECTOR RT.																						1														5	0.06	PCC-1, FES-1&2
90+64	90+77	18"X12' R.C. PIPE CULVERT						12																																
90+77		DROP INLET																																						PCC-1
90+77	91+67	18"X86' R.C. PIPE CULVERT										86																			1								FPC-9M
91+67		DROP INLET																																						PCC-1
91+67	92+81	18"X111' PIPE CULVERT																													1		1						FPC-9M
92+81		DROP INLET																				111																		PCC-1, PCM-1
92+81	92+80	18"X22' PIPE CULVERT						22																							1								FPC-9M
92+80		DROP INLET																																						PCC-1, PCM-1
92+81	94+70	18"X186' PIPE CULVERT																													1		1						FPC-9M
94+70		DROP INLET																				186																		PCC-1, PCM-1
		HWY. 18 RT.																						1							1		1						FPC-9M
92+80	94+00	18"X117' PIPE CULVERT																													1								FPC-9M
94+00		DROP INLET																				117																		PCC-1, PCM-1
		FRISCO ST.																													1		1						FPC-9M
5+61		DROP INLET																																						
5+61	5+67	18"X47' R.C. PIPE CULVERT										47																			1								FPC-9M
		HWY. 63B LT.																						1																PCC-1
67+13	5+61	18"X38' PIPE CULVERT																				38																		PCC-1, PCM-1
67+13		DROP INLET																																						FPC-9S
67+13	67+13	18"X33' R.C. PIPE CULVERT						33																							1								FPC-9M
67+13	67+80	18"X63' PIPE CULVERT																				63																		PCC-1
67+80		DROP INLET																																						PCC-1, PCM-1
67+80		DROP INLET																													1		1						FPC-9M
67+80	69+25	18"X142' PIPE CULVERT																				142																		FPC-9M
69+25		DROP INLET																																						PCC-1, PCM-1
69+25	70+16	18"X88' PIPE CULVERT										88																			1								FPC-9M
		STEVENS ST. LT.																																						PCC-1, PCM-1
4+50		DROP INLET																																						
4+50	4+37	18"X12' PIPE CULVERT																				12																		FPC-9M
4+50	70+16	18"X37' R.C. PIPE CULVERT										37																			1								PCC-1, PCM-1
4+56		JUNCTION BOX																																						PCC-1
		STEVENS ST. RT.																																						FPC-9S
4+56	4+20	18"X35' R.C. PIPE CULVERT										35																												
4+56	70+16	18"X17' R.C. PIPE CULVERT						17																																PCC-1
SUBTOTALS (BOX 1 OF 4)₂				7				187				328		102						1423		640			3					4	19	2	9	1	1	3		5	0.06	PCC-1

BASIS OF ESTIMATE:

WATER.....12.6 GAL./SQ. YD. OF SOLID SODDING

QUANTITIES

10:56:57 AM
9/12/2018
mbinkley
S:\14408\01DGN\Plans\09_Quantity_Sheets\100824_Quantities_19a.dgn

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. 12104 SHAHRIAR AZAD 2018-09-12

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.		100824	103	346
(2) QUANTITIES				

STRUCTURES - NHPP-9227(80) (STATE) (BOX 2 OF 4)

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	(CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS IV) 12"	(CLASS IV) 18"	(CLASS IV) 24"	(CLASS IV) 30"	(CLASS V) 12"	(CLASS V) 18"	(CLASS V) 24"	(CLASS V) 30"	(CLASS V) 36"	SIDE DRAIN 12"	SIDE DRAIN 18"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	TYPE E	TYPE MO	TYPE ST	EXT. 4'	EXT. 8'	JUNCT. BOXES (TYPE E)	JUNCT. BOXES (TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																					EACH			LIN. FT.		EACH										SQ.YD.	M.GAL.	
		HWY. 63B RT.																																						
70+16		DROP INLET																																						
70+16	71+30	DBL. 18"X111' R.C. PIPE CULVERT										222																			1									FPC-9S
70+33		YARD DRAIN																																					PCC-1
70+33	4+56	12"X15' SIDE DRAIN														15																					1			FPC-9
71+30		DROP INLET																																						
71+30	71+82	DBL. 24"X48' PIPE CULVERT																										1												FPC-9E
71+82		DROP INLET																			96																			PCC-1, PCM-1
71+82	73+65	DBL. 24"X179' PIPE CULVERT																										1												FPC-9E
71+82		15"X4' PIPE CULVERT																			358																			PCC-1, PCM-1
73+65		DROP INLET																	4																					PCC-1, PCM-1
73+65	74+09	24"X52' PIPE CULVERT																										1												FPC-9E
74+09		DROP INLET																			52																			PCC-1, PCM-1
74+09	74+23	24"X19' R.C. PIPE CULVERT																										1												FPC-9E
74+23		DROP INLET											19																											PCC-1
74+23	74+37	18"X21' R.C. PIPE CULVERT										21																			1									FPC-9S
		HWY. 63B LT.																																						PCC-1
70+95		DROP INLET																																						
70+95	71+68	18"X70' PIPE CULVERT																			70										1									FPC-9M
71+68		DROP INLET																																						PCC-1, PCM-1
71+68	72+83	18"X112' PIPE CULVERT																			112										1									FPC-9M
72+83		DROP INLET																																						PCC-1, PCM-1
72+83	73+75	18"X86' PIPE CULVERT																			86										1									FPC-9M
73+54		YARD DRAIN																																						PCC-1, PCM-1
73+54	73+74	12"X19' SIDE DRAIN														19																					1			FPC-9
73+74		DROP INLET																																						
73+74	74+40	18"X46' PIPE CULVERT																													1									FPC-9M
74+40		DROP INLET																			46																			PCC-1, PCM-1
74+40	74+38	18"X68' R.C. PIPE CULVERT										68																1												FPC-9E
		HWY. 63B RT.																																						PCC-1, PCM-1
75+50		DROP INLET																																						
75+50	76+40	18"X88' R.C. PIPE CULVERT										88																			1									FPC-9M
76+40		JUNCTION BOX																																						PCC-1
76+40	5+34	12"X12' R.C. PIPE CULVERT														12																					1			FPC-9S
76+40	5+11	24"X8' R.C. PIPE CULVERT								8																														PCC-1
75+78		DROP INLET																																						PCC-1
75+78	76+41	18"X59' R.C. PIPE CULVERT										59																			1									FPC-9M
76+41		JUNCTION BOX																																						PCC-1
76+41	4+95	24"X8' R.C. PIPE CULVERT								8																											1			FPC-9S
76+41	4+76	12"X8' R.C. PIPE CULVERT														8																								PCC-1
		HWY. 63B LT.																																						PCC-1
77+07		YARD DRAIN																																						
77+07	77+84	12"X82' SIDE DRAIN																																			1			FPC-9
77+84		DROP INLET														82																								
77+84	77+84	18"X39' PIPE CULVERT																													1									FPC-9M
77+84		JUNCTION BOX																			39																			PCC-1, PCM-1
77+84	78+95	18"X113' R.C. PIPE CULVERT		113																															1					FPC-9
78+95		JUNCTION BOX																																						PCC-1
78+95	80+67	18"X170' R.C. PIPE CULVERT		170																																	1			FPC-9S
80+67		DROP INLET																																						PCC-1
80+67	80+67	18"X41' PIPE CULVERT																													1									FPC-9M
80+67	81+49	18"X80' PIPE CULVERT																			41				1													5	0.06	PCC-1, PCM-1, FES-1&2
80+82		YARD DRAIN																			80																			PCC-1, PCM-1
80+82	80+67	12"X28' SIDE DRAIN														28																						1			FPC-9
81+49		DROP INLET																																						
81+49	81+49	18"X12' PIPE CULVERT																													1									FPC-9M
81+49		JUNCTION BOX																			12																			PCC-1, PCM-1
81+49	82+69	24"X119' R.C. PIPE CULVERT			119																														1					FPC-9
82+69		JUNCTION BOX																																						PCC-1
82+69	83+94	24"X122' R.C. PIPE CULVERT			122																														1					FPC-9
83+94		DROP INLET																																						PCC-1
83+94	83+94	24"X8' R.C. PIPE CULVERT			8																															1				FPC-9S
83+94	83+94	24"X8' R.C. PIPE CULVERT			8																																			PCC-1
77+20		DROP INLET																																						PCC-1
77+20		18"X5' PIPE CULVERT																																						FPC-9M
77+20	78+50	18"X121' PIPE CULVERT																			5				1													5	0.06	PCC-1, PCM-1, FES-1&2
78+50		DROP INLET																			121																			PCC-1, PCM-1
78+50		18"X17' PIPE CULVERT																													1				1					FPC-9M
78+50	80+15	18"X162' PIPE CULVERT																			17				1													5	0.06	PCC-1, PCM-1, FES-1&2
80+15		DROP INLET																			162																			PCC-1, PCM-1
80+15		18"X28' PIPE CULVERT																													1				1					FPC-9M
80+15	81+49	18"X129' PIPE CULVERT																			28				1													5	0.06	PCC-1, PCM-1, FES-1&2
81+49		DROP INLET																			129																			PCC-1, PCM-1
81+49	81+49	24"X27' R.C. PIPE CULVERT																													1				1					FPC-9M
SUBTOTALS (BOX 2 OF 4)₂				283	257		20		43			458	19			144		4	4	948	506				4					5		13	3	4		3	3	4	20	0.30	PCC-1

BASIS OF ESTIMATE:

WATER.....12.6 GAL./SQ. YD. OF SOLID SODDING

QUANTITIES

10:56:57 AM 9/12/2018 mbinkley

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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. 12404
STEPHANIE A. KING
2018-09-12

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.		100824	104	346
				② QUANTITIES				

STRUCTURES - NHPP-9227(80) (STATE) (BOX 3 OF 4)

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	(CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS IV) 12"	(CLASS IV) 18"	(CLASS IV) 24"	(CLASS IV) 30"	(CLASS V) 12"	(CLASS V) 18"	(CLASS V) 24"	(CLASS V) 30"	(CLASS V) 36"	SIDE DRAIN 12"	SIDE DRAIN 18"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	TYPE E	TYPE MO	TYPE ST	EXT. 4'	EXT. 8'	JUNCT. BOXES (TYPE E)	JUNCT. BOXES (TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																				EACH			LIN. FT.		EACH										SO.YD.	M.GAL.	
81+50		DROP INLET																																					
81+50	81+49	18"X14' PIPE CULVERT																											1										FPC-9M
81+96		DROP INLET																		14																			PCC-1, PCM-1
81+96	81+49	12"X44' PIPE CULVERT																44											1										FPC-9S
82+69		DROP INLET																																					PCC-1, PCM-1
82+69	82+69	18"X43' R.C. PIPE CULVERT										43																			1								FPC-9S
		HWY. 18 RT.																																					PCC-1
95+33		DROP INLET																																					
95+33	96+20	18"X84' PIPE CULVERT																											1			1							FPC-9M
96+20		DROP INLET																		84																			PCC-1, PCM-1
96+20	97+20	18"X96' PIPE CULVERT																											1			1							FPC-9M
97+20		DROP INLET																		96																			PCC-1, PCM-1
95+33	95+34	18"X27' R.C. PIPE CULVERT						27																					1				1						FPC-9M
95+34		JUNCTION BOX																																					PCC-1
95+34	96+09	18"x72' R.C. PIPE CULVERT						72																												1			FPC-9S
95+34	4+45	18"x49' R.C. PIPE CULVERT						49																															PCC-1
96+09		DROP INLET																																					PCC-1
96+09	96+63	18"X50' PIPE CULVERT																											1										FPC-9M
96+09	96+09	18"X2' R.C. PIPE CULVERT		2																50																			PCC-1, PCM-1
96+63		DROP INLET																						1													5	0.06	PCC-1
96+63	97+64	18"X97' PIPE CULVERT																											1										FPC-9M
97+64		DROP INLET																		97																			PCC-1, PCM-1
97+64	98+95	18"X129' PIPE CULVERT																											1										FPC-9M
98+95		DROP INLET																		129																			PCC-1, PCM-1
98+95	99+28	18"X32' R.C. PIPE CULVERT										32																	1										FPC-9M
99+28		JUNCTION BOX																																					PCC-1
99+28	99+38	24"X8' R.C. PIPE CULVERT											8																							1			FPC-9S
102+01		DROP INLET																																					PCC-1
102+01	103+97	18"X191' PIPE CULVERT																											1				1						FPC-9M
103+97		DROP INLET																		191																			PCC-1, PCM-1
103+97	105+68	18"X166' PIPE CULVERT																											1				1						FPC-9M
104+28		DROP INLET																		166																			PCC-1, PCM-1
104+28		18"X8' PIPE CULVERT																												1									FPC-9
105+40		DROP INLET																		8																			PCC-1, PCM-1
105+40		18"X16' PIPE CULVERT																												1									FPC-9
105+68		DROP INLET																		16																			PCC-1, PCM-1
105+68	107+25	18"X154' PIPE CULVERT																											1				1						FPC-9M
107+24	107+24	18"X8' PIPE CULVERT																		154																			PCC-1, PCM-1
107+24		DROP INLET																		8																			PCC-1, PCM-1
107+24	107+25	18"X13' PIPE CULVERT																												1									FPC-9
107+25		DROP INLET																		13																			PCC-1, PCM-1
107+25	108+49	24"X12I' PIPE CULVERT																											1				1						FPC-9M
108+49		DROP INLET																			121																			PCC-1, PCM-1
108+49	109+27	24"X75' PIPE CULVERT																											1				1						FPC-9M
109+27		DROP INLET																			75																			PCC-1, PCM-1
109+27	16+89	30"X62' PIPE CULVERT																											1				1						FPC-9M
		HWY. 18 LT.																				62																		PCC-1, PCM-1
105+58		DROP INLET																																					
105+58	106+30	36"X67' PIPE CULVERT																					67						1										FPC-9M
106+30		DROP INLET																																					PCC-1, PCM-1
106+30		18"X14' PIPE CULVERT																											1										FPC-9M
106+30	107+78	36X143' PIPE CULVERT																		14				1													5	0.06	PCC-1, PCM-1, FES-1&2
107+78		DROP INLET																					143															5	0.06	PCC-1, PCM-1
107+78		18"X3' PIPE CULVERT																											1										FPC-9M
107+78	108+65	36"X82' PIPE CULVERT																		3				1															PCC-1, PCM-1, FES-1&2
108+65		DROP INLET																					82																	PCC-1, PCM-1
108+65	109+27	36"X57' PIPE CULVERT																											1										FPC-9M
109+27		DROP INLET																					57																	PCC-1, PCM-1
109+27	110+20	36"X88' PIPE CULVERT																											1										FPC-9M
110+20		DROP INLET																					88																	PCC-1, PCM-1
110+20	111+12	36"X87' PIPE CULVERT																					87						1										FPC-9M
111+12		DROP INLET																																					PCC-1, PCM-1
111+12	111+12	36"X8' R.C. PIPE CULVERT													8														1										FPC-9M
111+12	111+44	18"X30' PIPE CULVERT																		30																			PCC-1
111+16		DROP INLET																																					PCC-1, PCM-1
111+16	111+16	36"X8' R.C. PIPE CULVERT													8																		1						FPC-9E
111+16	111+33	18"X12' PIPE CULVERT																		12																			PCC-1
SUBTOTALS (BOX 3 OF 4):				2				148				75	8		16			44		1085	196	62	524		3				1	3	22	1	5	4		2		15	0.72	

BASIS OF ESTIMATE:

WATER.....12.6 GAL./SQ. YD. OF SOLID SODDING

QUANTITIES

10:56:57 AM 9/12/2018 mbinkley
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10:56:58 AM
9/12/2018
mdinkley

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. 14404
SHAHRIAR AZAM
2018-09-12

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.		100824	105	346
				(2) QUANTITIES				

STRUCTURES - NHPP-9227(80) (STATE) (BOX 4 OF 4)

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	18"	24"	30"	(CLASS IV) 12"	18"	24"	30"	(CLASS V) 12"	18"	24"	30"	36"	SIDE DRAIN 12"	18"	PIPE CULVERT STORM DRAIN ALTERNATES I & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	E	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	(TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																					EACH			LIN. FT.		EACH											SO.YD.	M.GAL.	
		HWY. 63B RT.																																							
55+86	56+31	12"X44' PIPE CULVERT																44																								PCC-1, PCM-1
56+31	26+74	12"X37' PIPE CULVERT																37																								PCC-1, PCM-1
56+31		DROP INLET																														1								FPC-9M
57+74		DROP INLET																														1								FPC-9M
57+74	58+84	12"X110' PIPE CULVERT																110																								PCC-1, PCM-1
	90+80 TO 90+84	TEMPORARY PIPE FOR MOT STAGE IA																										6													
	74+40 TO 74+43	TEMPORARY PIPE FOR MOT STAGE IA																										5													
	90+76 TO 90+80	TEMPORARY PIPE FOR MOT STAGE IB																										4													
	93+49 TO 93+66	TEMPORARY PIPE FOR MOT STAGE 4B																										25													
SUBTOTALS (BOX 4 OF 4):																		191										40				2									
SUBTOTALS (BOX 3 OF 4):				2				148				75	8		16			44		1085	196	62	524		3				1	3	22	1	5	4		2		15	0.72	
SUBTOTALS (BOX 2 OF 4):				283	257		20		43			458	19			144		4	4	948	506				4				5		13	3	4		3	3	4	20	0.30	
SUBTOTALS (BOX 1 OF 4):				7				187				328		102						1423		640			3					4	19	2	9	1	1	3		5	0.06	
TOTALS:				292	257		20	335	43			861	27	102	16	144		239	4	3456	702	702	524		10			40		6	7	56	6	18	5	4	8	4	40	1.08	

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

STRUCTURES - NHPP-9227(80) (LOCAL)

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	18"	24"	30"	(CLASS IV) 12"	18"	24"	30"	(CLASS V) 12"	18"	24"	30"	36"	SIDE DRAIN 12"	18"	PIPE CULVERT STORM DRAIN ALTERNATES I & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	E	MO	ST	EXT. 4'	8'	JUNCT. BOXES (TYPE E)	(TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																					EACH			LIN. FT.		EACH											SO.YD.	M.GAL.	
		CAIN ST. LT.																																							
20+32	20+61	18"X25' R.C. PIPE CULVERT										25																													PCC-1
20+61		DROP INLET																														1				1				FPC-9M
20+61	20+90	18"X27' PIPE CULVERT										27																													PCC-1, PCM-1
20+90		DROP INLET																															1							FPC-9S
20+90	20+90	18"X10' PIPE CULVERT																		10																					PCC-1, PCM-1
20+90		DROP INLET																														1								FPC-9M
20+90	21+34	18"X41' PIPE CULVERT										41																													PCC-1, PCM-1
21+34		DROP INLET																															1							FPC-9S
21+34	22+74	18"X137' PIPE CULVERT										137																													PCC-1, PCM-1
22+74		DROP INLET																														1								FPC-9M
		CAIN ST. RT.																																							
20+34	20+61	24"X23' R.C. PIPE CULVERT											23																												PCC-1
20+61		DROP INLET																														1		1						FPC-9M
20+61	20+83	24"X20' PIPE CULVERT																			20																				PCC-1, PCM-1
20+83		DROP INLET																														1								FPC-9M
20+83	21+34	24"X48' PIPE CULVERT																			48																				PCC-1, PCM-1
21+34		DROP INLET																														1								FPC-9M
21+34	22+04	24"X66' PIPE CULVERT																			66																				PCC-1, PCM-1
22+04		DROP INLET																														1								FPC-9M
22+04	22+75	18"X68' PIPE CULVERT																		68																				PCC-1, PCM-1
22+75		DROP INLET																														1		1						FPC-9M
22+75	23+76	18"X87' PIPE CULVERT																		87																				PCC-1, PCM-1
23+76		DROP INLET																														1								FPC-9M
23+76	24+50	18"X65' PIPE CULVERT																		65																				PCC-1, PCM-1
24+50		DROP INLET																														1								FPC-9M
24+50	25+10	18"X56' PIPE CULVERT																		56																				PCC-1, PCM-1
25+10		DROP INLET																														1								FPC-9M
25+10	25+10	18"X31' R.C. PIPE CULVERT										31																													PCC-1
25+10		DROP INLET																														1								FPC-9M
25+10	25+67	18"X53' PIPE CULVERT																		53																				PCC-1, PCM-1
25+67		DROP INLET																														1								FPC-9M
26+74		DROP INLET																														1		1						FPC-9M
26+74	26+73	12"X57' R.C. PIPE CULVERT									57																													PCC-1
26+73		DROP INLET																														1		1						FPC-9M
26+73	57+74	12"X52' PIPE CULVERT																52																							PCC-1, PCM-1
	20+58 TO 20+64	TEMPORARY PIPE FOR MOT STAGE IB																										6													
	20+80 TO 20+86	TEMPORARY PIPE FOR MOT STAGE IB																										6													
	16+78 TO 16+74	TEMPORARY PIPE FOR MOT STAGE 2 DRWY																										40													
	16+13 TO 16+21	TEMPORARY PIPE EXT. FOR MOT STAGE 2 DRWY																										12													
	20+68 to 20+47	TEMPORARY PIPE FOR MOT STAGE 3 TEMP. DRWY																										30													
TOTALS:											57	261	23					52		339	134							82	12			15	2	4	1						

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

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QUANTITIES

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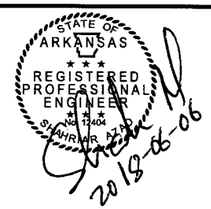
mbinkley



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.		100824	106	346
				(2)	QUANTITIES			

STRUCTURES - 9930

STATION	STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 12"	(CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS IV) 12"	(CLASS IV) 18"	(CLASS IV) 24"	(CLASS IV) 30"	(CLASS V) 12"	(CLASS V) 18"	(CLASS V) 24"	(CLASS V) 30"	(CLASS V) 36"	SIDE DRAIN 12"	SIDE DRAIN 18"	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 12"	15"	18"	24"	30"	36"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 12"	18"	24"	TEMPORARY CULVERT 18"	24"	DROP INLETS TYPE C	TYPE E	TYPE MO	TYPE ST	EXT. 4'	EXT. 8'	JUNCT. BOXES (TYPE E)	(TYPE ST)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
			LIN. FT.																					EACH			LIN. FT.		EACH										SQ.YD.	M.GAL.	
		WATT ST. RT.																																						
7+06		DROP INLET																													1									FPC-9S
7+06	7+09	18"X28' R.C. PIPE CULVERT		28																																				PCC-1
		WATT ST. LT.																																						
7+09		DROP INLET																													1									FPC-9S
7+09	78+95	18"X47' R.C. PIPE CULVERT		47																																				PCC-1
		WATT ST. LT.																																						
16+89		DROP INLET																													1		1							FPC-9M
16+89	16+90	24"X54' R.C. PIPE CULVERT							54																															PCC-1
		WATT ST. RT.																																						
16+90		DROP INLET																													1		1							FPC-9M
16+90	16+79	24"X29' PIPE CULVERT																		29					1												8	0.10	PCC-1, PCM-1, FES-1&2
		IRBY ST.																																						
16+57		DROP INLET																												1								42	0.53	FPC-9
16+57	17+89	18"X150' PIPE CULVERT																	150																					PCC-1, PCM-1
17+89		DROP INLET																													1		1							FPC-9M
17+89	17+89	18"X25' PIPE CULVERT						25																																PCC-1, PCM-1
17+89		DROP INLET																													1			1						FPC-9M
17+89	18+89	18"X97' PIPE CULVERT																	97																					PCC-1, PCM-1
18+89		DROP INLET																													1		1							FPC-9M
18+89	18+89	18"X26' PIPE CULVERT		26																																				PCC-1, PCM-1
18+89		JUNCTION BOX																																	1			32	0.40	FPC-9
18+89	19+48	18"X61' PIPE CULVERT																	61																					PCC-1, PCM-1
19+48		DROP INLET																													1		1							FPC-9M
19+48	19+48	18X26 PIPE CULVERT		26																																				PCC-1, PCM-1
19+48		JUNCTION BOX																																	1			32	0.40	FPC-9
19+48	8+99	18"X71' PIPE CULVERT		71																																				PCC-1, PCM-1
		ARCH ST.																																						
6+93	7+40	18"X59' PIPE CULVERT																	59																					PCC-1, PCM-1
7+25	7+40	24"X11' R.C. PIPE CULVERT										11																												PCC-1
7+40		DROP INLET																																	1					FPC-9S
7+40	8+09	30"X71' R.C. PIPE CULVERT											71																											PCC-1
8+09		DROP INLET																																						FPC-9M
8+09	8+12	30"X31' R.C. PIPE CULVERT								31																														PCC-1
8+12		DROP INLET																																						FPC-9M
8+12	8+50	36"X33' PIPE CULVERT																				33																		PCC-1, PCM-1
8+50		DROP INLET																																						FPC-9M
8+50	8+55	30"X64' R.C. PIPE CULVERT				64																																		PCC-1
8+50	8+99	36"X45' PIPE CULVERT																				45																		PCC-1, PCM-1
8+99		DROP INLET																																						FPC-9M
8+99	105+58	36"X91' PIPE CULVERT																				91																		PCC-1, PCM-1
		WATT ST.																																						
12+15		DROP INLET																																						FPC-9M
12+15	14+15	18"X197' PIPE CULVERT																	197																					PCC-1, PCM-1
14+15		DROP INLET																																						FPC-9M
14+15	15+39	18"X115' PIPE CULVERT																	115																					PCC-1, PCM-1
14+45		18"X60' SIDE DRAIN															60																							PCC-1,PCM-1,PCP-1,PCP-2
15+39		DROP INLET																																						FPC-9M
15+39		18"X18' PIPE CULVERT																	18						1													5	0.06	PCC-1, PCM-1, FES-1&2
15+39	15+39	18"X39' R.C. PIPE CULVERT		39																																				PCC-1
15+39		DROP INLET																																						FPC-9M
15+39	16+90	18"X155' PIPE CULVERT																	155																					PCC-1, PCM-1
16+90		DROP INLET																															1							FPC-9M
16+90	16+90	DBL. 18"X55' R.C. PIPE CULVERT									110																													PCC-1, PCM-1
16+90		DROP INLET																															1							FPC-9M
16+90	111+16	30"X90' PIPE CULVERT																			90																		PCC-1, PCM-1
		FRISCO ST.																					1																	
16+94	16+80	12"X9' R.C. PIPE CULVERT	9																																					
TOTALS:			9	237		64		25	54	31		110	11	71			60		852	29	90	169	1	1	1			2	1	14	3	9	1	2			124	1.55	

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.

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QUANTITIES

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-23-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	107	346
① 07407 & 07408 QUANTITIES				5951I

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018

SCHEDULE OF BRIDGE QUANTITIES - JOB 100824

	BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	619	801	SS & 802	SP, SS, & 802	803	804	804	SS & 805	806	806	SP, SS, & 807	SS & 807	808	SS & 809	812	816	SP JOB 100824
				ITEM	7' STEEL CHAIN LINK FENCE	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GR. 60)	EPOXY COATED REINFORCING STEEL (GR. 60)	① STEEL SHELL PILING (18" DIA.)	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270 - GR. 50)	PAINTING STRUCTURAL STEEL	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	ARCHITECTURAL FINISH
				UNIT	LIN. FT.	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	EA.	LB.	TON	CU. IN.	LIN. FT.	EA.	CU. YD.	SQ. FT.
NHPP-9227(80) (STATE)	07407	HWY. 18 BRIDGE OVER BNSF RAILROAD	HWY. 18 BRIDGE OVER BNSF RAILROAD																		
			END BENT 1				84.97		0.3	11,232	583	1,560	4		3,840	2.0		97			
			BENT 2			310	525.61			57,934		3,984		2 ②	402	0.3					
			END BENT 3				93.42		0.4	14,544	972	2,416	27	1	3,842	2.0		96			882
			254'-0" CONT. PLATE GIRDER UNIT		504			700.90	44.2		160,755				721,556	360.8	15,616.0		1	6	1,303
			TOTAL FOR BRIDGE 07407		504	310	704.00	700.90	44.9	83,710	162,310	7,960	31	3	729,640	365.1	15,616.0	193	1	6	2,185
NHPP-9227(80) (LOCAL)	07408	WATT ST. BRIDGE OVER BNSF RAILROAD	WATT ST. BRIDGE OVER BNSF RAILROAD																		
			END BENT 1				30.24		0.1	4,274	239	1,036	2		1,582	0.8		38			
			BENT 2			137	197.18			22,064		2,160		2 ③	108	0.1					353
			BENT 3			137	159.13			20,632		2,160			108	0.1					353
			END BENT 4				51.05		0.3	5,620	380	1,491	15	2	1,586	0.8		38			
			241'-0" CONT. PLATE GIRDER UNIT		338			325.70	21.8		82,011		140		280,116	140.1	6,931.0		1	62	1,246
			TOTAL FOR BRIDGE 07408		338	274	437.60	325.70	22.2	52,590	82,630	6,847	157	4	283,500	141.9	6,931.0	76	1	62	1,952
			TOTAL FOR JOB 100824		842	584	1,141.60	1,026.60	67.1	136,300	244,940	14,807	188	7	1,013,140	507.0	22,547	269	2	68	4,137

① Piles shall conform to details shown on Std. Dwg. No. 55021

② Type Special 1 Transitional Approach Railing shall be paid as Transitional Approach Railing.

③ Type Special 2 Transitional Approach Railing shall be paid as Transitional Approach Railing.

SCHEDULE OF BRIDGE QUANTITIES
BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 11/14/16
CHECKED BY: STS DATE: 12/4/16
DESIGNED BY: JH DATE: 11/24/16
FILENAME: bl00824m.gi
SCALE: NONE

BRIDGE NO. 07407 & 07408 DRAWING NO. 5951I

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SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY				UNIT
		NHPP-9227(80) (STATE)	NHPP-9227(80) (LOCAL)	9930	TOTAL	
201	CLEARING	12	4	7	23	STATION
201	GRUBBING	12	4	7	23	STATION
202	REMOVAL AND DISPOSAL OF CURB	305	54		359	LIN. FT.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	5998	216		6214	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE	1199	531		1730	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	496			496	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	5569	1488		7057	SQ. YD.
202	REMOVAL AND DISPOSAL OF STEPS	3			3	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS	2890	222		3112	SQ. YD.
202	REMOVAL AND DISPOSAL OF FOUNDATIONS	1944	1		1945	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	79	24		103	EACH
202	REMOVAL AND DISPOSAL OF JUNCTION BOXES	2			2	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	34			34	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	78	8		86	EACH
202	REMOVAL AND DISPOSAL OF BUILDINGS	8			8	EACH
202	REMOVAL AND DISPOSAL OF BILLBOARDS	1			1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	92	33		125	EACH
202	REMOVAL AND DISPOSAL OF RAILROAD RAILS		100		100	LIN. FT.
202	REMOVAL AND DISPOSAL OF HANDRAIL	27			27	LIN. FT.
207	STONE BACKFILL	1396	1879		3275	TON
210	UNCLASSIFIED EXCAVATION	7036	3034		10070	CU. YD.
SP	SELECT GRANULAR BACKFILL	28581	14571		43152	CU. YD.
210	COMPACTED EMBANKMENT	15616	5145		20761	CU. YD.
SP & 210	COMPACTED EMBANKMENT (SPECIAL)	36568	6456		43024	CU. YD.
SP & 210	SOIL STABILIZATION	100			100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	1902	389		2291	TON
309	PORTLAND CEMENT CONCRETE BASE (4" UNIFORM THICKNESS)	3837	2368		6205	SQ. YD.
SS & 401	TACK COAT	7685	2316		10001	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	3976	1187		5163	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	174	52		226	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	3308	1140		4448	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	145	50		195	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	4892	1971		6863	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	11	4		15	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")	257	105		362	TON
412	COLD MILLING ASPHALT PAVEMENT	2818	2126		4944	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	40			40	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	50			50	TON
504	APPROACH SLABS	392.98	78.72		471.70	CU. YD.
504	APPROACH GUTTERS	134.79	71.08		205.87	CU. YD.
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	4680.73	2534.21		7214.94	SQ. YD.
601	MOBILIZATION	0.65	0.35		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1			1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	0.65	0.35		1.00	LUMP SUM
603	18" TEMPORARY CULVERT	40	82		122	LIN. FT.
603	24" TEMPORARY CULVERT		12		12	LIN. FT.
SS & 604	SIGNS	1770	231		2001	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	10			10	EACH
SS & 604	BARRICADES	408	64		472	LIN. FT.
SS & 604	TRAFFIC DRUMS	402	10		412	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	480			480	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	3230			3230	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	29156	15896		45052	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	3230			3230	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	9596			9596	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WORDS)	4	4		8	EACH
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	21	5		26	EACH
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	8			8	WEEK
SS & 604	VERTICAL PANELS	34	5		39	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)	718	685		1403	SQ. YD.
SP	CULVERT CLEAN OUT	10			10	EACH
606	12" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)			9	9	LIN. FT.
•606	12" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	239	52		291	LIN. FT.
•606	12" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	239	52		291	LIN. FT.
606	12" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	20			20	LIN. FT.
606	12" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		57		57	LIN. FT.
•606	15" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	4			4	LIN. FT.
•606	15" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	4			4	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	292		237	529	LIN. FT.
•606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	3456	339	852	4647	LIN. FT.
•606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	3456	339	852	4647	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	335		25	360	LIN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	861	261	110	1232	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	257			257	LIN. FT.
•606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	702	134	29	865	LIN. FT.
•606	24" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	702	134	29	865	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	43		54	97	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	27	23	11	61	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)			64	64	LIN. FT.
•606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	702		90	792	LIN. FT.
•606	30" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	702		90	792	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)			31	31	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	102		71	173	LIN. FT.
•606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	524		169	693	LIN. FT.
•606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	524		169	693	LIN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	16			16	LIN. FT.
SS & 606	12" SIDE DRAIN	144			144	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN			60	60	LIN. FT.
606	12" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS			1	1	EACH
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	10		1	11	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS			1	1	EACH
606	SELECTED PIPE BEDDING	200			200	CU. YD.
609	DROP INLETS (TYPE C)	6		2	8	EACH
609	DROP INLETS (TYPE E)	7		1	8	EACH
609	DROP INLETS (TYPE MO)	56	15	14	85	EACH
609	DROP INLETS (TYPE ST)	6	2	3	11	EACH
609	JUNCTION BOXES (TYPE E)	4		2	6	EACH
609	JUNCTION BOXES (TYPE ST)	8			8	EACH
609	DROP INLET EXTENSIONS (4')	18	4	9	31	EACH
609	DROP INLET EXTENSIONS (8')	5	1	1	7	EACH
609	YARD DRAINS	4			4	EACH
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	92	62		154	TON
•619	6' STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)	724	386		1110	LIN. FT.
•619	6' ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)	724	386		1110	LIN. FT.
•619	10' STEEL GATES (ALTERNATE NO. 1)	6			6	EACH
•619	10' ALUMINUM GATES (ALTERNATE NO. 2)	6			6	EACH
•619	16' STEEL GATES (ALTERNATE NO. 1)	1	2		3	EACH
•619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	2		3	EACH
620	LIME	2	2		4	TON
620	SEEDING	1.01	1.18		2.19	ACRE
SS & 620	MULCH COVER	2.17	1.20		3.37	ACRE
620	WATER	134.0	124.7	1.6	260.3	M.GAL.
621	TEMPORARY SEEDING	1.16	0.02		1.18	ACRE
621	SILT FENCE	2567	2083		4650	LIN. FT.
621	SAND BAG DITCH CHECKS	110	88		198	BAG
621	DROP INLET SILT FENCE	200			200	LIN. FT.
621	SEDIMENT BASIN	30			30	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	30			30	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	344	129		473	CU. YD.
621	ROCK DITCH CHECKS	15			15	CU. YD.
621	WATTLE (20")	45			45	LIN. FT.
621	TRIANGULAR SILT DIKE	3104	1312		4416	LIN. FT.
623	SECOND SEEDING APPLICATION	1.01	1.18		2.19	ACRE
624	SOLID SODDING	541	313	124	978	SQ. YD.
SP & 631	CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-1)	1090	475		1565	LIN. FT.
SP & 631	CONCRETE BARRIER WALL (SIDE TYPE SPECIAL-2)		484		484	LIN. FT.
SS & 632	CONCRETE ISLAND	1147	184		1331	SQ. YD.
SS & 633	CONCRETE WALKS	2536	152	438	3126	SQ. YD.
SS & 633	CONCRETE STEPS	19	2		21	SQ. YD.
SP, SS, & 633	CONCRETE WALKS (TYPE SPECIAL)	34			34	SQ. YD.
SS & 633	HAND RAILING	233	154		387	LIN. FT.
SS & 634	CONCRETE CURB (TYPE D)	266			266	LIN. FT.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	8573	1547	2295	12415	LIN. FT.

•DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER
2018-09-12

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.ROD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	100824	108	346

② SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY				UNIT
		NHPP-9227(80) (STATE)	NHPP-9227(80) (LOCAL)	9930	TOTAL	
635	ROADWAY CONSTRUCTION CONTROL	0.65	0.35		1.00	LUMP SUM
637	MAILBOXES	10	1		11	EACH
637	MAILBOX SUPPORTS (SINGLE)	10	1		11	EACH
641	WHEELCHAIR RAMPS (TYPE 1)	561		30	591	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 2)	10			10	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 3)	40	14	11	65	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)	131	171		302	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 5)	12			12	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 6)	21	12		33	SQ. YD.
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	1		2	EACH
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	2			2	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	1		2	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	40	120		160	LIN. FT.
SP	BATTERY BACKUP SYSTEM		1		1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	10	6		16	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	1		3	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	2			2	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	2		6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2882	620		3502	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	165	61		226	LIN. FT.
708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)		193		193	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)		110		110	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM (2C/6 A.W.G., E.G.C.)			3070	3070	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	457	263		720	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)		139		139	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	30	22		52	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES		208		208	LIN. FT.
709	GALVANIZED STEEL CONDUIT (1.25")		10		10	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	180			180	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	60			60	LIN. FT.
710	NON-METALLIC CONDUIT (1.25")	19	18		37	LIN. FT.
710	NON-METALLIC CONDUIT (2")	95	118	2862	3075	LIN. FT.
710	NON-METALLIC CONDUIT (3")	201	131		332	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	1	3		4	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	6	1	10	17	EACH
SP	TAMPER RESISTANT PULL BOX INSERT			10	10	EACH
713	SPAN WIRE ASSEMBLY	2			2	EACH
SP	LIGHT POLE FOUNDATION			4	4	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')		1		1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28'-34')		1		1	EACH
SP	LED LUMINAIRE ASSEMBLY		2		2	EACH
SP	ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 13')			40	40	EACH
SP	ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 16')			4	4	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	1		5	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	1		2	EACH
SP	PEDESTAL TYPE SERVICE POINT (100 AMP)			2	2	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00			1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 40')	6			6	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	1640	3006		4646	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	1370	946		2316	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	260	351		611	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")	67	283		350	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	11368	7541		18909	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (8")	161	124		285	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	1	5		6	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	1	5		6	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	196	61		257	EACH
725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	26			26	SQ. FT.
726	STANDARD SIGN	435	153	40	628	SQ. FT.
SP	18" STREET NAME SIGN	3	3		6	EACH
729	CHANNEL POST SIGN SUPPORT (TYPE U-1)	21	3	1	25	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	724			724	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	24	8	2	34	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	2			2	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	2			2	EACH
733	VIDEO DETECTOR RELOCATION	3			3	EACH
SP & 733	VIDEO DETECTOR (CLR)	4	6		10	EACH
733	VIDEO CABLE	867	584		1451	LIN. FT.
733	VIDEO MONITOR (CLR)	1	1		2	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	4		7	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	1		2	EACH
SP	AGGREGATE PIER	1546	748		2294	SQ. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	37.61	31.17		68.78	CU. YD.
SP	RETAINING WALL	44245	27789		72034	SQ. FT.
SP	ARCHITECTURAL FINISH	3228	2637		5865	SQ. FT.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	76048	24478		100526	POUND
806	METAL BRIDGE RAILING (TYPE H)	1334	544		1878	LIN. FT.
806	TRANSITIONAL APPROACH RAILING	1	1		2	EACH
SP	SHORING (SITE NO. 2)	1.00			1.00	LUMP SUM
SP	NET-ACCESS RADIO (5.8 GHZ, 32 MBPS)	1	1		2	EACH
	STRUCTURES OVER 20' SPAN					
619	7' STEEL CHAIN LINK FENCE	504	338		842	LIN. FT.
636	BRIDGE CONSTRUCTION CONTROL	0.65	0.35		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	310	274		584	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE	704.00	437.60		1141.60	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	700.90	325.70		1026.60	CU. YD.
SP	ARCHITECTURAL FINISH	2185	1952		4137	SQ. FT.
803	CLASS I PROTECTIVE SURFACE TREATMENT	44.9	22.2		67.1	GAL.
804	REINFORCING STEEL-BRIDGE (GRADE 60)	83710	52590		136300	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	162310	82630		244940	POUND
SS & 805	STEEL SHELL PILING (18" DIAMETER)	7960	6847		14807	LIN. FT.
806	METAL BRIDGE RAILING (TYPE H)	31	157		188	LIN. FT.
806	TRANSITIONAL APPROACH RAILING	3	4		7	EACH
SP, SS, & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50)	729640	283500		1013140	POUND
SS & 807	PAINTING STRUCTURAL STEEL	365.1	141.9		507.0	TON
808	ELASTOMERIC BEARINGS	15616.0	6931.0		22547.0	CU. IN.
SS & 809	SILICONE JOINT SEALANT	193	76		269	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	1	1		2	EACH
816	CONCRETE RIPRAP	6	62		68	CU. YD.

*DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
10-01-18	REVISED SIGNAL PLANS AND QUANTITIES TO CALL FOR REMOVAL OF THE WATT ST. SIGNAL AT THE COMPLETION OF THE JOB.	109, 131-132, 137-142
10-23-18	ADDED SP FOR "ARCHITECTURAL FINISH". REVISED BARRIER WALL, APPROACH GUTTER, BRIDGE QUANTITIES, AND SUMMARY OF QUANTITIES TO INCLUDE PAY ITEM FOR "ARCHITECTURAL FINISH", REVISED BRIDGE PLANS FOR "ASHLAR STONE PATTERN" AND "ARCHITECTURAL FINISH".	3, 92, 95, 107, 109, 171, 175, 177-181, 190, 194, 196, 198, 201, 203, 207, 210, 219, 223, 225-226

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13672 STEPHEN T. BRADLEY

23 Oct 2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-01-18			
10-23-18			

LOG NO. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	100824	109	346

② SUMMARY OF QUANTITIES & REVISIONS

SUMMARY OF QUANTITIES & REVISIONS

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5/29/2018
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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.		100824	110	346

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES
Project Name: s100824
Date: 6/29/2016
Coordinate System: Arkansas State Plane Coordinates
Based on GPS PTS : *100 - 101*
Projected to Ground Coordinates
Units: U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

Point No.	Northing	SY	Easting	SX	Elevation	SZ	Feature Code	Point Description
1	544234.3079	0.027	1713097.8287	0.007	250.88	0.011	CTL	REBAR/CAP
2	544294.0944	0.052	1712422.4622	0.008	251.67	0.014	CTL	REBAR/CAP
3	544294.0643	0.066	1712057.4176	0.009	256.39	0.015	CTL	REBAR/CAP
4	544291.8349	0.091	1711508.6095	0.011	254.11	0.017	CTL	REBAR/CAP
5	544290.9110	0.109	1711137.2734	0.012	254.24	0.018	CTL	REBAR/CAP
6	544213.9848	0.128	1710775.9638	0.013	254.20	0.018	CTL	REBAR/CAP
7	544199.0503	0.158	1710237.0584	0.014	253.57	0.020	CTL	REBAR/CAP
8	543810.8644	0.039	1712764.1515	0.020	250.72	0.014	CTL	REBAR/CAP
9	543509.0848	0.044	1712626.0521	0.033	250.06	0.014	CTL	REBAR/CAP
10	543325.3896	0.050	1712467.7697	0.041	250.48	0.015	CTL	REBAR/CAP
11	543334.7570	0.061	1712201.5947	0.040	251.11	0.015	CTL	REBAR/CAP
12	543930.0674	0.059	1712248.4335	0.017	250.33	0.015	CTL	REBAR/CAP
13	544624.5714	0.112	1711082.2205	0.022	254.15	0.018	CTL	REBAR/CAP
14	544907.5787	0.098	1711368.8541	0.036	254.09	0.018	CTL	REBAR/CAP
100	544340.4235	0.000	1714783.8122	0.000	246.34	0.000	GPS	5/8"REBAR AHTD ALUM CAP
101	544322.3868	0.000	1713919.7564	0.000	251.18	0.000	GPS	5/8"REBAR AHTD ALUM CAP
900	544320.7339	0.100	1715166.2361	0.100	247.13	0.001	BM	K332
902	544283.6937	0.100	1709662.6223	0.100	257.07	0.001	BM	N9192
903	543554.6047	0.100	1712577.1214	0.100	251.03	0.001	TBM	CHIS SQ

*Standard Primary Control Monument - Rebar and Cap - Standard - 5/8"x 24" Rebar with 2"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. AHTD monuments will be stamped "Arkansas Hwy & Trans Dept" with "PN: ###" & "Job ######". Monuments that are set by Consultants will be stamped "Arkansas Hwy & Trans Dept" with "PN:###", "Job######", & "PS####". The consultant Professional Surveyor in charge will stamp his/her PS license number on the cap.

**Standard GPS Control Point Monument - 5/8" x 48" Rebar with 2.5"Aluminum Cap stamped: *"(include all common information here)"* plus other markings indicated in the point description of the individual point. These monuments will be stamped "Ark. State Hwy Trans. Dept.", "GPS Survey", & "Point No. ######".

SX, SY, SZ – Represents the standard error estimate of the coordinate values of each point at the 67% confidence level (one sigma) based on the least squares analysis of the control network. See the AASHTO SDMS Technical Data Guide data tag definition for SX:, SY:, and SZ: for additional information. These values shall be used when control points are added and the entire network is reprocessed using least square analysis. A value of 0.001 is defined as fixed (no adjustment) in the least square analysis process. A value of 30 is defined as location by handheld GPS device or scaled from USGS Quadmap.

Reference Control points (1500 series) shall be used to re-establish horizontal datum if the primary control has been destroyed. These reference control points shall not be used for vertical control unless the elevation has been established from the project datum with 3-wire level techiniques.

All additional project control shall be occupied, measured, and adjusted with direct survey ties to at least two of the control points listed in the table above. New survey control shall not be independent of the survey control listed above. This includes horizontal coordinates and elevations.

Positional Accuracy:
- Horizontal - GPS (1.0 cm± 1PPM) — *PN: 100-101 (in the above example)*
- Horizontal - Primary (2.0cm± 20PPM): — *PN:1-10 (in the above example)*
- Horizontal - Secondary (3 cm ± 50PPM): — *PN:1500-1508 (in the above example)*
- Vertical - NGS 1st Order (±4mm x Vdist in km) — *PN:990 & 992 (in the above example)*
- Vertical - NGS 2nd Order (±6mm x Vdist in km) — *PN:991 (in the above example)*
- Vertical - NGS 3rd Order (±8mm x Vdist in km) — *PN:1-915 (in the above example)*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0301 - North Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999937027 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM:
A project Elevation Factor of: 0.9999879443 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 252.04 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-14, 100,101, 900-903 From NGS BM: K332 s179 N9192

Basis of Bearing: Grid Bearings based on AHTD GPS points: *100 - 101*
Convergence Angle is: 0°47'23.09" Right at PN: 100
LT: 34-49-16 N LG: 90-38-34 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

Note: Information in Italics is for clarification only. It is not to be part of the actual Control Table or Control Detail Sheets.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHARRIAN A. BRIDGEFARMER
2018-05-29

C.L. HWY. 18

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	P.O.B.	78+00.00	544251.3914	1709809.9036
8001	P.C.	88+75.49	544253.2713	1710885.3954
8002	P.I.	90+15.00	544253.5151	1711024.8986
8003	P.T.	91+54.45	544260.5479	1711164.2245
8004	P.C.	100+99.32	544308.1816	1712107.8966
8005	P.I.	102+80.65	544317.3229	1712288.9948
8006	P.T.	104+61.49	544303.5572	1712469.8003
8007	P.C.	107+33.13	544282.9356	1712740.6555
8008	P.I.	109+67.92	544265.1118	1712974.7637
8009	P.T.	112+02.44	544266.5020	1713209.5454
8010	P.O.E.	121+00.00	544271.8168	1714107.0886

C.L. HWY. 18 CONNECTOR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8059	P.C.	89+64.77	544225.4277	1710974.9236
8060	P.I.	90+39.77	544225.5588	1711049.9260
8061	P.T.	91+14.69	544219.8077	1711124.7077
8062	P.C.	92+06.67	544212.7553	1711216.4102
8063	P.I.	92+69.16	544207.9634	1711278.7191
8064	P.T.	93+31.47	544211.3329	1711341.1211
8065	P.C.	96+23.82	544227.0955	1711633.0385
8066	P.I.	96+74.02	544229.8023	1711683.1671
8067	P.T.	97+24.20	544229.8718	1711733.3687
8068	P.O.E.	99+73.77	544230.2176	1711982.9411

C.L. HWY. 63B (NETTLETON AVE.)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8016	P.O.B.	50+00.00	545378.2533	1710887.1036
8017	P.C.	65+74.70	544239.9382	1711975.1809
8018	P.I.	66+03.13	544219.3836	1711994.8284
8019	P.T.	66+28.71	544190.9507	1711994.5407
8020	P.I.	70+84.29	543735.3932	1711989.9304
8021	P.C.	73+75.30	543444.3807	1711989.0996
8022	P.I.	74+53.32	543366.3587	1711988.8768
8023	P.T.	74+98.73	543364.5964	1712066.8793
8024	P.C.	76+46.86	543361.2505	1712214.9666
8025	P.I.	77+46.24	543359.0057	1712314.3228
8026	P.T.	78+43.15	543319.5722	1712405.5460
8027	P.C.	80+97.76	543218.5480	1712639.2495
8028	P.I.	81+52.54	543196.8096	1712689.5379
8029	P.T.	82+06.91	543164.8731	1712734.0523
8030	P.O.E.	84+00.00	543052.3130	1712890.9434

C.L. ARCH ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8043	P.O.B.	5+00.00	544791.5206	1712449.3200
8044	P.C.	7+35.33	544556.1870	1712448.9120
8045	P.I.	7+73.70	544517.8227	1712448.8455
8046	P.T.	8+11.15	544482.1299	1712462.9114
8047	P.C.	8+90.57	544408.2410	1712492.0297
8048	P.I.	9+23.06	544378.0104	1712503.9431
8049	P.T.	9+55.00	544345.5661	1712505.7264
8050	P.O.E.	10+00.00	544300.6340	1712508.1962

C.L. BRYAN ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8082	P.O.B.	4+00.00	544122.8769	1711553.8130
8083	P.O.E.	5+00.00	544222.8719	1711554.8182

C.L. CAIN ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	P.O.B.	20+00.00	544258.0650	1711109.9207
8012	P.C.	23+27.45	544585.5070	1711107.9818
8013	P.I.	23+68.61	544626.6635	1711107.7381
8014	P.T.	24+05.17	544655.1022	1711137.4898
8015	P.O.E.	27+23.85	544875.3027	1711367.8572

C.L. CAIN ST. (SOUTH OF HWY. 18)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8080	P.O.B.	8+50.00	544108.9683	1711133.7445
8081	P.O.E.	10+00.00	544258.9198	1711129.9297

C.L. FRISCO ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8070	P.O.B.	5+00.00	544165.2215	1711994.2803
8071	P.C.	5+16.10	544165.0586	1712010.3782
8072	P.I.	5+45.54	544164.7607	1712039.8147
8073	P.T.	5+71.96	544143.8477	1712060.5328
8074	P.O.E.	7+00.00	544052.8863	1712150.6464

C.L. FRISCO ST. (AT WATT ST.)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8075	P.O.B.	15+00.00	543703.2872	1712492.3006
8076	P.I.	16+00.00	543630.9994	1712561.3981
8077	P.I.	17+80.00	543497.8760	1712682.5516
8078	P.O.E.	19+00.00	543410.8497	1712765.1738

C.L. IRBY ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8051	P.O.B.	15+00.00	544518.4613	1712045.1441
8052	P.C.	16+09.40	544439.8353	1712121.2060
8053	P.I.	17+00.49	544374.3629	1712184.5433
8054	P.T.	17+80.46	544378.8177	1712275.5291
8055	P.C.	18+97.28	544384.5305	1712392.2072
8056	P.I.	19+30.39	544386.1497	1712425.2789
8057	P.T.	19+62.91	544398.2896	1712456.0844
8058	P.O.E.	20+00.00	544411.8886	1712490.5923

C.L. STEVENS ST. (WEST)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8085	P.O.B.	4+00.00	543816.0575	1711890.7514
8086	P.O.E.	5+00.00	543816.4472	1711990.7506

C.L. STEVENS ST. (EAST)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8087	P.O.B.	5+00.00	543802.4681	1711990.6092
8088	P.O.E.	6+00.00	543803.6910	1712090.6017

C.L. WATT ST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8032	P.O.B.	6+00.00	543271.5700	1712465.1684
8033	P.C.	6+59.56	543327.1931	1712486.4493
8034	P.I.	7+00.65	543365.5770	1712501.1346
8035	P.T.	7+41.43	543399.9585	1712523.6489
8036	P.C.	10+91.66	543692.9576	1712715.5157
8037	P.I.	11+42.55	543735.5264	1712743.3913
8038	P.T.	11+93.34	543774.8919	1712775.6329
8039	P.C.	14+37.70	543963.9403	1712930.4695
8040	P.I.	15+69.44	544065.8626	1713013.9472
8041	P.T.	16+91.43	544197.5757	1713016.8423
8042	P.O.E.	17+62.43	544268.5590	1713018.4026

SURVEY CONTROL DETAILS

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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.		100824	III	346

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12465
SHANE RIAD
2018-05-29

N

50 0 50 100
SCALE: 1" = 100'

BM PN:902 PD:N9192

P.O.B. 78+00.00

8000 80 HWY. 18 N89°53'59"E 1075.49' 85 HWY. 18

SURVEY BASELINE N88°24'45"E 539.11'

PN:7 PD:REBAR/CAP

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

C.L. HWY. 18
P.I. = 90+15.00
D = 1°00'00"
Δ = 2°47'22" LT.
T = 139.50'
L = 278.95'
P.C. = 88+75.49
P.T. = 91+54.45
e = N.C.

PN:6 PD:REBAR/CAP

C.L. HWY. 18 CONN.
P.I. = 90+39.77
D = 3°00'00"
Δ = 4°29'52" RT.
T = 75.00'
L = 149.93'
P.C. = 89+64.76
P.T. = 91+14.69
e = N.C.

STA. 89+64.53 C.L. HWY. 18, 28.70' RT. =
STA. 89+64.76 C.L. HWY. 18 CONN.

P.C. 88+75.49

SURVEY BASELINE 369.41' N89°53'59"E 139.50'

P.O.B. 20+00.00

HWY. 18 CONN. N89°53'59"E 75.00'

S85°36'08"E 91.97'

S85°36'08"E 75.00'

P.C. 89+64.76

P.I. 90+15.00

P.I. 90+39.77

P.T. 91+14.69

P.T. 91+54.45

P.C. 92+06.67

N00°27'26"W 150.00'

P.O.B. 8+50.00

N77°58'50"E 139.50'

N87°06'37"E 139.50'

P.O.E. 10+00.00

PN:5 PD:REBAR/CAP P.O.E. 10+00.00

C.L. HWY. 18 CONN.
P.I. = 92+69.16
D = 6°00'00"
Δ = 7°29'18" LT.
T = 62.49'
L = 124.81'
P.C. = 92+06.67
P.T. = 93+31.47
e = N.C.

N00°20'21"W 327.45'

SURVEY BASELINE N00°27'26"W 1351.11'

CAIN ST.

STA. 91+20.11 C.L. HWY. 18 =
STA. 10+00.00 C.L. CAIN ST.
Δ = 91°05'21"

STA. 91+00.08 C.L. HWY. 18 =
STA. 20+00.00 C.L. CAIN ST.
Δ = 87°59'36"

STA. 91+20.94 C.L. HWY. 18 CONN. =
STA. 9+60.40 C.L. CAIN ST.
Δ = 95°51'18"

N

50 0 50 100
SCALE: 1" = 100'

C.L. HWY. 18 CONN.
P.I. = 92+69.16
D = 6°00'00"
Δ = 7°29'18" LT.
T = 62.49'
L = 124.81'
P.C. = 92+06.67
P.T. = 93+31.47
e = N.C.

C.L. HWY. 18 CONN.
P.I. = 96+74.02
D = 3°00'00"
Δ = 3°00'41" RT.
T = 50.20'
L = 100.38'
P.C. = 96+23.82
P.T. = 97+24.20
e = N/A

S43°42'27"E 1574.7'

HWY. 63B/NETTLETON AVE.

P.O.B. 15+00.00 8051

IRBY ST. S44°03'01"E 109.40'

P.C. 16+09.40 8052

P.I. 17+00.49

P.T. 17+80.46 8054

8053 N87°11'49"E 91.09'

N87°11'49"E 116.82'

C.L. IRBY ST.
P.I. = 17+00.49
D = 28°30'00"
Δ = 48°45'10" LT.
T = 91.09'
L = 171.06'
P.C. = 16+09.40
P.T. = 17+80.46
e = N.C.

C.L. IRBY ST.
P.I. = 19+30.39
D = 28°30'00"
Δ = 18°42'20" LT.
T = 33.11'
L = 65.63'
P.C. = 18+97.28
P.T. = 19+62.91
e = N.C.

S00°05'59"W 235.33'

ARCH

P.C. 7+35.33 8044

S00°05'59"W 38.36'

P.I. 7+73.70 8045

S00°05'59"W 38.36'

P.T. 8+11.15 8046

S25°30'29"E 75.42'

P.C. 18+97.28 8055

P.I. 19+30.39 8056

N68°29'29"E 33.11'

N87°11'49"E 33.11'

N68°29'29"E 37.09'

P.C. 8+90.57 8047

P.I. 9+23.06

P.T. 9+55.00 8049

P.O.E. 20+00.00

S85°36'08"E 105.40'

8048

STA. 8+86.65 C.L. ARCH ST. =
STA. 20+00.00 C.L. IRBY ST.
Δ = 90°00'00"

C.L. ARCH ST.
P.I. = 9+23.06
D = 28°30'00"
Δ = 18°21'45" RT.
T = 32.49'
L = 64.43'
P.C. = 8+90.57
P.T. = 9+55.00
e = N.C.

SURVEY BASELINE N89°51'27"E 371.34'

PN:4 PD:REBAR/CAP

SURVEY BASELINE N89°46'02"E 548.81'

HWY. 18

N86°54'33"E 292.34'

8062 S85°36'08"E 62.49' 8063 N86°54'33"E 62.49' 8064

HWY. 18 CONNECTOR

P.I. 92+69.16

P. 93+31.47

8065 N86°54'33"E 50.20' 8066 N89°55'14"E 50.20' 8067

P.C. 96+23.82

P.I. 96+74.02

P.T. 97+24.20

8082 P.O.E. 5+00.00

STA. 95+45.48 C.L. HWY. 18 CONN. =
STA. 5+00.00 C.L. BRYAN ST.
Δ = 86°20'00"

BRYAN ST.

4 N00°34'33"E 8083 100.00' P.O.B. 4+00.00

PN:8 PD:CHIS SQUARE 904

STA. 99+10.24 C.L. HWY. 18 =
STA. 64+87.53 C.L. HWY. 63B
Δ = 130°49'04"

N89°55'14"E 249.57'

HWY. 18 CONNECTOR

STA. 99+73.77 C.L. HWY. 18 CONN. =
STA. 65+81+20 C.L. HWY. 63B
Δ = 56°35'06"

N87°06'37"E 944.87' 100 HWY. 18

P.C. 65+74.10

8017 S43°42'27"E 28.43'

P.I. 66+03.13

8018 S00°34'47"E 28.43'

8019 P.T. 66+28.71

P.O.E. 99+73.77

8070 P.O.B. 5+00.00

P.I. 5+45.54

S89°25'13"E 29.44'

8072 S44°43'54"E 29.44'

S44°43'54"E 128.04'

8073

STA. 66+64.44 C.L. HWY. 63B =
STA. 5+00.00 C.L. FRISCO ST.
Δ = 90°00'00"

S89°25'13"E 16.10'

P.C. 5+16.10 8071

FRISCO ST.

96

8004 P.C. 100+99.32

C.L. HWY. 18
P.I. = 102+80.65
D = 2°00'00"
Δ = 7°14'37" RT.
T = 181.33'
L = 362.17'
P.C. = 100+99.32
P.T. = 104+61.49
e = 0.028 '/'
Ls = 400'

8005 P.I. 102+80.65

N87°06'37"E 181.33'

S85°38'46"E 181.33'

P.O.E. 10+00.00

8006

PN:2 PD:REBAR/CAP

8050 S85°38'46"E 271.64' HWY. 18 SURVEY BASELINE

STA. 105+00.00 C.L. HWY. 18 =
STA. 10+00.00 C.L. ARCH ST.
Δ = 82°30'00"

C.L. FRISCO ST.
P.I. = 5+45.54
D = 80°00'00"
Δ = 44°41'18" RT.
T = 29.44'
L = 55.86'
P.C. = 5+16.10
P.T. = 5+71.96
e = N.C.

P.T. 104+61.49

8007

P.C. 107+33.13

SURVEY CONTROL DETAILS

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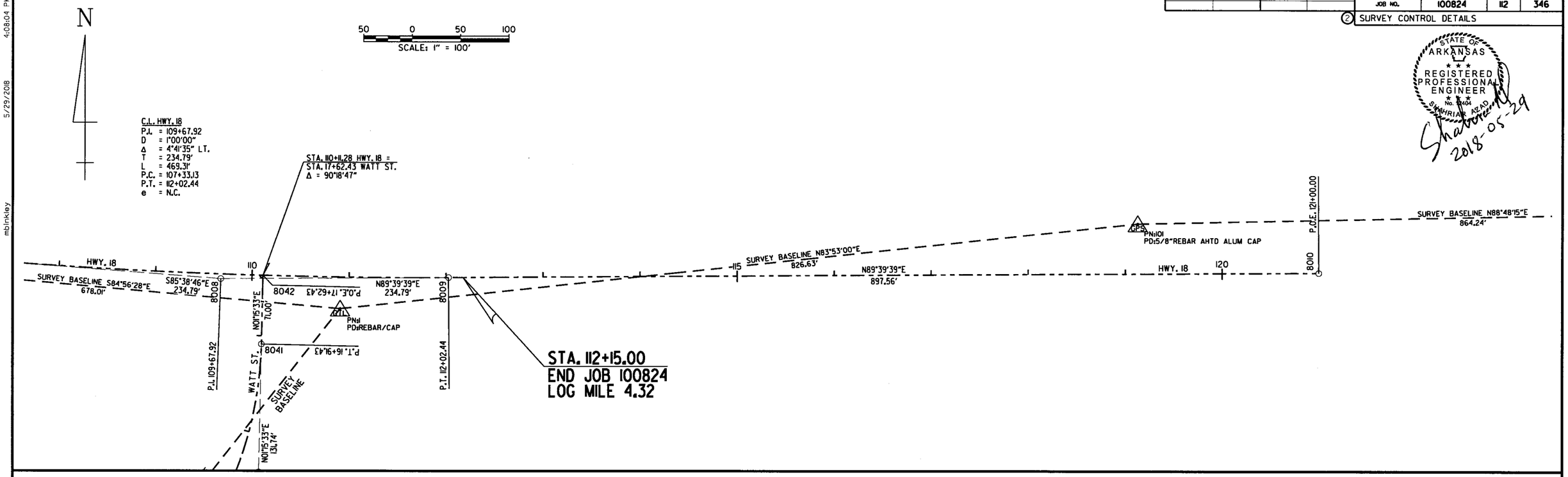
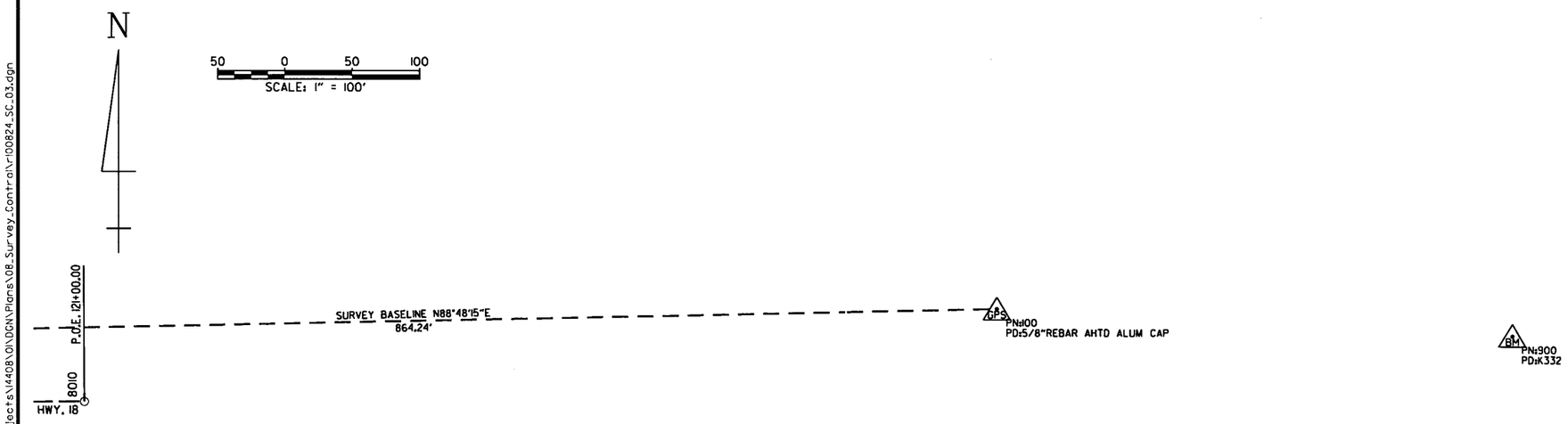
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	112	346

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19404
SHAHRIAR AZAD
2018-05-29





SURVEY CONTROL DETAILS

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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.		100824	113	346

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

SCALE: 1" = 100'

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18
SURVEY BASELINE
P.C. 88+75.49
8001
N17°58'50"E 369.41'
P.C. 89+64.76
8059
N89°15'59"E 139.50'
8002
P.I. 90+15.00
P.I. 90+39.77
8060
S85°36'08"E 75.00'
P.O.B. 20+00.00
20
8001
P.T. 91+14.69
8061
N01°27'26"W 150.00'
8080
CAIN ST.
S85°36'08"E 91.97'
8003
N17°06'37"E 139.50'
P.T. 91+54.45
P.O.B. 8+50.00
P.C. 92+06.67
8062
S85°36'08"E 62.49'
HWY. 18 CONNECTOR
P.I. 92+69.16
8063
N86°53'23"E 62.49'
SURVEY BASELINE N17°14'34"E 357.71'

STA. 91+00.08 C.L. HWY. 18 =
STA. 20+00.00 C.L. CAIN ST.
Δ = 87°59'36"

STA. 91+20.11 C.L. HWY. 18 =
STA. 10+00.00 C.L. CAIN ST.
Δ = 91°05'21"

P.C. 22+27.45
PK#3 PDREBAR/CAP
P.I. 23+68.61
8012
8013
P.I. 24+05.17
N00°20'21"W 41.16'
N46°17'33"E 41.16'
P.O.B.
SURVEY BASELINE
CAIN ST.
N00°20'21"W 327.45'
N09°22'09"W 338.17'

STA. 27+23.85 C.L. CAIN ST. =
STA. 56+89.91 C.L. HWY. 63B
Δ = 90°00'00"

SURVEY BASELINE N45°21'53"E 402.81'
N46°17'33"E 318.68'
25
CAIN ST.
8015
HWY. 63B/NETTLETON AVE.
S43°42'27"E 1568.75'
55
P.O.E. 27+23.85
PK#4 PDREBAR/CAP

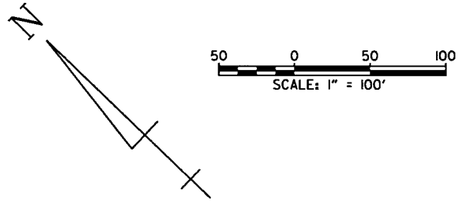
C.L. HWY. 18 CONN.
P.I. = 90+39.77
D = 3°00'00"
Δ = 4°29'52" RT.
T = 75.00'
L = 149.93'
P.C. = 89+64.76
P.T. = 91+14.69
e = N.C.

STA. 91+20.94 C.L. HWY. 18 CONN. =
STA. 9+60.40 C.L. CAIN ST.
Δ = 95°51'18"

C.L. HWY. 18 CONN.
P.I. = 92+69.16
D = 6°00'00"
Δ = 7°29'18" LT.
T = 62.49'
L = 124.81'
P.C. = 92+06.67
P.T. = 93+31.47
e = N.C.

C.L. HWY. 18
P.I. = 90+15.00
D = 1°00'00"
Δ = 2°47'22" LT.
T = 139.50'
L = 278.95'
P.C. = 88+75.49
P.T. = 91+54.45
e = N.C.

C.L. CAIN ST.
P.I. = 23+68.61
D = 60°00'00"
Δ = 46°37'55" RT.
T = 41.16'
L = 77.72'
P.C. = 23+27.45
P.T. = 24+05.17
e = N.C.



SCALE: 1" = 100'

P.O.B. 50+00.00
8016
HWY. 63B/NETTLETON AVE.
50
55
60
65
S43°42'27"E 1568.75'
P.O.E. 27+23.85
PK#4 PDREBAR/CAP
8008
STA. 27+23.85 C.L. CAIN ST. =
STA. 56+89.91 C.L. HWY. 63B
Δ = 90°00'00"
SURVEY BASELINE N45°21'53"E 402.81'
N46°17'33"E 318.68'
25
CAIN ST.

15
IRBY ST.
S44°03'01"E 109.40'
8051
P.O.B. 15+00.00

STA. 99+10.24 C.L. HWY. 18 =
STA. 64+87.53 C.L. HWY. 63B
Δ = 130°49'04"
N81°06'37"E
PK#3277 PDCHAS SQUARE 904
N89°46'02"E
SURVEY BASELINE 546.81'
HWY. 18
N89°55'14"E 249.57'
HWY. 18 CONNECTOR

SURVEY CONTROL DETAILS

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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.		100824	114	346

(2) SURVEY CONTROL DETAILS

SCALE: 1" = 100'

C.L. IRBY ST.
P.I. = 17+00.49
D = 28°30'00"
Δ = 48°45'10" LT.
T = 91.09'
L = 171.06'
P.C. = 16+09.40
P.T. = 17+80.46
e = N.C.

C.L. HWY. 18
P.I. = 102+80.65
D = 2°00'00"
Δ = 7°14'37" RT.
T = 181.33'
L = 362.17'
P.C. = 100+99.32
P.T. = 104+61.49
e = 0.028 '/'
Ls = 400'

C.L. HWY. 63B
P.I. = 66+03.13
D = 82°00'00"
Δ = 44°17'14" RT.
T = 28.43'
L = 54.01'
P.C. = 65+74.70
P.T. = 66+28.71
e = N.C.

C.L. HWY. 63B
P.I. = 77+46.24
D = 11°15'00"
Δ = 22°05'00" RT.
T = 99.38'
L = 196.30'
P.C. = 76+46.86
P.T. = 78+43.15
e = 0.040 '/'
Ls = 125'

C.L. HWY. 63B
P.I. = 74+53.32
D = 72°00'00"
Δ = 88°52'10" LT.
T = 78.02'
L = 123.43'
P.C. = 73+75.30
P.T. = 74+98.73
e = 0.040 '/'
Ls = 125'

C.L. WATT ST.
P.I. = 7+00.65
D = 15°00'00"
Δ = 12°16'55" RT.
T = 41.10'
L = 81.88'
P.C. = 6+59.56
P.T. = 7+41.43
e = N.C.

C.L. HWY. 63B
P.I. = 81+52.54
D = 11°15'00"
Δ = 12°16'46" RT.
T = 54.79'
L = 109.15'
P.C. = 80+97.76
P.T. = 82+06.91
e = 0.040 '/'
Ls = 125'

STA. 70+03.23 C.L. HWY. 63B = STA. 5+00.00 C.L. STEVENS ST. Δ = 89°11'49"

STA. 70+17.21 C.L. HWY. 63B = STA. 5+00.00 C.L. STEVENS ST. Δ = 91°13'08"

STA. 76+57.90 C.L. HWY. 63B = STA. 5+00.00 C.L. CLARK ST. Δ = 93°05'18"

STA. 66+64.44 C.L. HWY. 63B = STA. 5+00.00 C.L. FRISCO ST. Δ = 90°00'00"

STA. 99+73.77 C.L. HWY. 18 CONN. = STA. 65+81+20 C.L. HWY. 63B Δ = 56°35'06"

STA. 79+16.06 C.L. HWY. 63B = STA. 6+20.42 C.L. WATT ST. Δ = 87°33'31"

HWY. 63B/NETTLETON AVE.

HWY. 18 CONNECTOR

SURVEY BASELINE N89°59'43"E 365.04'

SURVEY BASELINE S87°59'04"E 266.34'

SURVEY BASELINE N40°45'00"E 242.48'

SURVEY BASELINE S88°42'21"E 148.13'

SURVEY BASELINE S88°42'21"E 99.38'

SURVEY BASELINE S66°37'21"E 254.60'

SURVEY BASELINE S54°20'34"E 193.09'

FRISCO ST. S44°43'54"E 128.04'

FRISCO ST. S43°30'47"E 120.00'

CLARK ST. N00°33'05"W 200.00'

IRBY ST. S44°03'07"E 109.40'

WATT ST. N33°37'06"E 150.23'

STEVENS ST. N89°17'57"E 100.00'

STEVENS ST. N89°46'36"E 100.00'

S00°34'47"W 455.58'

S00°09'49"W 291.01'

S00°09'49"W 78.02'

S00°39'33"E 249.57'

N87°06'37"E 944.87'

N87°11'49"E 116.82'

N87°11'49"E 91.09'

S85°38'46"E 181.33'

N87°06'37"E 181.33'

PNI2 PDREBAR/CAP

PNI3 PDREBAR/CAP

PNI4 PDREBAR/CAP

PNI5 PDREBAR/CAP

PNI6 PDREBAR/CAP

PNI7 PDREBAR/CAP

PNI8 PDREBAR/CAP

PNI9 PDREBAR/CAP

PNI10 PDREBAR/CAP

PNI11 PDREBAR/CAP

PNI903 PDCHIS

P.C. 7+35

P.I. 17+80.46

P.I. 17+00.49

P.C. 16+09.40

P.C. 100+99.32

P.I. 102+80.65

P.I. 5+71.96

P.I. 5+45.54

P.C. 5+16.10

P.C. 65+74.70

P.I. 66+03.13

P.T. 66+28.71

P.C. 99+73.77

P.I. 70+84.29

P.I. 74+53.32

P.C. 73+75.30

P.T. 74+98.73

P.I. 76+46.86

P.I. 77+46.24

P.I. 78+43.15

P.I. 74+98.73

P.I. 74+53.32

P.I. 16+00

P.I. 17+80.00

P.I. 7+41.43

P.I. 7+00.65

P.C. 6+59.56

P.I. 78+43.15

P.C. 80+97.76

P.I. 81+52.54

P.T. 82+06.91

P.I. 84+00.00

P.O.E. 6+00.00

P.O.B. 4+00.00

P.O.E. 19+00.00

P.O.B. 84+00.00

8055 8054 8053 8052 8051 8050 8049 8048 8047 8046 8045 8044 8043 8042 8041 8040 8039 8038 8037 8036 8035 8034 8033 8032 8031 8030 8029 8028 8027 8026 8025 8024 8023 8022 8021 8020 8019 8018 8017 8016 8015 8014 8013 8012 8011 8010 8009 8008 8007 8006 8005 8004 8003 8002 8001

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2018-05-29

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD

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.		100824	115	346

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

STA. 76+57.90 C.L. HWY. 63B =
STA. 5+00.00 C.L. CLARK ST.
Δ = 93°05'18"

C.L. HWY. 63B
P.I. = 77+46.24
D = 11°15'00"
Δ = 22°05'00" RT.
T = 99.38'
L = 196.30'
P.C. = 76+46.86
P.T. = 78+43.15
e = 0.040 '/'
Ls = 125'

C.L. WATT ST.
P.I. = 11+42.55
D = 6°00'00"
Δ = 6°06'01" RT.
T = 50.88'
L = 101.67'
P.C. = 10+91.66
P.T. = 11+93.34
e = N.C.

C.L. HWY. 18
P.I. = 109+67.92
D = 1°00'00"
Δ = 4°41'35" LT.
T = 234.79'
L = 469.31'
P.C. = 107+33.13
P.T. = 112+02.44
e = N.C.

STA. 79+16.06 C.L. HWY. 63B =
STA. 6+20.42 C.L. WATT ST.
Δ = 87°33'31"

STA. 79+16.06 C.L. WATT ST. =
STA. 9+30.88 C.L. FRISCO ST.
Δ = 104°28'36"

STA. 110+11.28 C.L. HWY. 18 =
STA. 17+62.43 C.L. WATT ST.
Δ = 90°18'47"

C.L. WATT ST.
P.I. = 7+00.65
D = 15°00'00"
Δ = 12°16'55" RT.
T = 41.10'
L = 81.88'
P.C. = 6+59.56
P.T. = 7+41.43
e = N.C.

C.L. WATT ST.
P.I. = 15+69.44
D = 15°00'00"
Δ = 38°03'34" LT.
T = 131.74'
L = 253.73'
P.C. = 14+37.70
P.T. = 16+91.43
e = N.C.

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

SURVEY CONTROL DETAILS

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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.		100824	116	346

(2) PLAN & PROFILE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR MAJD
2018-09-04

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 STA. 88+33 LT. - CONSTRUCT
30" x 156' PIPE OUTLET
CONNECT TO EXISTING INLET @ 86+71LT.

HWY. 18 STA. 88+99 LT. - CONSTRUCT
30" x 60' PIPE OUTLET
CONNECT TO EXISTING INLET @ 88+33 LT.

HWY. 18 STA. 89+64 LT. - CONSTRUCT
30" x 60' PIPE OUTLET
CONNECT TO EXISTING INLET @ 88+99 LT.

HWY. 18 STA. 90+35 - CONSTRUCT
D.I. WITH BACK OPENING 32' LT. OF C.L.
CONNECT TO EXISTING INLET @ 89+64 LT.
WITH 30" x 66' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-7"

HWY. 18 STA. 90+80 - CONSTRUCT
J.B. 33' LT. OF C.L.
CONNECT TO D.I.@ STA. 90+35 LT.
WITH 30" x 41' R.C. PIPE OUTLET (CL. V).
TYPE ST J.B. = 4'-0" X 4'-0"
H = 4'-1"

HWY. 18 STA. 91+45 - CONSTRUCT
J.B. 33' LT. OF C.L.
CONNECT TO J.B. @ STA. 90+80 LT.
WITH 30" x 61' R.C. PIPE OUTLET (CL. V)
TYPE ST J.B. = 4'-0" X 4'-0"
H = 4'-1"

STA. 89+98 = CONSTRUCT
APPROACH ON LT. = EMBK. 15.0 CU. YDS.
EXC. 20.0 CU. YDS.

STA. 90+57 ON LT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 67.5 SQ. YDS.

STA. 91+60 ON LT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 48.2 SQ. YDS.

HWY. 18 STA. 86+71LT. - CONSTRUCT
30" x 200' R.C. PIPE OUTLET
CONNECT TO EXISTING INLET @ 84+68 LT.

HWY. 18 STA. 84+68 LT. - CONSTRUCT
30" x 98' R.C. PIPE OUTLET
CONNECT TO EXISTING INLET @ 83+68 LT.

HWY. 18 STA. 92+99 - CONSTRUCT
D.I. 67' LT. OF C.L.
CONNECT TO D.I.@ STA. 92+88 LT.
WITH 18" x 35' PIPE OUTLET (CL. V)
TYPE ST D.I. = 3'-0" X 3'-0"
H = 2'-10"

HWY. 18 STA. 92+88 - CONSTRUCT
D.I. 32' LT. OF C.L.
CONNECT TO D.I. @ STA. 91+90 LT.
WITH 18" x 94' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 5'-4"

HWY. 18 STA. 96+20 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' LT. OF C.L.
CONNECT TO D.I. @ STA. 95+20 LT.
WITH 18" x 97' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 5'-6"

HWY. 18 STA. 94+00 - CONSTRUCT
D.I. 41' LT. OF C.L.
CONNECT TO D.I. @ STA. 94+00 LT.
WITH 18" x 7' R.C. PIPE OUTLET
TYPE E D.I. = 3'-0" X 2'-0"
H = 2'-9"

HWY. 18 STA. 95+20 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' LT. OF C.L.
CONNECT TO D.I.@ STA. 95+20 LT.
WITH 18" x 8' R.C. PIPE OUTLET (CL. IV)
TYPE MO D.I.= 4'-0" DIA.
H = 14'-11"

HWY. 18 STA. 91+90 - CONSTRUCT
D.I. WITH 4' EXT. & BACK OPENING 32' LT. OF C.L.
CONNECT TO J.B. @ STA. 91+45 LT.
WITH 18" x 42' R.C. PIPE OUTLET (CL. IV)
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-6"

STA. 92+51 = CONSTRUCT
APPROACH ON LT. = EMBK. 50.0 CU. YDS.
EXC. 40.0 CU. YDS.

STA. 91+00.08 HWY. 18 = STA. 20+00.00 CAIN ST.
Δ = 87°59'36"

STA. 91+20.11 HWY. 18 = STA. 10+00.00 CAIN ST.
Δ = 91°05'21"

HWY. 18 STA. 94+00 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' LT. OF C.L.
CONNECT TO D.I.@ STA. 92+88 LT.
WITH 18" x 109' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 8'-4"

HWY. 18 STA. 95+20 - CONSTRUCT
D.I. 42' LT. OF C.L.
CONNECT TO D.I. @ STA. 96+82 LT.
WITH 18" x 159' PIPE OUTLET
TYPE E D.I. = 3'-0" X 2'-0"
H = 4'-3"

STA. 93+20 = CONSTRUCT
APPROACH ON LT. = EMBK. 105.0 CU. YDS.

HWY. 18 STA. 96+82 - CONSTRUCT
D.I. 42' LT. OF C.L.
CONNECT TO D.I.@ STA. 98+31LT.
WITH 18" x 145' PIPE OUTLET
TYPE E = 3'-0" X 2'-0"
H = 3'-7"

STA. 63+33 ON RT. CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.0 SQ. YDS.

STA. 99+02 ON LT. CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 5.0 SQ. YDS.

HWY. 18 STA. 97+20 - CONSTRUCT
D.I. WITH 8' EXTENSION 32' LT. OF C.L.
CONNECT TO D.I.@ STA. 96+20 LT.
WITH 18" x 96' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 5'-8"

HWY. 18 STA. 98+31 - CONSTRUCT
D.I. 42' LT. OF C.L.
CONNECT TO D.I.@ STA. 98+39 LT.
WITH 18" x 6' PIPE OUTLET
TYPE E D.I. = 3'-0" X 2'-0"
H = 3'-2"

HWY. 18 STA. 98+39 - CONSTRUCT
J.B. 44' LT. OF C.L.
WITH 18" x 63' EXISTING PIPE CULVERT AND
WITH 18" x 53' R.C. PIPE OUTLET (CL. IV)
AND WITH F.E.S. @ STA. 98+84 LT.
TYPE E J.B. = 3'-0" X 3'-0"
H = 4'-7"

STA. 98+33.83 BR. END
BR. NO. 07407
254'-0" CONT. COMP. PL. GIRDER UNIT (102'-152')
58'-0" CLEAR ROADWAY
256'-10" BR. LENGTH
STA. 100+90.66 BR. END

HWY. 18 (HIGHLAND DR.)

C.L. HWY. 18
P.I. = 90+15.00
D = 1°00'00"
Δ = 2°47'22" LT.
T = 139.50'
L = 278.95'
P.C. = 88+75.49
P.T. = 91+54.45
e = N.C.
Ls = N/A

STA. 89+64.65, 28.70' RT. OF C.L. HWY. 18 = STA. 89+64.88 C.L. HWY. 18 CONNECTOR

STA. 91+20.94 HWY. 18 CONN. = STA. 9+60.40 CAIN ST.
Δ = 95°51'18"

STA. 95+45.48 HWY. 18 CONN. = STA. 5+00.00 BRYAN ST.
Δ = 86°20'00"

STA. 99+10.24 HWY. 18 = STA. 64+87.53 HWY. 63B
Δ = 130°49'04"

STA. 100+00.00 HWY. 18 = BNSF RAILWAY M.P. 423.51
Δ = 130°49'05"

STA. 99+73.77 HWY. 18 CONN. = STA. 65+87.15 HWY. 63B
Δ = 123°24'54"

STA. 66+64.44 HWY. 63B = STA. 5+00.00 FRISCO ST.
Δ = 90°00'00"

STA. 70+03.23 HWY. 63B = STA. 5+00.00 STEVENS ST.
Δ = 89°11'49"

STA. 70+17.21 HWY. 63B = STA. 5+00.00 STEVENS ST.
Δ = 91°13'08"

C.L. HWY. 18 CONN.
P.I. = 90+39.77
D = 3°00'00"
Δ = 4°29'52" RT.
T = 75.00'
L = 149.93'
P.C. = 89+64.76
P.T. = 91+14.69
e = N.C.
Ls = N/A

C.L. HWY. 18 CONN.
P.I. = 92+69.16
D = 6°00'00"
Δ = 7°29'18" LT.
T = 62.49'
L = 124.81'
P.C. = 92+06.67
P.T. = 93+31.47
e = N.C.
Ls = N/A

C.L. HWY. 18 CONN.
P.I. = 96+74.02
D = 3°00'00"
Δ = 3°00'41" RT.
T = 50.20'
L = 100.38'
P.C. = 96+23.82
P.T. = 97+24.20
e = N/A
Ls = N/A

C.L. HWY. 63B
P.I. = 66+03.13
D = 82°00'00"
Δ = 44°17'14" RT.
T = 28.43'
L = 54.01'
P.C. = 65+74.70
P.T. = 66+28.71
e = N.C.
Ls = N/A

C.L. IRBY ST.
P.I. = 17+00.49
D = 28°30'00"
Δ = 48°45'10" LT.
T = 91.09'
L = 171.06'
P.C. = 16+09.40
P.T. = 17+80.46
e = N.C.
Ls = N/A

C.L. FRISCO ST.
P.I. = 5+45.54
D = 80°00'00"
Δ = 44°41'18" RT.
T = 29.44'
L = 55.86'
P.C. = 5+16.10
P.T. = 5+71.96
e = N.C.
Ls = N/A

STA. 93+04 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 14.0 SQ. YDS.

STA. 93+04 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 14.1 SQ. YDS.

HWY. 18 CONNECTOR STA. 90+77 - CONSTRUCT
D.I. WITH BACK OPENING 3' RT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 90+64 RT.
WITH 18" x 12' R.C. PIPE OUTLET (CL. IV)
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-2"

HWY. 18 CONNECTOR STA. 91+67 - CONSTRUCT
D.I. WITH 4' EXTENSION 4' RT. OF C.L.
CONNECT TO D.I.@ STA. 90+77 RT.
WITH 18" x 86' R.C. PIPE OUTLET (CL. V)
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-11"

HWY. 18 CONNECTOR STA. 92+81 - CONSTRUCT
D.I. 3' RT. OF C.L.
CONNECT TO D.I.@ STA. 91+67 RT.
WITH 18" x 111' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-7"

HWY. 18 CONNECTOR STA. 94+70 - CONSTRUCT
D.I. WITH 4' EXTENSION 4' RT. OF C.L.
CONNECT TO D.I.@ STA. 92+80 RT.
WITH 18" x 186' PIPE OUTLET
AND WITH 18" X 4' R.C. PIPE INLET
WITH F.E.S.
TYPE MO D.I.= 4' DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-1"

STA. 96+33 = CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS

STA. 97+35 = CONSTRUCT
APPROACH ON RT. = EXC. 5.0 CU. YDS.

STA. 9+06 ON RT. CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.0 SQ. YDS.

STA. 90+52 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 15.7 SQ. YDS.

STA. 91+00 ON RT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 44.6 SQ. YDS.

STA. 91+43 ON RT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 36.8 SQ. YDS.

STA. 97+90 = CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 98+34 = CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 93+79 = CONSTRUCT
APPROACH ON RT. = EMBK. 45.0 CU. YDS.

STA. 94+27 = CONSTRUCT
APPROACH ON RT. = EMBK. 25.0 CU. YDS.

HWY. 18 STA. 92+80 - CONSTRUCT
D.I. WITH 4' EXTENSION 35' RT. OF C.L.
CONNECT TO D.I.@ STA. 92+81RT.
WITH 18" x 22' R.C. PIPE OUTLET (CL. IV)
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-7"

HWY. 18 STA. 94+00 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' RT. OF C.L.
CONNECT TO D.I.@ STA. 92+80 RT.
WITH 18" x 117' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 5'-0"

HWY. 18 CONNECTOR STA. 95+34 - CONSTRUCT
J.B. 4' RT. OF C.L.
CONNECT TO D.I.@ STA. 96+09 RT.
WITH 18" x 72' R.C. PIPE OUTLET (CL. IV)
TYPE ST J.B. = 3'-0" x 3'-0"
H=3'-11"

HWY. 18 STA. 95+33 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' RT. OF C.L.
CONNECT TO J.B. @ STA. 95+34 RT.
WITH 18" x 27' R.C. PIPE OUTLET (CL. IV)
TYPE MO D.I.= 4'-0" DIA.
H = 15'-7"

HWY. 18 STA. 96+20 - CONSTRUCT
D.I. WITH 4' EXTENSION 32' RT. OF C.L.
CONNECT TO D.I.@ STA. 95+33 RT.
WITH 18" x 84' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 5'-11"

HWY. 18 CONNECTOR STA. 96+09 - CONSTRUCT
D.I. 4' RT. OF C.L.
CONNECT TO D.I.@ STA. 96+63 RT.
WITH 18" x 50' PIPE OUTLET
AND WITH 18" x 2' R.C. PIPE INLET WITH F.E.S.
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-11"

HWY. 18 CONNECTOR STA. 96+63 - CONSTRUCT
D.I. WITH BACK OPENING 6' RT. OF C.L.
CONNECT TO D.I.@ STA. 97+64 RT.
WITH 18" x 97' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-9"

HWY. 18 CONNECTOR STA. 97+64 - CONSTRUCT
D.I. WITH BACK OPENING 7' RT. OF C.L.
CONNECT TO D.I. @ STA. 98+95 RT.
WITH 18" x 129' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-2"

STA. 99+24 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 28.1 SQ. YDS.

HWY. 18 CONNECTOR STA. 98+95 - CONSTRUCT
D.I. WITH BACK OPENING 7' RT. OF C.L.
CONNECT TO J.B. @ STA. 99+28 LT.
WITH 18" x 32' R.C. PIPE OUTLET (CL. V)
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-4"

HWY. 18 CONNECTOR STA. 99+28 - CONSTRUCT
J.B. 5' LT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 99+38
WITH 24" x 8' R.C. PIPE OUTLET (CL. V)
TYPE ST J.B. = 3'-0" X 3'-0"
H = 3'-8"

BRYAN ST. STA. 4+45 - EXIST DROP INLET
RETAIN AND CONSTRUCT
18" x 49' PIPE CULVERT (CLASS IV)
CONNECT TO J.B. @ 95+34

STA. 4+93 ON LT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 13.4 SQ. YDS.

STA. 4+95 ON RT. CONSTRUCT
TYPE I WHEELCHAIR RAMP = 14.3 SQ. YDS.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

CAIN ST. NETTLETON AVE. BNSF RAILWAY IRBY ST. FRISCO ST. STEVENS ST. HWY. 63B/NETTLETON AVE. HWY. 18

100 YR. FLOODPLAIN LIMIT

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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

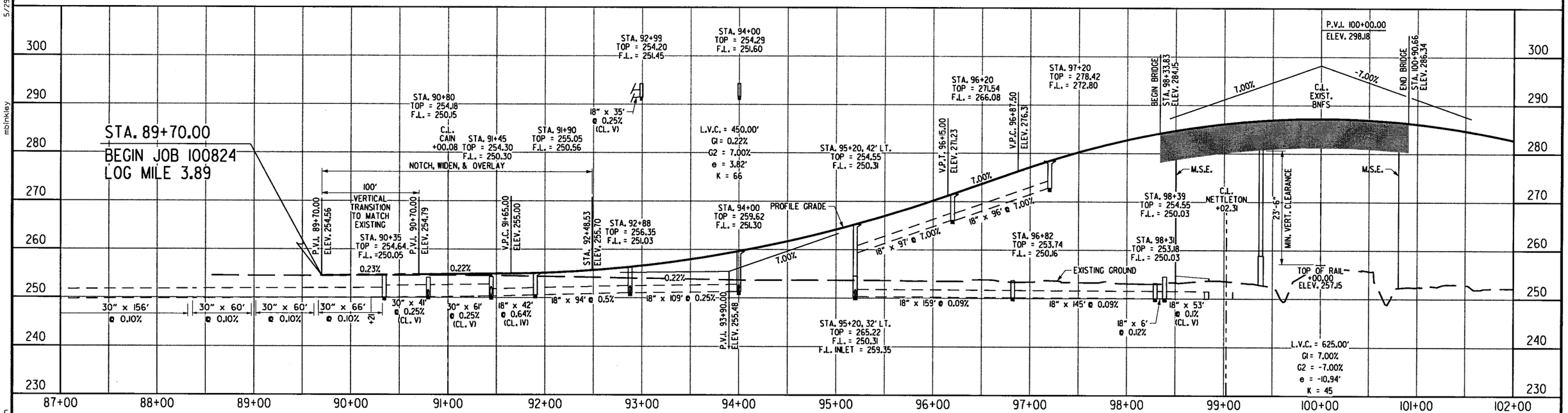
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
STANLEY L. HILL
2018-05-29

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.		100824	117	346

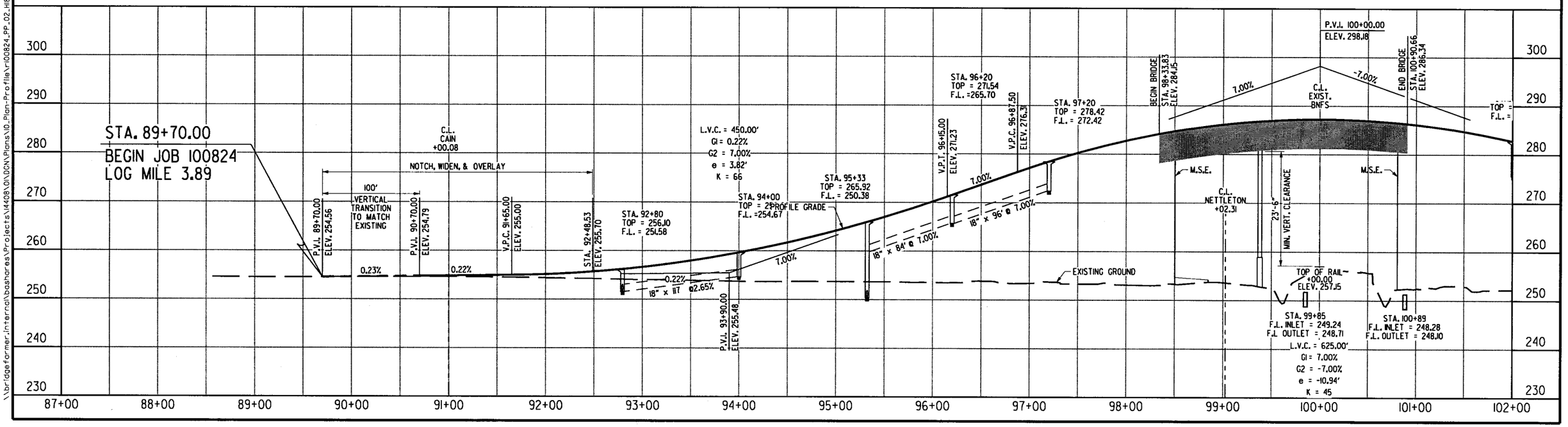
(2) PLAN & PROFILE

LEFT SIDE OF HWY. 18



STA. 97+99.32 BEGIN SUPERELEVATION
STA. 101+99.32 MAX. SUPERELEVATION (0.028 '/')
STA. 103+61.49 MAX. SUPERELEVATION (0.028 '/')
STA. 107+61.49 END SUPERELAVATION
SUPER ROTATED ABOUT HWY. 18 INSIDE PVMT. EDGE

RIGHT SIDE OF HWY. 18



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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

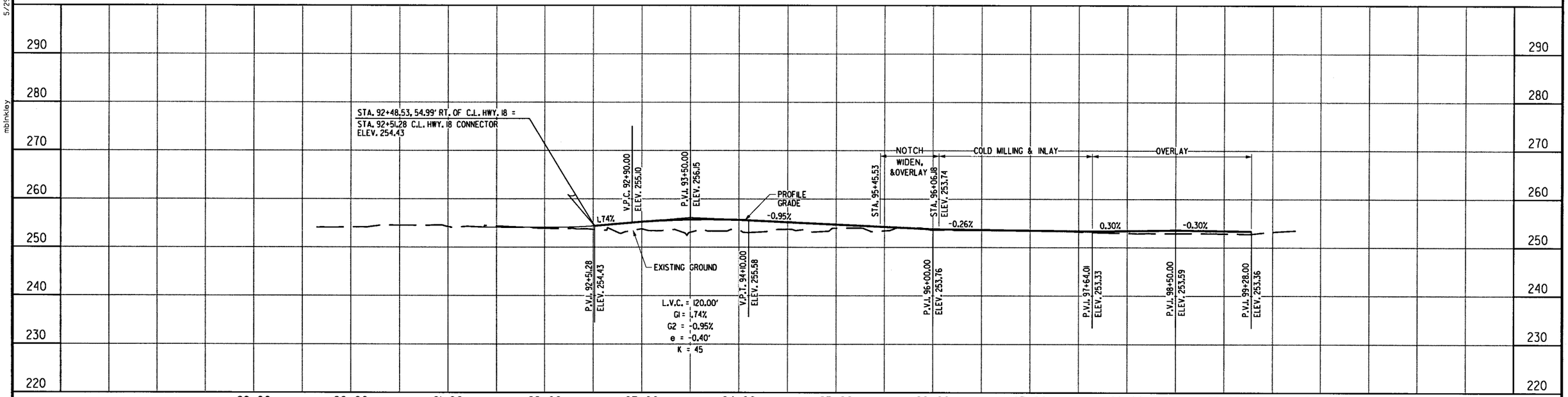
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 12406
SHAHNAWAR ALAM
2019-05-29

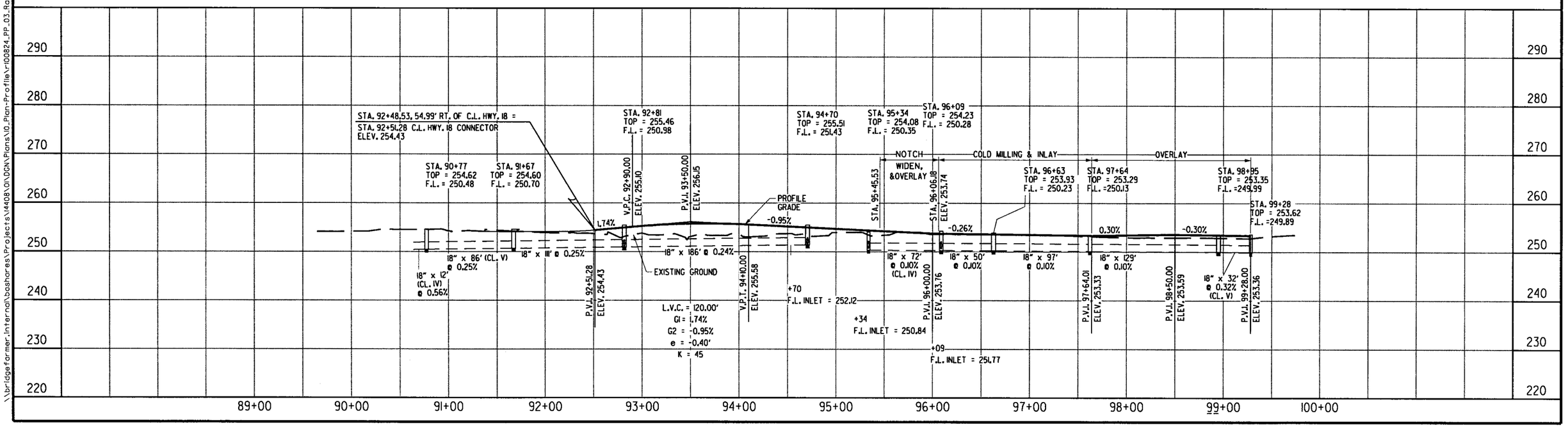
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	118	346

(2) PLAN & PROFILE

LEFT SIDE OF HWY. 18 CONNECTOR



RIGHT SIDE OF HWY. 18 CONNECTOR



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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.		100824	119	346

(2) PLAN & PROFILE

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

IRBY ST. STA. 17+89 - CONSTRUCT D.I. WITH 8' EXTENSION 15' RT. OF C.L. CONNECT TO J.B. @ STA. 18+89 RT. WITH 18" x 97' PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 4'-3"

IRBY ST. STA. 19+48 - CONSTRUCT D.I. WITH 4' EXTENSION 15' LT. OF C.L. CONNECT TO J.B. @ STA. 19+48 RT. WITH 18" x 26' R.C. PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 5'-9"

IRBY ST. STA. 17+89 - CONSTRUCT D.I. WITH 4' EXTENSION 15' LT. OF C.L. CONNECT TO D.I. @ STA. 17+89 RT. WITH 18" x 25' R.C. PIPE OUTLET (CL. IV) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 4'-2"

IRBY ST. STA. 16+57 - CONSTRUCT D.I. 52' RT. OF C.L. CONNECT TO D.I. @ STA. 17+89 RT. WITH 18" x 150' PIPE OUTLET TYPE E D.I. = 4'-0" X 3'-0" H = 3'-6"

IRBY ST. STA. 18+89 - CONSTRUCT D.I. WITH 4' EXTENSION 15' LT. OF C.L. CONNECT TO J.B. @ STA. 18+89 RT. WITH 18" x 26' R.C. PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 5'-10"

IRBY ST. STA. 19+48 - CONSTRUCT J.B. 15' RT. OF C.L. CONNECT TO D.I. @ STA. 8+99 LT. WITH 18" x 71' R.C. PIPE OUTLET TYPE E J.B. = 3'-0" X 3'-0" H = 10'-4"

IRBY ST. STA. 18+89 - CONSTRUCT J.B. 15' RT. OF C.L. CONNECT TO J.B. @ STA. 19+48 RT. WITH 18" x 61' PIPE OUTLET TYPE E J.B. = 3'-0" X 3'-0" H = 7'-0"

ARCH ST. STA. 7+40 - CONSTRUCT D.I. 15' RT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 6+93 WITH 18" x 59' PIPE INLET AND CONNECT TO EXISTING PIPE @ STA. 7+25 WITH 24" x 11' R.C. PIPE INLET (CL. V) AND CONNECT TO D.I. @ STA. 8+09 RT. WITH 30" x 71' R.C. PIPE OUTLET (CL. V) TYPE ST D.I. = 4'-0" X 7'-0" H = 3'-10"

ARCH ST. STA. 8+09 - CONSTRUCT D.I. 18' RT. OF C.L. CONNECT TO D.I. @ STA. 8+12 LT. WITH 30" x 31' R.C. PIPE OUTLET (CL.IV) TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 5'-11"

ARCH ST. STA. 7+40 - CONSTRUCT D.I. 17' LT. OF C.L. WITH 18" x 57' PIPE INLET AND CONNECT TO D.I. @ STA. 8+12 LT. WITH 18" x 62' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 4'-5"

ARCH ST. STA. 8+27 - CONSTRUCT 30" x 19' R.C. PIPE RT. SIDE DRAIN (CL. IV) CONNECT TO EXISTING PIPE @ STA. 8+35

ARCH ST. STA. 8+99 - CONSTRUCT D.I. 22' LT. OF C.L. CONNECT TO D.I. @ STA. 105+58 LT. WITH 36" x 91' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 11'-9"

C.L. ARCH ST.
P.I. = 7+73.70
D = 28°30'00"
Δ = 21°36'28" LT.
T = 38.36'
L = 75.82'
P.C. = 7+35.33
P.T. = 8+11.15
e = N.C.
Ls = N/A

STA. 7+82 - CONSTRUCT APPROACH ON LT. = EMBK. 10.0 CU. YDS.

STA. 109+61 ON LT. CONSTRUCT TYPE 4 WHEELCHAIR RAMP = 15.8 SQ. YDS.

ARCH ST. STA. 8+12 - CONSTRUCT D.I. 18' LT. OF C.L. CONNECT TO D.I. @ STA. 8+50 LT. WITH 36" x 33' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 6'-2"

STA. 7+26 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 2.4 SQ. YDS.

STA. 7+30 ON RT. CONSTRUCT TYPE 6 WHEELCHAIR RAMP = 11.8 SQ. YDS.

STA. 8+63 ON LT. CONSTRUCT TYPE 4 WHEELCHAIR RAMP = 15.9 SQ. YDS.

STA. 9+59 ON LT. CONSTRUCT TYPE 4 WHEELCHAIR RAMP = 36.3 SQ. YDS.

STA. 9+48 ON RT. CONSTRUCT TYPE 4 WHEELCHAIR RAMP = 61.4 SQ. YDS.

STA. 15+52 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.1 SQ. YDS.

ARCH ST. STA. 8+50 - CONSTRUCT D.I. 19' LT. OF C.L. CONNECT TO D.I. @ STA. 8+55 RT. WITH 30" x 64' R.C. PIPE INLET AND CONNECT TO D.I. @ STA. 8+99 LT. WITH 36" x 45' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 8'-2"

HWY. 18 STA. 109+27 - CONSTRUCT D.I. WITH BACK OPENING 32' LT. OF C.L. CONNECT TO D.I. @ STA. 110+20 LT. WITH 36" x 88' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 5'-1"

HWY. 18 STA. 108+65 - CONSTRUCT D.I. WITH BACK OPENING 32' LT. OF C.L. CONNECT TO D.I. @ STA. 109+27 LT. WITH 36" x 57' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 5'-1"

C.L. ARCH ST.
P.I. = 9+23.06
D = 28°30'00"
Δ = 18°21'45" RT.
T = 32.49'
L = 64.43'
P.C. = 8+90.57
P.T. = 9+55.00
e = N.C.
Ls = N/A

HWY. 18 STA. 107+78 - CONSTRUCT D.I. WITH 4' EXTENSION 32' LT. OF C.L. WITH 18" x 3' PIPE INLET W/F.E.S. AND CONNECT TO D.I. @ STA. 108+65 LT. WITH 36" x 82' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 6'-0"

STA. 7+63 ON LT. CONSTRUCT CONC. STEPS = 2.0 SQ. YDS.

STA. 8+86.65 ARCH ST. = STA. 20+00.00 IRBY ST. Δ = 90°00'00"

HWY. 18 STA. 105+58 - CONSTRUCT D.I. 32' LT. OF C.L. CONNECT TO D.I. @ STA. 106+30 LT. WITH 36" x 67' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 14'-0"

STA. 15+76 ON RT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.1 SQ. YDS.

STA. 19+69 ON RT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 4.6 SQ. YDS.

STA. 19+74 ON LT. CONSTRUCT TYPE 1 WHEELCHAIR RAMP = 30.0 SQ. YDS.

HWY. 18 STA. 106+30 - CONSTRUCT D.I. 32' LT. OF C.L. WITH 18" x 14' PIPE INLET W/F.E.S. AND CONNECT TO D.I. @ STA. 107+78 LT. WITH 36" x 143' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 10'-6"

STA. 110+63 ON RT. CONSTRUCT TYPE 4 WHEELCHAIR RAMP = 15.7 SQ. YDS.

STA. 107+14 - CONSTRUCT APPROACH ON LT. = EMBK. 70.0 CU. YDS.

C.L. HWY. 18
P.I. = 109+67.92
D = 1°00'00"
Δ = 4°41'35" LT.
T = 234.79'
L = 469.31'
P.C. = 107+33.13
P.T. = 112+02.44
e = N.C.
Ls = N/A

HWY. 18 STA. 110+20 - CONSTRUCT D.I. WITH BACK OPENING 32' LT. OF C.L. CONNECT TO D.I. @ STA. 111+12 LT. WITH 36" x 87' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 5'-1"

HWY. 18 STA. 111+12 - CONSTRUCT D.I. WITH 4' EXT. & BACK OPENING 31' LT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 111+44 LT. WITH 18" x 30' PIPE INLET AND CONNECT TO EXISTING PIPE @ STA. 111+12 LT. WITH 36" x 8' R.C. PIPE OUTLET (CL. V) TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 5'-0" H = 5'-2"

STA. 98+33.83 BR. END
BR. NO. 07407
254'-0" CONT. COMP. PL. GIRDER UNIT (102'-152')
58'-0" CLEAR ROADWAY
256'-10" BR. LENGTH
STA. 100+90.66 BR. END

STA. 99+10.24 HWY. 18 = STA. 64+87.53 HWY. 63B
Δ = 130°49'04"

STA. 99+33.77 HWY. 18 CONN. = STA. 65+87.35 HWY. 63B
Δ = 123°24'54"

STA. 100+00.00 HWY. 18 = BNSF RAILWAY M.P. 423.51
Δ = 130°49'05"

STA. 66+64.44 HWY. 63B = STA. 5+00.00 FRISCO ST.
Δ = 90°00'00"

C.L. HWY. 63B
P.I. = 66+03.13
D = 82°00'00"
Δ = 44°17'14" RT.
T = 28.43'
L = 54.01'
P.C. = 65+74.70
P.T. = 66+28.71
e = N.C.
Ls = N/A

STA. 70+03.23 HWY. 63B = STA. 5+00.00 STEVENS ST.
Δ = 89°11'49"

STA. 70+17.21 HWY. 63B = STA. 5+00.00 STEVENS ST.
Δ = 91°13'08"

C.L. IRBY ST.
P.I. = 17+00.49
D = 28°30'00"
Δ = 48°45'10" LT.
T = 91.09'
L = 171.06'
P.C. = 16+09.40
P.T. = 17+80.46
e = N.C.
Ls = N/A

C.L. IRBY ST.
P.I. = 19+30.39
D = 28°30'00"
Δ = 18°42'20" LT.
T = 33.11'
L = 65.63'
P.C. = 18+97.28
P.T. = 19+62.91
e = N.C.
Ls = N/A

STA. 15+73 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 16+09 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 16+18 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 8+32 - CONSTRUCT APPROACH ON RT. = EMBK. 35.0 CU. YDS.

HWY. 18 STA. 102+01 - CONSTRUCT D.I. WITH 8' EXTENSION 32' RT. OF C.L. CONNECT TO D.I. @ STA. 103+97 RT. WITH 18" x 191' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 7'-2"

HWY. 18 STA. 103+97 - CONSTRUCT D.I. WITH 8' EXTENSION 32' RT. OF C.L. CONNECT TO D.I. @ STA. 105+68 RT. WITH 18" x 166' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 7'-0"

HWY. 18 STA. 105+68 - CONSTRUCT D.I. WITH 4' EXTENSION 32' RT. OF C.L. CONNECT TO D.I. @ STA. 107+25 RT. WITH 18" x 154' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 7'-1"

HWY. 18 STA. 104+28 - CONSTRUCT D.I. 71' RT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 104+38 RT. WITH 18" x 8' PIPE OUTLET TYPE E D.I. = 4'-0" X 3'-0" H = 4'-0"

C.L. HWY. 18
P.I. = 102+80.65
D = 2°00'00"
Δ = 7°14'37" RT.
T = 181.33'
L = 362.17'
P.C. = 100+99.32
P.T. = 104+61.49
e = 0.028 '/'
Ls = 400'

STA. 105+00.00 HWY. 18 = STA. 10+00.00 ARCH ST.
Δ = 82°30'00"

HWY. 18 STA. 105+40 - CONSTRUCT D.I. 62' RT. OF C.L. ON EXISTING 18" R.C. PIPE CULVERT WITH 18" x 16' PIPE CULVERT TYPE E D.I. = 4'-0" X 3'-0" H = 3'-7"

HWY. 18 STA. 107+24 - CONSTRUCT D.I. 47' RT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 107+24 RT. WITH 18" x 8' PIPE INLET AND CONNECT TO D.I. @ STA. 107+25 RT. WITH 18" x 13' PIPE OUTLET TYPE E D.I. = 4'-0" X 3'-0" H = 4'-1"

HWY. 18 STA. 107+25 - CONSTRUCT D.I. WITH 8' EXTENSION 32' RT. OF C.L. CONNECT TO D.I. @ STA. 108+49 RT. WITH 24" x 121' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 6'-10"

HWY. 18 STA. 108+49 - CONSTRUCT D.I. WITH 4' EXTENSION 32' RT. OF C.L. CONNECT TO D.I. @ STA. 109+27 RT. WITH 24" x 75' PIPE OUTLET TYPE MO D.I= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 5'-1"

HWY. 18 STA. 109+27 - CONSTRUCT D.I. WITH 4' EXT. & BACK OPENING 32' RT. OF C.L. CONNECT TO D.I. @ STA. 16+89 LT. WITH 30" x 62' PIPE OUTLET TYPE MO D.I= 5'-0" DIA. TYPE C D.I. = 5'-0" X 4'-6" H = 5'-0"

STA. 109+52 ON RT. CONSTRUCT TYPE 1 WHEELCHAIR RAMP = 55.2 SQ. YDS.

STA. 110+63 ON RT. CONSTRUCT TYPE 1 WHEELCHAIR RAMP = 55.6 SQ. YDS.

STA. 106+00 - CONSTRUCT APPROACH ON RT. = EMBK. 285.0 CU. YDS. GRAVEL ROAD EMBK. 95.0 CU. YDS.

STA. 108+00 - CONSTRUCT APPROACH ON RT. = EMBK. 25.0 CU. YDS.

WATT ST. STA. 16+89 - CONSTRUCT D.I. WITH 4' EXTENSION 35' LT. OF C.L. CONNECT TO D.I. @ STA. 16+90 RT. WITH DBL. 18" x 55' R.C. PIPE OUTLET (CL. IV) TYPE C D.I. = 6'-0" X 4'-6" H = 4'-5"

WATT ST. STA. 16+90 - CONSTRUCT D.I. WITH 4' EXTENSION 22' RT. OF C.L. CONNECT TO D.I. @ STA. 111+16 RT. WITH 30" x 89' PIPE OUTLET TYPE C D.I. = 6'-0" X 3'-0" H = 5'-0"

C.L. WATT ST.
P.I. = 15+69.44
D = 15°00'00"
Δ = 38°03'34" LT.
T = 131.74'
L = 253.73'
P.C. = 14+37.70
P.T. = 16+91.43
e = N.C.
Ls = N/A

C.L. WATT ST.
P.I. = 11+42.55
D = 6°00'00"
Δ = 6°06'01" RT.
T = 50.88'
L = 101.67'
P.C. = 10+91.66
P.T. = 11+93.34
e = N.C.
Ls = N/A

HWY. 18 STA. 111+16 - CONSTRUCT D.I. WITH BACK OPENING 30' RT. OF C.L. CONNECT TO EXISTING PIPE CULVERT @ STA 111+16 RT. WITH 36" X 8' R.C. PIPE INLET (CL. V) CONNECT TO EXISTING PIPE @ STA. 111+33 WITH 18" x 12' PIPE INLET AND CONNECT TO EXISTING BOX CULVERT @ STA. 111+16 RT. TYPE C D.I. = 11' X 4' H = 5'-4"

RAMMED AGGREGATE PIERS TO AVOID THE EXISTING 30" ENCASEMENT PIPE CONTAINING AN 18" WATER PIPE

RETAINING WALL

PROPOSED CHAIN LINK FENCE

100 YR. FLOODPLAIN LIMIT

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

IRBY ST.
HENRY ST.
ARCH ST.
CONVEYOR ST.
HWY. 18 (HIGHLAND DR.)
FRISCO ST.
HWY. 63B
BNSF RAILWAY
CLARK ST.
WATT ST.
STEVENS ST.
HWY. 18

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNAHAN
2018-05-30

HWY. 18

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mbinkley

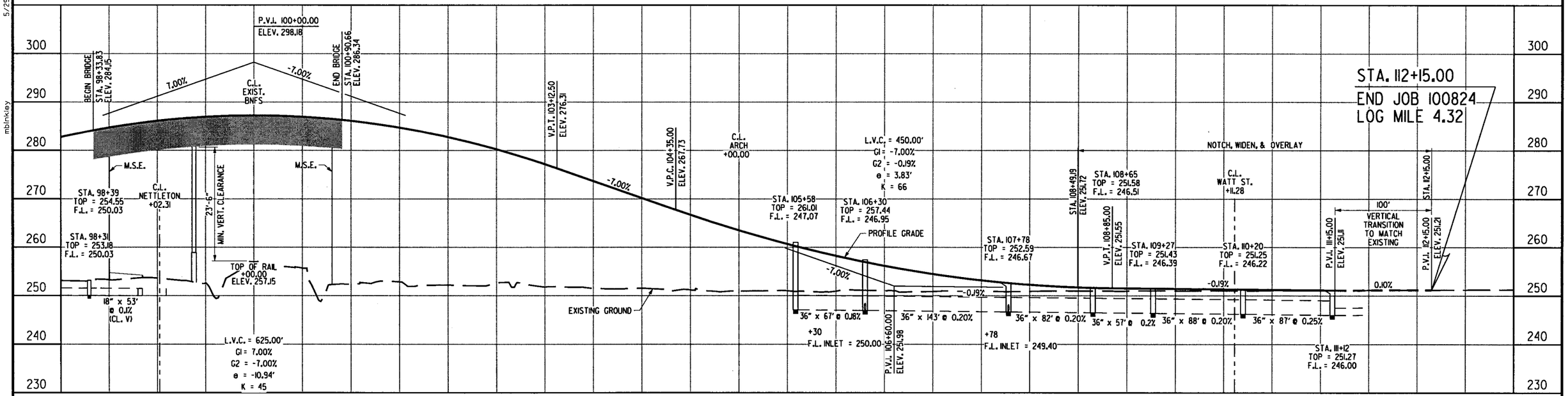
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	120	346
				(2) PLAN & PROFILE				

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

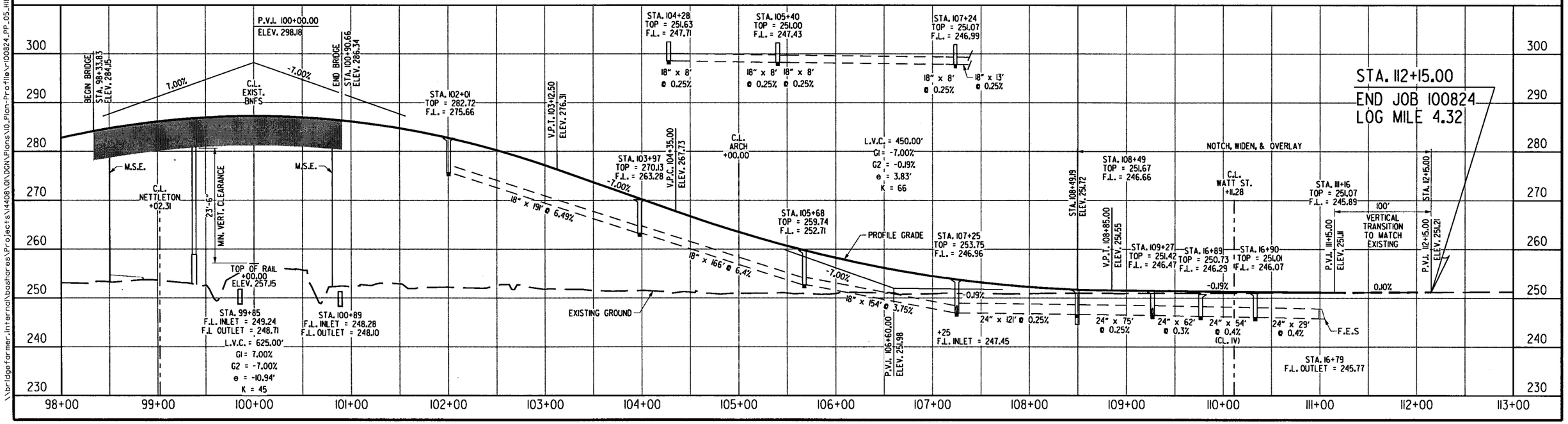
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNAR A. JOE
2019-05-29

LEFT SIDE OF HWY. 18



STA. 97+99.32 BEGIN SUPERELEVATION
STA. 101+99.32 MAX. SUPERELEVATION (0.028 '/')
STA. 103+61.49 MAX. SUPERELEVATION (0.028 '/')
STA. 107+61.49 END SUPERELAVATION
SUPER ROTATED ABOUT HWY. 18 INSIDE PVMT. EDGE

RIGHT SIDE OF HWY. 18



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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

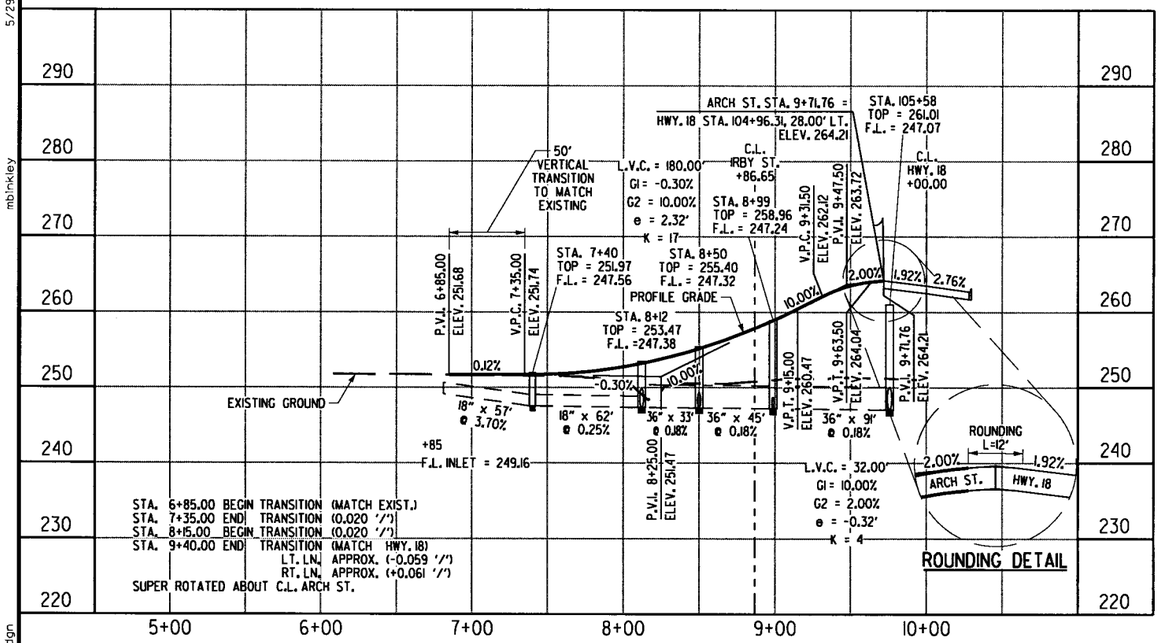
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12403
SHANNAR ZAP
2018-05-29

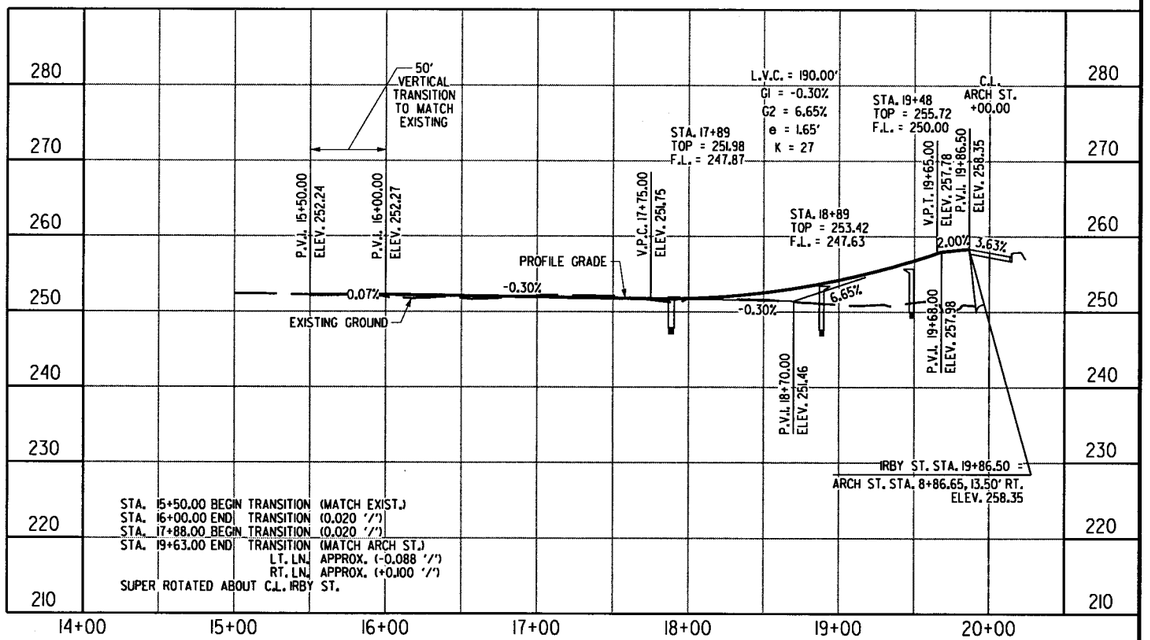
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	121	346

(2) PLAN & PROFILE

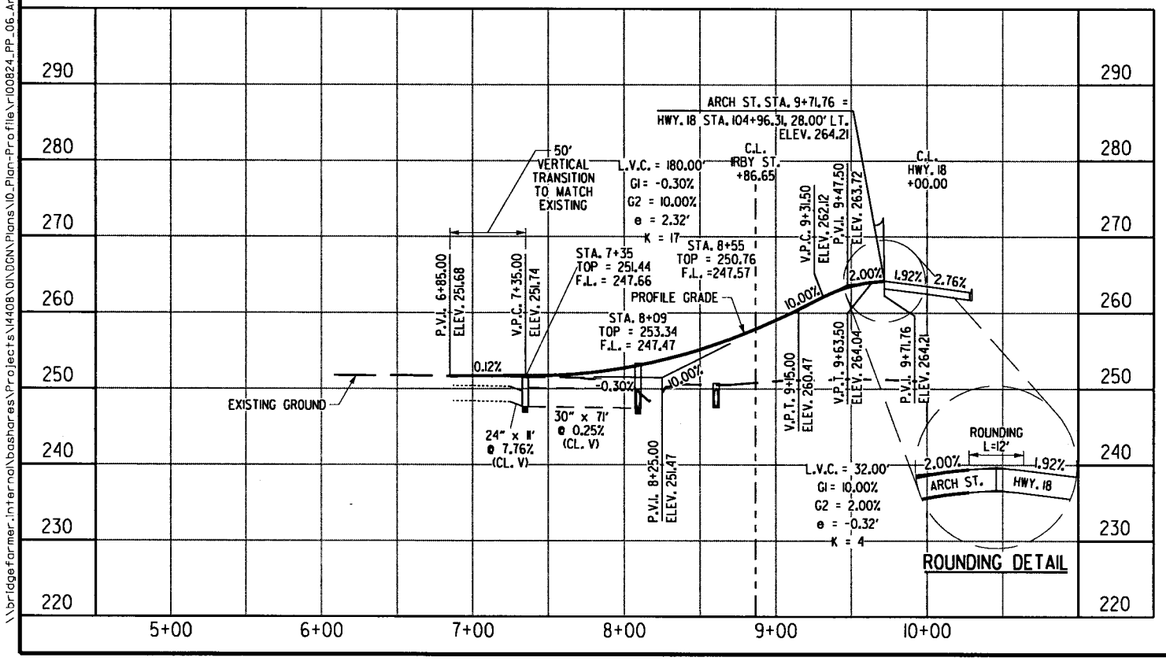
LEFT SIDE OF ARCH ST.



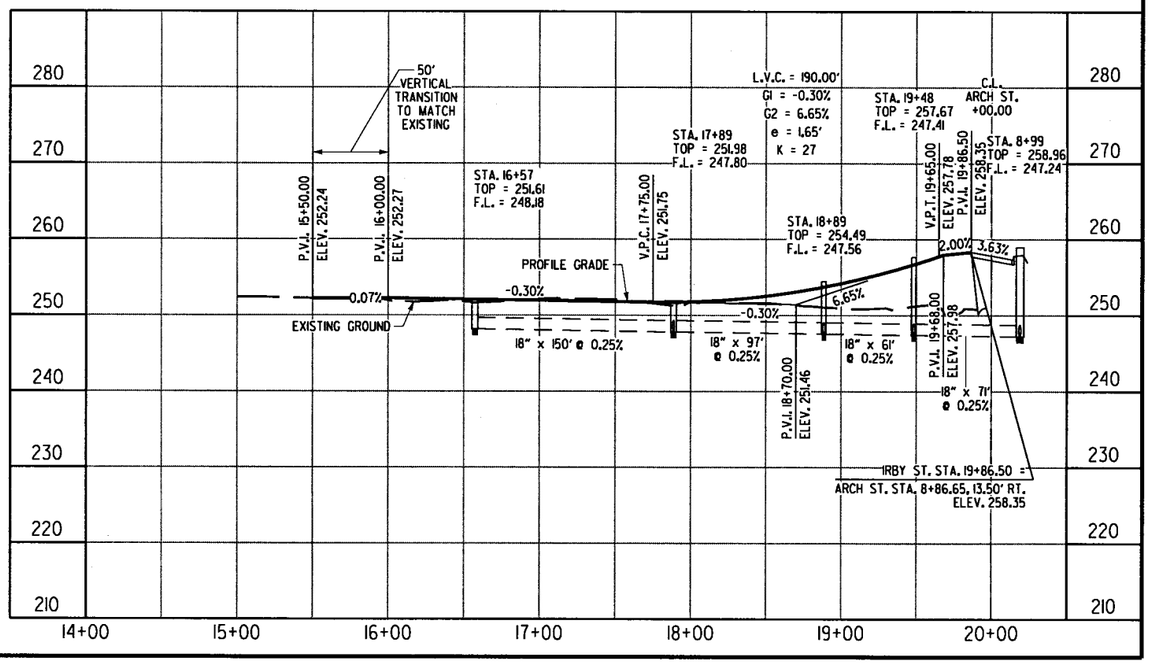
LEFT SIDE OF IRBY ST.



RIGHT SIDE OF ARCH ST.



RIGHT SIDE OF IRBY ST.



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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.		100824	122	346

2 PLAN & PROFILE

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ARCH ST.
IRBY ST.
FRISCO ST.
STEVENS ST.
CLARK ST.
THORN ST.
GRIFFIN ST.
BNSF RAILWAY
HWY. 63B
NETTLETON AVE.
BRYAN ST.
CONST. LIMIT
EXISTING R/W
PROPOSED R/W
PROP. R/W
RETAINING WALL
100 YR. FLOODPLAIN LIMIT
TRANSITION
T.C.E.
F-F
N.C.
PROP. CHAIN LINK FENCE
GRADE TO DRAIN

C.L. HWY. 18
P.I. = 102+80.65
D = 2°00'00"
Δ = 7°14'37" RT.
T = 181.33'
L = 362.17'
P.C. = 100+99.32
P.T. = 104+61.49
e = 0.028 '/'
Ls = 400'

STA. 105+00.00 HWY. 18 = STA. 10+00.00 ARCH ST.
Δ = 82°30'00"

STA. 100+00.00 HWY. 18 = BNSF RAILWAY M.P. 423.51
Δ = 130°49'05"

STA. 99+10.24 HWY. 18 = STA. 64+87.53 HWY. 63B
Δ = 130°49'04"

STA. 98+33.83 BR. END
BR. NO. 07407
254'-0" CONT. COMP. PL. GIRDER UNIT (102'-152')
58'-0" CLEAR ROADWAY
256'-10" BR. LENGTH
STA. 100+90.66 BR. END

STA. 62+60.00
BEGIN CONSTRUCTION

HWY. 63B STA. 63+48 - CONSTRUCT D.I. WITH BACK OPENING 24' RT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 63+42 WITH 18" x 4' R.C. PIPE INLET (CL. III), AND CONNECT TO EXISTING PIPE @ STA. 63+54 WITH 18" x 4' R.C. PIPE OUTLET (CL. III) TYPE C D.I. =4'-0"x 5'-6" H = 4'-3"

FRISCO ST. STA. 5+61 - CONSTRUCT D.I. 22' RT. OF C.L. WITH 18" x 47' R.C. PIPE OUTLET (CL. V) WITH F.E.S. @ STA. 5+67 LT. TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. =4'-0" X 4'-0 H=3'-9"

HWY. 63B STA. 67+13 - CONSTRUCT D.I. 16' LT. OF C.L. CONNECT TO D.I. @ STA. 5+61 RT. ON FRISCO ST. WITH 18" x 38' PIPE OUTLET TYPE ST D.I.= 3'-9" X 3'-0" H = 3'-10"

STA. 67+28 - CONSTRUCT APPROACH ON LT. = EMBK. 20.0 CU. YDS.

STA. 68+13 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS.

STA. 68+82 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS.

STA. 69+36 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS.

STA. 70+17.21 HWY. 63B = STA. 5+00.00 STEVENS ST. Δ = 91°16'08"

HWY. 63B STA. 67+80 - CONSTRUCT D.I. WITH 4' EXT. & BACK OPENING 21' LT. OF C.L. CONNECT TO D.I. @ STA. 67+13 LT. WITH 18" x 63' PIPE OUTLET TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. =4'-0"x 4'-0" H = 4'-0"

HWY. 63B STA. 70+95 - CONSTRUCT D.I. WITH BACK OPENING 21' LT. OF C.L. CONNECT TO D.I. @ STA. 71+68 LT. WITH 18" x 70' PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-3"

STA. 69+75 ON LT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 49.3 SQ. YDS.

STA. 70+39 ON LT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 30.0 SQ. YDS.

STA. 70+17 - IN PLACE CONSTRUCT APPROACH ON LT. STEVENS STREET = EMBK. 5.0 CU. YDS.

HWY. 63B STA. 73+54 - CONSTRUCT YARD DRAIN 28' LT. OF C.L. WITH 12" x 19' SIDE DRAIN OUTLET CONNECT TO D.I. STA. 73+75 LT.

HWY. 63B STA. 71+68 - CONSTRUCT D.I. WITH BACK OPENING 21' LT. OF C.L. CONNECT TO D.I.@ STA. 72+83 LT. WITH 18" x 112' PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-2"

STA. 76+57.90 HWY. 63B = STA. 5+00.00 CLARK ST. Δ = 93°05'18"

HWY. 63B STA. 72+83 - CONSTRUCT D.I. WITH BACK OPENING 21' LT. OF C.L. CONNECT TO D.I. @ STA. 73+75 LT. WITH 18" x 86' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-2"

STA. 76+88 ON LT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 32.5 SQ. YDS.

STA. 76+26 ON LT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 30.1 SQ. YDS.

HWY. 63B STA. 73+74 - CONSTRUCT D.I. WITH BACK OPENING 22' LT. OF C.L. CONNECT TO D.I. @ STA. 74+40 LT. WITH 18" x 46' PIPE OUTLET TYPE MO D.I.= 6'-0" DIA. TYPE C D.I. = 4'-0" X 6'-0" H = 3'-2"

STA. 71+32 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 10.0 CU. YDS.

STA. 72+05 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS.

STA. 73+58 ON RT. CONSTRUCT CONC. STEPS = 1.0 SQ. YDS.

STA. 73+10 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 74+18 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 5+64 - CONSTRUCT EXISTING R/W APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 75+82 - CONSTRUCT APPROACH ON LT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 76+90 ON RT. CONSTRUCT CONC. STEPS = 3.0 SQ. YDS.

C.L. HWY. 63B
P.I. = 77+46.24
D = 11°15'00"
Δ = 22°05'00" RT.
T = 99.38'
L = 196.30'
P.C. = 76+46.86
P.T. = 78+43.15
e = 0.040 '/'
Ls = 125'

HWY. 63B STA. 76+40 - CONSTRUCT J.B. 21' LT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 5+34 WITH 12" x 12' R.C. PIPE INLET (CL. IV) AND CONNECT TO EXISTING PIPE @ STA. 5+11 WITH 24" x 8' R.C. PIPE OUTLET (CL. IV) TYPE ST J.B. = 3'-0" X 3'-0" H = 3'-10"

REFER TO THE NEXT HWY. 63B PLAN SHEET FOR INFORMATION BEYOND CLARK ST.

STA. 76+95 ON RT. CONSTRUCT TYPE 2 WHEELCHAIR RAMP = 9.9 SQ. YDS.

STA. 4+57 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.3 SQ. YDS.

STA. 4+53 ON RT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.3 SQ. YDS.

STA. 76+33 ON RT. CONSTRUCT TYPE 6 WHEELCHAIR RAMP = 20.5 SQ. YDS.

HWY. 63B STA. 76+41 - CONSTRUCT J.B. 15' RT. OF C.L. CONNECT TO EXISTING PIPE @ STA. 4+95 WITH 24" x 8' R.C. PIPE INLET (CL. IV) AND CONNECT TO EXISTING PIPE @ STA. 4+76 WITH 12" x 8' R.C. PIPE OUTLET (CL. IV) TYPE ST J.B. = 3'-0" x 3'-0" H = 3'-8"

HWY. 63B STA. 75+78 - CONSTRUCT D.I. WITH BACK OPENING 22' RT. OF C.L. CONNECT TO J.B. @ STA. 76+41 RT. WITH 18" x 59' R.C. PIPE OUTLET (CL. V) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-6"

HWY. 63B STA. 75+50 - CONSTRUCT D.I. WITH BACK OPENING 21' LT. OF C.L. CONNECT TO J.B. @ STA. 76+40 LT. WITH 18" x 88' R.C. PIPE OUTLET (CL. V) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-4"

STA. 74+64 ON RT. CONSTRUCT TYPE 5 WHEELCHAIR RAMP = 12.1 SQ. YDS.

HWY. 63B STA. 74+40 - CONSTRUCT D.I. 15' LT. OF C.L. CONNECT TO EXISTING INLET @ STA. 74+38 RT. WITH 18" x 68' R.C. PIPE OUTLET (CL. V) TYPE ST D.I.= 3'-0" X 3'-9" H = 2'-7"

HWY. 63B STA. 71+82 - CONSTRUCT D.I. WITH BACK OPENING 22' RT. OF C.L. CONNECT TO D.I. @ STA. 73+65 RT. WITH DBL. 24" x 179' PIPE OUTLET AND CONNECT TO EXISTING PIPE @ STA. 71+82 RT. WITH 15" x 4' PIPE INLET TYPE C D.I. = 4'-0" X 8'-0" H = 3'-5"

HWY. 63B STA. 73+65 - CONSTRUCT D.I. WITH BACK OPENING 22' RT. OF C.L. CONNECT TO D.I. @ STA. 74+09 RT. WITH DBL. 24" x 52' PIPE OUTLET TYPE C D.I. = 4'-0" X 8'-0" H = 4'-2"

HWY. 63B STA. 74+09 - CONSTRUCT D.I. WITH BACK OPENING 32' RT. OF C.L. CONNECT TO D.I. @ STA. 74+23 RT. WITH DBL. 24" x 19' R.C. PIPE OUTLET (CL. V) TYPE C D.I. = 4'-0" X 8'-0" H = 4'-9"

HWY. 63B STA. 74+23 - CONSTRUCT D.I. 39' RT. OF C.L. CONNECT TO EXISTING INLET @ STA. 74+37 RT. WITH 18" x 21' R.C. PIPE OUTLET (CL. V) TYPE ST D.I.= 3'-0" X 7'-0" H = 3'-4"

C.L. HWY. 63B
P.I. = 74+53.32
D = 72°00'00"
Δ = 88°52'10" LT.
T = 78.02'
L = 123.43'
P.C. = 73+75.30
P.T. = 74+98.73
e = 0.040 '/'
Ls = 125'

STA. 74+17 ON RT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 23.0 SQ. YDS.

HWY. 63B STA. 70+16 - CONSTRUCT D.I. 21' RT. OF C.L. CONNECT TO D.I.@ STA. 71+30 RT. WITH DBL. 18" x 11' R.C. PIPE OUTLET (CL. V) TYPE ST D.I.= 3'-0"X 7'-0" H = 2'-11"

HWY. 63B STA. 71+30 - CONSTRUCT D.I. WITH BACK OPENING 22' RT. OF C.L. CONNECT TO D.I. @ STA. 71+82 RT. WITH DBL. 24" x 48' PIPE OUTLET TYPE C D.I. = 4'-0" X 8'-0" H = 3'-6"

HWY. 63B STA. 70+33 - CONSTRUCT YARD DRAIN 44' RT. OF C.L. WITH 12" x 15' SIDE DRAIN OUTLET CONNECT TO J.B. STA. 4+56 RT. STEVENS ST.

STA. 70+45 ON RT. CONSTRUCT CONC. STEPS = 2.0 SQ. YDS.

STA. 71+57 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 72+65 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 70+03 - IN PLACE CONSTRUCT APPROACH ON RT. STEVENS STREET = EMBK. 5.0 CU. YDS.

STA. 72+12 - CONSTRUCT APPROACH ON RT. = EMBK. 10.0 CU. YDS. EXC. 10.0 CU. YDS.

STA. 73+17 - CONSTRUCT APPROACH ON RT. = EMBK. 10.0 CU. YDS.

STA. 69+75 ON RT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 44.6 SQ. YDS.

STA. 70+39 ON RT. CONSTRUCT TYPE I WHEELCHAIR RAMP = 42.4 SQ. YDS.

STEVENS ST. STA. 4+56 - CONSTRUCT J.B. 12' RT. OF C.L. CONNECT TO EXISTING PIPE @ 4+20 WITH 18" x 35' R.C. PIPE INLET (CL. V) AND CONNECT TO D.I. STA 70+16 WITH 18" x 17' R.C. PIPE OUTLET (CL. IV) TYPE ST J.B. = 3'-0" x 3'-0" H = 2'-6"

C.L. HWY. 63B
P.I. = 66+03.13
D = 82°00'00"
Δ = 44°17'14" RT.
T = 28.43'
L = 54.01'
P.C. = 65+74.70
P.T. = 66+28.71
e = N.C.
Ls = N/A

REFER TO THE NEXT HWY. 63B PLAN SHEET FOR DETAILS OF STEVENS ST. INT.

STEVENS ST. STA. 4+50 - CONSTRUCT D.I. WITH BACK OPENING 17' LT. OF C.L. CONNECT TO EXIST. PIPE @ STA. 4+37 WITH 18" x 12' PIPE INLET AND CONNECT TO D.I. @ STA. 70+16 RT. WITH 18" x 37' R.C. PIPE OUTLET (CL. V) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. =4'-0"x 4'-0" H = 2'-11"

HWY. 63B STA. 69+25 - CONSTRUCT D.I. WITH BACK OPENING 21' RT. OF C.L. CONNECT TO D.I. @ STA. 70+16 RT. WITH 18" x 88' R.C. PIPE OUTLET (CL. V) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. =4'-0"x 4'-0" H = 3'-5"

HWY. 63B STA. 67+80 - CONSTRUCT D.I. WITH BACK OPENING 21' RT. OF C.L. CONNECT TO D.I. @ STA. 69+25 RT. WITH 18" x 142' PIPE OUTLET TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. =4'-0"x 4'-0" H = 2'-10"

HWY. 63B STA. 67+13 - CONSTRUCT D.I. WITH BACK OPENING 21' RT. OF C.L. CONNECT TO D.I. @ STA. 67+13 LT. WITH 18" x 33' R.C. PIPE OUTLET (CL. IV) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. =4'-0"x 4'-0" H = 4'-3"

STA. 63+17 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 66+81 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 67+47 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS.

STA. 66+64.44 HWY. 63B = STA. 5+00.00 FRISCO ST. Δ = 90°00'00"

STA. 99+73.77 HWY. 18 CONN. = STA. 65+87.15 HWY. 63B Δ = 123°24'54"

STA. 70+03.23 HWY. 63B = STA. 5+00.00 STEVENS ST. Δ = 89°18'49"

STA. 95+45.48 HWY. 18 CONN. = STA. 5+00.00 BRYAN ST. Δ = 86°20'00"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAHRIAR
2018-09-04

HWY. 63B/NETTLETON AVE.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

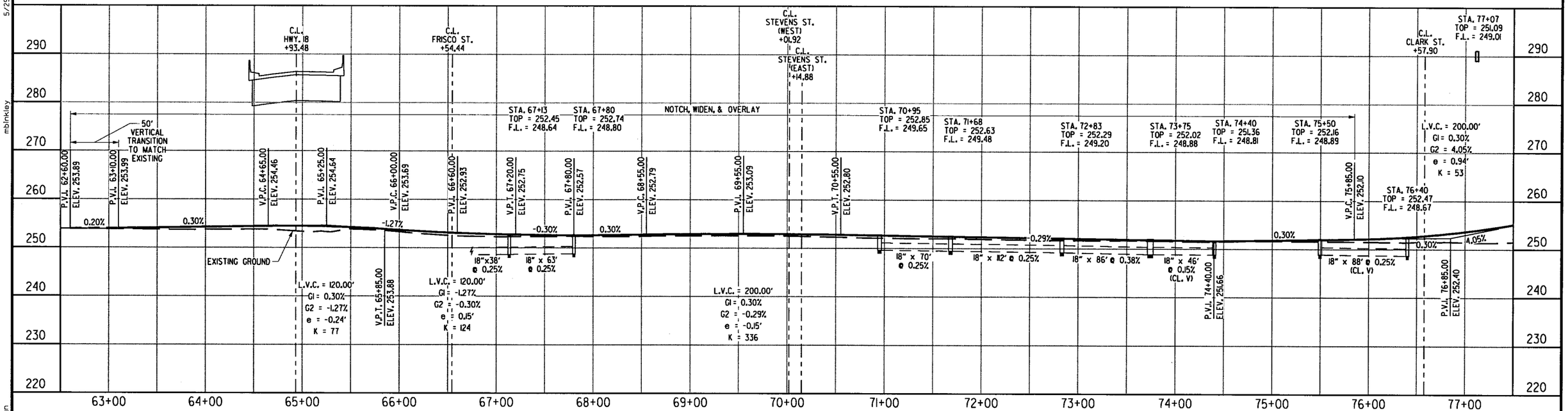
STA. 72+81.55 BEGIN SUPERELEVATION
STA. 74+06.55 MAX. SUPERELEVATION (0.040 '/')
STA. 74+47.79 MAX. SUPERELEVATION (0.040 '/')
STA. 75+72.79 END/BGN. SUPERELEVATION
STA. 76+97.79 MAX. SUPERELEVATION (0.040 '/')
STA. 81+75.66 MAX. SUPERELEVATION (0.040 '/')
STA. 83+00.66 END SUPERELEVATION
SUPER ROTATED ABOUT HWY. 63B/NETTLETON INSIDE PVMT. EDGE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AHAD
2018-05-29

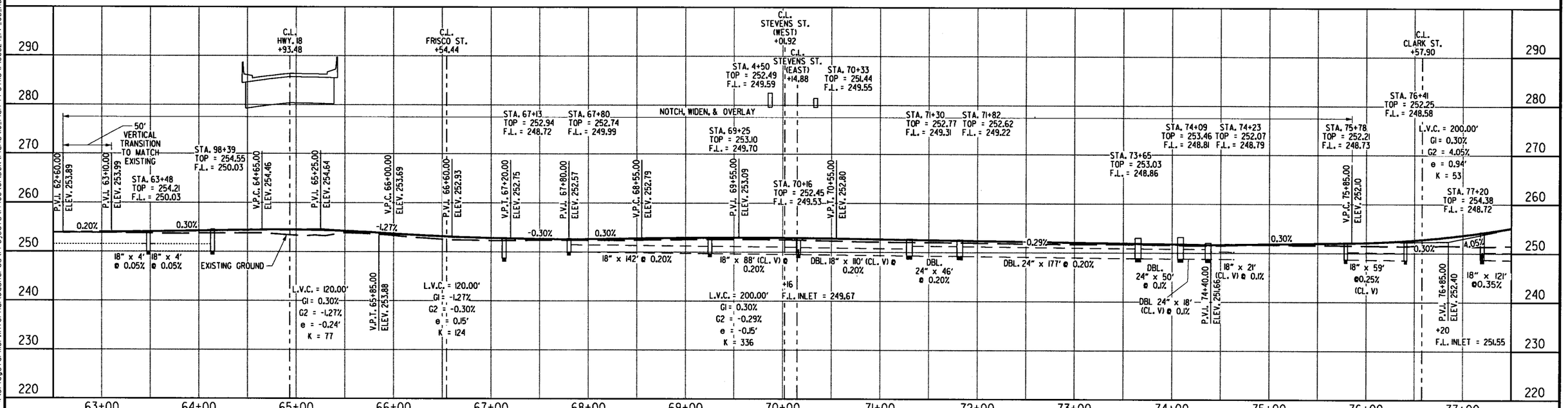
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	123	346

(2) PLAN & PROFILE

LEFT SIDE OF HWY. 63B/NETTLETON AVE.



RIGHT SIDE OF HWY. 63B/NETTLETON AVE.



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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.		100824	124	346

(2) PLAN & PROFILE

HWY. 63B STA. 77+84 - CONSTRUCT D.I. WITH BACK OPENING 62' LT. OF C.L. CONNECT TO J.B.@ STA. 77+84 LT. WITH 18" x 39' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-9"

HWY. 63B STA. 77+84 - CONSTRUCT J.B. 21' LT. OF C.L. CONNECT TO J.B.@ STA. 78+95 LT. WITH 18" x 113' R.C. PIPE CULVERT TYPE E J.B. = 3'-0" X 3'-0"

STA. 8+77.89 BR. END
BR. NO. 07408
241'-0" CONT. COMP. PL. GIRDER UNIT (68'-103'-70')
27'-0" CLEAR ROADWAY
242'-2⅝" BR. LENGTH
STA. 11+21.10 BR. END

HWY. 63B STA. 78+95 - CONSTRUCT J.B. 39' LT. OF C.L. CONNECT TO D.I.@ STA. 80+67 LT. WITH 18" x 170' R.C. PIPE CULVERT TYPE ST J.B. = 3'-0" X 3'-0" H = 13'-1"

STA. 70+03.23 HWY. 63B = STA. 5+00.00 STEVENS ST. Δ = 89°11'49"

STA. 70+17.21 HWY. 63B = STA. 5+00.00 STEVENS ST. Δ = 91°13'08"

STA. 76+57.90 HWY. 63B = STA. 5+00.00 CLARK ST. Δ = 93°05'18"

STA. 79+16.06 WATT ST. = STA. 16+98.11 FRISCO ST. Δ = 104°28'36"

STA. 10+00.00 WATT ST. = BNSF RAILWAY M.P. 423.62 Δ = 76°55'33"

C.L. HWY. 63B
P.I. = 77+46.24
D = 11°15'00"
Δ = 22°05'00" RT.
T = 99.38'
L = 196.30'
P.C. = 76+46.86
P.T. = 78+43.15
e = 0.040 '/'
Ls = 125'

C.L. WATT ST.
P.I. = 7+00.65
D = 15°00'00"
Δ = 12°16'55" RT.
T = 41.40'
L = 81.88'
P.C. = 6+59.56
P.T. = 7+41.43
e = N.C.
Ls = N/A

C.L. HWY. 63B
P.I. = 74+53.32
D = 72°00'00"
Δ = 88°52'10" LT.
T = 78.02'
L = 123.43'
P.C. = 73+75.30
P.T. = 74+98.73
e = 0.040 '/'
Ls = 125'

C.L. HWY. 63B
P.I. = 81+52.54
D = 11°15'00"
Δ = 12°16'46" RT.
T = 54.79'
L = 109.15'
P.C. = 80+97.76
P.T. = 82+06.91
e = 0.040 '/'
Ls = 125'

HWY. 63B STA. 80+67 - CONSTRUCT D.I. 16' LT. OF C.L. WITH 18" x 41' PIPE INLET W/F.E.S. AND CONNECT TO D.I.@ STA. 81+49 LT. WITH 18" x 80' PIPE CULVERT TYPE MO D.I.= 6'-0" DIA. TYPE C D.I. = 6'-0" X 4'-0" H = 8'-10"

HWY. 63B STA. 80+82 - CONSTRUCT YARD DRAIN 42' LT. OF C.L. WITH 12" x 28' SIDE DRAIN OUTLET CONNECT TO D.I. STA. 80+67 LT.

HWY. 63B STA. 81+49 - CONSTRUCT D.I. 30' LT. OF C.L. CONNECT TO D.I.@ STA. 81+49 LT. WITH 18" x 12' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 2'-10"

HWY. 63B STA. 81+49 - CONSTRUCT J.B. 16' LT. OF C.L. CONNECT TO J.B.@ STA. 82+69 LT. WITH 24" x 119' R.C. PIPE CULVERT TYPE E J.B. = 3'-0" X 3'-0" H = 6'-5"

HWY. 63B STA. 82+69 - CONSTRUCT J.B. 19' LT. OF C.L. CONNECT TO D.I.@ STA. 83+94 LT. WITH 24" x 122' R.C. PIPE CULVERT TYPE E J.B. = 3'-0" X 3'-0" H = 4'-5"

HWY. 63B STA. 83+94 - CONSTRUCT D.I. 25' LT. OF C.L. CONNECT TO EXISTING PIPE @ 83+94LT. WITH 24" x 8' R.C. PIPE CULVERT AND CONNECT TO EXISTING PIPE@ STA. 83+94 LT. WITH 24" x 8' R.C. PIPE CULVERT TYPE ST D.I. = 4'-0" X 4'-0" H = 4'-0"

STA. 78+20 - CONSTRUCT APPROACH ON LT. = EMBK. 695.0 CU. YDS. EXC. 35.0 CU. YDS.

STA. 80+42 - CONSTRUCT APPROACH ON LT. = EMBK. 200.0 CU. YDS. EXC. 15.0 CU. YDS.

STA. 81+13 - CONSTRUCT APPROACH ON LT. = EMBK. 75.0 CU. YDS.

STA. 78+81 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 5.6 SQ. YDS.

STA. 77+30 - CONSTRUCT APPROACH ON LT. = EMBK. 105.0 CU. YDS. EXC. 20.0 CU. YDS.

CLARK ST. STA. 5+78 - IN PLACE D.I. 16' LT. OF C.L. WITH 12" x 67' R.C. PIPE INLET WITH 12" x 8' R.C. PIPE STUD INLET WITH 12" x 44' R.C. PIPE OUTLET RETAIN

HWY. 63B STA. 77+07 - CONSTRUCT YARD DRAIN 40' LT. OF C.L. WITH 12" x 82' SIDE DRAIN OUTLET CONNECT TO J.B.@ STA. 77+84 LT.

STA. 79+66 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 4.4 SQ. YDS.

STA. 81+78 - CONSTRUCT APPROACH ON RT. = EMBK. 15.0 CU. YDS. EXC. 15.0 CU. YDS.

STA. 79+66 ON RT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.3 SQ. YDS.

STA. 78+81 ON RT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 3.3 SQ. YDS.

STA. 80+69 ON RT. CONSTRUCT CONC. STEPS = 9.0 SQ. YDS.

STA. 81+90 - CONSTRUCT APPROACH ON LT. = EMBK. 30.0 CU. YDS.

STA. 82+75 ON LT. CONSTRUCT TYPE 3 WHEELCHAIR RAMP = 4.1 SQ. YDS.

STA. 82+09 ON RT. CONSTRUCT CONC. STEPS = 4.0 SQ. YDS.

STA. 80+56 - CONSTRUCT APPROACH ON RT. = EMBK. 210.0 CU. YDS. EXC. 90.0 CU. YDS.

STA. 82+57 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

STA. 83+08 - CONSTRUCT APPROACH ON RT. = EMBK. 5.0 CU. YDS. EXC. 5.0 CU. YDS.

HWY. 63B STA. 80+15 - CONSTRUCT D.I. WITH 4' EXTENSION 18' RT. OF C.L. WITH 18" x 28' PIPE INLET W/F.E.S. AND CONNECT TO D.I.@ STA. 81+49 RT. WITH 18" x 129' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 10'-0"

HWY. 63B STA. 81+49 - CONSTRUCT D.I. WITH 4' EXTENSION 16' RT. OF C.L. CONNECT TO D.I.@ STA. 81+49 LT. WITH 24" x 27' R.C. PIPE CULVERT (CL. IV) TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 5'-4"

HWY. 63B STA. 81+50 - CONSTRUCT DROP INLET 30' RT. OF C.L. CONNECT TO D.I.@ STA. 81+49 RT. WITH 18" x 14' PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 2'-10"

HWY. 63B STA. 81+96 - CONSTRUCT DROP INLET 27' RT. OF C.L. CONNECT TO D.I.@ STA. 81+49 RT. WITH 12" x 44' PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 3'-2"

HWY. 63B STA. 82+69 - CONSTRUCT D.I. 27' RT. OF C.L. CONNECT TO D.I.@ STA. 82+69 LT. WITH 18" x 43' R.C. PIPE CULVERT (CLASS V) TYPE ST D.I. = 3'-0" X 3'-0" H = 3'-0"

HWY. 63B STA. 78+50 - CONSTRUCT D.I. WITH 4' EXTENSION 21' RT. OF C.L. WITH 18" x 17' PIPE INLET W/F.E.S. AND CONNECT TO D.I.@ STA. 80+15 RT. WITH 18" x 162' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 10'-6"

HWY. 63B STA. 77+20 - CONSTRUCT D.I. WITH 4' EXTENSION 21' RT. OF C.L. WITH 18" x 5' PIPE INLET W/F.E.S. AND CONNECT TO D.I.@ STA. 78+50 RT. WITH 18" x 121' PIPE CULVERT TYPE MO D.I.= 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 5'-8"

REFER TO THE PREV. HWY. 63B PLAN SHEET FOR INFORMATION PRIOR TO CLARK ST.

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

DETAIL 'A'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12483
SHANNAN M. MCDANIEL
2018-05-29

STA. 83+60.00
END CONSTRUCTION

HWY. 63B/NETTLETON AVE.

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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

STA. 72+81.55	BEGIN	SUPERELEVATION	
STA. 74+06.55	MAX.	SUPERELEVATION	(0.040 '/')
STA. 74+47.79	MAX.	SUPERELEVATION	(0.040 '/')
STA. 75+72.79	END/BGN.	SUPERELEVATION	
STA. 76+97.79	MAX.	SUPERELEVATION	(0.040 '/')
STA. 81+75.66	MAX.	SUPERELEVATION	(0.040 '/')
STA. 83+00.66	END	SUPERELEVATION	

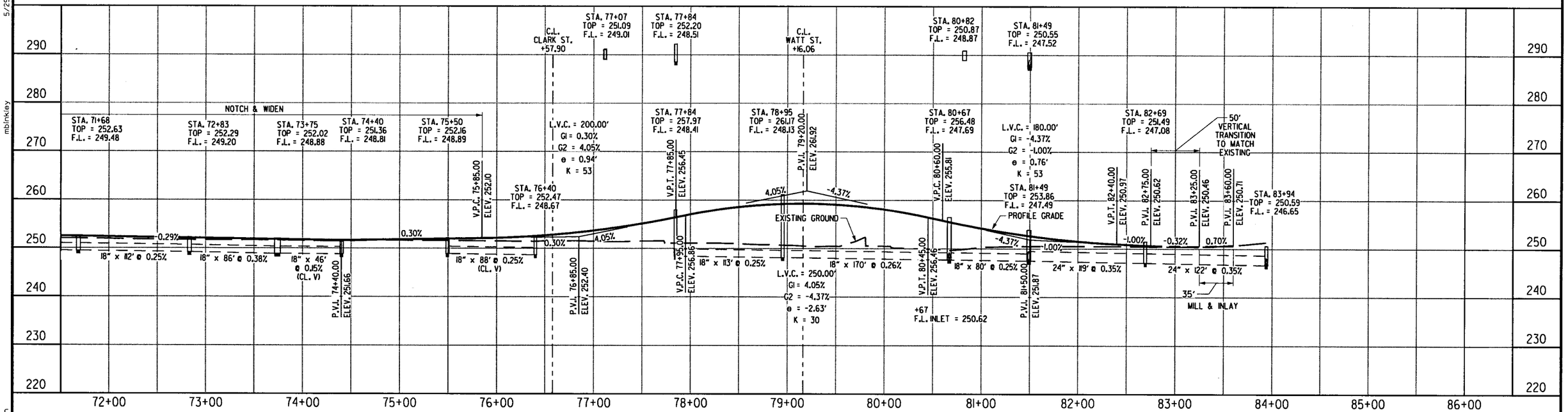
SUPER ROTATED ABOUT HWY. 63B/NETTLETON INSIDE PVMT. EDGE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAWRIAS A. AZAD
2018-05-29

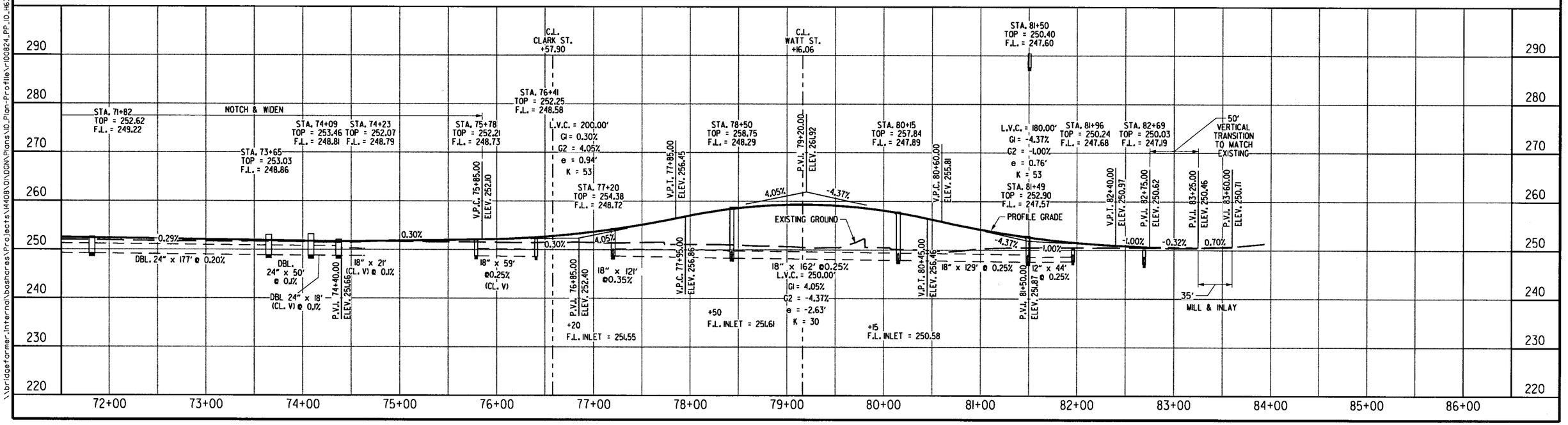
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	125	346

② PLAN & PROFILE

LEFT SIDE OF HWY. 63B/NETTLETON AVE.



RIGHT SIDE OF HWY. 63B/NETTLETON AVE.



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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.		100824	126	346

(2) PLAN & PROFILE

CLARK ST.

CLARK ST.

FRISCO ST.

BNSF RAILWAY

100 YR. FLOODPLAIN LIMIT

WATT ST.

WATT ST.

WATT ST.

HWY. 63B

HWY. 18 (HIGHLAND DR.)

STA. 76+57.90 HWY. 63B = STA. 5+00.00 CLARK ST.
Δ = 93°05'18"

C.L. HWY. 63B
P.I. = 77+46.24
D = 11°15'00"
Δ = 22°05'00" RT.
T = 99.38'
L = 196.30'
P.C. = 76+46.86
P.T. = 78+43.15
e = 0.040 '/'
Ls = 125'

C.L. WATT ST.
P.I. = 7+00.65
D = 15°00'00"
Δ = 12°16'55" RT.
T = 41.10'
L = 81.88'
P.C. = 6+59.56
P.T. = 7+41.43
e = N.C.
Ls = N/A

WATT ST. STA. 7+09 - CONSTRUCT D.I. 10' LT. OF C.L. CONNECT TO J.B. @ STA. 7+95 LT. WITH 18" x 47' R.C. PIPE CULVERT TYPE ST D.I. = 4'-0" X 3'-0" H = 7'-10"

FRISCO ST. STA. 16+94 - EXIST. 12" X 9' R.C. PIPE CULVERT REMOVE AND EXTEND 8' RT. WITH FES RT.

P.O.B. 15+00.00

STA. 8+77.89 BR. END
BR. NO. 07408
241'-0" CONT. COMP. PL. GIRDER UNIT (68'-103'-70')
27'-0" CLEAR ROADWAY
242'-2⅝" BR. LENGTH
STA. 11+21.10 BR. END

P.I. 16+00.00

P.O.E. 19+00.00

STA. 79+16.06 HWY. 63B = STA. 6+20.42 WATT ST.
Δ = 87°33'31"

STA. 79+16.06 WATT ST. = STA. 9+30.88 FRISCO ST.
Δ = 104°28'36"

STA. 10+00.00 WATT ST. = BNSF RAILWAY M.P. 423.62
Δ = 76°55'33"

WATT ST STA. 7+06 - CONSTRUCT D.I. 22' RT. OF C.L. CONNECT TO D.I.@ STA. 7+09 LT. WITH 18" x 28' R.C. PIPE CULVERT TYPE ST D.I. = 4'-0" X 3'-0" H = 5'-7"

C.L. WATT ST.
P.I. = 11+42.55
D = 6°00'00"
Δ = 6°06'01" RT.
T = 50.88'
L = 101.67'
P.C. = 10+91.66
P.T. = 11+93.34
e = N.C.
Ls = N/A

C.L. HWY. 63B
P.I. = 81+52.54
D = 11°15'00"
Δ = 12°16'46" RT.
T = 54.79'
L = 109.15'
P.C. = 80+97.76
P.T. = 82+06.91
e = 0.040 '/'
Ls = 125'

STA. 83+60.00
END CONSTRUCTION

P.O.E. 84+00.00

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

ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

C.L. HWY. 18
P.I. = 102+80.65
D = 2°00'00"
Δ = 7°14'37" RT.
T = 181.33'
L = 362.17'
P.C. = 100+99.32
P.T. = 104+61.49
e = 0.028 '/'
Ls = 400'

WATT ST. STA. 12+15 - CONSTRUCT D.I. WITH 4' EXTENSION 16' LT. OF C.L. CONNECT TO D.I.@ STA. 14+15 RT. WITH 18" x 197' R.C. PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 6'-0"

STA. 105+00.00 HWY. 18 = STA. 10+00.00 ARCH ST.
Δ = 82°30'00"

C.L. WATT ST.
P.I. = 15+69.44
D = 15°00'00"
Δ = 38°03'34" LT.
T = 131.74'
L = 253.73'
P.C. = 14+37.70
P.T. = 16+91.43
e = N.C.
Ls = N/A

WATT ST. STA. 14+15 - CONSTRUCT D.I. WITH 4' EXTENSION 22' LT. OF C.L. CONNECT TO D.I.@ STA. 15+39 LT. WITH 18" x 115' R.C. PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. H = 6'-0"

WATT ST. STA. 15+39 - CONSTRUCT D.I. WITH 4' EXTENSION 22' LT. OF C.L. WITH 18" x 18' PIPE INLET W/F.E.S. CONNECT TO D.I.@ STA. 15+39 RT. WITH 18" x 39' R.C. PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 6'-3"

WATT ST. STA. 15+83 - CONSTRUCT APPROACH ON RT. = EMBK. 375.0 CU. YDS.

WATT ST. STA. 14+45 - CONSTRUCT 18"X60' RT. SIDE DRAIN

WATT ST. STA. 15+39 - CONSTRUCT D.I. WITH 4' EXTENSION 21' RT. OF C.L. CONNECT TO D.I.@ STA. 16+90 RT. WITH 18" x 155' PIPE CULVERT TYPE MO D.I. = 4'-0" DIA. TYPE C D.I. = 4'-0" X 4'-0" H = 6'-7"

WATT ST. STA. 16+90 - CONSTRUCT D.I. 22' RT. OF C.L. CONNECT TO D.I.@ STA. 111+16 RT. WITH 30" x 90' PIPE OUTLET TYPE C D.I. = 6'-0" X 3'-0" H = 5'-0"

WATT ST. STA. 16+90 - CONSTRUCT D.I. 36' LT. OF C.L. CONNECT TO D.I. @ STA. 16+90 RT. WITH DBL. 18" x 55' R.C. PIPE OUTLET (CL. V) TYPE C D.I. = 6'-0" X 4'-6" H = 4'-5"

STA. 110+11.28 HWY. 18 = STA. 17+62.43 WATT ST.
Δ = 90°18'47"

STA. 112+15.00
END JOB 100824
LOG MILE 4.32

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR SHAHIDI
2018-05-30

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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

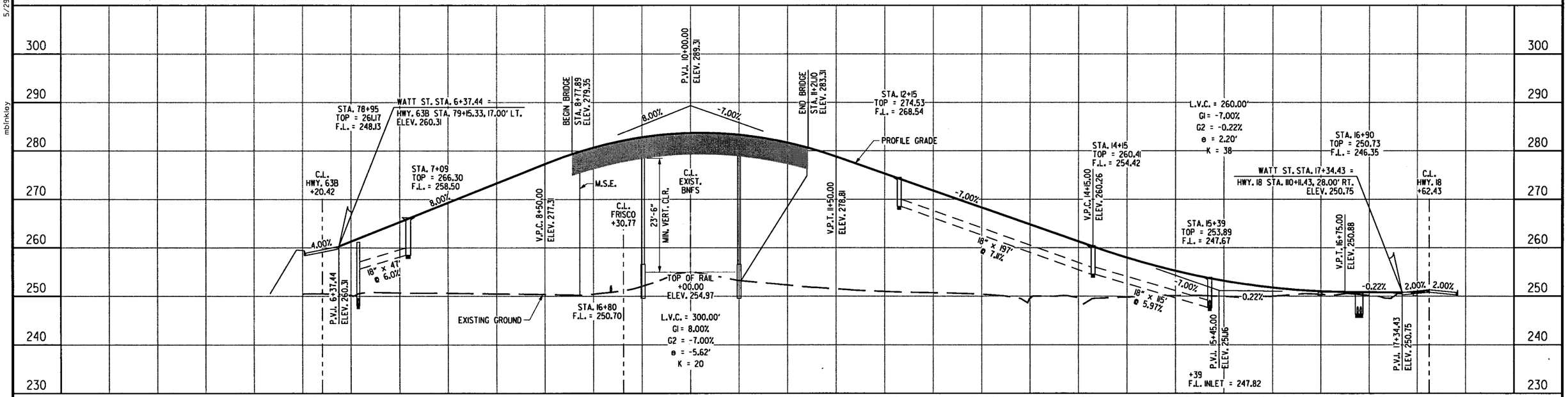
STA. 6+36.93 BEGIN TRANSITION (MATCH HWY. 63B) APPROX. (0.002 '/')
STA. 6+86.93 END TRANSITION (0.020 '/')
STA. 16+84.43 BEGIN TRANSITION (0.020 '/')
STA. 17+34.43 END TRANSITION (MATCH HWY. 18) APPROX. (0.002 '/')
SUPER ROTATED ABOUT C.L. WATT ST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNON STARR
2018-05-29

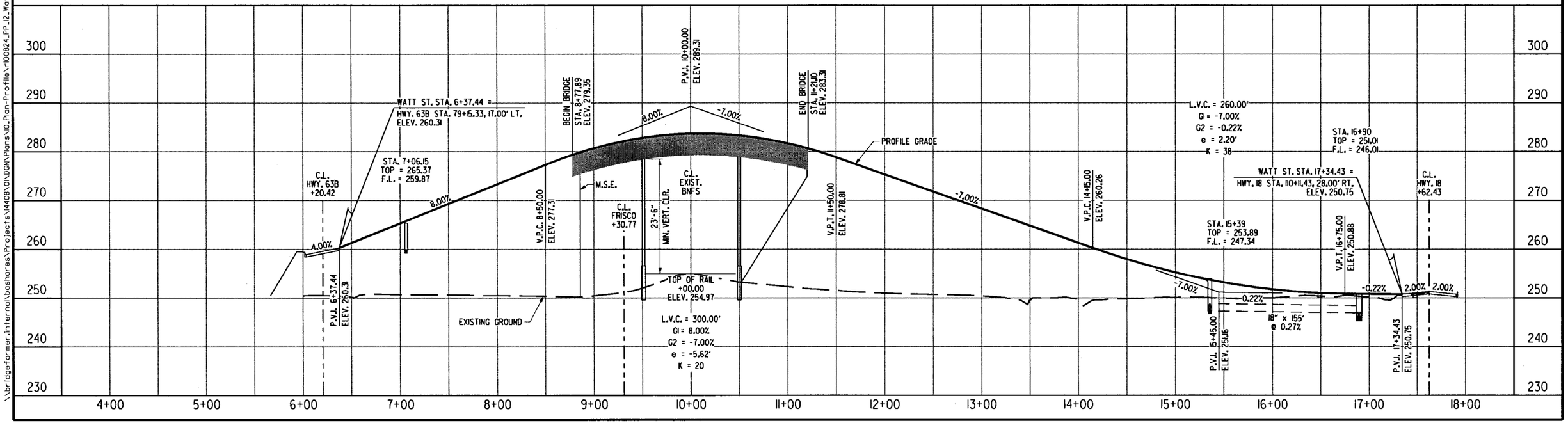
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	127	346

(2) PLAN & PROFILE

LEFT SIDE OF WATT ST.



RIGHT SIDE OF WATT ST.



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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.		100824	128	346

(2) PLAN & PROFILE

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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12515
SHAHRIAR AZAD
2018-05-29

HWY. 18 (HIGHLAND DR.)

N 89°53'59" E

EXISTING R/W

100 YR. FLOODPLAIN LIMIT

STA. 89+64.65, 28.70' RT. OF C.L. HWY. 18 =
STA. 89+64.88 C.L. HWY. 18 CONNECTOR

P.C. 88+75.49

C.L. HWY. 18 CONN.
P.I. = 90+39.77
D = 3°00'00"
Δ = 4°29'52" RT.
T = 75.00'
L = 149.93'
P.C. = 89+64.76
P.T. = 91+14.69
e = N.C.
Ls = N/A

P.C. 89+64.76
P.I. 90+15.00
P.I. 90+39.77
P.T. 91+14.69

STA. 89+70.00
BEGIN JOB 100824

CAIN ST. STA. 20+61 - CONSTRUCT
D.I. WITH 8' EXTENSION 22' LT. OF C.L.
CONNECT TO JCT. BOX @ STA. 20+32 LT.
WITH 18" x 25' R.C. PIPE OUTLET (CL. V)
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-3"

CAIN ST. STA. 20+90 - CONSTRUCT
D.I. WITH BACK OPENING 26' LT. OF C.L.
CONNECT TO D.I. @ STA. 20+90 LT.
WITH 18" x 10' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-11"

CAIN ST. STA. 21+34 - CONSTRUCT
D.I. 12' LT. OF C.L.
CONNECT TO D.I. @ STA. 20+90 LT.
WITH 18" x 41' PIPE OUTLET (CL. IV)
TYPE ST D.I. = 4'-0" x 4'-0"
H = 3'-9"

C.L. CAIN ST.
P.I. = 23+68.61
D = 60°00'00"
Δ = 46°37'55" RT.
T = 41.16'
L = 77.72'
P.C. = 23+27.45
P.T. = 24+05.17
e = N.C.
Ls = N/A

CAIN ST. STA. 22+74 - CONSTRUCT
D.I. WITH BACK OPENING 22' LT. OF C.L.
CONNECT TO D.I. @ STA. 21+34 LT.
WITH 18" x 137' PIPE OUTLET (CL. V)
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-9"

CAIN ST. STA. 25+67 - CONSTRUCT
D.I. WITH BACK OPENING 18' LT. OF C.L.
CONNECT TO D.I. @ STA. 25+10 LT.
WITH 18" x 53' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-7"

STA. 23+37 - CONSTRUCT
APPROACH ON LT. = EMBK. 5.0 CU. YDS.
EXC. 10.0 CU. YDS.

STA. 24+32 - CONSTRUCT
APPROACH ON LT. = EMBK. 15.0 CU. YDS.
EXC. 35.0 CU. YDS.

CAIN ST. STA. 25+10 - CONSTRUCT
D.I. WITH BACK OPENING 18' LT. OF C.L.
CONNECT TO D.I. @ STA. 25+10 RT.
WITH 18" x 31' R.C. PIPE OUTLET (CLASS V)
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-6"

CAIN ST. STA. 20+90 - CONSTRUCT
D.I. 12' LT. OF C.L.
CONNECT TO D.I. @ STA. 20+61 LT.
WITH 18" x 27' PIPE OUTLET (CL. V)
TYPE ST D.I. = 4'-0" x 4'-0"
H = 3'-9"

STA. 25+39 - CONSTRUCT
APPROACH ON LT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

STA. 25+93 - CONSTRUCT
APPROACH ON LT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

STA. 21+77 - CONSTRUCT
APPROACH ON LT. = EMBK. 5.0 CU. YDS.

CONST. LIMIT

PROP. S.L.

PROP. R/W

T.C.E.

TAPER

C.L. CAIN ST.

N 00°20'21" W

P.O.B. 20+00.00

N 89°53'59" E

S 85°35'08" E

STA. 91+20.94 HWY. 18 CONN. =
STA. 9+60.40 CAIN ST.
Δ = 95°51'18"

P.O.E. 40+00.00

STA. 22+39 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 10.0 CU. YDS.

STA. 21+77 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

STA. 91+00.08 HWY. 18 =
STA. 20+00.00 CAIN ST.
Δ = 87°59'36"

CAIN ST.

STA. 24+22 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

CAIN ST. STA. 23+76 - CONSTRUCT
D.I. WITH BACK OPENING 18' RT. OF C.L.
CONNECT TO D.I. @ STA. 22+75 RT.
WITH 18" x 87' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-9"

CAIN ST. STA. 21+34 - CONSTRUCT
D.I. WITH BACK OPENING 24' RT. OF C.L.
CONNECT TO D.I. @ STA. 20+83 RT.
WITH 24" x 48' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-11"

STA. 24+81 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

CAIN ST. STA. 22+04 - CONSTRUCT
D.I. WITH BACK OPENING 22' RT. OF C.L.
CONNECT TO D.I. @ STA. 21+34 RT.
WITH 24" x 66' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-11"

CAIN ST. STA. 24+50 - CONSTRUCT
D.I. WITH BACK OPENING 18' RT. OF C.L.
CONNECT TO D.I. @ STA. 23+76 RT.
WITH 18" x 65' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-10"

CAIN ST. STA. 20+61 - CONSTRUCT
D.I. WITH 4' EXT. & BACK OPENING 43' RT. OF C.L.
CONNECT TO JCT. BOX @ STA. 20+34 RT.
WITH 24" x 23' R.C. PIPE OUTLET (CL. V)
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-1"

CAIN ST. STA. 20+83 - CONSTRUCT
D.I. 34' RT. OF C.L.
CONNECT TO D.I. @ STA. 20+61 RT.
WITH 24" x 20' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 4'-0"

C.L. HWY. 18 CONN.
P.I. = 92+69.16
D = 6°00'00"
Δ = 7°29'18" LT.
T = 62.49'
L = 124.81'
P.C. = 92+06.67
P.T. = 93+31.47
e = N.C.
Ls = N/A

P.I. 92+69.16
P.I. 93+31.47

CAIN ST. STA. 22+75 - CONSTRUCT
D.I. WITH 4' EXT. & BACK OPENING 19' RT. OF C.L.
CONNECT TO D.I. @ STA. 22+04 RT.
WITH 18" x 68' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-7"

STA. 25+36 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

STA. 26+28 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

CAIN ST. STA. 25+10 - CONSTRUCT
D.I. WITH BACK OPENING 18' RT. OF C.L.
CONNECT TO D.I. @ STA. 24+50 RT.
WITH 18" x 56' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 3'-7"

C.L. HWY. 18
P.I. = 90+15.00
D = 1°00'00"
Δ = 2°47'22" LT.
T = 139.50'
L = 278.95'
P.C. = 88+75.49
P.T. = 91+54.45
e = N.C.
Ls = N/A

P.I. 91+14.69
P.I. 91+54.45
P.C. 92+06.67
P.O.B. 87+50.00

N 01°27'26" W

TRANS. TRANS.

P.O.B. 40+00.00

N 87°06'37" E

C.L. HWY. 18

N 00°54'33" E

C.L. BRYAN ST.

P.O.E. 5+00.00

BRYAN WALL

STA. 55+91 ON RT. CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 4.0 SQ. YDS.

HWY. 63B STA. 56+31 - CONSTRUCT
D.I. WITH BACK OPENING 25' RT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 55+86 RT.
WITH 12" x 44' PIPE INLET
AND CONNECT TO D.I. @ STA. 26+74 LT.
WITH 12" x 37' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 2'-10"

STA. 56+59 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 24.9 SQ. YDS.

CAIN ST. STA. 26+74 - CONSTRUCT
D.I. WITH 4' EXT. & BACK OPENING 33' LT. OF C.L.
CONNECT TO D.I. @ STA. 26+73 RT.
WITH 12" x 57' R.C. PIPE OUTLET (CLASS V)
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 2'-6"

STA. 57+33 ON RT. CONSTRUCT
TYPE 4 WHEELCHAIR RAMP = 32.2 SQ. YDS.

STA. 56+89.81 NETTLETON AVE. =
STA. 27+23.85 CAIN ST.
Δ = 90°00'00"

CAIN ST. STA. 26+73 - CONSTRUCT
D.I. WITH 4' EXT. & BACK OPENING 28' RT. OF C.L.
CONNECT TO D.I. @ STA. 57+74 RT.
WITH 12" x 52' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 2'-7"

HWY 63B STA. 57+74 - CONSTRUCT
D.I. 28' RT. OF C.L.
WITH 12" x 110' PIPE OUTLET
TYPE MO D.I. = 4'-0" DIA.
TYPE C D.I. = 4'-0" X 4'-0"
H = 2'-8"

STA. 58+50 ON LT. CONSTRUCT
TYPE 3 WHEELCHAIR RAMP = 7.1 SQ. YDS.

STA. 58+07 - CONSTRUCT
APPROACH ON RT. = EMBK. 5.0 CU. YDS.
EXC. 5.0 CU. YDS.

BNSF RAILWAY

NETTLETON AVE.

C.L. HWY. 63B/NETTLETON AVE.

S 43°42'27" E

P.O.E. 27+23.85

EXISTING R/W

CAIN ST.

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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

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

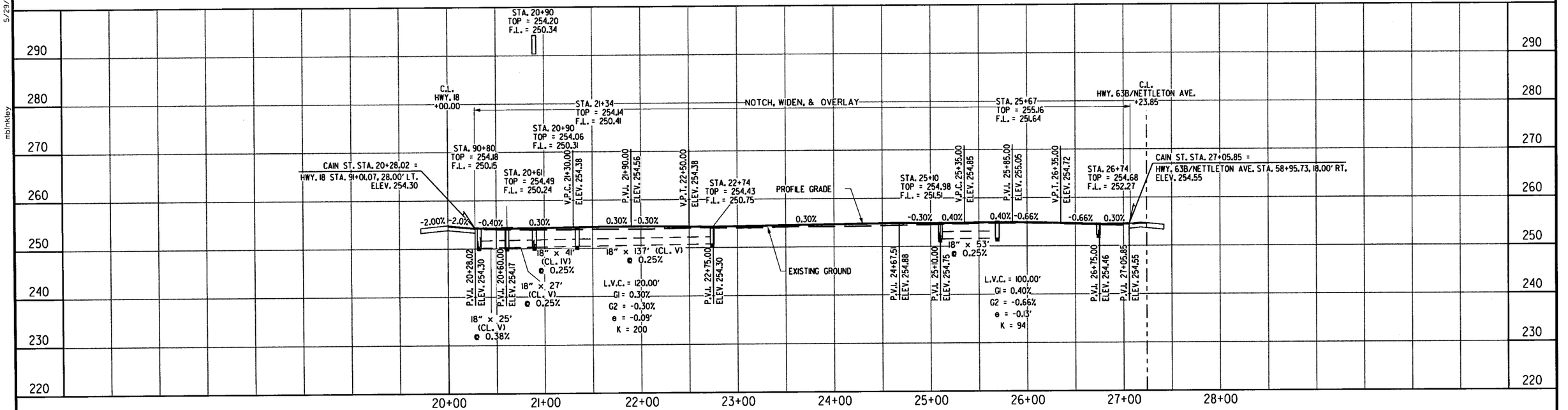
STA. 20+31.67 BEGIN TRANSITION (0.002 '/')
STA. 20+81.67 END TRANSITION (0.020 '/')
STA. 26+55.85 BEGIN TRANSITION (0.020 '/')
STA. 27+05.85 END TRANSITION (0.003 '/')
SUPER ROTATED ABOUT C.L. CAIN ST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19404
SHAHRAM ARJMAND
2018-05-29

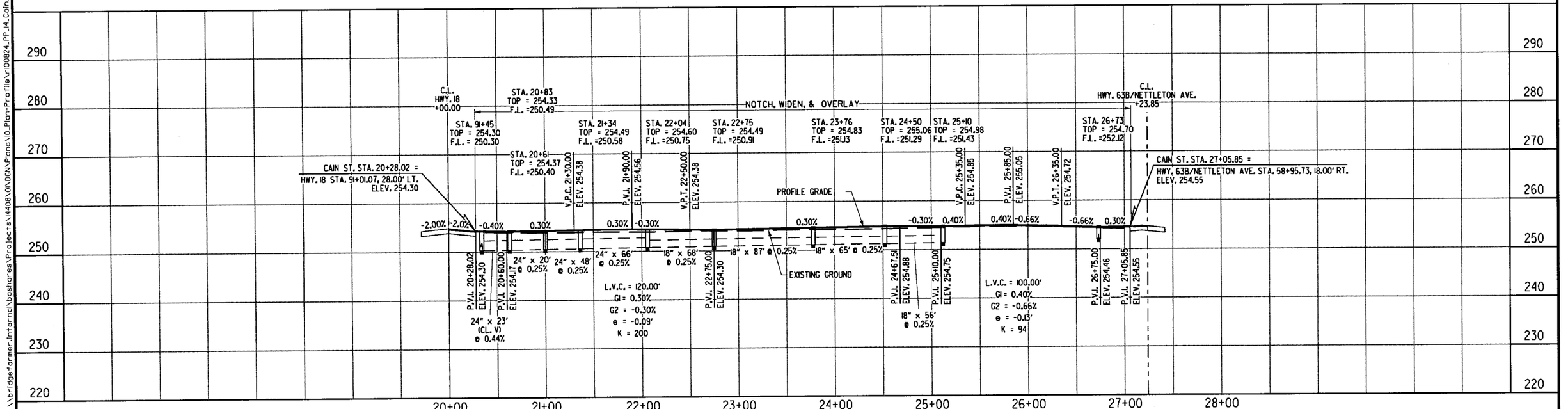
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	129	346

(2) PLAN & PROFILE

LEFT SIDE OF CAIN ST.



RIGHT SIDE OF CAIN ST.



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ALL R.C. PIPE CULVERTS SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED. FOR ALL R.C. PIPE INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED. FOR ALL C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

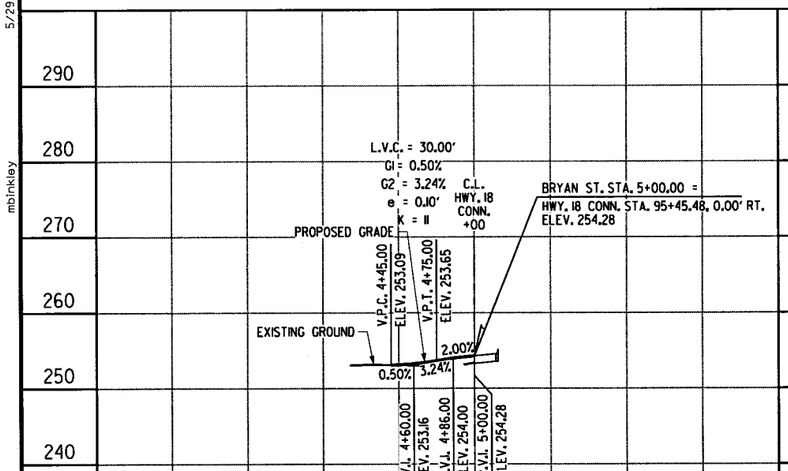
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ADIB
2018-05-29

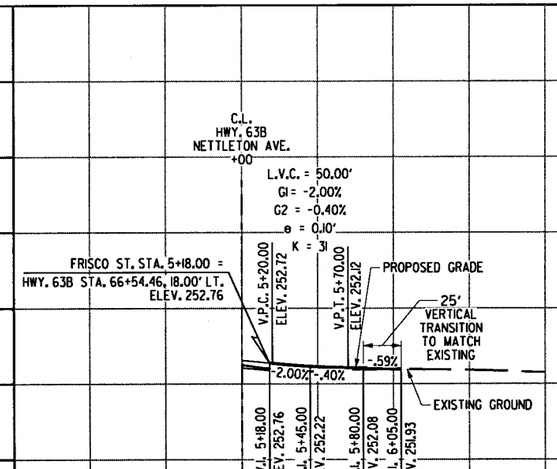
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	130	346

(2) PLAN & PROFILE

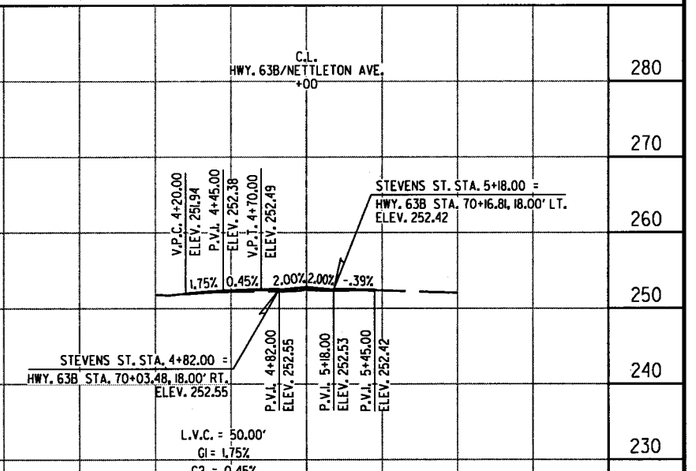
BRYAN ST.



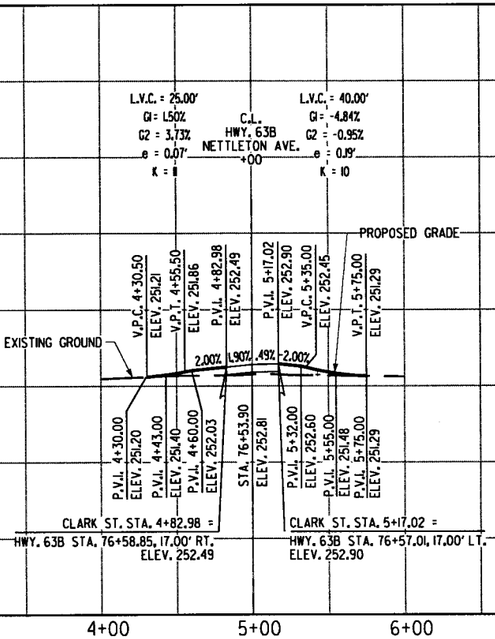
FRISCO ST.



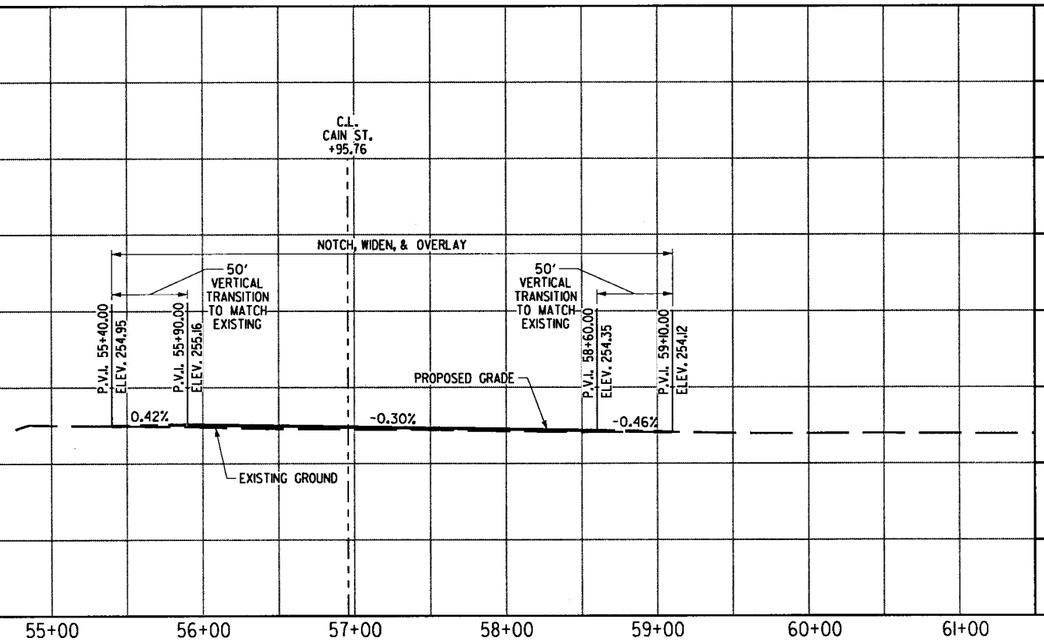
STEVENS ST.



CLARK ST.



NETTLETON AVE. @ CAIN ST.



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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
10-01-18				6	ARK.			
				JOB NO.		100824	131	346

(2) TRAFFIC SIGNAL NOTES & SUMM. OF QUANT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
CHR. SILVER
10-1-2018

TRAFFIC SIGNAL NOTES

1. ALL ELECTRICAL WORK SHALL BE 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 EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. PAVEMENT MARKINGS 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.
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, 4" 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 I"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.

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

	ITEM NO.	ITEM	NHPP-9227(80) (LOCAL) NETTLETON AVE./CAIN ST.	NHPP-9227(80) (STATE) HWY. 63B/WATT ST.	NHPP-9227(80) (STATE) HWY. 18/HWY. 63B	QUANTITY	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	1	0	2	EACH
	SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	0	0	2	2	EACH
	SP	ETHERNET SWITCH TIOO HARDENED (8-PORT)	1	1	0	2	EACH
	SP	E-NET CABLE (EXTERIOR CAT 5E)	120	40	0	160	LIN. FT.
	SP	BATTERY BACKUP SYSTEM	1	0	0	1	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	6	4	16	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	2	0	3	EACH
	SP	RELOCATION OF TRAFFIC SIGNAL HEAD	0	0	2	2	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	2	4	0	6	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	620	1909	973	3502	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	61	165	0	226	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	193	0	0	193	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	110	0	0	110	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	263	84	373	720	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	139	0	0	139	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	22	30	0	52	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	208	0	0	208	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (1.25")	10	0	0	10	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	0	180	0	180	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (3")	0	60	0	60	LIN. FT.
	710	NON-METALLIC CONDUIT (1.25")	18	19	0	37	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	118	95	0	213	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	131	0	201	332	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 2)	3	1	0	4	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	1	4	2	7	EACH
	713	SPAN WIRE ASSEMBLY	0	1	1	2	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	0	0	1	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28'-34')	1	0	0	1	EACH
	SP	LED LUMINAIRE ASSEMBLY	2	0	0	2	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	1	4	0	5	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	1	0	2	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.00	0.40	0.60	1.00	LUMP SUM
	716	TREATED WOOD POLE (CLASS 2, 40')	0	4	2	6	EACH
	SP	18" STREET NAME SIGN	3	3	0	6	EACH
	733	VIDEO DETECTOR RELOCATION	0	0	3	3	EACH
*	SP & 733	VIDEO DETECTOR (CLR)	6	4	0	10	EACH
	733	VIDEO CABLE	584	369	498	1451	LIN. FT.
	733	VIDEO MONITOR (CLR)	1	1	0	2	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	3	0	7	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	1	0	2	EACH
	SP	NET-ACCESS RADIO (5.8 GHz, 32 MBPS)	1	1	0	2	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR, EDGE CARD SHALL BE SUPPLIED PER INTERSECTION.

LOCATION: ENTIRE PROJECT
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: NA DRAWN BY: CRS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-01-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	132	346

(2) TRAFFIC SIGNAL NOTES & SUMM. OF QUANT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER

10-1-2018

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

NETTLETON AVE. & CAIN ST.

	ITEM NO.	ITEM	FINAL	TOTAL	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	1	EACH
	SP	ETHERNET SWITCH TI00 HARDENED (8-PORT)	1	1	EACH
	SP	E-NET CABLE (EXTERIOR CAT 5E)	120	120	LIN. FT.
	SP	BATTERY BACKUP SYSTEM	1	1	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED. (3 SECTION, 1 WAY)	6	6	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	1	1	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD. LED	2	2	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	620	620	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	61	61	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (12C/14 A.W.G.)	193	193	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	110	110	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	263	263	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	139	139	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	22	22	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	208	208	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (1.25")	10	10	LIN. FT.
	710	NON-METALLIC CONDUIT (1.25")	18	18	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	118	118	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	131	131	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 2)	3	3	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	1	1	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	1	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (28'-34')	1	1	EACH
	SP	LED LUMINAIRE ASSEMBLY	2	2	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	1	1	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	1	EACH
	SP	18" STREET NAME SIGN	3	3	EACH
*	SP & 733	VIDEO DETECTOR (CLR)	6	6	EACH
	733	VIDEO CABLE	584	584	LIN. FT.
	733	VIDEO MONITOR (CLR)	1	1	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	4	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	1	EACH
	SP	NET-ACCESS RADIO (5.8 GHz, 32 MBPS)	1	1	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR, EDGE CARD SHALL BE SUPPLIED.

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

HWY. 63B (NETTLETON AVE.) & WATT ST.

	ITEM NO.	ITEM	STAGE 4	FINAL	TOTAL	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS 2-TYPE 2, E-NET (8 PHASES)	1	0	1	EACH
	SP	ETHERNET SWITCH TI00 HARDENED (8-PORT)	1	0	1	EACH
	SP	E-NET CABLE (EXTERIOR CAT 5E)	40	0	40	LIN. FT.
	SP & 706	TRAFFIC SIGNAL HEAD, LED. (3 SECTION, 1 WAY)	6	0	6	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	0	2	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD. LED	4	0	4	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1909	0	1909	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	165	0	165	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	84	0	84	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	30	0	30	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	180	0	180	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (3")	60	0	60	LIN. FT.
	710	NON-METALLIC CONDUIT (1.25")	19	0	19	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	95	0	95	LIN. FT.
	SP & 711	CONCRETE PULL BOX (TYPE 2)	1	0	1	EACH
	SP & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	0	4	EACH
	713	SPAN WIRE ASSEMBLY	1	0	1	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	0	4	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	0	1	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0	0.4	0.4	LUMP SUM
	716	TREATED WOOD POLE (CLASS 2, 40')	4	0	4	EACH
	SP	18" STREET NAME SIGN	3	0	3	EACH
*	SP & 733	VIDEO DETECTOR (CLR)	4	0	4	EACH
	733	VIDEO CABLE	369	0	369	LIN. FT.
	733	VIDEO MONITOR (CLR)	1	0	1	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	0	3	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	0	1	EACH
	SP	NET-ACCESS RADIO (5.8 GHz, 32 MBPS)	1	0	1	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR, EDGE CARD SHALL BE SUPPLIED.

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

HWY. 18 & HWY. 63B (NETTLETON AVE.)

ITEM NO.	ITEM	STAGE 4A	STAGE 4B	TOTAL	UNIT
SP	TRAFFIC SIGNAL CONTROLLER (MODIFICATION)	1	1	2	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED. (3 SECTION, 1 WAY)	2	2	4	EACH
SP	RELOCATION OF TRAFFIC SIGNAL HEAD	0	2	2	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	783	190	973	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	318	55	373	LIN. FT.
710	NON-METALLIC CONDUIT (3")	201	0	201	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	2	0	2	EACH
713	SPAN WIRE ASSEMBLY	0	1	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.30	0.30	0.60	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 40')	0	2	2	EACH
733	VIDEO DETECTOR RELOCATION	2	1	3	EACH
733	VIDEO CABLE	410	88	498	LIN. FT.

LOCATION: ENTIRE PROJECT
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: NA DRAWN BY: CRS

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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.		100824	133	346

SYSTEM MAP

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SMITH
2014-05-29

EXISTING MASTER ANTENNA
35°51'31.14" N
90°40'29.19" W

HWY. 63B (NETTLETON AVE.) AT WATT ST.
LOCAL RADIO WITH ANTENNA

NETTLETON AVE. AT CAIN ST.
LOCAL RADIO WITH ANTENNA

ANTENNA ORIENTATION
NETTLETON AVE. AT CAIN ST.

25°45'28" W OF N

ANTENNA ORIENTATION
HWY. 63B (NETTLETON AVE.) AT WATT ST.

26°34'51" W OF N

1500 0 1500 3000
SCALE: 1" = 3000'

LOCATION: HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: AS SHOWN DRAWN BY: CRS

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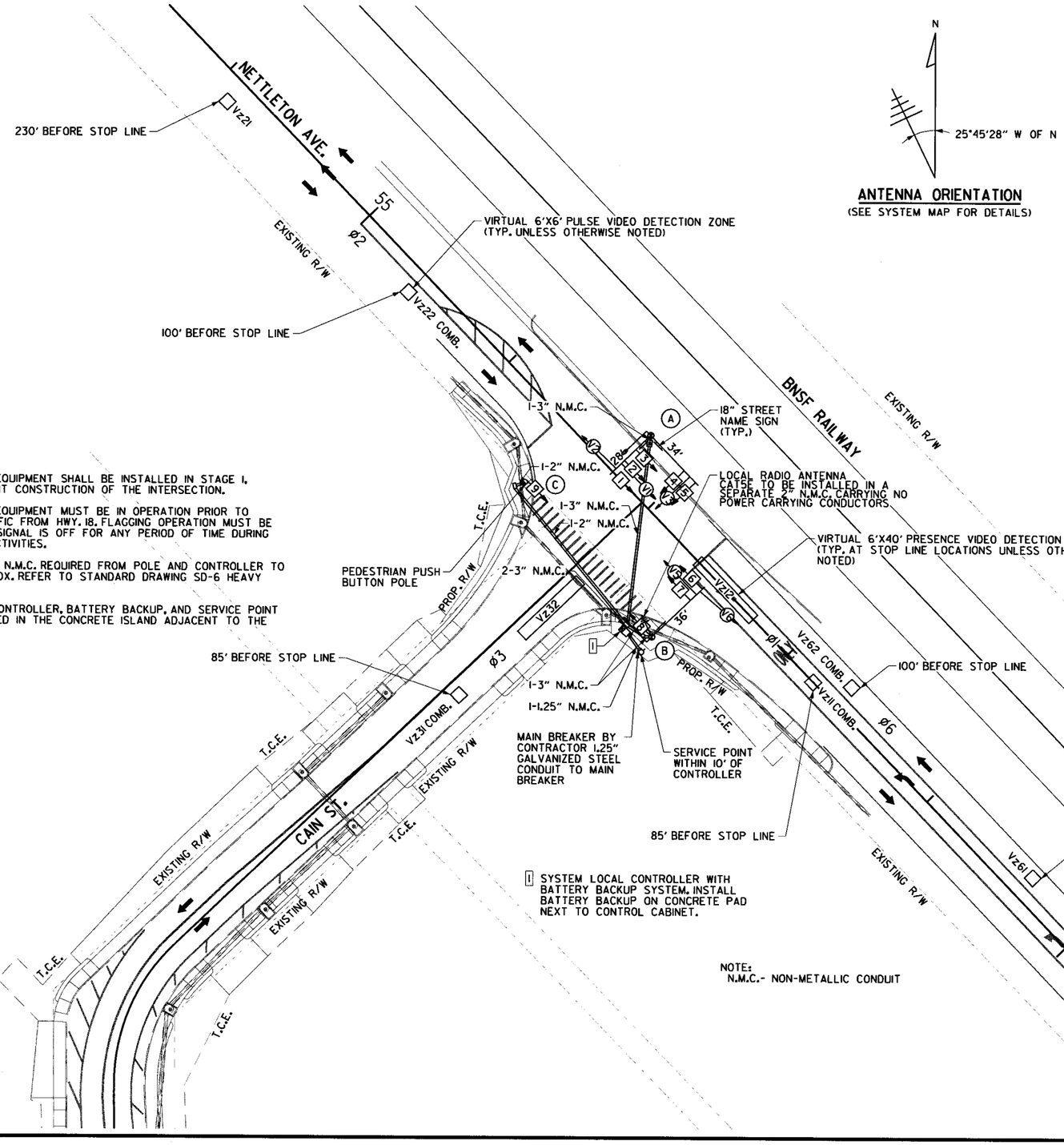
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	134	346
				②		SIGNALIZATION PLAN		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-06-05

POLE DIMENSIONS

POLE	MAST ARM LENGTH	MAST ARM ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUMINAIRE ARM LENGTH	LUM. ARM ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	STATION CL NETTLETON AVE.	OFFSET CL NETTLETON AVE.	NORTHING	EASTING
A	28' & 34'	180 DEGREES & 90 DEGREES	35'-0"	15'	180 DEGREES	56+68.80	26' LT	544908.4485	1711372.1416
B	36'	270 DEGREES	35'-0"	15'	180 DEGREES	57+47.59	43' RT	544808.5737	1711373.0584
C	-	-	15'-0"	-	-	56+48.56	36' RT	544885.1680	1711309.8702



N

25°45'28" W OF N

ANTENNA ORIENTATION
(SEE SYSTEM MAP FOR DETAILS)

NOTES:

1. TRAFFIC SIGNAL EQUIPMENT SHALL BE INSTALLED IN STAGE I, DURING PERMANENT CONSTRUCTION OF THE INTERSECTION.
2. TRAFFIC SIGNAL EQUIPMENT MUST BE IN OPERATION PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
3. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
4. SYSTEM LOCAL CONTROLLER, BATTERY BACKUP, AND SERVICE POINT SHALL BE LOCATED IN THE CONCRETE ISLAND ADJACENT TO THE SIDEWALK.

[1] SYSTEM LOCAL CONTROLLER WITH BATTERY BACKUP SYSTEM. INSTALL BATTERY BACKUP ON CONCRETE PAD NEXT TO CONTROL CABINET.

NOTE:
N.M.C.- NON-METALLIC CONDUIT

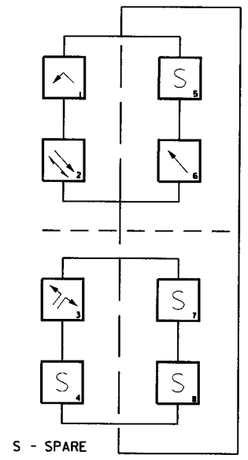
LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE IHD PULL BOX
- TYPE I PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

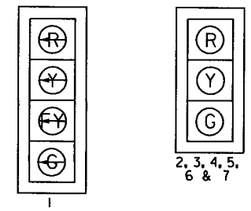
DESIGN PARAMETERS

POSTED SPEED LIMIT
40 MPH NORTH & SOUTH APPROACH
25 MPH WEST APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE (BARRIER CURB SECTION)
12' MIN CLEAR ZONE (CAIN ST.)
18' MIN. CLEAR ZONE (NETTLETON AVE.)

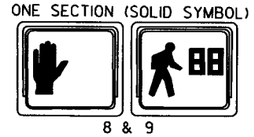
PHASING DIAGRAM



S - SPARE



ONE SECTION (SOLID SYMBOL)



NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.

30 0 30 60
SCALE: 1" = 60'

FINAL

LOCATION: NETTLETON AVE. & CAIN ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 60' DRAWN BY: CRS

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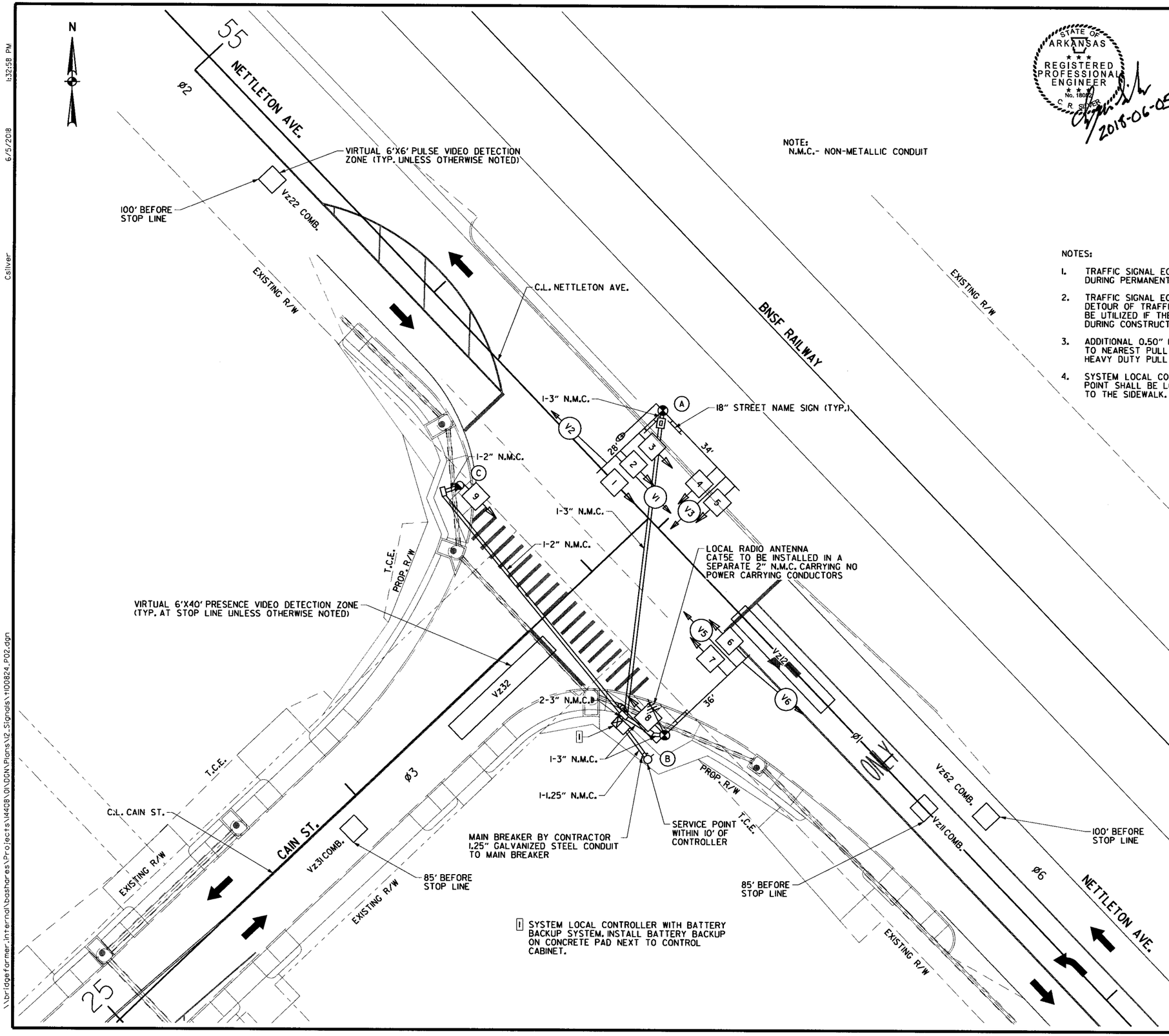


NOTE:
N.M.C.- NON-METALLIC CONDUIT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18082
C. R. SIDES
2018-06-05

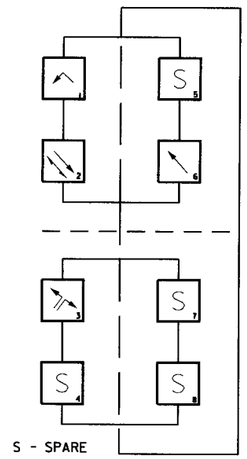
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	135	346

(2) SIGNALIZATION PLAN

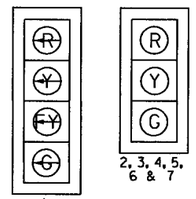
LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

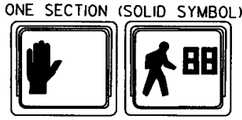
PHASING DIAGRAM



S - SPARE



ONE SECTION (SOLID SYMBOL)



8 & 9

NOTES:

1. TRAFFIC SIGNAL EQUIPMENT SHALL BE INSTALLED IN STAGE I, DURING PERMANENT CONSTRUCTION OF THE INTERSECTION.
2. TRAFFIC SIGNAL EQUIPMENT MUST BE IN OPERATION PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
3. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
4. SYSTEM LOCAL CONTROLLER, BATTERY BACKUP, AND SERVICE POINT SHALL BE LOCATED IN THE CONCRETE ISLAND ADJACENT TO THE SIDEWALK.

NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.

15 0 15 30
SCALE: 1" = 30'

FINAL

LOCATION: NETTLETON AVE. & CAIN ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

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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.		100824	136	346

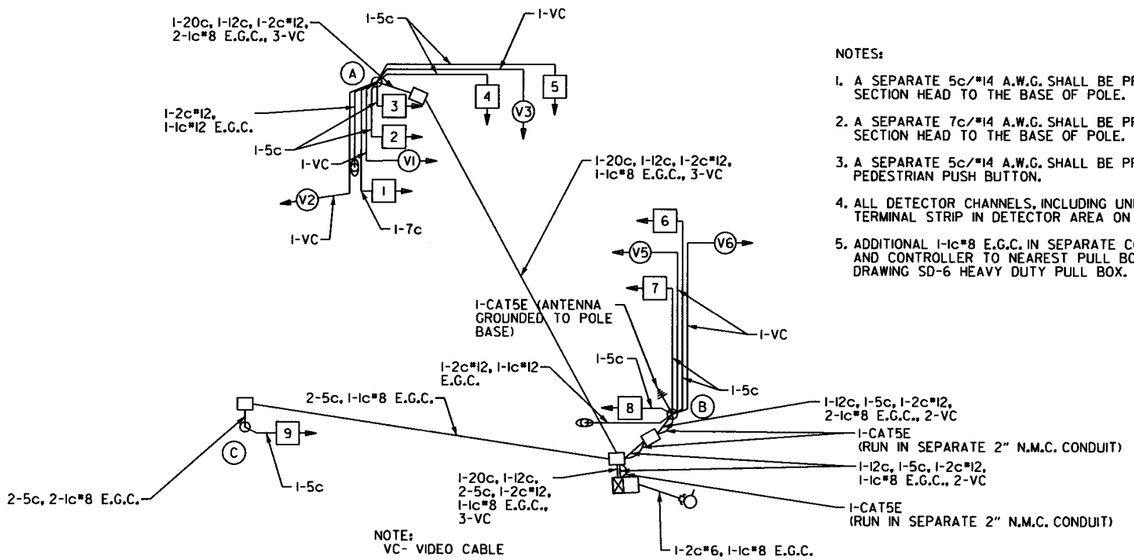
(2) SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVEY
2019-06-05

LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE IHD PULL BOX
- TYPE I PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

WIRING DIAGRAM



NOTE:
VC- VIDEO CABLE

NOTES:

1. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 3 SECTION HEAD TO THE BASE OF POLE.
2. A SEPARATE 7c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 4 SECTION HEAD TO THE BASE OF POLE.
3. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED TO EACH POLE WITH PEDESTRIAN PUSH BUTTON.
4. ALL DETECTOR CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
5. ADDITIONAL 1-1c#8 E.G.C. IN SEPARATE CONDUIT REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.

INTERVAL CHART

SIGNAL NO.	INTERSECTION INTERVALS						FLASH SEQ.
	1 + 6	CLR.	2 + 6	CLR.	3	CLR.	
1	~~G~~	**	~~FY~~	***	~~R~~	~~R~~	~~R~~
2 & 3	G	*	G	*	R	R	R
4 & 5	R	R	R	R	G	*	R
6 & 7	R	R	G	*	R	*	R
8 & 9	DW	DW	W	FDW	DW	DW	BLK

*DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE.
**DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE.
***DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE.

DETECTOR CHART

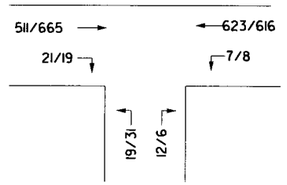
NETTLETON AVE./CAIN ST. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENT			VIDEO DET. TUBE LENGTH	COMMENTS
							LOCAL		MASTER		
DET. ID #	DIRECTION LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #	SYSTEM DET. #S		
VZ 11	NB LEFT FAR	COMB.			1	9	1	1		23"	VD 1
VZ 12	NB LEFT NEAR	LOCAL			2	1	1			23"	VD 1
VZ 21	SB FAR	COMB.			5	10	2	2		37"	VD 2
VZ 22	SB NEAR	LOCAL			6	2	2			23"	VD 5
VZ 31	EB FAR	COMB.			9	11	3	3		23"	VD 3
VZ 32	EB NEAR	LOCAL			10	3	3			23"	VD 3
VZ 61	NB FAR	LOCAL			3	6	6			37"	VD 6
VZ 62	NB NEAR	COMB.			4	14	6	6		23"	VD 1
P2	N TO S	PED.			P2	P2	2				

CONTROLLER INPUT ABBREVIATIONS
V - VEHICLE INPUT
D - SYSTEM OR AUXILIARY INPUT
P - PEDESTRIAN INPUT

SPARE AMP CHN. #= 7,8,11,12,13-16

PEAK HR TRAFFIC COUNTS

2017 TRAFFIC VOLUMES (AM/PM)



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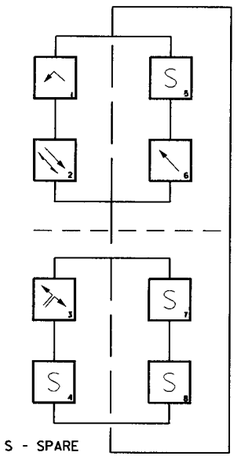

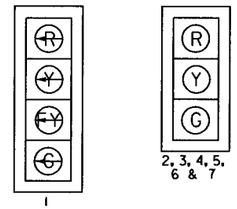

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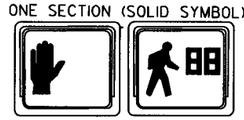
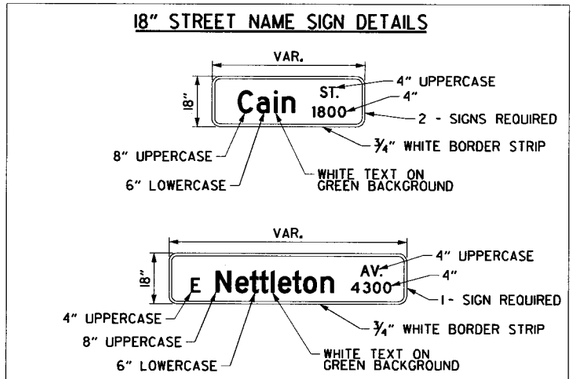


NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.

18" STREET NAME SIGN DETAILS



NOTES:

1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ALODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGN, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY.
3. SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.
5. STREET NAME "CAIN ST." ON POLES A (NB) AND B (SB), "NETTLETON AV." ON POLE A (EB).

FINAL

LOCATION: NETTLETON AVE. & CAIN ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

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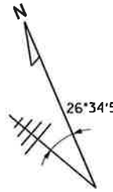
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-01-18				6	ARK.			
				JOB NO.		100824	137	346
				(2)		SIGNALIZATION PLAN		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
10-1-2018

ANTENNA ORIENTATION
(SEE SYSTEM MAP FOR DETAILS)

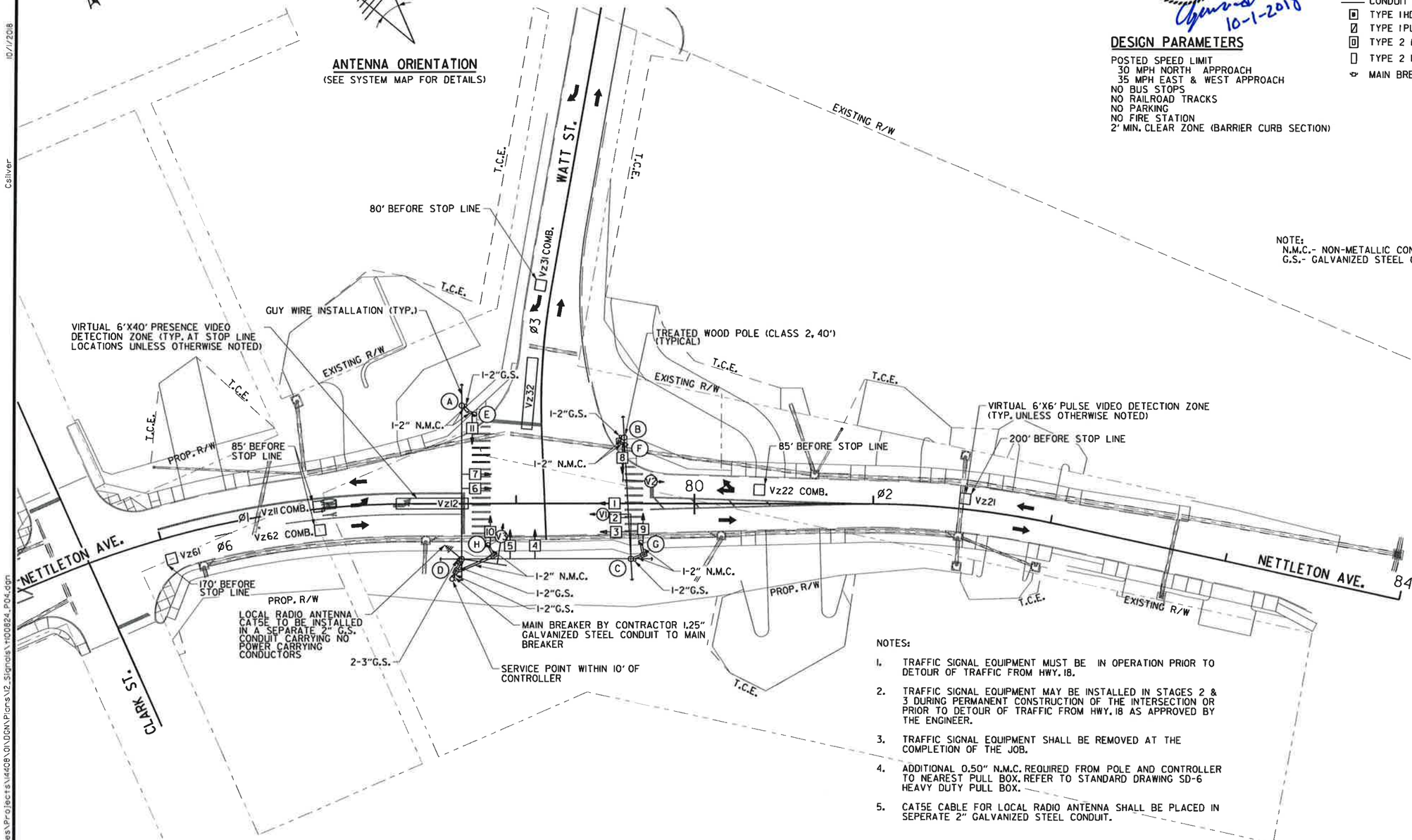


DESIGN PARAMETERS

POSTED SPEED LIMIT
30 MPH NORTH APPROACH
35 MPH EAST & WEST APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE (BARRIER CURB SECTION)

LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1 PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD



NOTE:
N.M.C.- NON-METALLIC CONDUIT
G.S.- GALVANIZED STEEL CONDUIT

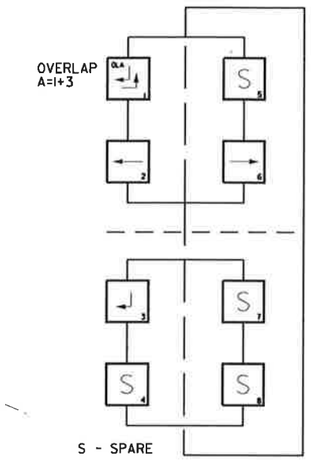
NOTES:

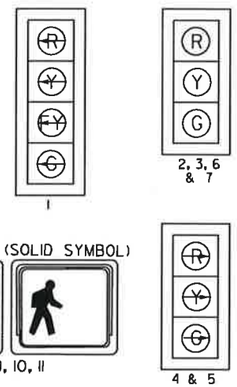
1. TRAFFIC SIGNAL EQUIPMENT MUST BE IN OPERATION PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18.
2. TRAFFIC SIGNAL EQUIPMENT MAY BE INSTALLED IN STAGES 2 & 3 DURING PERMANENT CONSTRUCTION OF THE INTERSECTION OR PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18 AS APPROVED BY THE ENGINEER.
3. TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED AT THE COMPLETION OF THE JOB.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. CAT5E CABLE FOR LOCAL RADIO ANTENNA SHALL BE PLACED IN SEPERATE 2" GALVANIZED STEEL CONDUIT.

POLE DIMENSIONS

POLE	MAST ARM LENGTH	MAST ARM ORIENTATION ANGLE FROM HANDHOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	STATION CL HWY. 63B (NETTLETON AVE.)	OFFSET CL HWY. 63B (NETTLETON AVE.)	NORTHING	EASTING
E	NA	NA	15'-0"	78+76.96	51' LT	543352.2471	1712456.4999
F	NA	NA	15'-0"	79+60.88	33' LT	543303.1773	1712526.7176
G	NA	NA	15'-0"	79+70.04	22' RT	543249.1635	1712513.3460
H	NA	NA	15'-0"	78+84.49	32' RT	543280.3706	1712417.8437

PHASING DIAGRAM





NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.

STAGES 4 & 5

30 0 30 60
SCALE: 1" = 60'

LOCATION: HWY. 63B (NETTLETON AVE.) & WATT ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 60' DRAWN BY: CRS

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-01-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	138	346

(2) SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18067
C R SILVER
10-1-2018

NOTE:
N.M.C.- NON-METALLIC CONDUIT
G.S.- GALVANIZED STEEL CONDUIT

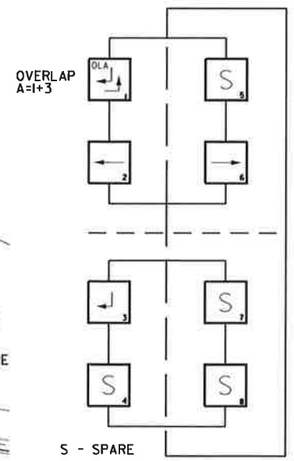
NOTES:

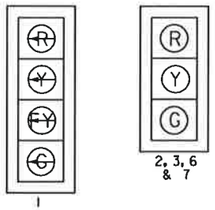
1. TRAFFIC SIGNAL EQUIPMENT MUST BE IN OPERATION PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18.
2. TRAFFIC SIGNAL EQUIPMENT MAY BE INSTALLED IN STAGES 2 & 3 DURING PERMANENT CONSTRUCTION OF THE INTERSECTION OR PRIOR TO DETOUR OF TRAFFIC FROM HWY. 18 AS APPROVED BY THE ENGINEER.
3. TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED AT THE COMPLETION OF THE JOB.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. CAT5E CABLE FOR LOCAL RADIO ANTENNA SHALL BE PLACED IN SEPERATE 2" GALVANIZED STEEL CONDUIT.

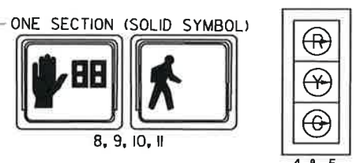
LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1 PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

PHASING DIAGRAM

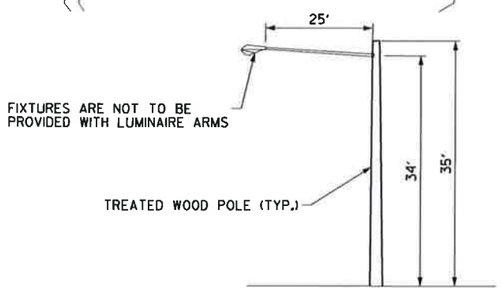






NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.



NOTE: LUMINAIRE ARMS (OR OTHER APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716.

NOTE: ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.

STAGES 4 & 5

15 0 15 30
SCALE: 1" = 30'

LOCATION: HWY. 63B (NETTLETON AVE.) & WATT ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

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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
10-01-18				6	ARK.			
				JOB NO.		100824	139	346

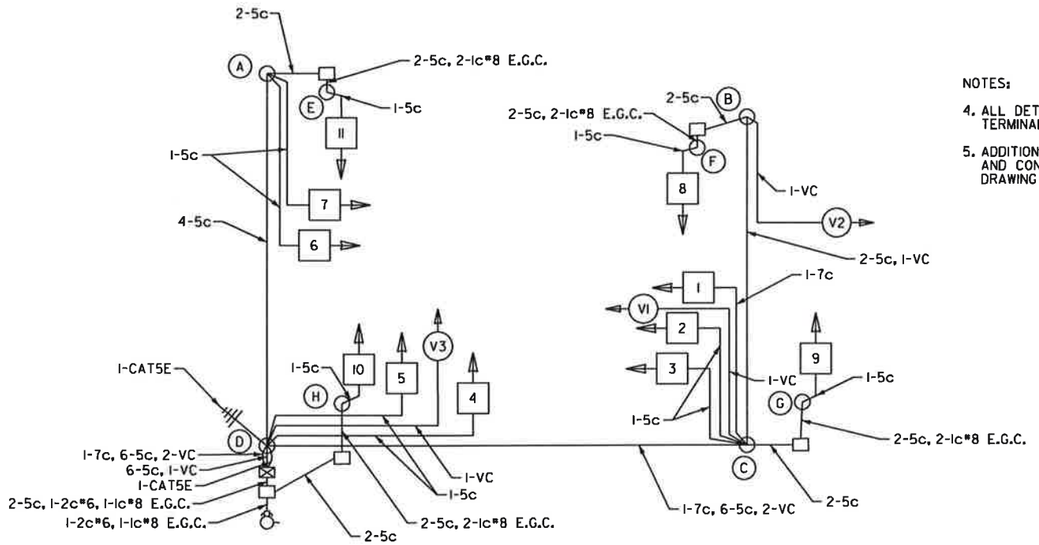
(2) SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
10-1-2018

LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE IHD PULL BOX
- TYPE I PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

WIRING DIAGRAM

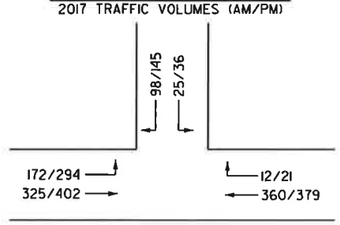


NOTES:

4. ALL DETECTOR CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
5. ADDITIONAL I-Ic*8 E.G.C. IN SEPARATE CONDUIT REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.

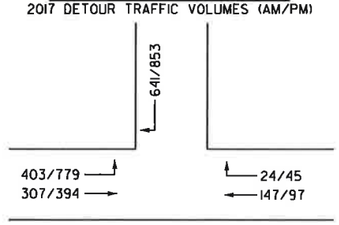
PEAK HR TRAFFIC COUNTS

2017 TRAFFIC VOLUMES (AM/PM)

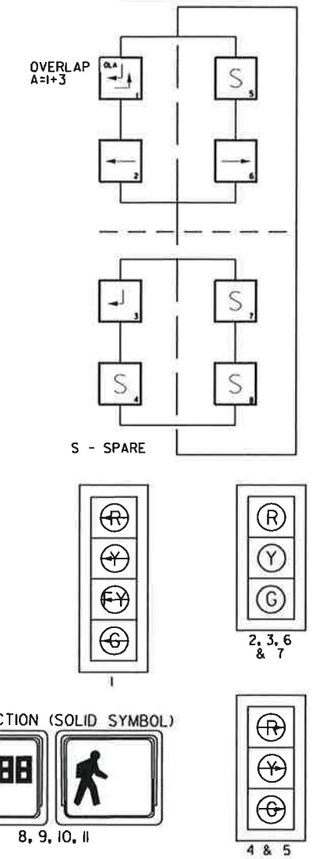


PEAK HR TRAFFIC COUNTS

2017 DETOUR TRAFFIC VOLUMES (AM/PM)



PHASING DIAGRAM



DETECTOR CHART

HWY. 63B (NETTLETON AVE.)/WATT ST. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENT			VIDEO DET. TUBE LENGTH	COMMENTS
							LOCAL		MASTER SYSTEM DET. #S		
DET. ID #	DIRECTION LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #			
VZ 11	EB LEFT FAR	COMB.			1	9	1	1		23"	VD 1
VZ 12	EB LEFT NEAR	LOCAL			2	1	1			23"	VD 1
VZ 21	WB FAR	LOCAL			5	2	2			23"	VD 2
VZ 22	WB NEAR	COMB.			6	10	2	2		23"	VD 2
VZ 31	SB FAR	COMB.			9	II	3	3		23"	VD 3
VZ 32	SB NEAR	LOCAL			10	3	3			23"	VD 3
VZ 61	EB FAR	LOCAL			3	6	6			23"	VD 1
VZ 62	EB NEAR	COMB.			4	14	6	6		23"	VD 1

CONTROLLER INPUT ABBREVIATIONS
V - VEHICLE INPUT
D - SYSTEM OR AUXILIARY INPUT
P - PEDESTRIAN INPUT

SPARE AMP CHN. #= 7,8, II-16

INTERVAL CHART

SIGNAL NO.	INTERSECTION INTERVALS						FLASH SEQ.
	1 + 6	CLR.	2 + 6	CLR.	3	CLR.	
1	~~G~~	**	~~FY~~	***	~~G~~	**	~~R~~
2 & 3	G	*	G	*	R	R	R
4 & 5	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	**	~~R~~
6 & 7	R	R	G	*	R	R	R

*DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE.
**DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE.
***DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE.

NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A. STANDARDS.

STAGES 4 & 5

LOCATION: HWY. 63B (NETTLETON AVE.) & WATT ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: NA DRAWN BY: CRS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
10-01-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	140	346

(2) SIGNALIZATION PLAN

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10-01-18				6	ARK.			
				JOB NO.		100824	141	346
				②	SIGNALIZATION PLAN			

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10-01-18				6	ARK.			
				JOB NO.		100824	142	346
				(2)	SIGNALIZATION PLAN			

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				6	ARK.			
				JOB NO.		100824	143	346

(2) SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-08-01

N

NETTLETON AVE.

HWY. 18

HWY. 63B (NETTLETON AVE.)

165' BEFORE STOP LINE

Vz21

EXISTING R/W

65' BEFORE STOP LINE

Vz22 COMB.

VIRTUAL 6'X6' PULSE VIDEO DETECTION ZONE (TYP. UNLESS OTHER WISE NOTED)

RETAIN EXISTING POLE AND MAST ARM

Vz11 COMB.

Vz12

80' BEFORE STOP LINE

RETAIN EXISTING 3" N.M.C.

RETAIN EXISTING POLE AND MAST ARM

RETAIN EXISTING 3" N.M.C.

VIRTUAL 6'X40' PRESENCE VIDEO DETECTION ZONE (TYP. AT STOP LINE LOCATIONS UNLESS OTHERWISE NOTED)

RETAIN EXISTING 3" N.M.C.

ABANDON EXISTING CONDUIT

REMOVE EXISTING POLE AND MAST ARM

ABANDON EXISTING CONDUIT

REMOVE EXISTING SIGNAL HEAD (TYP.)

RETAIN EXISTING VIDEO DETECTOR FOR USE IN STAGE 4B

REMOVE EXISTING VIDEO DETECTOR (TYP.)

RETAIN EXISTING POLE AND MAST ARM

RETAIN EXISTING 3" N.M.C.

MODIFY EXISTING LOCAL CONTROLLER FOR TWO PHASE OPERATION

RETAIN EXISTING SERVICE POINT & MAIN BREAKER

1-3" N.M.C.

RETAIN EXISTING CONDUIT

T.C.E.

PROP. R/W

T.C.E.

PROP. R/W

T.C.E.

PROP. R/W

T.C.E.

PROP. R/W

T.C.E.

EXISTING R/W

C.L. HWY 63B

C.L. FRISCO ST.

BNSF RAILWAY

FRISCO ST.

EXISTING R/W

EXISTING R/W

EXISTING R/W

PROP. R/W

NOTES:

1. THE EXISTING TRAFFIC SIGNAL IS TO BE MAINTAINED UNTIL SUCH A TIME AS THE NEW SIGNAL EQUIPMENT CAN BE PLACED INTO OPERATION. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
2. EXISTING POLE AND CONDUIT LOCATIONS BASED ON AVAILABLE SURVEY DATA AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
3. STAGE 4A TRAFFIC SIGNAL SHALL BE OPERATIONAL PRIOR TO STAGE 4A CONSTRUCTION BEGINING.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. RELOCATE EXISTING VIDEO DETECTOR ON POLE 'D' AS SHOWN.

LEGEND

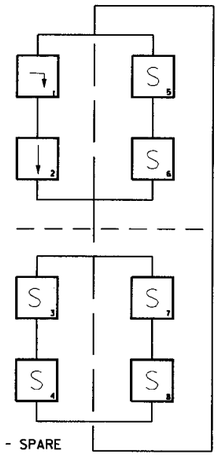
- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

DESIGN PARAMETERS

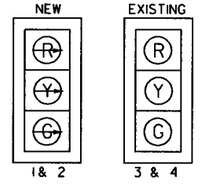
POSTED SPEED LIMIT
30 MPH NORTH & SOUTH APPROACH
30 MPH WEST APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE (BARRIER CURB SECTION)
18' MIN. CLEAR ZONE (NETTLETON AVE. & HWY. 18)

NOTE:
N.M.C.- NON-METALLIC CONDUIT

PHASING DIAGRAM



S - SPARE



NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

STAGE 4A

30 0 30 60
SCALE: 1" = 60'

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 60' DRAWN BY: CRS

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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.		100824	144	346

2 SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SIMES
2018-08-01

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mbinkley

N

NETTLETON AVE.

EXISTING R/W

T.C.E.

PROPOSED R/W

65' BEFORE STOP LINE

Ø2

Vz22 COMB.

C.L. HWY. 63B (NETTLETON AVE.)

NOTE:
N.M.C.- NON-METALLIC CONDUIT

ABANDON EXISTING CONDUIT

EXISTING R/W

RETAIN EXISTING 3" N.M.C.

RETAIN EXISTING POLE AND MAST ARM

REMOVE EXISTING POLE AND MAST ARM

HWY. 18

VIRTUAL 6'X6' PULSE VIDEO DETECTION ZONE (TYP. UNLESS OTHERWISE NOTED)

65'

36'

ABANDON EXISTING CONDUIT

Vz11 COMB.

Ø1

Vz12

80' BEFORE STOP LINE

VIRTUAL 6'X40' PRESENCE VIDEO DETECTION ZONE (TYP. AT STOP LINE LOCATIONS UNLESS OTHERWISE NOTED)

REMOVE EXISTING SIGNAL HEAD (TYP.)

RETAIN EXISTING VIDEO DETECTOR FOR USE IN STAGE 4B

44'

REMOVE EXISTING VIDEO DETECTOR (TYP.)

RETAIN EXISTING SIGNAL HEADS

RETAIN EXISTING POLE AND MAST ARM

RETAIN EXISTING 3" N.M.C.

RETAIN EXISTING 3" N.M.C.

RETAIN EXISTING SERVICE POINT & MAIN BREAKER

RETAIN EXISTING CONDUIT

BNSF RAILWAY

RETAIN EXISTING 3" N.M.C.

1-3" N.M.C.

MODIFY EXISTING LOCAL CONTROLLER FOR TWO PHASE OPERATION

C.L. FRISCO ST.

FRISCO ST.

PROPOSED R/W

EXISTING R/W

T.C.E.

HWY. 63B (NETTLETON AVE.)

EXISTING R/W

T.C.E.

EXISTING R/W

PROPOSED R/W

T.C.E.

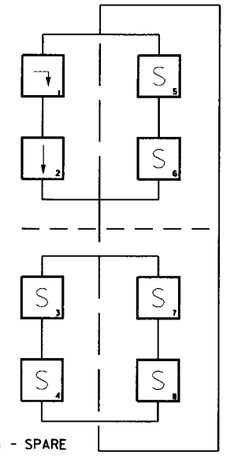
NOTES:

1. THE EXISTING TRAFFIC SIGNAL IS TO BE MAINTAINED UNTIL SUCH A TIME AS THE NEW SIGNAL EQUIPMENT CAN BE PLACED INTO OPERATION. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
2. EXISTING POLE AND CONDUIT LOCATIONS BASED ON AVAILABLE SURVEY DATA AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
3. STAGE 4A TRAFFIC SIGNAL SHALL BE OPERATIONAL PRIOR TO STAGE 4A CONSTRUCTION BEGINING.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. RELOCATE EXISTING VIDEO DETECTOR ON POLE 'D' AS SHOWN.

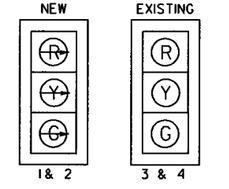
LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

PHASING DIAGRAM



S - SPARE



NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

STAGE 4A

15 0 15 30
SCALE: 1" = 30'

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

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6/4/2018
Csilver

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.		100824	145	346

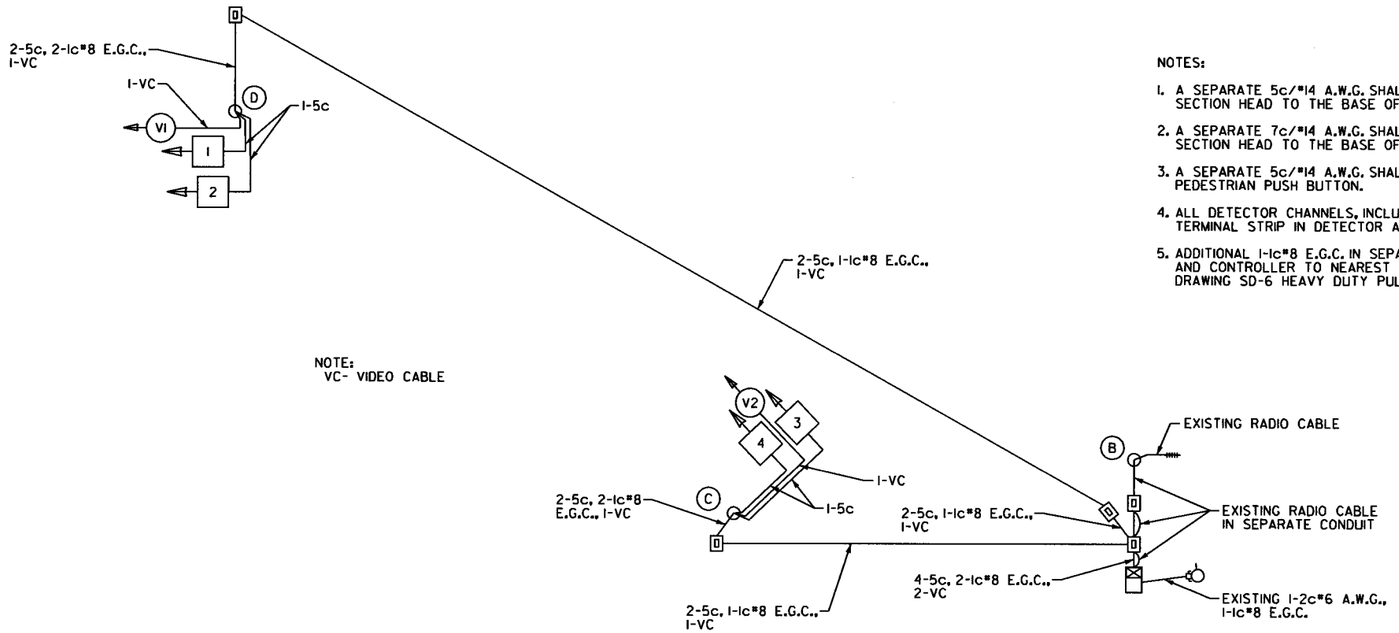
SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-06-05

LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

WIRING DIAGRAM

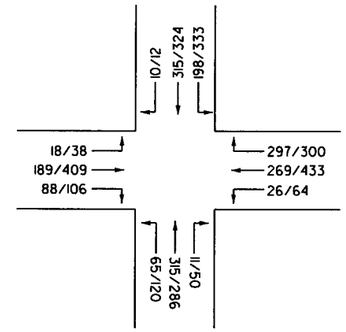


NOTES:

1. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 3 SECTION HEAD TO THE BASE OF POLE.
2. A SEPARATE 7c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 4 SECTION HEAD TO THE BASE OF POLE.
3. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED TO EACH POLE WITH PEDESTRIAN PUSH BUTTON.
4. ALL DETECTOR CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
5. ADDITIONAL 1-1c*8 E.G.C. IN SEPARATE CONDUIT REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.

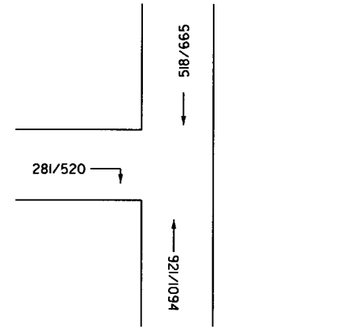
PEAK HR TRAFFIC COUNTS

2017 TRAFFIC VOLUMES (AM/PM)

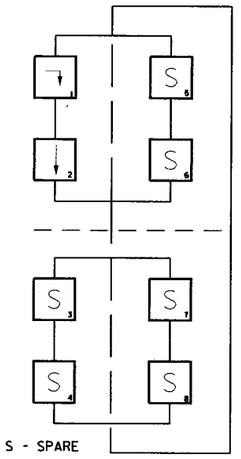


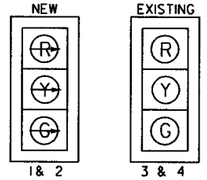
PEAK HR TRAFFIC COUNTS

2017 DETOUR TRAFFIC VOLUMES (AM/PM)



PHASING DIAGRAM





NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

INTERVAL CHART

SIGNAL NO.	INTERSECTION INTERVALS				FLASH SEQ.
	1	CLR.	2	CLR.	
1 & 2	G►	**	R►	R►	R►
3 & 4	R	R	G	*	R

*DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE.
**DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE.
***DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE.

DETECTOR CHART

HWY. 63B(NETTLETON AVE.)/HWY 18 DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENT			VIDEO DET. TUBE LENGTH	COMMENTS
							LOCAL		MASTER SYSTEM DET. #S		
DET. ID #	DIRECTION LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #			
VZ 11	EB FAR	COMB.			1	9	1	1		23"	VD 1
VZ 12	EB NEAR	LOCAL			2	1	1			23"	VD 1
VZ 21	SB FAR	LOCAL			3	10	2			46"	VD 2
VZ 22	SB NEAR	COMB.			4	2	2	2		46"	VD 2

CONTROLLER INPUT ABBREVIATIONS
V - VEHICLE INPUT
D - SYSTEM OR AUXILIARY INPUT
P - PEDESTRIAN INPUT

SPARE AMP CHN. #= 5-16

STAGE 4A

15 0 15 30
SCALE: 1" = 30'

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: DRAWN BY: CRS

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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.		100824	146	346

2 SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVEY
2018-08-01

LEGEND

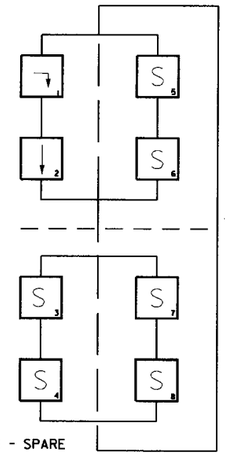
- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE IHD PULL BOX
- TYPE I PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

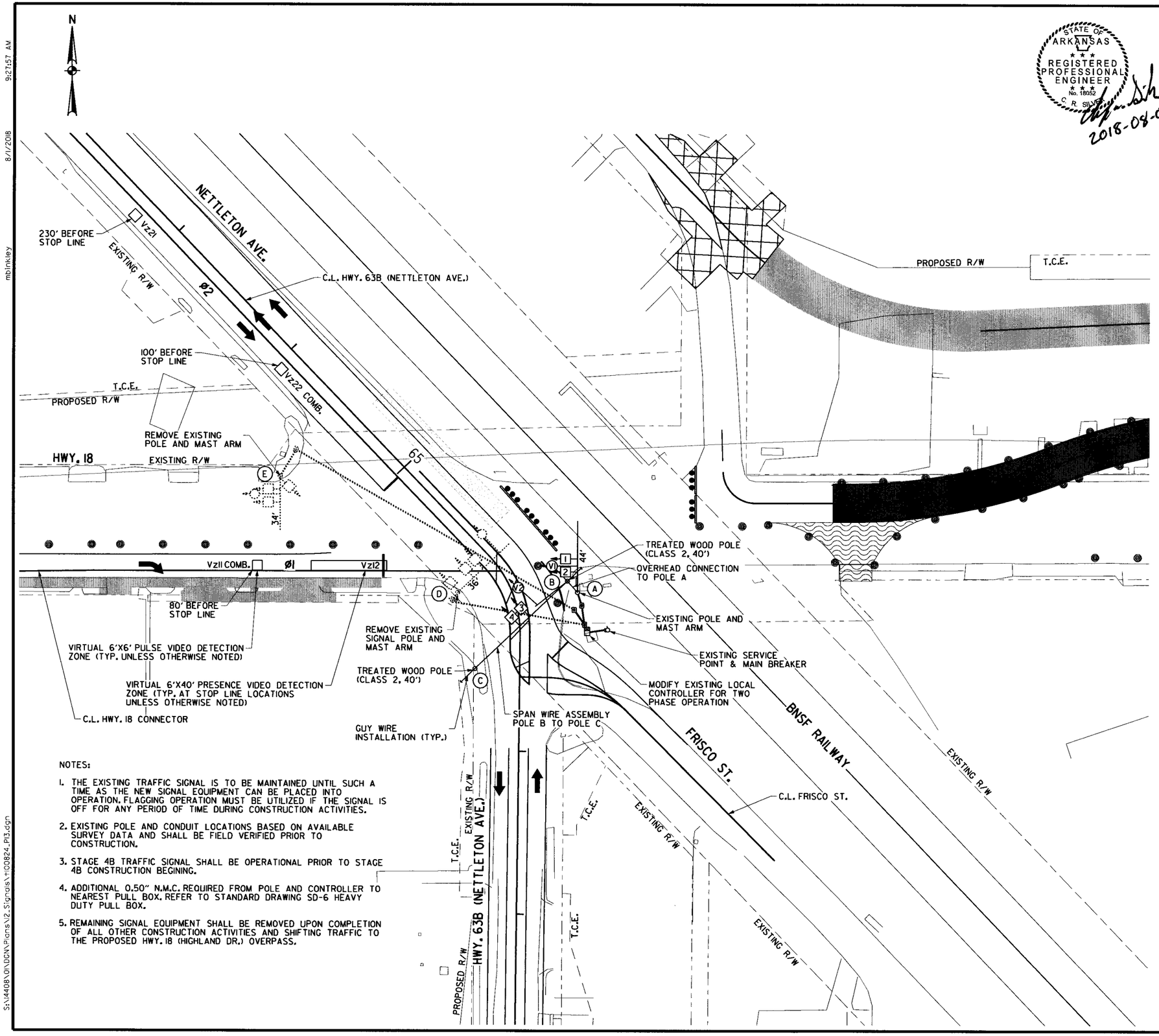
DESIGN PARAMETERS

POSTED SPEED LIMIT
40 MPH NORTH APPROACH
30 MPH WEST APPROACH
NO BUS STOPS
RAILROAD TRACKS 90° EAST
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE (BARRIER CURB SECTION)
18' MIN. CLEAR ZONE (NETTLETON AVE. & HWY. 18)

NOTE:
N.M.C.- NON-METALLIC CONDUIT

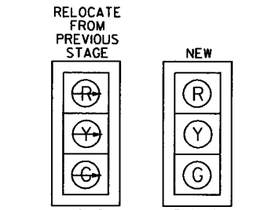
PHASING DIAGRAM





NOTES:

1. THE EXISTING TRAFFIC SIGNAL IS TO BE MAINTAINED UNTIL SUCH A TIME AS THE NEW SIGNAL EQUIPMENT CAN BE PLACED INTO OPERATION. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
2. EXISTING POLE AND CONDUIT LOCATIONS BASED ON AVAILABLE SURVEY DATA AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
3. STAGE 4B TRAFFIC SIGNAL SHALL BE OPERATIONAL PRIOR TO STAGE 4B CONSTRUCTION BEGINING.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. REMAINING SIGNAL EQUIPMENT SHALL BE REMOVED UPON COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES AND SHIFTING TRAFFIC TO THE PROPOSED HWY. 18 (HIGHLAND DR.) OVERPASS.



NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

STAGE 4B & 5

SCALE: 1" = 60'

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 60' DRAWN BY: CRS

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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.		100824	147	346

(2) SIGNALIZATION PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVEY
2018-05-24

N

NETTLETON AVE.

ø2

100' BEFORE STOP LINE

V222 COMB.

VIRTUAL 6'X6' PULSE VIDEO DETECTION ZONE (TYP. UNLESS OTHERWISE NOTED)

EXISTING R/W

T.C.E.

PROPOSED R/W

REMOVE EXISTING POLE AND MAST ARM

HWY. 18

REMOVE EXISTING VIDEO DETECTOR (TYP.)

65

REMOVE EXISTING SIGNAL HEAD (TYP.)

V211 COMB.

ø1

V211

80' BEFORE STOP LINE

EXISTING R/W

T.C.E.

REMOVE EXISTING SIGNAL POLE AND MAST ARM

VIRTUAL 6'X40' PRESENCE VIDEO DETECTION ZONE (TYP. AT STOP LINE LOCATIONS UNLESS OTHERWISE NOTED)

PROPOSED R/W

EXISTING R/W

GUY WIRE INSTALLATION (TYP.)

TREATED WOOD POLE (CLASS 2, 40')

T.C.E.

HWY. 63B (NETTLETON AVE.)

SPAN WIRE ASSEMBLY POLE B TO POLE C

BNSF RAILWAY

TREATED WOOD POLE (CLASS 2, 40')

OVERHEAD CONNECTION TO POLE A FROM EXISTING SIGNAL POLE

EXISTING POLE AND MAST ARM

EXISTING SERVICE POINT & MAIN BREAKER

MODIFY EXISTING LOCAL CONTROLLER FOR TWO PHASE OPERATION

FRISCO ST.

T.C.E.

EXISTING R/W

EXISTING R/W

NOTE:
N.M.C.- NON-METALLIC CONDUIT

EXISTING R/W

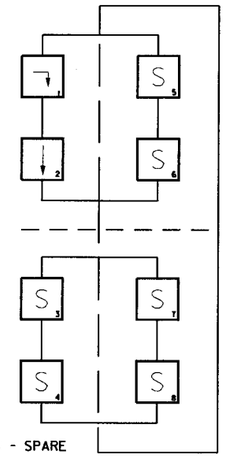
EXISTING R/W

EXISTING R/W

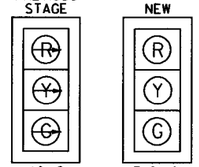
LEGEND

- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE 1HD PULL BOX
- TYPE 1 PULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

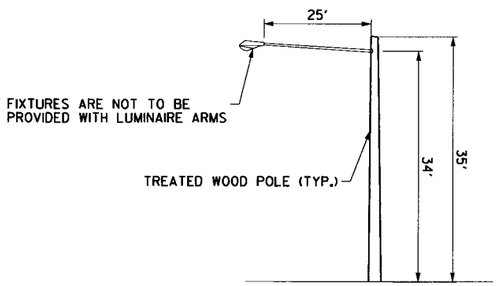
PHASING DIAGRAM



S - SPARE



NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.



NOTE: LUMINAIRE ARMS (OR OTHER APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716.

NOTES:

1. THE EXISTING TRAFFIC SIGNAL IS TO BE MAINTAINED UNTIL SUCH A TIME AS THE NEW SIGNAL EQUIPMENT CAN BE PLACED INTO OPERATION. FLAGGING OPERATION MUST BE UTILIZED IF THE SIGNAL IS OFF FOR ANY PERIOD OF TIME DURING CONSTRUCTION ACTIVITIES.
2. EXISTING POLE AND CONDUIT LOCATIONS BASED ON AVAILABLE SURVEY DATA AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
3. STAGE 4B TRAFFIC SIGNAL SHALL BE OPERATIONAL PRIOR TO STAGE 4B CONSTRUCTION BEGINING.
4. ADDITIONAL 0.50" N.M.C. REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
5. REMAINING SIGNAL EQUIPMENT SHALL BE REMOVED UPON COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES AND SHIFTING TRAFFIC TO THE PROPOSED HWY. 18 (HIGHLAND DR.) OVERPASS.

STAGE 4B & 5

15 0 15 30
SCALE: 1" = 30'

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

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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.		100824	148	346
				(2) SIGNALIZATION PLAN				

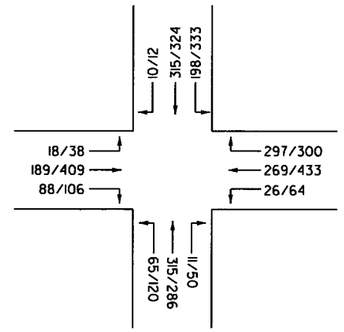
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-06-05

LEGEND

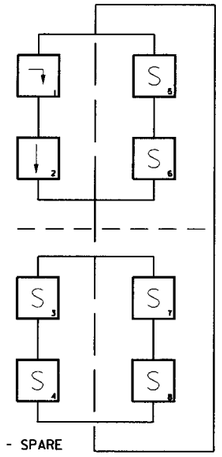
- CONDUIT (EXISTING)
- CONDUIT (PROPOSED)
- TYPE IHD PULL BOX
- TYPE IPULL BOX
- TYPE 2 HD PULL BOX
- TYPE 2 PULL BOX
- MAIN BREAKER
- RADIO ANTENNA
- TRAFFIC SIGNAL CONTROLLER
- POLE WITH MAST ARM AND LUMINAIRE ARM
- PED. PUSH BUTTON POLE
- VIDEO DETECTOR
- SIGNAL HEAD

PEAK HR TRAFFIC COUNTS

2017 TRAFFIC VOLUMES (AM/PM)



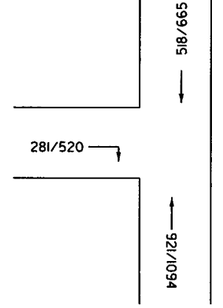
PHASING DIAGRAM



S - SPARE

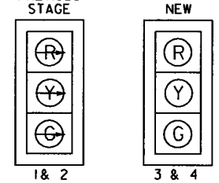
PEAK HR TRAFFIC COUNTS

2017 DETOUR TRAFFIC VOLUMES (AM/PM)



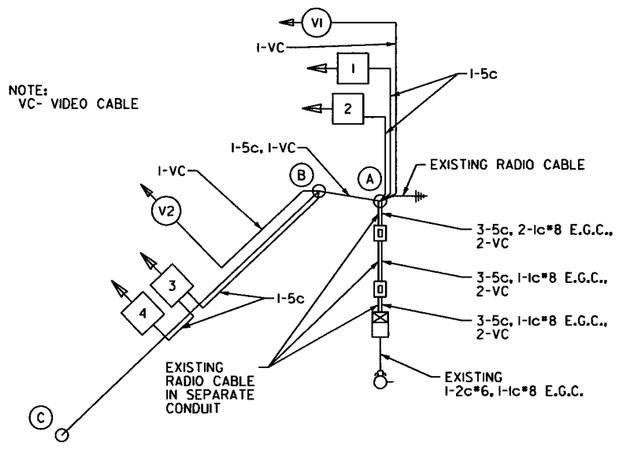
RELOCATE FROM PREVIOUS STAGE

NEW



NOTE: ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

WIRING DIAGRAM



NOTE:
VC- VIDEO CABLE

NOTES:

1. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 3 SECTION HEAD TO THE BASE OF POLE.
2. A SEPARATE 7c/#14 A.W.G. SHALL BE PROVIDED FROM EACH 4 SECTION HEAD TO THE BASE OF POLE.
3. A SEPARATE 5c/#14 A.W.G. SHALL BE PROVIDED TO EACH POLE WITH PEDESTRIAN PUSH BUTTON.
4. ALL DETECTOR CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
5. ADDITIONAL I-Ic*8 E.G.C. IN SEPARATE CONDUIT REQUIRED FROM POLE AND CONTROLLER TO NEAREST PULL BOX. REFER TO STANDARD DRAWING SD-6 HEAVY DUTY PULL BOX.
6. WIRING DIAGRAM SHOWS STAGE 4B WIRING SCHEME. WIRING FROM PREVIOUS STAGES MAY BE USED WHERE APPLICABLE.

DETECTOR CHART

HWY. 63B(NETTLETON AVE.)/HWY 18 DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENT			VIDEO DET. TUBE LENGTH	COMMENTS
							LOCAL		MASTER		
DET. ID #	DIRECTION LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS	SYSTEM DET. #	SYSTEM DET. #S		
VZ 11	EB FAR	COMB.			1	9	1	1		23"	VD 1
VZ 12	EB NEAR	LOCAL			2	1	1			23"	VD 1
VZ 21	SB FAR	LOCAL			3	10	2			23"	VD 2
VZ 22	SB NEAR	COMB.			4	2	2	2		23"	VD 2

CONTROLLER INPUT ABBREVIATIONS
V - VEHICLE INPUT
D - SYSTEM OR AUXILIARY INPUT
P - PEDESTRIAN INPUT

SPARE AMP CHN. #= 5-16

INTERVAL CHART

SIGNAL NO.	INTERSECTION INTERVALS				FLASH
	1	CLR.	2	CLR.	SEQ.
1 & 2	~~G~~►	**	~~R~~►	~~R~~►	~~R~~►
3 & 4	R	R	G	*	R

*DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE.
**DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE.
***DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE.

STAGE 4B & 5

LOCATION: HWY. 18 & HWY. 63B (NETTLETON AVE.)
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: 1" = 30' DRAWN BY: CRS

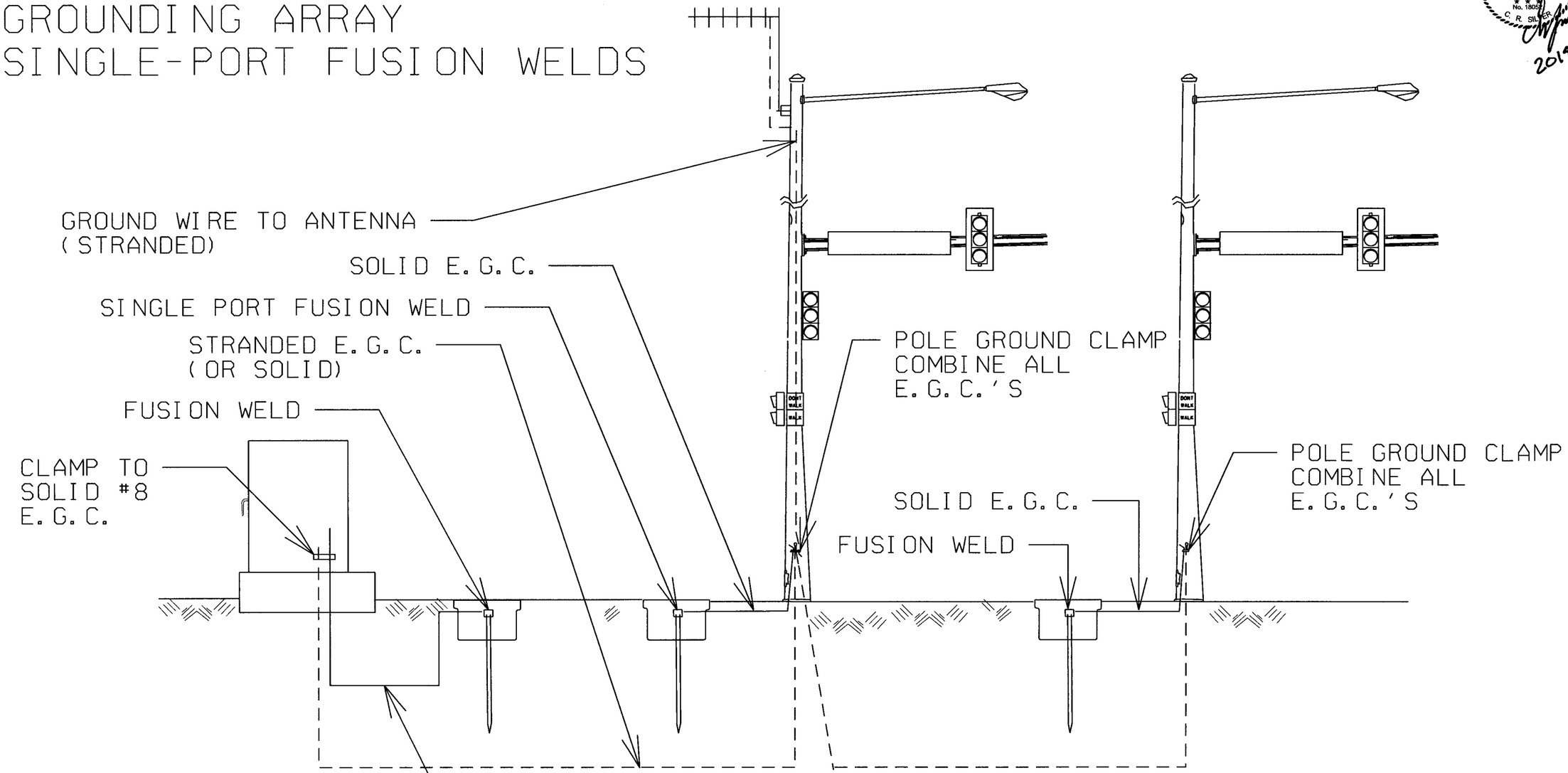
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	149	346

(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-05-29

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



LOCATION: NETTLETON AVE. & CAIN ST.
CITY: JONESBORO
COUNTY: CRAIGHEAD
DISTRICT: 10 SCALE: NA DRAWN BY:

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHANNON RIAR READ
2018-09-12

SIGNING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	NHPP-9227(80) (STATE)	NHPP-9227(80) (LOCAL)	9930	TOTAL	UNIT
725	GUIDE SIGN - ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	26			26	SQ. FT.
726	STANDARD SIGN	435	153	40	628	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE U-1)	21	3	1	25	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	724			724	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	24	8	2	34	EACH

ROADSIDE MOUNTED SIGNING QUANTITIES

SIGN NO./ LOCATION	I-BEAM STRUCTURE TYPE			GUIDE SIGN DEMOUNTABLE LEGEND			I-BEAM BREAKAWAY SIGN SUPPORT											
							STEEL SECT. A-572		SIGN POST LENGTH			STUB POST			FOOTINGS			SIGN POST AND STUB
	GI	G2	G3	LENGTH LIN. FT.	HEIGHT LIN. FT.	SQ. FT.	BEAM	LBS	H-1	H-2	H-3	H-1	H-2	H-3	DIA.	DEPTH	EMBED.	POUND
GM-18-16-STA86+63		1		6.50	1.50	9.75	W6	15.00	9.19	9.22		2.67	2.67		1.50	3.50	2.33	356.15
GM-18-16-STA92+90		1		6.50	2.50	16.25	W6	15.00	9.58	9.60		2.67	2.67		1.50	3.50	2.33	367.70
TOTALS:		2				26.00												723.85

SIGN NO./ LOCATION	STANDARD SIGNS FLAT SHEET OMNI-DIRECTIONAL SIGN SUPPORTS TYPE												STANDARD SIGN
	G-1	G-2	G2-1	G2-2	G2-3	G2-4	G2-5	G2-6	G2-7	G2-8	G2-9	G2-10	
	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	SQ. FT.
SS-CAIN-16-STA20+76		1											18.00
SS-RAMP-16-STA91+40		1											18.00
SS-RAMP-16-STA95+63		1											22.50
SS-IRBY-16-STA19+61		1											16.00
SS-ARCH-62-STA9+35		1											18.00
SS-WATT-16-STA17+01		1											18.00
SS-63B-16-STA69+96		1											9.00
SS-63B-16-STA70+23		1											19.00
SS-63B-16-STA74+33		1											17.00
SS-63B-16-STA74+66		1											9.00
SS-63B-16-STA76+26		1											9.00
SS-63B-16-STA76+86		1											18.00
SS-WATT-16-STA6+77		1											18.00
SS-63B-16-STA83+91		1											9.00
SS-63B-16-STA83+91		1											19.00
SS-FRISCO-16-STA5+31		1											27.50
SS-63B-16-STA-63+02		1											11.25
SS-63B-16-STA77+61		1											11.25
SS-63B-16-STA70+77		1											11.25
SS-18-16-STA88+63		1											9.19
SS-18-16-STA110+44		1											9.19
SS-18-16-STA113+28		1											9.19
SS-WATT-16-STA16+37		1											16.38
SS-63B-16-STA78+58		1											8.19
SS-63B-16-STA83+51		1											8.19
SS-63B-16-STA79+80		1											8.19
SS-CAIN-16-STA22+60		1											16.38
SS-63B-16-STA55+89		1											20.38
SS-63B-16-STA53+39		1											20.38
SS-RAMP-16-STA98+90		1											12.00
SS-RAMP-16-STA99+12		1											21.00
SS-RAMP-16-STA94+90		1											18.00
SS-WATT-16-STA15+20		1											9.00
SS-63B-16-STA83+74		1											11.25
TOTALS:		34											495.66

SIGN NO./ LOCATION	STANDARD SIGNS FLAT SHEET CHANNEL POST SIGN SUPPORTS TYPE												STANDARD SIGN
	U-1	U-2	U2-1	U2-2	U2-3	U2-4	U2-5	U2-6	U2-7	U2-8	U2-9	U2-10	
	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	SQ. FT.
SS-18-16-STA108+50	1												5.00
SS-63B-16-STA63+37	1												5.00
SS-63B-16-STA67+12	1												5.00
SS-WATT-16-STA6+85	1												5.00
SS-WATT-16-STA15+03	1												5.00
SS-18-16-STA111+41	1												7.07
SS-63B-16-STA80+24	1												7.07
GM-18-16-STA86+63	1												7.19
SS-63B-16-STA77+06	1												6.19
SS-63-16B-STA61+37	1												6.19
SS-18-16-STA90+80	1												6.19
SS-18-16-STA110+17	1												6.19
SS-63B-16-STA78+95	1												7.19
SS-63B-16-STA74+06	1												7.19
SS-63B-16-STA65+77	1												7.19
SS-RAMP-16-STA97+12	1												7.19
SS-RAMP-16-STA93+79	1												3.00
SS-RAMP-16-STA95+46	1												3.00
SS-RAMP-16-STA96+30	1												3.00
SS-RAMP-16-STA97+42	1												3.00
SS-RAMP-16-STA97+79	1												3.00
SS-RAMP-16-STA98+38	1												3.00
SS-63B-16-STA64+88	1												4.00
SS-63B-16-STA66+00	1												4.00
SS-ARCH-16-STA9+69	1												6.25
TOTALS:	25												132.10

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.

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).

10:57:00 AM 9/12/2018 mbinkley
S:\14408\01\DGN\Plans\07_Signing\r100824_SGN_01_qQuantity.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.		100824	151	346

2 SIGN LAYOUT

R1-1 (36" X 36")

SS-CAIN-16-STA20+76
SS-RAMP-16-STA91+40
SS-RAMP-16-STA95+63
SS-IRBY-16-STA19+61
SS-ARCH-16-STA9+35
SS-WATT-16-STA17+01
SS-63B-16-STA69+96
SS-63B-16-STA70+23
SS-63B-16-STA74+33
SS-63B-16-STA74+66
SS-63B-16-STA76+26
SS-63B-16-STA76+86
SS-WATT-16-STA6+77
SS-63B-16-STA83+91
SS-63B-16-STA83+91
SS-FRISCO-16-STA5+31

R2-1 (24" X 30")

SS-18-16-STA108+50
SS-63B-16-STA63+37

R2-1 (24" X 30")

SS-63B-16-STA67+12

R2-1 (24" X 30")

SS-WATT-16-STA6+85
SS-WATT-16-STA15+03

R3-1 (24" X 24")

SS-63B-16-STA64+88

R5-2 (30" X 30")

SS-ARCH-16-STA9+69

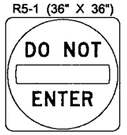
R6-2 (18" X 24")

SS-RAMP-16-STA93+79
SS-RAMP-16-STA95+46
SS-RAMP-16-STA96+30
SS-RAMP-16-STA97+42
SS-RAMP-16-STA97+79
SS-RAMP-16-STA98+38

W10-1 (36" DIA.)

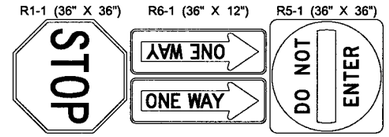
SS-18-16-STA111+41
SS-63B-16-STA80+24

R5-1 (36" X 36")



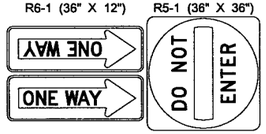
SS-RAMP-16-STA94+90
SS-FRISCO-16-STA5+31

R1-1 (36" X 36") R6-1 (36" X 12") R5-1 (36" X 36")



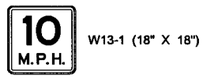
SS-RAMP-16-STA99+12

R6-1 (36" X 12") R5-1 (36" X 36")



SS-RAMP-16-STA98+90

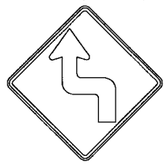
W1-3R (36" X 36")

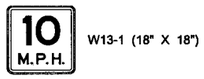


W13-1 (18" X 18")

SS-63B-16-STA63+02
SS-63B-16-STA77+61

W1-3L (36" X 36")





W13-1 (18" X 18")

SS-63B-16-STA70+77

R3-2 (24" X 24")

SS-63B-16-STA66+00
SS-RAMP-16-STA95+63

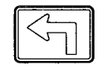
M1-5 (24" X 24")

M6-4 (21" X 15")

SS-18-16-STA90+80
SS-18-16-STA110+17

M3-2 (24" X 12")

M1-5 (24" X 24")

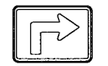


M5-1 (21" X 15")

SS-CAIN-16-STA22+60

M3-4 (24" X 12")

M1-5 (24" X 24")



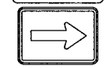
M5-1a (21" X 15")

SS-CAIN-16-STA22+60

M4-5 (24" X 12")

M3-4 (24" X 12")

M1-5 (24" X 24")



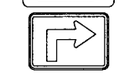
M6-1 (21" X 15")

SS-63B-16-STA55+89

M4-5 (24" X 12

M3-4 (24" X 12")

M1-5 (24" X 24")



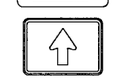
M5-1a (21" X 15")

SS-63B-16-STA53+39

M4-5 (24" X 12)

M3-2 (24" X 12")

M1-5 (24" X 24")



M6-3 (21" X 15")

SS-63B-16-STA53+39
SS-63B-16-STA55+89

M4-5 (24" X 12")

M1-5 (24" X 24")

M5-1 (21" X 15")

SS-63B-16-STA77+06
SS-63B-16-STA61+37

M4-5 (24" X 12")

M1-5 (24" X 24")

M6-1a (21" X 15")

SS-63B-16-STA78+58

M4-5 (24" X 12)

M1-5 (24" X 24")

M5-1a (21" X 15")

SS-63B-62-STA83+51

M3-4 (24" X 12")

M1-5 (24" X 24")

M5-1 (21" X 15")

SS-WATT-16-STA16+37

M3-2 (24" X 12")

M1-5 (24" X 24")

M5-1a (21" X 15")

SS-WATT-16-STA16+37

M4-5 (24" X 12")

M1-4 (24" X 30")

M6-1a (21" X 15")

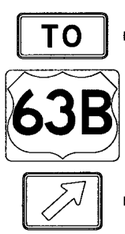
SS-18-16-STA110+44

M4-5 (24" X 12")

M1-4 (24" X 30")

M5-1 (21" X 15")

SS-18-16-STA113+28

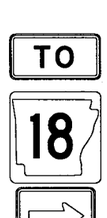


M4-5 (24" X 12")

M1-4 (24" X 30")

M6-2 (21" X 15")

SS-18-16-STA88+63



M4-5 (24" X 12")

M1-5 (24" X 24")

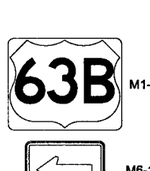
M6-1 (21" X 15")

SS-63B-16-STA79+80

M2-1 (21" X 15")

M1-4 (24" X 30")

SS-18-16-STA86+63



M1-4 (24" X 30")

M6-1a (21" X 15")

SS-63B-16-STA74+06

M1-4 (24" X 30")

M6-1 (21" X 15")

SS-63B-16-STA65+77

M1-4 (24" X 30")

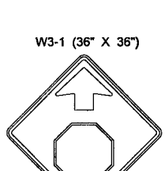
M6-4 (21" X 15")

SS-63B-16-STA78+95

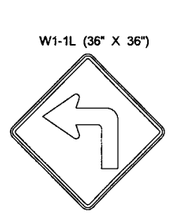
M1-4 (24" X 30")

M5-1a (21" X 15")

SS-RAMP-16-STA97+12



SS-RAMP-16-STA94+90
SS-WATT-16-STA15+20



W13-1 (18" X 18")

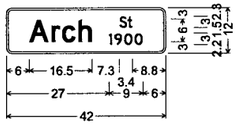
SS-63B-16-STA83+74

SIGN LAYOUT

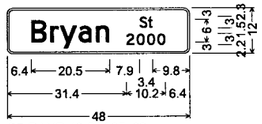
5/29/2018 4:08:33 PM mblankley

\\bridgefarmer.internal\bashcreas\Projects\14408\01\DGN\Plans\07_Signing\r100824_SGN_Layout_01.dgn

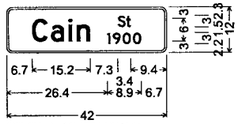
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHROKH ARAD
2018-05-24



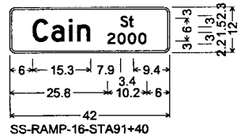
SS-IRBY-16-STA19+61
SS-ARCH-16-STA9+35
1.5" Radius, 0.5" Border, White on Green;
[Arch] D 2K; [St] D 2K;
[1900] D 2K;



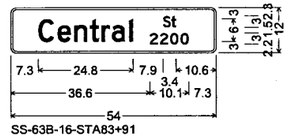
SS-RAMP-16-STA95+63
1.5" Radius, 0.5" Border, White on Green;
[Bryan] D 2K; [St] D 2K;
[2000] D 2K;



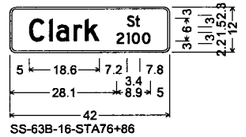
SS-CAIN-16-STA20+60
1.5" Radius, 0.5" Border, White on Green;
[Cain] D 2K; [St] D 2K;
[1900] D 2K;



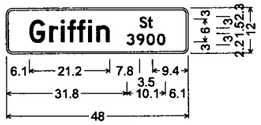
SS-RAMP-16-STA91+40
1.5" Radius, 0.5" Border, White on Green;
[Cain] D 2K; [St] D 2K;
[2000] D 2K;



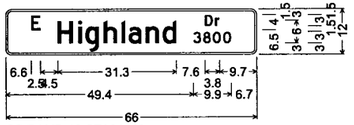
SS-63B-16-STA83+91
1.5" Radius, 0.5" Border, White on Green;
[Central] D 2K; [St] D 2K;
[2200] D 2K;



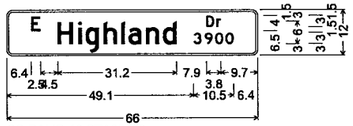
SS-63B-16-STA76+86
1.5" Radius, 0.5" Border, White on Green;
[Clark] D 2K; [St] D 2K;
[2100] D 2K;



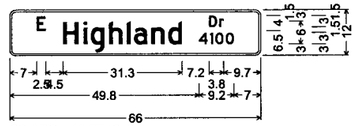
SS-63B-16-STA74+33
1.5" Radius, 0.5" Border, White on Green;
[Griffin] D 2K; [St] D 2K;
[3900] D 2K;



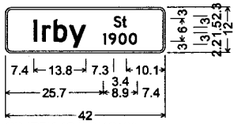
SS-RAMP-16-STA91+40
SS-CAIN-16-STA20+60
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Highland] D 2K; [Dr] D 2K;
[3800] D 2K;



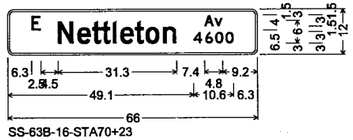
SS-RAMP-16-STA95+63
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Highland] D 2K; [Dr] D 2K;
[3900] D 2K;



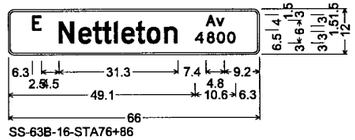
SS-ARCH-16-STA9+35
SS-WATT-16-STA17+01
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Highland] D 2K; [Dr] D 2K;
[4100] D 2K;



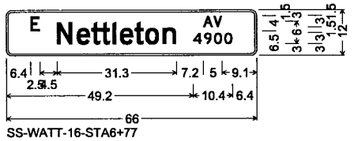
SS-IRBY-16-STA19+61
1.5" Radius, 0.5" Border, White on Green;
[Irby] D 2K; [St] D 2K;
[1900] D 2K;



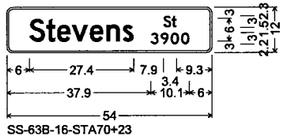
SS-63B-16-STA70+23
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Nettleton] D 2K; [Av] D 2K;
[4600] D 2K;



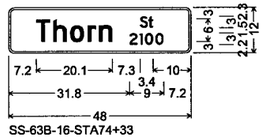
SS-63B-16-STA76+86
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Nettleton] D 2K; [Av] D 2K;
[4800] D 2K;



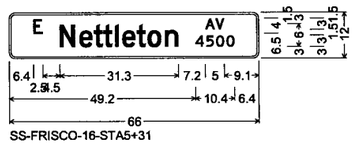
SS-WATT-16-STA6+77
SS-63B-16-STA83+91
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Nettleton] D 2K; [AV] D 2K;
[4900] D 2K;



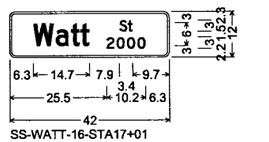
SS-63B-16-STA70+23
1.5" Radius, 0.5" Border, White on Green;
[Stevens] D 2K; [St] D 2K;
[3900] D 2K;



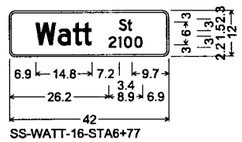
SS-63B-16-STA74+33
1.5" Radius, 0.5" Border, White on Green;
[Thorn] D 2K; [St] D 2K;
[2100] D 2K;



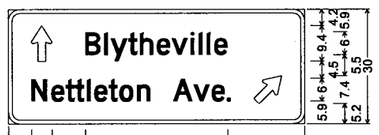
SS-FRISCO-16-STA5+31
1.5" Radius, 0.5" Border, White on Green;
[E] D 2K; [Nettleton] D 2K; [AV] D 2K;
[4500] D 2K;



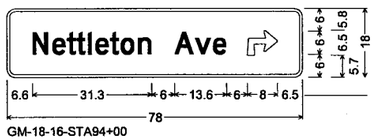
SS-WATT-16-STA17+01
1.5" Radius, 0.5" Border, White on Green;
[Watt] D 2K; [St] D 2K;
[2000] D 2K;



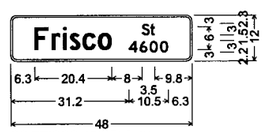
SS-WATT-16-STA6+77
1.5" Radius, 0.5" Border, White on Green;
[Watt] D 2K; [St] D 2K;
[2100] D 2K;



GM-18-16-STA86+63
3.0" Radius, 1.0" Border, White on Green;
Standard Arrow Custom 9.4" X 5.4" 90°;
[Blytheville] D 2K; [Nettleton Ave.] D 2K;
Standard Arrow Custom 9.4" X 5.4" 45°;



GM-18-16-STA94+00
2.3" Radius, 0.8" Border, White on Green;
[Nettleton Ave] D 2K;
90 Deg Advanced Turn Arrow 8.0" X 6.5";



SS-FRISCO-16-STA5+31
1.5" Radius, 0.5" Border, White on Green;
[Frisco] D 2K; [St] D 2K;
[4600] D 2K;

SIGN LAYOUT

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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.		100824	153	346
				②	SIGNING PLANS			

N

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

HWY. 18 (HIGHLAND DR.)

INSTALL
SS-CAIN-16-STA22+60

INSTALL
SS-CAIN-16-STA20+76

STA. 91+00.08 C.L. HWY. 18=
STA 20+00.00 C.L. CAIN ST.

STA. 91+20.11 C.L. HWY. 18=
STA 10+00.00 C.L. CAIN ST.

INSTALL
SS-18-16-STA92+90

STA. 95+45.48 C.L. HWY. 18 CONNECTOR =
STA. 5+00.00 C.L. BRYAN ST.

INSTALL
SS-18-16-STA90+80

INSTALL
SS-18-16-STA88+63

INSTALL
GM-18-16-STA86+63

CAIN ST.

INSTALL
SS-RAMP-16-STA91+40

INSTALL
SS-RAMP-16-STA93+79

INSTALL
SS-RAMP-16-STA94+90

INSTALL
SS-RAMP-16-STA95+46

INSTALL
SS-RAMP-16-STA95+63

C.L. HWY. 18 CONNECTOR

INSTALL
SS-63B-16-STA61+37

NETTLETON AVE.

BNSF RAILWAY

INSTALL
SS-63B-16-STA63+37

INSTALL
SS-63B-16-STA63+02

INSTALL
SS-63B-16-STA64+88

INSTALL
SS-RAMP-16-STA96+30
SS-RAMP-16-STA97+42
SS-RAMP-16-STA97+79
SS-RAMP-16-STA98+38

INSTALL
SS-RAMP-16-STA97+12

INSTALL
SS-RAMP-16-STA98+90

INSTALL
SS-RAMP-16-STA99+12

INSTALL
SS-63B-16-STA67+12

IRBY ST.

C.L. IRBY ST.

INSTALL
SS-63B-16-STA65+77

INSTALL
SS-63B-16-STA66+00

STA. 65+87.15 NETTLETON AVE. =
STA. 99+73.77 HWY. 18 CONNECTOR

INSTALL
SS-FRISCO-16-STA5+31

FRISCO ST.

STA. 66+54.44 C.L. NETTLETON AVE. =
STA. 5+00.00 C.L. FRISCO ST.

STA. 70+03.23 C.L. HWY. 63B (NETTLETON AVE.) =
STA. 5+00.00 C.L. STEVENS ST.

INSTALL
SS-63B-16-STA70+23

INSTALL
SS-63B-16-STA69+96

STA. 70+17.21 C.L. HWY 63B (NETTLETON AVE.) =
STA. 5+00.00 C.L. STEVENS ST.

INSTALL
SS-63B-16-STA70+77

INSTALL
GM-63B-16-STA71+63

STA. 71+63.00 C.L. HWY. 63B (NETTLETON AVE.) =
STA. 5+00.00 C.L. GM ST.

INSTALL
SS-63B-16-STA73+00

INSTALL
SS-63B-16-STA73+37

INSTALL
SS-63B-16-STA74+37

INSTALL
SS-63B-16-STA75+37

INSTALL
SS-63B-16-STA76+37

INSTALL
SS-63B-16-STA77+37

INSTALL
SS-63B-16-STA78+37

INSTALL
SS-63B-16-STA79+37

INSTALL
SS-63B-16-STA80+37

INSTALL
SS-63B-16-STA81+37

INSTALL
SS-63B-16-STA82+37

INSTALL
SS-63B-16-STA83+37

INSTALL
SS-63B-16-STA84+37

INSTALL
SS-63B-16-STA85+37

INSTALL
SS-63B-16-STA86+37

INSTALL
SS-63B-16-STA87+37

INSTALL
SS-63B-16-STA88+37

INSTALL
SS-63B-16-STA89+37

INSTALL
SS-63B-16-STA90+37

INSTALL
SS-63B-16-STA91+37

INSTALL
SS-63B-16-STA92+37

INSTALL

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.		100824	154	346
				②	SIGNING PLANS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12460
SHAHNAWAZ AHMAD
2018-05-24

N

HENRY ST.

IRBY ST.

ARCH ST.

CONVEYOR ST.

HWY. 18 (HIGHLAND DR.)

INSTALL SS-IRBY-16-STA19+61

STOP

Arch N 1100

Irby W 400

STA. 8+86.65 C.L. ARCH ST. =
STA. 20+00.00 C.L. IRBY ST.

INSTALL SS-ARCH-16-STA9+35

STOP

E Highland Dr 4100

Arch N 1100

INSTALL SS-ARCH-16-STA9+69

INSTALL SS-18-16-STA110+17

18

INSTALL SS-18-16-STA110+44

TO 63B

INSTALL SS-18-16-STA113+28

TO 63B

STA. 110+11.28 C.L. HWY. 18 (HIGHLAND DR.) =
STA. 17+62.43 C.L. WATT ST.

STA. 105+00.00 C.L. HWY. 18 (HIGHLAND DR.) =
STA. 10+00.00 C.L. ARCH ST.

INSTALL SS-18-16-STA108+50

SPEED LIMIT 40

INSTALL SS-WATT-16-STA17+01

E Highland Dr 4100

Watt N 2000

STOP

INSTALL SS-WATT-16-STA16+37

WEST 18

EAST 18

STA. 112+10.00
END JOB 100824
LOG MILE 4.32

INSTALL SS-18-16-STA111+41

INSTALL SS-WATT-16-STA15+03

SPEED LIMIT 30

INSTALL SS-WATT-16-STA15+20

CLARK ST.

FRISCO ST.

BNSF RAILWAY

SIGNING PLANS
HWY. 18

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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.		100824	155	346
				②	SIGNING PLANS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-24

N

HWY. 63B (NETTLETON AVE.)

CLARK ST.

FRISCO ST.

BNSF RAILWAY

GRIFFIN ST.

THORNBURGH ST.

CLARK ST.

HWY. 63B (NETTLETON AVE.)

STA. 16+98.11 C.L. FRISCO ST. =
STA. 9+30.88 C.L. WATT ST.

STA. 76+57.90 C.L. HWY. 63B (NETTLETON AVE.) =
STA. 5+00.00 C.L. CLARK ST.

STA. 79+16.06 C.L. HWY. 63B (NETTLETON AVE.) =
STA. 6+20.42 C.L. WATT ST.

STA. 83+25.00
END CONSTRUCTION

INSTALL SS-63B-I6-STA74+06

INSTALL SS-63B-I6-STA74+33

INSTALL SS-63B-I6-STA74+66

INSTALL SS-63B-I6-STA76+26

INSTALL SS-63B-I6-STA76+86

INSTALL SS-63B-I6-STA77+61

INSTALL SS-63B-I6-STA77+06

INSTALL SS-WATT-I6-STA6+77

INSTALL SS-63B-I6-STA78+58

INSTALL SS-63B-I6-STA78+95

INSTALL SS-63B-I6-STA80+24

INSTALL SS-WATT-I6-STA6+85

INSTALL SS-63B-I6-STA79+80

INSTALL SS-63B-I6-STA83+51

INSTALL SS-63B-I6-STA83+74

INSTALL SS-63B-I6-STA83+91

INSTALL SS-63B-I6-STA83+91

SIGNING PLANS
HWY. 63B/NETTLETON AVE.

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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.		100824	156	346
				SIGNING PLANS				

HWY. 18 (HIGHLAND DR.)

STA. 89+70.00
BEGIN JOB 100824
LOG MILE 3.89

INSTALL
SS-18-16-STA86+63

INSTALL
SS-18-16-STA88+63

INSTALL
SS-CAIN-16-STA20+76

INSTALL
SS-CAIN-16-STA22+60

INSTALL
SS-63B-16-STA53+39

INSTALL
SS-63B-16-STA55+89

STA. 91+00.08 C.L. HWY. 18=
STA 20+00.00 C.L. CAIN ST.

INSTALL
SS-18-16-STA90+80

CAIN ST.

STA. 91+20.11 C.L. HWY. 18=
STA 10+00.00 C.L. CAIN ST.

INSTALL
SS-RAMP-16-STA91+40

INSTALL
SS-RAMP-16-STA93+79

INSTALL
SS-18-16-STA92+90

INSTALL
SS-RAMP-16-STA94+90

INSTALL
SS-RAMP-16-STA95+46

INSTALL
SS-RAMP-16-STA95+63

STA. 95+45.48 C.L. HWY. 18 CONNECTOR =
STA. 5+00.00 C.L. BRYAN ST.

INSTALL
SS-63B-16-STA61+37

NETTLETON AVE.

BNSF RAIL WAY

STA. 56+89.81 C.L. NETTLETON AVE. =
STA. 27+23.85 C.L. CAIN ST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ADAMI
2018-05-29

SIGNING PLANS
CAIN ST.

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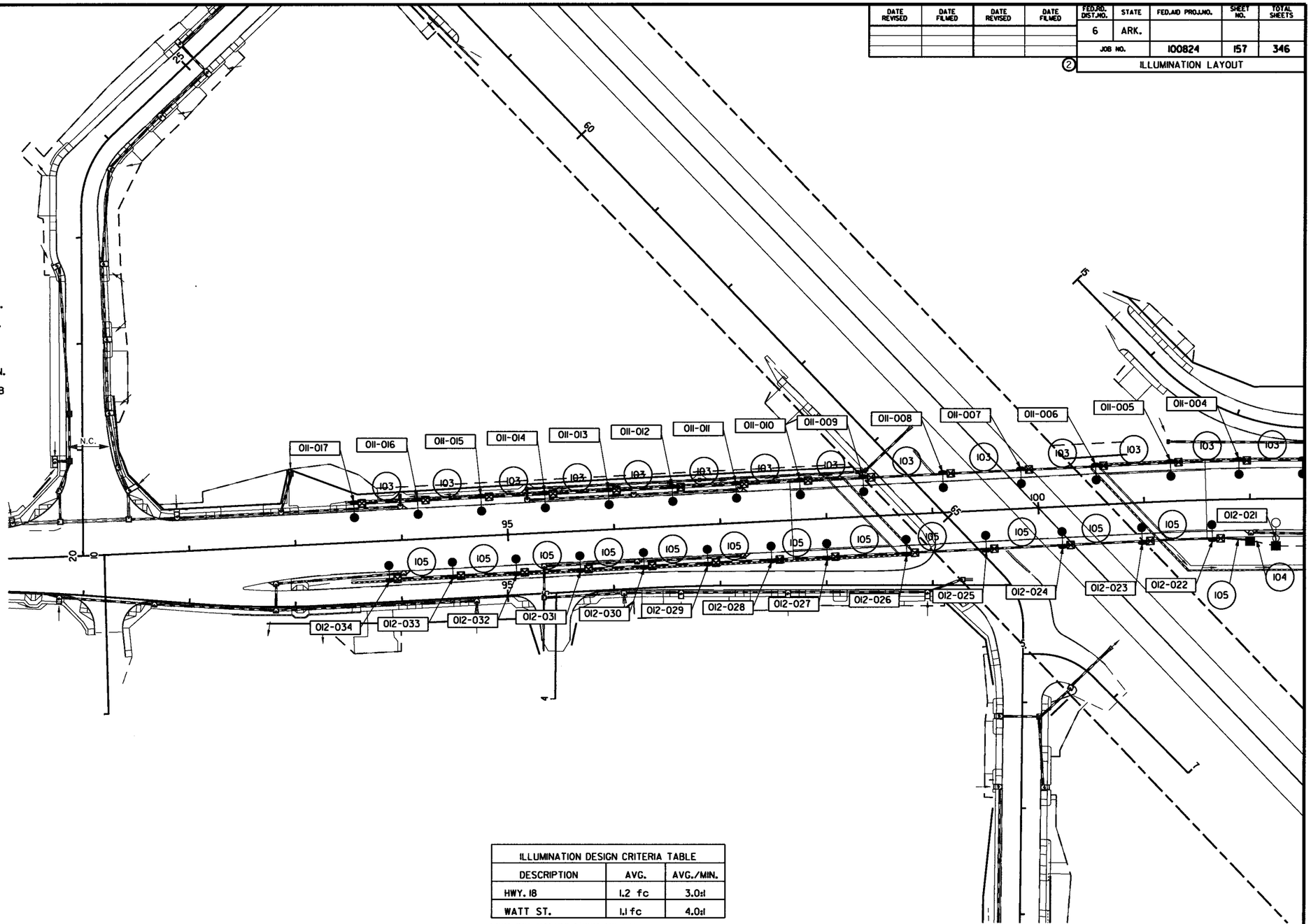
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	157	346

(2) ILLUMINATION LAYOUT

N

GENERAL NOTES:

1. CONTRACTOR SHALL LOCATE ALL UTILITIES AND NOTIFY UTILITY OWNERS PRIOR TO BEGINNING WORK ON ANY UNDERGROUND ITEMS ON THIS PROJECT.
2. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
3. REFER TO ELECTRICAL SERVICE DATA SHEET FOR DETAILS OF SERVICE POINTS.
4. CONTRACTOR SHALL CONTACT UTILITY TO VERIFY SERVICE POINT LOCATION.
5. CONTRACTOR SHALL PERFORM 48-HOUR BURN TEST COORDINATED WITH JOB ENGINEER.
6. E.G.C. SHALL BE EXOTHERMICALLY BONDED TO GROUND ROD.
7. CONDUIT HEIGHT IN PULL BOX SHALL BE SET UP IN SUCH A WAY THAT PULL BOX LID CLOSES FLUSH, OR NO LONGER THAN 6 INCHES.
8. CONTRACTOR SHALL FOLLOW LATEST NEC RULES ON WIRING PROTECTION, METHODS AND MATERIALS. NO RIVETS ARE ALLOWED. NO SPLICE ALLOWED.
9. CONTRACTOR SHALL INSTALL CONDUIT BUSHINGS.
10. SLACK CABLE IN PULL BOX SHALL BE 3 FEET.
11. ALL ELECTRICAL ELEMENTS SHALL BE UL LISTED.
12. PULL BOX SHALL BE LABELED WITH "ARDOT ELECTRIC ALUMINUM"
13. CONTRACTOR SHALL CONDUCT NON DESTRUCTIVE MEG TEST AFTER INSTALLATION, IN THE PRESENCE OF FIELD INSPECTOR. THE VOLTAGE FOR THE TEST SHALL BE LIMITED TO THE VOLTAGE RATING OF WIRE, WHICH IS 600 VOLTS. THE TEST SHALL BE DOCUMENTED AND SUBMITTED TO THE ENGINEER'S OFFICE.
14. SUBMITTAL SHALL INCLUDE INTERNAL WIRING OF SERVICE PEDESTAL.
15. CONTRACTOR SHALL MODIFY PHOTOCELL OR SHIELD ON SERVICE PEDESTAL AS DIRECTED BY THE ENGINEER.
16. CONCRETE PULL BOX, VANDAL RESISTANT SEE SP.
17. CONTRACTOR SHALL CONDUCT MEG AND LEAKAGE TEST.



ILLUMINATION DESIGN CRITERIA TABLE		
DESCRIPTION	AVG.	AVG./MIN.
HWY. 18	1.2 fc	3.0:1
WATT ST.	1.1 fc	4.0:1

LIGHTING CALCULATION NOTES:

1. LIGHTING CALCULATIONS WERE PERFORMED USING LIGHTING ANALYST INC. AGI32 VERSION 16.6 SOFTWARE.
2. LIGHTING LEVELS ARE IN FOOTCANDLE UNITS (fc).
3. DESIGN BASIS IS THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA, IESNA LIGHTING HANDBOOK, 10TH EDITION, FHWA LIGHTING HANDBOOK (AUG 2012), AASHTO ROADWAY LIGHTING DESIGN GUIDE (OCT 2005)
4. THE FOLLOWING AASHTO ROADWAY CLASSIFCATIONS WERE USED:
   HWY. 18
   PRINCIPAL ARTERIAL, INTERMEDIATE, R3
   WATT ST
   COLLECTOR, INTERMEDIATE, R3

LEGEND

- PROP CONDUIT
- PROP CONDUIT (BORED)
- ELEC SVC POINT
- JUNCTION BOX
- PULL BOX TYPE HD
- (X) RUN NUMBER
- YYZ-XXX — YY-SERVICE NO. Z-CIRCUIT XXX-POLE NUMBER
- PROP ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 16') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)
- PROP BARRIER MOUNTED ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 13') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)

2019-05-31

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER

HWY. 18 ILLUMINATION LAYOUT SHEET 1 OF 5

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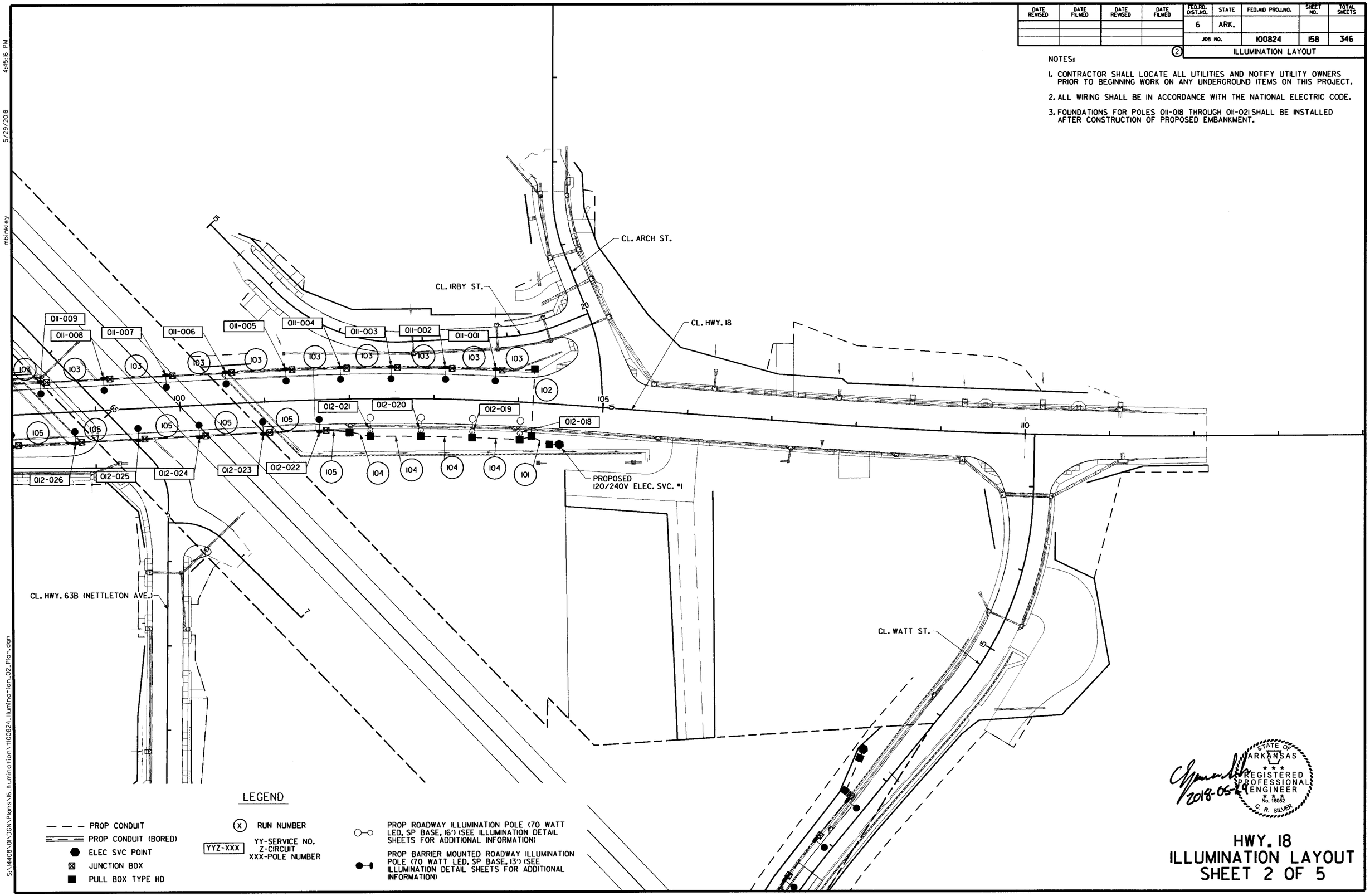
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	158	346

(2) ILLUMINATION LAYOUT

NOTES:

1. CONTRACTOR SHALL LOCATE ALL UTILITIES AND NOTIFY UTILITY OWNERS PRIOR TO BEGINNING WORK ON ANY UNDERGROUND ITEMS ON THIS PROJECT.
2. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
3. FOUNDATIONS FOR POLES 011-018 THROUGH 011-021 SHALL BE INSTALLED AFTER CONSTRUCTION OF PROPOSED EMBANKMENT.



LEGEND

- PROP CONDUIT
- PROP CONDUIT (BORED)
- ELEC SVC POINT
- JUNCTION BOX
- PULL BOX TYPE HD
- (X) RUN NUMBER
- YYZ-XXX — YY-SERVICE NO. Z-CIRCUIT XXX-POLE NUMBER
- PROP ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 16') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)
- PROP BARRIER MOUNTED ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 13') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-05-29

HWY. 18 ILLUMINATION LAYOUT SHEET 2 OF 5

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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.		100824	159	346

(2) ILLUMINATION LAYOUT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18057
C. R. SILLS
2016-05-29

SCHEDULE OF ILLUMINATION ROADWAY ASSEMBLIES
(ALL STATION NUMBERS ARE BASELINE HWY. 18)

ILLUM SHEET NO.	POLE NO.	STATION	OFFSET (FEET)	SIDE	NOTES	POLE TYPE	POLE HEIGHT	BASE TYPE	LUMINAIRE WATTAGE	LUMINAIRE TYPE	SVC CTR	CIRCUIT
2	011-001	103+72	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
2	011-002	103+13	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
2	011-003	102+49	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-004	101+90	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-005	101+26	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, APPROACH GUTTER RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-006	100+56	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-007	99+85	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-008	99+11	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-009	98+36	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-010	97+76	37.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, APPROACH GUTTER RAIL	5" SMOOTH	13'	SP	70	LED	1	1
1	011-011	97+16	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-012	96+56	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-013	95+96	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-014	95+36	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-015	94+76	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-016	94+16	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
1	011-017	93+56	37.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	1
2	012-018	104+04	37.2'	RT	ADJACENT TO SIDEWALK, 6' LIGHT POLE FOUNDATION	5" SMOOTH	16'	SP	70	LED	1	2
2	012-019	103+47	37.3'	RT	ADJACENT TO SIDEWALK, 6' LIGHT POLE FOUNDATION	5" SMOOTH	16'	SP	70	LED	1	2
2	012-020	102+85	37.3'	RT	ADJACENT TO SIDEWALK, 6' LIGHT POLE FOUNDATION	5" SMOOTH	16'	SP	70	LED	1	2
1	012-021	102+24	37.3'	RT	ADJACENT TO SIDEWALK, 6' LIGHT POLE FOUNDATION	5" SMOOTH	16'	SP	70	LED	1	2
1	012-022	101+64	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-023	100+97	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-024	100+21	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-025	99+49	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-026	98+74	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-027	97+99	37.7'	RT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-028	97+46	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, APPROACH GUTTER RAIL	5" SMOOTH	13'	SP	70	LED	1	2
1	012-029	96+86	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-030	96+26	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-031	95+66	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-032	95+06	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-033	94+46	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2
1	012-034	93+86	37.6'	RT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	1	2

HWY. 18 CONDUIT AND CONDUCTOR RUNS

RUN NO.	ELECTRICAL CONDUCTORS-IN-CONDUIT ALUMINUM LENGTH (FEET) 2C/6 A.W.G. E.G.C.	NON-METALLIC CONDUIT (FEET) 2 IN. PVC SCH 40	COMMENTS
101	42	34	TRENCH
102	84	80	TRENCH
103	1138	1066	CONDUIT IN BARRIER
104	239	215	TRENCH
105	858	810	CONDUIT IN BARRIER

HWY. 18
POLE SCHEDULE & CONDUIT RUNS
ILLUMINATION LAYOUT
SHEET 3 OF 5

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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.		100824	160	346

(2) ILLUMINATION LAYOUT

NOTES:

1. CONTRACTOR SHALL LOCATE ALL UTILITIES AND NOTIFY UTILITY OWNERS PRIOR TO BEGINNING WORK ON ANY UNDERGROUND ITEMS ON THIS PROJECT.
2. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
3. REFER TO ILLUMINATION DETAILS FOR DETAILS OF ROUTING CONDUIT RUN 201A BEHIND RETAINING WALL.

C.L. CLARK ST.

C.L. FRISCO ST.

C.L. HWY. 63B (NETTLETON AVE.)

C.L. HWY. 18

C.L. WATT ST.

021-101 021-102 021-103 021-104 021-105 021-106 021-107 021-108 021-109 021-110

202 202 202 202 202 202 202 202 202 201 201A

PROPOSED 120/240V ELEC. SVC. #2

LEGEND

- PROP CONDUIT
- PROP CONDUIT (BORED)
- ELEC SVC POINT
- JUNCTION BOX
- PULL BOX TYPE HD
- (X) RUN NUMBER
- YYZ-XXX YY-SERVICE NO. Z-CIRCUIT XXX-POLE NUMBER
- PROP ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 16') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)
- PROP BARRIER MOUNTED ROADWAY ILLUMINATION POLE (70 WATT LED, SP BASE, 13') (SEE ILLUMINATION DETAIL SHEETS FOR ADDITIONAL INFORMATION)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 18052 C. R. SILVER

2018-05-14

WATT ST. ILLUMINATION LAYOUT SHEET 4 OF 5

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mbinkley

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.		100824	161	346

(2) ILLUMINATION LAYOUT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SILVER
2018-05-29

SCHEDULE OF ILLUMINATION ROADWAY ASSEMBLIES
(ALL STATION NUMBERS ARE BASELINE WATT ST.)

ILLUM SHEET NO.	POLE NO.	STATION	OFFSET (FEET)	SIDE	NOTES	POLE TYPE	POLE HEIGHT	BASE TYPE	LUMINAIRE WATTAGE	LUMINAIRE TYPE	SVC CTR	CIRCUIT
4	021-101	7+19	22.4'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	2	1
4	021-102	7+76	21.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	2	1
4	021-103	8+36	21.6'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	2	1
4	021-104	8+96	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	2	1
4	021-105	9+56	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	2	1
4	021-106	10+16	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	2	1
4	021-107	10+76	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	2	1
4	021-108	11+34	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, BRIDGE RAIL	5" SMOOTH	13'	SP	70	LED	2	1
4	021-109	11+93	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	2	1
4	021-110	12+53	21.7'	LT	MOUNTED ON LIGHT BRACKET BLISTER, CONCRETE BARRIER WALL (SP-1)	5" SMOOTH	13'	SP	70	LED	2	1

WATT ST. CONDUIT AND CONDUCTOR RUN

Run No.	ELECTRICAL CONDUCTORS-IN-CONDUIT ALUMINUM LENGTH (FEET)	NON-METALLIC CONDUIT (FEET)	COMMENTS
	2C/6 A.W.G., E.G.C.	2 IN. PVC SCH 40	
201	68	60	TRENCH
201A	40	32	BEHIND MSE PANELS
202	601	565	CONDUIT IN BARRIER

WATT ST.
POLE SCHEDULE & CONDUIT RUNS
ILLUMINATION LAYOUT
SHEET 5 OF 5

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19604
MARY L. LYONS
5-29-2018

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.		100824	162	346

② ELECTRICAL SERVICE DATA SHEET

ELECTRICAL SERVICE NO.	STATUS	LOCATION	SERVICE VOLTAGE	MAIN BREAKER	BRANCH BRKR CKT1	BRANCH BRKR CKT2	SERVICE ENT CONDUCTOR	SERVICE ENT CONDUIT	COMMENTS
#1 SHEET 1 OF 5	INSTALL NEW 120/240 VAC PEDESTAL TYPE ELECTRICAL SERVICE #1	S R/W HWY. 18	120/240V, SINGLE PHASE	2P/100A	INSTALL NEW 2P/20A, 17-70W LED FIXTURES FOR A CONNECTED LOAD OF 5.5A AT 240 VAC	INSTALL NEW 2P/20A, 17-70W LED FIXTURES FOR A CONNECTED LOAD OF 5.5A AT 240 VAC	2/#2 A.W.G., E.G.C.	2"	TOTAL CONNECTED LOAD = 2.6 KVA
#2 SHEET 3 OF 5	INSTALL NEW 120/240 VAC PEDESTAL TYPE ELECTRICAL SERVICE #2	N R/W WATT ST.	120/240V, SINGLE PHASE	2P/100A	INSTALL NEW 2P/20A, 10-70W LED FIXTURES FOR A CONNECTED LOAD OF 3.2A AT 240 VAC		2/#2 A.W.G., E.G.C.	2"	TOTAL CONNECTED LOAD = 0.8 KVA

ELECTRICAL SERVICE DATA SHEET
SHEET 1 OF 1

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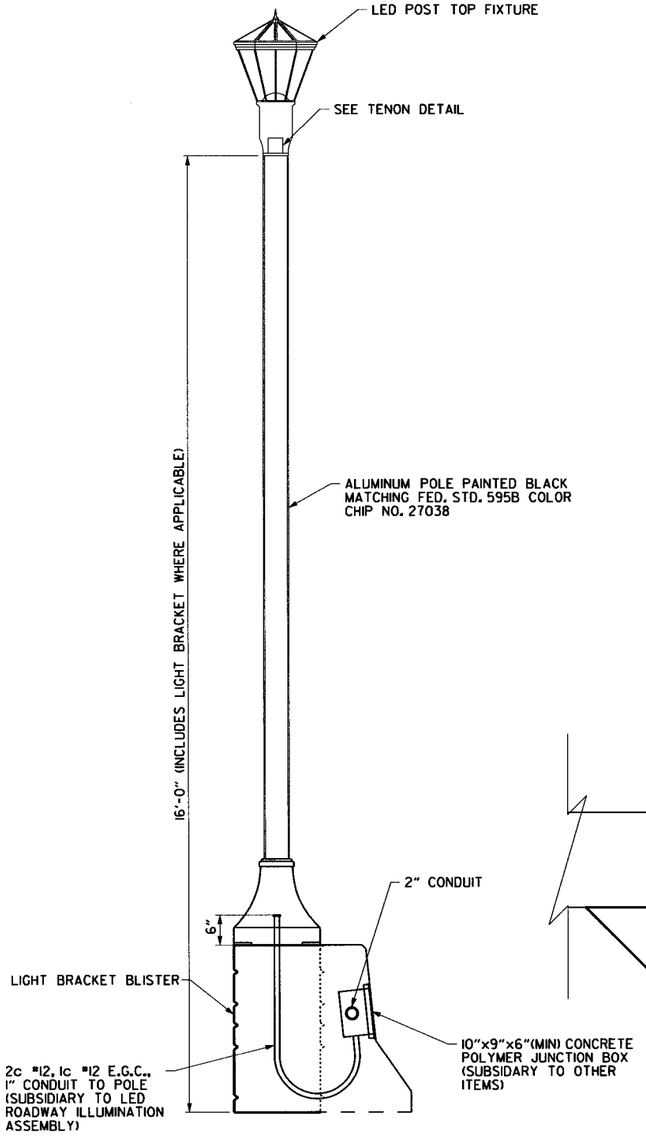
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	163	346
				ILLUMINATION DETAILS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18026
C. R. SILLER
2018-05-29

ILLUMINATION MOUNTING DETAILS

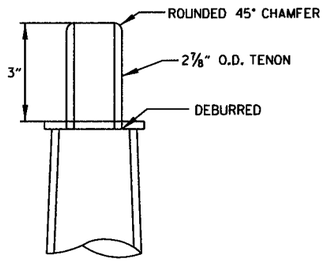
ACCEPTANCE CRITERIA SHALL CONSIST OF THE FOLLOWING:
A. SUBMIT COMPLETE SHOP DRAWING DATA FOR FIXTURE AND LAMP, INCLUDING IES FILE AND LLF CALCULATION.
B. SUBMIT COMPLETE POINT-BY-POINT PHOTOMETRIC LIGHTING ANALYSIS OF ALL GIVEN AREAS FOR BOTH INITIAL LUMEN AND LLF CALCULATIONS.
C. LLF DESIGN, LIGHTING ANALYSIS VALUES SHALL MEET OR EXCEED THE ILLUMINATION DESIGN CRITERIA TABLE REQUIREMENTS, NO EXCEPTION.

FINAL ACCEPTANCE TESTING PROCEDURE SHALL CONSIST OF THE FOLLOWING:
A. SUBMIT TEST PROCEDURE FOR REVIEW AND APPROVAL.
B. CONDUCT MINIMUM 14-DAY FINAL ACCEPTANCE TEST FOR THE COMPLETE LIGHTING SYSTEM. CORRECT MALFUNCTIONING EQUIPMENT AND RETEST, OTHERWISE REMOVE AND REPLACE WITH NEW EQUIPMENT.
C. REPLACE BURNED OUT AND NOTICEABLY DIM LAMPS AND RETEST.
D. DURING FINAL ACCEPTANCE TEST PERIOD, TAKE FIELD LIGHT LEVEL MEASUREMENTS (ILLUMINANCE) ALONG THE ENTIRE STRUCTURE, IN A 10' GRID PATTERN COVERING ALL PAVED AREAS, WITH AN ILLUMINANCE METER THAT IS LED RATED. FIELD LEVEL MEASUREMENTS AND CALCULATIONS SHALL MEET OR EXCEED INITIAL LUMEN DESIGN CALCULATIONS. COORDINATE FIELD WORK WITH OWNER AND ENGINEER

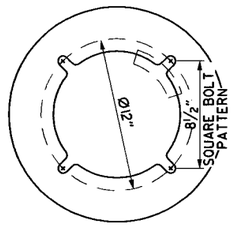


LED ROADWAY ILLUMINATION POLE
WITH LIGHT BRACKET BLISTER OR LIGHT POLE FOUNDATION

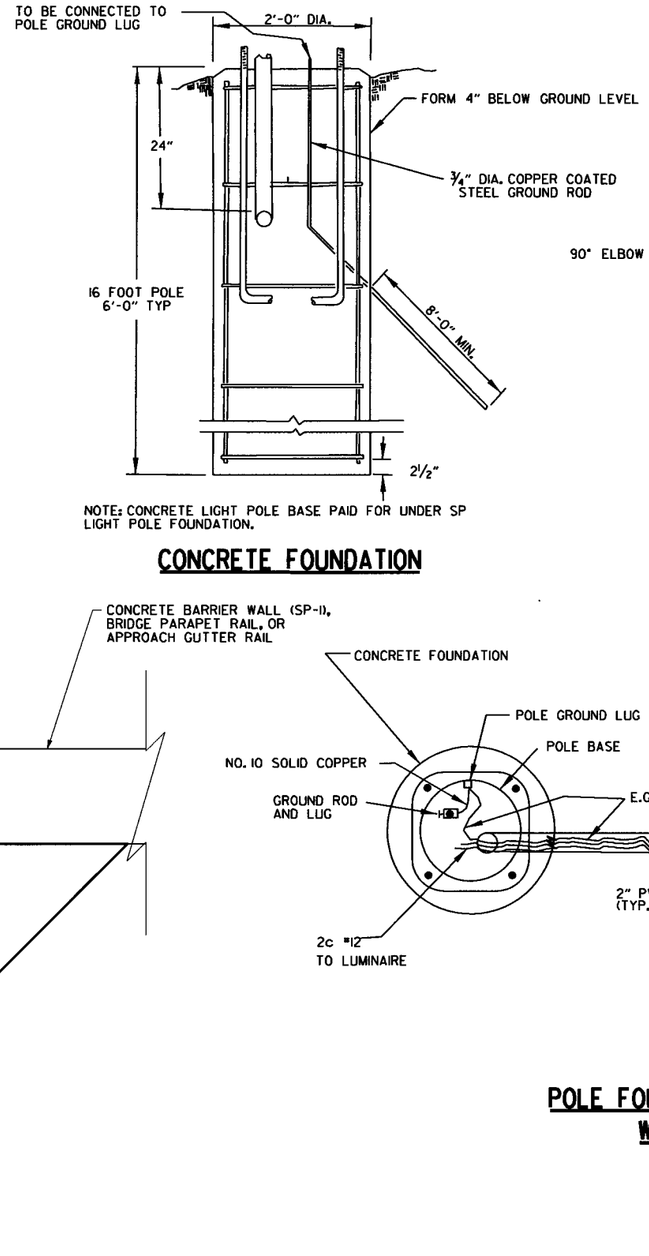
SEE RAIL DETAILS FOR ADDITIONAL INFORMATION ON LIGHT BRACKET BLISTER. CHAIN LINK FENCE AND TYPE H RAIL NOT SHOWN FOR CLARITY.



TENON DETAIL

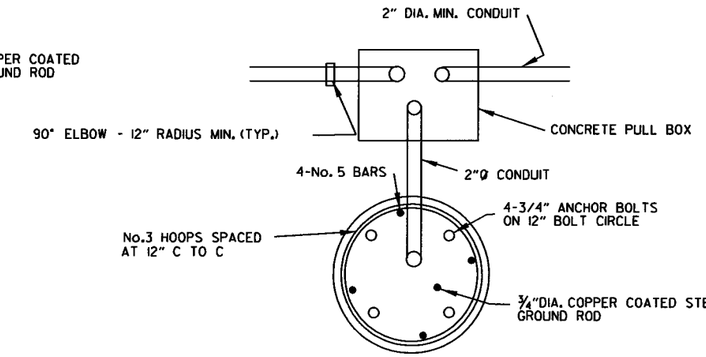


ANCHOR BOLT CIRCLE



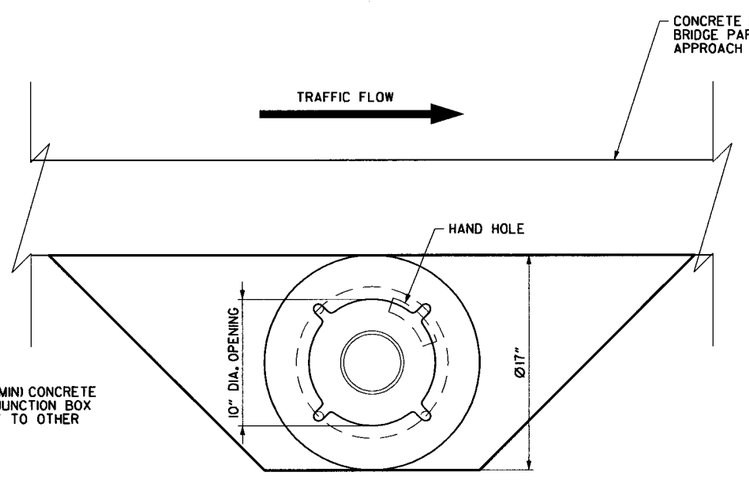
NOTE: CONCRETE LIGHT POLE BASE PAID FOR UNDER SP LIGHT POLE FOUNDATION.

CONCRETE FOUNDATION

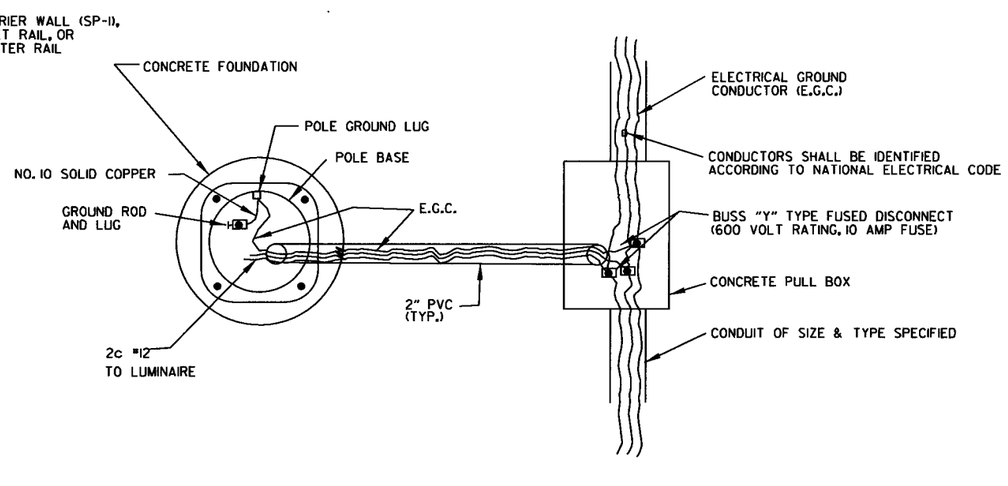


PLAN

NOTE: TOP OF FOUNDATION SHALL BE FLUSH WITH LOCAL GROUND SURFACE.



LED ROADWAY ILLUMINATION POLE ON LIGHT BRACKET - PLAN



POLE FOUNDATION/PULL BOX WIRING DETAIL

ILLUMINATION DETAILS
SHEET 1 OF 5
N.T.S.

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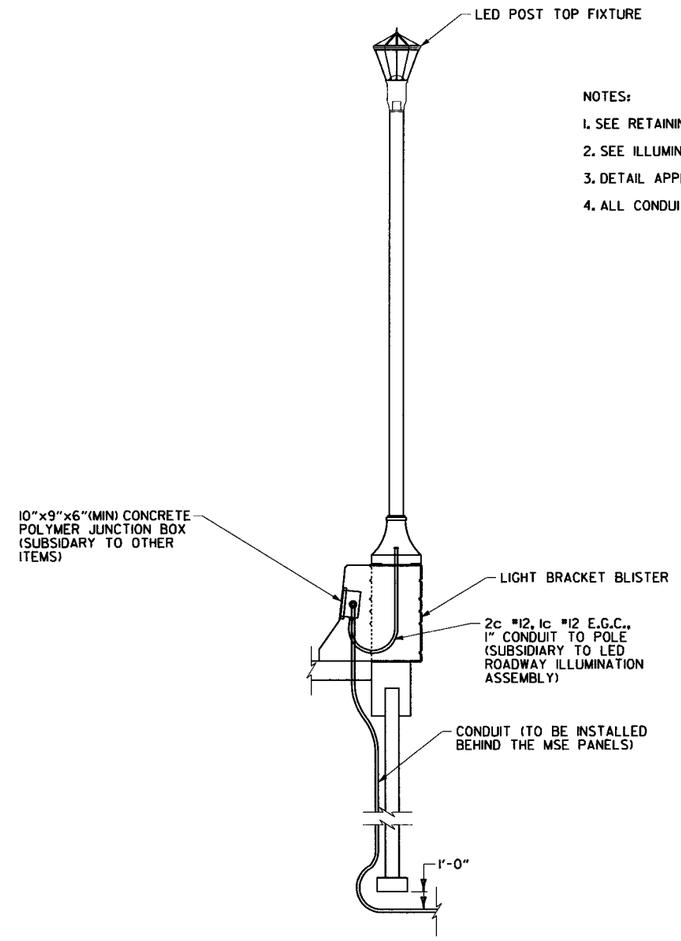
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. SLYSH
2018-05-29

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.		100824	164	346
				(2)	ILLUMINATION DETAILS			



CONDUIT PLACEMENT DETAIL

ROUTED BEHIND MSE RETAINING WALL

NOTES:

1. SEE RETAINING WALL PLANS FOR DETAILS OF RETAINING WALL.
2. SEE ILLUMINATION DETAILS SHEET 1 OF 4 FOR ADDITIONAL INFORMATION.
3. DETAIL APPLIES TO CONDUIT RUN 201A. SEE WATT ST. ILLUMINATION LAYOUT FOR ADDITIONAL INFORMATION.
4. ALL CONDUIT BENDS SHALL BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

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ILLUMINATION DETAILS
SHEET 2 OF 5
N.T.S.

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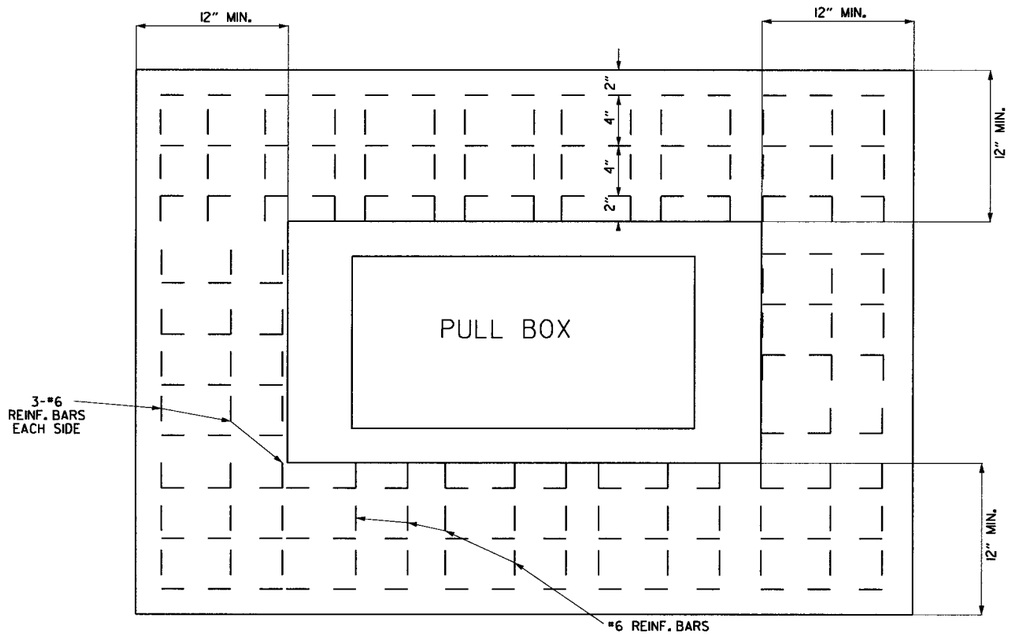
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	165	346
				②	ILLUMINATION DETAILS			



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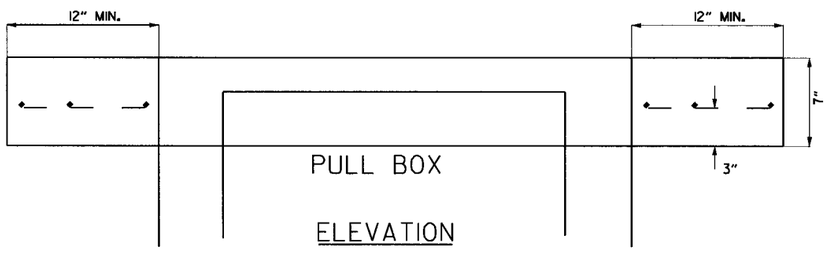
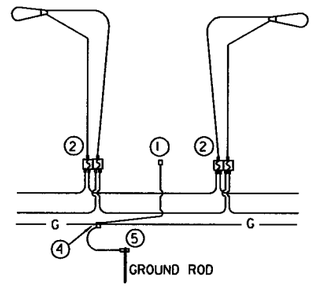


ELEVATION

DETAILS OF CONCRETE APRON
"HD" PULL BOX



FOR THREE-WIRE CIRCUIT-CENTER GROUNDED LUMINAIRES SERVED AT 480V ON 240/480 VOLT SERVICE OR LUMINAIRES SERVED AT 240V FOR FOR 120/240 VOLT SERVICE.

LUMINAIRE WIRING SCHEMATICS

KEYED NOTES:

① POLE BONDING CONNECTOR

② FUSED CONNECTOR - ALL ELECTRICAL CONNECTIONS FOR BREAKAWAY POLES SHALL BE WATERTIGHT AND SHALL BE DESIGNED AS BREAKAWAY (BUSSMANN HEBW, LITTLEFUSE LEB, OR EQUAL). USE A FUSED CONNECTOR FOR THE LINE (PHASE) WIRE ON ALL POLES.

④ SPLIT BOLT OR OTHER CONNECTOR.

⑤ GROUND ROD CLAMP.

NOTE: ALL TRANSFORMER BASE POLES SHALL BE CONSIDERED AS BREAKAWAY POLES.

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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.		100824	166	346
				(2)	ILLUMINATION DETAILS			

LEGEND

1- MAIN DISCONNECT CIRCUIT BREAKER
SEE ELECTRICAL SERVICE DATA TABLE FOR SIZE

2 - CIRCUIT BREAKER, 15 AMP

3 - CONTROL STATION (HAND-OFF-AUTO)

4 - PHOTO ELECTRIC CONTROL, 240 VAC

5 - LIGHTING CONTACTOR, 240 VOLT COIL

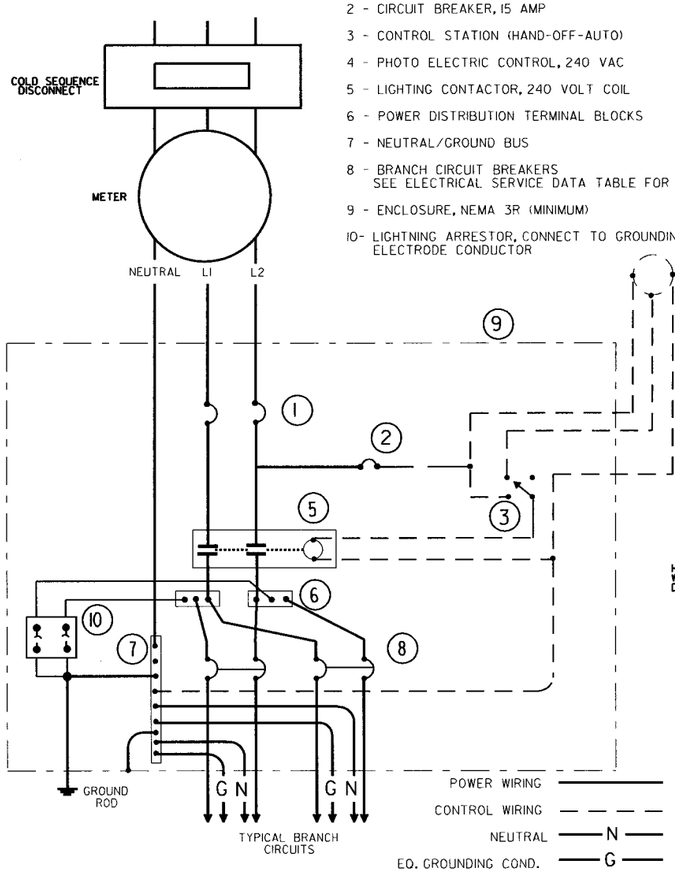
6 - POWER DISTRIBUTION TERMINAL BLOCKS

7 - NEUTRAL/GROUND BUS

8 - BRANCH CIRCUIT BREAKERS
SEE ELECTRICAL SERVICE DATA TABLE FOR SIZE

9 - ENCLOSURE, NEMA 3R (MINIMUM)

10- LIGHTNING ARRESTOR, CONNECT TO GROUNDING ELECTRODE CONDUCTOR

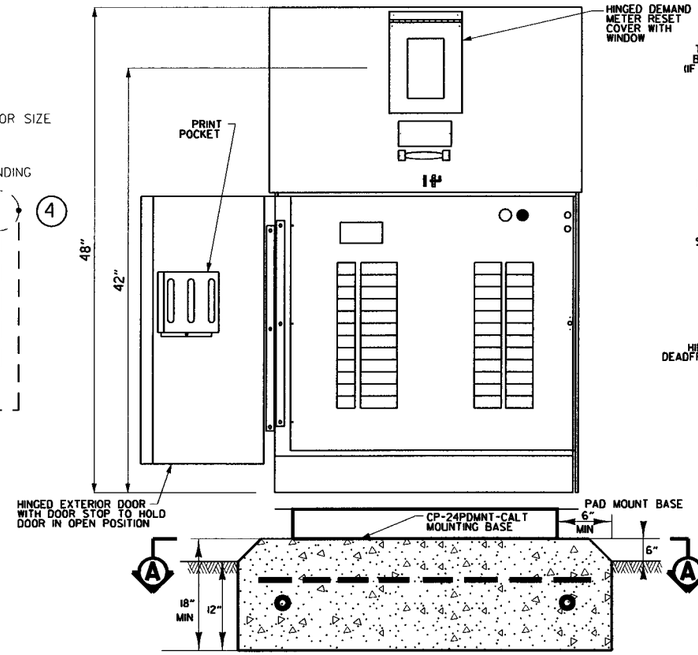


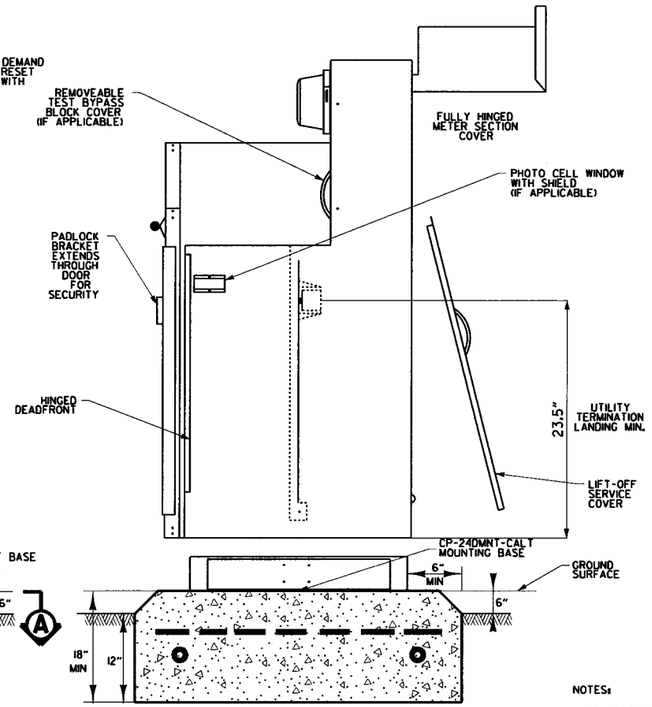
TYPICAL PROPOSED ELECTRICAL SERVICE WIRING DIAGRAM

SEE ELECTRICAL SERVICE DATA TABLE FOR ADDITIONAL REQUIREMENTS

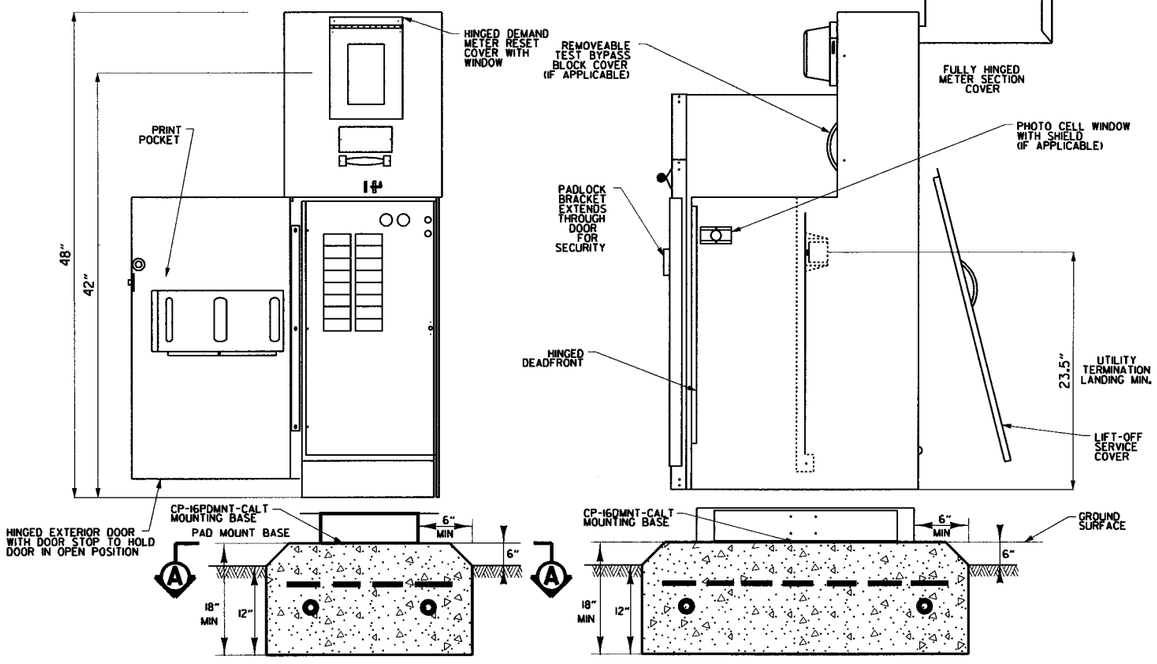
GENERAL NOTES FOR ELECTRICAL INSTALLATIONS

1. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
2. ALL ENCLOSURE FRONT DOORS SHALL BE PERMANENTLY LABELED "DANGER HIGH VOLTAGE." LABEL SHALL BE A SELF STICKING TYPE INTENDED FOR OUTDOOR INSTALLATION. LETTERING STYLE, LAYOUT, AND COLORS OF RED, BLACK AND WHITE SHALL BE AS REQUIRED BY OSHA. LABEL LETTERS SHALL BE ONE TO ONE AND A HALF INCHES HIGH OR AS HIGH AS THE ENCLOSURE DOOR WIDTH WILL PERMIT. ENCLOSURES SHALL ALSO BE LABELED TO INDICATE THE LOAD SERVED. THESE LABELS SHALL BE DUO-COLORED PLASTIC ENGRAVED LABELS. THE LABEL SHALL INDICATE THE SERVICE NUMBER AND THE LOAD (I.E. LIGHTING).
3. ALL UNDERGROUND SPLICES SHALL BE SEALED AND INSULATED WITH RAYCHEM GELCAP TUBES OR GELCAP SL OR EQUIVALENT GEL TUBES FROM ANOTHER MANUFACTURER. EFFORT SHOULD BE MADE TO LIMIT SPLICES. WHERE POSSIBLE CONTINUOUS PULLS SHOULD BE MADE. WIRE NUTS WITH FACTORY APPLIED WATERPROOF SEALANT MAY BE USED FOR SPLICES ABOVE GROUND ONLY FOR #8 AWG AND SMALLER AND WHERE SUCH SPLICE IS ENCLOSED IN JUNCTION BOXES AND POLE BASES.
4. A SUFFICIENT LENGTH OF CONDUCTOR FOR MAKING UP CONNECTIONS SHALL BE LEFT IN GROUND BOXES (2 FEET MINIMUM, 3 FEET MAXIMUM, TO POINT OF SPLICE, 3 FEET MINIMUM, 4 FEET MAXIMUM, WHEN CONDUCTOR IS PULLED THROUGH WITHOUT SPLICE), ENCLOSURES, WEATHERHEADS, AND POLE BASES (1FOOT MINIMUM, 1.5 FEET MAXIMUM).
5. CONDUCTORS IN LIGHT POLES SHALL BE SUPPORTED BY A J-HOOK.
6. CONDUCTORS CONNECTED TO BREAKAWAY IN-LINE FUSE HOLDERS MUST BE INSTALLED IN ACCORDANCE WITH THE SPECIFIC MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHERE THREADED CONNECTIONS ARE MADE, THEY SHALL BE PROPERLY TORQUED. WHERE CRIMP TYPE CONNECTIONS ARE MADE, CRIMPS SHALL BE MADE USING PROPERLY SIZED CRIMPING PLIERS. PROPER CONDUCTOR TERMINATIONS ARE CRITICAL TO THE SAFE OPERATION OF BREAKAWAY DEVICES. WATERPROOFING BOOTS SHALL BE PROPERLY TRIMMED TO FIT SNUGLY AROUND THE CONDUCTOR SO AS TO PROVIDE A WATER PROOF SEAL. NO MORE THAT ONE WIRE MAY ENTER A SINGLE OPENING IN ANY ONE BOOT. WATER PROOFING BOOTS MUST PROVIDE THE CORRECT NUMBER OF OPENINGS. WHERE ONLY ONE WIRE IS TO BE CONNECTED TO A BOOT, THE BOOT MAY NOT BE A TWO WIRE TYPE.
7. INSULATION FOR CONDUCTORS FOR THIS PROJECT SHALL BE TYPE XHHW UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER.
8. CONTRACTOR SHALL LOCATE AND AVOID OVERHEAD AND UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.





METERED COMMERCIAL PEDESTAL 200 AMP (N.T.S.)



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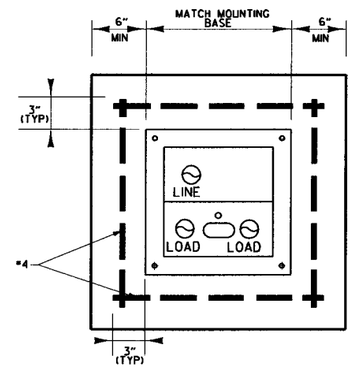
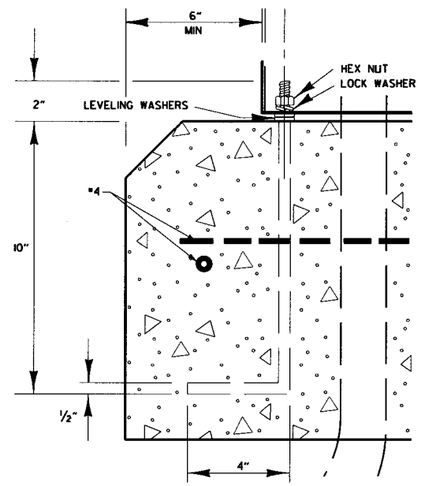


SECTION A-A

NOTES:

1. CONCRETE FOR CAST-IN-PLACE FOUNDATION SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH, f'c = 3,500 PSI.
2. ALL REINFORCING STEEL SHALL BE GRADE 60 AND CONFORM TO AASHTO M31 OR M53.



ANCHOR BOLT DETAIL

ILLUMINATION DETAILS SHEET 4 OF 5 N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18052
C. R. OLIVER
2018-05-29

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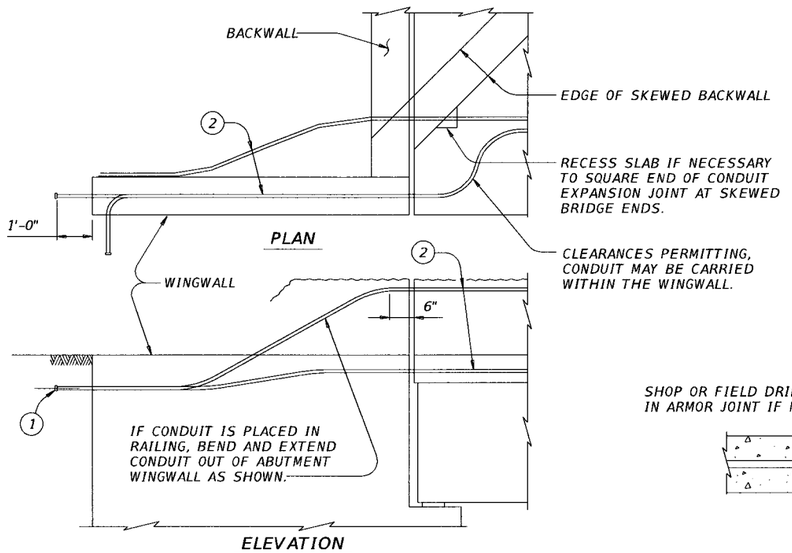
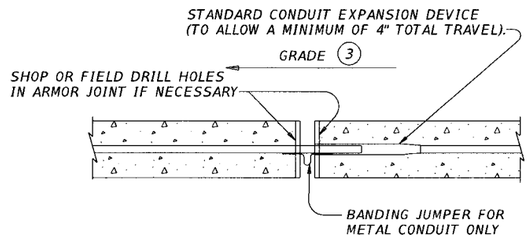
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18852
C. R. SILVER
2018-05-29

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.		100824	167	346
				(2)	ILLUMINATION DETAILS			



TREATMENT AT END OF BRIDGE



CONDUIT EXPANSION JOINT

(1) REAM BURRS AND INSTALL BELL ENDS OR BUSHINGS ON ALL CONDUIT ENDS.

(2) POSITION OF CONDUIT SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

(3) PLACE CONDUIT EXPANSION DEVICE ON HIGH SIDE OF EXPANSION JOINT.

ILLUMINATION DETAILS
SHEET 5 OF 5
N.T.S.

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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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				1 07407 & 07408		Proj Brdg Gen Notes		59512

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GENERAL NOTES

BENCH MARK: For bench mark information, see RDWY survey control sheets 110-115

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2014 edition) with 2016 Interim revisions.

METHOD OF DESIGN: LRFD LIVE LOADING: HL-93

SEISMIC ZONE: 4, SITE CLASS: D, SDI: 0.56 g

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr.50)	Fy = 50,000 psi
Structural Steel (AASHTO M270, Gr.36)	Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division. See each bridge layout for boring legend.

STEEL SHELL PILING: Piling shall be 18" diameter concrete filled steel shells. All piling shall be driven with an approved air, steam, or diesel hammer. Piling for end bents shall be driven after embankment to bottom of cap is in place. Refer to each Bridge Layout's table "Minimum Pile Requirements" for ultimate bearing capacity and minimum (shallowest permissible) tip elevations for piles at each bent. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. Test piles are not required, but may be driven for the Contractor's information in accordance with Subsection 805.08(g). There will be no additional payment for cut-off or build-up of piles. Water jetting or other methods approved by the Engineer, will be required for Bridge No. 07408 at Bent 1 and may be needed elsewere to achieve the minimum penetration. Any costs associated with achieving the minimum pile penetration shall be incidental to "Steel Shell Piling (18" Dia.)".

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)" of the Standard Specifications. Refer to each Bridge Layout's table "Minimum Pile Requirements" for estimated minimum required energy rating of the hammer to be used at each bent.

PILE CASINGS: Pile casings are required for piling within MSE at End Bents. Casings shall be installed prior to or during the 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 at least 4" greater than the outside diameter of the steel shell pile. Piles shall be driven through the open casings. After driving is complete, the pile casings shall be filled with Class S Concrete, an approved non-shrink grout, mixture used for Portland Cement Concrete Pavement, or other approved material in a single continuous operation to completely fill voids. Pile casings and concrete will not be paid for directly but shall be considered subsidiary to the item "Steel Shell Piling (18" Dia.)".

PILE FOOTINGS: The top of interior bent footings shall be set 2'-0" minimum below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled according to Subsection 801.08 of the Standard Specifications.

BRIDGE DECK: The concrete bridge deck shall be a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Sidewalks shall be given a Class 6 Broomed Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface, the top of end bent backwalls, and as otherwise noted. Protective Surface Treatment shall not be applied on surfaces where Texture Coating Finish is applied.

PAINT: All structural steel except galvanized members and some surfaces in contact with concrete shall be cleaned in accordance with Subsection 807.84(b) and painted as specified in Subsection 807.75. Unless noted otherwise, the color of paint shall be Red and shall match Fed. Std. 595B Color Chip No. 31350.

LIST OF DETAIL DRAWINGS: See each bridge layout.

MAINTENANCE OF TRAFFIC: See RDWY plans for Maintenance of Traffic.

See each Bridge Layout and corresponding (Exhibit A) drawing for additional notes.

STRUCTURAL STEEL: See each bridge layout for additional bridge specific requirements. Structural steel completely embedded in concrete may be AASHTO M270, Gr.36. See Elastomeric Bearing Details sheets for cleaning requirements of external load plates and shear blocks of bearings.

Unless noted otherwise, all girders shall be assembled in the shop as specified in Subsection 807.54(b)(2) and blocked in their true position with webs horizontal.

The Contractor shall submit to the Engineer for informational and record purposes, details of Methods, Equipment, and Falsework construction in accordance with Subsections 807.63 & 807.64.

The Contractor shall ensure that girders are stable throughout the erection process. The Contractor shall be responsible for providing temporary bracing or stiffening devices to accommodate handling stresses in individual members or segments of the structure during erection.

The camber, length of sections, distance between bearings, and openings of joints shall be measured with the girders in their true position. This information shall become a part of the permanent records of this job. The component parts shall be match-marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of 1/4" +/- is allowed for camber.

All references to cross-frames shall include "X" or "K" types.

All girder web and flange plates, all field splice plates and all diaphragms, cross-frames, and connection plates attached to horizontally curved girders are considered main load carrying members. All 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, 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 pay item "Structural Steel in Plate Girder Spans (M 270, Gr.50)"

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.

Diaphragms and cross-frames shall be installed as girders are erected. All bolts in diaphragms, cross-frames, and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck, unless noted otherwise.

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 that are used for non-main load carrying members, may be 5/8 "ø if a washer is supplied for use under both the nut and the head of the bolt. Oversized bolt holes may not be used for main load carrying members. Bolt spacing shall be 2 1/2" for 3/4"ø bolts unless noted otherwise. For field splices, bolts shall be 1 1/8"ø bolts. Open holes shall be 15/16 "ø. Bolt spacing shall be 3" for 1 1/8"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder web and on the bottom of the girder flanges.

Girder webs may be made by shop splicing with minimum length of 25 feet for section. Flange plates longer than 50 feet may be made by shop splicing with minimum length of 25 feet for section. No additional payment for welds for these splices will be made. Material Specifications and location of shop-welded splices, if any, shall be shown on the shop drawings.

All welding shall conform to Subsection 807.26.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted to Engineer for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support device or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require the approval prior to construction.

Groove welds in web and flange plates shall be Quality Control (Q.C) tested by nondestructive testing, as required by 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 Q.C. testing is at the Contractor's expense.

Anchor bolts shall be galvanized according to Subsection 807.07 and shall be Grade 55.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.

Bearings shall be seated in accordance with Subsection 808.08. The work and materials will not be paid for directly but will be considered subsidiary to the item Elastomeric Bearings.

See detail drawings for additional notes.

CONCRETE:

Concrete for bridge superstructure shall be Class S(AE) with a minimum 28 day compressive strength, f'(c) =4000 psi. Concrete for bridge substructure shall be Class S with a minimum 28 day Compressive strength, f'(c) =3500 psi.

Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

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.

A minimum of 72 hours shall elapse between completion of the deck and the pouring of the parapet railing and sidewalk. Any railing pours made before the entire deck has been placed and cured must be approved by the Engineer.

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.

Movement of the finishing machine across the 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 strike-off to fully load the girder.

See detail drawings for additional notes.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322, Type A, Grade 60.
Mill test reports shall be submitted for reinforcing steel.

The reinforcing steel in bent caps shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

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. See Subsection 804.06. The wire supports will not be paid for directly but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)" and "Reinforcing Steel Bridge (Grade 60)", in conformance with Subsection 804.11.

See detail drawings for additional notes.

SPIRAL REINFORCING:
Spiral reinforcing shall be plain round or deformed steel bars meeting the requirements of AASHTO M31 or M322, Type A, Grade 60 or shall be cold drawn wire meeting the requirements of AASHTO M32 or M225 (Grade 70) with a minimum diameter of 0.625".

Spiral reinforcement shall be paid for at the contract unit price bid per pound for "Reinforcing Steel-Bridge (Grade 60)". No additional payment shall be made for spacers, additional splices, or bracing needed for assembly, shipping, handling, or erecting.

Contractor may elect to use a different number of spiral lapped splices per column (Maximum = 2). In no case shall a spiral be lapped within the top or bottom 1/4th of the column height. Splices in spiral reinforcement shall be lapped a minimum of 80 bar diameters.

Spiral reinforcement at lapped splices shall be terminated by a 135° hook with a 10" tail around a vertical bar. Hook may be field bent. Ends of spirals not lapped shall be terminated with 1 1/2 turns and a 135° hook with a 10" tail around a vertical bar.

See detail drawings for additional notes.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley
29 May 2018

PROJECT BRIDGE GENERAL NOTES
BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	bi008240_li
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	N/A
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07407 & 07408 DRAWING NO. 59512

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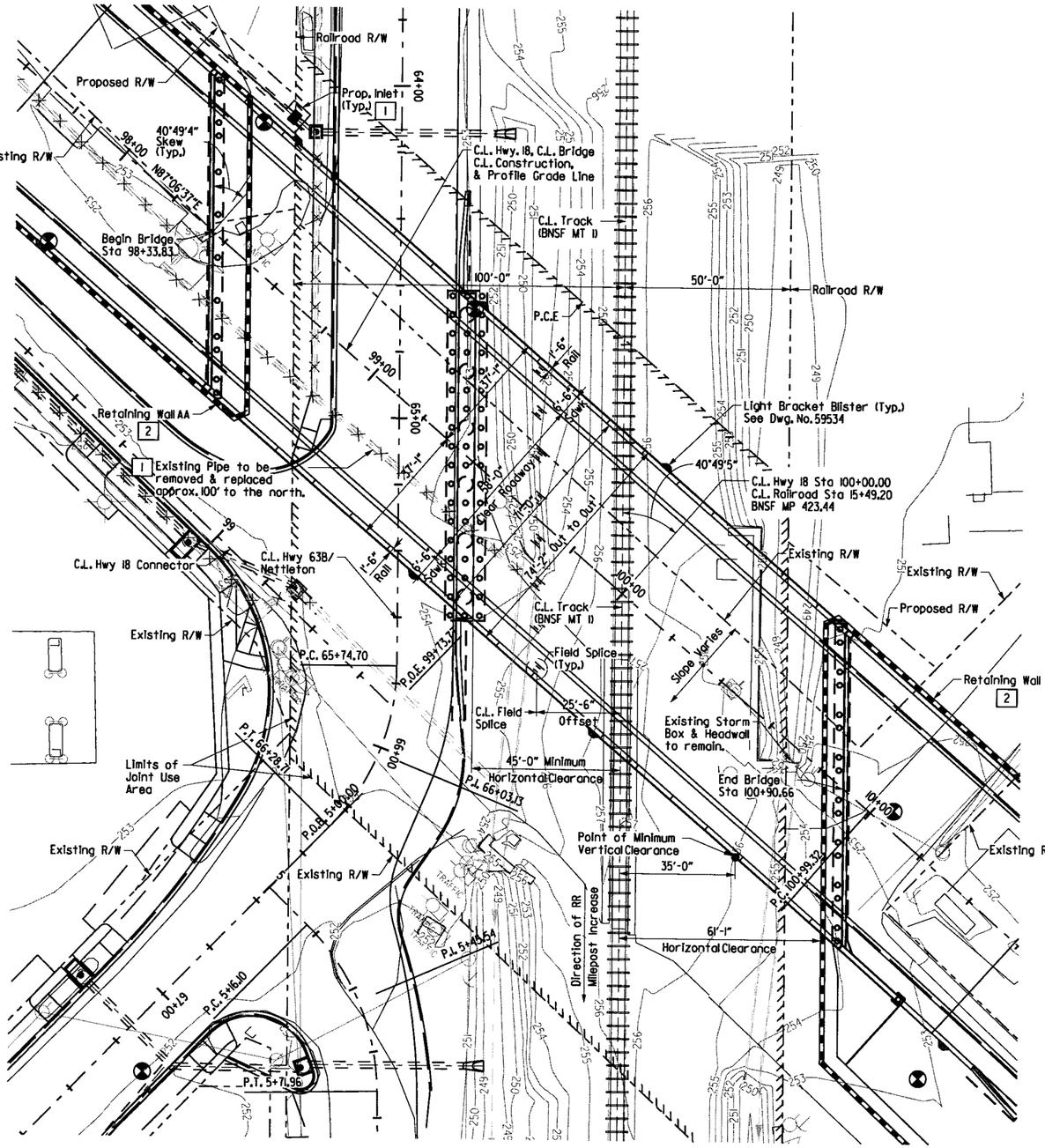
				JOB NO.		100824	169	346
				1 07407		EXHIBIT A		59513



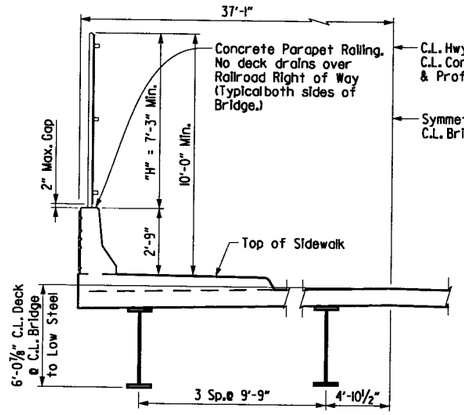
PLAN

1 See Roadway Plans

2 See Retaining Wall Plans

Horizontal Curve
C.L. Hwy. 18

PI Sta	=	102+80.65
Delta	=	2°0'0"
Degree	=	7°14'37"
Tangent	=	181.33'
Length	=	362.17'
Radius	=	2864.79'
PC Sta	=	100+99.32
PT Sta	=	104+61.49
PC Brg	=	N 87°06'37"E
PT Brg	=	S 85°38'46"E



TYPICAL HALF SECTION
No Scale

Only one track exists as shown (BNSF MT 1) and no continuous access road is apparent. However, supports for proposed overhead structure are spaced at sufficient horizontal clearance either side of existing track to provide room for future track (BNSF Future MT 2) or access road without need of crashwall.

GENERAL NOTES:

All demolitions within the Railroad's right-of-way and/or demolitions that may impact the Railroad's tracks or operations shall comply with the Railroad's demolition requirements.

Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation. Erection over the Railroad's track shall be developed such that it enables the track(s) to remain open to traffic per the Railroad's requirements.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.

Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment when trains are present.

The following statement is in the "State Rail Agreement"; The State shall not plow ice, snow, or sleet over the sides of the structure, in consideration of this practice, the Carrier waives its request for the State to attach splash boards to sides of the structure.

Shoring shall comply with the BNSF Railroad requirements. Construction shall comply with the requirements of SP Job No. 100824 "Insurance, Construction, and Flagging requirements on Railroad property (Burlington Northern Sante Fe Railroad)." Railroad review and approval of Shoring, Erection, and Falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

Currently there are no known utilities on the railroad right-of-way other than shown.

A Chain Link Fence is required on both sides of the Bridge. The Fence is to be mounted on top of the concrete parapet rail and shall extend the full length of the Bridge. For details of fence, see Std. Dwg. No. 550l8.

The proposed bridge construction will not change the quantity and/or characteristics of the flow within the Railroad right-of-way.

Closed Parapet Railing (No Deck Drains). Typical both sides of bridge.

All permanent clearances shall be verified before project closing.

For Railroad coordination refer to the Railroad Minimum Requirements of SP Job No. 100824 "Insurance, Construction and Flagging Requirements on Railroad Property (Burlington Northern Sante Fe Railroad)".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 1 OF 2
(EXHIBIT A)
LAYOUT OF HWY. 18 BRIDGE
OVER BNSF RAILROAD
THAYER SUBDIVISION (MP 423.44)
BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	b100824exa1_ll
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	1" = 20'
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07407

DRAWING NO. 59513

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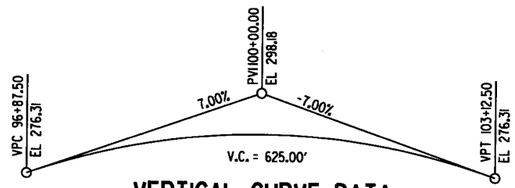
				6	ARK.			
				JOB NO.		100824	170	346
				07407		EXHIBIT A		59514

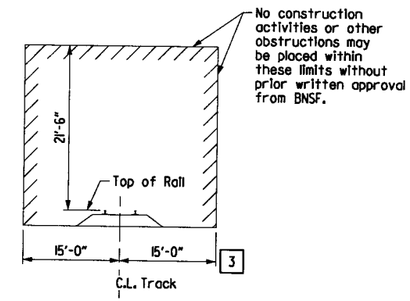
BNSF RAILWAY
TOP OF RAIL ELEVATIONS *

LEFT RAIL		RIGHT RAIL	
Station	Elevation	Station	Elevation
5+00.00	258.64	5+00.00	258.64
6+63.04	258.58	6+63.04	258.58
7+00.00	258.52	7+00.00	258.52
8+00.00	258.36	8+00.00	258.36
9+00.00	258.21	9+00.00	258.21
10+00.00	258.05	10+00.00	258.05
11+00.00	257.89	11+00.00	257.89
12+00.00	257.73	12+00.00	257.73
13+00.00	257.58	13+00.00	257.58
14+00.00	257.42	14+00.00	257.42
15+00.00	257.26	15+00.00	257.26
15+69.14	257.15	15+69.14	257.15
16+00.00	257.08	16+00.00	257.08
17+00.00	256.84	17+00.00	256.84
18+00.00	256.61	18+00.00	256.61
19+00.00	256.37	19+00.00	256.37
20+00.00	256.14	20+00.00	256.14
21+00.00	255.9	21+00.00	255.9
22+00.00	255.66	22+00.00	255.66
23+00.00	255.43	23+00.00	255.43
24+00.00	255.19	24+00.00	255.19
25+00.00	254.95	25+00.00	254.95
25+00.64	254.95	25+00.64	254.95
26+00.00	254.61	26+00.00	254.61
27+00.00	254.26	27+00.00	254.26
28+00.00	253.92	28+00.00	253.92
29+00.00	253.57	29+00.00	253.57
30+00.00	253.22	30+00.00	253.22
31+00.00	252.88	31+00.00	252.88
32+00.00	252.53	32+00.00	252.53
33+00.00	252.18	33+00.00	252.18
34+00.00	251.84	34+00.00	251.84
35+00.00	251.49	35+00.00	251.49

* Top of rail elevations based on interpolation of 4 survey shots. The elevations of the existing top of rail profile shall be verified by the contractor prior to the beginning of construction. Any discrepancies shall be brought to the attention of the Railroad prior to construction.

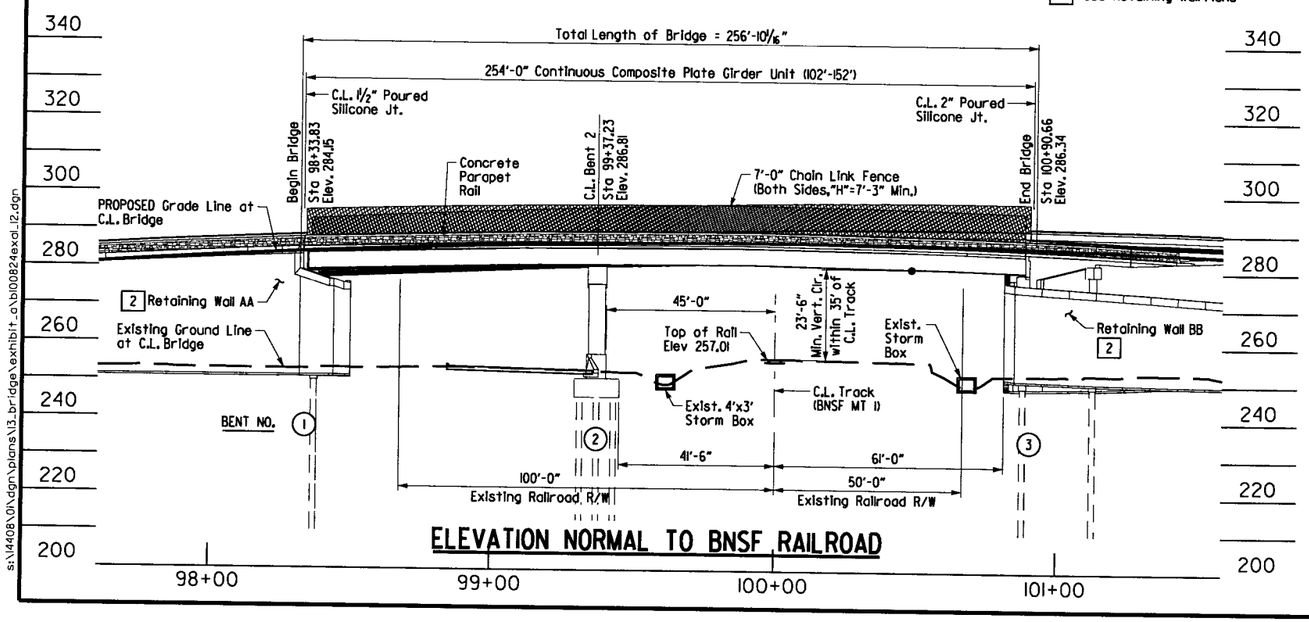


VERTICAL CURVE DATA
(Along THEORETICAL Profile Grade)



MINIMUM CONSTRUCTION CLEARANCES
SKETCH NORMAL TO TRACK
No Scale

3 Measured normal to track.



ELEVATION NORMAL TO BNSF RAILROAD

Only one track exists as shown(BNSF MT 1) and no continuous access road is apparent. However, supports for proposed overhead structure are spaced at sufficient horizontal clearance either side of existing track to provide room for future track(BNSF Future MT 2) or access road without need of crashwall.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 2 OF 2
(EXHIBIT A)
LAYOUT OF HWY. 18 BRIDGE
OVER BNSF RAILROAD
THAYER SUBDIVISION (MP 423.44)
BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	b100824exa1_12
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	1" = 20'
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07407

DRAWING NO. 59514

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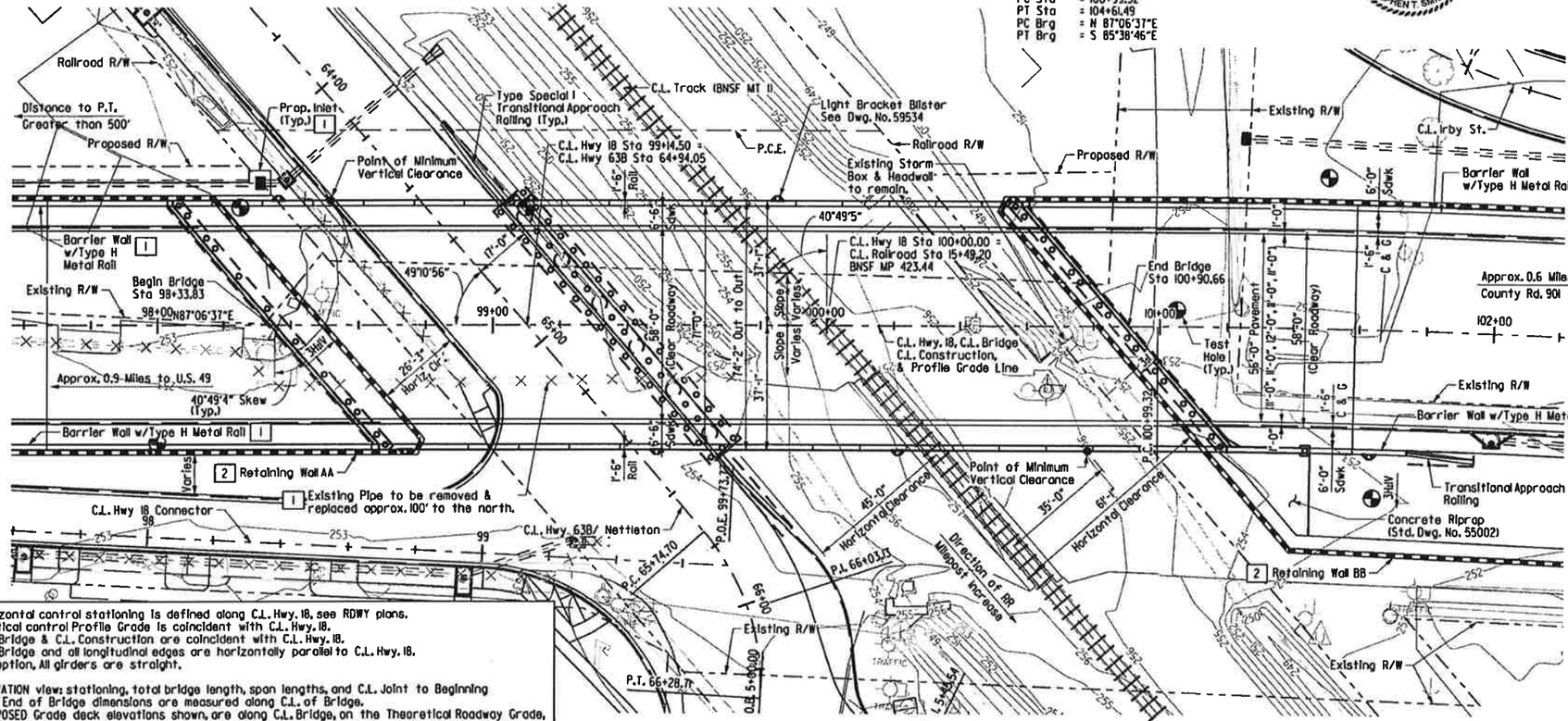
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	171	346
				1 07407		BRIDGE LAYOUT		59515

For R/W Data, See Roadway Plans.

For Type Special 1 Approach Slab & Type Special 1 & 2 Approach Gutters at Begin of bridge, and Type Special 2 Approach Slab & Type Special 3 & 4 Approach Gutters at End of bridge See Dwg. Nos. 59537-59540

Horizontal Curve
C.L. Hwy. 18
PI Sta = 102+80.65
Delta = 2°0'0"
Degree = 7°14'37"
Tangent = 181.33'
Length = 362.17'
Radius = 2864.79'
PC Sta = 100+99.32
PT Sta = 104+61.49
PC Brg = N 87°06'37"E
PT Brg = S 85°38'46"E

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018



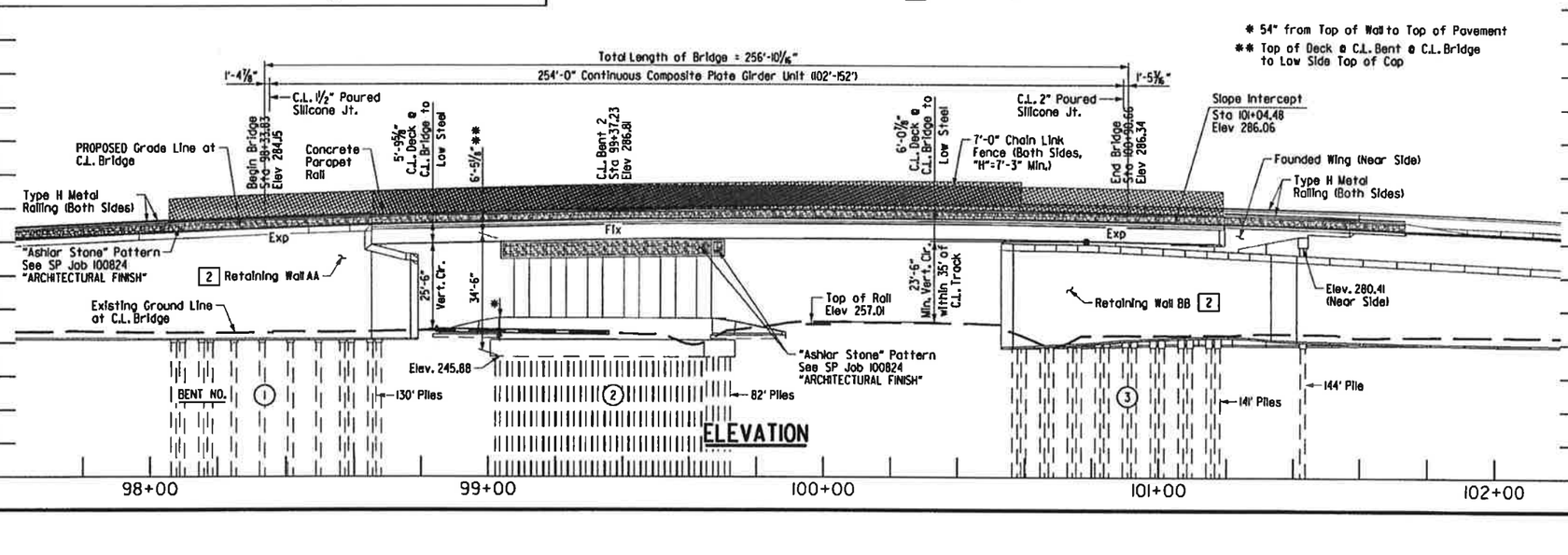
Horizontal control stationing is defined along C.L. Hwy. 18, see RDWY plans.
Vertical control Profile Grade is coincident with C.L. Hwy. 18.
C.L. Bridge & C.L. Construction are coincident with C.L. Hwy. 18.
C.L. Bridge and all longitudinal edges are horizontally parallel to C.L. Hwy. 18.
Exception, All girders are straight.

ELEVATION view: stationing, total bridge length, span lengths, and C.L. Joint to Beginning and End of Bridge dimensions are measured along C.L. of Bridge.
PROPOSED Grade deck elevations shown, are along C.L. Bridge, on the Theoretical Roadway Grade, at Working Point, above Top of Rdwy. Surface. See "ROUNDING DETAIL" on Std. Dwg. No. 55007. Beyond the Reverse Crown Station, Rounding is no longer applicable, and the Working Point, on the deck surface is above THEORETICAL Profile Grade Line.

PLAN

1 See Roadway Plans

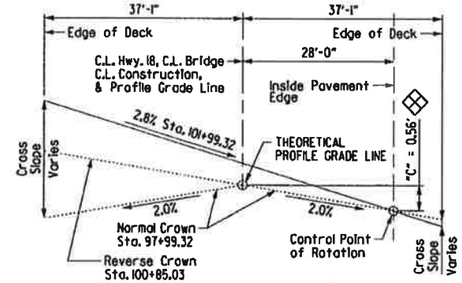
2 See Retaining Wall Plans



ELEVATION

* 54" from Top of Wall to Top of Pavement

** Top of Deck @ C.L. Bent @ C.L. Bridge to Low Side Top of Cap



SUPERELEVATION TRANSITION SKETCH

(Looking Ahead)
No Scale

Maximum Superelevation = 2.80%
Length of Superelevation Transition = 400'
Begin Transition Sta. 97+99.32
Reverse Crown Sta. 100+85.03
End Transition Sta. 101+99.32

For Additional Information of Std. Method When Superelevation Revolves Around Inner Pavement Edge, see Std. Dwg. SE-2

VERTICAL CURVE DATA

(Along THEORETICAL Profile Grade)

NOTES:

1. Skew is measured at C.L. Bent for intermediate Bents and at C.L. Joints for End Bents.
2. All Bents are parallel to each other.
3. See Project Bridge General Notes Dwg. No. 59512
4. For additional Pile information, see Soil Borings Dwg. No. 59516

DETAIL DRAWINGS:	DRAWING NO.:
End Bents	59517-59523
Intermediate Bent	59524-59526
254'-0" Cont. Comp. Plate Girder Unit	59527-59533
Concrete Riprap	55002
Screed Rail Support for Plate Girder	55007
Silicone Joints	55008
Transitional Approach Railing	55013
Type H Metal Bridge Railing	55014
Chain Link Fence	55018
Concrete Filled Steel Shell Piles	55021
Rail & Type Special Trans. Approach Railing	59534-59535
Elastomeric Bearings	59536
Type Special Approach Slabs & Gutters	59537-59540

LAYOUT OF HWY. 18 BRIDGE OVER BNSF RAILROAD BNSF RAILROAD OVERPASS (HWY. 18) (JONESBORO) (S) CRAIGHEAD COUNTY

ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	bl00824l.e
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	1" = 20'
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07407 DRAWING NO. 59515

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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.		100824	172	346
				(1) 07407		SOIL BORINGS		59516

SUMMARY OF SPT N-VALUES (BRIDGE BORINGS)

Sta. 98+25, 35' Lt (Boring S1)
0.5-1.5, N = 10
2.5-3.5, N = 8
4.5-5.5, N = 4
6.5-7.5, N = 4
9-10, N = 4
14-15, N = 16
19-20, N = 20
24-25, N = 13
39-40, N = 13
44-45, N = 16
49-50, N = 16
59-60, N = 17
69-70, N = 16
79-80, N = 50/9"
89-90, N = 24
99-100, N = 26
109-110, N = 28
119-120, N = 34
129-130, N = 39

Sta. 99+10, 35' Lt (Boring S2)
2.5-3.5, N = 6
4.5-5.5, N = 4
9-10, N = 17
24-25, N = 14
29-30, N = 11
34-35, N = 19
39-40, N = 18
44-45, N = 50/10"
49-50, N = 19
59-60, N = 23
69-70, N = 19
79-80, N = 18
89-90, N = 50/10"
99-100, N = 50/9"

Sta. 101+05, 5' Lt (Boring S3)
0.5-1.5, N = 35
2.5-3.5, N = 22
6.5-7.5, N = 14
14-15, N = 10
24-25, N = 15
34-35, N = 14
39-40, N = 14
44-45, N = 15
49-50, N = 24
59-60, N = 31
69-70, N = 30
79-80, N = 25
89-90, N = 50/7"
99-100, N = 50/8'

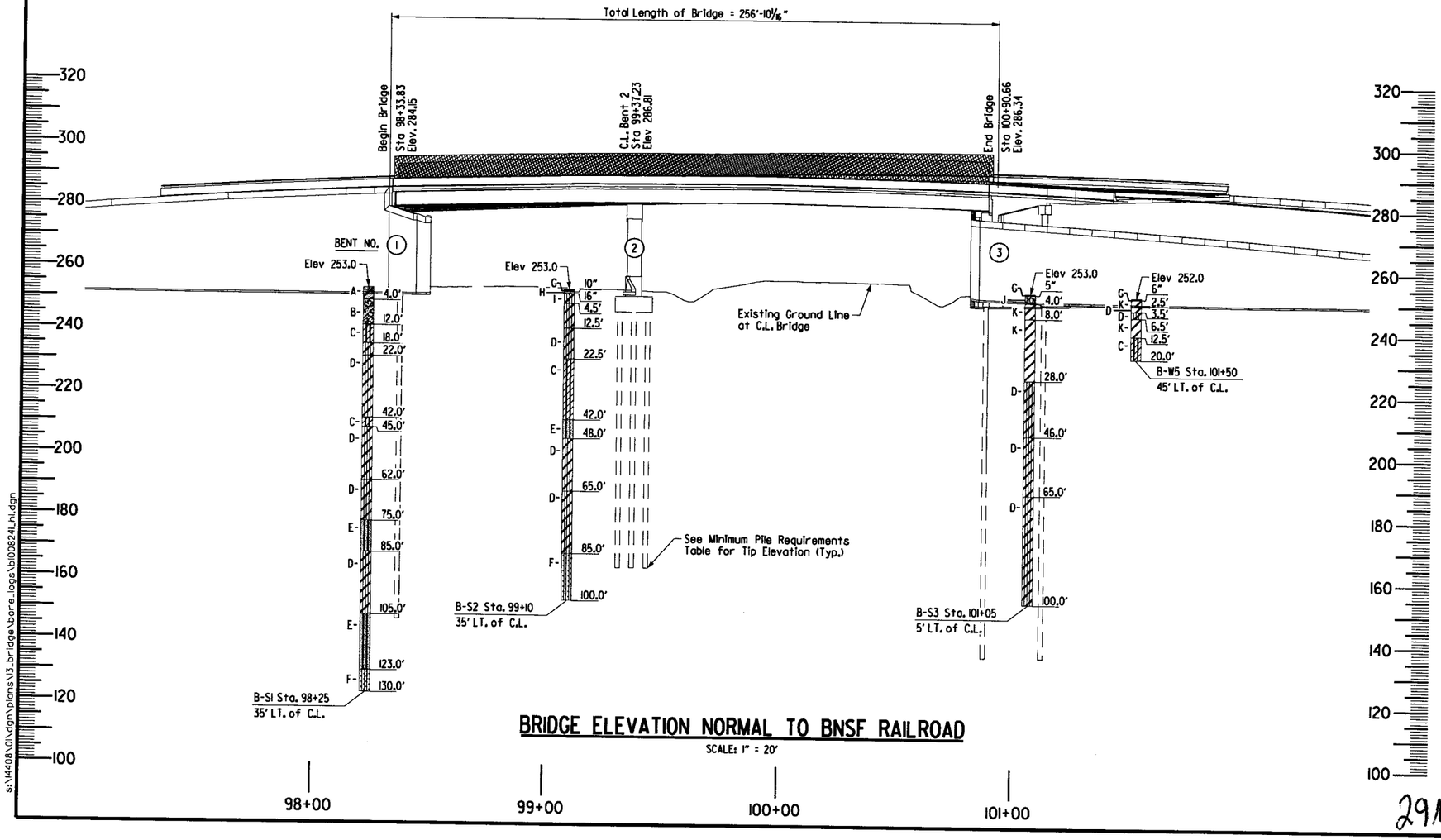
Sta. 101+50, 45' Lt (Boring W5)
1-2, N = 4
3-4, N = 14
5-6, N = 14
7-8, N = 10
9-10, N = 13
14-15, N = 14
19-20, N = 5

MINIMUM PILE REQUIREMENTS

Bent	Capacity (tons/pile)	Tip Elevation	Hammer Energy (Ft-Kips)
1	280	147.0	198
2	251	164.0	107
3	281	137.0	198

BORING LEGEND:

A - Asphalt Concrete
B - Aggregate Base
C - Soft to stiff very stiff silty clay
D - Soft to hard silty clay
E - Medium dense to dense fine sandy silt
F - Dense silty sand
G - Asphalt Concrete
H - Aggregate Base
I - Soft silty clay (fill)
J - Dense clayey sand (fill)
K - Soft to stiff clay



BRIDGE ELEVATION NORMAL TO BNSF RAILROAD

SCALE: 1" = 20'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SOIL BORINGS
HWY. 18 BRIDGE
OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 4/20/2016
CHECKED BY: STS DATE: 5/1/2016
DESIGNED BY: JH DATE: 4/1/2016
FILENAME: bl008241_hl
SCALE: AS SHOWN

BRIDGE NO. 07407 DRAWING NO. 59516

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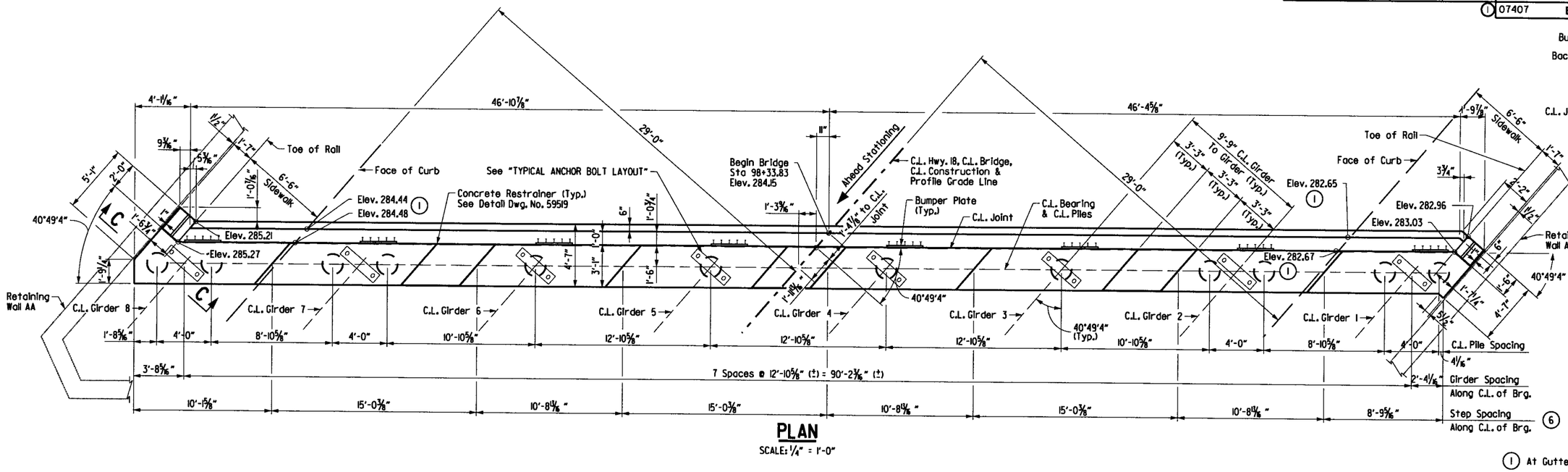
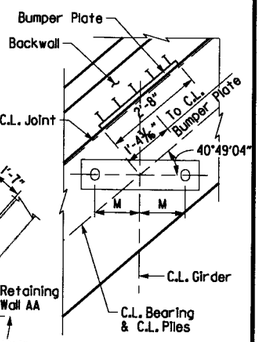
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	173	346
(1) 07407	END BENT DETAILS			59517



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



TYPICAL ANCHOR BOLT LAYOUT (4)
SCALE: 1/2" = 1'-0"

(1) At Gutter line

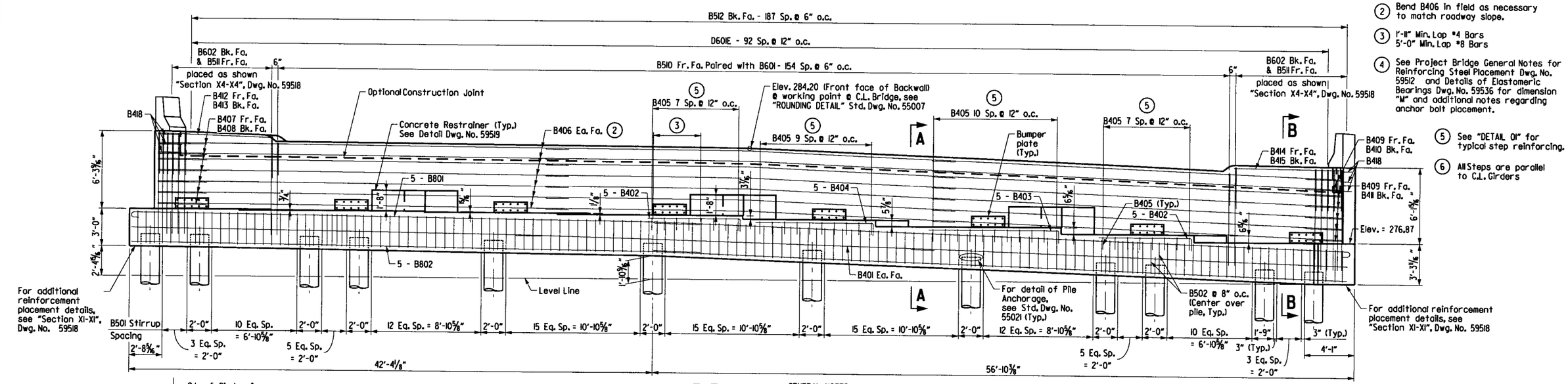
(2) Bend B406 in field as necessary to match roadway slope.

(3) 1'-11" Min. Lap #4 Bars
5'-0" Min. Lap #8 Bars

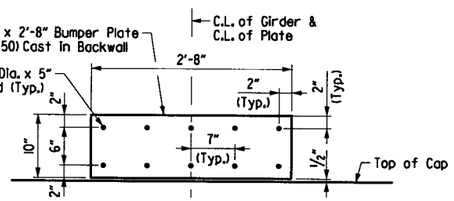
(4) See Project Bridge General Notes for Reinforcing Steel Placement Dwg. No. 59512 and Details of Elastomeric Bearings Dwg. No. 59536 for dimension "M" and additional notes regarding anchor bolt placement.

(5) See "DETAIL 01" for typical step reinforcing.

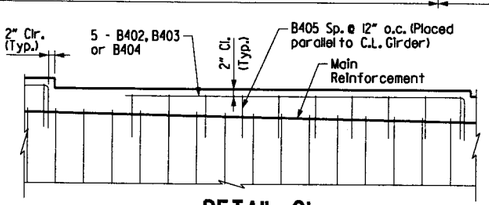
(6) All Steps are parallel to C.L. Girders



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



BUMPER PLATE DETAIL
SCALE: 1" = 1'-0"



DETAIL 01
Other Bars Not Shown For Clarity
N.T.S.

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 conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test reports.

Structural Steel in End Bents shall be AASHTO M270, Gr. 50 and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

No portion of the Backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint shall not be placed until the adjacent deck pour has been made.

For additional information, see layout.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
STEPHEN T. SMILEY
No. 13072

29 May 2018

SHEET 1 OF 3
DETAILS OF END BENT 1
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016
CHECKED BY:	STS	DATE:	7/22/2016
DESIGNED BY:	DCD	DATE:	6/28/2016

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BRIDGE NO. 07407 DRAWING NO. 59517

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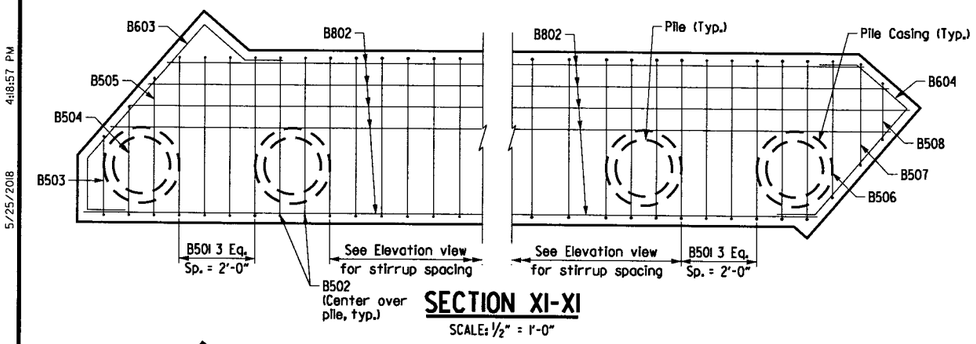
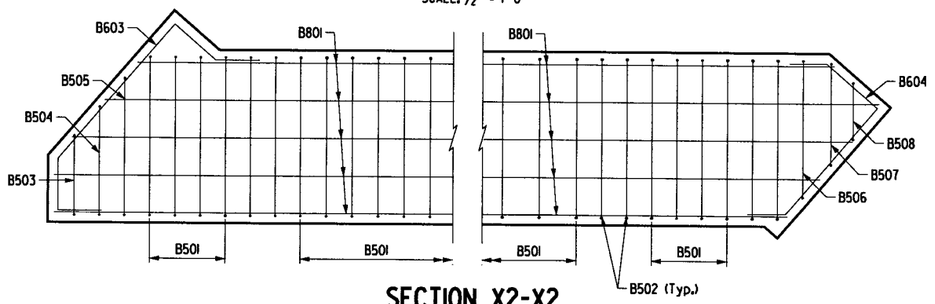
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	174	346

(1) 07407 END BENT DETAILS 59518



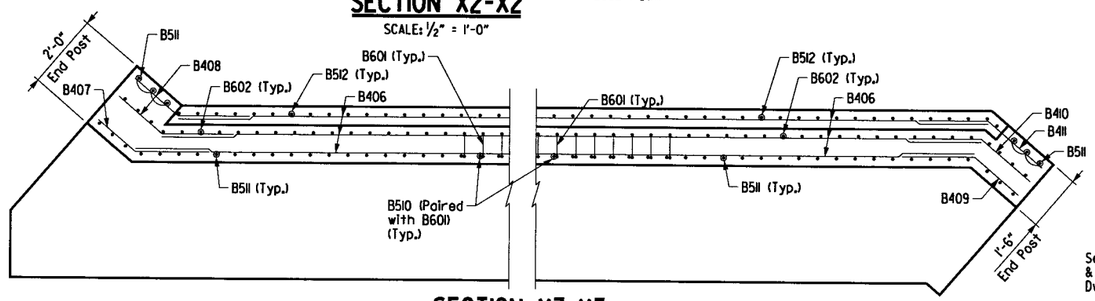
SECTION XI-XI

SCALE: ½" = 1'-0"



SECTION X2-X2

SCALE: ½" = 1'-0"



SECTION X3-X3

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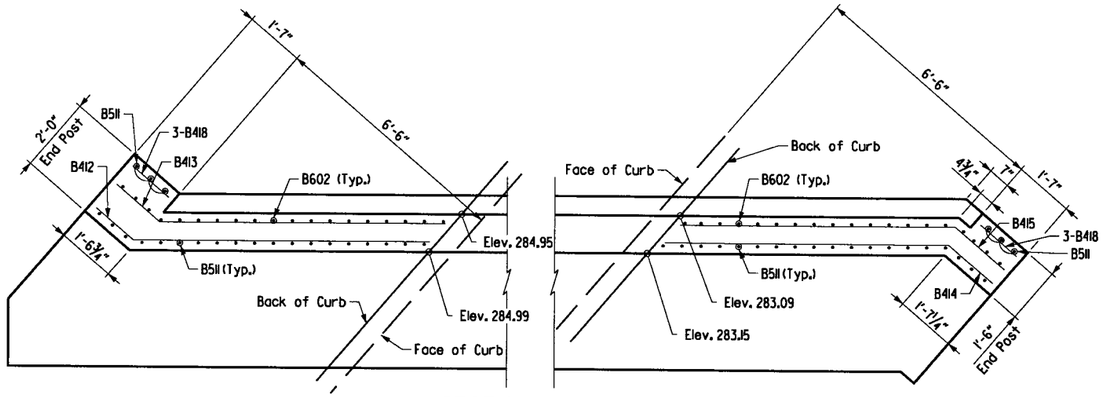
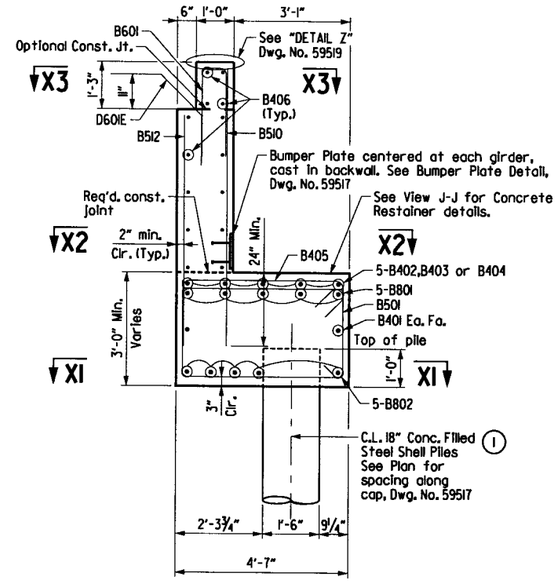


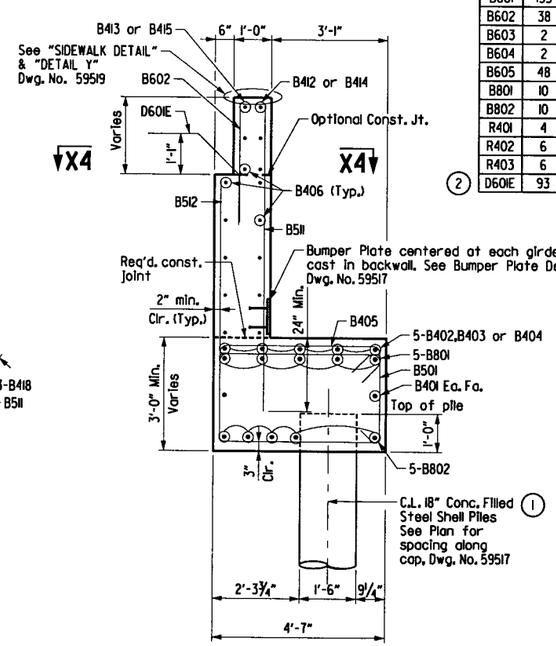
SECTION X4-X4

SCALE: ½" = 1'-0"



VIEW A-A

SCALE: ½" = 1'-0"



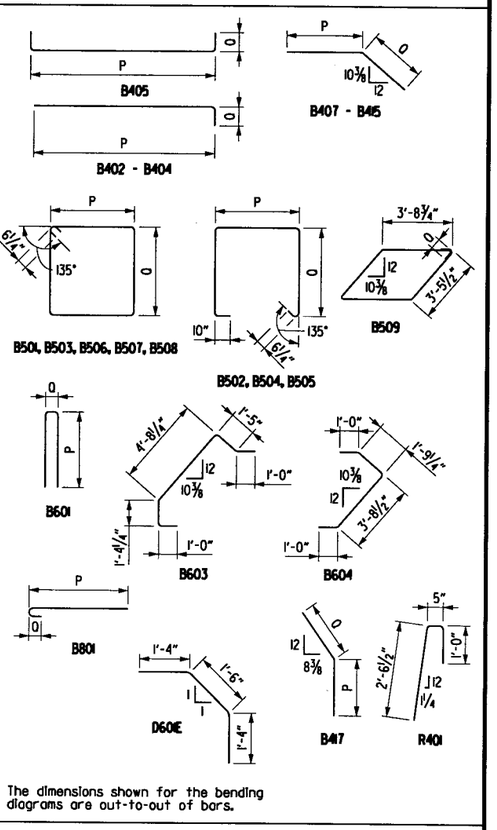
VIEW B-B

SCALE: ½" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P	O	P.D.
Cap & Backwall					
B401	6	33'-5"			Str.
B402	10	8'-5"	7'-6"	1'-0"	2"
B403	5	11'-5"	10'-6"	1'-0"	2"
B404	5	10'-5"	9'-6"	1'-0"	2"
B405	37	7'-5"	5'-7 ¼"	1'-0"	2"
B406	42	32'-7"			Str.
B407	7	3'-2 ½"	2'-0"	1'-3 ½"	2"
B408	7	3'-5"	2'-0"	1'-6"	2"
B409	7	3'-5"	2'-0"	1'-6 ½"	2"
B410	2	3'-8"	2'-0"	1'-8 ¾"	2"
B411	5	3'-10"	2'-0"	1'-10 ¾"	2"
B412	1	9'-1"	7'-10 ½"	1'-3 ½"	2"
B413	1	9'-0"	7'-7"	1'-6"	2"
B414	1	9'-0"	7'-6 ½"	1'-6 ½"	2"
B415	1	8'-11"	7'-3 ¾"	1'-8 ¾"	2"
B416	6	4'-1"			Str.
B417	6	3'-11"	2'-0"	1'-11"	2"
B418	6	1'-3"			Str.
B501	116	14'-4"	4'-3"	2'-7"	2 ½"
B502	24	10'-4"	4'-3"	2'-7"	2 ½"
B503	1	10'-1"	2'-1 ½"	2'-7"	2 ½"
B504	1	8'-11"	2'-11"	2'-7"	2 ½"
B505	1	9'-8"	3'-8 ¼"	2'-7"	2 ½"
B506	1	13'-2"	3'-8"	2'-7"	2 ½"
B507	1	11'-4"	2'-8 ¾"	2'-7"	2 ½"
B508	1	8'-11"	1'-6 ¾"	2'-7"	2 ½"
B509	12	14'-11"		6"	2 ½"
B510	155	7'-9"	7'-6"		Str.
B511	44	8'-5"	8'-2"		Str.
B512	188	6'-6"	6'-3"		Str.
B601	155	5'-6"	2'-7"	8"	4 ½"
B602	38	3'-4"			Str.
B603	2	9'-4"			4 ½"
B604	2	7'-5"			4 ½"
B605	48	3'-6"			Str.
B801	10	52'-10"	51'-3"	8"	6"
B802	10	51'-3"			Str.
R401	4	3'-11"			2"
R402	6	1'-2"			Str.
R403	6	1'-8"			Str.
(2) D601E	93	4'-2"			4 ½"

BENDING DIAGRAMS



The dimensions shown for the bending diagrams are out-to-out of bars.

(1) Concrete filled steel shell piles shall conform to Std. Dwg. No. 55021.

(2) Bars marked with an "E" suffix shallbe epoxy coated and paid as item 804 "Epoxy Coated Reinforcing Steel (Gr. 60)"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen Smiley

29 May 2018

SHEET 2 OF 3
DETAILS OF END BENT 1
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	b100824i_bl2
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59518

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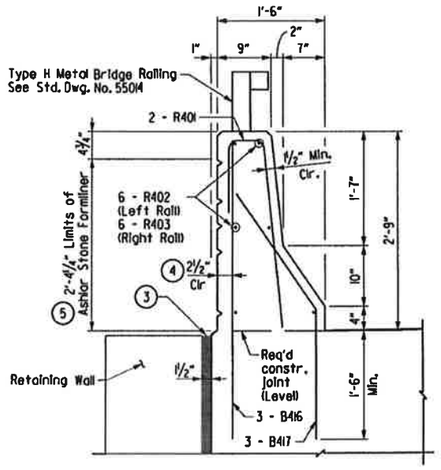
jharrell

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	175	346
				1 07407		END BENT DETAILS		59519

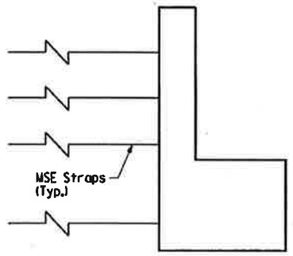
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13077
STEPHEN T. SMILEY

Stephen T. Smiley 23 Oct 2018



VIEW C-C

SCALE: 1" = 1'-0"
(Right Rail shown - Left Rail similar)

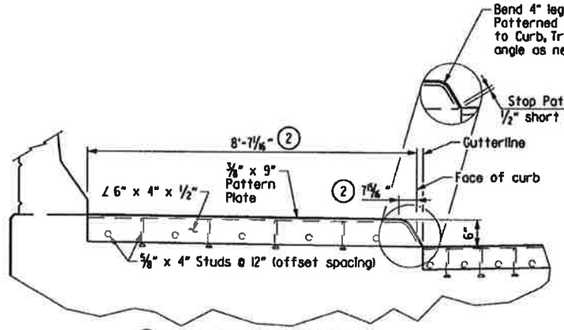


STRAPS DETAIL

No Scale

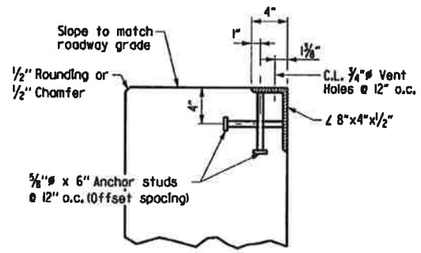
MSE straps are shown for illustration only. The exact number, length, location and method of attachment to the backwall shall be designed by the MSE wall manufacturer. The contractor shall submit sign and sealed working drawings prepared by a Professional Engineer registered in the state of Arkansas along with the design calculations for Engineer's approval. All costs in connection with the design, working drawings, furnishing materials and construction shall be included in the contract bid price for "Retaining Walls".

A service lateral load of 1.8 K per feet of length of bent, resulting from back fill soil pressure and a thermalload of 0.8 K per feet of length of bent shall be accounted for.



1 SIDEWALK DETAIL

No Scale



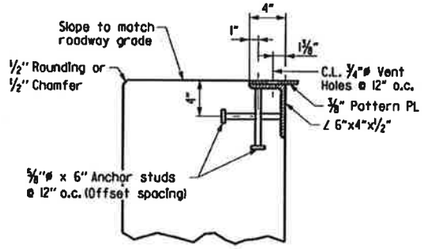
1 DETAIL Z

No Scale

Notes:

Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shallbe hand packed under the joint armor in the sidewalk and in the backwall.



1 DETAIL Y

No Scale

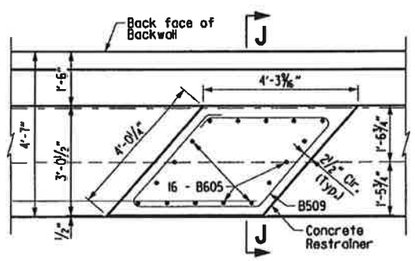
1 For additional joint details, see Std. Dwg. No. 55008 and Dwg. No. 59532

2 Measured along joint

3 ½" Preformed Jt. Filler (AASHTO M 153, Type II and ½" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Joint Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls" or to the item "Approach Gutters".

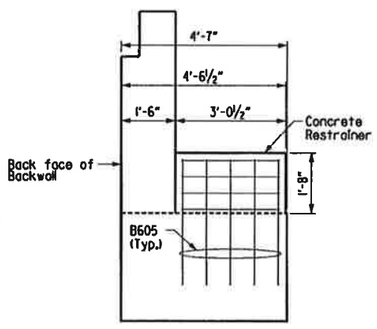
4 Form Liner Relief shall be a maximum of 1" to preserve a minimum clear cover of 1½"

5 "Ashlar Stone" Pattern, See SP Job 100824 "ARCHITECTURAL FINISH"



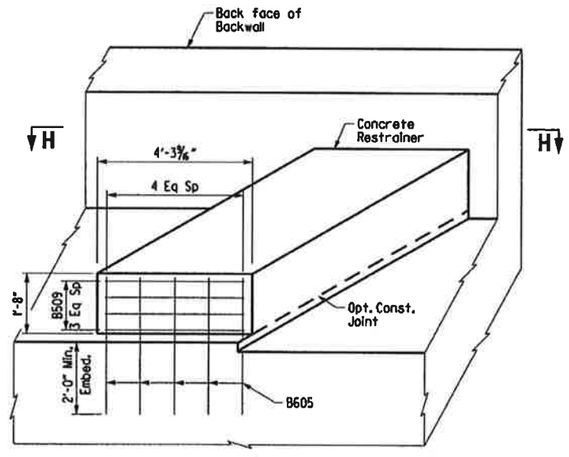
VIEW H-H

SCALE: ½" = 1'-0"



SECTION J-J

SCALE: ½" = 1'-0"



CONCRETE RESTRAINER DETAIL

N.T.S.

SHEET 3 OF 3
DETAILS OF END BENT 1
HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	bi00824l.bi3
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59519

\\bridgefarmer.internal\basshares\Projects\14408\ON\DGN\Plans\13_Bridge\Bents\bi00824l_bi3.dgn

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.

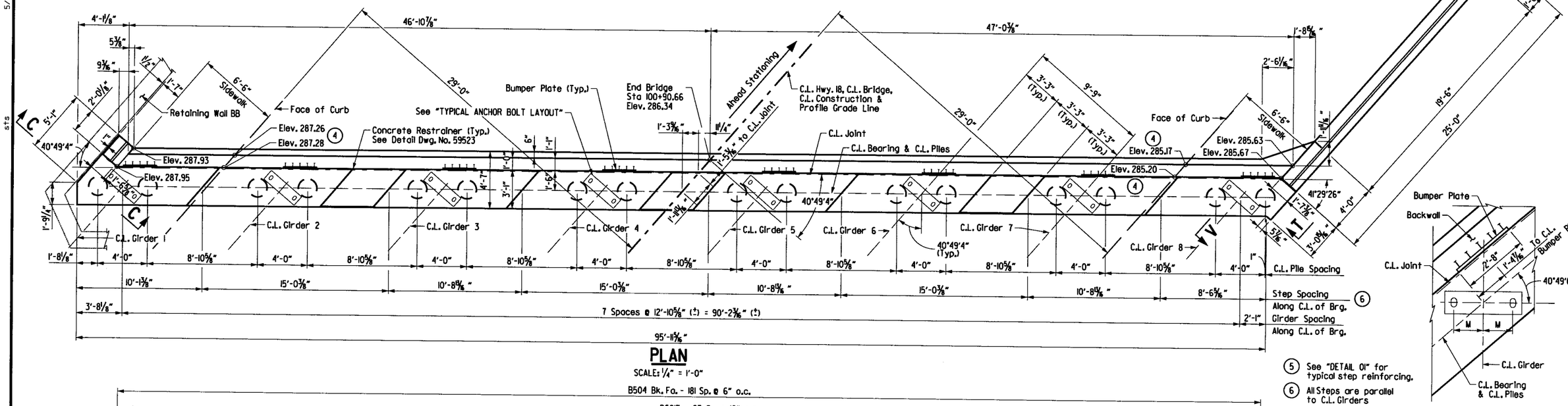
All reinforcing steel shall conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test results.

Structural Steel in End Bents shall be AASHTO M270, Gr. 50 and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

No portion of the Backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint shall not be placed until the adjacent deck pour has been made.

For additional information, see layout.

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.		100824	176	346
				(1) 07407		END BENT DETAILS		59520

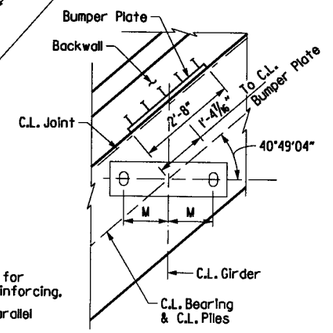


PLAN

SCALE: ¼" = 1'-0"

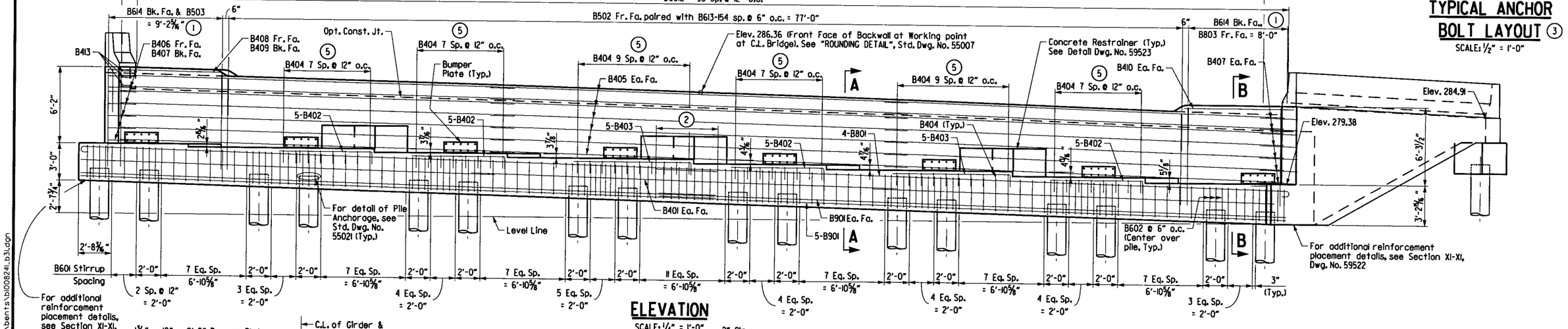
(5) See "DETAIL 01" for typical step reinforcing.

(6) All Steps are parallel to C.L. Girders



TYPICAL ANCHOR BOLT LAYOUT (3)

SCALE: ½" = 1'-0"



ELEVATION

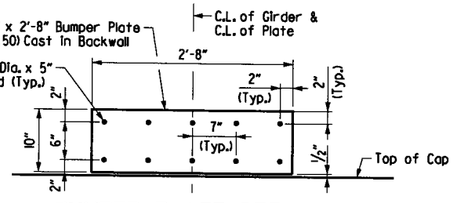
SCALE: ¼" = 1'-0"

(1) Placed as shown in Section X4-X4 Dwg. No. 59522

(2) 1'-11" Min. Lap #4 Bars
5'-0" Min. Lap #8 Bars
4'-6" Min. Lap #9 Bars

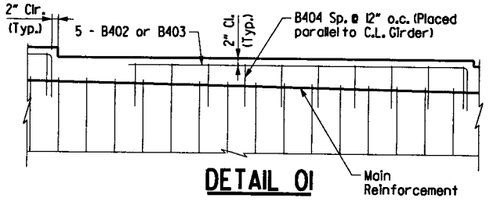
(3) See Project Bridge General Notes for Reinforcing Steel Placement Dwg. No. 59512 and Details of Elastomeric Bearings Dwg. No. 59536 for dimension "M" and additional notes regarding anchor bolt placement.

(4) At Gutter line



BUMPER PLATE DETAIL

SCALE: 1" = 1'-0"



DETAIL 01

Other Bars Not Shown For Clarity N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley

29 May 2018

SHEET 1 OF 4
DETAILS OF END BENT 3
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	b100824l_b3l
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59520

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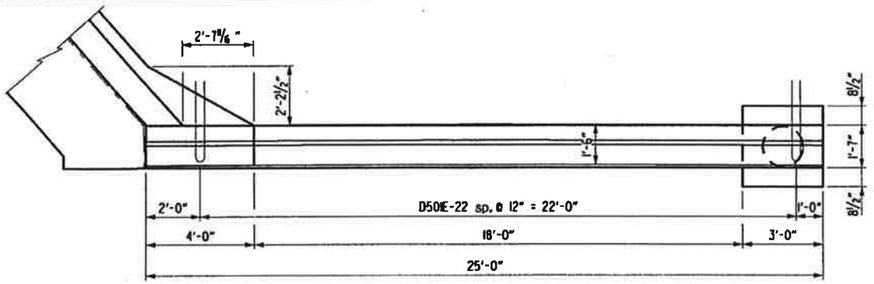
2:31:01 PM
10/23/2018
jharrell

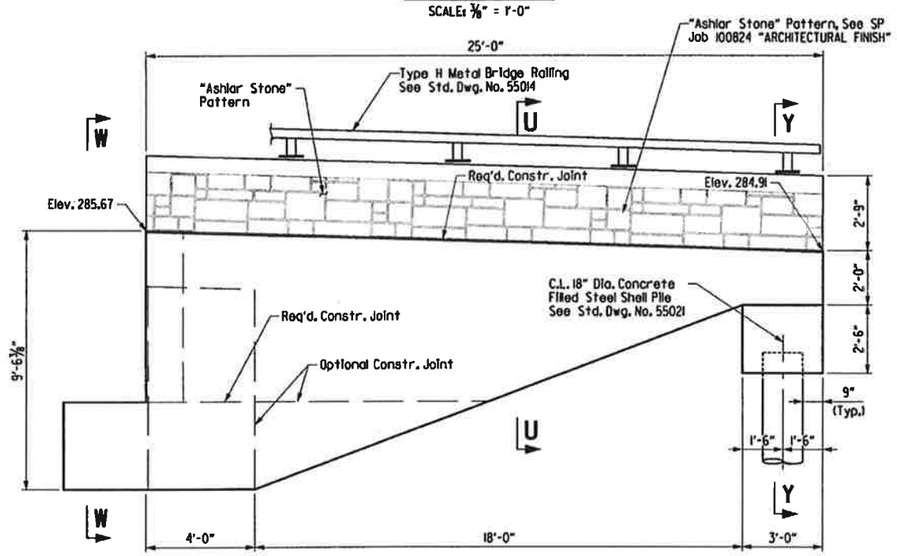
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	177	346
				① 07407		END BENT DETAILS		59521

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
Stephen T. Smiley 23 Oct 2018

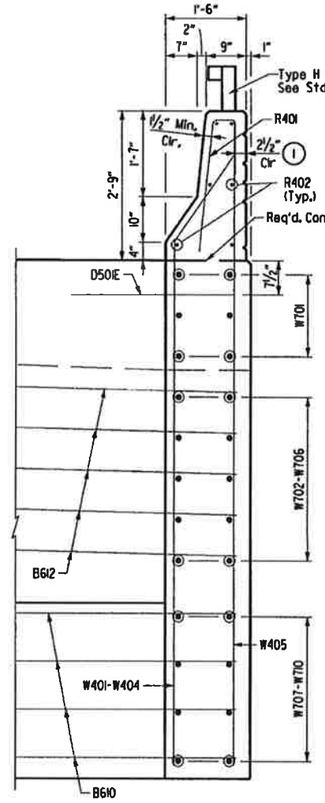
① Form Liner Relief shall be a maximum of 1" to preserve a minimum clear cover of 1½"



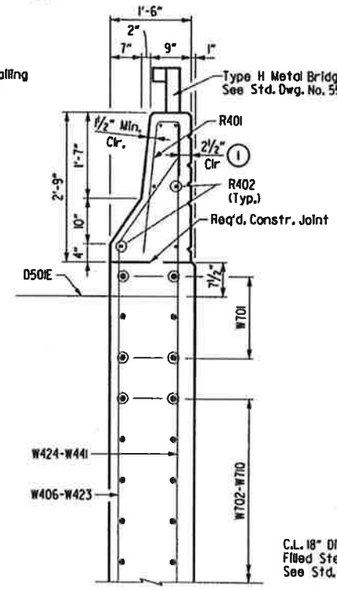
PLAN OF RAIL
SCALE: ⅜" = 1'-0"



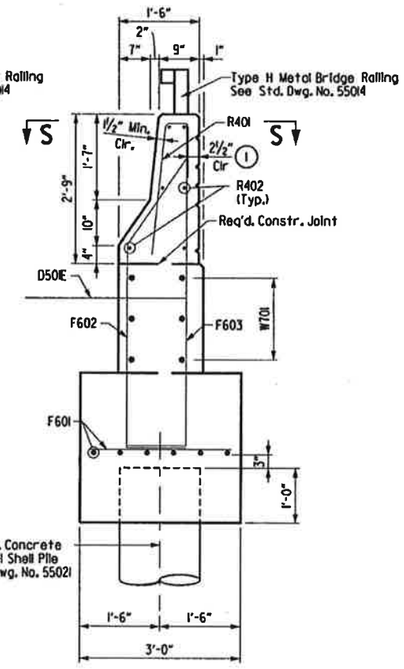
VIEW T-T
SCALE: ⅜" = 1'-0"



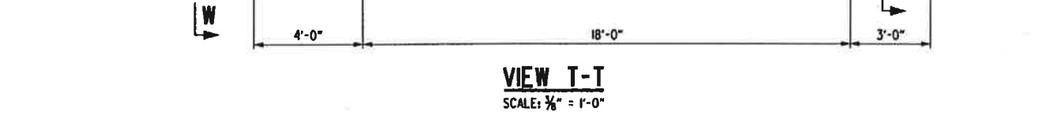
VIEW W-W
SCALE: ¾" = 1'-0"



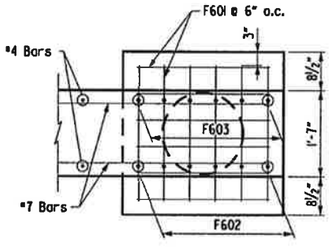
SECTION U-U
SCALE: ¾" = 1'-0"



SECTION Y-Y
SCALE: ¾" = 1'-0"



VIEW V-V
SCALE: ⅜" = 1'-0"



VIEW S-S
SCALE: ¾" = 1'-0"

SHEET 2 OF 4
DETAILS OF END BENT 3
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/8/2016	FILENAME:	b100824l.b32
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59521

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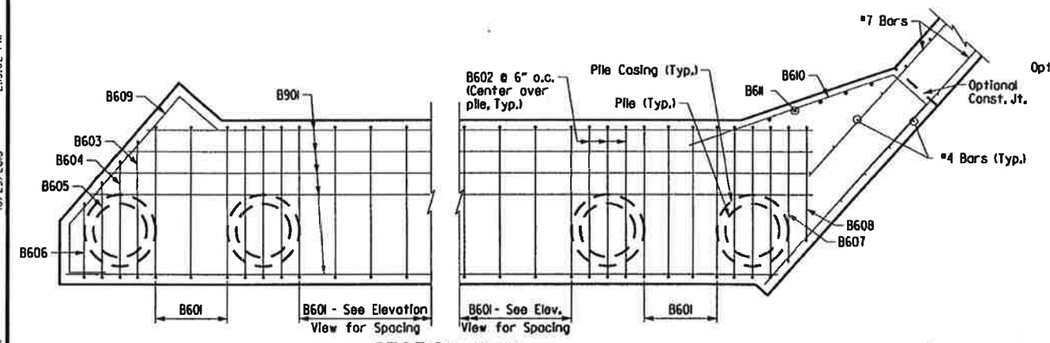
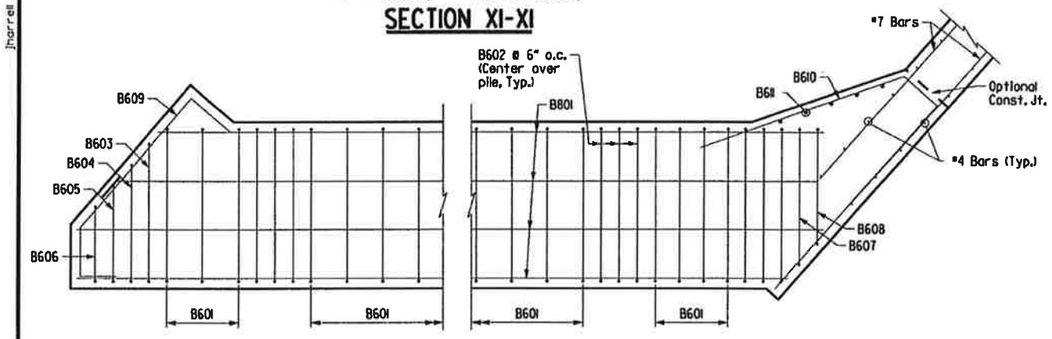
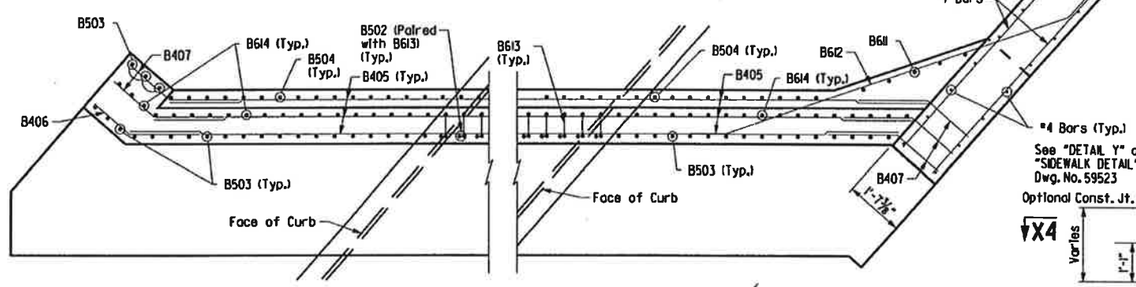
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	178	346
				① 07407		END BENT DETAILS		59522



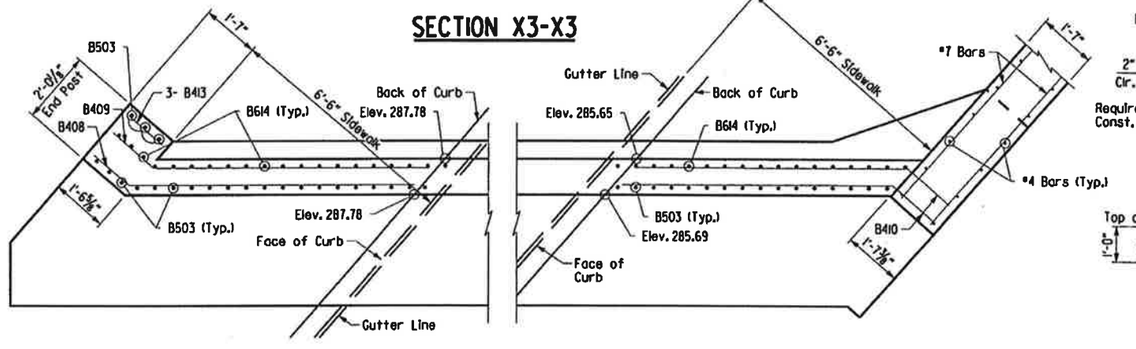
SECTION XI-XI



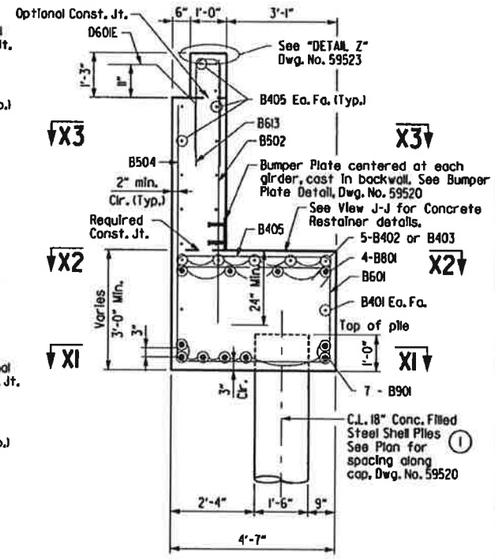
SECTION X2-X2



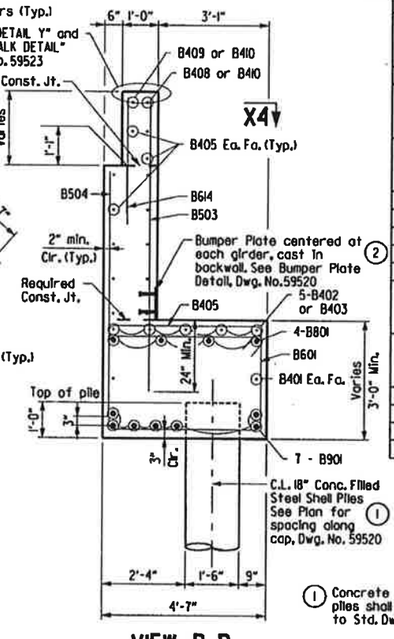
SECTION X3-X3



SECTION X4-X4



VIEW A-A

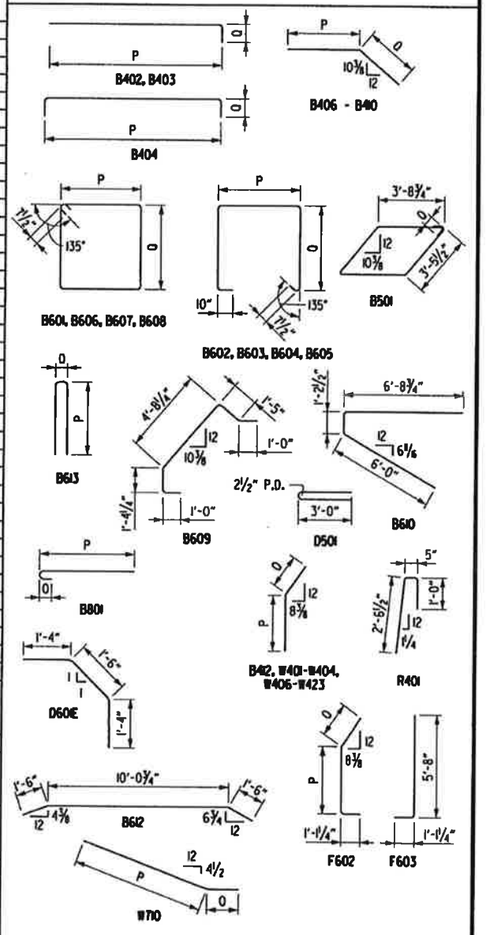


VIEW B-B

BAR LIST

MARK	NO. REQ'D.	LENGTH	P	Q	P.D.
Cap & Backwall					
B401	6	33'-5"			Str.
B402	20	8'-5"	7'-6"	1'-0"	2"
B403	10	10'-5"	9'-6"	1'-0"	2"
B404	52	7'-5"	5'-7 ¼"	1'-0"	2"
B405	36	32'-7"			Str.
B406	7	3'-3"	2'-0"	1'-3 ½"	2"
B407	21	3'-5"	2'-0"	1'-6"	2"
B408	1	9'-1"	7'-10"	1'-3 ½"	2"
B409	1	9'-0"	7'-7"	1'-6"	2"
B410	2	9'-0"	7'-6 ½"	1'-6 ½"	2"
B411	3	4'-1"			Str.
B412	3	3'-11"	2'-0"	1'-11"	2"
B413	3	1'-3"			Str.
B501	12	14'-11"		6"	2 ½"
B502	155	7'-8"			Str.
B503	39	8'-2"			Str.
B504	182	6'-5"			Str.
B601	97	14'-6"	4'-3"	2'-7"	4 ½"
B602	45	10'-5"	4'-3"	2'-7"	4 ½"
B603	1	11'-4"	5'-1 ¼"	2'-7"	4 ½"
B604	1	9'-6"	3'-3 ¼"	2'-7"	4 ½"
B605	1	8'-11"	2'-8 ¼"	2'-7"	4 ½"
B606	1	10'-3"	2'-1 ⅛"	2'-7"	4 ½"
B607	1	13'-7"	3'-9 ½"	2'-7"	4 ½"
B608	1	12'-5"	3'-2 ¾"	2'-7"	4 ½"
B609	2	9'-4"			4 ½"
B610	4	13'-10"			4 ½"
B611	5	7'-0"			Str.
B612	5	9'-4"			4 ½"
B613	155	6'-5"	3'-0"	8"	4 ½"
B614	37	3'-6"			Str.
B615	48	3'-8"			Str.
B801	8	53'-4"	51'-9"	8"	6"
B901	14	50'-7"			Str.
② D60IE	94	5'-10"			4 ½"
Wing Wall					
W401 to W404	1 Ea	11'-7" to 11'-6"	9'-7 ½" to 9'-6 ¼"	1'-11" to 1'-11"	2"
W405	4	11'-9"			Str.
W406 to W423	1 Ea	11'-5" to 4'-6"	9'-5 ¾" to 2'-6 ¾"	1'-11" to 1'-11"	2"
W424 to W441	1 Ea	11'-9" to 4'-10"			Str.
F601	12	2'-6"			Str.
F602	6	6'-4"	3'-5 ¼"	1'-11"	4 ½"
F603	6	6'-8"			4 ½"
② D50IE	23	6'-2"			3 ¾"
W701	6	24'-8"			Str.
W702 to W706	2 Ea	20'-5" to 13'-1"			Str.
W707 to W709	2 Ea	11'-4" to 6'-8"			Str.
W710	2	24'-6"	20'-6"	4'-0"	5 ¼"
R401	30	3'-11"			2"
R402	6	24'-8"			Str.
R403	6	1'-8"			Str.

BENDING DIAGRAMS



The dimensions shown for the bending diagrams are out-to-out of bars.

② Bars marked with an "E" suffix shallbe epoxy coated and paid as Item 804 "Epoxy Coated Reinforcing Steel(Gr. 60)"

STATE OF ARKANSAS
STEPHEN T. SMILEY
REGISTERED PROFESSIONAL ENGINEER
No. 13072
23 Oct 2018

SHEET 3 OF 4
DETAILS OF END BENT 3
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/8/2016	FILENAME:	bi008241.b33
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	¼" = 1'-0"
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59522

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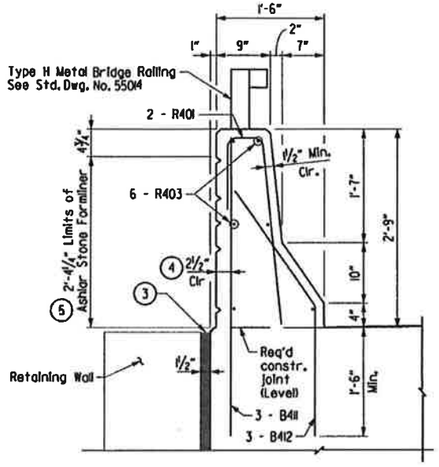
10/23/2018 2:13:02 PM
jharrell

2:13:03 PM 10/23/2018 jharrell

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	179	346
				① 07407		END BENT DETAILS		59523

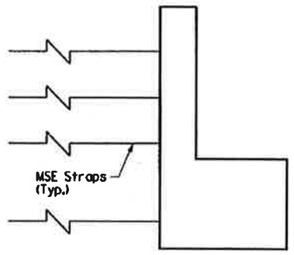
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley 23 Oct 2018



VIEW C-C

SCALE: 1" = 1'-0"

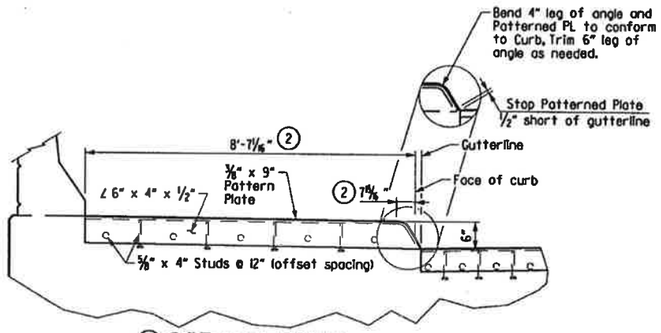


STRAPS DETAIL

No Scale

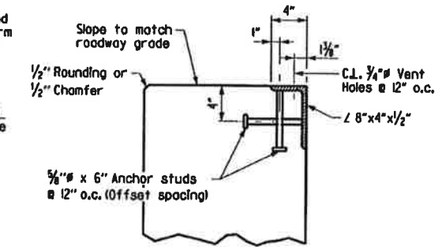
MSE straps are shown for illustration only. The exact number, length, location and method of attachment to the back wall shall be designed by the MSE wall manufacturer. The contractor shall submit sign and sealed working drawings prepared by a Professional Engineer registered in the state of Arkansas along with the design calculations for Engineer's approval. All costs in connection with the design, working drawings, furnishing materials and construction shall be included in the contract bid price for "Retaining Walls".

A service lateral load of 1.8 K per feet of length of bent, resulting from back fill soil pressure and a thermal load of 1.2 K per feet of length of bent shall be accounted for.



① SIDEWALK DETAIL

No Scale



① DETAIL Z

No Scale

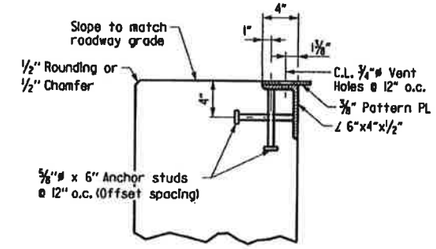
① For additional joint details, see Std. Dwg. No. 55008 and Dwg. No. 59532

② Measured along joint

Notes:

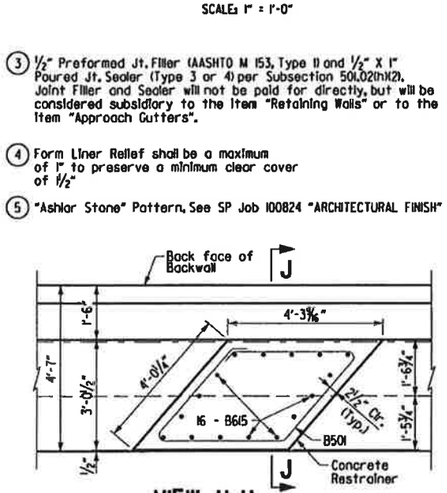
Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shall be hand packed under the joint armor in the sidewalk and in the backwall.



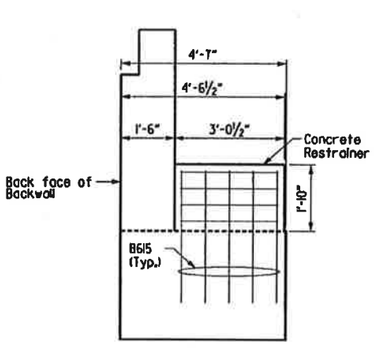
① DETAIL Y

No Scale



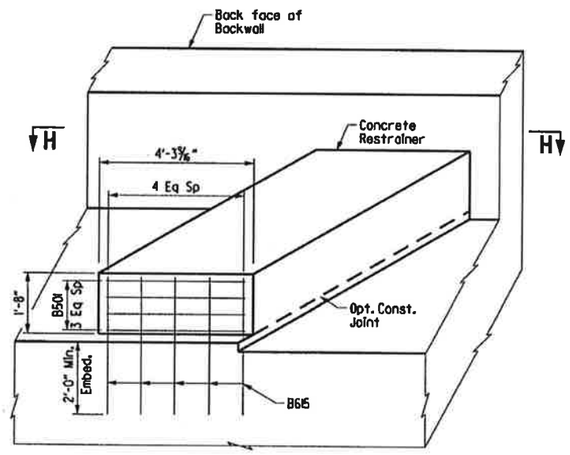
VIEW H-H

SCALE: ½" = 1'-0"



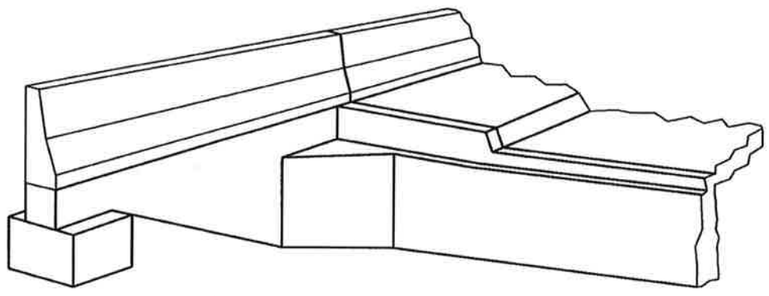
SECTION J-J

SCALE: ½" = 1'-0"



CONCRETE RESTRAINER DETAIL

N.T.S.



PICTORAL OF END BENT RAILING

N.T.S.

SHEET 4 OF 4
DETAILS OF END BENT 3
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/8/2016	FILENAME:	bl00824l.b34
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07407 DRAWING NO. 59523

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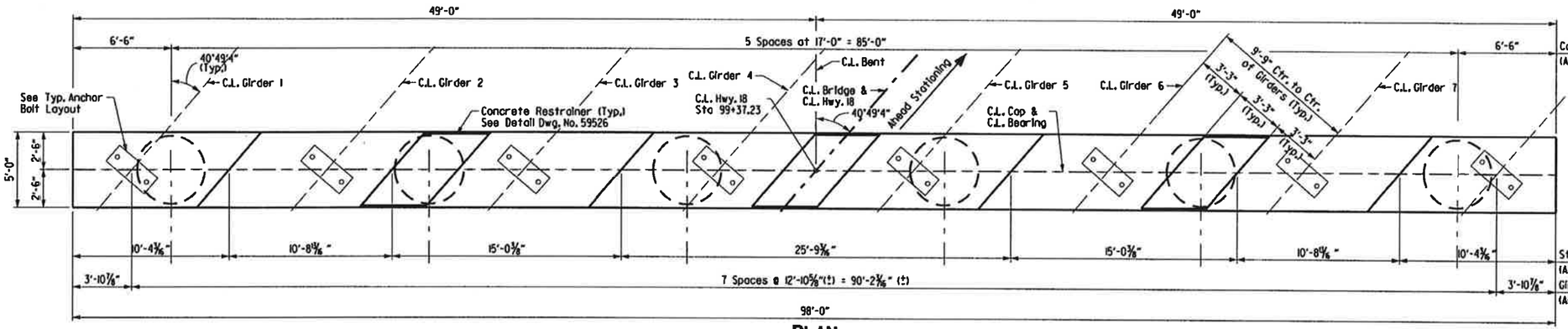
DATE REVISED	DATE F.H.WED	DATE REVISED	DATE F.H.WED
10-23-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	180	346
(1) 07407		INT. BENT DETAILS		59524

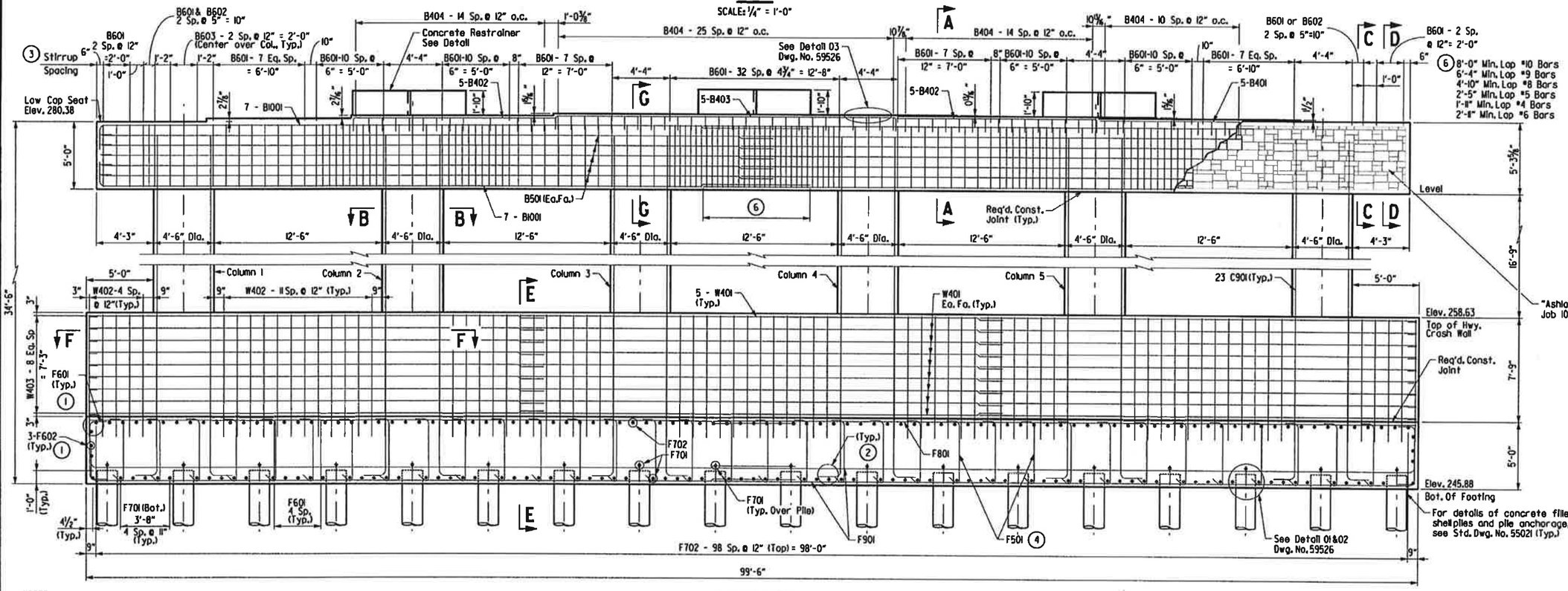
STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018



(5) All Steps are parallel to C.L. Girders

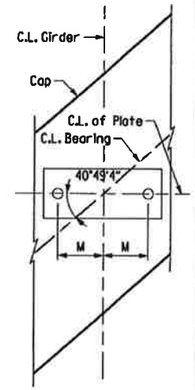
PLAN

SCALE: ¼" = 1'-0"



ELEVATION

(Looking Ahead)
Scale: ¼" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

Scale: ½" = 1'-0"

(6) 8'-0" Min. Lap #10 Bars
6'-4" Min. Lap #9 Bars
4'-10" Min. Lap #8 Bars
2'-5" Min. Lap #5 Bars
1'-8" Min. Lap #4 Bars
2'-8" Min. Lap #6 Bars

NOTES:

For general notes, see Dwg. No. 59512

For details and dimension M of elastomeric bearing, see Dwg. No. 59536

All reinforcing steel shall conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test reports.

Top reinforcing steel in bent caps shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Concrete: 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.

Top reinforcing steel in footing and bottom reinforcing steel in bent cap shall be properly placed to avoid interference with vertical column bars.

NOTE:

For "SECTION A-A" Thru "SECTION G-G" See Dwg. No. 59536

(1) Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

(2) Small rotation permissible for resolution of hooks conflicting with adjacent bars.

(3) Stirrup spacing are symmetrical about C.L. Bent.

(4) Hook F501 around transverse #8 footing reinforcing and space as shown in Elevation and End View.

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENT 2
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/10/2016	FILENAME:	bl00824l.b21
CHECKED BY:	STS	DATE:	6/13/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/1/2016		

BRIDGE NO. 07407 DRAWING NO. 59524

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10/23/2018 2:13:04 PM
jharrell

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	181	346
				1 07407		INT. BENT DETAILS		59525

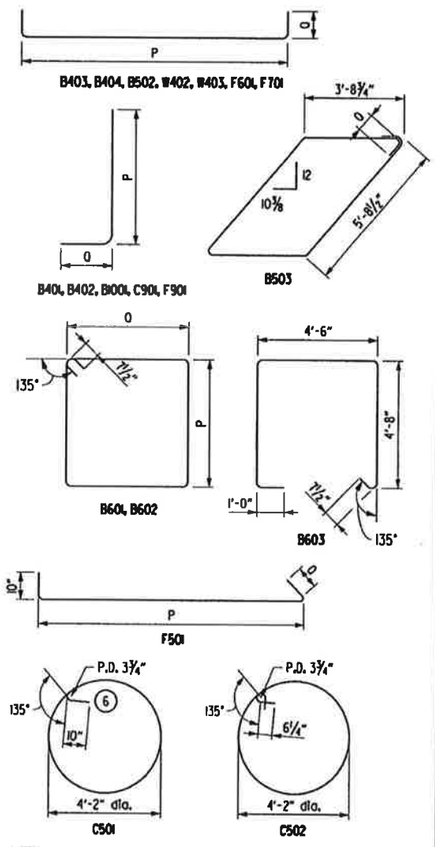
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13072 STEPHEN T. SMILEY

Stephen T. Smiley 23 Oct 2018

BAR LIST

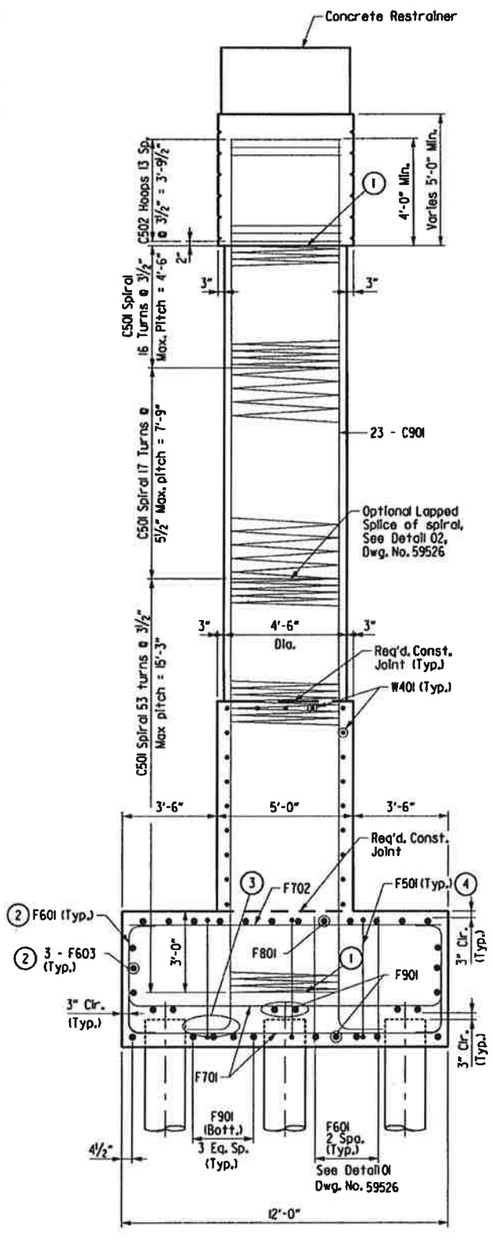
MARK	NO. REQ'D.	LENGTH	P	O	P.D.
Cap					
B401	5	11'-5"	10'-6"	1'-0"	2"
B402	10	15'-11"	15'-0"	1'-0"	2"
B403	5	27'-3"	25'-5"	1'-0"	2"
B404	67	8'-0"	6'-1 3/4"	1'-0"	2"
B501	20	50'-0"			Str.
B502	10	5'-10"	4'-4 1/2"	10"	2 1/2"
B503	12	19'-6"		6"	2 1/2"
B601	121	19'-2"	4'-8"	4'-6"	4 1/2"
B602	6	13'-6"	4'-8"	1'-7 7/8"	4 1/2"
B603	18	15'-4"			4 1/2"
B604	60	3'-7"			Str.
B1001	28	54'-2"	52'-8"	1'-9 1/2"	10"
Columns					
C501	6	861'-4"			Spiral
C502	84	13'-11"			Hoops
C901	138	34'-5"	33'-1"	1'-7 1/4"	9"
Crash Wall					
W401	63	34'-4"			Str.
W402	70	22'-8"	4'-8"	9'-1"	2"
W403	18	6'-5"	4'-7"	1'-0"	2"
W404	32	9'-1"			Str.
Footing					
F501	102	5'-7"	4'-5"	6 1/4"	3 3/4"
F601	186	5'-11"	4'-3 3/4"	1'-0"	4 1/2"
F602	6	11'-6"			Str.
F603	12	51'-0"			Str.
F701	105	13'-9"	11'-6"	1'-4"	5 1/4"
F702	99	11'-6"			Str.
F901	32	54'-0"	52'-8"	1'-7 1/4"	9"
F801	24	51'-11"			Str.

BENDING DIAGRAMS



(6) At the lapped splice end of the spiral, the hook may be field bent around a vertical bar.

The dimensions shown for the bending diagrams are out-to-out of bars.



END VIEW

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

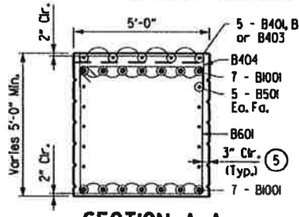
(1) End spiral reinforcing with 1½" flat turns.

(2) Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

(3) Small rotation permissible for resolution of hooks conflicting with adjacent bars.

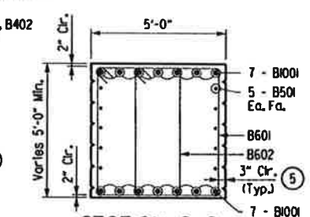
(4) Hook F501 Bars around transverse #8 footing reinforcing and space as shown in Elevation and End View.

(5) Form Liner relief shall be a maximum of 1" to provide a minimum clear cover of 2".



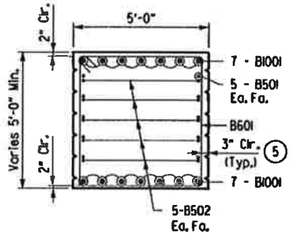
SECTION A-A

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



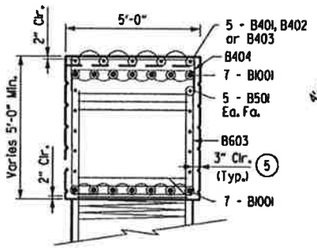
SECTION C-C

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



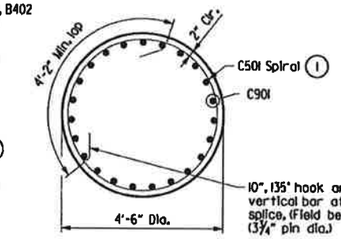
SECTION D-D

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



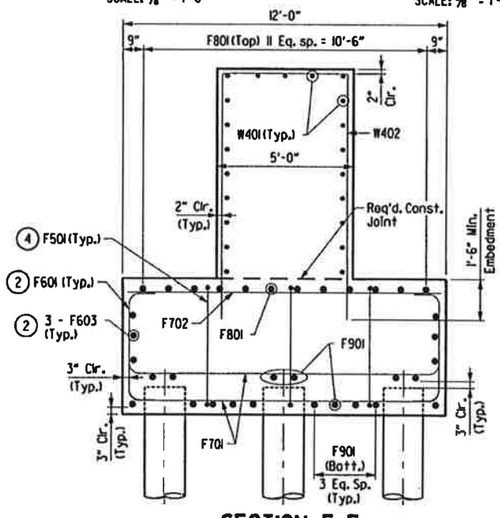
SECTION G-G

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



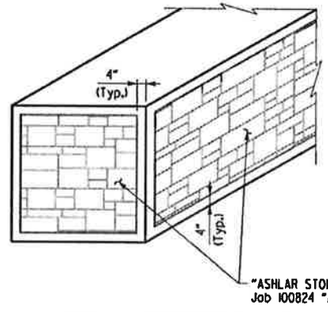
SECTION B-B

Scale: ½" = 1'-0"



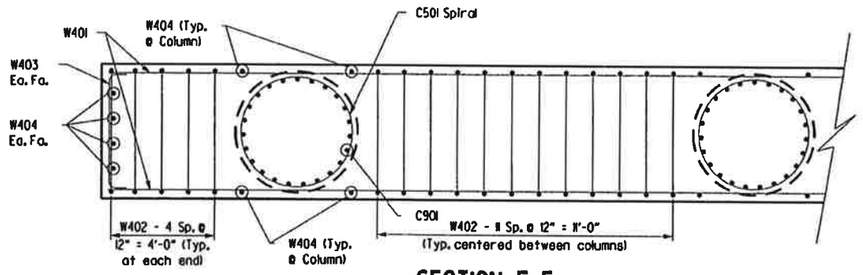
SECTION E-E

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



CAP - ISOMETRIC VIEW

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



SECTION F-F

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

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENT 2
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/10/2016	FILENAME:	bl00824l.b22
CHECKED BY:	STS	DATE:	6/13/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/1/2016		

BRIDGE NO. 07407 DRAWING NO. 59525

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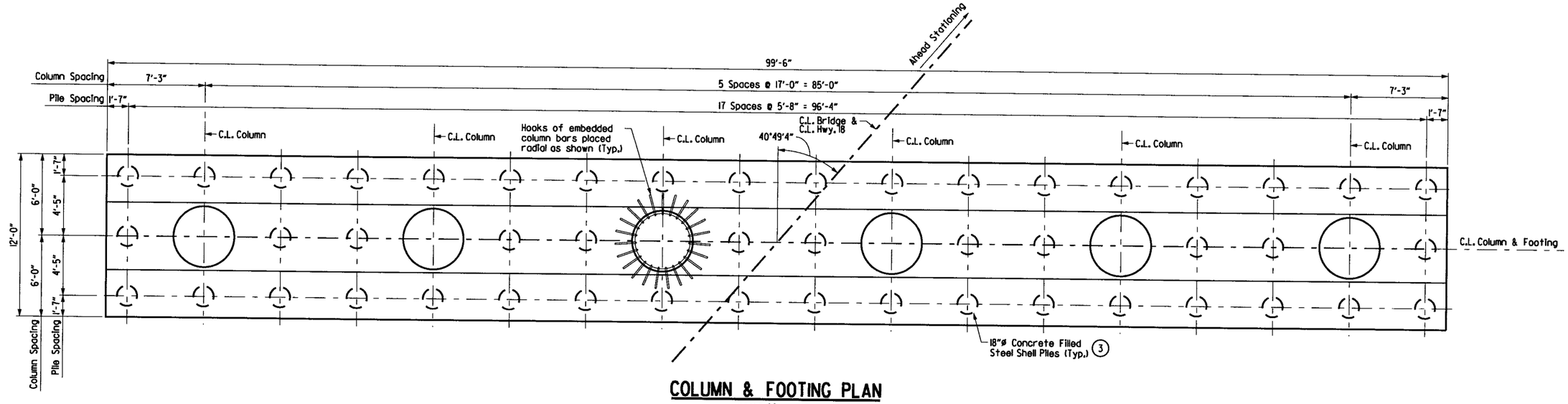
10/23/2018 2:13:05 PM
jharrell

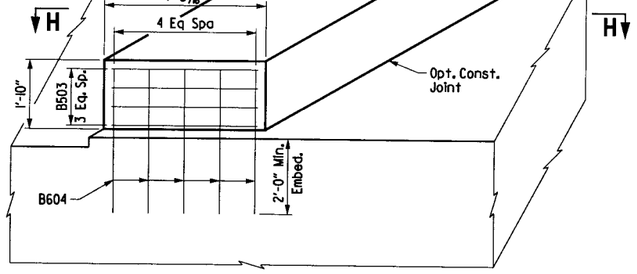
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	182	346
(1) 07407		INT. BENT DETAILS		59526



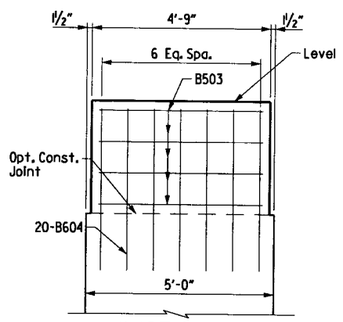
COLUMN & FOOTING PLAN

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



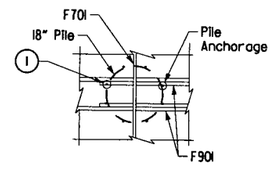
CONCRETE RESTRAINER DETAIL

N.T.S



SECTION J-J

Scale: ½" = 1'-0"

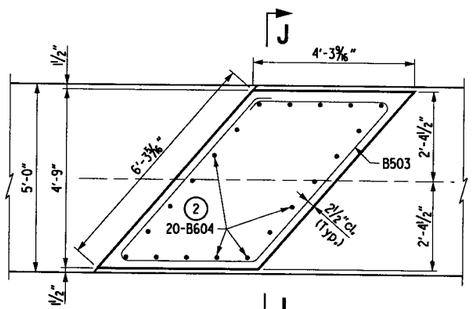


Place bars each-way as shown, threaded between the field welded Pile Anchorage hooks (see Std. Dwg. No. 55021). The required contact lap splice for bars F901 may be side-by-side OR vertically stacked

DETAIL 02

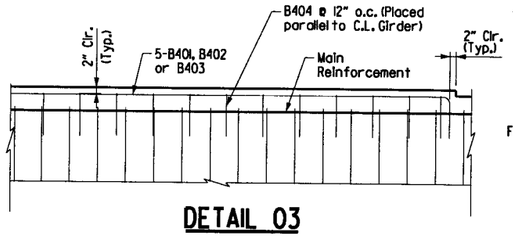
Other Bars Not Shown For Clarity

N.T.S.



VIEW H-H

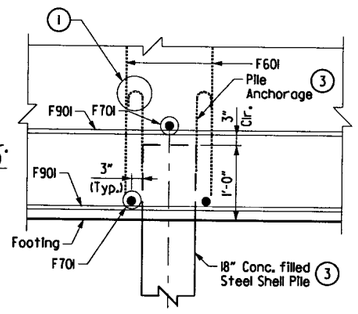
SCALE: ½" = 1'-0"



DETAIL 03

Other Bars Not Shown For Clarity

N.T.S.



DETAIL 01

Other Bars Not Shown For Clarity

N.T.S.

(1) Prior to tying or specified field welding, Small rotation permissible for resolution of hooks conflicting with adjacent bars

(2) B604 bars placed as shown, avoid B1001

(3) See Std. Dwg. No. 55021 for additional information.

Stephen T. Smiley

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENT 2
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/10/2016	FILENAME:	b100824l_b23
CHECKED BY:	STS	DATE:	6/13/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/1/2016		

BRIDGE NO. 07407

DRAWING NO. 59526

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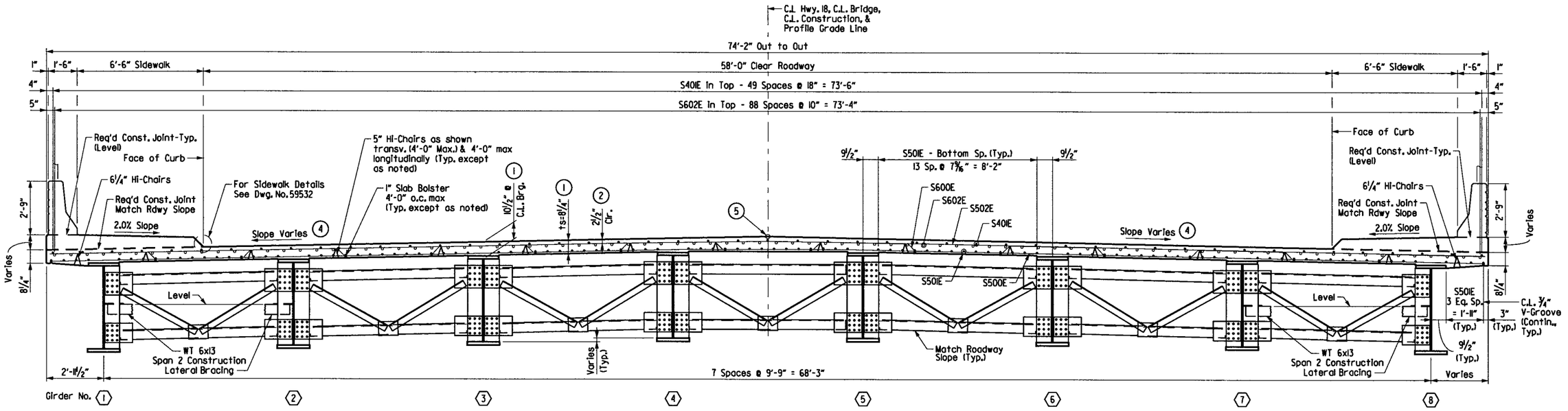
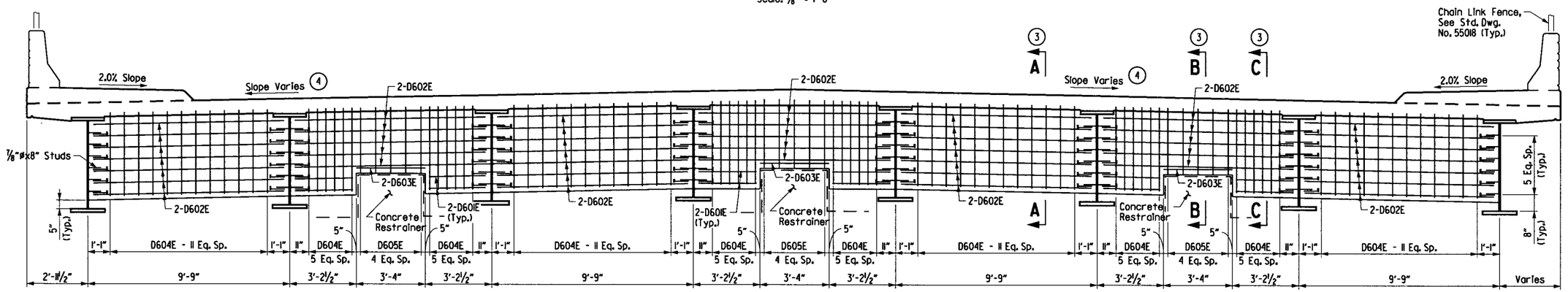
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	183	346
				(1) 07407		SPAN DETAILS		59527



TYPICAL ROADWAY SECTION (4)

(Looking Ahead)
Scale: ⅜" = 1'-0"



ROADWAY SECTION AT INTERIOR BENT

Scale: ⅜" = 1'-0"

(1) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" Std. Dwg. No. 55007.

(2) Tolerance Minus = ¼", Plus equal to amount of slab thickening used to meet thickness tolerance. See ""ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" Std. Dwg. No. 55007.

(3) See "PARTIAL PLAN OF CONCRETE DIAPHRAGM..." details for orientation of skewed section, Dwg. No. 59529

(4) See "SUPERELEVATION TRANSITION SKETCH", Dwg. No. 59515

(5) See "ROUNDING DETAIL" on Std. Dwg. No. 55007 and its limits of applicability given by "SUPERELEVATION TRANSITION SKETCH" on Dwg. No. 59515

NOTES:

One Epoxy Coated #6 bar in the top and one Epoxy Coated #6 bar in the bottom may be substituted for each bar S600E. Payment willbe based on the weight of bar S600E.

Class I Protective Surface Treatment shallbe applied to the Roadway Surface and the face and top of parapet rail.

All bars designated with an E suffix are to be epoxy coated.

For "SCREED RAIL SUPPORT FOR PLATE GIRDER", see Std. Dwg. No 55007.

SLAB REINFORCING:

Transverse:
- S502E @ 13" Centers (Top)
- S601E @ 13" Centers (Top Overhang)
- S600E @ 13" Centers (Bent up over girder)
- S500E @ 13" Centers (bottom)

Longitudinal:
- S401E @ 18" Centers (Top Temperature)
- S602E @ 10" Centers (Placed in Top as shown over int. Supports)
- S501E @ place as shown (Bottom)

EXPANSION DEVICE @ BENTS 1 & 3

Roadway Channel MC18x42.7 (M270, Gr. 50)
Conn. L's 8"x4"x½"
Detail Device ⅛" high and provide ¼" shims using 1- ⅛" PL & 2 - 1/16" PL's

For Additional Joint Details, see Std. Dwg. No. 55008 and Dwg. No. 59532

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
29 May 2018

SHEET 1 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	5/26/2016	FILENAME:	b100824l_sll
CHECKED BY:	STS	DATE:	5/30/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	4/29/2016		

BRIDGE NO. 07407 DRAWING NO. 59527

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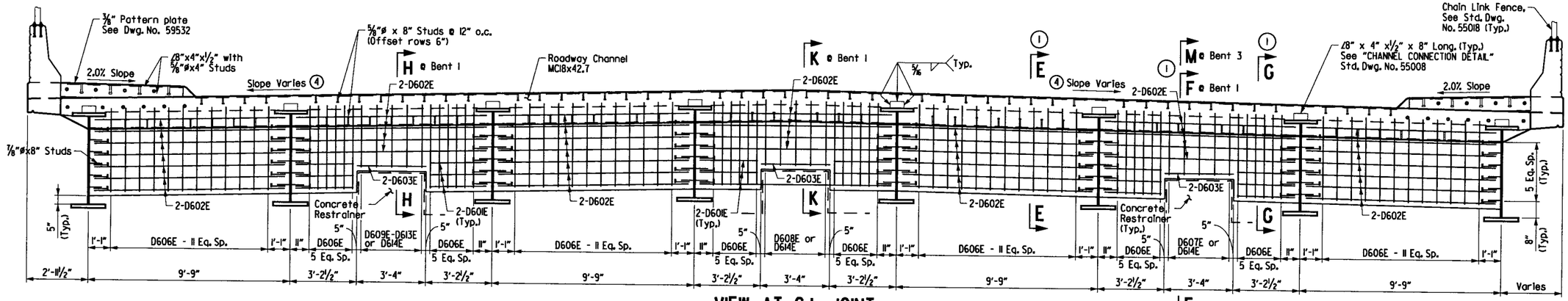
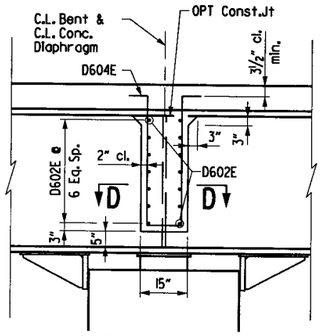
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	184	346
				(1) 07407		SPAN DETAILS		59528



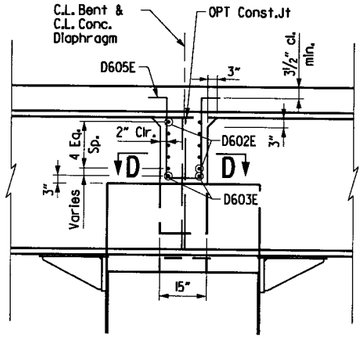
VIEW AT C.L. JOINT

(Looking Ahead)
Scale: ⅜" = 1'-0"



SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

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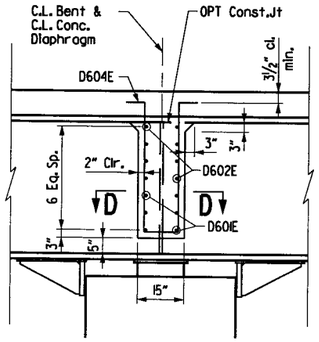
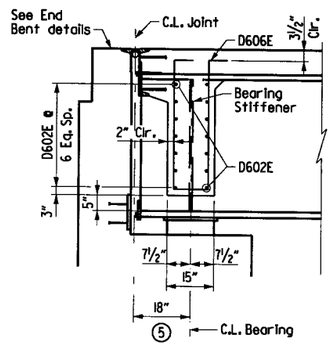


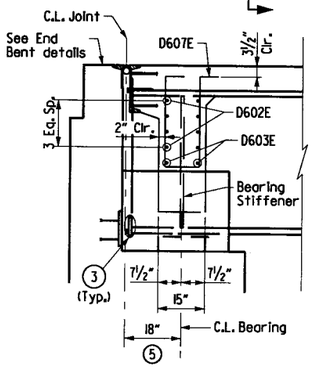
SECTION C-C

SCALE: ½" = 1'-0"



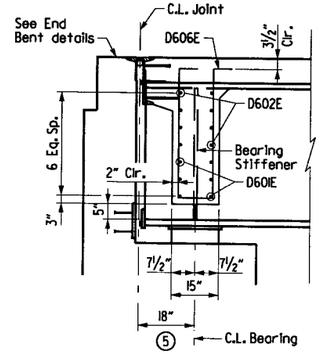
SECTION E-E

SCALE: ½" = 1'-0"



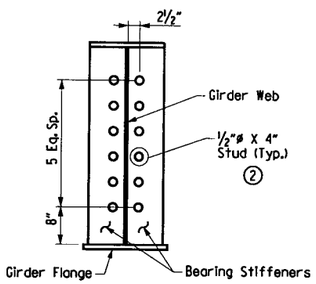
SECTION F-F

SCALE: ½" = 1'-0"



SECTION G-G

SCALE: ½" = 1'-0"



DETAIL K

Not to Scale

(6) Measured normal to C.L. Joint

SECTION H-H

SCALE: ½" = 1'-0"

(6) Measured normal to C.L. Joint

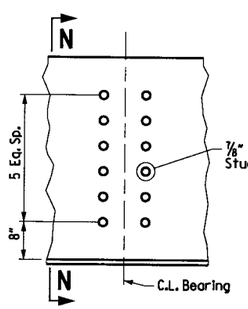
SECTION K-K

SCALE: ½" = 1'-0"

(6) Measured normal to C.L. Joint

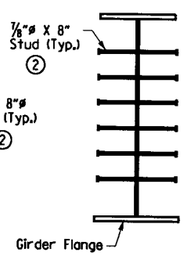
SECTION M-M

SCALE: ½" = 1'-0"



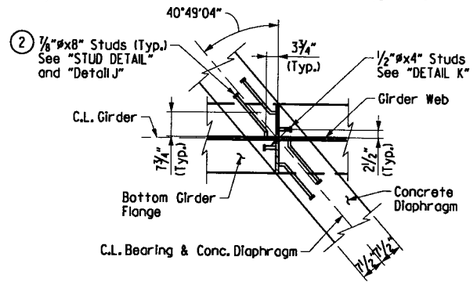
DETAIL J

Stud Vertical Spacing
Girder Elevation @ C.L. of Bearing
Not to Scale



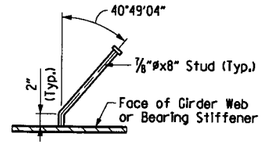
SECTION N-N

Not to Scale



SECTION D-D

SCALE: ½" = 1'-0"



STUD DETAIL

N.T.S.

(1) See "PARTIAL PLAN OF CONCRETE DIAPHRAGM..." details for orientation of skewed section, Dwg. No. 59529

(2) Omit studs on outside of Exterior Girders.

(3) See "BUMPER CONNECTION DETAIL", Dwg. No. 59529

(4) See "SUPERELEVATION TRANSITION SKETCH", Dwg. No. 59529

(5) Measured normal to C.L. Joint

STATE OF ARKANSAS
STEPHEN T. SMILEY
REGISTERED PROFESSIONAL ENGINEER
No. 13072

Stephen T. Smiley
29 May 2018

SHEET 2 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	5/26/2016	FILENAME:	bl008241_sl2
CHECKED BY:	STS	DATE:	5/30/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	4/29/2016		

BRIDGE NO. 07407 DRAWING NO. 59528

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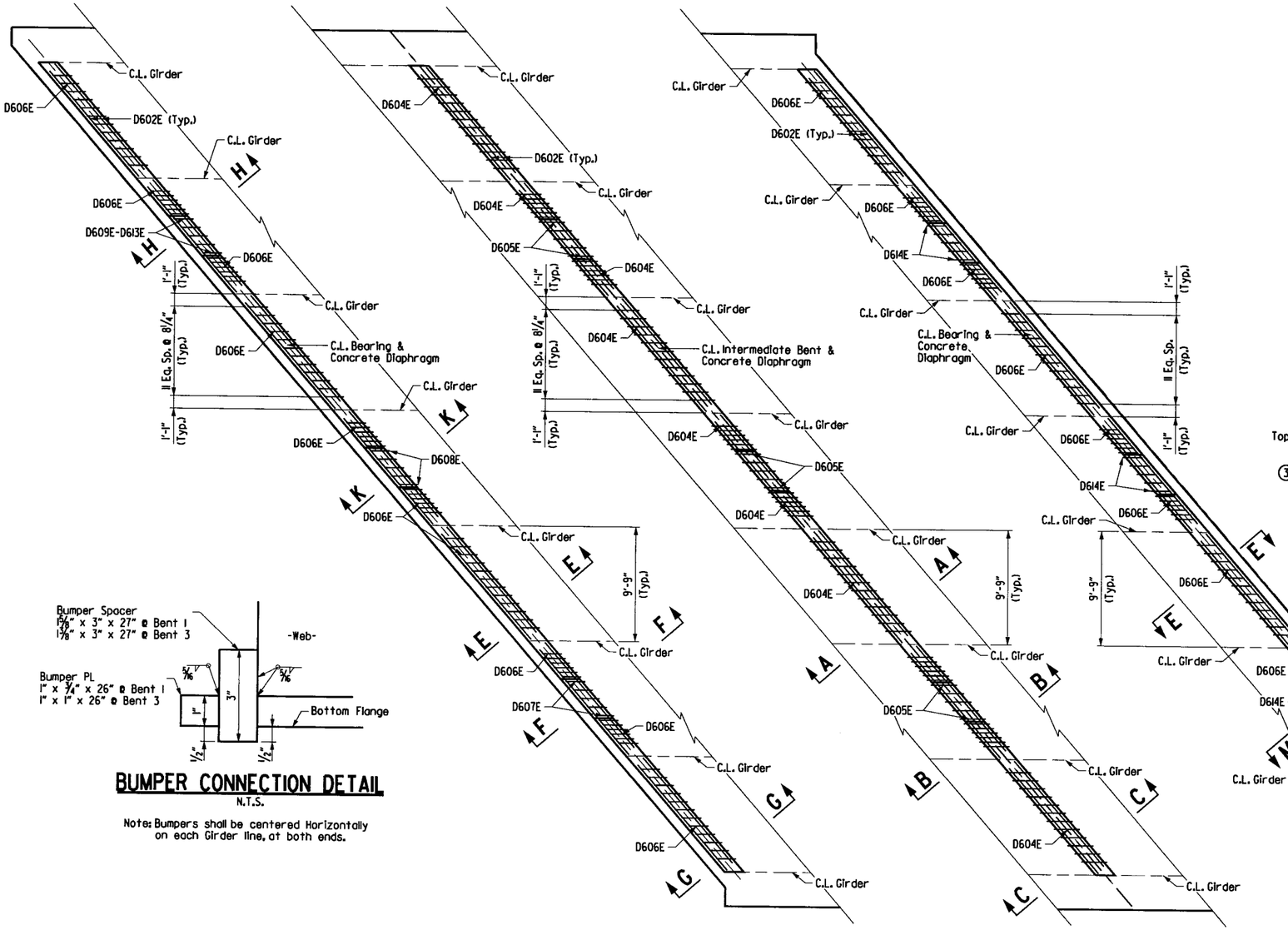
5/25/2018 4:19:18 PM sts

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.		100824	185	346
				(1) 07407		SPAN DETAILS		59529



PARTIAL PLAN OF CONCRETE DIAPHRAGM REINFORCING AT END BENT 1

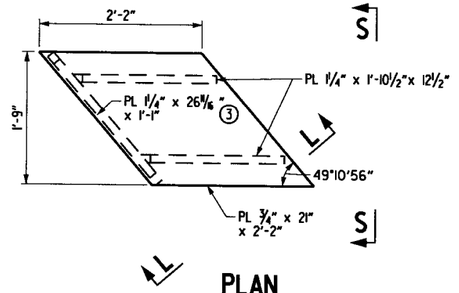
SCALE: 3/16" = 1'-0"

PARTIAL PLAN OF CONCRETE DIAPHRAGM REINFORCING AT BENT 2

SCALE: 3/16" = 1'-0"

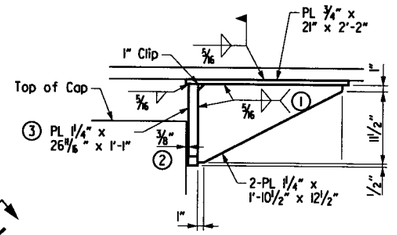
PARTIAL PLAN OF CONCRETE DIAPHRAGM REINFORCING AT END BENT 3

SCALE: 3/16" = 1'-0"



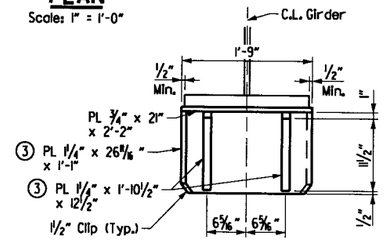
PLAN

Scale: 1" = 1'-0"



VIEW L-L

Scale: 1" = 1'-0"



VIEW S-S

Scale: 1" = 1'-0"

① Stop weld ½" from clip.

② Gap measured perpendicular to cap.

③ Longitudinal restrainer shall be fabricated to account for grade, so the final position of this plate will be vertical. Longitudinal restrainer shall not be welded to flange until after deck is poured.

LONGITUDINAL RESTRAINER DETAILS

Scale: 1" = 1'-0"

BUMPER CONNECTION DETAIL

N.T.S.

Note: Bumpers shall be centered Horizontally on each Girder line, at both ends.

STATE OF ARKANSAS
Stephen T. Smiley
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STEPHEN T. SMILEY

29 May 2018

SHEET 3 OF 7

DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT

HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	5/26/2016	FILENAME:	b100824l_sl3
CHECKED BY:	STS	DATE:	5/30/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	4/29/2016		

BRIDGE NO. 07407 DRAWING NO. 59529

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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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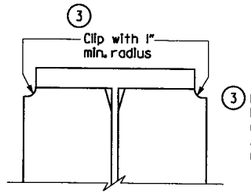
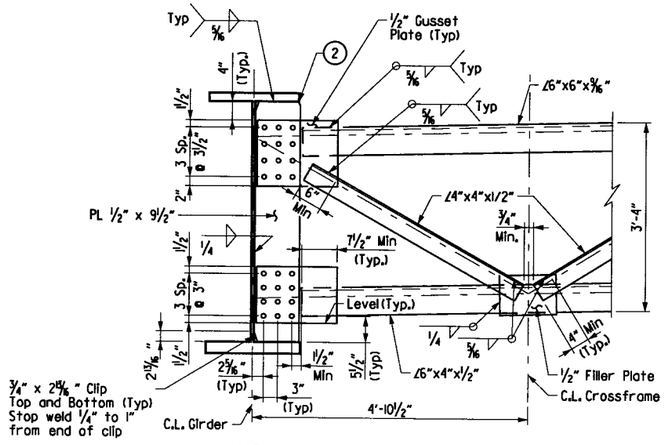
				JOB NO.		100824	186	346
				(1) 07407		SPAN DETAILS		59530



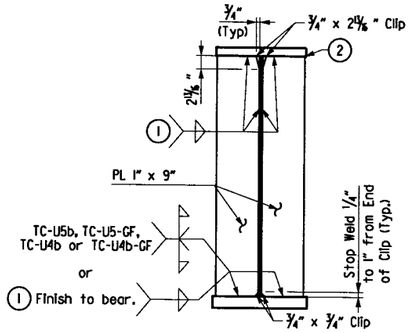
(3) If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

PLATE CLIP DETAIL
N.T.S.



TYPICAL CROSSFRAME CONNECTION
SCALE: 3/4" = 1'-0"

(2) See "PLATE CLIP DETAIL"



BEARING STIFFENER DETAIL
SCALE: 3/4" = 1'-0"

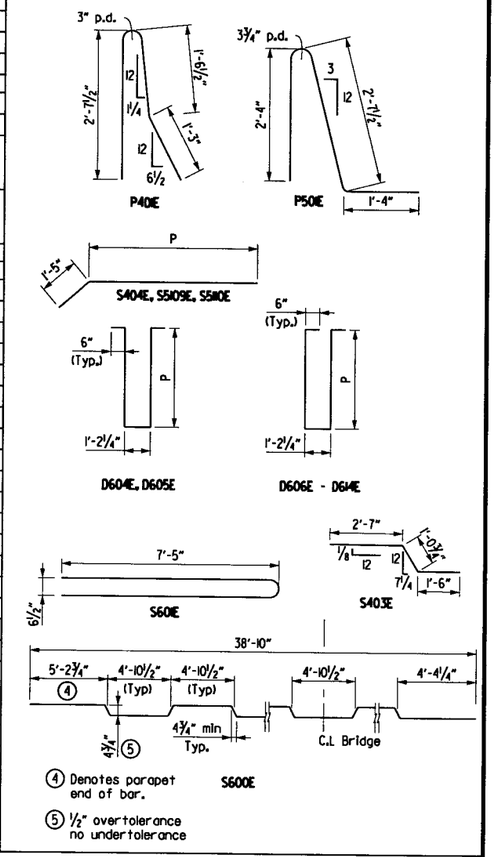
Note:
Bearing stiffeners shall be fabricated to be plumb in its final position.

(1) See "WELD TABLE" for minimum weld size, Std. Dwg. No. 55007

BAR LIST

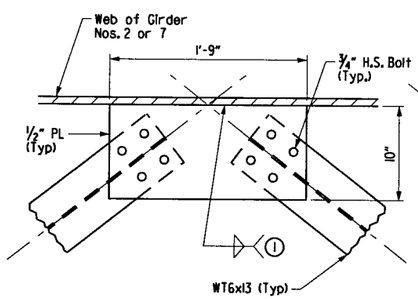
Mark	No. Req'd.	P	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars)
S401E	462		38'-6"	Str.	
S402E	456		7'-8"	Str.	
S403E	474		5'-2"	3"	
S404E	20	8'-2 1/2"	9'-8"	3"	
S500E	356		38'-8"	Str.	
S501E	530		53'-5"	Str.	
S502E	356		38'-8"	Str.	
S503E to S522E	8 Ea		37'-7" to 31'-8"	Str.	
S523E to S5108E	4 Ea		6'-1" to 59'-5"	Str.	
S5109E	8	48'-6 1/2"	50'-0"	3 3/4"	
S5110E	28	6'-0"	7'-5"	3 3/4"	
S600E	354		39'-7"	4 1/2"	
S601E	458		15'-2"	6"	
S602E	178		57'-0"	Str.	
P401E	912		5'-6"	3"	
P402E	104		5'-6"	Str.	
P403E	21		11'-7"	Str.	
P404E	7		11'-8"	Str.	
P405E	84		14'-8"	Str.	
P406E	140		13'-8"	Str.	
P501E	912		6'-4"	3 3/4"	
D601E	96		3'-2"	Str.	
D602E	246		11'-9"	Str.	
D603E	18		4'-4"	Str.	
D604E	84	4'-2"	10'-0"	4 1/2"	
D605E	15	3'-3"	8'-2"	4 1/2"	
D606E	168	4'-2"	10'-0"	4 1/2"	
D607E	5	3'-3"	8'-2"	4 1/2"	
D608E	5	3'-2 1/2"	8'-1"	4 1/2"	
D609E to D613E	1 Ea	2'-11 1/2" to 3'-1 1/2"	7'-7" to 7'-11"	4 1/2"	
D614E	15	3'-0 1/2"	7'-9"	4 1/2"	

Note:
All bars designated with an E suffix are to be epoxy coated.

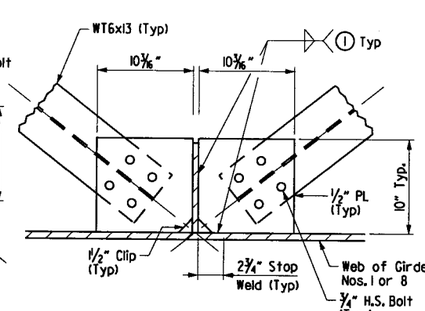


(4) Denotes parapet end of bar.

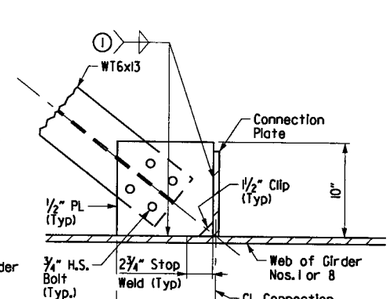
(5) 1/2" overtolerance no undertolerance



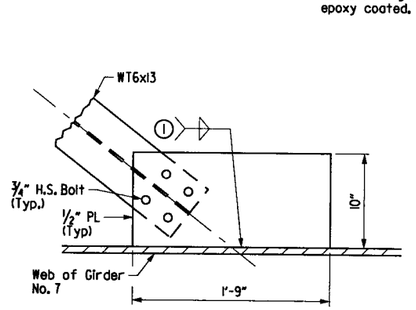
TYPICAL CONSTRUCTION LATERAL BRACE CONNECTION @ GIRDER NOS. 2 & 7
SCALE: 1 1/2" = 1'-0"



TYPICAL CONSTRUCTION LATERAL BRACE CONNECTION @ GIRDER NOS. 1 & 8
SCALE: 1 1/2" = 1'-0"



TYPICAL CONSTRUCTION LATERAL BRACE CONNECTION TERMINATION @ INT. GIRDER CONNECTION P
SCALE: 1 1/2" = 1'-0"



TYPICAL CONSTRUCTION LATERAL BRACE CONNECTION TERMINATION @ INT. GIRDER W/O CONNECTION P
SCALE: 1 1/2" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 4 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 5/26/2016
CHECKED BY: STS DATE: 5/30/2016
DESIGNED BY: DCD DATE: 4/29/2016
FILENAME: b100824l_sl4
SCALE: AS SHOWN

BRIDGE NO. 07407 DRAWING NO. 59530

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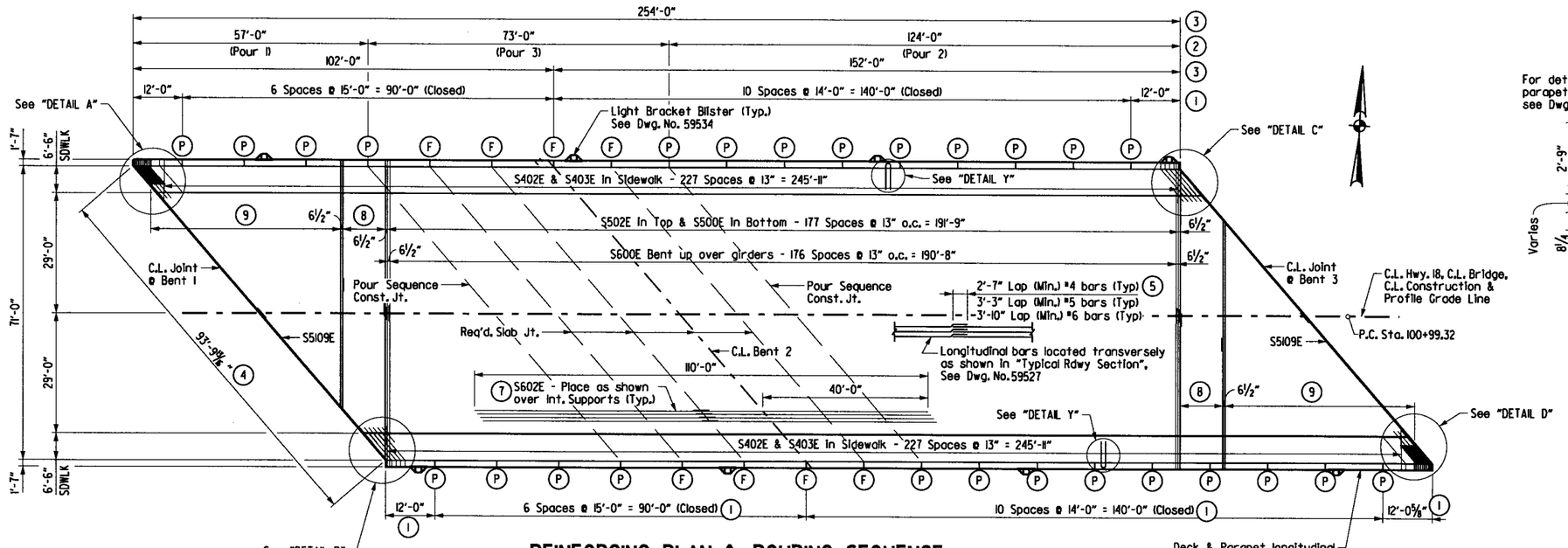
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	187	346
				(1) 07407		SPAN DETAILS		59531

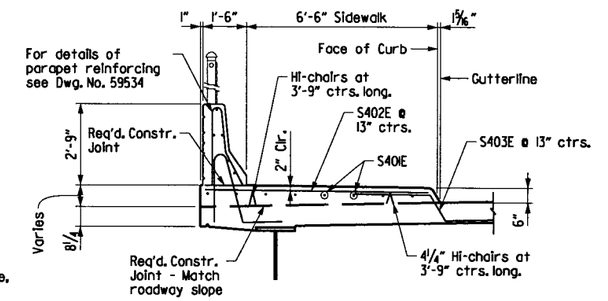
Note:
Horizontal control stationing is defined along C.L. Hwy. 18, see RDWY plans.
Vertical control Profile Grade is coincident with C.L. Hwy. 18.
C.L. Bridge & C.L. Construction are coincident with C.L. Hwy. 18.
C.L. Bridge and all longitudinal edges are horizontally parallel to C.L. Hwy. 18.
Exception, All girders are straight.



REINFORCING PLAN & POURING SEQUENCE

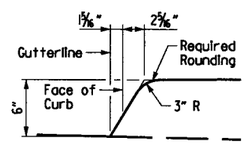
SCALE: 1/16" = 1'-0"

Deck & Parapet longitudinal edges are concentric with C.L. Construction.



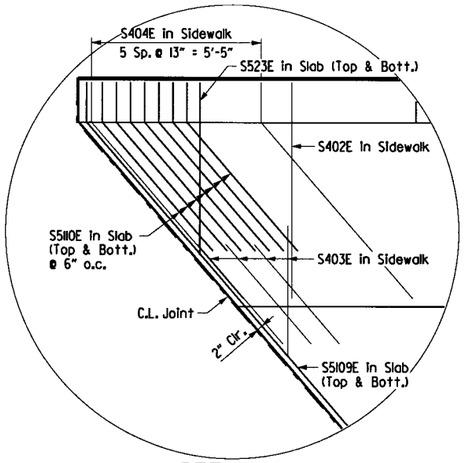
SIDEWALK DETAIL

N.T.S.
(Looking Ahead - Left Side shown, Right Side is similar)



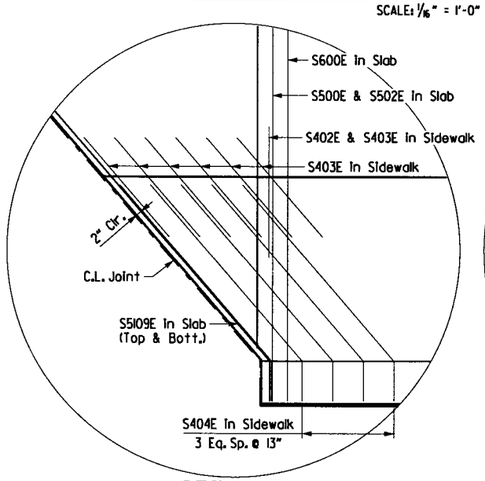
CURB DETAIL

N.T.S.



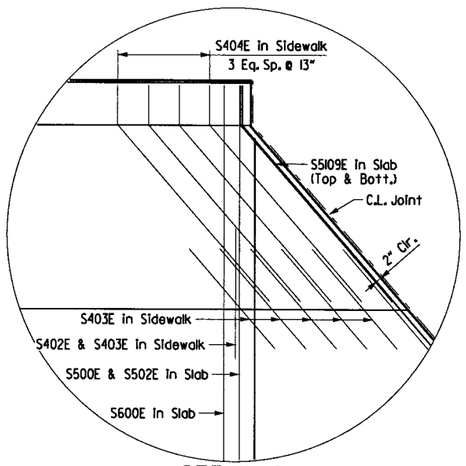
DETAIL A

No Scale



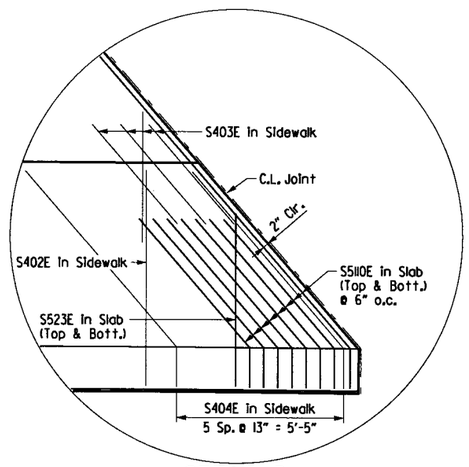
DETAIL B

No Scale



DETAIL C

No Scale



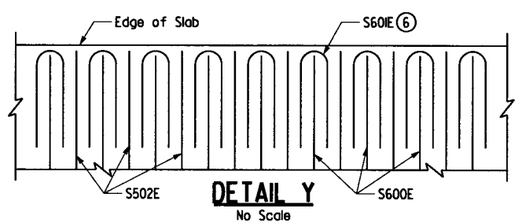
DETAIL D

No Scale

All longitudinal dimensions measured to centerline of joint or transverse reinforcing.

(1) Parapet panel spacing measured along front face of parapet and intersecting at C.L. Deck Joint opening or C.L. Bent.
(2) Dimensions measured along C.L. Construction.
(3) Dimensions measured along edge of deck and intersecting at C.L. Deck Joint opening or C.L. Bent.
(4) Dimensions measured along centerline of joint.
(5) Min Laps also applicable to splices in Transverse Reinforcing.
(6) Spaced equally between S500E and S501E.
(7) For placement, refer to TYPICAL ROADWAY SECTION on Dwg. No. 59527
(P) C.L. Partial Depth Parapet Joint 1¼" to 1" max.). Stop 1'-2" from top of slab or sidewalk. See Dwg. No. 59534
(F) C.L. Full Depth Parapet Joint 1¼" to 1" max.). Stop 4" from top of slab or sidewalk, See Dwg. No. 59534
(8) S503E - S522E Top & Bottom 19 Spaces @ 6½" o.c. = 10'-3½"
(9) S523E - S5108E Top & Bottom 85 Spaces @ 6½" o.c. = 46'-0½"

For "CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW" and "TRANSVERSE SLAB JOINT DETAIL", see Std. Dwg. No. 55007.



DETAIL Y

No Scale

Notes:
Pours must be made in order as numbered. 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 the adjacent pour. Any railing or sidewalk pours made before the entire slab unit has been placed must be approved by the Engineer. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk and a minimum of 72 hours shall elapse between completion of the sidewalk and the pouring of the parapet railing. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Required slab joints and pouring sequence joints shall align with parapet open joint at the gutter line.

STATE OF ARKANSAS
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STEPHEN T. SMILEY
29 May 2018

SHEET 5 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	5/26/2016	FILENAME:	bi008241_sl5
CHECKED BY:	STS	DATE:	5/30/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	4/29/2016		

BRIDGE NO. 07407 DRAWING NO. 59531

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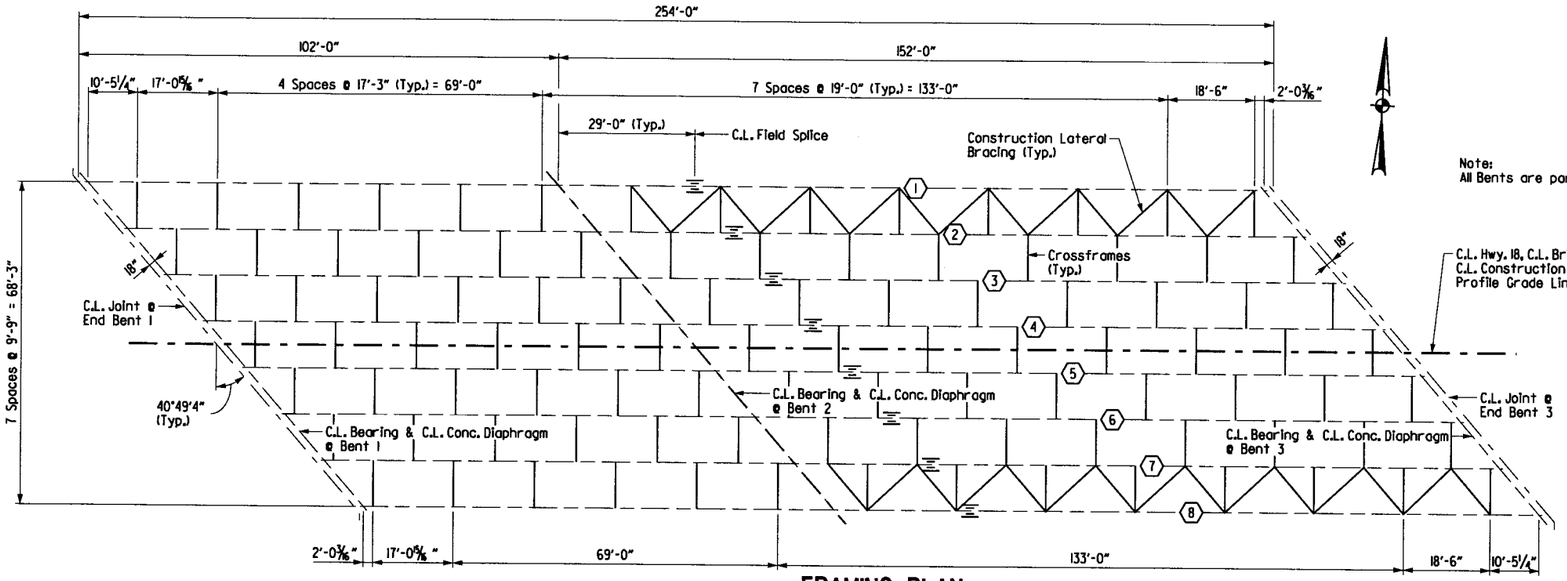
5/25/2018 4:19:24 PM sts

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.		100824	188	346
				(1) 07407		SPAN DETAILS		59532

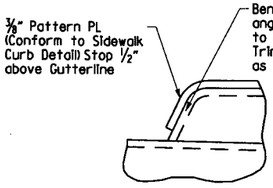


FRAMING PLAN

SCALE: 1/16" = 1'-0"

Note:
All Bents are parallel and all Girders are horizontally straight.

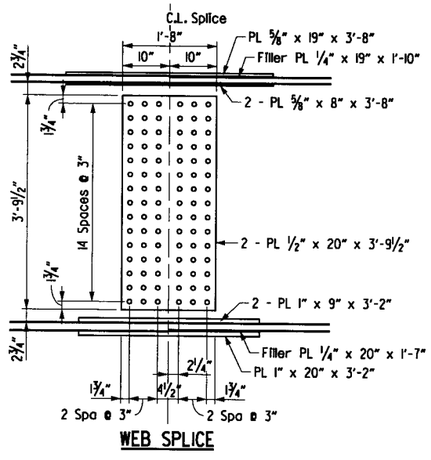
(X) Girder Number



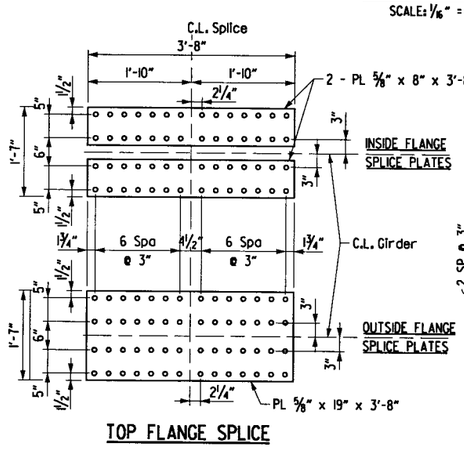
DETAIL E

No Scale

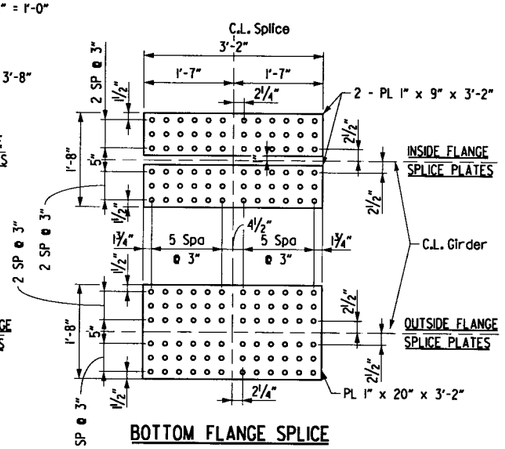
The surfaces of the ⅜" plates shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Plate Girder Spans (M270, Gr. 50)".



WEB SPLICE



TOP FLANGE SPLICE

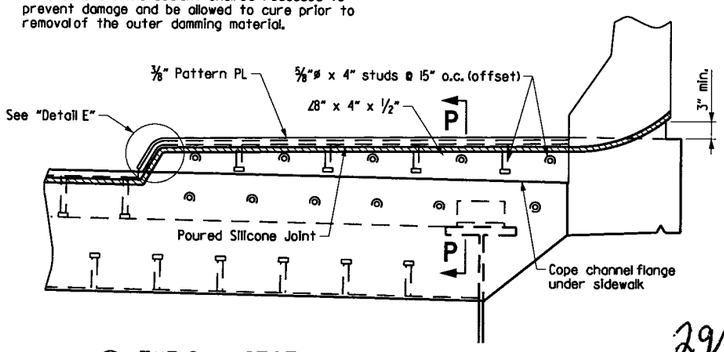


BOTTOM FLANGE SPLICE

Note: Install seal in slab joint and parapet joint with damming procedure as recommended by the manufacturer. The sealant shall be recessed to prevent damage and be allowed to cure prior to removal of the outer damming material.

SILICONE JOINT DATA (2)

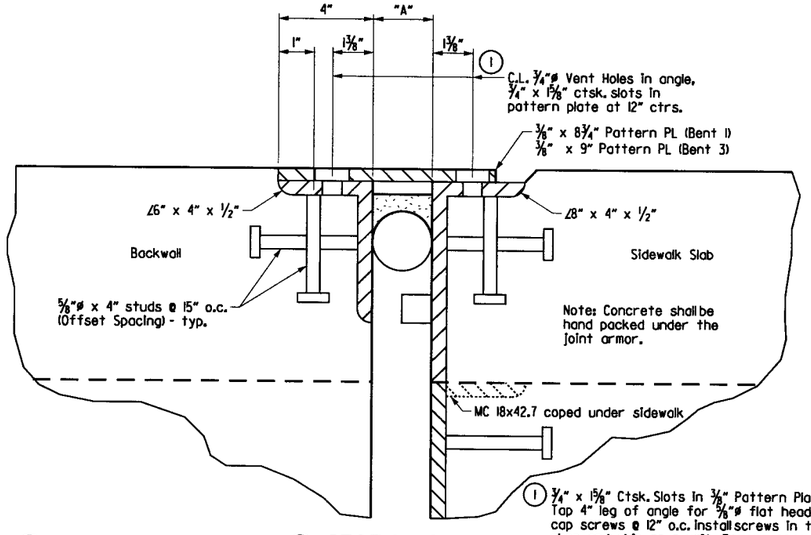
Bent Number	Field Set Dimension "A"			Shop Dimensions	
	40°F	60°F	80°F	"B"	Bumper Plate
Bent 1	1⅝"	1½"	1⅜"	2⅜"	¾"
Bent 3	2⅜"	2"	1⅛"	2⅜"	1"



(2) TYPICAL SECTION THRU SIDEWALK

No Scale

(2) For "POURED SILICONE JOINT DETAILS" see Std. Dwg. No. 55008.



(2) SECTION P-P

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 6 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/20/2016	FILENAME:	bl008241_sl6
CHECKED BY:	STS	DATE:	6/23/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/3/2016		

BRIDGE NO. 07407 DRAWING NO. 59532

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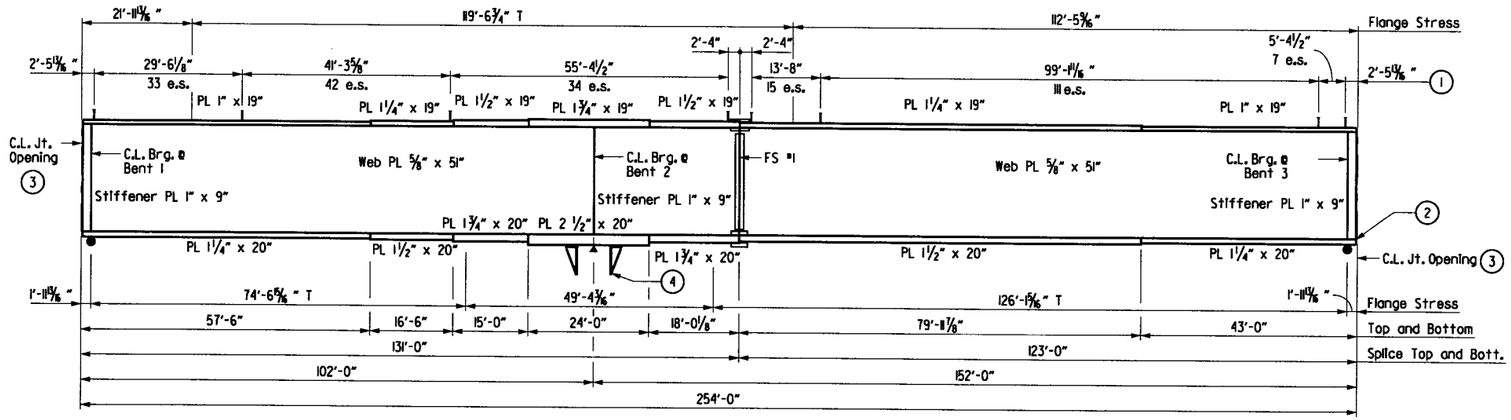
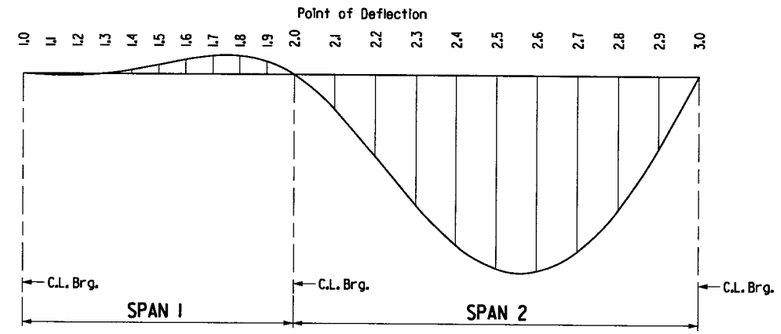
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	189	346
				(1) 07407		SPAN DETAILS		59533



TYPICAL GIRDER ELEVATION

SCALE: 1" = 15' Horiz.



DEAD LOAD DEFLECTION DIAGRAM

No Scale

TABLE OF DEAD LOAD DEFLECTIONS

		Vertical Dead Load Deflection (In.)																							
		Structural Steel								Structural Steel + Slab								Structural Steel + Slab + Parapets + Sidewalk							
		Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8
	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Span 1	1.1	0.010	0.011	0.010	0.010	0.010	0.010	0.011	0.006	0.054	0.080	0.067	0.066	0.066	0.068	0.078	0.040	0.087	0.094	0.066	0.053	0.055	0.073	0.096	0.065
	1.2	0.009	0.012	0.010	0.010	0.010	0.011	0.012	0.006	0.063	0.113	0.088	0.085	0.086	0.090	0.109	0.051	0.115	0.133	0.083	0.059	0.065	0.098	0.138	0.091
	1.3	-0.003	-0.001	-0.003	-0.004	-0.004	-0.003	-0.001	-0.009	0.024	0.073	0.038	0.034	0.035	0.040	0.068	-0.001	0.077	0.087	0.024	-0.004	0.005	0.045	0.096	0.032
	1.4	-0.029	-0.028	-0.031	-0.032	-0.032	-0.031	-0.029	-0.035	-0.079	-0.041	-0.085	-0.090	-0.089	-0.083	-0.049	-0.103	-0.048	-0.046	-0.113	-0.137	-0.126	-0.086	-0.036	-0.095
	1.5	-0.064	-0.066	-0.070	-0.070	-0.070	-0.069	-0.067	-0.071	-0.221	-0.213	-0.263	-0.267	-0.265	-0.259	-0.221	-0.249	-0.228	-0.245	-0.306	-0.321	-0.308	-0.275	-0.233	-0.283
	1.6	-0.101	-0.105	-0.109	-0.109	-0.109	-0.108	-0.106	-0.106	-0.377	-0.398	-0.449	-0.452	-0.451	-0.446	-0.407	-0.395	-0.433	-0.461	-0.506	-0.509	-0.496	-0.476	-0.448	-0.476
	1.7	-0.125	-0.133	-0.136	-0.137	-0.136	-0.136	-0.134	-0.133	-0.478	-0.539	-0.585	-0.589	-0.587	-0.583	-0.546	-0.511	-0.572	-0.626	-0.650	-0.642	-0.630	-0.624	-0.613	-0.635
	1.8	-0.129	-0.135	-0.137	-0.138	-0.137	-0.137	-0.135	-0.129	-0.503	-0.565	-0.602	-0.604	-0.602	-0.600	-0.570	-0.501	-0.618	-0.658	-0.664	-0.647	-0.637	-0.643	-0.646	-0.631
	1.9	-0.087	-0.094	-0.096	-0.096	-0.096	-0.096	-0.094	-0.092	-0.341	-0.402	-0.424	-0.425	-0.424	-0.423	-0.405	-0.362	-0.424	-0.469	-0.466	-0.450	-0.445	-0.454	-0.462	-0.461
	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Span 2	2.1	0.253	0.258	0.260	0.261	0.260	0.260	0.258	0.248	0.997	1.122	1.163	1.164	1.162	1.161	1.126	0.977	1.268	1.311	1.269	1.215	1.206	1.250	1.297	1.259
	2.2	0.588	0.609	0.615	0.616	0.615	0.615	0.610	0.588	2.323	2.668	2.758	2.759	2.756	2.754	2.676	2.323	2.963	3.112	3.002	2.870	2.854	2.968	3.087	2.996
	2.3	0.937	0.973	0.982	0.983	0.983	0.982	0.973	0.943	3.710	4.279	4.415	4.415	4.414	4.410	4.287	3.732	4.739	4.981	4.796	4.584	4.568	4.756	4.951	4.810
	2.4	1.227	1.268	1.279	1.280	1.280	1.279	1.268	1.223	4.870	5.593	5.763	5.763	5.762	5.760	5.600	4.848	6.226	6.497	6.250	5.977	5.963	6.217	6.475	6.239
	2.5	1.399	1.442	1.455	1.455	1.455	1.454	1.442	1.391	5.561	6.377	6.566	6.565	6.564	6.563	6.381	5.525	7.114	7.393	7.110	6.803	6.794	7.091	7.387	7.100
	2.6	1.415	1.460	1.472	1.473	1.473	1.472	1.459	1.411	5.637	6.472	6.656	6.656	6.656	6.656	6.471	5.614	7.214	7.489	7.198	6.892	6.890	7.197	7.499	7.203
	2.7	1.271	1.310	1.321	1.321	1.321	1.320	1.309	1.266	5.073	5.822	5.983	5.983	5.983	5.984	5.818	5.048	6.492	6.723	6.462	6.190	6.194	6.475	6.748	6.465
	2.8	0.970	0.998	1.006	1.007	1.007	1.006	0.997	0.962	3.878	4.448	4.567	4.568	4.569	4.570	4.442	3.841	4.961	5.125	4.926	4.723	4.731	4.948	5.154	4.911
	2.9	0.531	0.543	0.547	0.547	0.547	0.547	0.542	0.526	2.126	2.423	2.487	2.487	2.487	2.488	2.418	2.104	2.718	2.788	2.680	2.570	2.575	2.695	2.807	2.687
	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTES:

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES, See Std. Dwg. No. 55007.
Fabricate ends of top and bottom flanges horizontally parallel to C.L. Joint.

Bolted Field Splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basic of the Plan Quantities.

Camber for Dead Load Deflection plus Vertical curve +/-1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign(-) indicates point above chord.

For details of studs welded to girder web, see Dwg. No. 59528

(1) Stud Shear Connectors shall be 7/8" dia. x 5"; use 3 studs per row.

(2) See "BUMPER CONNECTION DETAIL" (Typ.), Dwg. No. 59529

(3) For Silicone Joint Details see Std. Dwg. No. 55008 and for Silicone Joint Data see Dwg. No. 59532

(4) Field attached Longitudinal Restrainer Assembly. See Dwg. No. 59529

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
29 May 2018

SHEET 7 OF 7
DETAILS OF 254'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 6/20/2016
CHECKED BY: STS DATE: 6/23/2016
DESIGNED BY: DCD DATE: 6/3/2016
FILENAME: b100824l_sl7
SCALE: AS SHOWN

BRIDGE NO. 07407 DRAWING NO. 59533

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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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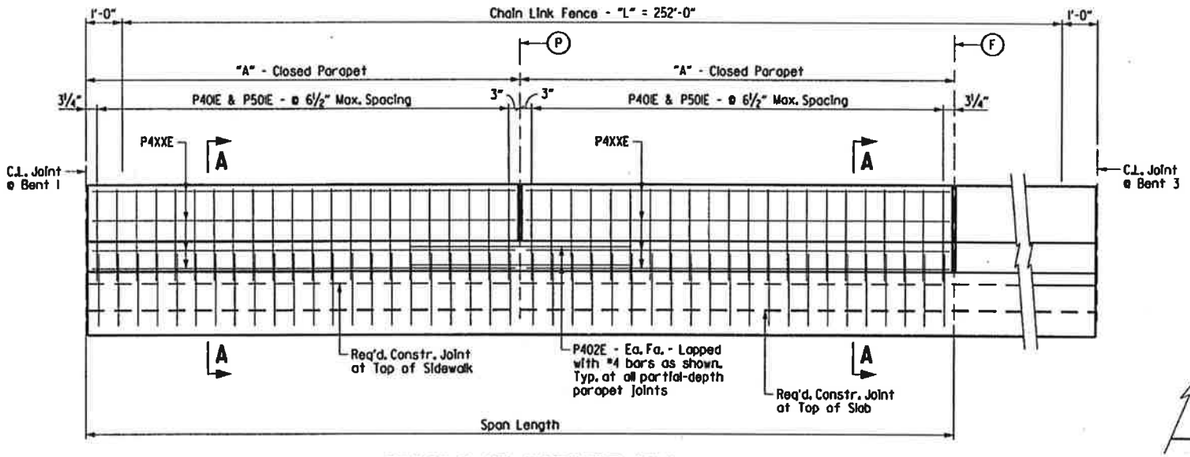
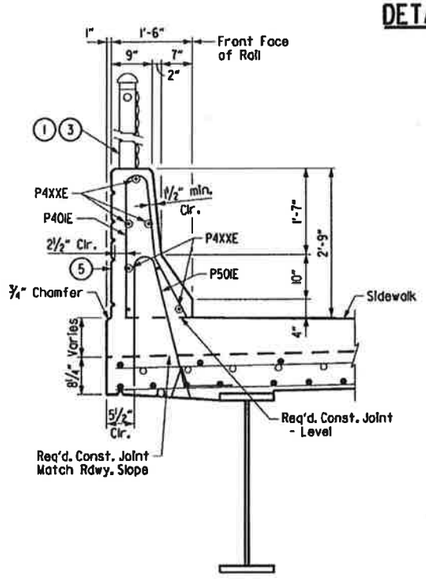
				JOB NO.		100824	190	346
				(1) 07407		RAIL DETAILS		59534



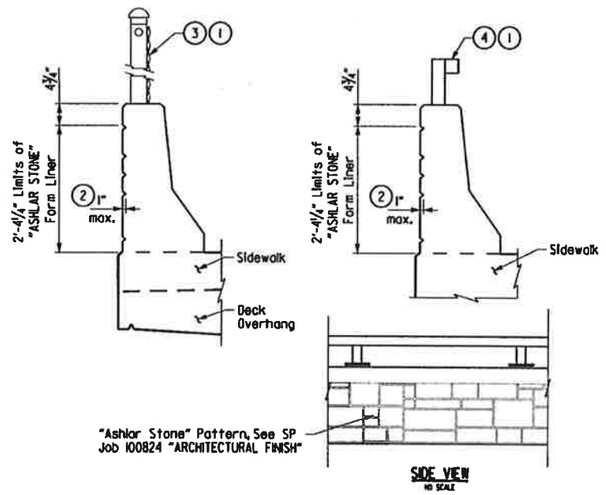
DETAILS OF PARAPET RAIL

Scale: ½" = 1'-0"



SECTION A-A

Scale: ¾" = 1'-0"

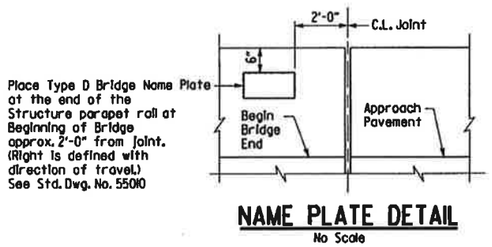


DETAIL OF PARAPET ENHANCEMENT

Scale: ¾" = 1'-0"

(1) The color of the Chain Link Fence, Posts and Type H Metal Rail, unless noted otherwise, shall be Black and shall match Fed. Std. 595B Color Chip No. 27038.

(2) "ASHLAR STONE" pattern form liner relief shallbe a maximum of 1", to preserve the minimum clearance of 2½" shown. See SP Job 100824 "ARCHITECTURAL FINISH".



NAME PLATE DETAIL

No Scale

ESTIMATED QUANTITIES - EACH LIGHT BRACKET BLISTER

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
46	0.41

(F) C.J., Full-Depth Parapet Joint (¼" to 1" max.) Stop 4" from top of sidewalk. For location, See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 59531

(P) C.J., Partial-Depth Parapet Joint (¼" to 1" max.) Stop 1'-2" from top of sidewalk. For location, See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 59531

(3) For Chain Link Fence Details, See Std. Dwg. No. 55018 where "H" = 7'-3" and "L" = 252'-0" (1)

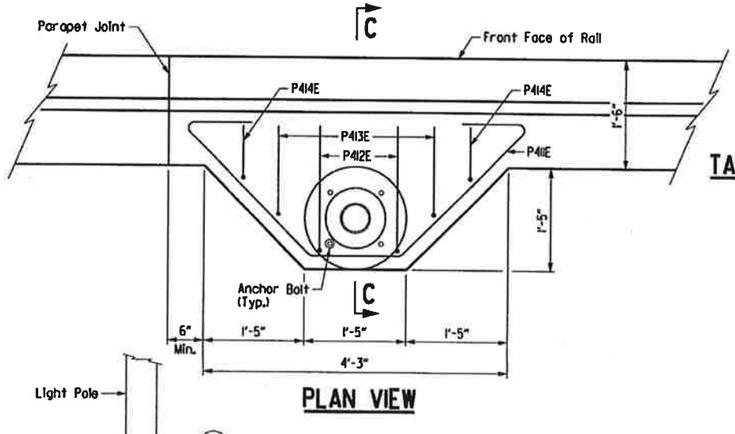
(4) For "TYPE H RAILING DETAILS", see Std. Dwg. No 55014. (1)

(5) See "Detail of Parapet Enhancement" and "Details of Light Bracket Blister", as applicable.

(6) For Reinforcing placement, Bending diagrams and Bar List, see "Approach Gutter Details" Dwg. Nos. 59538 & 59540 and "Concrete Barrier Wall (SIDE TYPE SPECIAL-D"

(7) See Illumination Plan for locations and additional details, including electrical conduit cast into concrete. Anchor bolts to be provided with light fixture.

(8) Epoxy coating of reinforcing bars may be omitted for brackets NOT attached to bridge span parapets.



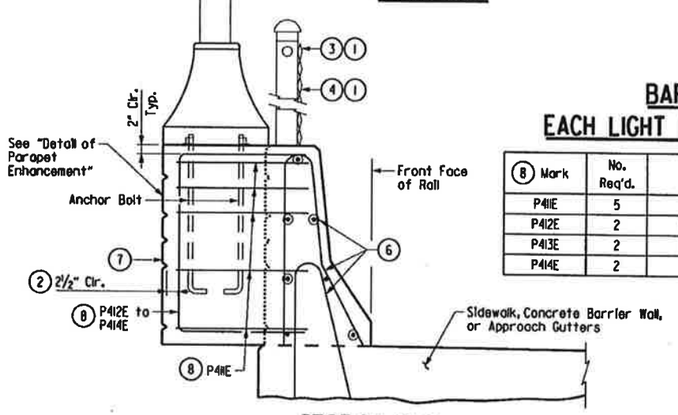
PLAN VIEW

TABLE OF PARAPET RAIL VARIABLES

Parapet Type	"A"	Longitudinal Reinforcing
Closed-E	12'-0"	P403E
Closed-E	12'-0 5/16"	P404E
Closed	15'-0"	P405E
Closed	14'-0"	P406E

CLosed-E panels are immediately adjacent to deck joint opening.

For location of Parapet panels, see "REINFORCING PLAN AND POURING SEQUENCE" Dwg. No. 59531



SECTION C-C

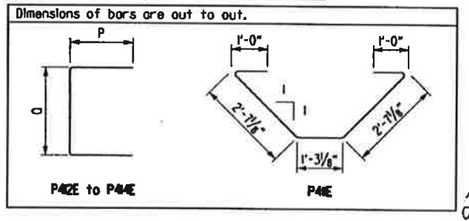
BAR LIST - EACH LIGHT BRACKET BLISTER

(8) Mark	No. Req'd.	P	Q	Length	Pin Dia.
P411E	5			8'-1"	2"
P412E	2	1'-9"	2'-5"	5'-9"	2"
P413E	2	1'-3"	2'-5"	4'-9"	2"
P414E	2	9"	2'-5"	3'-9"	2"

DETAILS OF LIGHT BRACKET BLISTER (7)

Scale: 1" = 1'-0"

BENDING DIAGRAM



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13073
STEPHEN T. SMILEY

Stephen T. Smiley
23 Oct 2018

RAIL DETAILS
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 5/26/2016
CHECKED BY: STS DATE: 5/30/2016
DESIGNED BY: DCO DATE: 4/29/2016
FILENAME: b100824l_rl
SCALE: AS SHOWN

BRIDGE NO. 07407 DRAWING NO. 59534

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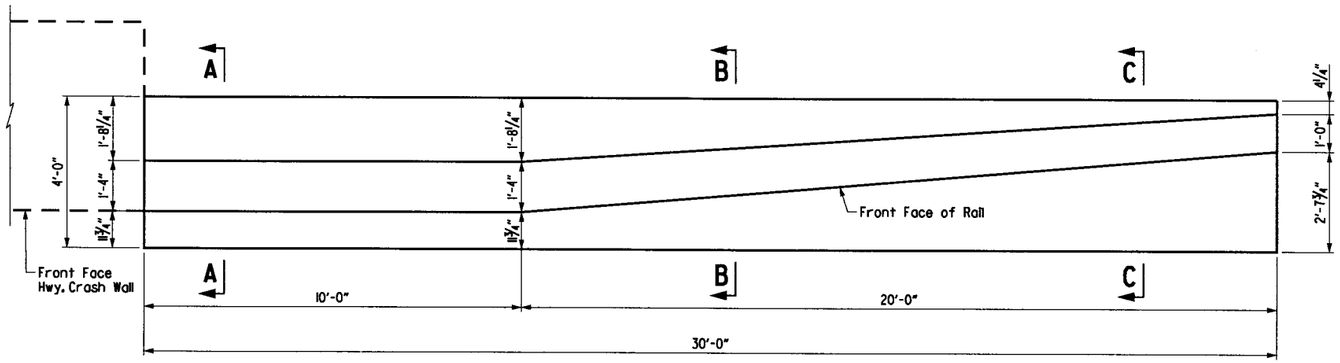
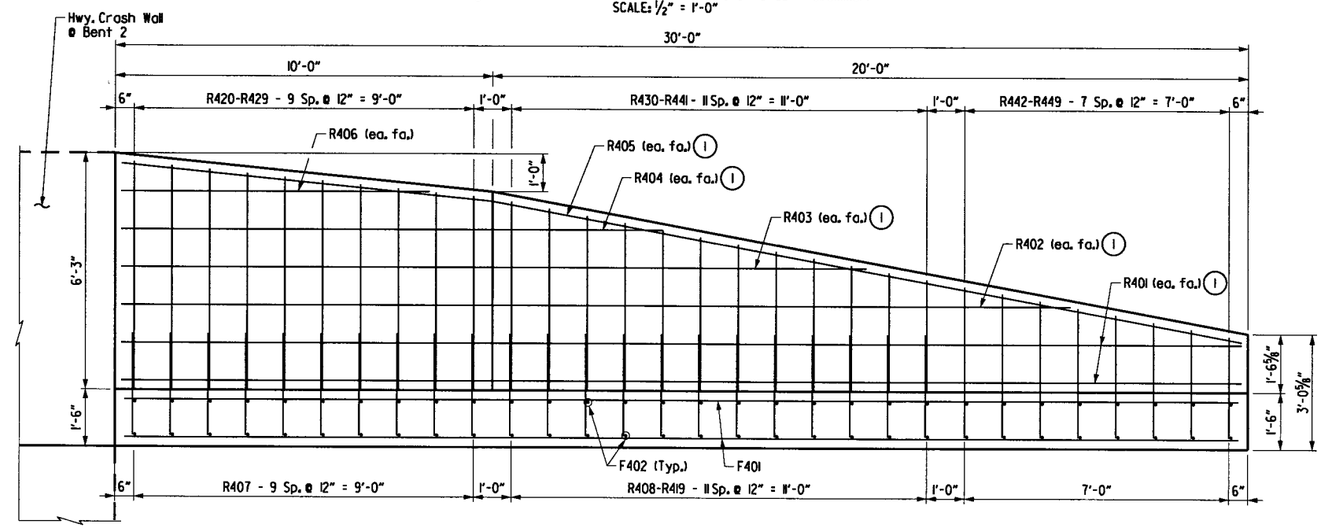
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	191	346
				① 07407		TRANS APRCH RAIL 1		59535



PLAN OF TRANSITIONAL APPROACH RAILING

(Right end of Crash Wall shown, Left end of Crash Wall Similar)
SCALE: ½" = 1'-0"



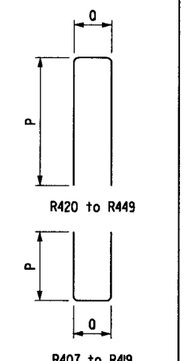
ELEVATION OF TRANSITIONAL APPROACH RAILING

SCALE: ½" = 1'-0"

① Bend R401 to R405 in field to match rail line. Pin dia. = 4"

BAR LIST - ONE TRANSITIONAL RAIL

MARK	NO. REQ'D.	LENGTH	P	O	P.D.	Bending Diagram
Cap & Backwall						
F401	8	29'-6"			Str.	
F402	60	3'-6"			Str.	
R401	4	29'-9"			Str.	
R402	2	25'-2"			Str.	
R403	2	19'-9"			Str.	
R404	2	14'-4"			Str.	
R405	2	30'-1"			Str.	
R406	2	8'-2"			Str.	
R407	10	6'-4"	2'-9"	1'-0"	3"	
R408 to R419	1 Ea	6'-4" to 6'-2"	2'-9"	11¾" to 9½"	3"	
R420 to R429	1 Ea	12'-11" to 11'-1"	6'-0¼" to 5'-1½"	1'-0"	3"	
R430 to R441	1 Ea	10'-10" to 6'-7"	4'-11¾" to 2'-11¼"	11¾" to 9½"	3"	
R442 to R449	1 Ea	8'-8" to 5'-11"	4'-0" to 2'-8½"	9½" to 8"	3"	



Dimensions are out to out of bars.

FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Class 1 Protective Surface Treatment (Gal.)
787	12.67	0.72

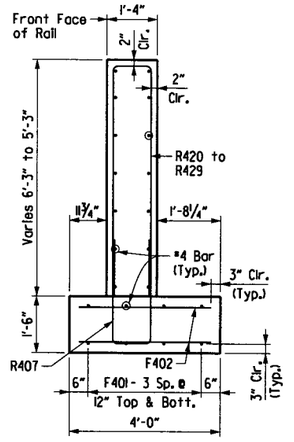
General Notes

Transitional Approach Railing shall be placed locations shown in the plans.

All Concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

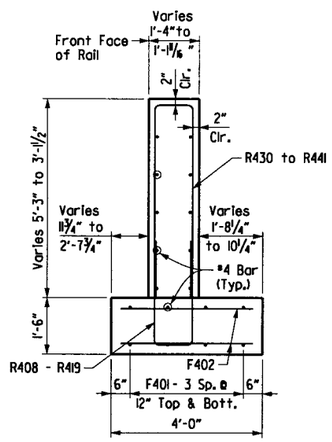
All reinforcing steel shall be grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Transitional Approach Railing shall be paid for at the contract unit price bid per each for "Transitional Approach Railing." See Section 806 for additional information.



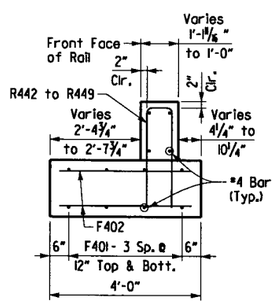
SECTION A-A

SCALE: ½" = 1'-0"



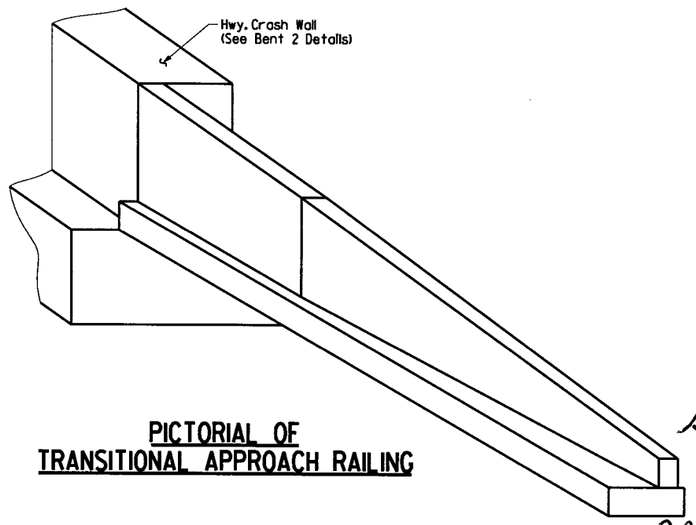
SECTION B-B

SCALE: ½" = 1'-0"



SECTION C-C

SCALE: ½" = 1'-0"



PICTORIAL OF TRANSITIONAL APPROACH RAILING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

DETAILS OF TYPE SPECIAL 1 TRANSITIONAL APPROACH RAILING

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	9/26/2016	FILENAME:	bl008241_r2
CHECKED BY:	STS	DATE:	9/27/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	9/21/2016		

BRIDGE NO. 07407 DRAWING NO. 59535

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5/25/2018 4:19:32 PM sts

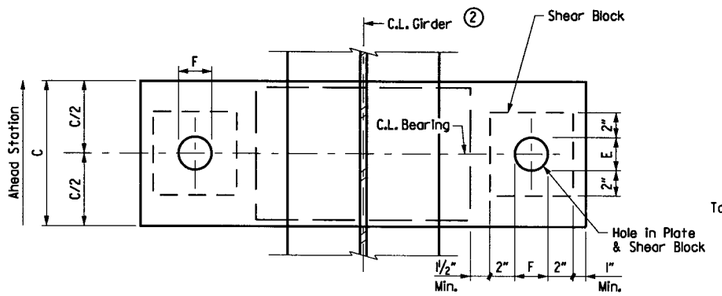
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	192	346

(1) 07407 **BEARING DETAILS** 59536

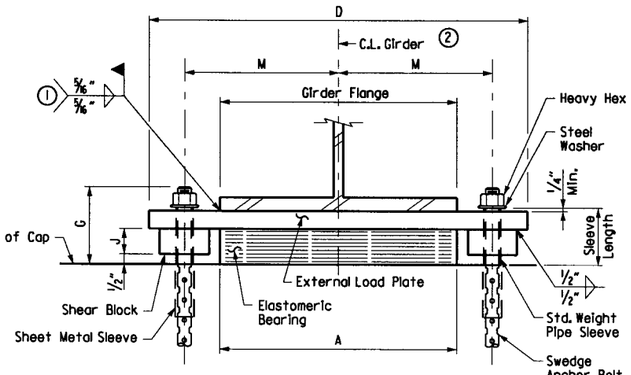
TABLE OF FABRICATOR VARIABLES

LOCATION						ELASTOMER PAD							EXTERNAL LOAD PLATE									ANCHOR BOLT				
																						ANCHOR BOLT		PIPE	SHEET METAL	STEEL
BENT NO.	GIRDER NO(S).	BEARING TYPE	NO. of BEARINGS EACH BENT	MAXIMUM DESIGN LOAD (KIPS)	G (In.)	H (In.)	A (In.)	B (In.)	N (In.)	ti (In.)	te (In.)	NO. & THICKNESS OF STEEL LAMINAE	T (In.)	C (In.)	D (In.)	E (In.)	F (In.)	J (In.)	K (In.)	M (In.)	Ta (In.)	Tb (In.)	(In.)	GRADE (Ksi)	SLEEVE SIZE	SLEEVE SIZE	WASHER O.D. (In.)
1	1 - 4	Exp.	4	148.92	6 7/8	4 3/8	20	8	3	1/2	1/4	4 @ 12 Ga.	2 7/16	9 1/8	38 1/2	3 5/8	2 3/4	1 7/8	9/16	14 7/8	2.20	1.80	1 1/4" x 26"	55	1 1/4" x 4 5/8"	3" x 12"	4 1/2
1	5 - 8	Exp.	4	148.92	6 7/8	4 3/8	20	8	3	1/2	1/4	4 @ 12 Ga.	2 7/16	9 1/8	38 1/2	3 5/8	2 3/4	1 7/8	9/16	14 7/8	2.15	1.85	1 1/4" x 26"	55	1 1/4" x 4 5/8"	3" x 12"	4 1/2
2	1 - 2	Fixed	2	528.94	8	5	20	15 1/2	4	1/2	1/4	5 @ 12 Ga.	3 7/16	16 1/2	39 7/8	3 3/8	3 3/8	2 1/2	1/2	15 1/4	2.20	1.80	1 3/4" x 31"	55	2" x 5 1/4"	4" x 12"	5 3/8
2	3 - 4	Fixed	2	528.94	8	5	20	15 1/2	4	1/2	1/4	5 @ 12 Ga.	3 7/16	16 1/2	39 7/8	3 3/8	3 3/8	2 1/2	1/2	15 1/4	2.14	1.86	1 3/4" x 31"	55	2" x 5 1/4"	4" x 12"	5 3/8
2	5	Fixed	1	528.94	8 5/16	5 5/16	20	15 1/2	4	1/2	1/4	5 @ 12 Ga.	3 7/16	16 1/2	39 7/8	3 3/8	3 3/8	2 1/2	1/2	15 1/4	2.41	2.21	1 3/4" x 32"	55	2" x 5 9/16"	4" x 12"	5 3/8
2	6	Fixed	1	528.94	8	5	20	15 1/2	4	1/2	1/4	5 @ 12 Ga.	3 7/16	16 1/2	39 7/8	3 3/8	3 3/8	2 1/2	1/2	15 1/4	2.10	1.90	1 3/4" x 31"	55	2" x 5 1/4"	4" x 12"	5 3/8
2	7 - 8	Fixed	2	528.94	8	5	20	15 1/2	4	1/2	1/4	5 @ 12 Ga.	3 7/16	16 1/2	39 7/8	3 3/8	3 3/8	2 1/2	1/2	15 1/4	2.07	1.93	1 3/4" x 31"	55	2" x 5 1/4"	4" x 12"	5 3/8
3	1 - 2	Exp.	2	226.40	7 1/2	5	20	10	4	1/2	1/4	5 @ 12 Ga.	3 7/16	II	38 1/2	4 3/8	2 3/4	2 1/2	1/2	14 7/8	1.95	2.05	1 1/4" x 26"	55	1 1/4" x 5 1/4"	3" x 10"	4 1/2
3	3 - 5	Exp.	3	226.40	7 1/2	5	20	10	4	1/2	1/4	5 @ 12 Ga.	3 7/16	II	38 1/2	4 3/8	2 3/4	2 1/2	1/2	14 7/8	1.91	2.09	1 1/4" x 26"	55	1 1/4" x 5 1/4"	3" x 10"	4 1/2
3	6 - 8	Exp.	3	226.40	7 1/2	5	20	10	4	1/2	1/4	5 @ 12 Ga.	3 7/16	II	38 1/2	4 3/8	2 3/4	2 1/2	1/2	14 7/8	1.87	2.13	1 1/4" x 26"	55	1 1/4" x 5 1/4"	3" x 10"	4 1/2

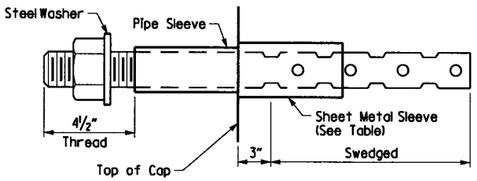
(5) Maximum Load = Service I Limit State



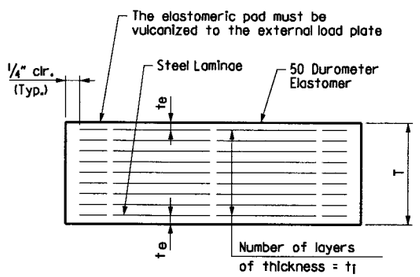
PLAN VIEW @ BENT 2
(No Scale)



FRONT VIEW @ ALL BENTS
(No Scale)



ANCHOR BOLT DETAIL
(No Scale)

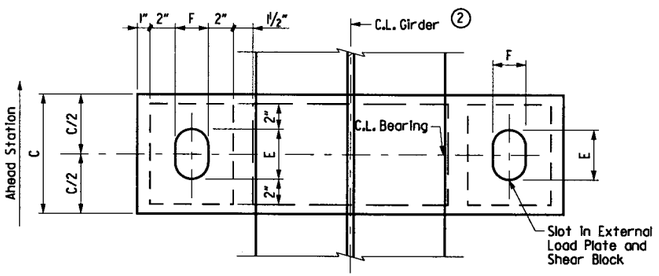


t_1 = thickness of elastomer between steel laminae.

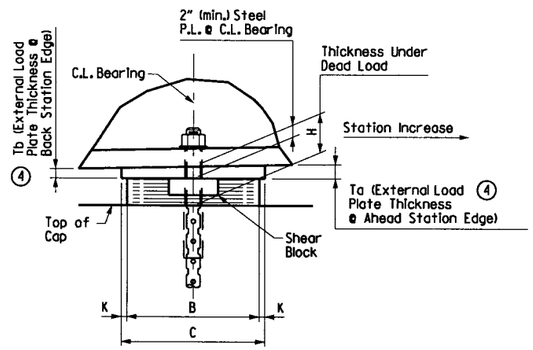
t_e = thickness of elastomer cover on top and bottom of pad.

N= number of elastomer layers of thickness t_1.

ELASTOMERIC BEARING
(No Scale)



PLAN VIEW @ BENT 1 & 3
(No Scale)



SIDE VIEW @ ALL BENTS
(No Scale)

(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) Thus the C.L. of Bearings shall coincide with the C.L. of Girders.

(3) For fabrication of the Steel Washers when the tabulated O.D. exceeds ASTM F436, the I.D. of the washers shall conform to ASTM F436 and the thickness of ¼" shall be used.

(4) The direction of bevel of the external load plate may not be accurately depicted with respect to the "Ta" and "Tb" values shown in the "Table of Fabricator Variables."

Prior to erection fo the girders, the Contractor shall verify the orientation of the bearings with respect to "Ta" and "Tb".

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 fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly but will be considered subsidiary to the item "Structural Steel In Plate Girder Spans, (M 270, Gr. 50)".

GENERAL NOTES:
Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, class 50.

External load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel.

External load plates and shear blocks shall be painted in accordance with Subsection 807.75. The color of the paint shall be red and shall match Fed. Std. 595B, Color Chip No. 31350. Mask areas that are to be welded in the field.

Anchor Bolts and Nuts shall conform to Subsection 807.07 of the Standard Specifications. Steel Washers shall conform to AASHTO M 270, Grade 50. 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. 50)". External load plates and blocks 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 subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

DETAILS OF ELASTOMERIC BEARINGS OF HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016
CHECKED BY:	STS	DATE:	6/6/2016
DESIGNED BY:	DCD	DATE:	5/6/2016

FILENAME: b100824l.el
SCALE: AS SHOWN

BRIDGE NO. 07407 DRAWING NO. 59536

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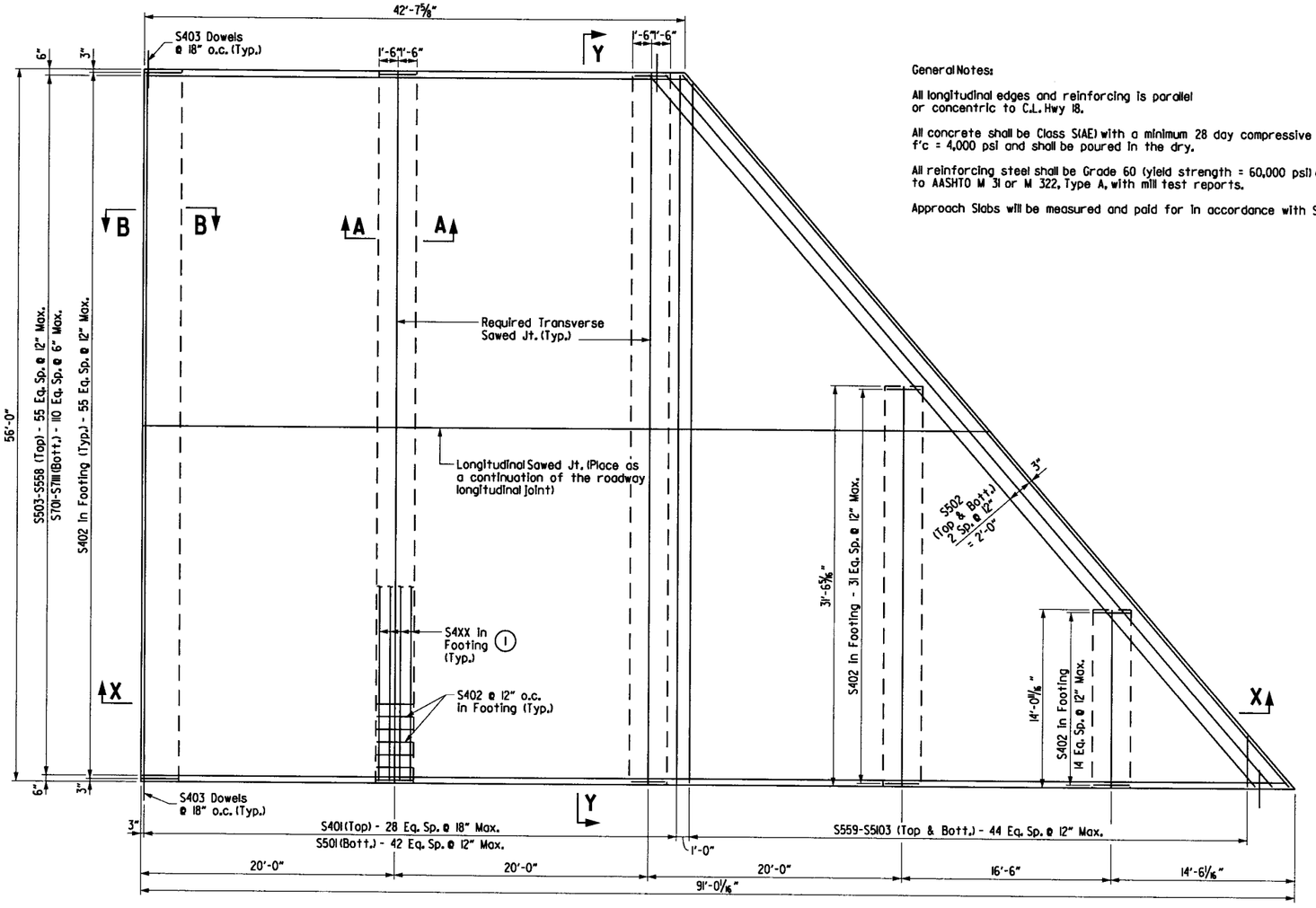
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	193	346
				(1) 07407		APPROACH SLAB I		59537

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.



PLAN - APPROACH SLAB SPECIAL I

SCALE: 3/16" = 1'-0"

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Hwy 18.

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.

BAR LIST

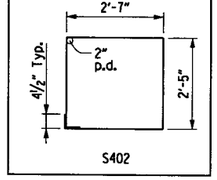
	Mark	No. Req'd.	Length
(2)	S401	82	28'-10"
	S402	215	10'-4"
	S403	90	3'-0"
	S404	4	31'-2"
	S405	4	13'-9"
	S501	43	55'-8"
(2)	S502	12	38'-3"
(2)	S503 to S558	2 Ea.	22'-10" to 46'-8"
	S559 to S5103	2 Ea.	4'-0" to 55'-0"
(2)	S701 to S711	2 Ea.	23'-1" to 46'-11"

TABLE OF QUANTITIES

For Information Only

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
29040	208.99

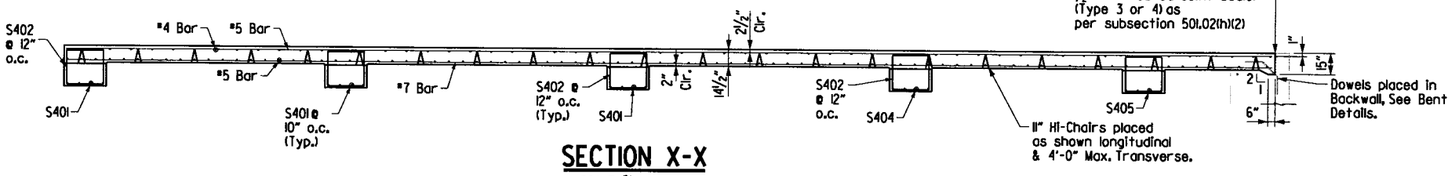
Bending Diagrams



(Dimensions are out to out of bars)

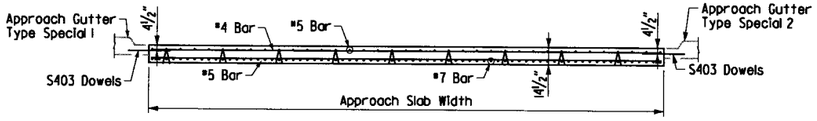
(2) Note:
Min Lap lengths for Longitudinal Bars are as follows.

#4 Bars = 2'-0"
#5 Bars = 3'-0"
#7 Bars = 3'-6"



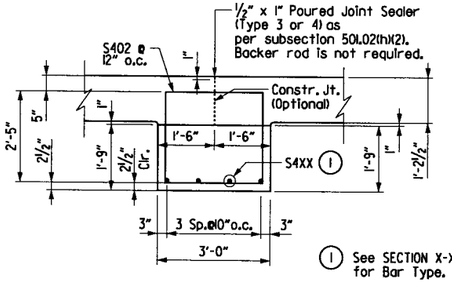
SECTION X-X

SCALE: 3/16" = 1'-0"



SECTION Y-Y

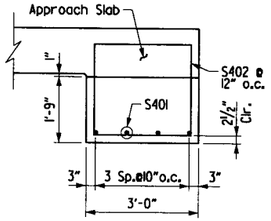
N.T.S.



(1) See SECTION X-X for Bar Type.

SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

DETAILS OF TYPE SPECIAL I APPROACH SLAB HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	b100824l.dsl
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07407 DRAWING NO. 59537

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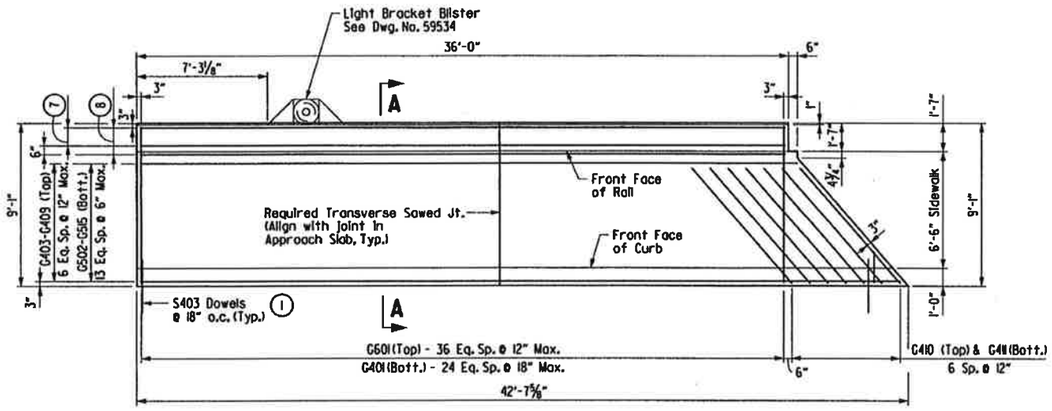
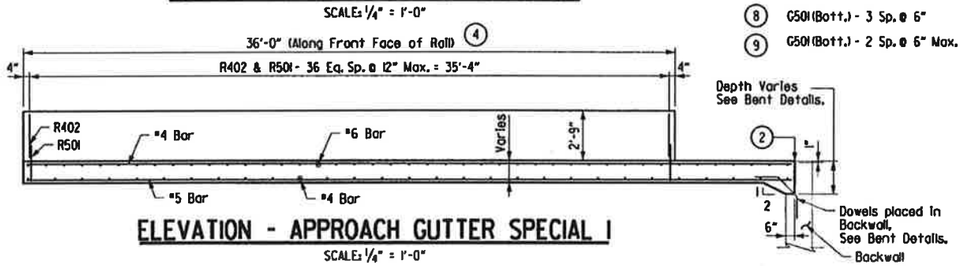
				JOB NO.		100824	194	346
				(1) 07407		APPROACH GUTTERS 1&2		59538



PLAN - APPROACH GUTTER SPECIAL 1

SCALE: ¼" = 1'-0"



ELEVATION - APPROACH GUTTER SPECIAL 1

SCALE: ¼" = 1'-0"

(7) G402 (Top) - 1 Sp. @ 12"
(8) G501 (Bott.) - 3 Sp. @ 6"
(9) G501 (Bott.) - 2 Sp. @ 6" Max.

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Hwy 18.

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.

(1) Prior to pouring concrete for approach slab, place S403 Dowels into approach slab using 18" embedment.
As an Alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately, but will be considered subsidiary to "APPROACH GUTTERS".

(2) ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.

(3) ½" Preformed Joint Filler (AASHTO M153, Type I) and ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Joint Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls".

(4) "Ashlar Stone Pattern" on back face of rail. For "Detail of Parapet Enhancement", See Dwg. No. 59534

(5) Type H Metal Rail, unless noted otherwise, shall be painted Black and shall match Fed. Std. 595B Color Chip No. 27038.

TABLE OF QUANTITIES

For Information Only

Gutter Type Special	Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Metal Bridge Railing - Type H (Lin. Ft.)	Architectural Finish (Sq. Ft.)
1	2314	20.02	36	87
2	5693	49.04	97	235

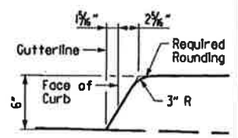
GUTTER 1 BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
G401	25	8'-9"	Str.
G402	2	35'-8"	Str.
(6) G403 to (6) G409	2 Ea.	19'-2" to 22'-0"	Str.
G410	7	11'-5"	3"
G411	7	8'-6"	Str.
G501	4	35'-8"	Str.
G502 to G515	1 Ea.	36'-4" to 42'-0"	Str.
G601	37	9'-1"	4½"
P411	5	8'-1"	2"
P412	2	5'-9"	2"
P413	2	4'-9"	2"
P414	2	3'-9"	2"
R401	7	35'-8"	Str.
R402	37	6'-1"	3"
R501	37	6'-4"	2½"

GUTTER 2 BAR LIST

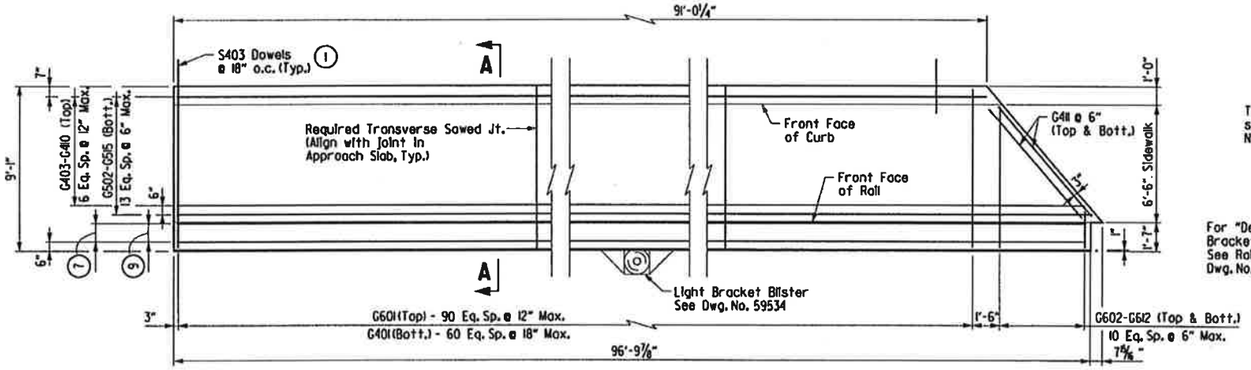
Mark	No. Req'd.	Length	Pin Dia.
G401	61	8'-9"	Str.
(6) G402	6	33'-6"	Str.
(6) G403 to (6) G410	3 Ea.	31'-7" to 33'-5"	Str.
G411	4	8'-0"	Str.
G501	6	49'-8"	Str.
(6) G502 to (6) G515	2 Ea.	46'-8" to 49'-10"	Str.
G601	91	9'-1"	4½"
G602 to G612	2 Ea.	2'-0" to 7'-9"	Str.
P411	5	8'-1"	2"
P412	2	5'-9"	2"
P413	2	4'-9"	2"
P414	2	3'-9"	2"
R401	21	31'-4"	Str.
R402	98	6'-1"	3"
R501	98	6'-4"	2½"

(6) Note:
Min Lap lengths for Longitudinal Bars are as follows.
#4 Bars = 2'-0"
#5 Bars = 3'-0"



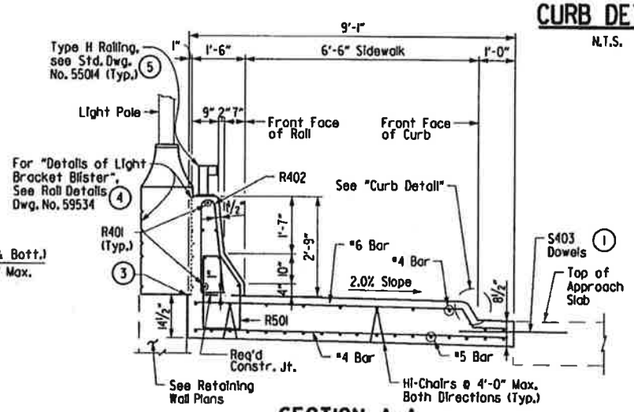
CURB DETAIL

N.T.S.



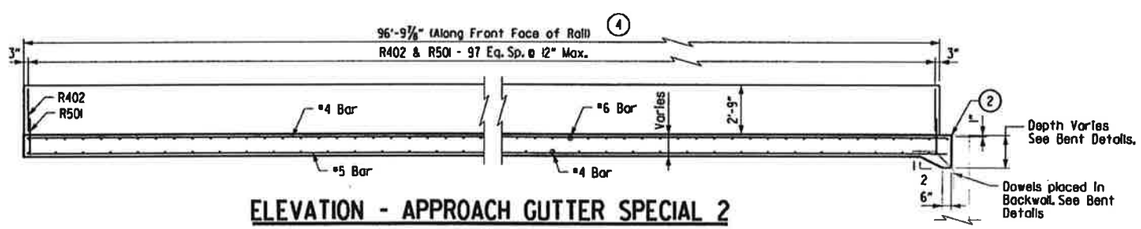
PLAN - APPROACH GUTTER SPECIAL 2

SCALE: ¼" = 1'-0"



SECTION A-A

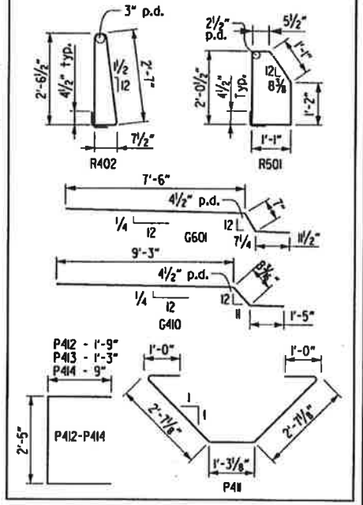
SCALE: ½" = 1'-0"



ELEVATION - APPROACH GUTTER SPECIAL 2

SCALE: ¼" = 1'-0"

Bending Diagrams
(Dimensions are out to out of bars)



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

23 Oct 2018

DETAILS OF TYPE SPECIAL 1 & 2 APPROACH GUTTERS HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

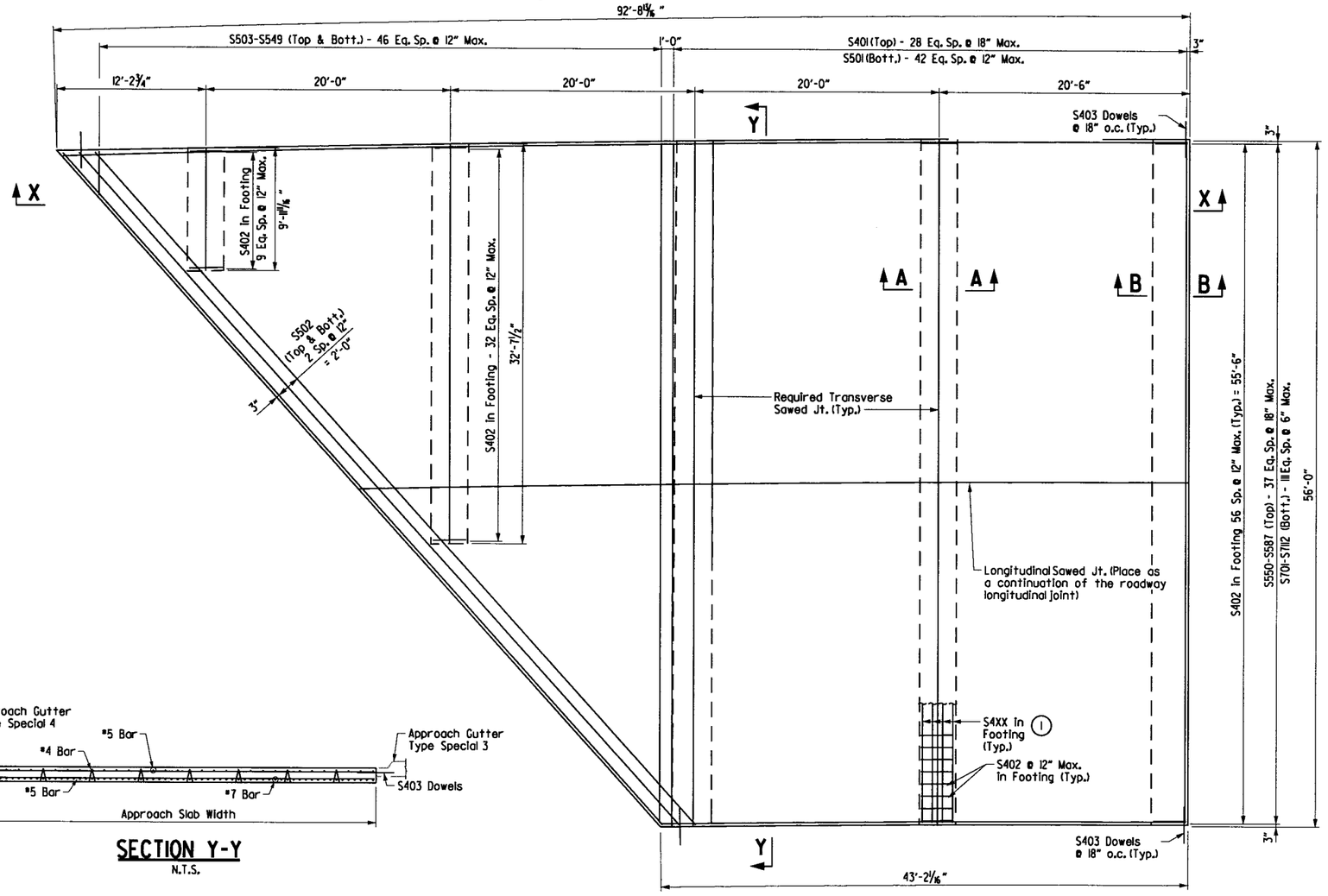
DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bl00824l_as2
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07407 DRAWING NO. 59538

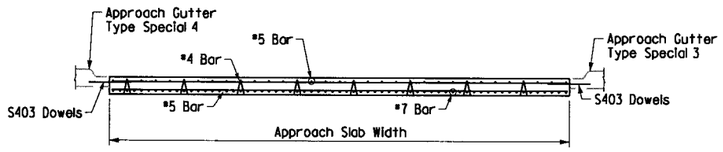
\\bridgeformer.internal\basharees\Projects\14408\01\DGN\Plans\13_Bridge\Approach\bl00824l_as2.dgn
10/23/2018 2:53:07 PM
jharrell

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.		100824	195	346
				(1) 07407		APPROACH SLAB 2		59539

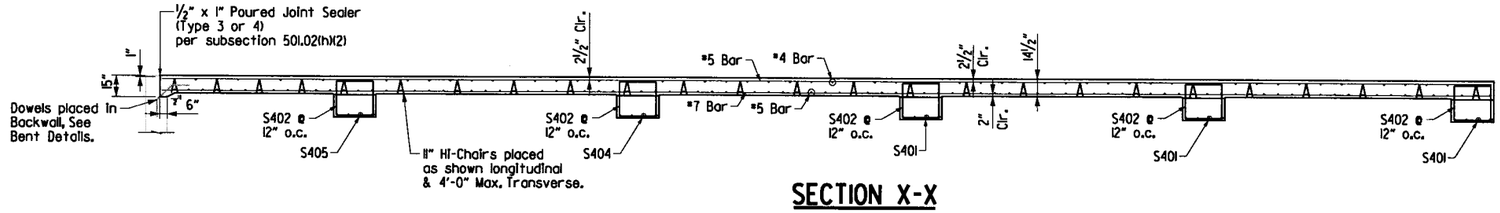
Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.



PLAN - APPROACH SLAB SPECIAL 2
SCALE: 3/16" = 1'-0"



SECTION Y-Y
N.T.S.



SECTION X-X
SCALE: 3/16" = 1'-0"

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Hwy 18.

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.

(2) Note:
Min Lap lengths for Longitudinal Bars are as follows.

#4 Bars = 2'-0"
#5 Bars = 3'-0"
#7 Bars = 3'-6"

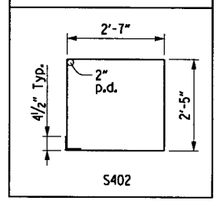
TABLE OF QUANTITIES
For Information Only

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
28273	183.99

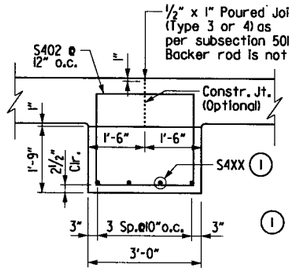
BAR LIST

	Mark	No. Req'd.	Length
(2)	S401	82	28'-10"
	S402	214	10'-4"
	S403	91	3'-0"
	S404	4	32'-4"
	S405	4	9'-8"
	S501	43	55'-8"
(2)	S502	12	38'-4"
	S503 to S549	2 Ea.	3'-6" to 55'-6"
(2)	S550 to S587	2 Ea.	23'-0" to 47'-6"
(2)	S701 to S7112	2 Ea.	23'-3" to 47'-9"

Bending Diagrams

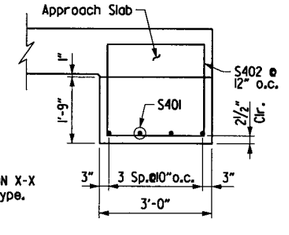


(Dimensions are out to out of bars)



(1) See SECTION X-X for Bar Type.

SECTION A-A
SCALE: 1/2" = 1'-0"



SECTION B-B
SCALE: 1/2" = 1'-0"

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

DETAILS OF TYPE SPECIAL 2 APPROACH SLAB HWY. 18 BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bi008241.as3
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07407 DRAWING NO. 59539

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5/25/2018 4:19:42 PM sts

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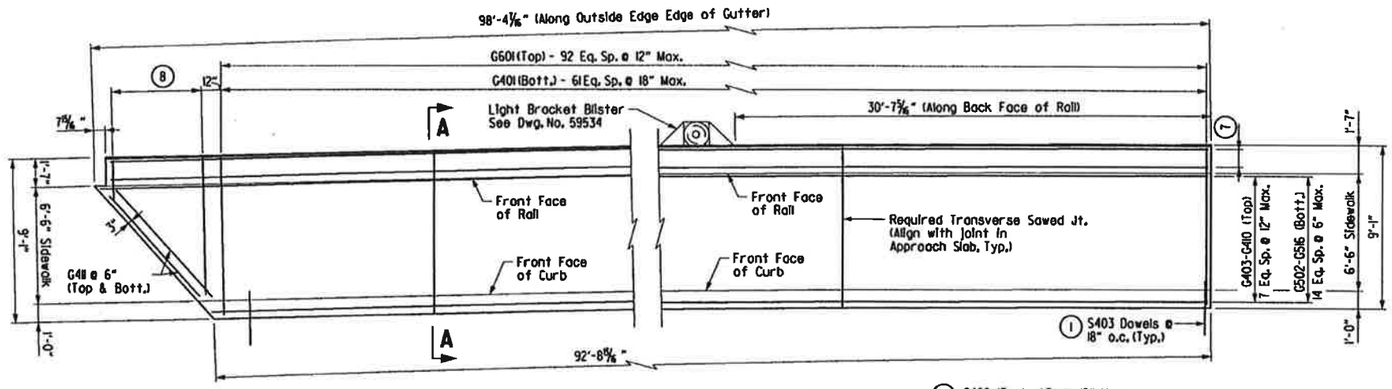
10/23/2018
jharrell

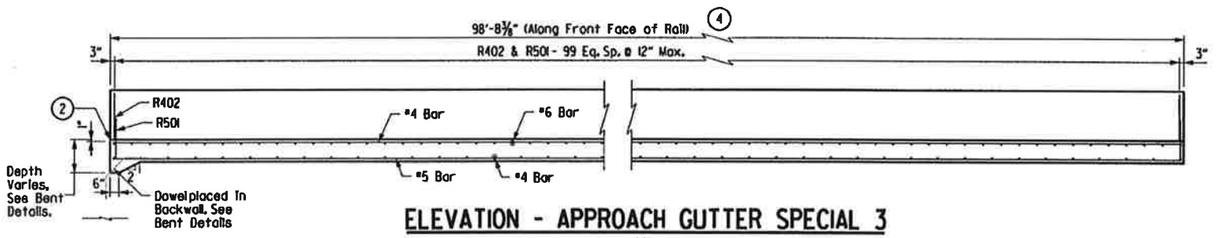
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	196	346
				(1) 07407		APPROACH GUTTERS 3&4		59540

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
Stephen T. Smiley 23 Oct 2018



PLAN - APPROACH GUTTER SPECIAL 3

SCALE: ¼" = 1'-0"



ELEVATION - APPROACH GUTTER SPECIAL 3

SCALE: ¼" = 1'-0"

(7) G402 (Top) - 1 Sp. @ 12" Max.
G501 (Bott.) - 2 Eq. Sp. @ 6" Max.

(8) G602-G607 (Top & Bott.) - 5 Eq. Sp. @ 12" Max.

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Hwy 18.

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.

(1) Prior to pouring concrete for approach slab, place S403 Dowels into approach slab using 18" embedment.
As an Alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately, but will be considered subsidiary to "APPROACH GUTTERS".

(2) ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.

(3) ½" Preformed Joint Filler (AASHTO M153, Type I) and ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Joint Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls".

(4) "Ashlar Stone Pattern" on back face of rail. For "Detail of Parapet Enhancement", See Dwg. No. 59534

(5) Type H Metal Rail, unless noted otherwise, shall be painted Black and shall match Fed. Std. 595B Color Chip No. 27038.

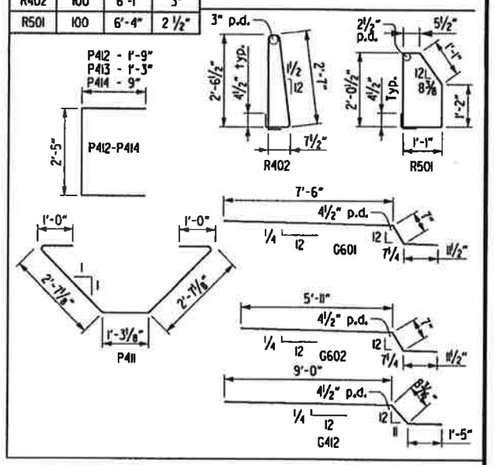
GUTTER 3 BAR LIST

	Mark	No. Req'd.	Length	Pin Dia.
	G401	62	8'-9"	Str.
(6)	G402	6	34'-1"	Str.
(6)	G403 to G410	3 Ea.	32'-3" to 34'-4"	Str.
(6)	G411	4	8'-0"	Str.
	G501	6	50'-8"	Str.
(6)	G502 to G516	2 Ea.	47'-10" to 50'-11"	Str.
	G601	93	9'-1"	4½"
	G602 to G607	2 Ea.	2'-4" to 7'-8"	Str.
	P411	5	8'-1"	2"
	P412	2	5'-9"	2"
	P413	2	4'-9"	2"
	P414	2	3'-9"	2"
(6)	R401	21	34'-6"	Str.
	R402	100	6'-1"	3"
	R501	100	6'-4"	2½"

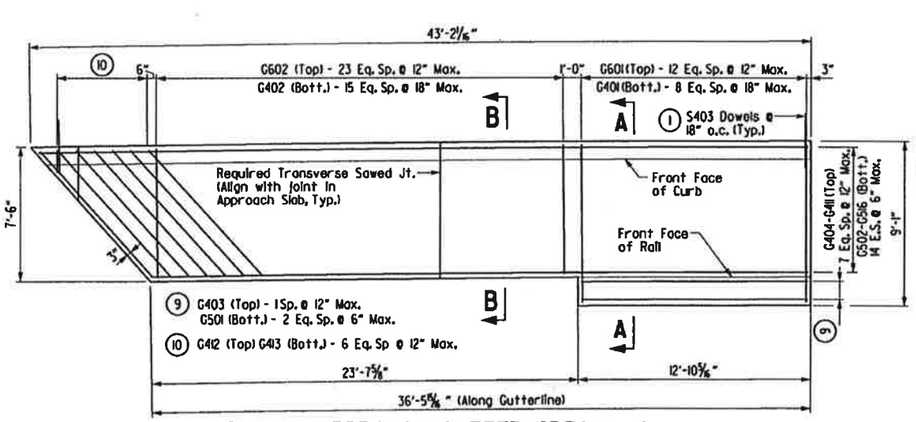
GUTTER 4 BAR LIST

	Mark	No. Req'd.	Length	Pin Dia.
	G401	9	8'-9"	Str.
	G402	16	7'-2"	Str.
	G403	2	12'-6"	Str.
(6)	G404 to G411	2 Ea.	19'-2" to 22'-3"	Str.
	G412	7	8'-2"	3"
	G413	7	9'-4"	Str.
	G501	3	12'-6"	Str.
	G502 to G516	1 Ea.	36'-4" to 42'-7"	Str.
	G601	13	9'-1"	4½"
	G602	24	7'-6"	4½"
	R401	7	12'-6"	Str.
	R402	14	6'-1"	3"
	R501	14	6'-4"	2½"

Bending Diagrams
(Dimensions are out to out of bars)

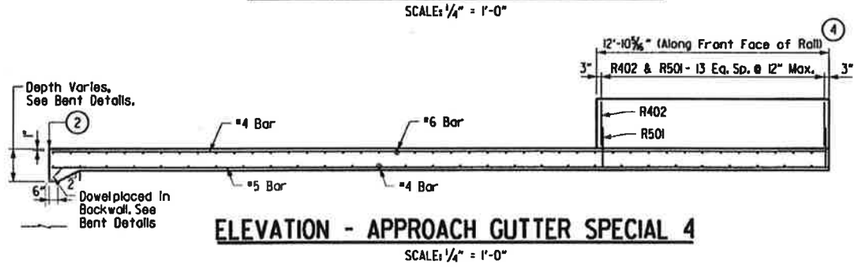


(6) Note:
Min Lap lengths for Longitudinal Bars are as follows.
#4 Bars = 2'-0"
#5 Bars = 3'-0"



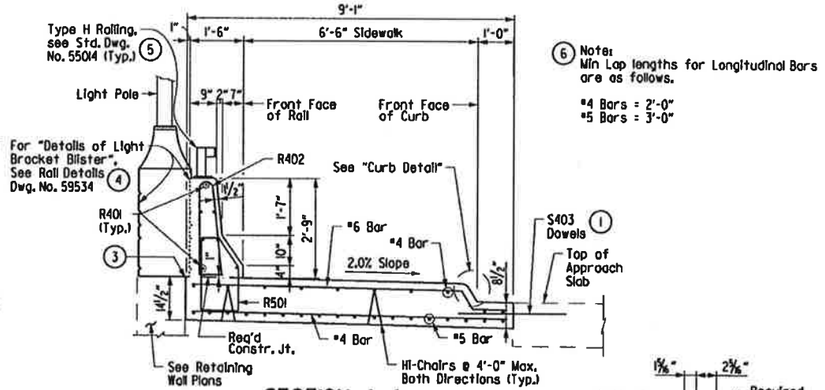
PLAN - APPROACH GUTTER SPECIAL 4

SCALE: ¼" = 1'-0"



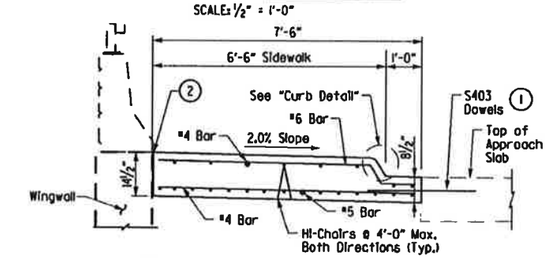
ELEVATION - APPROACH GUTTER SPECIAL 4

SCALE: ¼" = 1'-0"



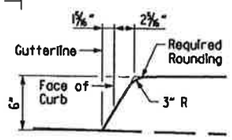
SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"



CURB DETAIL

N.T.S.

TABLE OF QUANTITIES

For Information Only

Gutter Type Special	Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Metal Bridge Railing - Type H (Lin. Ft.)	Architectural Finish (Sq. Ft.)
3	5876	50.09	99	239
4	1776	15.64	13	32

DETAILS OF TYPE SPECIAL 3 & 4
APPROACH GUTTERS
HWY. 18 BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bl00824l.as4
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07407 DRAWING NO. 59540

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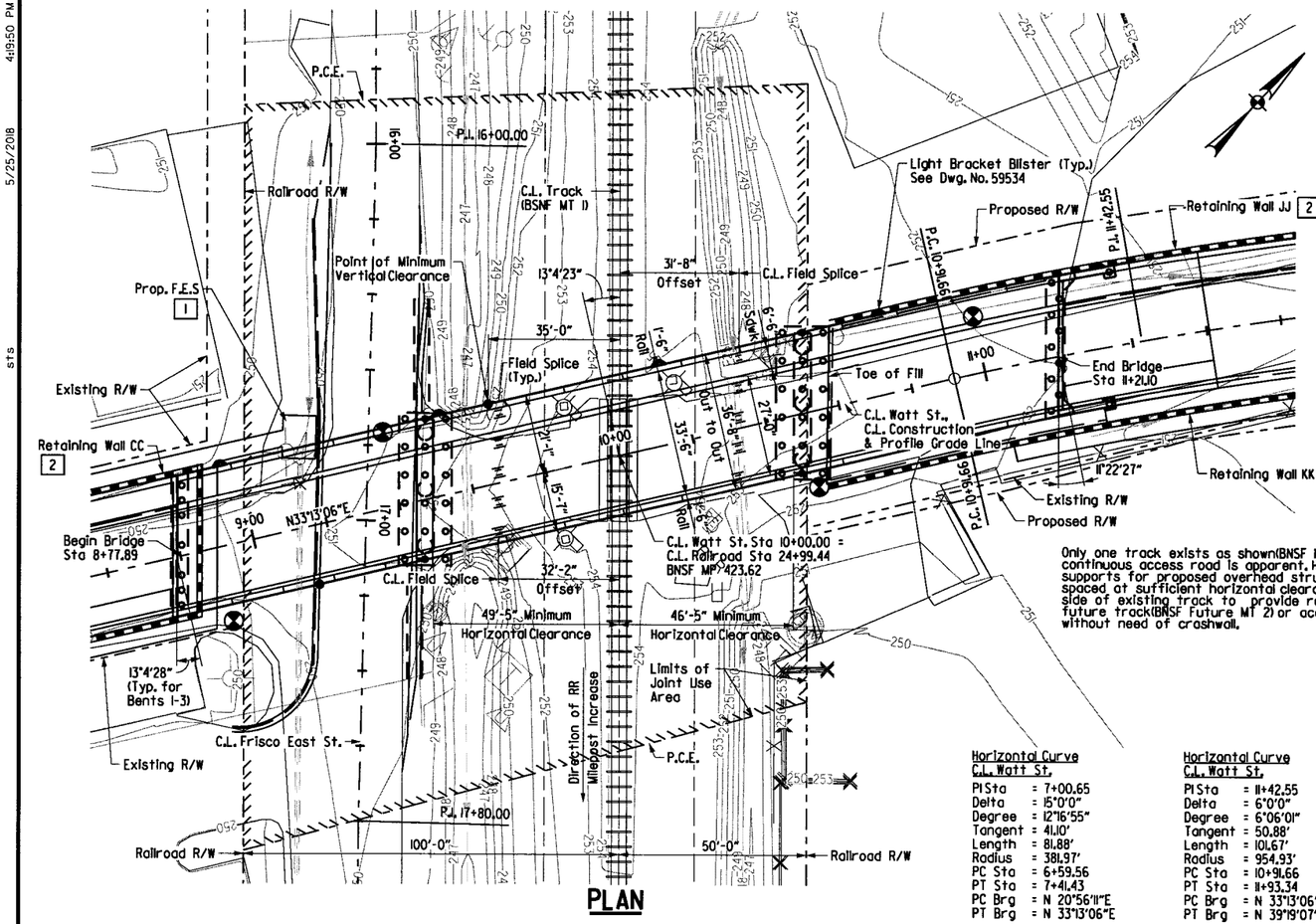
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	197	346
				1 07408		EXHIBIT A		59541



PLAN

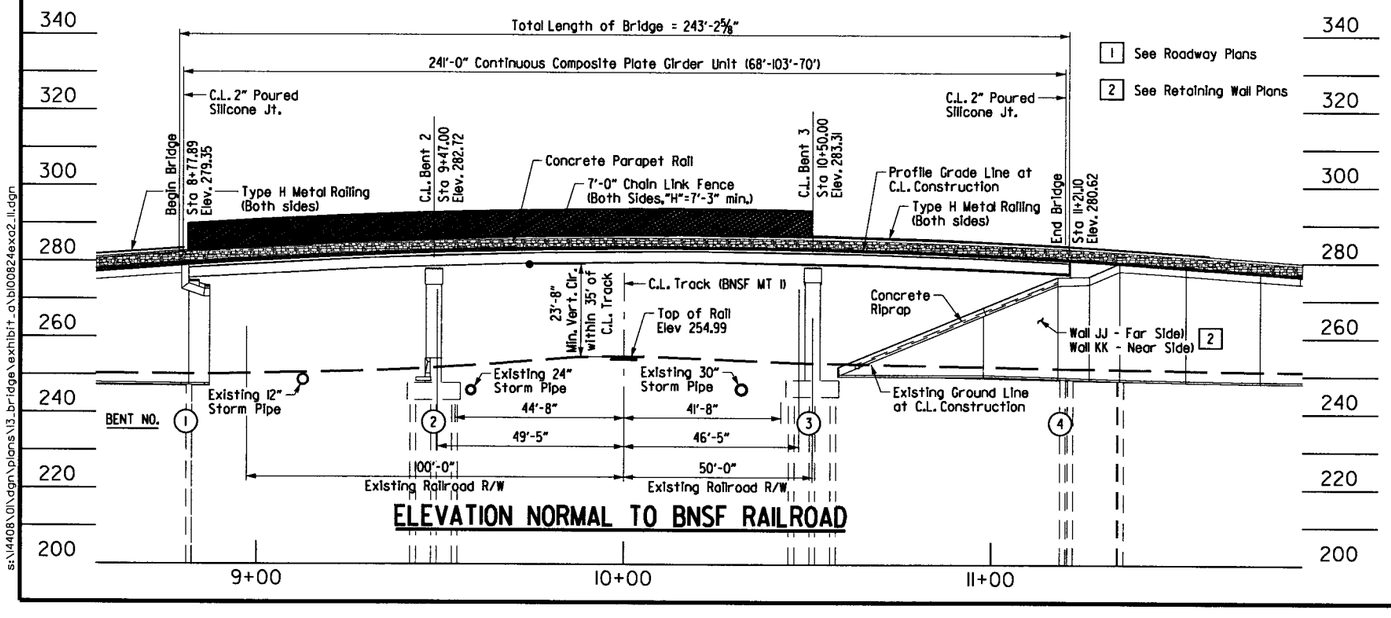
Only one track exists as shown(BNSF MT 1) and no continuous access road is apparent. However, supports for proposed overhead structure are spaced at sufficient horizontal clearance either side of existing track to provide room for future track(BNSF Future MT 2) or access road without need of crashwall.

Horizontal Curve C.L. Watt St.

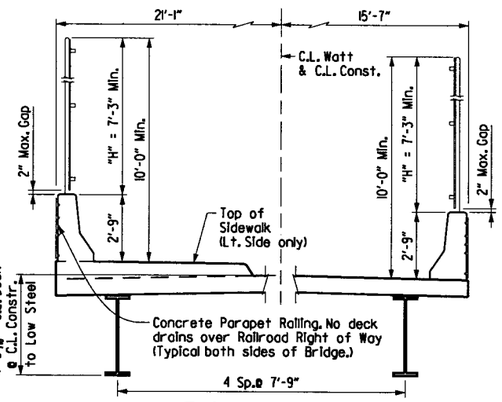
PI Sta	= 7+00.65
Delta	= 15°0'0"
Degree	= 12°16'55"
Tangent	= 41.10'
Length	= 81.88'
Radius	= 381.97'
PC Sta	= 6+59.56
PT Sta	= 7+41.43
PC Brg	= N 20°56'11"E
PT Brg	= N 33°13'06"E

Horizontal Curve C.L. Watt St.

PI Sta	= 11+42.55
Delta	= 6°0'0"
Degree	= 6°06'01"
Tangent	= 50.88'
Length	= 101.67'
Radius	= 954.93'
PC Sta	= 10+91.66
PT Sta	= 11+93.34
PC Brg	= N 33°13'06"E
PT Brg	= N 39°19'07"E

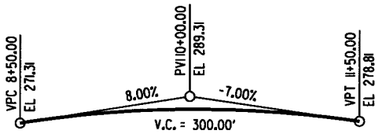


ELEVATION NORMAL TO BNSF RAILROAD



TYPICAL SECTION

No Scale



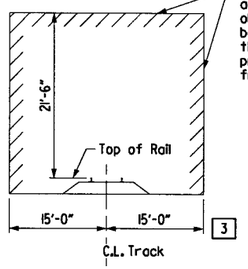
VERTICAL CURVE DATA

(Along Profile Grade)

BNSF RAILWAY
TOP OF RAIL ELEVATIONS *

LEFT RAIL Station	Elevation	RIGHT RAIL Station	Elevation
5+00.00	258.64	5+00.00	258.64
6+63.04	258.58	6+63.04	258.58
7+00.00	258.52	7+00.00	258.52
8+00.00	258.36	8+00.00	258.36
9+00.00	258.21	9+00.00	258.21
10+00.00	258.05	10+00.00	258.05
11+00.00	257.89	11+00.00	257.89
12+00.00	257.73	12+00.00	257.73
13+00.00	257.58	13+00.00	257.58
14+00.00	257.42	14+00.00	257.42
15+00.00	257.26	15+00.00	257.26
15+69.14	257.15	15+69.14	257.15
16+00.00	257.08	16+00.00	257.08
17+00.00	256.84	17+00.00	256.84
18+00.00	256.61	18+00.00	256.61
19+00.00	256.37	19+00.00	256.37
20+00.00	256.14	20+00.00	256.14
21+00.00	255.9	21+00.00	255.9
22+00.00	255.66	22+00.00	255.66
23+00.00	255.43	23+00.00	255.43
24+00.00	255.19	24+00.00	255.19
25+00.00	254.95	25+00.00	254.95
25+00.64	254.95	25+00.64	254.95
26+00.00	254.61	26+00.00	254.61
27+00.00	254.26	27+00.00	254.26
28+00.00	253.92	28+00.00	253.92
29+00.00	253.57	29+00.00	253.57
30+00.00	253.22	30+00.00	253.22
31+00.00	252.88	31+00.00	252.88
32+00.00	252.53	32+00.00	252.53
33+00.00	252.18	33+00.00	252.18
34+00.00	251.84	34+00.00	251.84
35+00.00	251.49	35+00.00	251.49

* Top of rail elevations based on interpolation of 4 survey shots. The elevations of the existing top of rail profile shall be verified by the contractor prior to the beginning of construction. Any discrepancies shall be brought to the attention of the Railroad prior to construction.



MINIMUM CONSTRUCTION CLEARANCES

SKETCH NORMAL TO TRACK
No Scale

3 Measured normal to track.

GENERAL NOTES:

All demolitions within the Railroad's right-of-way and/or demolitions that may impact the Railroad's tracks or operations shall comply with the Railroad's demolition requirements.

Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation. Erection over the Railroad's track shall be developed such that it enables the track(s) to remain open to traffic per the Railroad's requirements.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.

Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment when trains are present.

The following statement is in the "State Rail Agreement": The State shall not plow ice, snow, or sleet over the sides of the structure. In consideration of this practice, the Carrier waives its request for the State to attach splash boards to sides of the structure.

Shoring shall comply with the BNSF Railroad requirements. Construction shall comply with the requirements of SP Job No. 100824 "Insurance, Construction, and Flagging requirements on Railroad property (Burlington Northern Sante Fe Railroad)." Railroad review and approval of Shoring, Erection, and Falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

Currently there are no known utilities on the railroad right-of-way other than shown.

A Chain Link Fence is required on both sides of the Bridge. The Fence is to be mounted on top of the concrete parapet rail and shall extend throughout Spans 1 & 2. For details of fence, see Std. Dwg. No. 55018.

The proposed bridge construction will not change the quantity and/or characteristics of the flow within the Railroad right-of-way.

Closed Parapet Railing (No Deck Drains). Typical both sides of bridge.

All permanent clearances shall be verified before project closing.

For Railroad coordination refer to the Railroad Minimum Requirements of SP Job No. 100824 "Insurance, Construction and Flagging Requirements on Railroad Property (Burlington Northern Sante Fe Railroad)".

29 May 2018

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13072 STEPHEN T. SMILEY

(EXHIBIT A)
LAYOUT OF WATT ST. BRIDGE
OVER BNSF RAILROAD
THAYER SUBDIVISION (MP 423.62)
BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	b100824exa2_il
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	1" = 20'
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07408 DRAWING NO. 59541

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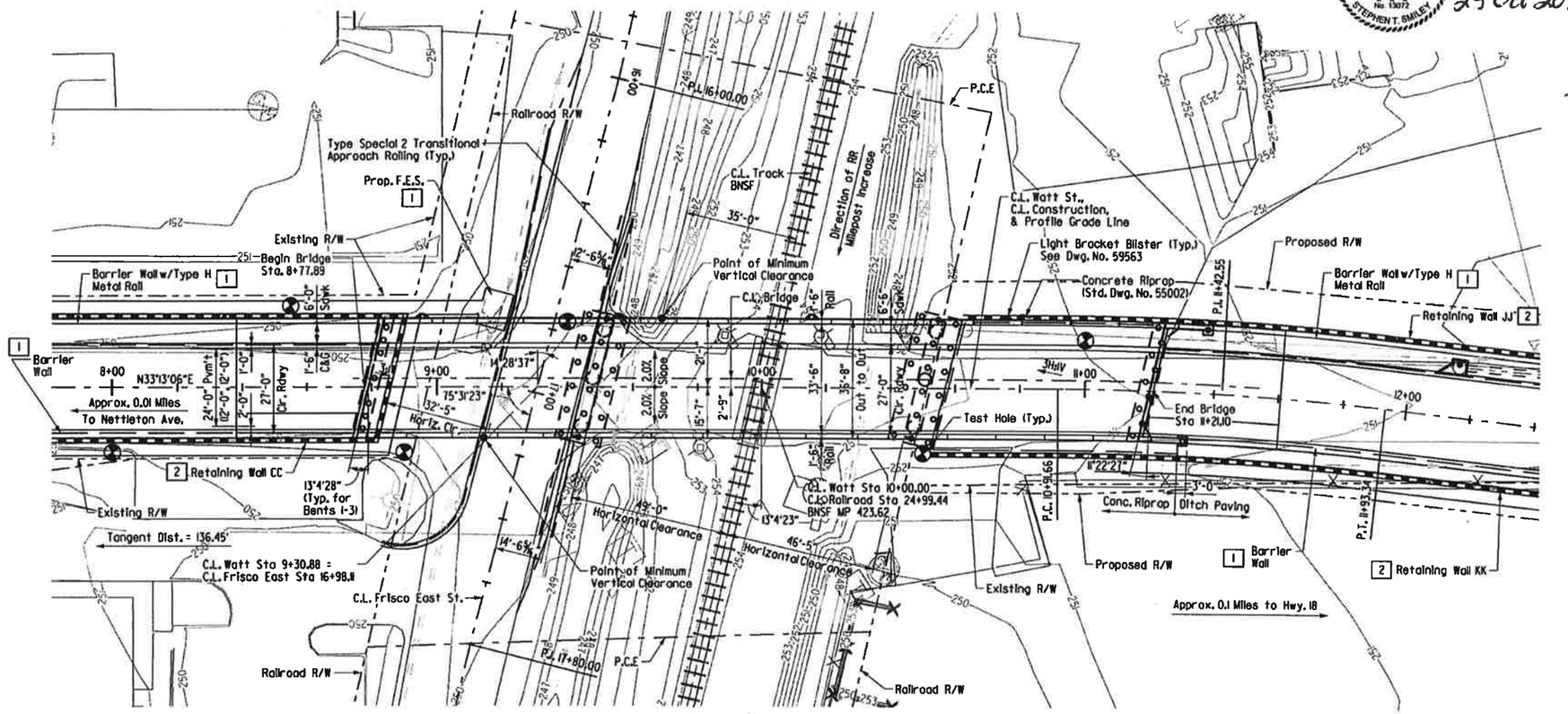
For R/W Data, See roadway Plans.

Note: Stations, elevations, and span lengths are shown along C.L. Construction.
Skew is measured at C.L. Bent for intermediate bents and at C.L. Joints for end bents.

For Type Special 3 Approach Slab & Type Special 5 & 6 Gutters at Begin of bridge,
and Type Special 4 Approach Slab & Type Special 7 & 8 Gutters at End of bridge,
See Dwg. Nos. 59566-59570

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	198	346
				1 07408		BRIDGE LAYOUT		59542

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
Stephen T. Smiley
23 Oct 2018

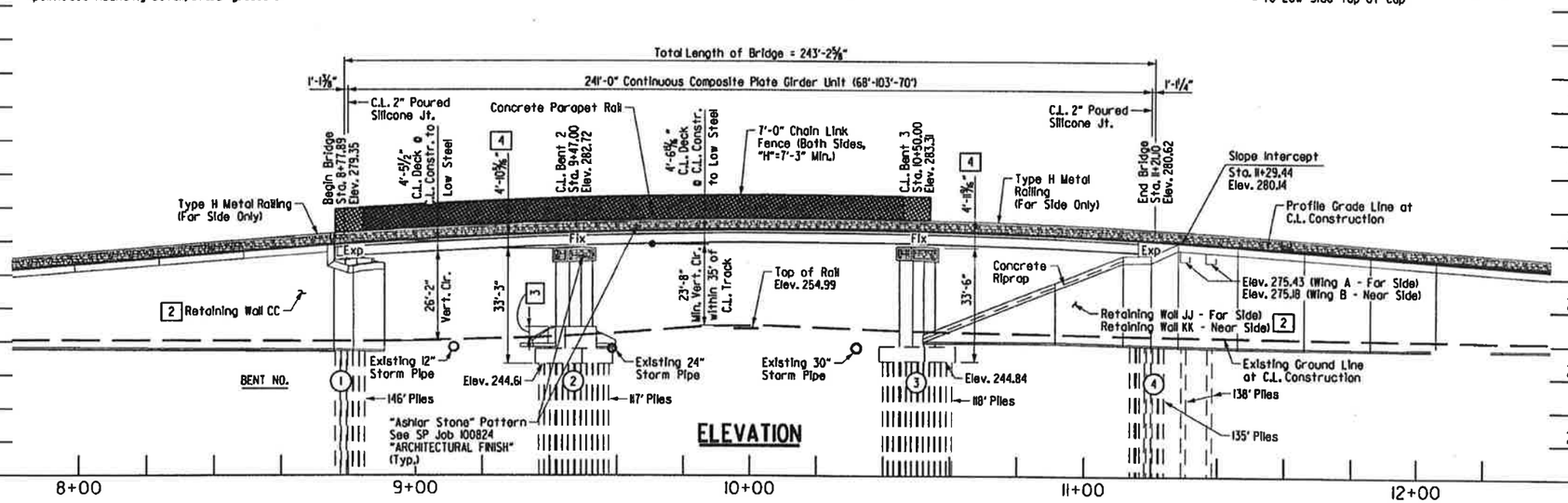


PLAN

Stations and elevations shown are along C.L. Construction. Elevations are at working point. See Rounding Detail, Std. Dwg. 55007.

3 54" from Top of Wall to Top of Pavement

4 Top of Deck @ C.L. Bent @ C.L. Construction to Low Side Top of Cap



ELEVATION

NOTES:

1. C.L. Construction and respective Profile Grade Line is coincident with C.L. Watt St.
2. All longitudinal edges of deck and approaches are concentric to C.L. Watt St. unless noted otherwise.
3. All Bents are parallel to each other.
4. See Project Bridge General Notes Dwg. No. 59512
5. For additional Pile information, see Soil Borings Dwg. No. 59543

1 See Roadway Plans

2 See Retaining Wall Plans

DETAIL DRAWINGS:

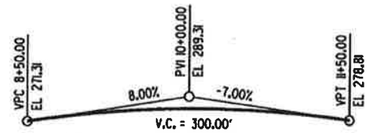
	DRAWING NO.:
End Bents	59544-59549
Intermediate Bent	59550-59555
24'-0" Cont. Comp. Plate Girder Unit	59556-59562
Concrete Riprap	55002
Screed Rail Support for Plate Girder	55007
Silicone Joints	55008
Transitional Approach Railing	55013
Type H Metal Bridge Railing	55014
Chain Link Fence	55108
Concrete Filled Steel Shell Piles	55021
Rail & Type Special 2 Trans. Approach Rail	59563-59564
Elastomeric Bearings	59565
Type Special Approach Slabs & Gutters	59566-59570

Horizontal Curve C.L. Watt St.

PI Sta	= 7+00.65
Delta	= 15°0'0"
Degree	= 12°16'55"
Tangent	= 41.10'
Length	= 81.88'
Radius	= 381.97'
PC Sta	= 6+59.56
PT Sta	= 7+41.43
PC Brg	= N 20°56'11"E
PT Brg	= N 33°13'06"E

Horizontal Curve C.L. Watt St.

PI Sta	= 11+42.55
Delta	= 6°0'0"
Degree	= 6°06'01"
Tangent	= 50.88'
Length	= 101.67'
Radius	= 954.93'
PC Sta	= 10+91.66
PT Sta	= 11+93.34
PC Brg	= N 33°13'06"E
PT Brg	= N 39°19'07"E



VERTICAL CURVE DATA

(Along Profile Grade)

LAYOUT OF WATT ST. BRIDGE OVER BNSF RAILROAD

BNSF RAILROAD OVERPASS
(HWY. 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	3/16/2016	FILENAME:	b100824.ll
CHECKED BY:	STS	DATE:	3/18/2016	SCALE:	1" = 20'
DESIGNED BY:	KH	DATE:	3/14/2016		

BRIDGE NO. 07408 DRAWING NO. 59542

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jharrell

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.		100824	199	346
				07408		SOIL BORINGS		59543

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SUMMARY OF SPT N-VALUES (BRIDGE BORINGS)

Sta. 11+00, 15' Lt (Boring S4)
0.5-1.5, N = 20
2.5-3.5, N = 9
4.5-5.5, N = 10
6.5-7.5, N = 12
14-15, N = 14
24-25, N = 14
34-35, N = 12
44-45, N = 14
49-50, N = 14
69-70, N = 12
79-80, N = 13
89-90, N = 18
99-100, N = 22
109-110, N = 29
119-120, N = 26
129-130, N = 17

Sta. 10+50, 20' Rt (Boring S5)
0.5-1.5, N = 20
2.5-3.5, N = 14
4.5-5.5, N = 11
9-10, N = 13
24-25, N = 39
29-30, N = 16
34-35, N = 20
39-40, N = 17
44-45, N = 50/8"
49-50, N = 50/9"
59-60, N = 19
69-70, N = 24
79-80, N = 14
89-90, N = 16
99-100, N = 41

Sta. 9+40, 20' Lt (Boring S6)
0.5-1.5, N = 10
2.5-3.5, N = 9
6.5-7.5, N = 12
24-25, N = 10
29-30, N = 16
39-40, N = 6
44-45, N = 8
49-50, N = 35
59-60, N = 35
69-70, N = 20
79-80, N = 36
89-90, N = 39
99-100, N = 36

Sta. 8+90, 20' Rt (Boring S7)
0.5-1.5, N = 27
2.5-3.5, N = 9
9-10, N = 14
14-15, N = 13
24-25, N = 14
29-30, N = 13
34-35, N = 16
39-40, N = 14
44-45, N = 50/7"
49-50, N = 50/10"
59-60, N = 26
69-70, N = 25
79-80, N = 50/6"
89-90, N = 50/9"
99-100, N = 50/7"

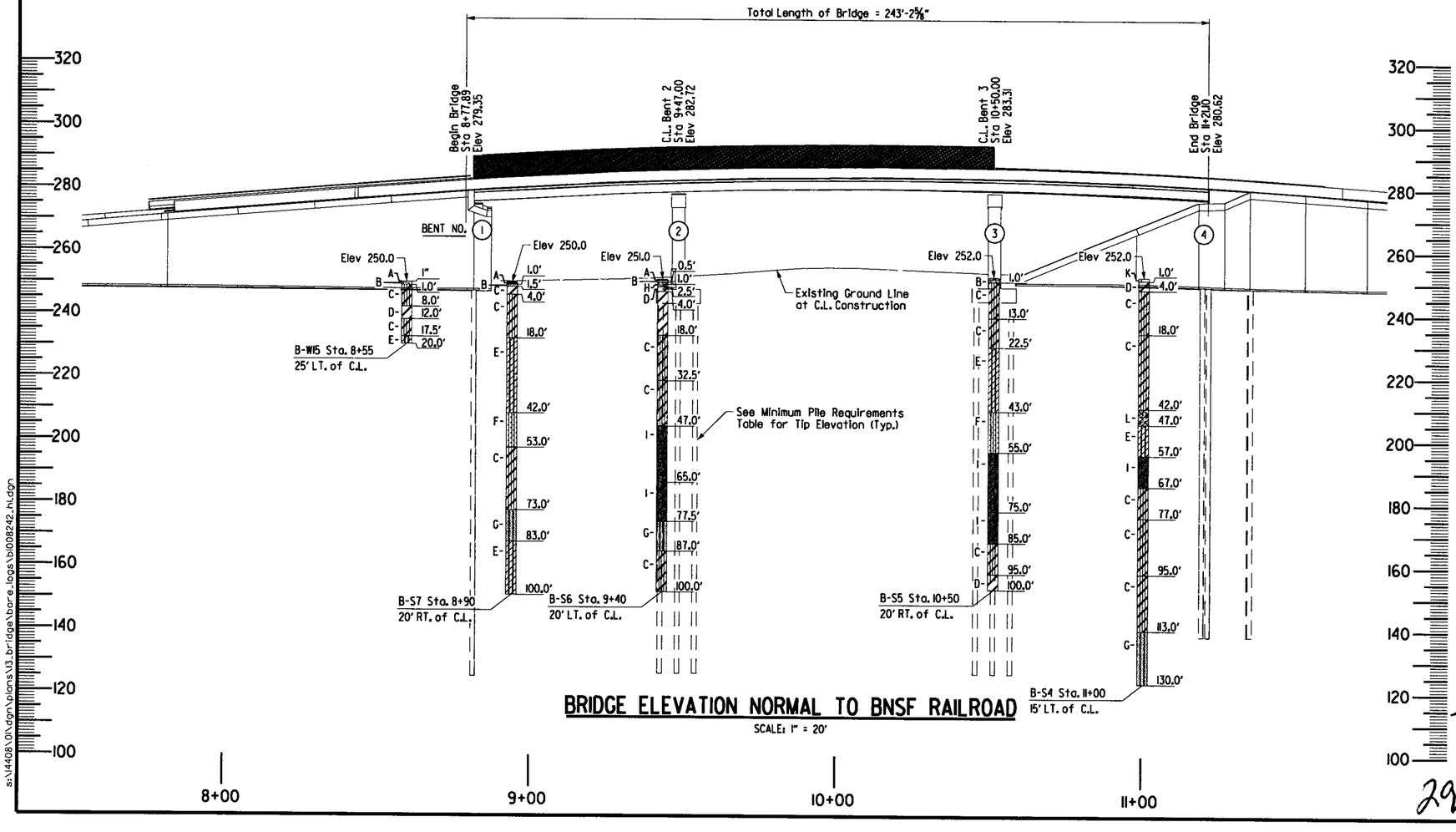
Sta. 8+55, 25' Lt (Boring W15)
0.5-1.5, N = 26
2.5-3.5, N = 16
6.5-7.5, N = 16
14-15, N = 11
19-20, N = 12

MINIMUM PILE REQUIREMENTS

Bent	Capacity (tons/pile)	Tip Elevation	Hammer Energy (Ft-Kips)
1	270	125.0	89 (Jetted)
2	239	126.0	90
3	239	126.0	90
4	212	138.0	90

BORING LEGEND:

A - Asphalt Concrete
B - Aggregate Base
C - Soft to very stiff silty clay
D - Soft to very stiff clay
E - Stiff to very stiff clayey silt
F - Dense to very dense silty fine sand
G - Medium dense to very dense fine sandy silt
H - Stiff fine sandy clay (fill)
I - stiff to very stiff fine sandy clay
J - Portland cement concrete
K - Crushed stone base
L - Medium dense clayey sand



BRIDGE ELEVATION NORMAL TO BNSF RAILROAD

SCALE: 1" = 20'

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

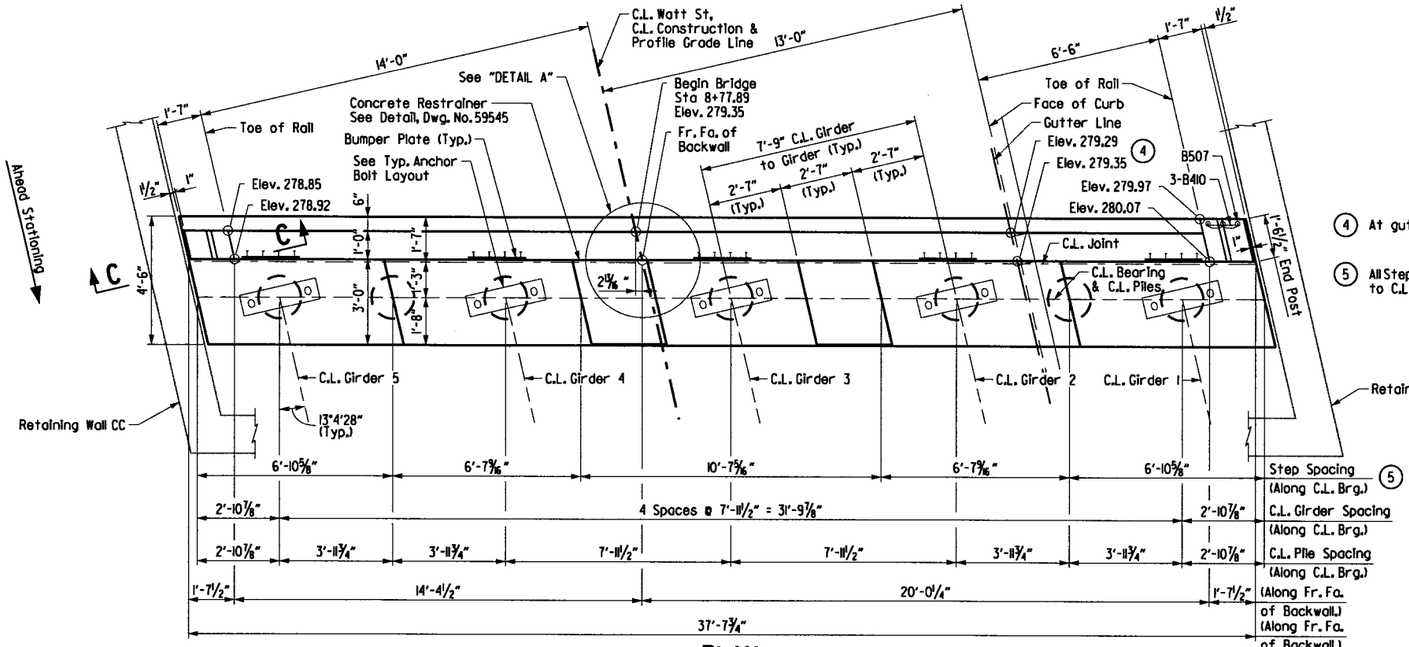
SOIL BORINGS
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 4/20/2016
CHECKED BY: STS DATE: 5/1/2016
DESIGNED BY: JH DATE: 4/1/2016
FILENAME: bl008242_hl
SCALE: AS SHOWN

BRIDGE NO. 07408 DRAWING NO. 59543

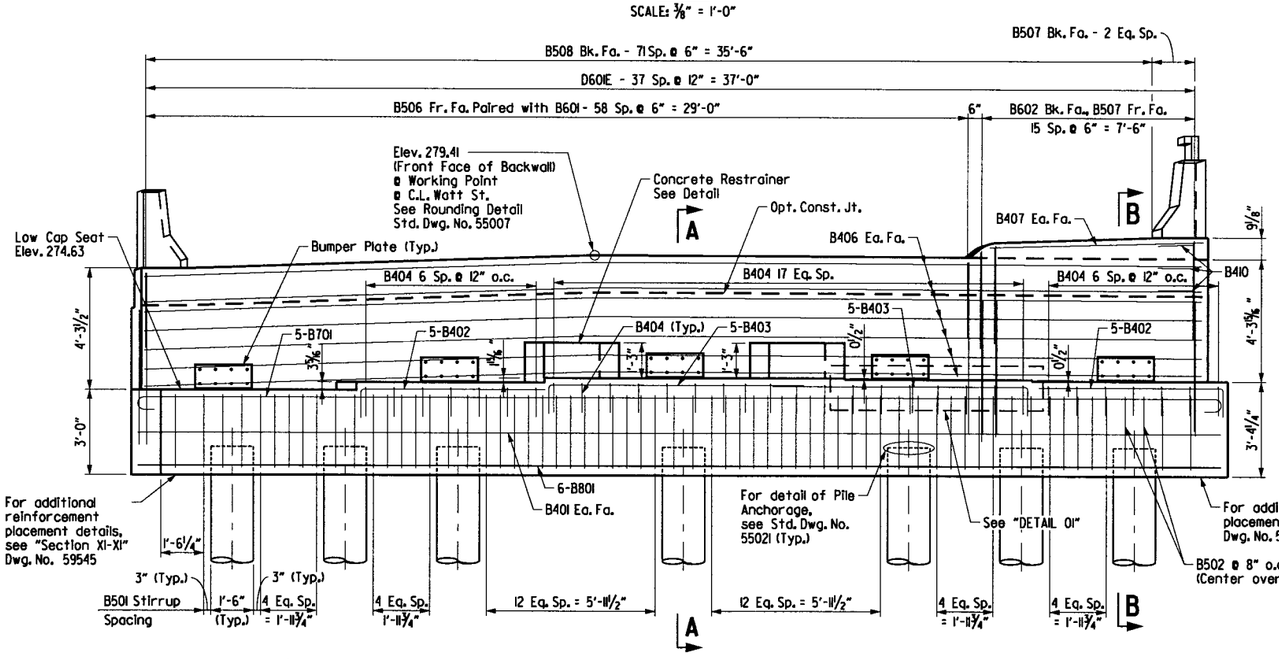
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	200	346

(1) 07408 **END BENT DETAILS** 59544



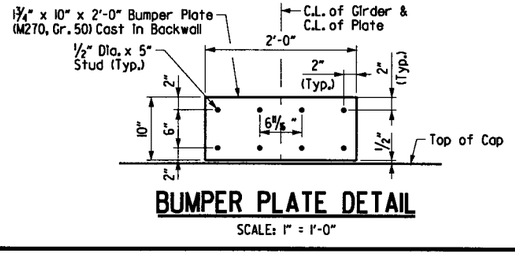
PLAN

SCALE: ⅜" = 1'-0"



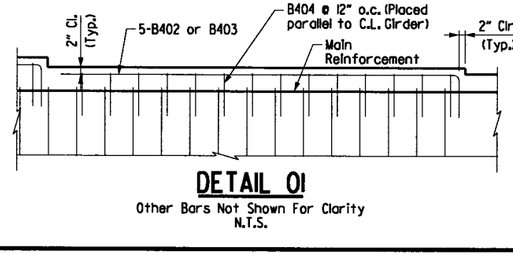
ELEVATION

SCALE: ⅜" = 1'-0"



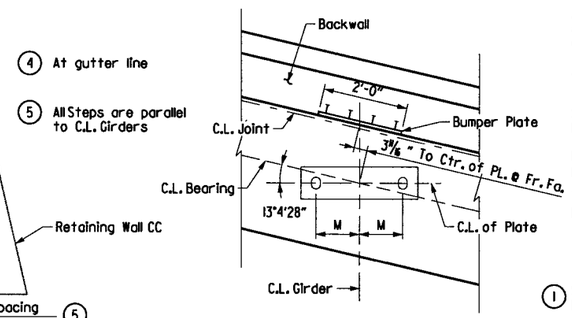
BUMPER PLATE DETAIL

SCALE: 1" = 1'-0"



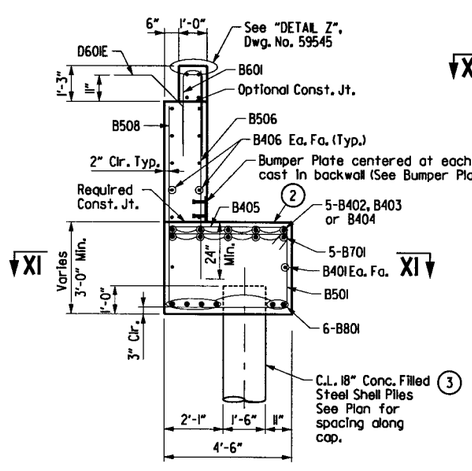
DETAIL 01

Other Bars Not Shown For Clarity
N.T.S.



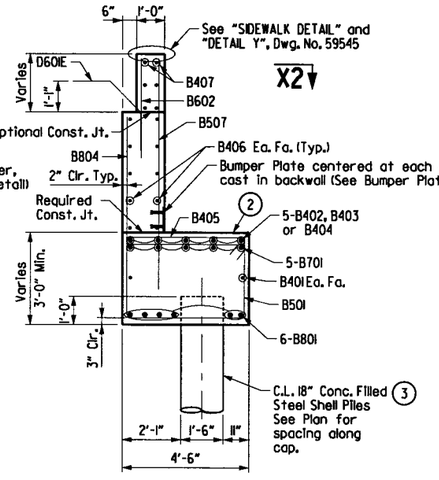
TYPICAL ANCHOR BOLT LAYOUT (1)

SCALE: ½" = 1'-0"



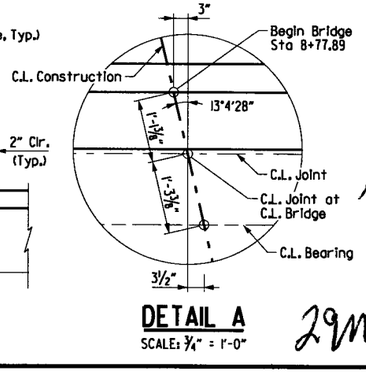
VIEW A-A

SCALE: ⅜" = 1'-0"



VIEW B-B

SCALE: ⅜" = 1'-0"



DETAIL A

SCALE: ¾" = 1'-0"

GENERAL NOTES:

All concrete shall be Class "S" with a minimum 28-Day compressive strength f'c=3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to Gr. 60 AASHTO M31 or M322 Type A with mill test reports.

Structural Steel in End Bents shall be AASHTO M270, Gr. 50 and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

No portion of the Backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint shall not be placed until the adjacent deck pour has been made.

For additional information, see layout.

(4) At gutter line

(5) All Steps are parallel to C.L. Girders

(1) See Project Bridge General Notes for Reinforcing Steel Placement Dwg. No. 59512 and Details of Elastomeric Bearings Dwg. No. 59565 for dimension "M" and additional notes regarding anchor bolt placement.

(2) See "View J-J" for Concrete Restrainer details, Dwg No. 59545

(3) Concrete filled steel shell piles shall conform to Std. Dwg. No. 55021.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley
29 May 2018

SHEET 1 OF 2
DETAILS OF END BENT 1
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/20/2016	FILENAME:	b1008242_b1l
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DESIGNED BY:	DCD	DATE:	7/18/2016		

BRIDGE NO. 07408 DRAWING NO. 59544

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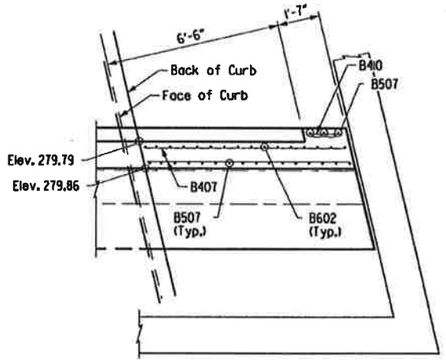
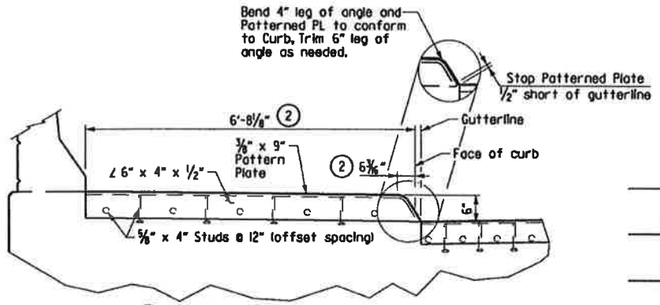
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	201	346
				(1) 07408		END BENT DETAILS		59545

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No 13073
STEPHEN T. SMILEY
23 Oct 2018



SECTION X2-X2
SCALE: 3/8" = 1'-0"

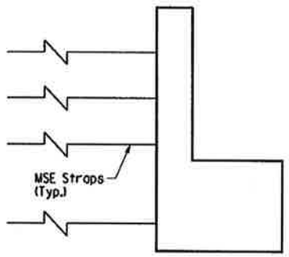


(1) SIDEWALK DETAIL
No Scale

(3) 1/2" Preformed Jt. Filler (AASHTO M 153, Type II and 1/2" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Joint Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls" or to the item "Approach Gutters".

(4) Form Liner Relief shall be a maximum of 1" to preserve a minimum clear cover of 1 1/2"

(5) "Ashlar Stone" Pattern, See SP Job 100824 "ARCHITECTURAL FINISH"



STRAPS DETAIL
No Scale

MSE straps are shown for illustration only. The exact number, length, location and method of attachment to the back wall shall be designed by the MSE wall manufacturer. The contractor shall submit sign and sealed working drawings prepared by a Professional Engineer registered in the state of Arkansas along with the design calculations for Engineer's approval. All costs in connection with the design, working drawings, furnishing materials and construction shall be included in the contract bid price for "Retaining Walls".

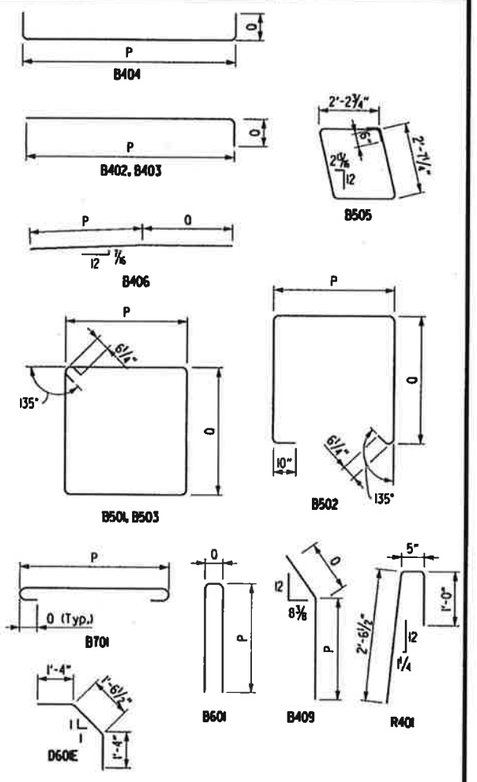
A service lateral load of 1.4 K per feet of length of bent, resulting from back fill soil pressure and a thermalload of 1.0 K per feet of length of bent shall be accounted for.

BAR LIST

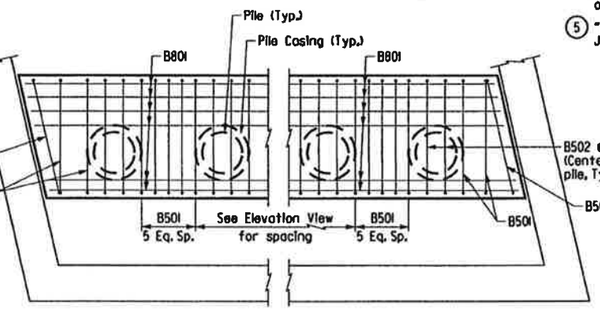
MARK	NO. REQ'D.	LENGTH	P	O	P.D.
Cap & Backwall					
B401	2	38'-2"			Str.
B402	10	7'-5"	6'-6"	1'-0"	2"
B403	11	8'-5"	7'-6"	1'-0"	2"
B404	32	6'-1"	4'-3 1/4"	1'-0"	2"
B406	14	37'-3 1/2"	15'-10 3/4"	21'-5"	2"
B407	2	7'-6"			Str.
B408	5	4'-0 1/2"			Str.
B409	5	3'-9"	1'-10 1/4"	1'-11"	2"
B410	3	1'-3 1/2"			Str.
B501	50	14'-1 1/2"	4'-2"	2'-7"	2 1/2"
B502	14	10'-3"	4'-2"	2'-7"	2 1/2"
B503	2	14'-4 1/2"	4'-3 1/4"	2'-7"	2 1/2"
B504	32	3'-0 1/2"			Str.
B505	6	10'-2"			2 1/2"
B506	59	6'-4"			Str.
B507	19	7'-0"			Str.
B508	72	5'-0"			Str.
B601	59	5'-7 1/2"	2'-7 3/4"	8"	4 1/2"
B602	16	3'-5"			Str.
B701	5	38'-8 1/2"	37'-3 1/2"	10"	5 1/4"
B801	6	37'-3 1/2"			Str.
R401	5	3'-11"			2"
R402	6	8"			Str.
R403	6	1'-2 1/2"			Str.
D60E	38	4'-2"			4 1/2"

Note:
Bars marked with an "E" suffix shall be epoxy coated and paid as Item 804 "Epoxy Coated Reinforcing Steel (Gr. 60)".

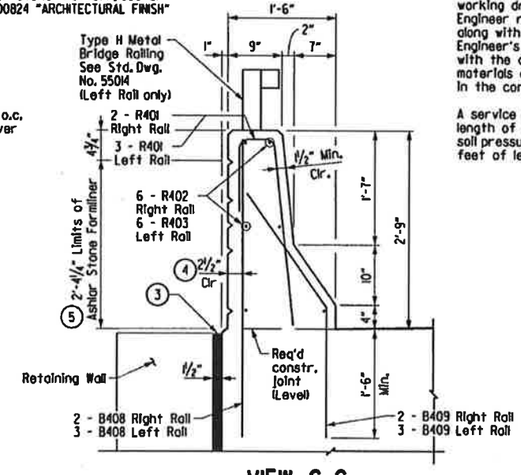
BENDING DIAGRAMS



The dimensions shown for the bending diagrams are out-to-out of bars.



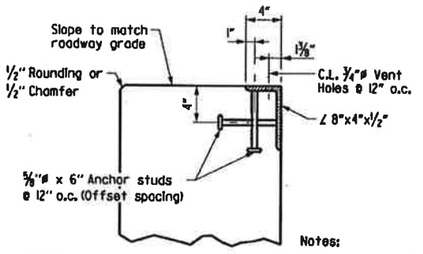
SECTION XI-XI
SCALE: 3/8" = 1'-0"



VIEW C-C
SCALE: 1" = 1'-0"
(Right Rail shown - Left Rail similar)

(1) For additional joint details, see Std. Dwg. No. 55008 and Dwg. No. 59558

(2) Measured along joint

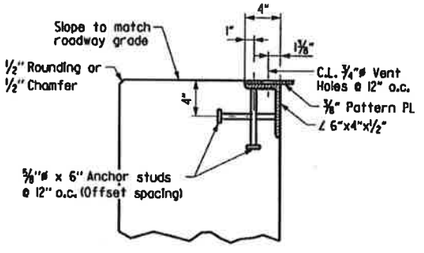


(1) DETAIL Z
No Scale

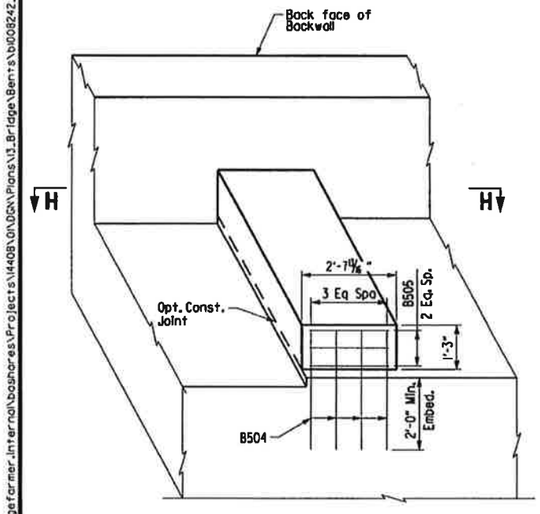
Notes:

Transverse spacing between vertical anchor studs and vent holes shall be 6".

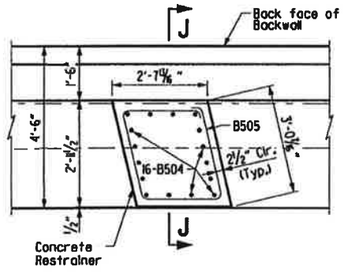
Concrete shall be hand packed under the joint armor in the sidewalk and in the backwall.



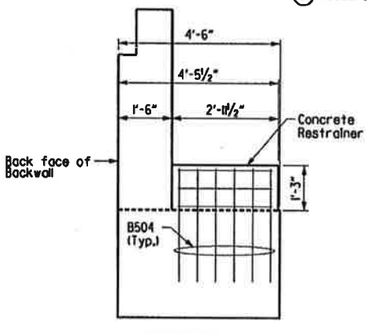
(1) DETAIL Y
No Scale



CONCRETE RESTRAINER DETAIL
N.T.S.



VIEW H-H
SCALE: 1/2" = 1'-0"



SECTION J-J
SCALE: 1/2" = 1'-0"

SHEET 2 OF 2
DETAILS OF END BENT 1
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/20/2016	FILENAME:	b100824_bl2
CHECKED BY:	STS	DATE:	8/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	7/18/2016		

BRIDGE NO. 07408 DRAWING NO. 59545

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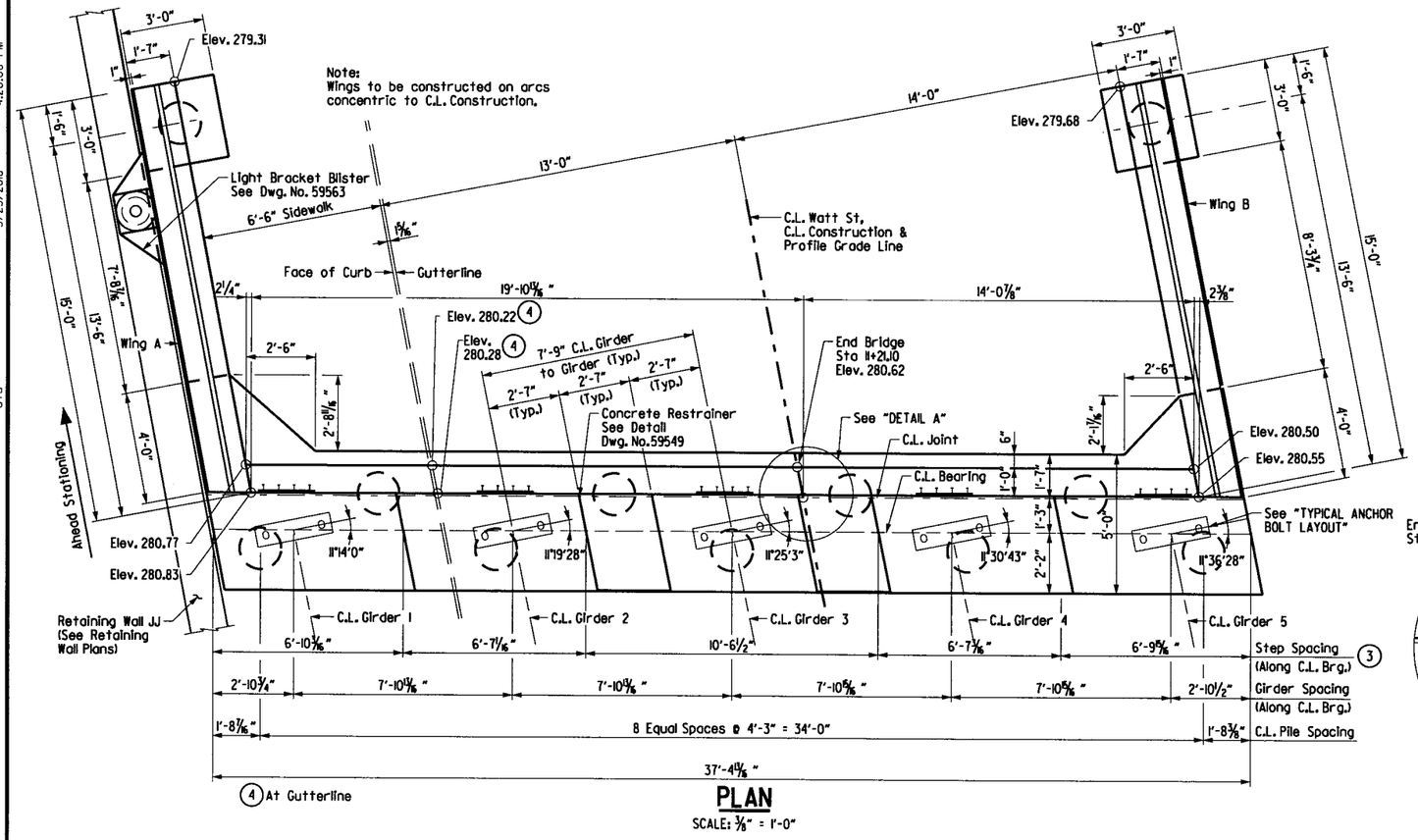
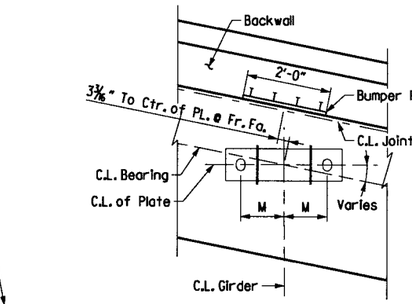
jharrell

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.		100824	202	346
				(1) 07408		END BENT DETAILS		59546



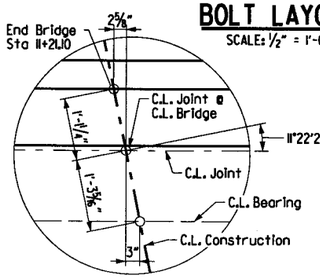
PLAN

SCALE: ⅜" = 1'-0"



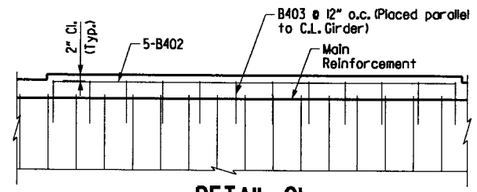
TYPICAL ANCHOR BOLT LAYOUT (1)

SCALE: ½" = 1'-0"



DETAIL A

SCALE: ¾" = 1'-0"



DETAIL 01

Other Bars Not Shown For Clarity
N.T.S.

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 conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test reports.

Structural Steel in End Bents shall be AASHTO M270, Gr. 50 and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

No portion of the Backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint shall not be placed until the adjacent deck pour has been made.

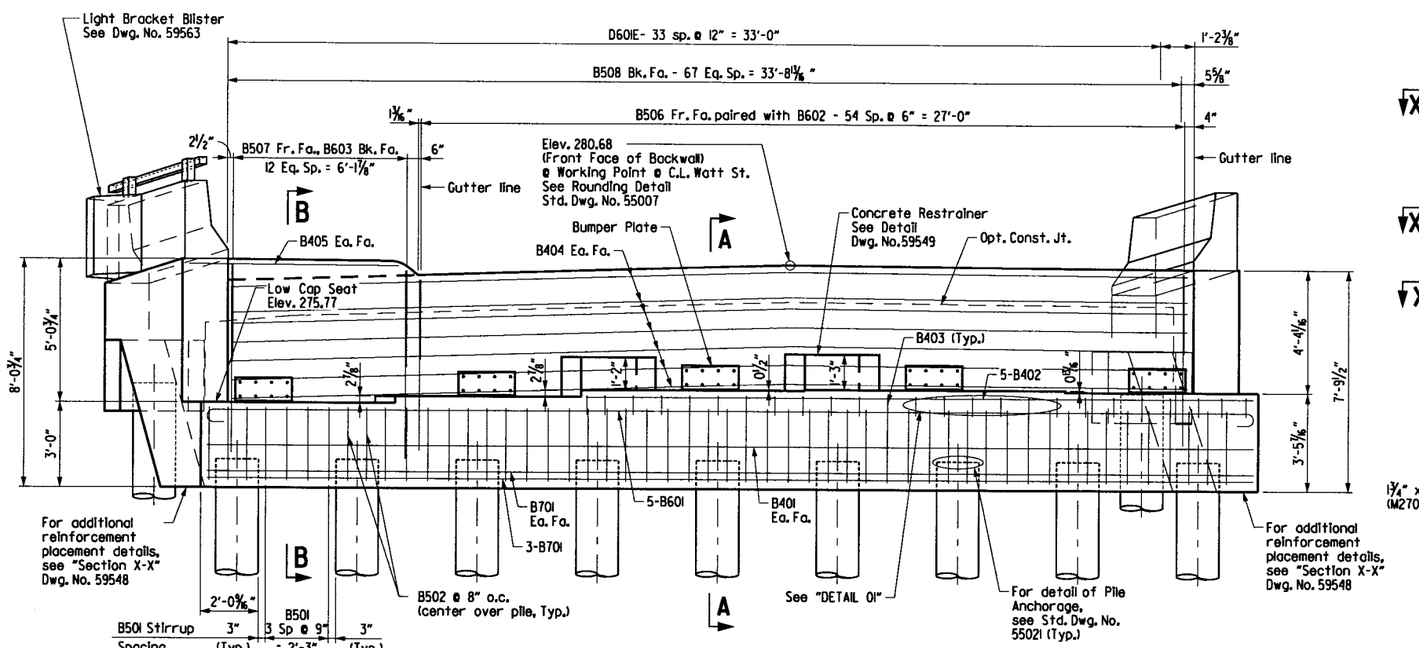
For details and dimension M of elastomeric bearing, see Dwg. No. 59565

For additional information, see layout.

(1) See Project Bridge General Notes for Reinforcing Steel Placement Dwg. No.59512 and Details of Elastomeric Bearings Dwg. No. 59565 for dimension "M" and additional notes regarding anchor bolt placement.

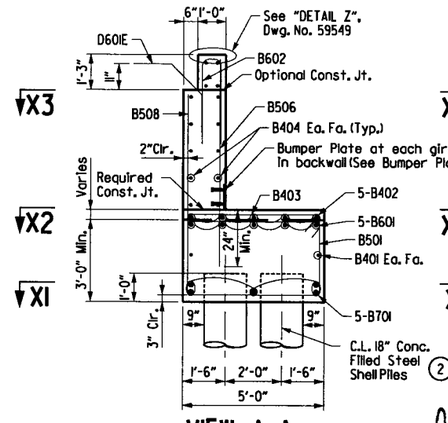
(2) Concrete filled steel shell piles shall conform to Std. Dwg. No. 5502l.

(3) All Steps are parallel to C.L. Girders



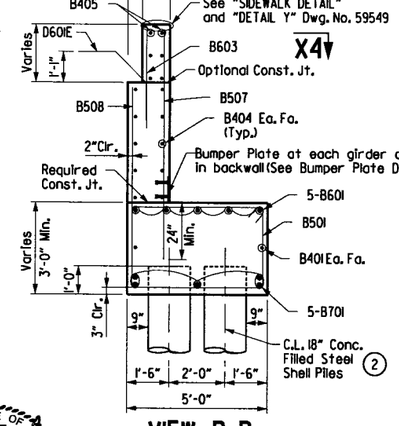
ELEVATION

SCALE: ⅜" = 1'-0"



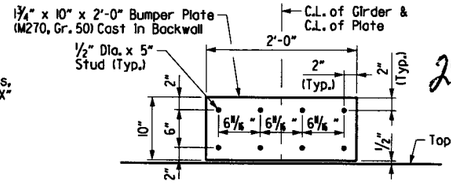
VIEW A-A

SCALE: ⅜" = 1'-0"



VIEW B-B

SCALE: ⅜" = 1'-0"



BUMPER PLATE DETAIL

SCALE: 1" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 1 OF 4
DETAILS OF END BENT 4
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/28/2016	FILENAME:	b1008242.b41
CHECKED BY:	STS	DATE:	8/1/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	7/26/2016		

BRIDGE NO. 07408 DRAWING NO. 59546

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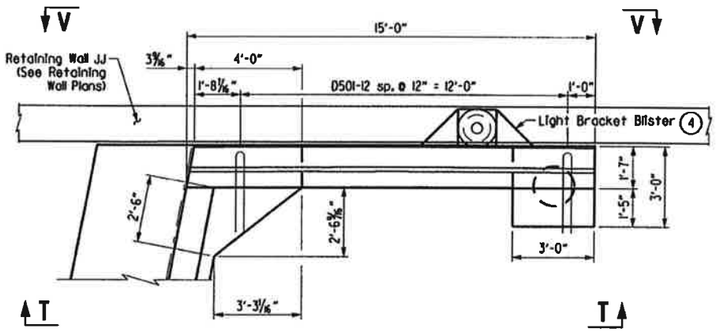
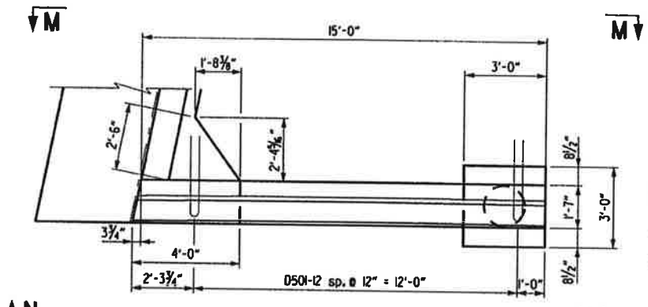
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED
10-23-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	203	346
1 07408	END BENT DETAILS			59547

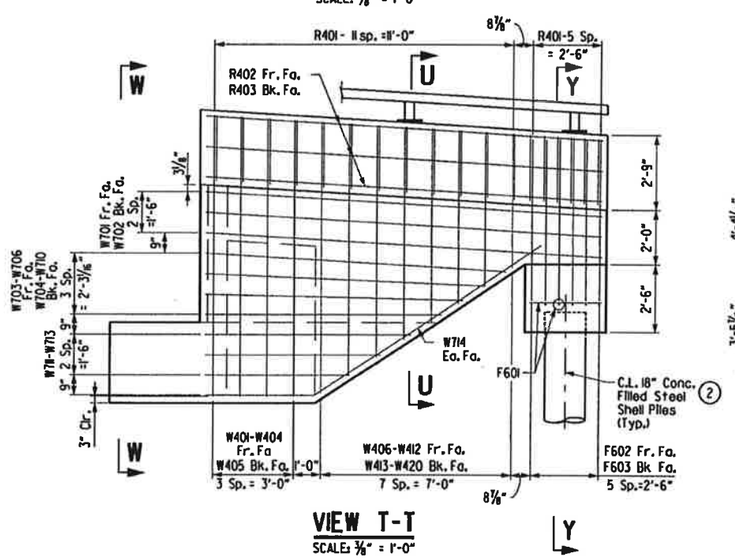
STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018



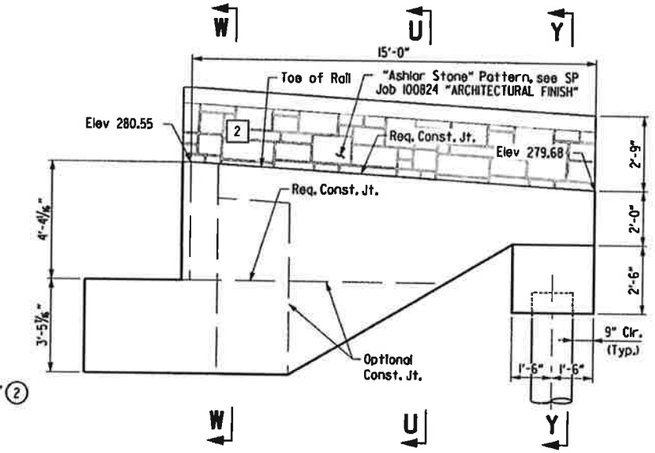
PLAN OF RAIL WING A
SCALE: ⅜" = 1'-0"



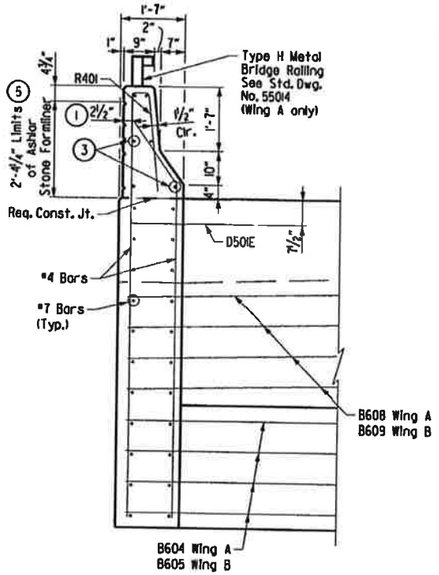
PLAN OF RAIL WING B
SCALE: ⅜" = 1'-0"



VIEW T-T
SCALE: ⅜" = 1'-0"



VIEW N-N
SCALE: ⅜" = 1'-0"



SECTION W-W
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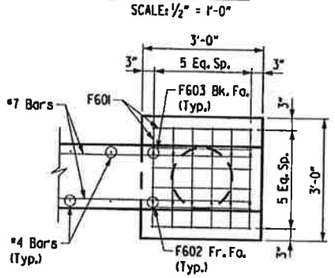
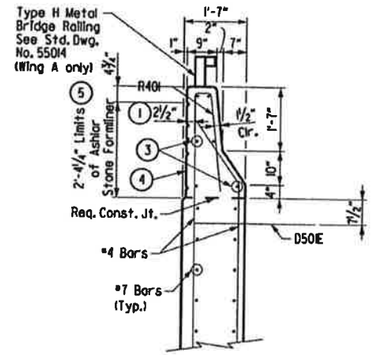


VIEW S-S
SCALE: ½" = 1'-0"
(Note: Wing B is shown; Wing A is similar)



SECTION U-U
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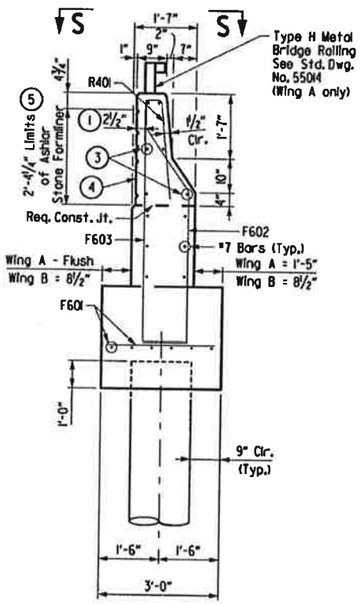
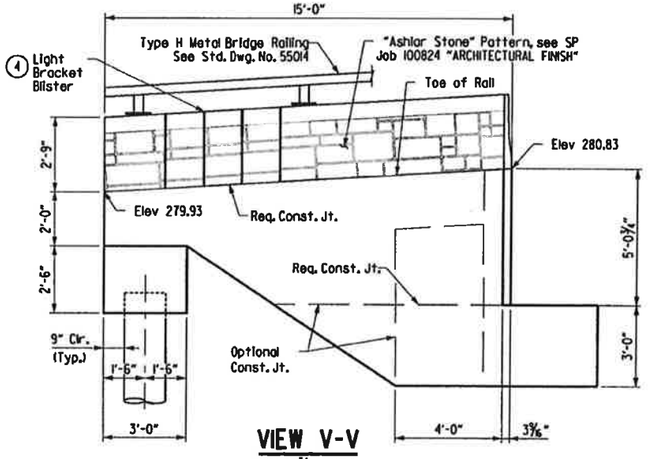
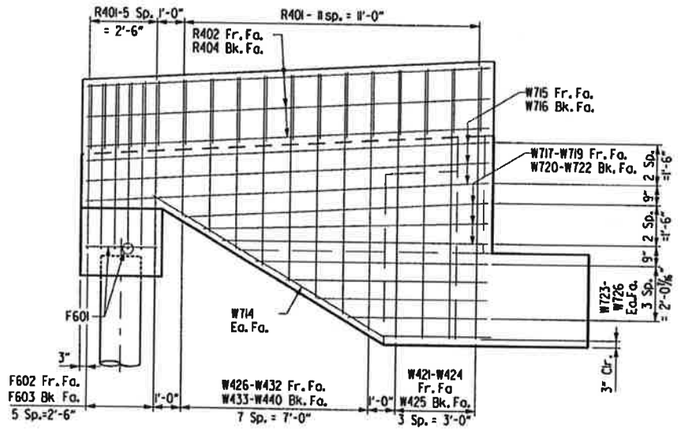


Type H Metal Bridge Railing See Std. Dwg. No. 55014

SECTION Y-Y
SCALE: ½" = 1'-0"
(Note: Wing B is shown; Wing A is similar)



VIEW V-V
SCALE: ⅜" = 1'-0"



VIEW M-M
SCALE: ⅜" = 1'-0"

(1) Form Liner Relief shall be a maximum of 1" to preserve a minimum clear cover of 1½"

(2) Concrete filled steel shell piles shall conform to Std. Dwg. No. 55021.

(3) R402 Fr. Fa. and R403 Bk. Fa. (Wing A)
R402 Fr. Fa. and R404 Bk. Fa. (Wing B)

(4) For "DETAILS OF LIGHT BRACKET BLISTER" See Dwg. No. 59563

(5) "Ashlar Stone" Pattern, See SP Job 100824 "ARCHITECTURAL FINISH"

SHEET 2 OF 4
DETAILS OF END BENT 4
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/28/2016
CHECKED BY:	STS	DATE:	8/1/2016
DESIGNED BY:	DCD	DATE:	7/26/2016
FILENAME:	b100824_b42		
SCALE:	AS SHOWN		

BRIDGE NO. 07408
DRAWING NO. 59547

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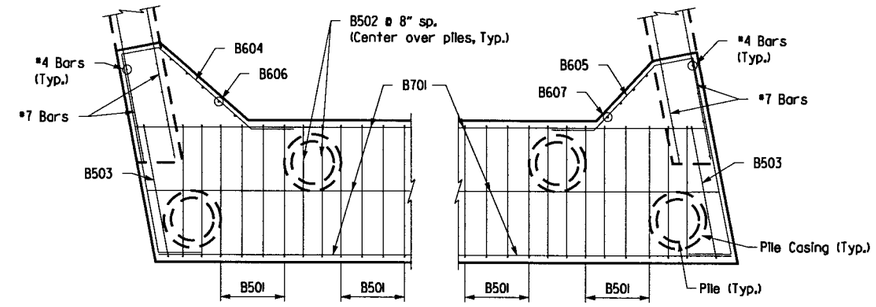
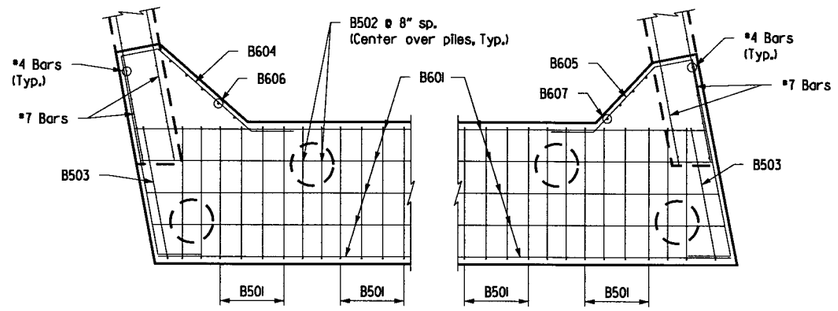
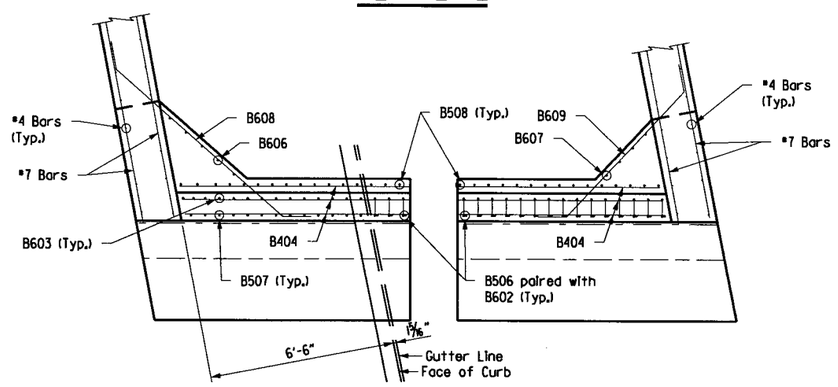
Jharrell



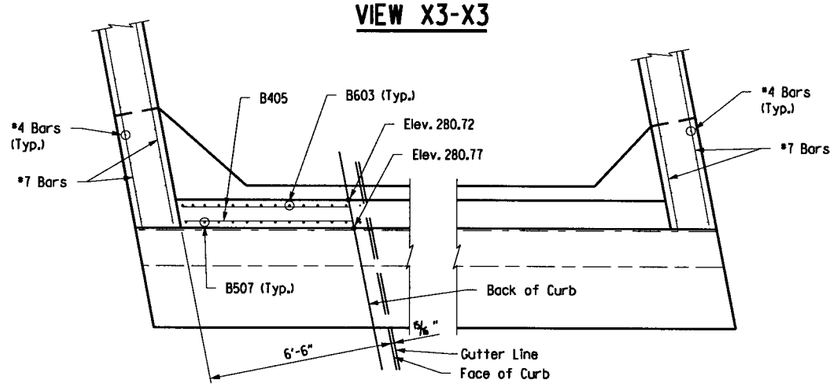
VIEW X1-X1



VIEW X2-X2



VIEW X3-X3



VIEW X4-X4

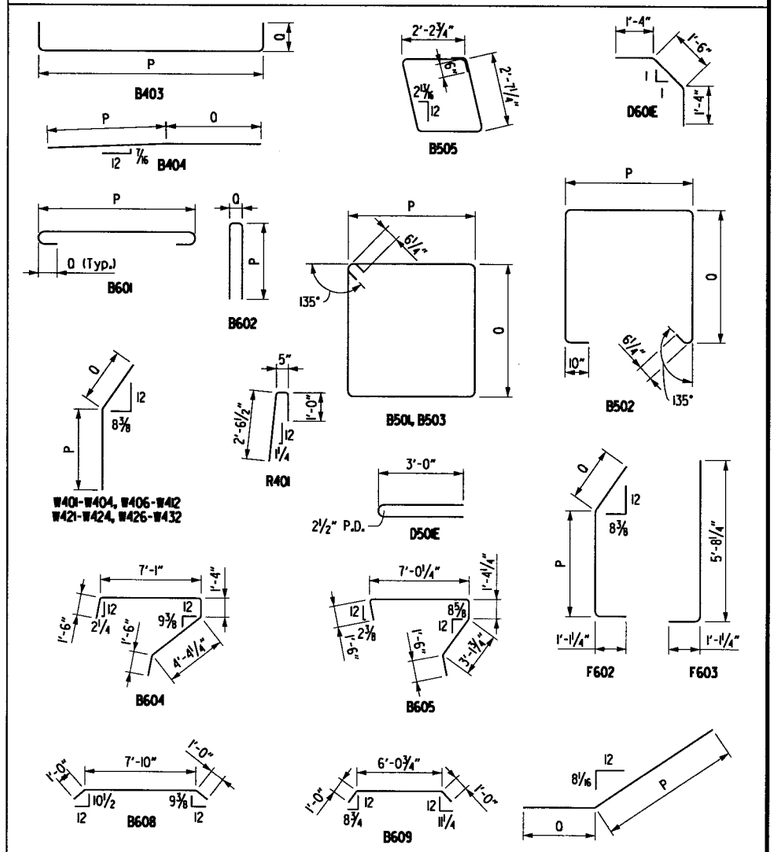
BAR LIST (1)

MARK	NO. REQ'D.	LENGTH	P	O	P.D.
Cap & Backwall					
B401	2	37'-0 1/2"			Str.
B402	5	23'-7"			Str.
B403	25	6'-7"	4'-9"	1'-0"	2"
B404	14	33'-10"	19'-9 1/4"	14'-1"	2"
B405	2	7'-4 1/2"			Str.
B501	32	15'-2"	4'-8"	2'-7"	2 1/2"
B502	18	10'-8"	4'-8"	2'-7"	2 1/2"
B503	2	15'-4"	4'-9"	2'-7"	2 1/2"
B504	36	3'-1"			Str.
B505	6	10'-2"			2 1/2"
B506	55	6'-3"			Str.
B507	13	7'-1"			Str.
B508	68	5'-1"			Str.
B601	5	38'-5"	37'-0 1/2"	6"	4 1/2"
B602	55	5'-6"	2'-7"	8"	4 1/2"
B603	14	3'-5"			Str.
B604	4	15'-8"			4 1/2"
B605	4	14'-4"			4 1/2"
B606	5	5'-8"			Str.
B607	4	6'-2"			Str.
B608	4	9'-10"			4 1/2"
B609	4	8'-1"			4 1/2"
B701	5	37'-0 1/2"			Str.
D601E	34	4'-2"			4 1/2"
Wing Wall A					
W401 to W404	1 Ea	10'-1" to 9'-11"	8'-1 1/2" to 7'-11 1/2"	1'-11" to 1'-11"	2"
W405	4	10'-2"			Str.
W406 to W412	1 Ea	9'-9" to 4'-8"	7'-9 1/2" to 2'-8 1/4"	1'-11" to 1'-11"	2"
W413 to W420	1 Ea	10'-1" to 5'-0"			Str.
W701	3	14'-7 1/2"			Str.
W702	3	14'-5"			Str.
W703 to W706	1 Ea	11'-2" to 8'-9"			Str.
W704 to W710	1 Ea	10'-11" to 8'-6"			Str.
W711 to W713	2 Ea	7'-7" to 5'-5"			Str.
R402	3	14'-7 1/2"			Str.
R403	3	14'-5"			Str.
Wing Wall B					
W421 to W424	1 Ea	9'-10" to 9'-8"	7'-10 1/2" to 7'-8 1/2"	1'-11" to 1'-11"	2"
W425	4	9'-11"			Str.
W426 to W432	1 Ea	9'-4" to 4'-9"	7'-4 1/2" to 2'-9 3/4"	1'-11" to 1'-11"	2"
W433 to W440	1 Ea	9'-8" to 5'-1"			Str.
W715	3	14'-7 1/2"			Str.
W716	3	15'-0"			Str.
W717 to W719	1 Ea	11'-1" to 9'-7"			Str.
W720 to W722	1 Ea	11'-5" to 10'-0"			Str.
W723 to W726	2 Ea	8'-8" to 5'-3"			Str.
R402	3	14'-7 1/2"			Str.
R404	3	15'-0"			Str.
Wing Wall A and B					
W714	4	14'-0 1/2"	10'-0"	4'-1"	5 1/4"
F601	24	2'-6"			Str.
F602	12	6'-4"	3'-5 1/2"	1'-11"	4 1/2"
F603	12	6'-8"			4 1/2"
D501E	26	6'-2"			3 3/4"
R401	36	3'-11"			2"

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.		100824	204	346
				(1) 07408		END BENT DETAILS		59548

(1) See "DETAILS OF LIGHT BRACKET BLISTER" for additional reinforcing bars applicable to Wing A, Dwg. No. 59563

BENDING DIAGRAMS (1)



The dimensions shown for the bending diagrams are out-to-out of bars.

Note: Bars marked with an "E" suffix shall be epoxy coated and paid as item 804 "Epoxy Coated Reinforcing Steel (Gr. 60)".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 3 OF 4
DETAILS OF END BENT 4
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/28/2016	FILENAME:	b1008242_b43
CHECKED BY:	STS	DATE:	8/1/2016	SCALE:	3/8" = 1'-0"
DESIGNED BY:	DCD	DATE:	7/26/2016		

BRIDGE NO. 07408 DRAWING NO. 59548

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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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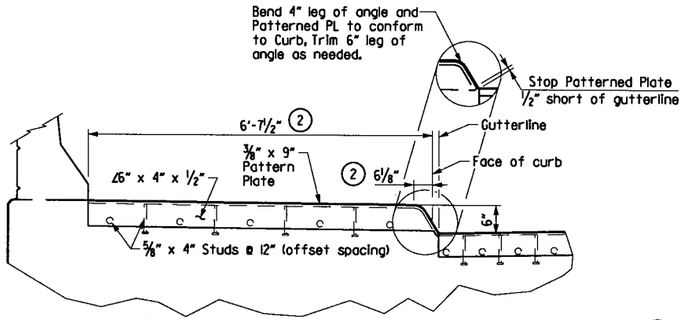
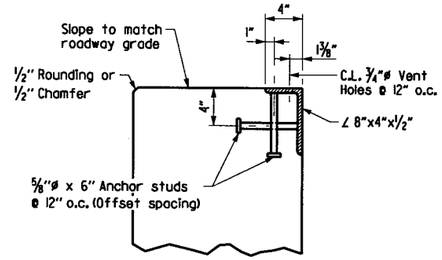


① **SIDEWALK DETAIL**
No Scale

① For additional joint details, see Std. Dwg. No. 55008 and Dwg. No. 59558

② Measured along joint

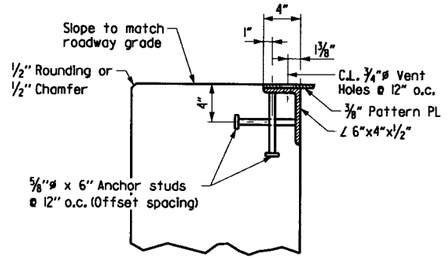


① **DETAIL Z**
No Scale

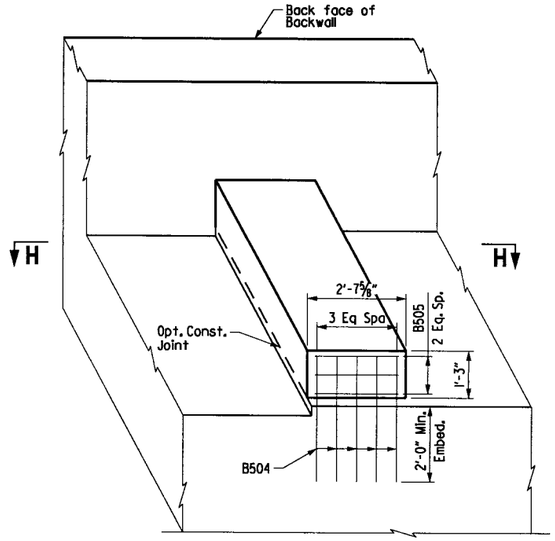
Notes:

Transverse spacing between vertical anchor studs and vent holes shall be 6".

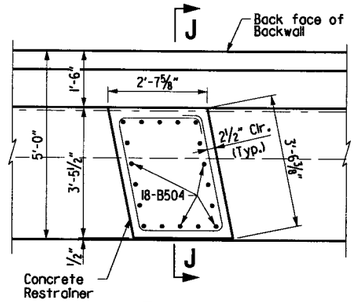
Concrete shall be hand packed under the joint armor in the sidewalk and in the backwall.



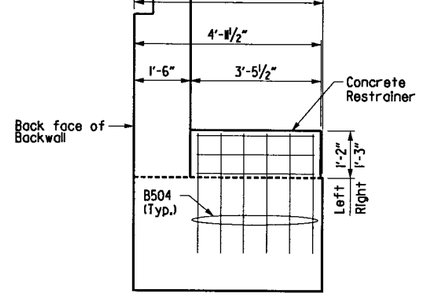
① **DETAIL Y**
No Scale



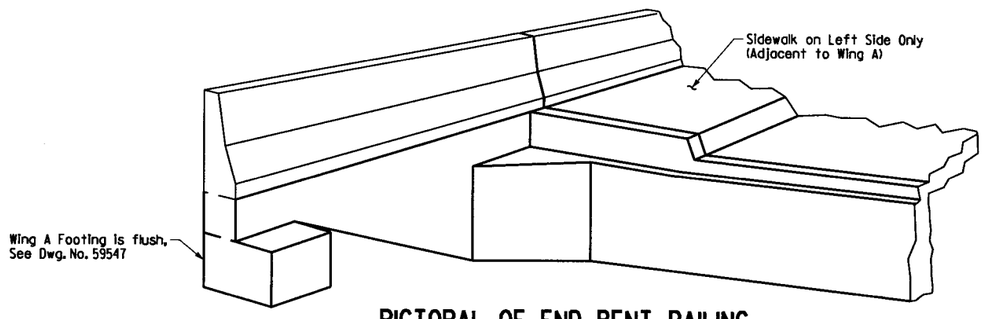
CONCRETE RESTRAINER DETAIL
N.T.S.



VIEW H-H
SCALE: ½" = 1'-0"



SECTION J-J
SCALE: ½" = 1'-0"



PICTORAL OF END BENT RAILING
N.T.S.
(Note: Type H Metal Bridge Railing not shown)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 4 OF 4
DETAILS OF END BENT 4
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 7/28/2016
CHECKED BY: STS DATE: 8/1/2016
DESIGNED BY: DCD DATE: 7/26/2016
FILENAME: b1008242_b44
SCALE: AS SHOWN

BRIDGE NO. 07408 DRAWING NO. 59549

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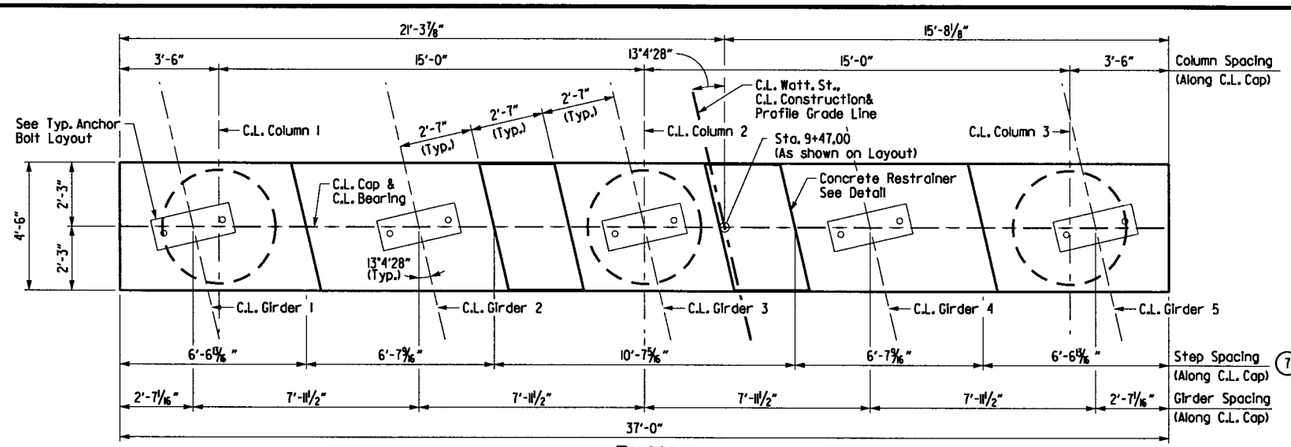
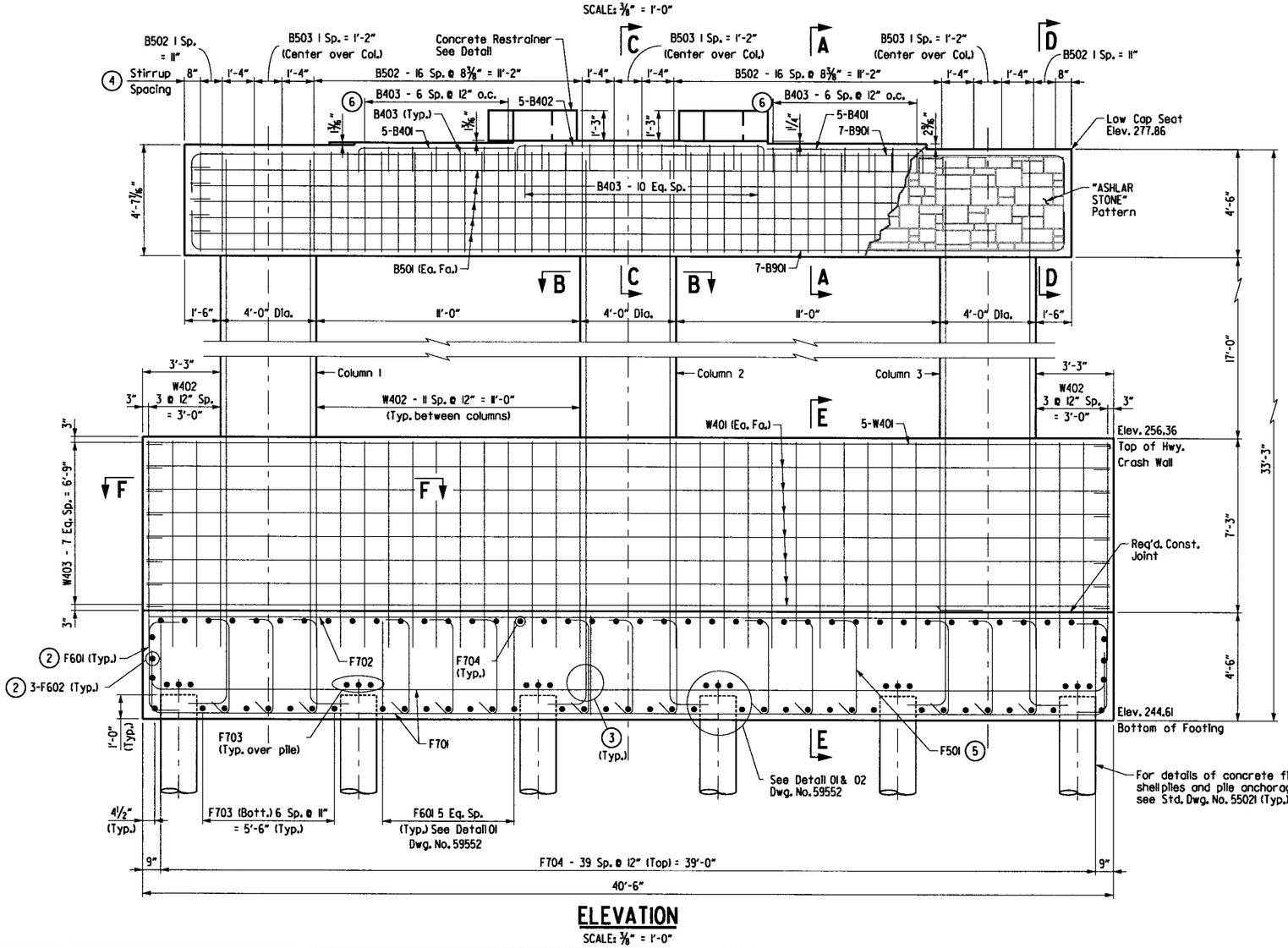
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	206	346
				(1) 07408		INT. BENT DETAILS		59550



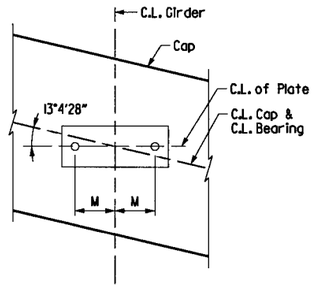
PLAN

SCALE: ⅜" = 1'-0"



ELEVATION

SCALE: ⅜" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

SCALE: ½" = 1'-0"

NOTES:

For general notes, see Dwg. No. 59512

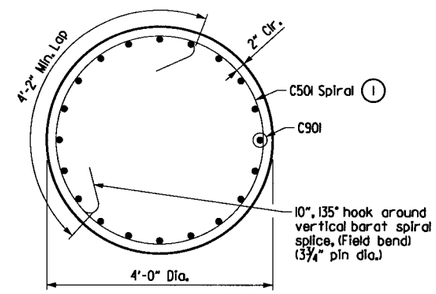
For details and dimension M of elastomeric bearing, see Dwg. No. 59565

All reinforcing steel shall conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test report.

Top reinforcing steel in bent caps shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Concrete: 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.

Top reinforcing steel in footing cap and bottom reinforcing steel in bent cap shall be properly placed to avoid interference with vertical column bars.



SECTION B-B

SCALE: ¾" = 1'-0"

(1) End spiral reinforcing with 1½" flat turns.

(2) Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

(3) Small rotation permissible for resolution of hooks conflicting with adjacent bars.

(4) Stirrup spacing are symmetrical about C.L. Bent.

(5) Hook F501 bars around transverse #8 footing reinforcing and space as shown in Elevation and End View.

(6) See "DETAIL 03" for typical step reinforcement

(7) All Steps are parallel to C.L. Girders

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENT 2
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	bl008242_b2i
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07408 DRAWING NO. 59550

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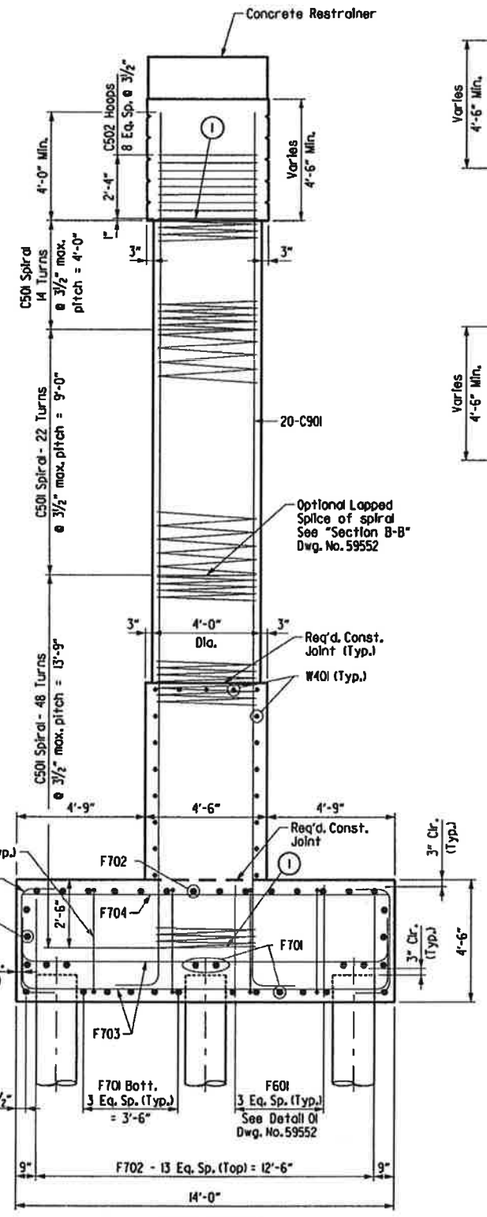
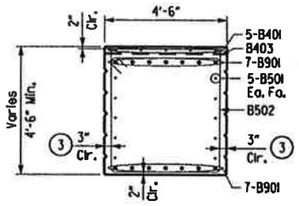
10/23/2018 2:13:13 PM
jharrell

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	207	346
				07408		INT. BENT DETAILS		59551

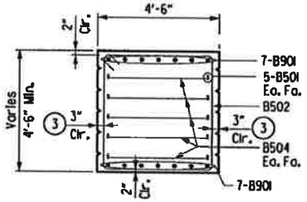
STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018



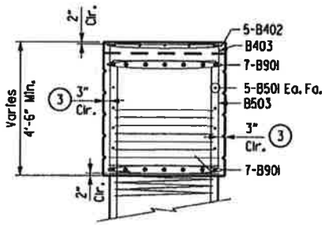
END VIEW



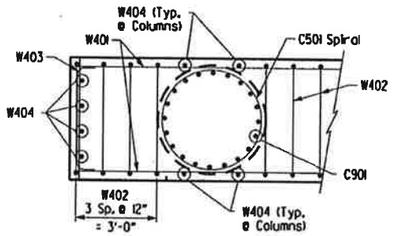
SECTION A-A



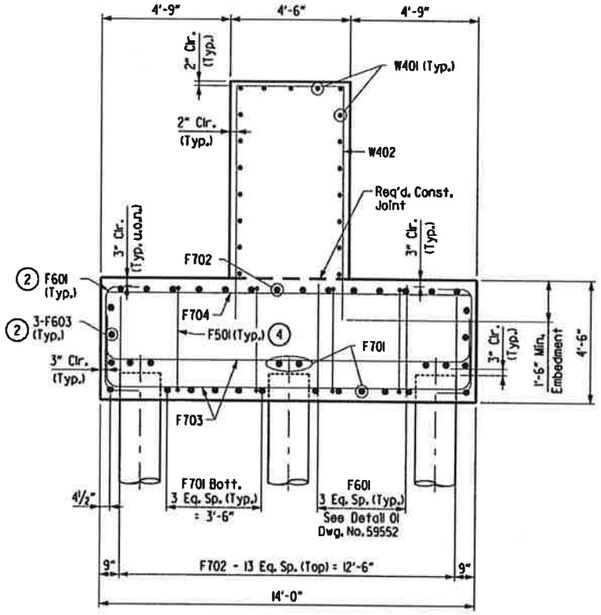
SECTION D-D



SECTION C-C



SECTION F-F



SECTION E-E

BAR LIST

MARK	NO. REQ'D.	LENGTH	P	Q	P.D.
Cap					
B401	10	7'-5"	6'-6"	1'-0"	2"
B402	5	12'-2"	10'-3"	1'-0"	2"
B403	24	6'-2"	4'-3"	1'-0"	2"
B501	10	36'-4"			Str.
B502	38	16'-8"	4'-2"	4'-0"	2 ½"
B503	6	13'-3"			2 ½"
B504	10	5'-6"	4'-0"	10"	2 ½"
B505	32	3'-3"			Str.
B506	6	13'-3"			2 ½"
B901	14	39'-1"	36'-4 ½"	1'-7 ⅛"	9"
Columns					
C501	3	998'-10"			Spiral
C502	27	13'-8"			Hoops
C901	60	33'-8"	32'-3 ½"	1'-7 ⅛"	9"
Crash Wall					
W401	19	40'-0"			Str.
W402	32	21'-3"	4'-2"	8'-7"	2"
W403	18	6'-1"	4'-2"	1'-0"	2"
W404	32	8'-7"			Str.
Footing					
F501	60	5'-2"	3'-8"	6 ⅛"	3 ¾"
F601	80	5'-7"	3'-9 ½"	1'-0"	4 ½"
F602	6	13'-6"			Str.
F603	6	40'-0"			Str.
F701	18	42'-3"	40'-0"	1'-4"	5 ¼"
F702	14	40'-0"			Str.
F703	55	15'-9"	13'-6"	1'-4"	5 ¼"
F704	40	13'-6"			Str.

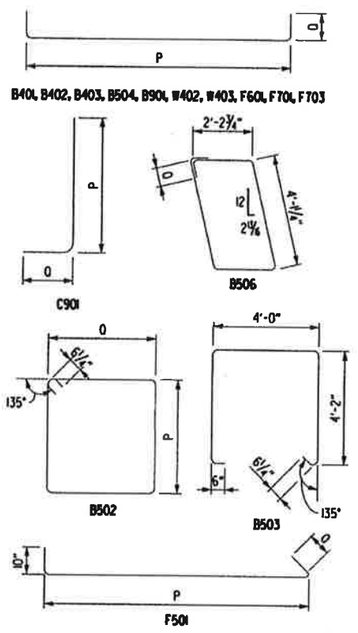
① End spiral reinforcing with 1½" flat turns.

② Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

③ Form liner shall be a maximum of 1" to provide a minimum clearance of 2".

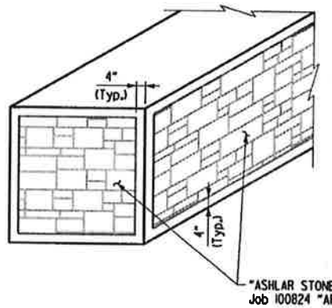
④ Hook F501 bars around transverse #8 footing reinforcing and space as shown in Elevation and End View.

BENDING DIAGRAMS



⑤ At the lapped splice end of the spiral, the hook may be field bent around a vertical bar.

The dimensions shown for the bending diagrams are out-to-out of bars.



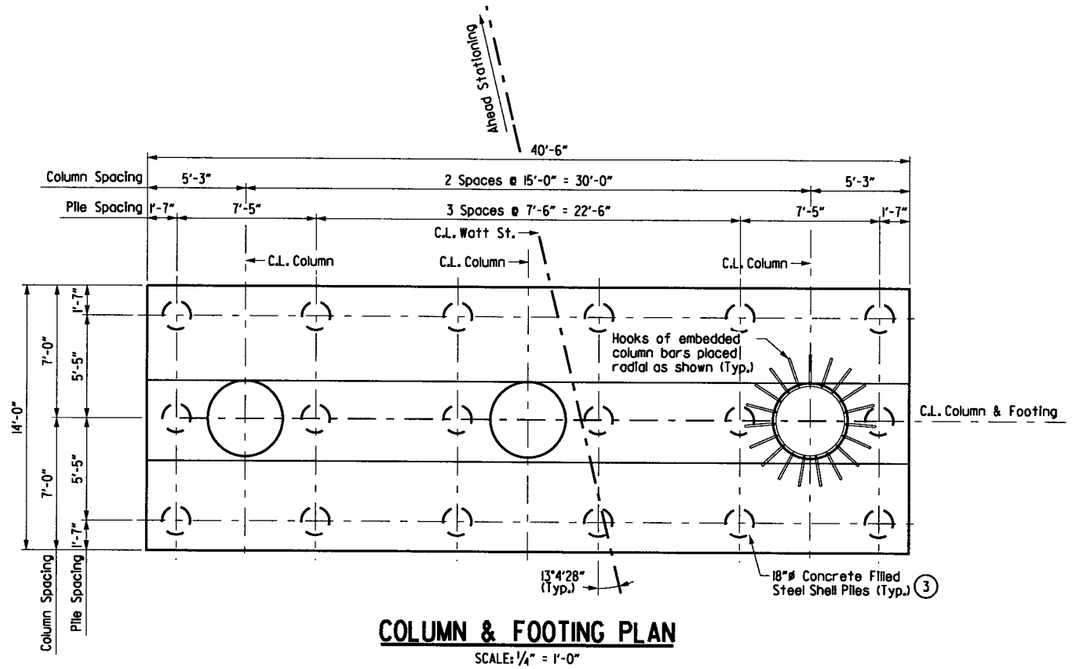
CAP - ISOMETRIC VIEW

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENT 2
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/8/2016	FILENAME:	b1008242_b22
CHECKED BY:	STS	DATE:	7/27/2016	SCALE:	⅜" = 1'-0"
DESIGNED BY:	DCD	DATE:	6/28/2016		

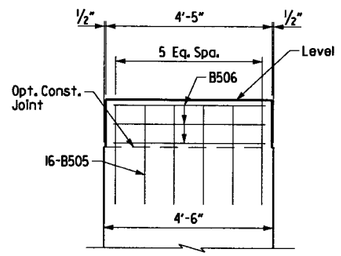
BRIDGE NO. 07408 DRAWING NO. 59551

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.		100824	208	346
				(1) 07408		INT. BENT DETAILS		59552



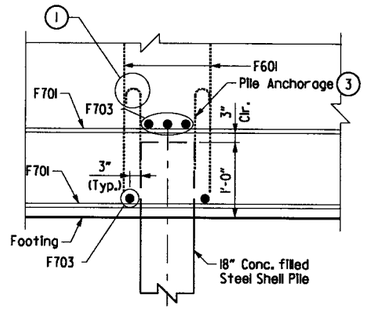
COLUMN & FOOTING PLAN

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



SECTION J-J

Scale: 1/2" = 1'-0"



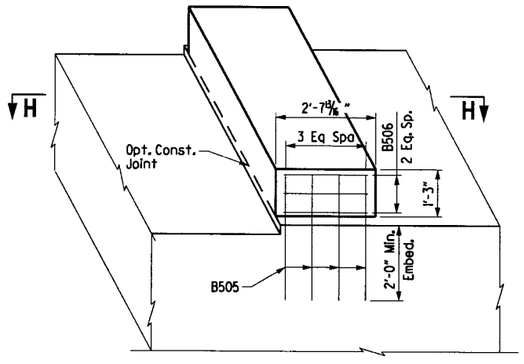
DETAIL 01

Other Bars Not Shown For Clarity
N.T.S.

(1) Prior to tying or specified field welding, Small rotation permissible for resolution of hooks conflicting with adjacent bars

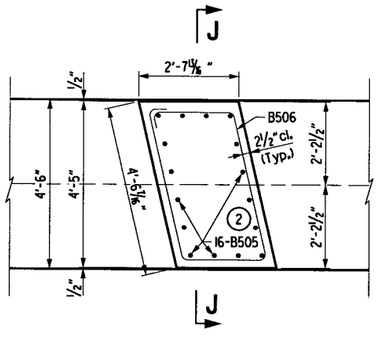
(2) B505 bars placed as shown, avoid B901

(3) See Std. Dwg. No. 55021 for additional information.



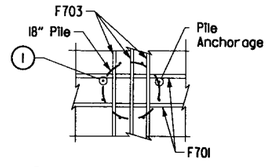
CONCRETE RESTRAINER DETAIL

N.T.S



VIEW H-H

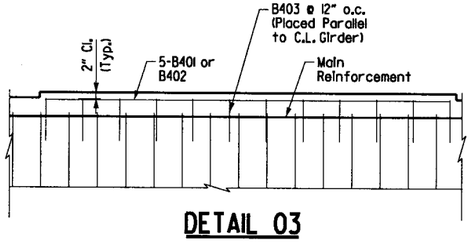
SCALE: 1/2" = 1'-0"



Place bars each-way as shown, threaded between the field welded Pile Anchorage hooks, see Piling Details, Std. Dwg. No 55021

DETAIL 02

Other Bars Not Shown For Clarity
N.T.S.



DETAIL 03

Other Bars Not Shown For Clarity
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENT 2
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	bl008242.b23
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07408 DRAWING NO. 59552

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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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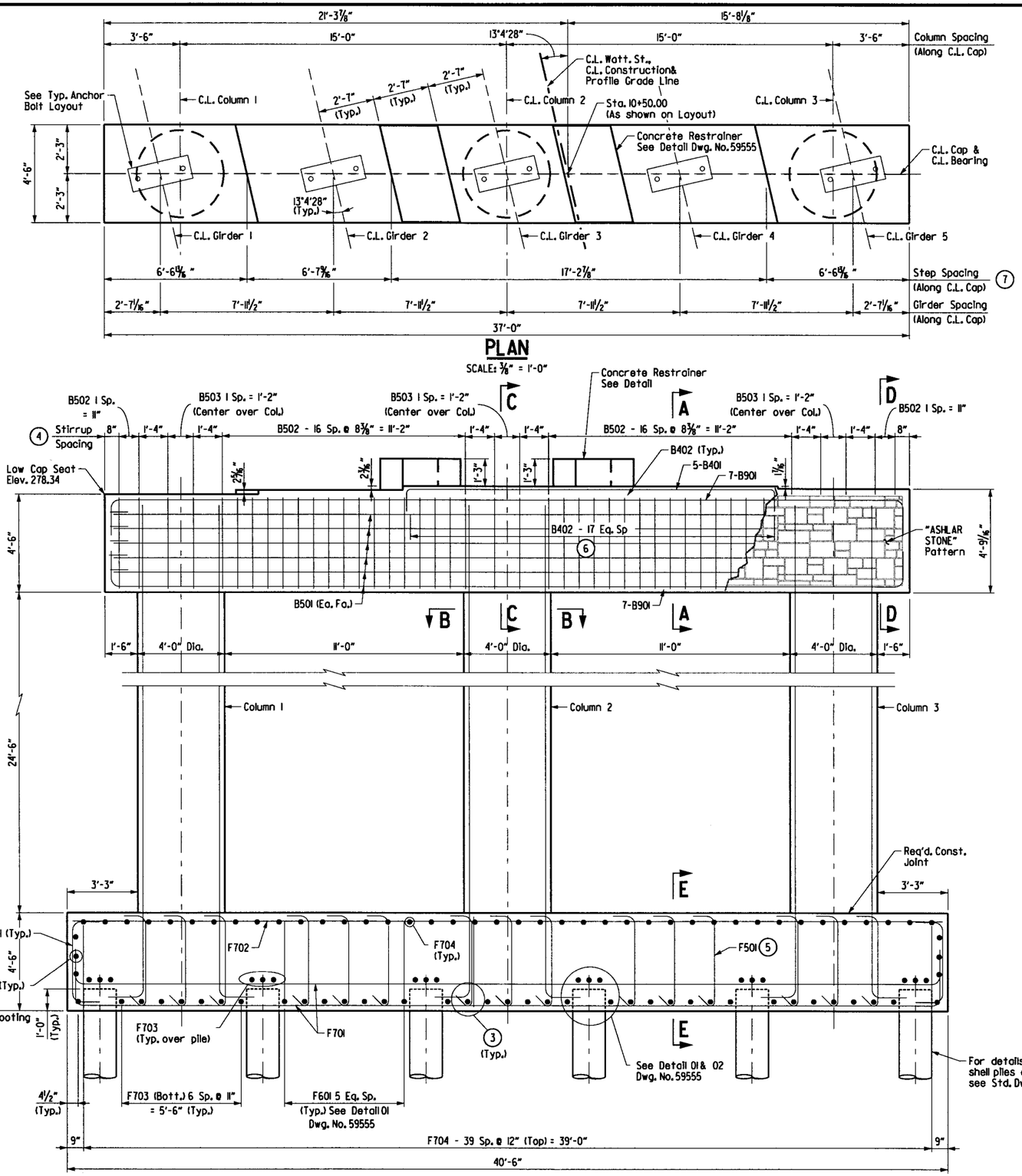
				JOB NO.		100824	209	346
				(1) 07408		INT. BENT DETAILS		59553

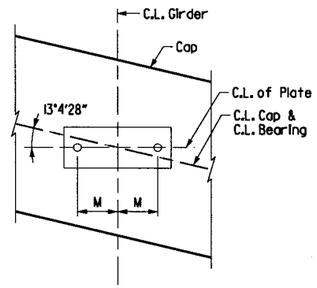


PLAN

SCALE: ⅜" = 1'-0"

ELEVATION

SCALE: ⅜" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

SCALE: ½" = 1'-0"

NOTES:

For general notes, see Dwg. No. 59512

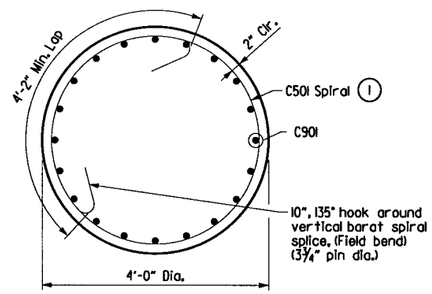
For details and dimension M of elastomeric bearing, see Dwg. No. 59565

All reinforcing steel shall conform to Gr. 60 AASHTO M31 or M322 Type A, with mill test report.

Top reinforcing steel in bent caps shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Concrete: 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.

Top reinforcing steel in footing cap and bottom reinforcing steel in bent cap shall be properly placed to avoid interference with vertical column bars.



SECTION B-B

SCALE: ¾" = 1'-0"

(1) End spiral reinforcing with 1½" flat turns.

(2) Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

(3) Small rotation permissible for resolution of hooks conflicting with adjacent bars.

(4) Stirrup spacing are symmetrical about C.L. Bent.

(5) Hook F501 bars around transverse #8 footing reinforcing and space as shown in Elevation and End View.

(6) See "DETAIL 03" for typical step reinforcement

(7) All Steps are parallel to C.L. Girders

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley
29 May 2018

SHEET 1 OF 3
DETAILS OF INTERMEDIATE BENT 3
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	bl008242.b31
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07408 DRAWING NO. 59553

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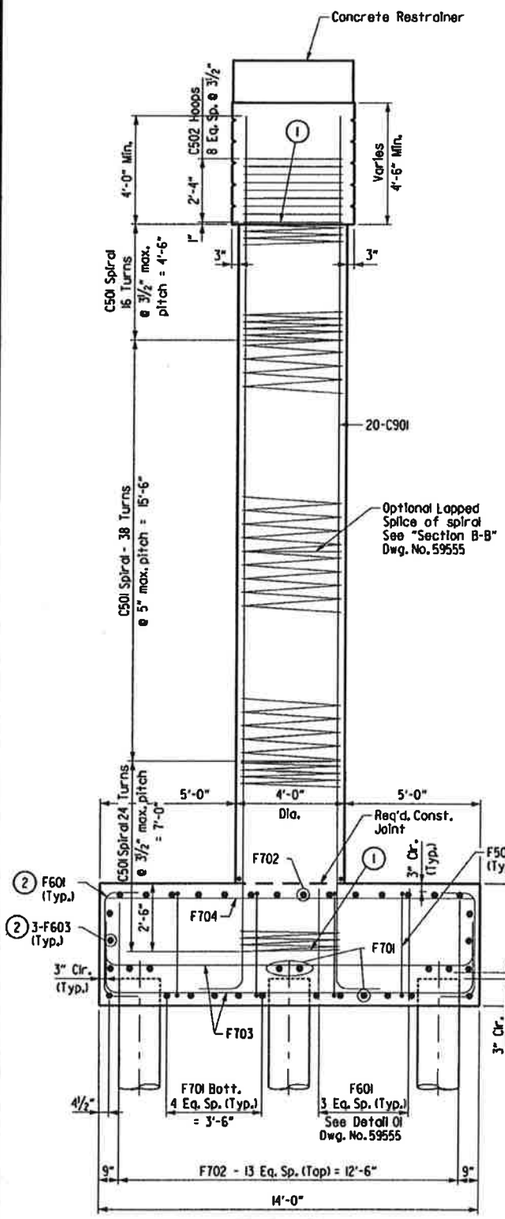
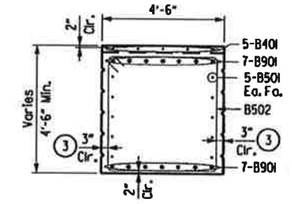
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	210	346
				① 07408		INT. BENT DETAILS		59554

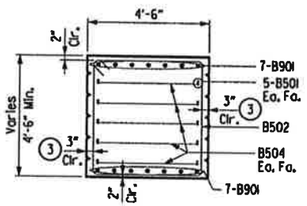
STATE OF ARKANSAS
STEPHEN T. SMILEY
No. 13072
REGISTERED PROFESSIONAL ENGINEER
Stephen T. Smiley 23 Oct 2018



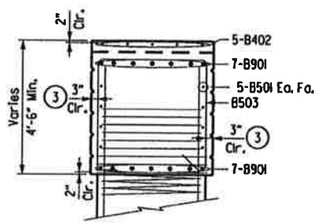
END VIEW



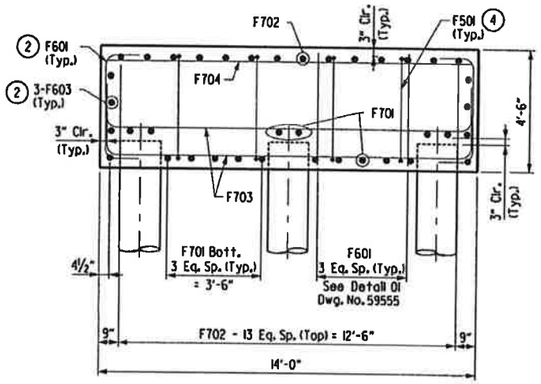
SECTION A-A



SECTION D-D



SECTION C-C



SECTION E-E

BAR LIST

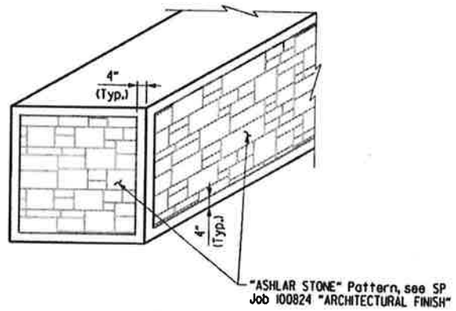
MARK	NO. REQ'D.	LENGTH	P	O	P.D.
Cap					
B401	5	17'-10"	16'-10 ½"	1'-0"	2"
B402	18	6'-2"	4'-3"	1'-0"	2"
B501	10	36'-4"			Str.
B502	38	16'-8"	4'-2"	4'-0"	2 ½"
B503	6	13'-3"			2 ½"
B504	10	5'-6"	4'-0"	10"	2 ½"
B505	32	3'-3"			Str.
B506	6	13'-3"			2 ½"
B901	14	39'-1"	36'-4 ½"	1'-7 ¼"	9"
Columns					
C501	3	930'-9"			Spiral
C502	27	13'-8"			Hoops
C901	60	33'-8"	32'-6 ½"	1'-7 ¼"	9"
Footing					
F501	60	5'-2"	3'-8"	6 ¼"	3 ¾"
F601	80	5'-7"	3'-9 ½"	1'-0"	4 ½"
F602	6	13'-6"			Str.
F603	6	40'-0"			Str.
F701	18	42'-3"	40'-0"	1'-4"	5 ¼"
F702	14	40'-0"			Str.
F703	55	15'-9"	13'-6"	1'-4"	5 ¼"
F704	40	13'-6"			Str.

① End spiral reinforcing with 1½" flat turns.

② Place F601, F602 & F603 perimeter bars as shown in both directions. Shape not to scale for clarity.

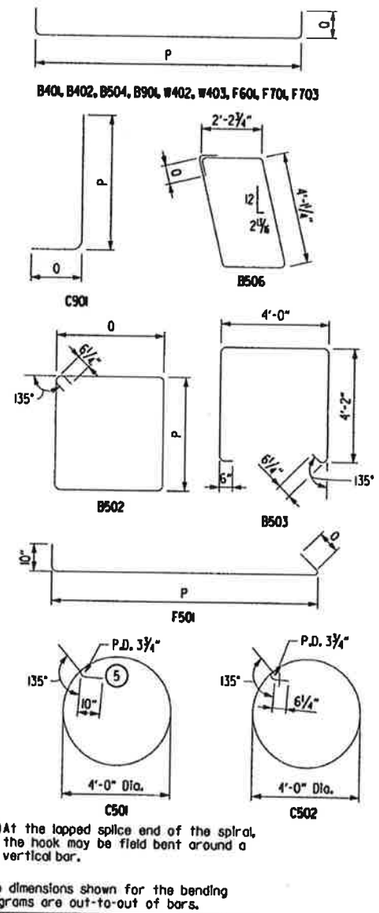
③ Form liner shall be a maximum of 1" to provide a minimum clearance of 2".

④ Hook F501 bars around transverse #8 footing reinforcing and space as shown in Elevation and End View.



CAP - ISOMETRIC VIEW

BENDING DIAGRAMS



⑤ At the lapped splice end of the spiral, the hook may be field bent around a vertical bar.

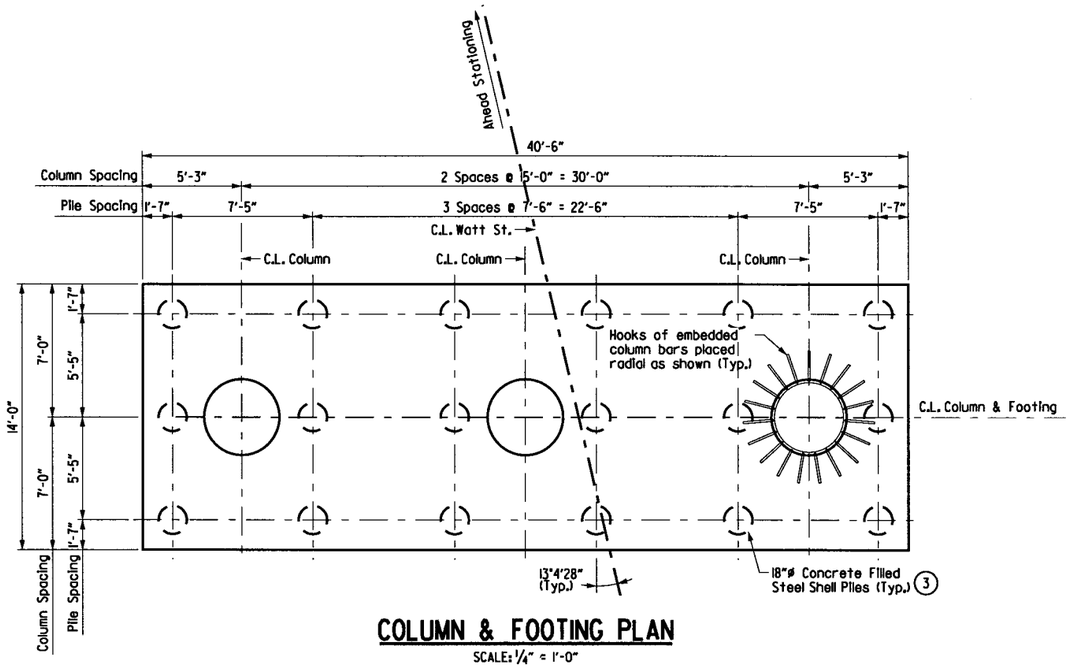
The dimensions shown for the bending diagrams are out-to-out of bars.

SHEET 2 OF 3
DETAILS OF INTERMEDIATE BENT 3
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 7/8/2016
CHECKED BY: STS DATE: 7/22/2016
DESIGNED BY: DCD DATE: 6/28/2016
FILENAME: bi008242.b32
SCALE: ⅜" = 1'-0"

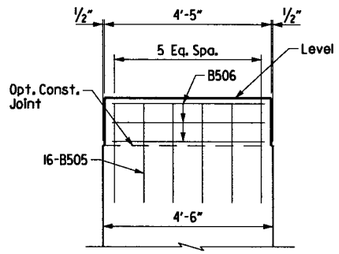
BRIDGE NO. 07408 DRAWING NO. 59554

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.		100824	211	346
				(1) 07408		INT. BENT DETAILS		59555



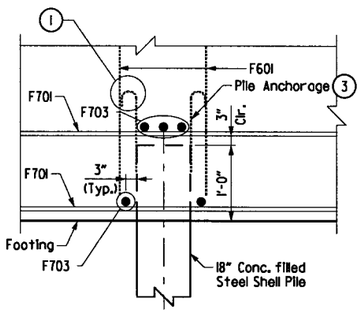
COLUMN & FOOTING PLAN

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



SECTION J-J

Scale: 1/2" = 1'-0"



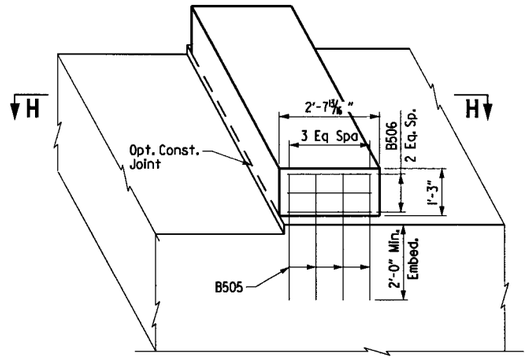
DETAIL 01

Other Bars Not Shown For Clarity
N.T.S.

(1) Prior to tying or specified field welding, Small rotation permissible for resolution of hooks conflicting with adjacent bars

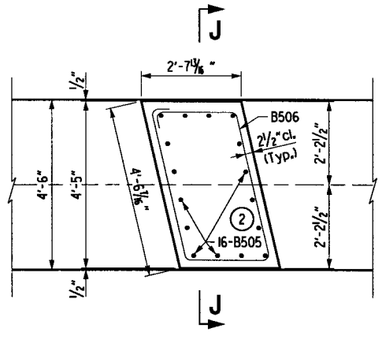
(2) B505 bars placed as shown, avoid B901

(3) See Std. Dwg. No. 55021 for additional information.



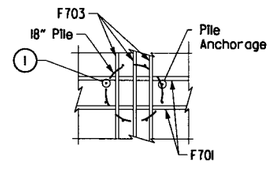
CONCRETE RESTRAINER DETAIL

Scale: 1/2" = 1'-0"



VIEW H-H

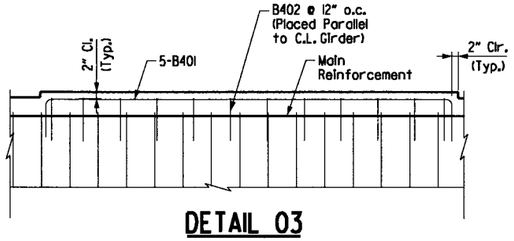
SCALE: 1/2" = 1'-0"



Place bars each-way as shown, threaded between the field welded Pile Anchorage hooks, see Piling Details, Std. Dwg. No 55021

DETAIL 02

Other Bars Not Shown For Clarity
N.T.S.



DETAIL 03

Other Bars Not Shown For Clarity
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley
29 May 2018

SHEET 3 OF 3
DETAILS OF INTERMEDIATE BENT 3
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	7/11/2016	FILENAME:	b1008242_b33
CHECKED BY:	STS	DATE:	7/22/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	6/28/2016		

BRIDGE NO. 07408 DRAWING NO. 59555

4:20:22 PM 5/25/2018 sts

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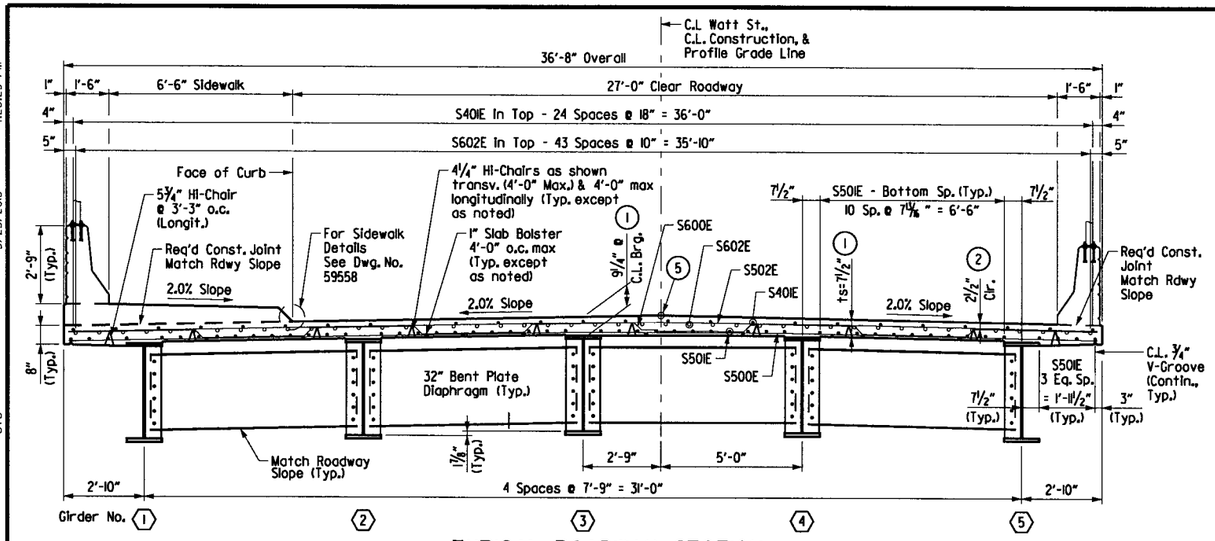
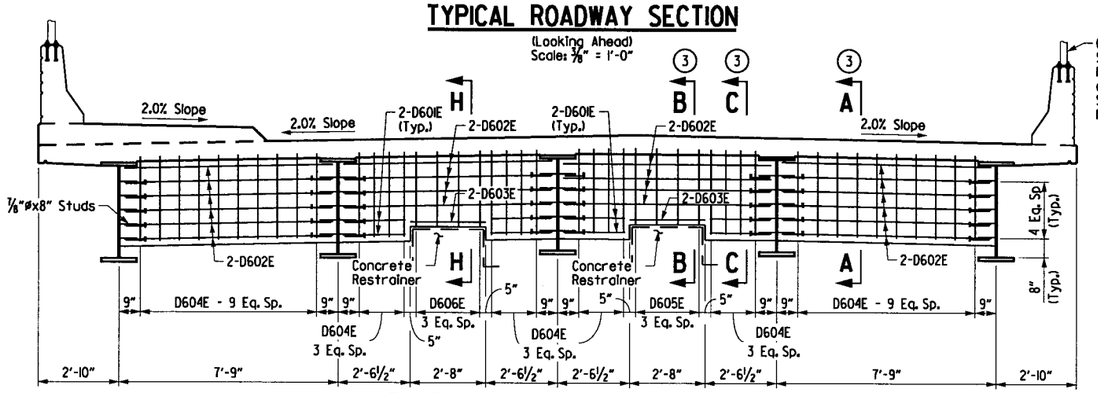
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	212	346
				07408		SPAN DETAILS		59556



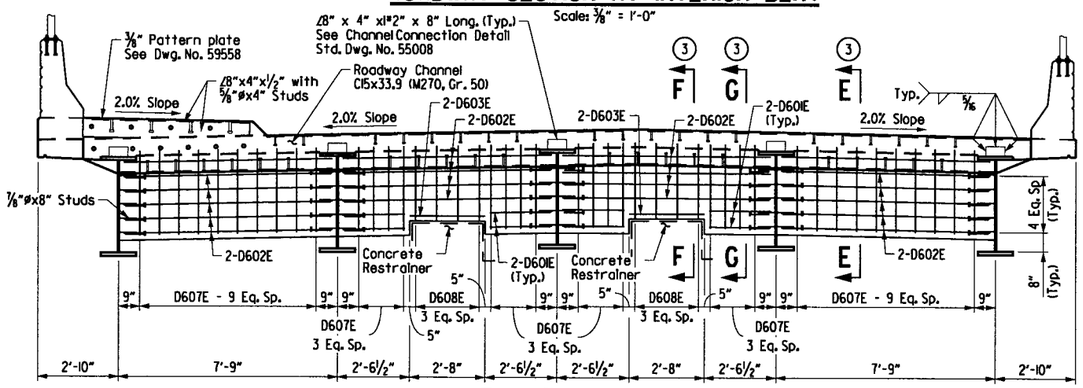
TYPICAL ROADWAY SECTION

(Looking Ahead) Scale: ⅜" = 1'-0"



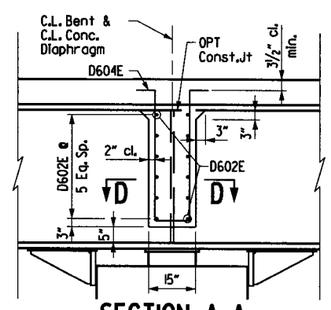
ROADWAY SECTION AT INTERIOR BENT

Scale: ⅜" = 1'-0"



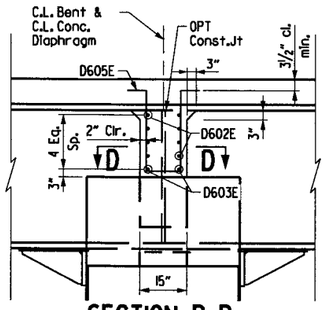
VIEW AT C.L. JOINT

Scale: ⅜" = 1'-0"



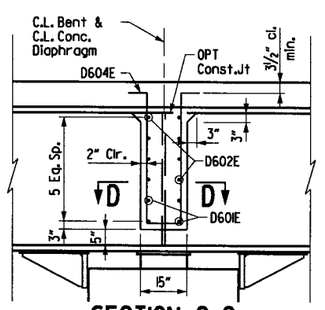
SECTION A-A

SCALE: ½" = 1'-0"



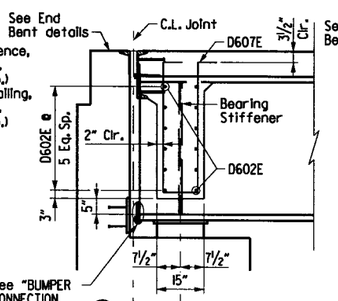
SECTION B-B

SCALE: ½" = 1'-0"



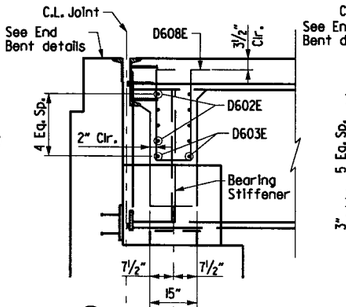
SECTION C-C

SCALE: ½" = 1'-0"



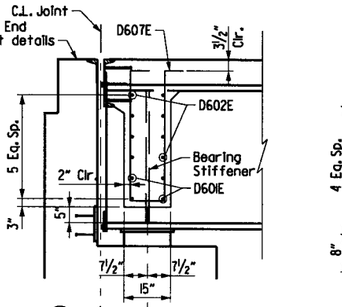
SECTION E-E

SCALE: ½" = 1'-0"



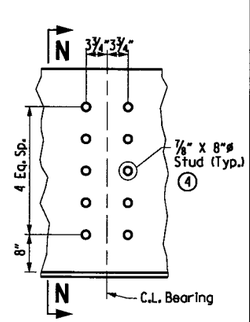
SECTION F-F

SCALE: ½" = 1'-0"



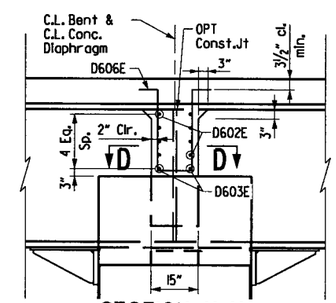
SECTION G-G

SCALE: ½" = 1'-0"



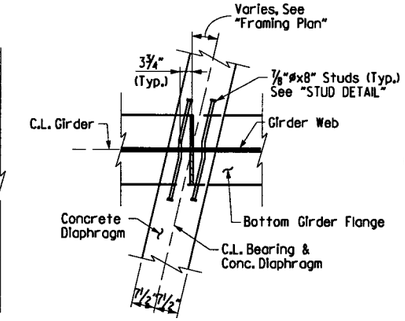
DETAIL J

Stud Vertical Spacing Girder Elevation @ C.L. of Bearing
Not to Scale



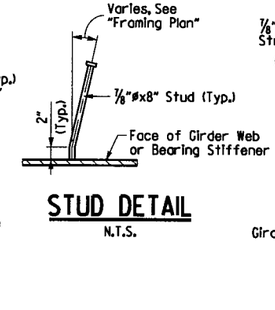
SECTION H-H

SCALE: ½" = 1'-0"



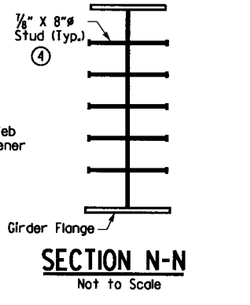
SECTION D-D

SCALE: ½" = 1'-0"



STUD DETAIL

N.T.S.



SECTION N-N

Not to Scale

NOTES:

One Epoxy Coated #6 bar in the top and one Epoxy Coated #6 bar in the bottom may be substituted for each bar S600E. Payment will be based on the weight of bar S600E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the face and top of parapet rail.

All bars designated with an E suffix are to be epoxy coated.

For "SCREED RAIL SUPPORT FOR PLATE GIRDERS", "ADJUSTMENT FOR SLAB" and "ROUNDING DETAIL", see Std. Dwg. No. 55007.

For "CHANNEL CONNECTION DETAIL", see Std. Dwg. No. 55008.

SLAB REINFORCING:

Transverse:
- S502E @ 13" Centers (Top)
- S601E @ 13" Centers (Top Overhang)
- S600E @ 13" Centers (Bent up over girders)
- S500E @ 13" Centers (bottom)

Longitudinal:
- S401E @ 18" Centers (Top Temperature)
- S602E @ 10" Centers (Placed in Top as shown over Int. Supports)
- S501E @ place as shown (Bottom)

EXPANSION DEVICE @ BENTS 1 & 4

Roadway Channel C15x33.9 (M270, Gr. 50) Conn. 2's 8"x4x½" Detail Device ⅛" high and provide ¼" shims using 1- ⅛" PL & 2 - 1/16" PL's

For Additional Joint Details, see Std. Dwg. No. 55008 and Dwg. No. 59558

1. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE", Std. Dwg. No. 55007.
2. Tolerance Minus = ¼" Plus equal to amount of slab thickening used to meet thickness tolerance. See ""ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" Std. Dwg. No. 55007.
3. See "PARTIAL PLAN OF CONCRETE DIAPHRAGM..." details for orientation of skewed section, Dwg. No. 59557
4. Omit studs on outside of Exterior Girders.
5. See "ROUNDING DETAIL", Std. Dwg. No. 55007.

STATE OF ARKANSAS — STEPHEN T. SMILEY — No. 13072 — REGISTERED PROFESSIONAL ENGINEER

29 May 2018

SHEET 1 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016	FILENAME:	bl008242_sll
CHECKED BY:	STS	DATE:	6/6/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	5/3/2016		

BRIDGE NO. 07408 DRAWING NO. 59556

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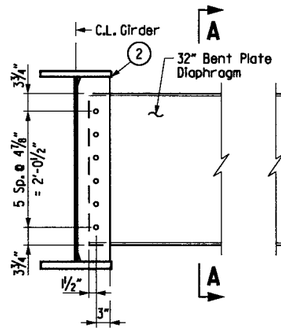
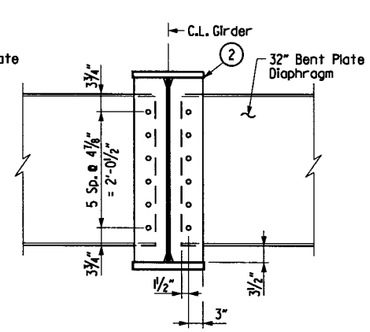
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	213	346
				(1) 07408		SPAN DETAILS		59557



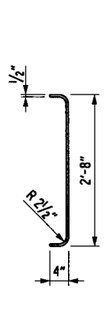
DIAPHRAGM CONNECTION AT EXTERIOR GIRDERS

SCALE: ¾" = 1'-0"



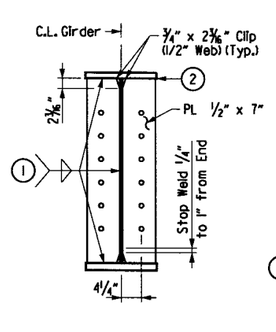
DIAPHRAGM CONNECTION AT INTERIOR GIRDERS

SCALE: ¾" = 1'-0"



SECTION A-A

SCALE: ¾" = 1'-0"

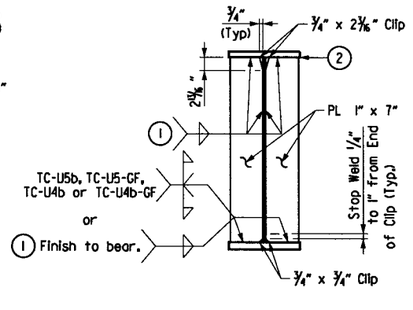


DIAPHRAGM CONNECTION PLATE DETAIL

SCALE: ¾" = 1'-0"

(1) See "WELD TABLE" for minimum weld size, Std. Dwg. No. 55007

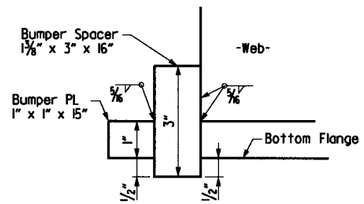
(2) See "PLATE CLIP DETAIL"



BEARING STIFFENER DETAIL

SCALE: ¾" = 1'-0"

Note:
Bearing stiffeners shall be fabricated to be plumb in its final position.



BUMPER CONNECTION DETAIL

N.T.S.

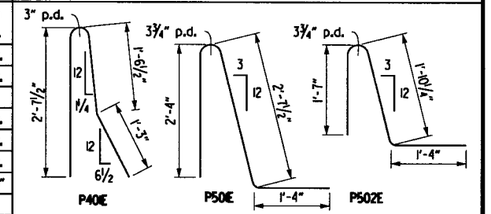
Note: Bumpers shall be centered Horizontally on each Girder line, at both ends.

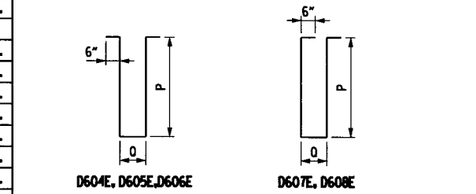
BAR LIST

Mark	No. Req'd.	P	Q	Length	Pin Dia.
S401E	231			36'-8"	Str.
S402E	223			7'-8"	Str.
S403E	223			5'-2"	3"
S500E	223			36'-6"	Str.
S501E	260			50'-10"	Str.
S502E	223			36'-6"	Str.
S600E	222			37'-0"	4 ½"
S601E	222			14'-6"	6"
S602E	176			40'-6"	Str.
P401E	870			5'-6"	3"
P402E	128			5'-6"	Str.
P403E	14			14'-7"	Str.
P404E	7			13'-7"	Str.
P405E	7			13'-7"	Str.
P406E	56			10'-8"	Str.
P407E	42			13'-8"	Str.
P408E	42			14'-8"	Str.
P409E	56			15'-8"	Str.
P410E	14			16'-8"	Str.
P501E	435			6'-4"	3 ¾"
P502E	435			4'-10"	3 ¾"
D601E	64			2'-4"	Str.
D602E	160			7'-8"	Str.
D603E	16			2'-8"	Str.
D604E	72	3'-1"	11 ¼"	7'-7"	4 ½"
D605E	8	2'-8 ½"	11 ¼"	6'-10"	4 ½"
D606E	8	2'-7 ½"	11 ¼"	6'-8"	4 ½"
D607E	72	3'-1"	11 ¼"	7'-7"	4 ½"
D608E	16	2'-7"	11 ¼"	6'-7"	4 ½"

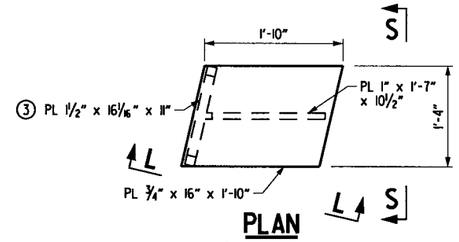
Note: All bars designated with an E suffix are to be epoxy coated.

Bending Diagrams (Dimensions are out to out of bars)



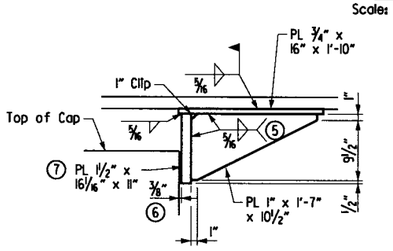


(4) ½" overtolerance no undertolerance



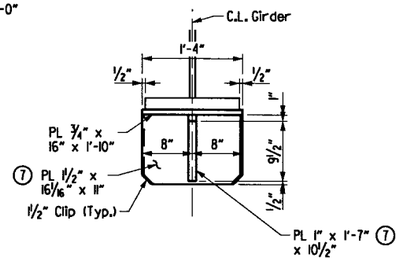
PLAN

Scale: 1" = 1'-0"



VIEW L-L

Scale: 1" = 1'-0"



VIEW S-S

Scale: 1" = 1'-0"

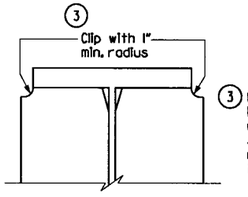
(5) Stop weld ½" from clip.

(6) Gap measured perpendicular to cap.

(7) Longitudinal restrainer shall be fabricated to account for grade, so the final position of this plate will be vertical. Longitudinal restrainer shall not be welded to flange until after deck is poured.

LONGITUDINAL RESTRAINER DETAILS

Scale: 1" = 1'-0"



(3) If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

PLATE CLIP DETAIL

N.T.S.

PARTIAL PLAN OF CONCRETE DIAPHRAGM REINFORCING AT END BENT 1 & 4

SCALE: ¼" = 1'-0"

PARTIAL PLAN OF CONCRETE DIAPHRAGM REINFORCING AT INTERIOR BENTS

SCALE: ¼" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

Stephen T. Smiley

29 May 2018

SHEET 2 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016
CHECKED BY:	STS	DATE:	6/6/2016
DESIGNED BY:	DCD	DATE:	5/3/2016

FILENAME: bi008242_sl2
SCALE: AS SHOWN

BRIDGE NO. 07408 DRAWING NO. 59557

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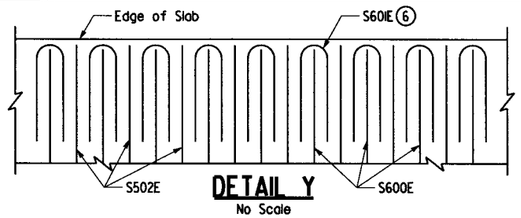
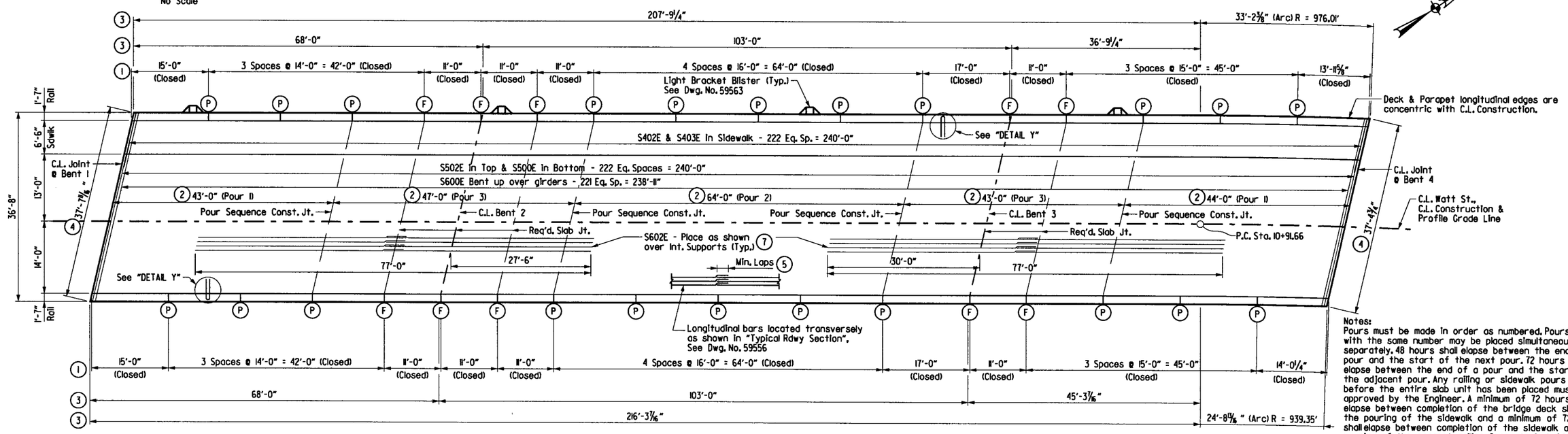
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	214	346
				(1) 07408		SPAN DETAILS		59558



DETAIL Y
No Scale

SILICONE JOINT DATA (B)

Bent Number	Field Set Dimension "A"			Shop Dimensions	
	40°F	60°F	80°F	"B"	Bumper Plate
Bent 1&4	2¼"	2"	1¾"	2⅜"	1"



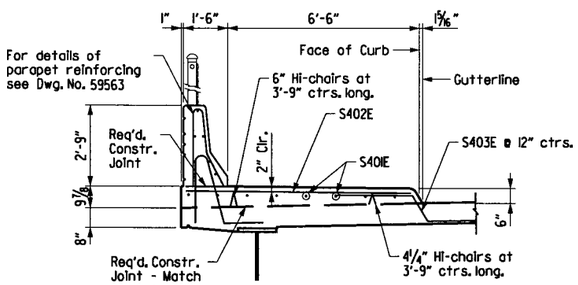
Notes:
Pours must be made in order as numbered. Pours with the same number may be placed simultaneously or separately. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing or sidewalk pours made before the entire slab unit has been placed must be approved by the Engineer. A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk and a minimum of 72 hours shall elapse between completion of the sidewalk and the pouring of the parapet railing. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

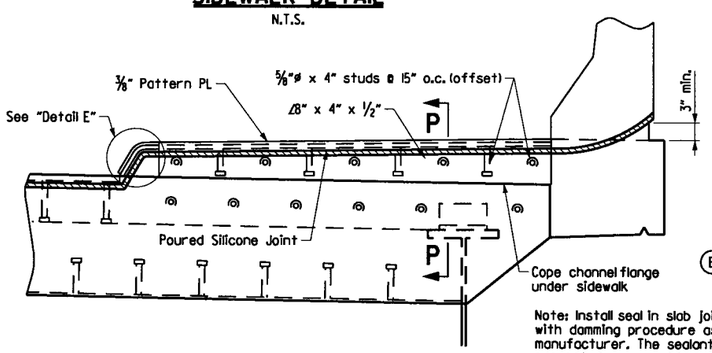
Required slab joints and pouring sequence joints shall align with parapet open joint at the gutter line.

REINFORCING PLAN & POURING SEQUENCE
SCALE: 1" = 10'

For "TRANSVERSE SLAB JOINT DETAIL" and "CONCRETE PLACEMENT PROCEDURE", see Std. Dwg. No. 55007.



SIDEWALK DETAIL
N.T.S.

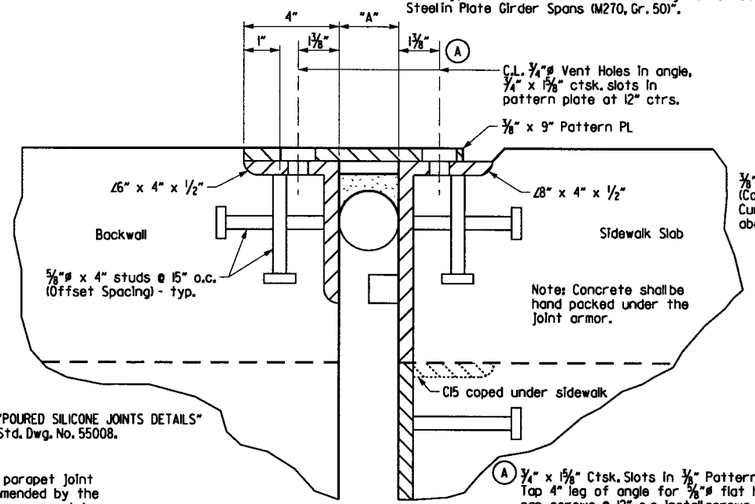


(B) TYPICAL SECTION THRU SIDEWALK
No Scale

Note: Install seal in slab joint and parapet joint with damming procedure as recommended by the manufacturer. The sealant shall be recessed to prevent damage and be allowed to cure prior to removal of the outer damming material.

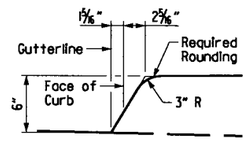
(B) For "POURED SILICONE JOINTS DETAILS" see Std. Dwg. No. 55008.

The surfaces of the ⅜" plates 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 Plate Girder Spans (M270, Gr. 50)".

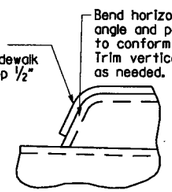


(B) SECTION P-P
No Scale

(A) ¾" x 1⅞" Ctsk. Slots in ⅜" Pattern Plates. Tap 4" leg of angle for ⅞"ø flat head cap screws @ 12" o.c. Install screws in the shop and ship as a unit. Remove screws on span side after erection is complete. Screws on backwall side to remain in place.



CURB DETAIL
N.T.S.



DETAIL E
No Scale

All longitudinal dimensions measured to centerline of joint or transverse reinforcing.

(1) Parapet panel spacing measured along front face of parapet and intersecting at C.L. Deck Joint opening or C.L. Bent.
(2) Dimensions measured along C.L. Construction.
(3) Dimensions measured along edge of deck and intersecting at C.L. Deck Joint opening or C.L. Bent.
(4) Dimensions measured along centerline of joint.
(5) Min. Laps for splices applicable to longitudinal and transverse reinforcing are as follows:
- #4 bars = 2'-7"
- #5 bars = 3'-3"
- #6 bars = 3'-10"

(6) Spaced equally between S500E and S501E.
(7) For placement, refer to TYPICAL ROADWAY SECTION on Dwg. No. 59556
(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-2" from top of slab or sidewalk. See Dwg. No. 59563
(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab or sidewalk. See Dwg. No. 59563

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
29 May 2018

SHEET 3 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016	FILENAME:	bl008242_sl3
CHECKED BY:	STS	DATE:	6/6/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	5/3/2016		

BRIDGE NO. 07408 DRAWING NO. 59558

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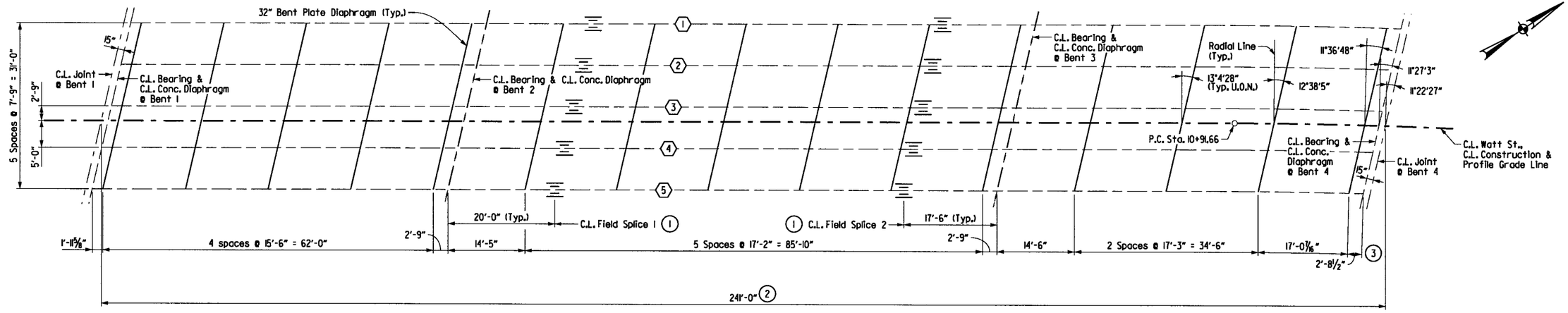
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	215	346
				(1) 07408		SPAN DETAILS		59559

NOTES:

All Bents and Diaphragms are Parallel.

Girders between P.C. Station and End of Bridge are concentric to C.L. Watt St.

For "DETAILS OF WELDED SPLICES" and "SHEAR CONNECTOR DETAIL", see Std. Dwg. No. 55007.



FRAMING PLAN

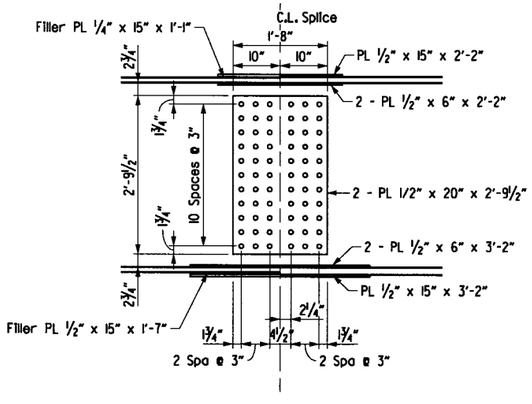
SCALE: 1" = 10'

(1) See Girder Elevations for splice location.

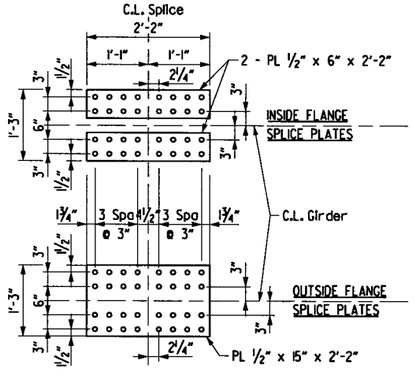
(2) Dimensions measured along C.L. Construction.

(3) Diaphragm spacing shown along Girder 5.

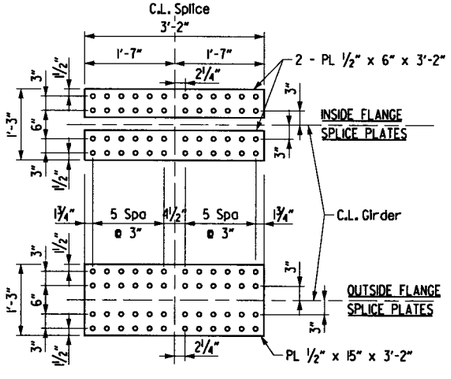
(X) Girder Number



WEB SPLICE



TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

Note: All splice plates shall be AASHTO M270 Gr. 50.

DETAILS OF FIELD SPLICE

No Scale

STATE OF ARKANSAS
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Stephen T. Smiley

29 May 2018

SHEET 4 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016	FILENAME:	bi008242.sl4
CHECKED BY:	STS	DATE:	6/6/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	5/3/2016		

BRIDGE NO. 07408 DRAWING NO. 59559

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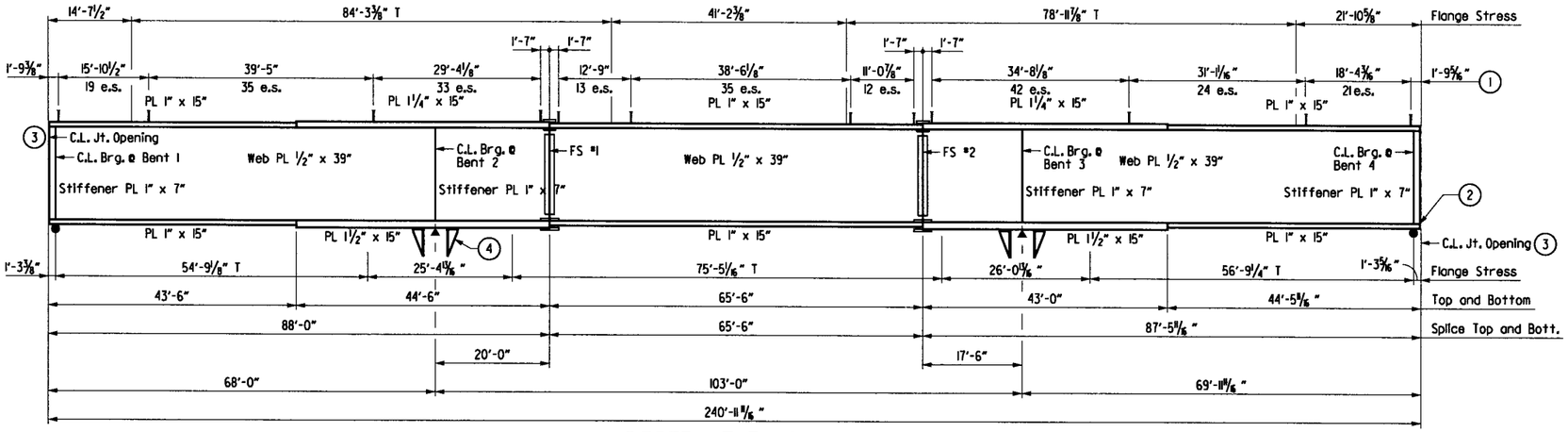
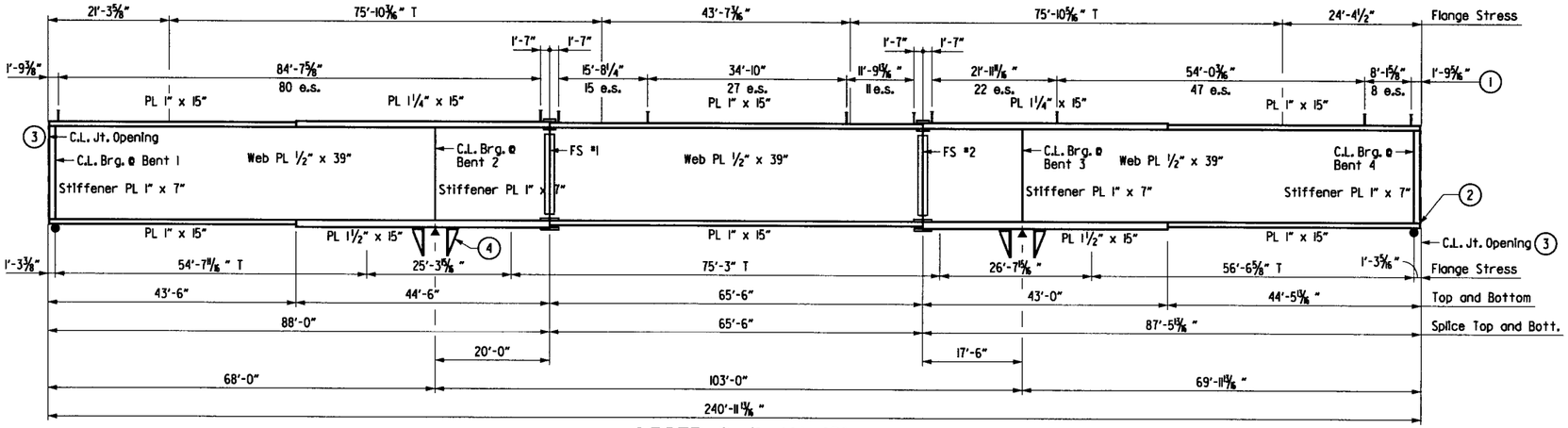
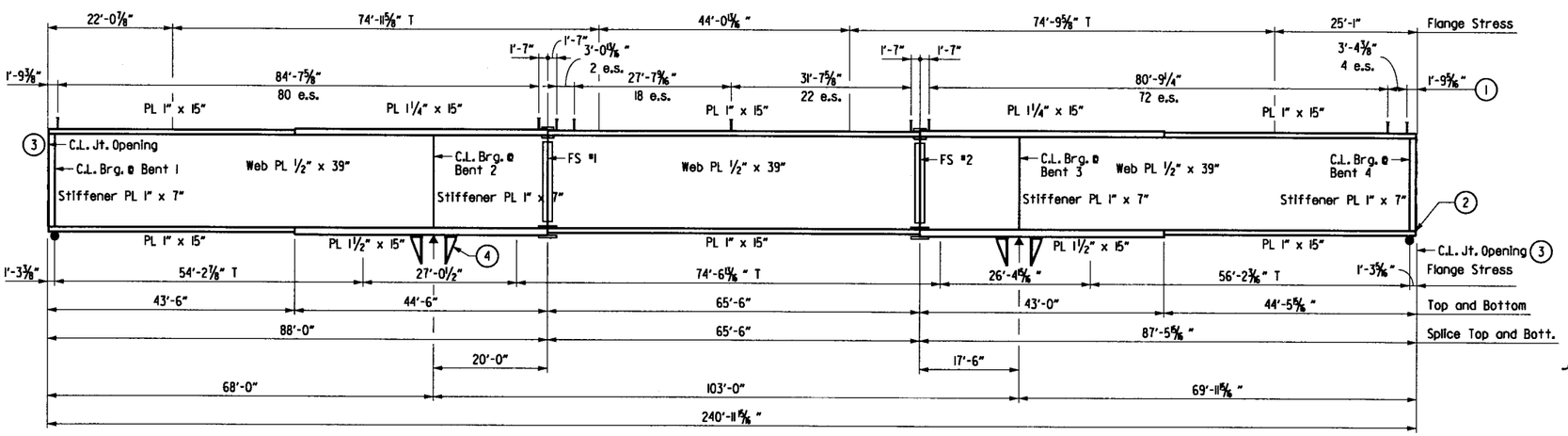
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	216	346
				07408		SPAN DETAILS		59560



GIRDER 1 ELEVATION



GIRDER 2 ELEVATION



GIRDER 3 ELEVATION

NOTES:

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES, See Std. Dwg. No. 55007.
Fabricate ends of top and bottom flanges horizontally parallel to C.L. Joint.

Bolted Field Splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basic of the Plan Quantities.

For details of studs welded to girder web, see Dwg. No. 59556

① Stud Shear Connectors shall be ⅞" dia. x 4"; use 3 studs per row. (Typ.)

② See "BUMPER CONNECTION DETAIL" (Typ.), Dwg. No. 59557

③ For Silicone Joint Details see Std. Dwg. No. 55008 and for Silicone Joint Data see Dwg. No. 59558

④ Field attached Longitudinal Restrainer Assembly. See Dwg. No. 59557

STATE OF ARKANSAS
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Stephen T. Smiley
29 May 2018

SHEET 5 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 6/2/2016
CHECKED BY: STS DATE: 6/6/2016
DESIGNED BY: DCD DATE: 5/3/2016
FILENAME: bl008242_sl5
SCALE: 1" = 12.5' HORIZ.

BRIDGE NO. 07408
DRAWING NO. 59560

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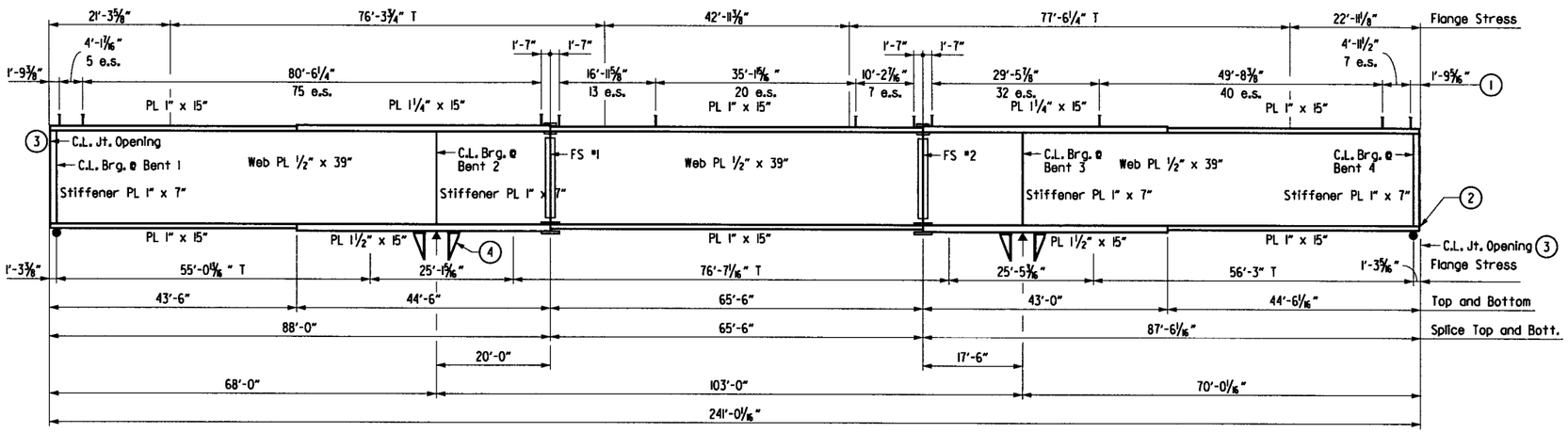
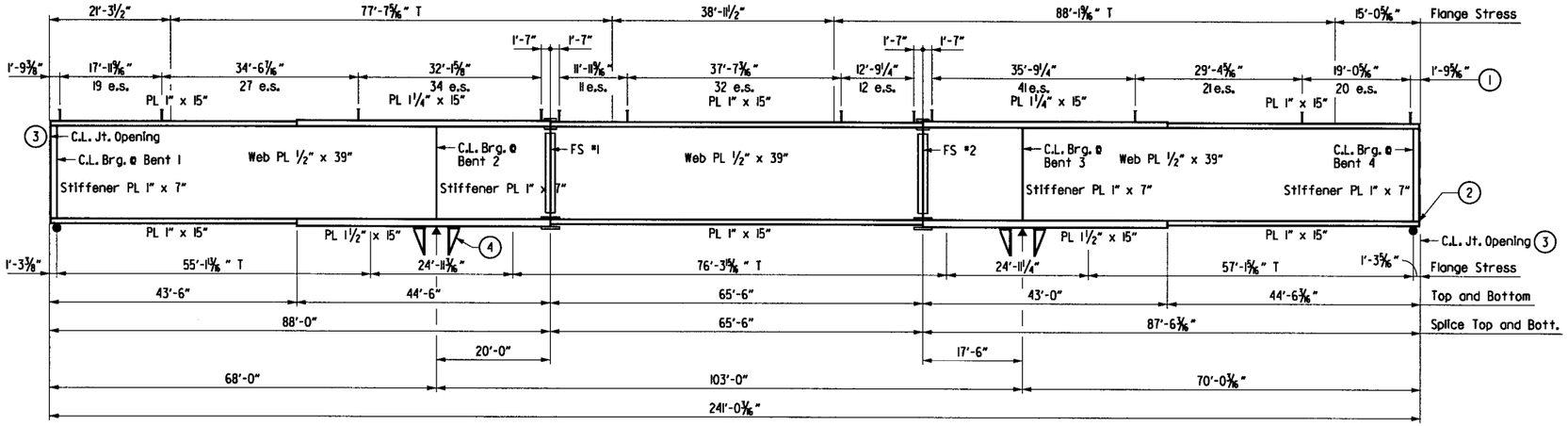
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	217	346
				1 07408		SPAN DETAILS		59561



GIRDER 4 ELEVATION



GIRDER 5 ELEVATION

See NOTES on Dwg. No. 59560

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

SHEET 6 OF 7
DETAILS OF 241'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/20/2016	FILENAME:	bl008242_sl6
CHECKED BY:	STS	DATE:	6/23/2016	SCALE:	1" = 12.5' HORIZ.
DESIGNED BY:	DCD	DATE:	6/3/2016		

BRIDGE NO. 07408 DRAWING NO. 59561

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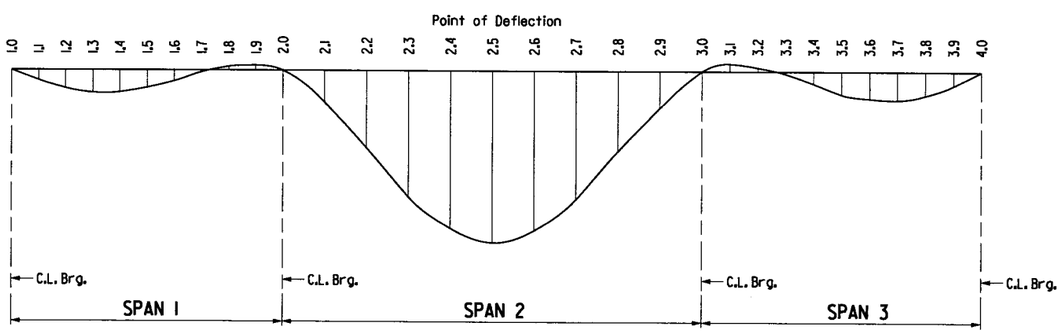
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	218	346
				(1) 07408		SPAN DETAILS		59562

TABLE OF DEAD LOAD DEFLECTIONS

	Point of Deflection	Vertical Dead Load Deflection (in.)														
		Structural Steel					Structural Steel + Slab					Structural Steel + Slab + Parapets + Sidewalk				
		Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5
	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Span 1	1.1	0.018	0.019	0.020	0.019	0.018	0.080	0.088	0.091	0.088	0.079	0.100	0.107	0.109	0.103	0.092
	1.2	0.032	0.035	0.035	0.035	0.032	0.141	0.157	0.161	0.156	0.140	0.177	0.192	0.193	0.182	0.162
	1.3	0.041	0.044	0.045	0.044	0.041	0.176	0.196	0.203	0.196	0.176	0.221	0.239	0.243	0.229	0.204
	1.4	0.041	0.044	0.045	0.044	0.040	0.170	0.191	0.199	0.191	0.169	0.213	0.233	0.238	0.223	0.196
	1.5	0.033	0.036	0.037	0.036	0.033	0.131	0.151	0.159	0.151	0.130	0.164	0.184	0.189	0.176	0.151
	1.6	0.022	0.025	0.025	0.024	0.022	0.078	0.096	0.102	0.095	0.078	0.098	0.117	0.121	0.110	0.090
	1.7	0.006	0.008	0.008	0.008	0.006	0.004	0.017	0.021	0.016	0.004	0.005	0.020	0.024	0.017	0.005
	1.8	-0.004	-0.003	-0.003	-0.003	-0.005	-0.039	-0.031	-0.029	-0.032	-0.040	-0.049	-0.039	-0.036	-0.039	-0.046
	1.9	-0.007	-0.007	-0.007	-0.007	-0.008	-0.045	-0.042	-0.042	-0.043	-0.046	-0.057	-0.052	-0.051	-0.051	-0.053
	2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Span 2	2.1	0.053	0.054	0.054	0.054	0.053	0.267	0.272	0.273	0.272	0.268	0.336	0.335	0.330	0.322	0.311
	2.2	0.130	0.132	0.133	0.133	0.131	0.649	0.662	0.668	0.665	0.652	0.815	0.815	0.806	0.785	0.756
	2.3	0.214	0.218	0.219	0.218	0.215	1.061	1.085	1.095	1.087	1.066	1.332	1.334	1.319	1.284	1.236
	2.4	0.268	0.272	0.274	0.273	0.269	1.324	1.354	1.368	1.358	1.331	1.661	1.664	1.648	1.603	1.543
	2.5	0.292	0.297	0.299	0.298	0.294	1.444	1.478	1.492	1.482	1.453	1.811	1.816	1.797	1.749	1.684
	2.6	0.272	0.276	0.278	0.277	0.274	1.343	1.374	1.388	1.378	1.352	1.684	1.688	1.672	1.627	1.567
	2.7	0.218	0.222	0.223	0.222	0.220	1.078	1.103	1.114	1.107	1.086	1.352	1.356	1.342	1.307	1.259
	2.8	0.136	0.138	0.139	0.139	0.137	0.673	0.689	0.696	0.692	0.680	0.844	0.847	0.839	0.818	0.789
	2.9	0.062	0.063	0.064	0.064	0.063	0.309	0.316	0.320	0.319	0.313	0.388	0.389	0.386	0.377	0.364
	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Span 3	3.1	-0.012	-0.012	-0.012	-0.013	-0.013	-0.067	-0.066	-0.066	-0.068	-0.070	-0.084	-0.081	-0.080	-0.081	-0.081
	3.2	-0.005	-0.004	-0.004	-0.005	-0.007	-0.040	-0.034	-0.033	-0.038	-0.047	-0.049	-0.042	-0.041	-0.046	-0.055
	3.3	0.006	0.007	0.007	0.006	0.004	0.008	0.018	0.020	0.013	-0.002	0.011	0.022	0.023	0.014	-0.003
	3.4	0.024	0.025	0.025	0.024	0.021	0.090	0.103	0.107	0.098	0.077	0.114	0.126	0.127	0.113	0.089
	3.5	0.042	0.044	0.044	0.043	0.039	0.178	0.196	0.200	0.189	0.163	0.225	0.240	0.239	0.220	0.188
	3.6	0.049	0.051	0.051	0.049	0.045	0.213	0.231	0.236	0.224	0.197	0.268	0.283	0.282	0.262	0.228
	3.7	0.051	0.053	0.053	0.052	0.048	0.227	0.244	0.249	0.239	0.213	0.286	0.299	0.298	0.279	0.246
	3.8	0.042	0.044	0.044	0.043	0.040	0.191	0.204	0.208	0.200	0.180	0.240	0.250	0.249	0.234	0.208
	3.9	0.025	0.025	0.026	0.025	0.023	0.112	0.118	0.121	0.116	0.105	0.141	0.145	0.145	0.136	0.121
	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

NOTE:

Camber for Dead Load Deflection plus Vertical curve +/-1/4" tolerance. Deflections shown are along C.L. Girder 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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STEPHEN T. SMILEY

29 May 2018

SHEET 7 OF 7
DETAILS OF 241'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 6/20/2016
CHECKED BY: STS DATE: 6/23/2016
DESIGNED BY: DCD DATE: 6/3/2016
FILENAME: b1008242.sl7
SCALE: NONE

BRIDGE NO. 07408 DRAWING NO. 59562

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10-23-18				6	ARK.			
				JOB NO.		100824	219	346
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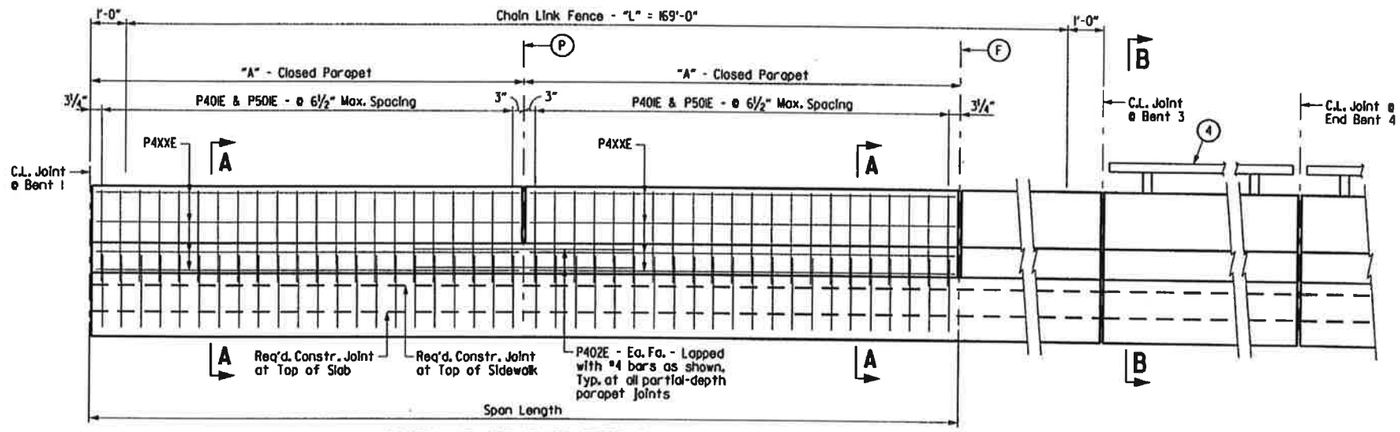


TABLE OF PARAPET RAIL VARIABLES

Parapet Type	"A"	Longitudinal Reinforcing
Closed-E	15'-0"	P403E
Closed-E	13'-11 5/8"	P404E
Closed-E	14'-0 1/4"	P405E
Closed	11'-0"	P406E
Closed	14'-0"	P407E
Closed	15'-0"	P408E
Closed	16'-0"	P409E
Closed	17'-0"	P410E

CLosed-E panels are immediately adjacent to deck joint opening.

For location of Parapet panels, see "Reinforcing Plan and Pouring Sequence" Dwg. No. 59558

(F) C.L. Full-Depth Parapet Joint (1/4" to 1" max.) Stop 4" from top of sidewalk. For location, See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 59558

(P) C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) Stop 1'-2" from top of sidewalk. For location, See "REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 59558

(3) For Chain Link Fence Details, See Dwg. No. 55018 (1) where "H" = 7'-3" Min. and "L" = 169'-0"

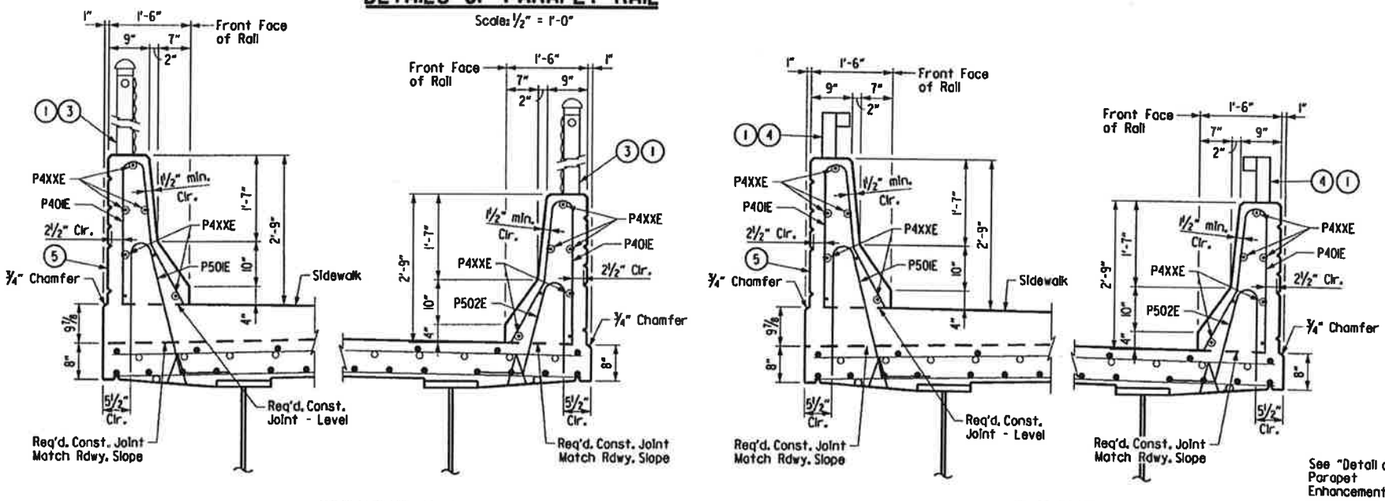
(4) For "TYPE H RAILING DETAILS", see Std. Dwg. No 55014, (1)

(5) See "Detail of Parapet Enhancement" and "Detail of Light Bracket Blister", as applicable.

(6) For Reinforcing placement, Bending diagrams and Bar List, see "Approach Gutter Details" Dwg. No. 59569, "Concrete Barrier Wall (SIDE TYPE SPECIAL-D", and End Bent 4 Details (Wing A).

DETAILS OF PARAPET RAIL

Scale: ½" = 1'-0"

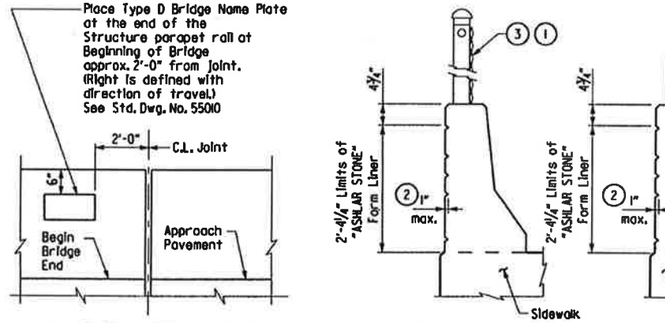


SECTION A-A

Scale: ¾" = 1'-0"

SECTION B-B

Scale: ¾" = 1'-0"

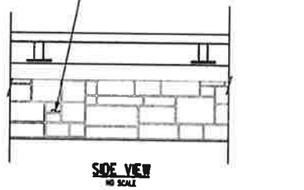


NAME PLATE DETAIL

No Scale

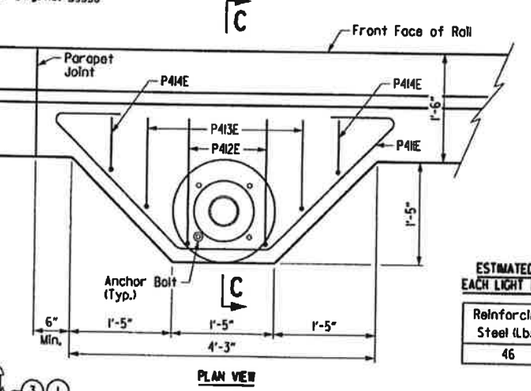
DETAIL OF PARAPET ENHANCEMENT

Scale: ¾" = 1'-0"



(1) The color of the Chain Link Fence, Posts and Type H Metal Rail, unless noted otherwise, shall be Black and shall match Fed. Std. 595B Color Chip No. 27038.

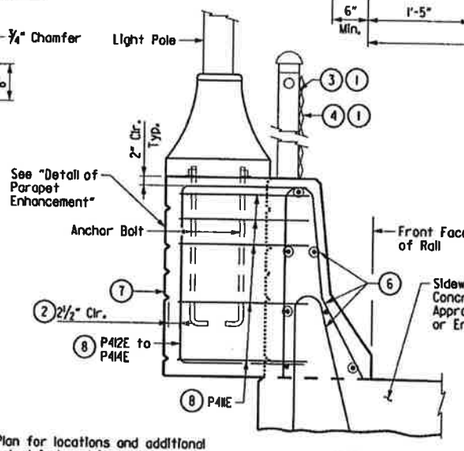
(2) "ASHLAR STONE" pattern form liner relief shall be a maximum of 1", to preserve the minimum clearance of 2½" shown. See SP Job 100824 "ARCHITECTURAL FINISH".



PLAN VIEW

ESTIMATED QUANTITIES - EACH LIGHT BRACKET BLISTER

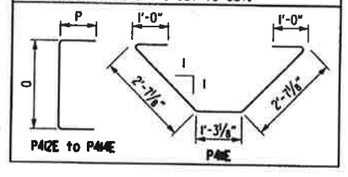
Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
46	0.41



SECTION C-C

BENDING DIAGRAM

Dimensions of bars are out to out.



BAR LIST - EACH LIGHT BRACKET BLISTER

(8) Mark	No. Req'd.	P	D	Length	Bin Dia.
P411E	5			8'-1"	2"
P412E	2	1'-9"	2'-5"	5'-9"	2"
P413E	2	1'-3"	2'-5"	4'-9"	2"
P414E	2	9"	2'-5"	3'-9"	2"

(7) See Illumination Plan for locations and additional details, including electrical conduit cast into concrete. Anchor bolts to be provided with light fixture.

(8) Epoxy coating of reinforcing bars may be omitted for brackets NOT attached to bridge span parapets.

DETAILS OF LIGHT BRACKET BLISTER (7)

Scale: 1" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

23 Oct 2018

RAIL DETAILS
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

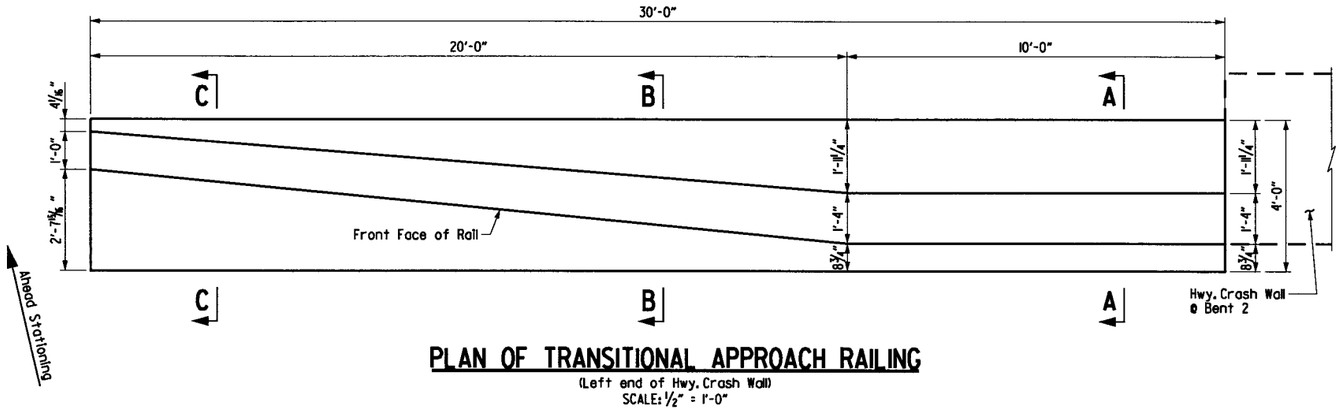
DRAWN BY:	AKH	DATE:	6/2/2016	FILENAME:	b1008242_rl
CHECKED BY:	STS	DATE:	6/6/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	5/3/2016		

BRIDGE NO. 07408 DRAWING NO. 59563

10/23/2018 2:20:23 PM jharrell

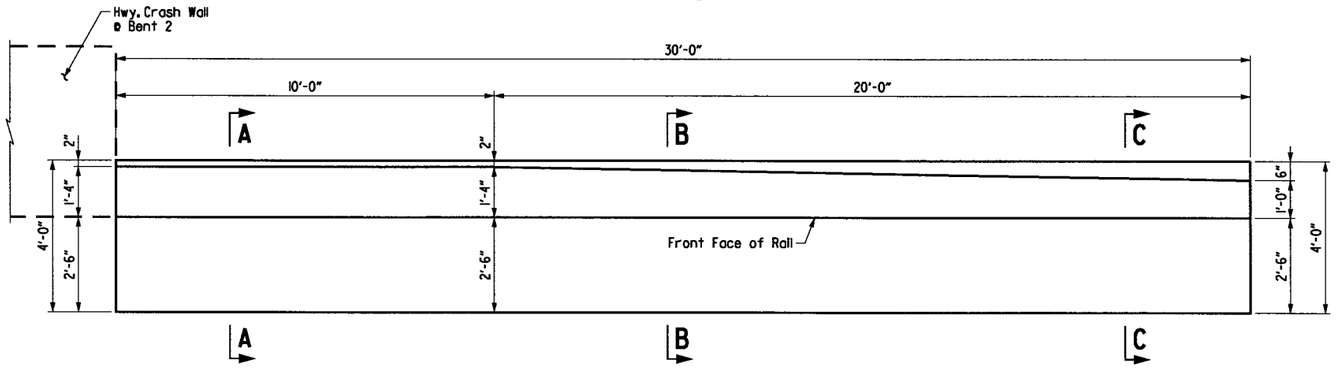
\\bridgefarmer.internal\Dashares\Projects\14408\D\DGN\Plans\13_Bridge\Rail_Details\b1008242_rl.dgn

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.		100824	220	346
				(1) 07408		TRANS APRCH RAIL 2		59564



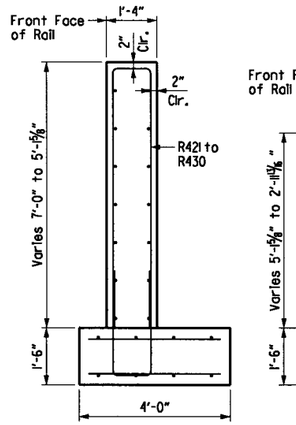
PLAN OF TRANSITIONAL APPROACH RAILING

(Left end of Hwy. Crash Wall)
SCALE: ½" = 1'-0"



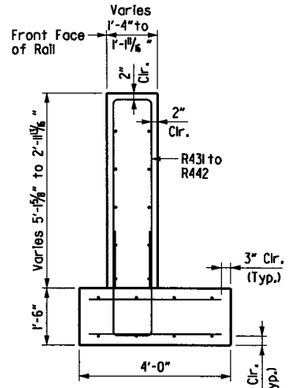
PLAN OF TRANSITIONAL APPROACH RAILING

(Right end of Hwy. Crash Wall)
SCALE: ½" = 1'-0"



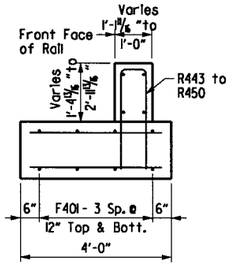
SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"

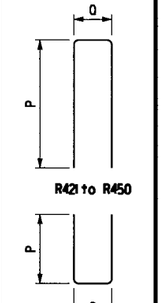


SECTION C-C

SCALE: ½" = 1'-0"

BAR LIST - ONE TRANSITIONAL RAIL

MARK	NO. REQ'D.	LENGTH	P	O	P.D.	Bending Diagram
Cap & Backwall						
F401	8	29'-6"			Str.	
F402	60	3'-6"			Str.	
R401	4	29'-9"			Str.	
R402	2	24'-4"			Str.	
R403	2	19'-0"			Str.	
R404	2	13'-8"			Str.	
R405	2	30'-2"			Str.	
R406	2	8'-4"			Str.	
R407	2	2'-11"			Str.	
R408	10	6'-4"	2'-9"	1'-0"	3"	
R409 to R420	1 Ea	6'-4" to 6'-2"	2'-9"	11 ¾" to 9 ½"	3"	
R421 to R430	1 Ea	14'-4" to 10'-11"	6'-8 ¾" to 5'-0 ½"	1'-0"	3"	
R431 to R442	1 Ea	10'-7" to 6'-8"	4'-10 ¼" to 3'-0"	11 ¾" to 9 ½"	3"	
R443 to R450	1 Ea	8'-4" to 5'-7"	3'-10" to 2'-6 ¼"	9 ½" to 8"	3"	



Dimensions are out to out of bars.

FOR INFORMATION ONLY
SCHEDULE OF QUANTITIES PER RAIL UNIT

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Class I Protective Surface Treatment (Gal.)
790	12.72	0.72

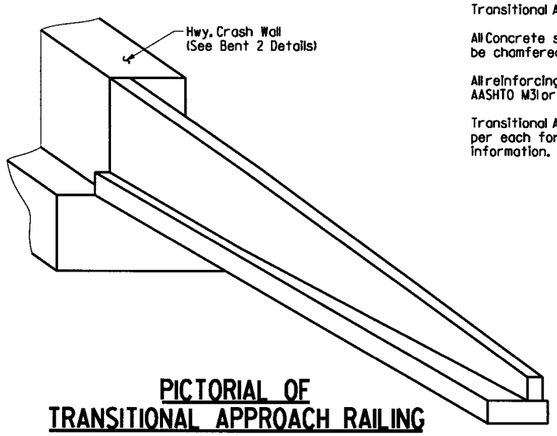
General Notes

Transitional Approach Railing shall be placed locations shown in the plans.

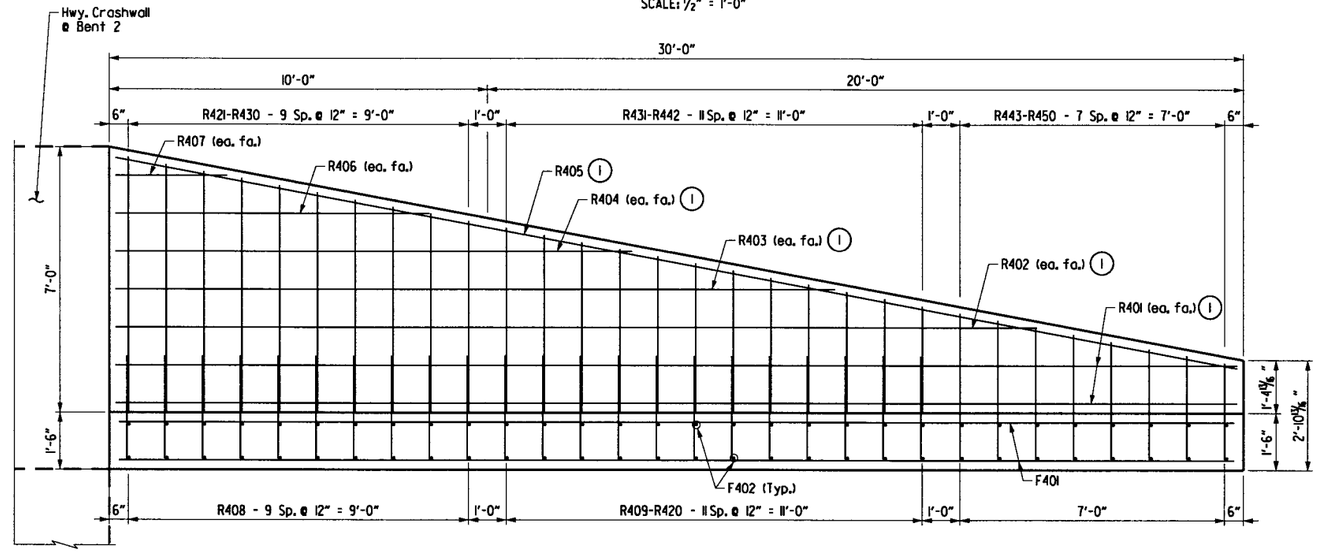
All Concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

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

Transitional Approach Railing shall be paid for at the contract unit price bid per each for "Transitional Approach Railing." See Section 806 for additional information.



PICTORIAL OF TRANSITIONAL APPROACH RAILING



ELEVATION OF TRANSITIONAL APPROACH RAILING

(Right rail shown, Left rail similar)
SCALE: ½" = 1'-0"

(1) Bend R401 to R405 in field to match rail line. Pin dia. = 4"

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
29 May 2018

DETAILS OF TYPE SPECIAL 2 TRANSITIONAL APPROACH RAILING

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	9/26/2016	FILENAME:	bI008242_r2
CHECKED BY:	STS	DATE:	9/27/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	9/21/2016		

BRIDGE NO. 07408 DRAWING NO. 59564

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

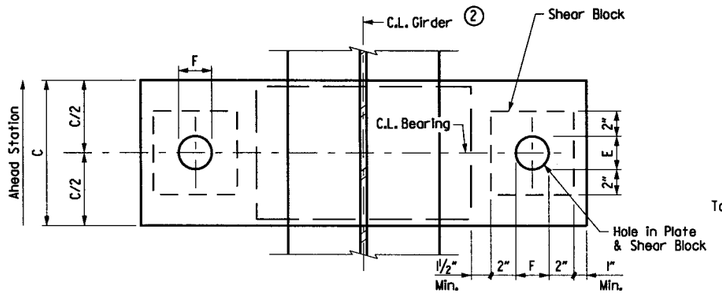
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	221	346

(1) 07408 **BEARING DETAILS** 59565

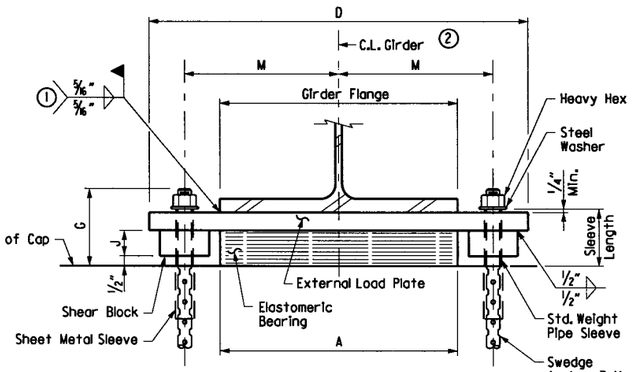
TABLE OF FABRICATOR VARIABLES

LOCATION			NO. of	MAXIMUM			ELASTOMER PAD						EXTERNAL LOAD PLATE									ANCHOR BOLT				
																						ANCHOR BOLT		PIPE	SHEET METAL	STEEL
BENT NO.	GIRDER NO(S).	BEARING TYPE	BEARINGS EACH BENT	DESIGN LOAD (KIPS)	G (In.)	H (In.)	A (In.)	B (In.)	N (In.)	t1 (In.)	te (In.)	NO. & THICKNESS OF STEEL LAMINAE	T (In.)	C (In.)	D (In.)	E (In.)	F (In.)	J (In.)	K (In.)	M (In.)	Ta (In.)	Tb (In.)	(In.)	GRADE (Ksi)	SLEEVE SIZE	SLEEVE SIZE	WASHER O.D. (In.)
1	ALL	Exp.	5	100.00	6 5/16	3 11/16	15	8	2	1/2	1/4	3 @ 12 Ga.	1 7/8	9	33	3 3/8	2 1/2	1 1/4	1/2	12 1/4	2.29	1.71	1 1/4" x 25"	55	1 1/4" x 4 1/16"	3" x 10"	4
2	ALL	Fixed	5	266.39	6 7/8	4 3/8	16	12	3	1/2	1/4	4 @ 12 Ga.	2 7/16	13	34	2 1/2	2 1/2	1 7/8	1/2	12 3/4	2.20	1.80	1 1/4" x 26"	55	1 1/4" x 4 5/8"	3" x 10"	4
3	1-2&4-5	Fixed	4	266.39	6 7/8	4 3/8	16	12	3	1/2	1/4	4 @ 12 Ga.	2 7/16	13	34	2 1/2	2 1/2	1 7/8	1/2	12 3/4	1.87	2.13	1 1/4" x 26"	55	1 1/4" x 4 5/8"	3" x 10"	4
3	3	Fixed	1	266.39	7	4 1/2	16	12	3	1/2	1/4	4 @ 12 Ga.	2 7/16	13	34	2 1/2	2 1/2	1 7/8	1/2	12 3/4	1.99	2.26	1 1/4" x 26"	55	1 1/4" x 4 3/4"	3" x 10"	4
4	ALL	Exp.	5	100.00	6 5/16	3 11/16	15	8	2	1/2	1/4	3 @ 12 Ga.	1 7/8	9	33	3 3/8	2 1/2	1 1/4	1/2	12 1/4	1.75	2.25	1 1/4" x 26"	55	1 1/4" x 4 1/16"	3" x 12"	4

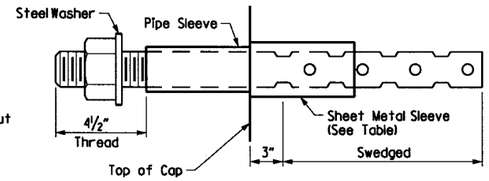
(5) Maximum Load = Service Limit I State



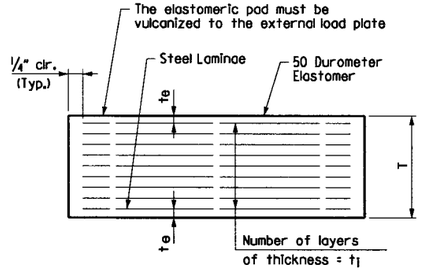
PLAN VIEW @ BENT 2 & 3
(No Scale)



FRONT VIEW @ ALL BENTS
(No Scale)



ANCHOR BOLT DETAIL
(No Scale)

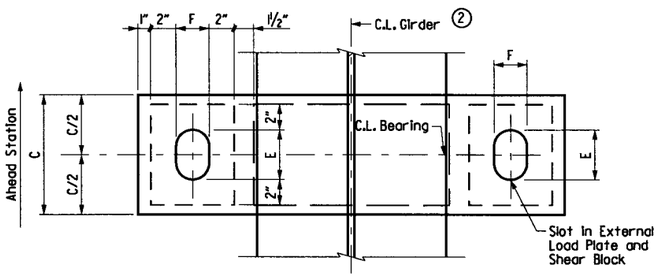


t_1 = thickness of elastomer between steel laminae.

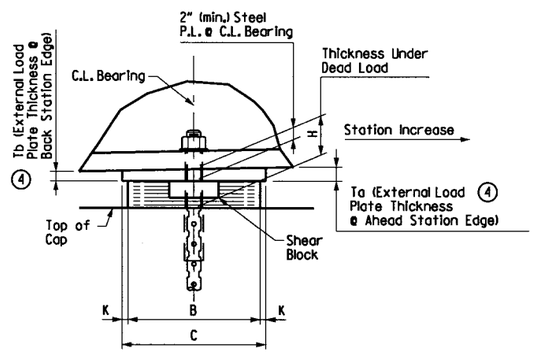
t_e= thickness of elastomer cover on top and bottom of pad.

N= number of elastomer layers of thickness t_1.

ELASTOMERIC BEARING
(No Scale)



PLAN VIEW @ BENT 1 & 4
(No Scale)



SIDE VIEW @ ALL BENTS
(No Scale)

(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) Thus the C.L. of Bearings shall coincide with the C.L. of Girders.

(3) For fabrication of the Steel Washers when the tabulated O.D. exceeds ASTM F436, the I.D. of the washers shall conform to ASTM F436 and the thickness of 1/4" shall be used.

(4) The direction of bevel of the external load plate may not be accurately depicted with respect to the "Ta" and "Tb" values shown in the "Table of Fabricator Variables."

Prior to erection fo the girders, the Contractor shall verify the orientation of the bearings with respect to "Ta" and "Tb".

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 fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly but will be considered subsidiary to the item "Structural Steel In Plate Girder Spans, (M 270, Gr. 50)".

GENERAL NOTES:
Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, class 50.

External load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel.

External load plates and shear blocks shall be painted in accordance with Subsection 807.75. The color of the paint shall be red and shall match Fed. Std. 595B, Color Chip No. 31350. Mask areas that are to be welded in the field.

Anchor Bolts and Nuts shall conform to Subsection 807.07 of the Standard Specifications. Steel Washers shall conform to AASHTO M 270, Grade 50. 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. 50)". External load plates and blocks 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 subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

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.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY

29 May 2018

DETAILS OF ELASTOMERIC BEARINGS OF WATT ST. BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	6/2/2016	FILENAME:	bI008242_el
CHECKED BY:	STS	DATE:	6/6/2016	SCALE:	AS SHOWN
DESIGNED BY:	DCD	DATE:	5/6/2016		

BRIDGE NO. 07408 DRAWING NO. 59565

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5/25/2018
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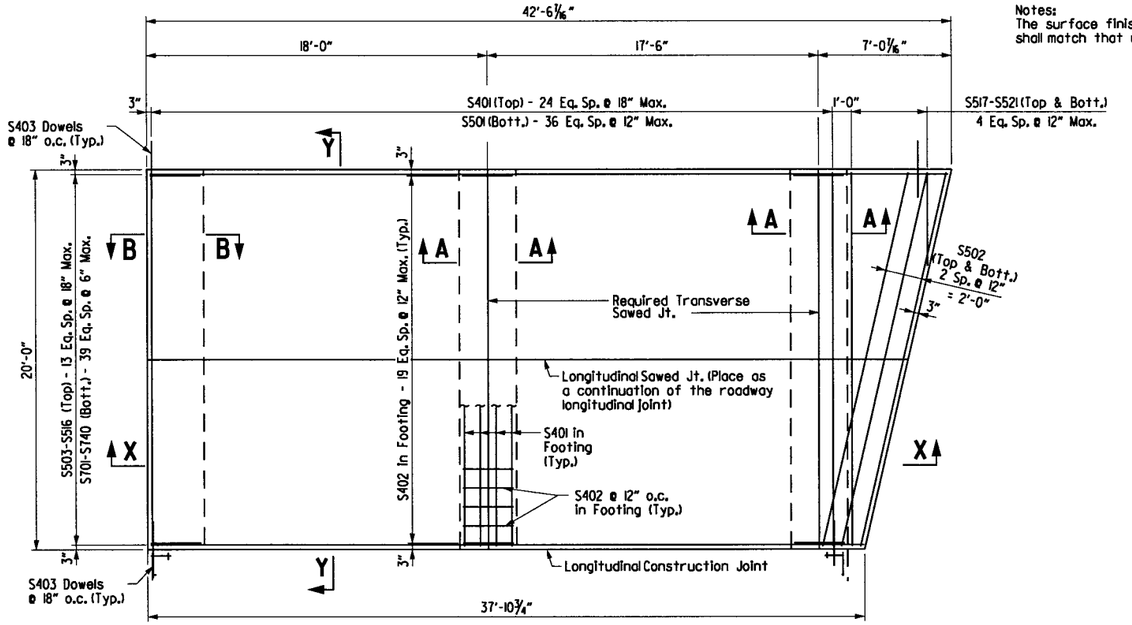
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	222	346
				1 07408		APPROACH SLAB 3		59566



Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

PLAN - APPROACH SLAB SPECIAL 3

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

General Notes:

All longitudinal edges and reinforcing are parallel or concentric to C.L. Watt St.

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.

BAR LIST

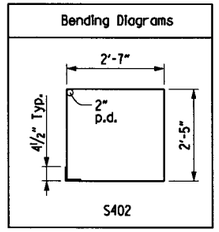
Mark	No. Req'd.	Length
S401	37	19'-8"
S402	60	10'-4"
S403	54	3'-0"
S501	37	19'-8"
S502	6	20'-0"
S503 to S516	1 Ea.	37'-8" to 42'-2"
S517 to S521	2 Ea.	4'-11" to 19'-8"
S701 to S740	1 Ea.	37'-8" to 42'-2"

TABLE OF QUANTITIES

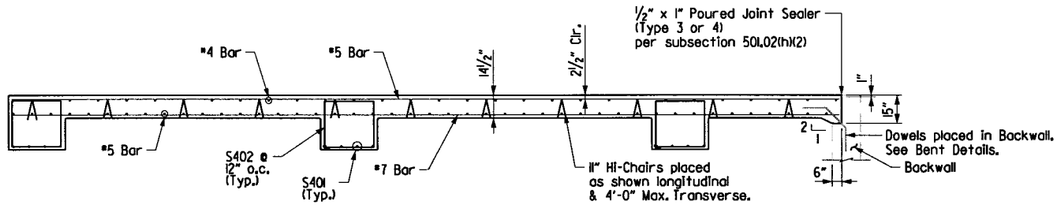
For Information Only

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
5868	39.88

Bending Diagrams

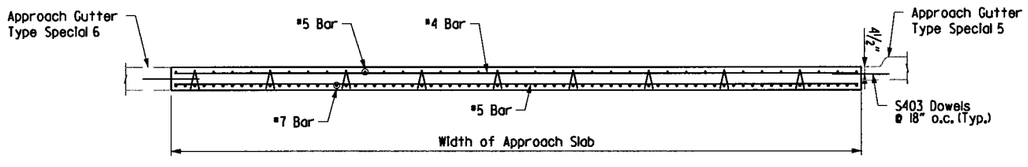


(Dimensions are out to out of bars)



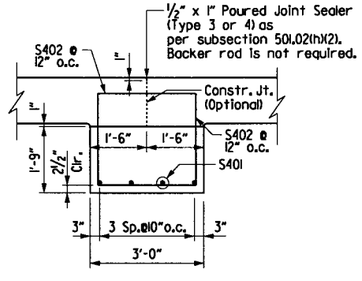
SECTION X-X

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



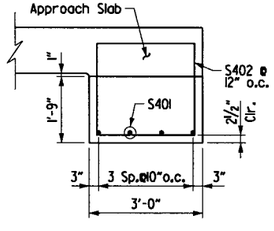
SECTION Y-Y

N.T.S.



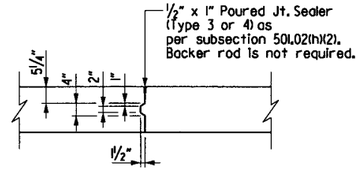
SECTION A-A

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



SECTION B-B

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



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

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

STATE OF ARKANSAS
Stephen T. Smiley
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
29 May 2018

DETAILS OF TYPE SPECIAL 3
APPROACH SLAB
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bl008242.asl
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07408 DRAWING NO. 59566

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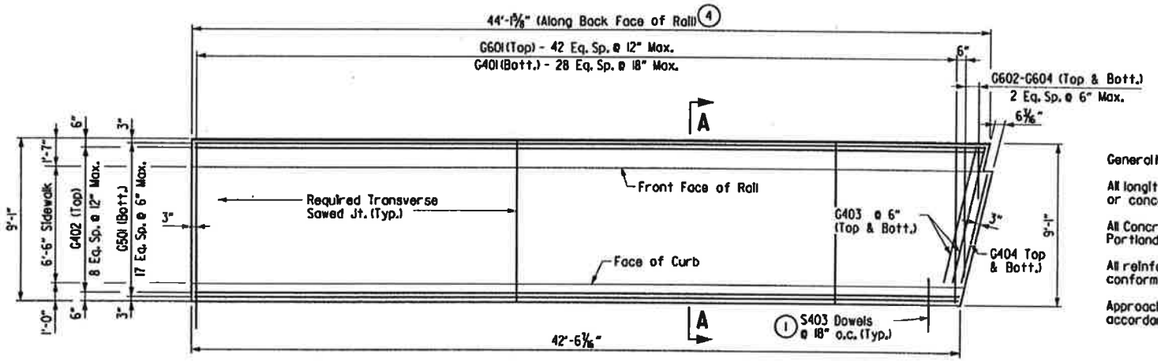
10/23/2018 2:13:15 PM
jharrell

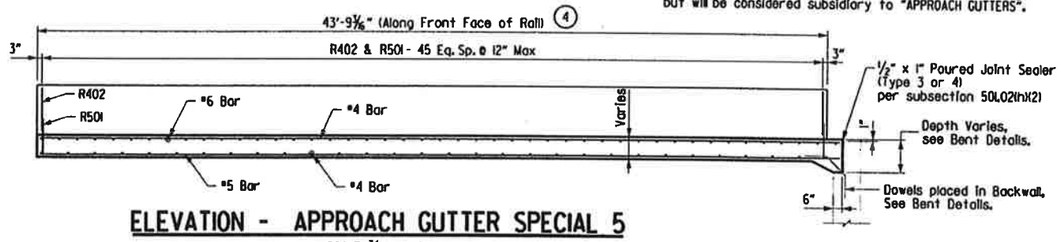
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	223	346
				(1) 07408		APPROACH GUTTERS 5&6		59567

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 13072 STEPHEN T. SMILEY
Stephen T. Smiley 23 Oct 2018



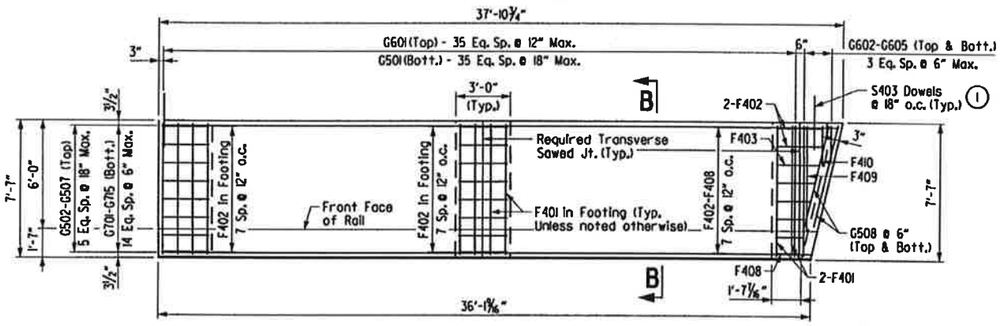
PLAN - APPROACH GUTTER SPECIAL 5

SCALE: ⅜" = 1'-0"



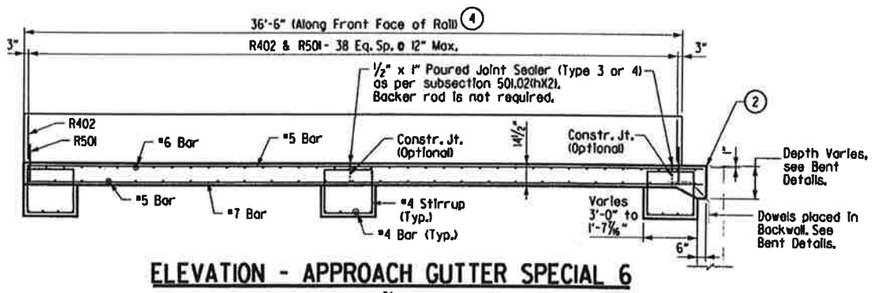
ELEVATION - APPROACH GUTTER SPECIAL 5

SCALE: ⅜" = 1'-0"



PLAN - APPROACH GUTTER SPECIAL 6

SCALE: ⅜" = 1'-0"



ELEVATION - APPROACH GUTTER SPECIAL 6

SCALE: ⅜" = 1'-0"

(1) Prior to pouring concrete for approach slab, place S403 Dowels into approach slab using 18" embedment.

As an Alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately, but will be considered subsidiary to "APPROACH GUTTERS".

(2) ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.

(3) ½" Preformed Joint Filler (AASHTO M153, Type II and ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Joint Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls".

(4) "Ashlar Stone Pattern" on back face of rail. For "Detail of Parapet Enhancement". See Dwg. No. 59563

(5) Type H Metal Rail, unless noted otherwise, shall be painted Black and shall match Fed. Std. 595B Color Chip No. 27038.

GUTTER 5 BAR LIST

	Mark	No. Req'd.	Length	Pin Dia.
	G401	29	8'-9"	Str.
(6)	G402	18	23'-1"	Str.
	G403	4	7'-10"	Str.
	G404	2	6'-3"	Str.
(6)	G501	36	23'-7"	Str.
	G601	43	9'-1"	4 ½"
	G602 to G604	2 Ea.	2'-11" to 7'-4"	Str.
(6)	R401	14	23'-2"	Str.
	R402	45	6'-1"	3"
	R501	45	6'-4"	2 ½"

GUTTER 6 BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
F401	10	7'-2"	Str.
F402	18	10'-4"	2"
F403 to F408	1 Ea.	10'-0" to 7'-8"	2"
F409	1	5'-9"	Str.
F410	1	2'-2"	Str.
G501	36	7'-3"	Str.
G502 to G507	2 Ea.	36'-0" to 37'-6"	Str.
G508	4	5'-9"	Str.
G601	36	7'-3"	Str.
G602 to G605	2 Ea.	1'-10" to 7'-3"	Str.
G701 to G715	1 Ea.	36'-0" to 37'-6"	Str.
R401	7	35'-10"	Str.
R402	39	6'-1"	3"
R501	39	6'-4"	2 ½"

TABLE OF QUANTITIES

For Information Only

Gutter Type Special	Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Metal Bridge Railing - Type H (Lin. Ft.)	Architectural Finish (Sq. Ft.)
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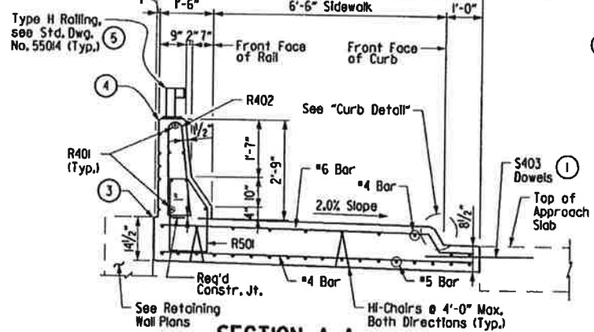
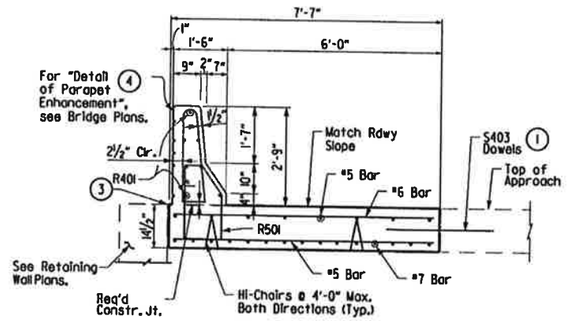
6	3124	16.42	-	89



SECTION A-A

SCALE: ⅜" = 1'-0"

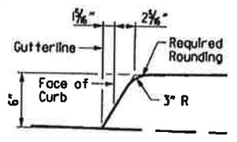


SECTION B-B

SCALE: ⅜" = 1'-0"

(6) Note: Min Lap lengths for Longitudinal Bars are as follows.

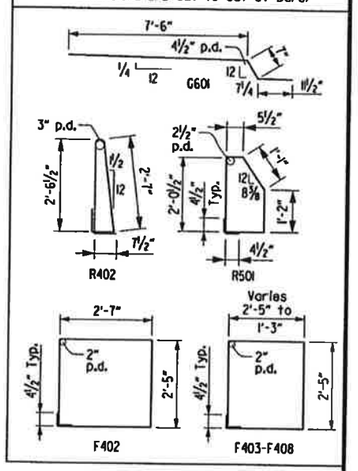
#4 Bars = 2'-0"
#5 Bars = 3'-0"



CURB DETAIL

N.T.S.

Bending Diagrams (Dimensions are out to out of bars)

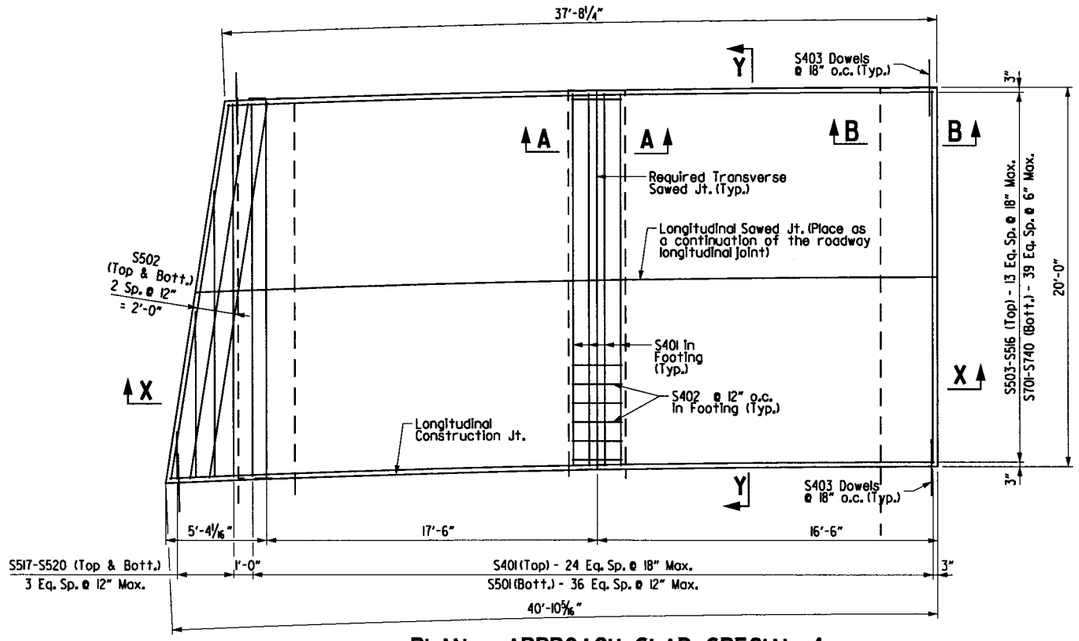


DETAILS OF TYPE SPECIAL 5 & 6
APPROACH GUTTERS
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bl008242_as2
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

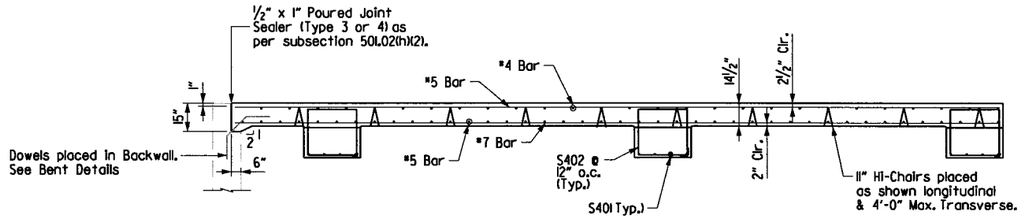
BRIDGE NO. 07408 DRAWING NO. 59567

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.		100824	224	346
				(1) 07408		APPROACH SLAB 4		59568



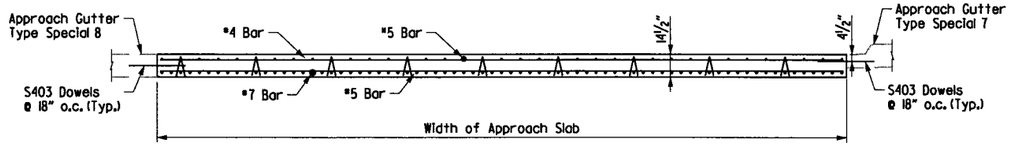
PLAN - APPROACH SLAB SPECIAL 4

SCALE: ¼" = 1'-0"



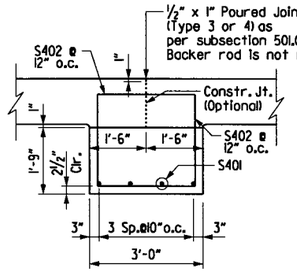
SECTION X-X

SCALE: ¼" = 1'-0"



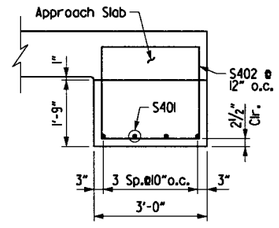
SECTION Y-Y

N.T.S.



SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"

BAR LIST

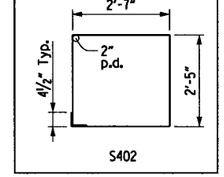
Mark	No. Req'd.	Length
S401	37	19'-8"
S402	60	10'-4"
S403	54	3'-0"
S501	37	19'-8"
S502	6	20'-0"
S503 to S516	1 Ea.	37'-5" to 40'-6"
S517 to S520	2 Ea.	2'-6" to 19'-8"
S701 to S740	1 Ea.	37'-5" to 40'-6"

TABLE OF QUANTITIES

For Information Only

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)
5742	38.84

Bending Diagrams



(Dimensions are out to out of bars)

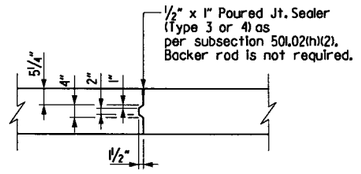
General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Watt St.

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.



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

SCALE: ½" = 1'-0"

STATE OF ARKANSAS
STEPHEN T. SMILEY
REGISTERED PROFESSIONAL ENGINEER
No. 13072

29 May 2018

DETAILS OF TYPE SPECIAL 4
APPROACH SLAB
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bi008242_as3
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07408 DRAWING NO. 59568

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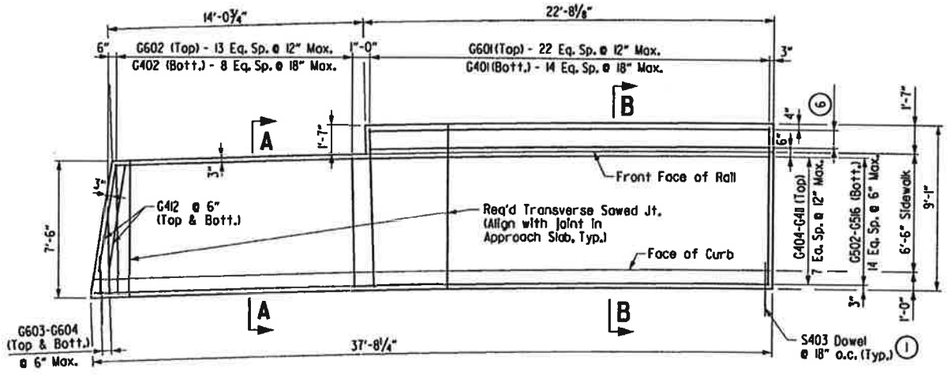
10/23/2018 2:33:46 PM
jharrell

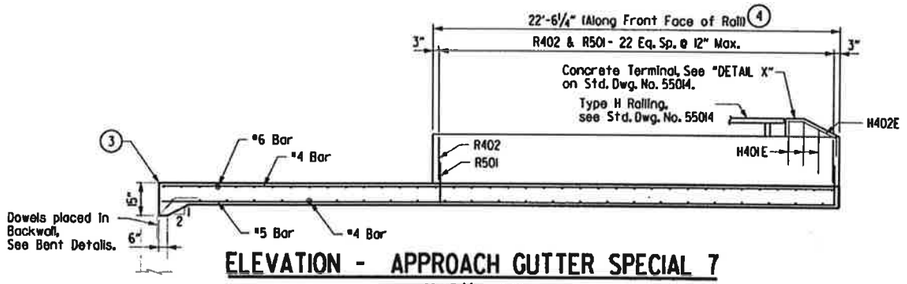
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	225	346
				① 07408		APPROACH GUTTER 7		59569

STATE OF ARKANSAS
STEPHEN T. SMILEY
REGISTERED PROFESSIONAL ENGINEER
No. 13072
STEPHEN T. SMILEY
23 Oct 2018



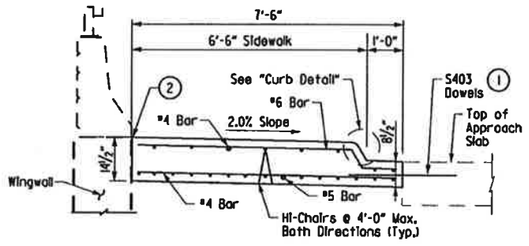
PLAN - APPROACH GUTTER SPECIAL 7

SCALE: ¼" = 1'-0"



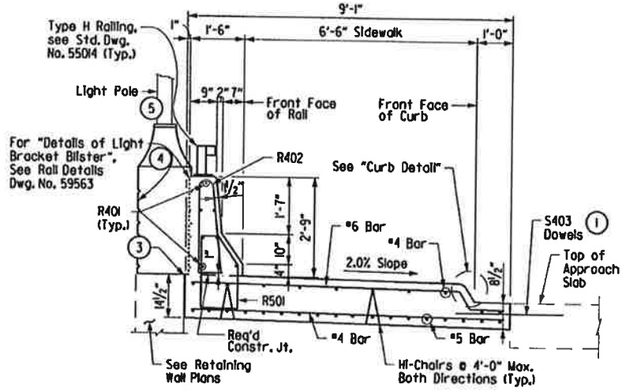
ELEVATION - APPROACH GUTTER SPECIAL 7

SCALE: ¼" = 1'-0"



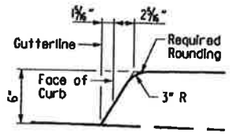
SECTION A-A

SCALE: ¼" = 1'-0"



SECTION B-B

SCALE: ¼" = 1'-0"



CURB DETAIL

N.T.S.

① Prior to pouring concrete for approach slab, place S403 Dowels into approach slab using 18" embedment.
As an Alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately, but will be considered subsidiary to "APPROACH GUTTERS".

② ½" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Jt.

③ ½" Preformed Jt. Filler (AASHTO M153, Type I) and ½" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Jt. Filler and Sealer will not be paid for directly, but will be considered subsidiary to the item "Retaining Walls"

④ "Ashlar Stone Pattern" on back face of rail. For "Details of Parapet Enhancement", See Dwg. No. 59563

⑤ Type H Metal Rail, unless noted otherwise, shall be painted Black and shall match Fed. Std. 595B Color Chip No. 27038.

⑥ G403 (Top) - 1 Sp. @ 12" Max.
G501 (Bott.) - 2 Eq. Sp. @ 6" Max.

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Watt St.

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.

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars)
G401	15	8'-9"	Str.	
G402	9	7'-2"	Str.	
G403	2	22'-3"	Str.	
G404 to G411	1 Ea.	36'-2" to 37'-4"	Str.	
G412	4	6'-0"	Str.	
G501	3	22'-3"	Str.	
G502 to G516	1 Ea.	36'-2" to 37'-4"	Str.	
G601	23	9'-1"	4 ½"	
G602	14	7'-6"	4 ½"	
G603 to G604	2 Ea.	2'-1" to 4'-10"	Str.	
H401E	3	5'-6"	3"	
H402E	1	3'-10"	3"	
R401	7	22'-3"	Str.	
R402	23	6'-1"	3"	
R501	23	6'-4"	2 ½"	

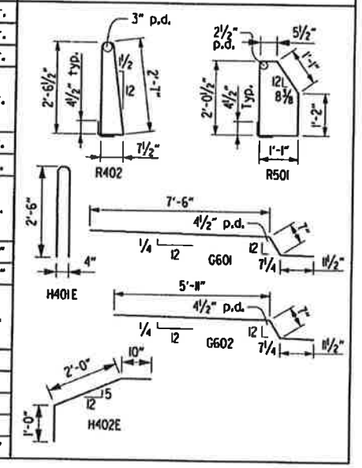


TABLE OF QUANTITIES

For Information Only

Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Metal Bridge Railing - Type H (Lin. Ft.)	Architectural Finish (Sq. Ft.)
1876	16.33	23	55

DETAILS OF TYPE SPECIAL 7 APPROACH GUTTERS WATT ST. BRIDGE OVER BNSF RAILROAD

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	AKH	DATE:	8/5/2016	FILENAME:	bi008242.cs4
CHECKED BY:	STS	DATE:	8/9/2016	SCALE:	AS SHOWN
DESIGNED BY:	JH	DATE:	8/4/2016		

BRIDGE NO. 07408 DRAWING NO. 59569

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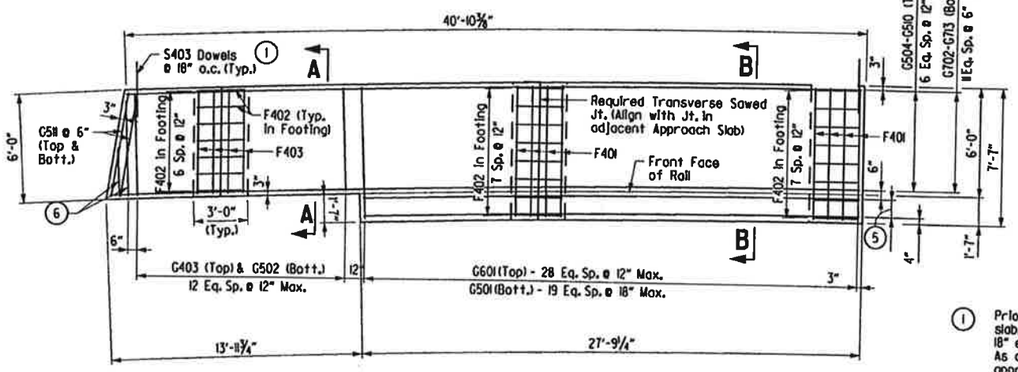
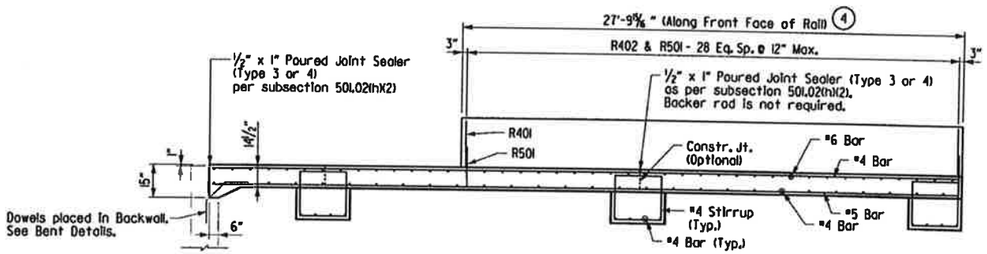
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-23-18				6	ARK.			
				JOB NO.		100824	226	346
				07408		APPROACH GUTTER 8		59570

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13075
STEPHEN T. SMILEY
Stephen T. Smiley 23 Oct 2018



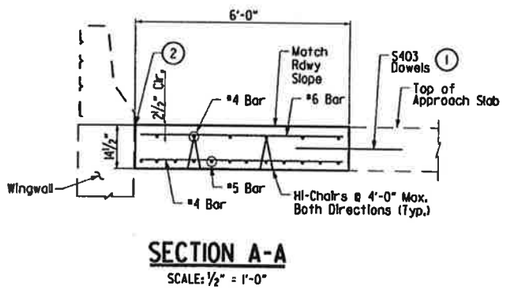
PLAN - APPROACH GUTTER SPECIAL 8

SCALE: ¼" = 1'-0"



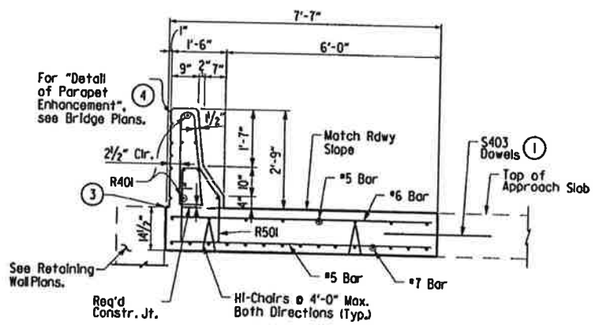
ELEVATION - APPROACH GUTTER SPECIAL 8

SCALE: ¼" = 1'-0"



SECTION A-A

SCALE: ½" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"

1 Prior to pouring concrete for approach slab, place S403 Dowels into approach slab using 18" embedment.
As an Alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately, but will be considered subsidiary to "APPROACH GUTTERS".

2 ½" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2).

3 ½" Preformed Jt. Filler (AASHTO M153, Type II and ½" X 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2). Jt. Filler and Sealer will not be paid for directly, but will be considered subsidiary to the Item "Retaining Walls"

4 "Ashlar Stone Pattern" on back face of rail. For "Detail of Parapet Enhancement", See Dwg. No. 59563

5 G503 (Top) - 1 Sp. @ 12" Max.
G701 (Bott.) - 2 Eq. Sp. @ 6" Max.

6 G603-G604 (Top & Bott.) 1 Sp. @ 6"

7 Note:
Min Lap lengths for Longitudinal Bars are as follows.

#5 Bars = 3'-0"

General Notes:

All longitudinal edges and reinforcing is parallel or concentric to C.L. Watt St.

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.

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
F401	8	7'-2"	Str.
F402	23	10'-4"	Str.
F403	4	5'-7"	Str.
G403	13	5'-8"	Str.
G501	20	7'-3"	Str.
G502	13	5'-8"	Str.
G503	2	27'-5"	Str.
7 G504 to 7 G510	2 Ea.	21'-4" to 21'-9"	Str.
G511	4	5'-9"	Str.
G601	29	7'-3"	Str.
G603 to G604	2 Ea.	2'-8" to 5'-3"	Str.
G701	3	27'-5"	Str.
G702 to G713	1 Ea.	40'-8" to 41'-5"	Str.
R401	7	27'-6"	Str.
R402	29	6'-1"	3"
R501	29	6'-4"	2 ½"

Bending Diagrams (Dimensions are out to out of bars)

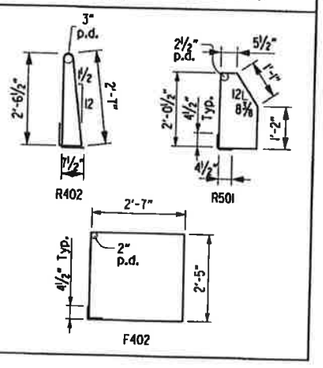


TABLE OF QUANTITIES

For Information Only

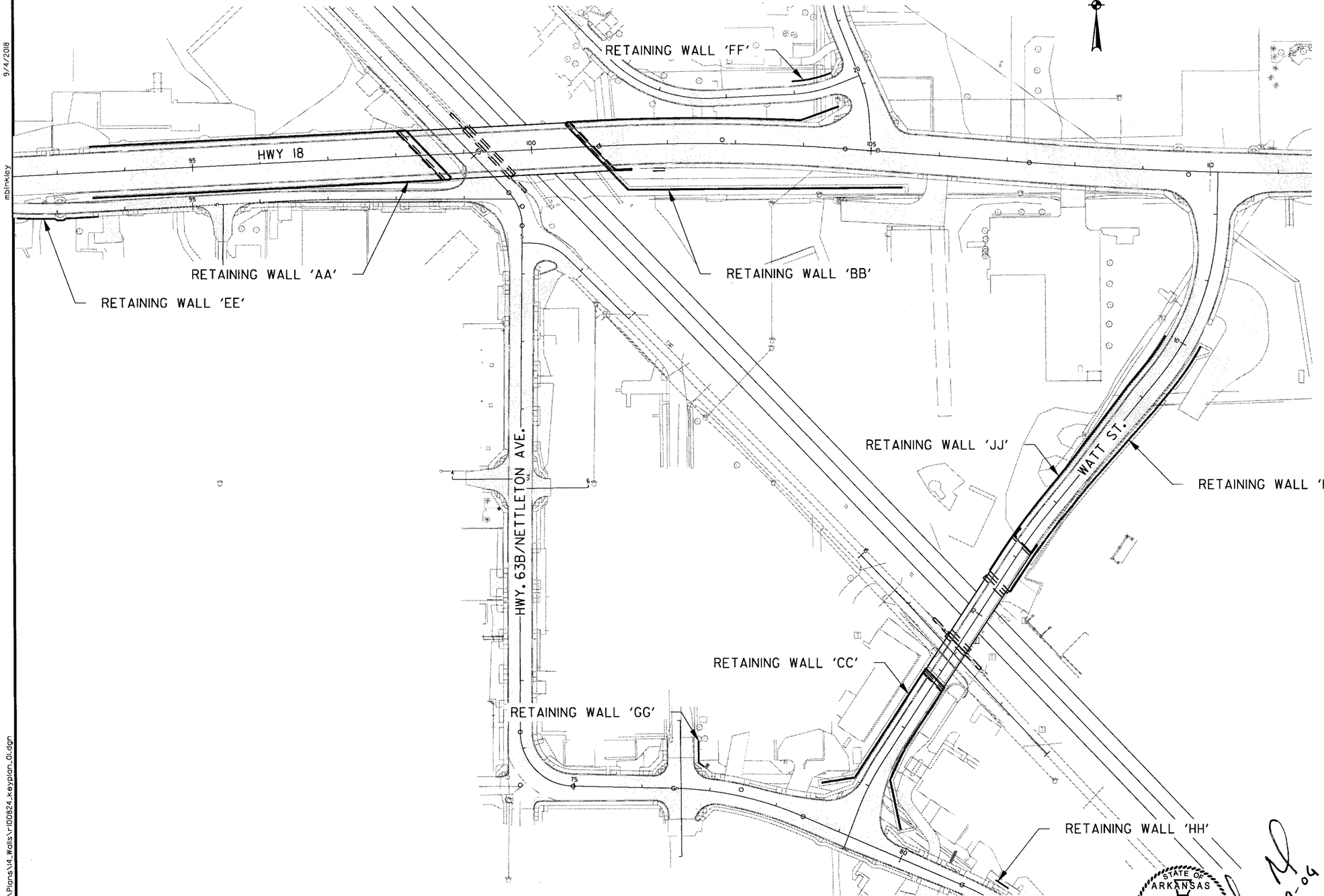
Reinforcing Steel (Lbs)	Concrete (Cu. Yds.)	Architectural Finish (Sq. Ft.)
2838	15.96	68

DETAILS OF TYPE SPECIAL 8
APPROACH GUTTERS
WATT ST. BRIDGE OVER BNSF RAILROAD
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: AKH DATE: 8/5/2016
CHECKED BY: STS DATE: 8/9/2016
DESIGNED BY: JH DATE: 8/4/2016
FILENAME: b1008242.as5
SCALE: AS SHOWN

BRIDGE NO. 07408 DRAWING NO. 59570

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.		100824	227	346
				RETAINING WALL KEY PLAN				59571



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD

2018-09-04

RETAINING WALL KEY PLAN

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
CHECKED BY: SA DATE: 6/6/2016
DESIGNED BY: DCD DATE: 5/3/2016

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SCALE: 1" = 75'

DRAWING NO. 59571

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5/29/2018
mbinkley

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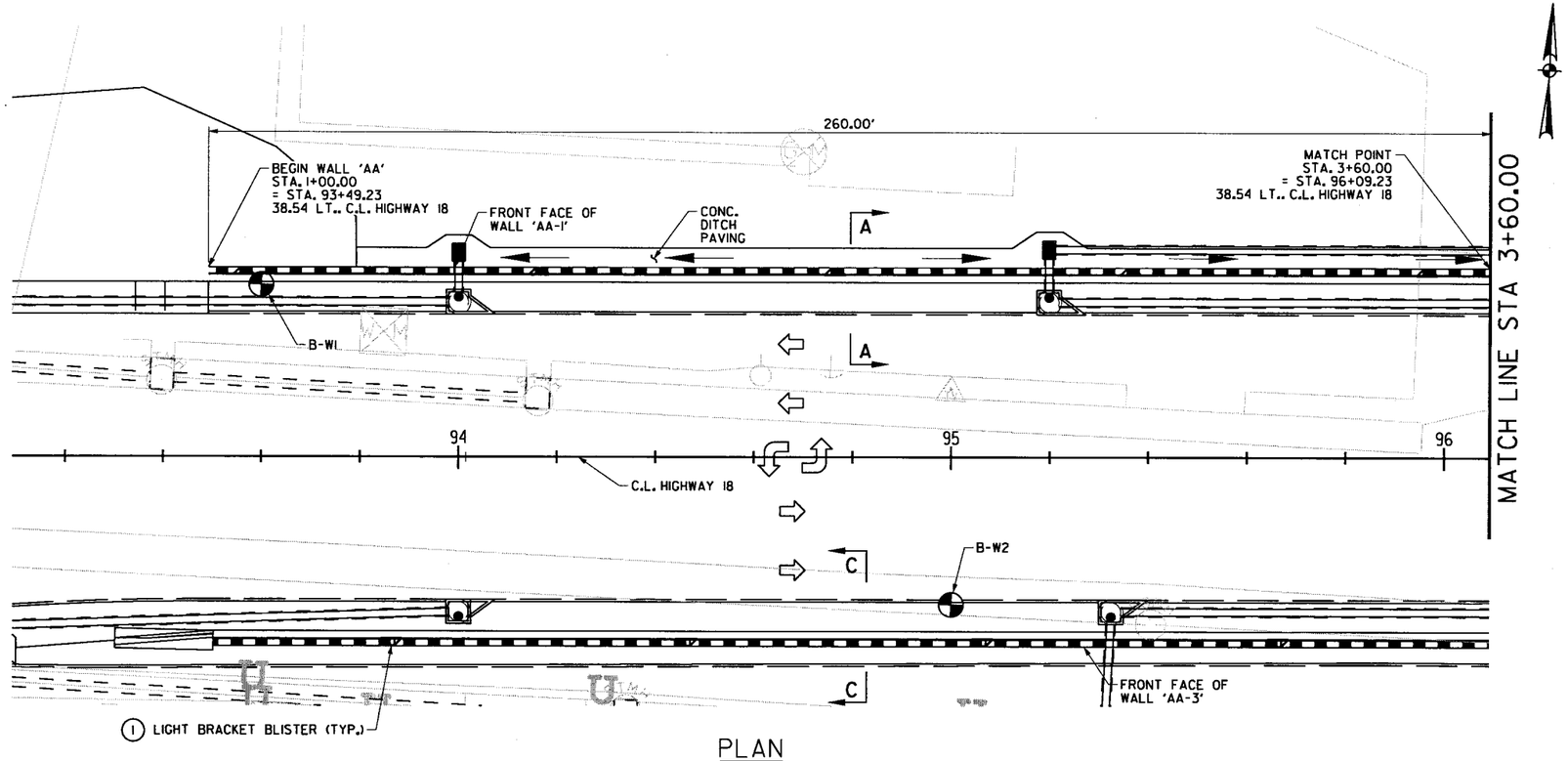
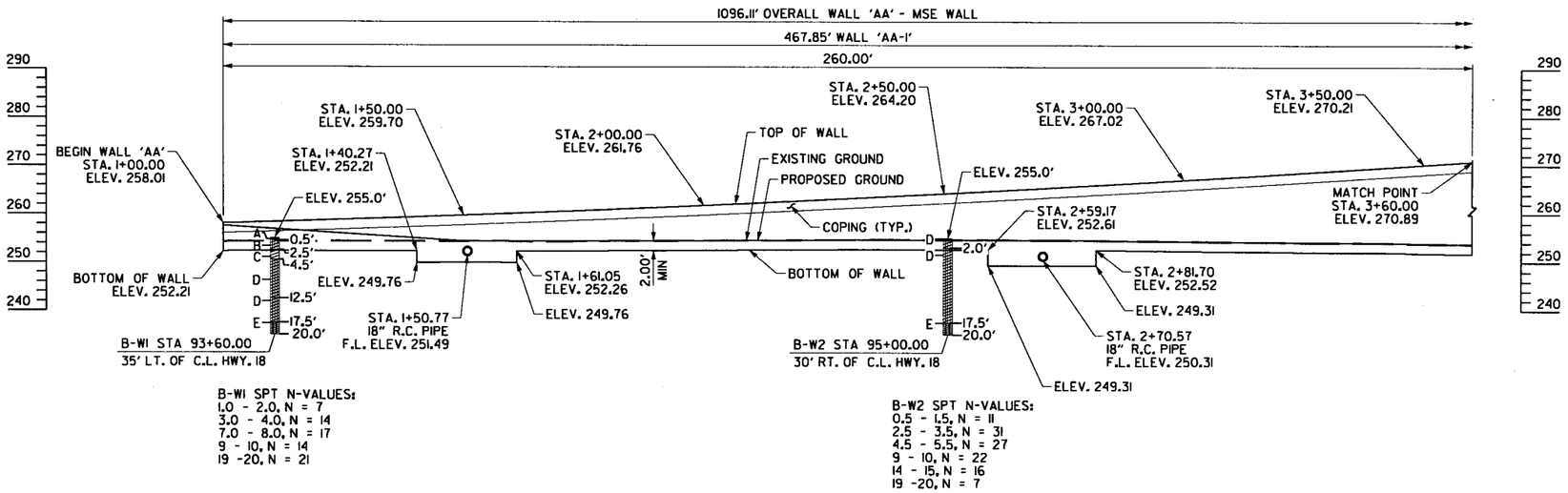
				JOB NO.		100824	228	346
				(1)		P&P RET. WALL 'AA'		59572



PLAN
SCALE 1"=15'



B-W1 SPT N-VALUES:
1.0 - 2.0, N = 7
3.0 - 4.0, N = 14
7.0 - 8.0, N = 17
9 - 10, N = 14
19 -20, N = 21

B-W2 SPT N-VALUES:
0.5 - 1.5, N = 11
2.5 - 3.5, N = 31
4.5 - 5.5, N = 27
9 - 10, N = 22
14 - 15, N = 16
19 -20, N = 7

ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

RETAINING WALL 'AA'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
1+00.00	258.01	257.51	252.21
1+25.00	258.81	255.95	252.31
1+50.00	259.70	254.39	249.76
1+75.00	260.68	254.39	252.30
2+00.00	261.76	254.48	252.48
2+25.00	262.93	254.62	252.62
2+50.00	264.20	254.62	252.62
2+75.00	265.56	254.56	249.31
3+00.00	267.02	254.36	252.36
3+25.00	268.56	254.15	252.15
3+50.00	270.21	253.91	251.91
3+75.00	271.94	253.61	251.61
4+00.00	273.69	253.66	251.66
4+25.00	275.44	253.79	251.79
4+50.00	277.17	253.81	251.81
4+75.00	278.79	253.82	251.82
5+00.00	280.26	253.83	251.83
5+25.00	281.60	253.77	251.77
5+50.00	282.79	253.41	251.41
5+75.00	273.94	254.06	251.24
6+00.00	275.19	254.49	251.35
6+25.00	275.75	254.54	251.27
6+50.00	275.93	254.66	251.37
6+75.00	277.19	254.25	251.43
7+00.00	284.66	253.97	251.34
7+25.00	283.73	253.96	251.32
7+50.00	282.66	253.94	251.40
7+75.00	281.45	254.06	251.49
8+00.00	280.10	254.18	251.59
8+25.00	278.61	254.28	251.74
8+50.00	276.98	254.39	251.87
8+75.00	275.24	254.41	251.89
9+00.00	273.49	254.43	251.91
9+25.00	271.74	254.54	251.93
9+50.00	270.01	254.64	251.94
9+75.00	268.38	254.88	251.95
10+00.00	266.84	255.12	251.92
10+25.00	265.40	255.39	249.38
10+50.00	264.05	255.66	251.93
10+75.00	262.79	255.90	251.90
11+00.00	261.63	256.14	251.82
11+25.00	260.56	256.35	251.75
11+50.00	259.59	256.56	251.81
11+75.00	258.71	256.68	251.79
11+96.11	258.04	256.78	251.84

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

(1) FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR SHAHRAM
2018-05-29

SHEET 1 OF 4
LAYOUT OF RETAINING WALL 'AA'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_aa_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59572

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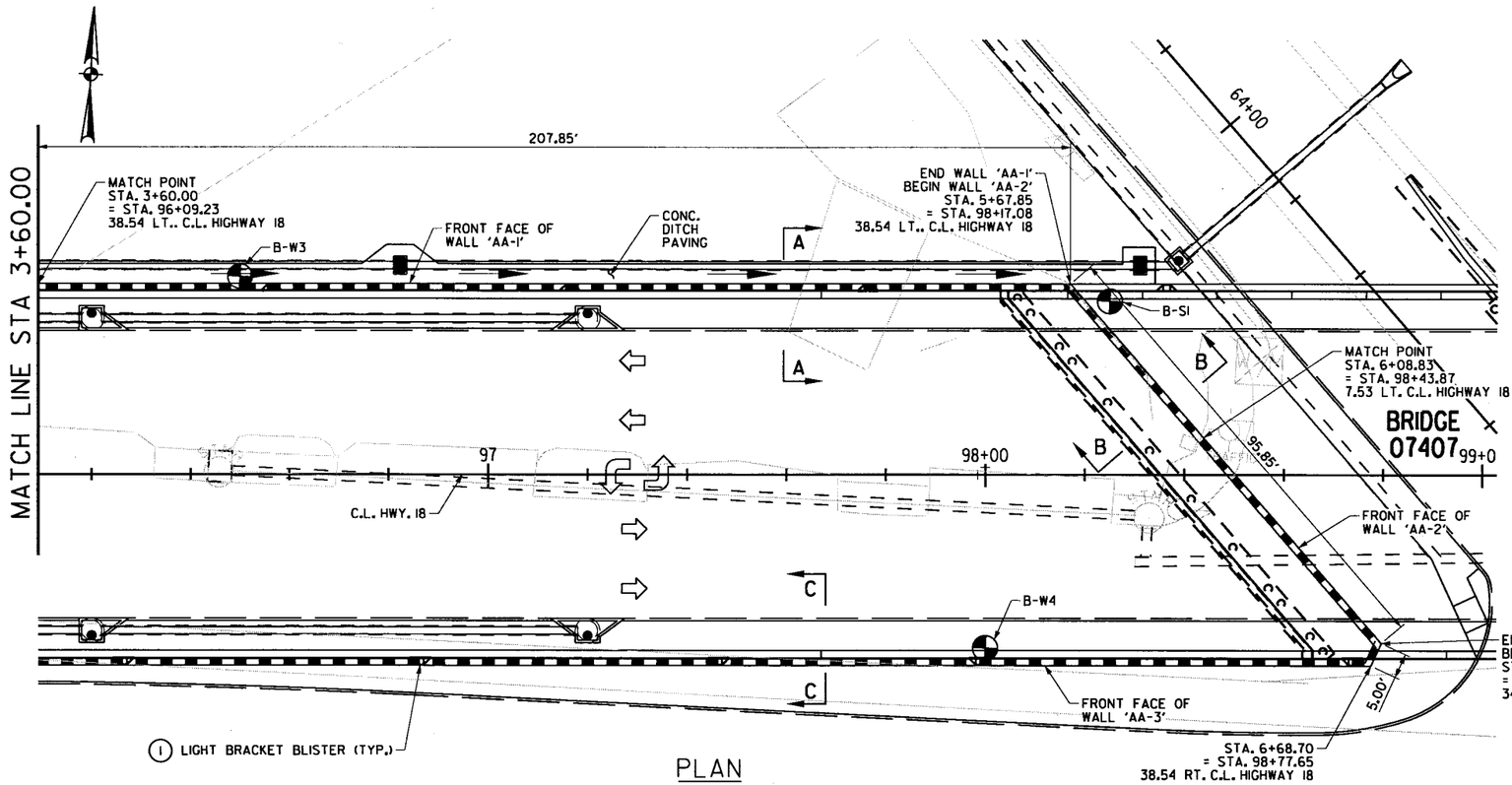
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	229	346
						P&P RET. WALL 'AA'		59573



PLAN
SCALE 1"=15'

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
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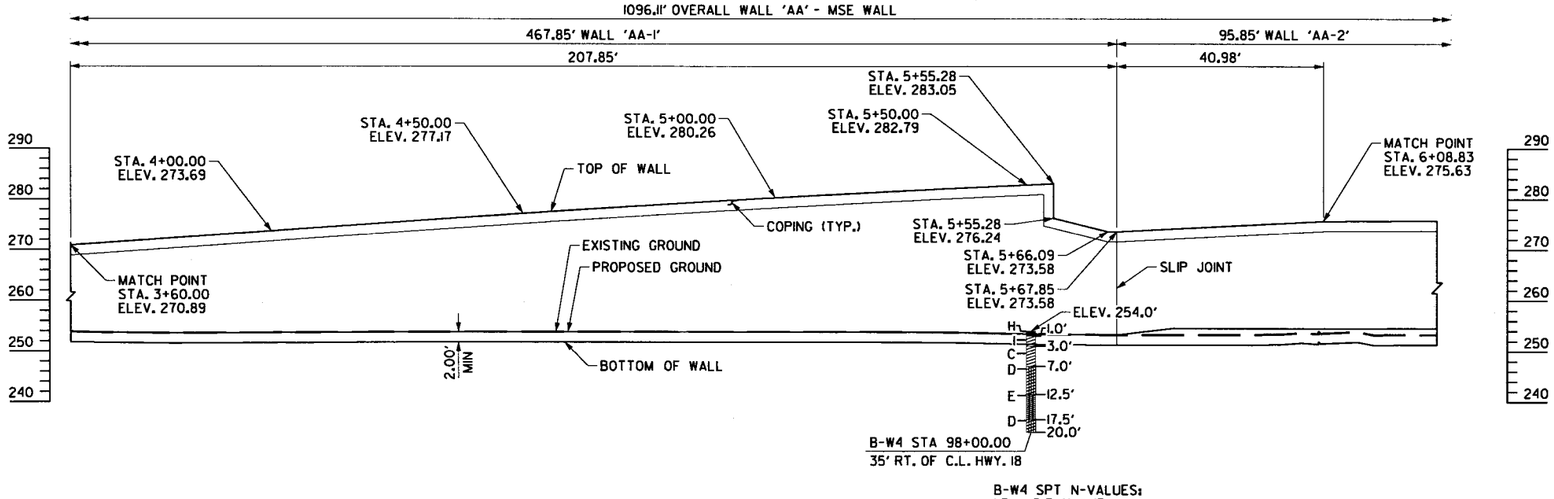
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

(1) FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534



B-W4 SPT N-VALUES:
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3.5 - 4.5, N = 18
5.5 - 6.5, N = 15
7.5 - 8.5, N = 16
9.5 - 10.5, N = 14
14 - 15, N = 22
19 - 20, N = 13

ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*AA
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
```

	STATION	NORTHING	EASTING
Element: Linear			
P.O.B. (8009)	1+00.00	544308.8600	1711356.8160
P.I. (8010)	5+67.85	544332.4458	1711824.0733
Tangential Direction:	N 87°06'37.2" E		
Tangential Length:	467.85		
Element: Linear			
P.I. (8010)	5+67.85	544332.4458	1711824.0733
P.I. (8011)	6+63.70	544263.1596	1711890.3016
Tangential Direction:	S 43°42'26.6" E		
Tangential Length:	95.85		
Element: Linear			
P.I. (8011)	6+63.70	544263.1596	1711890.3016
P.I. (8012)	6+68.70	544258.5140	1711888.4528
Tangential Direction:	S 21°42'05.3" W		
Tangential Length:	5.00		
Element: Linear			
P.I. (8012)	6+68.70	544258.5140	1711888.4528
P.O.E. (8013)	11+96.11	544231.9257	1711361.7125
Tangential Direction:	S 87°06'37.2" W		
Tangential Length:	527.41		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17694
SHAHRIAR ILAMI
2018-05-29

SHEET 2 OF 4
LAYOUT OF RETAINING WALL 'AA'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_aa_02
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59573

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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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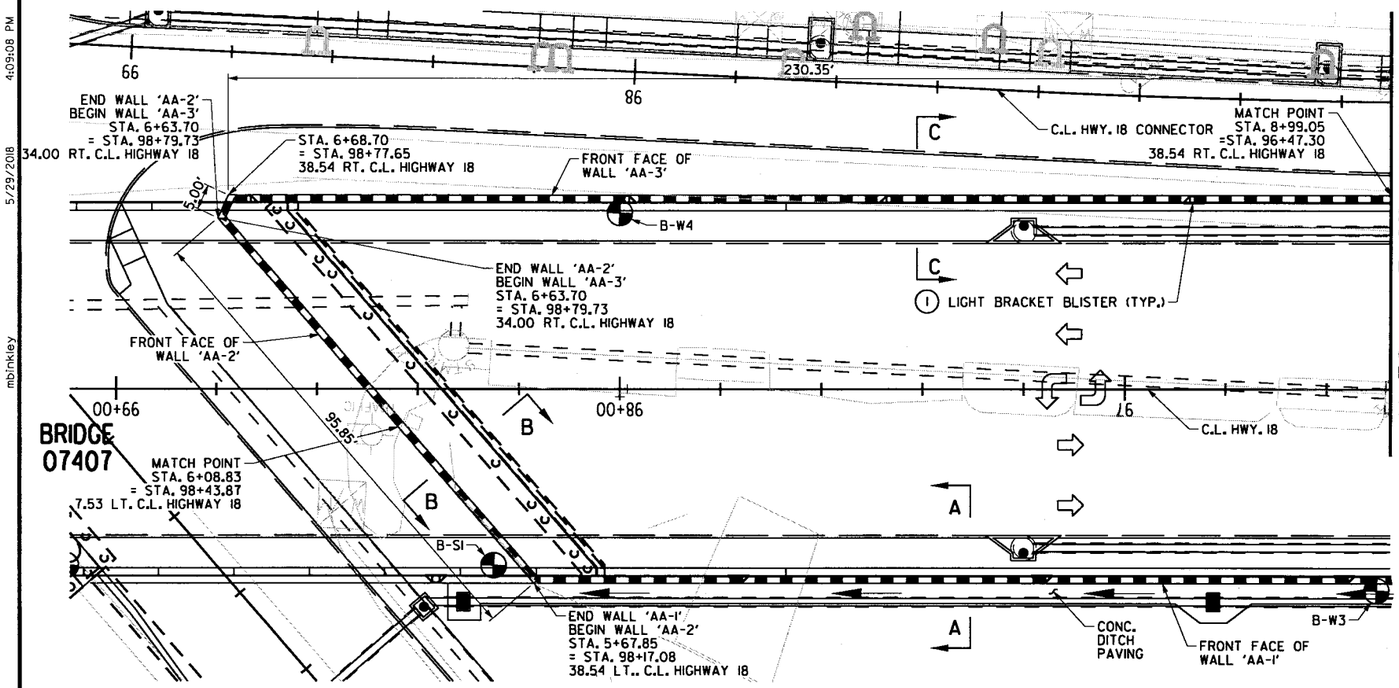
				JOB NO.		100824	230	346
				①		P&P RET. WALL 'AA'		59574



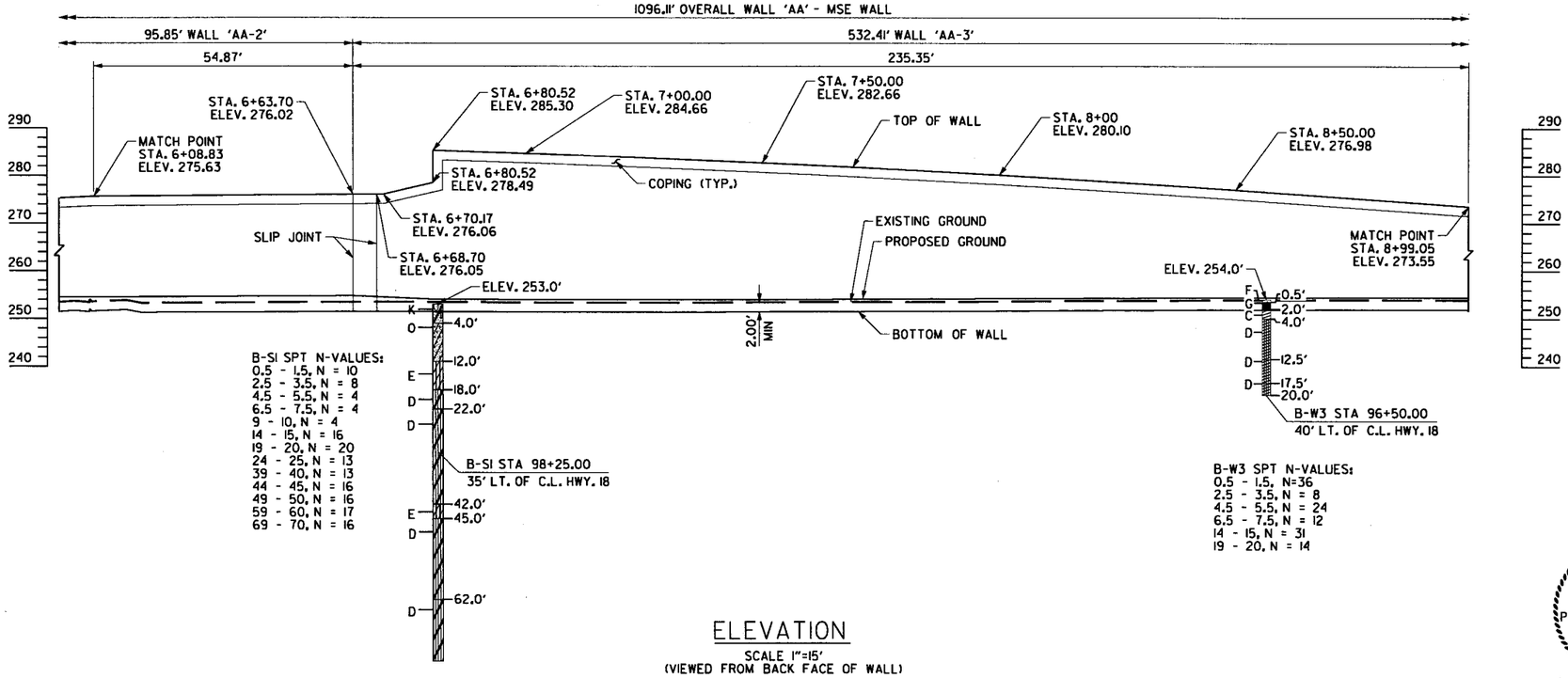
PLAN

SCALE 1"=15'

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534



B-SI SPT N-VALUES:
0.5 - 1.5, N = 10
2.5 - 3.5, N = 8
4.5 - 5.5, N = 4
6.5 - 7.5, N = 4
9 - 10, N = 4
14 - 15, N = 16
19 - 20, N = 20
24 - 25, N = 13
39 - 40, N = 13
44 - 45, N = 16
49 - 50, N = 16
59 - 60, N = 17
69 - 70, N = 16

B-W3 SPT N-VALUES:
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2.5 - 3.5, N = 8
4.5 - 5.5, N = 24
6.5 - 7.5, N = 12
14 - 15, N = 31
19 - 20, N = 14

ELEVATION

SCALE 1"=15'

(VIEWED FROM BACK FACE OF WALL)

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
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O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
S. M. SHAHRIAR
2018-05-29

SHEET 3 OF 4
LAYOUT OF RETAINING WALL 'AA'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_aa_03
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59574

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mbinkley

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.		100824	231	346
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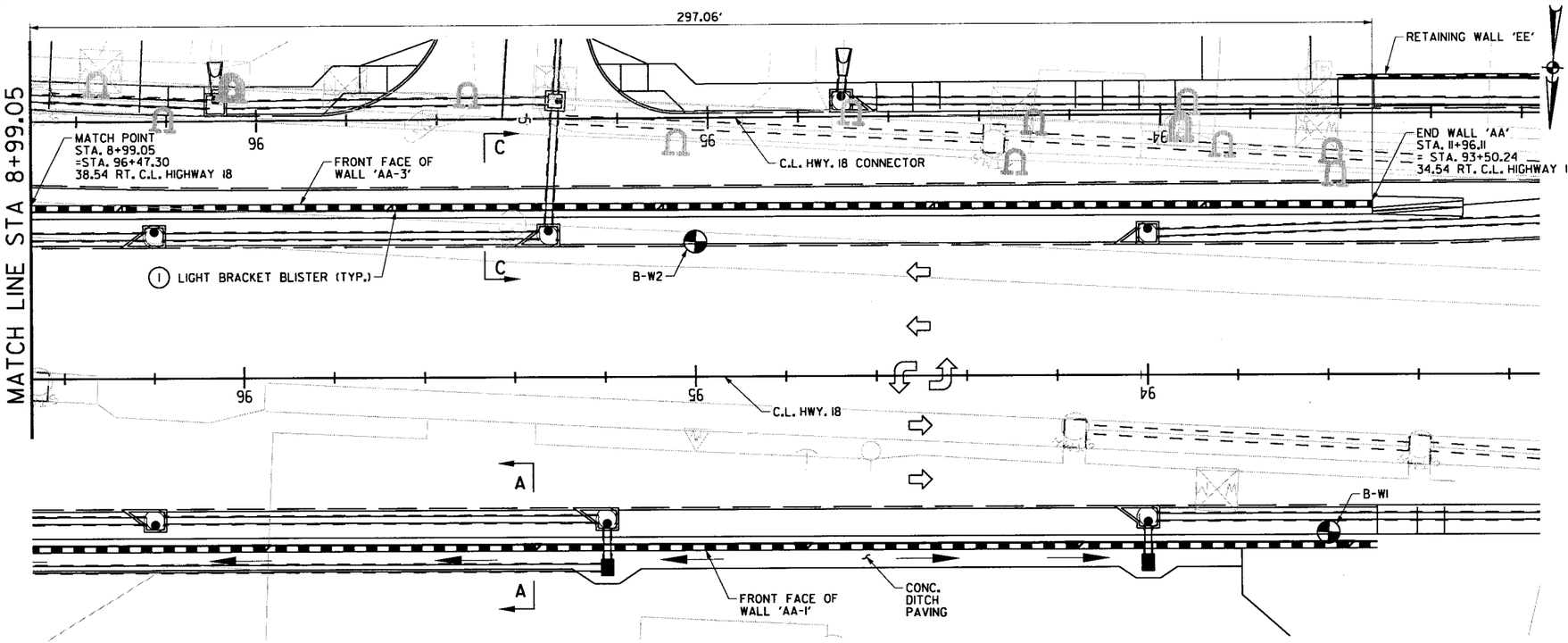
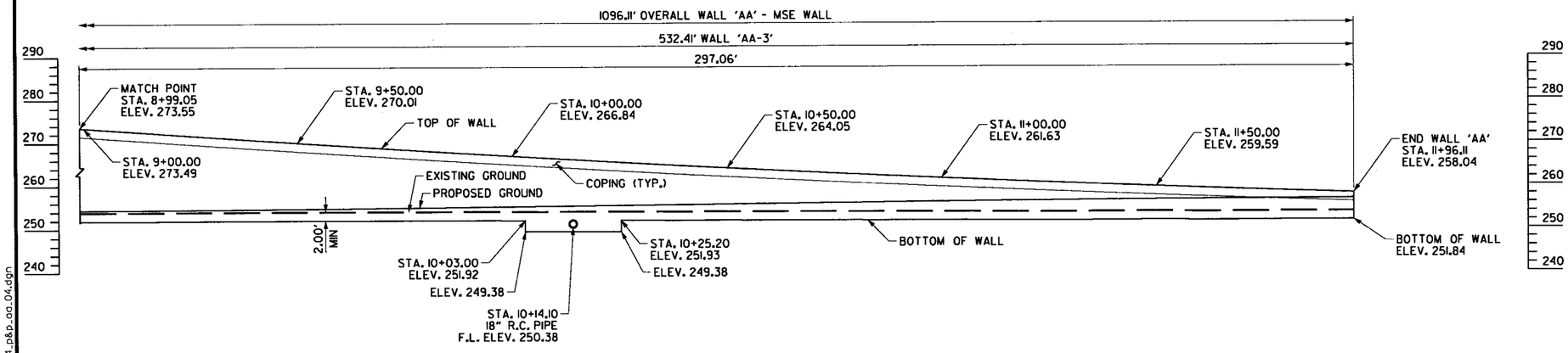


PLAN
SCALE 1"=15'



ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-29

SHEET 4 OF 4
LAYOUT OF RETAINING WALL 'AA'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_aa_04
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/31/2016		

DRAWING NO. 59575

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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.		100824	232	346
				①		SECTIONS WALL 'AA'		59576

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

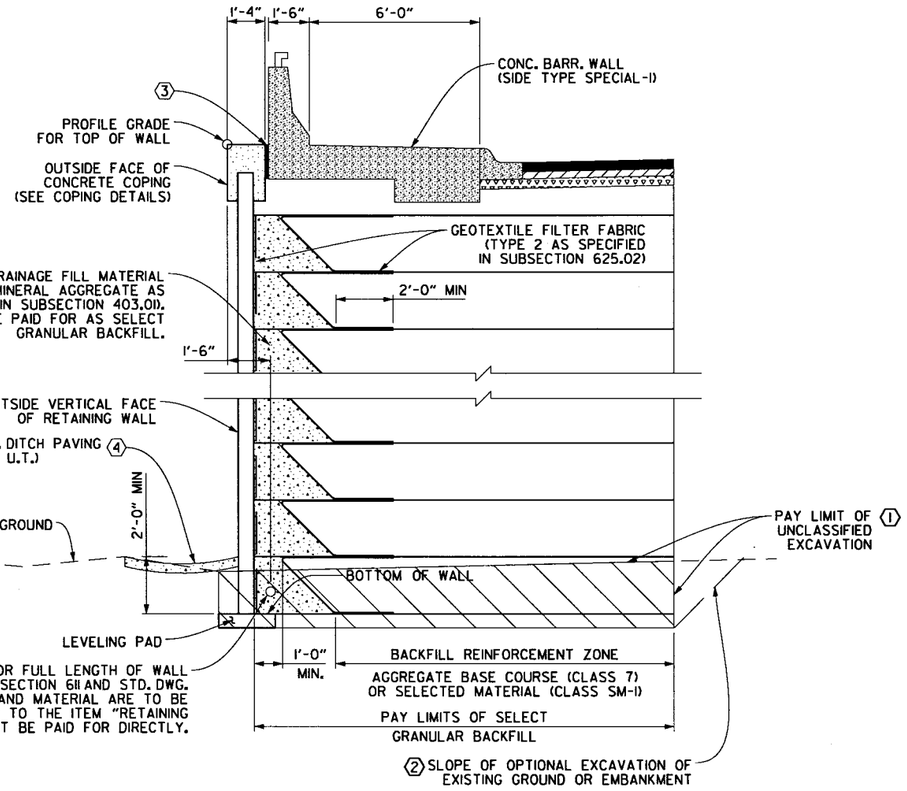
③ 1/2" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1/2" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

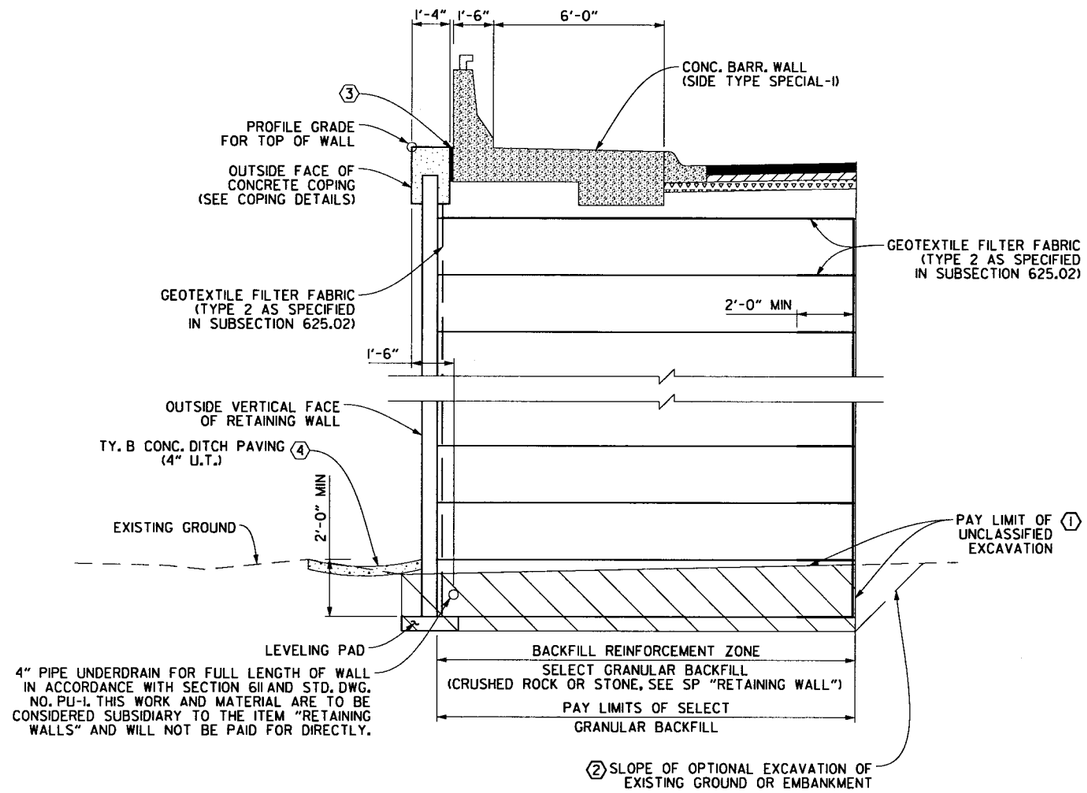
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
1+00.00 TO 2+50.00	3,835	MINIMAL	
2+50.00 TO 4+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
4+75.00 TO 7+50.00	7,800	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 10 FT
7+50.00 TO 11+96.00	6,500	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION A-A

(BACKFILL METHOD A)
N.T.S.



SECTION A-A

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZIZ
2018-05-29

SHEET 1 OF 3
SECTIONS OF RETAINING WALL 'AA'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY:	MJB	DATE:	5/3/2016		

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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.		100824	233	346
				①	SECTIONS WALL 'AA'			59577

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

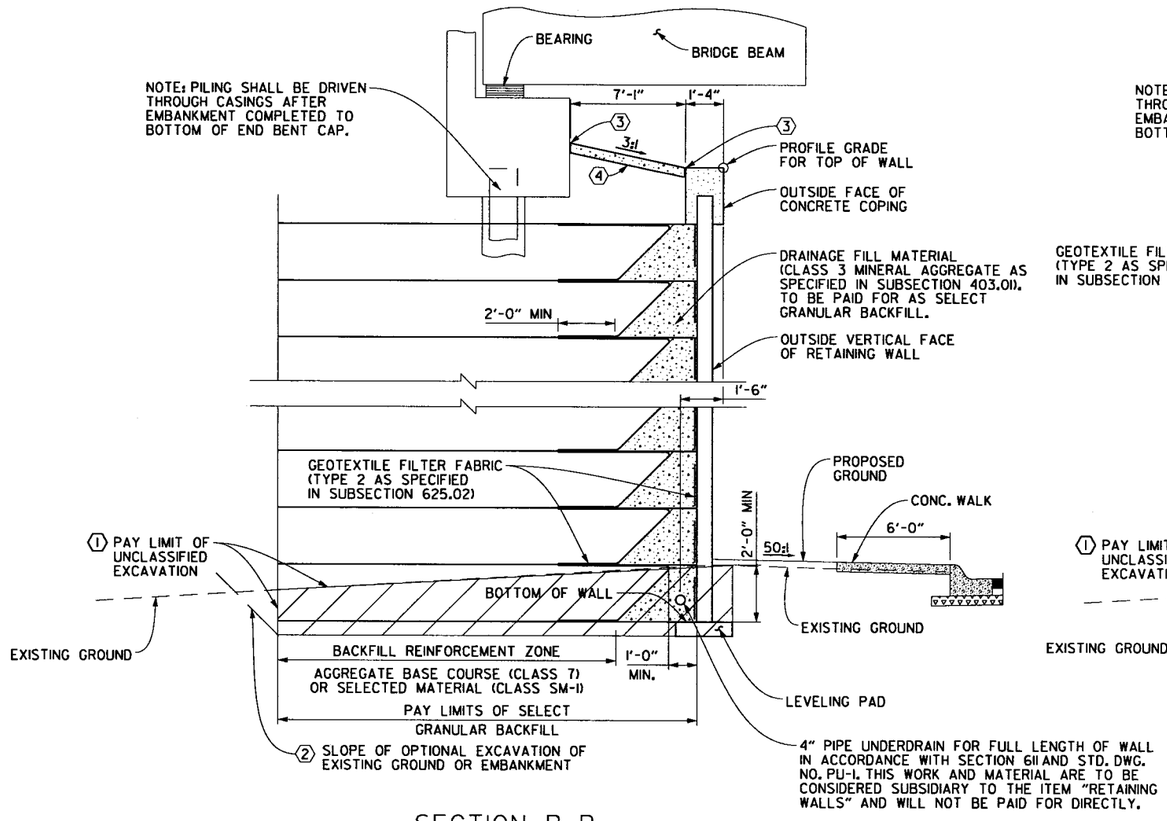
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

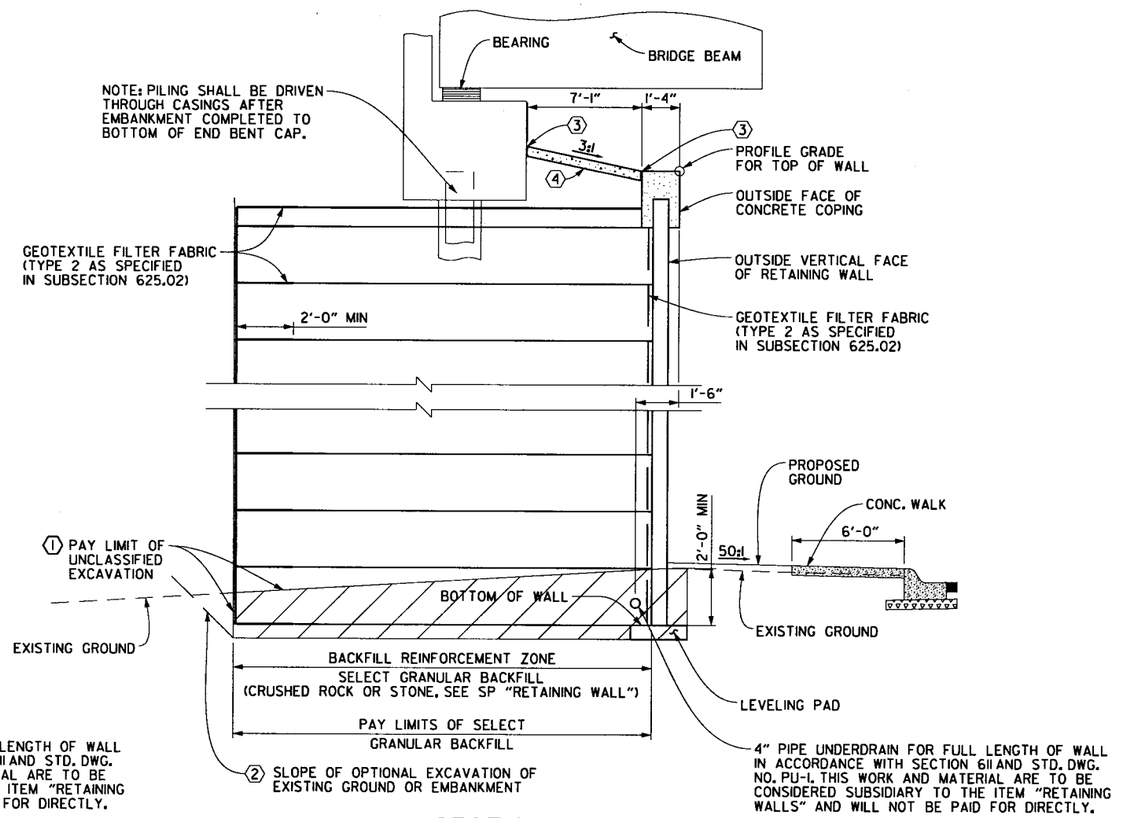
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
1+00.00 TO 2+50.00	3,835	MINIMAL	
2+50.00 TO 4+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
4+75.00 TO 7+50.00	7,800	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 10 FT
7+50.00 TO 11+96.00	6,500	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION B-B

(BACKFILL METHOD A)
N.T.S.



SECTION B-B

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 17404
SHAHRIAR AZIZ
2018-05-29

SHEET 2 OF 3
SECTIONS OF RETAINING WALL 'AA'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016
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DESIGNED BY:	MJB	DATE:	5/3/2016

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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.		100824	234	346
				①		SECTIONS WALL 'AA'		59578

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

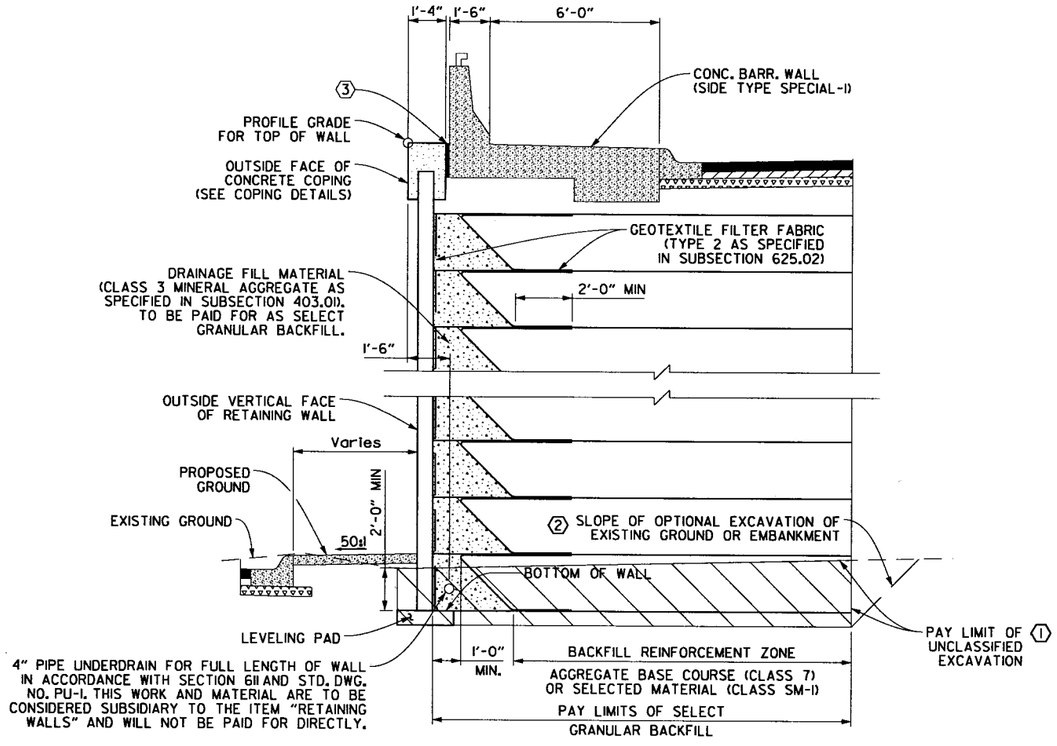
② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

TABLE I

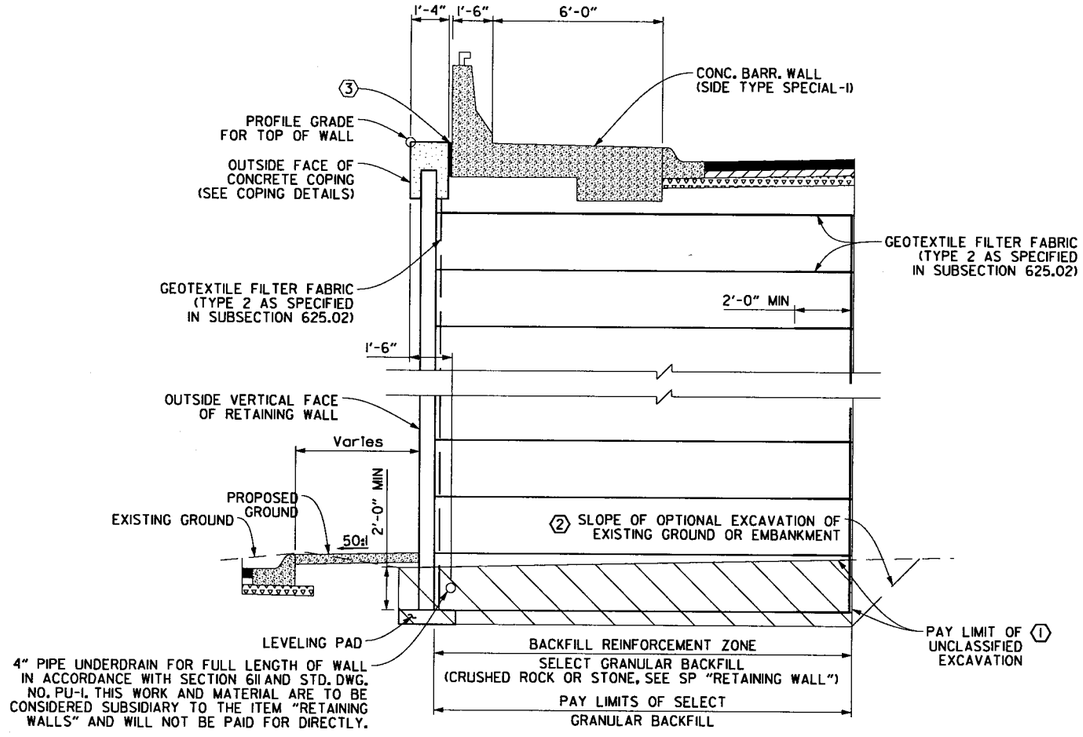
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
1+00.00 TO 2+50.00	3,835	MINIMAL	
2+50.00 TO 4+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
4+75.00 TO 7+50.00	7,800	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 10 FT
7+50.00 TO 11+96.00	6,500	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION C-C

(BACKFILL METHOD A)
N.T.S.



SECTION C-C

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ADIB
2016-05-29

SHEET 3 OF 3
SECTIONS OF RETAINING WALL 'AA'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
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DESIGNED BY: MJB DATE: 5/31/2016
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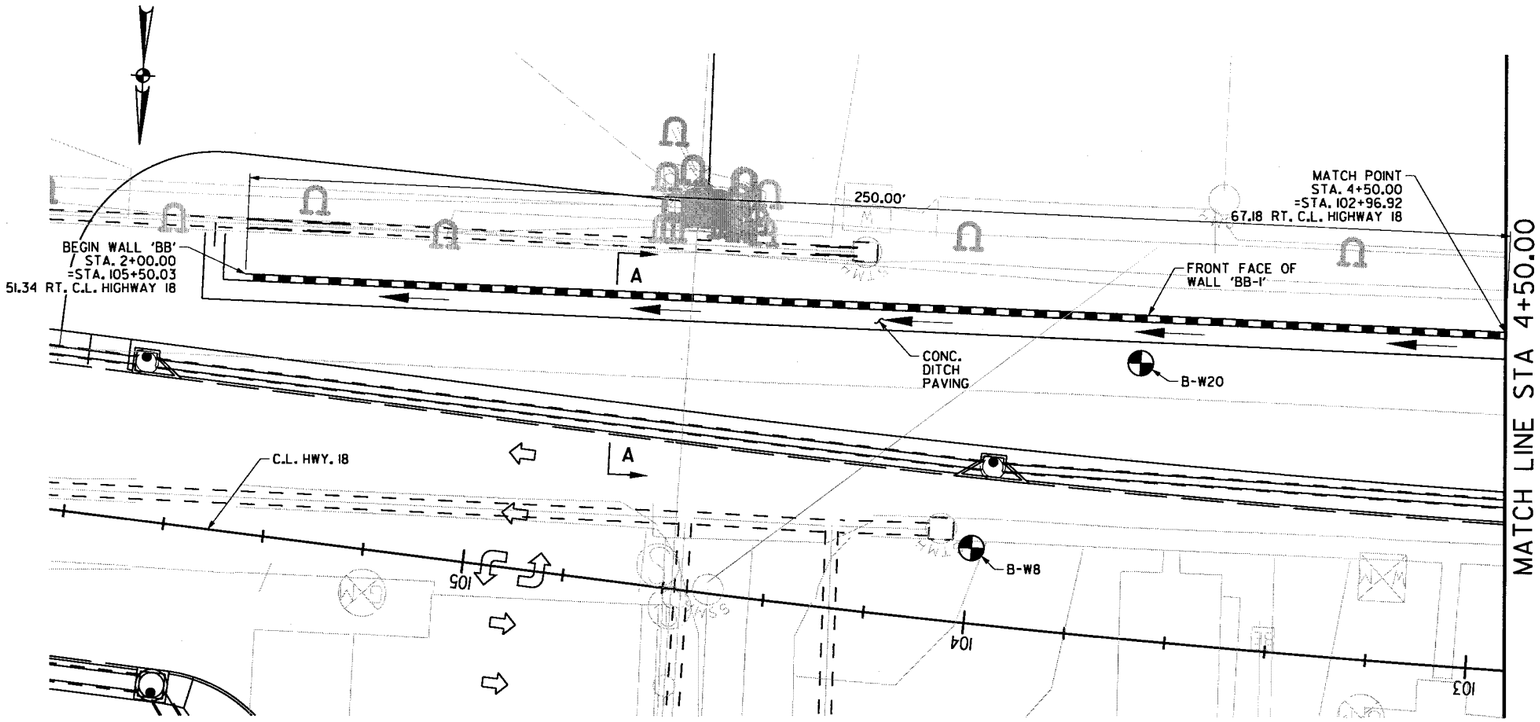
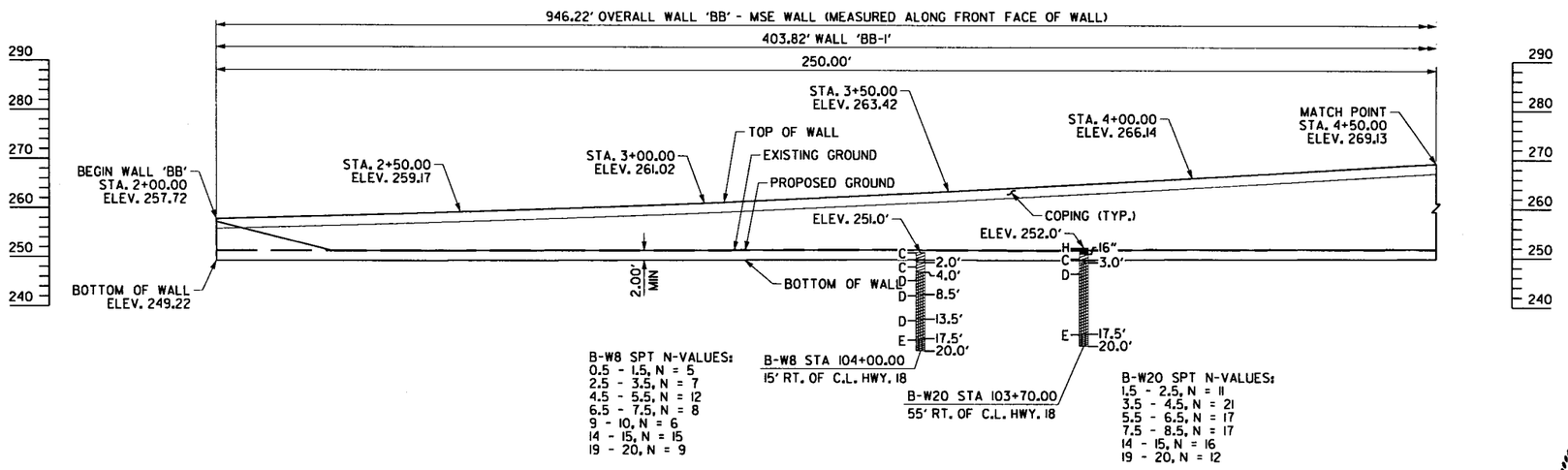
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	235	346
				①		P&P RET. WALL 'BB'		59579



PLAN
SCALE 1"=15'



ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

RETAINING WALL 'BB'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
2+00.00	257.72	257.14	249.22
2+25.00	258.40	251.23	249.23
2+50.00	259.17	251.26	249.26
2+75.00	260.04	251.31	249.31
3+00.00	261.02	251.41	249.41
3+25.00	262.17	251.49	249.49
3+50.00	263.42	251.45	249.45
3+75.00	264.74	251.44	249.44
4+00.00	266.14	251.60	249.60
4+25.00	267.61	251.64	249.64
4+50.00	269.13	251.68	249.68
4+75.00	270.59	251.65	249.65
5+00.00	271.98	251.75	249.75
5+25.00	273.30	251.89	249.89
5+50.00	275.79	252.14	250.14
5+75.00	276.64	252.55	250.55
6+00.00	277.48	253.09	251.09
6+25.00	278.04	254.27	252.27
6+50.00	278.58	254.04	252.04
6+75.00	279.21	253.42	251.42
7+00.00	279.84	252.01	250.01
7+25.00	280.47	251.11	249.11
7+50.00	287.91	250.98	248.98
7+75.00	287.60	251.36	249.36
8+00.00	287.15	253.47	249.95
8+25.00	286.56	253.88	249.75
8+50.00	285.84	254.29	249.91
8+75.00	284.99	254.42	250.13
9+00.00	283.95	254.56	250.16
9+25.00	282.73	254.01	250.25
9+50.00	281.36	253.79	249.74
9+75.00	279.86	254.90	249.39
10+00.00	278.23	256.00	249.70
10+25.00	276.50	257.57	249.74
10+50.00	274.78	259.14	249.50
10+75.00	272.97	260.81	249.23
11+00.00	269.11	260.97	249.10
11+25.00	265.43	261.44	249.09
11+46.20	262.31	261.83	249.01

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12405
SHAHRIAR AHAD
2018-05-29

SHEET 1 OF 4
LAYOUT OF RETAINING WALL 'BB'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_bb_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

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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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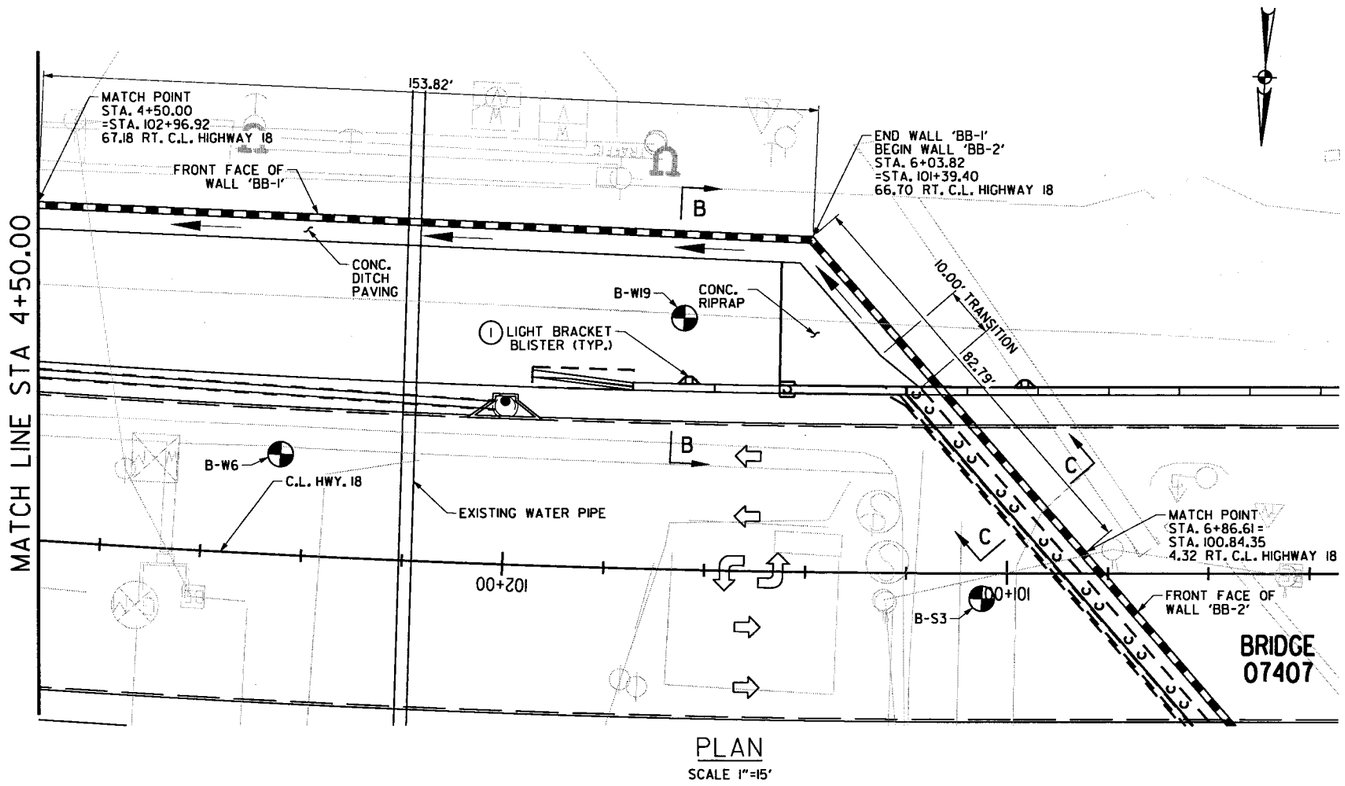
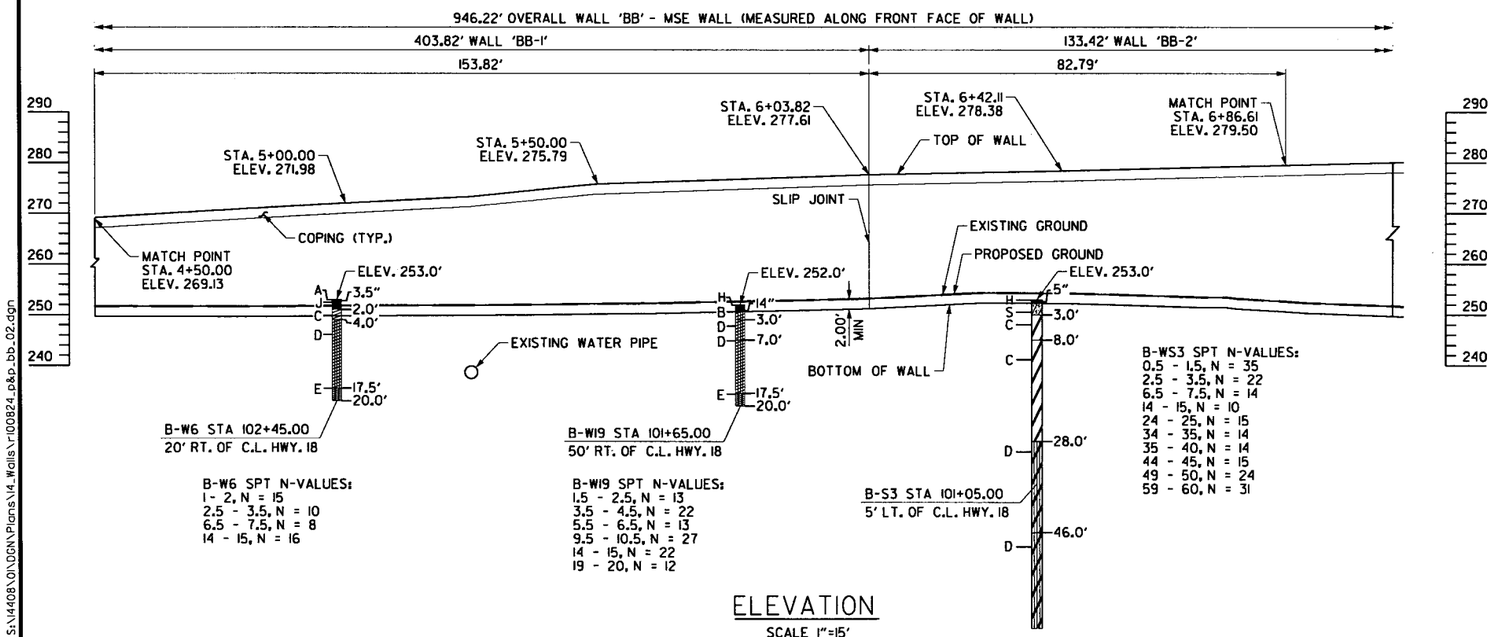
				JOB NO.		100824	236	346
				①		P&P RET. WALL 'BB'		59580



PLAN

SCALE 1"=15'



B-W6 SPT N-VALUES:
1 - 2, N = 15
2.5 - 3.5, N = 10
6.5 - 7.5, N = 8
14 - 15, N = 16

B-W19 SPT N-VALUES:
1.5 - 2.5, N = 13
3.5 - 4.5, N = 22
5.5 - 6.5, N = 13
9.5 - 10.5, N = 27
14 - 15, N = 22
19 - 20, N = 12

B-WS3 SPT N-VALUES:
0.5 - 1.5, N = 35
2.5 - 3.5, N = 22
6.5 - 7.5, N = 14
14 - 15, N = 10
24 - 25, N = 15
34 - 35, N = 14
35 - 40, N = 14
44 - 45, N = 15
49 - 50, N = 24
59 - 60, N = 31

ELEVATION

SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*BB
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
                                  STATION          NORTHING          EASTING
Element: Linear
        P.O.B. (      8006)       2+00.00       544245.6273      1712554.1795
        P.I. (        8014)       6+03.82       544243.2656      1712150.3654
  Tangential Direction:       S 89°39'53.7" W
    Tangential Length:             403.82

Element: Linear
        P.I. (        8014)       6+03.82       544243.2656      1712150.3654
        P.I. (        8015)       7+37.24       544339.7103      1712058.1761
  Tangential Direction:       N 43°42'27.6" W
    Tangential Length:             133.42

Element: Linear
        P.I. (        8015)       7+37.24       544339.7103      1712058.1761
        P.I. (        8016)       7+42.24       544344.3559      1712060.0250
  Tangential Direction:       N 21°42'04.8" E
    Tangential Length:               5.00

Element: Linear
        P.I. (        8016)       7+42.24       544344.3559      1712060.0250
        P.C. (        8017)       7+88.23       544346.6743      1712105.9536
  Tangential Direction:       N 87°06'37.2" E
    Tangential Length:              45.99

Element: Circular
        P.C. (        8017)       7+88.23       544346.6743      1712105.9536
        P.I. (              )     9+37.34       544354.1917      1712254.8826
        C.C. (        8018)                     541447.0353      1712252.3187
        P.T. (        8019)      10+86.20       544346.4116      1712403.7980
                      Radius:      2903.33
                       Delta:  5°52'49.4" Right
Degree of Curvature(Arc):      1°58'24.4"
                      Length:       297.98
                     Tangent:       149.12
                       Chord:       297.84
              Middle Ordinate:         3.82
                    External:         3.83
          Tangent Direction:   N 87°06'37.2" E
           Radial Direction:    S 2°53'22.8" E
             Chord Direction:   S 89°56'58.1" E
           Radial Direction:    S 2°59'26.6" W
          Tangent Direction:   S 87°00'33.4" E

Element: Linear
        P.T. (        8019)      10+86.20       544346.4116      1712403.7980
        P.O.E. (      8020)      11+46.20       544367.1565      1712460.0976
  Tangential Direction:       N 69°46'20.9" E
    Tangential Length:              60.00
```

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.
9. CONTRACTOR SHALL DESIGN AND CONSTRUCT RAMMED AGGREGATE PIERS TO AVOID THE EXISTING 30" ENCASEMENT PIPE CONTAINING AN 18" WATER PIPE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12405
SHAHRIAR ANSARI
2018-05-29

SHEET 2 OF 4
LAYOUT OF RETAINING WALL 'BB'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_bb_02
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59580

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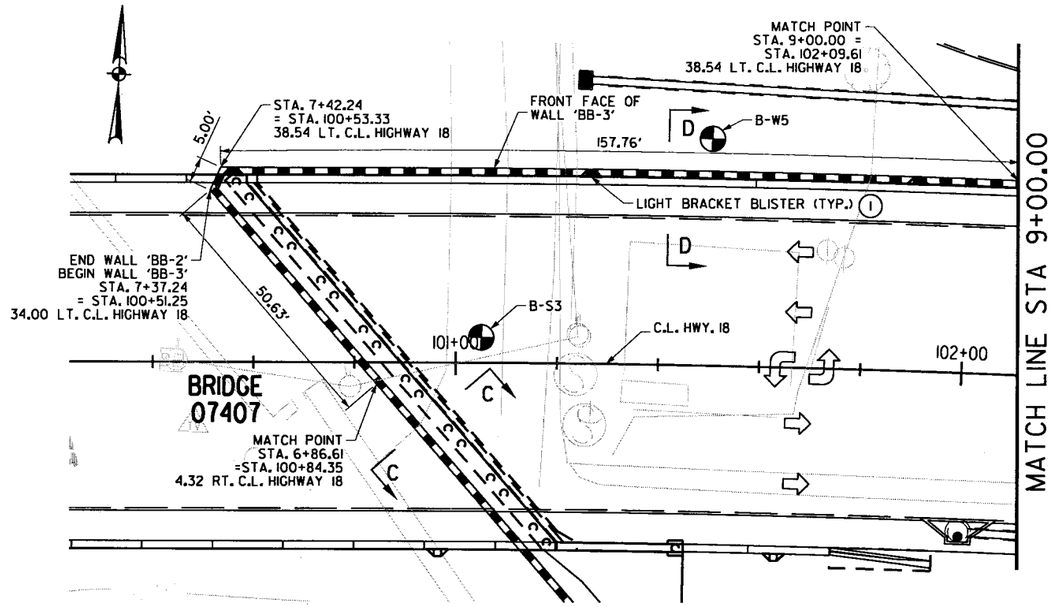
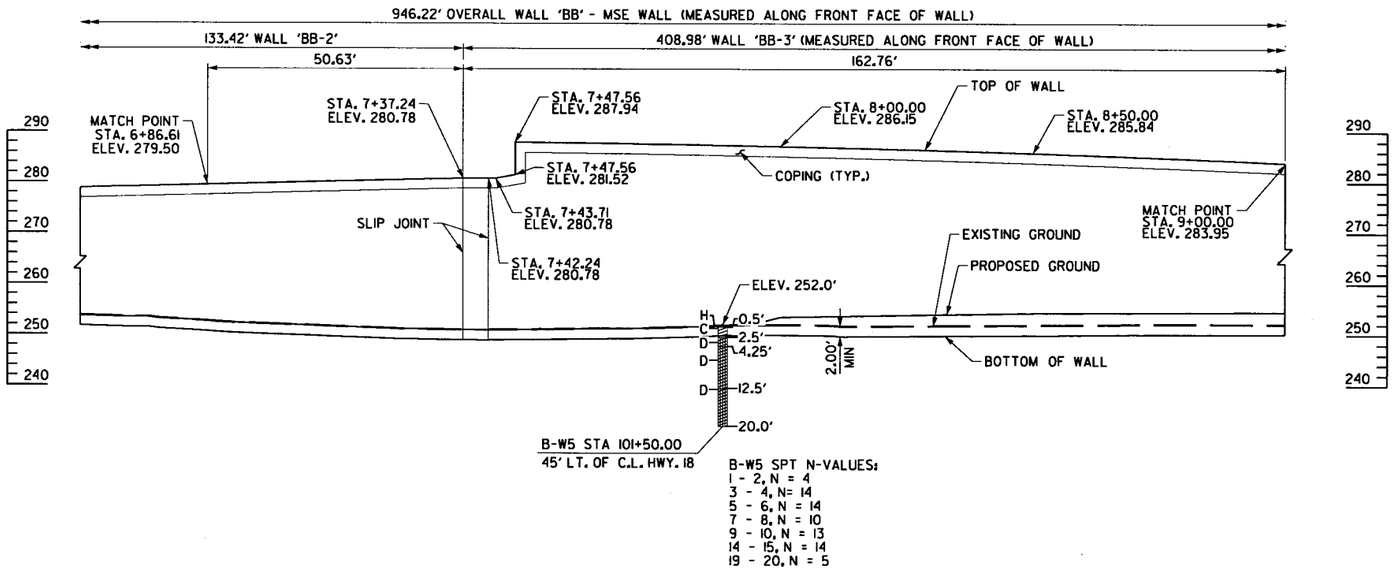
				6	ARK.			
				JOB NO.		100824	237	346
				①	P&P RET. WALL 'BB'			59581



PLAN
SCALE 1"=15'



ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel(fill)

① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12494
SHAHRIAR MOJ
2018-05-29

SHEET 3 OF 4
LAYOUT OF RETAINING WALL 'BB'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY:	MJB	DATE:	5/3/2016		

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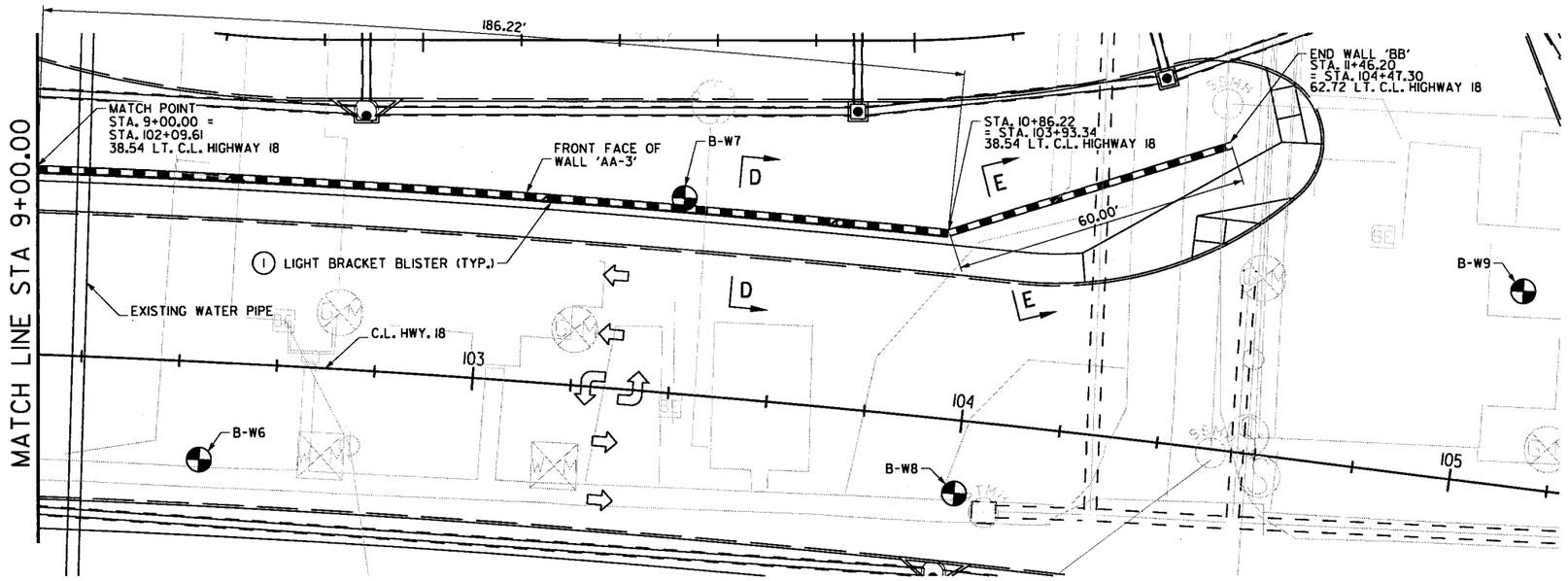
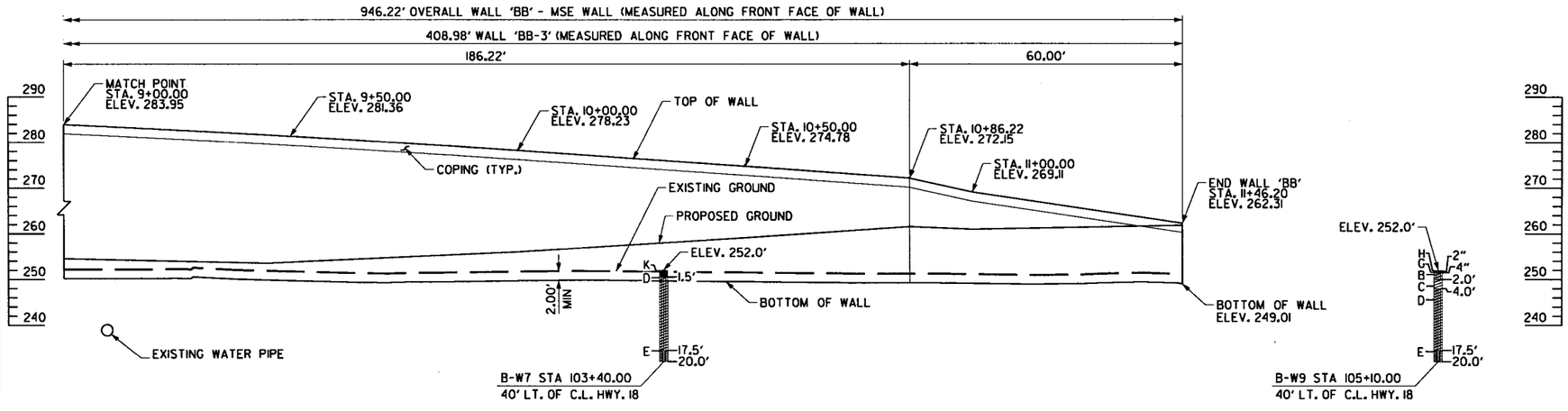
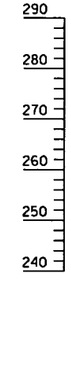
				JOB NO.		100824	238	346
				①		P&P RET. WALL 'BB'		59582



PLAN

SCALE 1"=15'





ELEVATION

SCALE 1"=15'

(VIEWED FROM BACK FACE OF WALL)

B-W7 SPT N-VALUES:
0.5 - 1.5, N = 8
2.5 - 3.5, N = 42
6.5 - 7.5, N = 14
14 - 15, N = 14
19 - 20, N = 12

B-W9 SPT N-VALUES:
0.5 - 1.5, N = 10
2.5 - 3.5, N = 10
4.5 - 5.5, N = 13
6.5 - 7.5, N = 11
9 - 10, N = 10
14 - 15, N = 11
19 - 20, N = 8

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.
9. CONTRACTOR SHALL DESIGN AND CONSTRUCT RAMMED AGGREGATE PIERS TO AVOID THE EXISTING 30" ENCASEMENT PIPE CONTAINING AN 18" WATER PIPE.

① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59534

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel(fill)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAHRIAR ALAM
2018-05-29

SHEET 4 OF 4
LAYOUT OF RETAINING WALL 'BB'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_bb_04
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

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				6	ARK.			
				JOB NO.		100824	239	346
				①		SECTIONS WALL 'BB'		59583

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

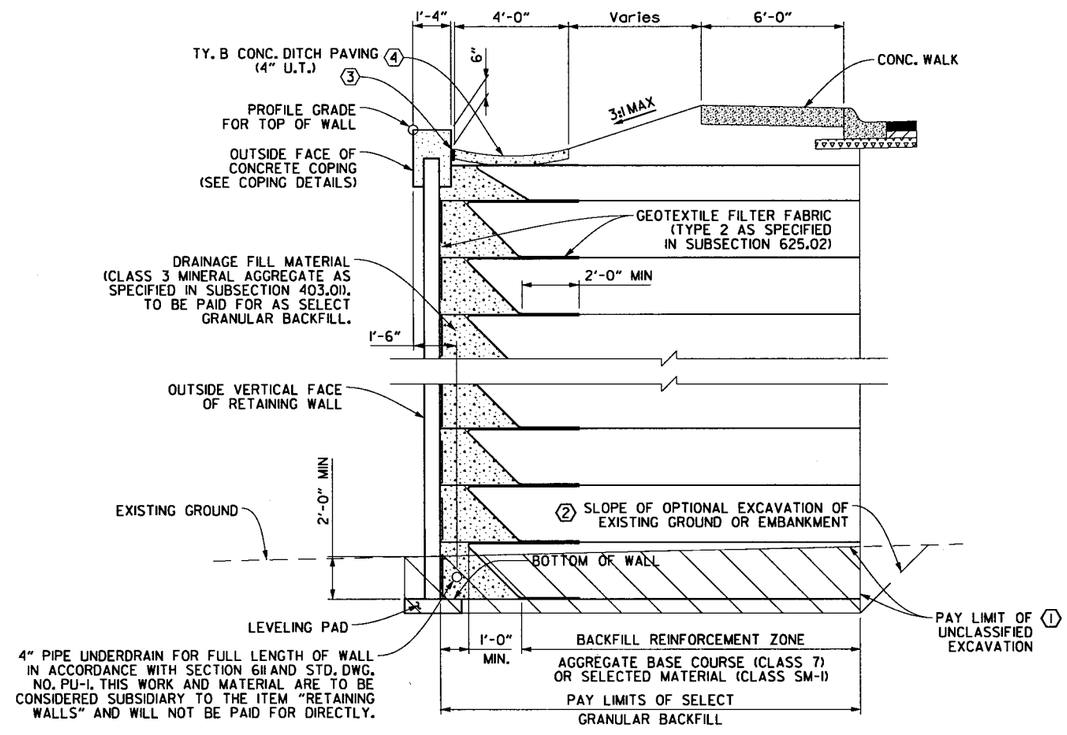
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+00.00 TO 3+00.00	3,900	MINIMAL	
3+00.00 TO 5+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
5+75.00 TO 8+25.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 22 FT
8+25.00 TO 10+00.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 15 FT
10+00.00 TO 11+46.00	5,460	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION A-A

(BACKFILL METHOD A)
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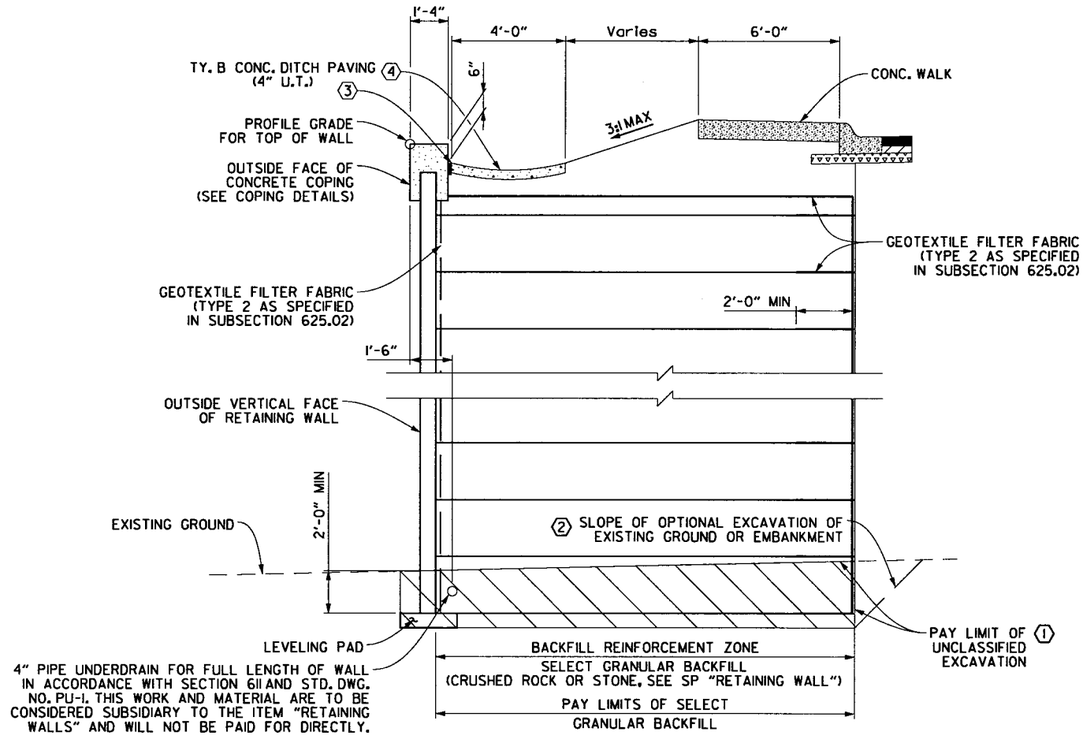

SECTION A-A

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12484
SHAHRIAR SHAD
2018-05-29

SHEET 1 OF 5
SECTIONS OF RETAINING WALL 'BB'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
CHECKED BY: SA DATE: 6/6/2016
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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.		100824	240	346
				①		SECTIONS WALL 'BB'		59584

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

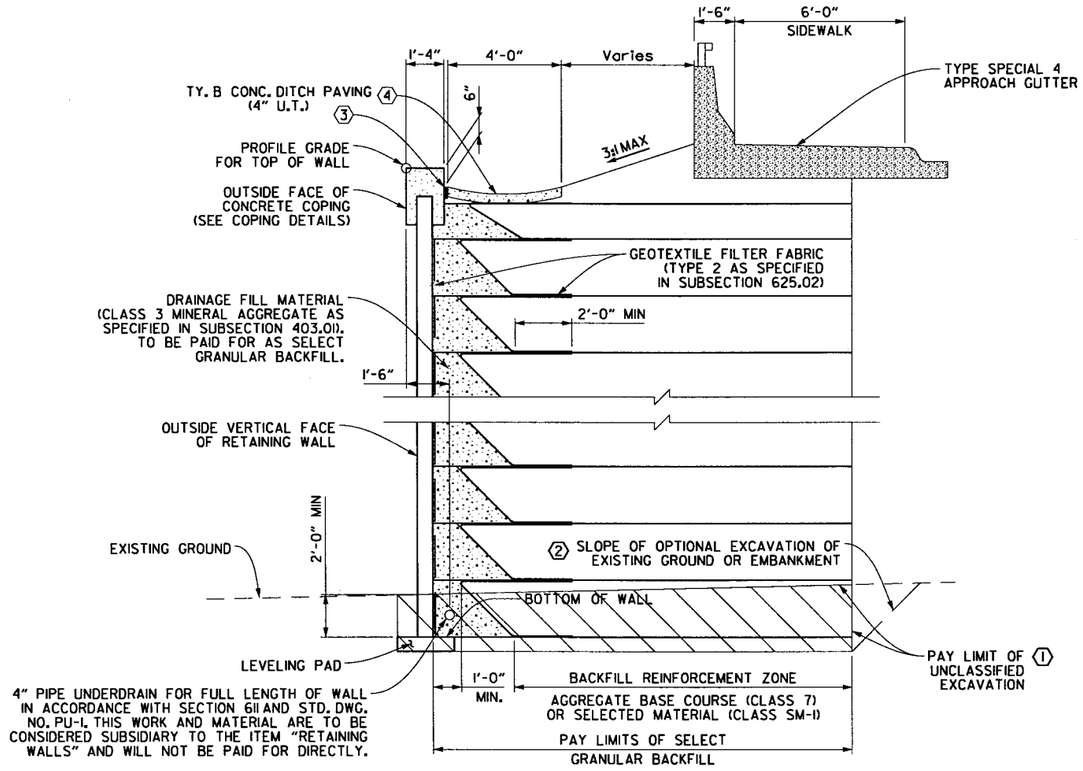
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

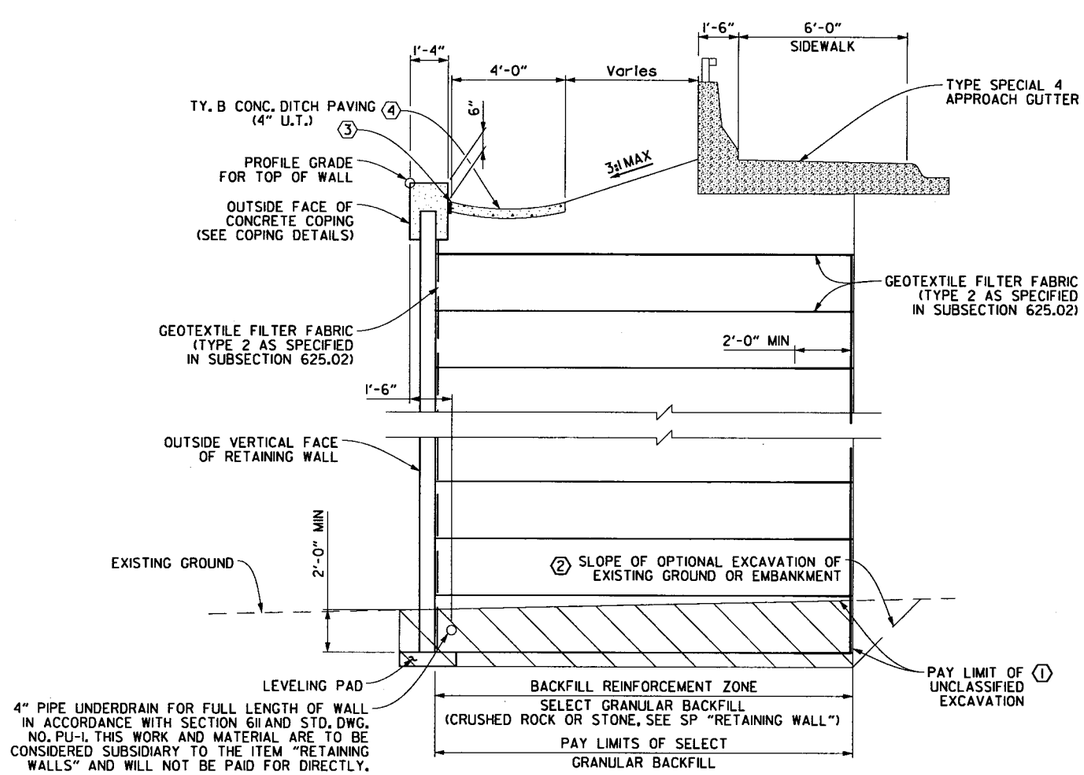
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+00.00 TO 3+00.00	3,900	MINIMAL	
3+00.00 TO 5+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL*
5+75.00 TO 8+25.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 22 FT
8+25.00 TO 10+00.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 15 FT
10+00.00 TO 11+46.00	5,460	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION B-B

(BACKFILL METHOD A)
N.T.S.



SECTION B-B

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12809
SHAHRIAR NAAD
2018-05-29

SHEET 2 OF 5
SECTIONS OF RETAINING WALL 'BB'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_bb_02
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				6	ARK.			
				JOB NO.		100824	241	346
				(1)		SECTIONS WALL 'BB'		59585

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE 1 FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: A
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

(1) EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

(2) CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

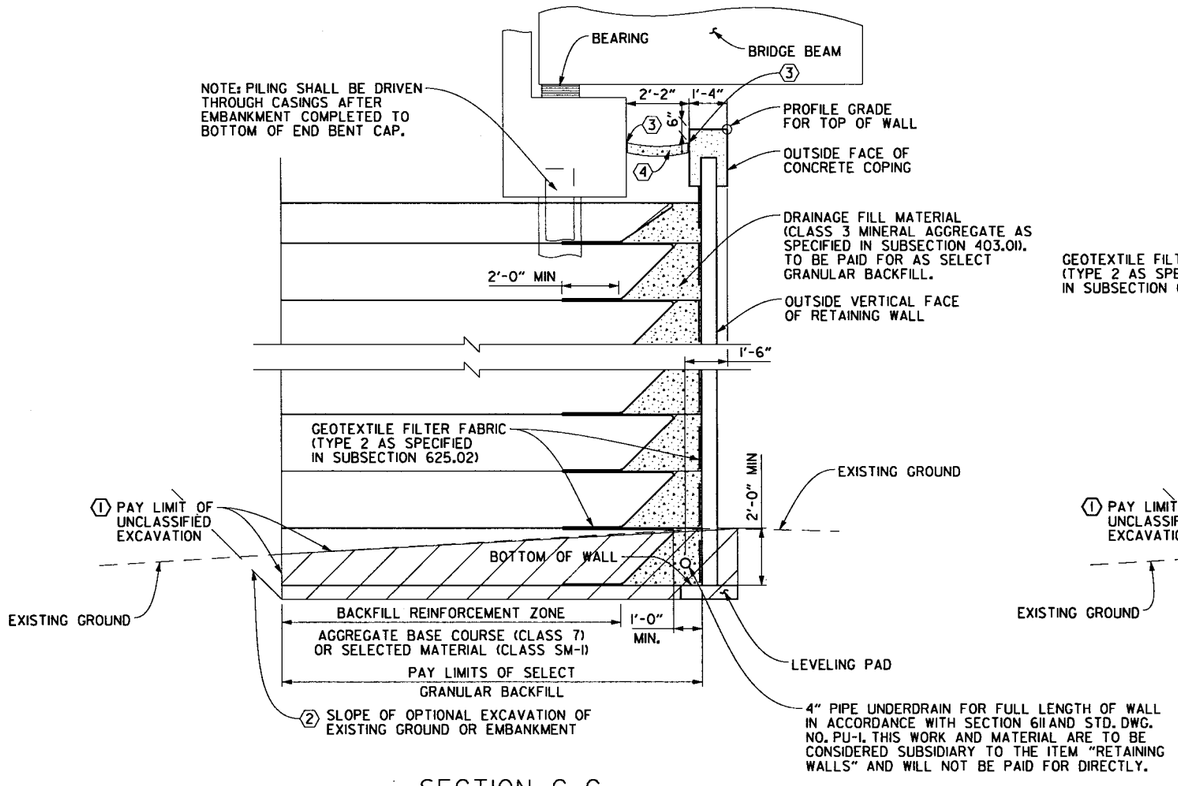
(3) 1/2" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1/2" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

(4) THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE 1

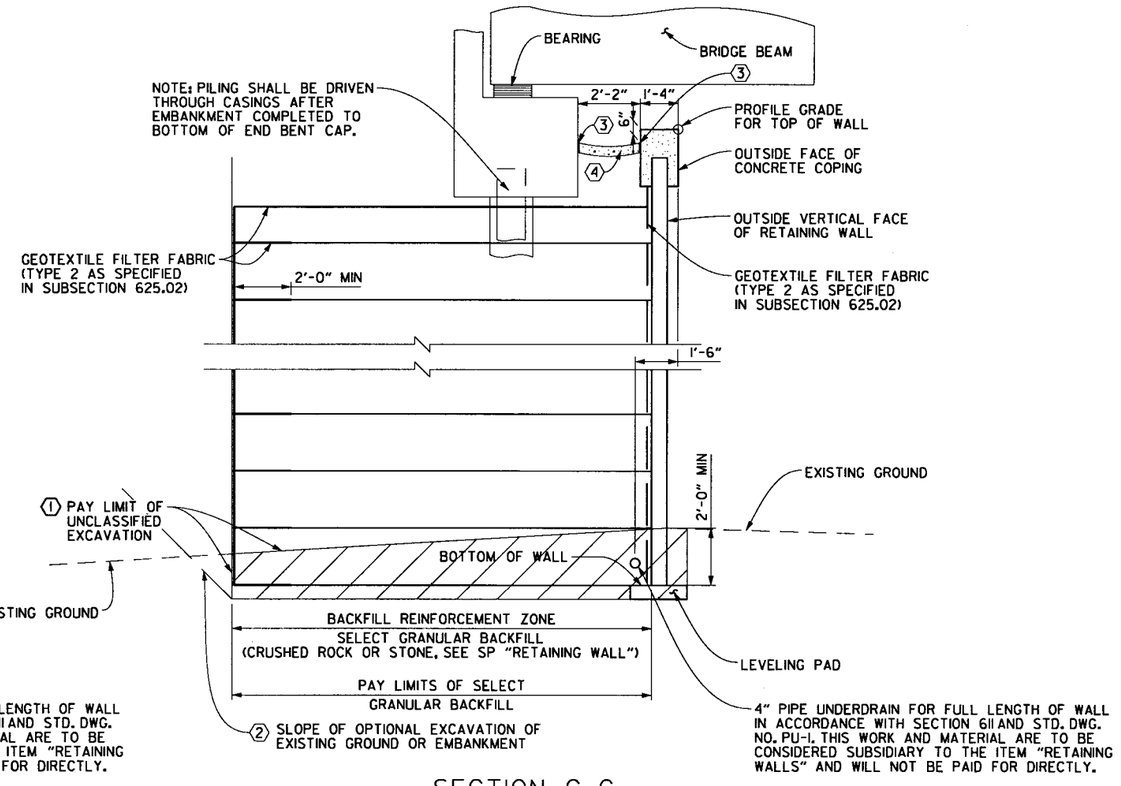
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+00.00 TO 3+00.00	3,900	MINIMAL	
3+00.00 TO 5+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
5+75.00 TO 8+25.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 22 FT
8+25.00 TO 10+00.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 15 FT
10+00.00 TO 11+46.00	5,460	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION C-C

(BACKFILL METHOD A)
N.T.S.



SECTION C-C

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12608
SHAHRAM ZAD
2018-05-24

SHEET 3 OF 5
SECTIONS OF RETAINING WALL 'BB'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_bb_03
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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.		100824	242	346
				①		SECTIONS WALL 'BB'		59586

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

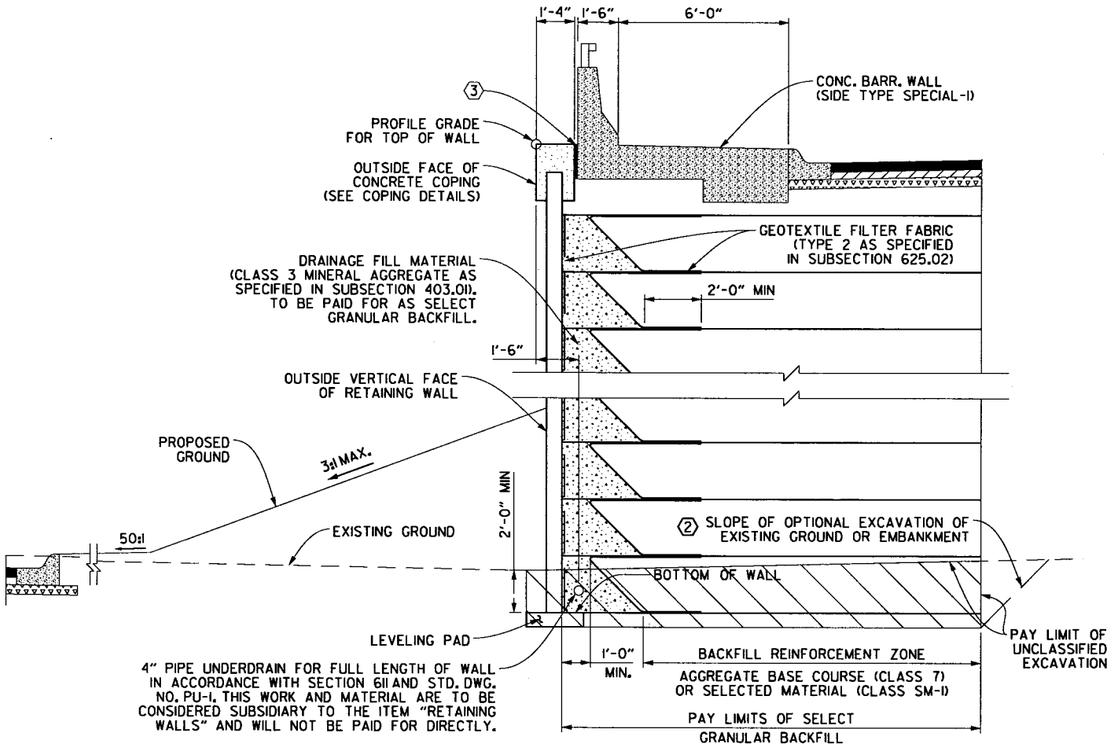
② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

③ 1/2" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1/2" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

TABLE I

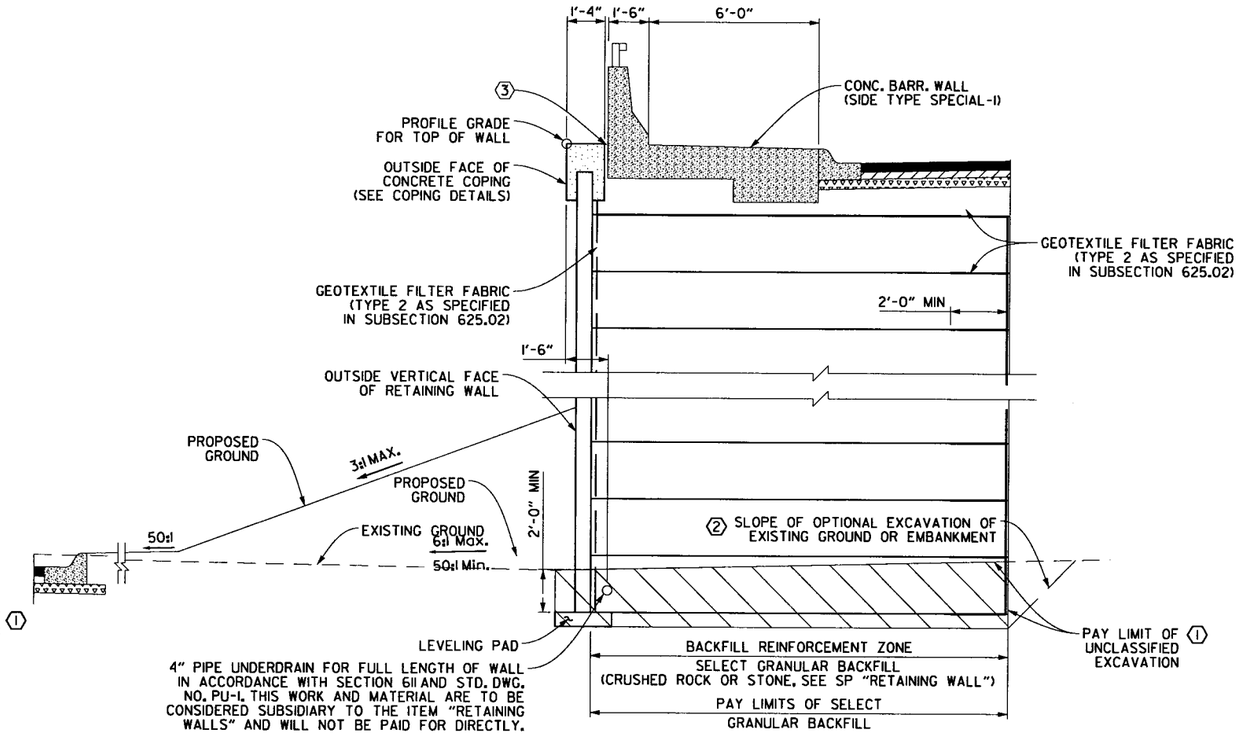
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+00.00 TO 3+00.00	3,900	MINIMAL	
3+00.00 TO 5+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL*
5+75.00 TO 8+25.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 22 FT
8+25.00 TO 10+00.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 15 FT
10+00.00 TO 11+46.00	5,460	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION D-D

(BACKFILL METHOD A)
N.T.S.



SECTION D-D

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR SHAD
No. 20474
2018-05-29

SHEET 4 OF 5
SECTIONS OF RETAINING WALL 'BB'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_bb_04
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

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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.		100824	243	346
				①	SECTIONS WALL 'BB'			59587

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

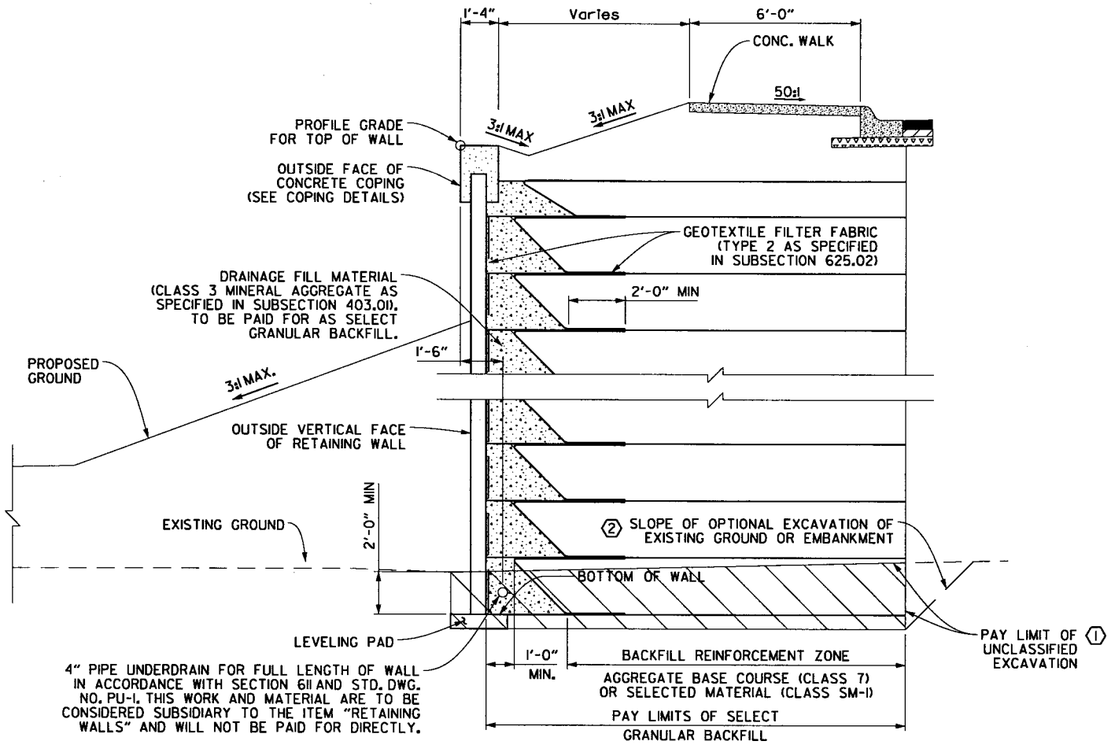
① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

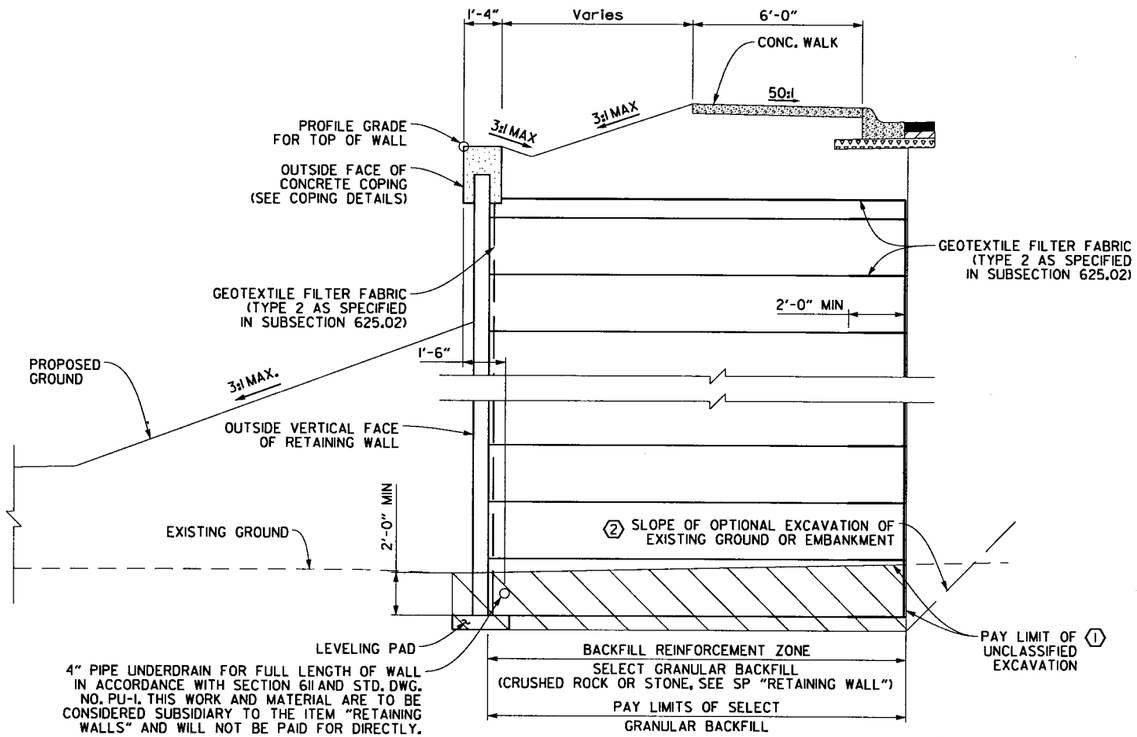
TABLE I

STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+00.00 TO 3+00.00	3,900	MINIMAL	
3+00.00 TO 5+75.00	6,045	2	BACKFILL UNDERCUT WITH STONE BACKFILL*
5+75.00 TO 8+25.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 22 FT
8+25.00 TO 10+00.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 15 FT
10+00.00 TO 11+46.00	5,460	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION E-E
(BACKFILL METHOD A)
N.T.S.



SECTION E-E
(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAHRIAR SHAHRAD
2018-05-29

SHEET 5 OF 5
SECTIONS OF RETAINING WALL 'BB'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_bb_05
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DESIGNED BY:	MJB	DATE:	5/3/2016		

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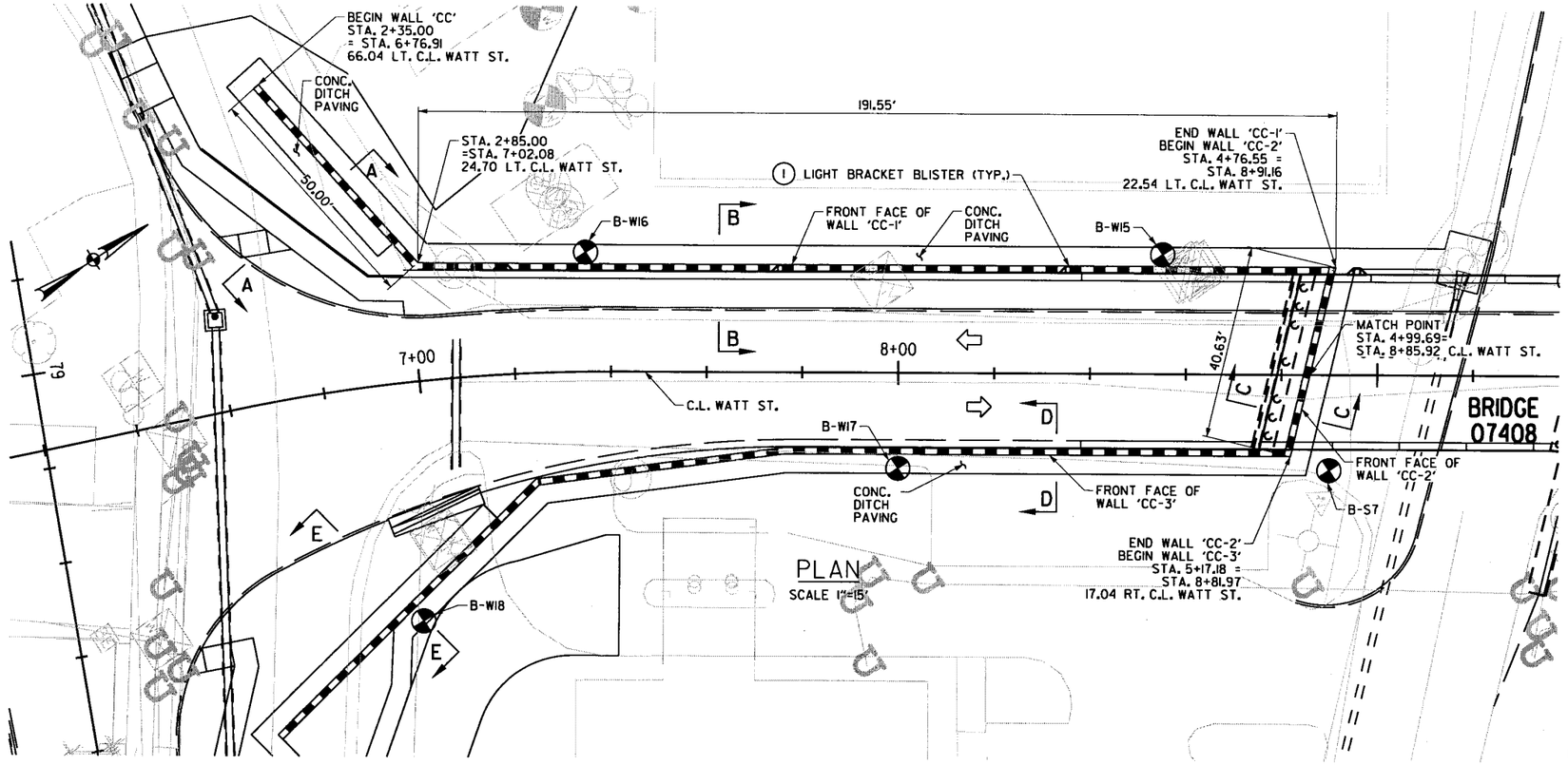
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	244	346
①	P&P RET. WALL 'CC'			59588



① FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59563

BORING LEGEND:

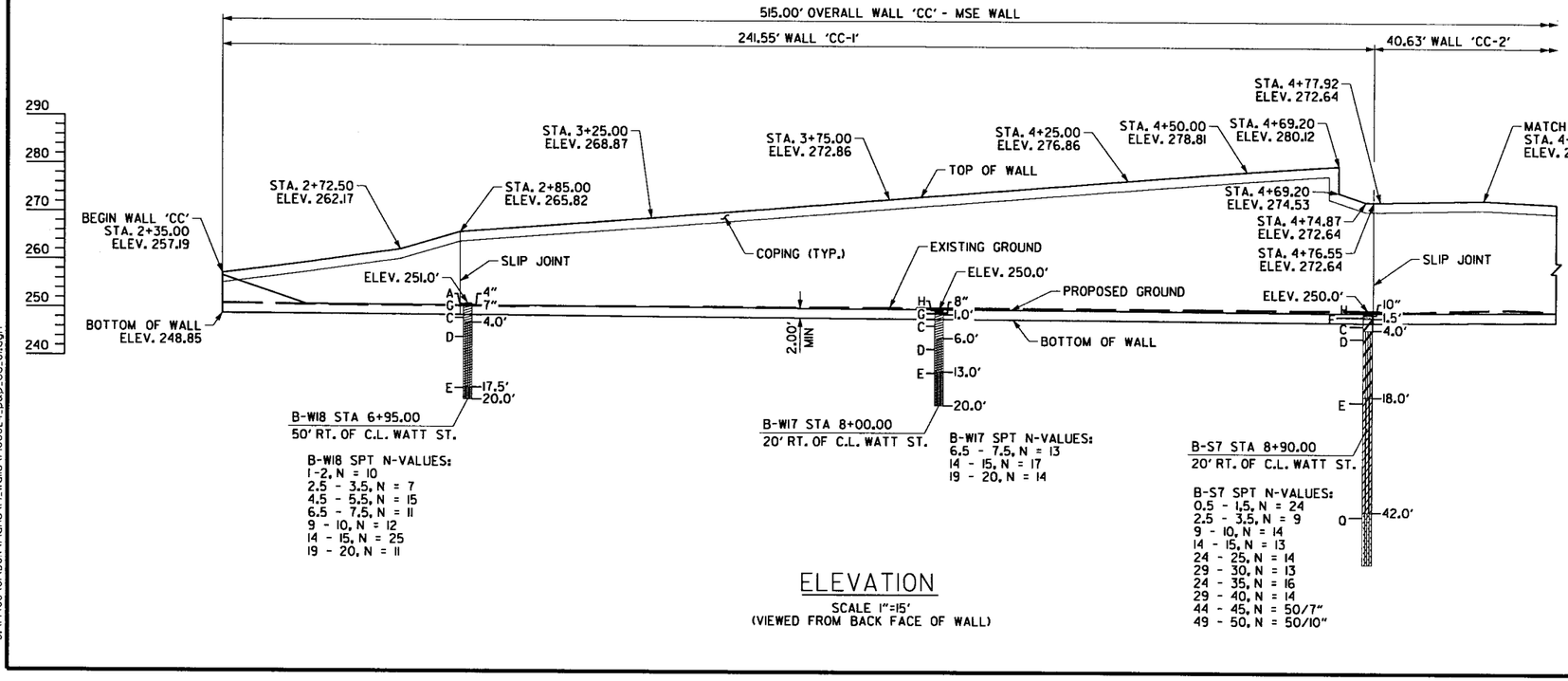
A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

RETAINING WALL 'CC'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
2+35.00	257.19	256.69	248.85
2+60.00	260.42	250.72	248.71
2+85.00	265.82	250.58	248.57
3+10.00	267.73	250.44	248.43
3+35.00	269.66	250.30	248.29
3+60.00	271.66	250.15	248.15
3+85.00	273.66	250.01	248.01
4+10.00	275.66	249.87	247.86
4+35.00	277.66	249.73	247.72
4+60.00	279.51	249.58	247.58
4+85.00	272.77	249.62	247.62
5+10.00	272.55	249.76	247.76
5+35.00	278.09	249.90	247.90
5+60.00	276.14	250.04	248.04
5+85.00	274.14	250.18	248.18
6+10.00	272.14	250.32	248.32
6+35.00	270.07	250.46	248.46
6+60.00	267.98	250.61	248.61
6+85.00	265.69	250.75	248.75
7+10.00	263.20	250.89	248.89
7+35.00	260.70	253.71	249.03
7+50.00	259.21	258.71	249.11

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.



B-W18 SPT N-VALUES:
1-2, N = 10
2.5 - 3.5, N = 7
4.5 - 5.5, N = 15
6.5 - 7.5, N = 11
9 - 10, N = 12
14 - 15, N = 25
19 - 20, N = 11

B-W17 SPT N-VALUES:
6.5 - 7.5, N = 13
14 - 15, N = 17
19 - 20, N = 14

B-S7 SPT N-VALUES:
0.5 - 1.5, N = 24
2.5 - 3.5, N = 9
9 - 10, N = 14
14 - 15, N = 13
24 - 25, N = 14
29 - 30, N = 13
24 - 35, N = 16
29 - 40, N = 14
44 - 45, N = 50/7"
49 - 50, N = 50/10"

ELEVATION
SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12464
SHAHRAM AZAD
2018-05-29

SHEET 1 OF 2
LAYOUT OF RETAINING WALL 'CC'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016
CHECKED BY:	SA	DATE:	6/6/2016
DESIGNED BY:	MJB	DATE:	5/3/2016

FILENAME: r100824_p&p_cc_01
SCALE: 1" = 15'

DRAWING NO. 59588

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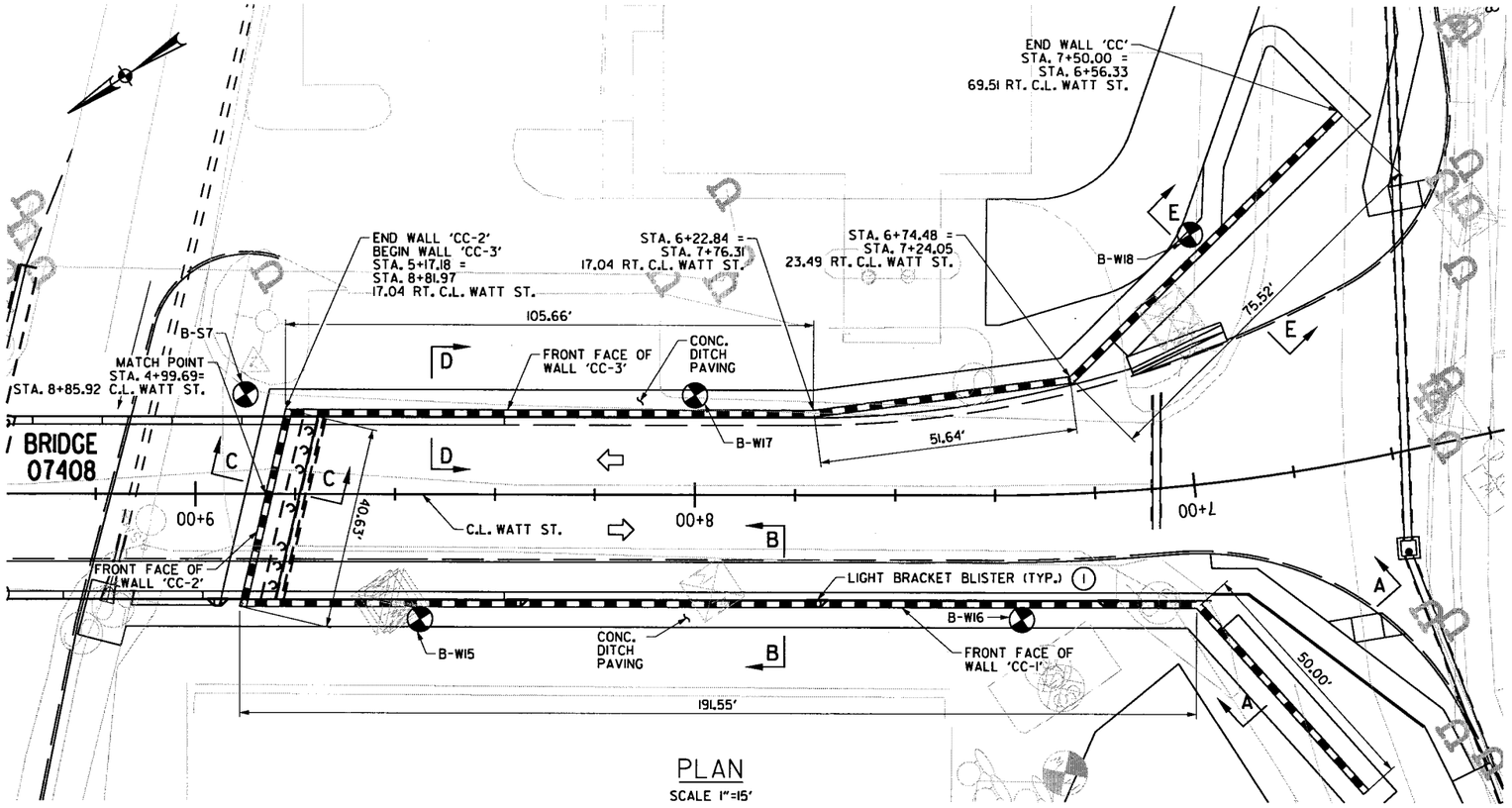
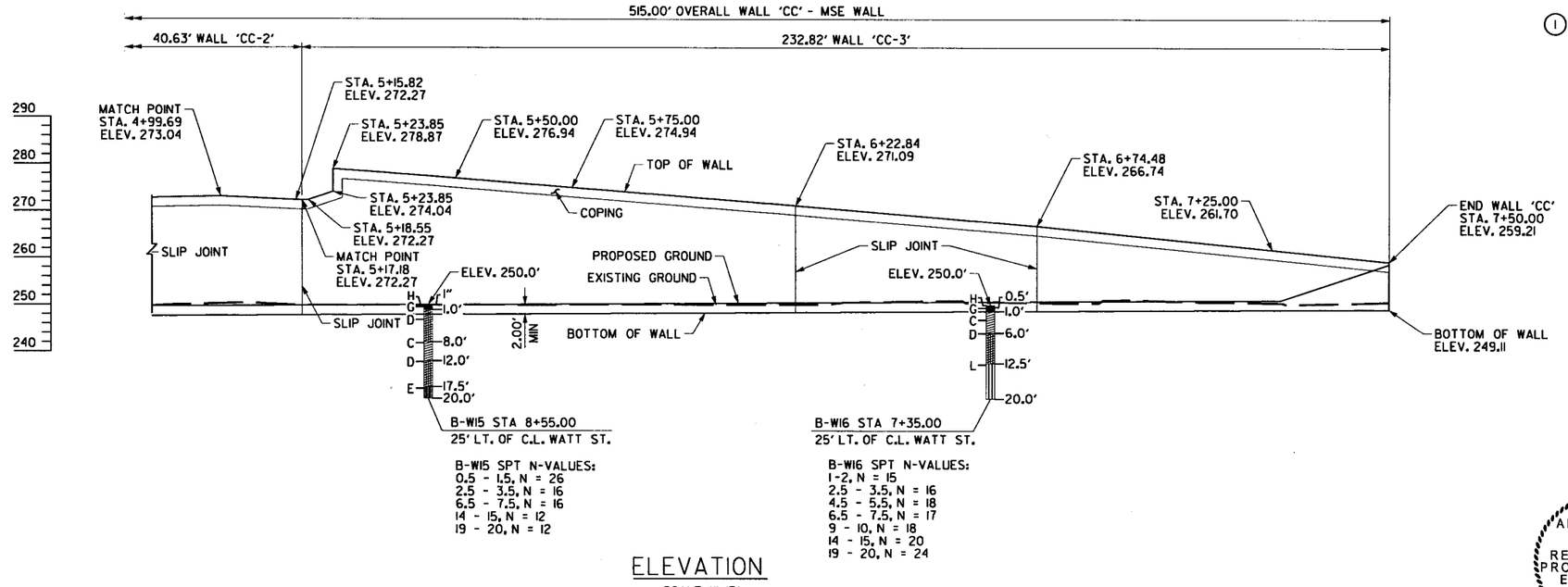
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	245	346
						P&P RET. WALL 'CC'		59589



PLAN

SCALE 1"=15'



B-W15 SPT N-VALUES:
0.5 - 1.5, N = 26
2.5 - 3.5, N = 16
6.5 - 7.5, N = 16
14 - 15, N = 12
19 - 20, N = 12

B-W16 SPT N-VALUES:
1-2, N = 15
2.5 - 3.5, N = 16
4.5 - 5.5, N = 18
6.5 - 7.5, N = 17
9 - 10, N = 18
14 - 15, N = 20
19 - 20, N = 24

ELEVATION

SCALE 1"=15'
(VIEWED FROM BACK FACE OF WALL)

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*CC
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
                                    STATION          NORTHING          EASTING
Element: Linear
        P.O.B. (      8008)         2+35.00       543369.6373       1712432.4720
        P.I. (      8007)           2+85.00       543377.3182       1712481.8785
    Tangential Direction:     N 81°09'48.1" E
      Tangential Length:                50.00

Element: Linear
        P.I. (      8007)           2+85.00       543377.3182       1712481.8785
        P.I. (      8000)           3+00.00       543389.8670       1712490.0959
    Tangential Direction:     N 33°13'05.8" E
      Tangential Length:                15.00

Element: Linear
        P.I. (      8000)           3+00.00       543389.8670       1712490.0959
        P.I. (      8001)           4+76.55       543537.5650       1712586.8141
    Tangential Direction:     N 33°13'05.8" E
      Tangential Length:               176.55

Element: Linear
        P.I. (      8001)           4+76.55       543537.5650       1712586.8141
        P.I. (      8002)           5+17.18       543508.1896       1712614.8931
    Tangential Direction:     S 43°42'26.5" E
      Tangential Length:                40.64

Element: Linear
        P.I. (      8002)           5+17.18       543508.1896       1712614.8931
        P.I. (      8003)           6+22.84       543419.7976       1712557.0107
    Tangential Direction:     S 33°13'05.8" W
      Tangential Length:               105.66

Element: Linear
        P.I. (      8003)           6+22.84       543419.7976       1712557.0107
        P.I. (      8004)           6+74.48       543373.2411       1712534.6723
    Tangential Direction:     S 25°37'56.1" W
      Tangential Length:                51.64

Element: Linear
        P.I. (      8004)           6+74.48       543373.2411       1712534.6723
        P.O.E. (      8005)         7+51.92       543297.4596       1712550.6178
    Tangential Direction:     S 11°52'56.8" E
      Tangential Length:                77.44
```

BORING LEGEND:

SEE SHEET 1 OF 2.

(1) FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59563

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAHRIAR ADL

2018-05-29

SHEET 2 OF 2
LAYOUT OF RETAINING WALL 'CC'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_cc_02
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59589

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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.		100824	246	346
						SECTIONS WALL 'CC'		59590

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

(1) EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

(2) CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

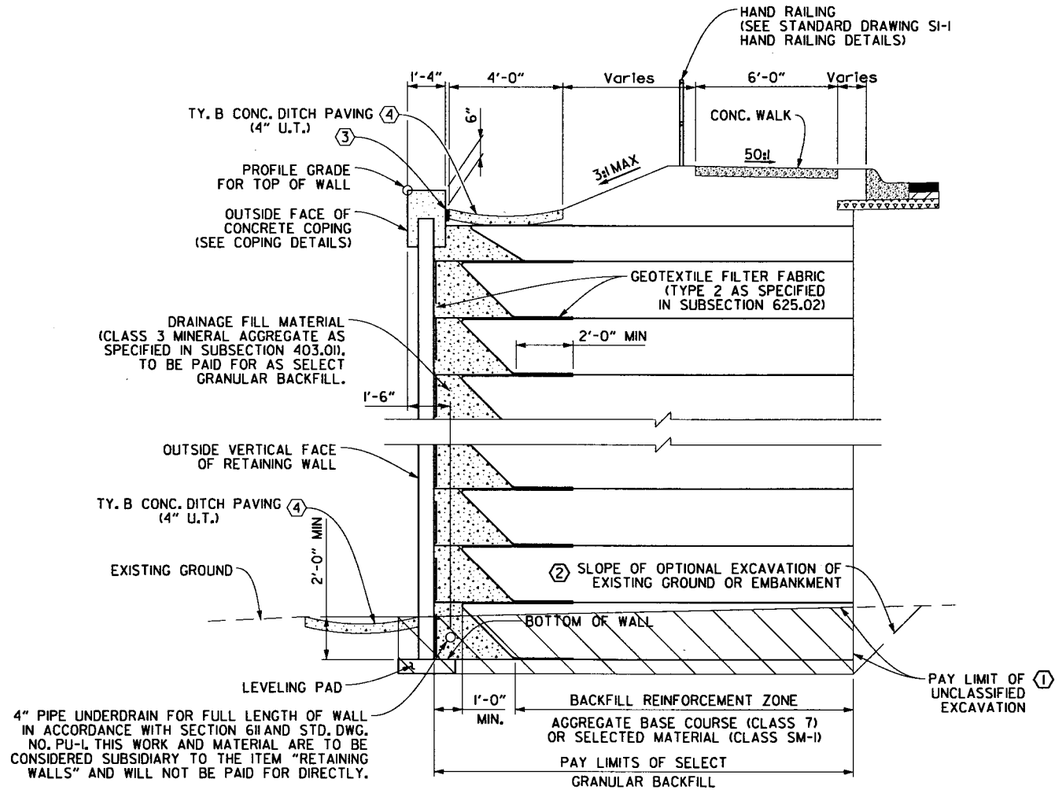
(3) 1/2" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1/2" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

(4) THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

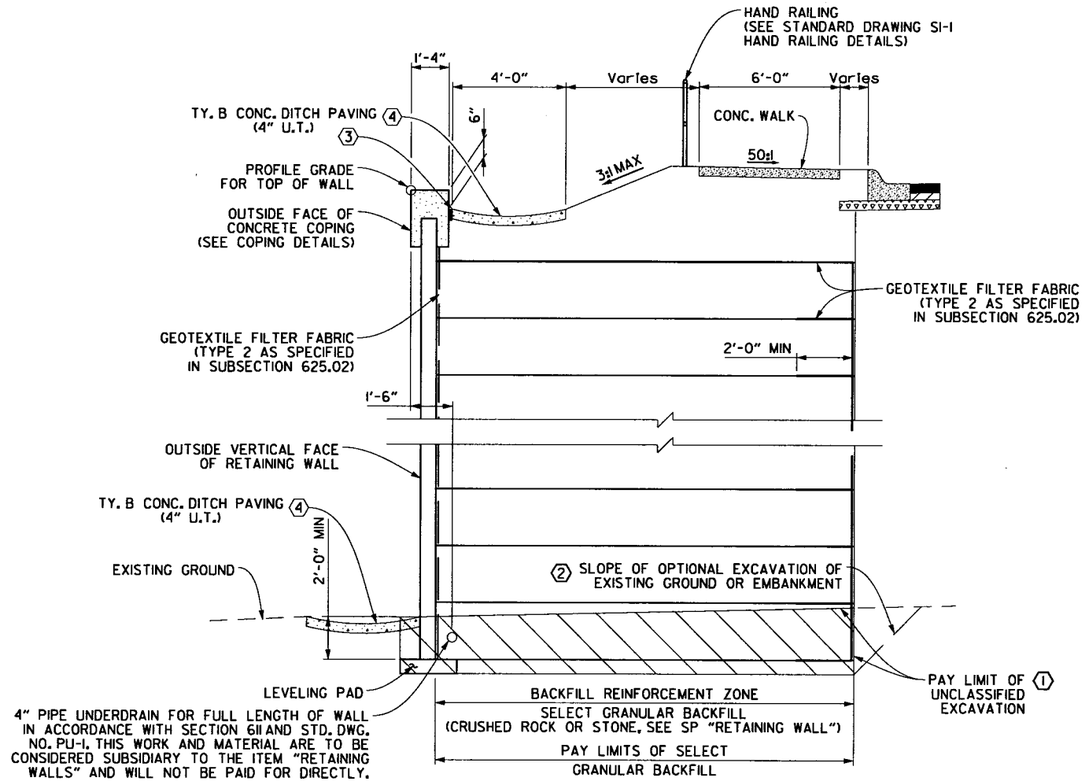
TABLE I

STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+35.00 TO 4+40.00	6,500	MINIMAL	
4+40.00 TO 5+75.00	6,955	AGGREGATE PIER	AGGREGATE PIER @ 20% AREA RATIO, 30 IN. DIA., L = 12 FT
5+75.00 TO 6+80.00	6,500	MINIMAL	
6+80.00 TO 7+50.00	3,200	3	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 3 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION A-A
(BACKFILL METHOD A)
N.T.S.



SECTION A-A
(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12894
SHAHRIAR ADAD
2018-05-29

SHEET 1 OF 5
SECTIONS OF RETAINING WALL 'CC'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_cc_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59590

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5/29/2018
mbinkley

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.		100824	247	346
				(1)		SECTIONS WALL 'CC'		59591

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

(1) EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

(2) CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

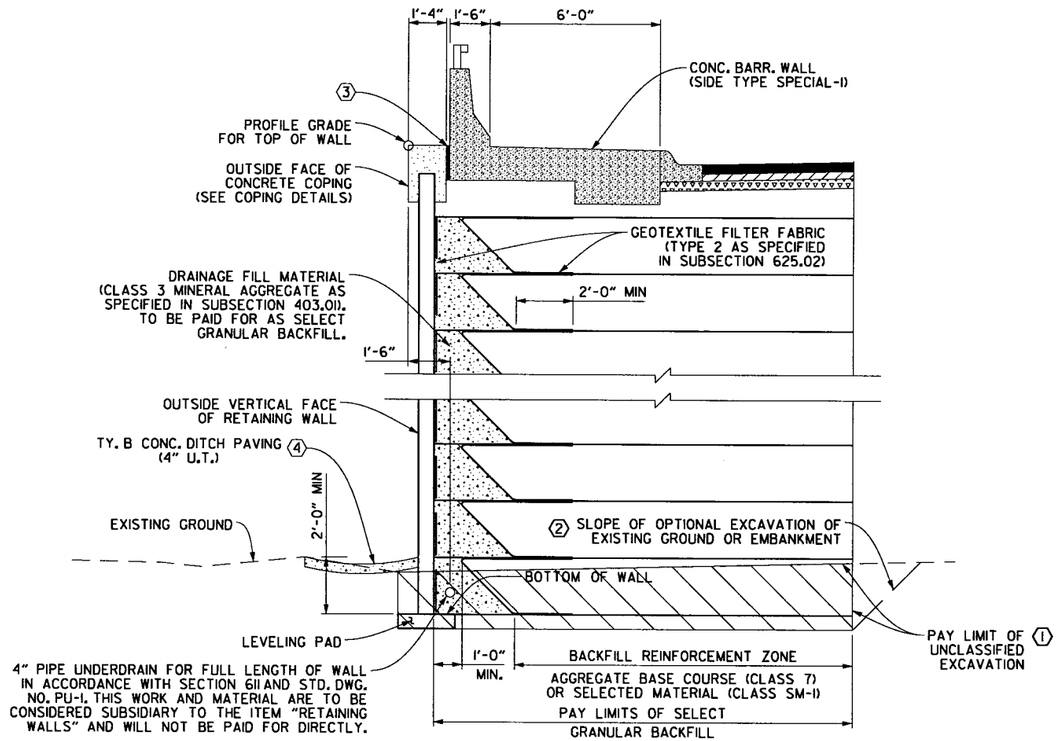
(3) 1/2" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1 1/2" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

(4) THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

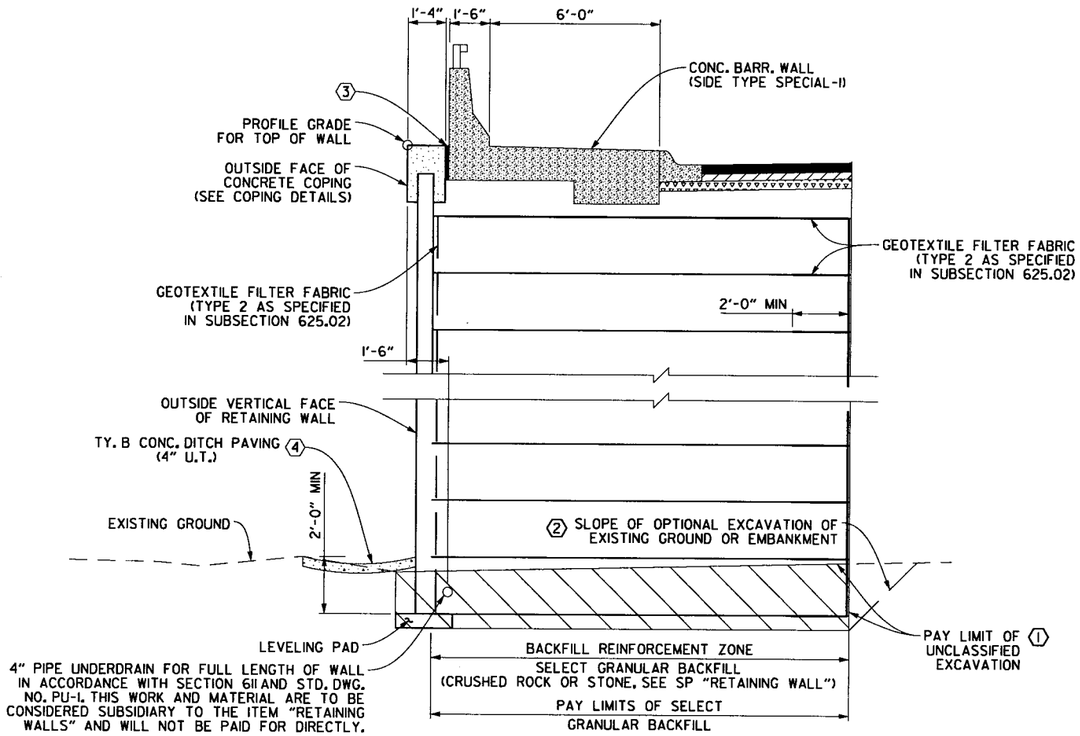
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+35.00 TO 4+40.00	6,500	MINIMAL	
4+40.00 TO 5+75.00	6,955	AGGREGATE PIER	AGGREGATE PIER @ 20% AREA RATIO, 30 IN. DIA., L = 12 FT
5+75.00 TO 6+80.00	6,500	MINIMAL	
6+80.00 TO 7+50.00	3,200	3	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 3 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION B-B

(BACKFILL METHOD A)
N.T.S.



SECTION B-B

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12401
SHAHRIAR ADL
2018-05-29

SHEET 2 OF 5
SECTIONS OF RETAINING WALL 'CC'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_cc_02
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59591

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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.		100824	248	346
				①		SECTIONS WALL 'CC'		59592

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

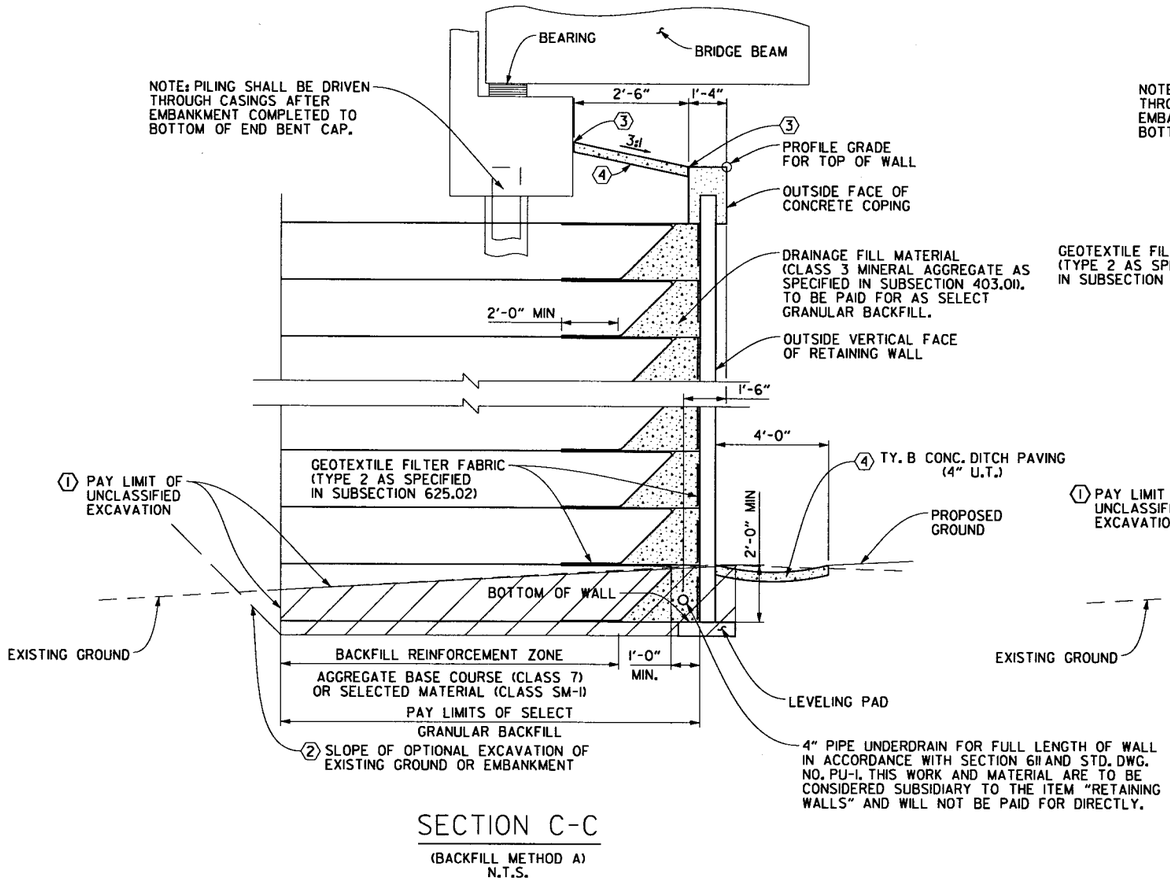
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

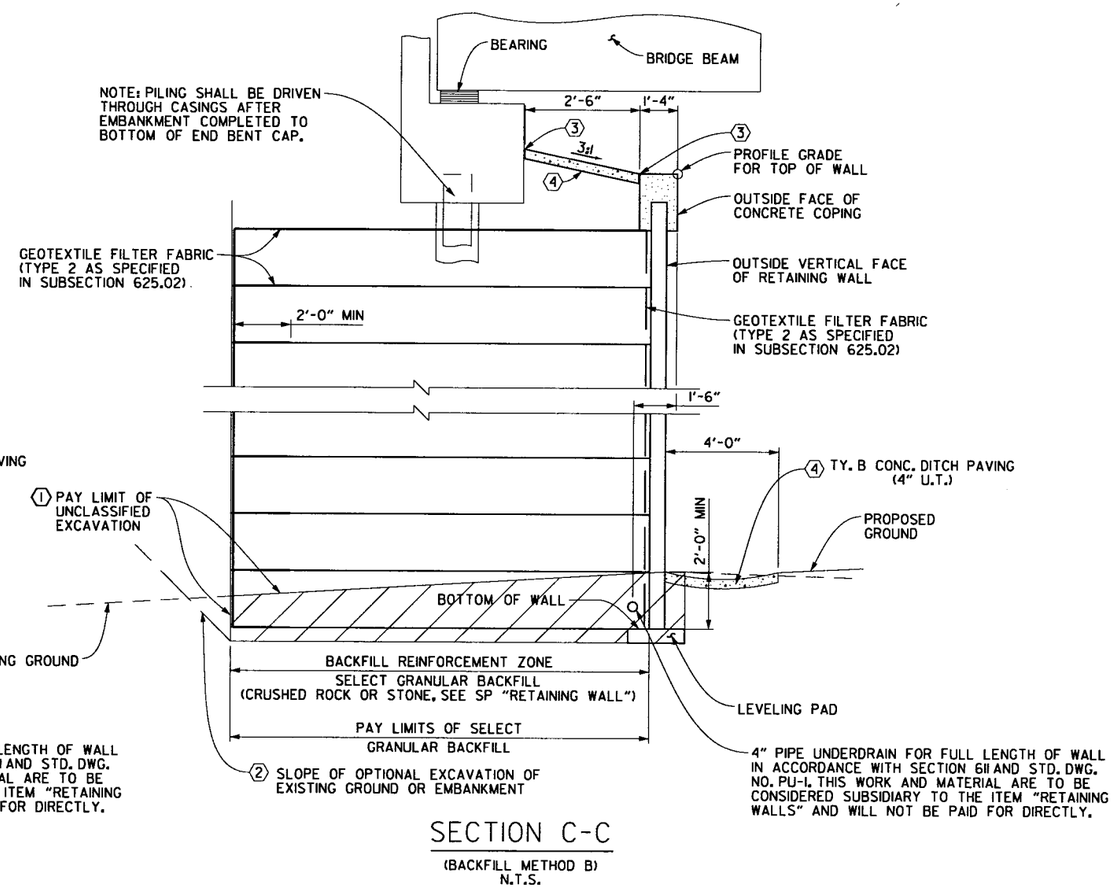
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+35.00 TO 4+40.00	6,500	MINIMAL	
4+40.00 TO 5+75.00	6,955	AGGREGATE PIER	AGGREGATE PIER @ 20% AREA RATIO, 30 IN. DIA., L = 12 FT
5+75.00 TO 6+80.00	6,500	MINIMAL	
6+80.00 TO 7+50.00	3,200	3	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 3 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION C-C

(BACKFILL METHOD A)
N.T.S.



SECTION C-C

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12469
SHAHRIAR KHALILI
2016-05-31

SHEET 3 OF 5
SECTIONS OF RETAINING WALL 'CC'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
CHECKED BY: SA DATE: 6/6/2016
DESIGNED BY: MJB DATE: 5/3/2016
FILENAME: r100824_sections_cc_03
SCALE: As Shown

DRAWING NO. 59592

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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.		100824	249	346
				①		SECTIONS WALL 'CC'		59593

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

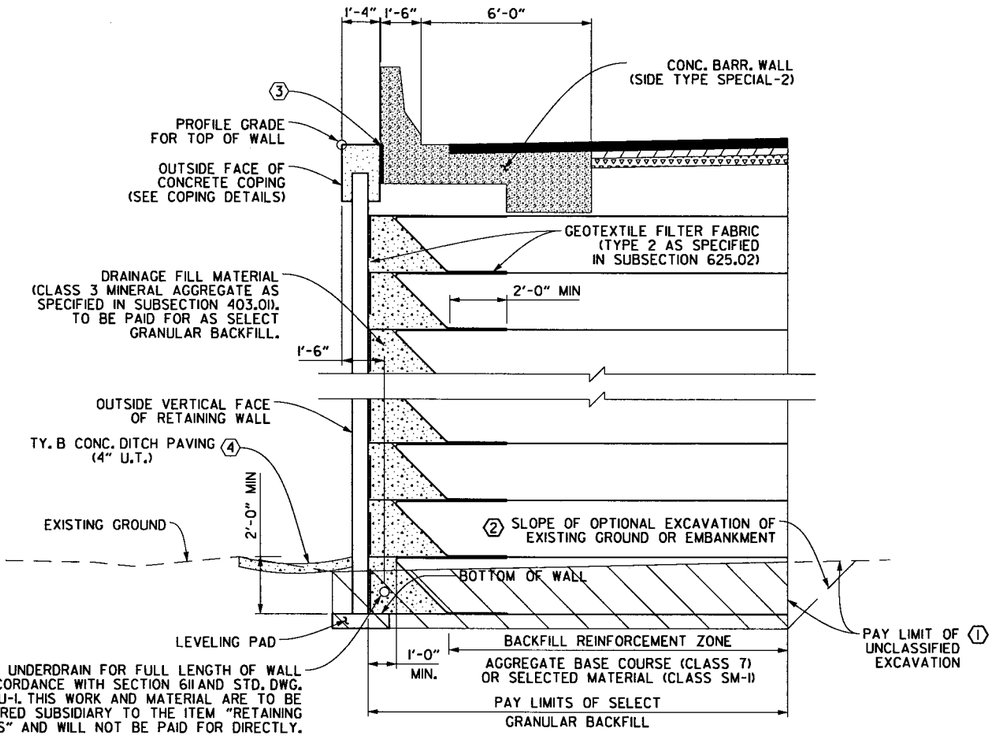
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

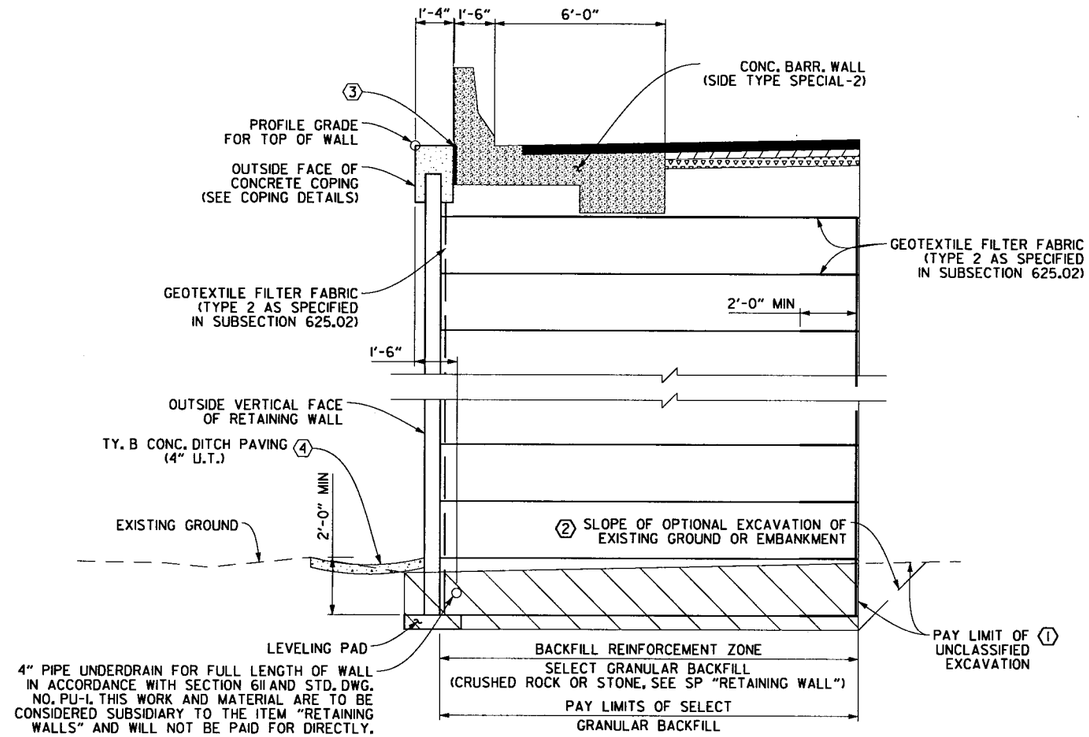
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
2+35.00 TO 4+40.00	6,500	MINIMAL	
4+40.00 TO 5+75.00	6,955	AGGREGATE PIER	AGGREGATE PIER @ 20% AREA RATIO, 30 IN. DIA., L = 12 FT
5+75.00 TO 6+80.00	6,500	MINIMAL	
6+80.00 TO 7+50.00	3,200	3	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 3 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION D-D

(BACKFILL METHOD A)
N.T.S.



SECTION D-D

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR LEAD
2018-05-29

SHEET 4 OF 5
SECTIONS OF RETAINING WALL 'CC'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_cc_04
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

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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.		100824	250	346
				①		SECTIONS WALL 'CC'		59594

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
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7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

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② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

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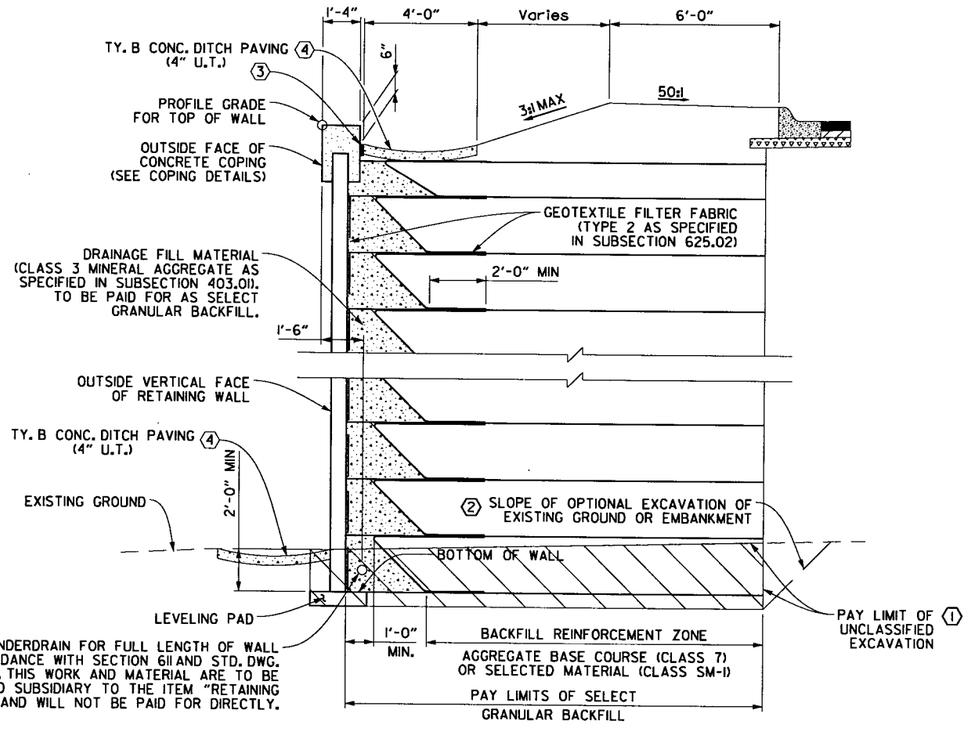
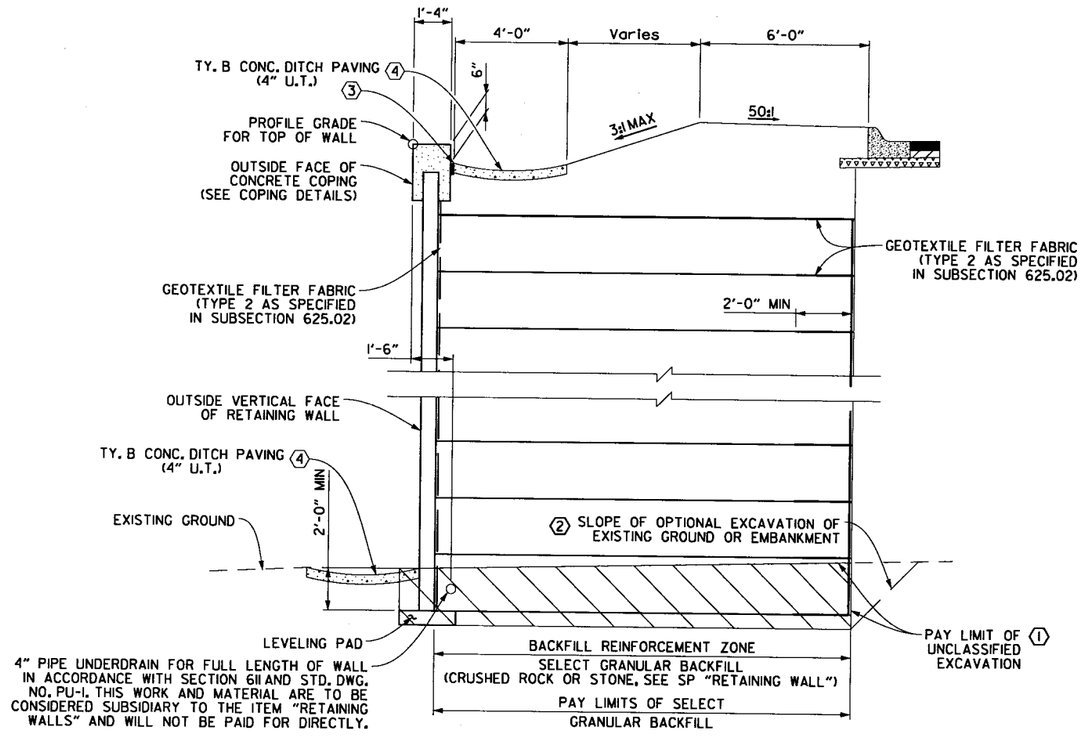
* UNDERCUTS SHOULD EXTEND AT LEAST 3 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION E-E
(BACKFILL METHOD A)
N.T.S.



SECTION E-E
(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12464
SHAHRIAR ADL
2016-05-19

SHEET 5 OF 5
SECTIONS OF RETAINING WALL 'CC'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
CHECKED BY: SA DATE: 6/6/2016
DESIGNED BY: MJB DATE: 5/3/2016
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SCALE: As Shown

DRAWING NO. 59594

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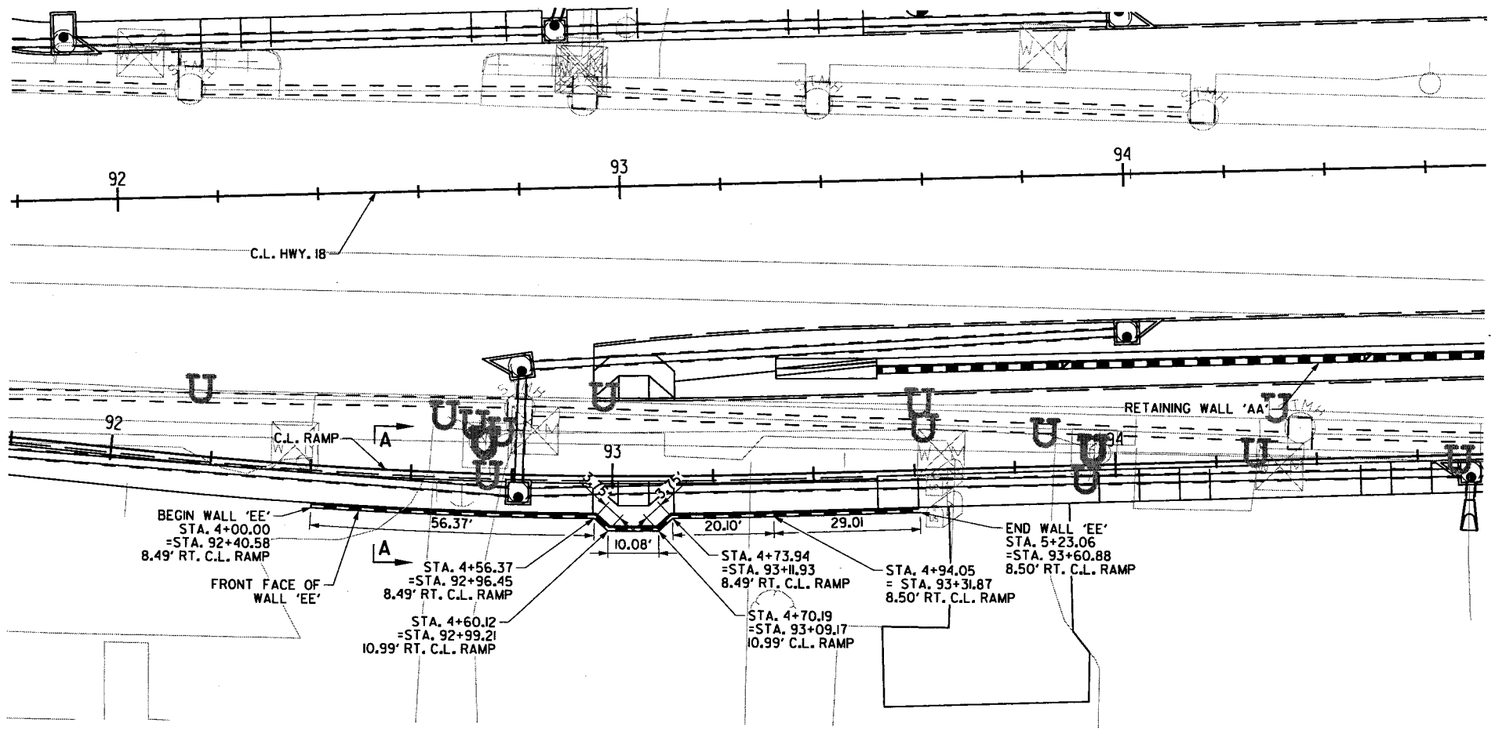
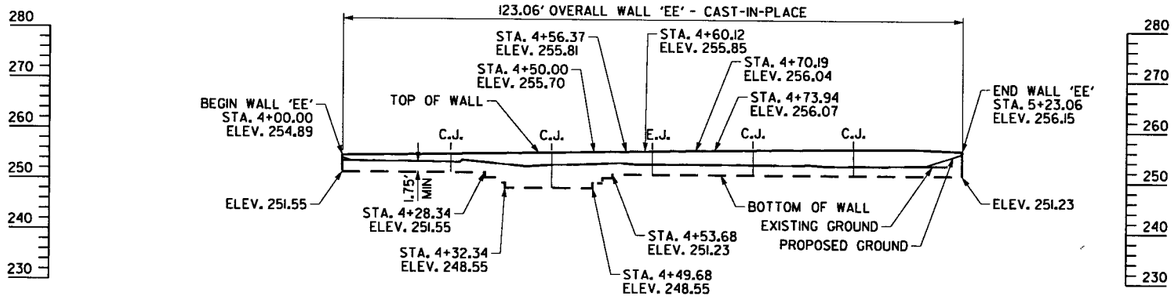
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	251	346
				P&P RET. WALL 'EE'			59598	



PLAN
SCALE 1"=30'



ELEVATION
SCALE 1"=30'
(VIEWED FROM FACE OF WALL)

RETAINING WALL 'EE'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
4+00.00	254.89	254.39	251.55
4+25.00	255.27	253.89	251.55
4+50.00	255.70	253.30	249.55
4+75.00	256.09	253.28	251.23
5+00.00	256.40	253.07	251.23
5+23.06	256.15	255.65	251.23

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
4. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
5. REFER TO ARDOT STD. DRAWING SI-2 FOR WALL DETAILS.

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*EE
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
```

		STATION	NORTHING	EASTING
Element: Circular				
P.C. (	8036)	4+00.00	544202.2733	1711249.9086
P.I. (	)	4+28.19	544201.1161	1711278.0779
C.C. (	8027)		545170.8860	1711289.7017
P.T. (	8035)	4+56.37	544201.5978	1711306.2668
Radius:		969.43		
Delta:		3°19'53.8" Left		
Degree of Curvature(Arc):		5°54'36.9"		
Length:		56.37		
Tangent:		28.19		
Chord:		56.36		
Middle Ordinate:		0.41		
External:		0.41		
Tangent Direction:		S 87°38'50.9" E		
Radial Direction:		S 2°21'09.1" W		
Chord Direction:		S 89°18'47.8" E		
Radial Direction:		S 0°58'44.7" E		
Tangent Direction:		N 89°01'15.3" E		
Element: Linear				
P.T. (	8035)	4+56.37	544201.5978	1711306.2668
P.C. (	8034)	4+60.12	544199.1499	1711309.1015
Tangential Direction:		S 49°11'16.2" E		
Tangential Length:		3.75		
Element: Circular				
P.C. (	8034)	4+60.12	544199.1499	1711309.1015
P.I. (	)	4+65.15	544199.2505	1711314.1394
C.C. (	8027)		545170.8860	1711289.7017
P.T. (	8033)	4+70.19	544199.4033	1711319.1759
Radius:		971.93		
Delta:		0°35'38.7" Left		
Degree of Curvature(Arc):		5°53'42.2"		
Length:		10.08		
Tangent:		5.04		
Chord:		10.08		
Middle Ordinate:		0.01		
External:		0.01		
Tangent Direction:		N 88°51'22.7" E		
Radial Direction:		S 1°08'37.3" E		
Chord Direction:		N 88°33'33.3" E		
Radial Direction:		S 1°44'16.0" E		
Tangent Direction:		N 88°15'44.0" E		
Element: Linear				
P.T. (	8033)	4+70.19	544199.4033	1711319.1759
P.C. (	8032)	4+73.94	544201.9906	1711321.8840
Tangential Direction:		N 46°18'22.9" E		
Tangential Length:		3.75		
Element: Circular				
P.C. (	8032)	4+73.94	544201.9906	1711321.8840
P.I. (	)	4+83.99	544202.3244	1711331.9323
C.C. (	8027)		545170.8860	1711289.7017
P.T. (	8026)	4+94.05	544202.8665	1711341.9715
Radius:		969.43		
Delta:		1°11'18.1" Left		
Degree of Curvature(Arc):		5°54'36.9"		
Length:		20.11		
Tangent:		10.05		
Chord:		20.11		
Middle Ordinate:		0.05		
External:		0.05		
Tangent Direction:		N 88°05'51.3" E		
Radial Direction:		S 1°54'08.7" E		
Chord Direction:		N 87°30'12.3" E		
Radial Direction:		S 3°05'26.8" E		
Tangent Direction:		N 86°54'33.2" E		
Element: Linear				
P.T. (	8026)	4+94.05	544202.8665	1711341.9715
P.O.E. (	8025)	5+23.06	544204.4310	1711370.9457
Tangential Direction:		N 86°54'33.2" E		
Tangential Length:		29.02		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ALI
2018-05-29

LAYOUT OF RETAINING WALL 'EE'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_ee_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/31/2016		

DRAWING NO. 59598

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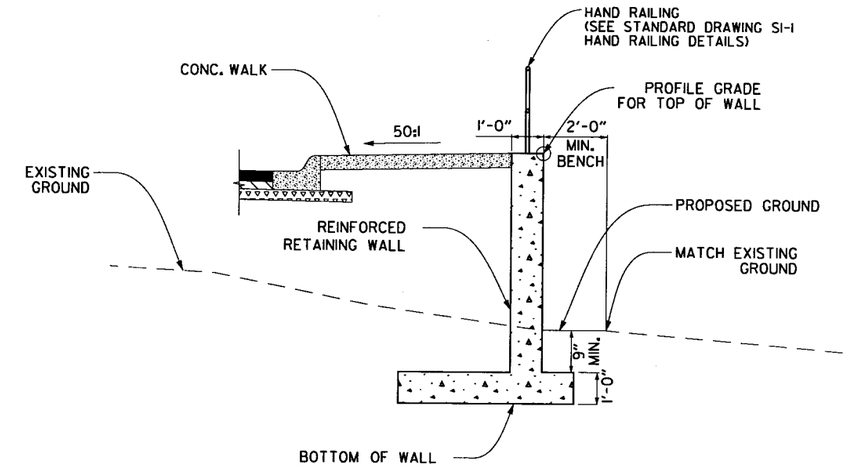
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	252	346
				①	SECTIONS WALL 'EE'			59599



SECTION A-A

N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD

2018-05-29

SECTIONS OF RETAINING WALL 'EE'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_ee_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59599

5/29/2018 4:09:22 PM
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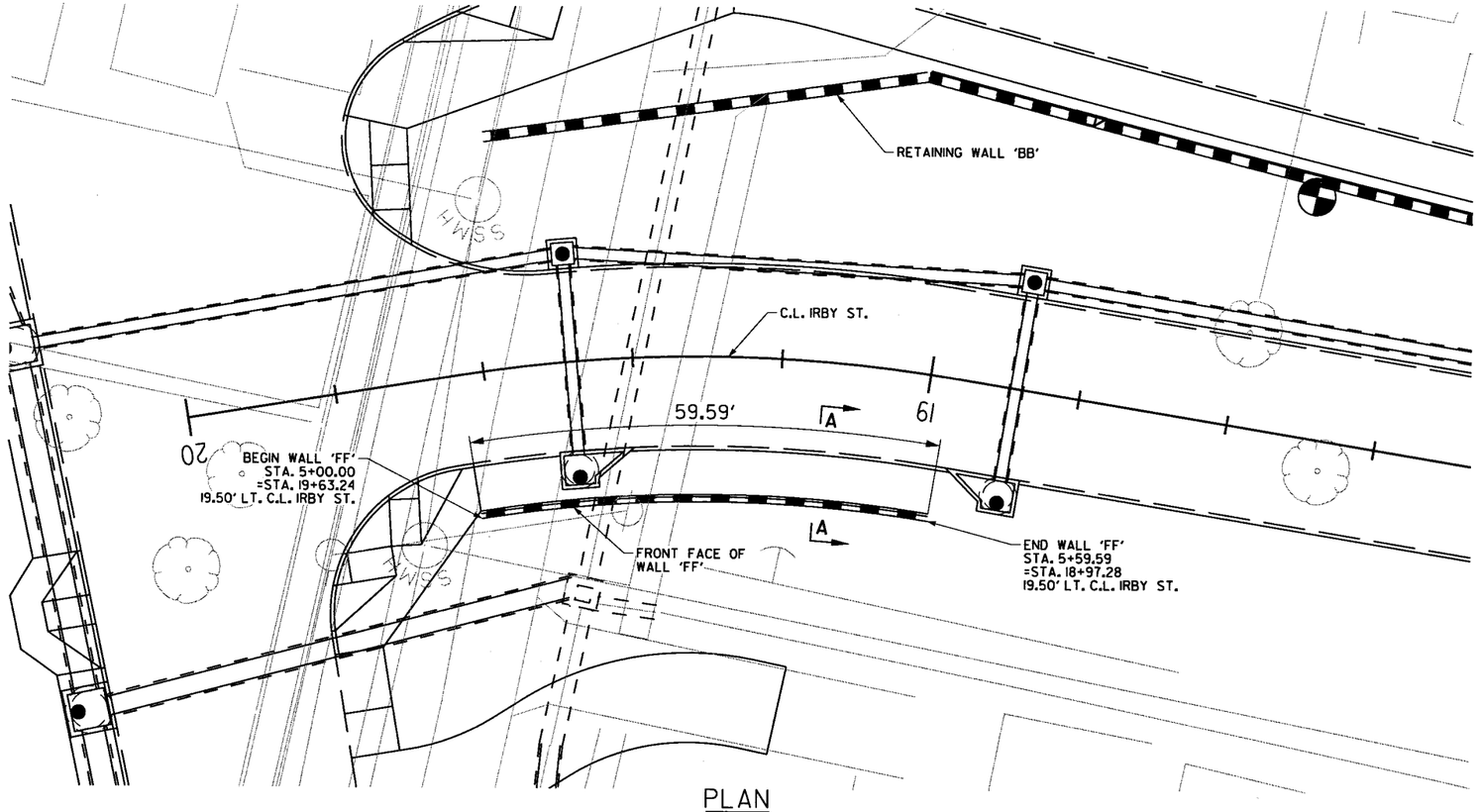
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	253	346
				P&P RET. WALL 'FF'				59600



PLAN
SCALE 1"=20'

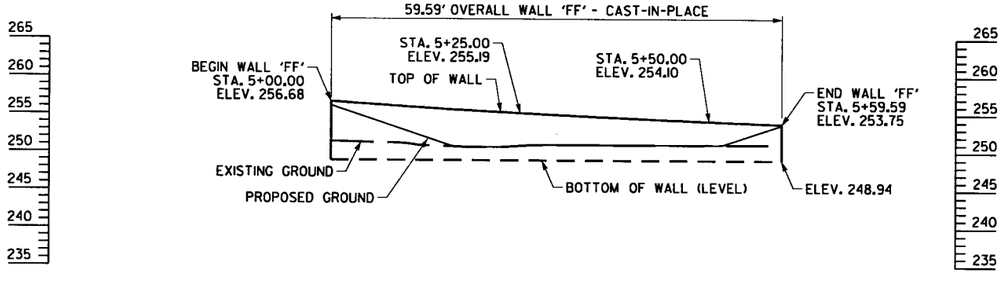
STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
5+00.00	256.68	256.18	248.94
5+25.00	255.19	250.88	248.94
5+50.00	254.10	251.01	248.94
5+59.59	253.75	253.64	248.94

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
4. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
5. REFER TO ARDOT STD. DRAWING SI-2 FOR WALL DETAILS.

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*FF
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
```

		STATION	NORTHING	EASTING
Element: Circular				
P.C. (	8024)	5+00.00	544416.5520	1712449.2393
P.I. (	)	5+30.07	544405.4776	1712421.2853
C.C. (	8022)		544585.3277	1712382.3759
P.T. (	8021)	5+59.59	544404.0071	1712391.2536
Radius:		181.54		
Delta:		18°48'31.6" Right		
Degree of Curvature(Arc):		31°33'40.9"		
Length:		59.59		
Tangent:		30.07		
Chord:		59.33		
Middle Ordinate:		2.44		
External:		2.47		
Tangent Direction:		S 68°23'17.4" W		
Radial Direction:		N 21°36'42.6" W		
Chord Direction:		S 77°47'33.2" W		
Radial Direction:		N 2°48'11.0" W		
Tangent Direction:		S 87°11'49.0" W		



ELEVATION
SCALE 1"=20'
(VIEWED FROM FACE OF WALL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12487
SHAHRIAR KIAD
2018-05-29

LAYOUT OF RETAINING WALL 'FF'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_ff_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	MJB	DATE:	5/3/2016		

DRAWING NO. 59600

9:55:24 AM 5/30/2018 mbinkley

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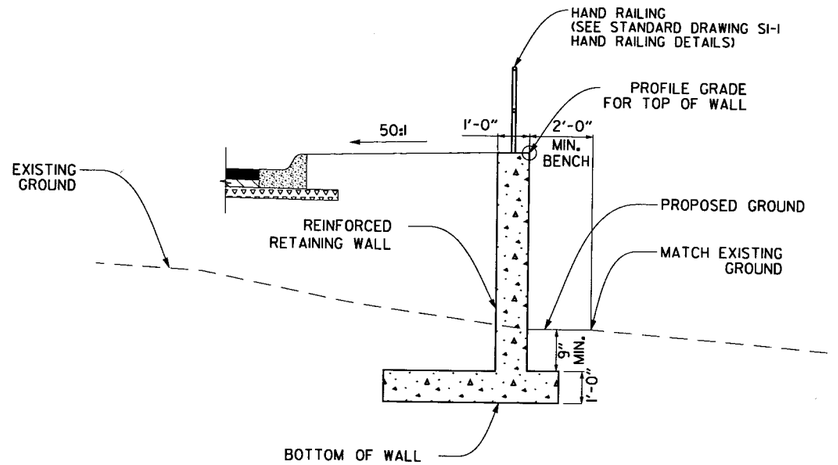
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	254	346
						SECTIONS WALL 'FF'		59601



SECTION A-A

N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR ADLI

2018-05-29

SECTIONS OF RETAINING WALL 'FF'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_ff_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

BRIDGE NO.

DRAWING NO. 59601

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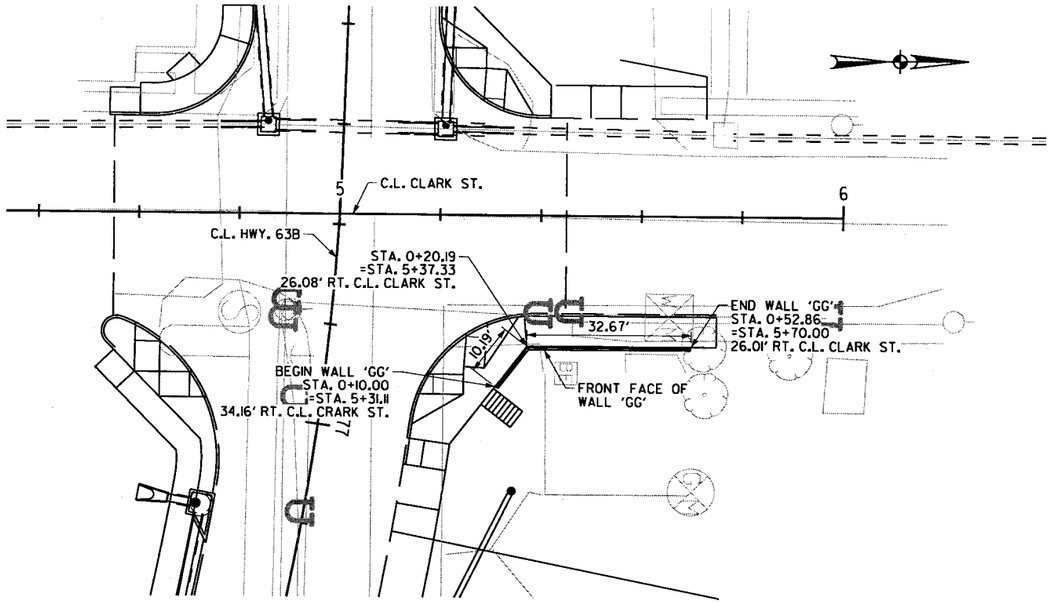
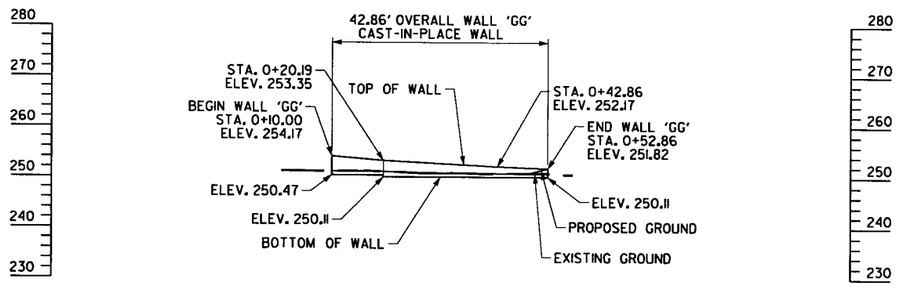
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	255	346
				P&P RET. WALL 'GG'				59602



PLAN
SCALE 1"=15'



ELEVATION
SCALE 1"=15'
(VIEWED FROM FACE OF WALL)

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
0+10.00	254.17	251.21	250.47
0+35.00	252.58	250.87	250.11
0+52.86	251.82	251.82	250.11

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*GG
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
                                        STATION          NORTHING        EASTING
Element: Linear
        P.O.B. (      8039)           0+00.00        543386.3003     1712267.8441
          P.I. (      8040)           0+20.19        543398.4599     1712251.7241
  Tangential Direction:        N 52°58'19.0" W
     Tangential Length:                 20.19

Element: Linear
          P.I. (      8040)           0+20.19        543398.4599     1712251.7241
        P.O.E. (      8041)           0+57.86        543436.1304     1712251.2829
  Tangential Direction:         N 0°40'16.1" W
     Tangential Length:                 37.67
```

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE INSIDE TOP CORNER OF WALL.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
4. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
5. REFER TO SPECIAL DETAIL CONCRETE WALK (TYPE SPECIAL).

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAWRIAN AZAD
2018-05-29

LAYOUT OF RETAINING WALL 'GG'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_gg_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	DCD	DATE:	5/31/2016		

DRAWING NO. 59602

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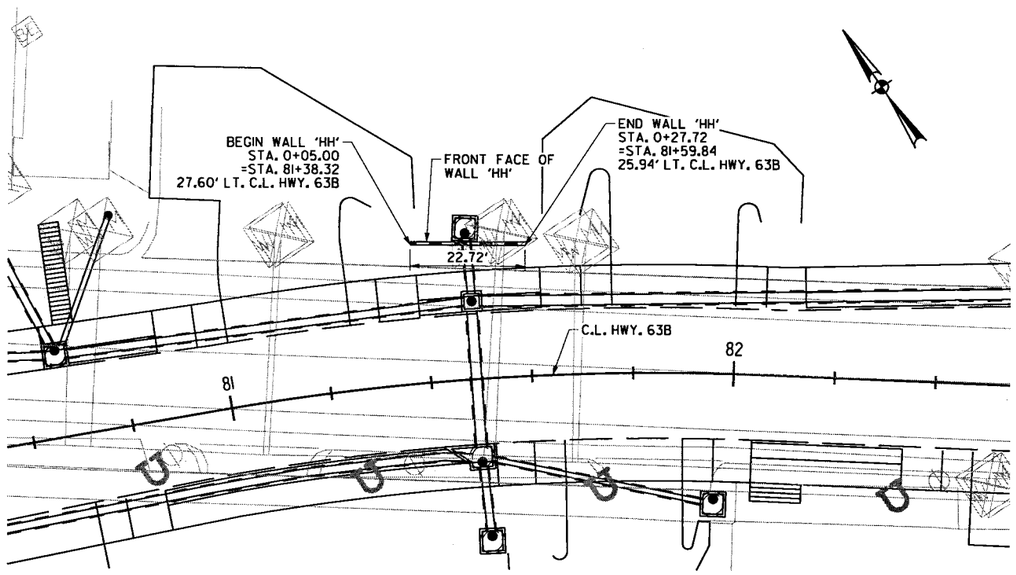
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	256	346
						P&P RET. WALL 'HH'		59603



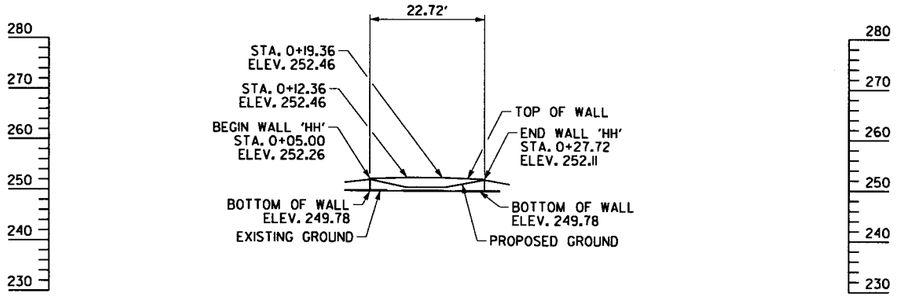
PLAN

SCALE 1"=15'

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WALL*HH
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
                                        STATION          NORTHING          EASTING
Element: Linear
        P.O.B. (      8042)             0+00.00       543228.1242       1712684.5584
        P.O.E. (      8043)             0+31.72       543210.6841       1712711.0491
  Tangential Direction:     S 56°38'28.0" E
    Tangential Length:                  31.72
```

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE INSIDE TOP CORNER OF WALL.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
4. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
5. REFER TO SPECIAL DETAIL CONCRETE WALK (TYPE SPECIAL).



ELEVATION

SCALE 1"=15'

(VIEWED FROM BACK FACE OF WALL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRIAR AZAD
2018-05-24

LAYOUT OF RETAINING WALL 'HH'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_hh_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	DCD	DATE:	5/3/2016		

DRAWING NO. 59603

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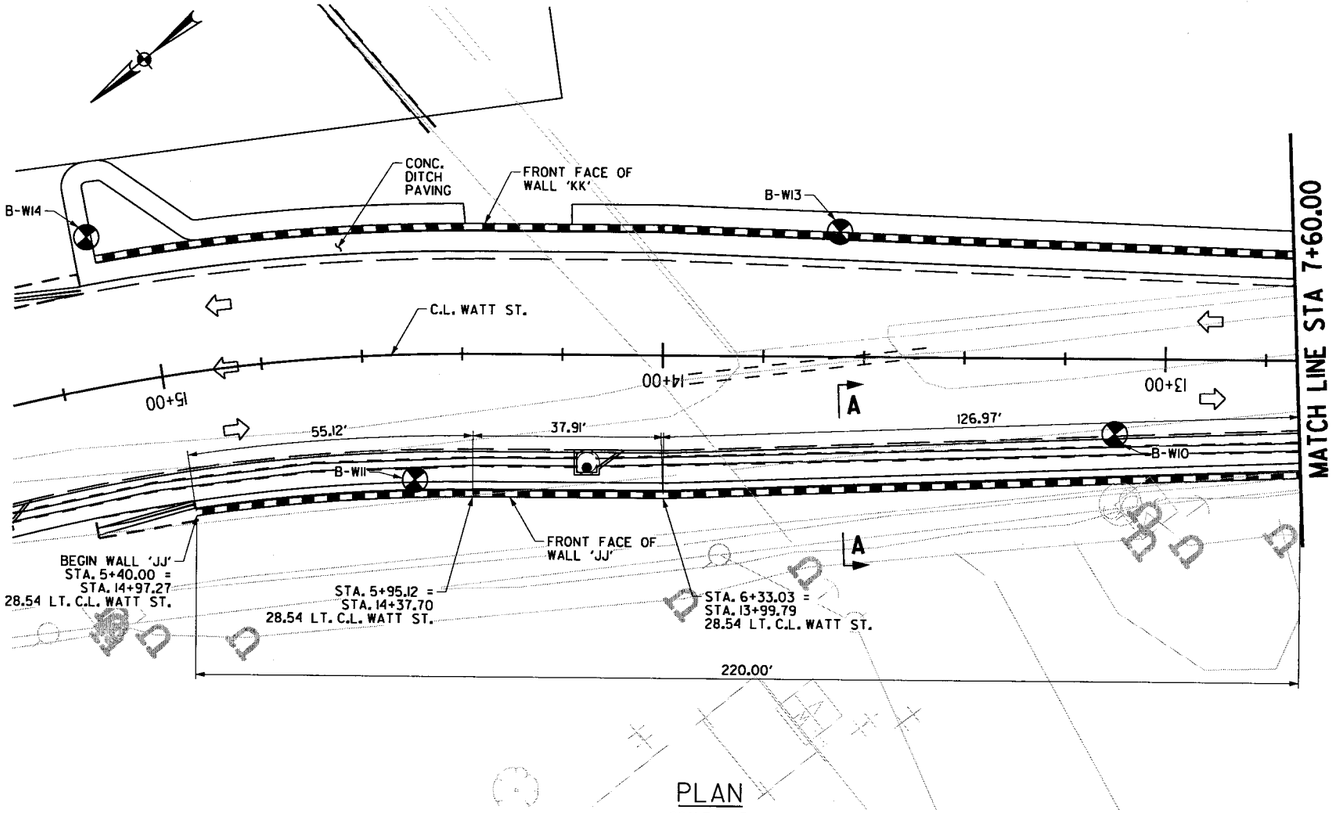
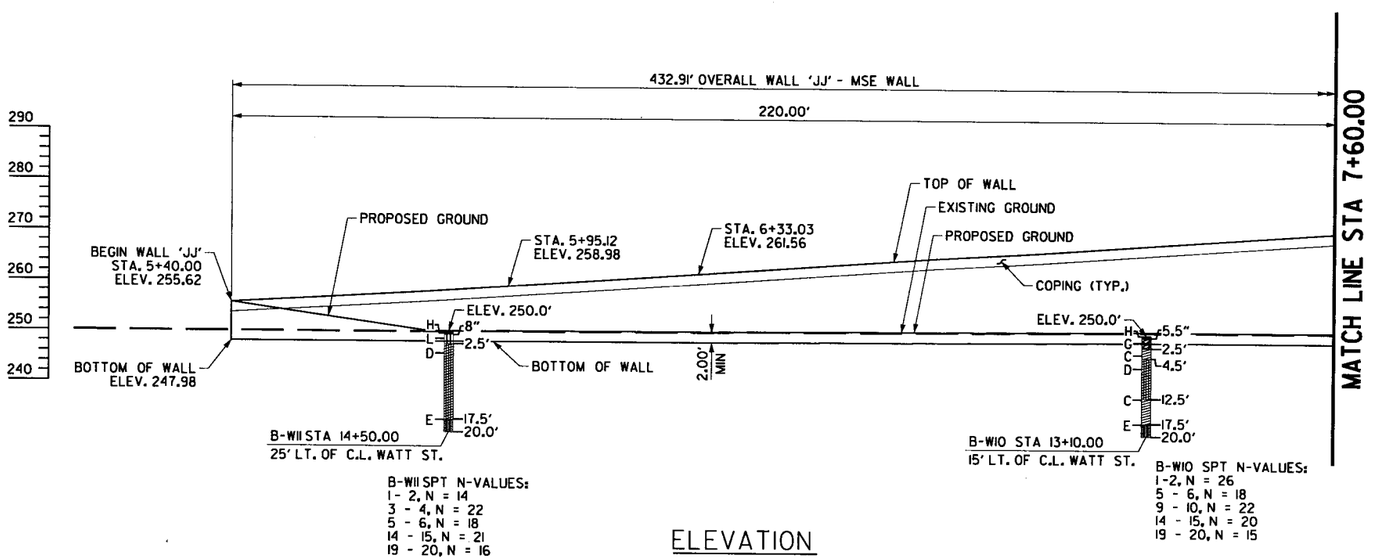
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	257	346
				①		P&P RET. WALL 'JJ'		59595



PLAN

SCALE 1"=15'



ELEVATION

SCALE 1"=15'

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WJJ
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
```

		STATION	NORTHING	EASTING
Element: Circular				
P.C. (	8044)	5+00.00	544062.7854	1712958.0898
P.I. (	)	5+47.85	544019.0410	1712938.7058
C.C. (	8023)		544205.9697	1712634.9627
P.T. (	WJJ-1)	5+95.12	543982.0252	1712908.3886
Radius:		353.43		
Delta:		15°25'10.0" Right		
Degree of Curvature(Arc):		16°12'40.8"		
Length:		95.12		
Tangent:		47.85		
Chord:		94.83		
Middle Ordinate:		3.19		
External:		3.22		
Tangent Direction:		S 23°53'56.8" W		
Radial Direction:		N 66°06'03.2" W		
Chord Direction:		S 31°36'31.8" W		
Radial Direction:		N 50°40'53.2" W		
Tangent Direction:		S 39°19'06.8" W		
Element: Linear				
P.T. (	WJJ-1)	5+95.12	543982.0252	1712908.3886
P.I. (	WJJHXX002)	6+33.03	543952.6961	1712884.3672
Tangential Direction:		S 39°19'06.8" W		
Tangential Length:		37.91		
Element: Linear				
P.I. (	WJJHXX002)	6+33.03	543952.6961	1712884.3672
P.I. (	WJJHXX003)	7+83.15	543832.8490	1712793.9642
Tangential Direction:		S 37°01'40.6" W		
Tangential Length:		150.12		
Element: Linear				
P.I. (	WJJHXX003)	7+83.15	543832.8490	1712793.9642
P.C. (	WJJ-2)	8+39.60	543789.1750	1712758.1939
Tangential Direction:		S 39°19'06.8" W		
Tangential Length:		56.45		
Element: Circular				
P.C. (	WJJ-2)	8+39.60	543789.1750	1712758.1939
P.I. (	)	8+91.68	543748.8803	1712725.1912
C.C. (	8045)		543169.8183	1713514.3999
P.T. (	8046)	9+43.67	543705.3066	1712696.6575
Radius:		977.47		
Delta:		6°06'01.0" Left		
Degree of Curvature(Arc):		5°51'41.9"		
Length:		104.07		
Tangent:		52.08		
Chord:		104.02		
Middle Ordinate:		1.38		
External:		1.39		
Tangent Direction:		S 39°19'06.8" W		
Radial Direction:		N 50°40'53.2" W		
Chord Direction:		S 36°11'06.3" W		
Radial Direction:		N 56°46'54.2" W		
Tangent Direction:		S 33°13'05.8" W		
Element: Linear				
P.T. (	8046)	9+43.67	543705.3066	1712696.6575
P.O.E. (	WJJHXX004)	9+87.29	543668.8175	1712672.7631
Tangential Direction:		S 33°13'05.8" W		
Tangential Length:		43.62		

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13404
STEPHEN A. ZAD
2018-05-29

SHEET 1 OF 2
LAYOUT OF RETAINING WALL 'JJ'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DCD DATE: 6/2/2016
CHECKED BY: SA DATE: 6/6/2016
DESIGNED BY: DCD DATE: 5/3/2016
FILENAME: r100824_p&p_JJ_01
SCALE: 1" = 15'

BRIDGE NO.

DRAWING NO. 59595

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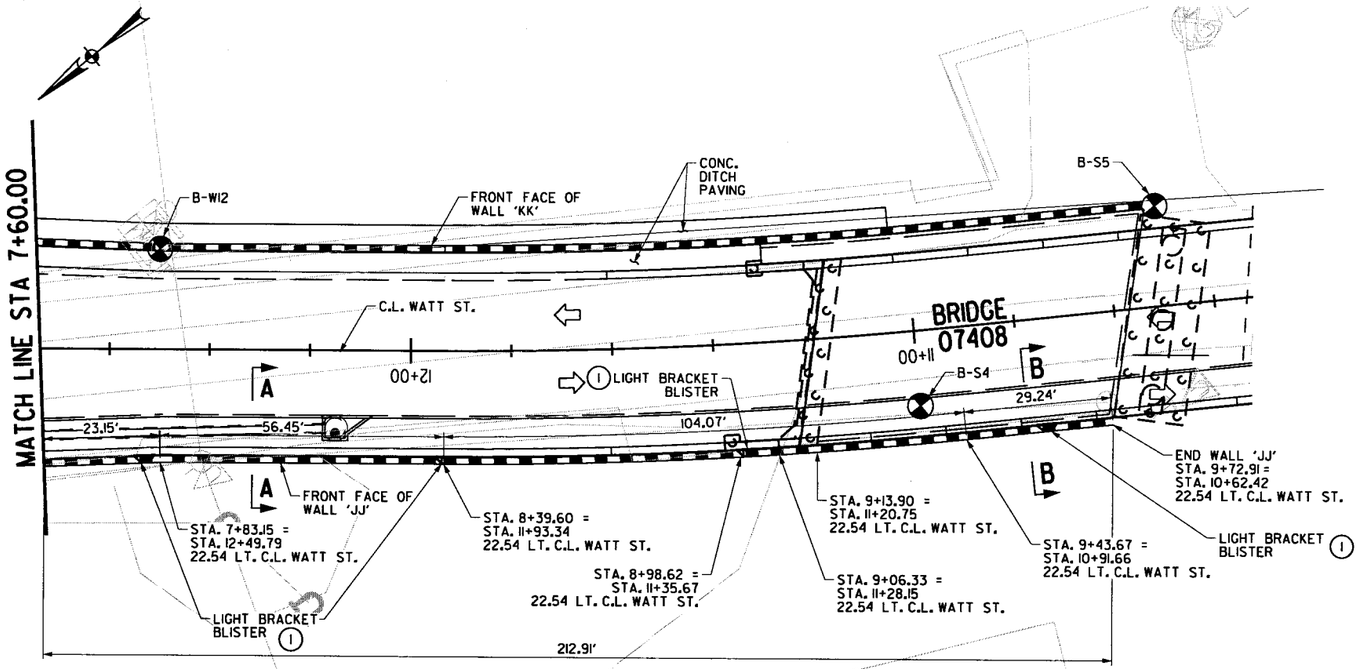
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	258	346
				(1)		P&P RET. WALL 'JJ'		59596



PLAN
SCALE 1"=15'

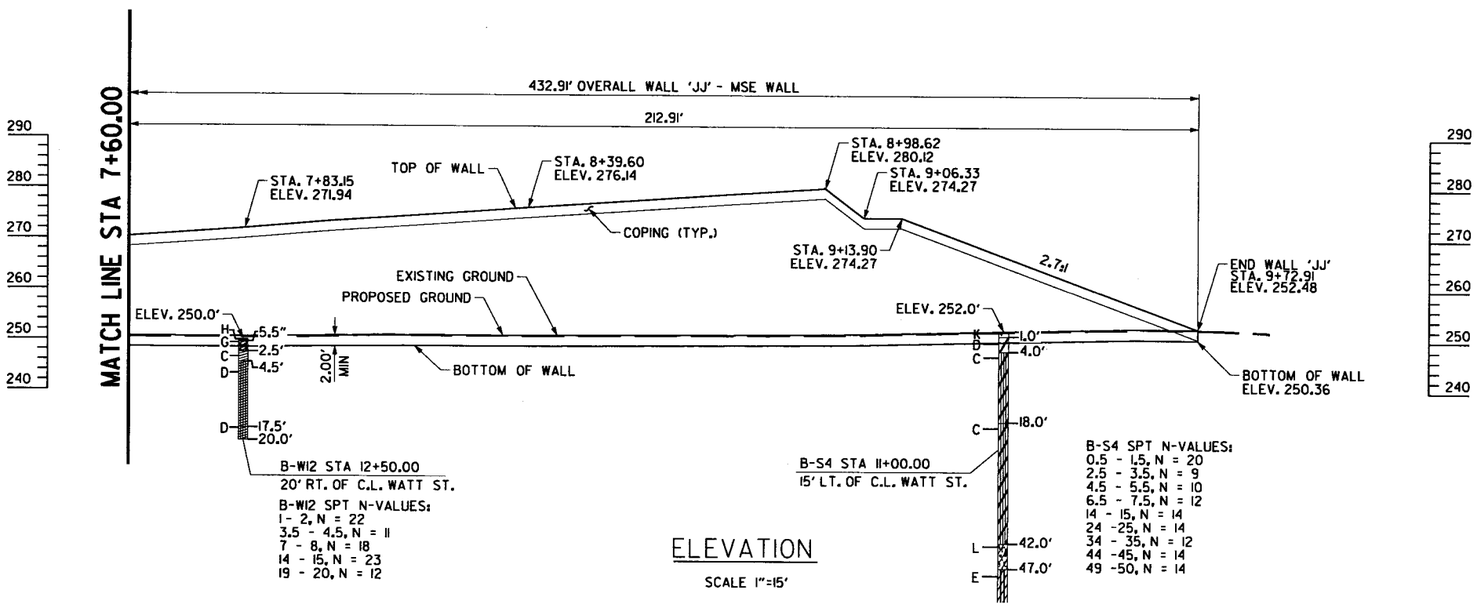
RETAINING WALL 'JJ'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
5+40.00	255.62	255.62	247.98
5+65.00	257.04	252.09	247.97
5+90.00	258.63	250.08	248.00
6+15.00	260.31	250.14	248.02
6+40.00	262.05	250.20	248.08
6+65.00	263.83	250.34	248.22
6+90.00	265.48	250.43	248.31
7+15.00	267.13	250.58	248.46
7+40.00	268.89	250.61	248.49
7+65.00	270.66	250.59	248.47
7+90.00	272.52	250.63	248.51
8+15.00	274.41	250.88	248.76
8+40.00	276.17	250.86	248.74
8+65.00	277.87	251.01	248.89
8+90.00	279.56	251.16	249.04
9+15.00	273.86	251.56	249.44
9+40.00	264.63	252.11	249.99
9+65.00	255.40	252.54	250.42
9+72.91	252.48	252.48	250.36

(1) FOR "LIGHT BRACKET BLISTER DETAILS" SEE BRIDGE PLAN, DWG NO. 59563

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.



B-WI2 SPT N-VALUES:
1 - 2, N = 22
3.5 - 4.5, N = 11
7 - 8, N = 18
14 - 15, N = 23
19 - 20, N = 12

B-S4 SPT N-VALUES:
0.5 - 1.5, N = 20
2.5 - 3.5, N = 9
4.5 - 5.5, N = 10
6.5 - 7.5, N = 12
14 - 15, N = 14
24 -25, N = 14
34 - 35, N = 12
44 -45, N = 14
49 -50, N = 14

ELEVATION
SCALE 1"=15'

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12402
SHAHRIAR AZAD
2018-05-29

SHEET 2 OF 2
LAYOUT OF RETAINING WALL 'JJ'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_p&p_JJ_02
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	1" = 15'
DESIGNED BY:	DCD	DATE:	5/3/2016		

DRAWING NO. 59596

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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.		100824	259	346
				①		SECTIONS WALL 'JJ'		59597

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1)) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

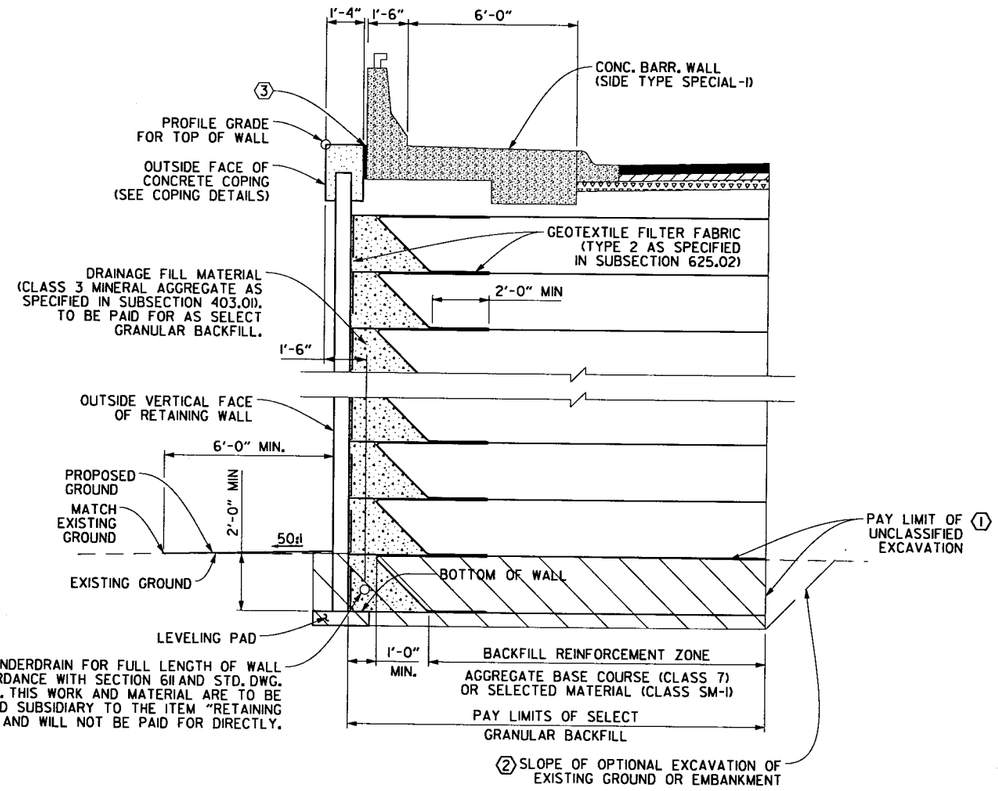
④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

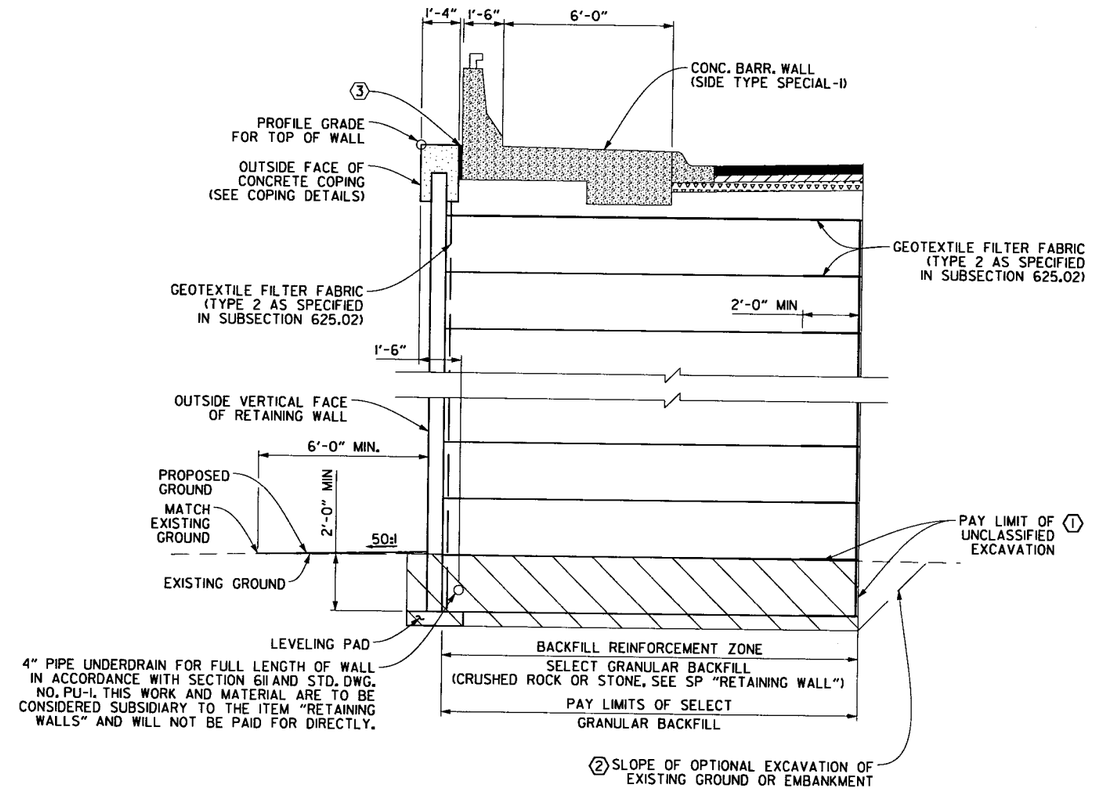
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
5+40.00 TO 7+25.00	5,005	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
7+25.00 TO 8+00.00	5,005	4	BACKFILL UNDERCUT WITH STONE BACKFILL **
8+00.00 TO 9+06.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 12 FT
9+06.00 TO 9+73.00	5,005	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE

** UNDERCUTS SHOULD EXTEND AT LEAST 4 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION A-A
(BACKFILL METHOD A)
N.T.S.



SECTION A-A
(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
2018-05-29

SHEET 1 OF 2
SECTIONS OF RETAINING WALL 'JJ'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_JJ_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

BRIDGE NO.

DRAWING NO. 59597

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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.		100824	259A	346
				①		SECTIONS WALL 'JJ'		59604

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
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6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
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① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

TABLE I

STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
5+40.00 TO 7+25.00	5,005	2	BACKFILL UNDERCUT WITH STONE BACKFILL *
7+25.00 TO 8+00.00	5,005	4	BACKFILL UNDERCUT WITH STONE BACKFILL * *
8+00.00 TO 9+06.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 12 FT
9+06.00 TO 9+73.00	5,005	MINIMAL	

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE

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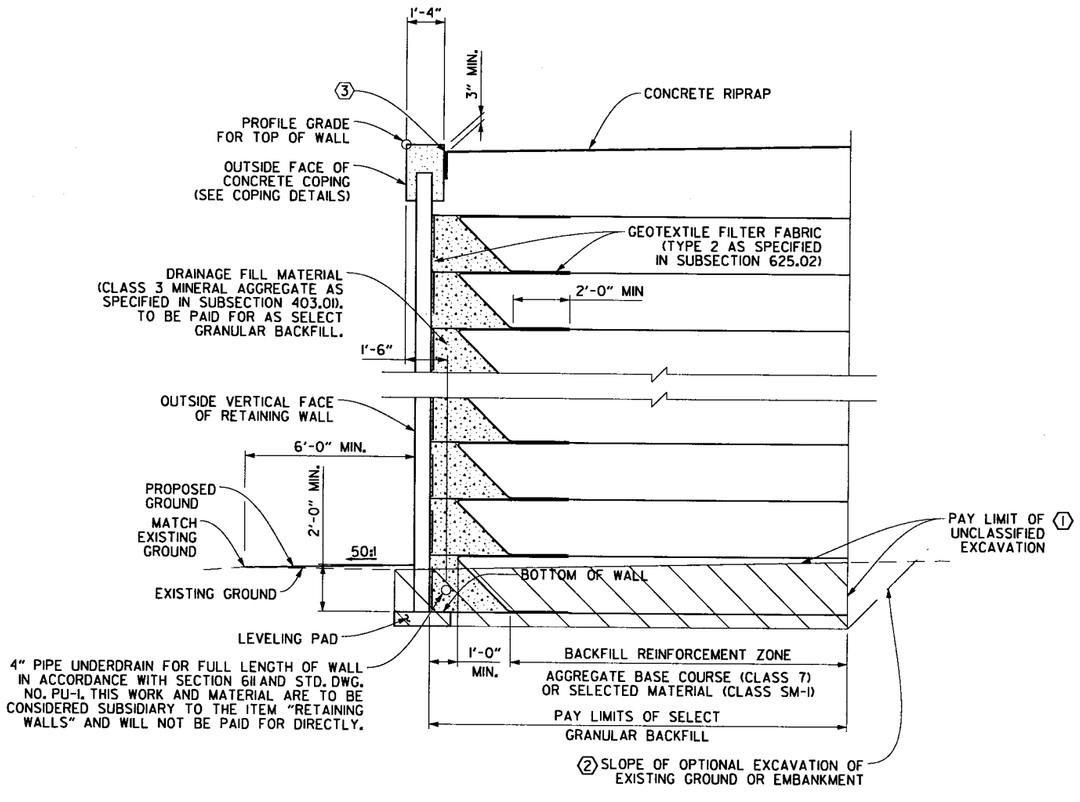
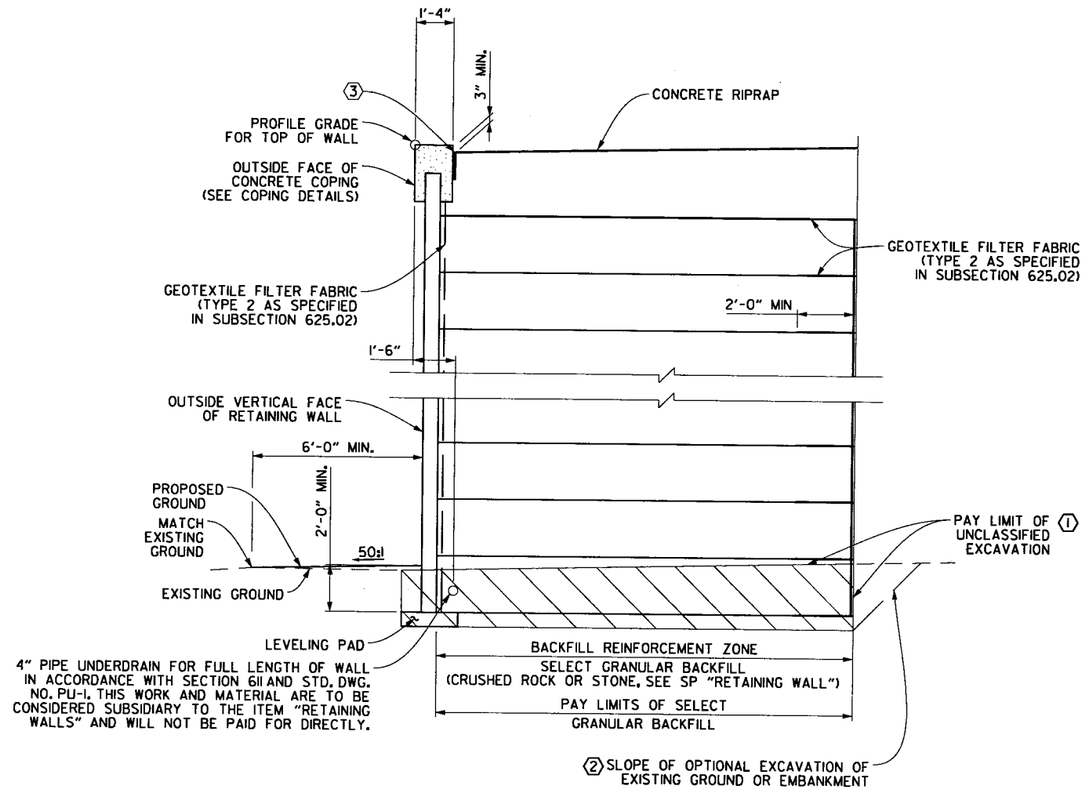


SECTION B-B

(BACKFILL METHOD A)
N.T.S.



SECTION B-B

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12406
SHAHRIAR AZAD
2018-05-29

SHEET 2 OF 2
SECTIONS OF RETAINING WALL 'JJ'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_JJ_0
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	MJB	DATE:	5/3/2016		

BRIDGE NO.

DRAWING NO. 59604

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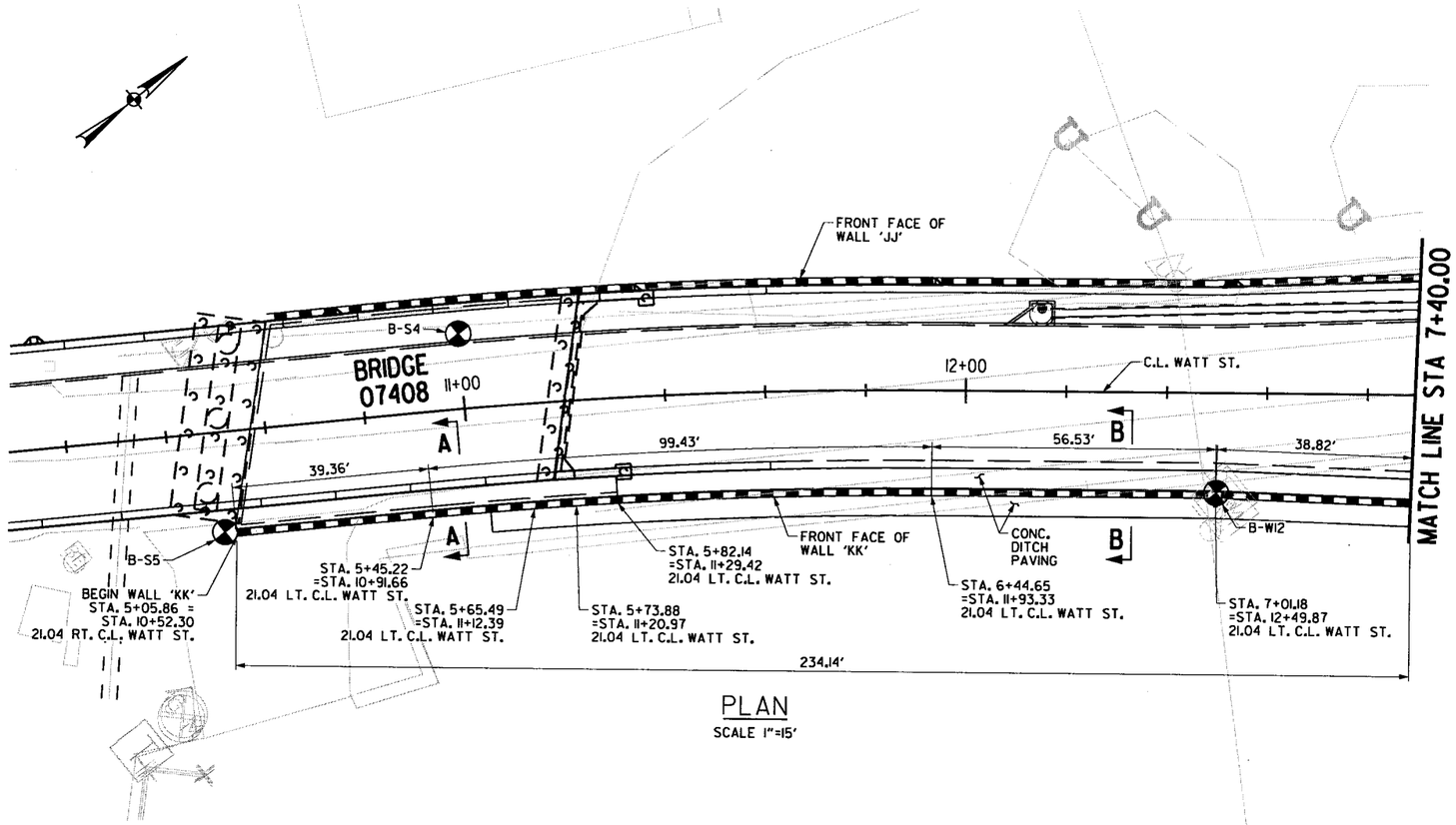
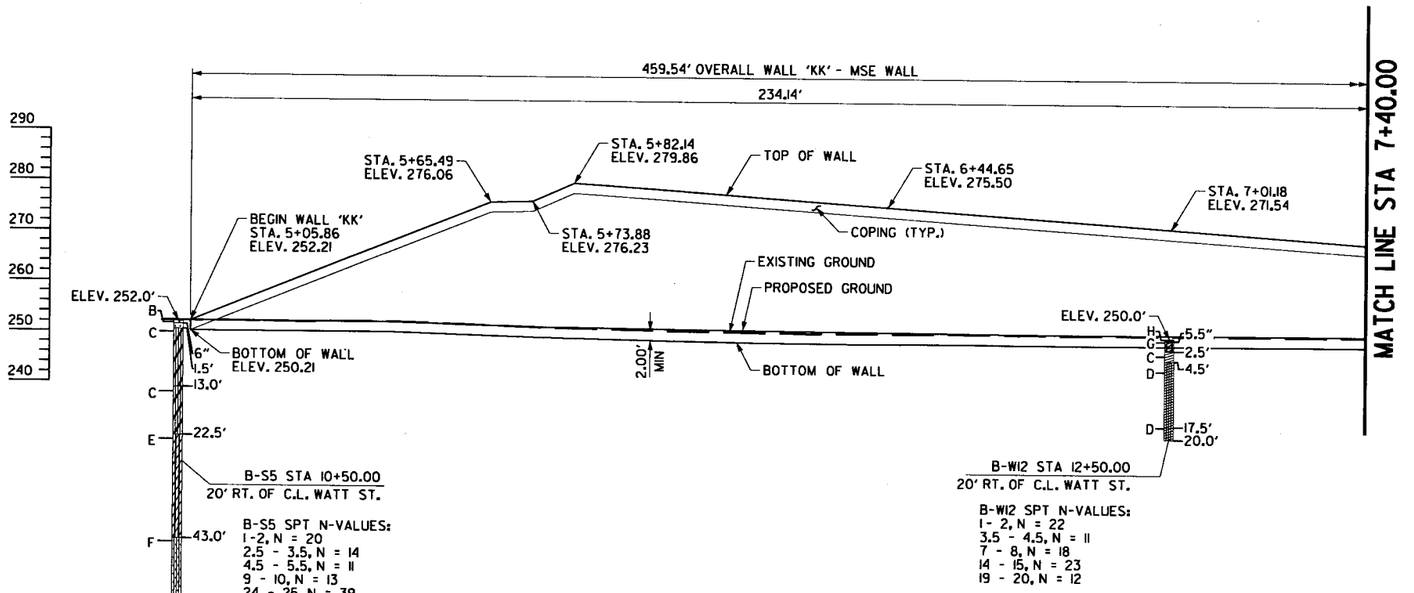
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	259B	346
				①		P&P RET. WALL 'KK'		59605



PLAN

SCALE 1"=15'



ELEVATION

SCALE 1"=15'

```
* BENTLEY HORIZONTAL ALIGNMENT REVIEW
*
* Alignment name: WKK
* Alignment description:
* Alignment style: Default
* Input Factor: 1.00000000
*
```

	STATION	NORTHING	EASTING
Element: Linear			
P.O.B. (WKKHXX001)	5+00.00	543643.5990	1712708.3456
P.C. (WKK-1)	5+45.22	543681.4303	1712733.1189
Tangential Direction:	N 33°13'05.8" E		
Tangential Length:	45.22		
Element: Circular			
P.C. (WKK-1)	5+45.22	543681.4303	1712733.1189
P.I. ( )	5+94.98	543723.0612	1712760.3804
C.C. (8045)		543169.8183	1713514.3999
P.T. (8047)	6+44.65	543761.5592	1712791.9115
Radius:	933.89		
Delta:	6°06'01.0" Right		
Degree of Curvature(Arc):	6°08'06.7"		
Length:	99.43		
Tangent:	49.76		
Chord:	99.38		
Middle Ordinate:	1.32		
External:	1.32		
Tangent Direction:	N 33°13'05.8" E		
Radial Direction:	S 56°46'54.2" E		
Chord Direction:	N 36°16'06.3" E		
Radial Direction:	S 50°40'53.2" E		
Tangent Direction:	N 39°19'06.8" E		
Element: Linear			
P.T. (8047)	6+44.65	543761.5592	1712791.9115
P.I. (WKKHXX002)	7+01.18	543805.2926	1712827.7305
Tangential Direction:	N 39°19'06.8" E		
Tangential Length:	56.53		
Element: Linear			
P.I. (WKKHXX002)	7+01.18	543805.2926	1712827.7305
P.I. (WKKHXX003)	8+51.26	543918.1696	1712926.6434
Tangential Direction:	N 41°13'39.8" E		
Tangential Length:	150.08		
Element: Linear			
P.I. (WKKHXX003)	8+51.26	543918.1696	1712926.6434
P.C. (WKK-2)	8+89.10	543947.4394	1712950.6163
Tangential Direction:	N 39°19'06.8" E		
Tangential Length:	37.83		
Element: Circular			
P.C. (WKK-2)	8+89.10	543947.4394	1712950.6163
P.I. ( )	10+26.57	544053.7949	1713037.7247
C.C. (8023)		544205.9697	1712634.9627
P.T. (8048)	11+54.30	544191.1795	1713042.7081
Radius:	408.01		
Delta:	37°14'28.2" Left		
Degree of Curvature(Arc):	14°02'33.4"		
Length:	265.20		
Tangent:	137.47		
Chord:	260.56		
Middle Ordinate:	21.36		
External:	22.54		
Tangent Direction:	N 39°19'06.8" E		
Radial Direction:	S 50°40'53.2" E		
Chord Direction:	N 20°41'52.7" E		
Radial Direction:	S 87°55'21.4" E		
Tangent Direction:	N 2°04'38.6" E		

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
I - Stiff clay (fill)
J - Stiff fine sandy clay (fill)
K - Firm to stiff fine sandy clay
L - Medium dense silt
M - Medium dense silty fine sand (fill)
N - Medium dense clayey fine sand
O - Loose to Medium dense clayey fine sand with fine to coarse gravel
P - Medium dense to dense fine sandy silt
Q - Medium dense to dense silty fine sand
R - Medium dense to dense fine to coarse sand
S - Medium dense to dense clayey fine to coarse sand with some fine to coarse gravel (fill)

NOTES:

1. CONTROL POINT STATIONS AND OFFSETS ARE MEARSURED TO THE OUTSIDE TOP CORNER OF COPING.
2. SEE ROADWAY PLANS FOR ADDITIONAL ROADWAY HORIZONTAL ALIGNMENT DATA.
3. UNDERDRAIN PIPE INFORMATION IS SHOWN FOR CONTRACTOR'S INFORMATION. THE ACTUAL LOCATION OF THE UNDERDRAIN PIPE SHALL BE DETERMINED BY THE CONTRACTOR INCLUDING CONNECTION TO A DRAINAGE SYSTEM.
4. SEE DRAINAGE PLANS FOR ADDITIONAL DRAINAGE INFORMATION.
5. THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL AS DESCRIBED IN SP JOB 100824 "RETAINING WALLS."
6. BORING LOGS MAY BE OBTAINED FROM THE CONSTRUCTION CONTRACT PROCUREMENT SECTION OF THE PROGRAM MANAGEMENT DIVISION UPON REQUEST.
7. REFER TO RETAINING WALL DETAIL SHEETS FOR ADDITIONAL INFORMATION.
8. ALL EXPOSED WALL CONCRETE ELEMENTS VISIBLE BEYOND COPINGS SHALL HAVE "ASHLAR STONE" FORMLINER PRODUCED FINISH PATTERN WITH 3/4" NOMINAL DEPTH OF RELIEF.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19414
SHAHRIAR AZAD
2018-05-29

SHEET 1 OF 2
LAYOUT OF RETAINING WALL 'KK'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016
CHECKED BY:	SA	DATE:	6/6/2016
DESIGNED BY:	DCD	DATE:	5/3/2016

FILENAME: r100824_p&p_kk_01
SCALE: 1" = 15'

DRAWING NO. 59605

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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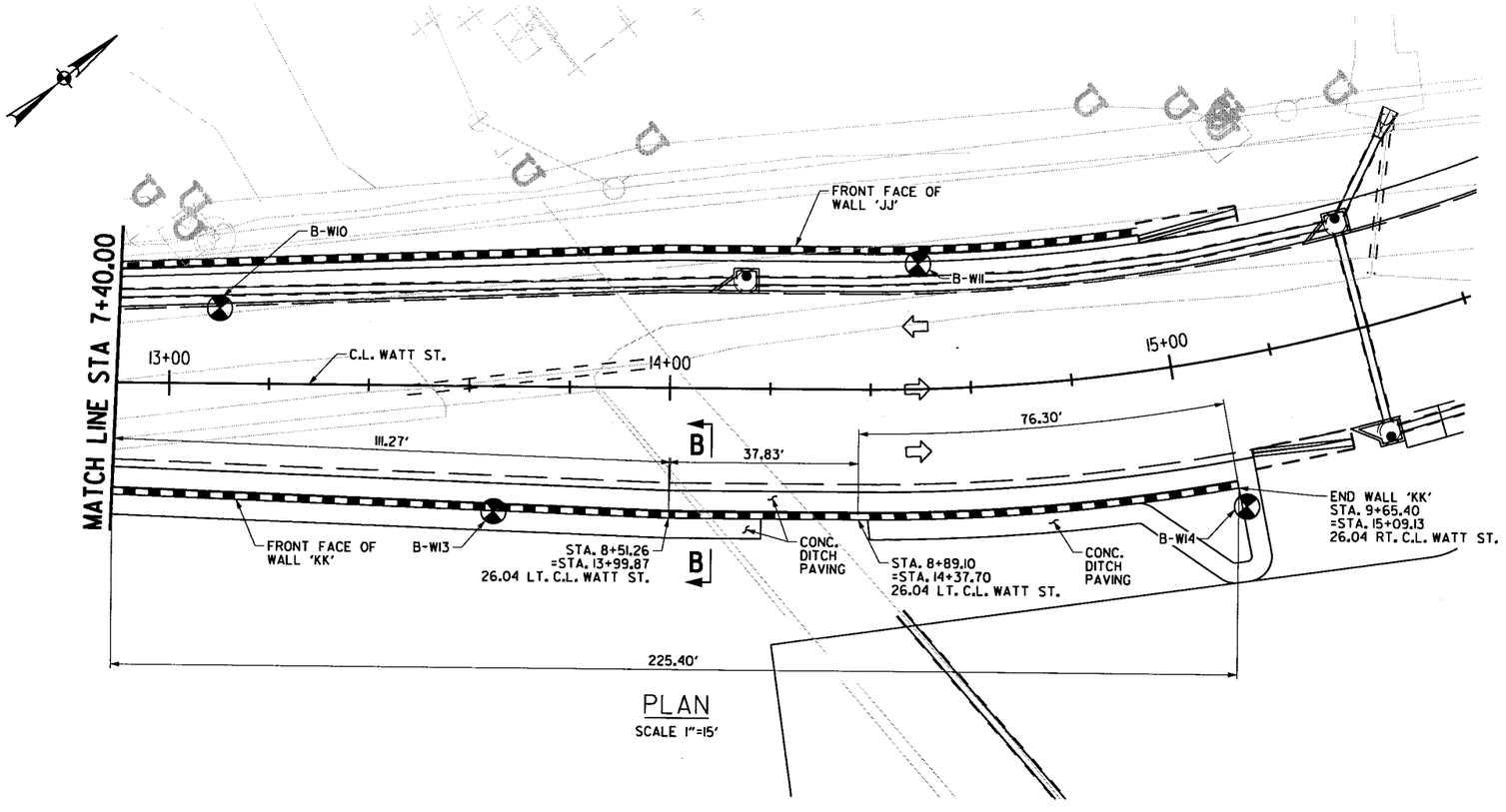
				JOB NO.		100824	259C	346
				①		P&P RET. WALL 'KK'		59606



PLAN

SCALE 1"=15'

RETAINING WALL 'KK'

STATION ALONG WALL	TOP OF WALL ELEV.	FINISHED GRADE ELEV.	BOTTOM OF WALL ELEV.
5+05.86	252.21	252.21	250.21
5+30.86	262.21	252.20	250.20
5+55.86	272.21	251.90	249.90
5+80.86	279.30	251.34	249.19
6+05.86	278.27	251.08	248.74
6+30.86	276.48	250.86	248.50
6+55.86	274.71	250.69	248.47
6+80.86	272.96	250.54	248.40
7+05.86	271.21	250.58	248.42
7+30.86	269.44	250.61	248.44
7+55.86	267.67	250.64	248.43
7+80.86	265.91	250.55	248.33
8+05.86	264.15	250.43	248.23
8+30.86	262.38	250.38	248.22
8+55.86	260.62	250.26	248.09
8+80.86	258.89	248.17	246.05
9+05.86	257.39	249.72	247.65
9+30.86	256.06	250.01	247.94
9+55.86	254.87	252.81	248.05
9+65.40	254.45	254.45	248.11

NOTES:

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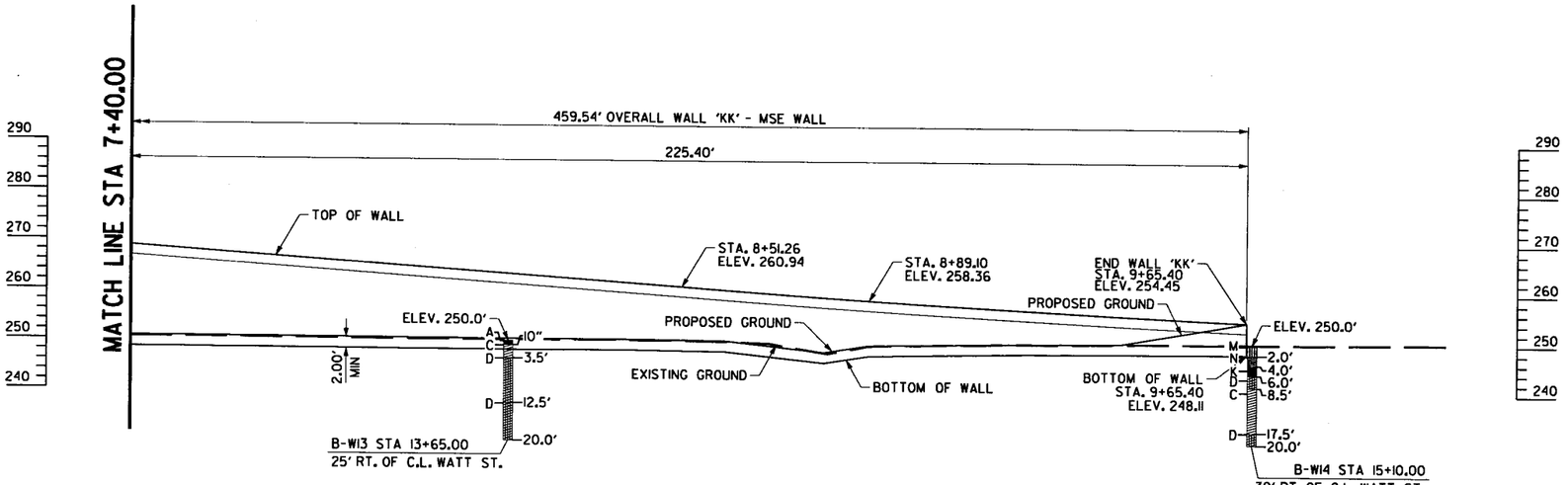

B-W13 STA 13+65.00
25' RT. OF C.L. WATT ST.

B-W13 SPT N-VALUES:
1 - 2, N = 14
2.5 - 3.5, N = 8
4.5 - 5.5, N = 19
6.5 - 7.5, N = 18
9.5 - 10.5, N = 10
14 - 15, N = 22
19 - 20, N = 20

B-W14 STA 15+10.00
30' RT. OF C.L. WATT ST.

B-W14 SPT N-VALUES:
0.5 - 1.5, N = 11
2.5 - 3.5, N = 13
4.5 - 5.5, N = 14
6.5 - 7.5, N = 17
9.5 - 10.5, N = 11
14 - 15, N = 25
19 - 20, N = 4

ELEVATION

SCALE 1"=15'

BORING LEGEND:

A - Portland cement concrete
B - Firm to stiff silty clay (fill)
C - Soft to stiff clay
D - Soft to very stiff silty clay
E - Firm to stiff clayey silt
F - Crushed stone base
G - Aggregate base
H - Asphalt concrete
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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
SHAHRIAR AZAD
2018-05-29

SHEET 2 OF 2
LAYOUT OF RETAINING WALL 'KK'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016
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FILENAME: r100824_p&p_kk_01
SCALE: 1" = 15'

DRAWING NO. 59606

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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.		100824	259D	346
				①		SECTIONS WALL 'KK'		59607

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
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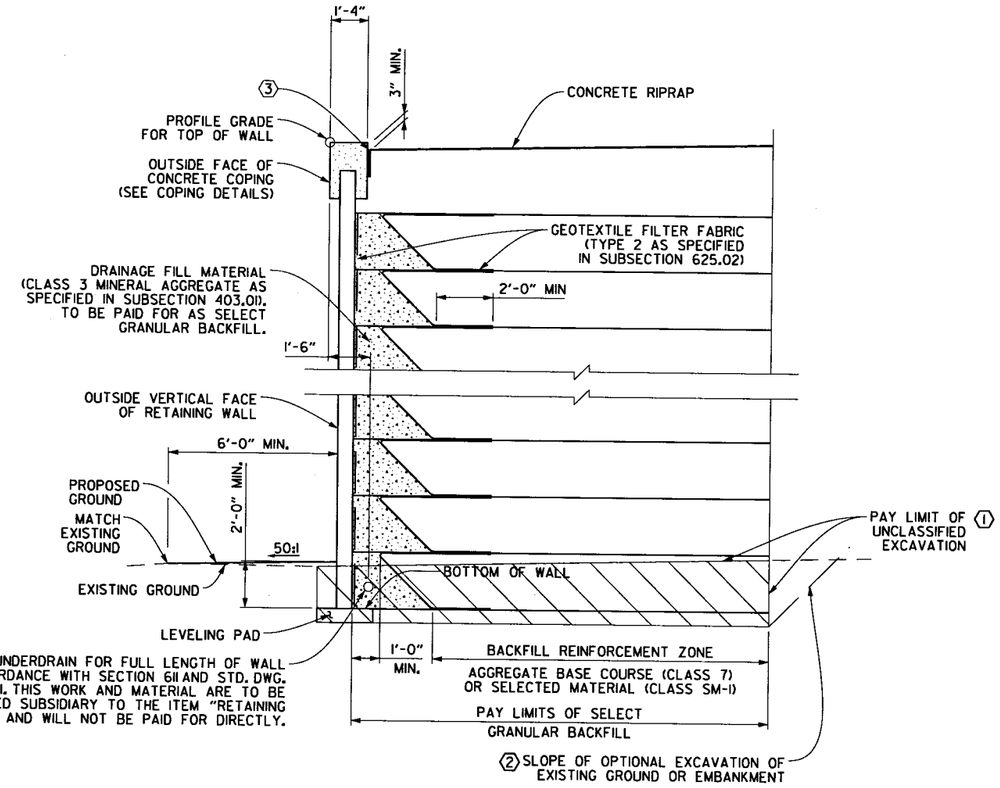
TABLE I

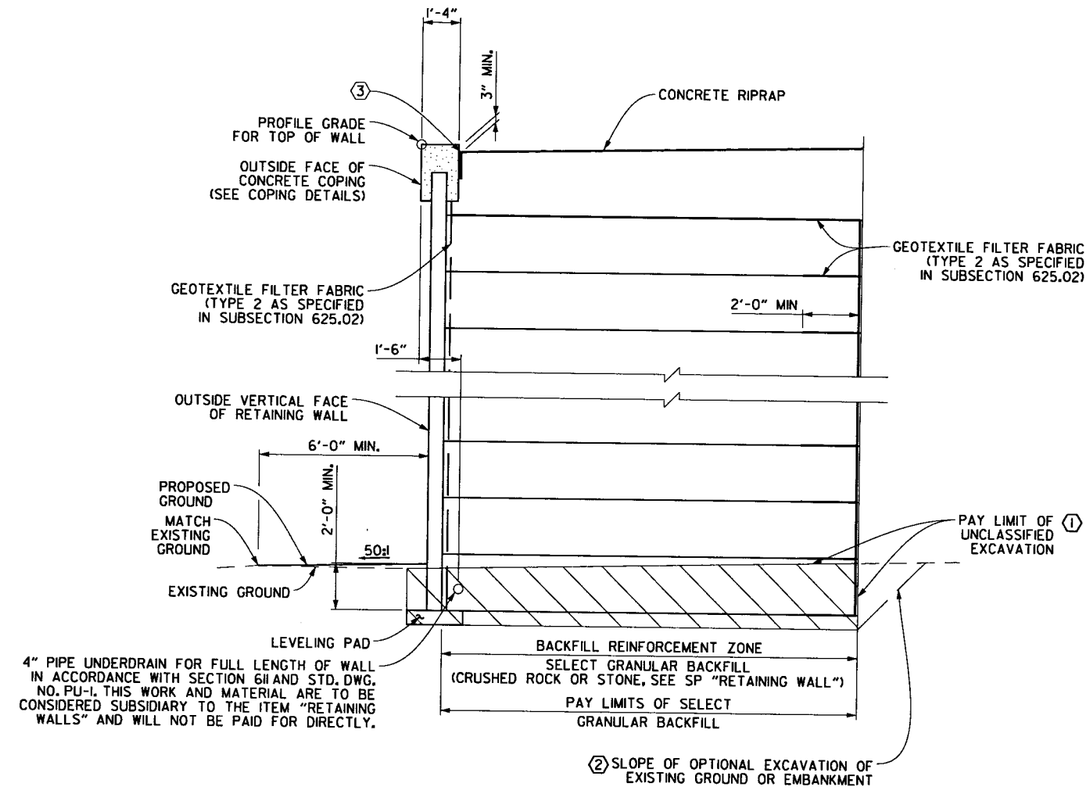
STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
5+06.00 TO 5+75.00	5,005	MINIMAL	
5+75.00 TO 6+80.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 12 FT
6+80.00 TO 9+65.00	5,005	2	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION A-A

(BACKFILL METHOD A)
N.T.S.



SECTION A-A

(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12404
SHAHRAM AMINI

2016-05-29

SHEET 1 OF 2
SECTIONS OF RETAINING WALL 'KK'

BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	DCD	DATE:	6/2/2016	FILENAME:	r100824_sections_kk_01
CHECKED BY:	SA	DATE:	6/6/2016	SCALE:	As Shown
DESIGNED BY:	DCD	DATE:	5/3/2016		

BRIDGE NO.

DRAWING NO. 59607

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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.		100824	259E	346
				①		SECTIONS WALL 'KK'		59608

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (6TH EDITION) WITH CURRENT INTERIMS.
2. SEE TABLE I FOR RECOMMENDED FACTORED BEARING RESISTANCE
3. SEISMIC PERFORMANCE ZONE: 4
4. ELEVATIONS ARE APPROXIMATE. WALL DIMENSIONS MAY VARY DEPENDING ON WALL DESIGN SELECTED.
5. SEE SP JOB 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.
6. JOINT SEALER AND JOINT FILLER WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS.
7. FOR MATERIAL PROPERTIES OF SELECT GRANULAR BACKFILL REFER TO RETAINING WALL SPECIAL PROVISION.

① EXCAVATION REQUIRED FOR AREA OF REINFORCING ZONE WILL BE PAID FOR UNDER THE PAY ITEM 210, "UNCLASSIFIED EXCAVATION". SEE SP JOB NO. 100824 "RETAINING WALLS" FOR ADDITIONAL INFORMATION.

② CONTRACTOR HAS THE OPTION OF USING A CUT SLOPE AND/OR SHORING TO MAINTAIN STABILITY OF CUT. ANY EXCAVATION AND SUBSEQUENT BACKFILL BELOW THE EXISTING GROUND LINE AND BEYOND THE LIMITS OF REINFORCING ZONE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE PAID UNDER ITEM SP JOB NO. 100824 "RETAINING WALLS".

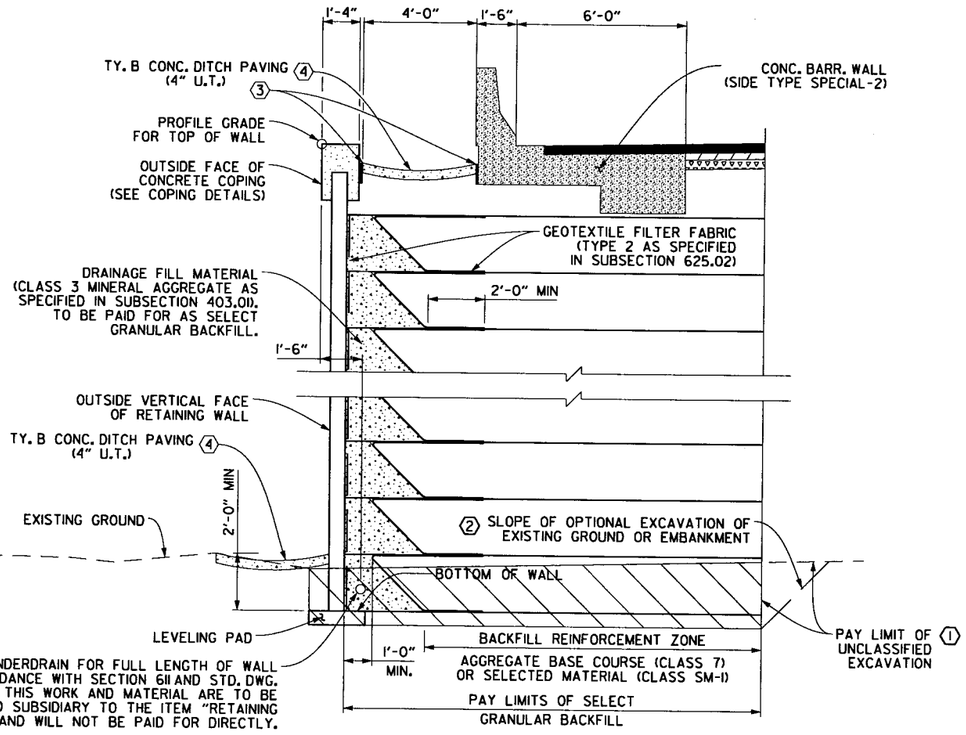
③ 1½" JOINT FILLER (AASHTO M153, TYPE I PER SUBSECTION 501.02(h)(1) WITH 1½" X 1" TYPE 3 OR 4 JOINT SEALER PER SUBSECTION 501.02(h)(2))

④ THE CONCRETE DITCH PAVING SHALL BE CONSTRUCTED WITHOUT THE 3" WEEP HOLES SHOWN ON STANDARD DWG. CDP-1

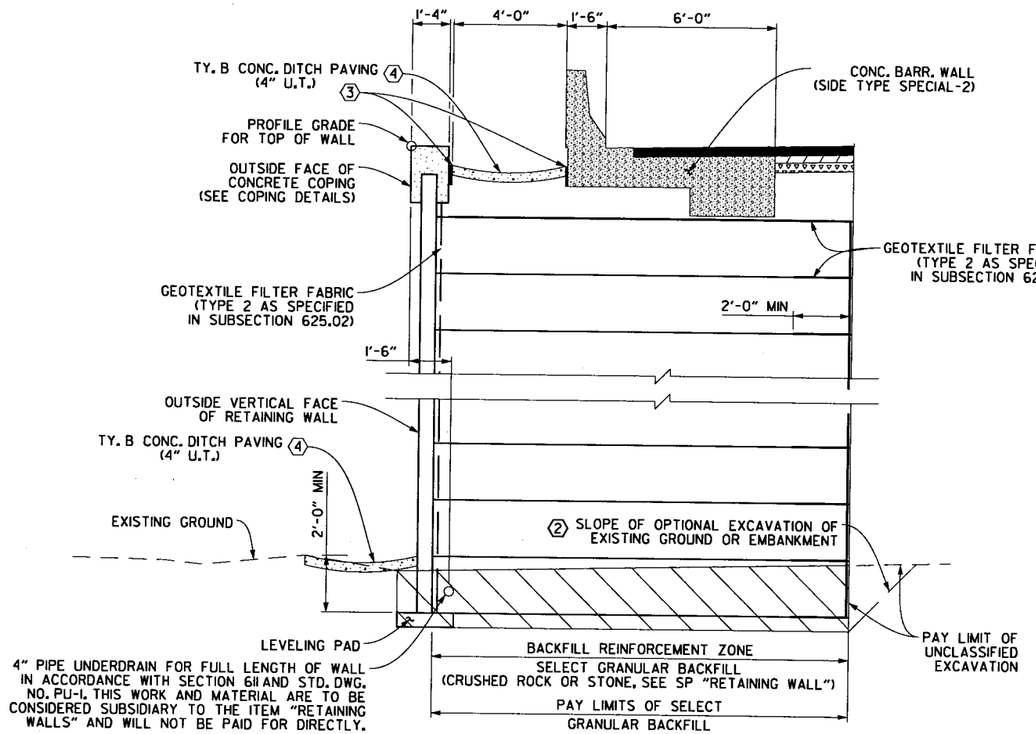
TABLE I

STATION ALONG WALL	FACTORED BEARING RESISTANCE (PSF)	ESTIMATED UNDERCUT REQUIREMENTS (FT)	COMMENTS
5+06.00 TO 5+75.00	5,005	MINIMAL	
5+75.00 TO 6+80.00	9,100	AGGREGATE PIER	AGGREGATE PIER @ 30% AREA RATIO, 30 IN. DIA., L = 12 FT
6+80.00 TO 9+65.00	5,005	2	BACKFILL UNDERCUT WITH STONE BACKFILL *

* UNDERCUTS SHOULD EXTEND AT LEAST 2 FT OUTSIDE THE REINFORCED ZONE TO THE EXTENT POSSIBLE



SECTION B-B
(BACKFILL METHOD A)
N.T.S.



SECTION B-B
(BACKFILL METHOD B)
N.T.S.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12484
SHAHRIAR AZIZ
2018-05-29

SHEET 2 OF 2
SECTIONS OF RETAINING WALL 'KK'
BNSF RAILROAD OVERPASS (HWY 18) (JONESBORO) (S)
CRAIGHEAD COUNTY
ROUTE 18 SECTION 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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BRIDGE NO.
DRAWING NO. 59608

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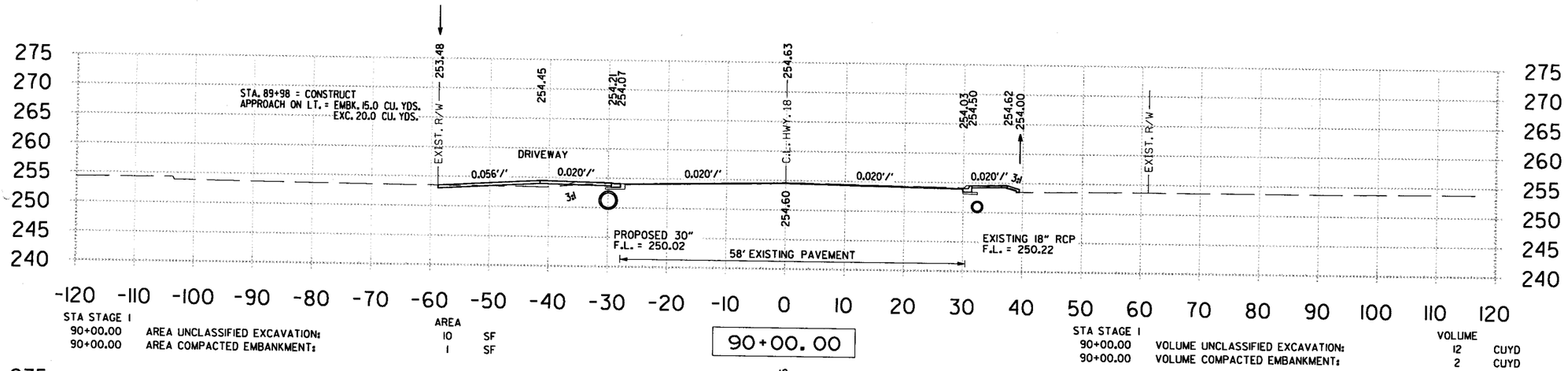
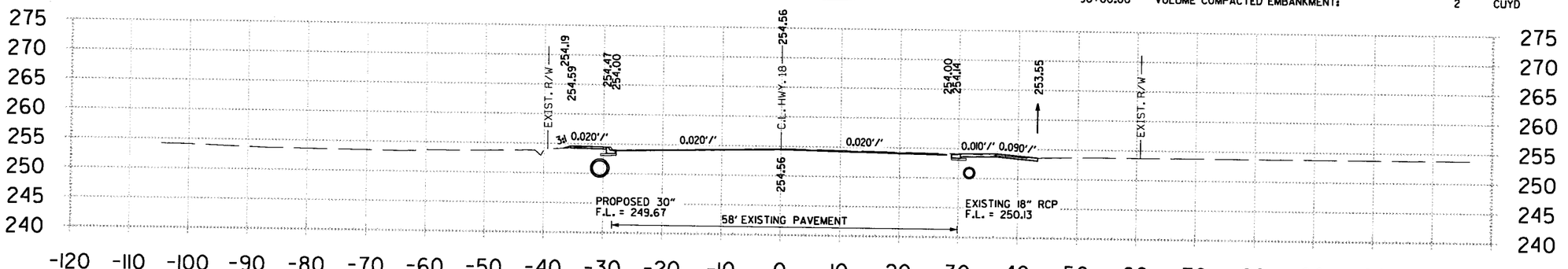


STA STAGE I		AREA	
90+00.00	AREA UNCLASSIFIED EXCAVATION:	10	SF
90+00.00	AREA COMPACTED EMBANKMENT:	1	SF

90+00.00

STA STAGE I		VOLUME	
90+00.00	VOLUME UNCLASSIFIED EXCAVATION:	12	CUYD
90+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

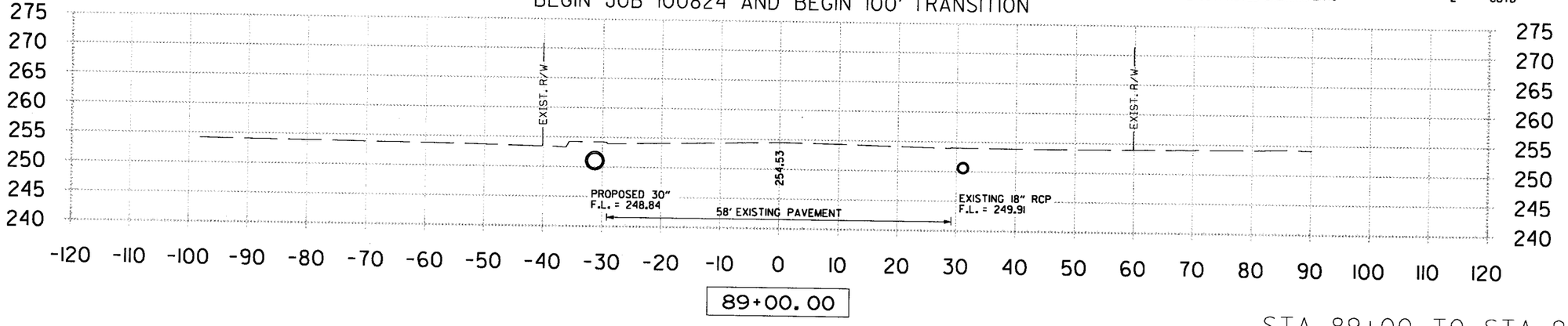


STA STAGE I		AREA	
89+70.00	AREA UNCLASSIFIED EXCAVATION:	10	SF
89+70.00	AREA COMPACTED EMBANKMENT:	1	SF

89+70.00

STA STAGE I		VOLUME	
89+70.00	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
89+70.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

BEGIN JOB 100824 AND BEGIN 100' TRANSITION



89+00.00

STA. 89+00 TO STA. 90+00 HWY. 18

CROSS SECTIONS

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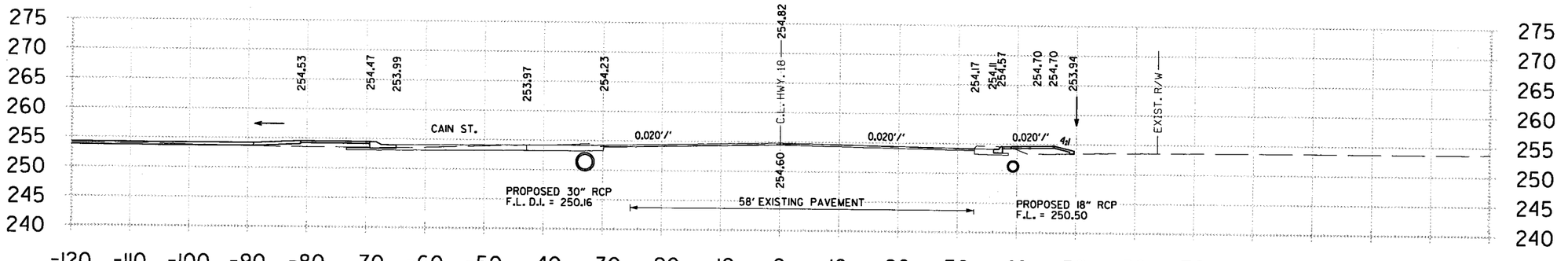
				JOB NO.		100824	261	346

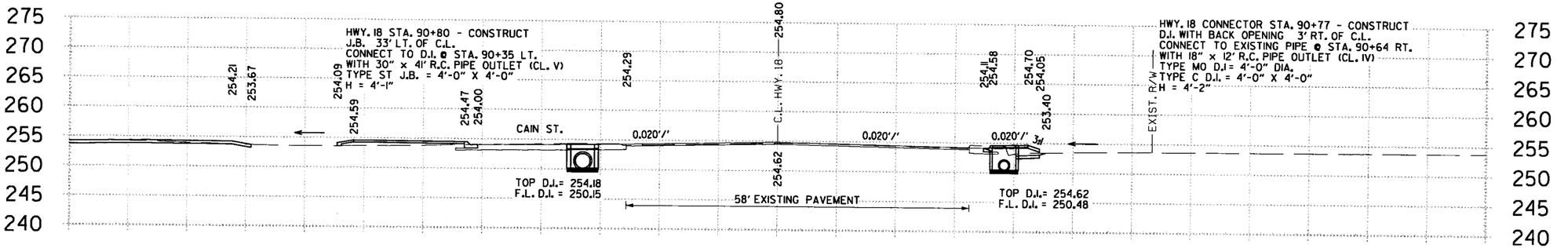
(2) CROSS SECTIONS



STA STAGE I		AREA	
90+85.27	AREA UNCLASSIFIED EXCAVATION:	38	SF
90+85.27	AREA COMPACTED EMBANKMENT:	18	SF

90+85.27

STA STAGE I		VOLUME	
90+85.27	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
90+85.27	VOLUME COMPACTED EMBANKMENT:	6	CUYD

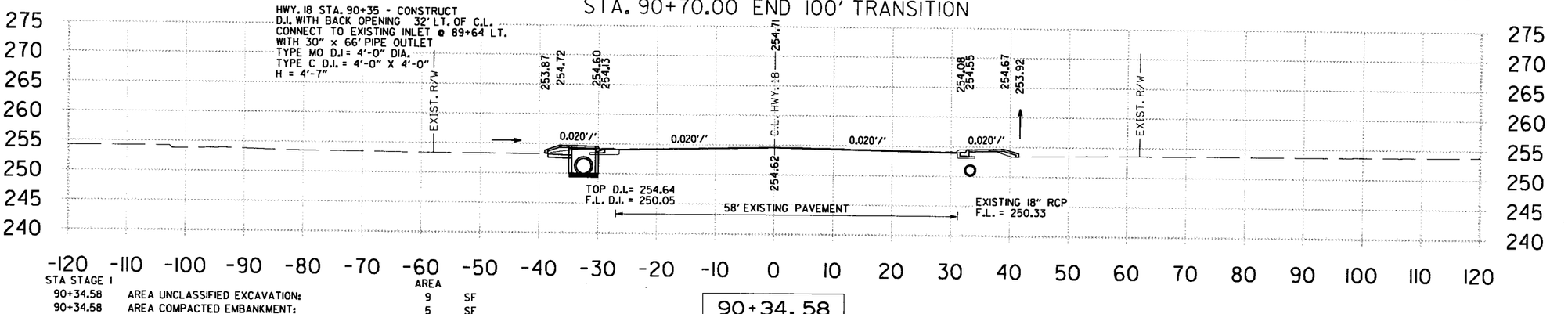


STA STAGE I		AREA	
90+76.02	AREA UNCLASSIFIED EXCAVATION:	34	SF
90+76.02	AREA COMPACTED EMBANKMENT:	16	SF

90+76.02

STA STAGE I		VOLUME	
90+76.02	VOLUME UNCLASSIFIED EXCAVATION:	33	CUYD
90+76.02	VOLUME COMPACTED EMBANKMENT:	17	CUYD

STA. 90+70.00 END 100' TRANSITION



STA STAGE I		AREA	
90+34.58	AREA UNCLASSIFIED EXCAVATION:	9	SF
90+34.58	AREA COMPACTED EMBANKMENT:	5	SF

STA STAGE I		VOLUME	
90+34.58	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
90+34.58	VOLUME COMPACTED EMBANKMENT:	4	CUYD

90+34.58

STA. 90+35 TO STA. 90+85 HWY. 18

CROSS SECTIONS

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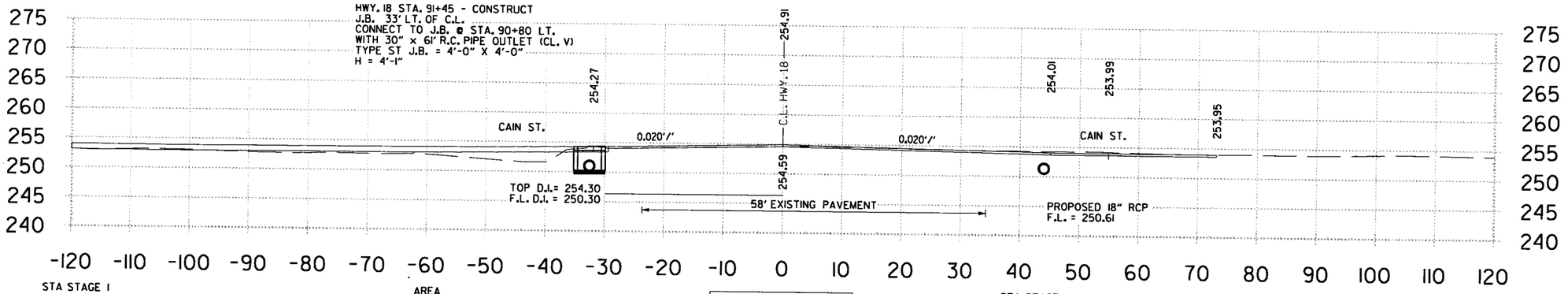
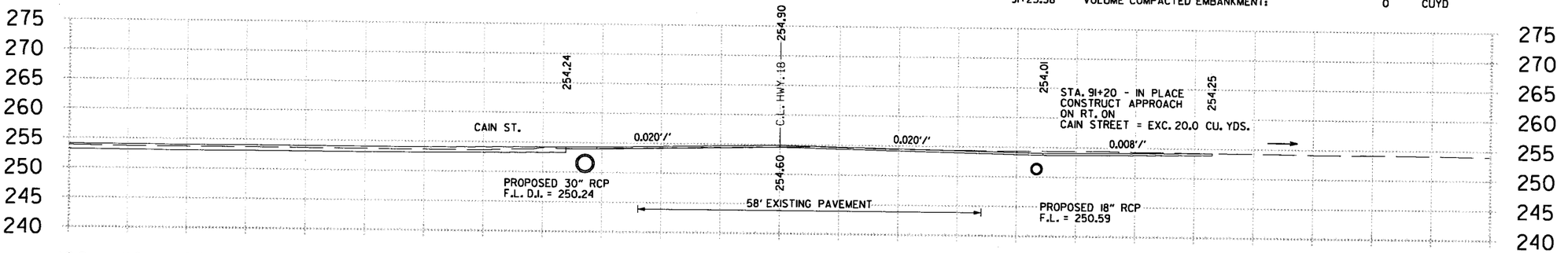


STA	STAGE		AREA	
91+25.58	I	AREA UNCLASSIFIED EXCAVATION:	5	SF
91+25.58		AREA COMPACTED EMBANKMENT:	0	SF

91+25.58

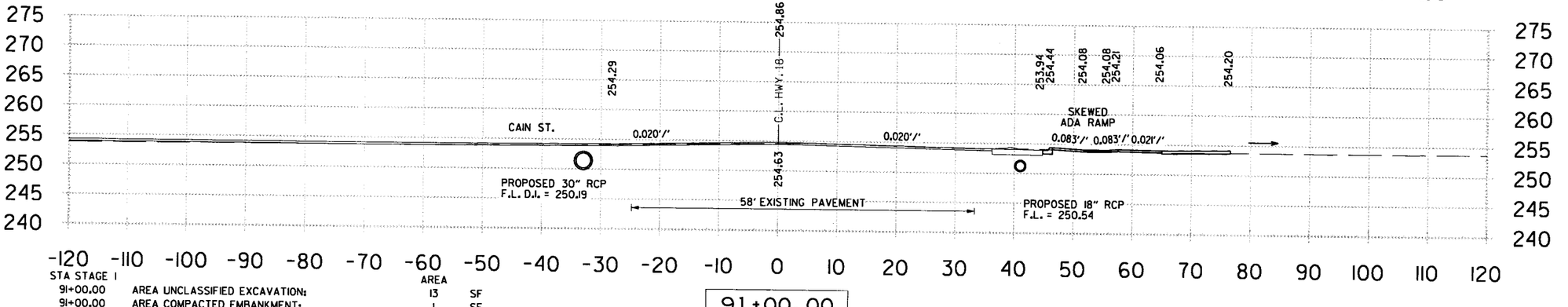
STA	STAGE		VOLUME	
91+25.58	I	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
91+25.58		VOLUME COMPACTED EMBANKMENT:	0	CUYD



STA	STAGE		AREA	
91+20.11	I	AREA UNCLASSIFIED EXCAVATION:	0	SF
91+20.11		AREA COMPACTED EMBANKMENT:	0	SF

91+20.11

STA	STAGE		VOLUME	
91+20.11	I	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
91+20.11		VOLUME COMPACTED EMBANKMENT:	1	CUYD



STA	STAGE		AREA	
91+00.00	I	AREA UNCLASSIFIED EXCAVATION:	13	SF
91+00.00		AREA COMPACTED EMBANKMENT:	1	SF

STA	STAGE		VOLUME	
91+00.00	I	VOLUME UNCLASSIFIED EXCAVATION:	14	CUYD
91+00.00		VOLUME COMPACTED EMBANKMENT:	6	CUYD

91+00.00

STA. 91+00 TO STA. 91+26 HWY. 18

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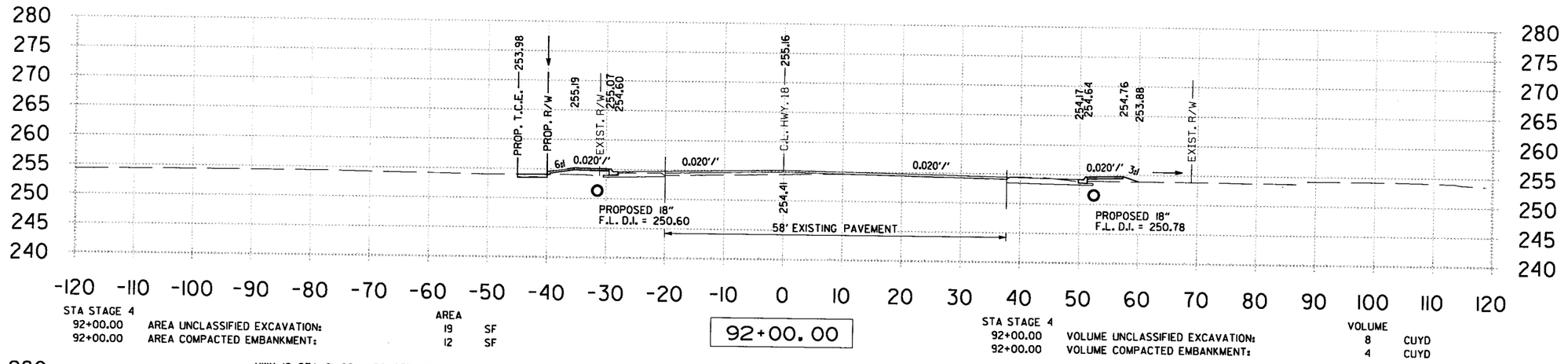
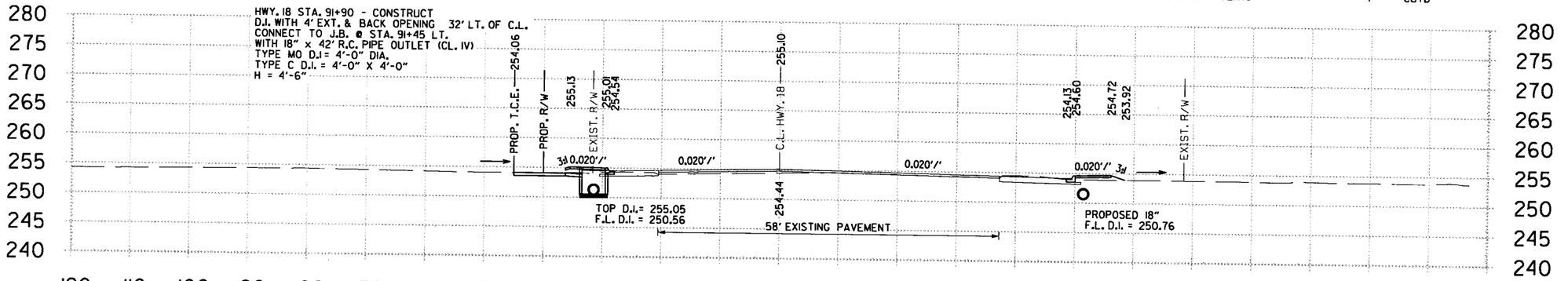


STA STAGE 4
92+00.00 AREA UNCLASSIFIED EXCAVATION: AREA 19 SF
92+00.00 AREA COMPACTED EMBANKMENT: 12 SF

92+00.00

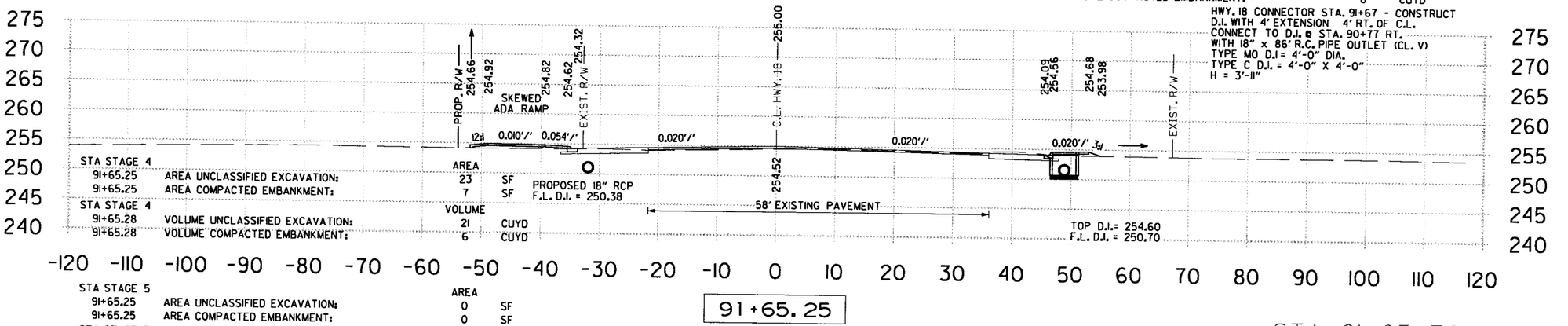
STA STAGE 4
92+00.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 8 CUYD
92+00.00 VOLUME COMPACTED EMBANKMENT: 4 CUYD



STA STAGE 4
91+90.00 AREA UNCLASSIFIED EXCAVATION: AREA 19 SF
91+90.00 AREA COMPACTED EMBANKMENT: 8 SF

91+90.00

STA STAGE 4
91+90.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 20 CUYD
91+90.00 VOLUME COMPACTED EMBANKMENT: 8 CUYD



STA STAGE 4
91+65.25 AREA UNCLASSIFIED EXCAVATION: AREA 23 SF
91+65.25 AREA COMPACTED EMBANKMENT: 7 SF

STA STAGE 4
91+65.28 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 21 CUYD
91+65.28 VOLUME COMPACTED EMBANKMENT: 6 CUYD

91+65.25

STA STAGE 5
91+65.25 AREA UNCLASSIFIED EXCAVATION: AREA 0 SF
91+65.25 AREA COMPACTED EMBANKMENT: 0 SF

STA STAGE 5
91+65.28 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 4 CUYD
91+65.28 VOLUME COMPACTED EMBANKMENT: 0 CUYD

STA. 91+65 TO STA. 92+00 HWY. 18

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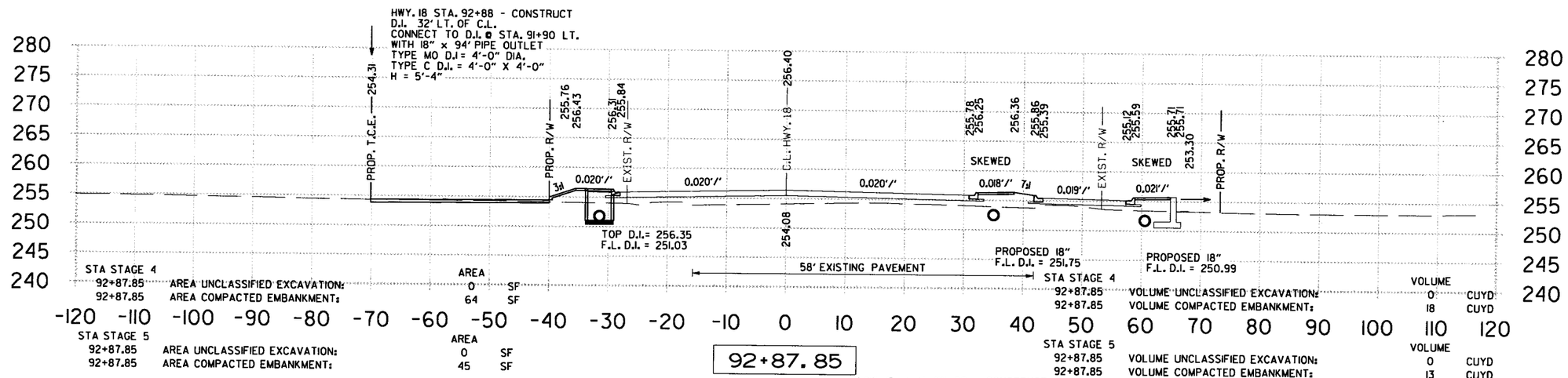

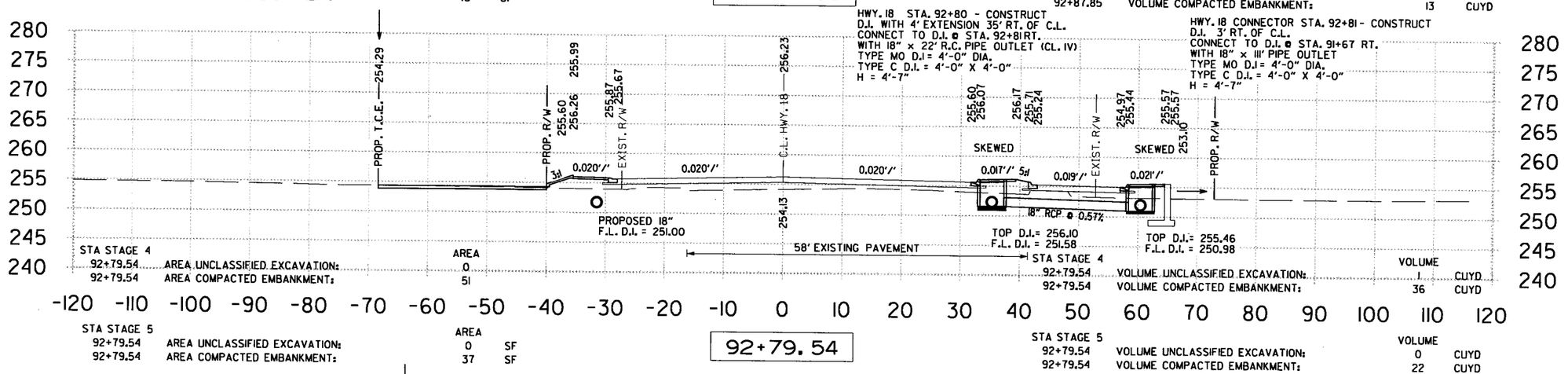

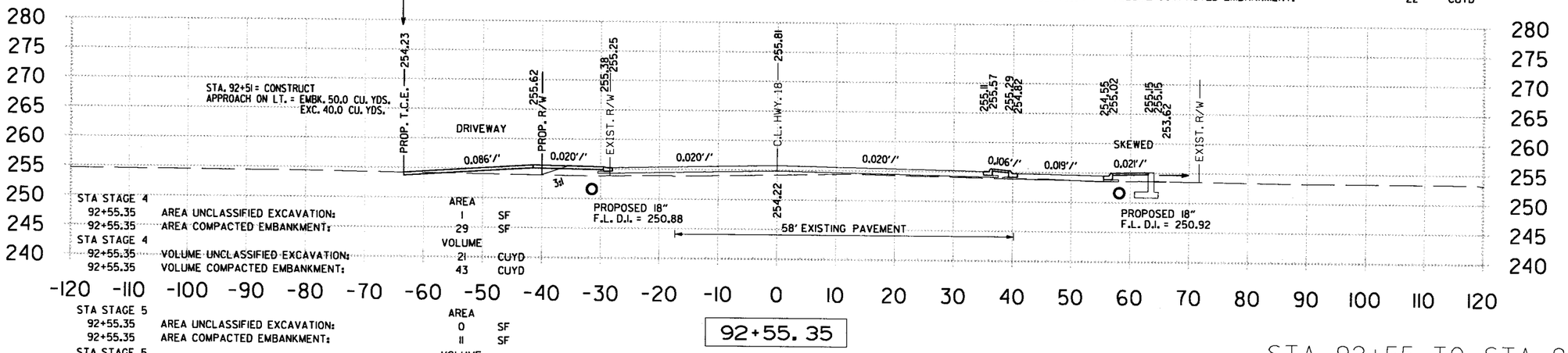

STA. 92+55 TO STA. 92+88 HWY. 18

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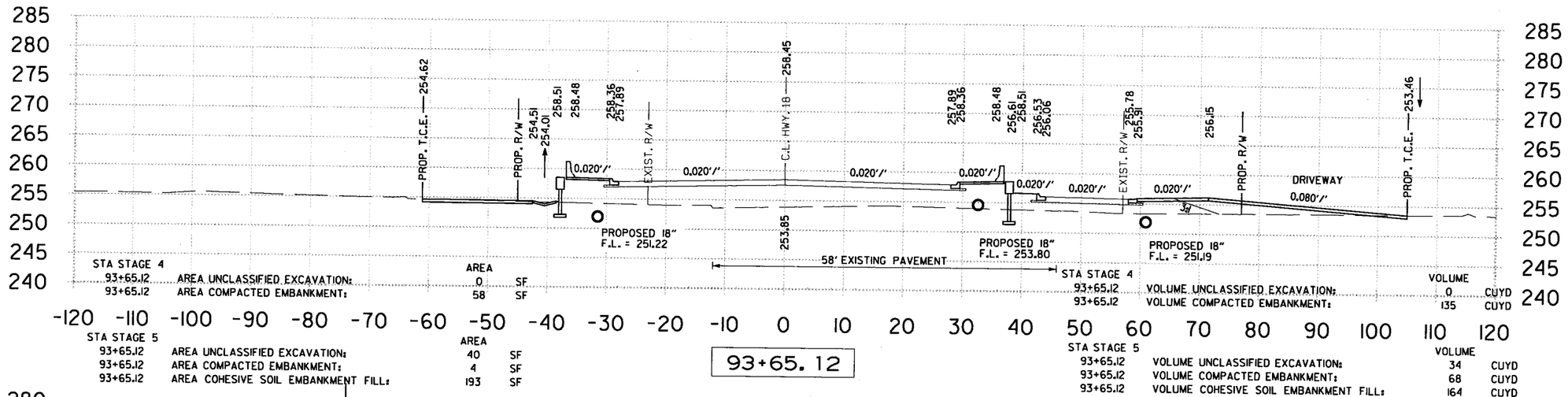
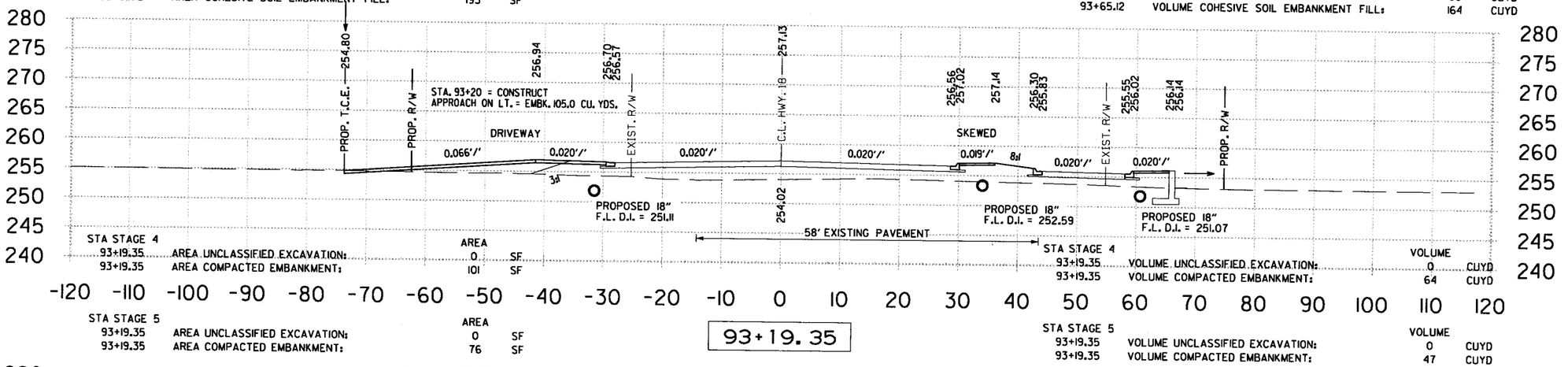


STA STAGE 4		AREA	
93+65.12	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+65.12	AREA COMPACTED EMBANKMENT:	58	SF

STA STAGE 5		AREA	
93+65.12	AREA UNCLASSIFIED EXCAVATION:	40	SF
93+65.12	AREA COMPACTED EMBANKMENT:	4	SF
93+65.12	AREA COHESIVE SOIL EMBANKMENT FILL:	193	SF

STA STAGE 4		VOLUME	
93+65.12	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+65.12	VOLUME COMPACTED EMBANKMENT:	135	CUYD

STA STAGE 5		VOLUME	
93+65.12	VOLUME UNCLASSIFIED EXCAVATION:	34	CUYD
93+65.12	VOLUME COMPACTED EMBANKMENT:	68	CUYD
93+65.12	VOLUME COHESIVE SOIL EMBANKMENT FILL:	164	CUYD

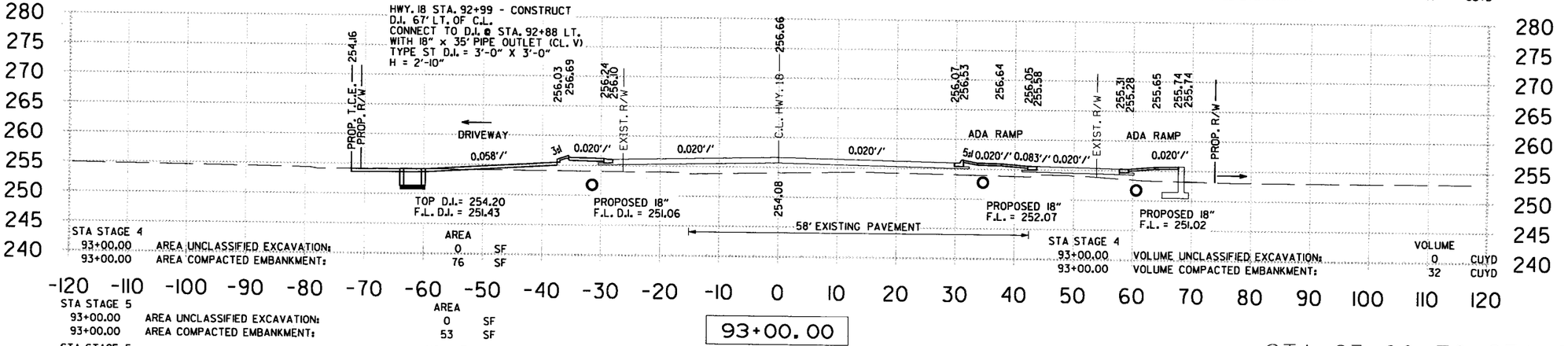


STA STAGE 4		AREA	
93+19.35	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+19.35	AREA COMPACTED EMBANKMENT:	101	SF

STA STAGE 5		AREA	
93+19.35	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+19.35	AREA COMPACTED EMBANKMENT:	76	SF

STA STAGE 4		VOLUME	
93+19.35	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+19.35	VOLUME COMPACTED EMBANKMENT:	64	CUYD

STA STAGE 5		VOLUME	
93+19.35	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+19.35	VOLUME COMPACTED EMBANKMENT:	47	CUYD



STA STAGE 4		AREA	
93+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+00.00	AREA COMPACTED EMBANKMENT:	76	SF

STA STAGE 5		AREA	
93+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+00.00	AREA COMPACTED EMBANKMENT:	53	SF

STA STAGE 5		VOLUME	
93+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+00.00	VOLUME COMPACTED EMBANKMENT:	23	CUYD

STA STAGE 4		VOLUME	
93+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+00.00	VOLUME COMPACTED EMBANKMENT:	32	CUYD

STA. 93+00 TO STA. 93+65 HWY. 18

CROSS SECTIONS

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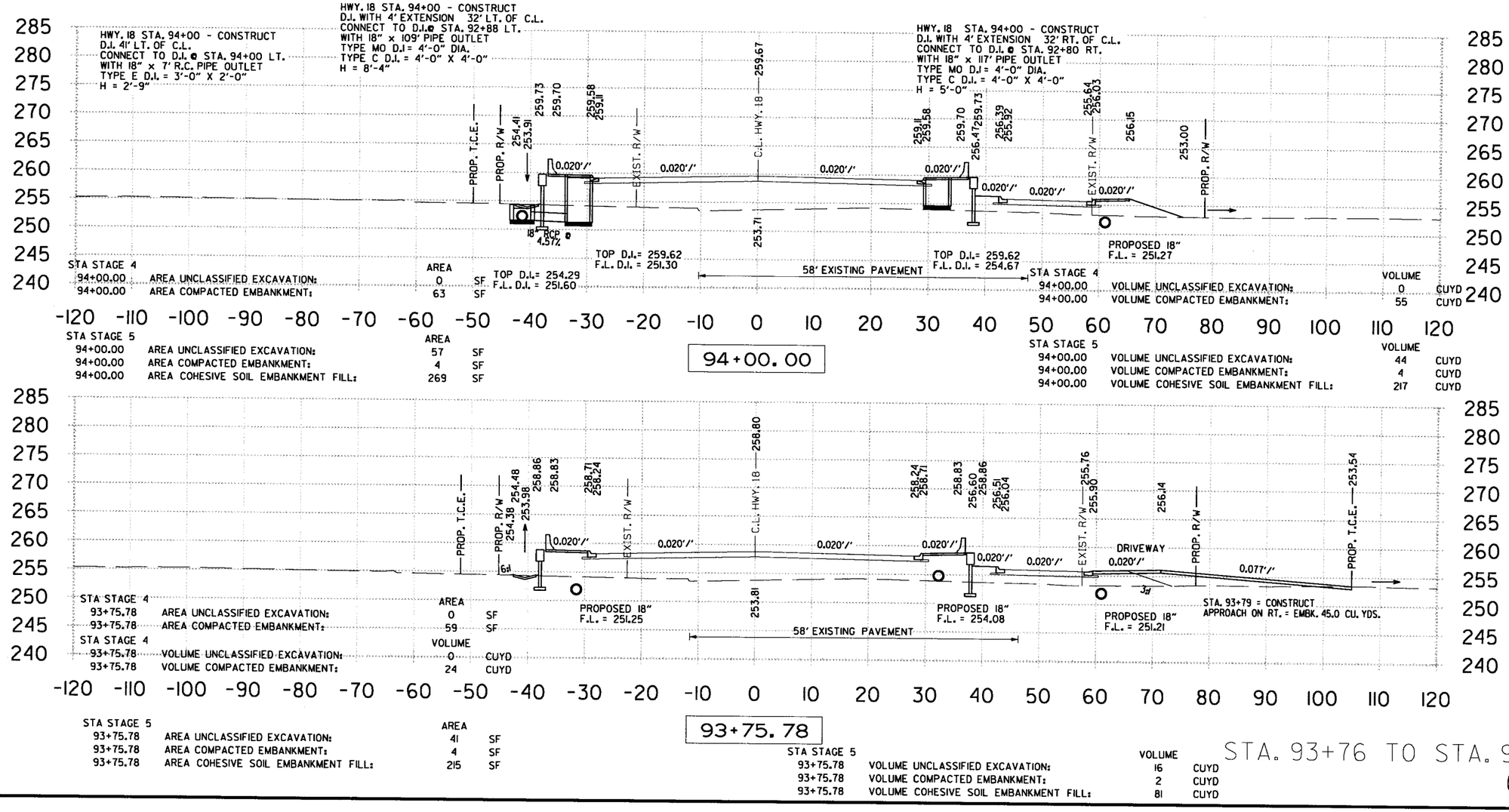

STA STAGE 4		AREA	
94+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
94+00.00	AREA COMPACTED EMBANKMENT:	63	SF

STA STAGE 5		AREA	
94+00.00	AREA UNCLASSIFIED EXCAVATION:	57	SF
94+00.00	AREA COMPACTED EMBANKMENT:	4	SF
94+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	269	SF

STA STAGE 4		VOLUME	
94+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
94+00.00	VOLUME COMPACTED EMBANKMENT:	55	CUYD

STA STAGE 5		VOLUME	
94+00.00	VOLUME UNCLASSIFIED EXCAVATION:	44	CUYD
94+00.00	VOLUME COMPACTED EMBANKMENT:	4	CUYD
94+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	217	CUYD

STA STAGE 4		AREA	
93+75.78	AREA UNCLASSIFIED EXCAVATION:	0	SF
93+75.78	AREA COMPACTED EMBANKMENT:	59	SF

STA STAGE 4		VOLUME	
93+75.78	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
93+75.78	VOLUME COMPACTED EMBANKMENT:	24	CUYD

STA STAGE 5		AREA	
93+75.78	AREA UNCLASSIFIED EXCAVATION:	41	SF
93+75.78	AREA COMPACTED EMBANKMENT:	4	SF
93+75.78	AREA COHESIVE SOIL EMBANKMENT FILL:	215	SF

STA STAGE 5		VOLUME	
93+75.78	VOLUME UNCLASSIFIED EXCAVATION:	16	CUYD
93+75.78	VOLUME COMPACTED EMBANKMENT:	2	CUYD
93+75.78	VOLUME COHESIVE SOIL EMBANKMENT FILL:	81	CUYD

STA. 93+76 TO STA. 94+00 HWY. 18
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
				6	ARK.			
				JOB NO.		100824	267	346
				(2) CROSS SECTIONS				

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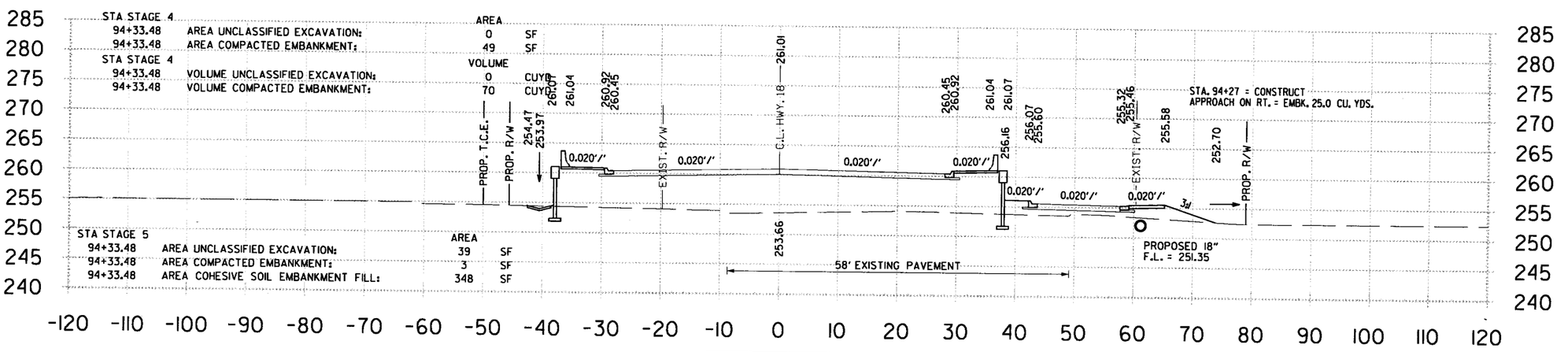
STA STAGE 4		AREA	
94+67.93	AREA UNCLASSIFIED EXCAVATION:	0	SF
94+67.93	AREA COMPACTED EMBANKMENT:	52	SF
STA STAGE 4		VOLUME	
94+67.93	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
94+67.93	VOLUME COMPACTED EMBANKMENT:	65	CUYD

STA STAGE 5		AREA	
94+67.93	AREA UNCLASSIFIED EXCAVATION:	39	SF
94+67.93	AREA COMPACTED EMBANKMENT:	3	SF
94+67.93	AREA COHESIVE SOIL EMBANKMENT FILL:	435	SF
STA STAGE 5		VOLUME	
94+67.93	VOLUME UNCLASSIFIED EXCAVATION:	50	CUYD
94+67.93	VOLUME COMPACTED EMBANKMENT:	4	CUYD
94+67.93	VOLUME COHESIVE SOIL EMBANKMENT FILL:	500	CUYD

94+67.93

STA STAGE 4		AREA	
94+33.48	AREA UNCLASSIFIED EXCAVATION:	0	SF
94+33.48	AREA COMPACTED EMBANKMENT:	49	SF
STA STAGE 4		VOLUME	
94+33.48	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
94+33.48	VOLUME COMPACTED EMBANKMENT:	70	CUYD

STA STAGE 5		AREA	
94+33.48	AREA UNCLASSIFIED EXCAVATION:	39	SF
94+33.48	AREA COMPACTED EMBANKMENT:	3	SF
94+33.48	AREA COHESIVE SOIL EMBANKMENT FILL:	348	SF



94+33.48

STA STAGE 5		VOLUME	
94+33.48	VOLUME UNCLASSIFIED EXCAVATION:	60	CUYD
94+33.48	VOLUME COMPACTED EMBANKMENT:	5	CUYD
94+33.48	VOLUME COHESIVE SOIL EMBANKMENT FILL:	383	CUYD

STA. 94+33 TO STA. 94+68 HWY. 18

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
				6	ARK.			
				JOB NO.		100824	268	346

(2) CROSS SECTIONS

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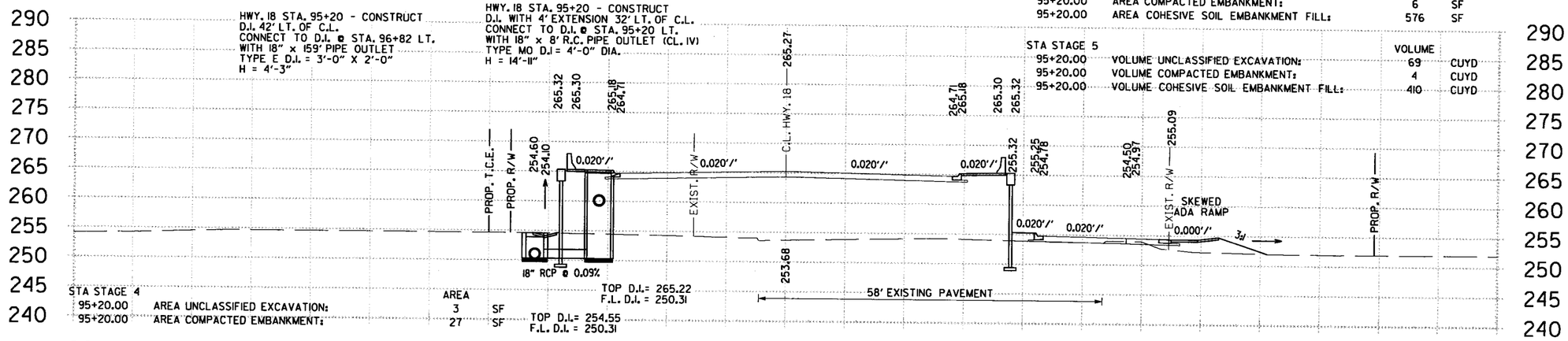


STA. 95+00 TO STA. 95+20 HWY. 18

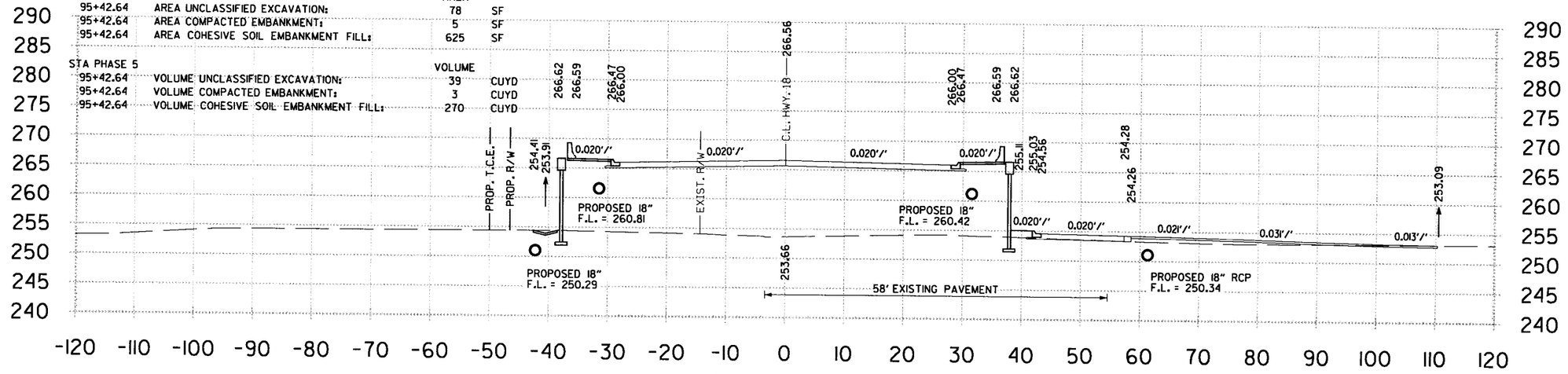
CROSS SECTIONS

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.		100824	269	346

(2) CROSS SECTIONS

STA PHASE 4		AREA	
95+42.64	AREA UNCLASSIFIED EXCAVATION:	1	SF
95+42.64	AREA COMPACTED EMBANKMENT:	0	SF
STA PHASE 4		VOLUME	
95+42.64	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
95+42.64	VOLUME COMPACTED EMBANKMENT:	5	CUYD

STA PHASE 5		AREA	
95+42.64	AREA UNCLASSIFIED EXCAVATION:	78	SF
95+42.64	AREA COMPACTED EMBANKMENT:	5	SF
95+42.64	AREA COHESIVE SOIL EMBANKMENT FILL:	625	SF
STA PHASE 5		VOLUME	
95+42.64	VOLUME UNCLASSIFIED EXCAVATION:	39	CUYD
95+42.64	VOLUME COMPACTED EMBANKMENT:	3	CUYD
95+42.64	VOLUME COHESIVE SOIL EMBANKMENT FILL:	270	CUYD



95+42.64

STA STAGE 4		AREA	
95+30.88	AREA UNCLASSIFIED EXCAVATION:	1	SF
95+30.88	AREA COMPACTED EMBANKMENT:	21	SF
STA STAGE 4		VOLUME	
95+30.88	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
95+30.88	VOLUME COMPACTED EMBANKMENT:	10	CUYD

STA STAGE 5		AREA	
95+30.88	AREA UNCLASSIFIED EXCAVATION:	97	SF
95+30.88	AREA COMPACTED EMBANKMENT:	5	SF
95+30.88	AREA COHESIVE SOIL EMBANKMENT FILL:	611	SF

STA STAGE 5		VOLUME	
95+30.88	VOLUME UNCLASSIFIED EXCAVATION:	45	CUYD
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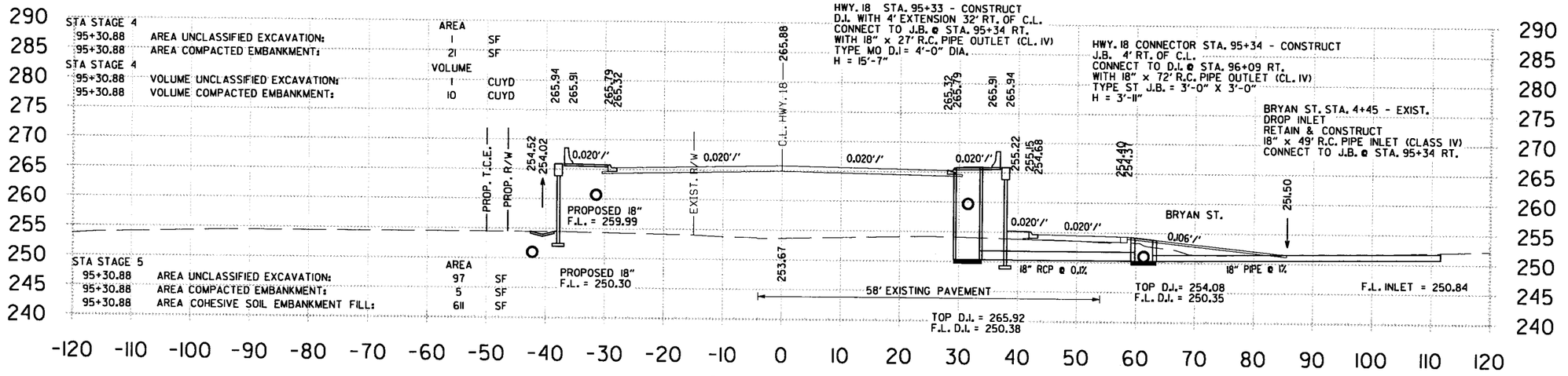
95+30.88	VOLUME COHESIVE SOIL EMBANKMENT FILL:	240	CUYD



95+30.88

STA. 95+31 TO STA. 95+43 HWY. 18
CROSS SECTIONS

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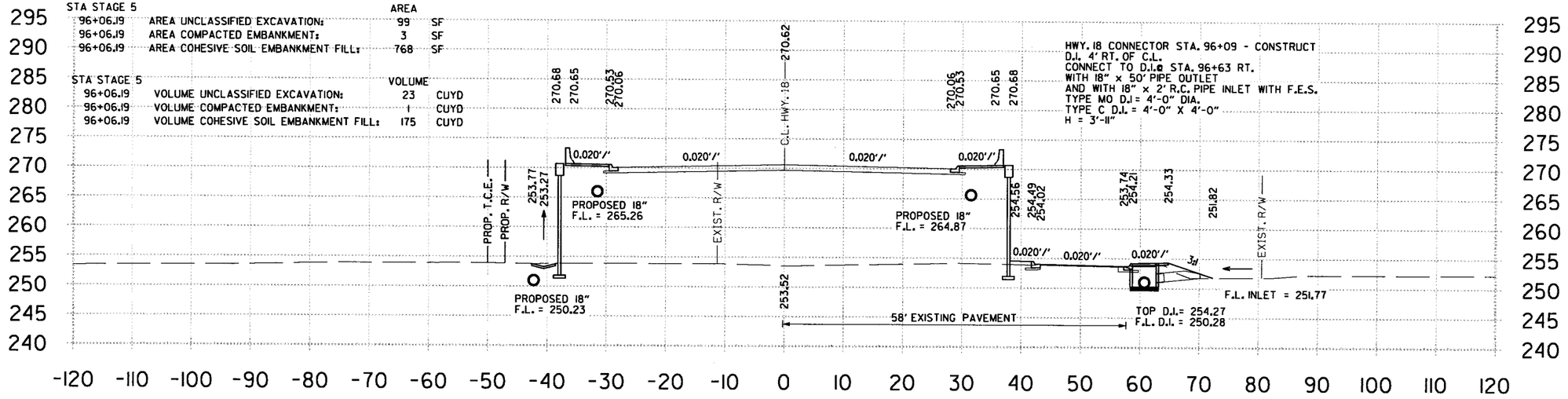
				6	ARK.			
				JOB NO.		100824	270	346

(2) CROSS SECTIONS

STA STAGE 4		AREA	
96+06.19	AREA UNCLASSIFIED EXCAVATION:	3	SF
96+06.19	AREA COMPACTED EMBANKMENT:	8	SF
STA STAGE 4		VOLUME	
96+06.19	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
96+06.19	VOLUME COMPACTED EMBANKMENT:	2	CUYD

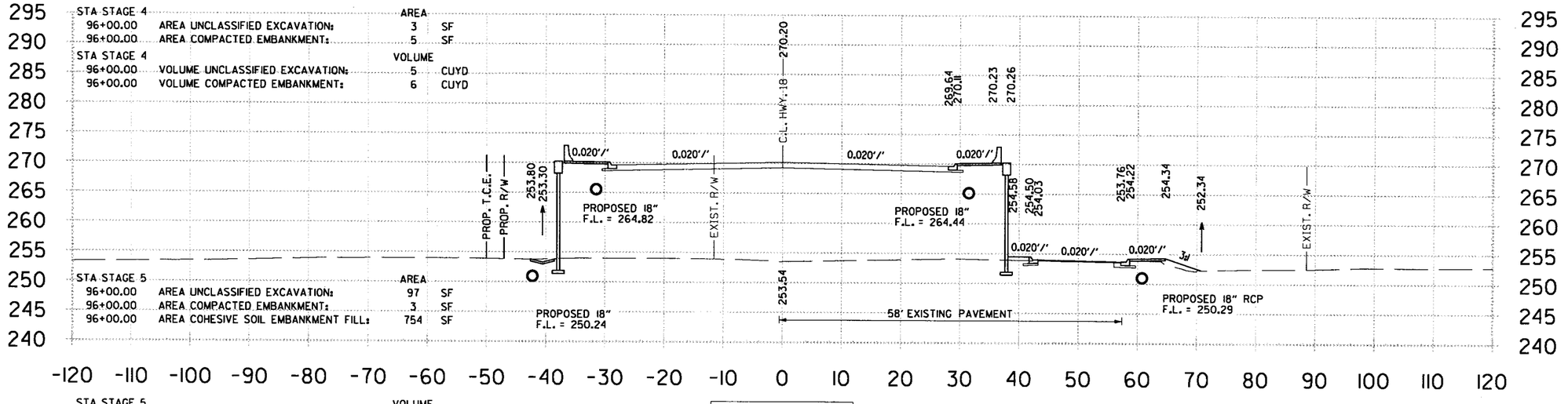
STA STAGE 5		AREA	
96+06.19	AREA UNCLASSIFIED EXCAVATION:	99	SF
96+06.19	AREA COMPACTED EMBANKMENT:	3	SF
96+06.19	AREA COHESIVE SOIL EMBANKMENT FILL:	768	SF
STA STAGE 5		VOLUME	
96+06.19	VOLUME UNCLASSIFIED EXCAVATION:	23	CUYD
96+06.19	VOLUME COMPACTED EMBANKMENT:	1	CUYD
96+06.19	VOLUME COHESIVE SOIL EMBANKMENT FILL:	175	CUYD



96+06.19

STA STAGE 4		AREA	
96+00.00	AREA UNCLASSIFIED EXCAVATION:	3	SF
96+00.00	AREA COMPACTED EMBANKMENT:	5	SF
STA STAGE 4		VOLUME	
96+00.00	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
96+00.00	VOLUME COMPACTED EMBANKMENT:	6	CUYD

STA STAGE 5		AREA	
96+00.00	AREA UNCLASSIFIED EXCAVATION:	97	SF
96+00.00	AREA COMPACTED EMBANKMENT:	3	SF
96+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	754	SF



96+00.00

STA STAGE 5		VOLUME	
96+00.00	VOLUME UNCLASSIFIED EXCAVATION:	186	CUYD
96+00.00	VOLUME COMPACTED EMBANKMENT:	9	CUYD
96+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	1469	CUYD

STA. 96+00 TO STA. 96+06 HWY. 18

CROSS SECTIONS

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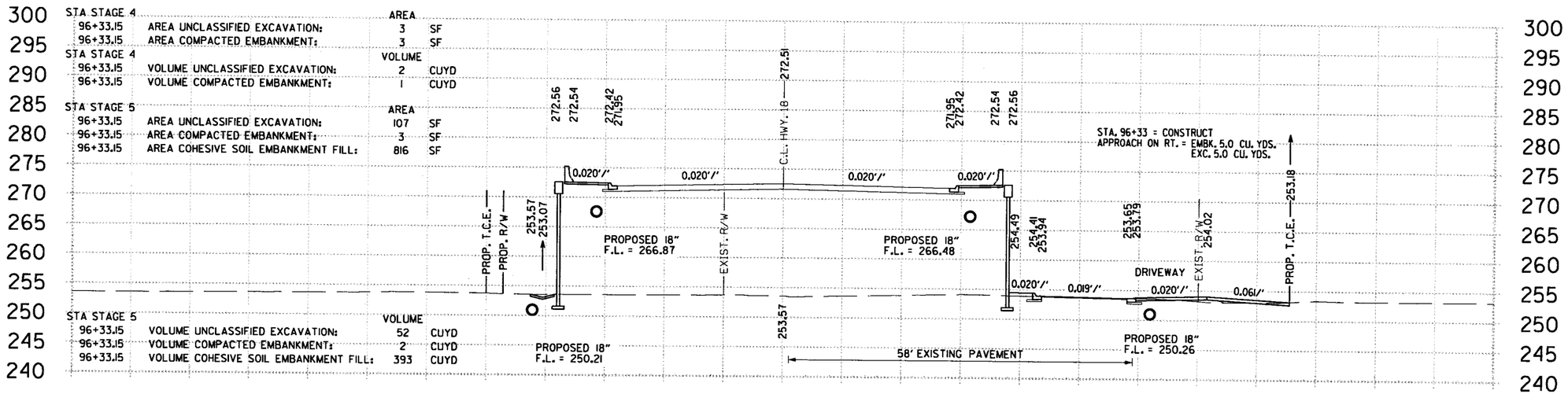
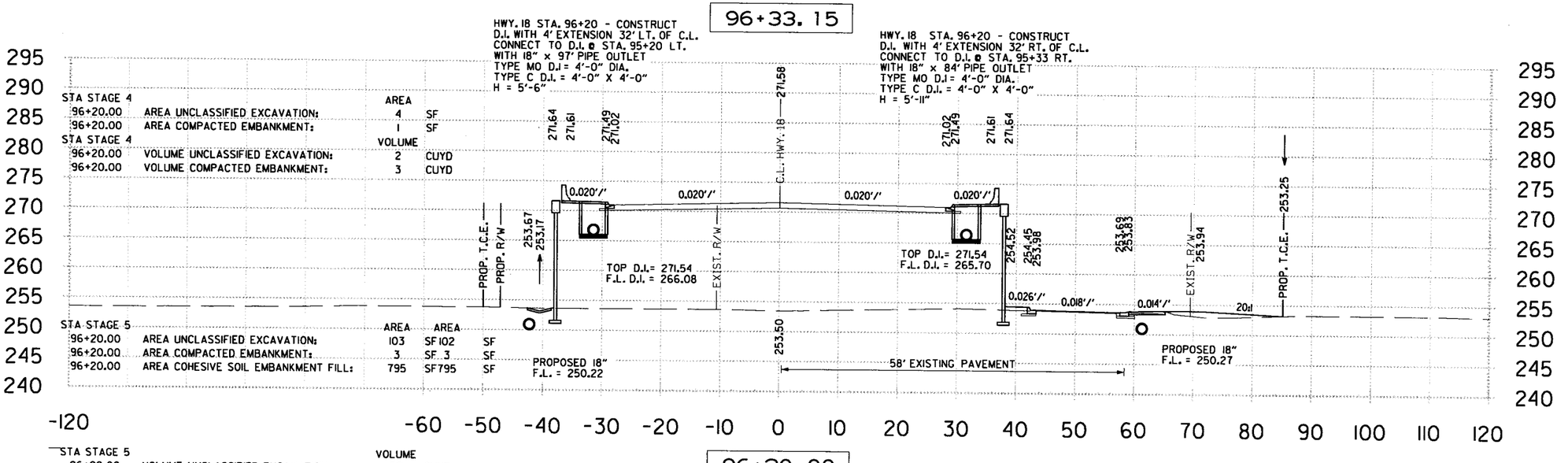
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	271	346

(2) CROSS SECTIONS



96+33.15



96+20.00

STA. 96+20 TO STA. 96+33 HWY. 18
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
				6	ARK.			
				JOB NO.		100824	272	346
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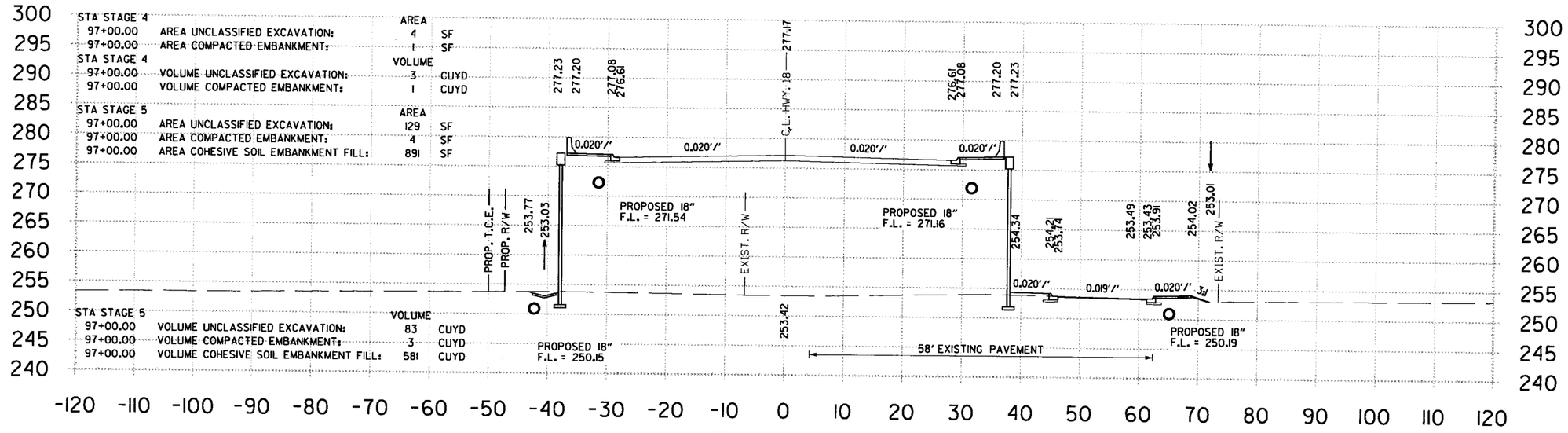

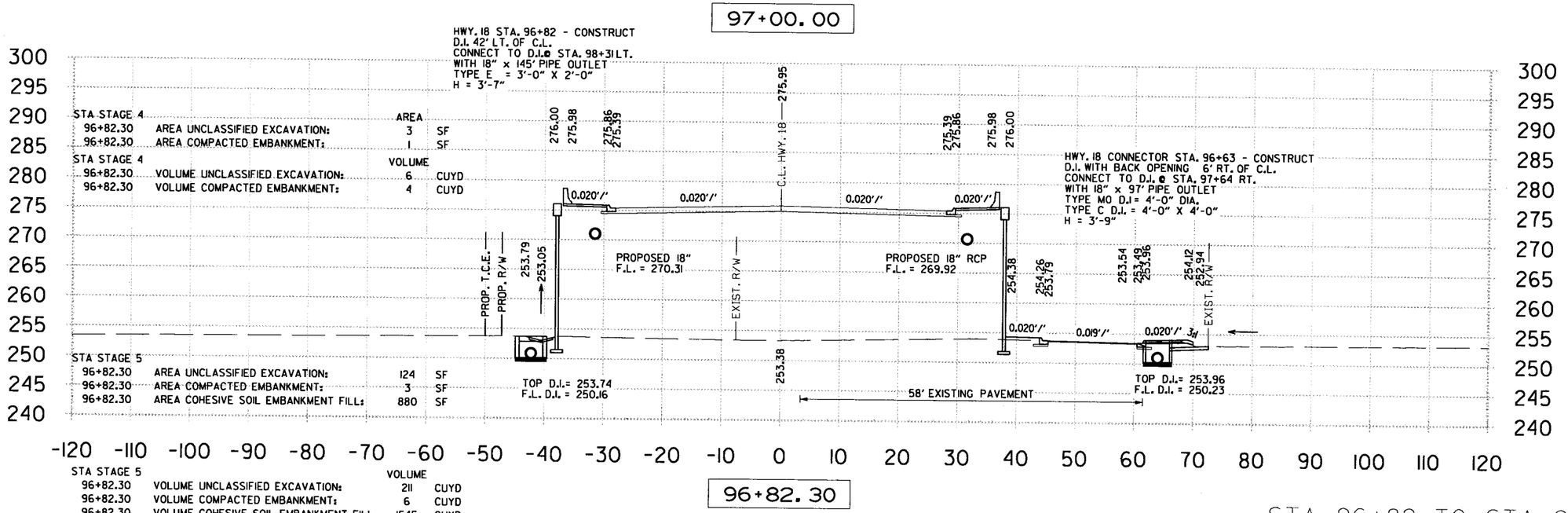

STA. 96+82 TO STA. 97+00 HWY. 18
CROSS SECTIONS

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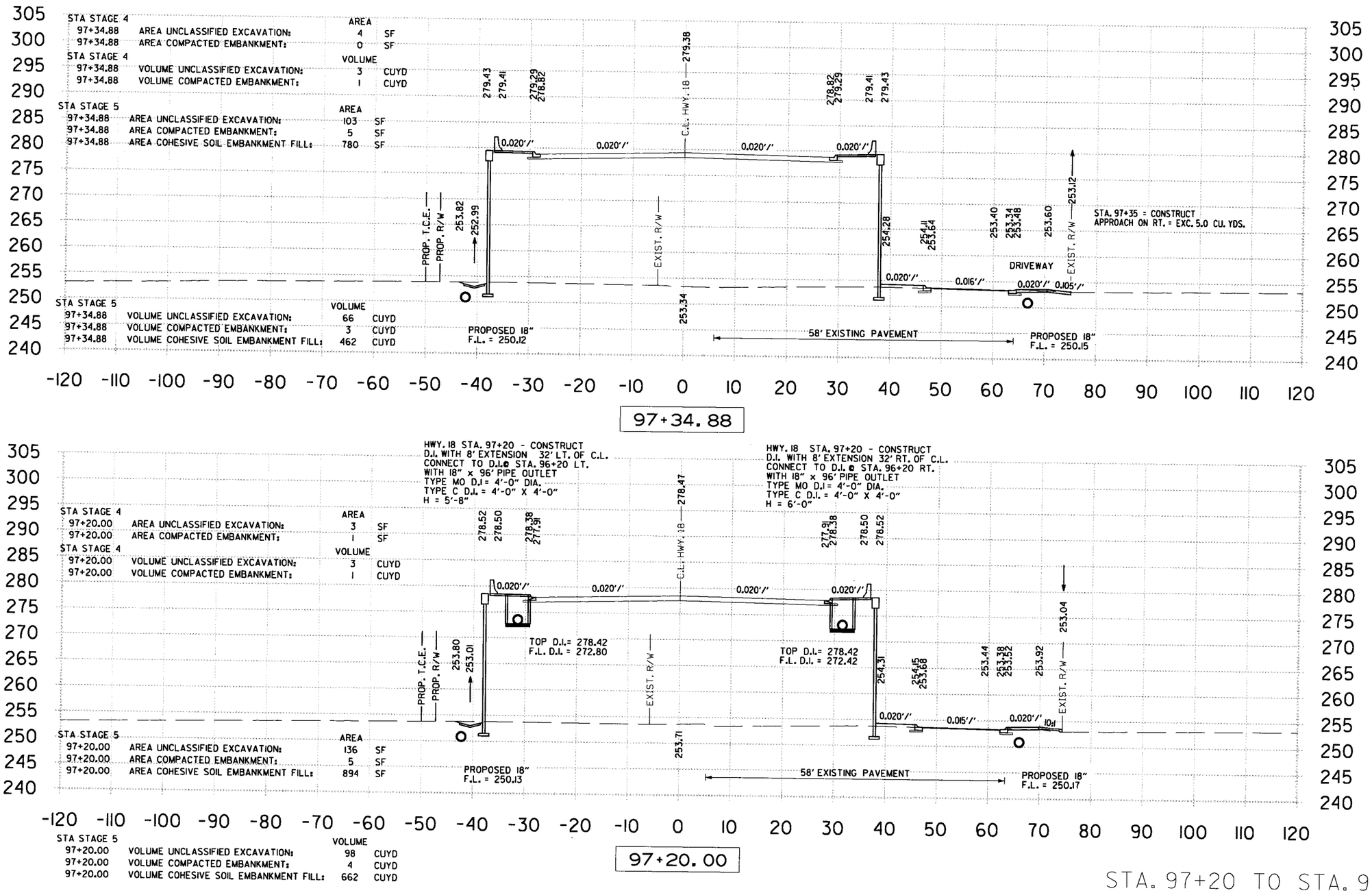
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	273	346

② CROSS SECTIONS



97+34.88

97+20.00

STA. 97+20 TO STA. 97+35 HWY. 18
CROSS SECTIONS

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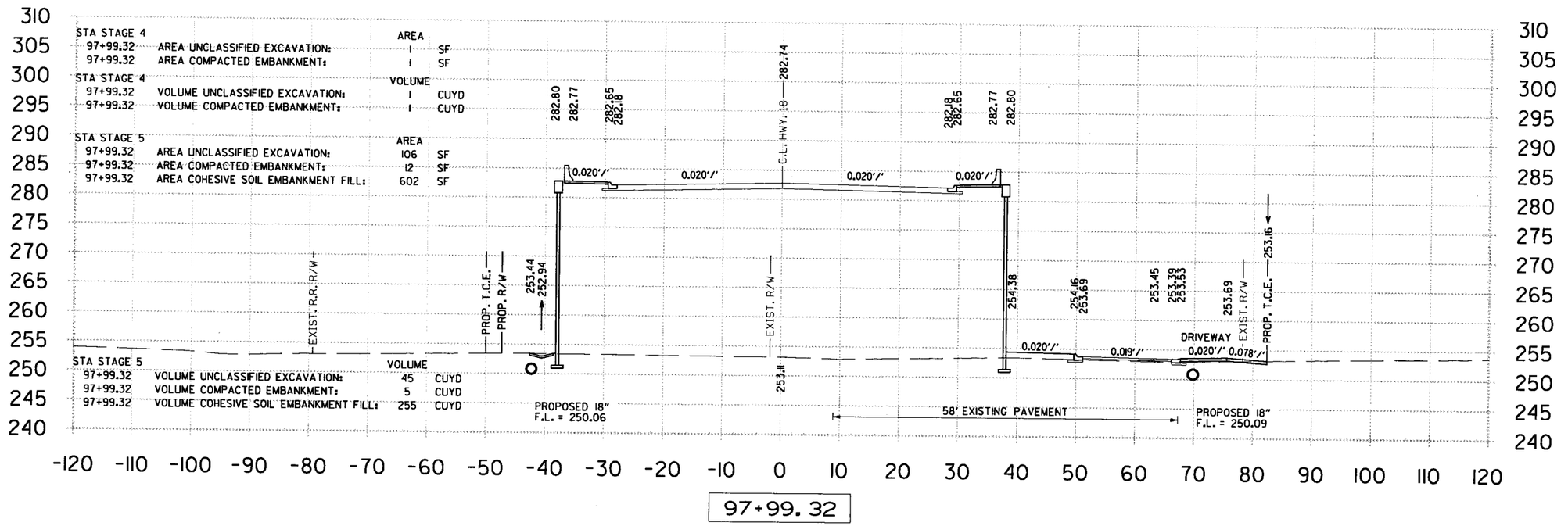

STA. 97+88 TO STA. 97+99 HWY. 18
CROSS SECTIONS

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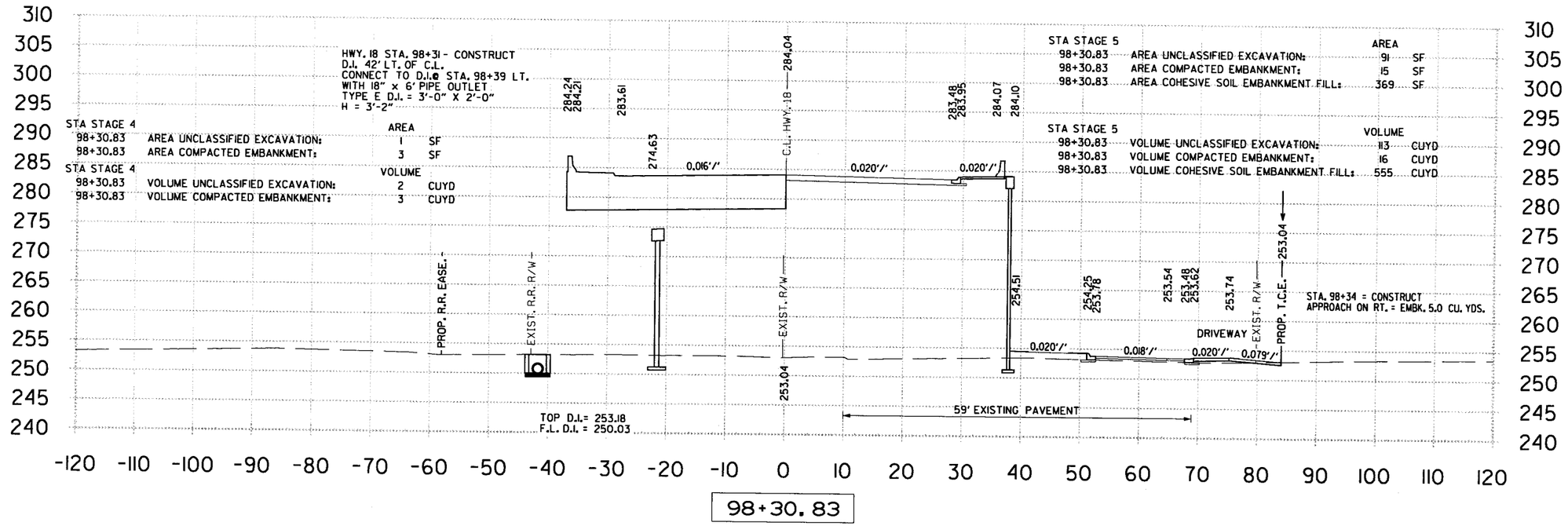
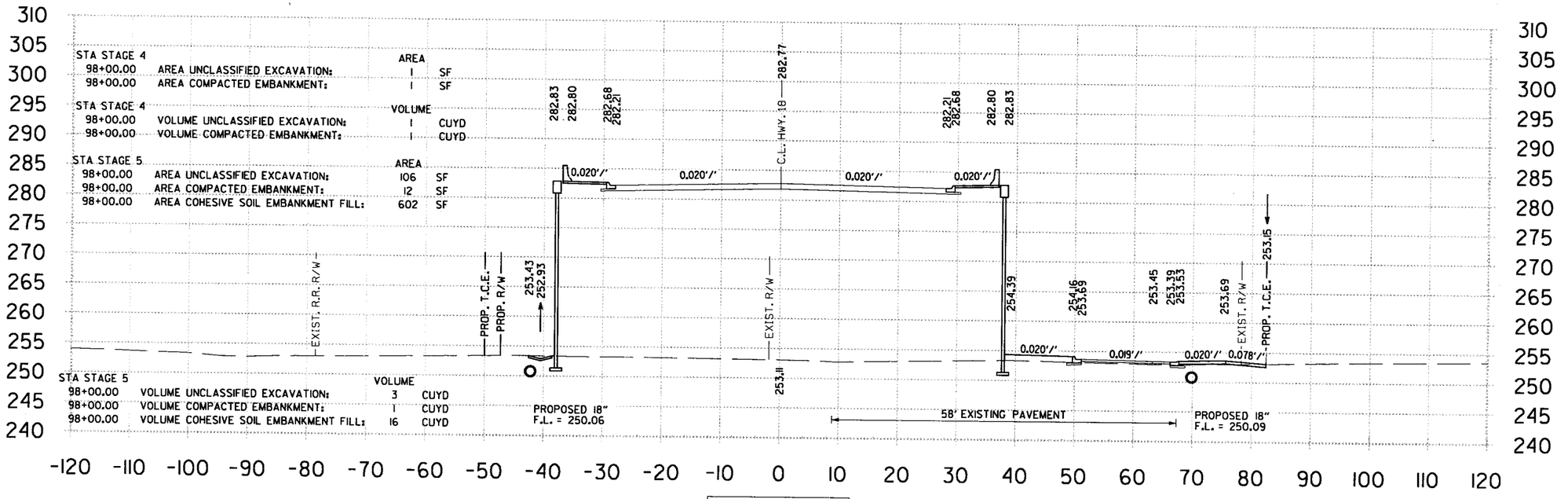


98+30.83



98+00.00

STA. 98+00 TO STA. 98+31 HWY. 18

CROSS SECTIONS

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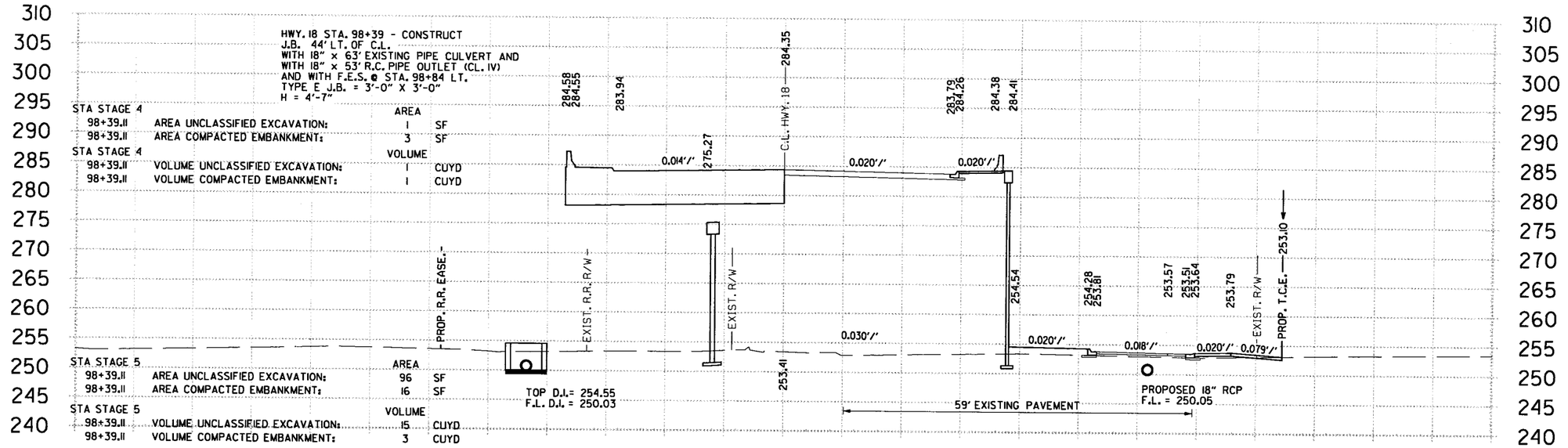
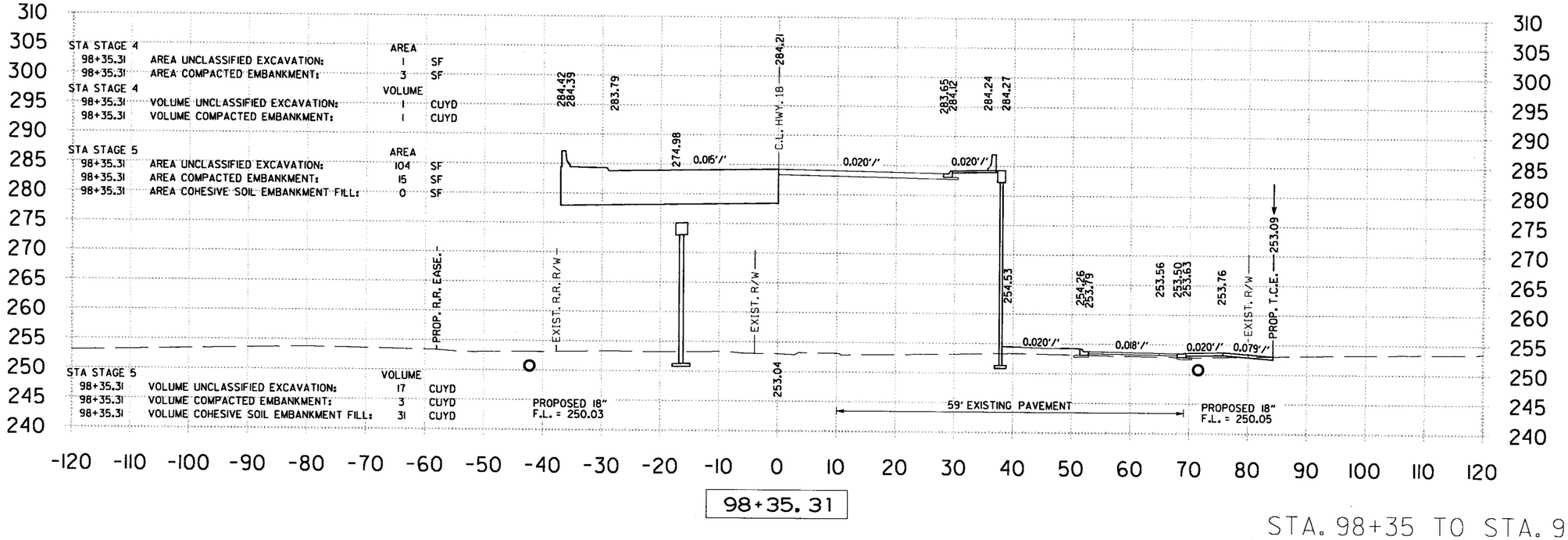
				JOB NO.		100824	276	346

(2) CROSS SECTIONS



98+39.11



98+35.31

STA. 98+35 TO STA. 98+39 HWY. 18
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
				6	ARK.			
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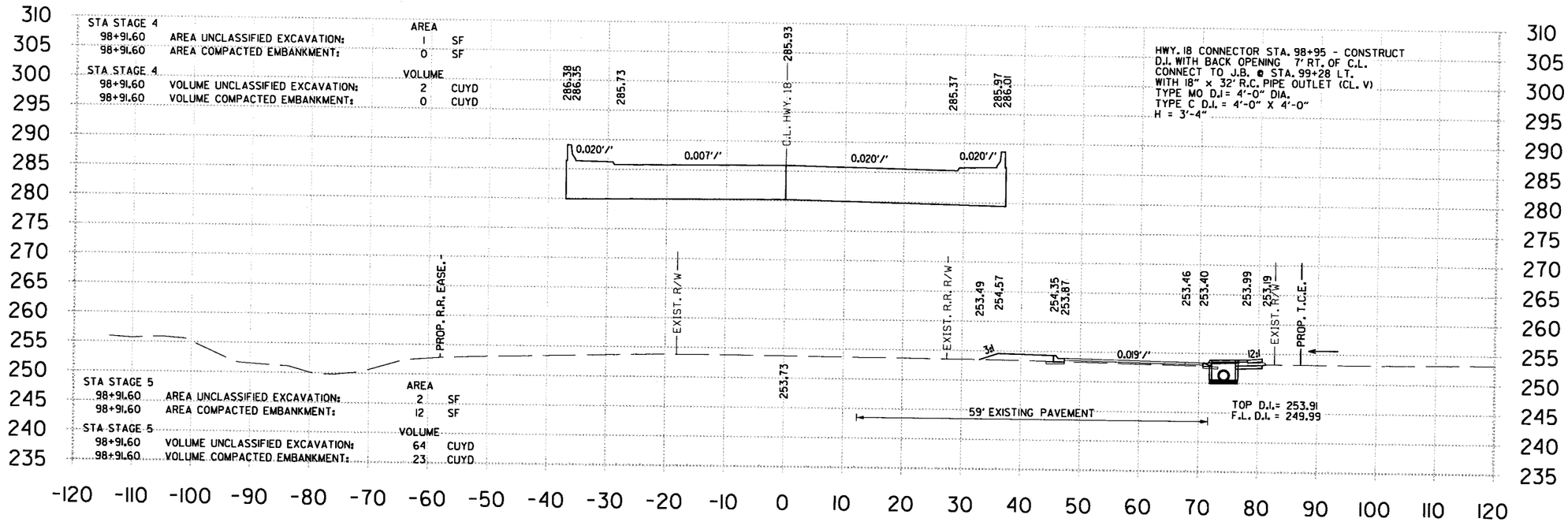
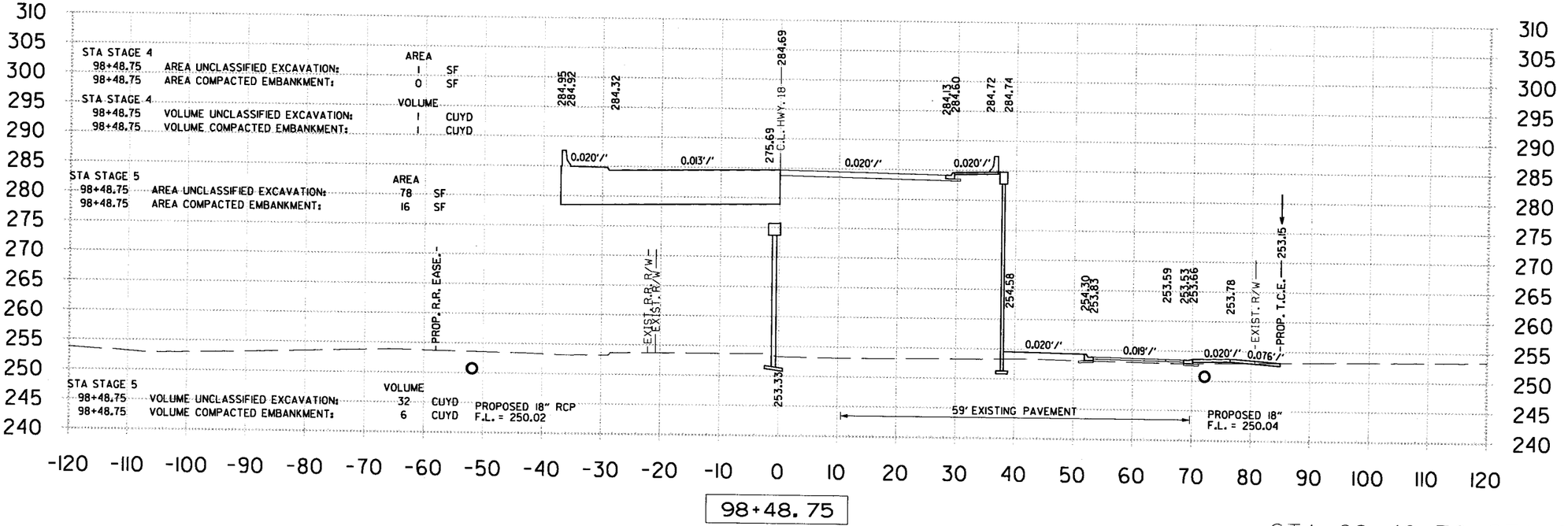
(2) CROSS SECTIONS



98+91.60



98+48.75

STA. 98+49 TO STA. 98+92 HWY. 18

CROSS SECTIONS

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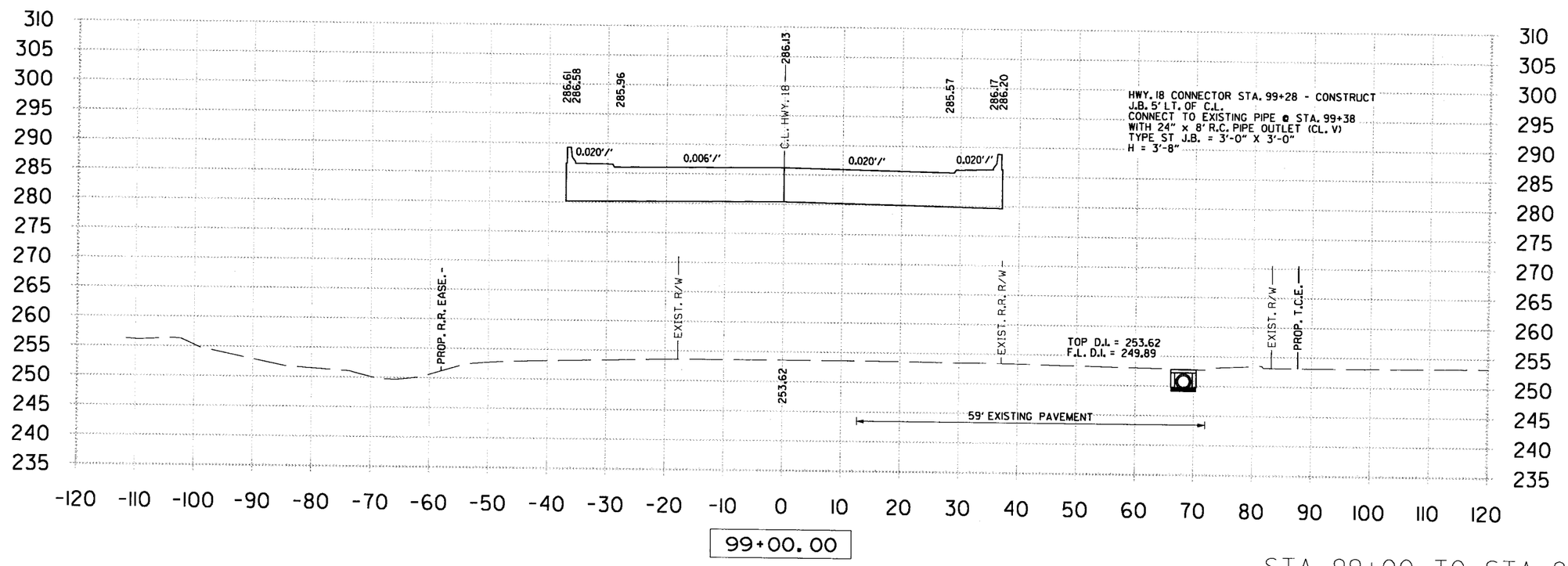
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		100824	278	346

(2) CROSS SECTIONS



STA. 99+00 TO STA. 99+00 HWY. 18

CROSS SECTIONS

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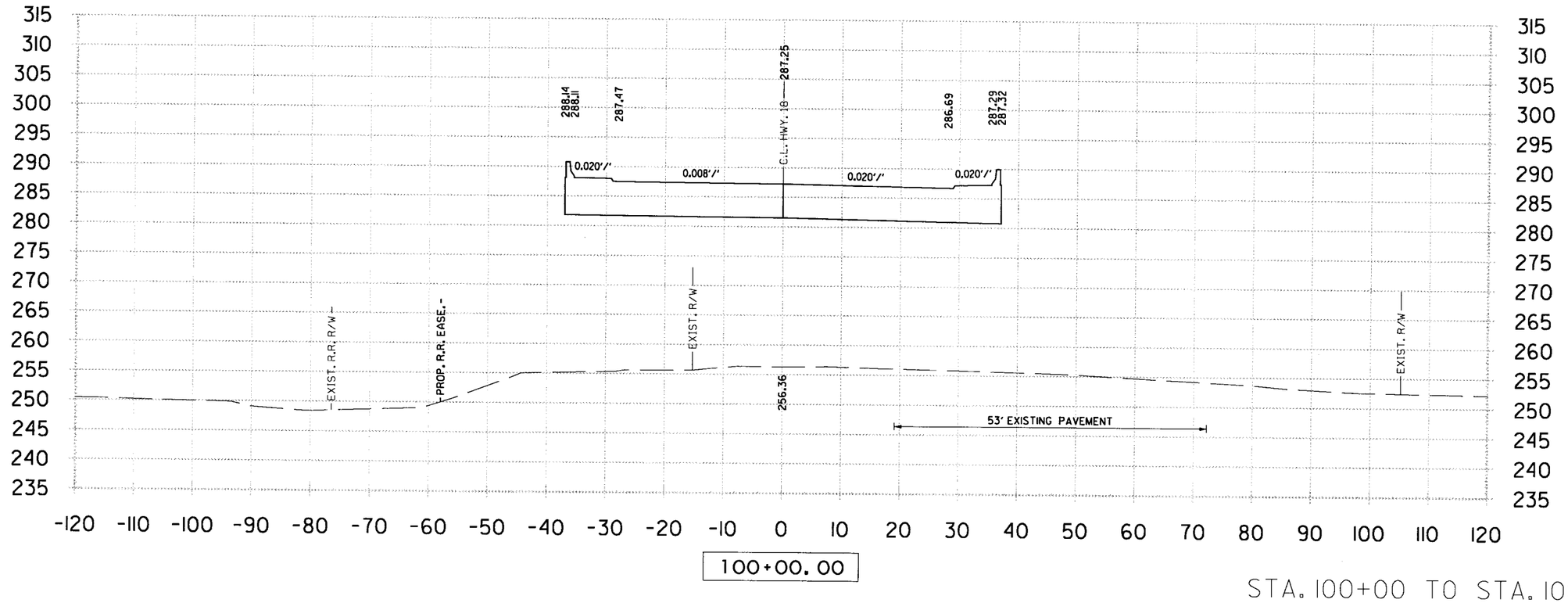

STA. 100+00 TO STA. 100+00 HWY. 18

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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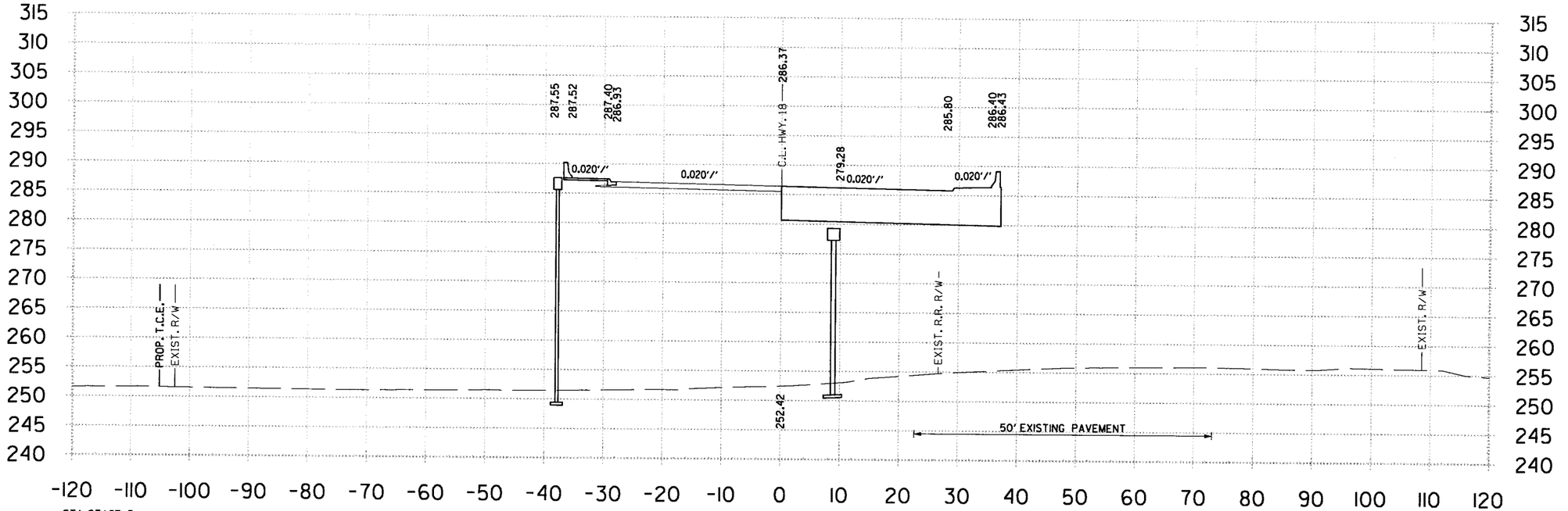
				JOB NO.		100824	280	346

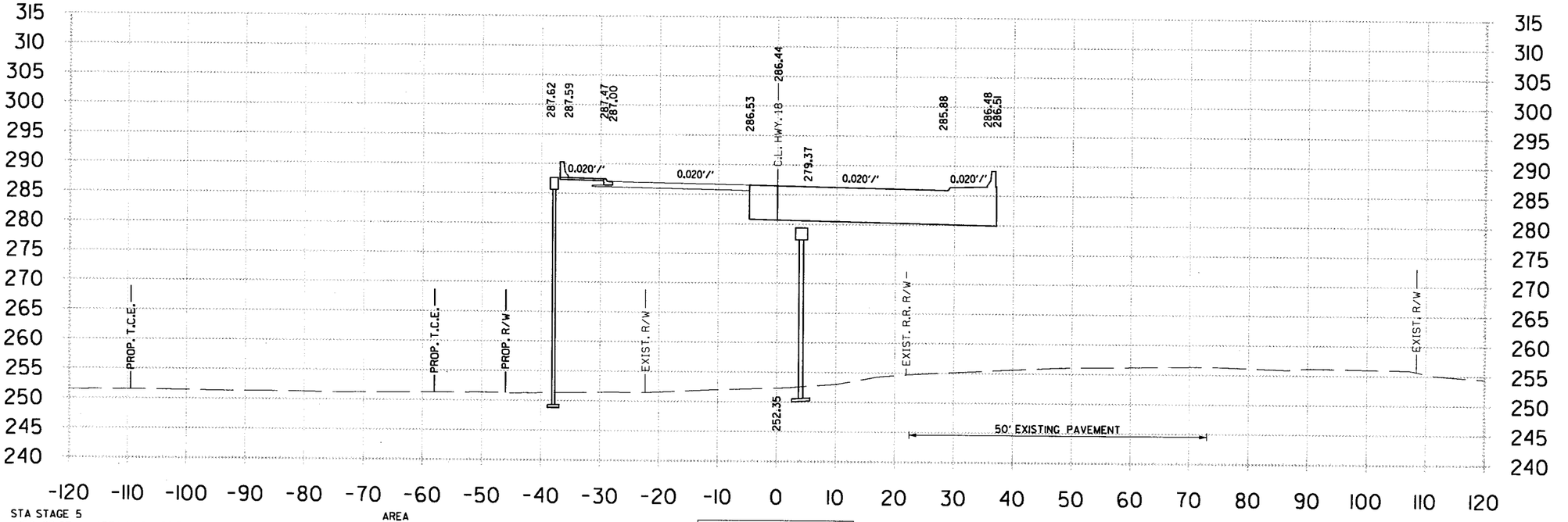
(2) CROSS SECTIONS



STA STAGE 5		AREA	
100+89.12	AREA UNCLASSIFIED EXCAVATION:	90	SF
100+89.12	AREA COMPACTED EMBANKMENT:	0	SF

100+89.12

STA STAGE 5		VOLUME	
100+89.12	VOLUME UNCLASSIFIED EXCAVATION:	14	CUYD
100+89.12	VOLUME COMPACTED EMBANKMENT:	0	CUYD



STA STAGE 5		AREA	
100+85.03	AREA UNCLASSIFIED EXCAVATION:	83	SF
100+85.03	AREA COMPACTED EMBANKMENT:	0	SF

STA STAGE 5		VOLUME	
100+85.03	VOLUME UNCLASSIFIED EXCAVATION:	131	CUYD
100+85.03	VOLUME COMPACTED EMBANKMENT:	0	CUYD

100+85.03

STA. 100+85 TO STA. 100+89 HWY. 18
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
				6	ARK.			
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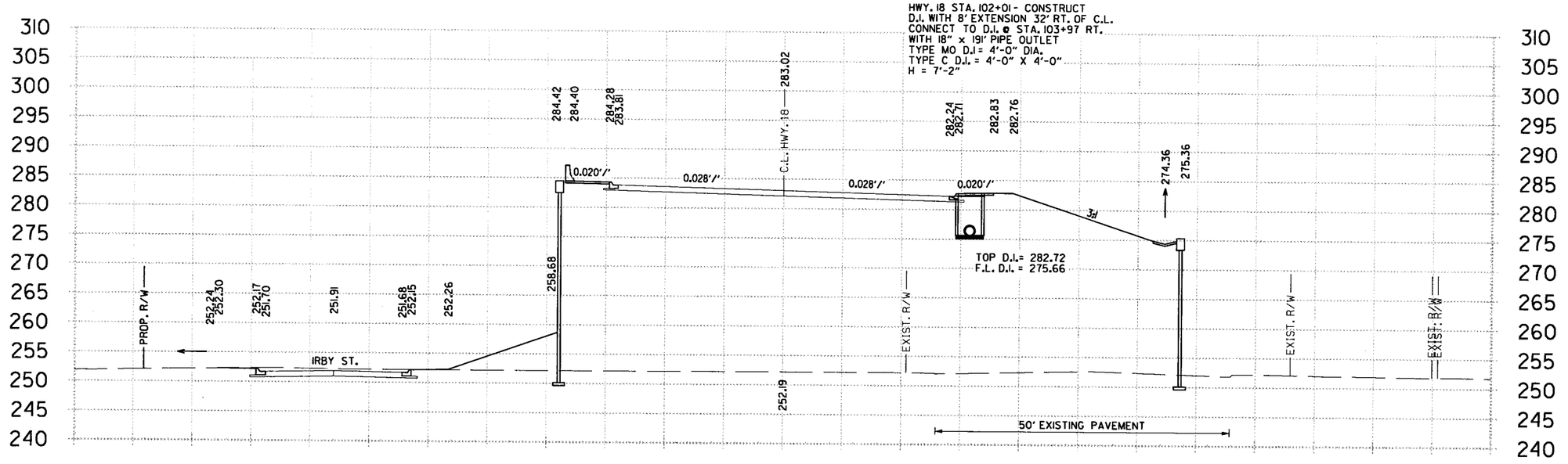
② CROSS SECTIONS



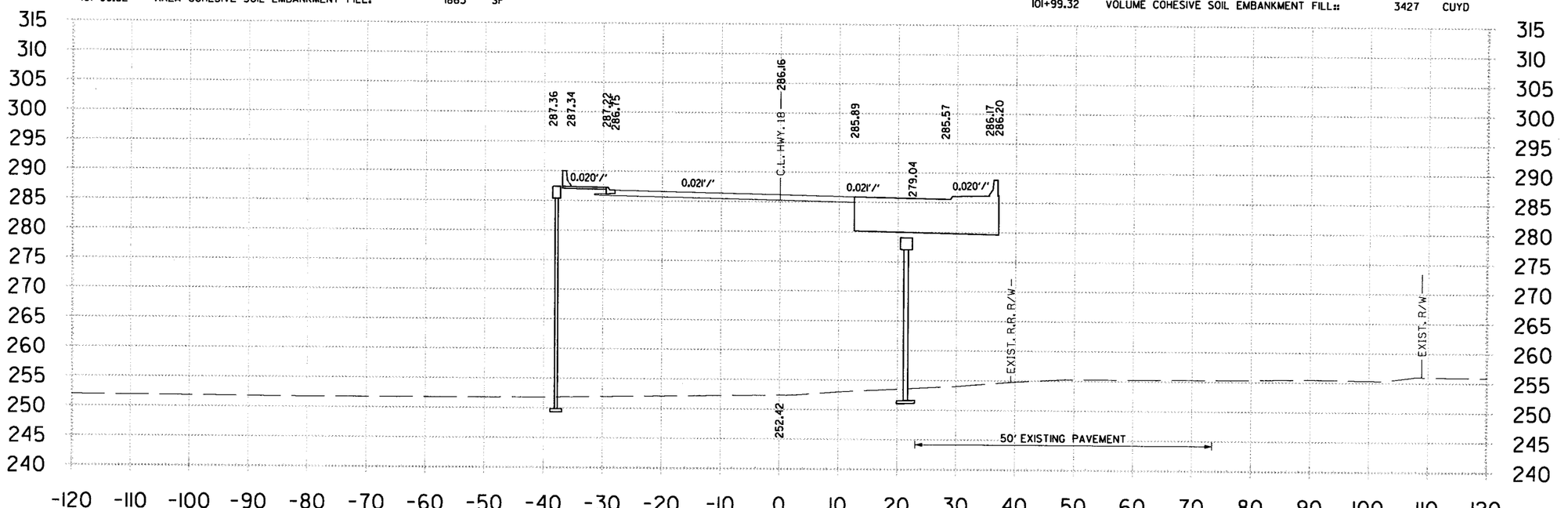
STA STAGE 5

		AREA	
101+99.32	AREA UNCLASSIFIED EXCAVATION:	138	SF
101+99.32	AREA COMPACTED EMBANKMENT:	0	SF
101+99.32	AREA COHESIVE SOIL EMBANKMENT FILL:	1863	SF

101+99.32

STA STAGE 5

		VOLUME	
101+99.32	VOLUME UNCLASSIFIED EXCAVATION:	457	CUYD
101+99.32	VOLUME COMPACTED EMBANKMENT:	0	CUYD
101+99.32	VOLUME COHESIVE SOIL EMBANKMENT FILL::	3427	CUYD



STA STAGE 5

		AREA	
101+00.00	AREA UNCLASSIFIED EXCAVATION:	110	SF
101+00.00	AREA COMPACTED EMBANKMENT:	0	SF
STA STAGE 5		VOLUME	
101+00.00	VOLUME UNCLASSIFIED EXCAVATION:	41	CUYD
101+00.00	VOLUME COMPACTED EMBANKMENT:	0	CUYD

101+00.00

STA. 101+00 TO STA. 101+99 HWY. 18

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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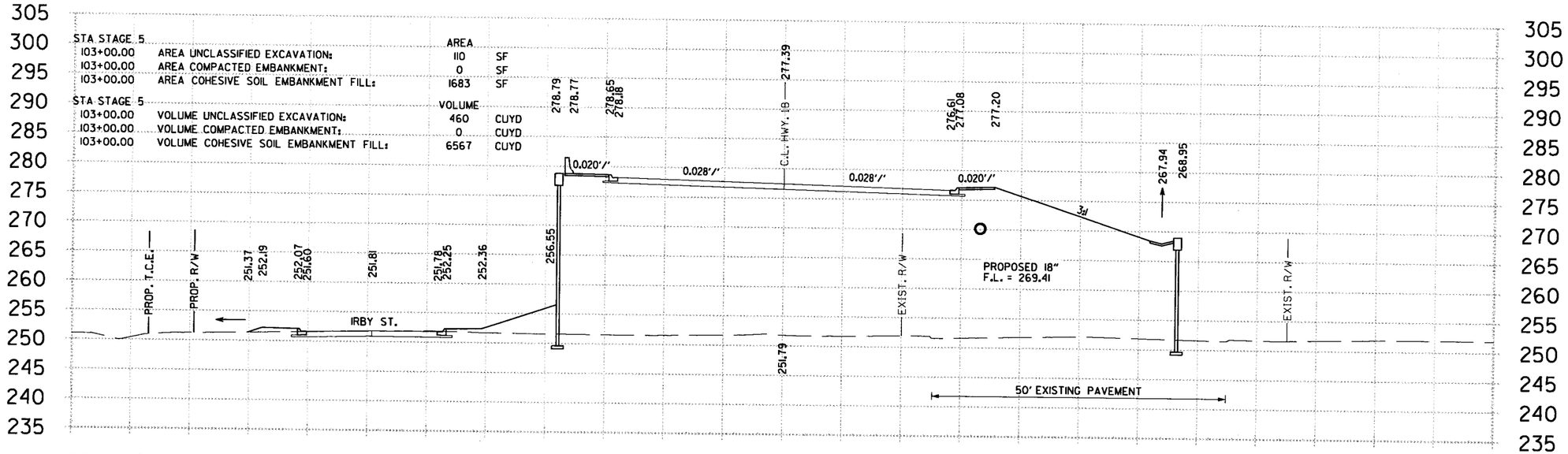
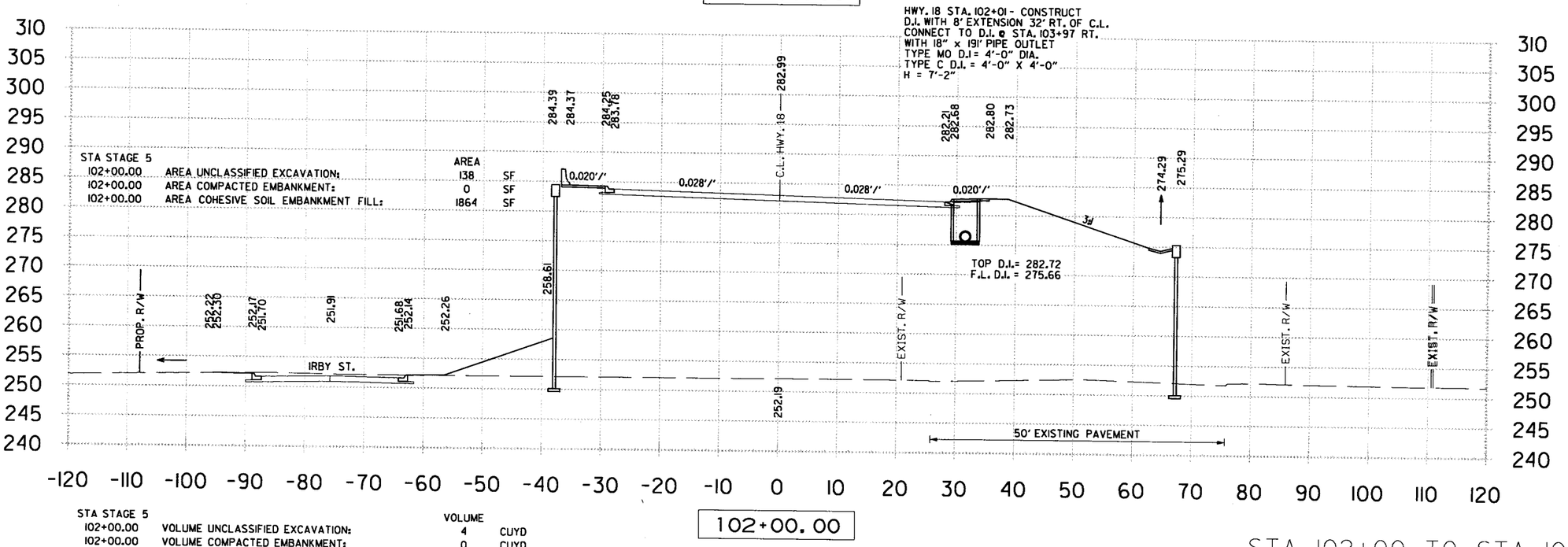
				JOB NO.		100824	282	346
				(2) CROSS SECTIONS				





STA. 102+00 TO STA. 103+00 HWY. 18

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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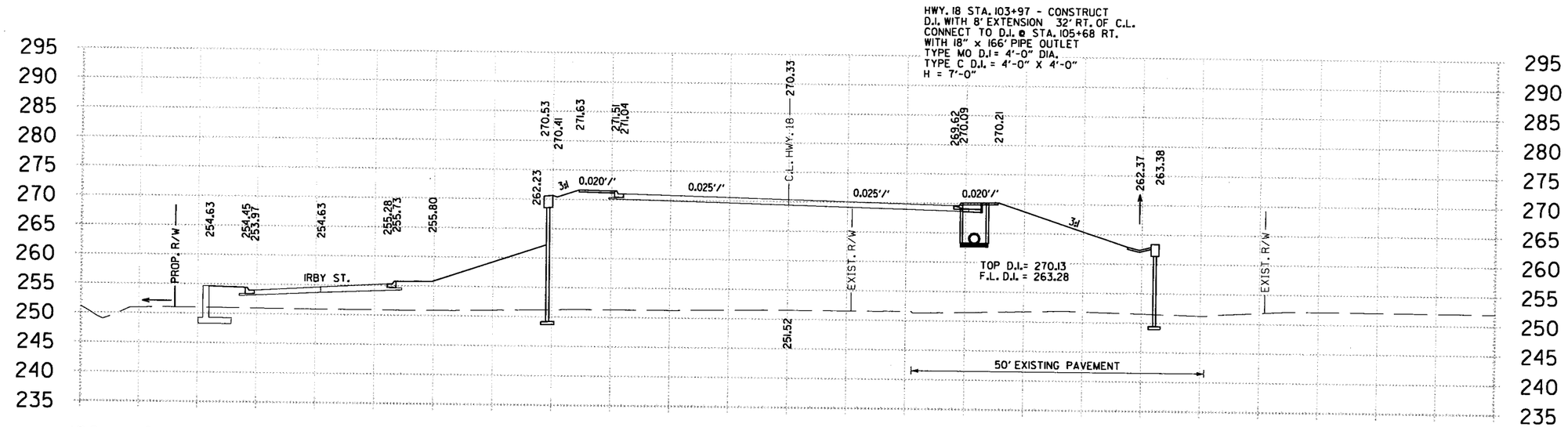
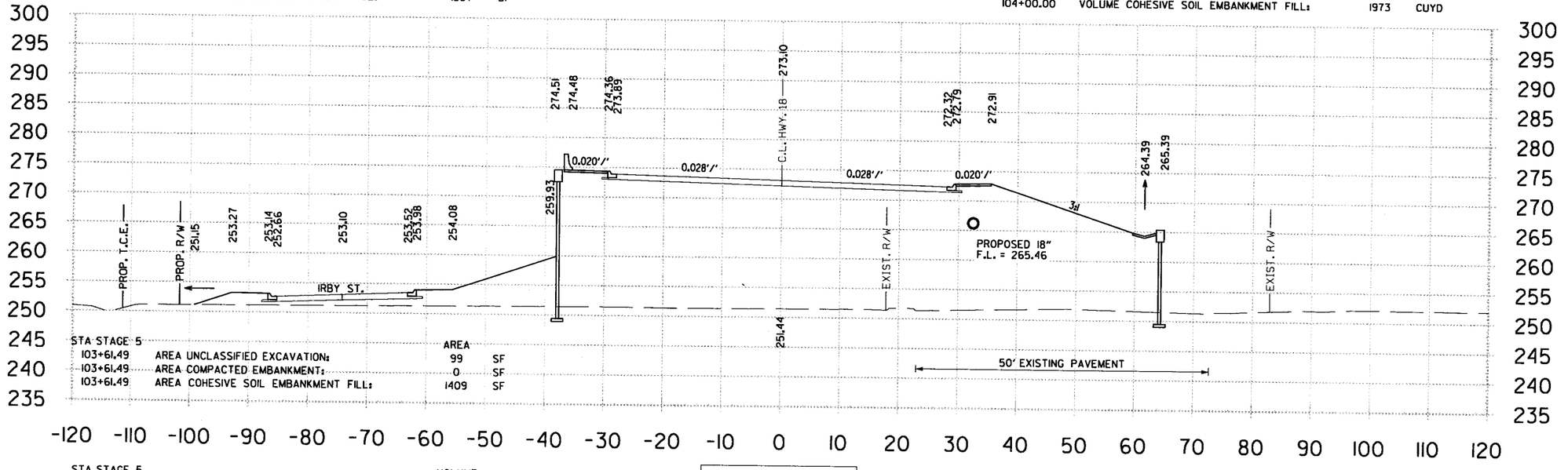


104+00.00

STA STAGE 5		AREA	
104+00.00	AREA UNCLASSIFIED EXCAVATION:	86	SF
104+00.00	AREA COMPACTED EMBANKMENT:	0	SF
104+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	1357	SF

STA STAGE 5		VOLUME	
104+00.00	VOLUME UNCLASSIFIED EXCAVATION:	132	CUYD
104+00.00	VOLUME COMPACTED EMBANKMENT:	0	CUYD
104+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	1973	CUYD



103+61.49

STA STAGE 5		AREA	
103+61.49	AREA UNCLASSIFIED EXCAVATION:	99	SF
103+61.49	AREA COMPACTED EMBANKMENT:	0	SF
103+61.49	AREA COHESIVE SOIL EMBANKMENT FILL:	1409	SF

STA STAGE 5		VOLUME	
103+61.49	VOLUME UNCLASSIFIED EXCAVATION:	238	CUYD
103+61.49	VOLUME COMPACTED EMBANKMENT:	0	CUYD
103+61.49	VOLUME AREA COHESIVE SOIL EMBANKMENT FILL:	3521	CUYD

STA. 103+61 TO STA. 104+00 HWY. 18

CROSS SECTIONS

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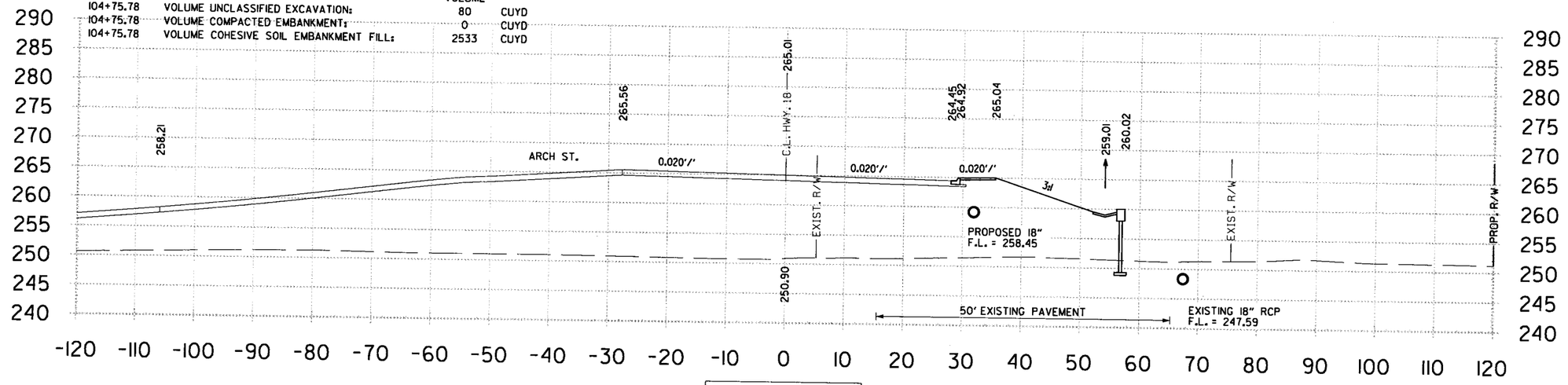
				6	ARK.			
				JOB NO.		100824	284	346
				(2) CROSS SECTIONS				

STA STAGE 4

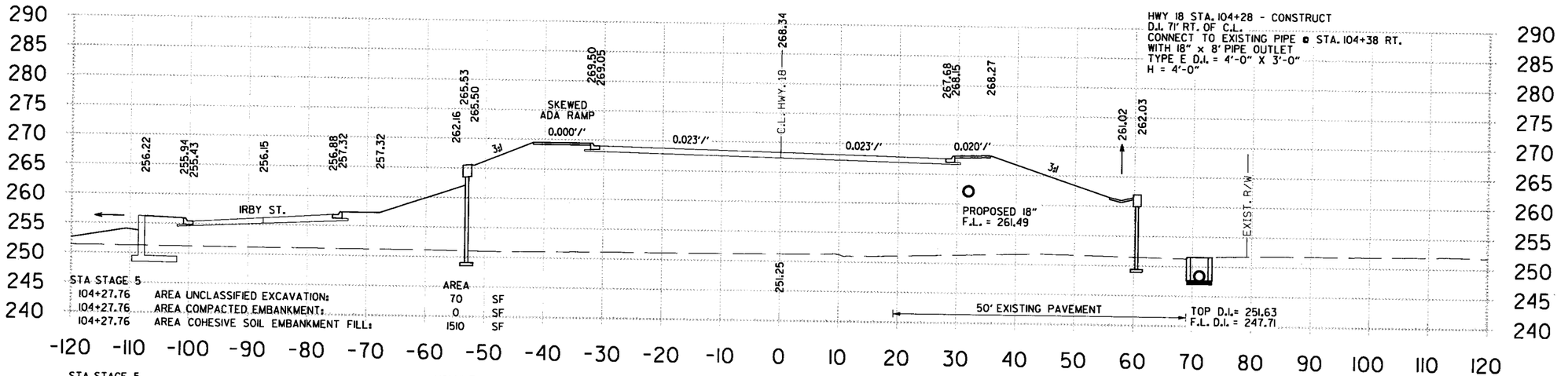
		AREA	
104+75.78	AREA UNCLASSIFIED EXCAVATION:	19	SF
104+75.78	AREA COMPACTED EMBANKMENT:	0	SF
104+75.78	AREA COHESIVE SOIL EMBANKMENT FILL:	1338	SF

STA STAGE 4

		VOLUME	
104+75.78	VOLUME UNCLASSIFIED EXCAVATION:	80	CUYD
104+75.78	VOLUME COMPACTED EMBANKMENT:	0	CUYD
104+75.78	VOLUME COHESIVE SOIL EMBANKMENT FILL:	2533	CUYD



104+75.78



STA STAGE 5

		AREA	
104+27.76	AREA UNCLASSIFIED EXCAVATION:	70	SF
104+27.76	AREA COMPACTED EMBANKMENT:	0	SF
104+27.76	AREA COHESIVE SOIL EMBANKMENT FILL:	1510	SF

STA STAGE 5

		VOLUME	
104+27.76	VOLUME UNCLASSIFIED EXCAVATION:	80	CUYD
104+27.76	VOLUME COMPACTED EMBANKMENT:	0	CUYD
104+27.76	VOLUME COHESIVE SOIL EMBANKMENT FILL:	2533	CUYD

104+27.76

STA. 104+28 TO STA. 104+76 HWY. 18

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.		100824	285	346
				(2) CROSS SECTIONS				

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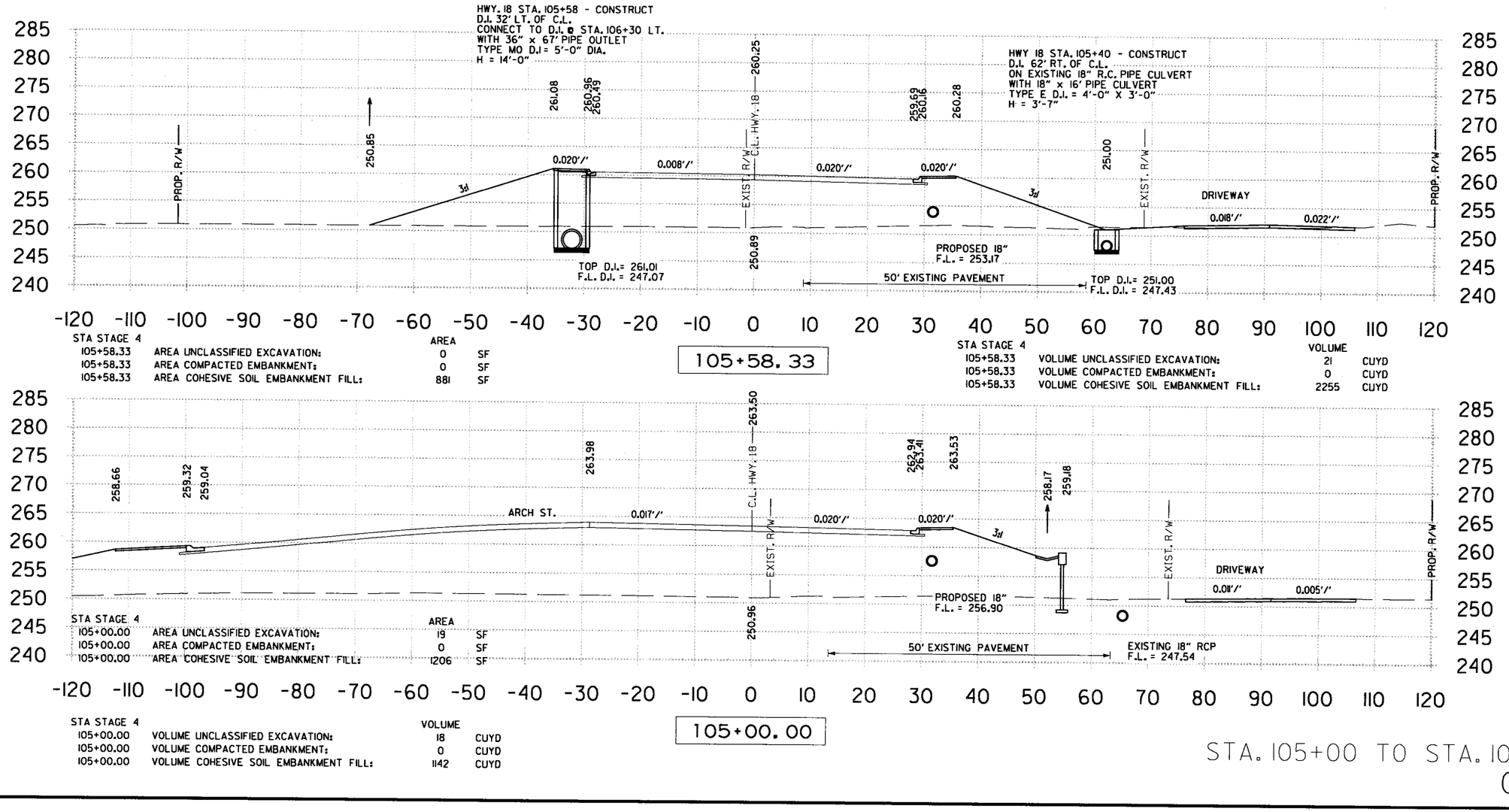

STA. 105+00 TO STA. 105+58 HWY. 18

CROSS SECTIONS

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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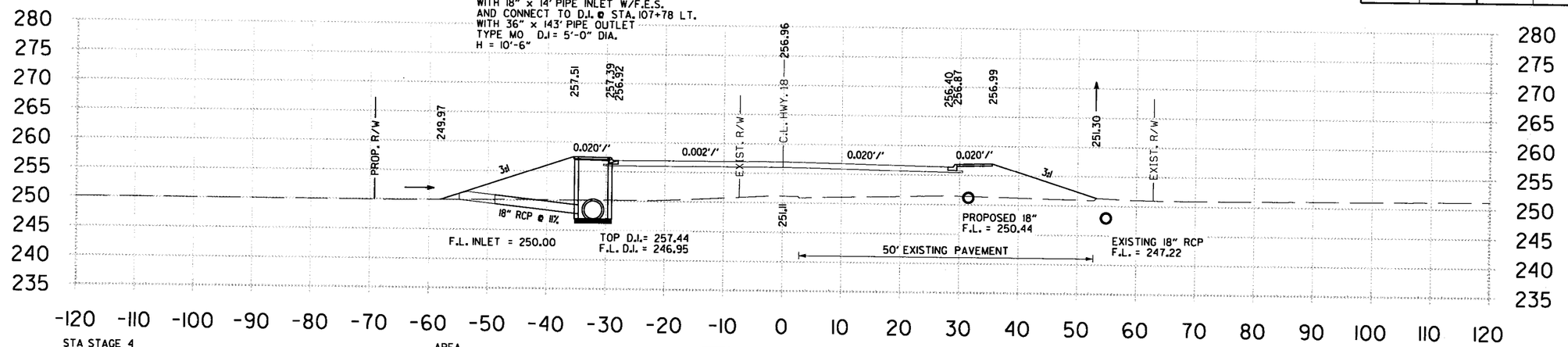
				JOB NO.		100824	286	346

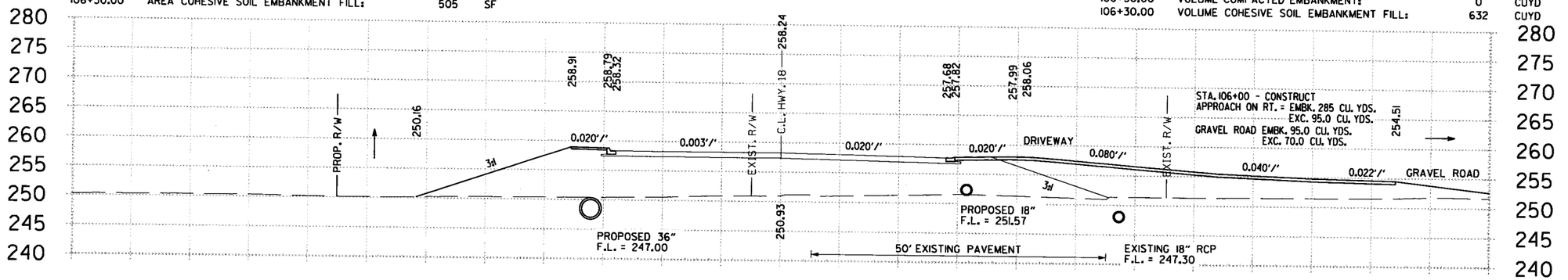
(2) CROSS SECTIONS



STA STAGE 4		AREA	
106+30.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
106+30.00	AREA COMPACTED EMBANKMENT:	0	SF
106+30.00	AREA COHESIVE SOIL EMBANKMENT FILL:	505	SF

106+30.00

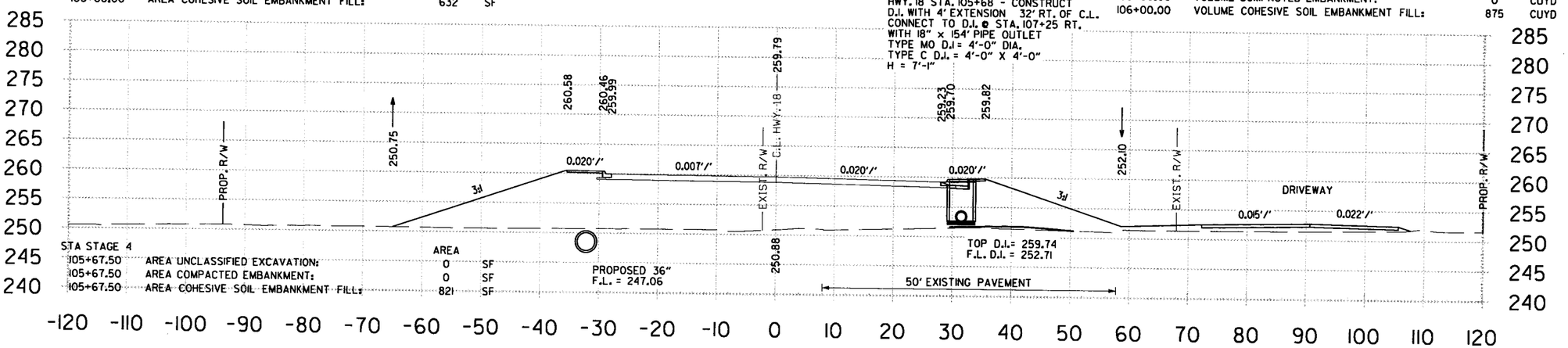
STA STAGE 4		VOLUME	
106+30.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
106+30.00	VOLUME COMPACTED EMBANKMENT:	0	CUYD
106+30.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	632	CUYD



STA STAGE 4		AREA	
106+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
106+00.00	AREA COMPACTED EMBANKMENT:	0	SF
106+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	632	SF

106+00.00

STA STAGE 4		VOLUME	
106+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
106+00.00	VOLUME COMPACTED EMBANKMENT:	0	CUYD
106+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	875	CUYD



STA STAGE 4		AREA	
105+67.50	AREA UNCLASSIFIED EXCAVATION:	0	SF
105+67.50	AREA COMPACTED EMBANKMENT:	0	SF
105+67.50	AREA COHESIVE SOIL EMBANKMENT FILL:	821	SF

105+67.50

STA STAGE 4		VOLUME	
105+67.50	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
105+67.50	VOLUME COMPACTED EMBANKMENT:	0	CUYD
105+67.50	VOLUME COHESIVE SOIL EMBANKMENT FILL:	290	CUYD

STA. 105+68 TO STA. 106+30 HWY. 18

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
				6	ARK.			
				JOB NO.		100824	287	346

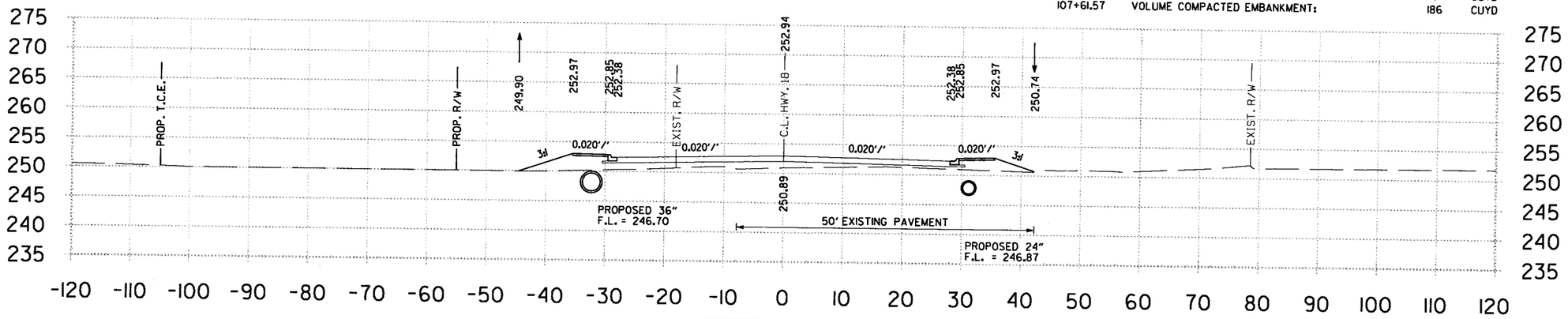
② CROSS SECTIONS

STA STAGE 4
107+61.57 AREA UNCLASSIFIED EXCAVATION:
107+61.57 AREA COMPACTED EMBANKMENT:

AREA
0 SF
94 SF

STA STAGE 4
107+61.57 VOLUME UNCLASSIFIED EXCAVATION:
107+61.57 VOLUME COMPACTED EMBANKMENT:

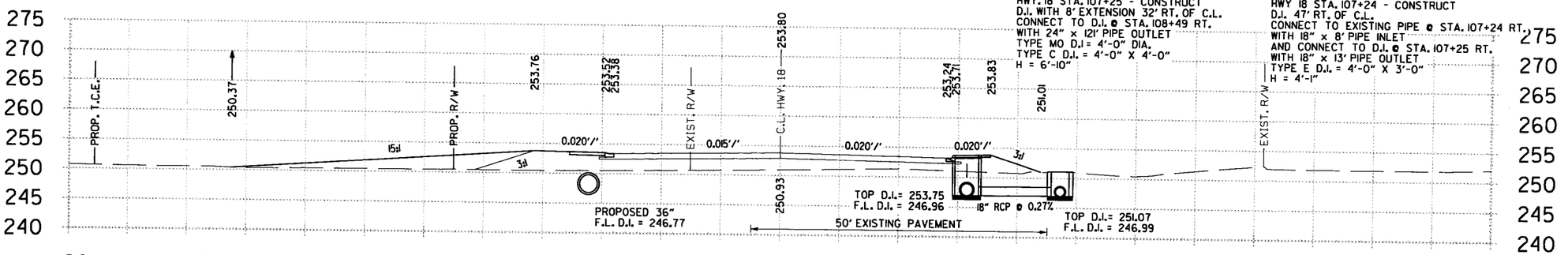
VOLUME
0 CUYD
186 CUYD



107+61.57

HWY. 18 STA. 107+25 - CONSTRUCT
D.I. WITH 8' EXTENSION 32' RT. OF C.L.
CONNECT TO D.I. @ STA. 108+49 RT.
WITH 24" x 121' PIPE OUTLET
TYPE MO D.I.= 4'-0" DIA.
TYPE C D.I.= 4'-0" X 4'-0"
H = 6'-10"

HWY 18 STA. 107+24 - CONSTRUCT
D.I. 47' RT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 107+24 RT.
WITH 18" x 8' PIPE INLET
AND CONNECT TO D.I. @ STA. 107+25 RT.
WITH 18" x 13' PIPE OUTLET
TYPE E D.I.= 4'-0" X 3'-0"
H = 4'-1"



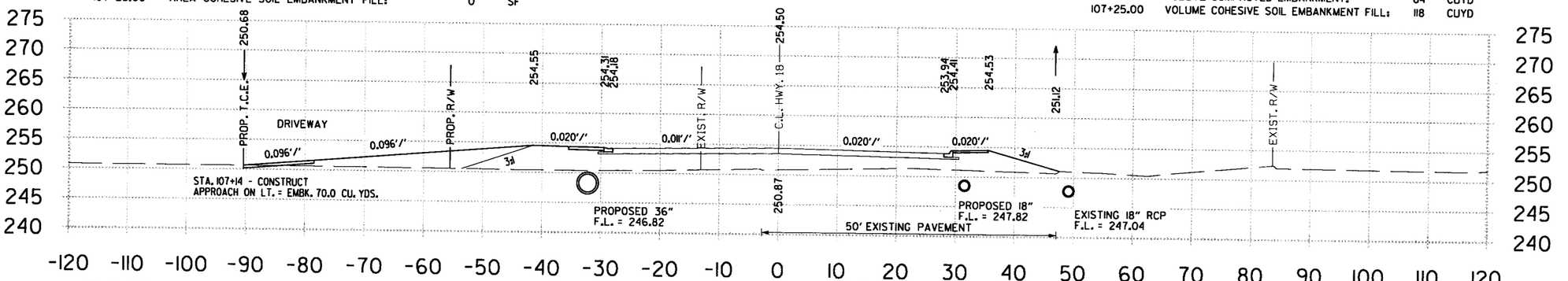
STA STAGE 4
107+25.00 AREA UNCLASSIFIED EXCAVATION:
107+25.00 AREA COMPACTED EMBANKMENT:
107+25.00 AREA COHESIVE SOIL EMBANKMENT FILL:

AREA
0 SF
180 SF
0 SF

107+25.00

STA STAGE 4
107+25.00 VOLUME UNCLASSIFIED EXCAVATION:
107+25.00 VOLUME COMPACTED EMBANKMENT:
107+25.00 VOLUME COHESIVE SOIL EMBANKMENT FILL:

VOLUME
0 CUYD
84 CUYD
118 CUYD



STA STAGE 4
107+00.00 AREA UNCLASSIFIED EXCAVATION:
107+00.00 AREA COMPACTED EMBANKMENT:
107+00.00 AREA COHESIVE SOIL EMBANKMENT FILL:

AREA
0 SF
0 SF
254 SF

107+00.00

STA STAGE 4
107+00.00 VOLUME UNCLASSIFIED EXCAVATION:
107+00.00 VOLUME COMPACTED EMBANKMENT:
107+00.00 VOLUME COHESIVE SOIL EMBANKMENT FILL:

VOLUME
0 CUYD
0 CUYD
984 CUYD

STA. 107+00 TO STA. 107+62 HWY. 18
CROSS SECTIONS

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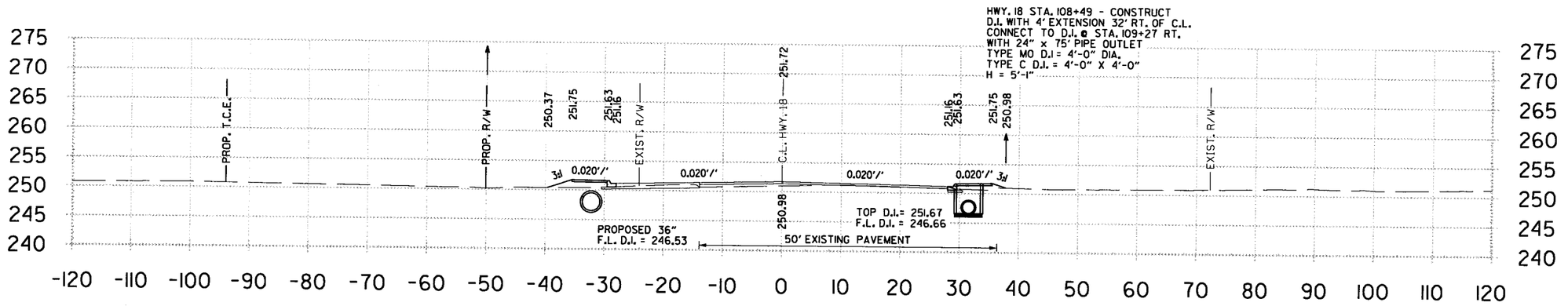
				JOB NO.		100824	288	346

(2) CROSS SECTIONS

STA STAGE 4
108+49.19 AREA UNCLASSIFIED EXCAVATION: 9 SF
108+49.19 AREA COMPACTED EMBANKMENT: 14 SF

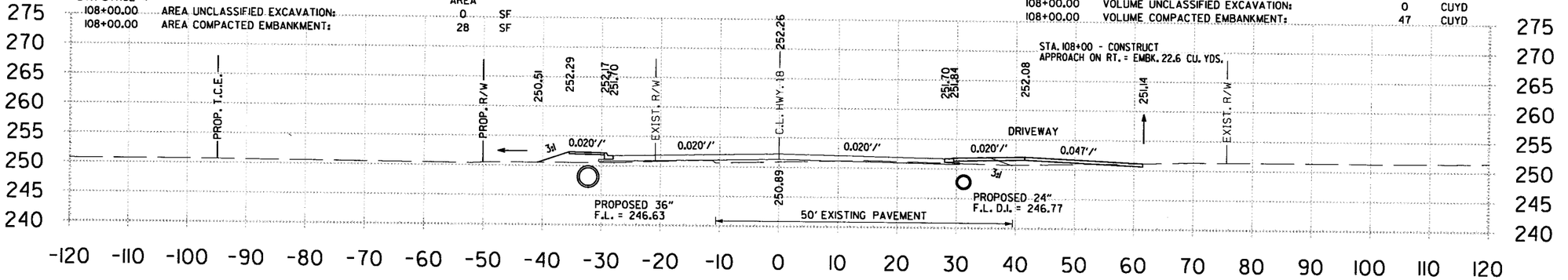
STA STAGE 4
108+49.19 VOLUME UNCLASSIFIED EXCAVATION: 9 CUYD
108+49.19 VOLUME COMPACTED EMBANKMENT: 39 CUYD



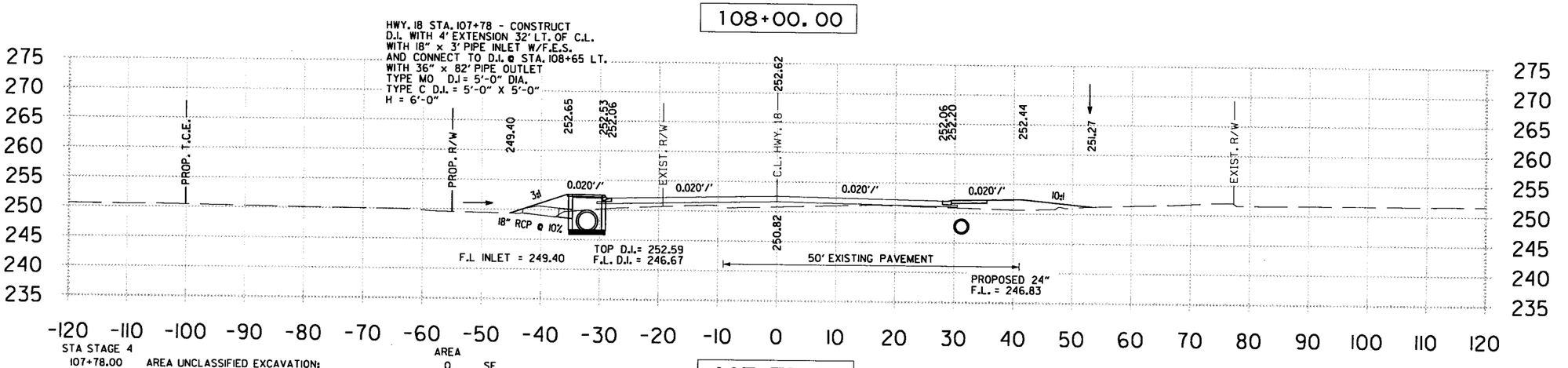
108+49.19

STA STAGE 4
108+00.00 AREA UNCLASSIFIED EXCAVATION: 0 SF
108+00.00 AREA COMPACTED EMBANKMENT: 28 SF

STA STAGE 4
108+00.00 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
108+00.00 VOLUME COMPACTED EMBANKMENT: 47 CUYD



108+00.00



107+78.00

STA STAGE 4
107+78.00 AREA UNCLASSIFIED EXCAVATION: 0 SF
107+78.00 AREA COMPACTED EMBANKMENT: 87 SF

STA STAGE 4
107+78.00 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
107+78.00 VOLUME COMPACTED EMBANKMENT: 56 CUYD

STA. 107+78 TO STA. 108+49 HWY. 18
CROSS SECTIONS

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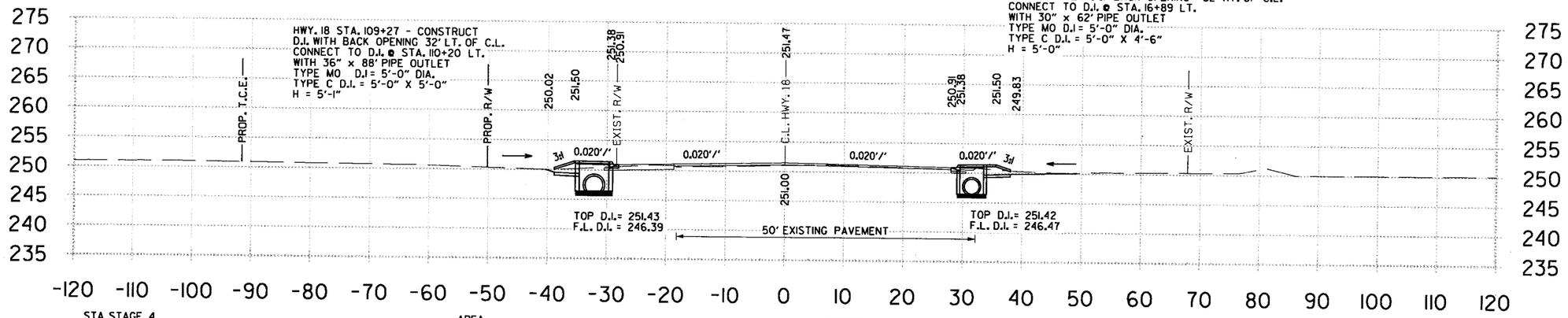
				6	ARK.			
				JOB NO.		100824	289	346

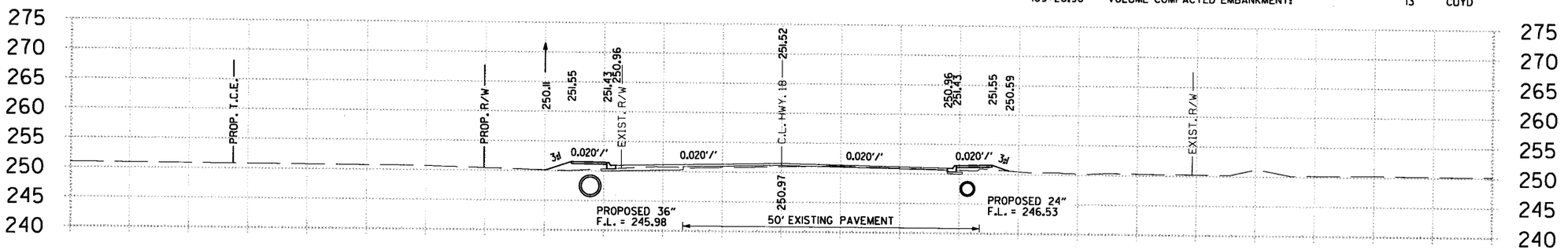
(2) CROSS SECTIONS



STA STAGE 4		AREA	
109+26.90	AREA UNCLASSIFIED EXCAVATION:	9	SF
109+26.90	AREA COMPACTED EMBANKMENT:	12	SF

109+26.90

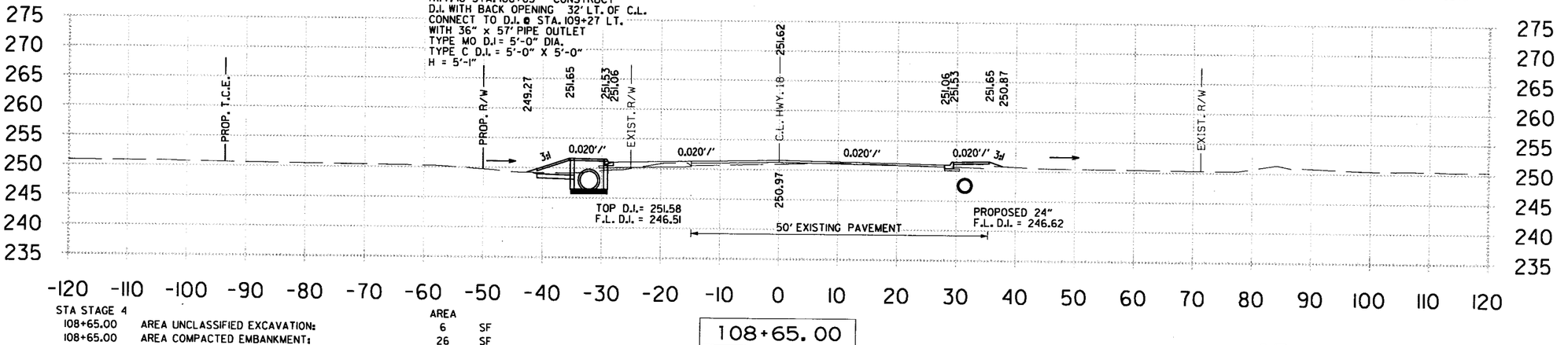
STA STAGE 4		VOLUME	
109+26.90	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD
109+26.90	VOLUME COMPACTED EMBANKMENT:	13	CUYD



STA STAGE 4		AREA	
109+00.00	AREA UNCLASSIFIED EXCAVATION:	8	SF
109+00.00	AREA COMPACTED EMBANKMENT:	13	SF

109+00.00

STA STAGE 4		VOLUME	
109+00.00	VOLUME UNCLASSIFIED EXCAVATION:	10	CUYD
109+00.00	VOLUME COMPACTED EMBANKMENT:	26	CUYD



STA STAGE 4		AREA	
108+65.00	AREA UNCLASSIFIED EXCAVATION:	6	SF
108+65.00	AREA COMPACTED EMBANKMENT:	26	SF

STA STAGE 4		VOLUME	
108+65.00	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
108+65.00	VOLUME COMPACTED EMBANKMENT:	12	CUYD

108+65.00

STA. 108+65 TO STA. 109+27 HWY. 18

CROSS SECTIONS

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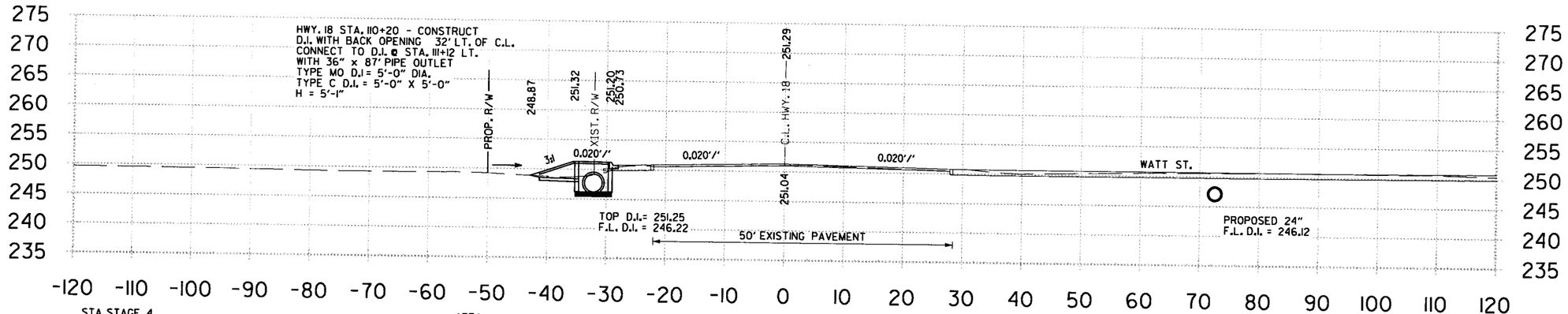
				6	ARK.			
				JOB NO.		100824	290	346

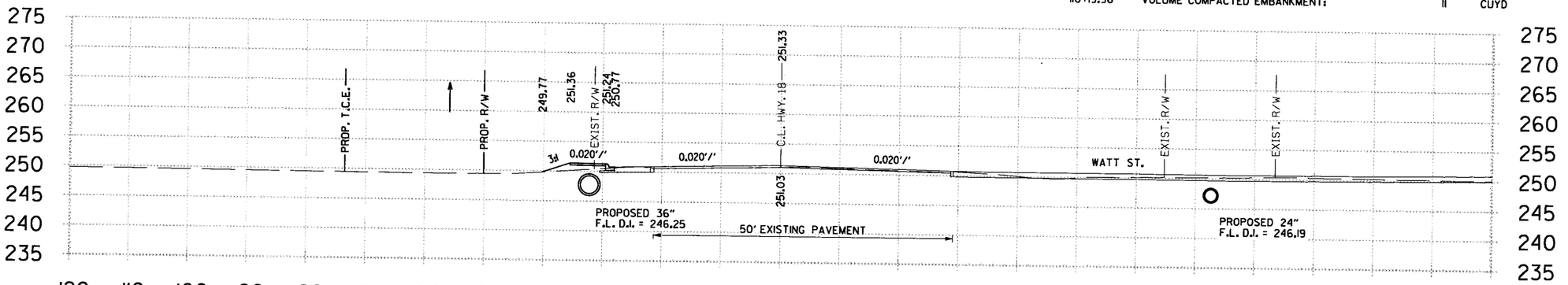
(2) CROSS SECTIONS



STA STAGE 4		AREA	
110+19.96	AREA UNCLASSIFIED EXCAVATION:	5	SF
110+19.96	AREA COMPACTED EMBANKMENT:	21	SF

110+19.96

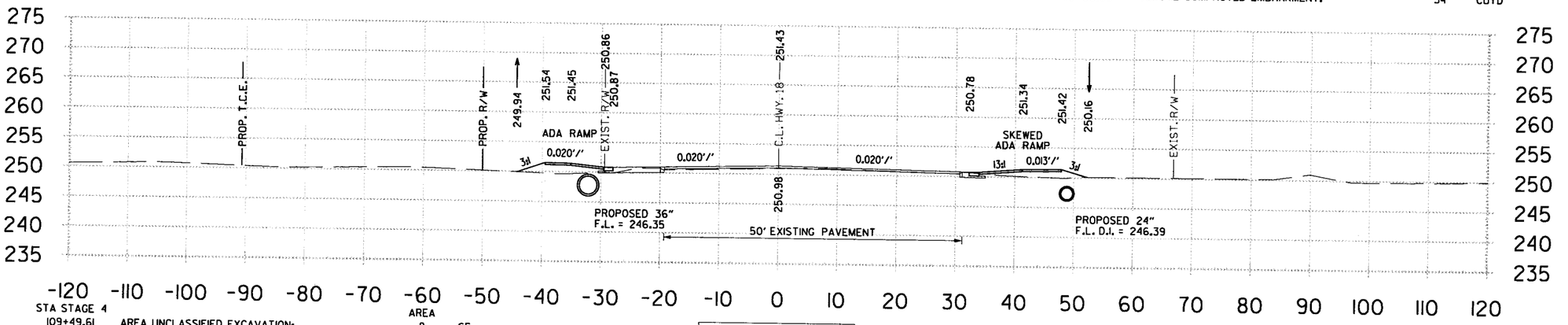
STA STAGE 4		VOLUME	
110+19.96	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
110+19.96	VOLUME COMPACTED EMBANKMENT:	11	CUYD



STA STAGE 4		AREA	
110+00.00	AREA UNCLASSIFIED EXCAVATION:	7	SF
110+00.00	AREA COMPACTED EMBANKMENT:	7	SF

110+00.00

STA STAGE 4		VOLUME	
110+00.00	VOLUME UNCLASSIFIED EXCAVATION:	14	CUYD
110+00.00	VOLUME COMPACTED EMBANKMENT:	34	CUYD



STA STAGE 4		AREA	
109+49.61	AREA UNCLASSIFIED EXCAVATION:	8	SF
109+49.61	AREA COMPACTED EMBANKMENT:	29	SF

STA STAGE 4		VOLUME	
109+49.61	VOLUME UNCLASSIFIED EXCAVATION:	8	CUYD
109+49.61	VOLUME COMPACTED EMBANKMENT:	18	CUYD

109+49.61

STA. 109+50 TO STA. 110+20 HWY. 18
CROSS SECTIONS

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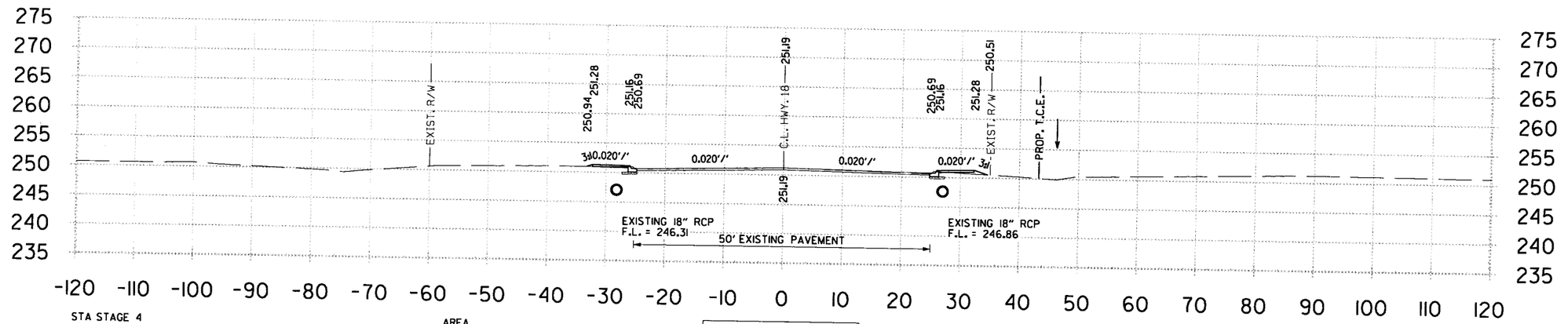
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	291	346

(2) CROSS SECTIONS



STA STAGE 4
112+00.00 AREA UNCLASSIFIED EXCAVATION:
112+00.00 AREA COMPACTED EMBANKMENT:

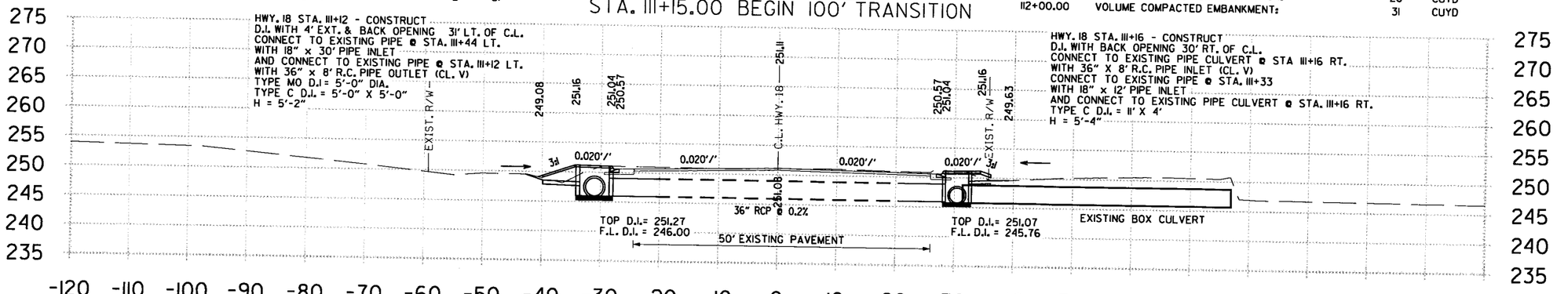
AREA	
5	SF
2	SF

112+00.00

STA. 111+15.00 BEGIN 100' TRANSITION

STA STAGE 4
112+00.00 VOLUME UNCLASSIFIED EXCAVATION:
112+00.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
28	CUYD
31	CUYD



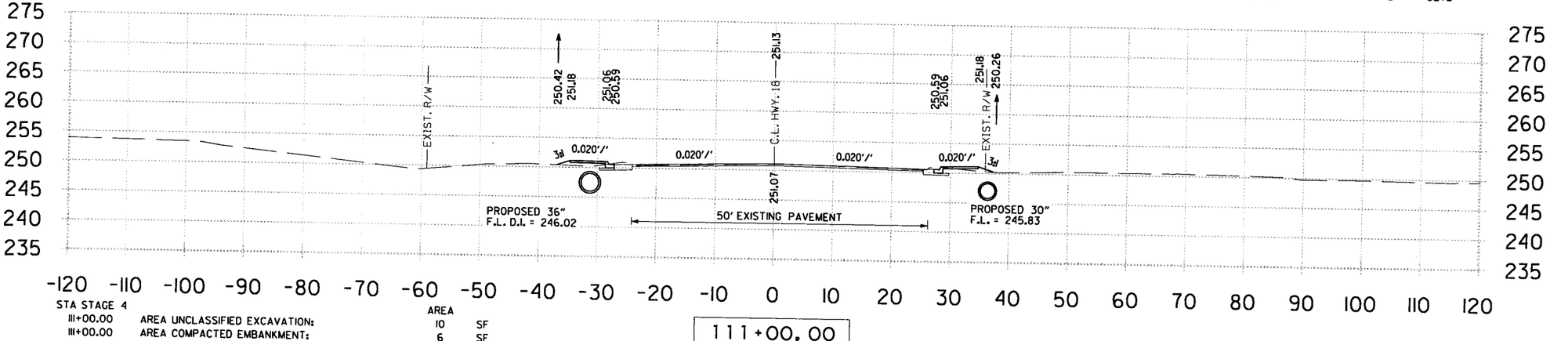
STA STAGE 4
111+12.31 AREA UNCLASSIFIED EXCAVATION:
111+12.31 AREA COMPACTED EMBANKMENT:

AREA	
12	SF
17	SF

111+12.31

STA STAGE 4
111+12.31 VOLUME UNCLASSIFIED EXCAVATION:
111+12.31 VOLUME COMPACTED EMBANKMENT:

VOLUME	
6	CUYD
6	CUYD



STA STAGE 4
111+00.00 AREA UNCLASSIFIED EXCAVATION:
111+00.00 AREA COMPACTED EMBANKMENT:

AREA	
10	SF
6	SF

STA STAGE 4
111+00.00 VOLUME UNCLASSIFIED EXCAVATION:
111+00.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
23	CUYD
41	CUYD

111+00.00

STA. 111+00 TO STA. 112+00 HWY. 18
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
				6	ARK.			
				JOB NO.		100824	292	346
				(2) CROSS SECTIONS				

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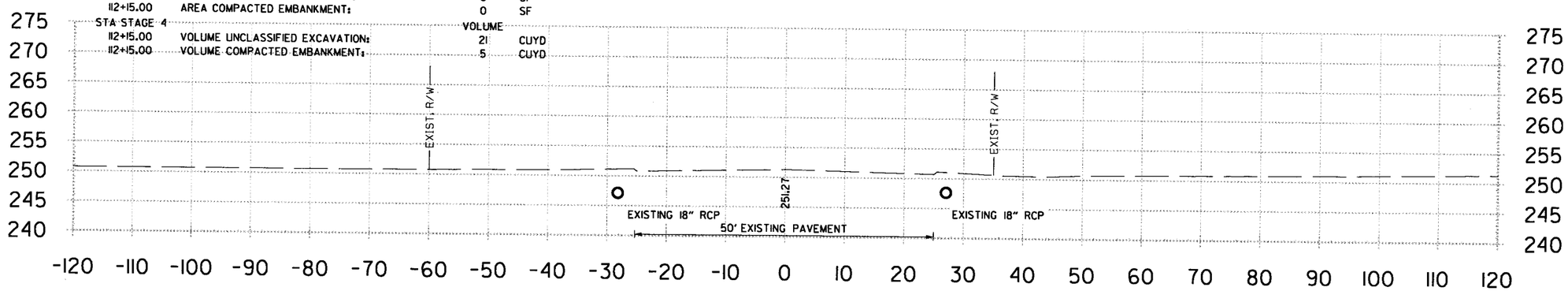
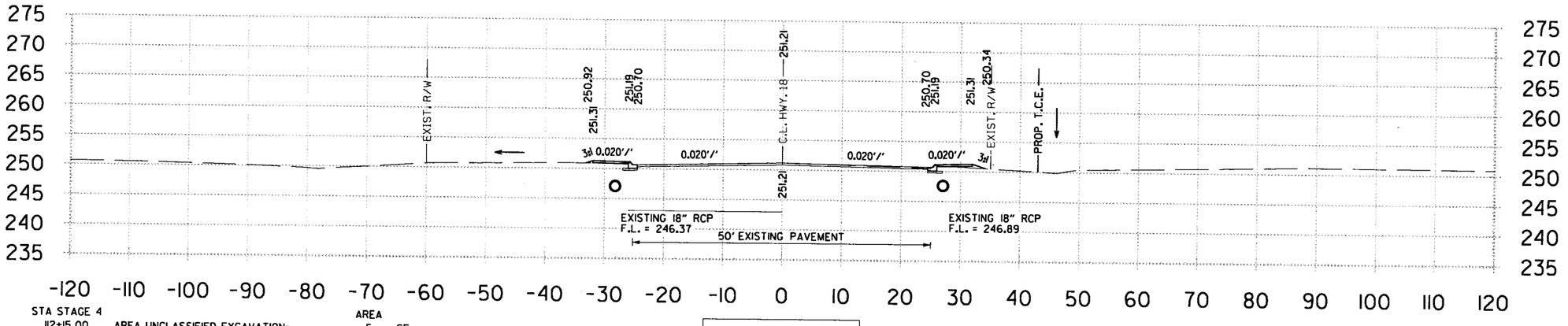
STA STAGE 4		AREA	
112+15.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
112+15.00	AREA COMPACTED EMBANKMENT:	0	SF
STA STAGE 4		VOLUME	
112+15.00	VOLUME UNCLASSIFIED EXCAVATION:	21	CUYD
112+15.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD



113+00.00



112+15.00

STA STAGE 4		AREA	
112+15.00	AREA UNCLASSIFIED EXCAVATION:	5	SF
112+15.00	AREA COMPACTED EMBANKMENT:	2	SF
STA STAGE 4		VOLUME	
112+15.00	VOLUME UNCLASSIFIED EXCAVATION:	3	CUYD
112+15.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

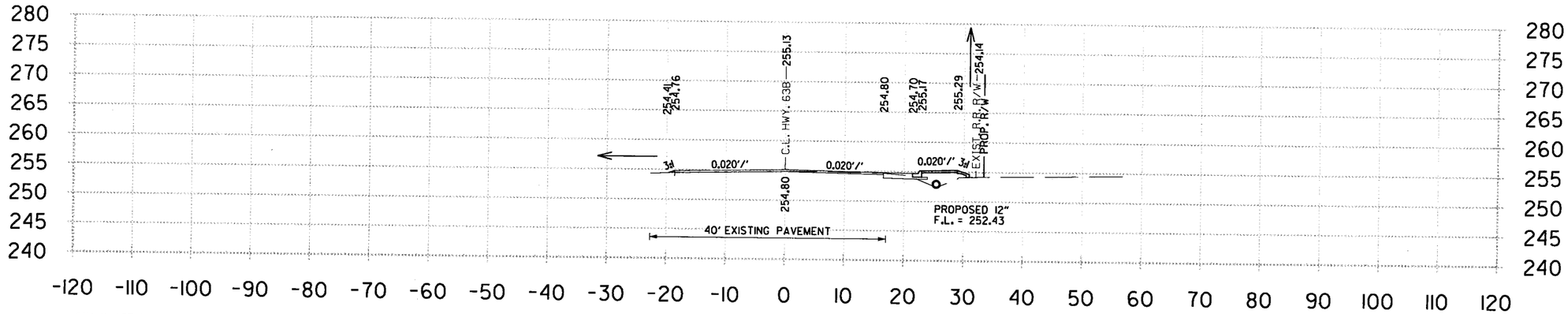
END JOB 100824 AND END 100' TRANSITION

STA. 112+15 TO STA. 113+00 HWY. 18

CROSS SECTIONS

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.		100824	293	346

(2) CROSS SECTIONS



STA STAGE 1

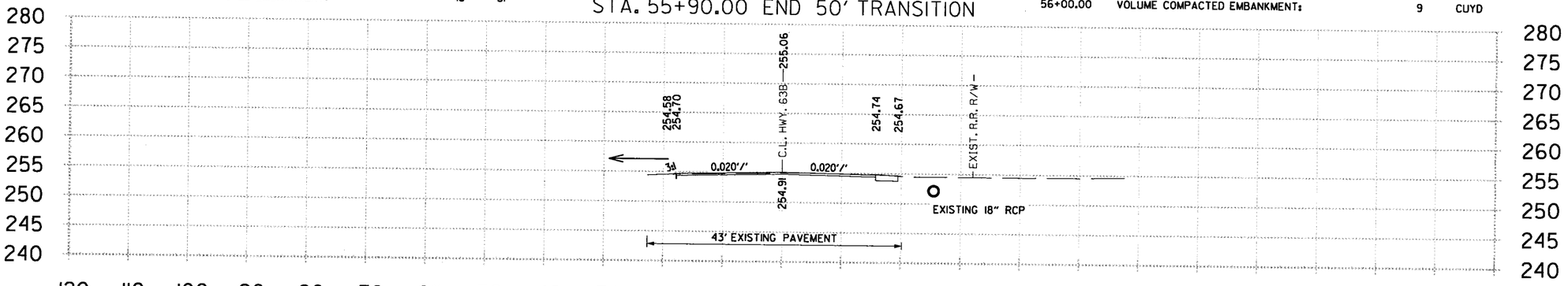
		AREA	
56+00.00	AREA UNCLASSIFIED EXCAVATION:	4	SF
56+00.00	AREA COMPACTED EMBANKMENT:	13	SF

56+00.00

STA. 55+90.00 END 50' TRANSITION

STA STAGE 1

		VOLUME	
56+00.00	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
56+00.00	VOLUME COMPACTED EMBANKMENT:	9	CUYD



STA STAGE 1

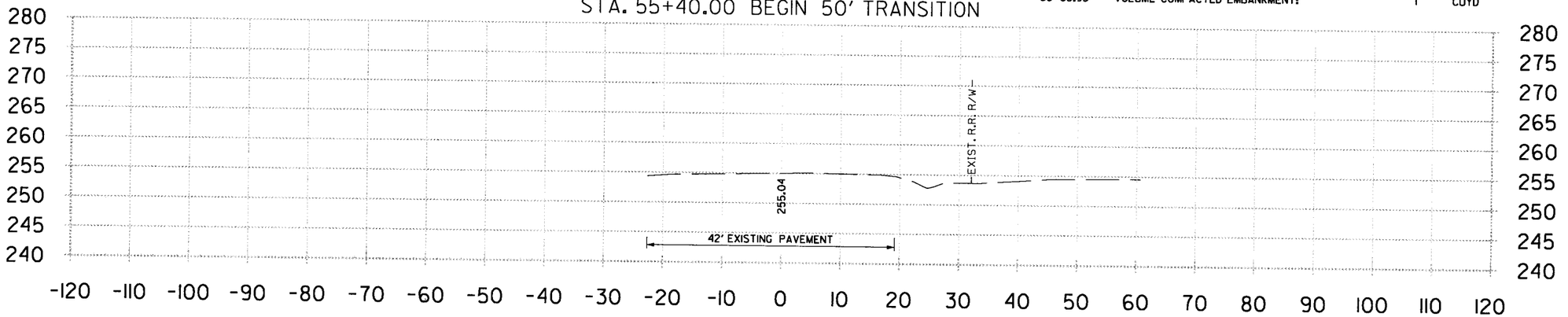
		AREA	
55+65.95	AREA UNCLASSIFIED EXCAVATION:	4	SF
55+65.95	AREA COMPACTED EMBANKMENT:	1	SF

55+65.95

STA. 55+40.00 BEGIN 50' TRANSITION

STA STAGE 1

		VOLUME	
55+65.95	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
55+65.95	VOLUME COMPACTED EMBANKMENT:	1	CUYD



55+00.00

STA. 55+00 TO STA. 56+00

NETTLETON AVE. CROSS SECTIONS

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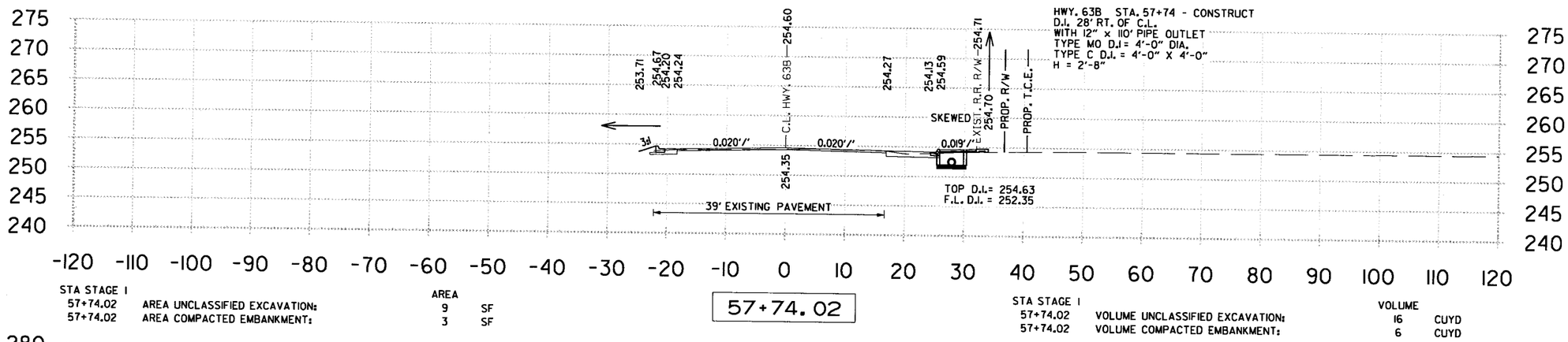
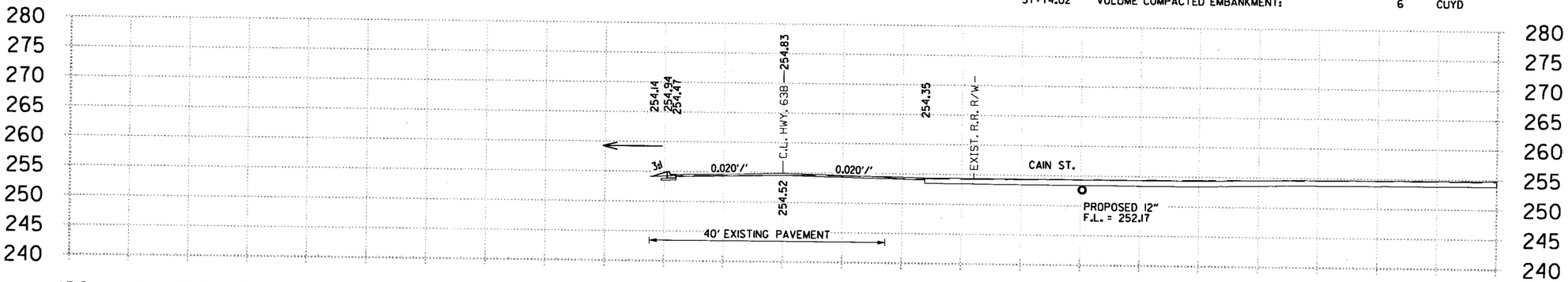
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	294	346
				(2) CROSS SECTIONS				



STA	STAGE		AREA	
57+74.02	I	AREA UNCLASSIFIED EXCAVATION:	9	SF
57+74.02		AREA COMPACTED EMBANKMENT:	3	SF

57+74.02

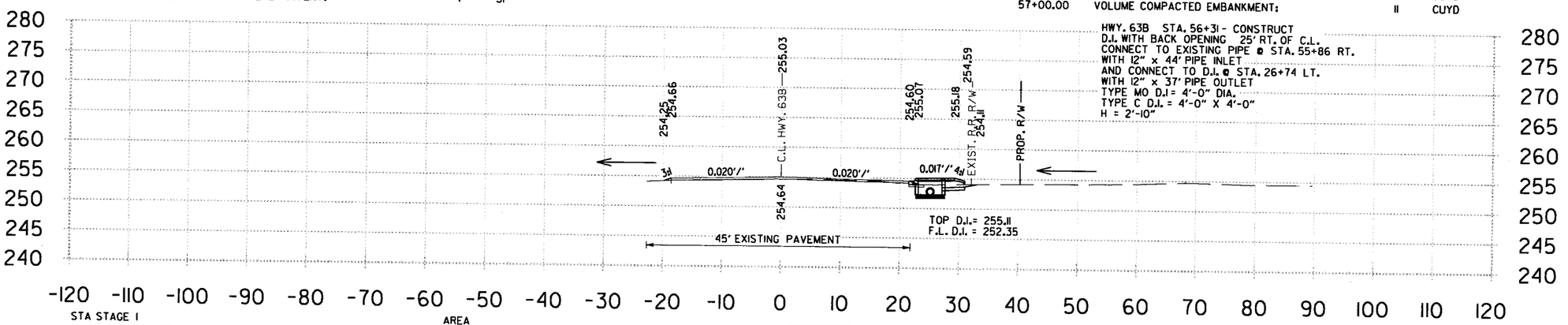
STA	STAGE		VOLUME	
57+74.02	I	VOLUME UNCLASSIFIED EXCAVATION:	16	CUYD
57+74.02		VOLUME COMPACTED EMBANKMENT:	6	CUYD



STA	STAGE		AREA	
57+00.00	I	AREA UNCLASSIFIED EXCAVATION:	2	SF
57+00.00		AREA COMPACTED EMBANKMENT:	1	SF

57+00.00

STA	STAGE		VOLUME	
57+00.00	I	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
57+00.00		VOLUME COMPACTED EMBANKMENT:	11	CUYD



STA	STAGE		AREA	
56+31.39	I	AREA UNCLASSIFIED EXCAVATION:	2	SF
56+31.39		AREA COMPACTED EMBANKMENT:	7	SF

STA	STAGE		VOLUME	
56+31.39	I	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
56+31.39		VOLUME COMPACTED EMBANKMENT:	12	CUYD

56+31.39

STA. 56+31 TO STA. 57+74

NETTLETON AVE. 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
				6	ARK.			
				JOB NO.		100824	295	346
				(2) CROSS SECTIONS				

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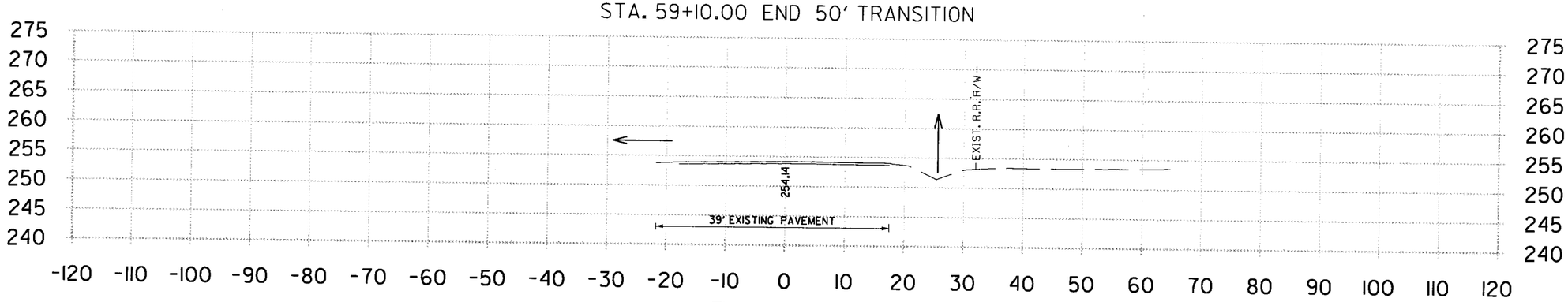
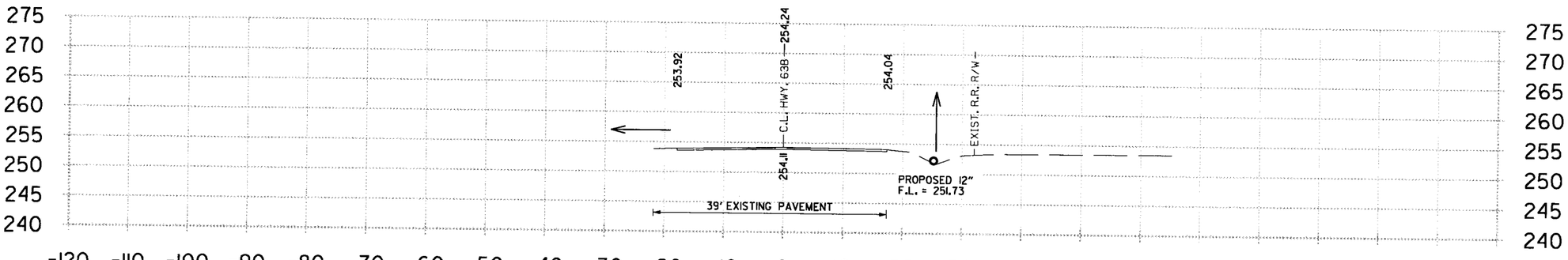
STA. 59+10.00 END 50' TRANSITION



59+00.00

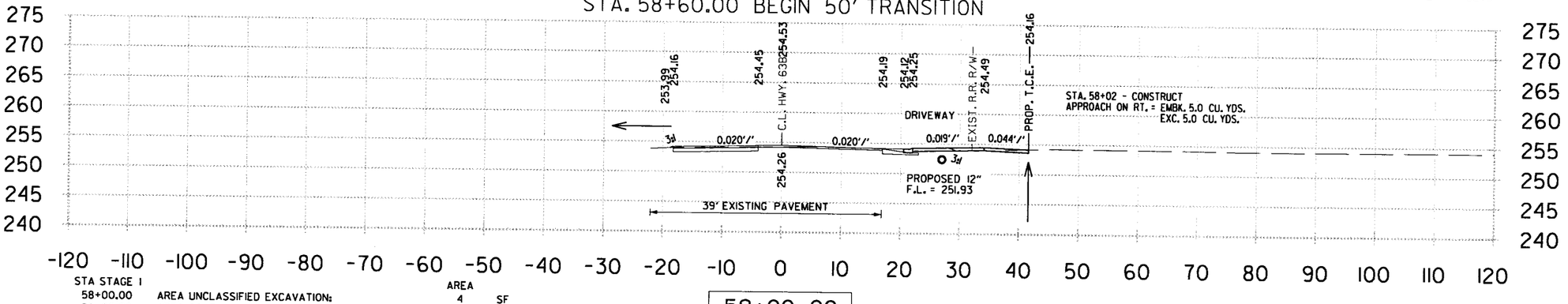


STA STAGE I		AREA	
58+82.50	AREA UNCLASSIFIED EXCAVATION:	0	SF
58+82.50	AREA COMPACTED EMBANKMENT:	0	SF

58+82.50

STA STAGE I		VOLUME	
58+82.50	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
58+82.50	VOLUME COMPACTED EMBANKMENT:	2	CUYD

STA. 58+60.00 BEGIN 50' TRANSITION



58+00.00

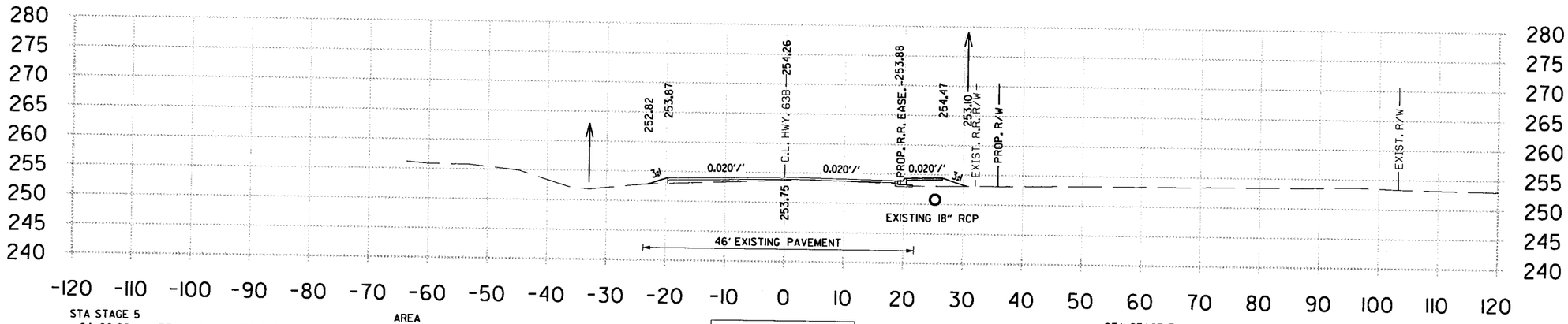
STA STAGE I		AREA	
58+00.00	AREA UNCLASSIFIED EXCAVATION:	4	SF
58+00.00	AREA COMPACTED EMBANKMENT:	1	SF
STA STAGE I		VOLUME	
58+00.00	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
58+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

STA. 58+00 TO STA. 59+00

NETTLETON AVE. CROSS SECTIONS

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.		100824	296	346

(2) CROSS SECTIONS

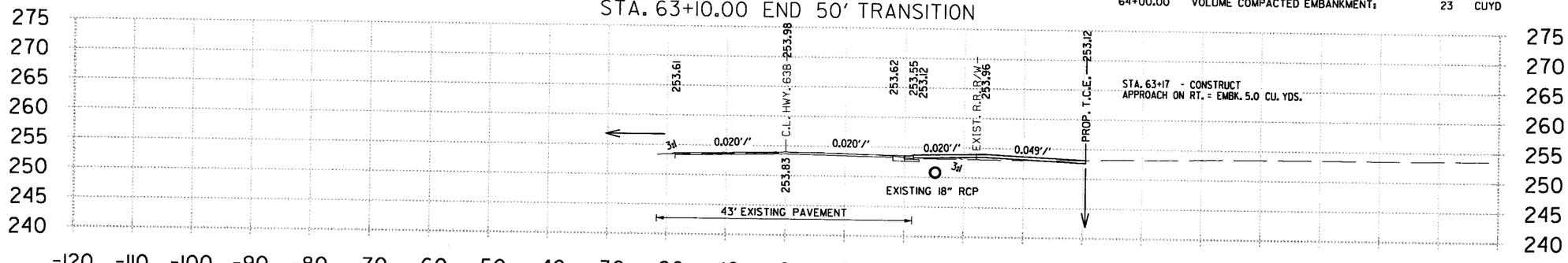


STA STAGE 5
64+00.00 AREA UNCLASSIFIED EXCAVATION: AREA I SF
64+00.00 AREA COMPACTED EMBANKMENT: II SF

64+00.00

STA STAGE 5
64+00.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 8 CUYD
64+00.00 VOLUME COMPACTED EMBANKMENT: 23 CUYD

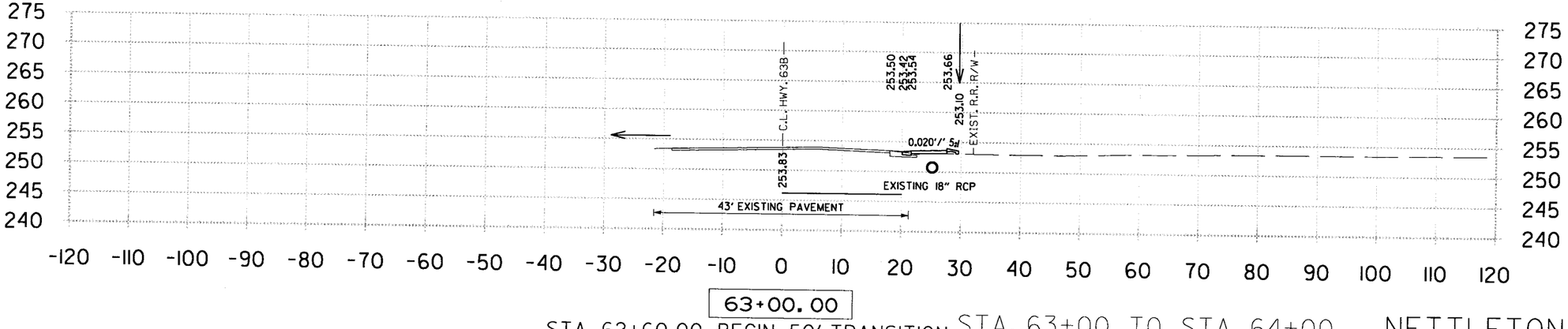
STA. 63+10.00 END 50' TRANSITION



STA STAGE 5
63+04.97 AREA UNCLASSIFIED EXCAVATION: AREA 3 SF
63+04.97 AREA COMPACTED EMBANKMENT: 2 SF

63+04.97

STA STAGE 5
63+04.97 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 1 CUYD
63+04.97 VOLUME COMPACTED EMBANKMENT: 1 CUYD



63+00.00

STA. 62+60.00 BEGIN 50' TRANSITION

STA. 63+00 TO STA. 64+00

NETTLETON AVE. & HWY. 63B CROSS SECTIONS

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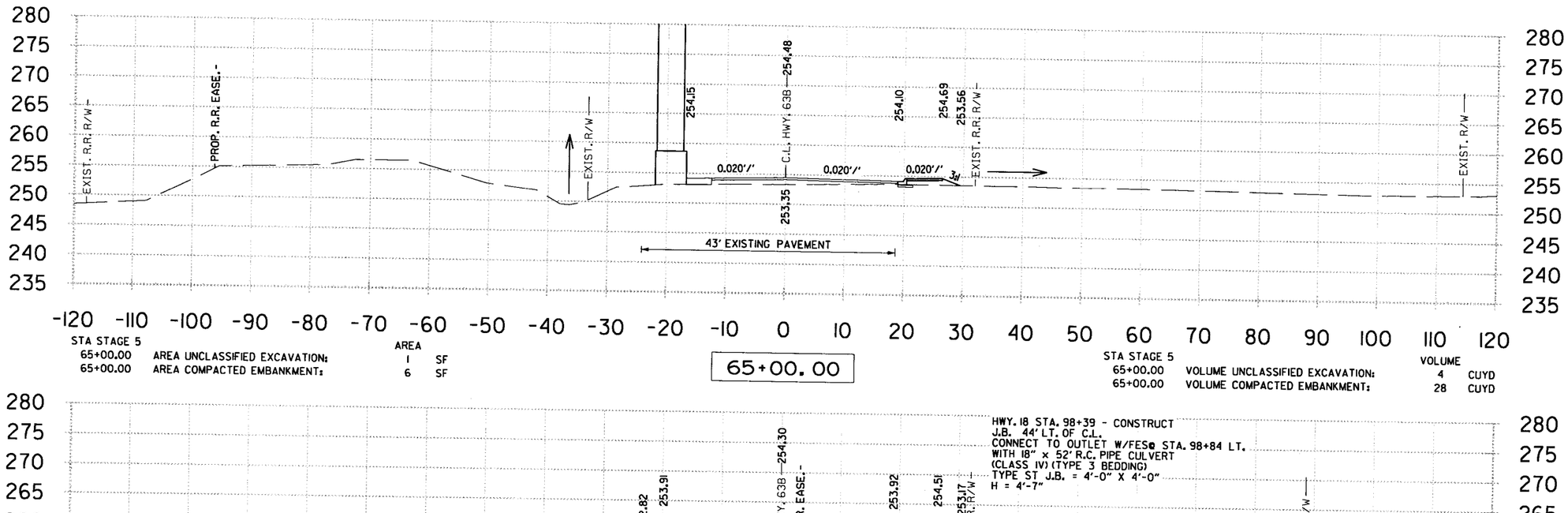
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	297	346

(2) CROSS SECTIONS



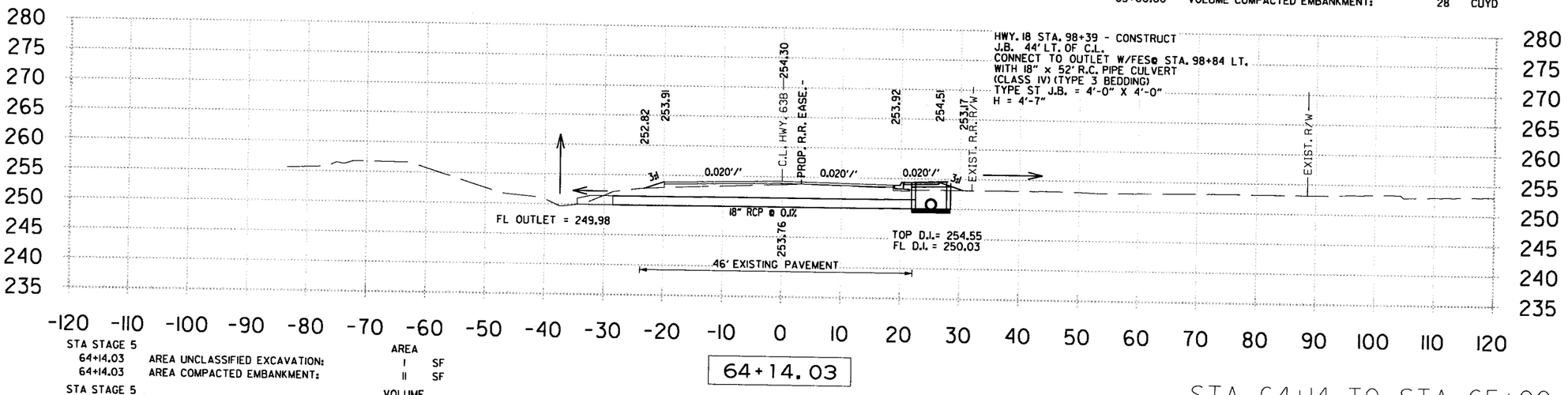
STA STAGE 5
65+00.00 AREA UNCLASSIFIED EXCAVATION:
65+00.00 AREA COMPACTED EMBANKMENT:

AREA	
I	SF
6	SF

65+00.00

STA STAGE 5
65+00.00 VOLUME UNCLASSIFIED EXCAVATION:
65+00.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
4	CUYD
28	CUYD



STA STAGE 5
64+14.03 AREA UNCLASSIFIED EXCAVATION:
64+14.03 AREA COMPACTED EMBANKMENT:

AREA	
I	SF
II	SF

STA STAGE 5
64+14.03 VOLUME UNCLASSIFIED EXCAVATION:
64+14.03 VOLUME COMPACTED EMBANKMENT:

VOLUME	
I	CUYD
6	CUYD

64+14.03

STA. 64+14 TO STA. 65+00

NETTLETON AVE. CROSS SECTIONS

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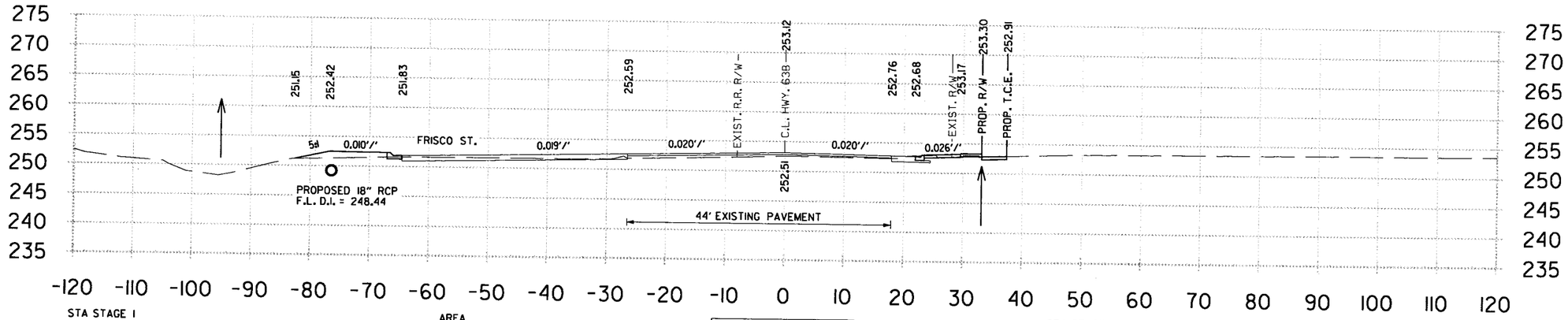
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	298	346

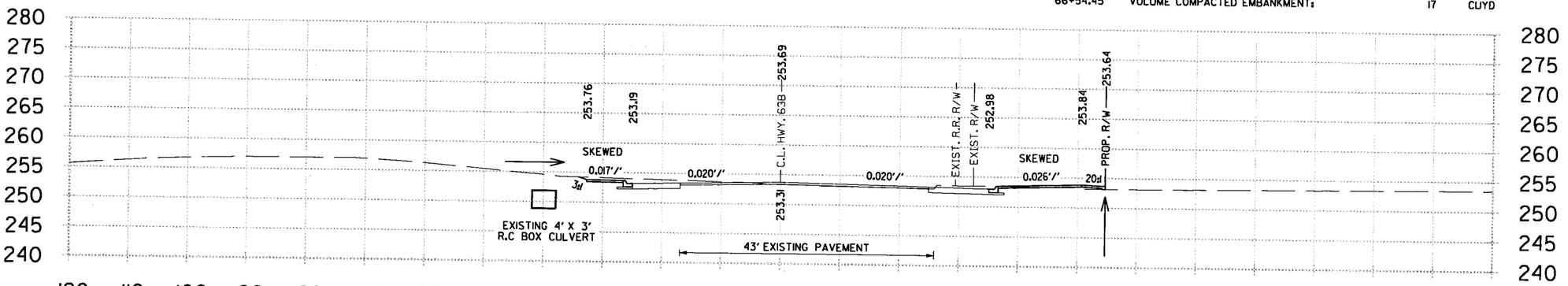
(2) CROSS SECTIONS



STA STAGE I
66+54.45 AREA UNCLASSIFIED EXCAVATION: AREA 21 SF
66+54.45 AREA COMPACTED EMBANKMENT: 14 SF

66+54.45

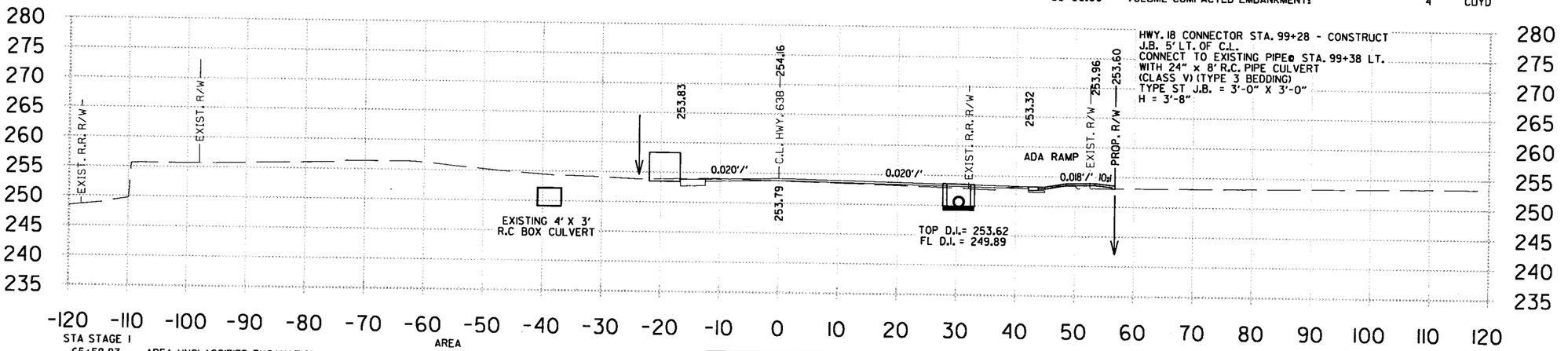
STA STAGE I
66+54.45 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 59 CUYD
66+54.45 VOLUME COMPACTED EMBANKMENT: 17 CUYD



STA STAGE I
66+00.00 AREA UNCLASSIFIED EXCAVATION: AREA 37 SF
66+00.00 AREA COMPACTED EMBANKMENT: 2 SF

66+00.00

STA STAGE I
66+00.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 36 CUYD
66+00.00 VOLUME COMPACTED EMBANKMENT: 4 CUYD



STA STAGE I
65+58.83 AREA UNCLASSIFIED EXCAVATION: AREA 9 SF
65+58.83 AREA COMPACTED EMBANKMENT: 3 SF

65+58.83

STA STAGE I
65+58.83 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 11 CUYD
65+58.83 VOLUME COMPACTED EMBANKMENT: 10 CUYD

STA. 65+59 TO STA. 66+54 NETTLETON AVE. HWY. 63B CROSS SECTIONS

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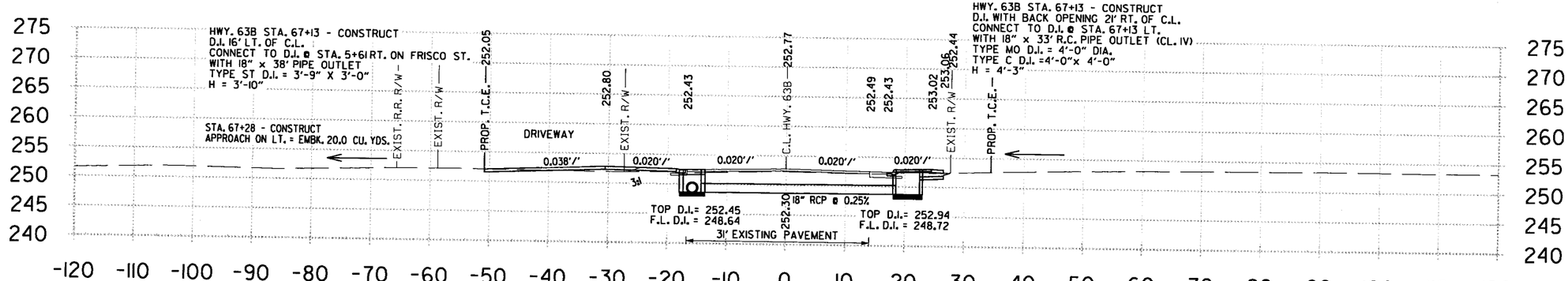
				6	ARK.			
				JOB NO.		100824	299	346

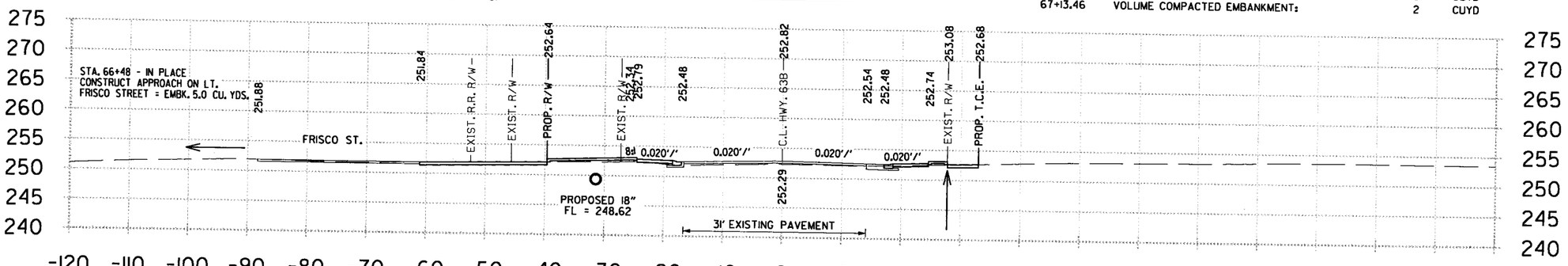
(2) CROSS SECTIONS



STA STAGE I		AREA	
67+13.46	AREA UNCLASSIFIED EXCAVATION:	5	SF
67+13.46	AREA COMPACTED EMBANKMENT:	3	SF

67+13.46

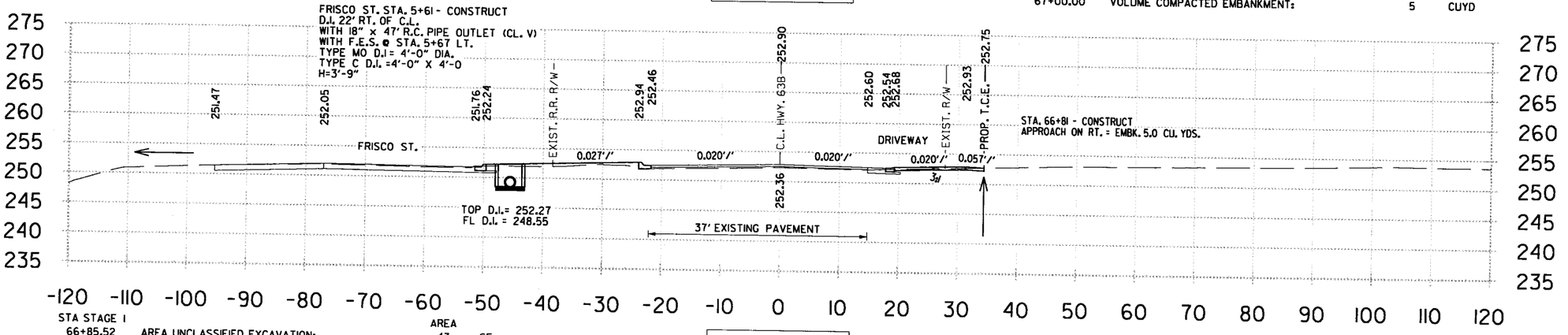
STA STAGE I		VOLUME	
67+13.46	VOLUME UNCLASSIFIED EXCAVATION:	3	CUYD
67+13.46	VOLUME COMPACTED EMBANKMENT:	2	CUYD



STA STAGE I		AREA	
67+00.00	AREA UNCLASSIFIED EXCAVATION:	6	SF
67+00.00	AREA COMPACTED EMBANKMENT:	5	SF

67+00.00

STA STAGE I		VOLUME	
67+00.00	VOLUME UNCLASSIFIED EXCAVATION:	14	CUYD
67+00.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE I		AREA	
66+85.52	AREA UNCLASSIFIED EXCAVATION:	43	SF
66+85.52	AREA COMPACTED EMBANKMENT:	12	SF

66+85.52

STA STAGE I		VOLUME	
66+85.52	VOLUME UNCLASSIFIED EXCAVATION:	37	CUYD
66+85.52	VOLUME COMPACTED EMBANKMENT:	15	CUYD

STA. 66+86 TO STA. 67+13 HWY. 63B
CROSS SECTIONS

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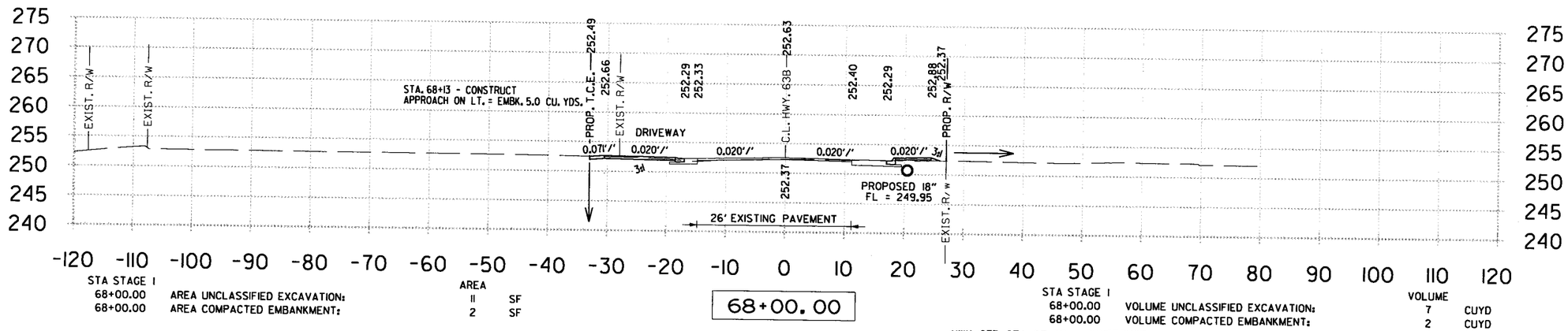
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	300	346

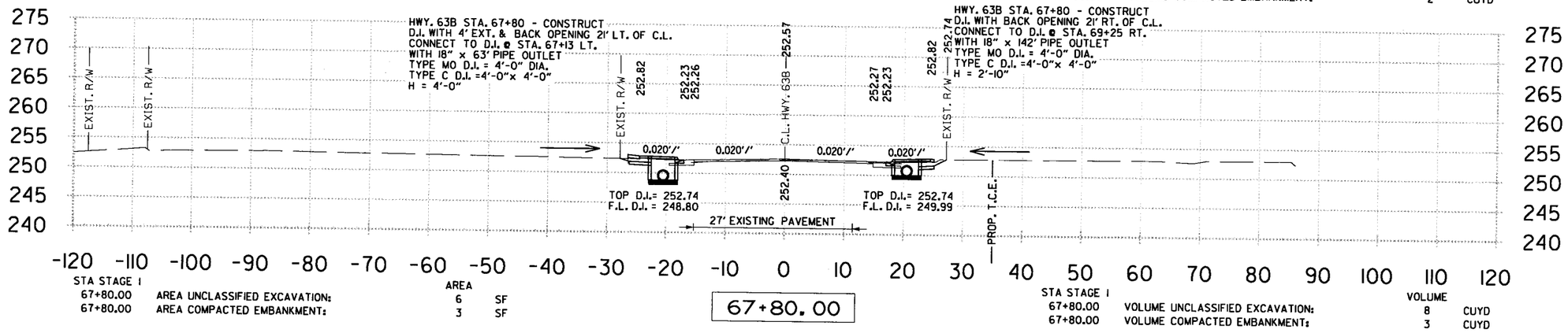
(2) CROSS SECTIONS



STA STAGE I		AREA	
68+00.00	AREA UNCLASSIFIED EXCAVATION:	11	SF
68+00.00	AREA COMPACTED EMBANKMENT:	2	SF

68+00.00

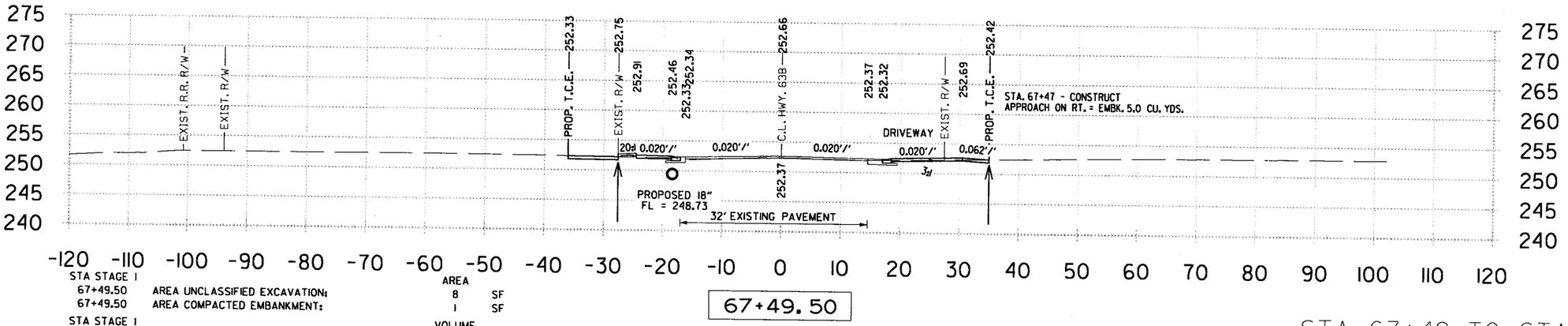
STA STAGE I		VOLUME	
68+00.00	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
68+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD



STA STAGE I		AREA	
67+80.00	AREA UNCLASSIFIED EXCAVATION:	6	SF
67+80.00	AREA COMPACTED EMBANKMENT:	3	SF

67+80.00

STA STAGE I		VOLUME	
67+80.00	VOLUME UNCLASSIFIED EXCAVATION:	8	CUYD
67+80.00	VOLUME COMPACTED EMBANKMENT:	3	CUYD



STA STAGE I		AREA	
67+49.50	AREA UNCLASSIFIED EXCAVATION:	8	SF
67+49.50	AREA COMPACTED EMBANKMENT:	1	SF

STA STAGE I		VOLUME	
67+49.50	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD
67+49.50	VOLUME COMPACTED EMBANKMENT:	3	CUYD

67+49.50

STA. 67+49 TO STA. 68+00 HWY. 63B 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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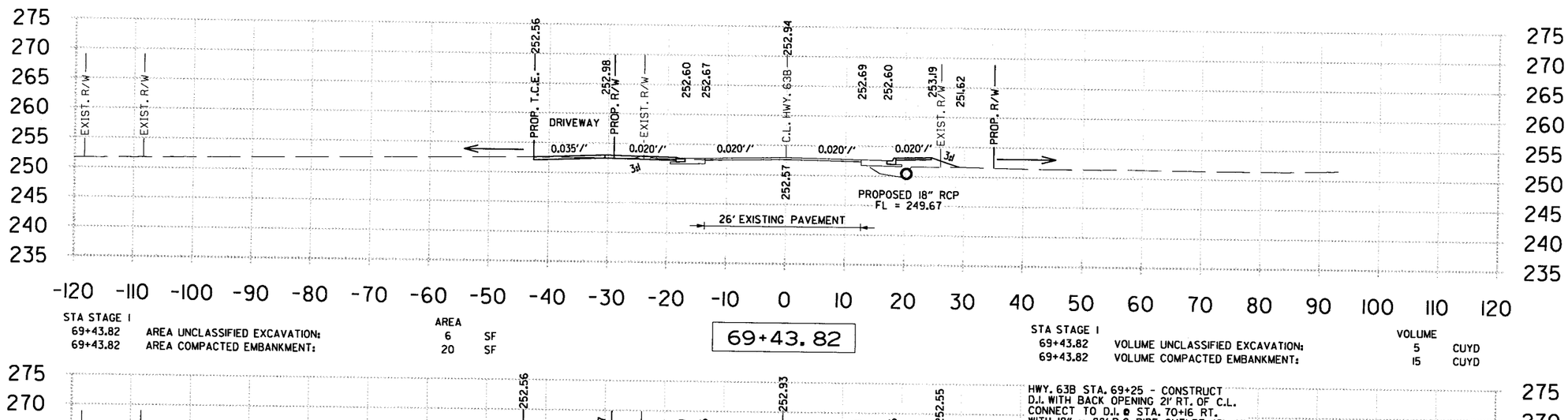
				JOB NO.		100824	301	346

(2) CROSS SECTIONS



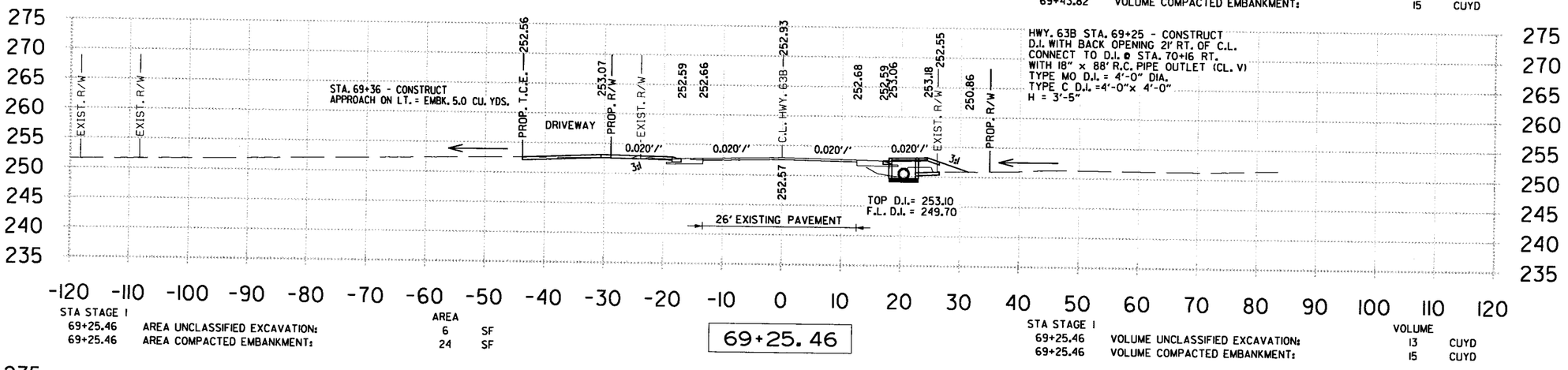
STA STAGE I

		AREA	
69+43.82	AREA UNCLASSIFIED EXCAVATION:	6	SF
69+43.82	AREA COMPACTED EMBANKMENT:	20	SF

69+43.82

STA STAGE I

		VOLUME	
69+43.82	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
69+43.82	VOLUME COMPACTED EMBANKMENT:	15	CUYD



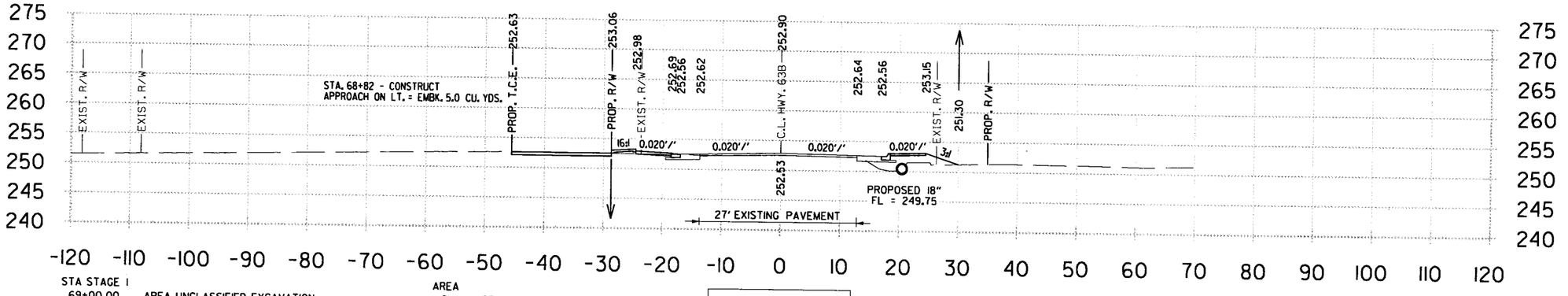
STA STAGE I

		AREA	
69+25.46	AREA UNCLASSIFIED EXCAVATION:	6	SF
69+25.46	AREA COMPACTED EMBANKMENT:	24	SF

69+25.46

STA STAGE I

		VOLUME	
69+25.46	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
69+25.46	VOLUME COMPACTED EMBANKMENT:	15	CUYD



STA STAGE I

		AREA	
69+00.00	AREA UNCLASSIFIED EXCAVATION:	21	SF
69+00.00	AREA COMPACTED EMBANKMENT:	6	SF

STA STAGE I

		VOLUME	
69+00.00	VOLUME UNCLASSIFIED EXCAVATION:	60	CUYD
69+00.00	VOLUME COMPACTED EMBANKMENT:	15	CUYD

69+00.00

STA. 69+00 TO STA. 69+44 HWY. 63B
CROSS SECTIONS

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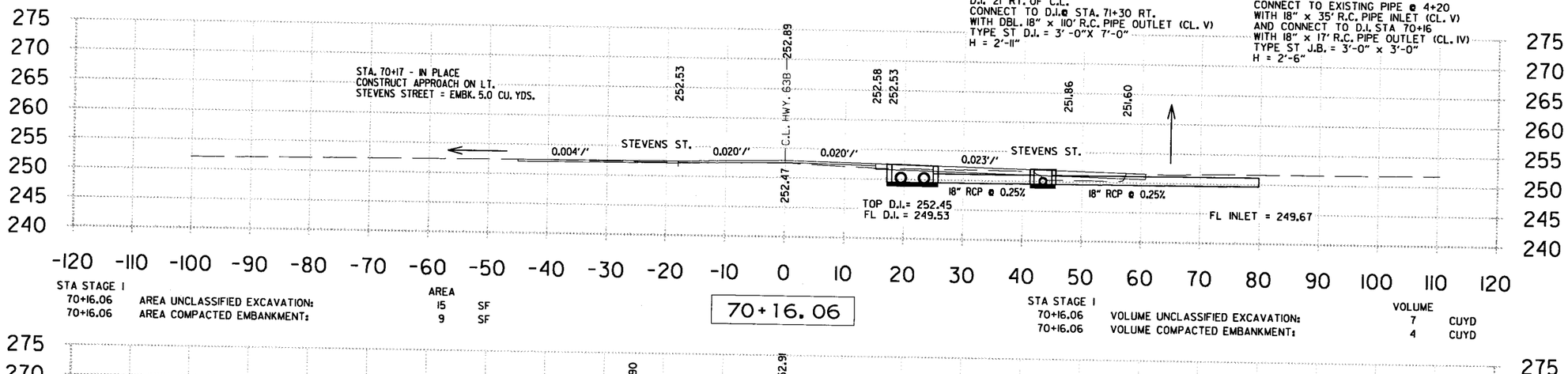

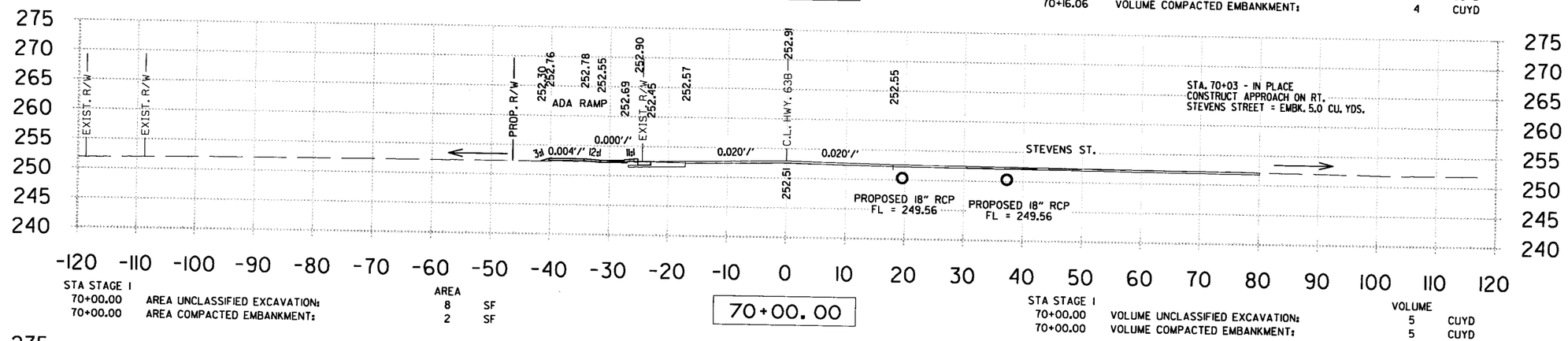

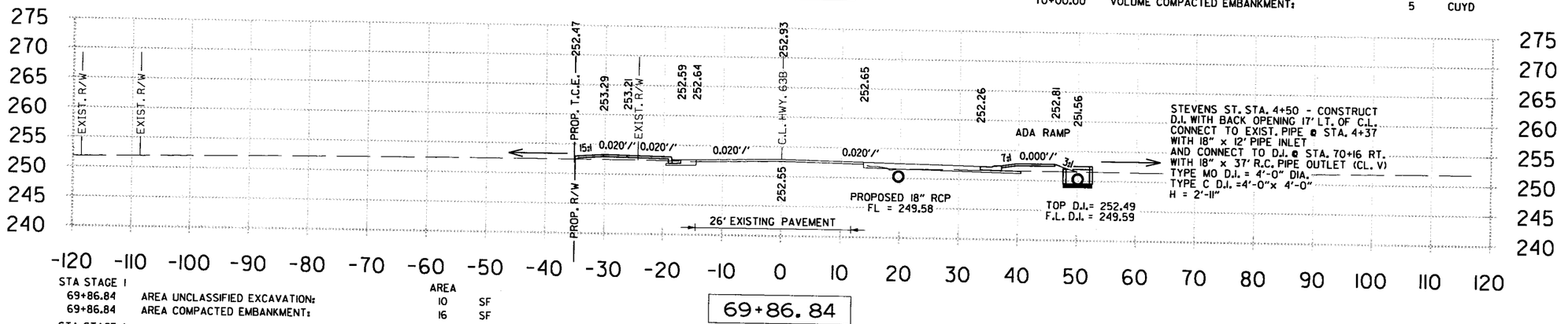

STA. 69+87 TO STA. 70+16 HWY. 63B
CROSS SECTIONS

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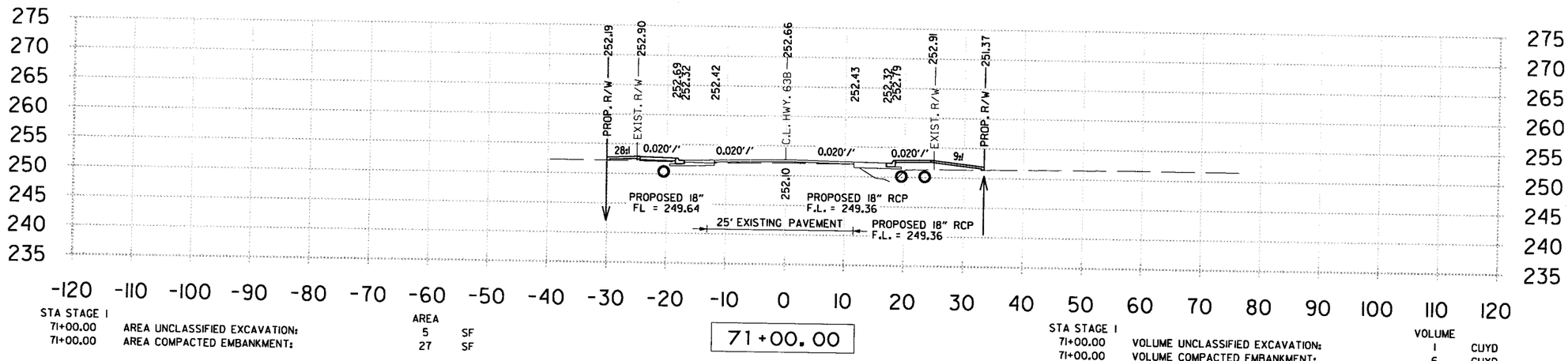
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	303	346

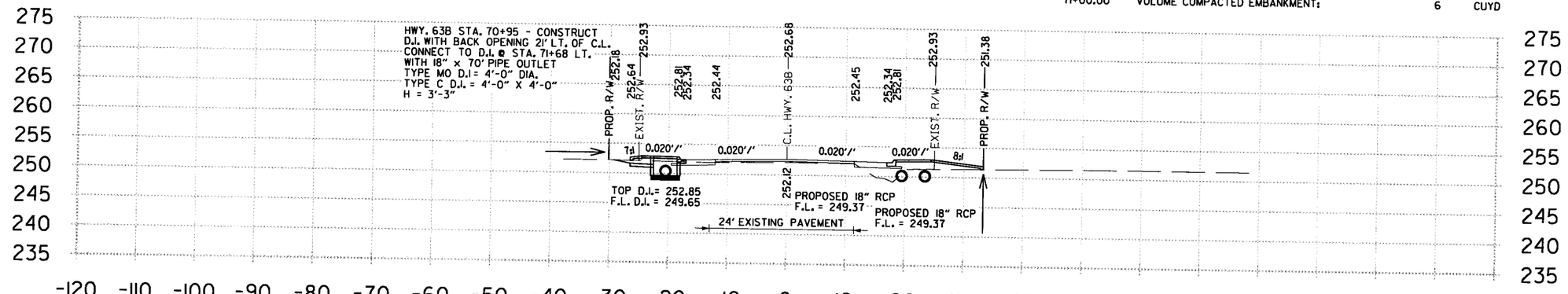
(2) CROSS SECTIONS



STA STAGE I
71+00.00 AREA UNCLASSIFIED EXCAVATION: AREA 5 SF
71+00.00 AREA COMPACTED EMBANKMENT: 27 SF

71+00.00

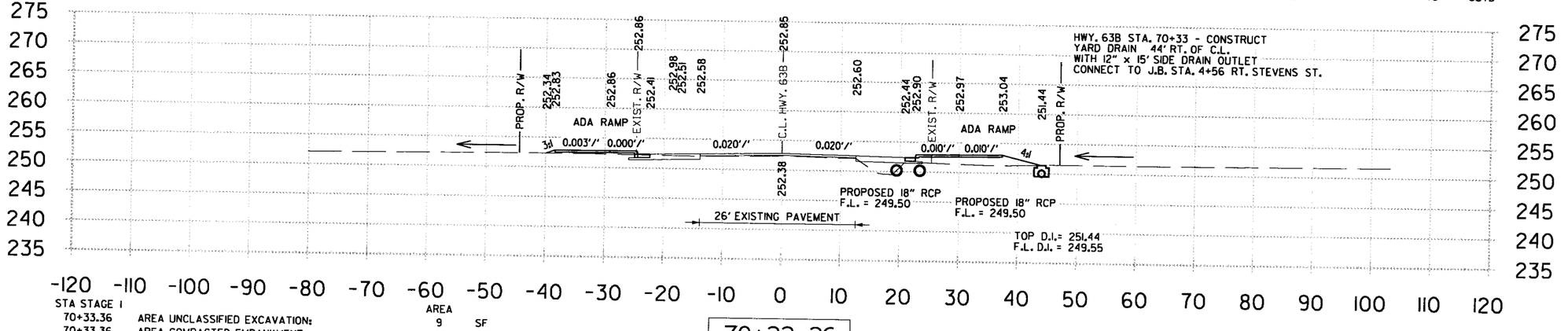
STA STAGE I
71+00.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 1 CUYD
71+00.00 VOLUME COMPACTED EMBANKMENT: 6 CUYD



STA STAGE I
70+95.00 AREA UNCLASSIFIED EXCAVATION: AREA 4 SF
70+95.00 AREA COMPACTED EMBANKMENT: 28 SF

70+95.00

STA STAGE I
70+95.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 15 CUYD
70+95.00 VOLUME COMPACTED EMBANKMENT: 75 CUYD



STA STAGE I
70+33.36 AREA UNCLASSIFIED EXCAVATION: AREA 9 SF
70+33.36 AREA COMPACTED EMBANKMENT: 37 SF

STA STAGE I
70+33.36 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 8 CUYD
70+33.36 VOLUME COMPACTED EMBANKMENT: 15 CUYD

70+33.36

STA. 70+33 TO STA. 71+00 HWY. 63B
CROSS SECTIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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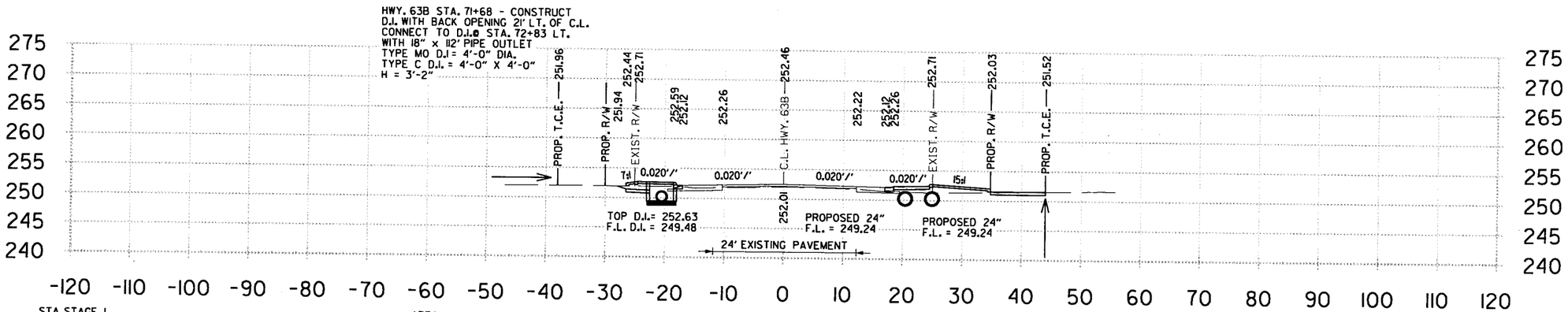
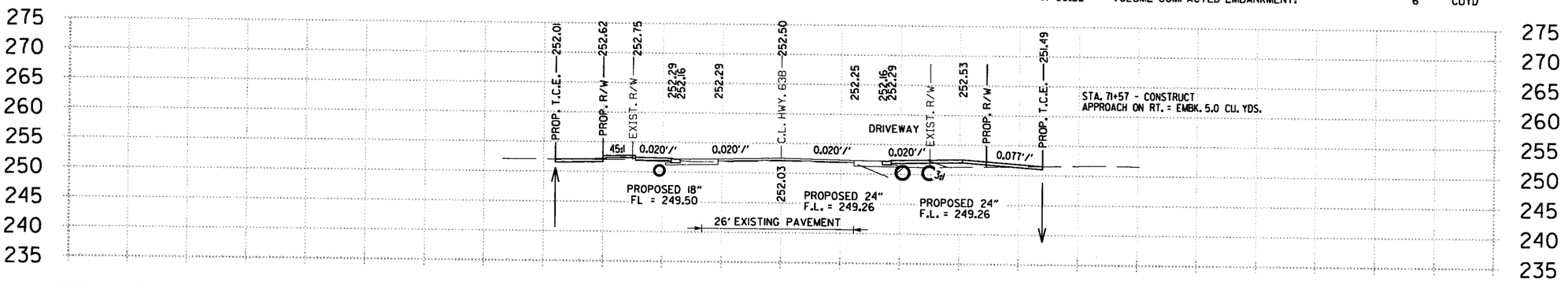
				JOB NO.		100824	304	346
				(2) CROSS SECTIONS				



STA STAGE 1		AREA	
71+68.22	AREA UNCLASSIFIED EXCAVATION:	7	SF
71+68.22	AREA COMPACTED EMBANKMENT:	13	SF

71+68.22

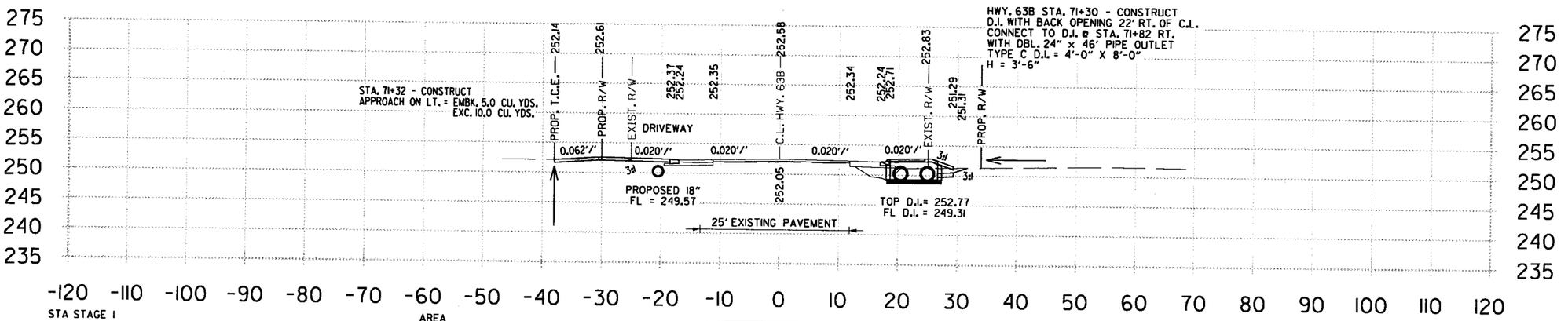
STA STAGE 1		VOLUME	
71+68.22	VOLUME UNCLASSIFIED EXCAVATION:	3	CUYD
71+68.22	VOLUME COMPACTED EMBANKMENT:	6	CUYD



STA STAGE 1		AREA	
71+56.32	AREA UNCLASSIFIED EXCAVATION:	6	SF
71+56.32	AREA COMPACTED EMBANKMENT:	14	SF

71+56.32

STA STAGE 1		VOLUME	
71+56.32	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
71+56.32	VOLUME COMPACTED EMBANKMENT:	17	CUYD



STA STAGE 1		AREA	
71+30.00	AREA UNCLASSIFIED EXCAVATION:	5	SF
71+30.00	AREA COMPACTED EMBANKMENT:	19	SF
STA STAGE 1		VOLUME	
71+30.00	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
71+30.00	VOLUME COMPACTED EMBANKMENT:	26	CUYD

71+30.00

STA. 71+30 TO STA. 71+68 HWY. 63B
CROSS SECTIONS

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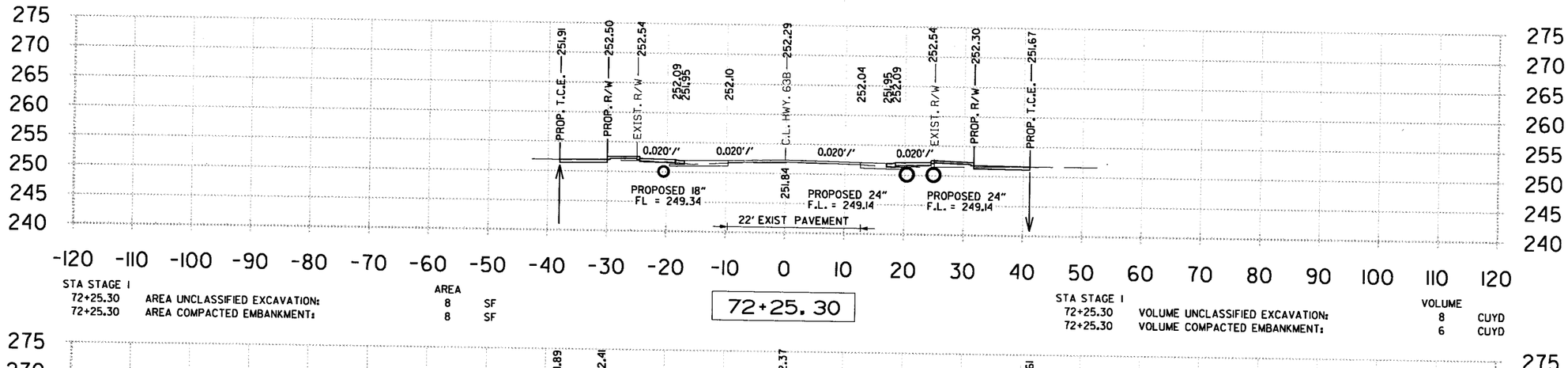
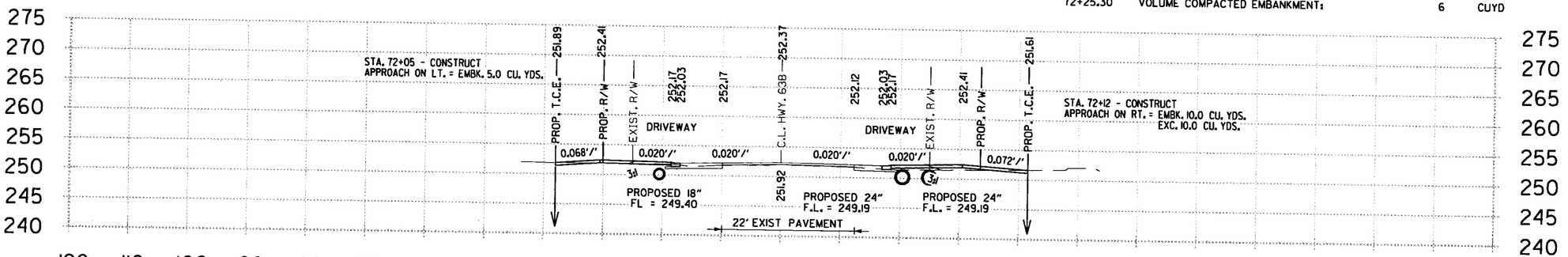
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	305	346
				(2)	CROSS SECTIONS			



72+25.30

STA STAGE 1		AREA	
72+25.30	AREA UNCLASSIFIED EXCAVATION:	8	SF
72+25.30	AREA COMPACTED EMBANKMENT:	8	SF

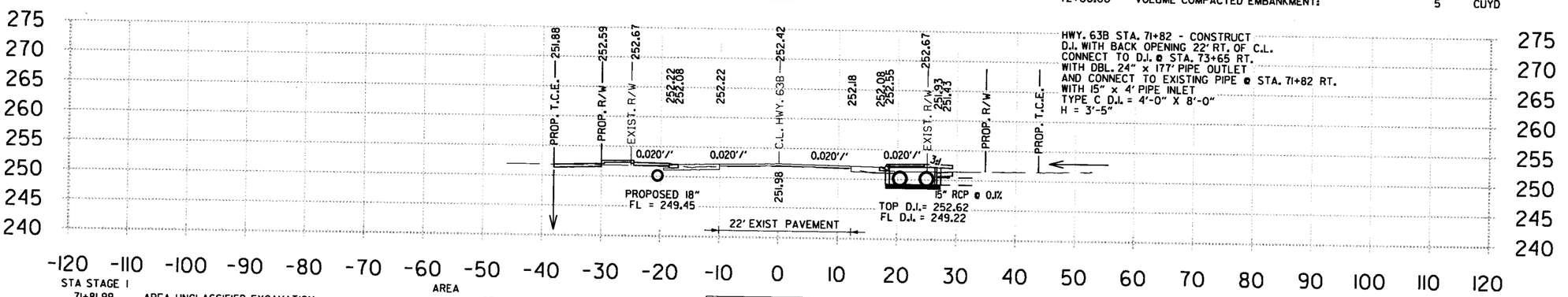
STA STAGE 1		VOLUME	
72+25.30	VOLUME UNCLASSIFIED EXCAVATION:	8	CUYD
72+25.30	VOLUME COMPACTED EMBANKMENT:	6	CUYD



72+00.00

STA STAGE 1		AREA	
72+00.00	AREA UNCLASSIFIED EXCAVATION:	9	SF
72+00.00	AREA COMPACTED EMBANKMENT:	3	SF

STA STAGE 1		VOLUME	
72+00.00	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
72+00.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD



71+81.99

STA STAGE 1		AREA	
71+81.99	AREA UNCLASSIFIED EXCAVATION:	7	SF
71+81.99	AREA COMPACTED EMBANKMENT:	11	SF

STA STAGE 1		VOLUME	
71+81.99	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
71+81.99	VOLUME COMPACTED EMBANKMENT:	7	CUYD

STA. 71+82 TO STA. 72+25 HWY. 63B
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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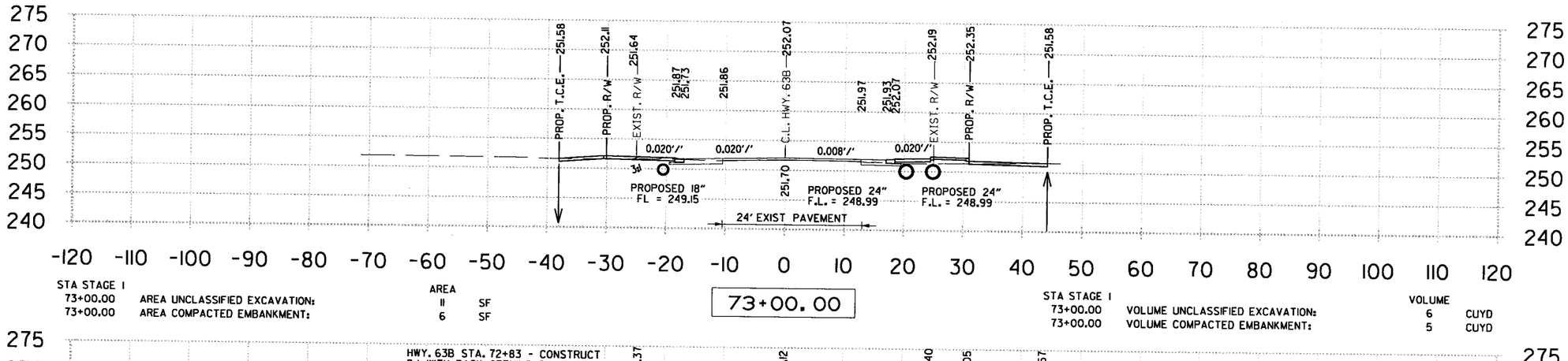
				JOB NO.		100824	306	346

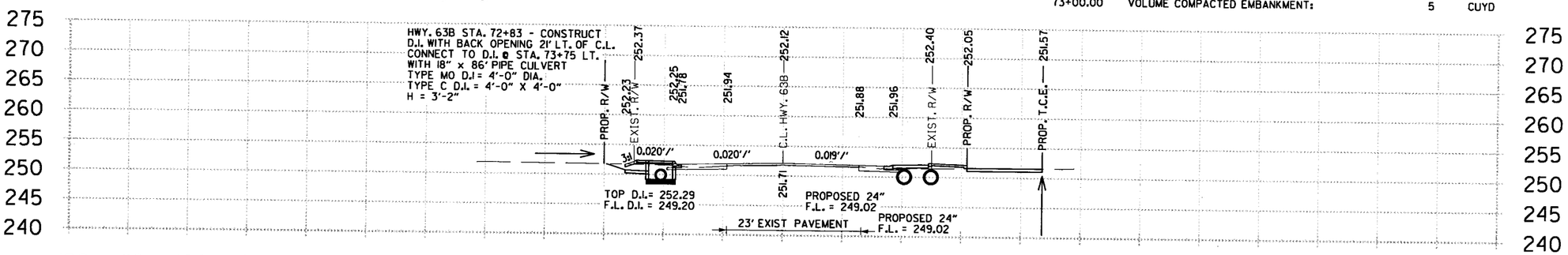
(2) CROSS SECTIONS



STA STAGE I		AREA	
73+00.00	AREA UNCLASSIFIED EXCAVATION:	11	SF
73+00.00	AREA COMPACTED EMBANKMENT:	6	SF

73+00.00

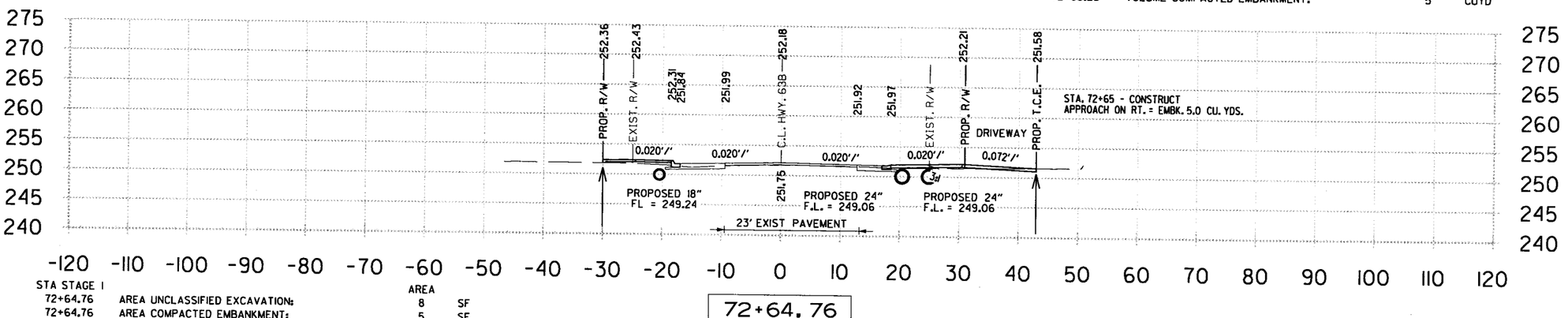
STA STAGE I		VOLUME	
73+00.00	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
73+00.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE I		AREA	
72+83.25	AREA UNCLASSIFIED EXCAVATION:	8	SF
72+83.25	AREA COMPACTED EMBANKMENT:	7	SF

72+83.25

STA STAGE I		VOLUME	
72+83.25	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
72+83.25	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE I		AREA	
72+64.76	AREA UNCLASSIFIED EXCAVATION:	8	SF
72+64.76	AREA COMPACTED EMBANKMENT:	5	SF
STA STAGE I		VOLUME	
72+64.76	VOLUME UNCLASSIFIED EXCAVATION:	12	CUYD
72+64.76	VOLUME COMPACTED EMBANKMENT:	10	CUYD

72+64.76

STA. 72+65 TO STA. 73+00 HWY. 63B 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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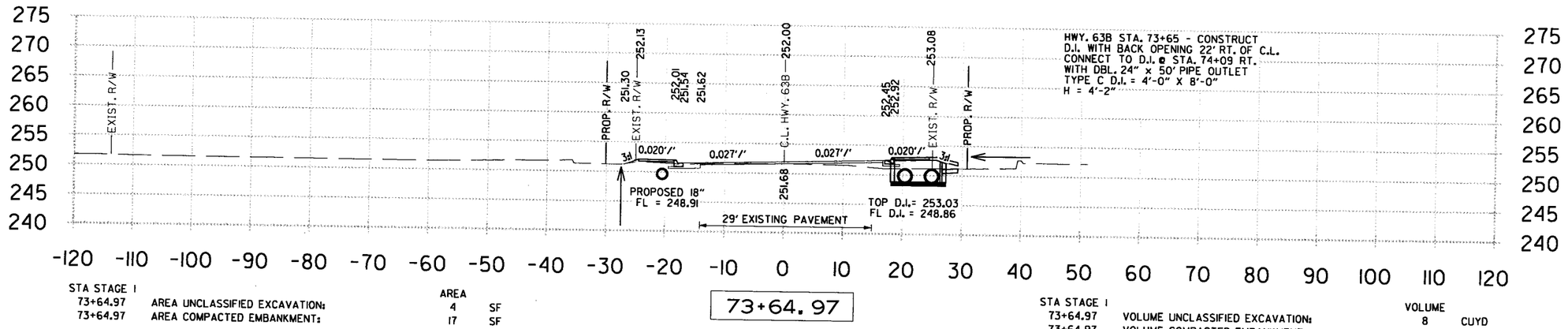
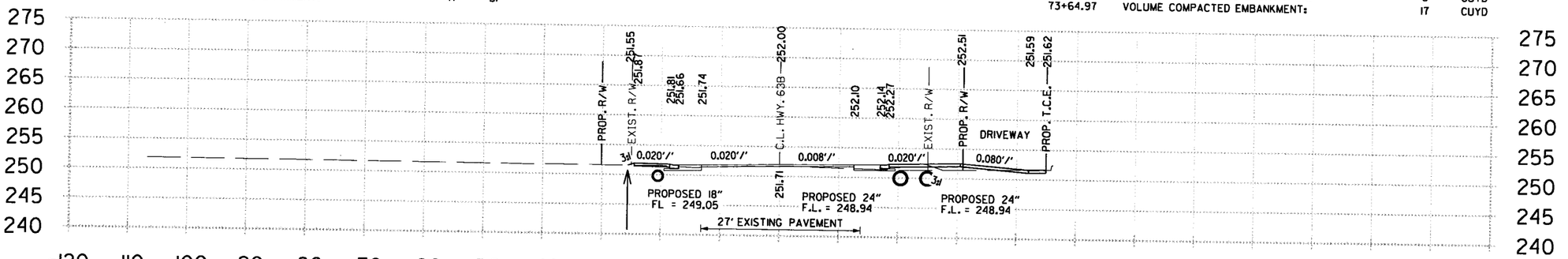


STA STAGE I		AREA	
73+64.97	AREA UNCLASSIFIED EXCAVATION:	4	SF
73+64.97	AREA COMPACTED EMBANKMENT:	17	SF

73+64.97

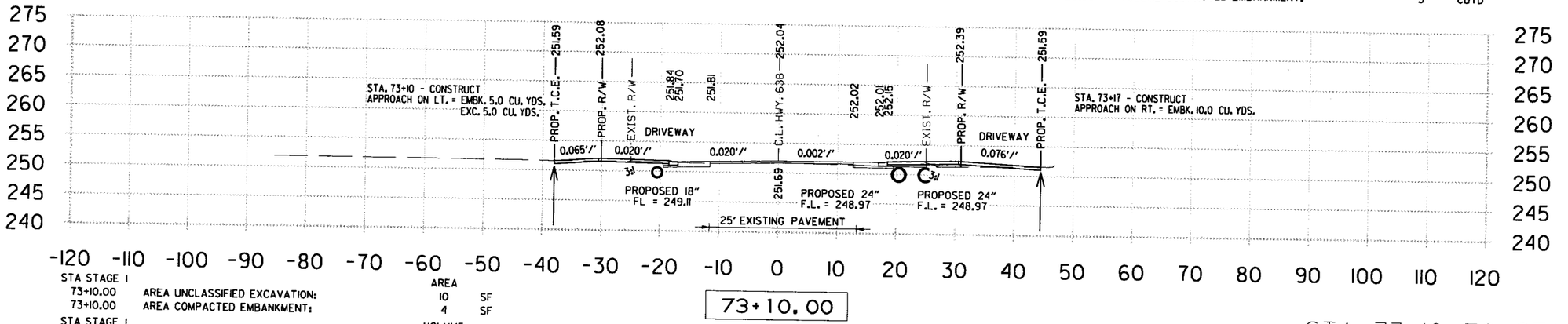
STA STAGE I		VOLUME	
73+64.97	VOLUME UNCLASSIFIED EXCAVATION:	8	CUYD
73+64.97	VOLUME COMPACTED EMBANKMENT:	17	CUYD



STA STAGE I		AREA	
73+25.30	AREA UNCLASSIFIED EXCAVATION:	6	SF
73+25.30	AREA COMPACTED EMBANKMENT:	5	SF

73+25.30

STA STAGE I		VOLUME	
73+25.30	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
73+25.30	VOLUME COMPACTED EMBANKMENT:	3	CUYD



STA STAGE I		AREA	
73+10.00	AREA UNCLASSIFIED EXCAVATION:	10	SF
73+10.00	AREA COMPACTED EMBANKMENT:	4	SF

STA STAGE I		VOLUME	
73+10.00	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
73+10.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

73+10.00

STA. 73+10 TO STA. 73+65 HWY. 63B
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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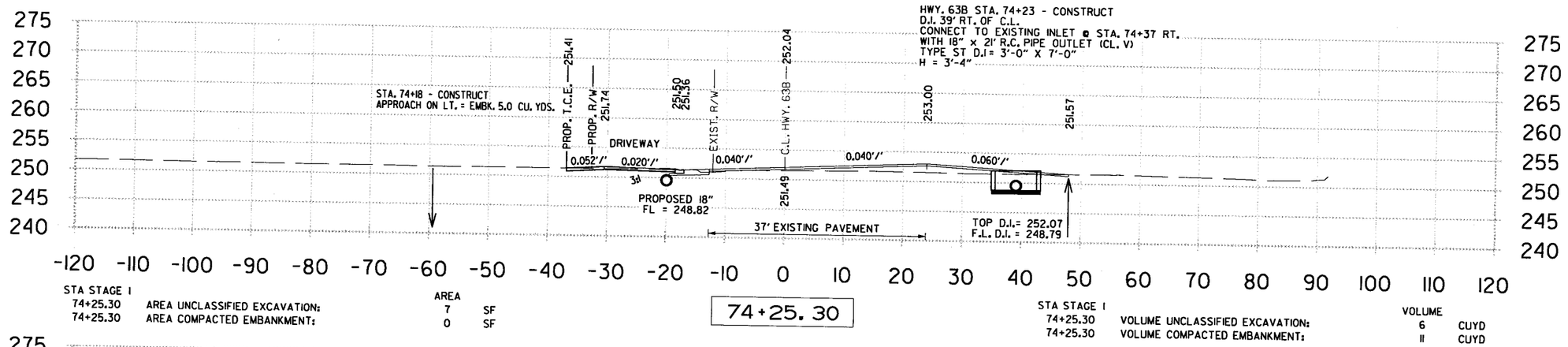
				JOB NO.		100824	308	346

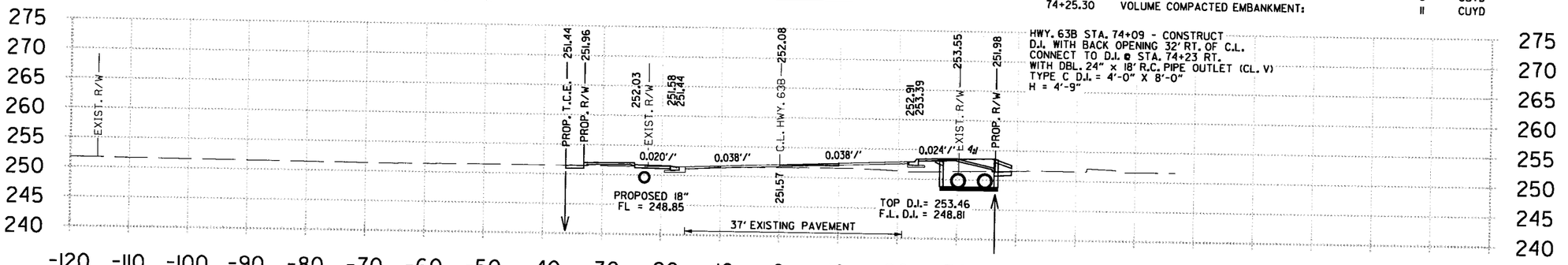
(2) CROSS SECTIONS



STA STAGE I		AREA	
74+25.30	AREA UNCLASSIFIED EXCAVATION:	7	SF
74+25.30	AREA COMPACTED EMBANKMENT:	0	SF

74+25.30

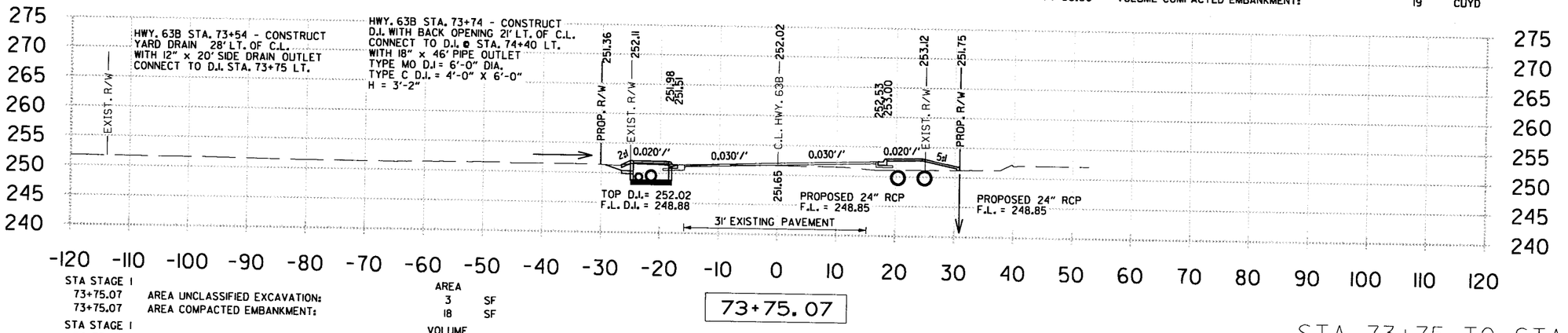
STA STAGE I		VOLUME	
74+25.30	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
74+25.30	VOLUME COMPACTED EMBANKMENT:	11	CUYD



STA STAGE I		AREA	
74+00.00	AREA UNCLASSIFIED EXCAVATION:	4	SF
74+00.00	AREA COMPACTED EMBANKMENT:	22	SF

74+00.00

STA STAGE I		VOLUME	
74+00.00	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
74+00.00	VOLUME COMPACTED EMBANKMENT:	19	CUYD



STA STAGE I		AREA	
73+75.07	AREA UNCLASSIFIED EXCAVATION:	3	SF
73+75.07	AREA COMPACTED EMBANKMENT:	18	SF

STA STAGE I		VOLUME	
73+75.07	VOLUME UNCLASSIFIED EXCAVATION:	2	CUYD
73+75.07	VOLUME COMPACTED EMBANKMENT:	7	CUYD

73+75.07

STA. 73+75 TO STA. 74+25 HWY. 63B
CROSS SECTIONS

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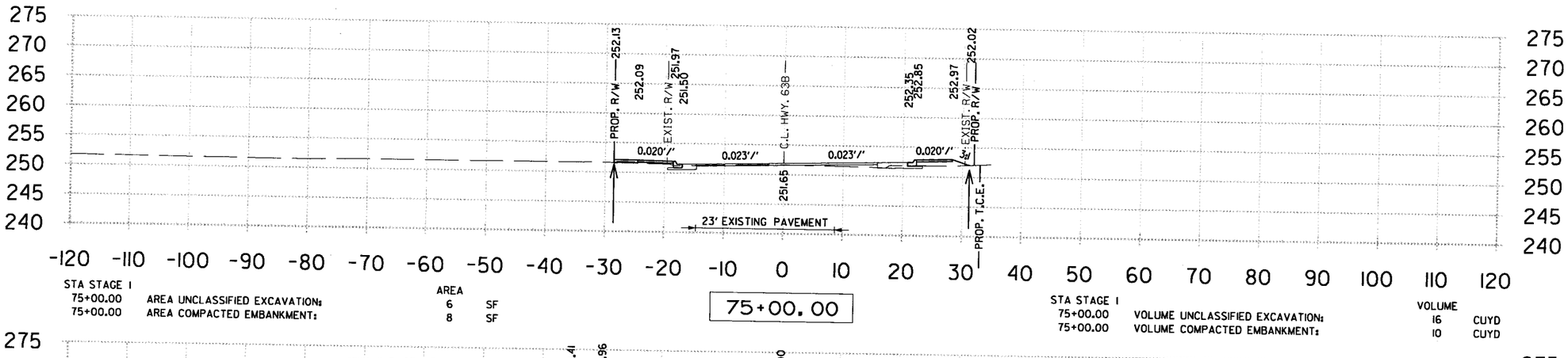
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	309	346

(2) CROSS SECTIONS



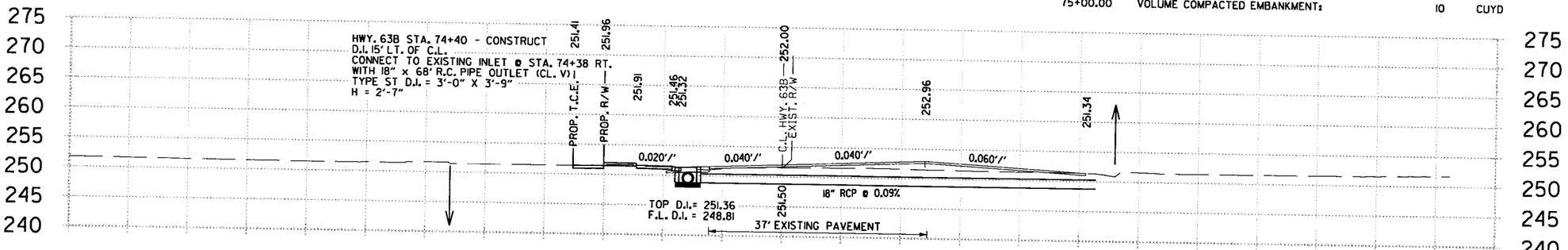
STA STAGE I
75+00.00 AREA UNCLASSIFIED EXCAVATION:
75+00.00 AREA COMPACTED EMBANKMENT:

AREA	
6	SF
8	SF

75+00.00

STA STAGE I
75+00.00 VOLUME UNCLASSIFIED EXCAVATION:
75+00.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
16	CUYD
10	CUYD



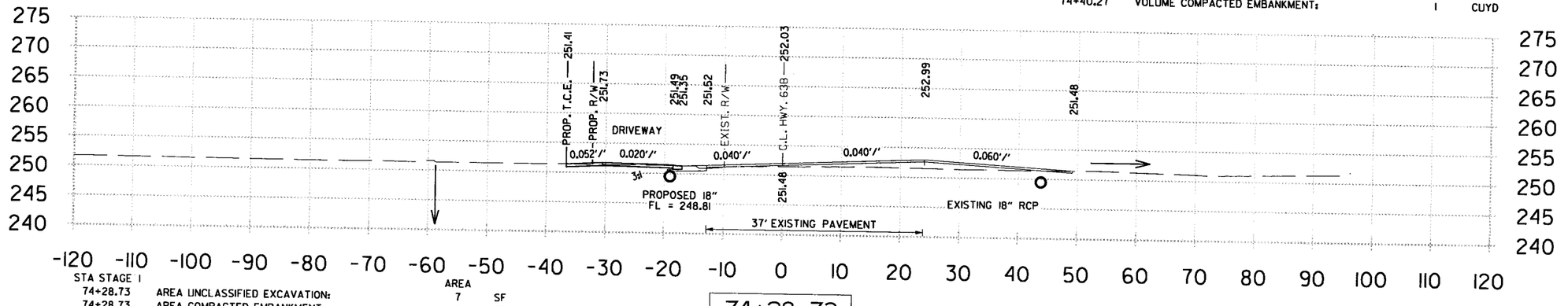
STA STAGE I
74+40.27 AREA UNCLASSIFIED EXCAVATION:
74+40.27 AREA COMPACTED EMBANKMENT:

AREA	
8	SF
1	SF

74+40.27

STA STAGE I
74+40.27 VOLUME UNCLASSIFIED EXCAVATION:
74+40.27 VOLUME COMPACTED EMBANKMENT:

VOLUME	
4	CUYD
1	CUYD



STA STAGE I
74+28.73 AREA UNCLASSIFIED EXCAVATION:
74+28.73 AREA COMPACTED EMBANKMENT:

AREA	
7	SF
0	SF

STA STAGE I
74+28.73 VOLUME UNCLASSIFIED EXCAVATION:
74+28.73 VOLUME COMPACTED EMBANKMENT:

VOLUME	
1	CUYD
0	CUYD

74+28.73

STA. 74+29 TO STA. 75+00 HWY. 63B
CROSS SECTIONS

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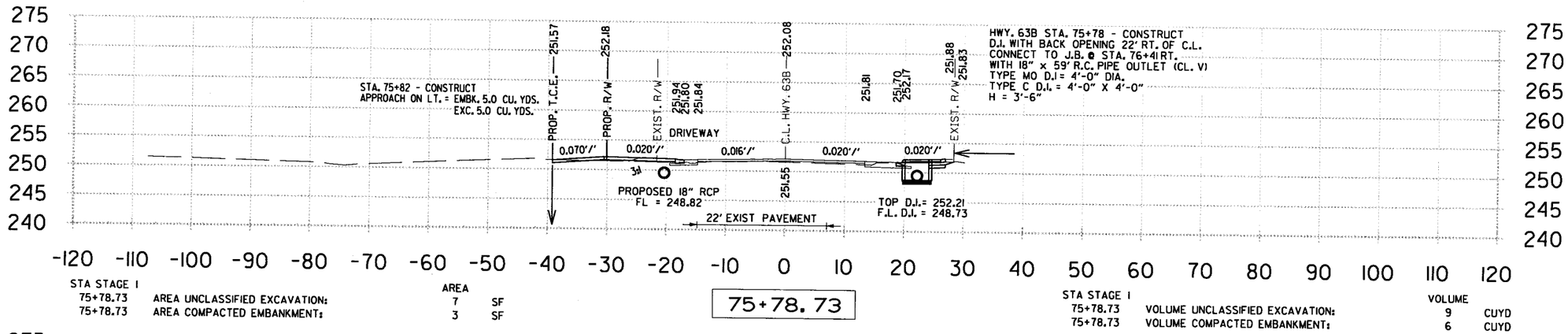
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	310	346

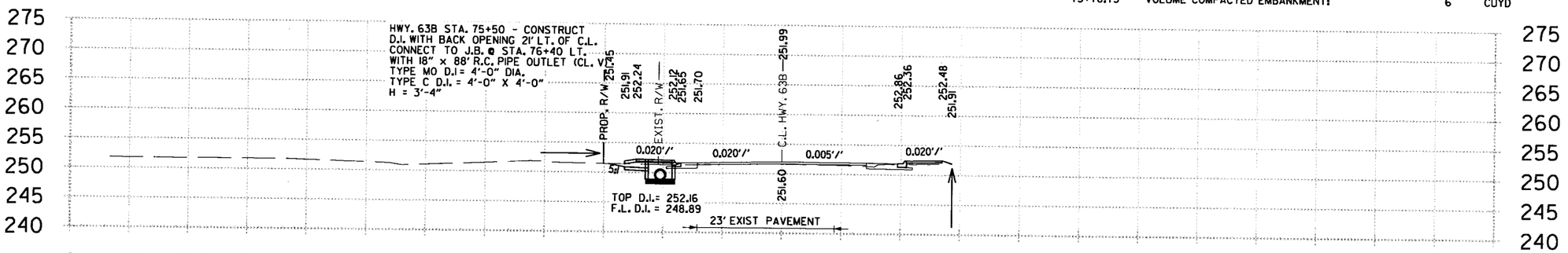
(2) CROSS SECTIONS



STA STAGE I		AREA	
75+78.73	AREA UNCLASSIFIED EXCAVATION:	7	SF
75+78.73	AREA COMPACTED EMBANKMENT:	3	SF

75+78.73

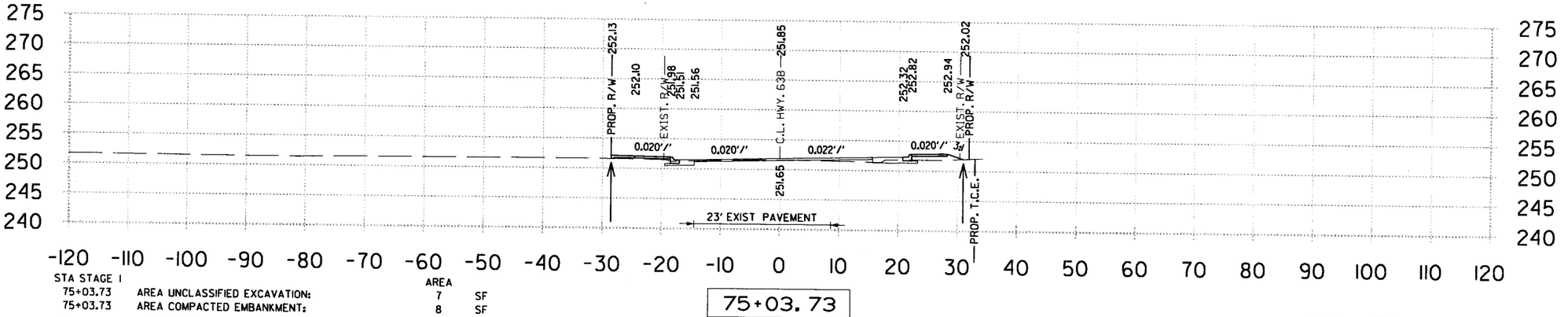
STA STAGE I		VOLUME	
75+78.73	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD
75+78.73	VOLUME COMPACTED EMBANKMENT:	6	CUYD



STA STAGE I		AREA	
75+49.50	AREA UNCLASSIFIED EXCAVATION:	8	SF
75+49.50	AREA COMPACTED EMBANKMENT:	7	SF

75+49.50

STA STAGE I		VOLUME	
75+49.50	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
75+49.50	VOLUME COMPACTED EMBANKMENT:	13	CUYD



STA STAGE I		AREA	
75+03.73	AREA UNCLASSIFIED EXCAVATION:	7	SF
75+03.73	AREA COMPACTED EMBANKMENT:	8	SF

75+03.73

STA STAGE I		VOLUME	
75+03.73	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
75+03.73	VOLUME COMPACTED EMBANKMENT:	2	CUYD

STA. 75+04 TO STA. 75+79 HWY. 63B
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
				6	ARK.			
				JOB NO.		100824	311	346
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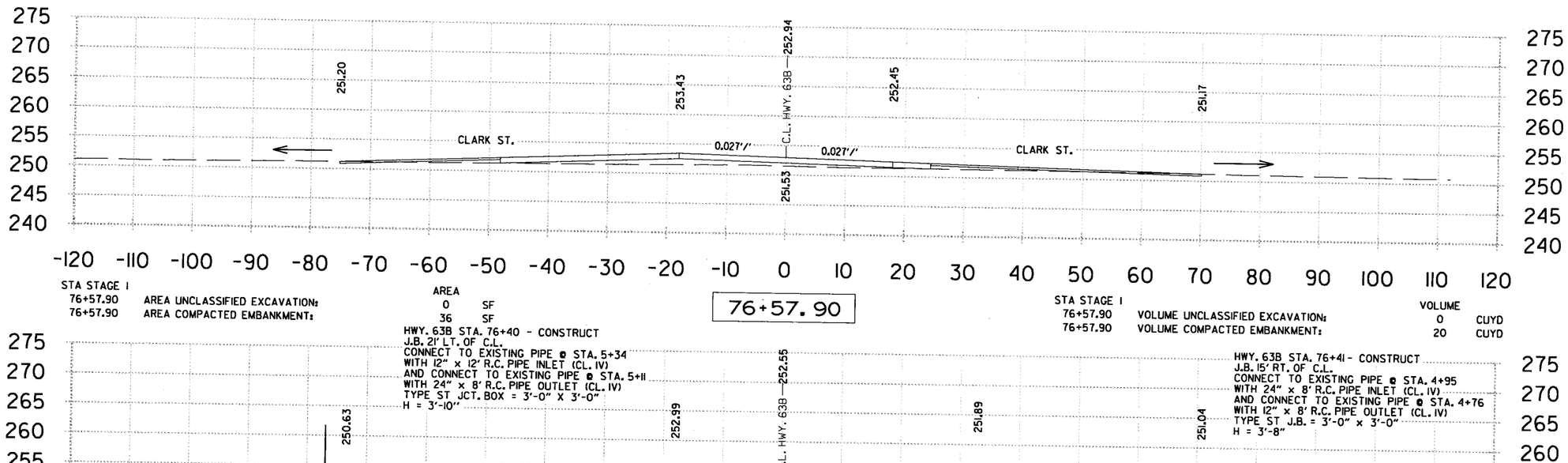
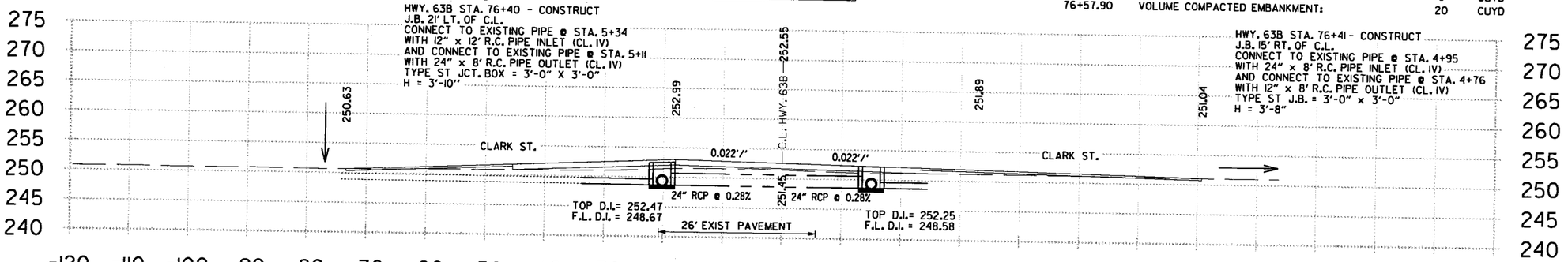


STA STAGE I
76+57.90 AREA UNCLASSIFIED EXCAVATION: 0 SF
76+57.90 AREA COMPACTED EMBANKMENT: 36 SF

HWY. 63B STA. 76+40 - CONSTRUCT
J.B. 21' LT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 5+34
WITH 12" x 12' R.C. PIPE INLET (CL. IV)
AND CONNECT TO EXISTING PIPE @ STA. 5+11
WITH 24" x 8' R.C. PIPE OUTLET (CL. IV)
TYPE ST JCT. BOX = 3'-0" X 3'-0"
H = 3'-10"

76+57.90

STA STAGE I
76+57.90 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
76+57.90 VOLUME COMPACTED EMBANKMENT: 20 CUYD

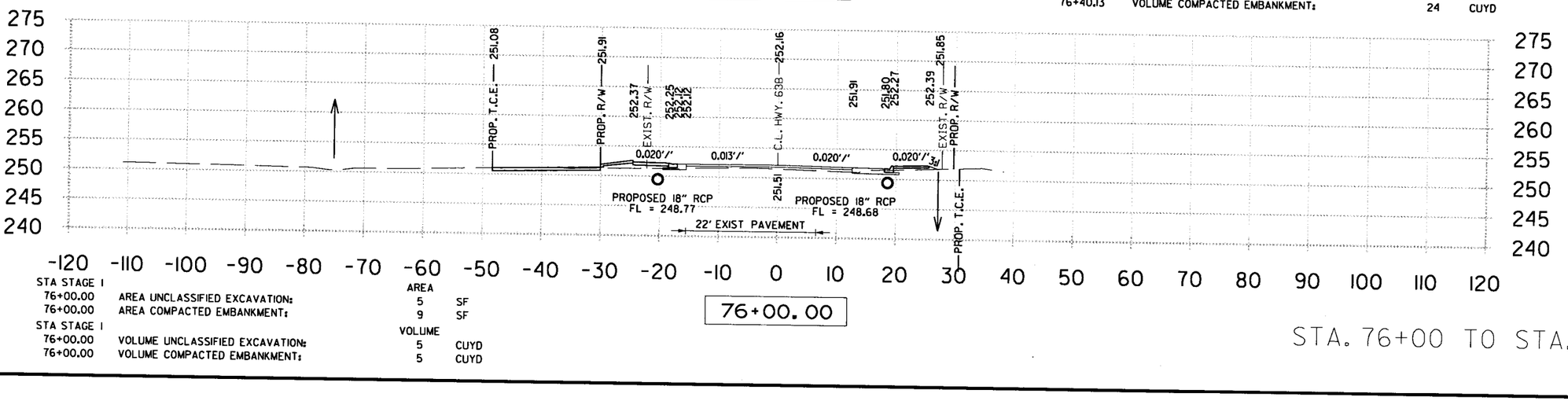


HWY. 63B STA. 76+41 - CONSTRUCT
J.B. 15' RT. OF C.L.
CONNECT TO EXISTING PIPE @ STA. 4+95
WITH 24" x 8' R.C. PIPE INLET (CL. IV)
AND CONNECT TO EXISTING PIPE @ STA. 4+76
WITH 12" x 8' R.C. PIPE OUTLET (CL. IV)
TYPE ST J.B. = 3'-0" x 3'-0"
H = 3'-8"

STA STAGE I
76+40.13 AREA UNCLASSIFIED EXCAVATION: 0 SF
76+40.13 AREA COMPACTED EMBANKMENT: 23 SF

76+40.13

STA STAGE I
76+40.13 VOLUME UNCLASSIFIED EXCAVATION: 4 CUYD
76+40.13 VOLUME COMPACTED EMBANKMENT: 24 CUYD



STA STAGE I
76+00.00 AREA UNCLASSIFIED EXCAVATION: 5 SF
76+00.00 AREA COMPACTED EMBANKMENT: 9 SF

STA STAGE I
76+00.00 VOLUME UNCLASSIFIED EXCAVATION: 5 CUYD
76+00.00 VOLUME COMPACTED EMBANKMENT: 5 CUYD

76+00.00

STA. 76+00 TO STA. 76+58 HWY. 63B
CROSS SECTIONS

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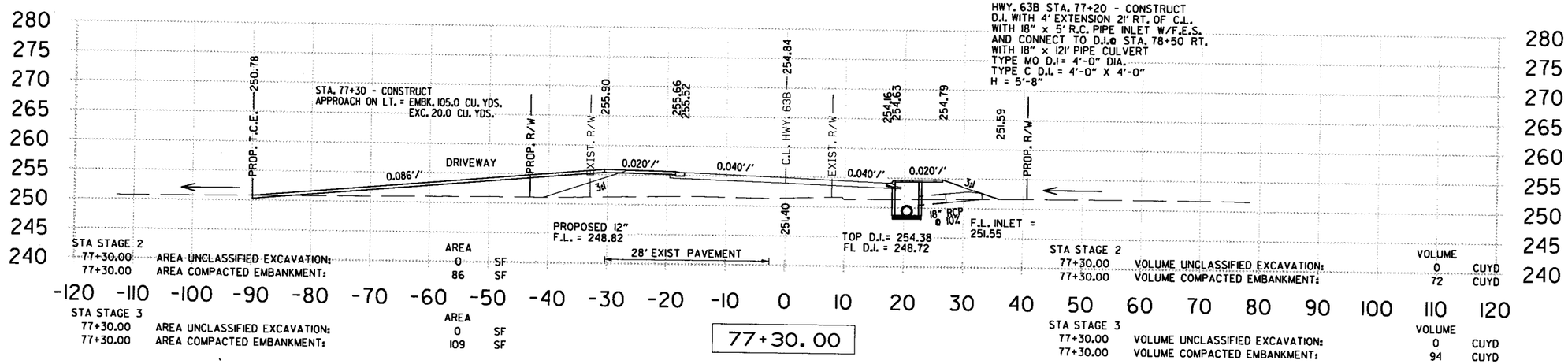
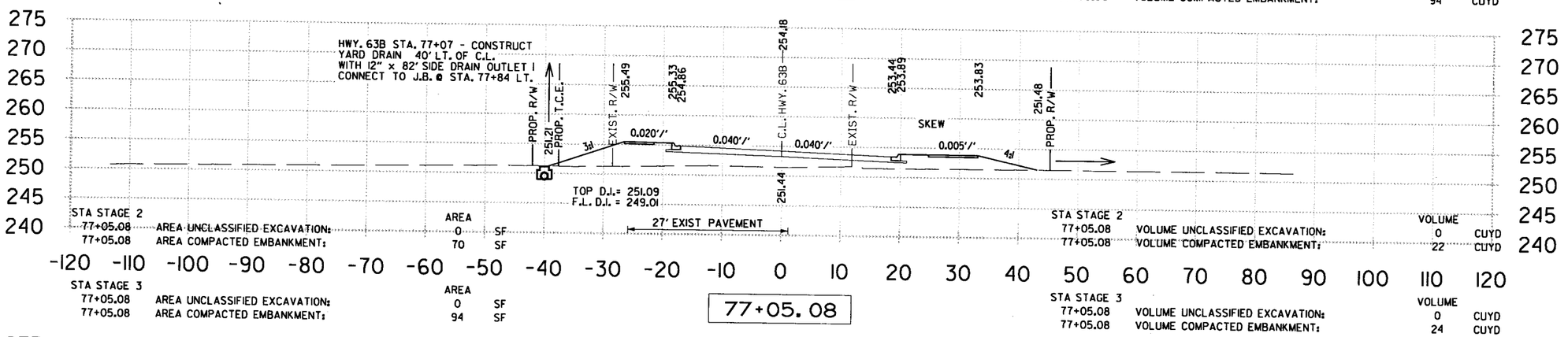
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RO. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	312	346

(2) CROSS SECTIONS





STA. 77+00 TO STA. 77+30 HWY. 63B
CROSS SECTIONS

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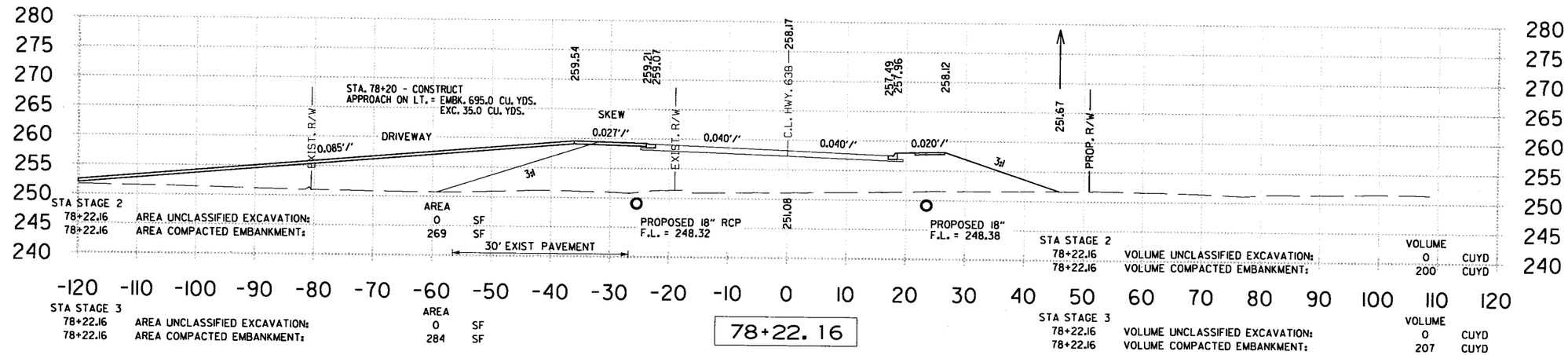
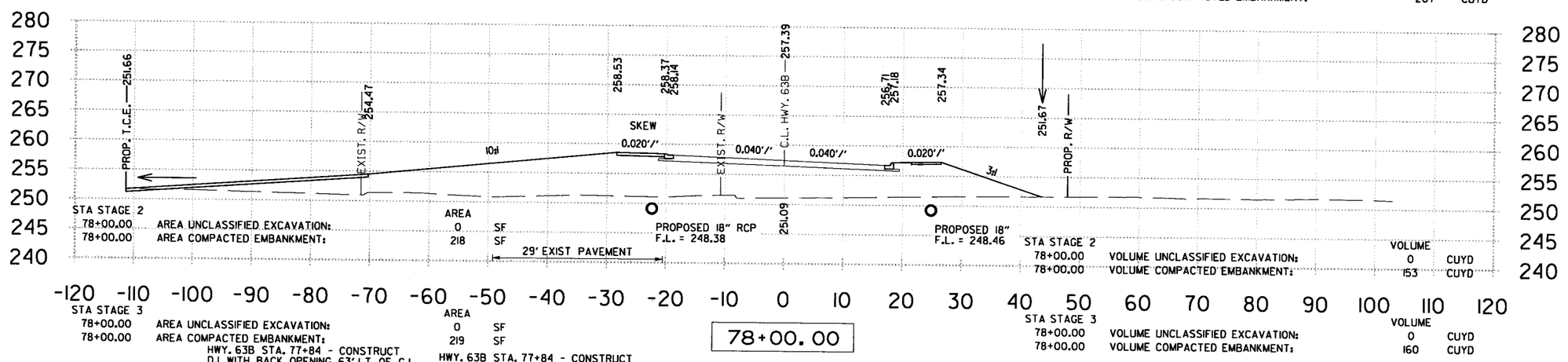
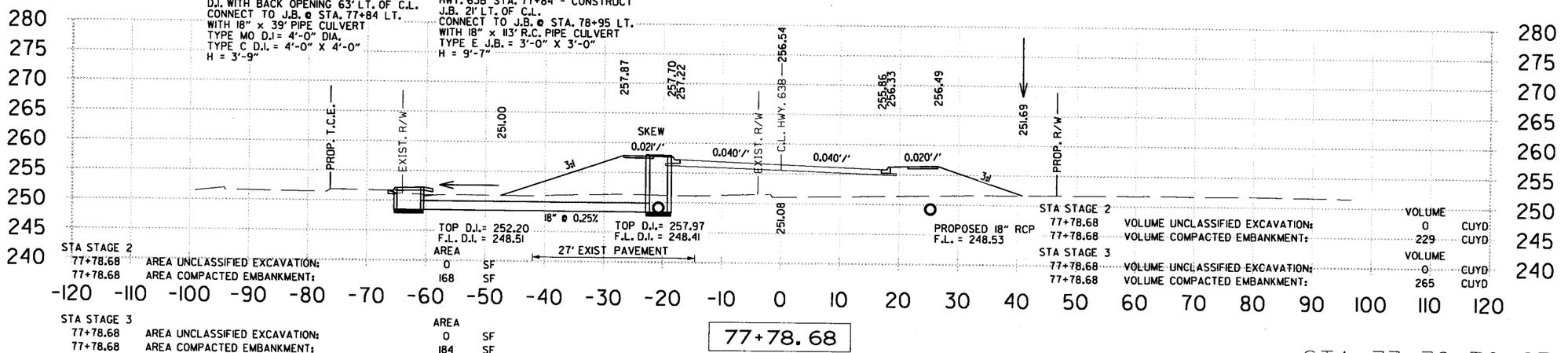
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	313	346
				(2) CROSS SECTIONS				







STA. 77+79 TO STA. 78+22 HWY. 63B
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
				6	ARK.			
				JOB NO.		100824	314	346

(2) CROSS SECTIONS

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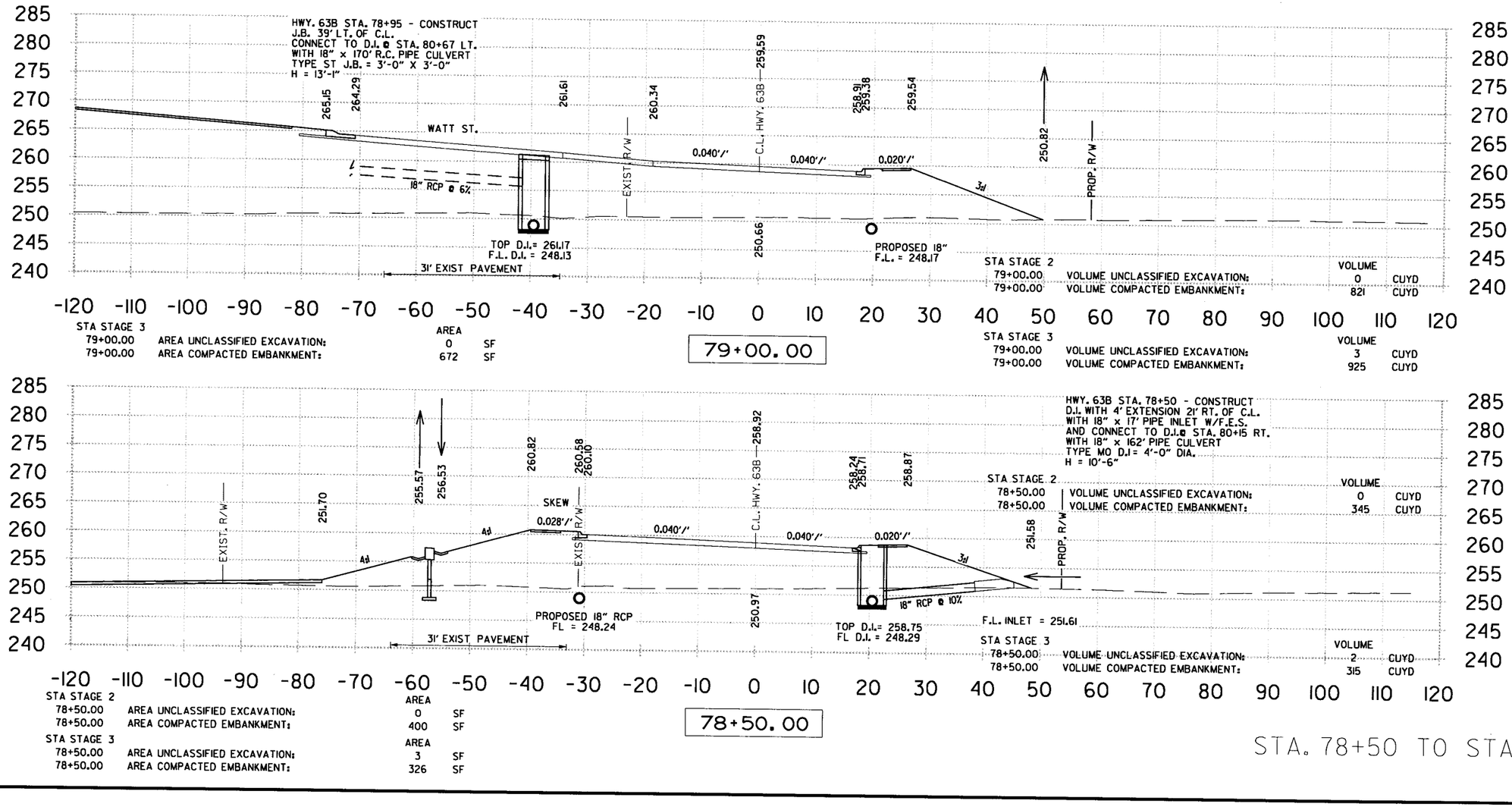

STA. 78+50 TO STA. 79+00 HWY. 63B CROSS SECTIONS

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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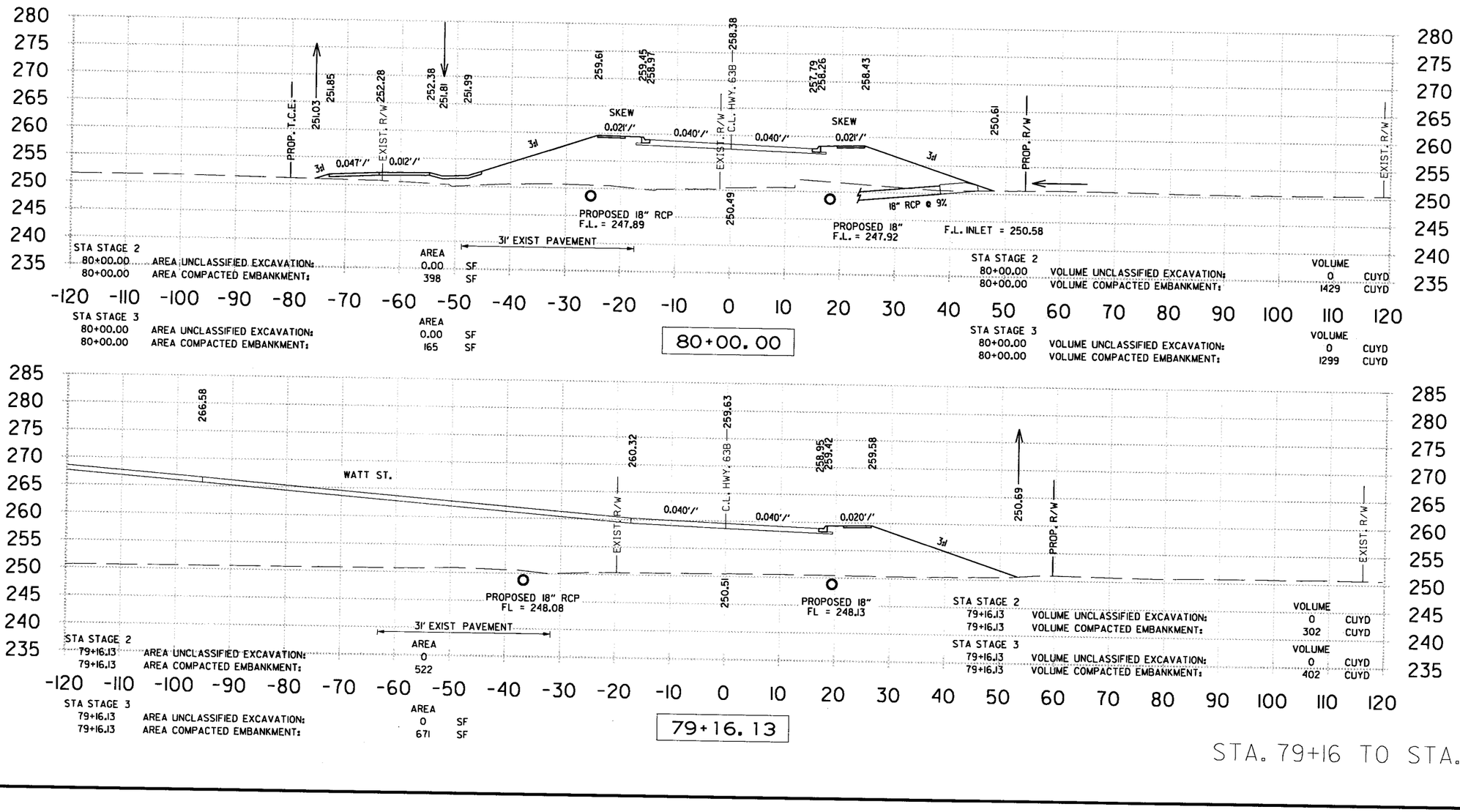
				JOB NO.		100824	315	346

(2) CROSS SECTIONS



STA. 79+16 TO STA. 80+00 HWY. 63B

CROSS SECTIONS

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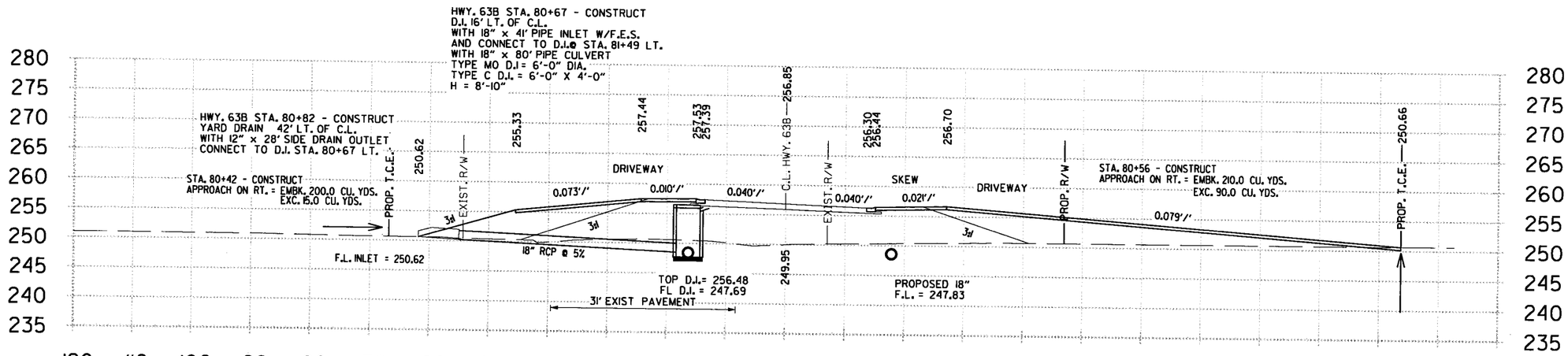
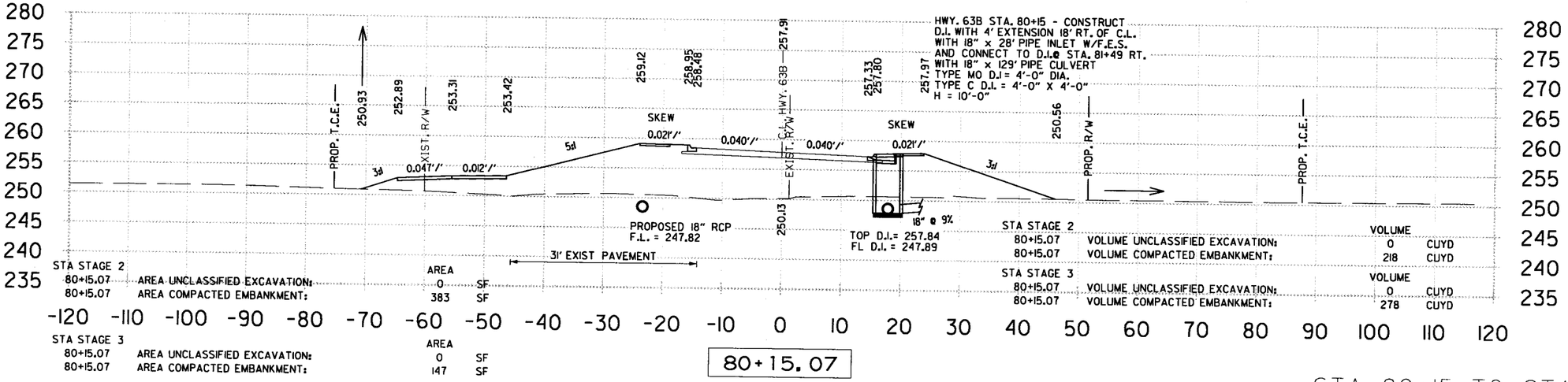
(2) CROSS SECTIONS



STA STAGE 2
80+42.34 AREA UNCLASSIFIED EXCAVATION: 0 SF
80+42.34 AREA COMPACTED EMBANKMENT: 402 SF

80+42.34

STA STAGE 2
80+42.34 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
80+42.34 VOLUME COMPACTED EMBANKMENT: 397 CUYD



STA STAGE 2
80+15.07 AREA UNCLASSIFIED EXCAVATION: 0 SF
80+15.07 AREA COMPACTED EMBANKMENT: 383 SF

STA STAGE 3
80+15.07 AREA UNCLASSIFIED EXCAVATION: 0 SF
80+15.07 AREA COMPACTED EMBANKMENT: 147 SF

80+15.07

STA STAGE 2
80+15.07 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
80+15.07 VOLUME COMPACTED EMBANKMENT: 218 CUYD

STA STAGE 3
80+15.07 VOLUME UNCLASSIFIED EXCAVATION: 0 CUYD
80+15.07 VOLUME COMPACTED EMBANKMENT: 278 CUYD

STA. 80+15 TO STA. 80+42 HWY. 63B CROSS SECTIONS

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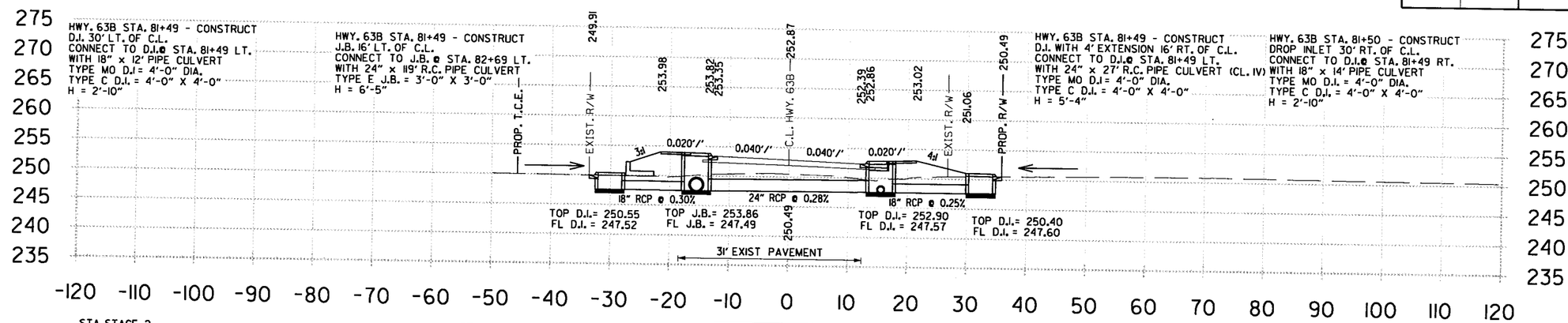
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	317	346

(2) CROSS SECTIONS



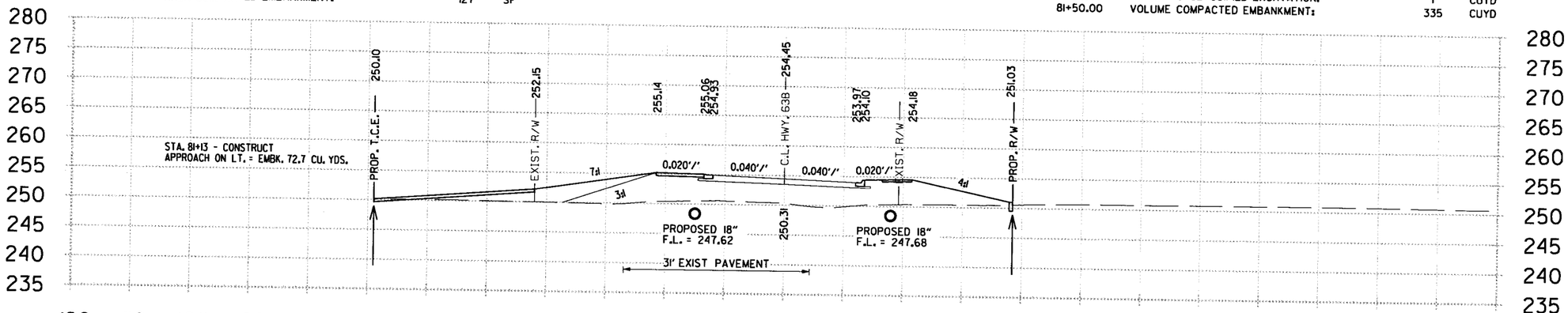
STA STAGE 2
81+50.00 AREA UNCLASSIFIED EXCAVATION:
81+50.00 AREA COMPACTED EMBANKMENT:

AREA	
1	SF
127	SF

81+50.00

STA STAGE 2
81+50.00 VOLUME UNCLASSIFIED EXCAVATION:
81+50.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
1	CUYD
335	CUYD



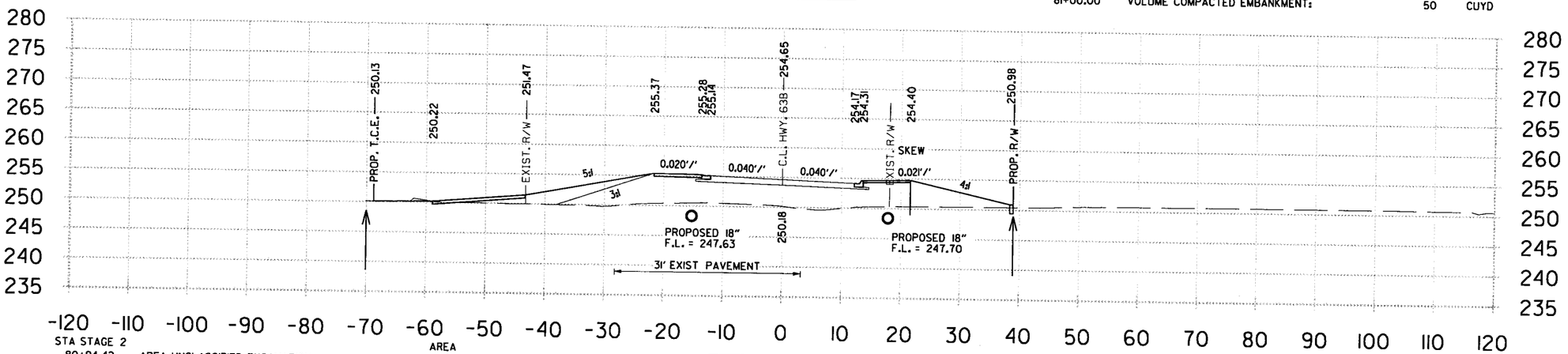
STA STAGE 2
81+00.00 AREA UNCLASSIFIED EXCAVATION:
81+00.00 AREA COMPACTED EMBANKMENT:

AREA	
0	SF
234	SF

81+00.00

STA STAGE 2
81+00.00 VOLUME UNCLASSIFIED EXCAVATION:
81+00.00 VOLUME COMPACTED EMBANKMENT:

VOLUME	
0	CUYD
50	CUYD



STA STAGE 2
80+94.42 AREA UNCLASSIFIED EXCAVATION:
80+94.42 AREA COMPACTED EMBANKMENT:

AREA	
0	SF
249	SF

STA STAGE 2
80+94.42 VOLUME UNCLASSIFIED EXCAVATION:
80+94.42 VOLUME COMPACTED EMBANKMENT:

VOLUME	
0	CUYD
628	CUYD

80+94.42

STA. 80+94 TO STA. 81+50 HWY. 63B
CROSS SECTIONS

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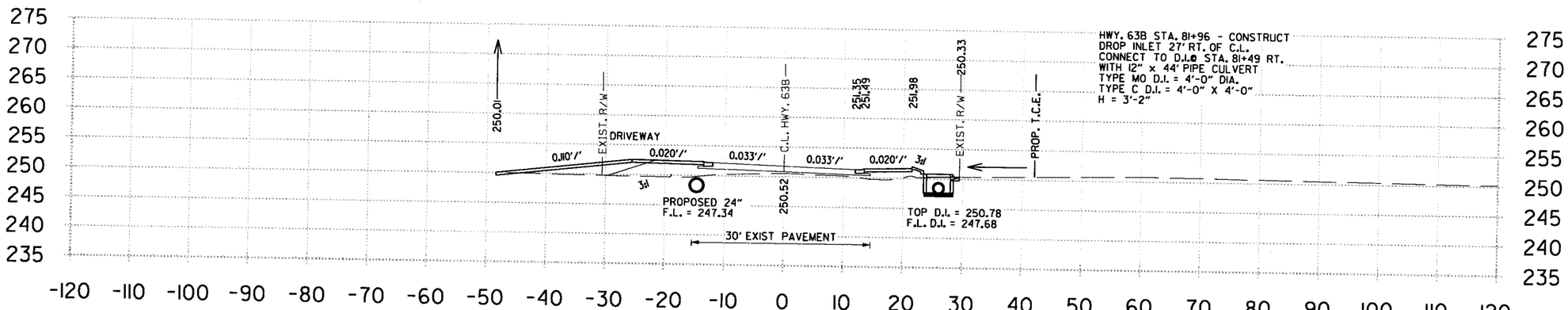
DATE REVISED	DATE F.N.ISED	DATE REVISED	DATE F.N.ISED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	318	346

(2) CROSS SECTIONS



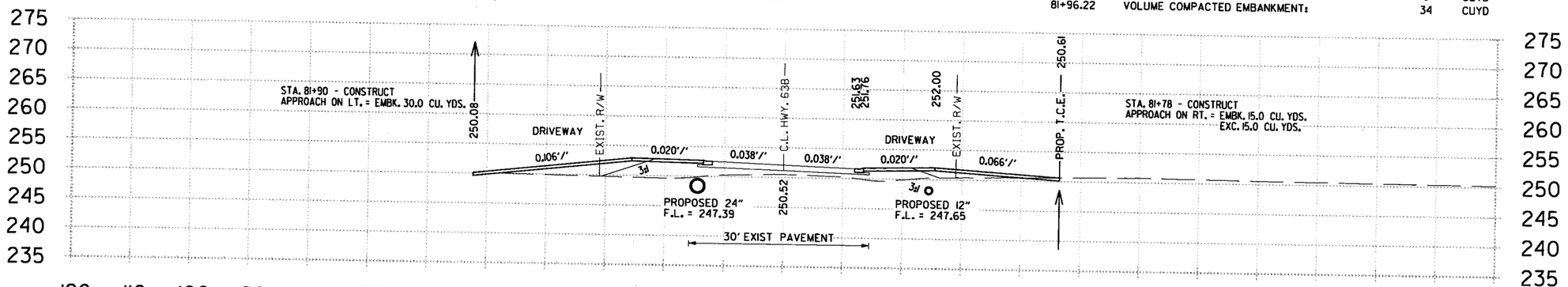
STA STAGE 2

		AREA	
81+96.22	AREA UNCLASSIFIED EXCAVATION:	0	SF
81+96.22	AREA COMPACTED EMBANKMENT:	54	SF

81+96.22

STA STAGE 2

		VOLUME	
81+96.22	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
81+96.22	VOLUME COMPACTED EMBANKMENT:	34	CUYD



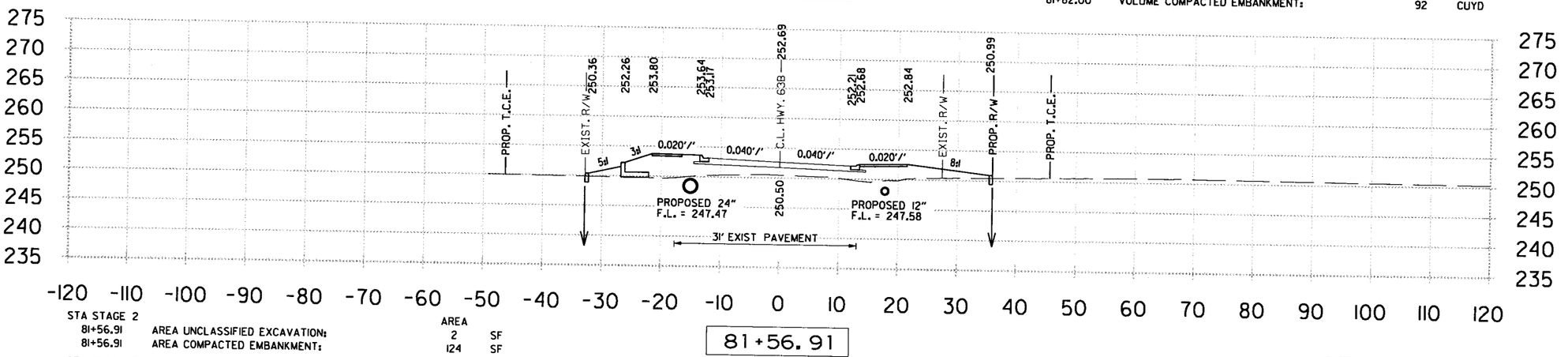
STA STAGE 2

		AREA	
81+82.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
81+82.00	AREA COMPACTED EMBANKMENT:	73	SF

81+82.00

STA STAGE 2

		VOLUME	
81+82.00	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
81+82.00	VOLUME COMPACTED EMBANKMENT:	92	CUYD



STA STAGE 2

		AREA	
81+56.91	AREA UNCLASSIFIED EXCAVATION:	2	SF
81+56.91	AREA COMPACTED EMBANKMENT:	124	SF

STA STAGE 2

		VOLUME	
81+56.91	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
81+56.91	VOLUME COMPACTED EMBANKMENT:	33	CUYD

81+56.91

STA. 81+57 TO STA. 81+96 HWY. 63B
CROSS SECTIONS

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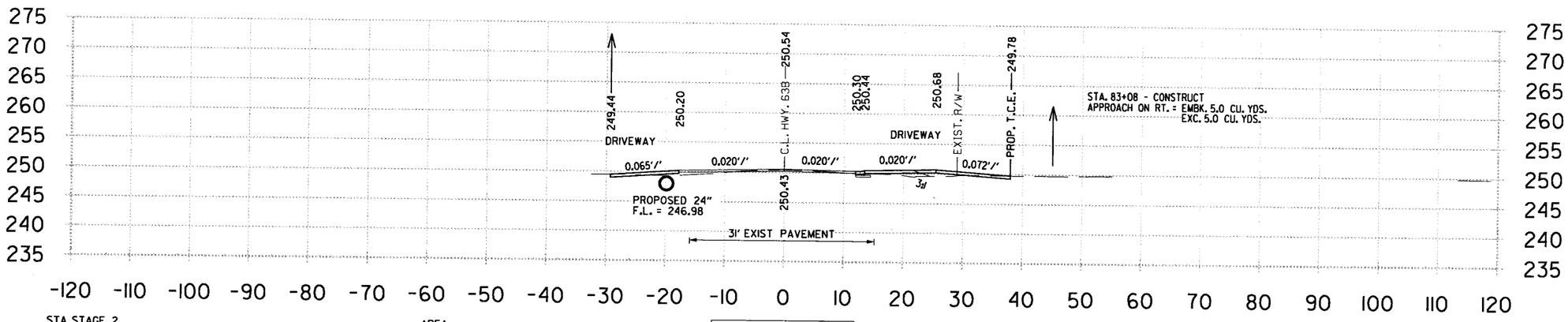
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	319	346

(2) CROSS SECTIONS



STA STAGE 2

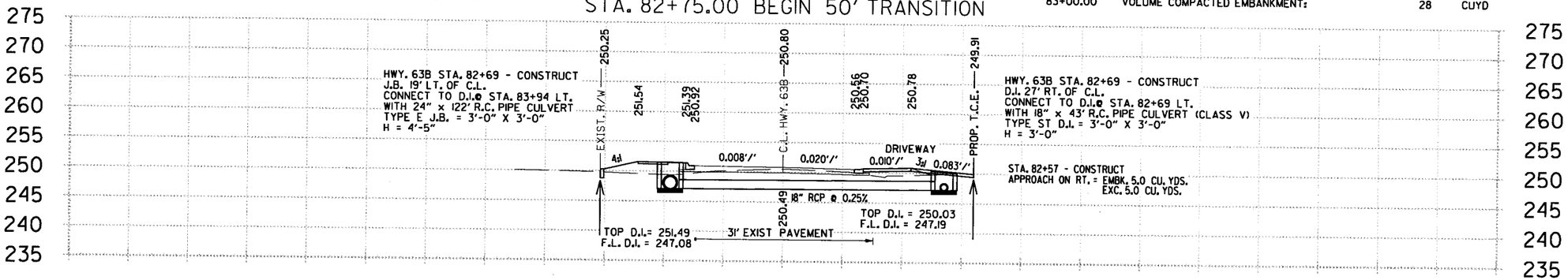
		AREA	
83+00.00	AREA UNCLASSIFIED EXCAVATION:	3	SF
83+00.00	AREA COMPACTED EMBANKMENT:	5	SF

83+00.00

STA. 82+75.00 BEGIN 50' TRANSITION

STA STAGE 2

		VOLUME	
83+00.00	VOLUME UNCLASSIFIED EXCAVATION:	12	CUYD
83+00.00	VOLUME COMPACTED EMBANKMENT:	28	CUYD



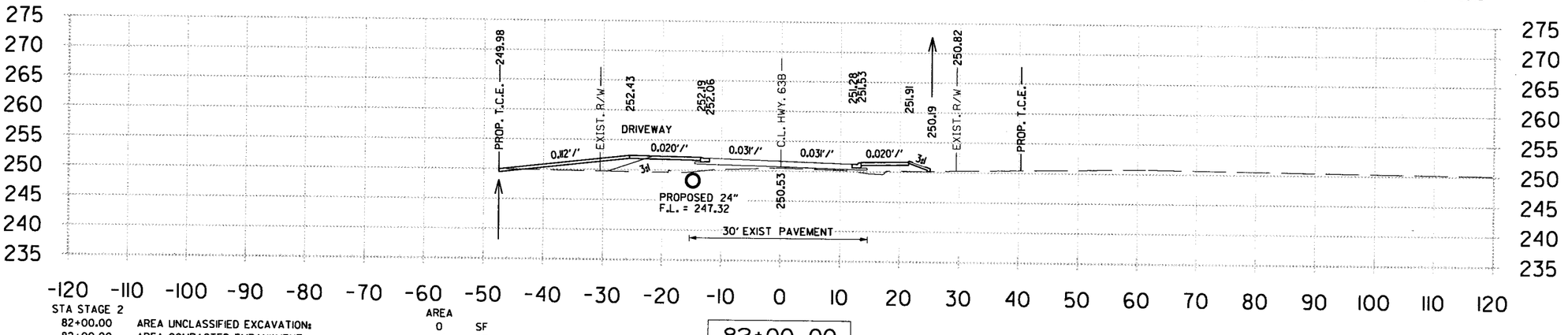
STA STAGE 2

		AREA	
82+56.91	AREA UNCLASSIFIED EXCAVATION:	12	SF
82+56.91	AREA COMPACTED EMBANKMENT:	30	SF

82+56.91

STA STAGE 2

		VOLUME	
82+56.91	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
82+56.91	VOLUME COMPACTED EMBANKMENT:	89	CUYD



STA STAGE 2

		AREA	
82+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
82+00.00	AREA COMPACTED EMBANKMENT:	54	SF

STA STAGE 2

		VOLUME	
82+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
82+00.00	VOLUME COMPACTED EMBANKMENT:	8	CUYD

82+00.00

STA. 82+00 TO STA. 83+00 HWY. 63B CROSS SECTIONS

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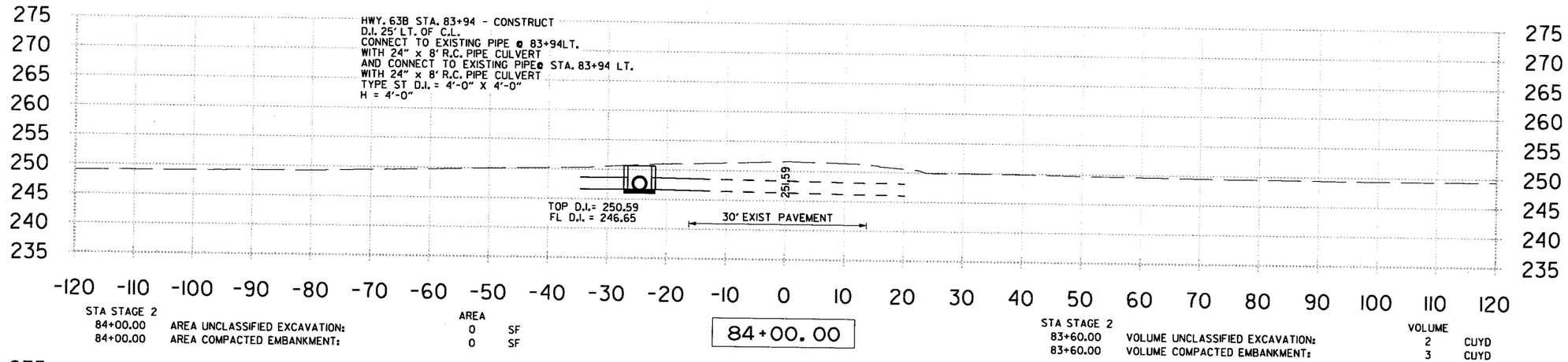
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	320	346

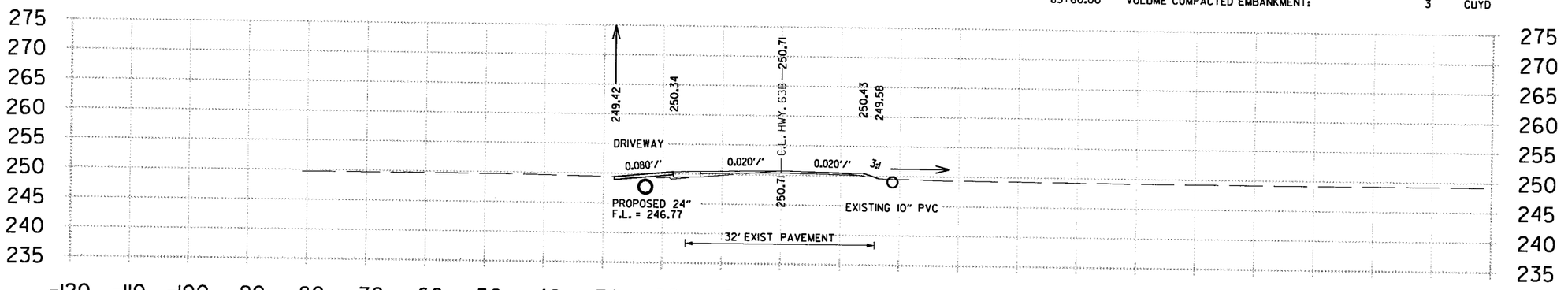
(2) CROSS SECTIONS



STA STAGE 2 — AREA
84+00.00 AREA UNCLASSIFIED EXCAVATION: 0 SF
84+00.00 AREA COMPACTED EMBANKMENT: 0 SF

84+00.00

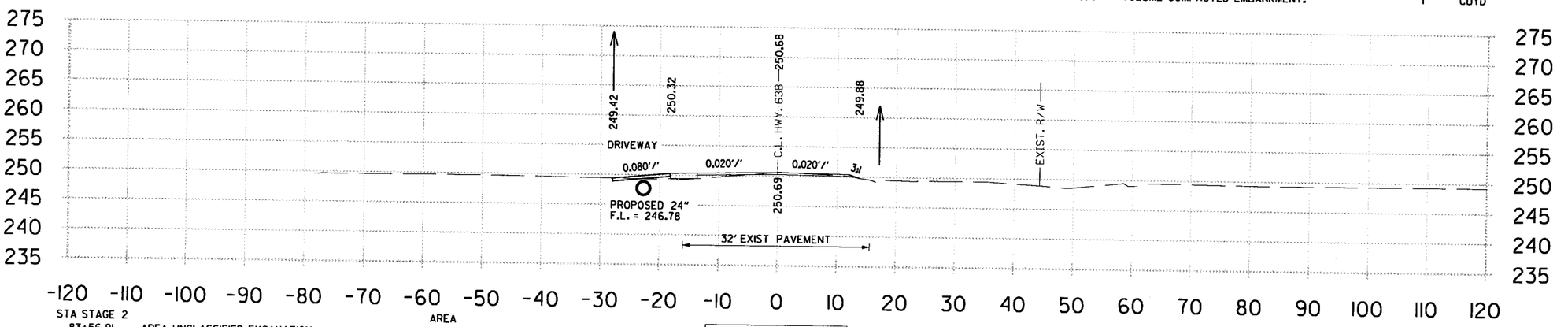
STA STAGE 2 — VOLUME
83+60.00 VOLUME UNCLASSIFIED EXCAVATION: 2 CUYD
83+60.00 VOLUME COMPACTED EMBANKMENT: 3 CUYD



STA STAGE 2 — AREA
83+60.00 AREA UNCLASSIFIED EXCAVATION: 2 SF
83+60.00 AREA COMPACTED EMBANKMENT: 3 SF

83+60.00

STA STAGE 2 — VOLUME
83+60.00 VOLUME UNCLASSIFIED EXCAVATION: 1 CUYD
83+60.00 VOLUME COMPACTED EMBANKMENT: 1 CUYD



STA STAGE 2 — AREA
83+56.91 AREA UNCLASSIFIED EXCAVATION: 2 SF
83+56.91 AREA COMPACTED EMBANKMENT: 2 SF

STA STAGE 2 — VOLUME
83+56.91 VOLUME UNCLASSIFIED EXCAVATION: 6 CUYD
83+56.91 VOLUME COMPACTED EMBANKMENT: 8 CUYD

83+56.91

STA. 83+25.00 END 50' TRANSITION

STA. 83+57 TO STA. 84+00 HWY. 63B
CROSS SECTIONS

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				6	ARK.			
				JOB NO.		100824	321	346
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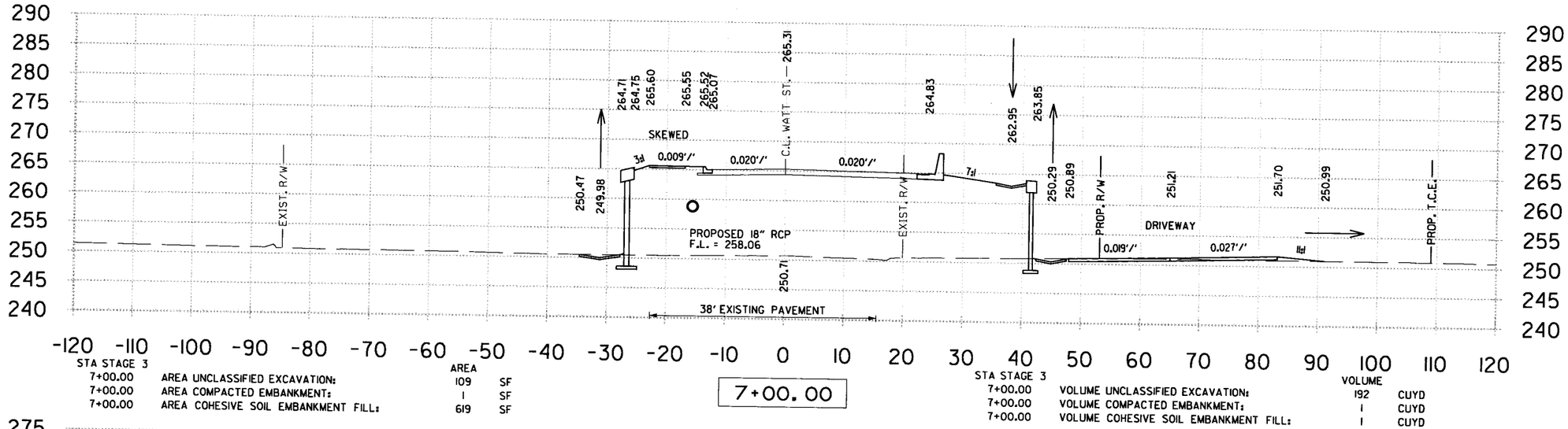
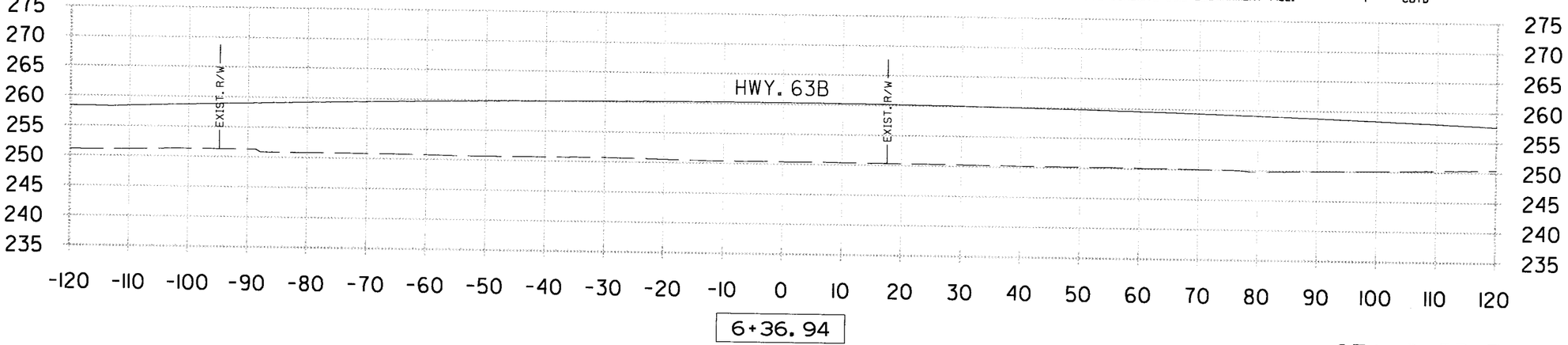


STA STAGE 3		AREA	
7+00.00	AREA UNCLASSIFIED EXCAVATION:	109	SF
7+00.00	AREA COMPACTED EMBANKMENT:	1	SF
7+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	619	SF

7+00.00

STA STAGE 3		VOLUME	
7+00.00	VOLUME UNCLASSIFIED EXCAVATION:	192	CUYD
7+00.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD
7+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	1	CUYD



6+36.94

STA. 6+37 TO STA. 7+00 WATT ST.
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
				6	ARK.			
				JOB NO.		100824	322	346
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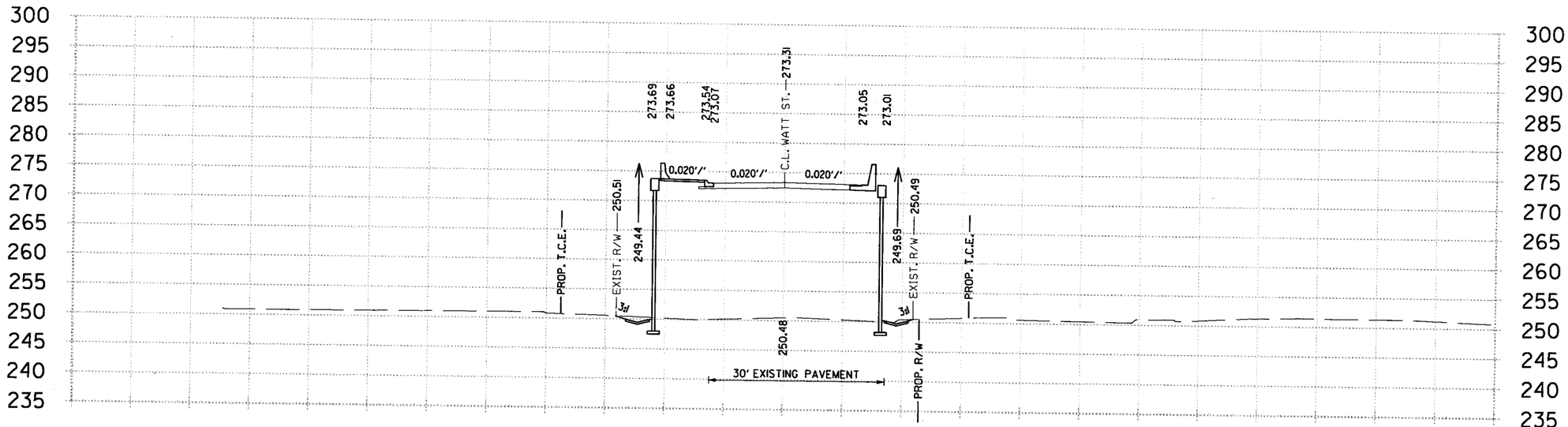


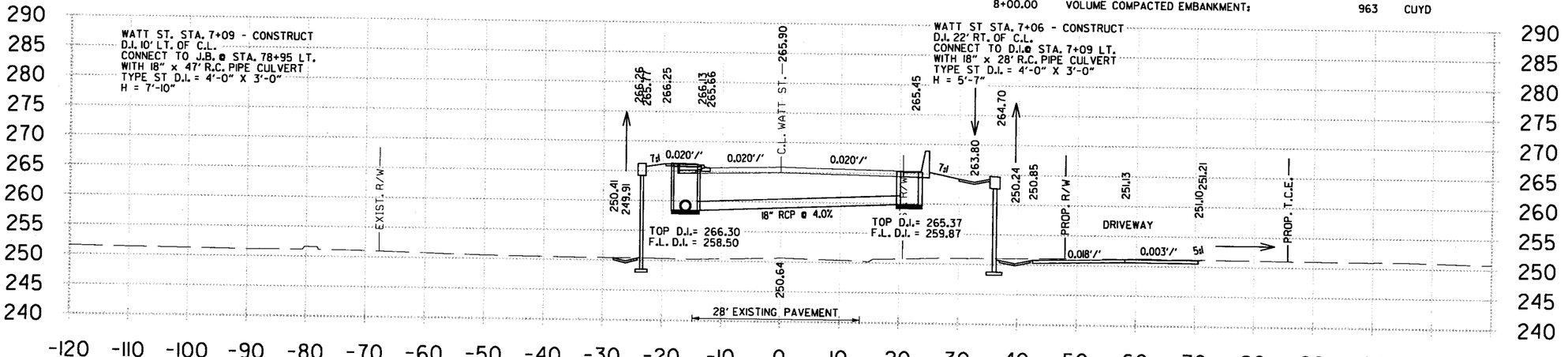
STA STAGE 3

STA		AREA	
8+00.00	AREA UNCLASSIFIED EXCAVATION:	87	SF
8+00.00	AREA COMPACTED EMBANKMENT:	1	SF
8+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	53	SF

8+00.00

STA STAGE 3

STA		VOLUME	
8+00.00	VOLUME UNCLASSIFIED EXCAVATION:	308	CUYD
8+00.00	VOLUME COMPACTED EMBANKMENT:	4	CUYD
8+00.00	VOLUME COMPACTED EMBANKMENT:	963	CUYD



STA STAGE 3

STA		AREA	
7+07.34	AREA UNCLASSIFIED EXCAVATION:	92	SF
7+07.34	AREA COMPACTED EMBANKMENT:	1	SF
7+07.34	AREA COHESIVE SOIL EMBANKMENT FILL:	508	SF

7+07.34

STA STAGE 3

STA		VOLUME	
7+07.34	VOLUME UNCLASSIFIED EXCAVATION:	28	CUYD
7+07.34	VOLUME COMPACTED EMBANKMENT:	1	CUYD
7+07.34	VOLUME COHESIVE SOIL EMBANKMENT FILL:	154	CUYD

STA. 7+07 TO STA. 8+00 WATT ST. CROSS SECTIONS

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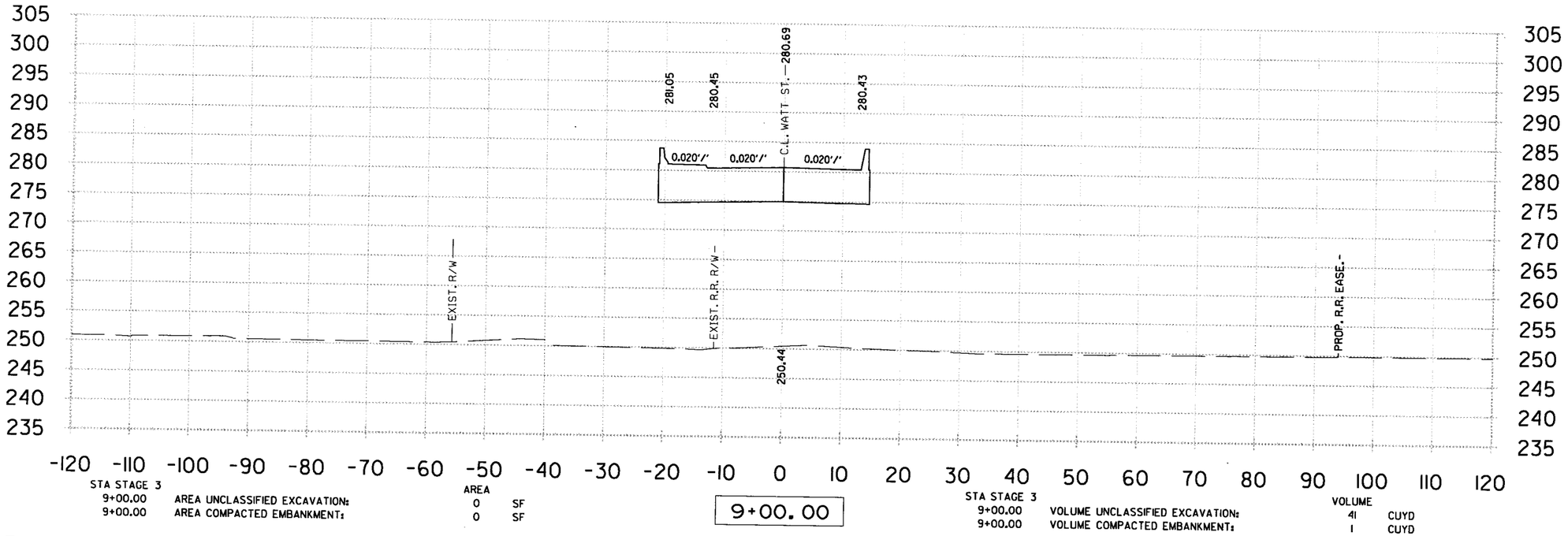
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	323	346

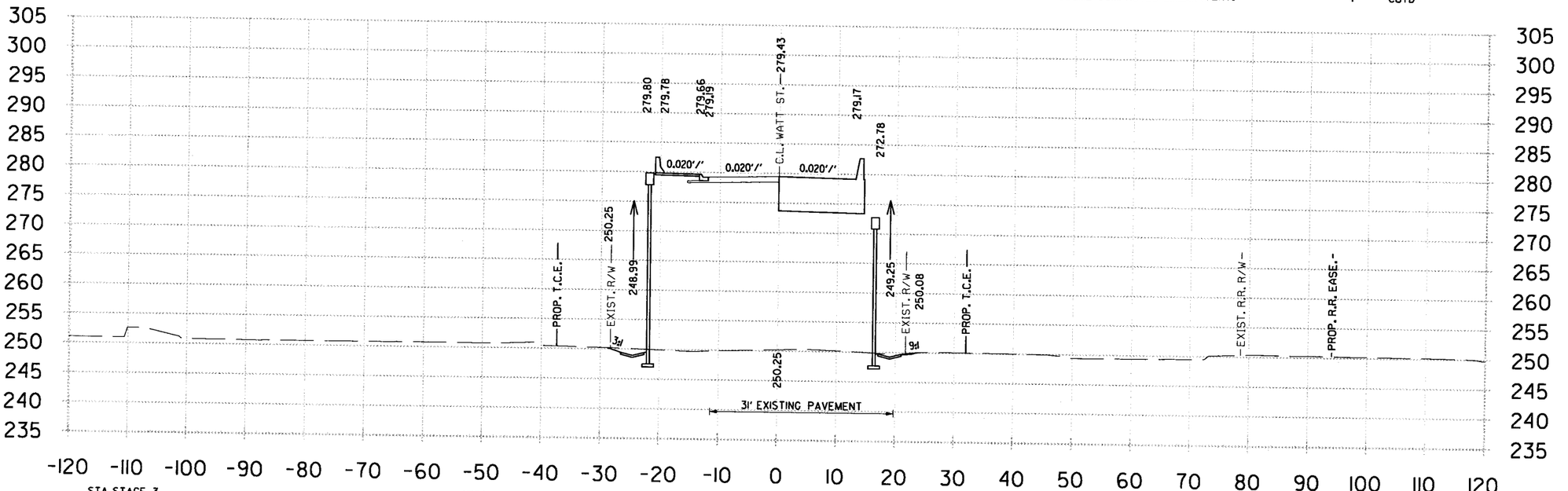
(2) CROSS SECTIONS



STA STAGE 3		AREA	
9+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
9+00.00	AREA COMPACTED EMBANKMENT:	0	SF

9+00.00

STA STAGE 3		VOLUME	
9+00.00	VOLUME UNCLASSIFIED EXCAVATION:	41	CUYD
9+00.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD



STA STAGE 3		AREA	
8+79.09	AREA UNCLASSIFIED EXCAVATION:	104	SF
8+79.09	AREA COMPACTED EMBANKMENT:	1	SF
8+79.09	AREA COHESIVE SOIL EMBANKMENT FILL:	0	SF

8+79.09

STA STAGE 3		VOLUME	
8+79.09	VOLUME UNCLASSIFIED EXCAVATION:	280	CUYD
8+79.09	VOLUME COMPACTED EMBANKMENT:	3	CUYD
8+79.09	VOLUME COHESIVE SOIL EMBANKMENT FILL:	78	CUYD

STA. 8+79 TO STA. 9+00 WATT ST. CROSS SECTIONS

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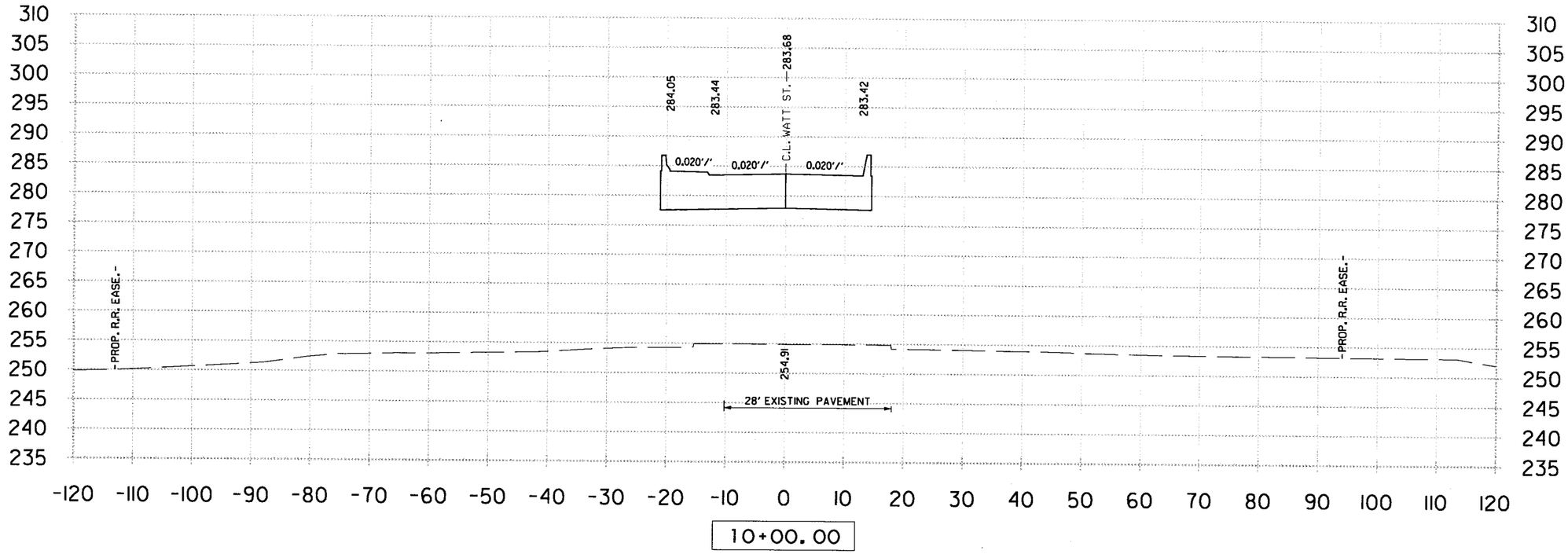
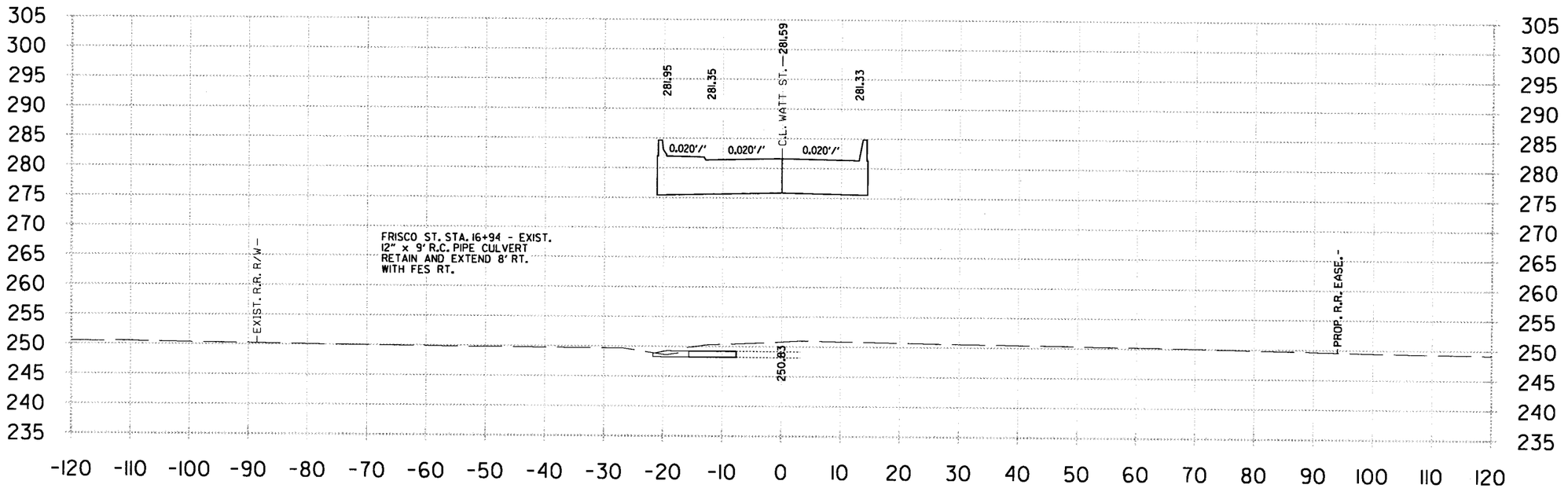
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	324	346
				(2) CROSS SECTIONS				



10+00.00



9+17.90

STA. 9+18 TO STA. 10+00 WATT ST.
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
				6	ARK.			
				JOB NO.		100824	325	346
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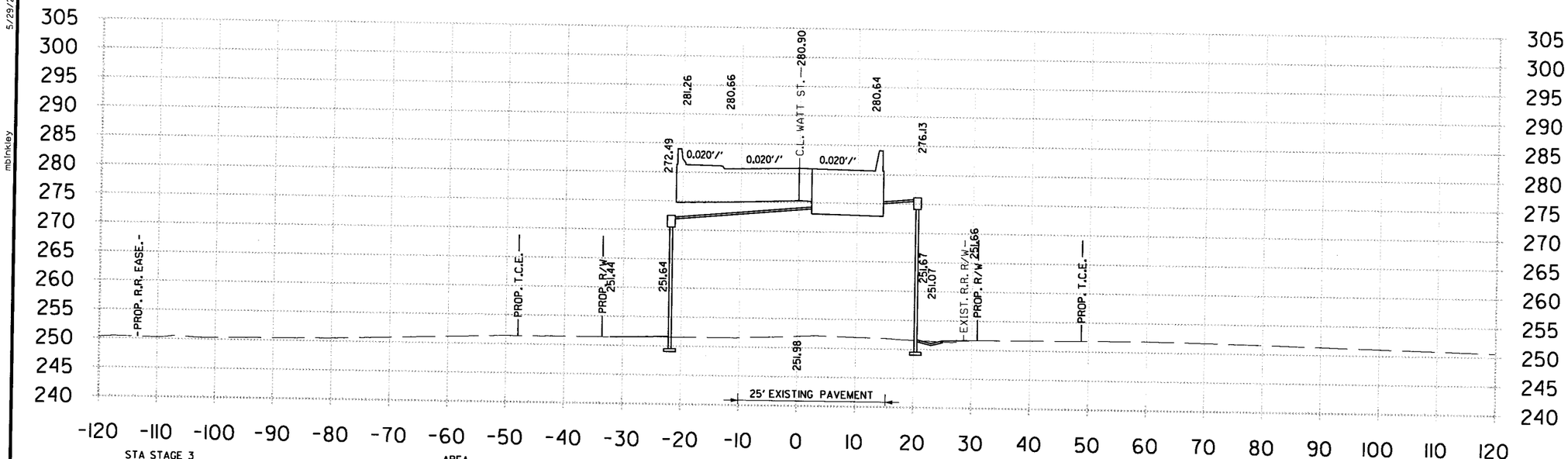
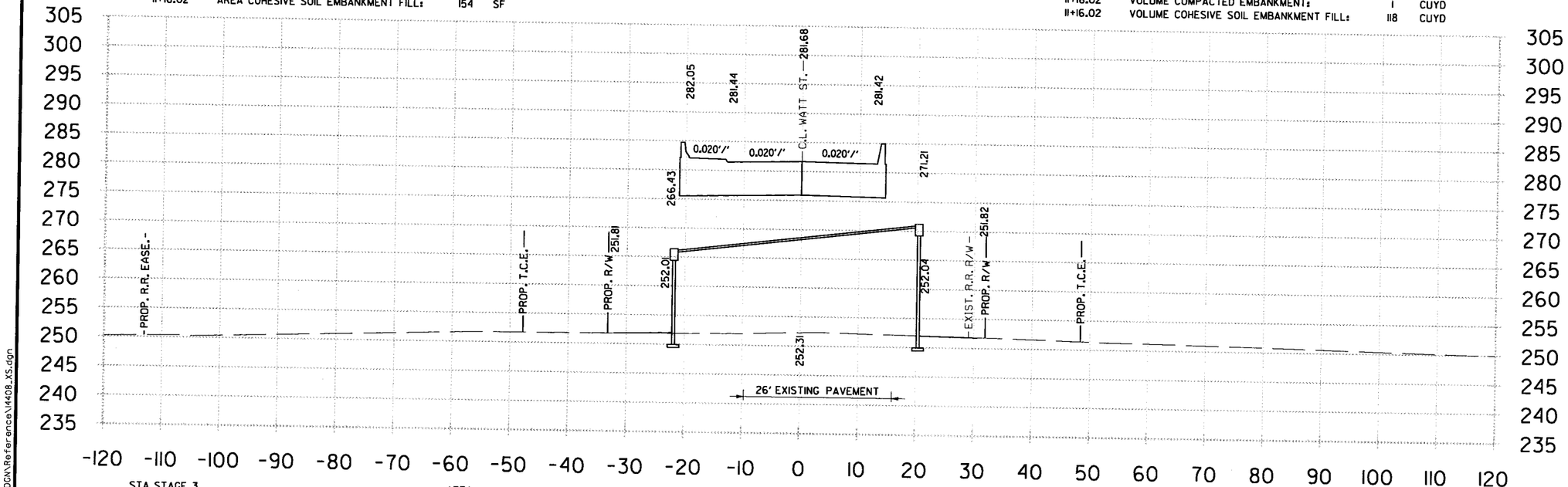


11+16.02

STA STAGE 3		AREA	
11+16.02	AREA UNCLASSIFIED EXCAVATION:	103	SF
11+16.02	AREA COMPACTED EMBANKMENT:	2	SF
11+16.02	AREA COHESIVE SOIL EMBANKMENT FILL:	154	SF

STA STAGE 3		VOLUME	
11+16.02	VOLUME UNCLASSIFIED EXCAVATION:	54	CUYD
11+16.02	VOLUME COMPACTED EMBANKMENT:	1	CUYD
11+16.02	VOLUME COHESIVE SOIL EMBANKMENT FILL:	118	CUYD



11+00.00

STA STAGE 3		AREA	
11+00.00	AREA UNCLASSIFIED EXCAVATION:	76	SF
11+00.00	AREA COMPACTED EMBANKMENT:	1	SF
11+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	242	SF

STA STAGE 3		VOLUME	
11+00.00	VOLUME UNCLASSIFIED EXCAVATION:	141	CUYD
11+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD
11+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	449	CUYD

STA. 11+00 TO STA. 11+16 WATT ST. 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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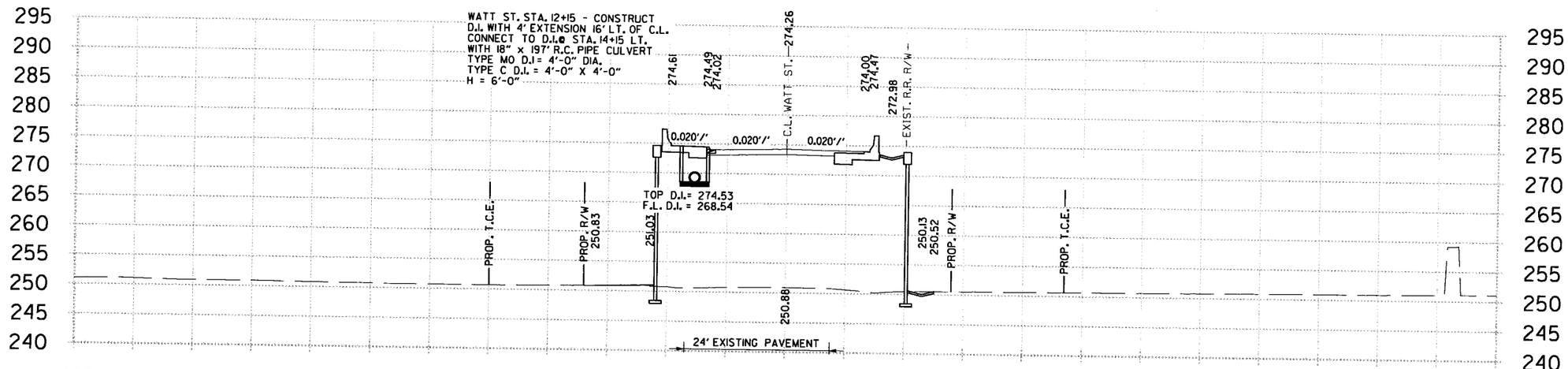
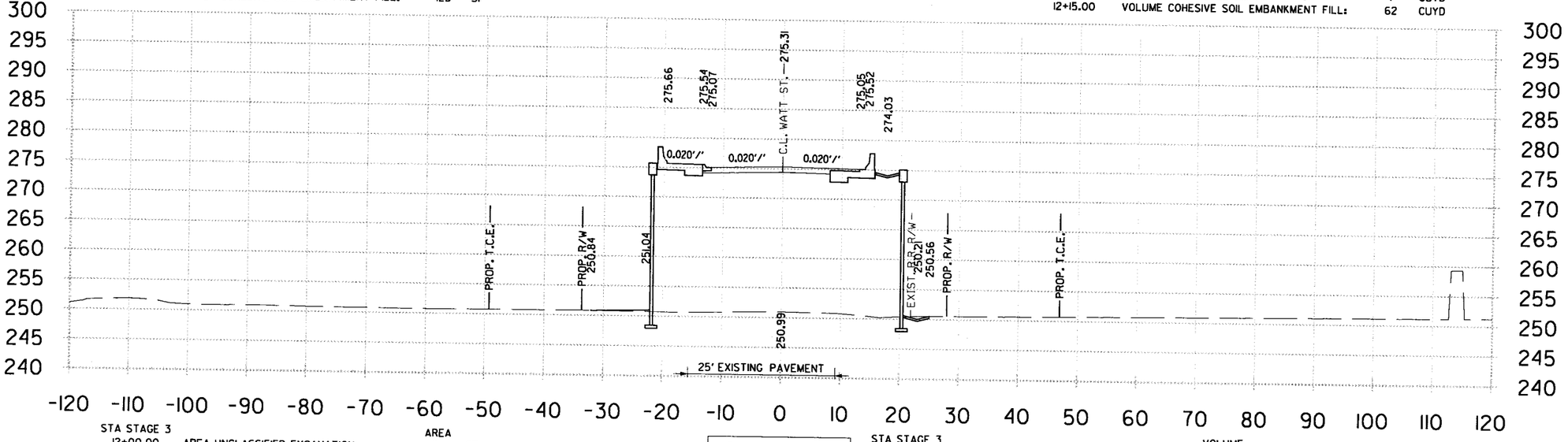


STA STAGE 3		AREA	
12+15.00	AREA UNCLASSIFIED EXCAVATION:	107	SF
12+15.00	AREA COMPACTED EMBANKMENT:	1	SF
12+15.00	AREA COHESIVE SOIL EMBANKMENT FILL:	125	SF

12+15.00

STA STAGE 3		VOLUME	
12+15.00	VOLUME UNCLASSIFIED EXCAVATION:	62	CUYD
12+15.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD
12+15.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	62	CUYD



STA STAGE 3		AREA	
12+00.00	AREA UNCLASSIFIED EXCAVATION:	114	SF
12+00.00	AREA COMPACTED EMBANKMENT:	1	SF
12+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	97	SF

12+00.00

STA STAGE 3		VOLUME	
12+00.00	VOLUME UNCLASSIFIED EXCAVATION:	338	CUYD
12+00.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD
12+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	391	CUYD

STA. 12+00 TO STA. 12+15 WATT ST. 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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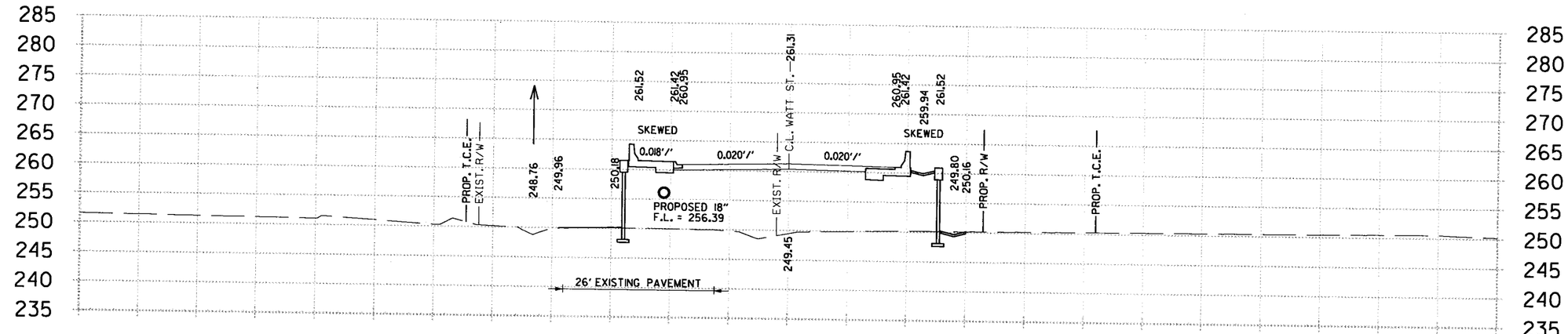
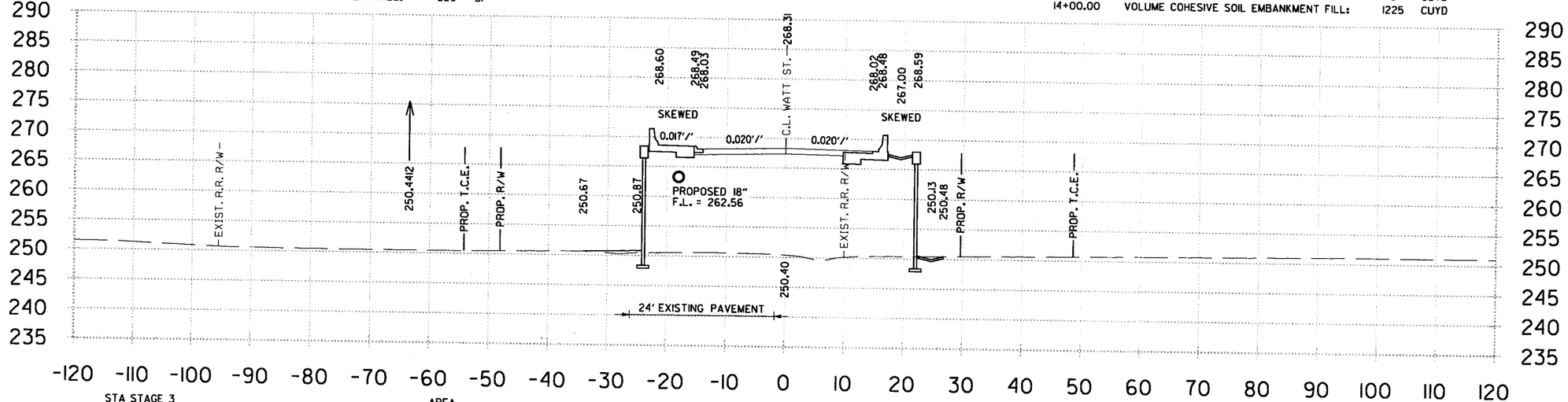
(2) CROSS SECTIONS



14+00.00

STA	STAGE 3		AREA	
14+00.00	AREA UNCLASSIFIED EXCAVATION:		54	SF
14+00.00	AREA COMPACTED EMBANKMENT:		1	SF
14+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:		359	SF

STA	STAGE 3	VOLUME	
14+00.00	VOLUME UNCLASSIFIED EXCAVATION:	247	CUYD
14+00.00	VOLUME COMPACTED EMBANKMENT:	8	CUYD
14+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	1225	CUYD



13+00.00

STA	STAGE 3		AREA	
13+00.00	AREA UNCLASSIFIED EXCAVATION:		79	SF
13+00.00	AREA COMPACTED EMBANKMENT:		3	SF
13+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:		302	SF

STA	STAGE 3	VOLUME	
13+00.00	VOLUME UNCLASSIFIED EXCAVATION:	293	CUYD
13+00.00	VOLUME COMPACTED EMBANKMENT:	7	CUYD
13+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	673	CUYD

STA. 13+00 TO STA. 14+00 WATT ST. 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
				6	ARK.			
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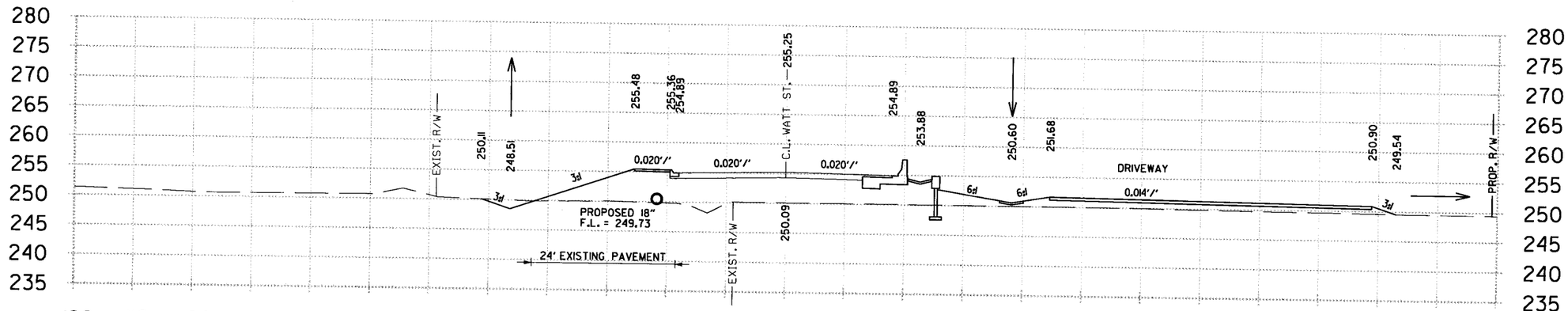
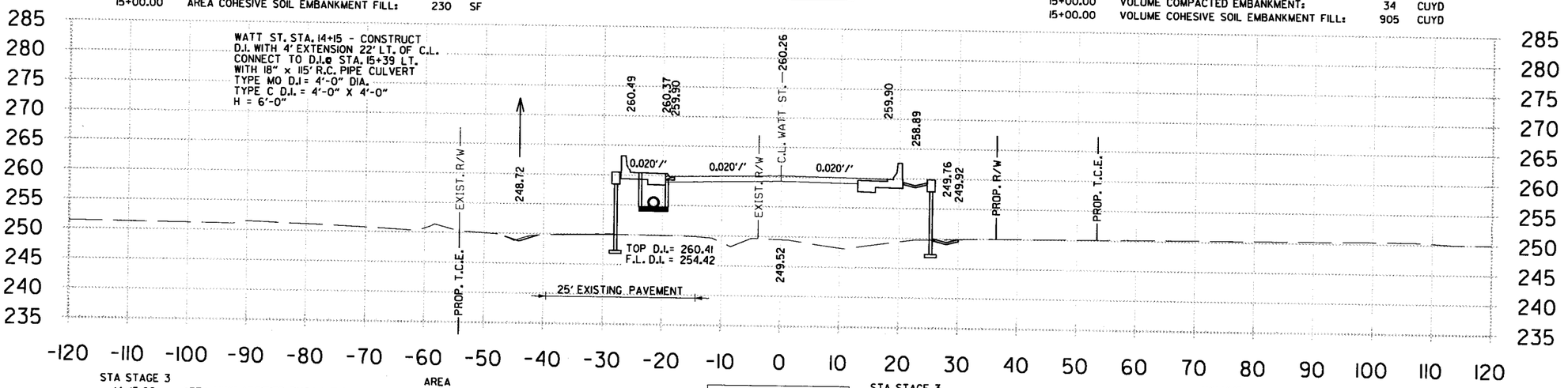
(2) CROSS SECTIONS



15+00.00

STA	STAGE 3	AREA	
15+00.00	AREA UNCLASSIFIED EXCAVATION:	29	SF
15+00.00	AREA COMPACTED EMBANKMENT:	20	SF
15+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	230	SF

STA	STAGE 3	VOLUME	
15+00.00	VOLUME UNCLASSIFIED EXCAVATION:	145	CUYD
15+00.00	VOLUME COMPACTED EMBANKMENT:	34	CUYD
15+00.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	905	CUYD



14+15.00

STA	STAGE 3	AREA	
14+15.00	AREA UNCLASSIFIED EXCAVATION:	63	SF
14+15.00	AREA COMPACTED EMBANKMENT:	1	SF
14+15.00	AREA COHESIVE SOIL EMBANKMENT FILL:	345	SF

STA	STAGE 3	VOLUME	
14+15.00	VOLUME UNCLASSIFIED EXCAVATION:	33	CUYD
14+15.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD
14+15.00	VOLUME COHESIVE SOIL EMBANKMENT FILL:	196	CUYD

STA. 14+15 TO STA. 15+00 WATT ST. 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
				6	ARK.			
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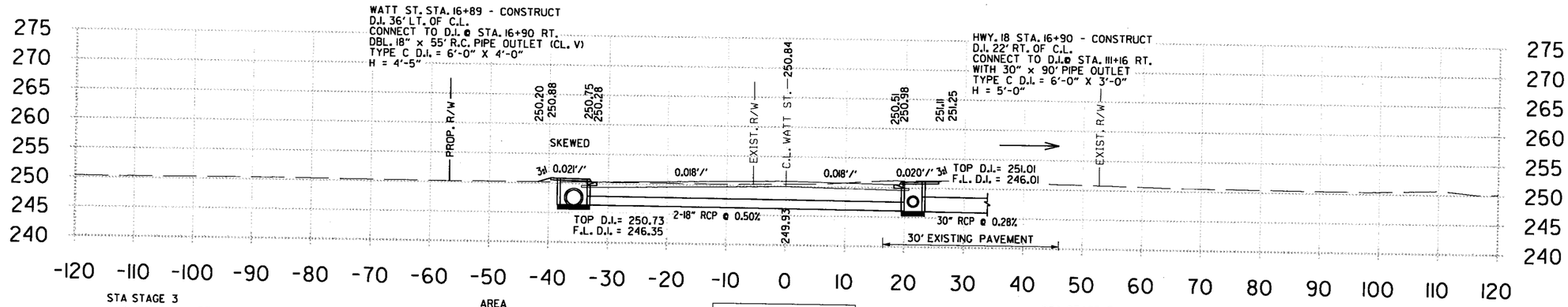
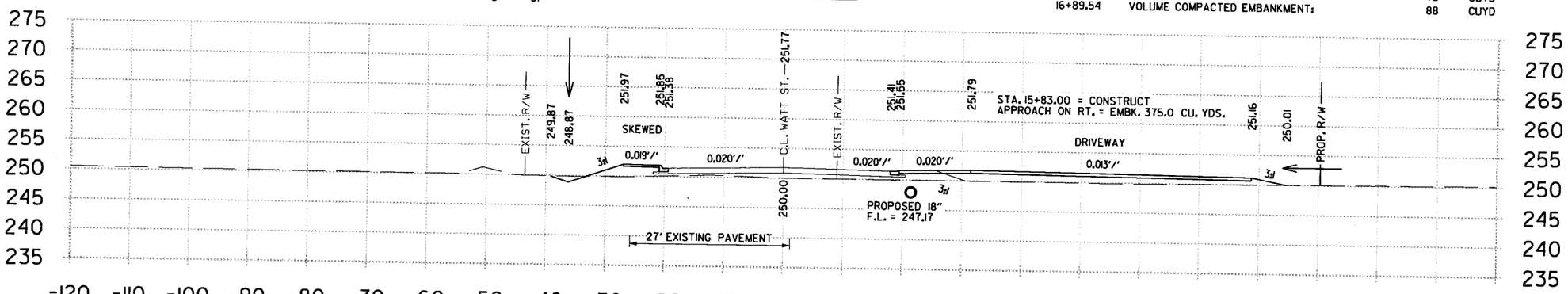


STA STAGE 3		AREA	
16+89.54	AREA UNCLASSIFIED EXCAVATION:	44	SF
16+89.54	AREA COMPACTED EMBANKMENT:	3	SF

16+89.54

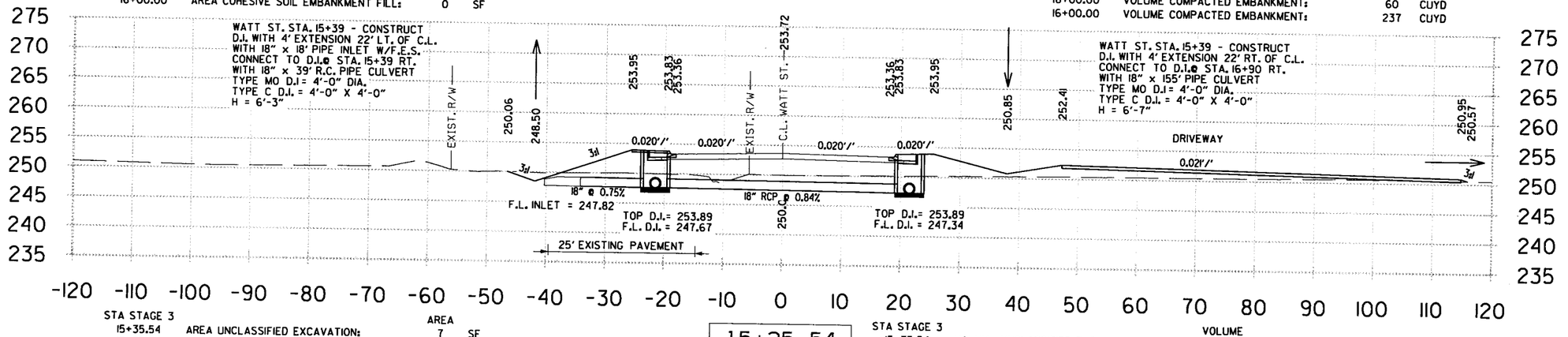
STA STAGE 3		VOLUME	
16+89.54	VOLUME UNCLASSIFIED EXCAVATION:	73	CUYD
16+89.54	VOLUME COMPACTED EMBANKMENT:	88	CUYD



STA STAGE 3		AREA	
16+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF
16+00.00	AREA COMPACTED EMBANKMENT:	50	SF
16+00.00	AREA COHESIVE SOIL EMBANKMENT FILL:	0	SF

16+00.00

STA STAGE 3		VOLUME	
16+00.00	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD
16+00.00	VOLUME COMPACTED EMBANKMENT:	60	CUYD
16+00.00	VOLUME COMPACTED EMBANKMENT:	237	CUYD



STA STAGE 3		AREA	
15+35.54	AREA UNCLASSIFIED EXCAVATION:	7	SF
15+35.54	AREA COMPACTED EMBANKMENT:	0	SF
15+35.54	AREA COHESIVE SOIL EMBANKMENT FILL:	198	SF

15+35.54

STA STAGE 3		VOLUME	
15+35.54	VOLUME UNCLASSIFIED EXCAVATION:	24	CUYD
15+35.54	VOLUME COMPACTED EMBANKMENT:	14	CUYD
15+35.54	VOLUME COHESIVE SOIL EMBANKMENT FILL:	282	CUYD

STA. 15+36 TO STA. 16+90 WATT ST. CROSS SECTIONS

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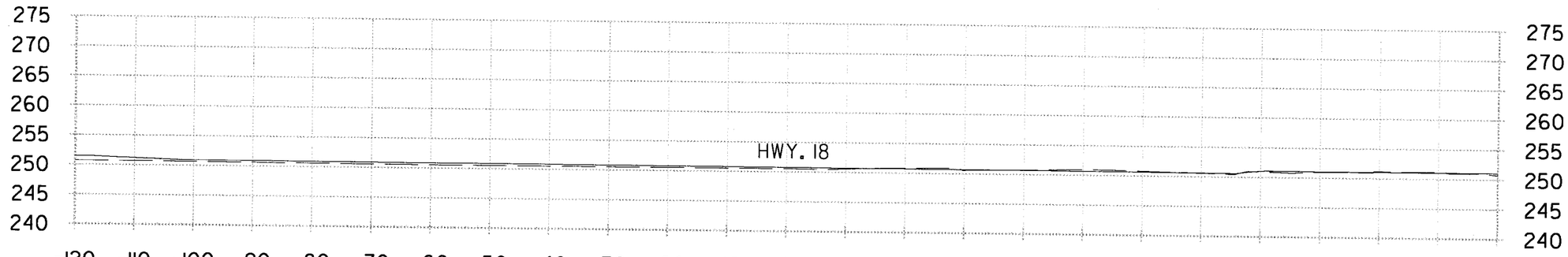
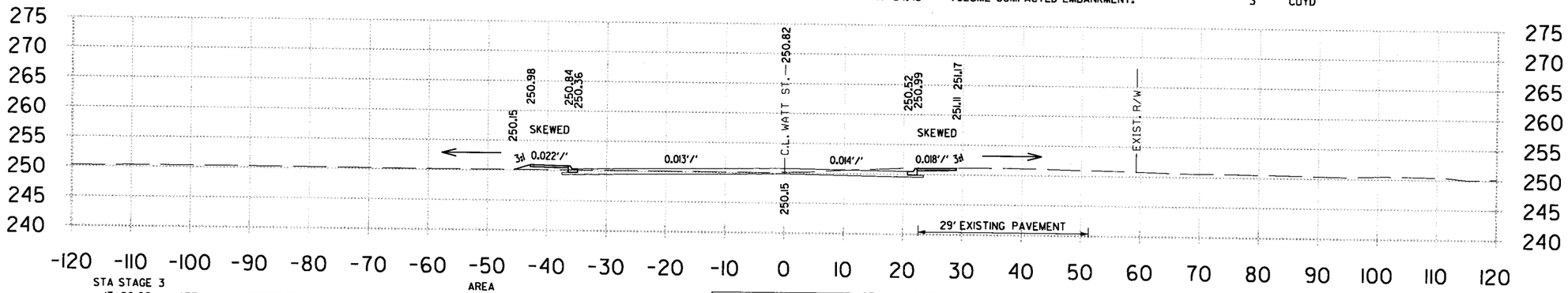
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	330	346
				(2) CROSS SECTIONS				



STA STAGE 3
17+34.43 AREA UNCLASSIFIED EXCAVATION: AREA 0 SF
17+34.43 AREA COMPACTED EMBANKMENT: 0 SF

17+34.43

STA STAGE 3
17+34.43 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 27 CUYD
17+34.43 VOLUME COMPACTED EMBANKMENT: 3 CUYD



STA STAGE 3
17+00.00 AREA UNCLASSIFIED EXCAVATION: AREA 41 SF
17+00.00 AREA COMPACTED EMBANKMENT: 4 SF

17+00.00

STA STAGE 3
17+00.00 VOLUME UNCLASSIFIED EXCAVATION: VOLUME 17 CUYD
17+00.00 VOLUME COMPACTED EMBANKMENT: 2 CUYD

STA. 17+00 TO STA. 17+34 WATT ST. CROSS SECTIONS

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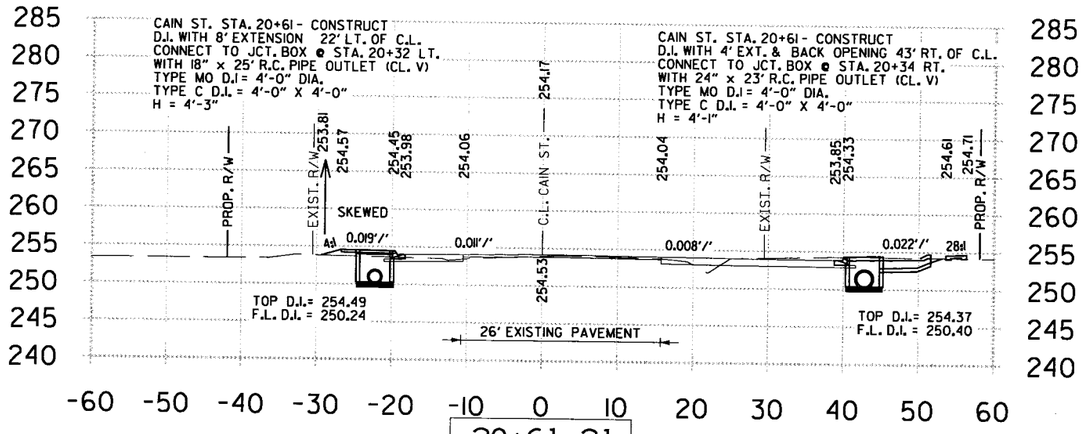
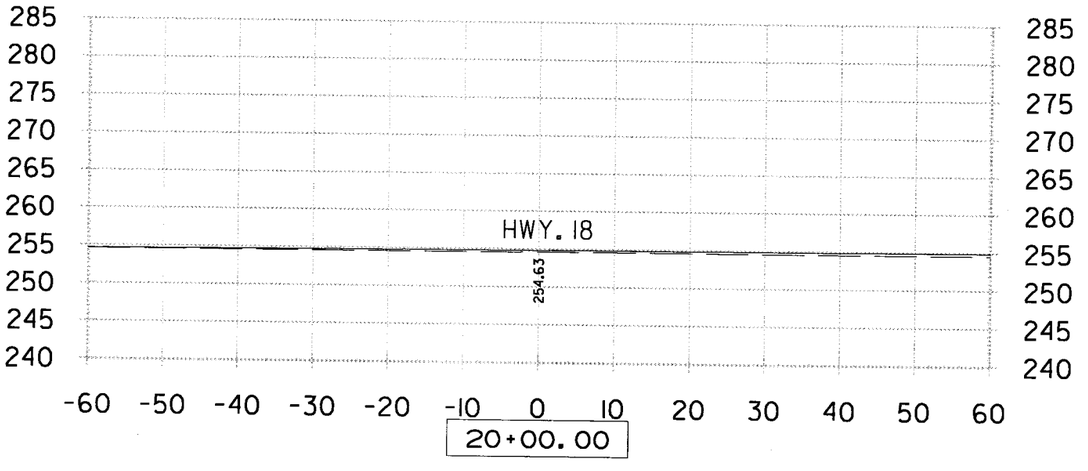
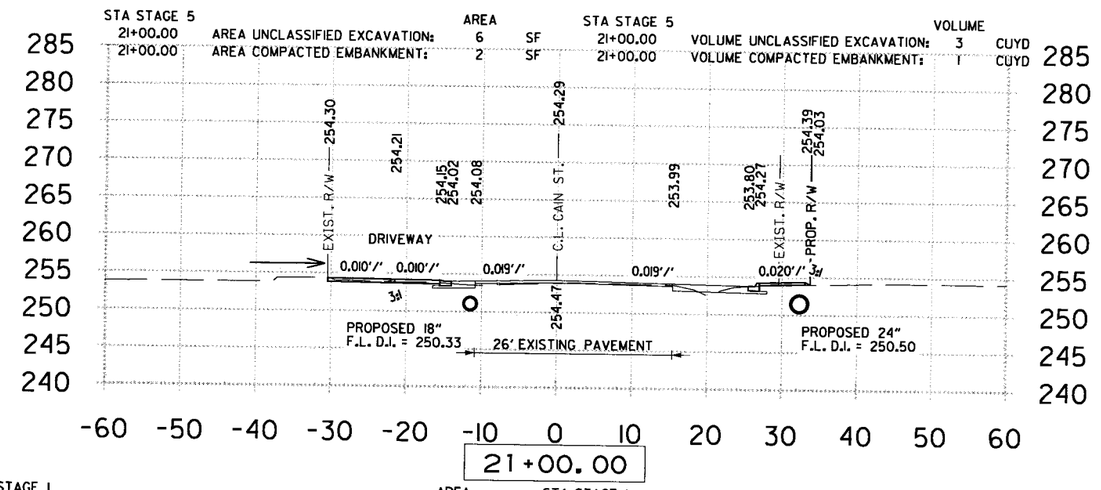
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	331	346

(2) CROSS SECTIONS

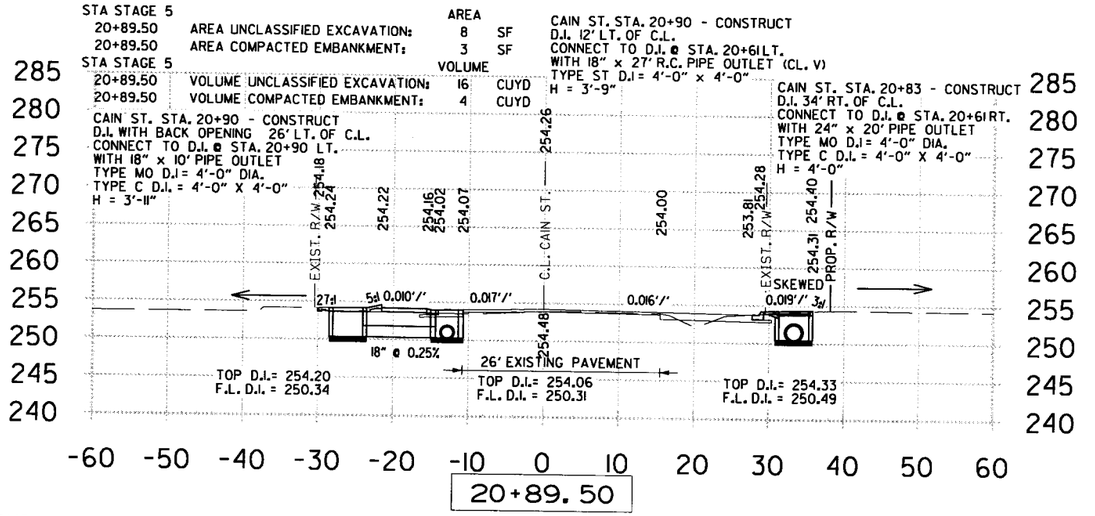


STA STAGE 1		AREA		STA STAGE 1		VOLUME	
20+61.21	AREA UNCLASSIFIED EXCAVATION:	4.14	SF	20+61.21	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
20+61.21	AREA COMPACTED EMBANKMENT:	6.39	SF	20+61.21	VOLUME COMPACTED EMBANKMENT:	6	CUYD
STA STAGE 5		AREA		STA STAGE 5		VOLUME	
20+61.21	AREA UNCLASSIFIED EXCAVATION:	21	SF	20+61.21	VOLUME UNCLASSIFIED EXCAVATION:	24	CUYD
20+61.21	AREA COMPACTED EMBANKMENT:	4	SF	20+61.21	VOLUME COMPACTED EMBANKMENT:	5	CUYD





STA STAGE 1		AREA		STA STAGE 1		VOLUME	
21+00.00	AREA UNCLASSIFIED EXCAVATION:	4	SF	21+00.00	VOLUME UNCLASSIFIED EXCAVATION:	2	CUYD
21+00.00	AREA COMPACTED EMBANKMENT:	0	SF	21+00.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD



STA STAGE 5		AREA		CAIN ST. STA. 20+90 - CONSTRUCT		VOLUME	
20+89.50	AREA UNCLASSIFIED EXCAVATION:	8	SF	D.I. 12' LT. OF C.L.			
20+89.50	AREA COMPACTED EMBANKMENT:	3	SF	CONNECT TO D.I. @ STA. 20+61 LT.			
STA STAGE 5		VOLUME		WITH 18" x 27' R.C. PIPE OUTLET (CL. V)			
20+89.50	VOLUME UNCLASSIFIED EXCAVATION:	16	CUYD	TYPE ST D.I = 4'-0" x 4'-0"			
20+89.50	VOLUME COMPACTED EMBANKMENT:	4	CUYD	H = 3'-9"			

STA STAGE 1		AREA		STA STAGE 1		VOLUME	
20+89.50	AREA UNCLASSIFIED EXCAVATION:	3	SF	20+89.50	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
20+89.50	AREA COMPACTED EMBANKMENT:	3	SF	20+89.50	VOLUME COMPACTED EMBANKMENT:	5	CUYD

STA. 20+00 TO STA. 21+00 CAIN ST. 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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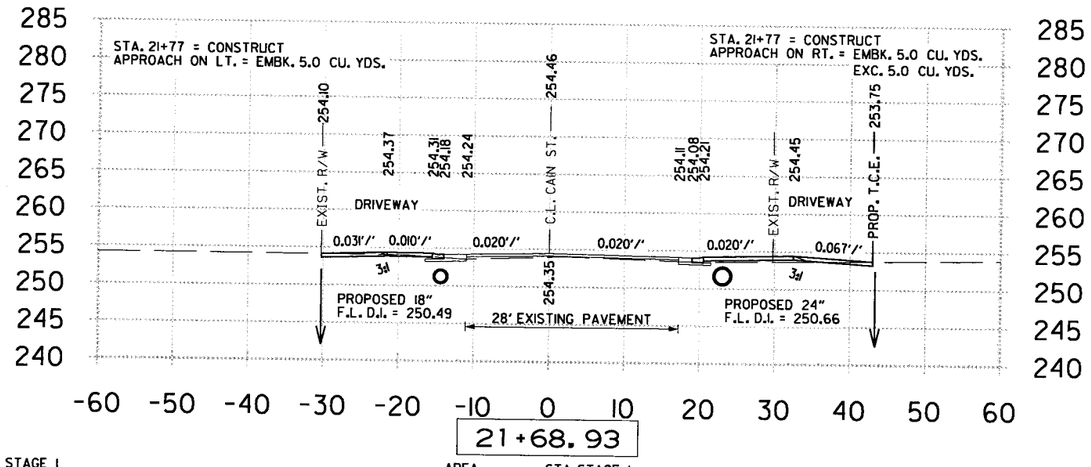
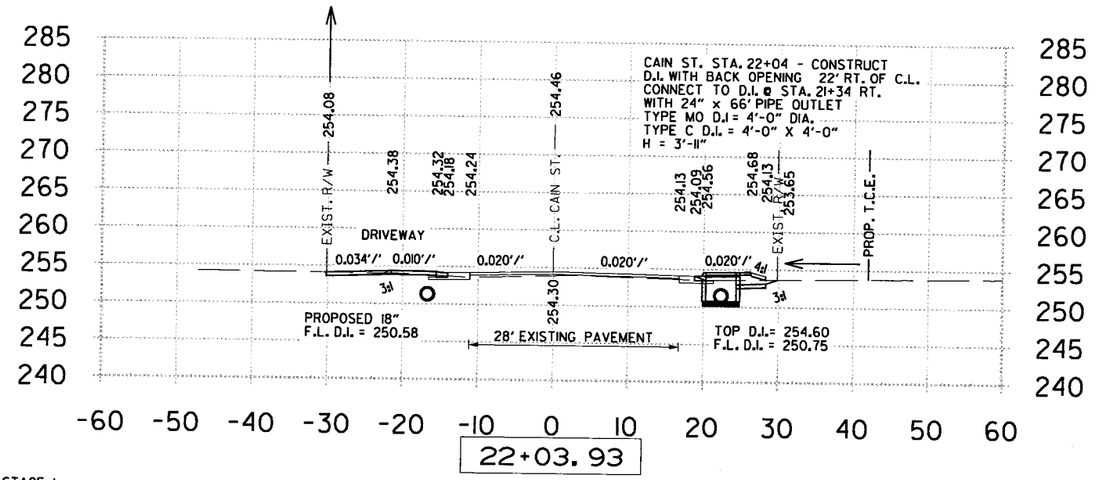
				JOB NO.		100824	332	346

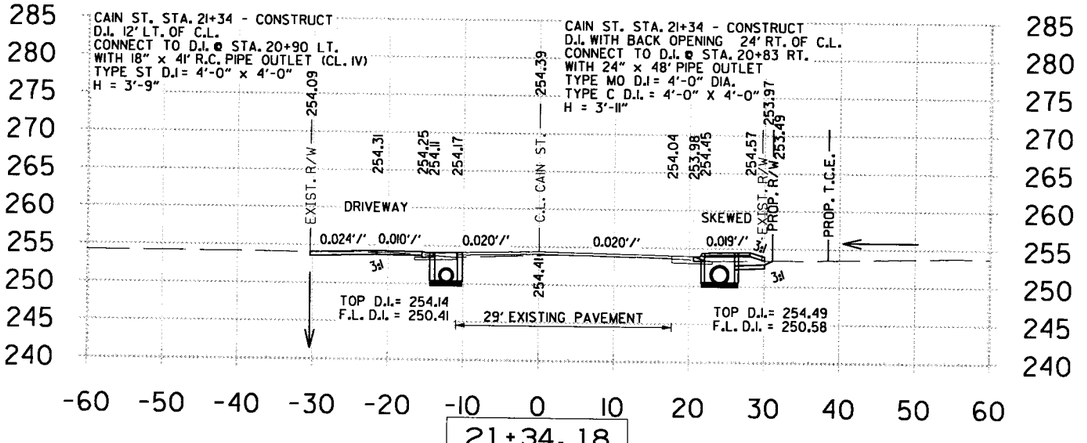
(2) CROSS SECTIONS



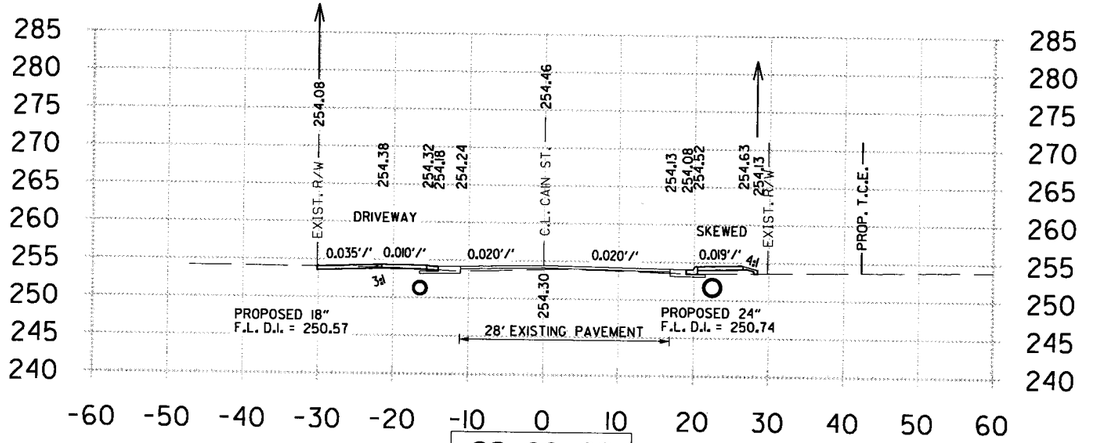
STA STAGE I		AREA		STA STAGE I		VOLUME	
21+68.93	AREA UNCLASSIFIED EXCAVATION:	5	SF	21+68.93	VOLUME UNCLASSIFIED EXCAVATION:	8	CUYD
21+68.93	AREA COMPACTED EMBANKMENT:	4	SF	21+68.93	VOLUME COMPACTED EMBANKMENT:	8	CUYD



STA STAGE I		AREA		STA STAGE I		VOLUME	
22+03.93	AREA UNCLASSIFIED EXCAVATION:	5	SF	22+03.93	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
22+03.93	AREA COMPACTED EMBANKMENT:	6	SF	22+03.93	VOLUME COMPACTED EMBANKMENT:	1	CUYD



STA STAGE I		AREA		STA STAGE I		VOLUME	
21+34.18	AREA UNCLASSIFIED EXCAVATION:	7	SF	21+34.18	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
21+34.18	AREA COMPACTED EMBANKMENT:	7	SF	21+34.18	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE I		AREA		STA STAGE I		VOLUME	
21+34.18	AREA UNCLASSIFIED EXCAVATION:	5	SF	21+34.18	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
21+34.18	AREA COMPACTED EMBANKMENT:	4	SF	21+34.18	VOLUME COMPACTED EMBANKMENT:	5	CUYD

STA. 21+34 TO STA. 22+04 CAIN ST. CROSS SECTIONS

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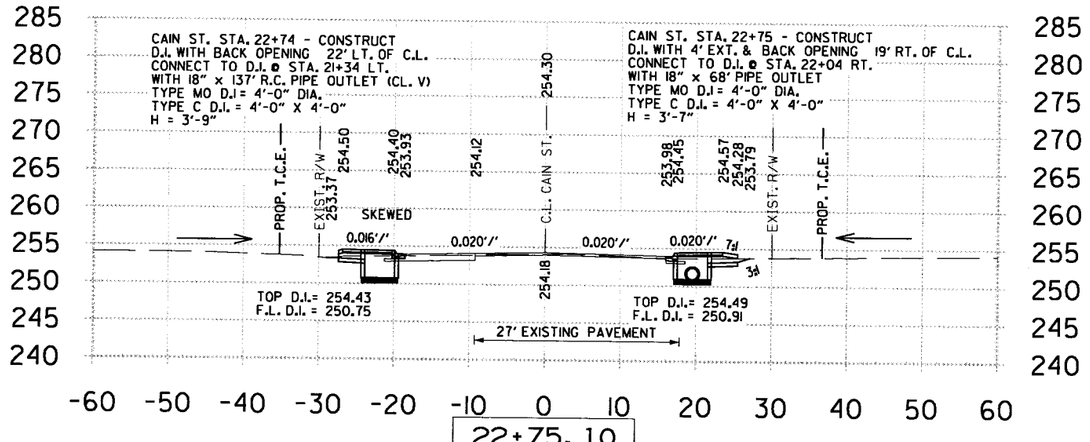
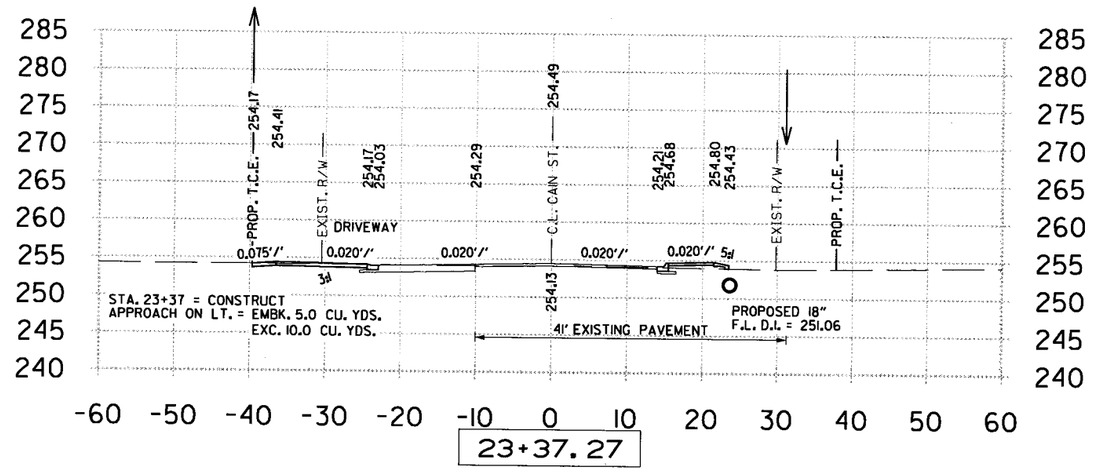
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	333	346

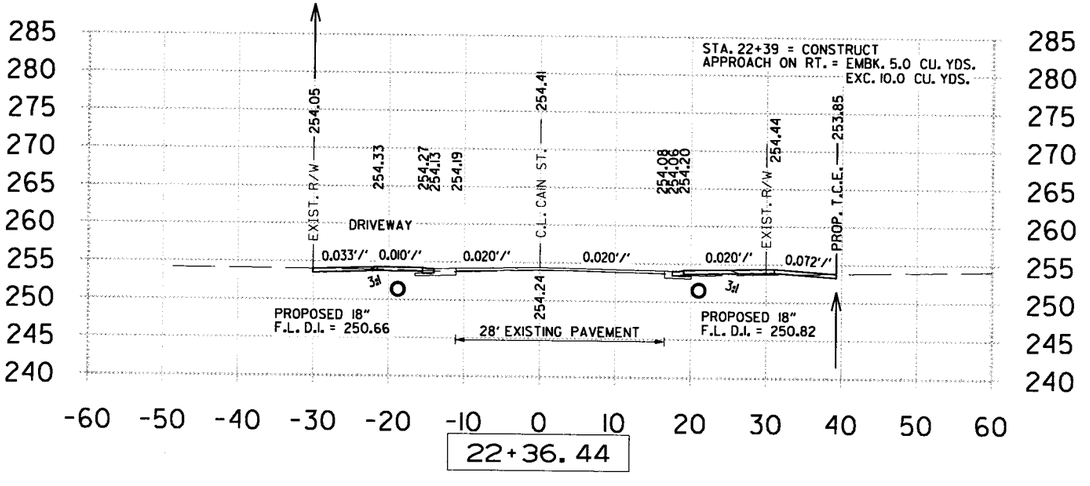
(2) CROSS SECTIONS



STA STAGE I		AREA		STA STAGE I		VOLUME	
22+75.10	AREA UNCLASSIFIED EXCAVATION:	10	SF	22+75.10	VOLUME UNCLASSIFIED EXCAVATION:	12	CUYD
22+75.10	AREA COMPACTED EMBANKMENT:	9	SF	22+75.10	VOLUME COMPACTED EMBANKMENT:	8	CUYD

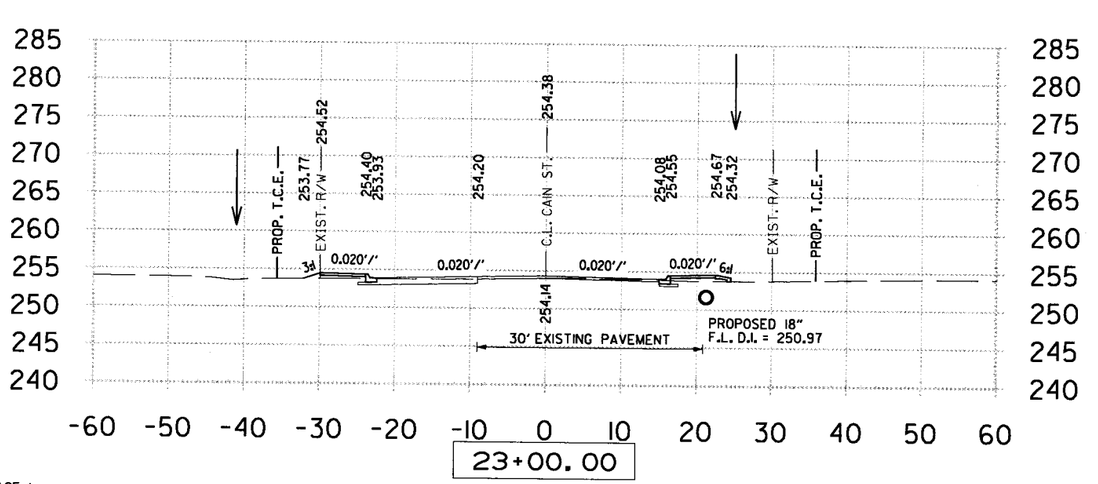


STA STAGE I		AREA		STA STAGE I		VOLUME	
23+37.27	AREA UNCLASSIFIED EXCAVATION:	18	SF	23+37.27	VOLUME UNCLASSIFIED EXCAVATION:	21	CUYD
23+37.27	AREA COMPACTED EMBANKMENT:	4	SF	23+37.27	VOLUME COMPACTED EMBANKMENT:	8	CUYD



STA STAGE I		AREA	
22+36.44	AREA UNCLASSIFIED EXCAVATION:	6	SF
22+36.44	AREA COMPACTED EMBANKMENT:	2	SF

STA STAGE I		VOLUME	
22+36.44	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
22+36.44	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE I		AREA		STA STAGE I		VOLUME	
23+00.00	AREA UNCLASSIFIED EXCAVATION:	12	SF	23+00.00	VOLUME UNCLASSIFIED EXCAVATION:	11	CUYD
23+00.00	AREA COMPACTED EMBANKMENT:	7	SF	23+00.00	VOLUME COMPACTED EMBANKMENT:	8	CUYD

STA. 22+36 TO STA. 23+37 CAIN ST.
CROSS SECTIONS

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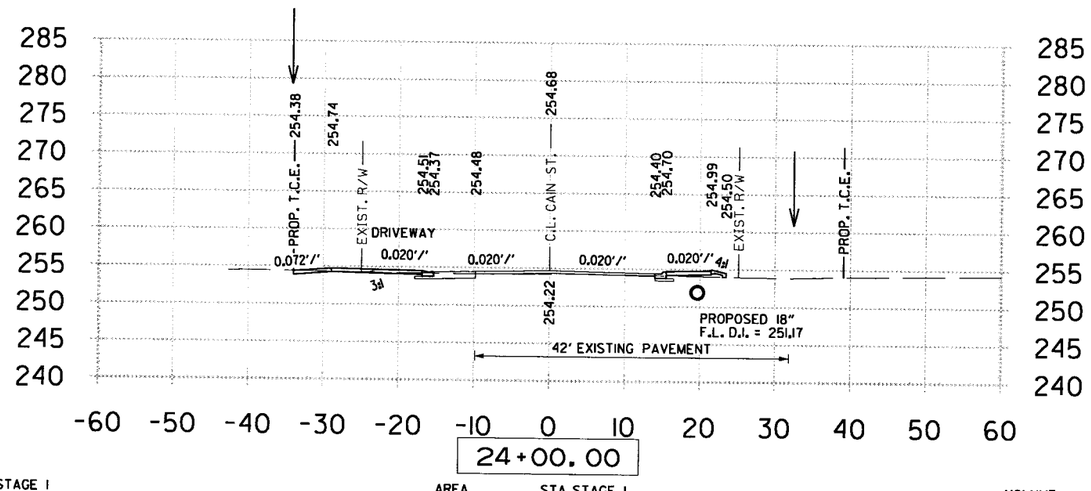
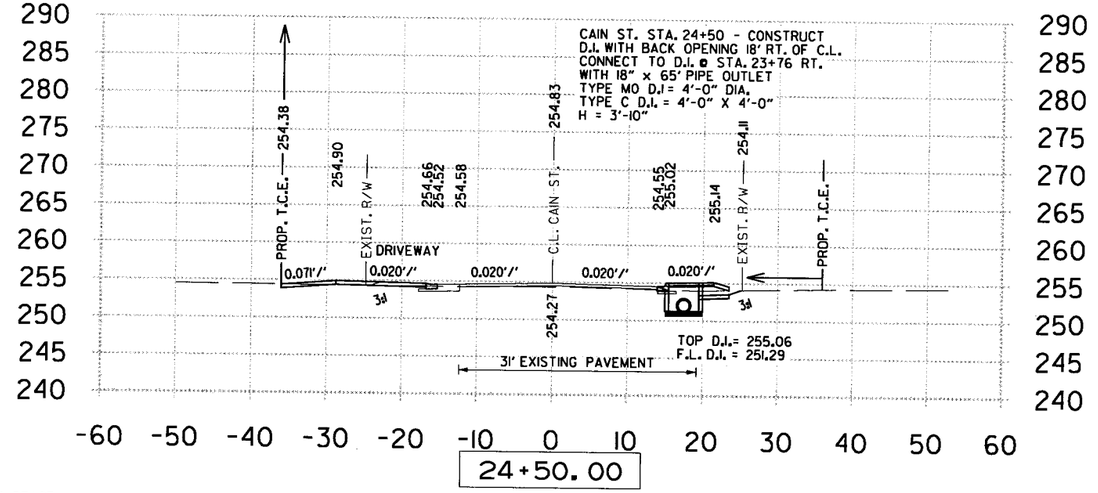
				6	ARK.			
				JOB NO.		100824	334	346

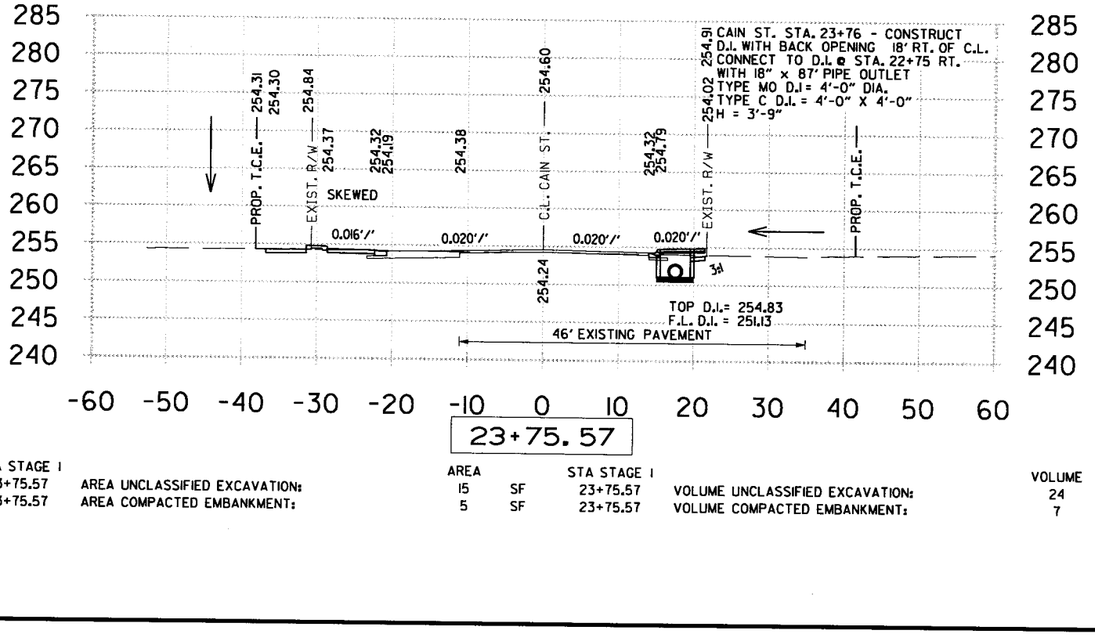
(2) CROSS SECTIONS



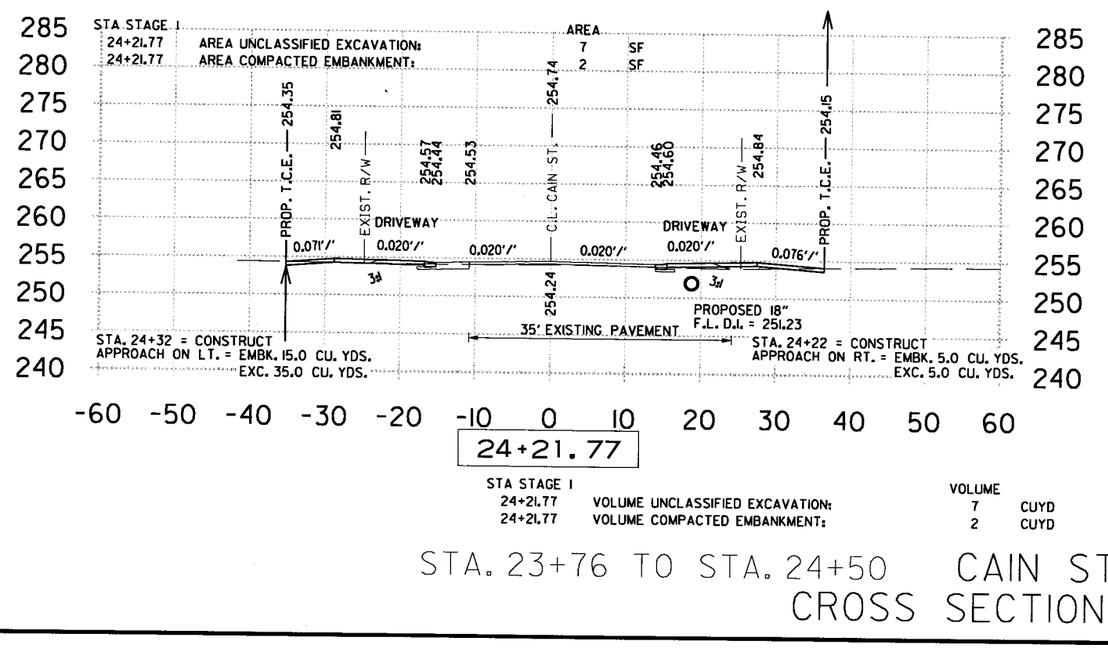
STA STAGE I		AREA		STA STAGE I		VOLUME	
24+00.00	AREA UNCLASSIFIED EXCAVATION:	8	SF	24+00.00	VOLUME UNCLASSIFIED EXCAVATION:	11	CUYD
24+00.00	AREA COMPACTED EMBANKMENT:	2	SF	24+00.00	VOLUME COMPACTED EMBANKMENT:	4	CUYD



STA STAGE I		AREA		STA STAGE I		VOLUME	
24+50.00	AREA UNCLASSIFIED EXCAVATION:	5	SF	24+50.00	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
24+50.00	AREA COMPACTED EMBANKMENT:	7	SF	24+50.00	VOLUME COMPACTED EMBANKMENT:	5	CUYD

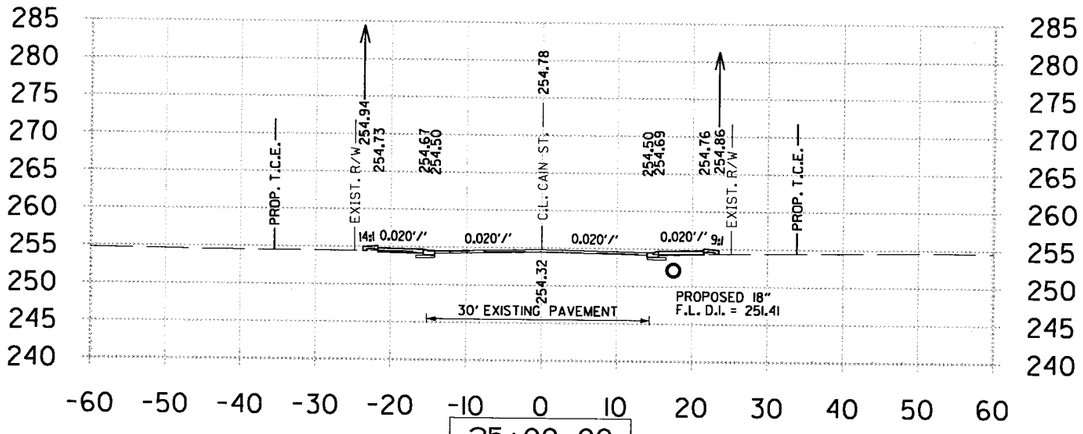


STA STAGE I		AREA		STA STAGE I		VOLUME	
23+75.57	AREA UNCLASSIFIED EXCAVATION:	15	SF	23+75.57	VOLUME UNCLASSIFIED EXCAVATION:	24	CUYD
23+75.57	AREA COMPACTED EMBANKMENT:	5	SF	23+75.57	VOLUME COMPACTED EMBANKMENT:	7	CUYD

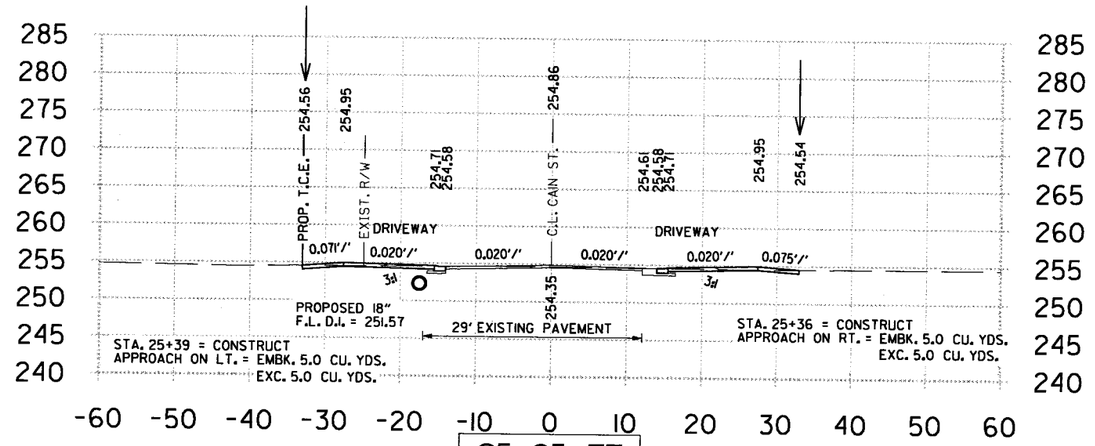


STA STAGE I		VOLUME	
24+21.77	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD
24+21.77	VOLUME COMPACTED EMBANKMENT:	2	CUYD

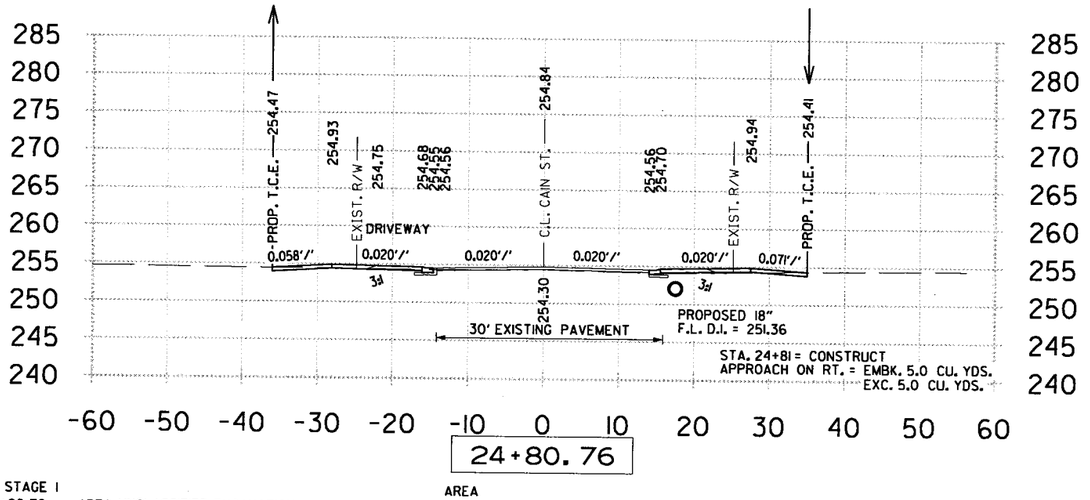
STA. 23+76 TO STA. 24+50 CAIN ST. CROSS SECTIONS



STA STAGE 1		AREA		STA STAGE 1		VOLUME		STA STAGE 1
25+00.00	AREA UNCLASSIFIED EXCAVATION:	5	SF	25+00.00	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD	25+35.77
25+00.00	AREA COMPACTED EMBANKMENT:	1	SF	25+00.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD	25+35.77

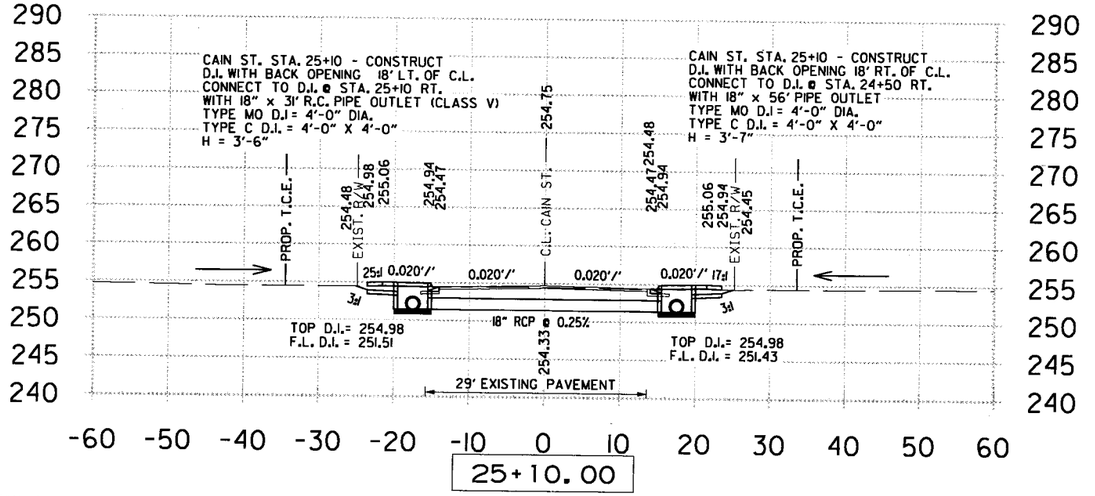


STA STAGE 1		AREA		STA STAGE 1		VOLUME		
25+35.77	AREA UNCLASSIFIED EXCAVATION:	10	SF	25+35.77	VOLUME UNCLASSIFIED EXCAVATION:	7	CUYD	
25+35.77	AREA COMPACTED EMBANKMENT:	0	SF	25+35.77	VOLUME COMPACTED EMBANKMENT:	1	CUYD	



STA STAGE 1		AREA	
24+80.76	AREA UNCLASSIFIED EXCAVATION:	4	SF
24+80.76	AREA COMPACTED EMBANKMENT:	1	SF

STA STAGE 1		VOLUME	
24+80.76	VOLUME UNCLASSIFIED EXCAVATION:	6	CUYD
24+80.76	VOLUME COMPACTED EMBANKMENT:	5	CUYD



STA STAGE 1		AREA		STA STAGE 1		VOLUME	
25+10.00	AREA UNCLASSIFIED EXCAVATION:	4	SF	25+10.00	VOLUME UNCLASSIFIED EXCAVATION:	2	CUYD
25+10.00	AREA COMPACTED EMBANKMENT:	1	SF	25+10.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD

STA. 24+81 TO STA. 25+36 CAIN ST. CROSS SECTIONS

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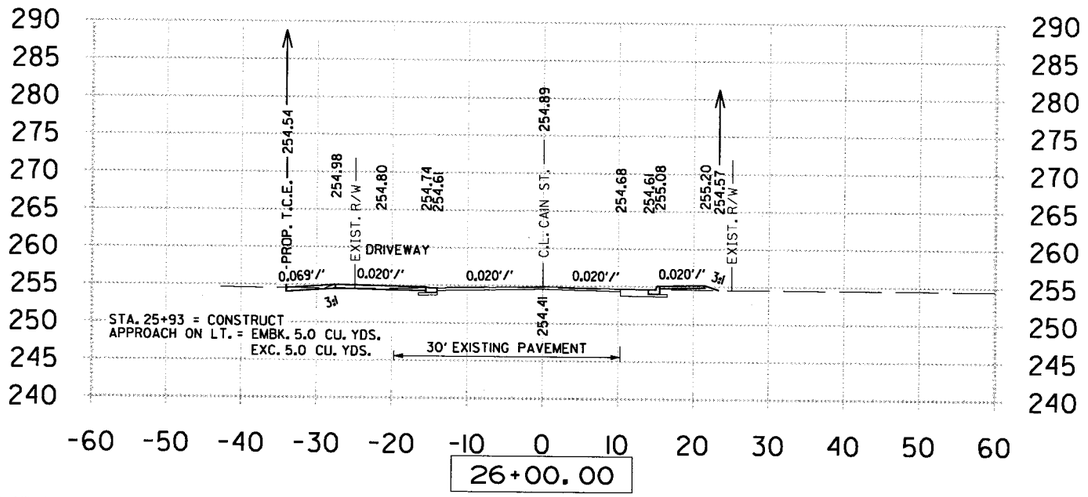
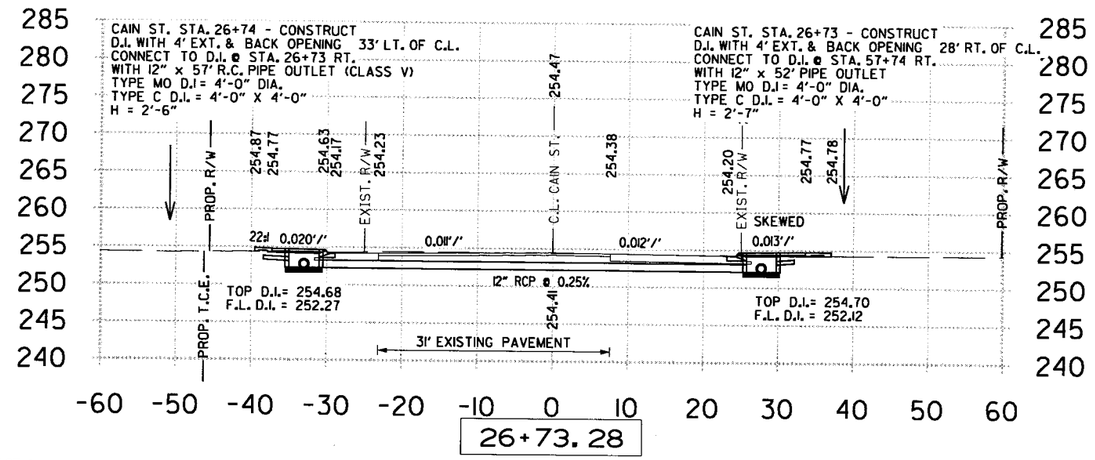
				6	ARK.			
				JOB NO.		100824	336	346

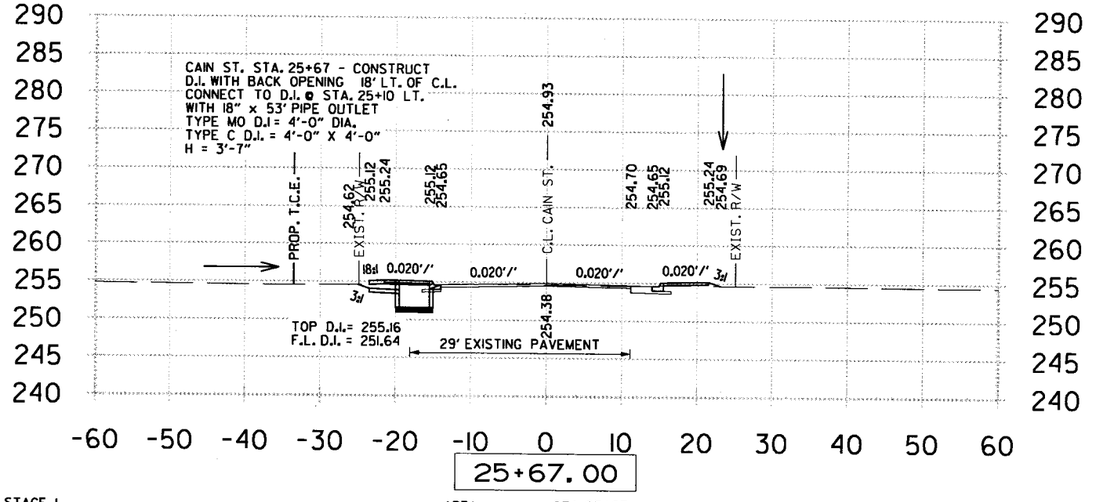
(2) CROSS SECTIONS



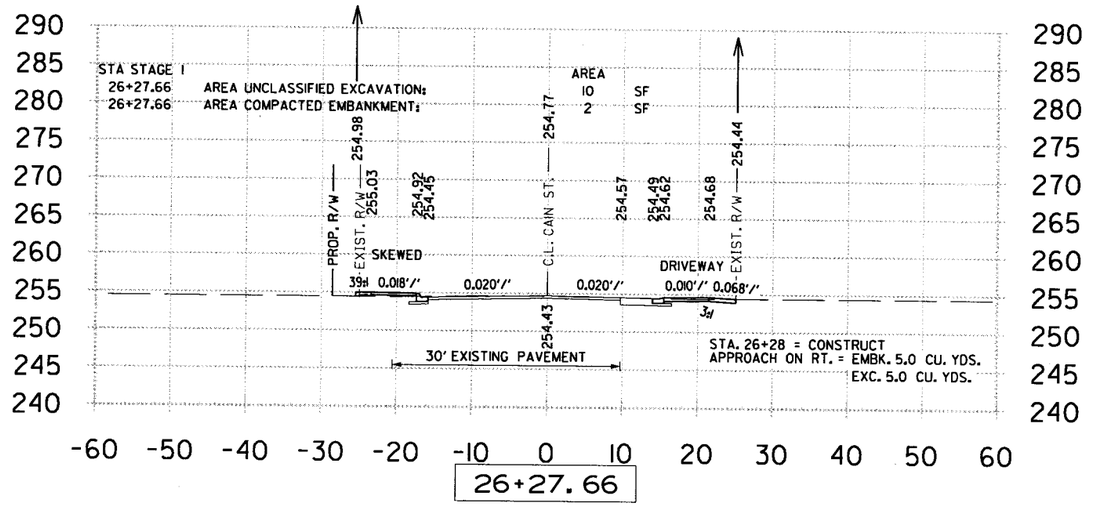
STA STAGE I		AREA		STA STAGE I		VOLUME		STA STAGE I
26+00.00	AREA UNCLASSIFIED EXCAVATION:	10	SF	26+00.00	VOLUME UNCLASSIFIED EXCAVATION:	11	CUYD	26+73.28
26+00.00	AREA COMPACTED EMBANKMENT:	2	SF	26+00.00	VOLUME COMPACTED EMBANKMENT:	4	CUYD	26+73.28



STA STAGE I		AREA		STA STAGE I		VOLUME		STA STAGE I
26+73.28	AREA UNCLASSIFIED EXCAVATION:	26	SF	26+73.28	VOLUME UNCLASSIFIED EXCAVATION:	31	CUYD	
26+73.28	AREA COMPACTED EMBANKMENT:	2	SF	26+73.28	VOLUME COMPACTED EMBANKMENT:	4	CUYD	



STA STAGE I		AREA		STA STAGE I		VOLUME	
25+67.00	AREA UNCLASSIFIED EXCAVATION:	7	SF	25+67.00	VOLUME UNCLASSIFIED EXCAVATION:	10	CUYD
25+67.00	AREA COMPACTED EMBANKMENT:	3	SF	25+67.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD



STA STAGE I		VOLUME	
26+27.66	VOLUME UNCLASSIFIED EXCAVATION:	11	CUYD
26+27.66	VOLUME COMPACTED EMBANKMENT:	3	CUYD

STA. 25+67 TO STA. 26+73 CAIN ST. CROSS SECTIONS

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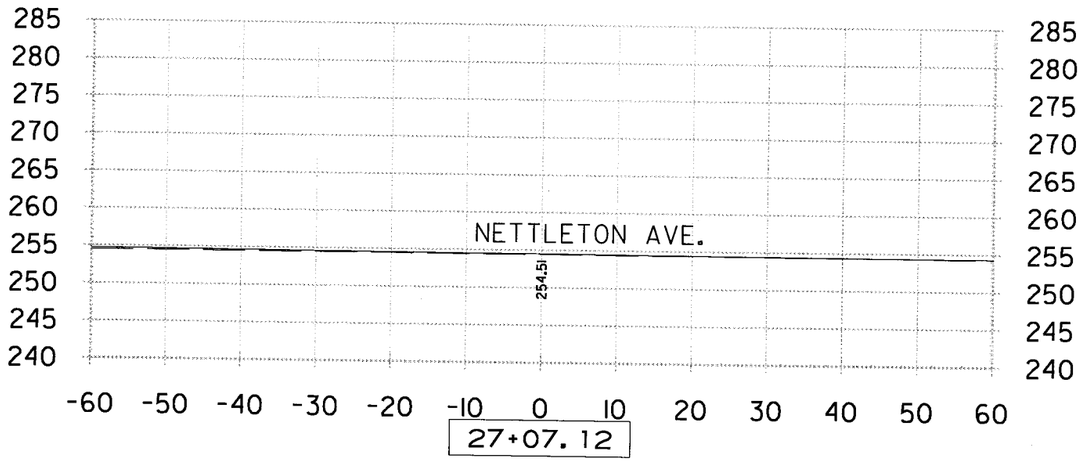
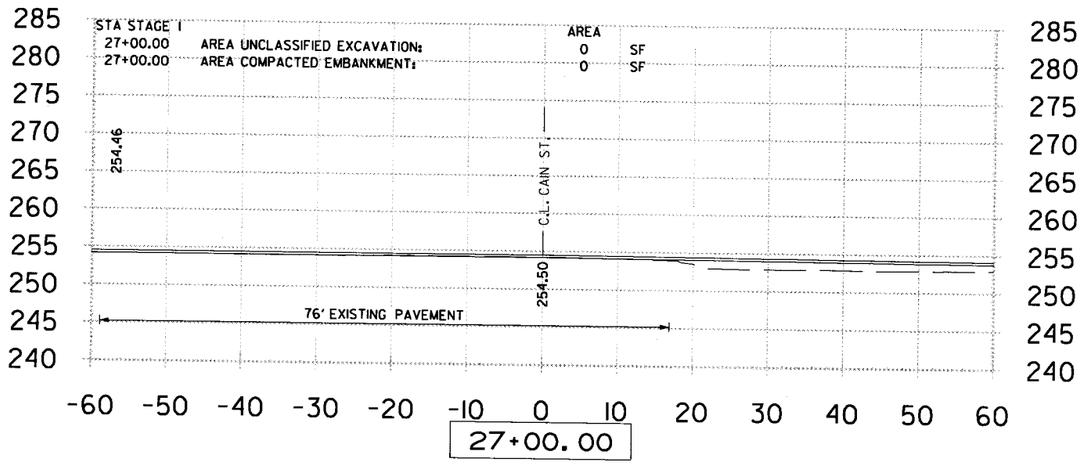
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	337	346

(2) CROSS SECTIONS





STA STAGE I		VOLUME	
27+00.00	VOLUME UNCLASSIFIED EXCAVATION:	13	CUYD
27+00.00	VOLUME COMPACTED EMBANKMENT:	1	CUYD

STA. 27+00 TO STA. 27+07 CAIN ST.
CROSS SECTIONS

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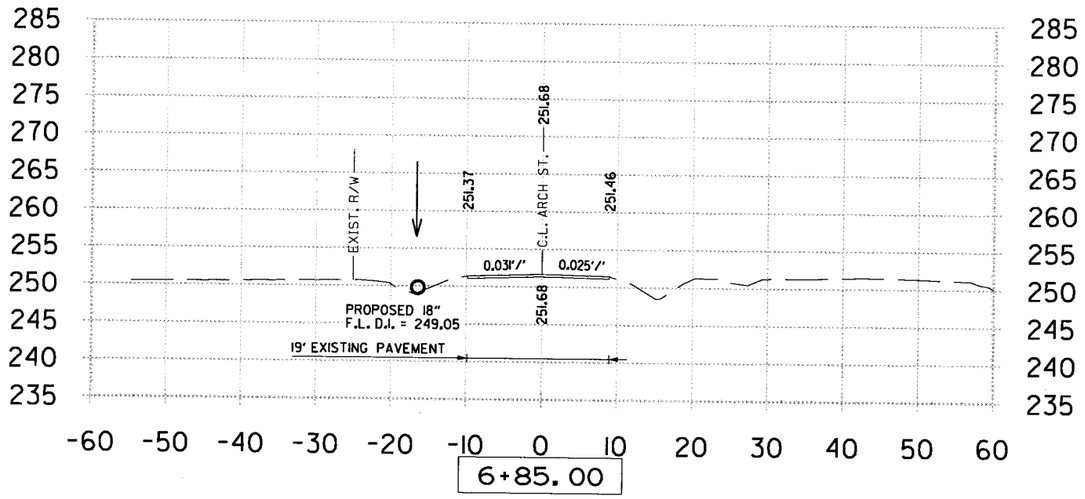
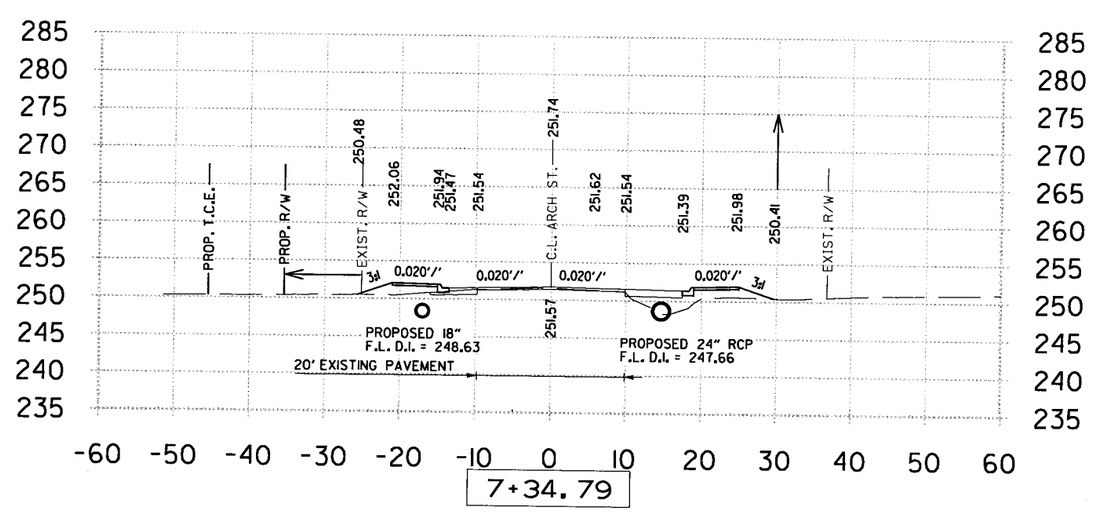
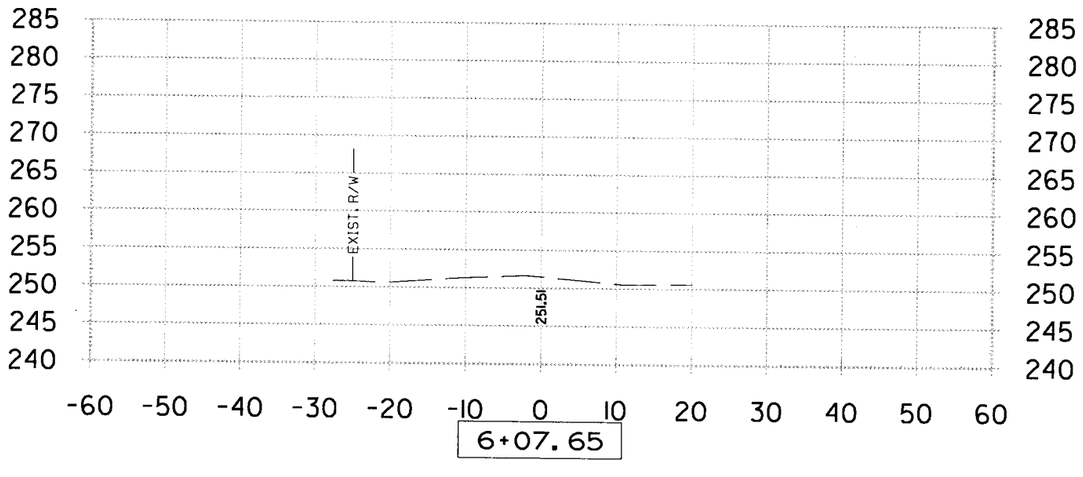
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	338	346

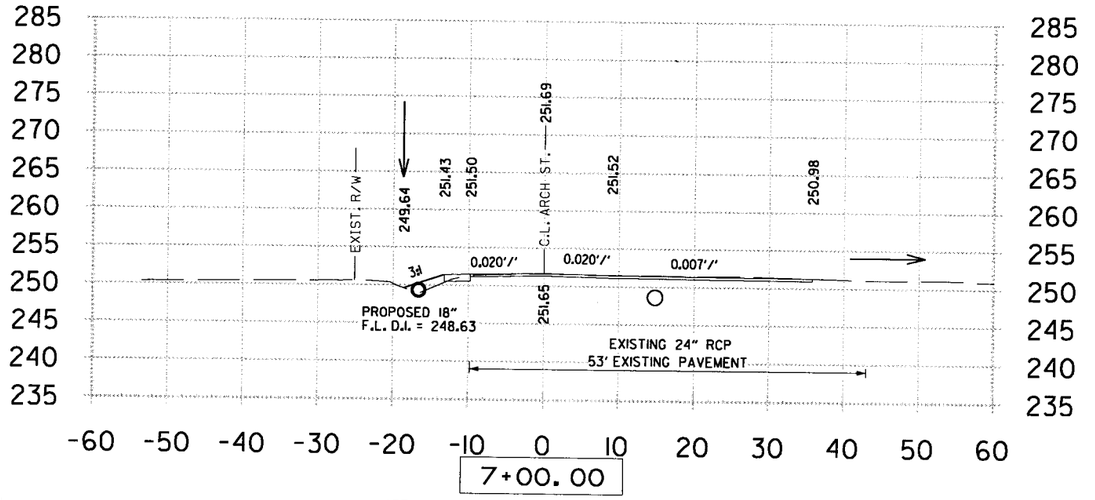
(2) CROSS SECTIONS





STA STAGE 4		AREA		STA STAGE 4		VOLUME	
7+34.79	AREA UNCLASSIFIED EXCAVATION:	4	SF	7+34.79	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
7+34.79	AREA COMPACTED EMBANKMENT:	34	SF	7+34.79	VOLUME COMPACTED EMBANKMENT:	26	CUYD





STA STAGE 4		AREA		STA STAGE 4		VOLUME	
7+00.00	AREA UNCLASSIFIED EXCAVATION:	2	SF	7+00.00	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
7+00.00	AREA COMPACTED EMBANKMENT:	6	SF	7+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD

STA. 6+08 TO STA. 7+35 ARCH ST. CROSS SECTIONS

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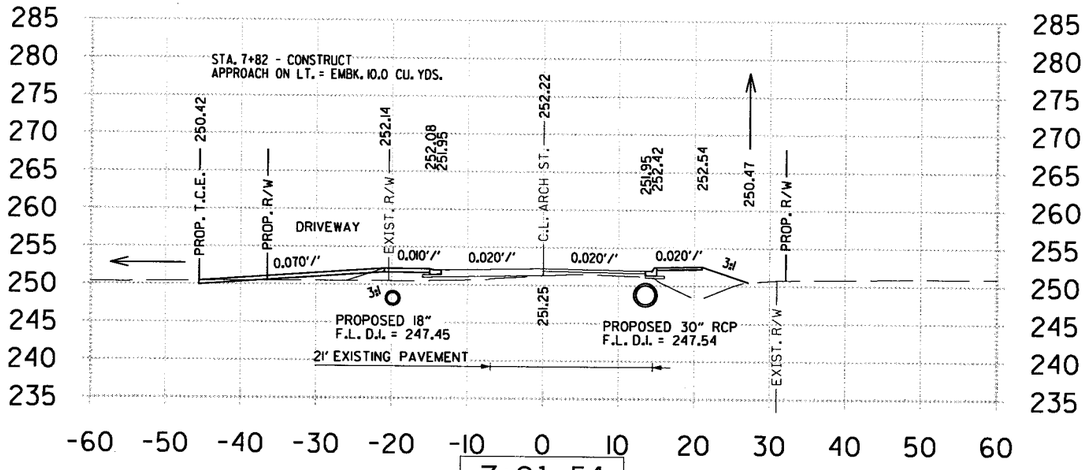
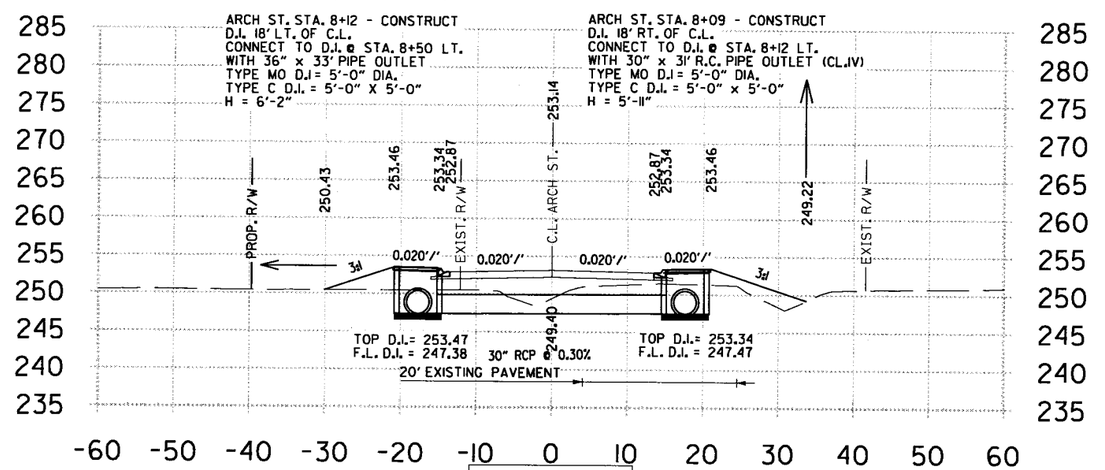
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	339	346

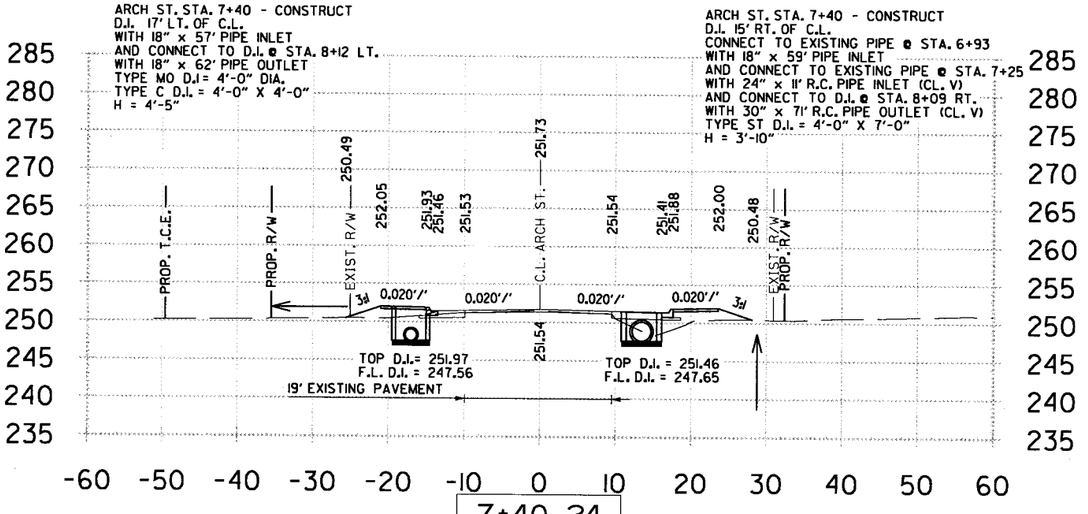
(2) CROSS SECTIONS



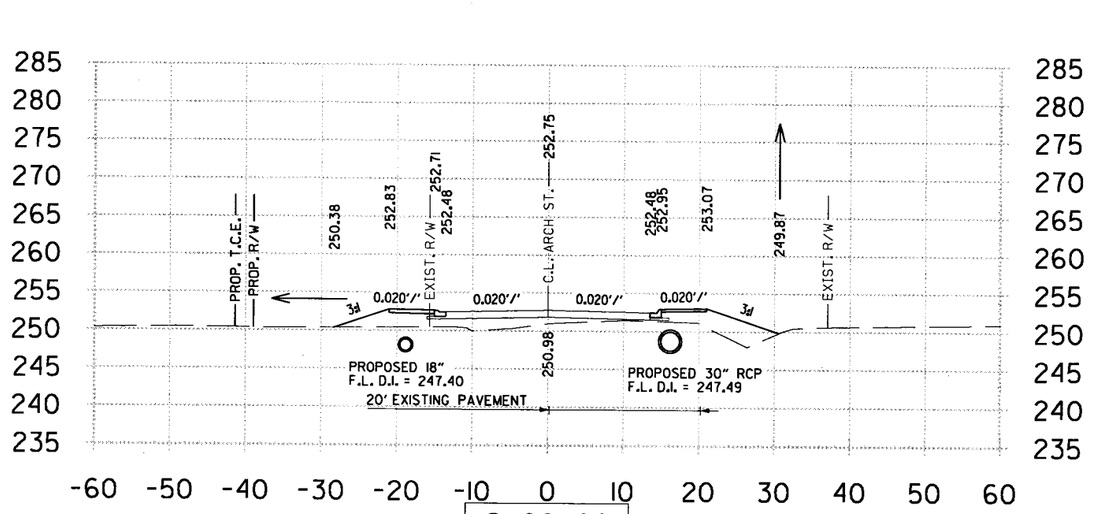
STA STAGE 4		AREA		STA STAGE 4		VOLUME	
7+81.54	AREA UNCLASSIFIED EXCAVATION:	1	SF	7+81.54	VOLUME UNCLASSIFIED EXCAVATION:	4	CUYD
7+81.54	AREA COMPACTED EMBANKMENT:	45	SF	7+81.54	VOLUME COMPACTED EMBANKMENT:	60	CUYD



STA STAGE 4		AREA		STA STAGE 4		VOLUME	
8+10.58	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+10.58	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
8+10.58	AREA COMPACTED EMBANKMENT:	109	SF	8+10.58	VOLUME COMPACTED EMBANKMENT:	37	CUYD



STA STAGE 4		AREA		STA STAGE 4		VOLUME	
7+40.24	AREA UNCLASSIFIED EXCAVATION:	4	SF	7+40.24	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
7+40.24	AREA COMPACTED EMBANKMENT:	33	SF	7+40.24	VOLUME COMPACTED EMBANKMENT:	7	CUYD

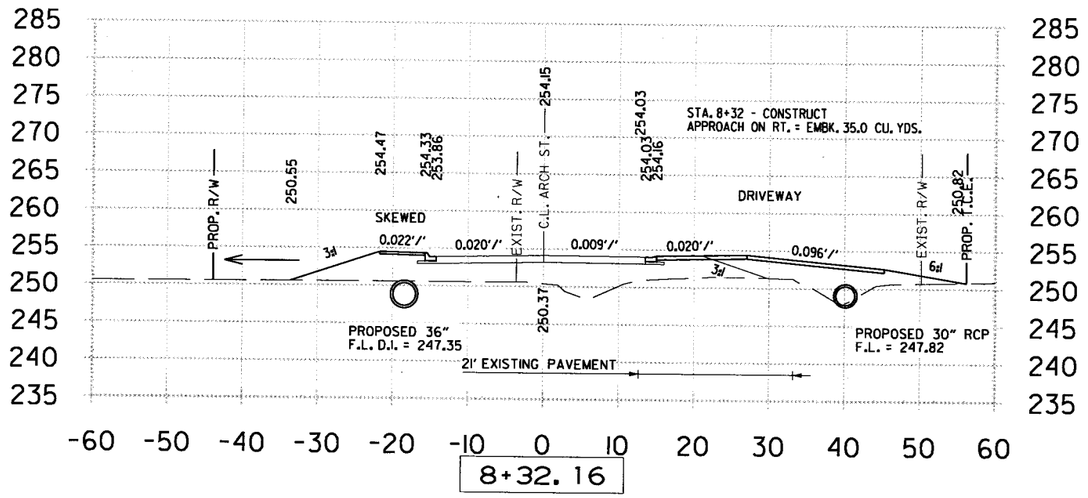


STA STAGE 4		AREA		STA STAGE 4		VOLUME	
8+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+00.00	VOLUME UNCLASSIFIED EXCAVATION:	1	CUYD
8+00.00	AREA COMPACTED EMBANKMENT:	76	SF	8+00.00	VOLUME COMPACTED EMBANKMENT:	42	CUYD

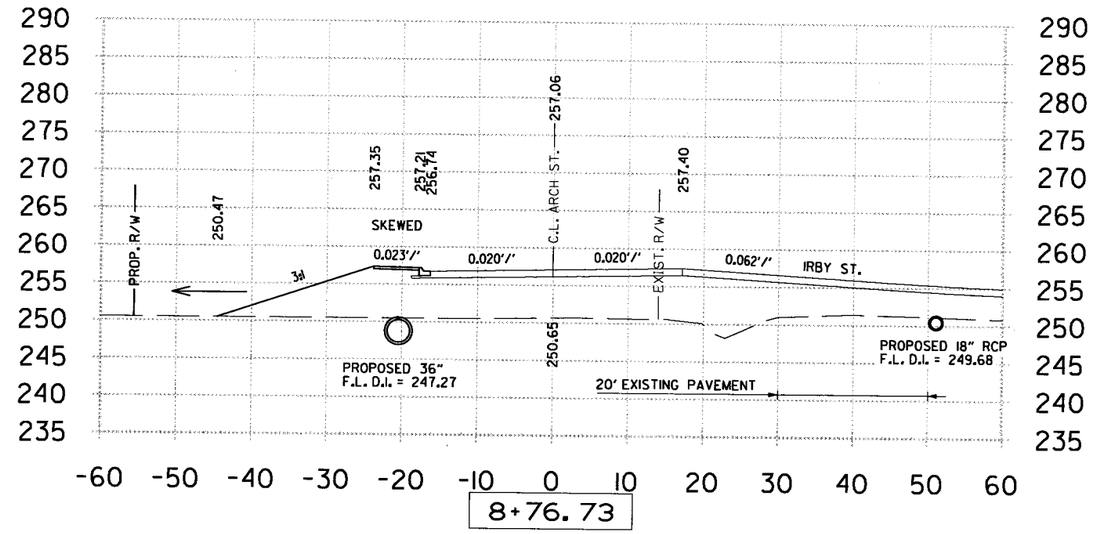
STA. 7+40 TO STA. 8+11 ARCH ST.
CROSS SECTIONS

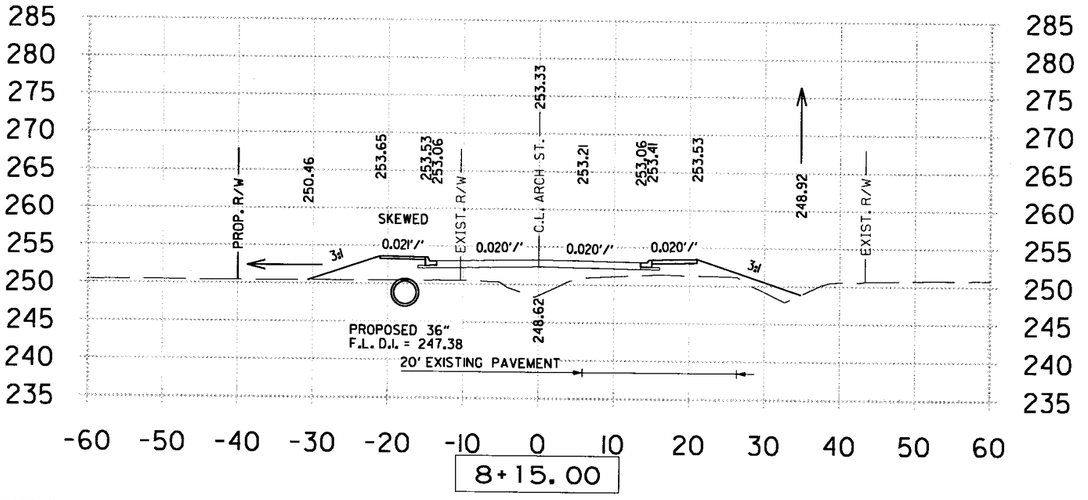
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	340	346

(2) CROSS SECTIONS

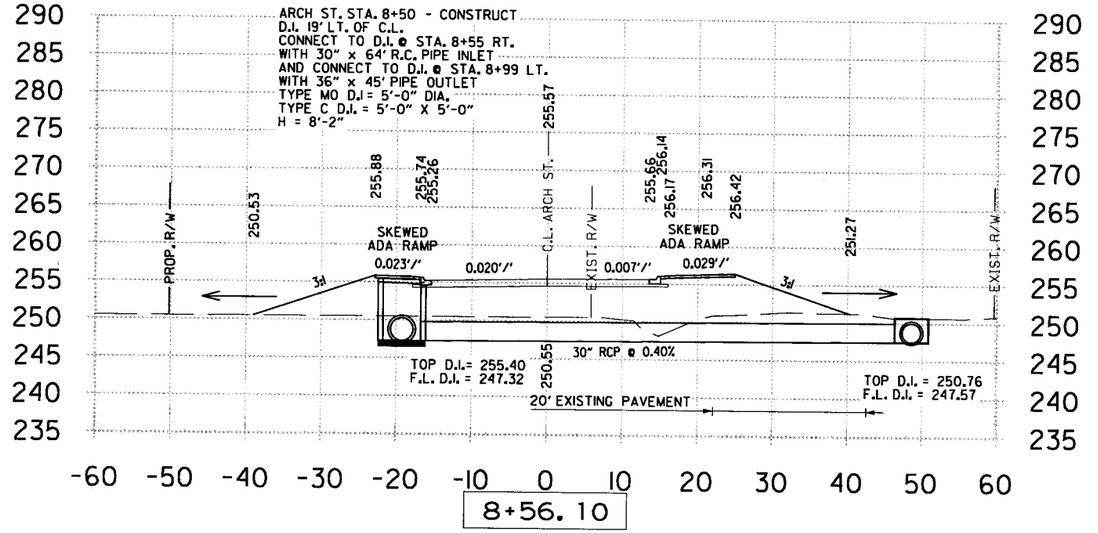


STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4		AREA		STA STAGE 4		VOLUME	
8+32.16	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+32.16	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD	8+76.73	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+76.73	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
8+32.16	AREA COMPACTED EMBANKMENT:	161	SF	8+32.16	VOLUME COMPACTED EMBANKMENT:	88	CUYD	8+76.73	AREA COMPACTED EMBANKMENT:	418	SF	8+76.73	VOLUME COMPACTED EMBANKMENT:	277	CUYD





STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4		AREA		STA STAGE 4		VOLUME	
8+15.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+15.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD	8+56.10	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+56.10	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
8+15.00	AREA COMPACTED EMBANKMENT:	115	SF	8+15.00	VOLUME COMPACTED EMBANKMENT:	19	CUYD	8+56.10	AREA COMPACTED EMBANKMENT:	305	SF	8+56.10	VOLUME COMPACTED EMBANKMENT:	207	CUYD



STA. 8+15 TO STA. 8+77 ARCH ST.
CROSS SECTIONS

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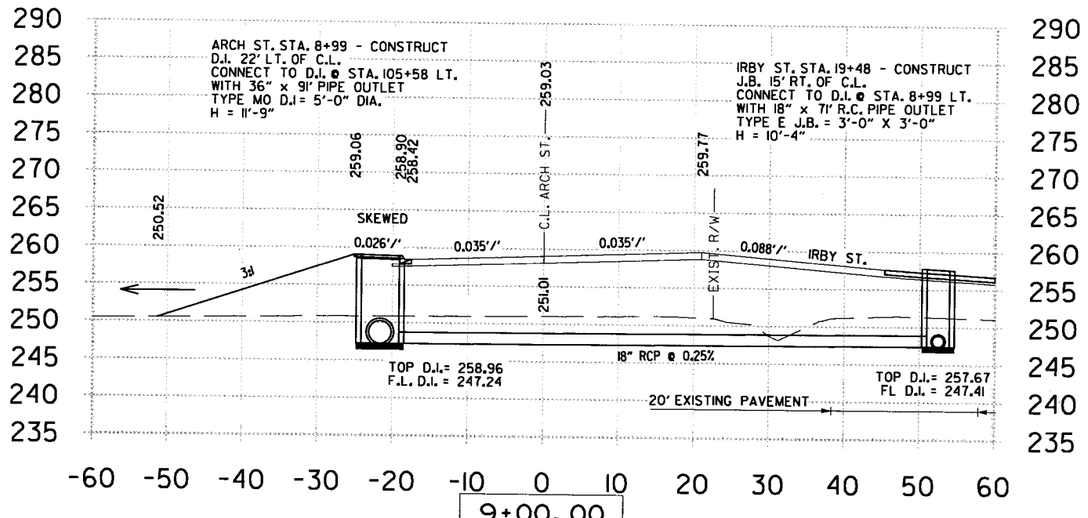
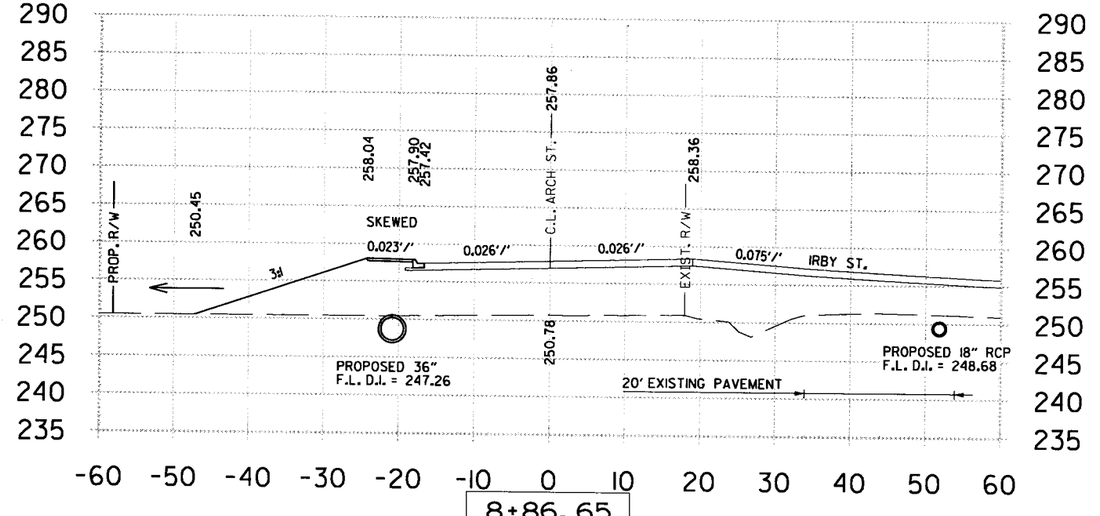
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	341	346
				(2) CROSS SECTIONS				



9+00.00

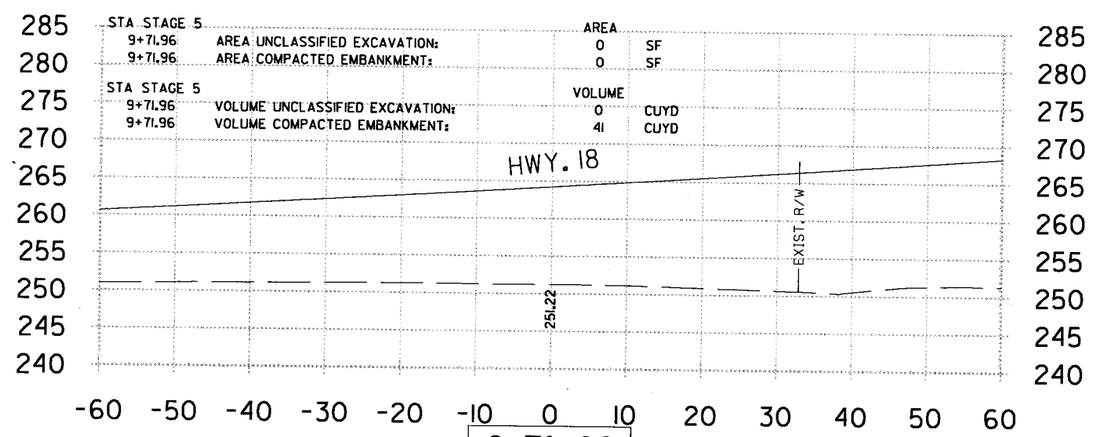
STA STAGE 4		AREA		STA STAGE 4		VOLUME	
9+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	9+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
9+00.00	AREA COMPACTED EMBANKMENT:	573	SF	9+00.00	VOLUME COMPACTED EMBANKMENT:	262	CUYD



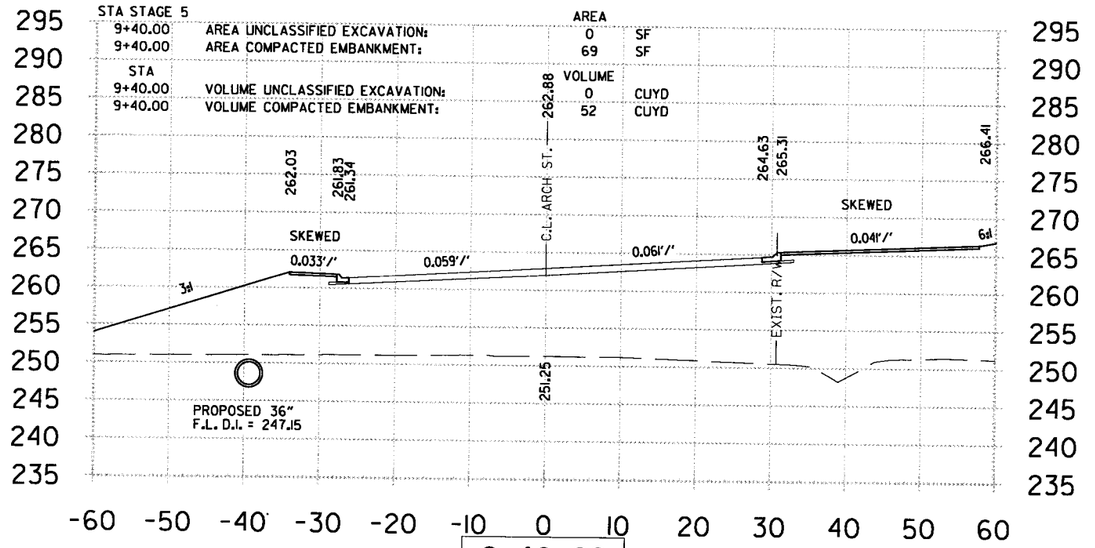
8+86.65

STA STAGE 4		AREA		STA STAGE 4		VOLUME	
8+86.65	AREA UNCLASSIFIED EXCAVATION:	0	SF	8+86.65	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
8+86.65	AREA COMPACTED EMBANKMENT:	483	SF	8+86.65	VOLUME COMPACTED EMBANKMENT:	166	CUYD

STA STAGE 4		AREA		STA STAGE 4		VOLUME	
9+71.96	AREA UNCLASSIFIED EXCAVATION:	0	SF	9+71.96	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
9+71.96	AREA COMPACTED EMBANKMENT:	0	SF	9+71.96	VOLUME COMPACTED EMBANKMENT:	505	CUYD



9+71.96



9+40.00

STA STAGE 4		AREA		STA STAGE 4		VOLUME	
9+40.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	9+40.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
9+40.00	AREA COMPACTED EMBANKMENT:	853	SF	9+40.00	VOLUME COMPACTED EMBANKMENT:	1057	CUYD

STA. 8+87 TO STA. 9+72 ARCH ST. CROSS SECTIONS

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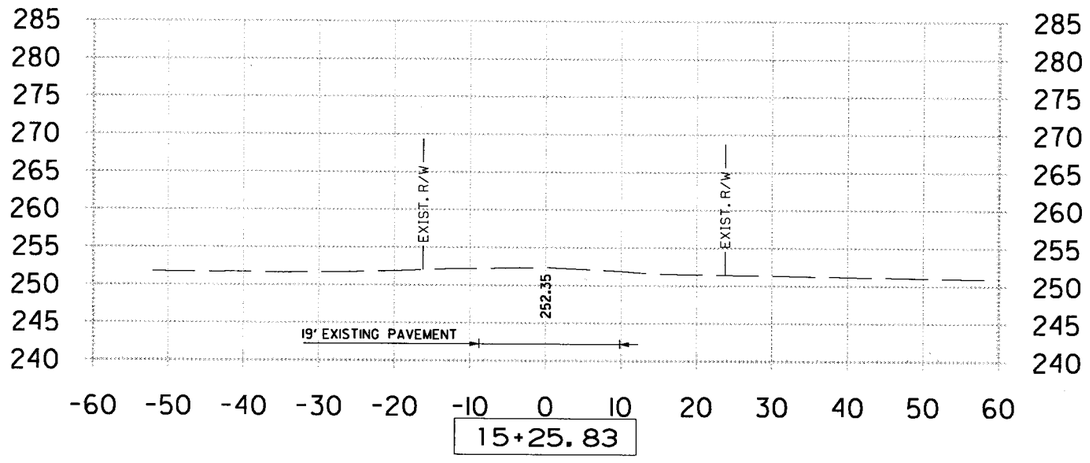
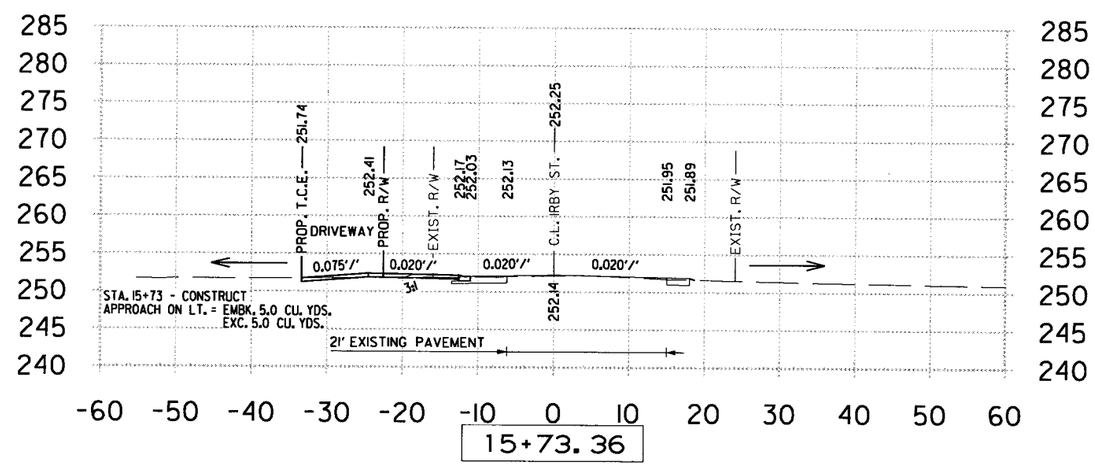
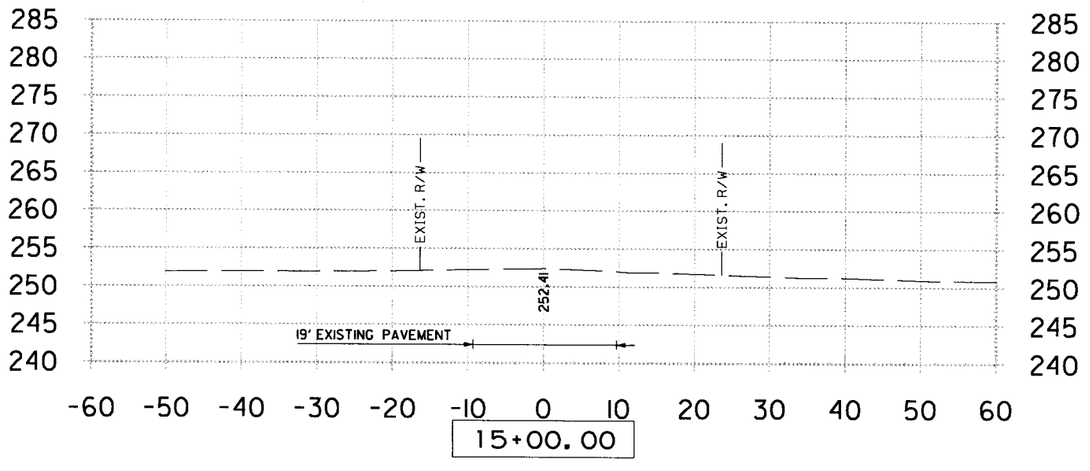
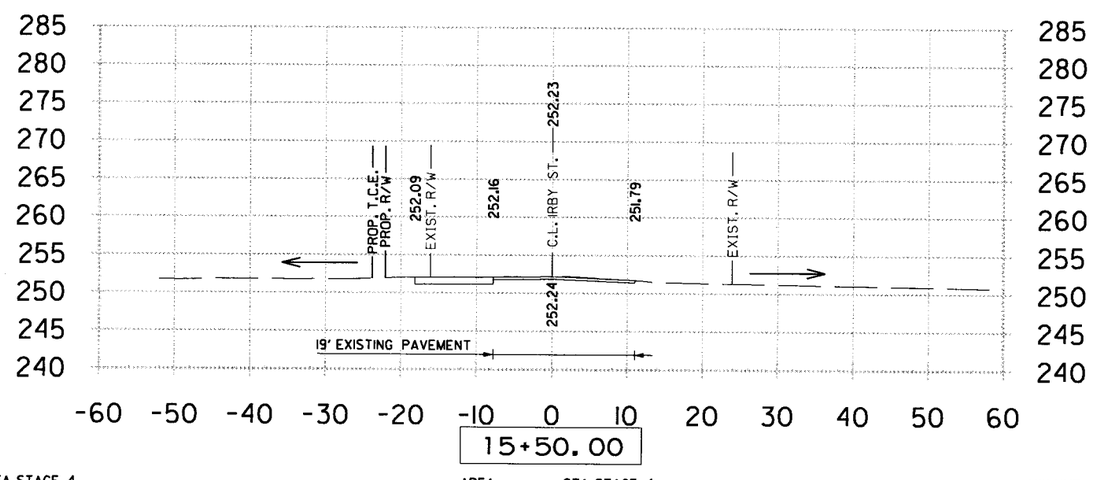
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	342	346
				② CROSS SECTIONS				





STA STAGE 4		AREA		STA STAGE 4		VOLUME	
15+73.36	AREA UNCLASSIFIED EXCAVATION:	9	SF	15+73.36	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD
15+73.36	AREA COMPACTED EMBANKMENT:	1	SF	15+73.36	VOLUME COMPACTED EMBANKMENT:	1	CUYD





STA STAGE 4		AREA		STA STAGE 4		VOLUME	
15+50.00	AREA UNCLASSIFIED EXCAVATION:	10	SF	15+50.00	VOLUME UNCLASSIFIED EXCAVATION:	5	CUYD
15+50.00	AREA COMPACTED EMBANKMENT:	0	SF	15+50.00	VOLUME COMPACTED EMBANKMENT:	0	CUYD

STA. 15+00 TO STA. 15+73 IRBY ST. CROSS SECTIONS

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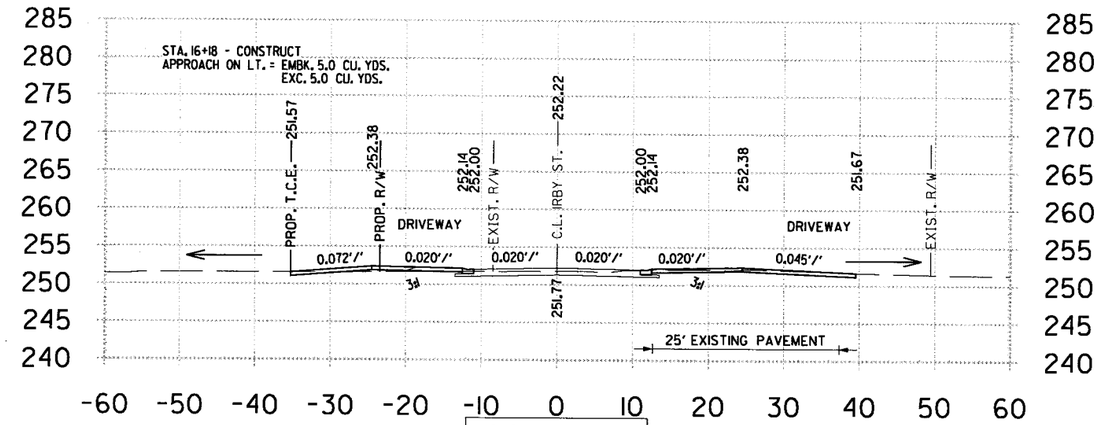
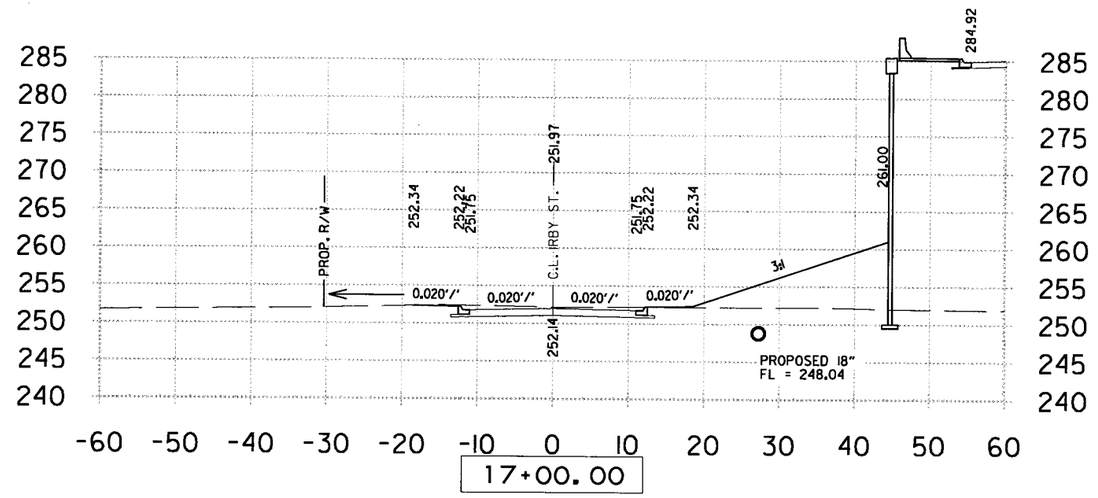
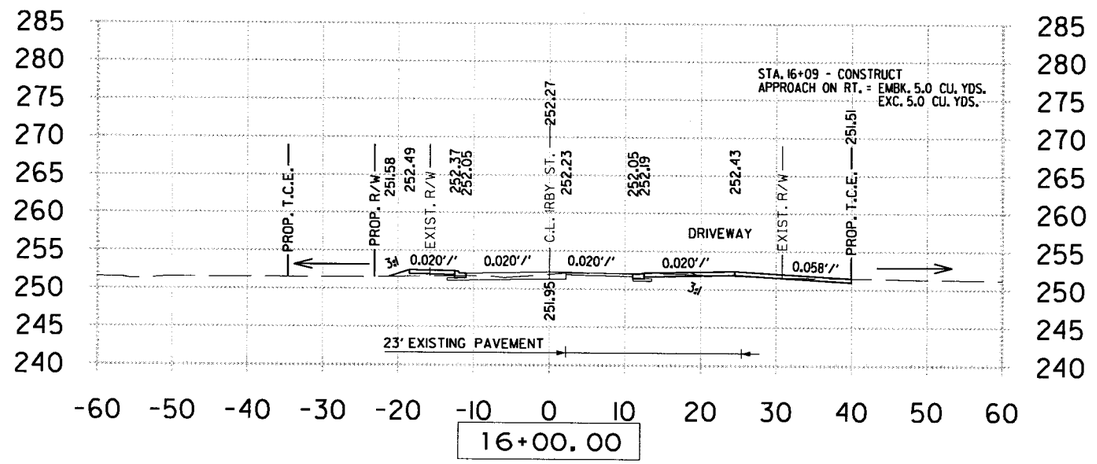
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	343	346

(2) CROSS SECTIONS

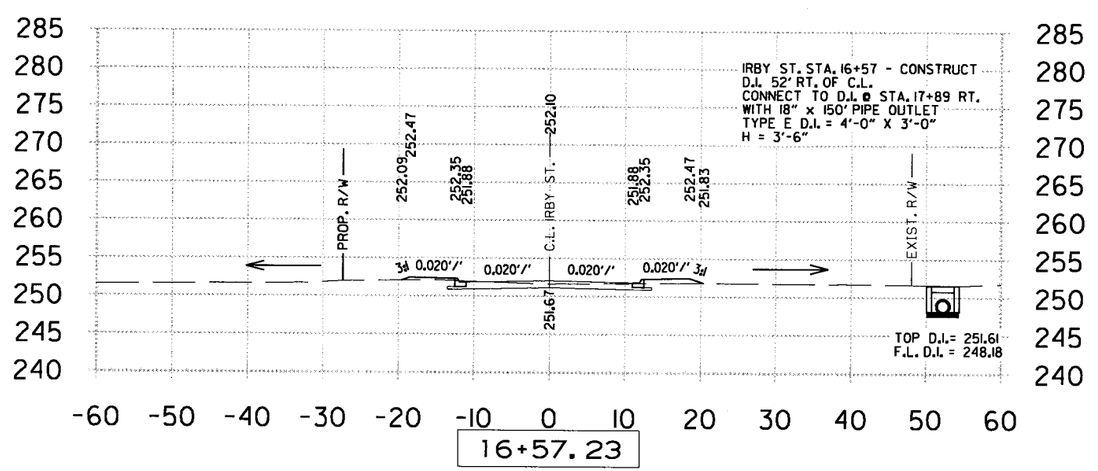


STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4		AREA		STA STAGE 4		VOLUME	
16+17.17	AREA UNCLASSIFIED EXCAVATION:	19	SF	16+17.17	VOLUME UNCLASSIFIED EXCAVATION:	10	CUYD	17+00.00	AREA UNCLASSIFIED EXCAVATION:	34	SF	17+00.00	VOLUME UNCLASSIFIED EXCAVATION:	42	CUYD
16+17.17	AREA COMPACTED EMBANKMENT:	1	SF	16+17.17	VOLUME COMPACTED EMBANKMENT:	1	CUYD	17+00.00	AREA COMPACTED EMBANKMENT:	118	SF	17+00.00	VOLUME COMPACTED EMBANKMENT:	100	CUYD





STA STAGE 4		AREA	
16+00.00	AREA UNCLASSIFIED EXCAVATION:	12	SF
16+00.00	AREA COMPACTED EMBANKMENT:	3	SF
STA STAGE 4		VOLUME	
16+00.00	VOLUME UNCLASSIFIED EXCAVATION:	11	CUYD
16+00.00	VOLUME COMPACTED EMBANKMENT:	2	CUYD



STA STAGE 4		AREA		STA STAGE 4		VOLUME	
16+57.23	AREA UNCLASSIFIED EXCAVATION:	19	SF	16+57.23	VOLUME UNCLASSIFIED EXCAVATION:	29	CUYD
16+57.23	AREA COMPACTED EMBANKMENT:	7	SF	16+57.23	VOLUME COMPACTED EMBANKMENT:	6	CUYD

STA. 16+00 TO STA. 17+00 IRBY ST. CROSS SECTIONS

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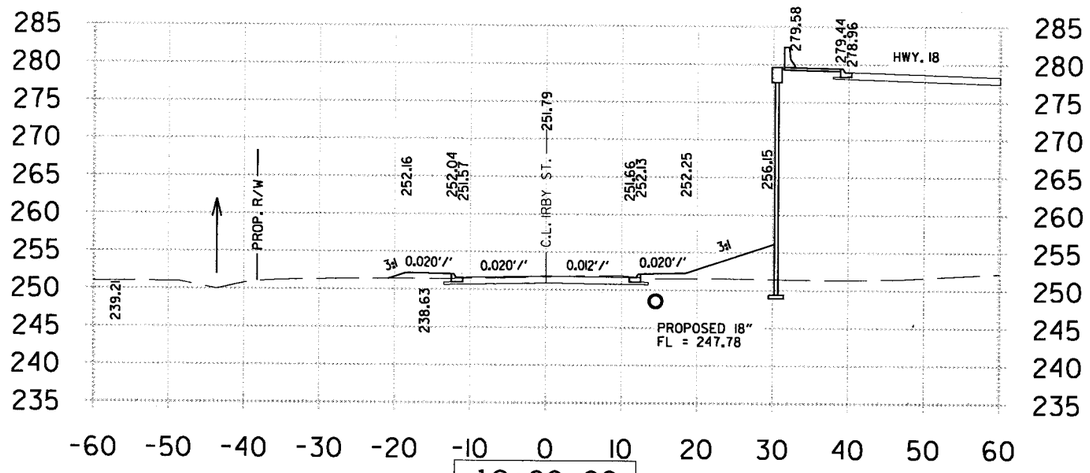
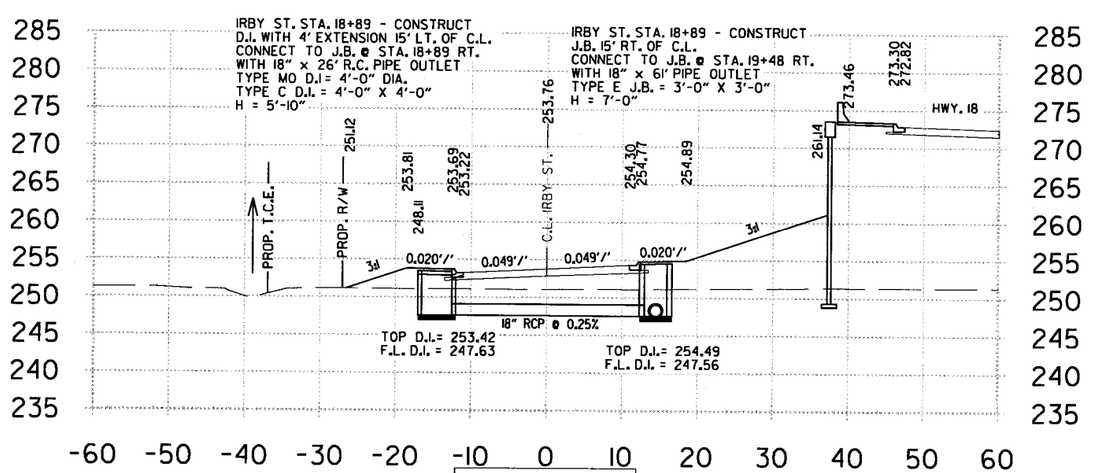
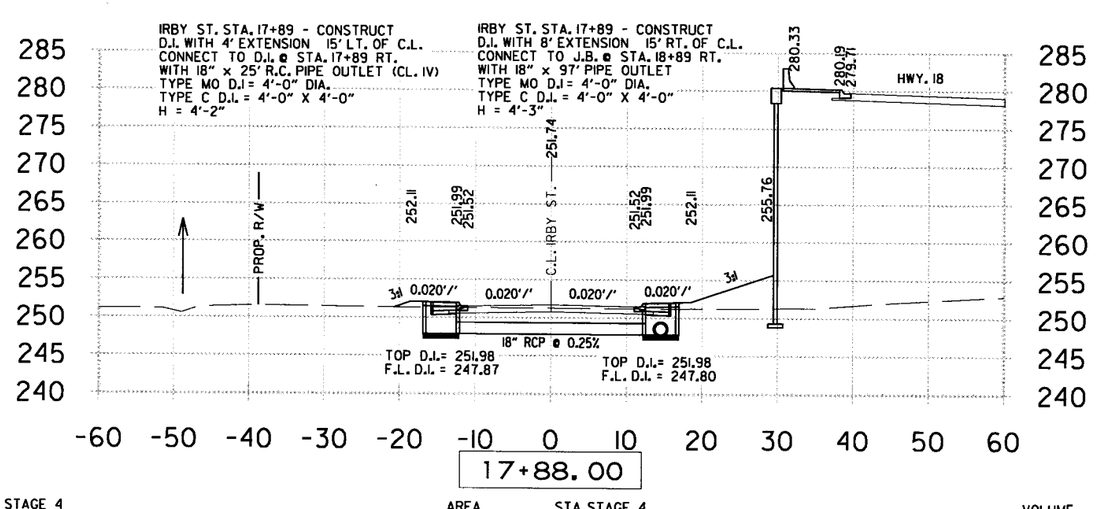
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100824	344	346
				(2) CROSS SECTIONS				

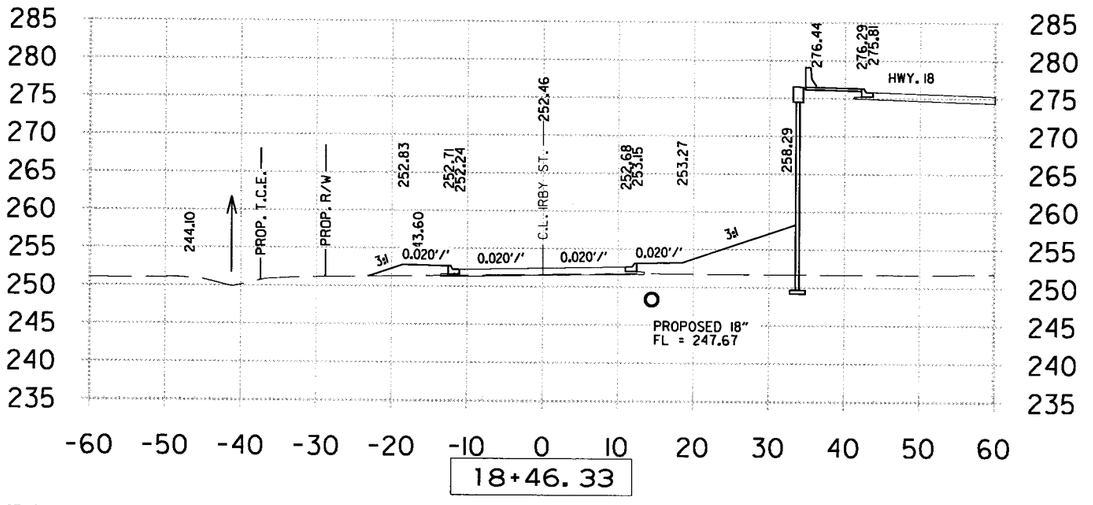


STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4		VOLUME		
18+00.00	AREA UNCLASSIFIED EXCAVATION:	24	SF	18+00.00	VOLUME UNCLASSIFIED EXCAVATION:	9	CUYD	18+88.50	AREA UNCLASSIFIED EXCAVATION:	0	SF	VOLUME UNCLASSIFIED EXCAVATION: 3 CUYD
18+00.00	AREA COMPACTED EMBANKMENT:	41	SF	18+00.00	VOLUME COMPACTED EMBANKMENT:	18	CUYD	18+88.50	AREA COMPACTED EMBANKMENT:	219	SF	18+88.50 VOLUME COMPACTED EMBANKMENT: 235 CUYD



STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4		VOLUME		
17+88.00	AREA UNCLASSIFIED EXCAVATION:	16	SF	17+88.00	VOLUME UNCLASSIFIED EXCAVATION:	82	CUYD	18+46.33	AREA UNCLASSIFIED EXCAVATION:	3	SF	VOLUME UNCLASSIFIED EXCAVATION: 24 CUYD
17+88.00	AREA COMPACTED EMBANKMENT:	39	SF	17+88.00	VOLUME COMPACTED EMBANKMENT:	256	CUYD	18+46.33	AREA COMPACTED EMBANKMENT:	81	SF	18+46.33 VOLUME COMPACTED EMBANKMENT: 105 CUYD

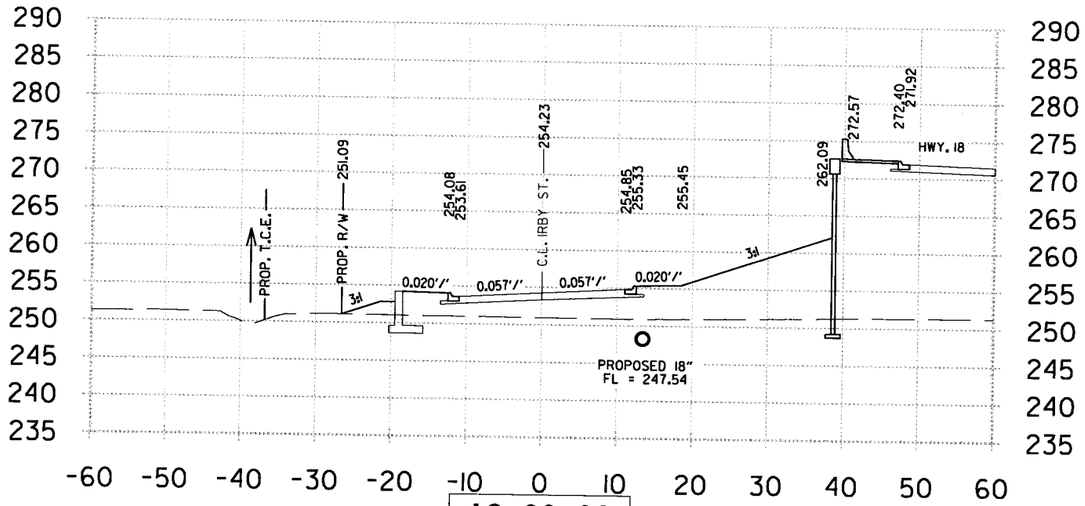




STA. 17+88 TO STA. 18+89 IRBY ST.
CROSS SECTIONS

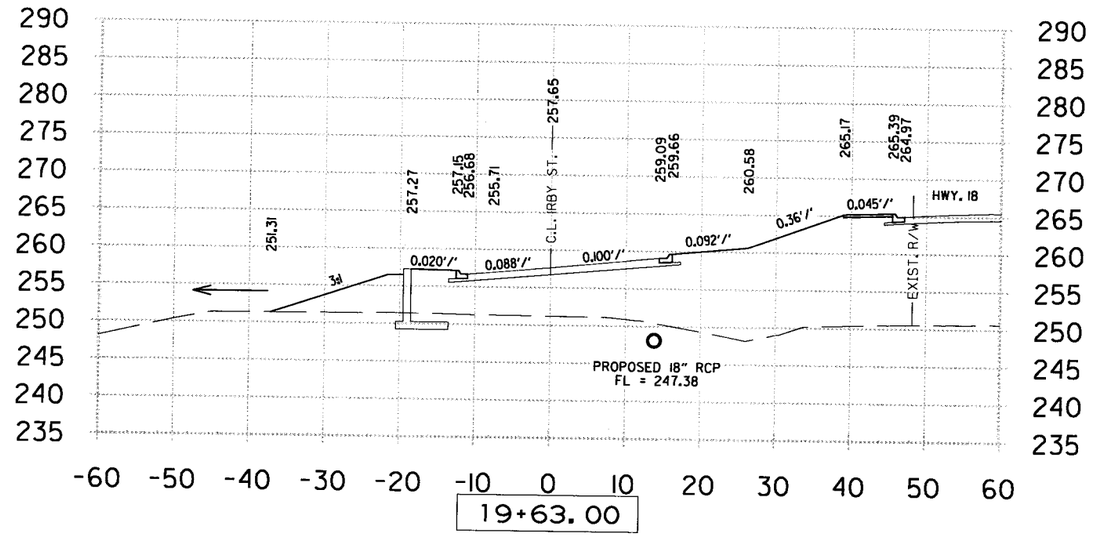
\\bridgeformer.internal\bashores\Projects\14408\0\DGN\Reference\14408_XS.dgn
mblnkley
5/29/2018 4:09:56 PM

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.		100824	345	346
				②	CROSS SECTIONS			



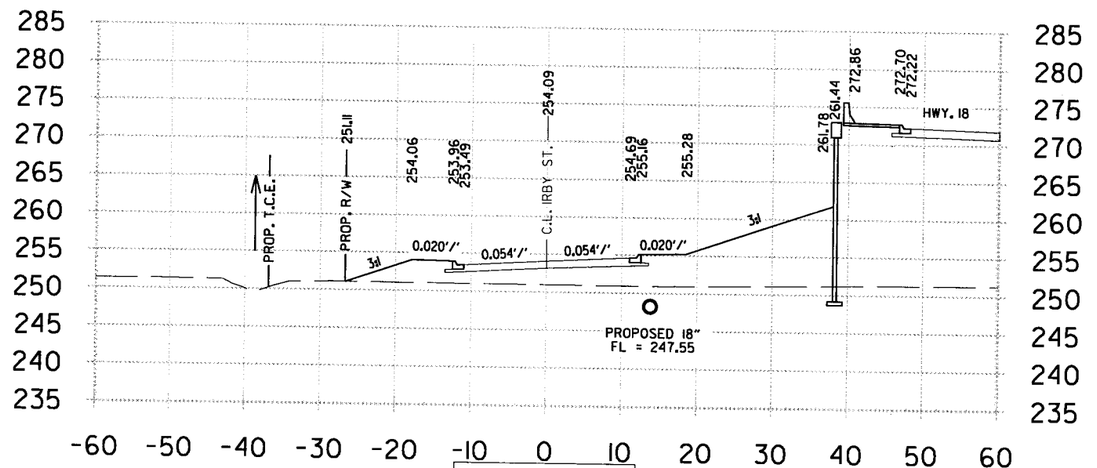
19+00.00

STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4
19+00.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	19+00.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD	19+63.00
19+00.00	AREA COMPACTED EMBANKMENT:	230	SF	19+00.00	VOLUME COMPACTED EMBANKMENT:	31	CUYD	19+63.00



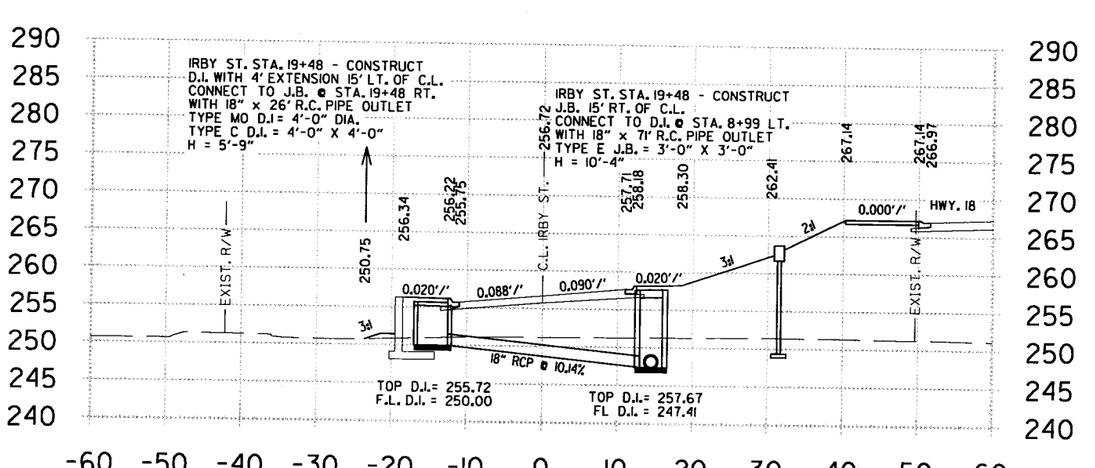
19+63.00

STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4
19+63.00	AREA UNCLASSIFIED EXCAVATION:	0	SF	19+63.00	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD	
19+63.00	AREA COMPACTED EMBANKMENT:	231	SF	19+63.00	VOLUME COMPACTED EMBANKMENT:	126	CUYD	



18+96.59

STA STAGE 4		AREA		STA STAGE 4		VOLUME		STA STAGE 4
18+96.59	AREA UNCLASSIFIED EXCAVATION:	0	SF	18+96.59	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD	19+48.21
18+96.59	AREA COMPACTED EMBANKMENT:	252	SF	18+96.59	VOLUME COMPACTED EMBANKMENT:	71	CUYD	19+48.21



19+48.21

STA STAGE 4		AREA		STA STAGE 4		VOLUME	
19+48.21	AREA UNCLASSIFIED EXCAVATION:	0	SF	19+48.21	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
19+48.21	AREA COMPACTED EMBANKMENT:	228	SF	19+48.21	VOLUME COMPACTED EMBANKMENT:	409	CUYD

STA. 18+97 TO STA. 19+63 IRBY ST.
CROSS SECTIONS

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mbinkley
\\bridgeformer.internal\basshares\Projects\14408\01\DGN\Reference\14408_XS.dgn

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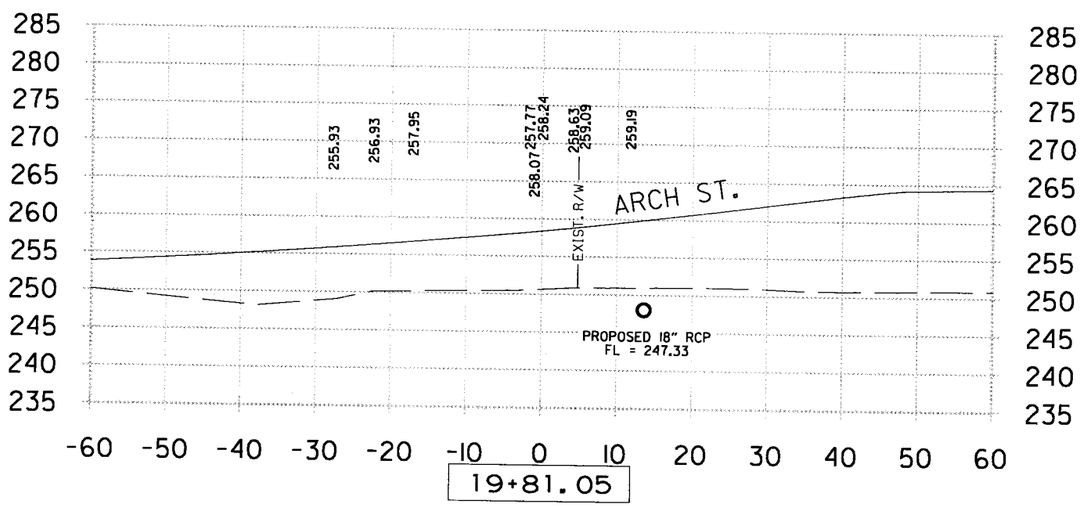
mblinkley

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.		100824	346	346
				(2) CROSS SECTIONS				

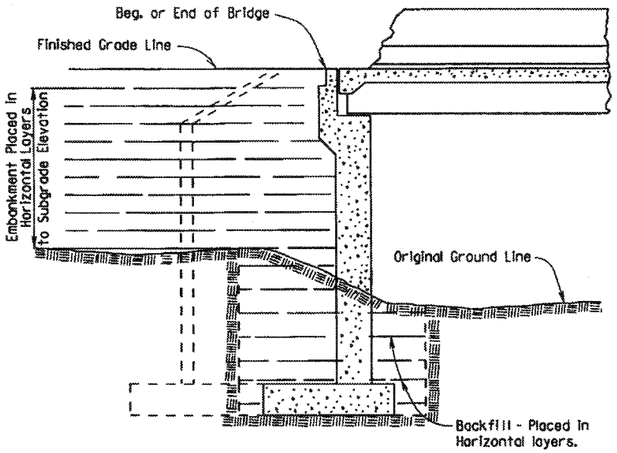


STA STAGE 4		AREA		STA STAGE 4		VOLUME	
19+81.05	AREA UNCLASSIFIED EXCAVATION:	0	SF	19+81.05	VOLUME UNCLASSIFIED EXCAVATION:	0	CUYD
19+81.05	AREA COMPACTED EMBANKMENT:	0	SF	19+81.05	VOLUME COMPACTED EMBANKMENT:	78	CUYD

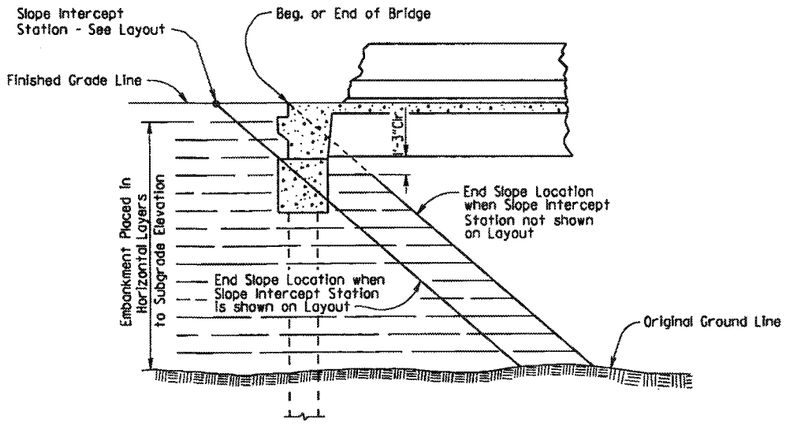
STA. 19+81 TO STA. 19+81 IRBY ST. CROSS SECTIONS

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

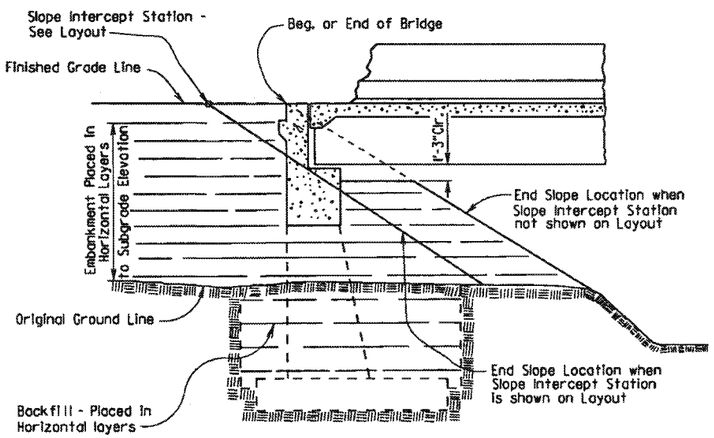
1 EMBANKMENT & BACKFILL 55000



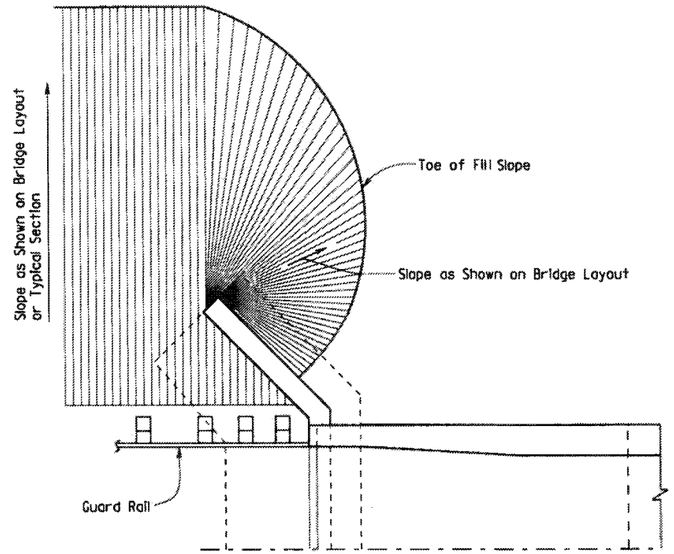
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



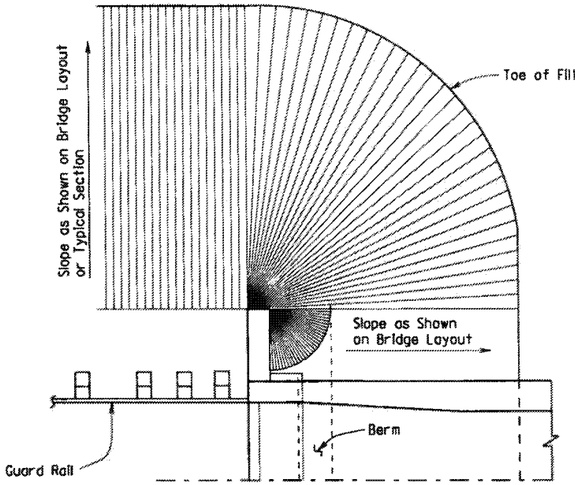
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



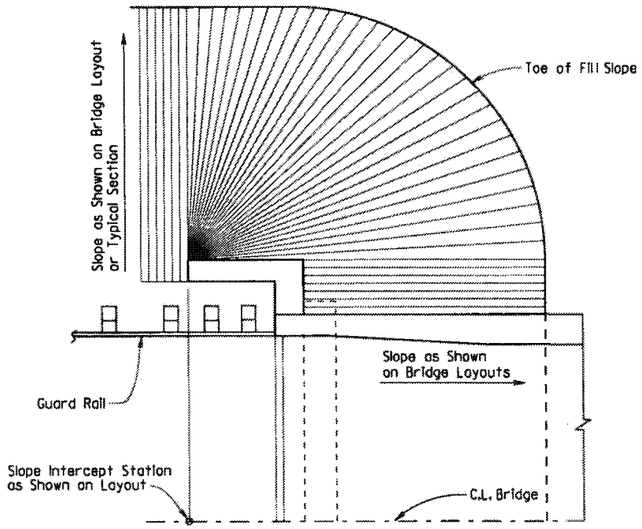
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



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

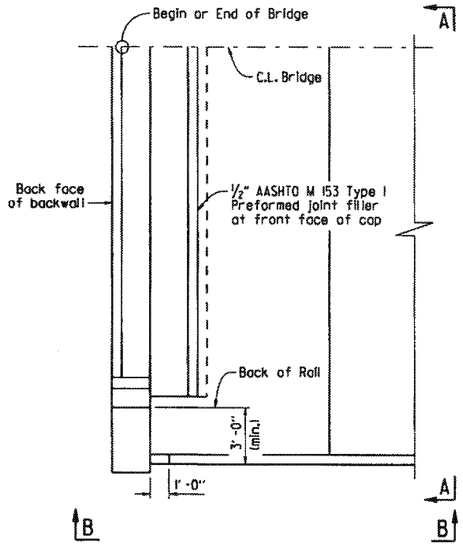
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000

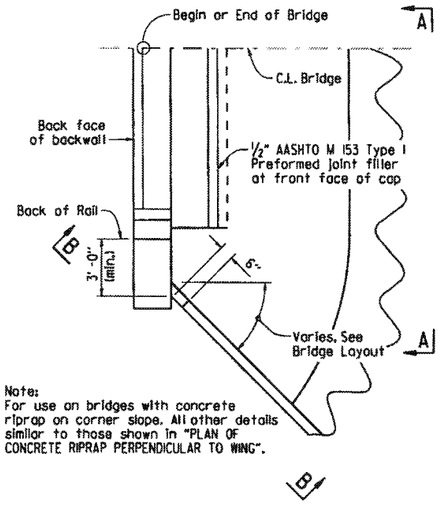
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

① CONCRETE RIPRAP 55002

Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



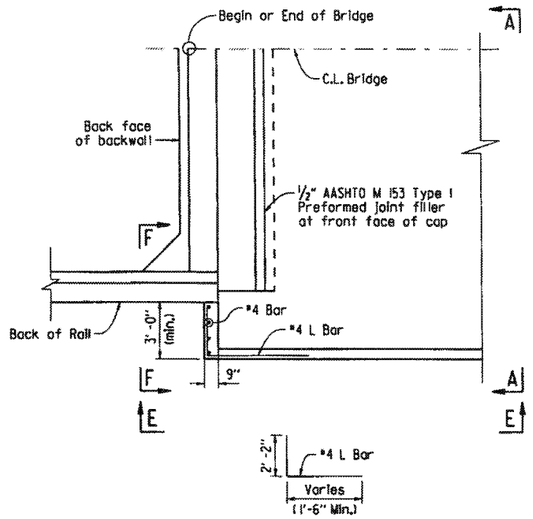
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING
1/4" = 1'-0"



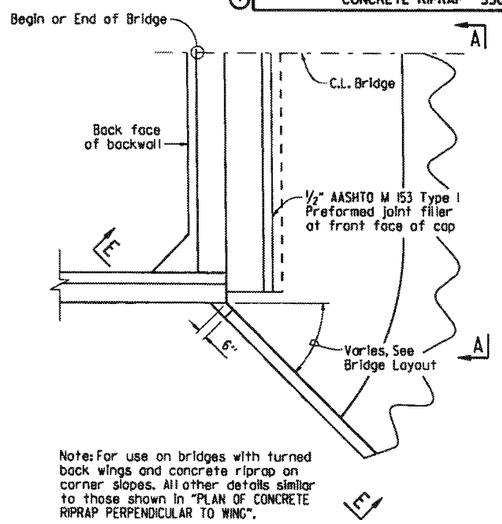
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP AT ANGLE TO WING
1/4" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



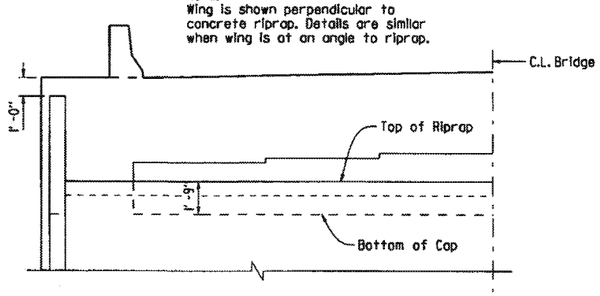
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO TURNED BACK WING
1/4" = 1'-0"



Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

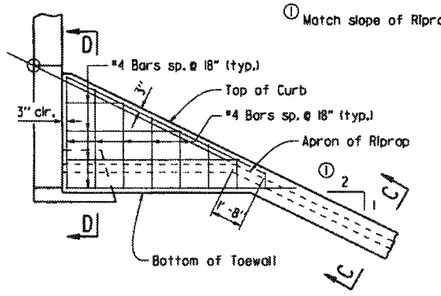
PLAN OF CONCRETE RIPRAP AT ANGLE FROM TURNED BACK WING
1/4" = 1'-0"

Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.

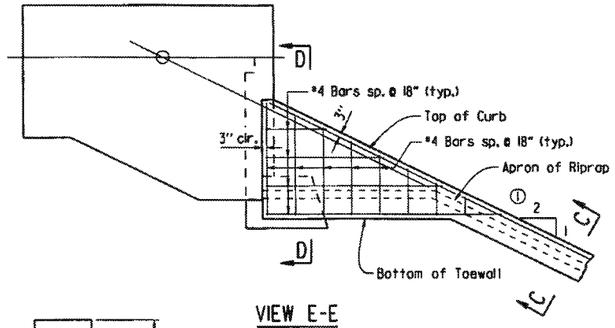


VIEW A-A
1/4" = 1'-0"

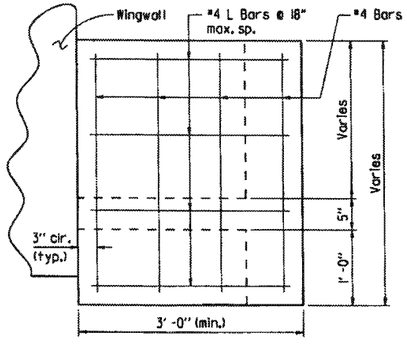
① Match slope of Riprap Apron.



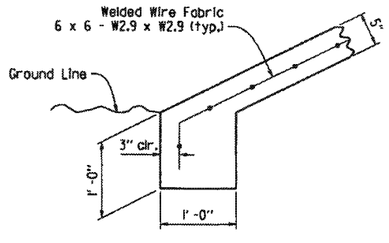
VIEW B-B
1/4" = 1'-0"



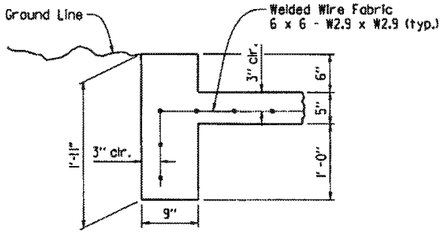
VIEW E-E
1/4" = 1'-0"



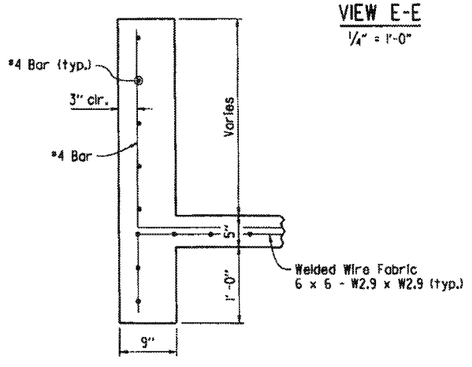
VIEW F-F
1" = 1'-0"



TOE OF CONCRETE RIPRAP
1" = 1'-0"



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



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

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, f'c = 2,100 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

ARKANSAS STATE HIGHWAY COMMISSION

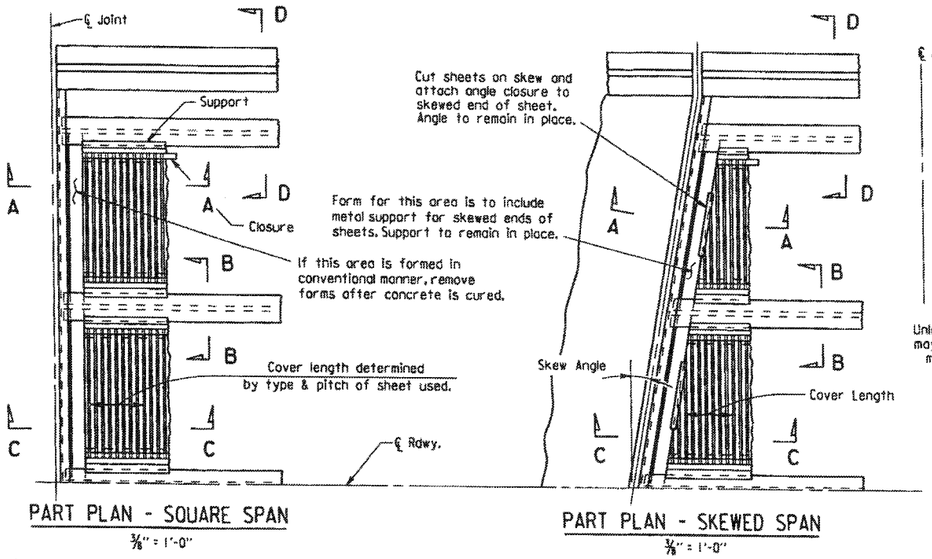
LITTLE ROCK, ARK.

DRAWN BY:	ACP	DATE:	2/27/2014	FILENAME:	b55002.dgn
CHECKED BY:	BEF	DATE:	2/27/2014	SCALE:	AS SHOWN
DESIGNED BY:	Std.	DATE:	---		

DRAWING NO. 55002

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

① BRIDGE DECK FORMS 55005

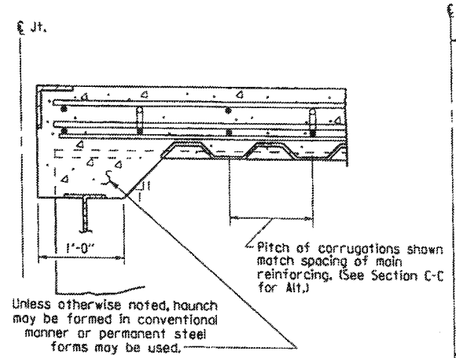


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

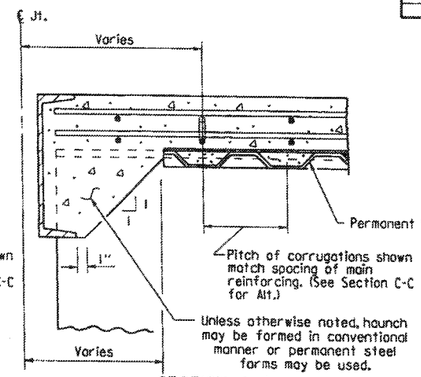
3/8" = 1'-0"



SECTION A-A

N.T.S.

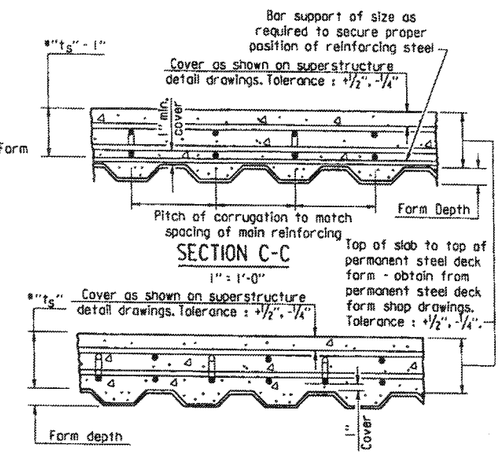
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



SECTION C-C

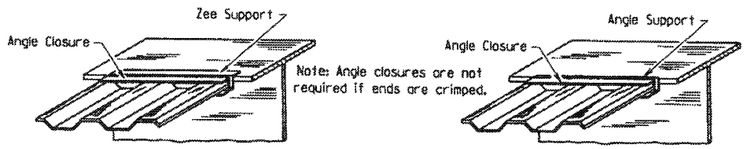
1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

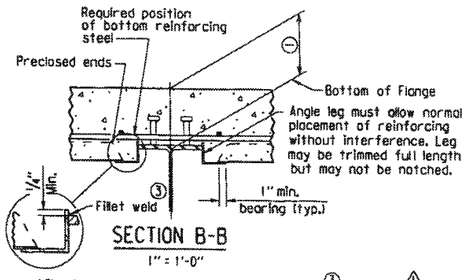
(Applicable when corrugations do not match spacing of main reinforcement)

*t_s = slab thickness as shown on superstructure detail drawings.



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

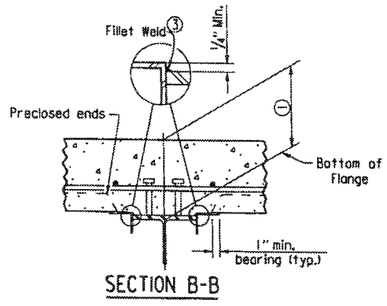


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

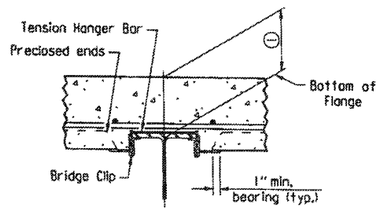
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

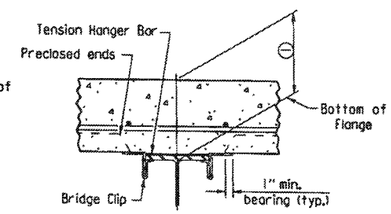
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

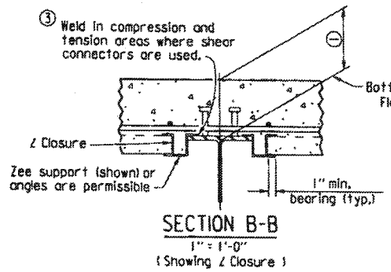
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

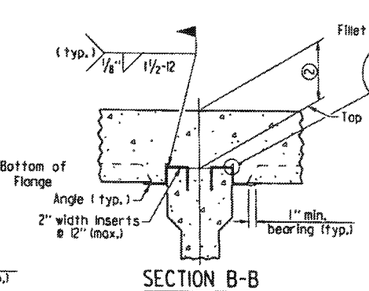
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

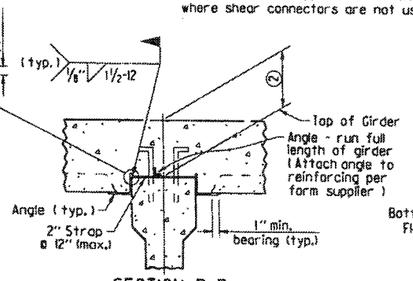


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

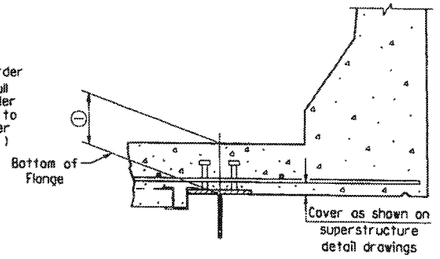


SECTION B-B

(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.

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.

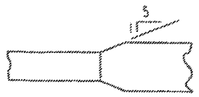
STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

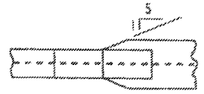
DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55005.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NONE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55005

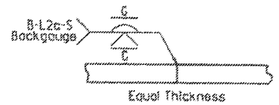


Plan-Unequal Width (Fig.)

FLANGE SPLICE

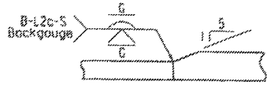


FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



Equal Thickness

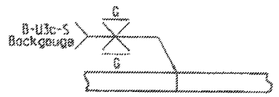
WEB & FLANGE SPLICE



Unequal Thickness

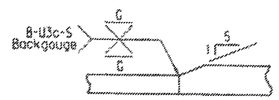
FLANGE SPLICE

(Use when Base Metal Thickness is Equal to or Less than 2")



Equal Thickness

WEB & FLANGE SPLICE

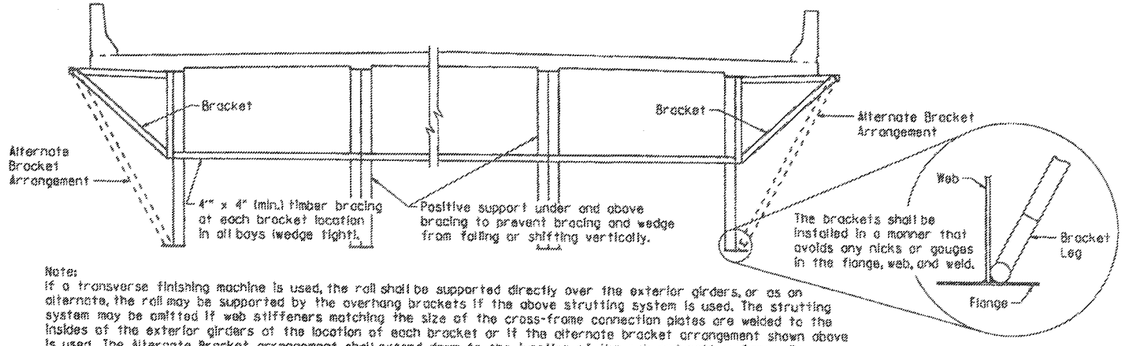


Unequal Thickness

FLANGE SPLICE

(Use when Base Metal Thickness is Greater than 2")

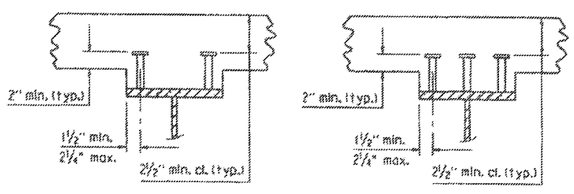
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



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 web stiffeners matching the size of the cross-frame connection plates 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 cross frame connection plates shown on the plans. 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 (____)".

SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



2 STUDS PER ROW

3 STUDS PER ROW

Stud Shear Connectors shall be automatically end welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

SHEAR CONNECTOR DETAIL

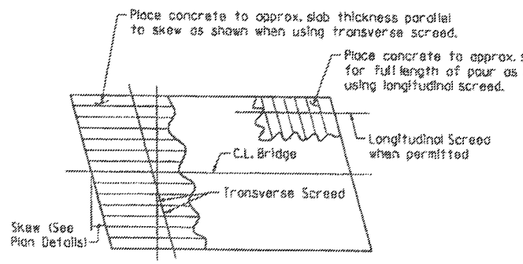
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and across the top of the sidewalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL

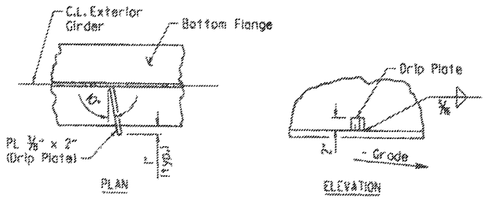
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

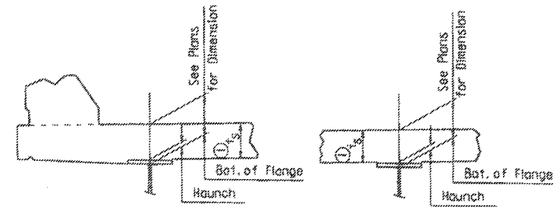
BOTTOM FLANGE DRIP PLATE

(USE WHEN WEB DEPTHS ARE 54" OR GREATER AND UNIT OR SPAN IS NOT IN LEVEL GRADE)

DATE 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 STEEL BRIDGE STRUCTURES 55007

t_s = slab thickness. See "Typical Roadway Section" in the plans.



EXTERIOR BEAM OR GIRDER

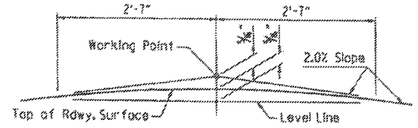
INTERIOR BEAM OR GIRDER

① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:
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" unless otherwise noted in the plans. 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



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN

WELD TABLE

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.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

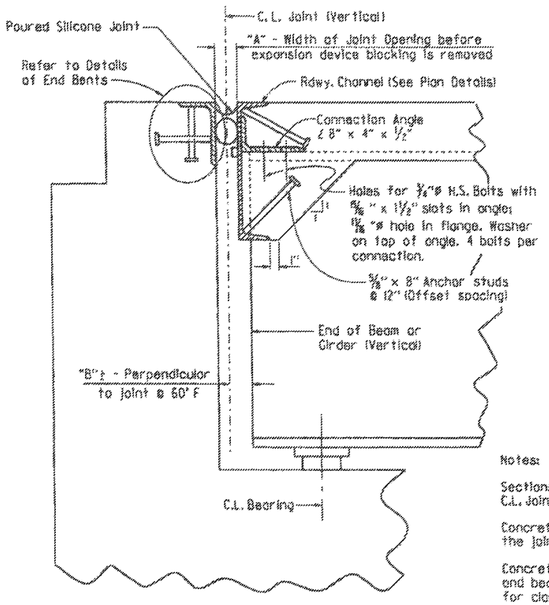
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

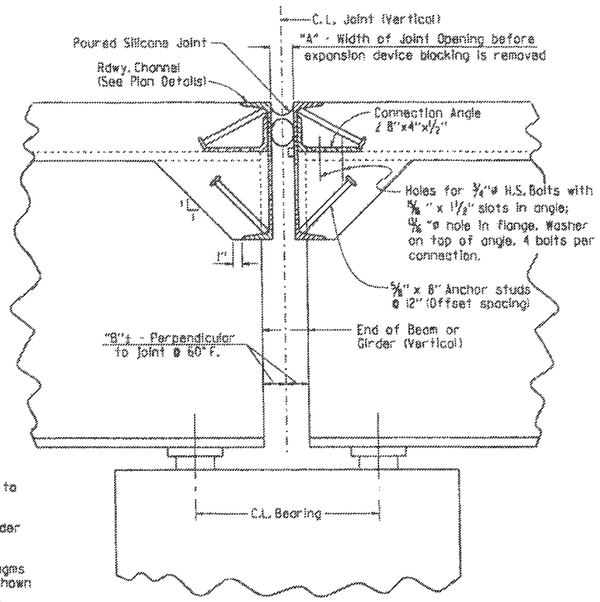
DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55007.dgn
CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: ---

DRAWING NO. 55007

DATE 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	POURED SILICONE JOINT			55008



SECTION THRU JOINT AT END BENT



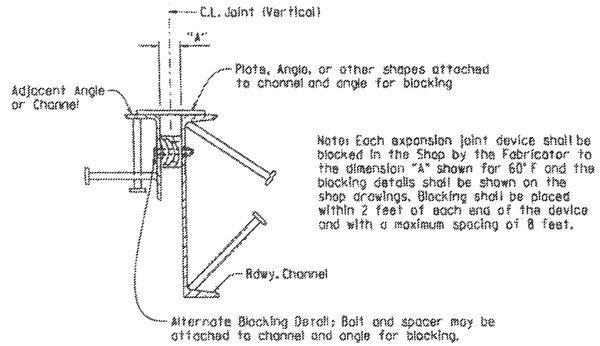
SECTION THRU JOINT AT INTERMEDIATE BENT

Notes:

Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

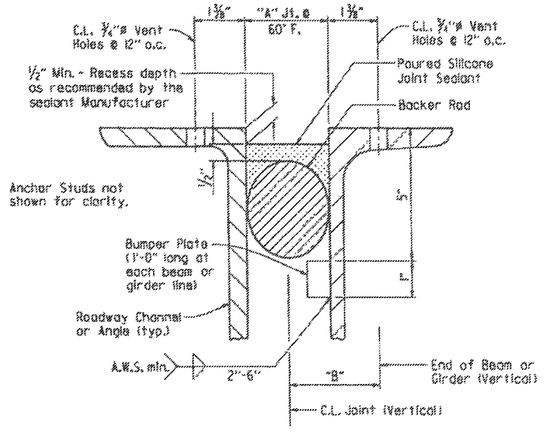
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior 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 beams or 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.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed, immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.



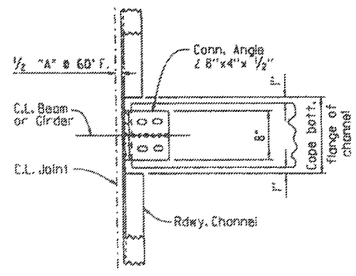
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. 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.

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. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

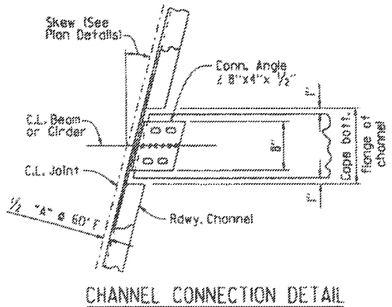
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



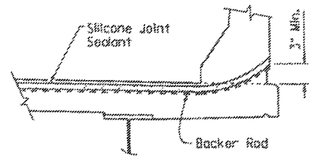
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

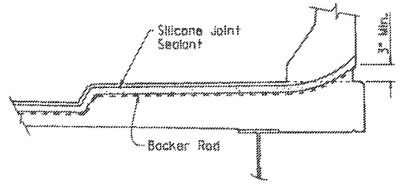


CHANNEL CONNECTION DETAIL

BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: ---

DRAWING NO. 55008

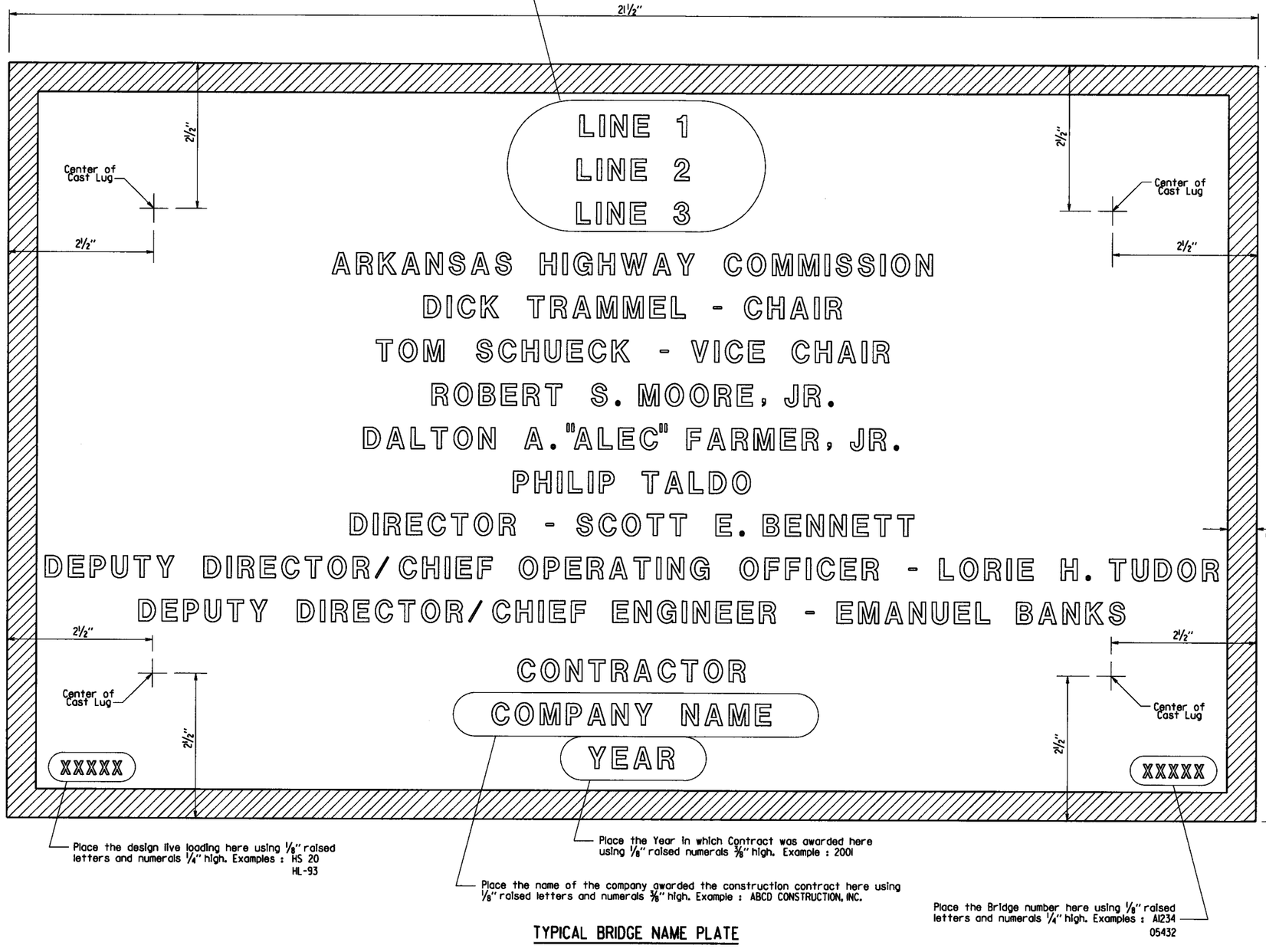
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14			
1-14-15			
1-17-17			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.				

① TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



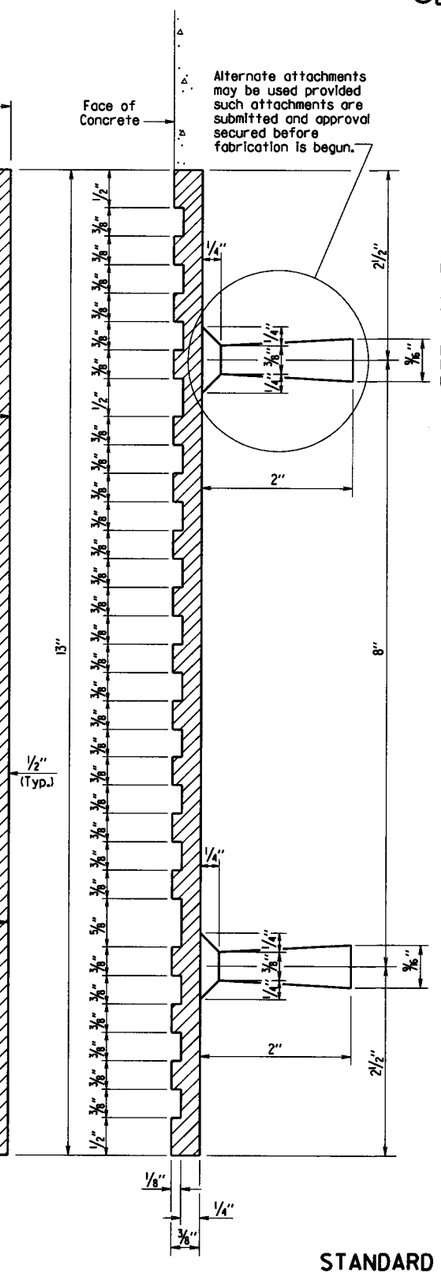
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : A1234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

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

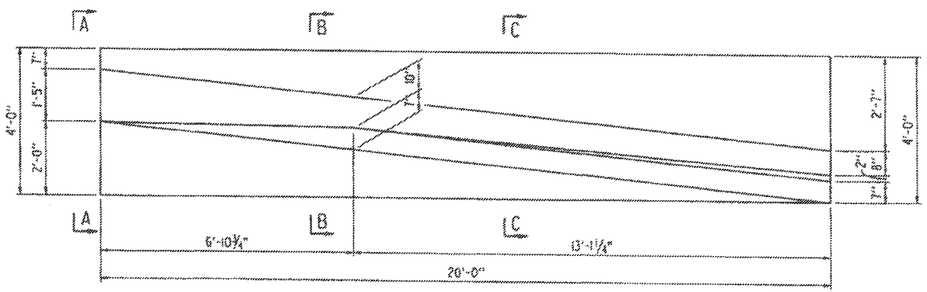
STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE

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
				6	ARK.			
				JOB NO.				
				①	TRANSITIONAL RAIL		55013	



PLAN OF TRANSITIONAL APPROACH RAILING

(RAILINGS ON EACH SIDE OF ROADWAY ARE OPPOSITE HAND TO EACH OTHER)

½" = 1'-0"

GENERAL NOTES

Transitional Approach Railing shall be placed at locations shown in the plans.

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 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Construction. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Construction.

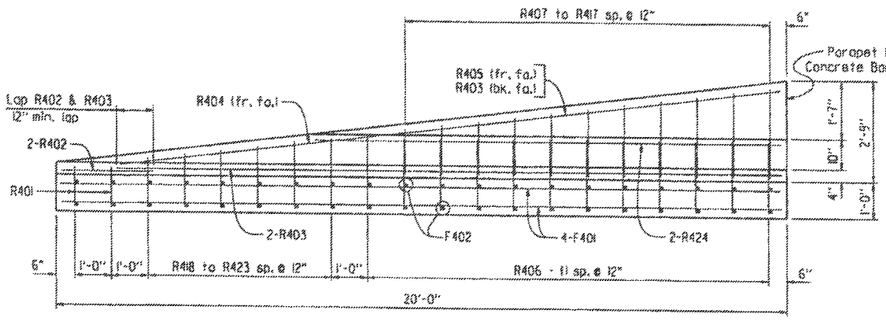
Unless otherwise required in the plans, curing and finishing shall be in accordance with Subsection 806.05(c) and the surface finish type and areas of application shall match that used on the adjacent bridge railing or concrete barrier wall. See Subsection 802.19(3) for Class 3 Textured Coating Finish or Subsections 803.03(a) or 803.03(b) for Class 1 or 2 Protective Surface Treatment, respectively. Payment for surface finishes shall not be paid for directly, but shall be considered incidental to the unit price bid for "Transitional Approach Railing".

When alternate surface and/or architectural finishes are specified in the plans, no direct payment will be made, and the alternate finish shall be considered incidental to the unit price bid for "Transitional Approach Railing". See plan details for additional information when architectural finishes are specified.

Transitional Approach Railing shall be paid for at the contract unit price bid for "Transitional Approach Railing". See Section 806 for additional information.

BAR LIST - ONE TRANSITIONAL RAIL

Mark	No. Req'd	Length	A	B	Pin Dia.	Bending Diagrams
F401	8	19'-8"			Str.	
F402	40	3'-8"			Str.	
R401	2	4'-10"	1'-2"	1'-1"	2"	
R402	2	3'-0"			Str.	
R403	3	17'-9"			Str.	
R404	1	5'-0"			Str.	
R405	1	12'-9"			Str.	
R406	12	8'-3"			2"	
R407 to R417	1 ea.	3'-0" to 5'-5"	1'-3" to 2'-5½"	1'-3" to 2'-5½"	2"	
R418 to R423	1 ea.	3'-9" to 5'-1"	1'-4" to 1'-11¼"	1'-1½"	2"	
R424	2	12'-0"			Str.	



ELEVATION OF TRANSITIONAL APPROACH RAILING

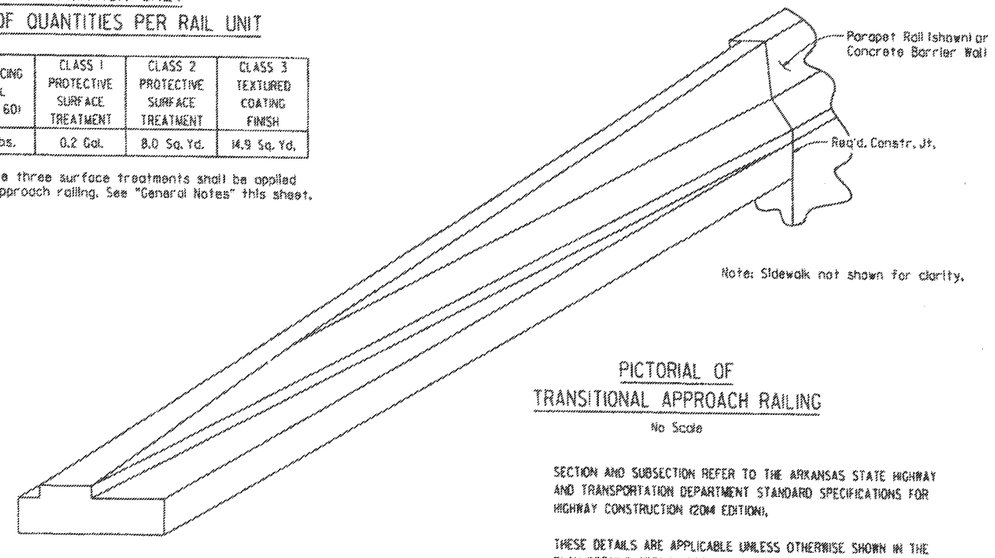
½" = 1'-0"

FOR INFORMATION ONLY

SCHEDULE OF QUANTITIES PER RAIL UNIT

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS 1 PROTECTIVE SURFACE TREATMENT	CLASS 2 PROTECTIVE SURFACE TREATMENT	CLASS 3 TEXTURED COATING FINISH
4.20 Cu. Yds.	376 Lbs.	0.2 Gal.	8.0 Sq. Yd.	14.9 Sq. Yd.

Only one of the above three surface treatments shall be applied to the transitional approach railing. See "General Notes" this sheet.

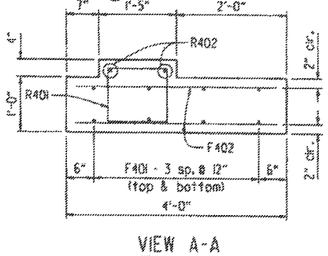


Note: Sidewalk not shown for clarity.

PICTORIAL OF TRANSITIONAL APPROACH RAILING

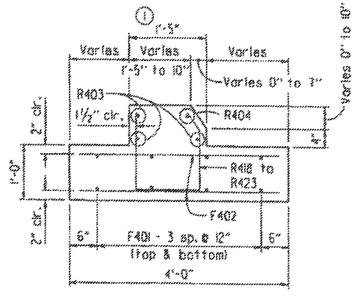
No Scale

① Dimension shall be increased to maintain 1½" clearance if architectural finish is specified.



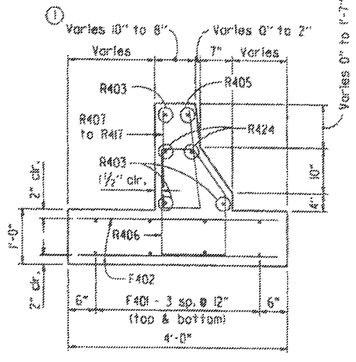
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR TRANSITIONAL APPROACH RAILING

ARKANSAS STATE HIGHWAY COMMISSION

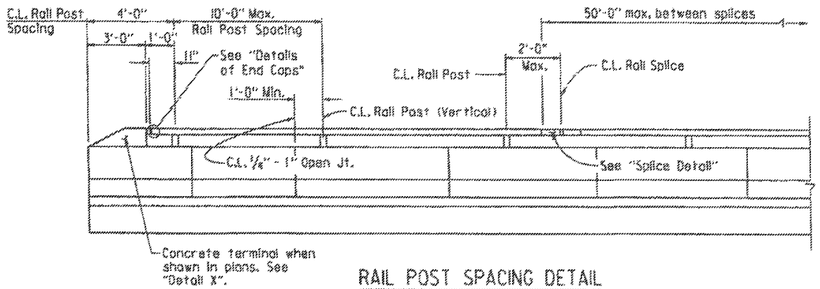
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55013.dgn

CHECKED BY: AMS DATE: 2/11/2016 SCALE: As Noted

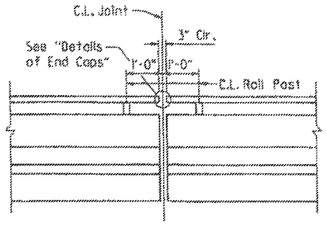
DESIGNED BY: STD. DATE:

DRAWING NO. 55013

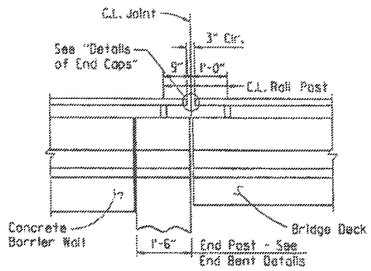


RAIL POST SPACING DETAIL

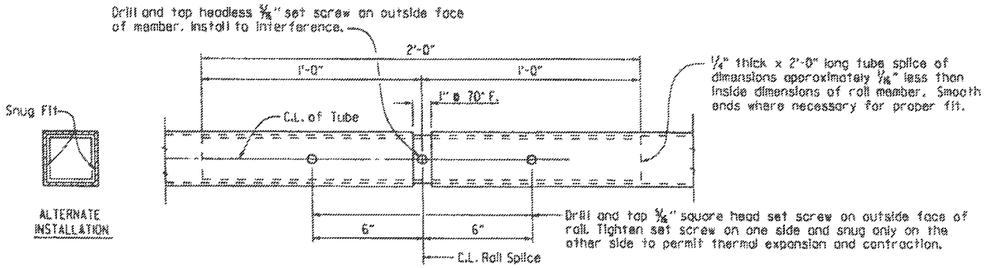
(Horizontal dimensions are along face of rail)



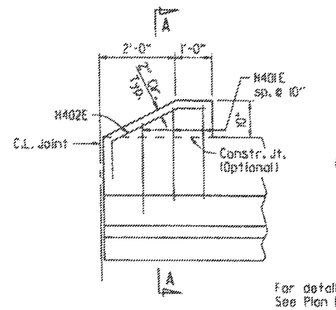
RAIL POST SPACING AT EXPANSION JOINTS



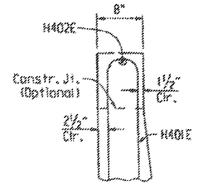
RAIL POST SPACING AT BRIDGE ENDS WITH CONCRETE BARRIER WALL



SPLICE DETAIL

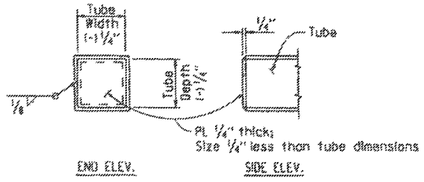


DETAIL X

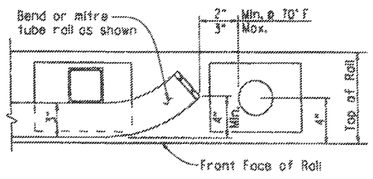


SECTION A-A

For details of reinforcing steel, See Plan Details.

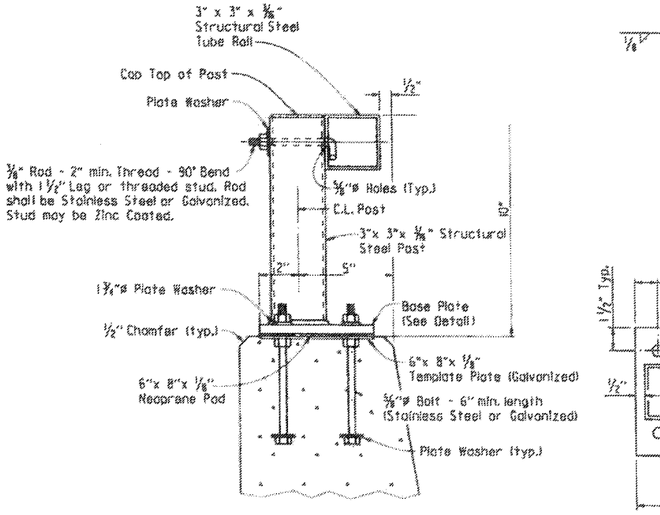


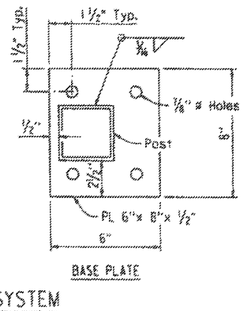
DETAILS OF END CAPS



DETAILS OF RAIL TERMINUS AT FENCE POST

(When Chain Link Fence is required)

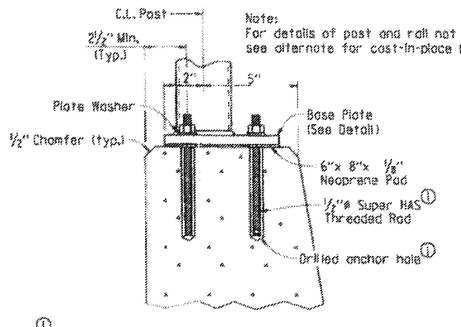


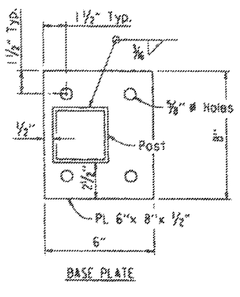


BASE PLATE

DETAILS OF POST ANCHOR SYSTEM

(CAST-IN-PLACE BOLTS)





BASE PLATE

① HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4½" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System (or approved equal) shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(EPOXY ADHESIVE ANCHORS)

DATE 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	TYPE H RAILING		55014		

MATERIALS:

Rail tubing, posts, end caps, and base plates shall conform to AASHTO M 270, Gr. 36 or ASTM A 500-Grade B, and shall be galvanized after fabrication in accordance with Subsection 806.02(c). When required elsewhere in the plans, steel rail members shall receive a powder coating process after galvanizing. Galvanized surfaces shall be prepared in accordance with Subsection 807.87 and the manufacturer's recommendations prior to application of the powder coating process.

The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2 to 4 mils. The top coat shall be tough polyester powder with a minimum thickness of 2 to 4 mils. The color shall be as shown in the plans. Coated galvanized framework shall have a salt spray resistance of 3000 hours using ASTM B 117 without loss of adhesion. The powder coating process shall be in accordance with manufacturer's recommendations. Any damage to the powder coated finish shall be repaired with a compatible touch-up system in accordance with manufacturer's recommendations and to the satisfaction of the Engineer at the Contractor's expense.

Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized fasteners and stainless steel will not be permitted.

High-Strength Steel:
Cast-in-place anchor bolts shall conform to ASTM A325, Type 1.
Nuts shall conform to ASTM A563, Grade DH or AASHTO M 292, Grade 2H.
Washers shall conform to ASTM F436.
Plate Washers shall conform to AASHTO M 270, Gr. 36.
Splice Set Screws shall conform to AASHTO M 270, Grade 36.
Anchor bolts, nuts, washers, plate washers, and set screws shall be galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50.

Stainless Steel:
Cast-in-place anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi.
Nuts shall conform to AASHTO M 292, Grade 8 or ASTM A563.
Washers shall conform to ASTM A240, Type 302.
Plate Washers shall conform to ASTM A240, Type 302.
Splice Set Screws shall conform to ASTM A193 or A320-Grade B8.

Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 Fit, ASA Specification B1. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series). Neoprene pads shall conform to the requirements of Subsection 807.15(b).

GENERAL NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge. All posts shall be vertical.

Maximum post spacing = 10'-0". Minimum distance from centerline post to centerline open or contraction joints in parapet rail = 1'-0".

Splices in rail tubing shall be at 50' maximum spacing. The centerline of splices shall be located a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Bridge railing, including posts, template and base plates, fasteners, and neoprene pads shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)". When required elsewhere in the plans, powdered coating finish and repair of powdered coating finish shall be considered subsidiary to the item "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured prior to fabrication.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR TYPE H RAILING

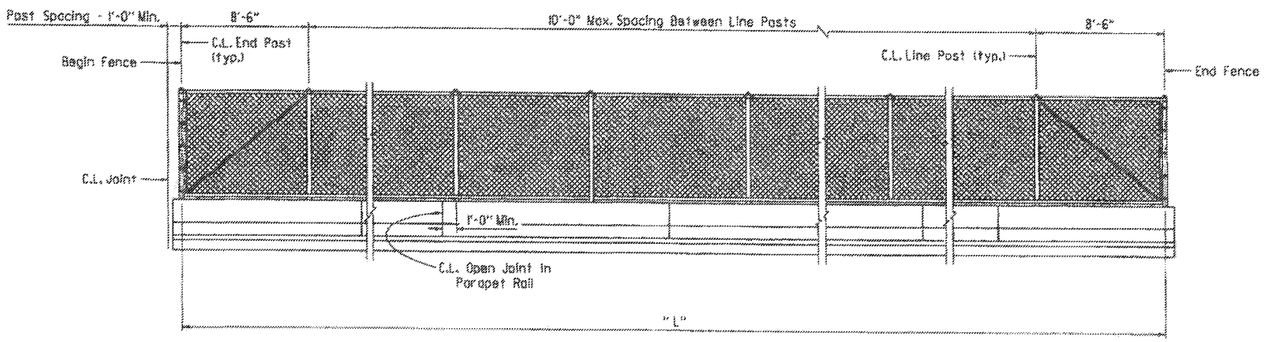
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55014.dgn
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: S.T.D. DATE: ----
BRIDGE NO. DRAWING NO. 55014

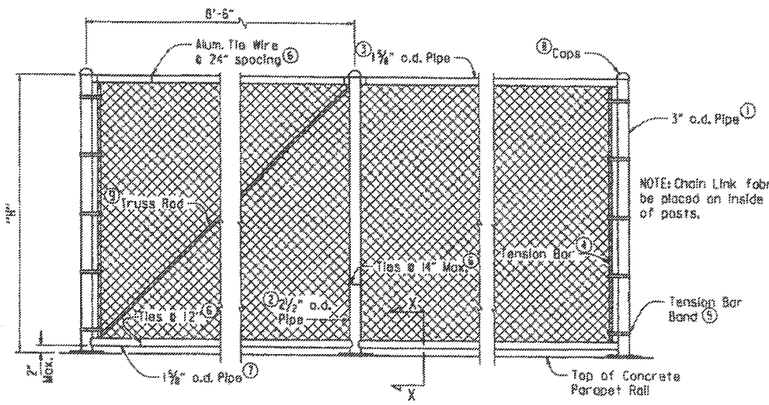
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

(1) CHAIN LINK FENCE 55018



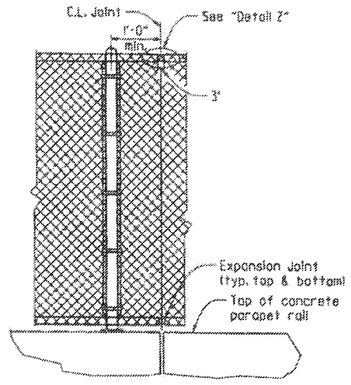
NOTE: The fence location, height "H", total length "L" and parapet panel spacing shall be as specified in plans.

LONGITUDINAL VIEW OF CHAIN LINK FENCE



NOTE: Chain Link fabric to be placed on inside face of posts.

DETAILS OF CHAIN LINK FENCE



DETAIL AT EXPANSION JOINTS

① END POST: 3" O.D.
② LINE POST: 2½" O.D.
③ TOP RAIL: 1⅝" O.D.
④ TENSION BAR: ⅜" x ¾" Bar
⑤ TENSION BAR BAND: ¾"x .074 w/⅜"ø x 1¼" Bolt (1 Band Top and Bottom w/15" Max. spaces)
⑥ TIE WIRE: 9 Ga. Aluminum
⑦ BOTTOM RAIL: 1⅝" O.D.
⑧ CAPS: All Posts shall be Capped and Shall Conform to ASTM F626-84
⑨ TRUSS ROD: Min. of ⅜" Round with Tightener and Fittings

FABRIC: 9 Ga. 2" Mesh w/Knucklug or Twisting Selvage

GENERAL NOTES FOR CHAIN LINK FENCE:

Fence layout shall conform to the vertical and horizontal bridge alignments. Fence posts shall be set plumb (true vertical position). Parapet rail concrete shall be at least 7 days old before stretching and securing fabric to posts.

Base plates shall not be placed upon areas that are improperly finished, deformed, or irregular.

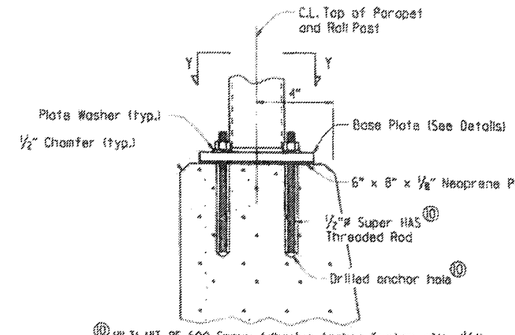
Chain Link Fence attached to Bridge, including neoprene pad and template plates, shall be paid for as "___' Steel Chain Link Fence". For additional details of Chain Link Fence, See Standard Drawing WF-3.

Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized fasteners and stainless steel will not be permitted.

High-Strength Steel:
Cast-in-place anchor bolts shall conform to ASTM A325, Type 1.
Nuts shall conform to ASTM A563, Grade DH or AASHTO M 292, Grade 2H.
Washers shall conform to ASTM F436.
Plate Washers shall conform to AASHTO M 270, Grade 36.
Splice Set Screws shall conform to AASHTO M 270, Grade 36.
Anchor bolts, nuts, washers, plate washers, and set screws shall be galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50.

Stainless Steel:
Cast-in-place anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi.
Nuts shall conform to AASHTO M 292, Grade 8 or ASTM A563.
Washers shall conform to ASTM A240, Type 302.
Plate Washers shall conform to ASTM A240, Type 302.
Splice Set Screws shall conform to ASTM A193 or A320-Grade B8.

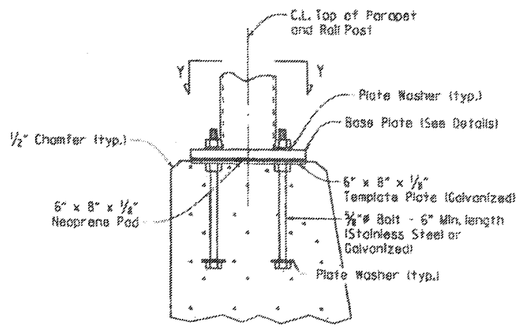
Threads on bolts, screws, and nuts shall conform to American Standard Course Series, Class 2 Fit, ASA Specification B1.1. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series). Neoprene pads shall conform to the requirements of Subsection 807.15(b).



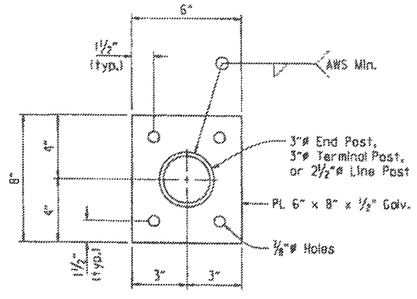
VIEW X-X

VIEW Y-Y

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

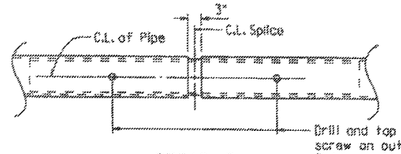


VIEW X-X



VIEW Y-Y

DETAILS OF POST ANCHOR SYSTEM
(CAST-IN-PLACE BOLTS)



Drill and tap ⅜" square head set screw on outside face of rails. Tighten set screw on one side and snug only on the other side to permit thermal expansion and contraction.

DETAIL Z

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

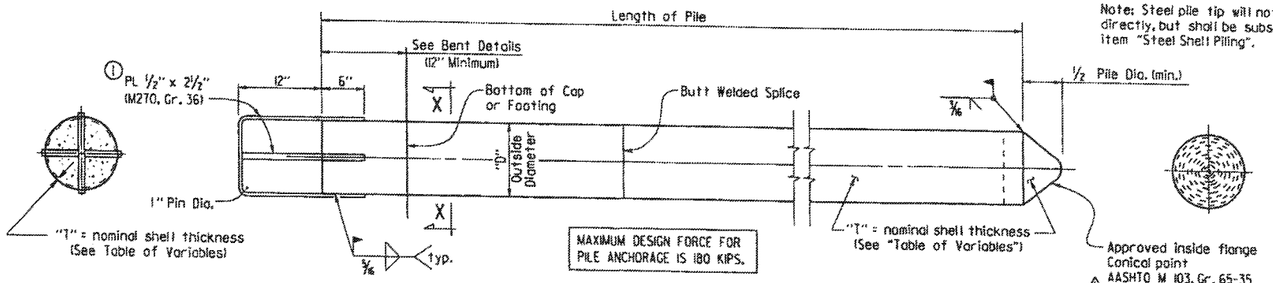
STANDARD DETAILS FOR CHAIN LINK FENCE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: E.O.R. DATE: 2-11-2016 FILENAME: b55018.dgn
CHECKED BY: A.M.S. DATE: 2-11-2016 SCALE: No Scale
DESIGNED BY: S.I.D. DATE:

DRAWING NO. 55018

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 SHELL PILES		55021	

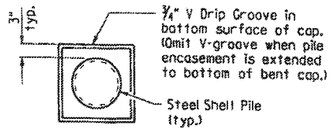


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

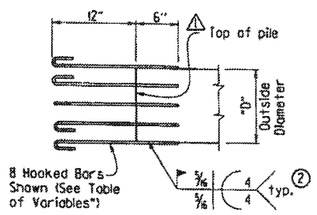
CONCRETE FILLED STEEL SHELL PILE

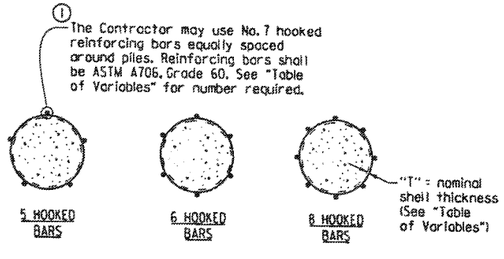
① Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

② Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



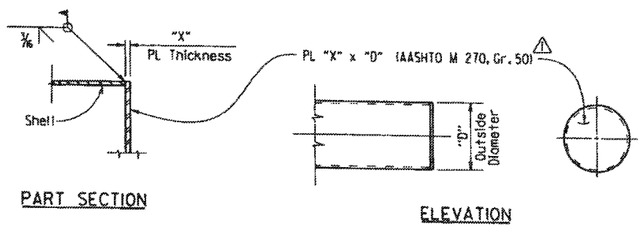
VIEW X-X





ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

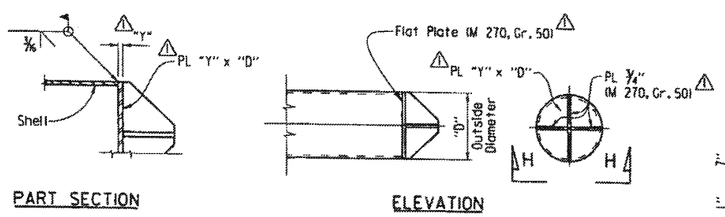


PART SECTION

ELEVATION

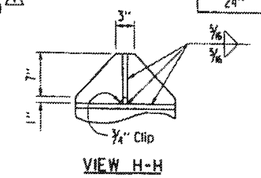
ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.



PART SECTION

ELEVATION



VIEW H-H

ALTERNATE VANED TIP DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

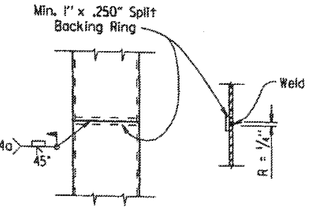
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi, and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

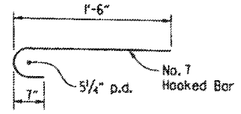
Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	⚠ PLATE THICKNESS "X"	⚠ PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	⚠ MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2¼"	1½"	5	859
16"	0.50"	2¼"	1½"	5	986
18"	0.50"	2½"	1½"	6	1,114
20"	0.50"	2½"	1¾"	6	1,241
24"	0.50"	2¾"	1¾"	8	1,495



HOOKED BAR DETAIL

⚠ Revised and added various details by KWY, Ck'd. by BEF. 3/24/16.

GENERAL NOTES FOR PILE ENCASEMENTS:

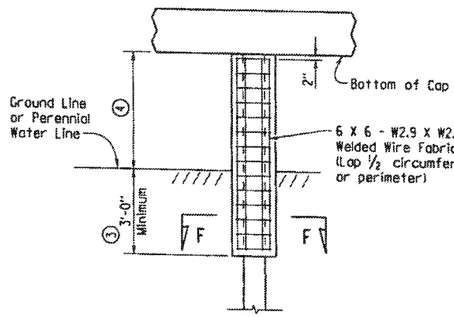
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

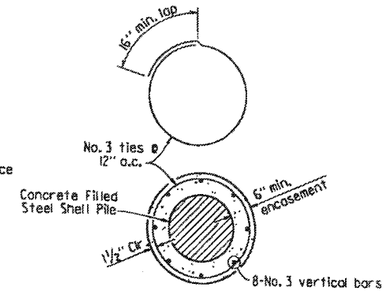
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

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.

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".





SECTION F-F (REINF. ALTERNATE)

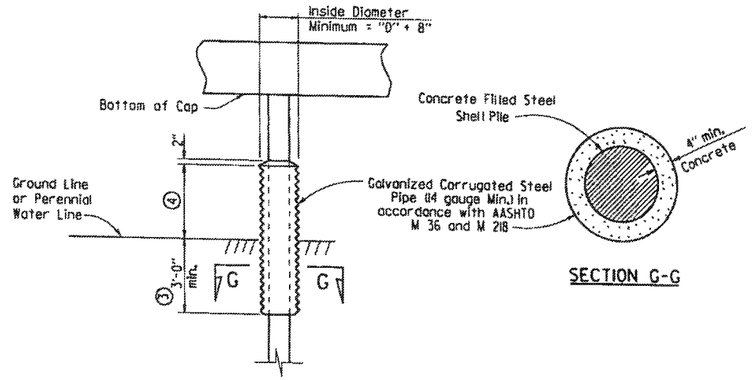
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

⑤ (Shown with Encasement to Bottom of Cap)

③ Unless otherwise noted on Bridge Layout.

④ See Bridge Layout for height of pile encasement (3'-0" Minimum).

⑤ Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

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 CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

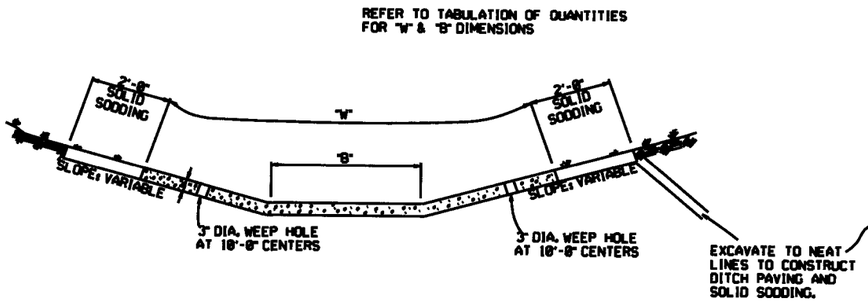
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b5502i.dgn

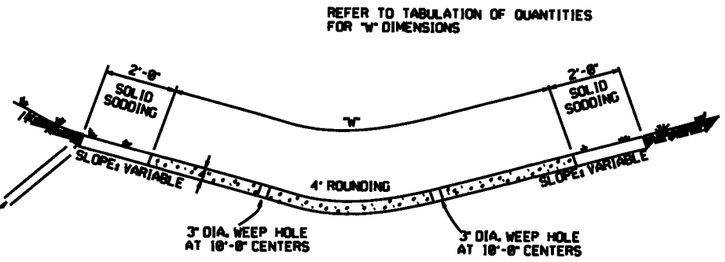
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: —

DRAWING NO. 55021



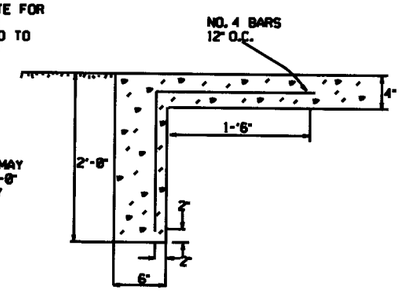
TYPE A



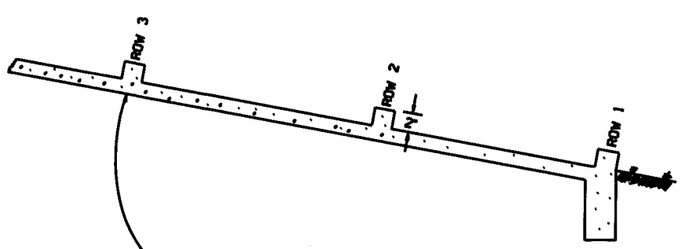
TYPE B

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."

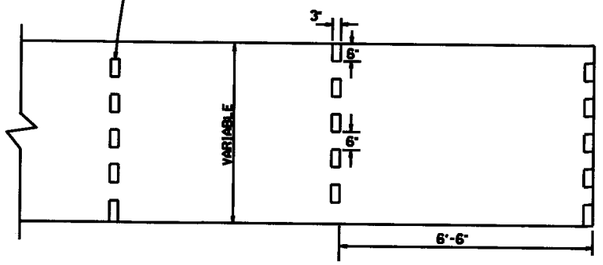
TOE WALL DEPTH MAY BE ALTERED TO 1'-6" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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.

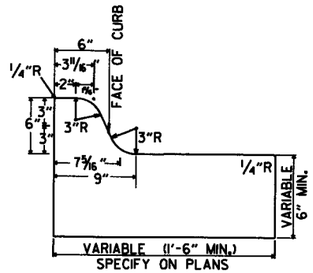
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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. NUMB. OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-5-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-6-87	MODIFIED NOTE ON ENERGY DISS.	642-1-6-87
1-2-86	ADDED NOTE TO ENERGY DISS.	598-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
10-2-72	TYPED A & B REVISED AND REDRAWN	508-10-2-72

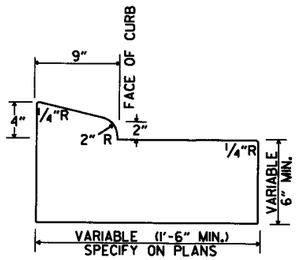
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

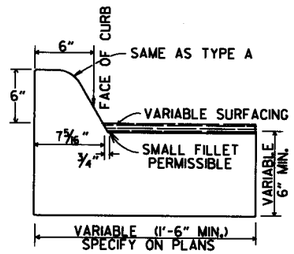
STANDARD DRAWING CDP-1



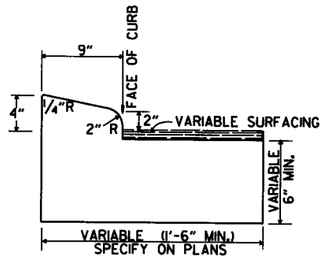
TYPE A



TYPE B-1



TYPE C



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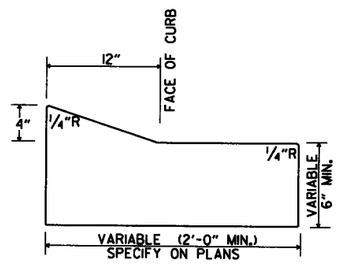
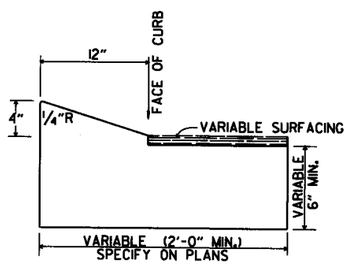
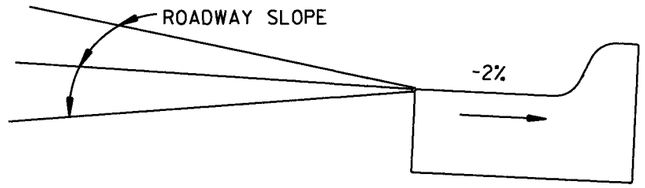


TYPE E-1



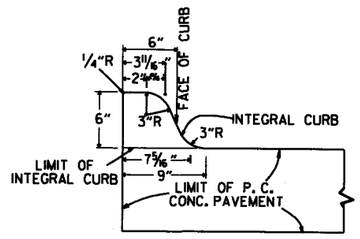
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

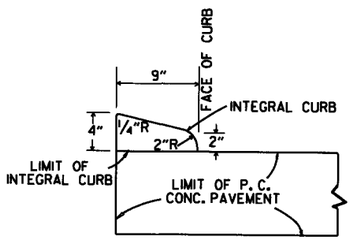


DETAIL OF GUTTER SLOPE

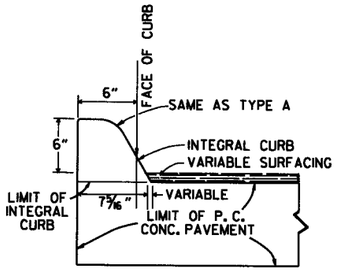
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

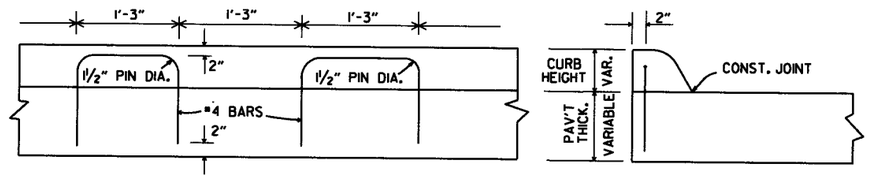


TYPE B



TYPE C

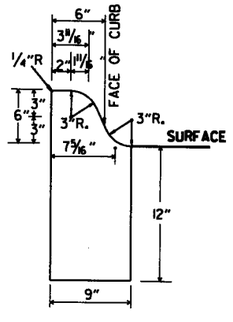
INTEGRAL CURB



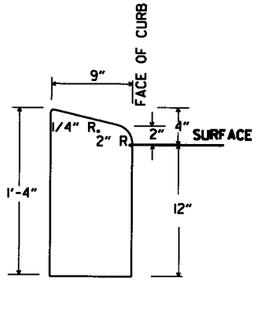
LONGITUDINAL SECTION

ELEVATION

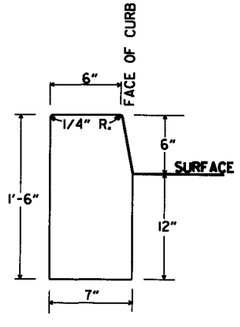
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



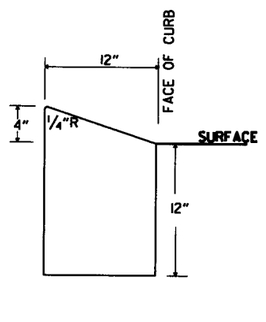
TYPE A



TYPE B

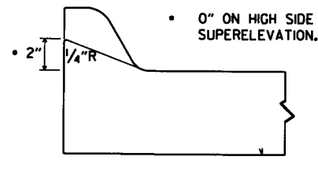


TYPE D



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.

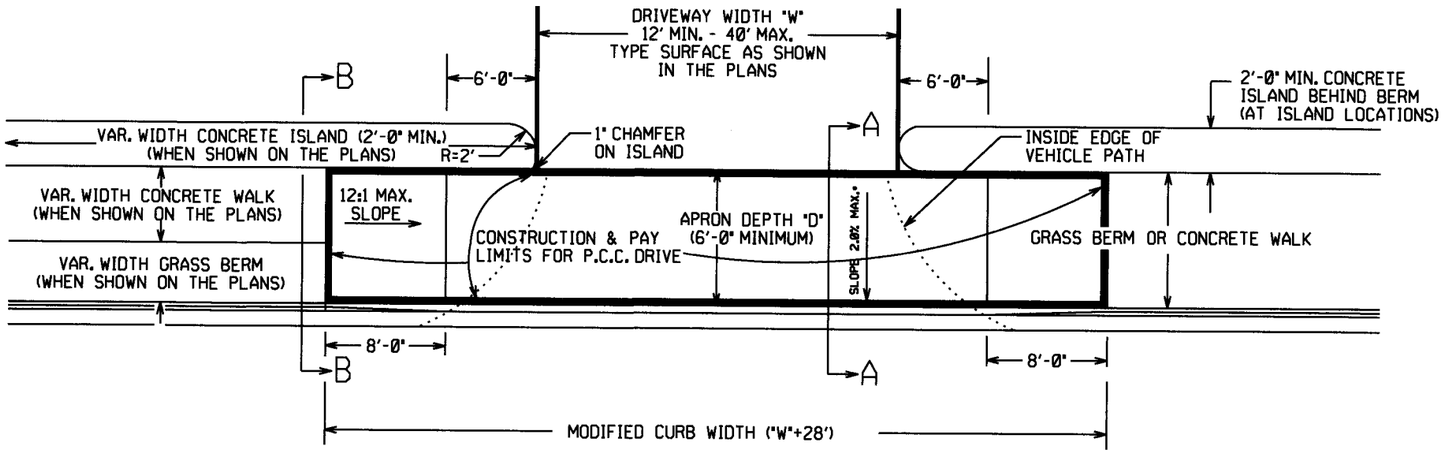
DETAILS OF MODIFIED CURB

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
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

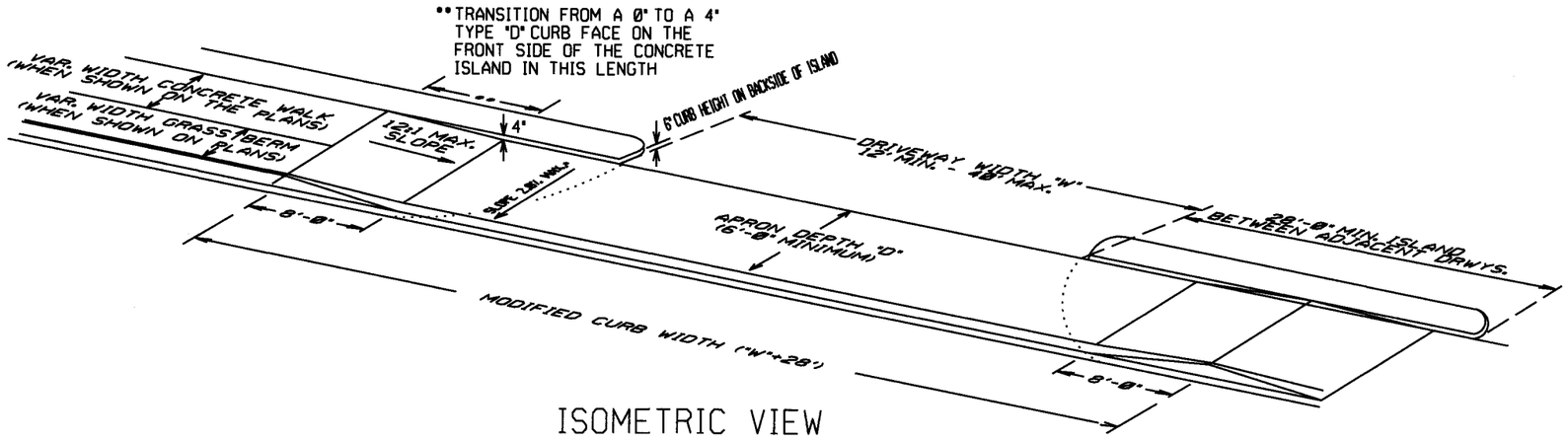
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

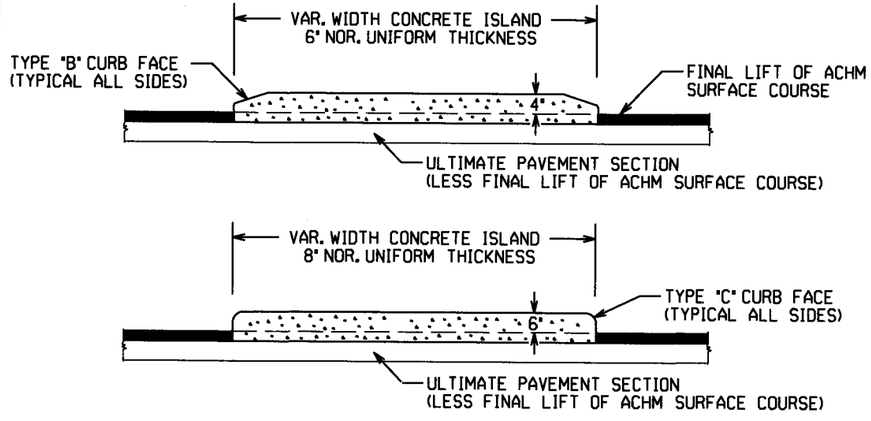
STANDARD DRAWING CG-1



PLAN VIEW

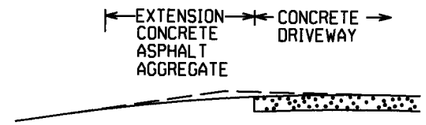


ISOMETRIC VIEW



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

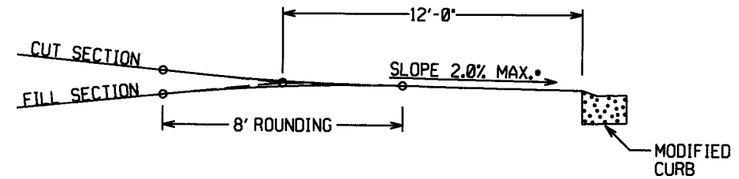
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

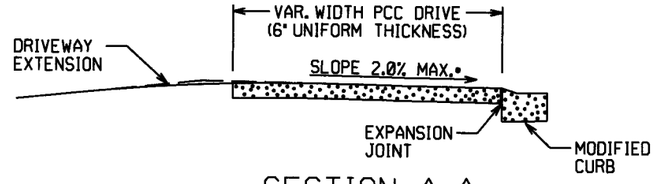
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

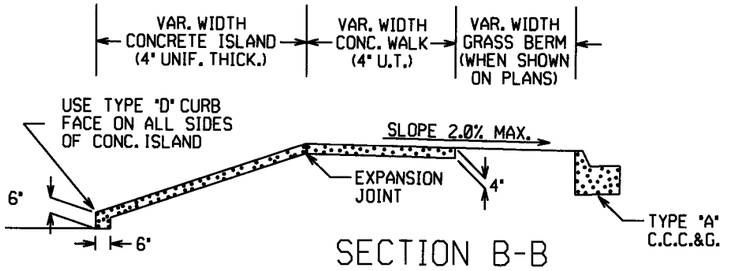


DRIVEWAY VERTICAL ALIGNMENT DETAILS

- NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



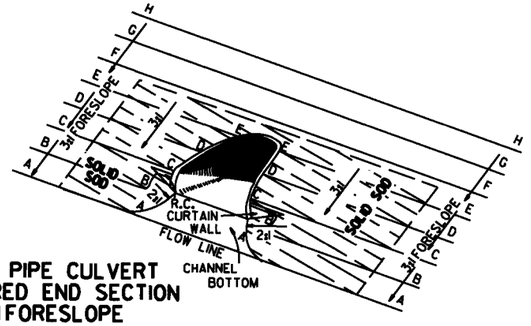
SECTION B-B
CURBED ISLAND BEHIND WALK

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

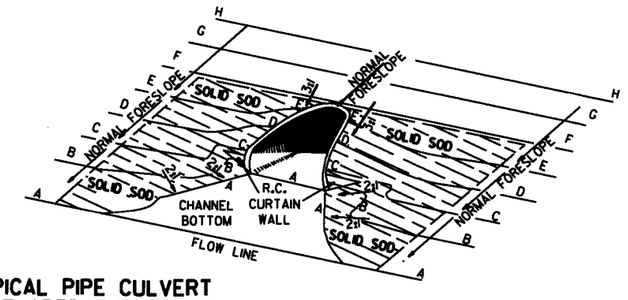
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

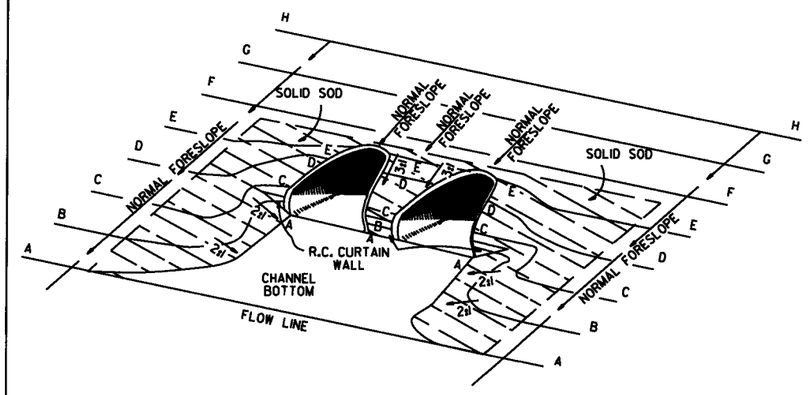
STANDARD DRAWING DR-1



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

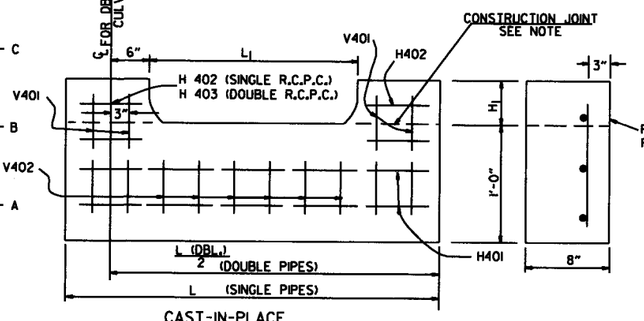
PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	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

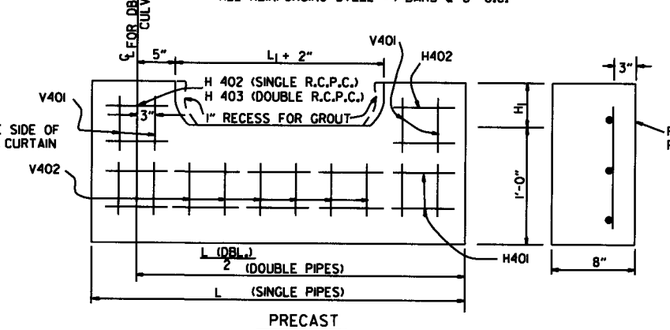
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

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

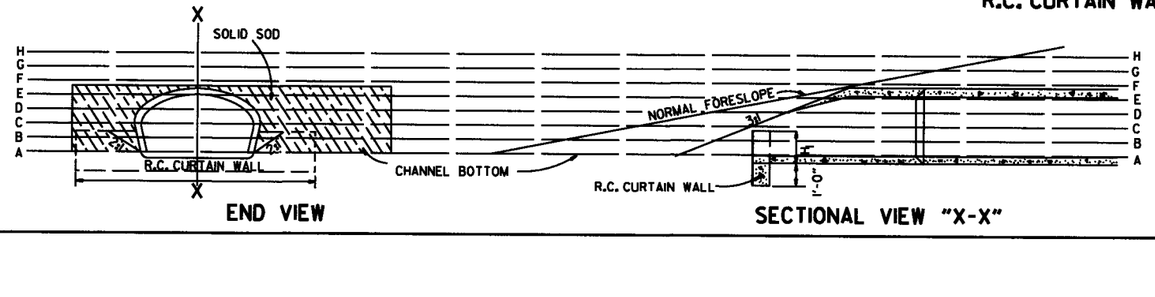
SOLID SODDING

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"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



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.	
5-2-80	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

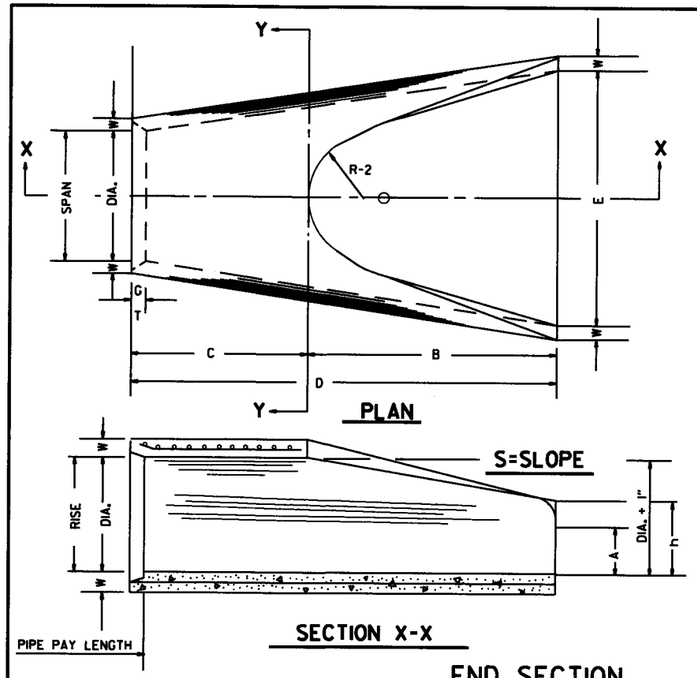
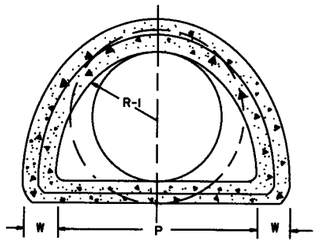
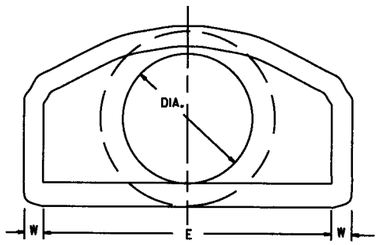


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 15/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4 5/16"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 5/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33¼"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 15/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 5/16"	38 5/16"	24"	5"	13250	4'-6"



SECTION Y-Y



END VIEW

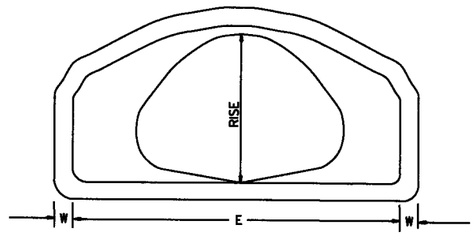
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

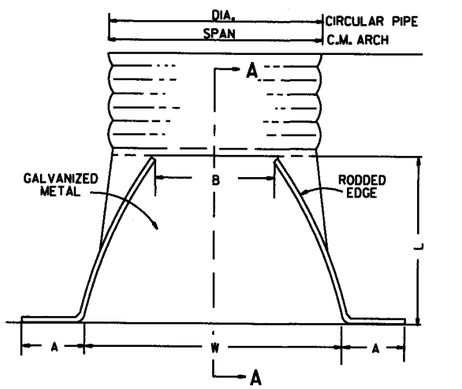
ARCH PIPE

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"	2½ set
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2½"	2½ set
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2½"	2½ set
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 5/8"	15"	2½"	2½ set
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 5/8"	20"	3"	2½ set
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/8"	22"	3½"	2½ set
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½ set
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/8"	24"	4¼"	2½ set
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72½"	24"	4¾"	2½ set
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 5/8"	24"	5"	2½ set

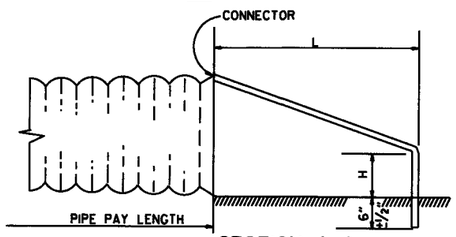
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE

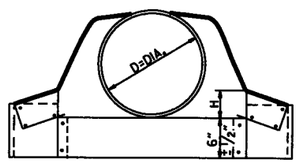


PLAN

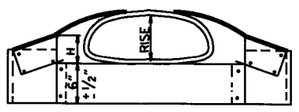


SECTION A-A

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



C.M. ARCH PIPE

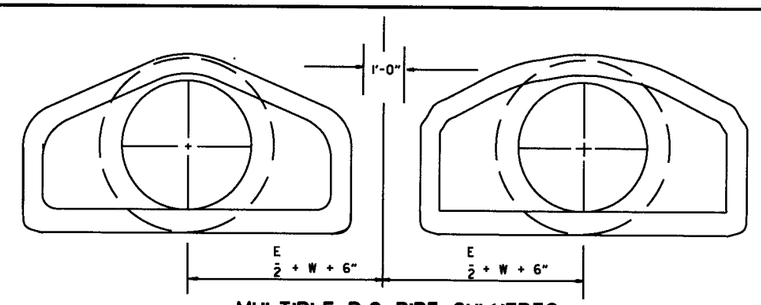
CIRCULAR PIPE

D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½ set
15	16	7	8	6	26	30	2½ set
18	16	8	10	6	31	36	2½ set
21	16	9	12	6	36	42	2½ set
24	16	10	13	6	41	48	2½ set
30	14	12	16	8	51	60	2½ set
36	14	14	19	9	60	72	2½ set
42	12	16	22	11	69	84	2½ set
48	12	18	27	12	78	90	2½ set
54	12	18	30	12	84	102	2 set
60	12	18	33	12	87	114	1⅔ set
66	12	18	36	12	87	120	1½ set
72	12	18	39	12	87	126	1 1/3 set

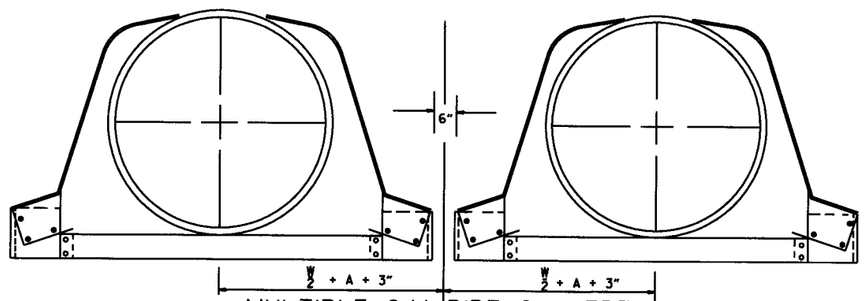
C.M. ARCH PIPE

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	2½ set	16
18"	21	15	7	10	6	23	36	2½ set	16
21"	24	18	8	12	6	28	42	2½ set	16
24"	28	20	9	14	6	32	48	2½ set	16
30"	35	24	10	16	6	39	60	2½ set	14
36"	42	29	12	18	8	46	75	2½ set	14
42"	49	33	13	21	9	53	85	2½ set	12
48"	57	38	18	26	12	63	90	2½ set	12
54"	64	43	18	30	12	70	102	2¼ set	12
60"	71	47	18	33	12	77	114	2¼ set	12

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



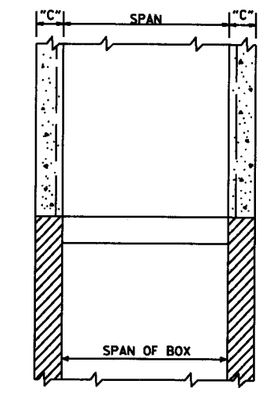
MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	BY	MED
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	

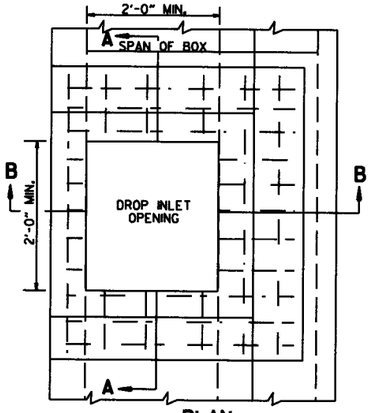
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

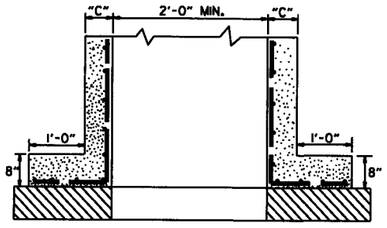
STANDARD DRAWING FES-2



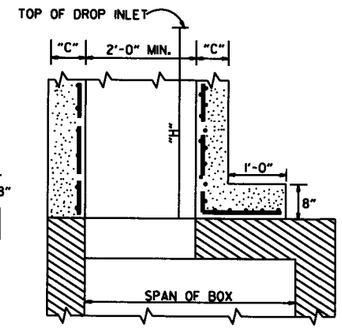
SECTION B-B



PLAN

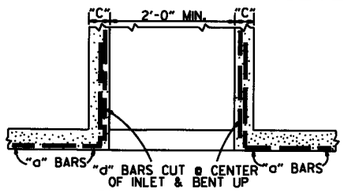


SECTION A-A

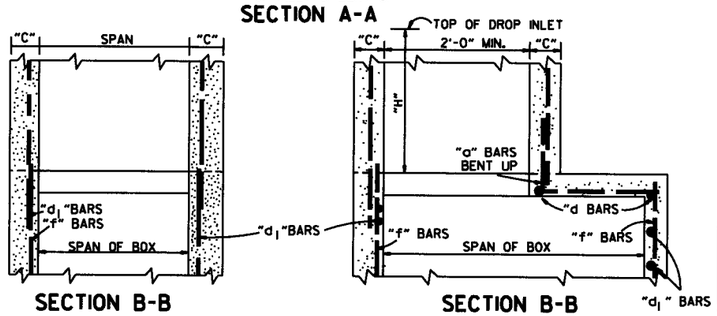


SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



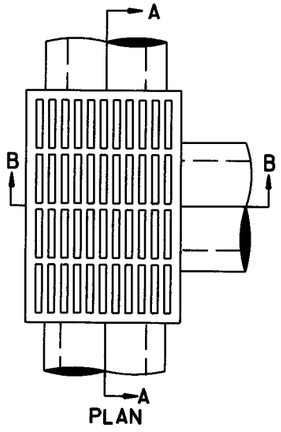
SECTION A-A



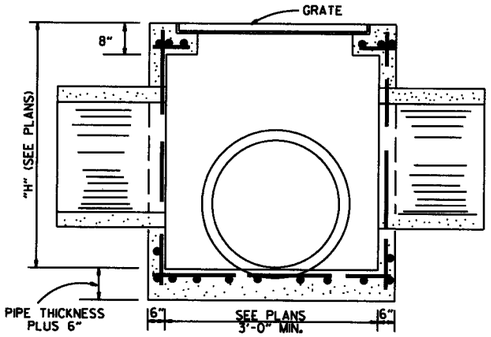
SECTION B-B SECTION B-B

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.

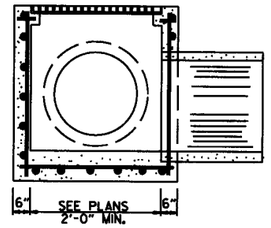


PLAN



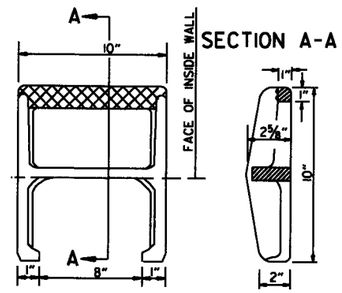
SECTION A-A

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)

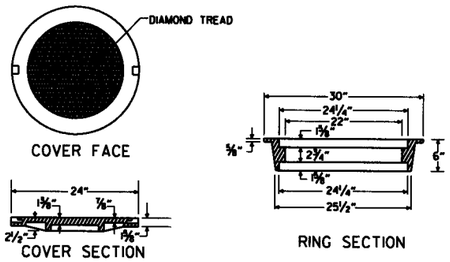


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

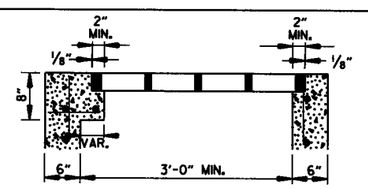
DETAIL OF STEP FOR DROP INLET



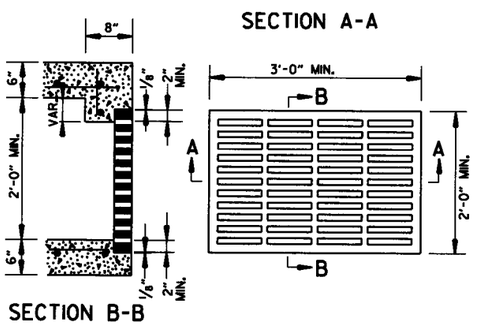
COVER SECTION RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



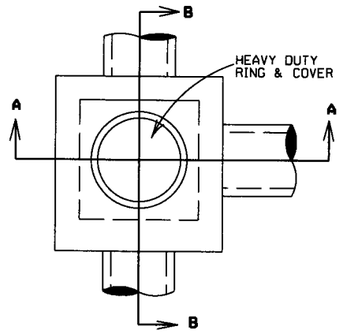
SECTION A-A



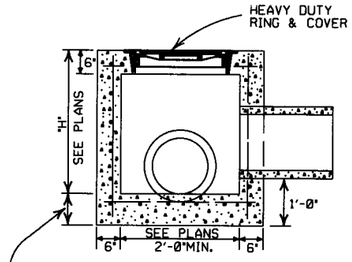
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET

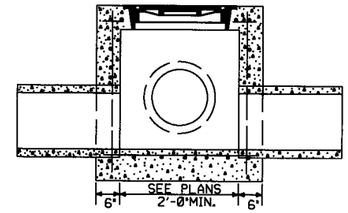


PLAN



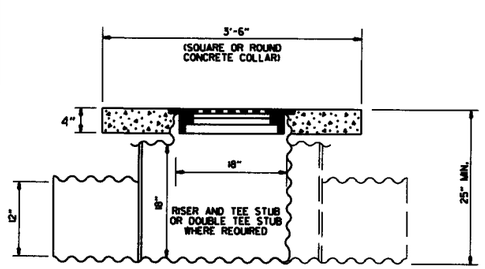
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

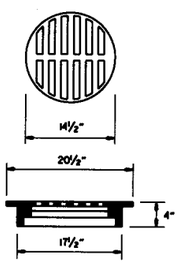


SECTION B-B

JUNCTION BOX (TYPE E)



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

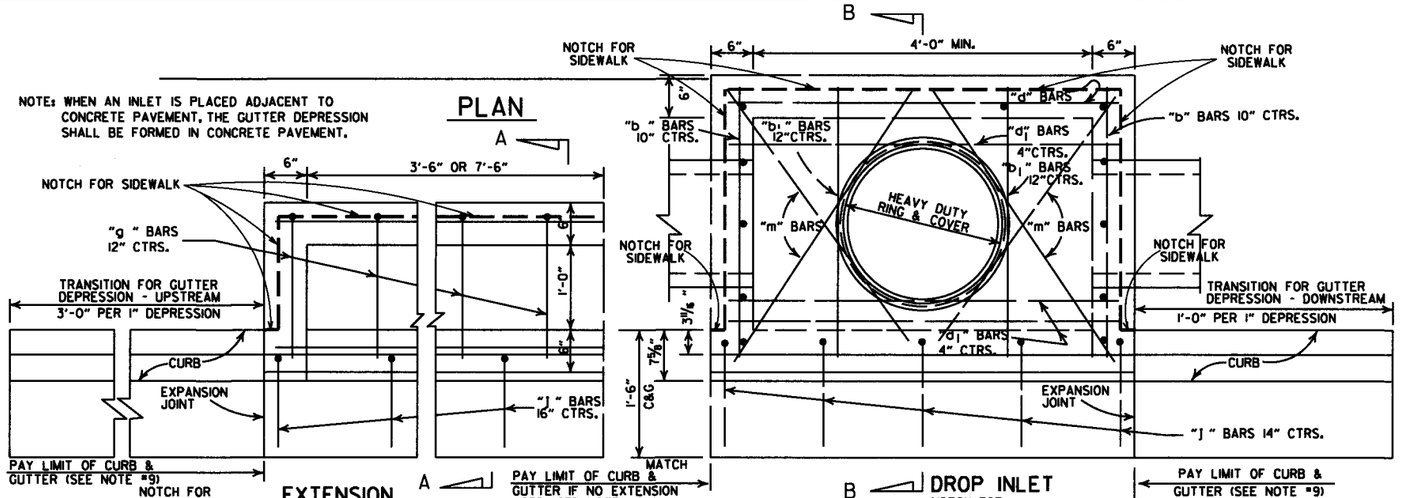
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

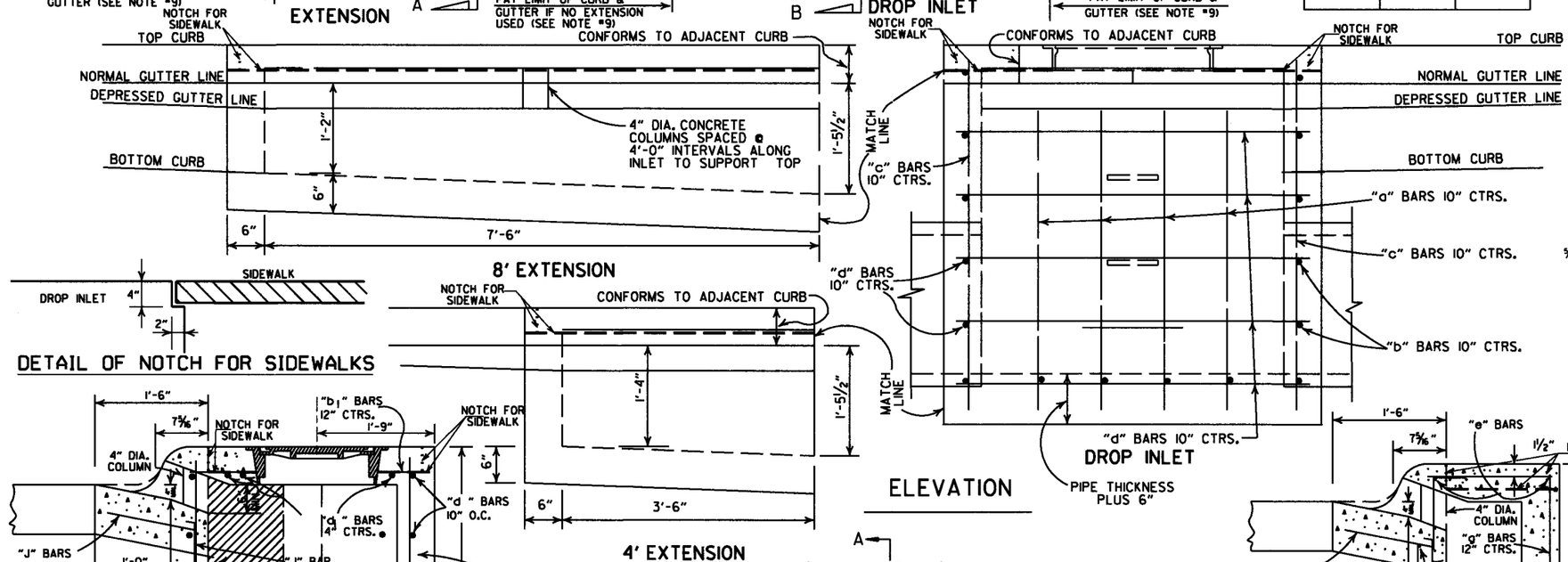
DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9





4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC. CU. YDS.	HEIGHT 5'-0" REINF. STEEL POUNDS	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DROP INLET EXTENSION

4'-0" CLASS A CONC. CU. YDS.	4'-0" REINF. STEEL POUNDS	8'-0" CLASS A CONC. CU. YDS.	8'-0" REINF. STEEL POUNDS
0.58	38	0.87	72

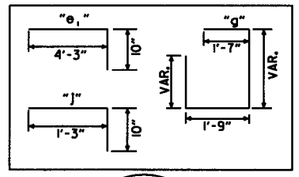
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.

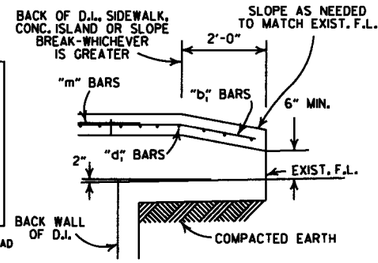
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

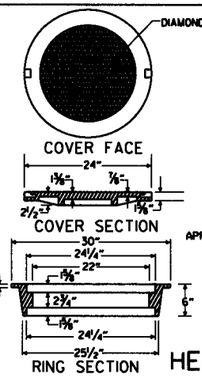
BAR DIAMETER





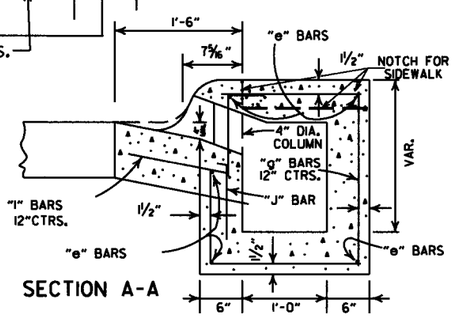
BACK OPENING

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 3/4" 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 1 1/2" 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.

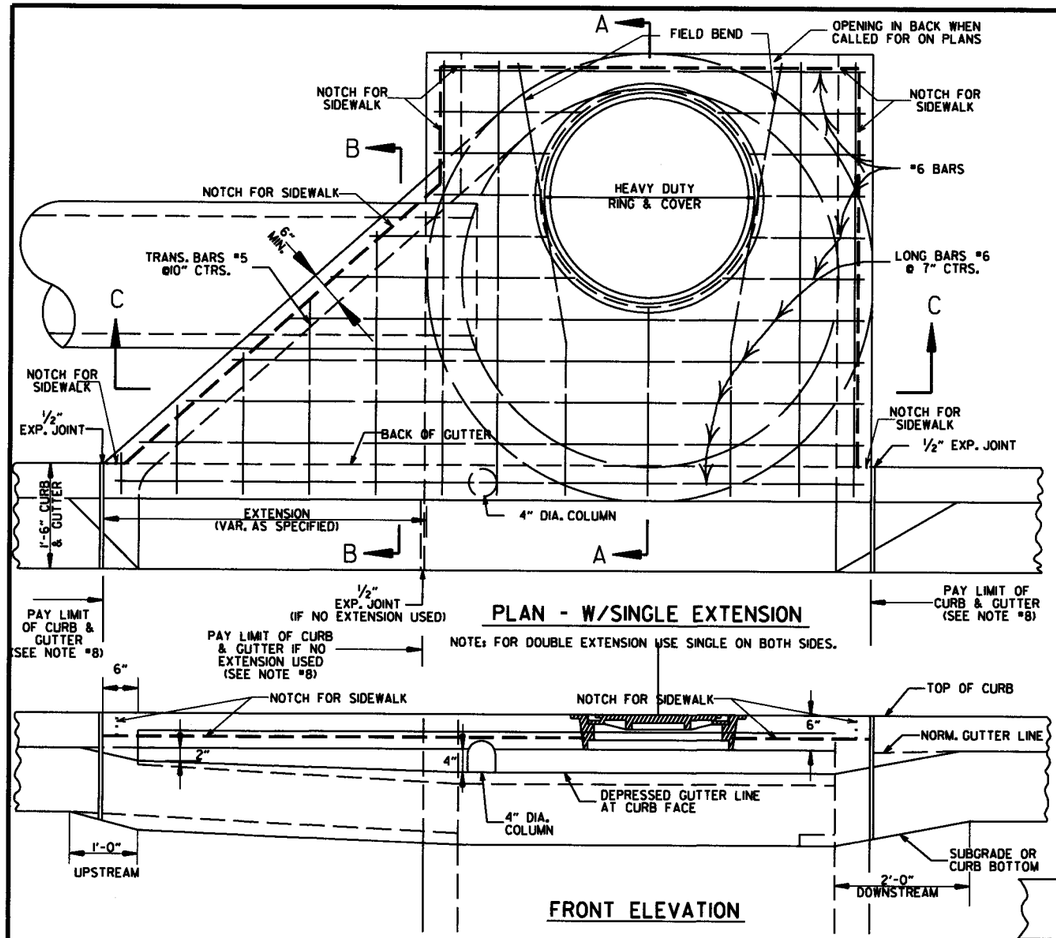
DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER 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)

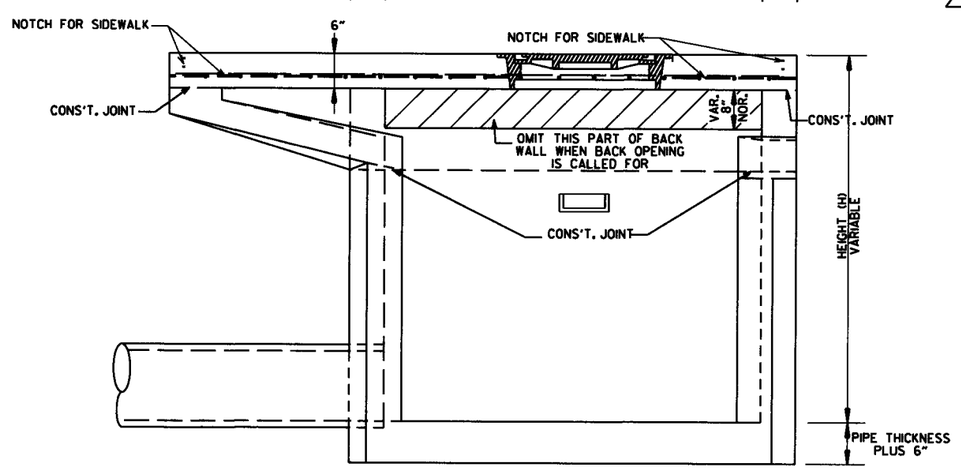
STANDARD DRAWING FPC-9E



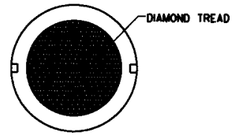
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

FRONT ELEVATION



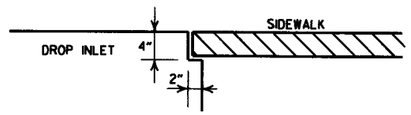
SECTION C-C



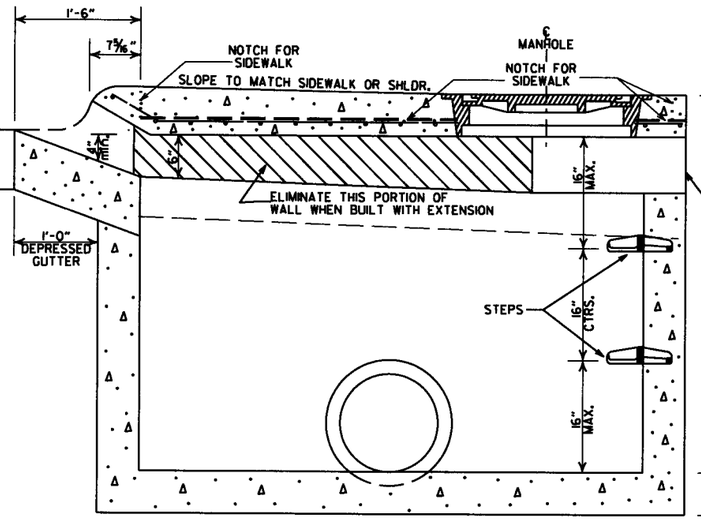
APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

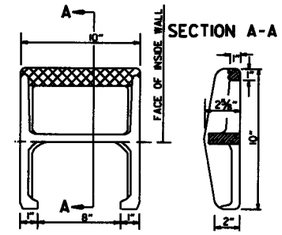
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS



SECTION A-A

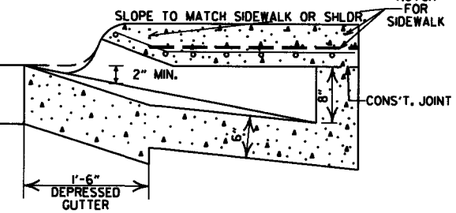


APPROX. WEIGHT = 41 LBS. (CAST IRON)

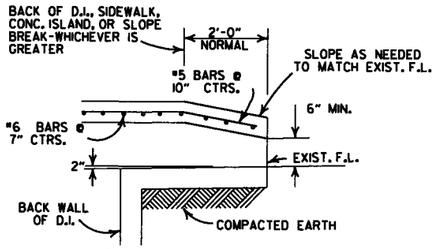
PLAN

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.

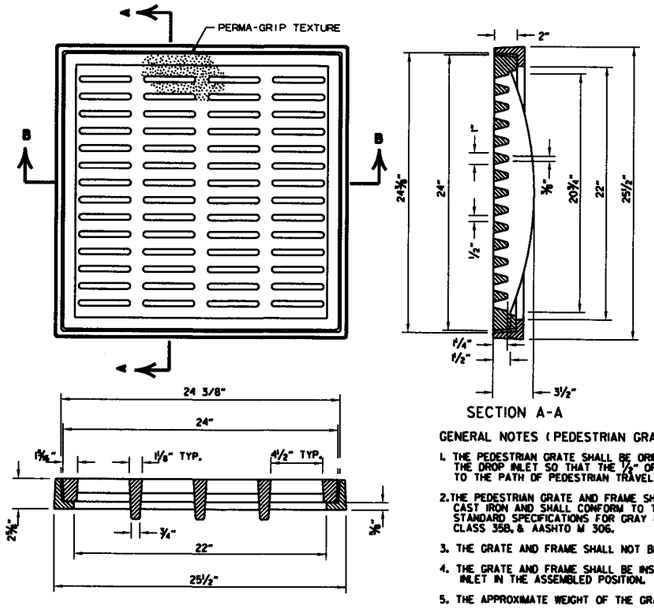
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS	
		CAST IN PLACE	PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE PLOTTED
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, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-25-96	ADDED NOTE 11 ALT. OPENING DIMENSION	
10-12-95	CORRECTED "5 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
4-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
8-3-94	REVISED GENERAL NOTES	1-3-94
4-8-93	REV. BACK OPEN DETAIL & NOTE	4-8-93
8-8-91	REVISED NOTES 1,12 & ADDED BK.OPEN DETAIL	8-8-91
11-20-89	ADDED NOTE NO. 12	11-20-89
4-24-89	ADDED NOTE 8 & MINIMUM WALL THICKNESS	5-5-89
7-25-88	ADDED EXTEND NOTE TO SECTION A-A	7-25-88
1-14-87	MODIFIED WALL THICKNESS	1-14-87
12-2-87	ISSUED	12-2-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M



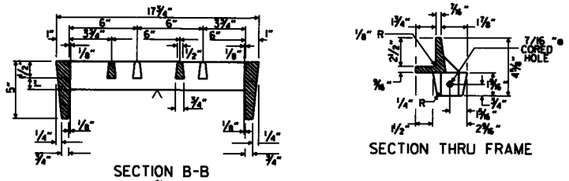
SECTION A-A

SECTION B-B

GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

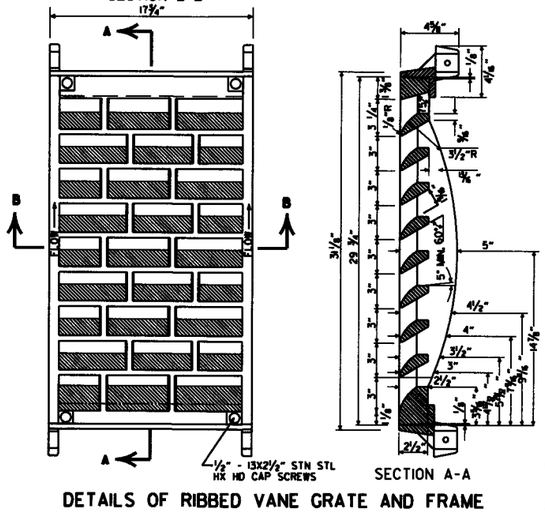
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS 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 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



SECTION B-B

SECTION THRU FRAME

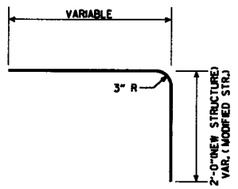


SECTION A-A

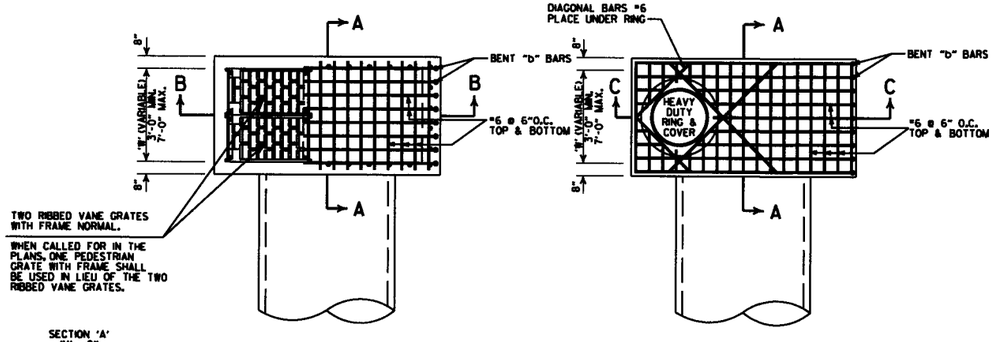
DETAILS OF RIBBED VANE GRATE AND FRAME

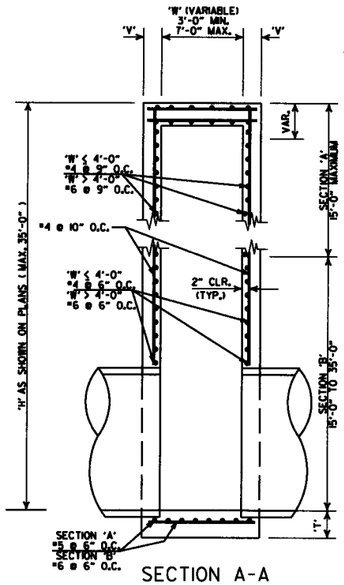
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

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.



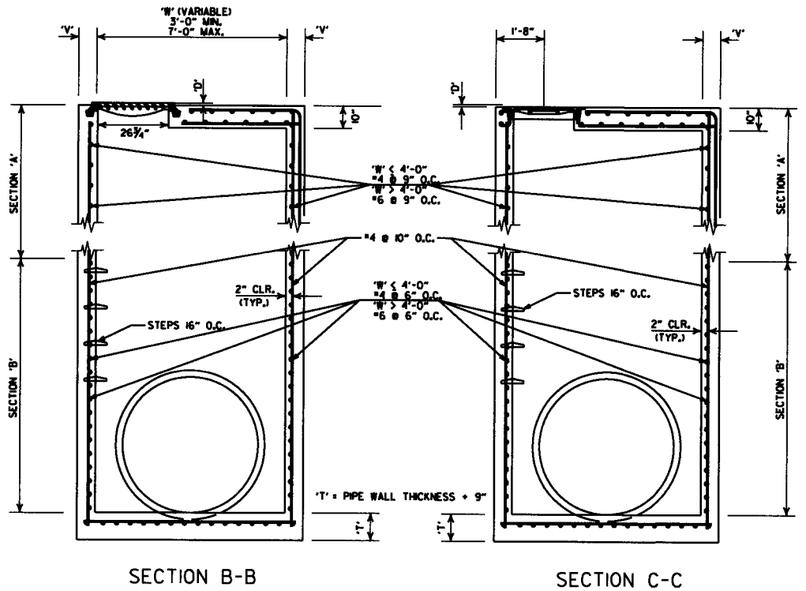
DETAIL OF BENT "b" BAR





SECTION 'A' 'V' = 8"
SECTION 'B' (H)≤4'-0" 'V' = 8"
SECTION 'B' (H)>4'-0" 'V' = 10"

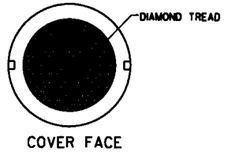
SECTION A-A



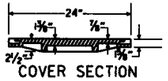
SECTION B-B

SECTION C-C

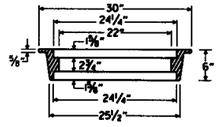
DETAILS OF DROP INLET (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

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.

GENERAL NOTES (HEAVY DUTY RING & COVER):

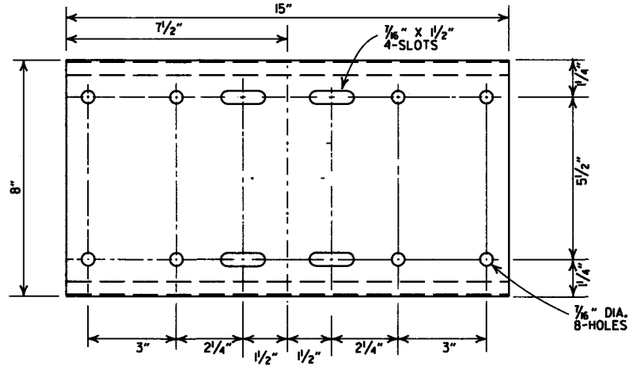
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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

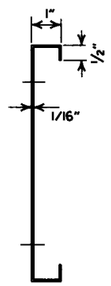
ARKANSAS STATE HIGHWAY COMMISSION

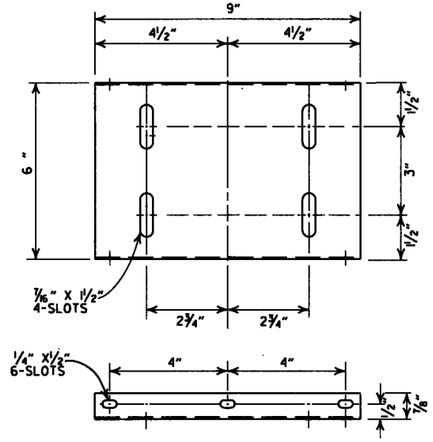
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

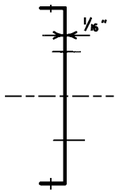


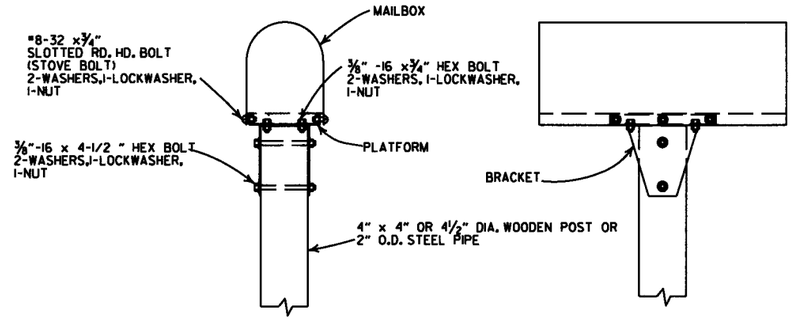
SHELF



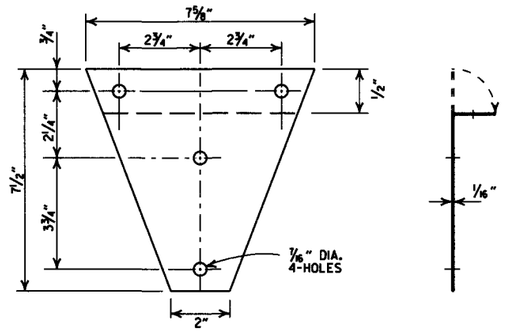


PLATFORM





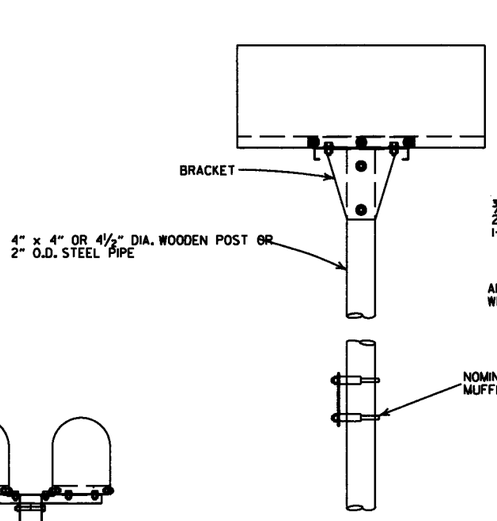
SINGLE INSTALLATION



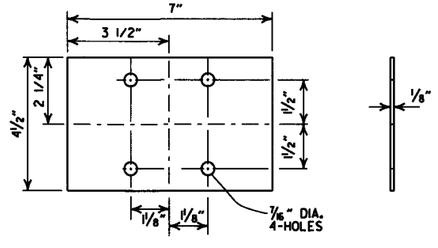
BRACKET

GENERAL NOTES

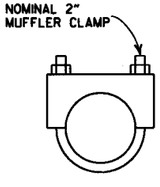
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X ¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



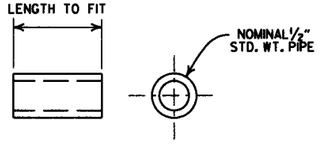
DOUBLE INSTALLATION



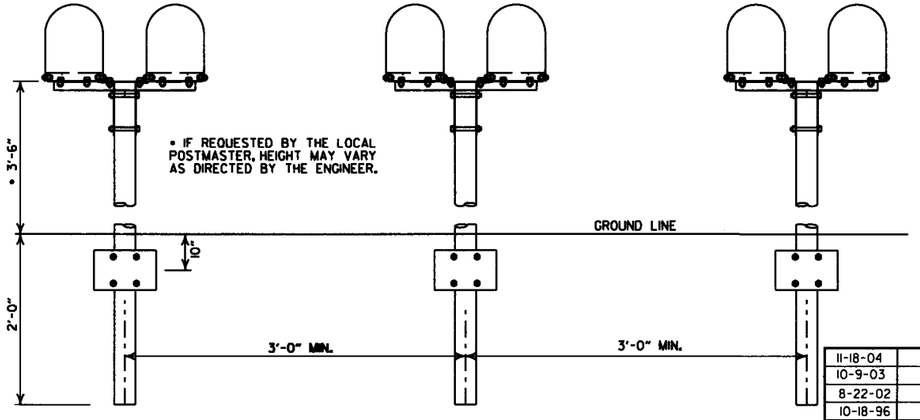
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-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	31⅜	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.

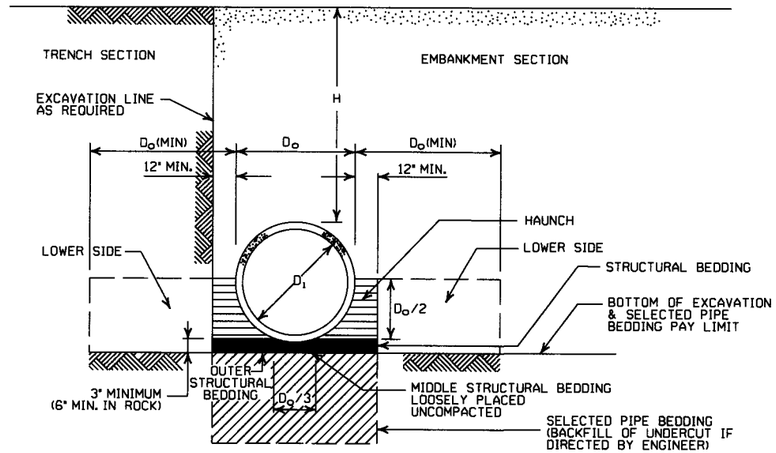
- LEGEND -

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.

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.

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."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

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

CORRUGATED METAL PIPE ARCHES

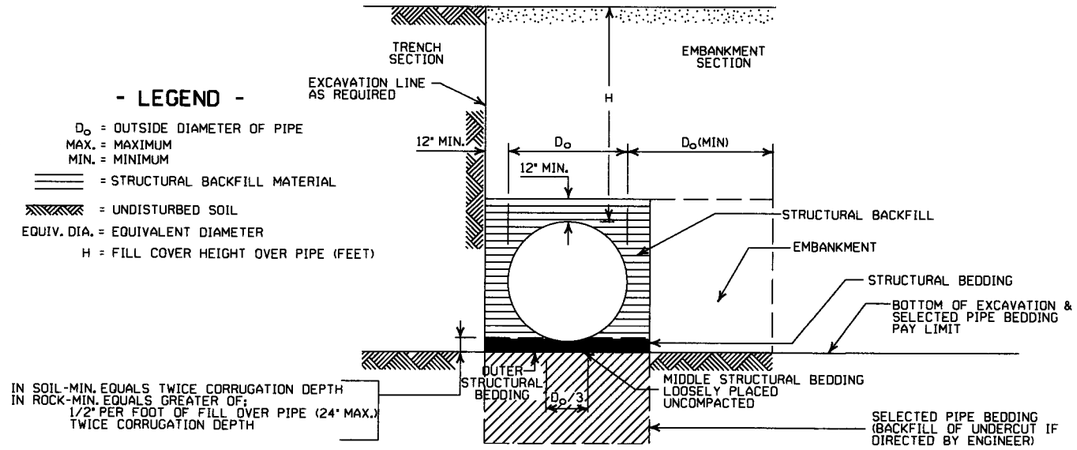
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL MIN. THICKNESS REQUIRED INCHES	STEEL ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	STEEL MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	ALUMINUM MIN. THICKNESS REQUIRED INCHES	ALUMINUM ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	ALUMINUM MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION 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.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

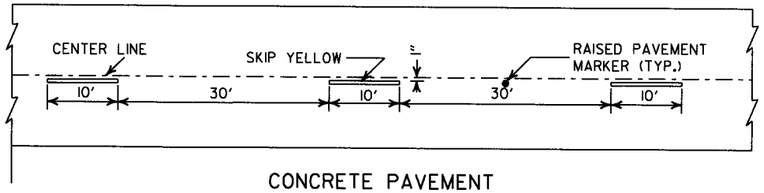
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

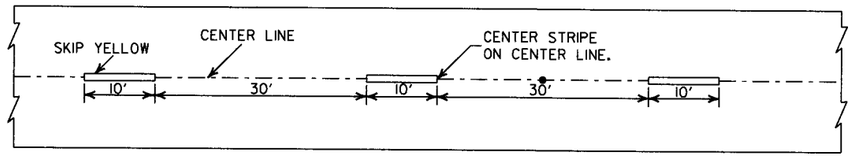
METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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.

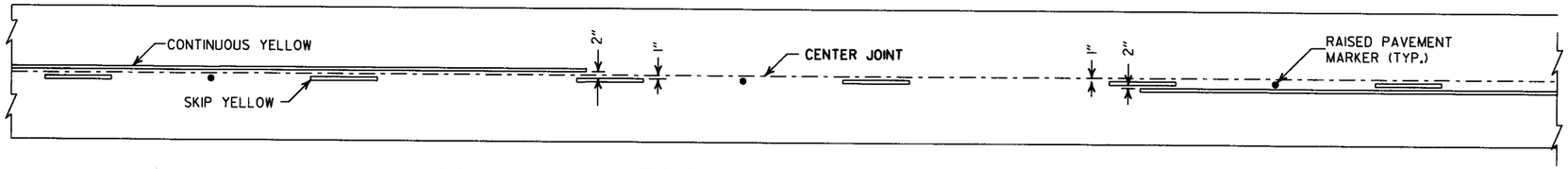


CONCRETE PAVEMENT

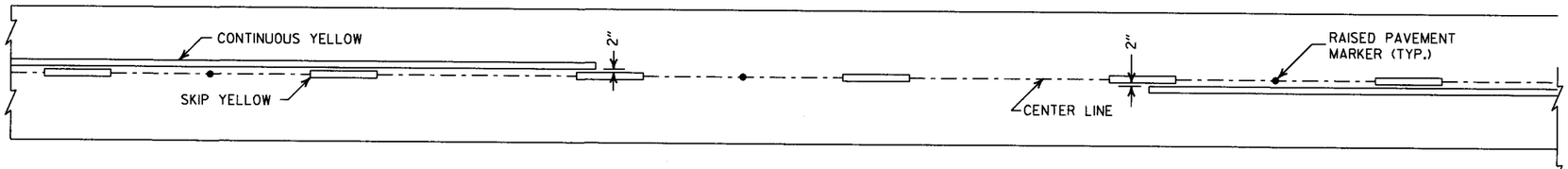


ASPHALT PAVEMENT

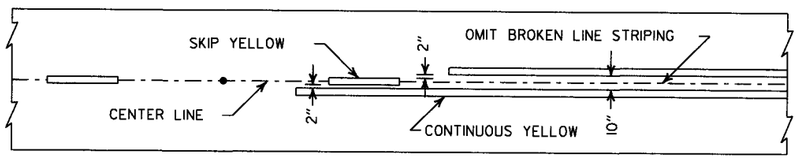
BROKEN LINE STRIPING



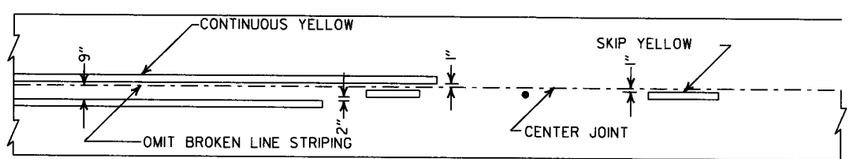
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

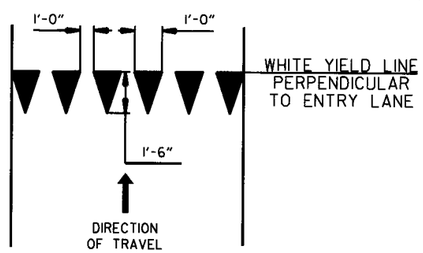


ASPHALT PAVEMENT

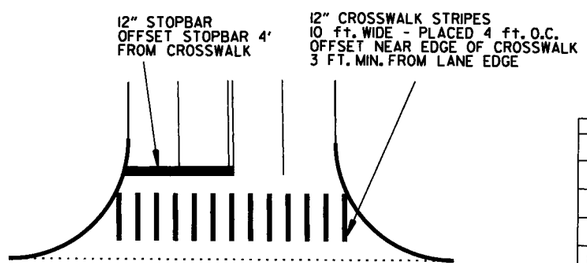


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

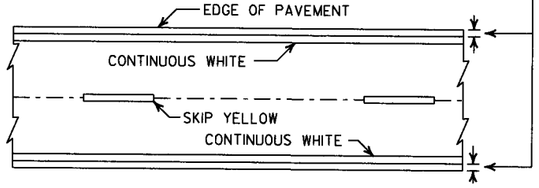


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

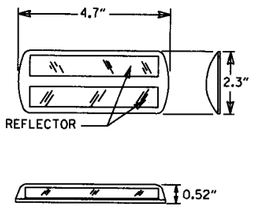
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

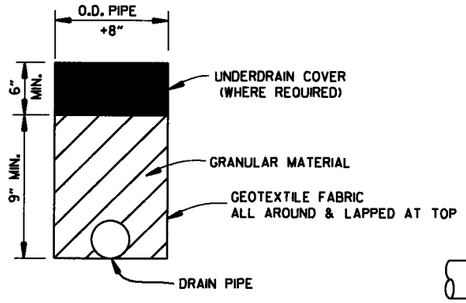
PAVEMENT MARKING DETAILS

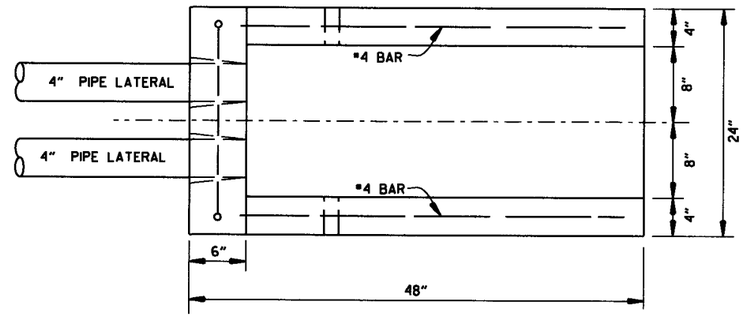
STANDARD DRAWING PM-1

NOTE:

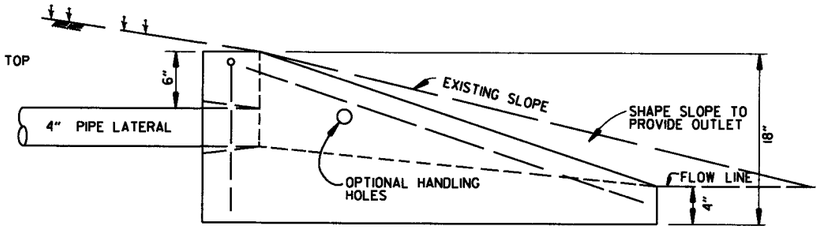
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

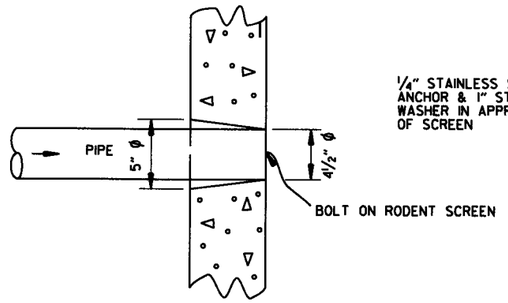




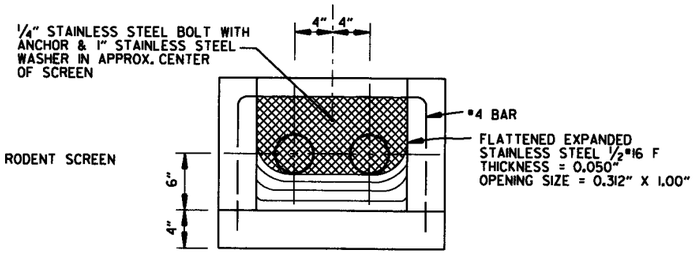
PLAN VIEW



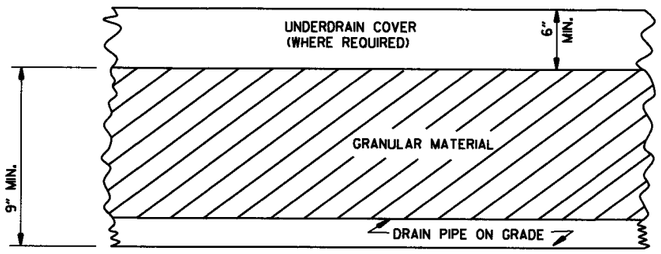
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

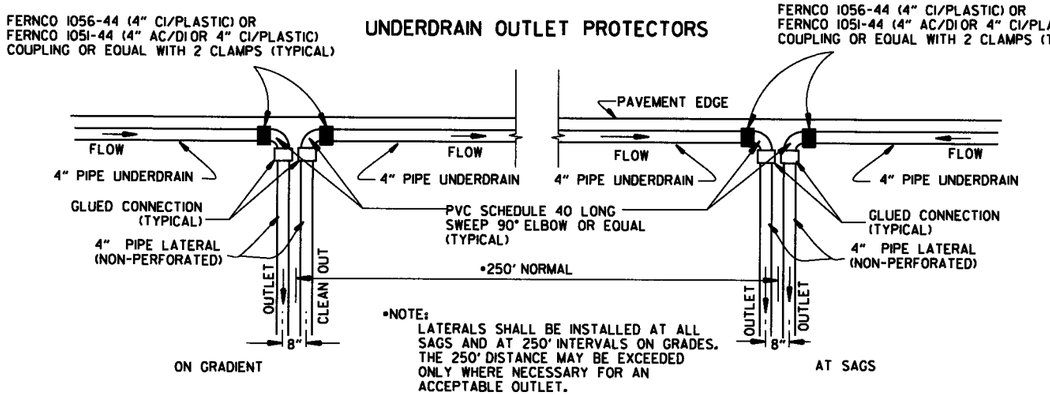


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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."

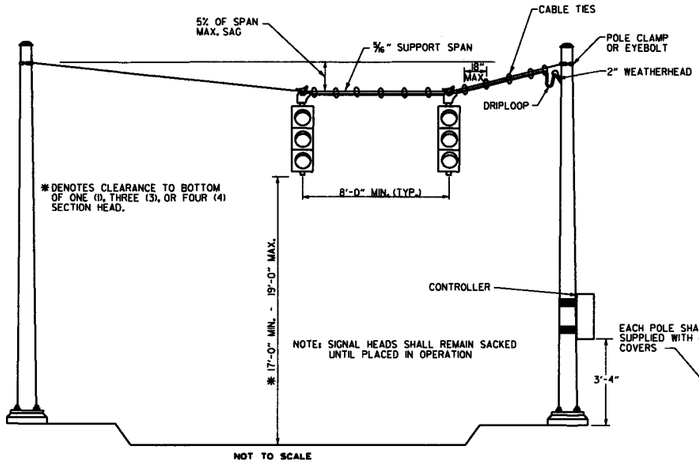
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

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

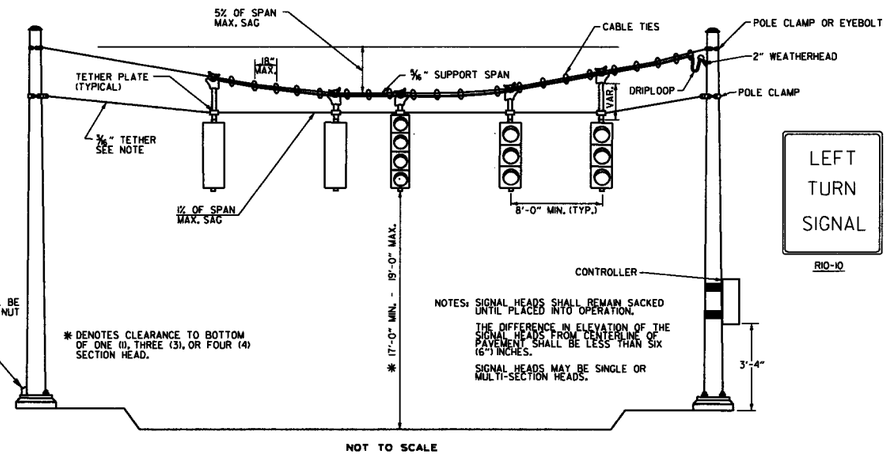
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

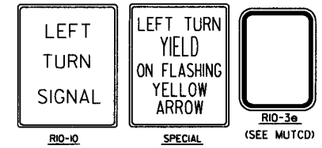
STANDARD DRAWING PU-1



TYPICAL SPAN WIRE ASSEMBLY



TYPICAL SPAN WIRE ASSEMBLY WITH TETHER



NOTES:

EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN SIGNAL PLAN NOTES.

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.

ALL SIGN BLANK SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

ALL SIGN FACE SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

TETHER STRAND SHALL BE EITHER 5*32" OR 3*16" HIGH FATIGUE STAINLESS STEEL AIRCRAFT CABLE IN 7/19 CONFIGURATION, MIL-W-83420 CERTIFIED, WITH A MINIMUM STRENGTH OF 2400 LB.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

FOUNDATION NOTES:

ALL REINFORCING STEEL SHALL BE GRADE 40 MINIMUM.

SPAN WIRE POLES WITH A 9" OR 10" POLE BASE SHALL USE FOUNDATIONS THAT ARE 30" IN DIAMETER AND 9'-0" IN DEPTH, VERTICAL REINFORCING STEEL SHALL BE 12-#7 @ 102". HORIZONTAL REINFORCING STEEL SHALL BE 13-#4 @ 8.333" O.C.

SPAN WIRE POLES WITH AN 11", 12", OR 13" POLE BASE SHALL USE FOUNDATIONS THAT ARE 30" IN DIAMETER AND 12'-0" IN DEPTH. VERTICAL REINFORCING STEEL SHALL BE 12-#7 @ 138". HORIZONTAL REINFORCING STEEL SHALL BE 17-#4 @ 8.5" O.C.

ALL PED POLES SHALL USE FOUNDATIONS THAT ARE 30" IN DIAMETER AND 7'-0" IN DEPTH. VERTICAL REINFORCING STEEL SHALL BE 12-#7 @ 78". HORIZONTAL REINFORCING STEEL SHALL BE 10-#4 @ 8.44" O.C.

NOTES: SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

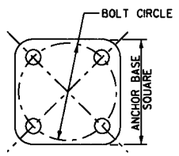
OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE IN STALLED IN LIEU OF ROUND POLES AND ARMS. ALL POLES AND ARMS IN A JOB MUST BE OF THE SAME SHAPE.

SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

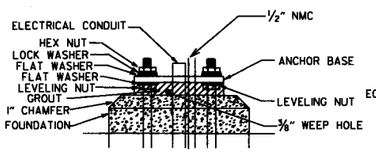
CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

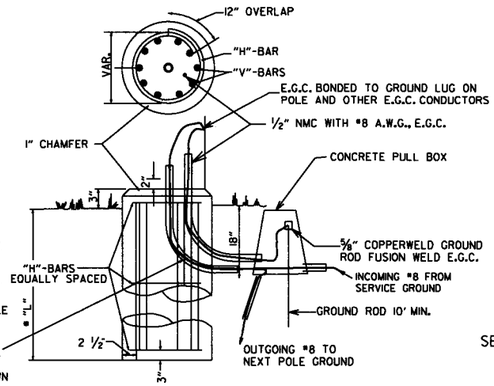
THE ANCHOR BOLTS AND SWEEPING "L" CONDUIT SHALL BE PLACED IN THE FOUNDATION IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE GROUND ROD SHALL EXTEND A MINIMUM OF 10' BELOW CABINET FOUNDATION.

THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.



ANCHOR BASE



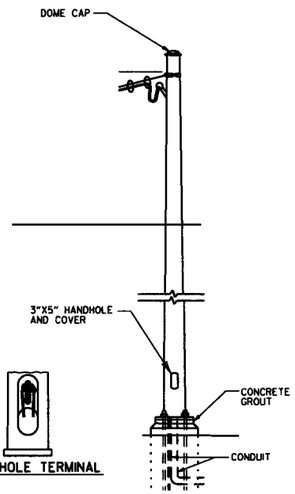


TYPICAL FOUNDATION DETAILS

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 713 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND E.G.C. CONDUCTOR SHALL BE PAID FOR SEPARATELY.

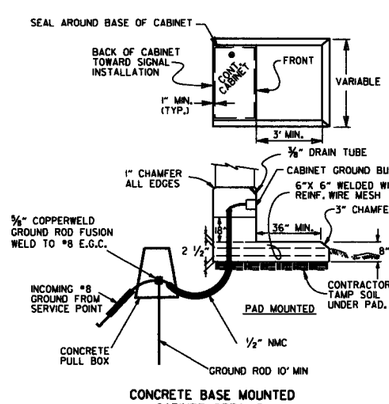
ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C=3500 PSI. CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS CHAMFERED 3/4" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).



HANDHOLE TERMINAL

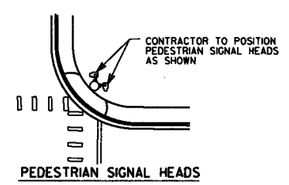
SPAN WIRE ASSEMBLY WITH SPAN WIRE SUPPORT POLE



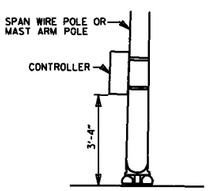
CONCRETE BASE MOUNTED CABINET DETAILS

CABINET 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.



PEDESTRIAN SIGNAL HEADS



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED

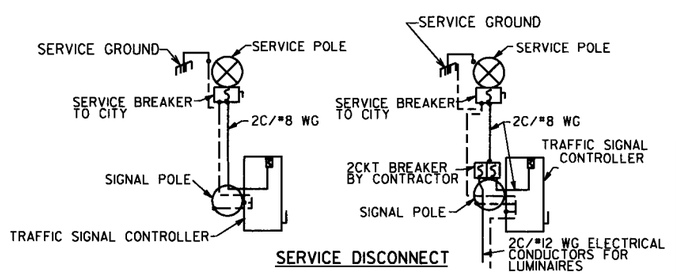
MINIMUM STRUCTURAL REQUIREMENTS:

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 THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.



SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

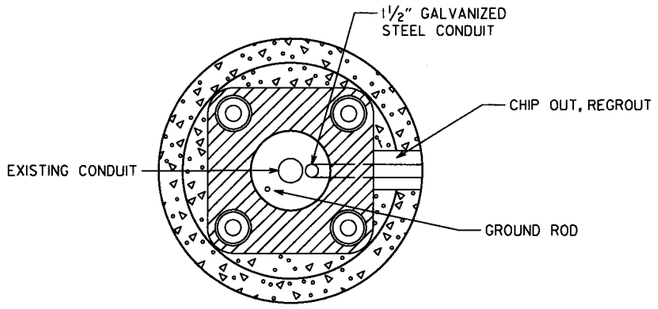
DATE	REVISION	FILMED
11-16-17	REVISED NOTES, ADDED SPAN WIRE SUPPORT POLE DETAIL AND HANDHOLE TERMINAL DETAIL.	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED PEDESTRIAN SIGN & GROUNDING	
05-21-09	REVISED GROUNDING	
09-10-08	REV. STEEL AIRCRAFT CABLE CONFIGURATION NOTE	
07-31-08	REVISED GROUNDING	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENTATION & SIGNAL OPERATION	
05-22-02	REVISED	
12-27-99	REVISED	
11-15-98	REVISION TO NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

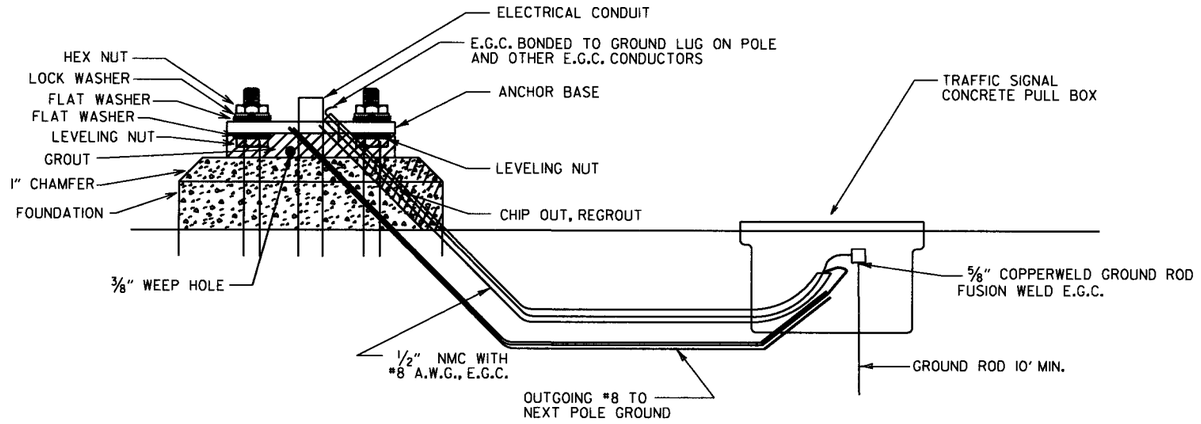
SPAN WIRE ASSEMBLY STEEL POLE

STANDARD DRAWING SD-3

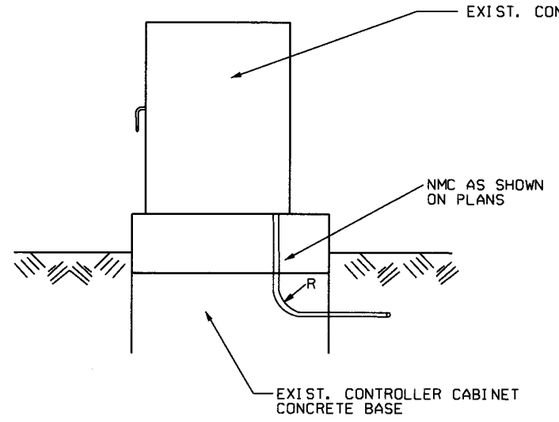
CONDUIT ENTRY TO EXISTING POLE BASE



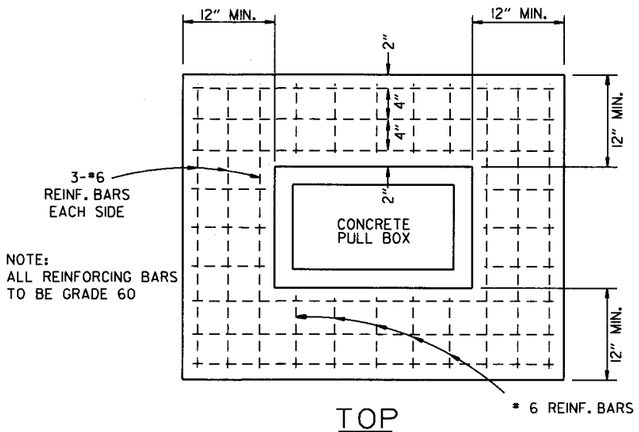
ANCHOR BASE



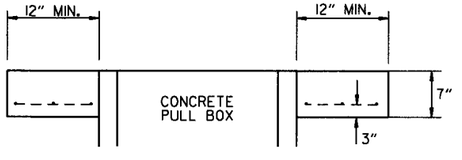
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

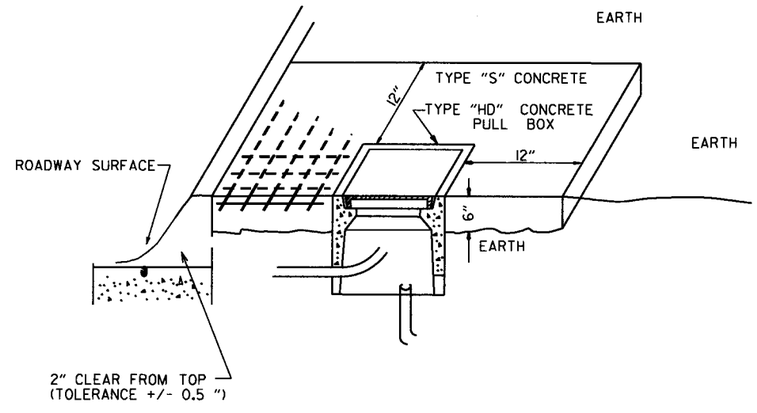


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



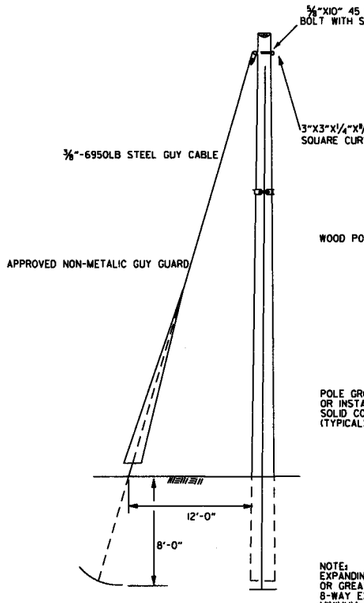
NOTE:
ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. 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	

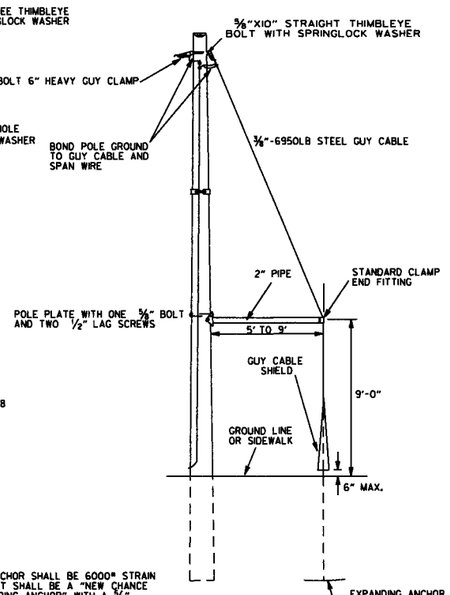
ARKANSAS STATE HIGHWAY COMMISSION

HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6



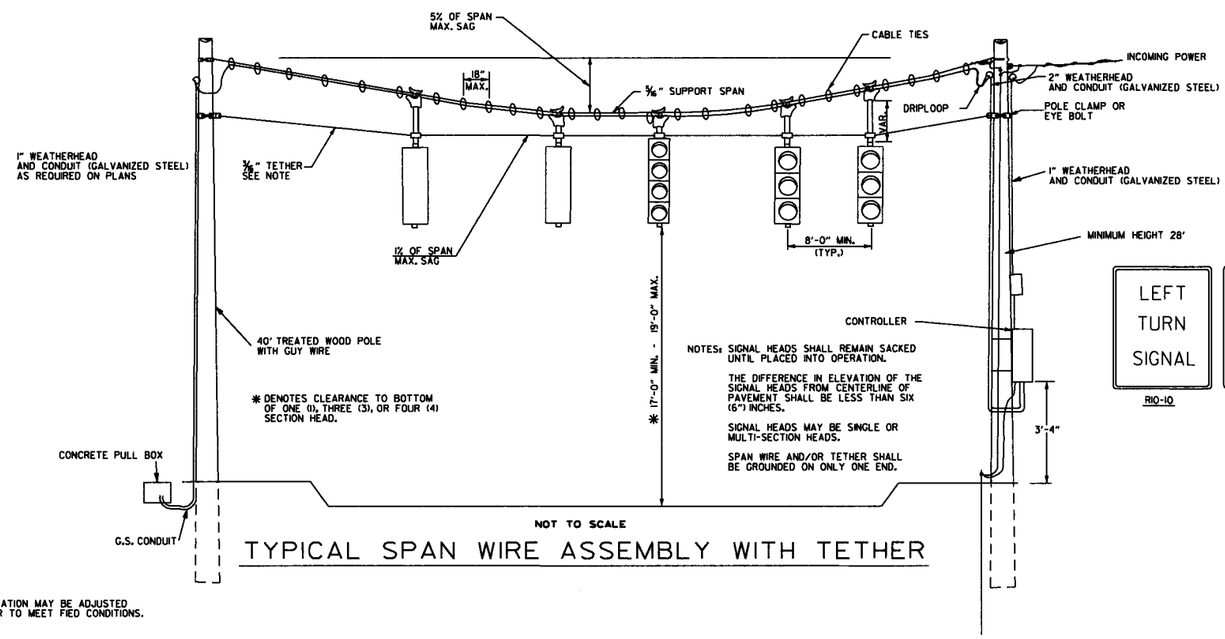
STANDARD GUY INSTALLATION



NOTE:
EXPANDING ANCHOR SHALL BE 6000# STRAIN OR GREATER. IT SHALL BE A "NEW CHANCE 8-WAY EXPANDING ANCHOR", WITH A ⅝" MINIMUM GUY ROD.

SIDEWALK GUY INSTALLATION

NOTE:
CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIED CONDITIONS.



* DENOTES CLEARANCE TO BOTTOM OF ONE (1), THREE (3), OR FOUR (4) SECTION HEAD.

NOTES: SIGNAL HEADS SHALL REMAIN SACKED UNTIL PLACED INTO OPERATION.

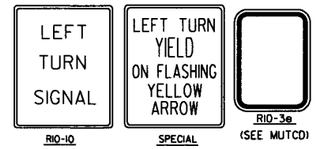
THE DIFFERENCE IN ELEVATION OF THE SIGNAL HEADS FROM CENTERLINE OF PAVEMENT SHALL BE LESS THAN SIX (6") INCHES.

SIGNAL HEADS MAY BE SINGLE OR MULTI-SECTION HEADS.

SPAN WIRE AND/OR TETHER SHALL BE GROUNDED ON ONLY ONE END.

NOT TO SCALE

TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

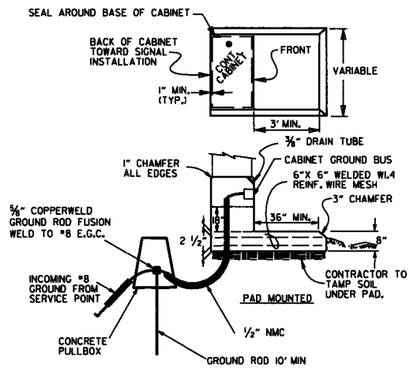


NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

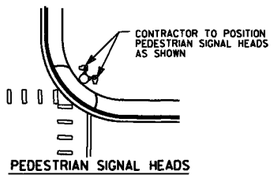
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

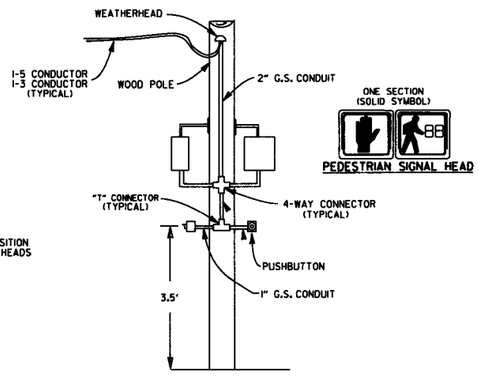
THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X ⅝" COPPERWELD GROUND ROD.



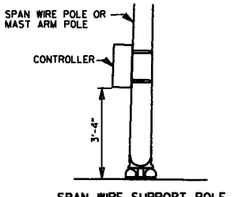
CONCRETE BASE MOUNTED CABINET DETAILS



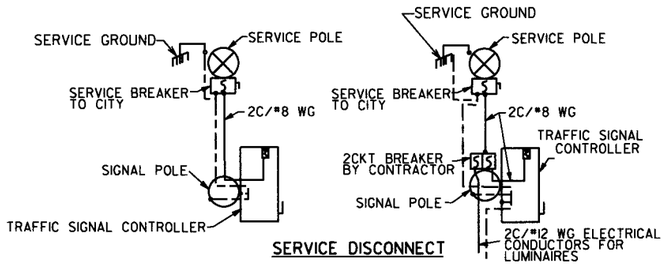
PEDESTRIAN SIGNAL HEADS



WOODEN POLE INSTALLATION OF PED HEADS



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

NOTES:

EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN SIGNAL PLAN NOTES.

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.

ALL SIGN BLANK SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

ALL SIGN FACE SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

CABINET 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.

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.

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 THICKNESS GREATER THAN ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

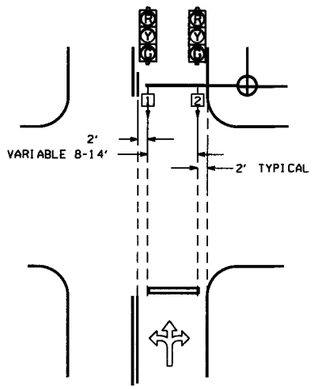
DATE	REVISION	FILMED
11-16-17	REVISED NOTES, ADDED SPAN WIRE SUPPORT POLE DETAIL, ADDED PEDESTRIAN SIGNAL HEAD DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED PEDESTRIAN SIGN & GROUNDING	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENTATION & SIGNAL OPERATION	
05-22-02	REV. TYP. SPAN WIRE ASSEMBLY	
12-27-99	REVISED	
11-18-98	REVISION TO NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

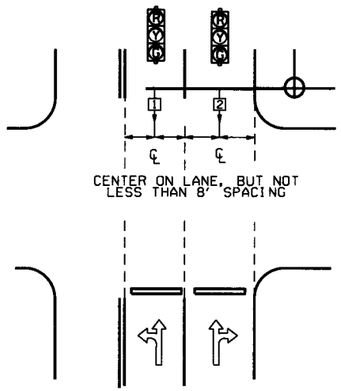
SPAN WIRE ASSEMBLY WOOD POLE

STANDARD DRAWING SD-7

(A)



(B)



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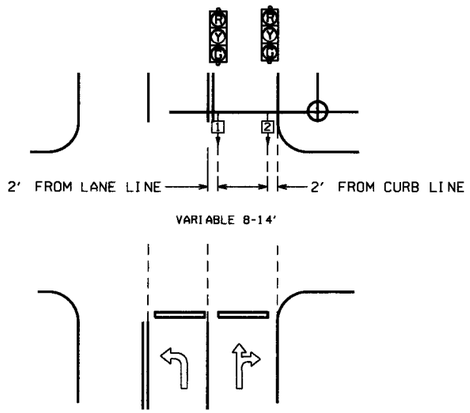

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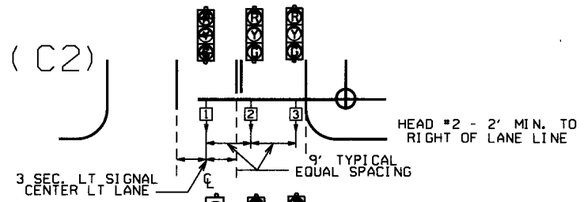
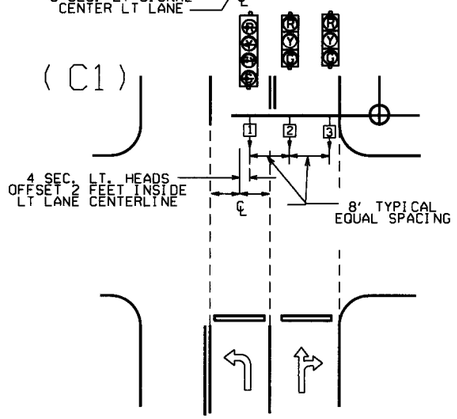


(C1)



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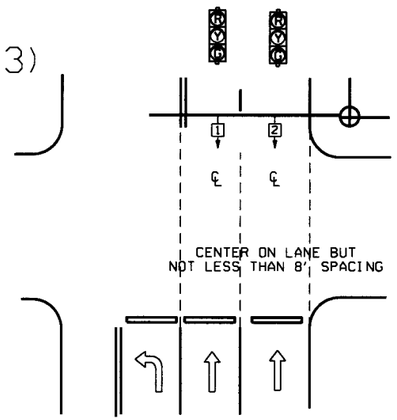

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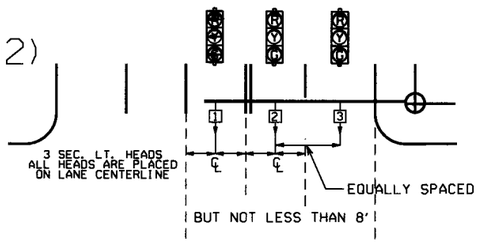
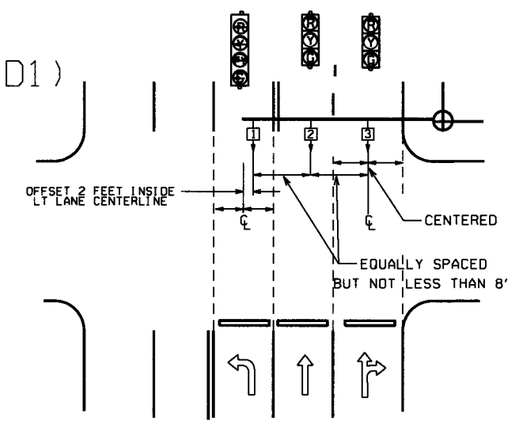
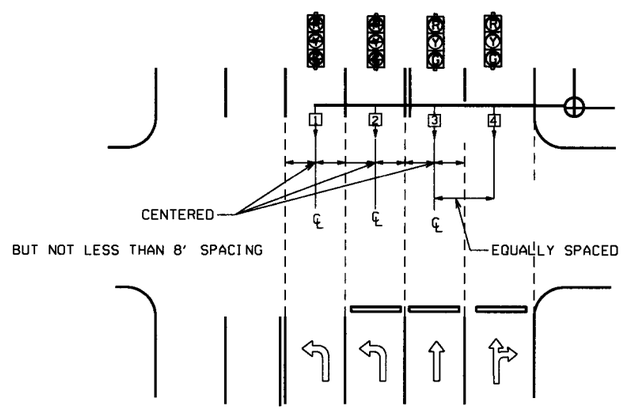


(D1)



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION 'PROTECTED/PERMISSIVE' LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION 'PROTECTED' LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.

DATE	REVISION	DATE FILM
12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	

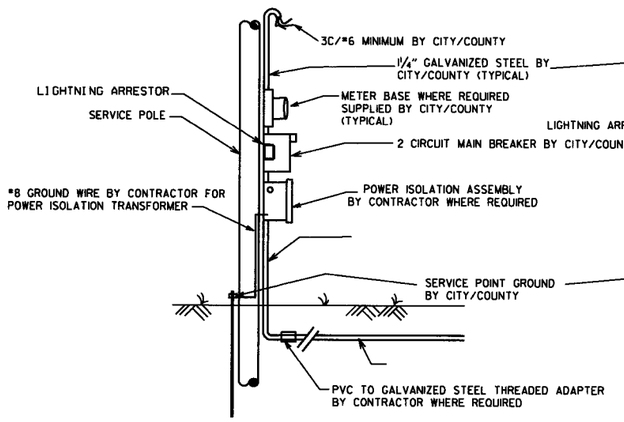
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

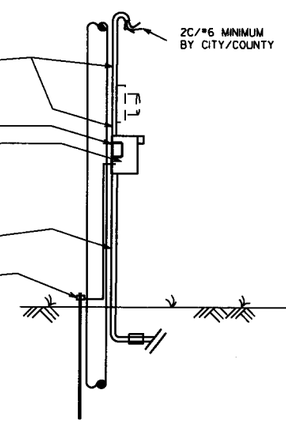
STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY



WITHOUT POWER ISOLATION ASSEMBLY



NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES:
MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

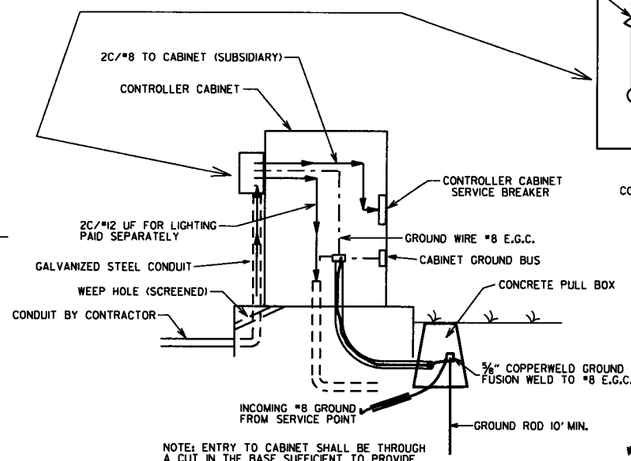
ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, 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.

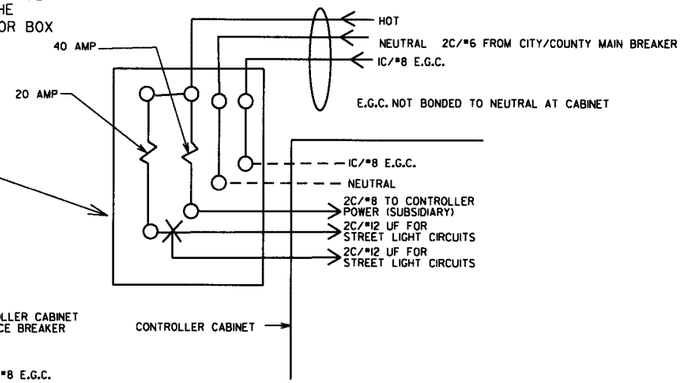
MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP 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)



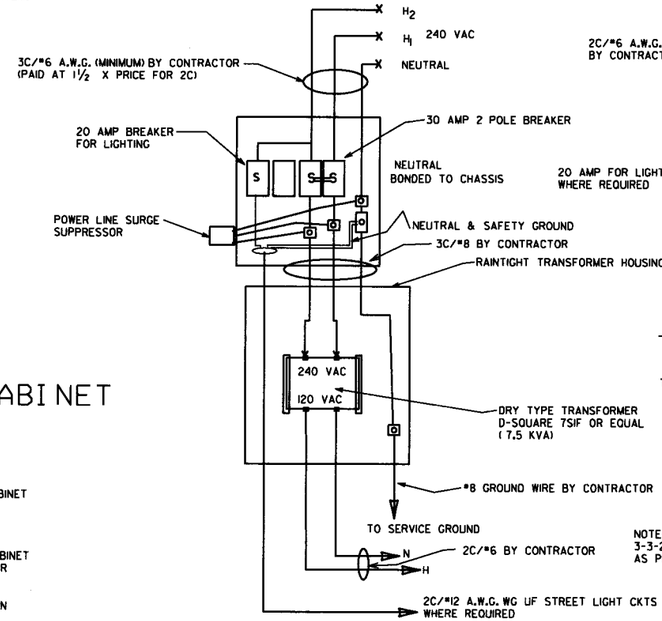
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



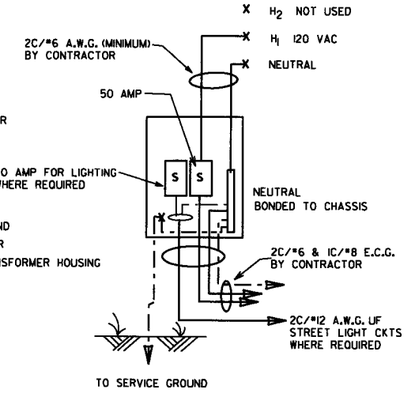
MAIN BREAKER WIRING (TYPICAL)

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

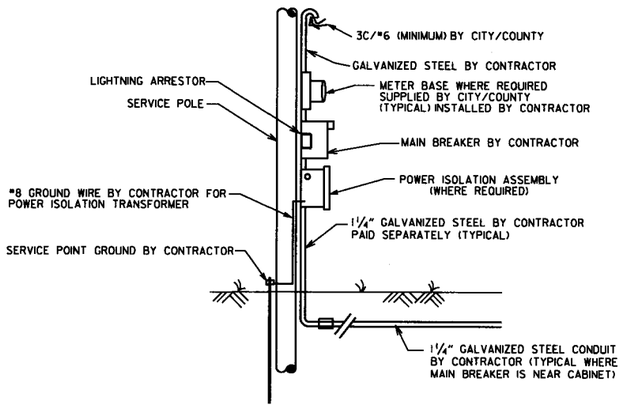


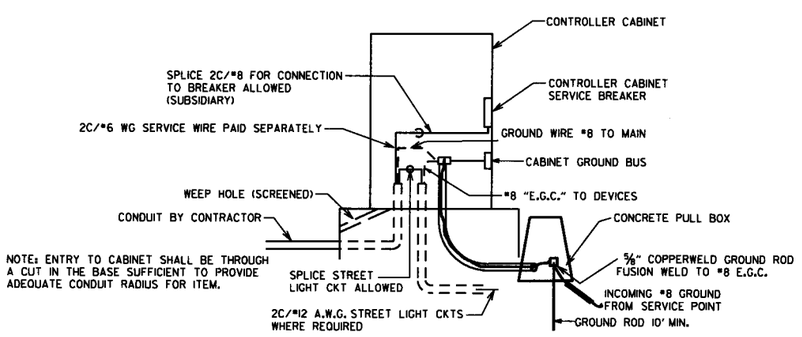
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



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





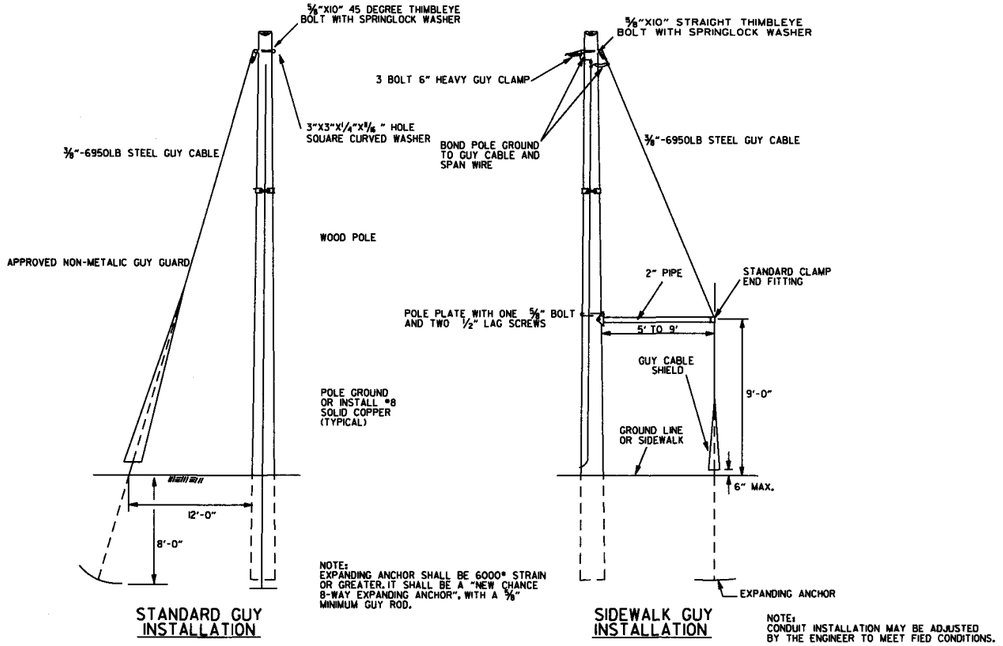
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

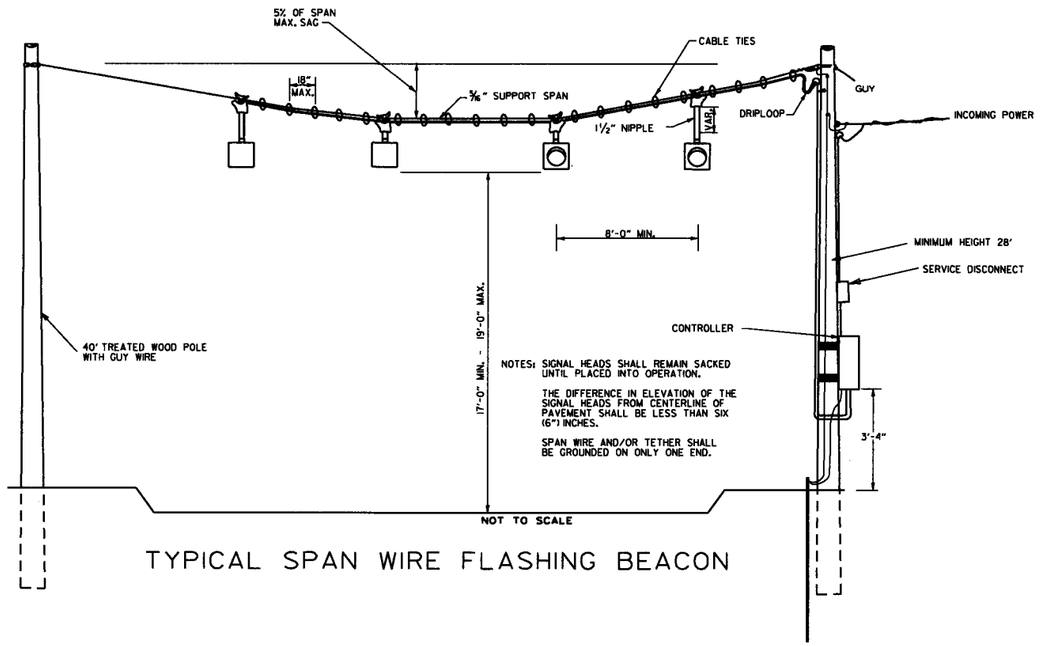
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9





TYPICAL SPAN WIRE FLASHING BEACON

NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X ⅝" COPPERWELD GROUND ROD.

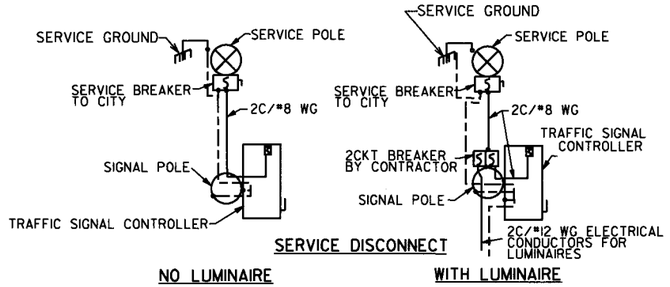
GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

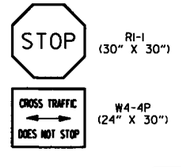
CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTNING AND R.F.I. SUPPRESSORS, GALVANIZED STEEL CONDUIT, TRAFFIC SIGNAL CABLE, 12" TRAFFIC SIGNAL HEAD (1 SEC., 1 WAY) WITH YELLOW LENSES ON MAJOR APPROACH AND RED LENSES ON MINOR APPROACH, FLASHING BEACON CONTROLLER AND A SOLID STATE CALANDER DATE TIME CLOCK WITH DAYLIGHT SAVINGS TIME PROGRAMMING AND 48 HOUR POWER FAIL PROTECTION.

THE CITY/COUNTY SHALL BE RESPONSIBLE FOR PROVIDING, THROUGH A LOCAL UTILITY COMPANY, A SERVICE POINT AND UNDERGROUND/AERIAL POWER TO THE FLASHING BEACON CONTROLLER.



NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES



AT INTERSECTIONS WITH FLASHING RED ON ONE APPROACH AND FLASHING YELLOW ON OTHER, SUPPLEMENTAL "CROSS TRAFFIC DOES NOT STOP" SHALL BE INSTALLED ON THE SUPPORT FOR THE STOP SIGN PRIOR TO ACTIVATION OF BEACON.

TRAFFIC SIGNAL LEGEND

SYMBOL	DEFINITION
	LOOP DETECTOR
	LOOP WIRING
	CONDUIT
Ø A	PHASE A IN PHASING DIAGRAM
2" Ø	2" DIAMETER
1	SIGNAL NO. 1
1	ARROW ON MAST ARM OR SPANWIRE SHOWS DIRECTION OF SIGNAL FACE
	ARROW IN ROADWAY LANE INDICATES DIRECTION OF TRAFFIC IN THE LANE
1 2	SPANWIRE SUPPORT POLES & SPAN WIRE SUPPORTING 2 SIGNALS
1 2	MAST ARM & POLE WITH FOUNDATION SUPPORTING 2 SIGNALS
	CONTROLLER MOUNTED ON SUPPORT POLE
	CONTROLLER MOUNTED ON CONCRETE BASE
	PRECAST CONCRETE PULL BOX

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
05-11-04	REV. GROUND CONDUCTORS & SIGNING	
12-27-99	REVISED NOTES	
11-17-98	REVISED NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

WOOD POLE SPAN WIRE INSTALLATION

STANDARD DRAWING SD-10

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.

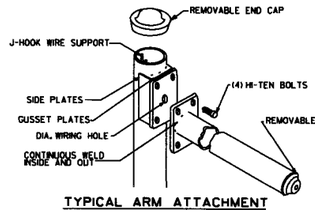
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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 21FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

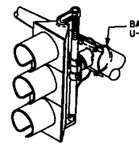
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

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.

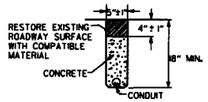
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



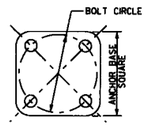
TYPICAL ARM ATTACHMENT



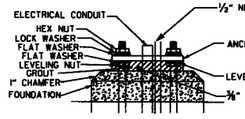
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



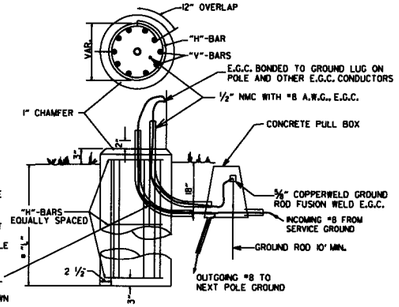
TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



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	HORIZONTAL	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"

* 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 MANIFACTURER. 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.

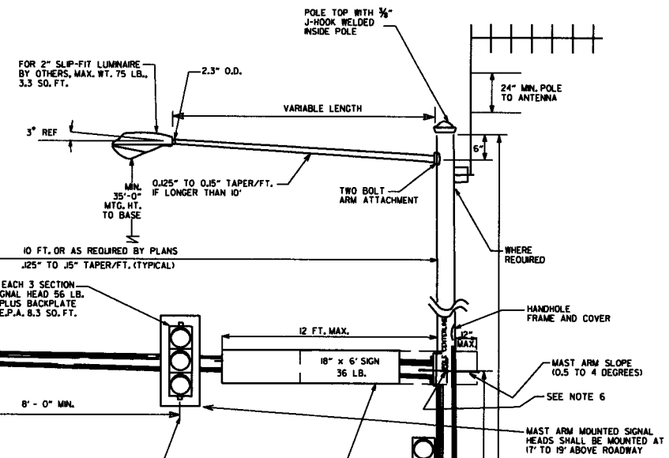
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

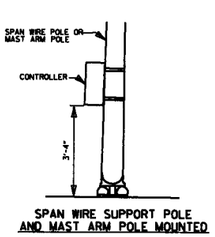
SIGNAL OPERATION NOTES:

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.

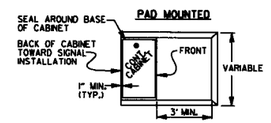
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATION IN FLASH SEQUENCE.

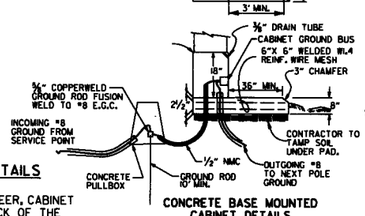
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.





SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED





CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

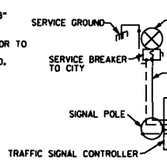
NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

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.

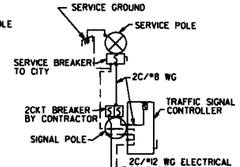
9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A ¼" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

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.



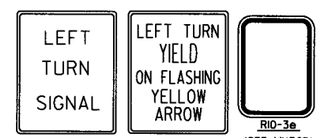
NO LUMINAIRE



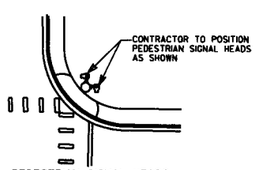
WITH LUMINAIRE

SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES



R10-10 SPECIAL



PEDESTRIAN SIGNAL HEADS

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

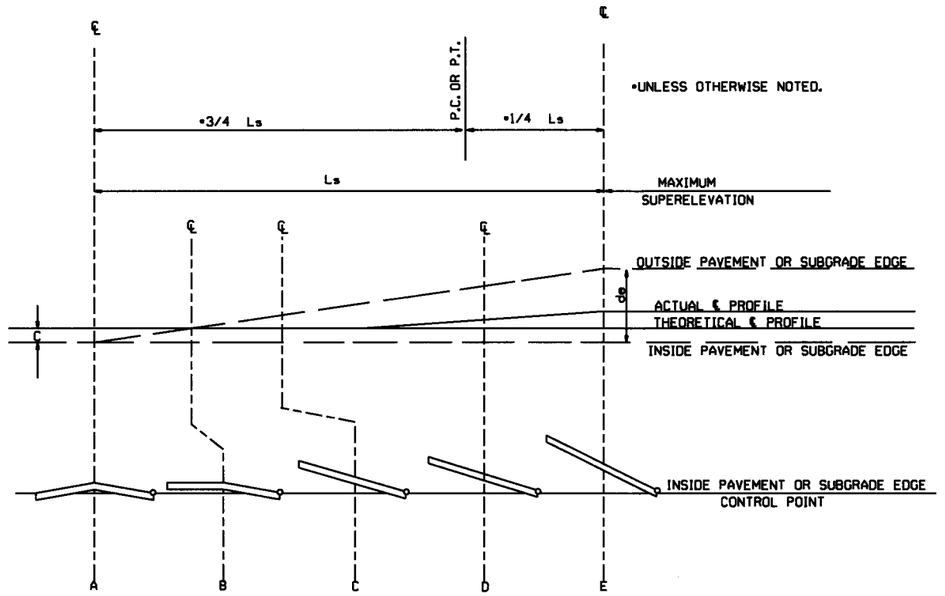
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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		
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225		0.043	250		0.054	275	
1° 45'	N.C.			0.025			0.036			0.043			0.049			0.062		
2° 00'	R.C.			0.028	175		0.040			0.048			0.055			0.070		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.078	300	
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	350
2° 45'	0.023			0.037		200	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			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				
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305	350			
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	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300							
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.

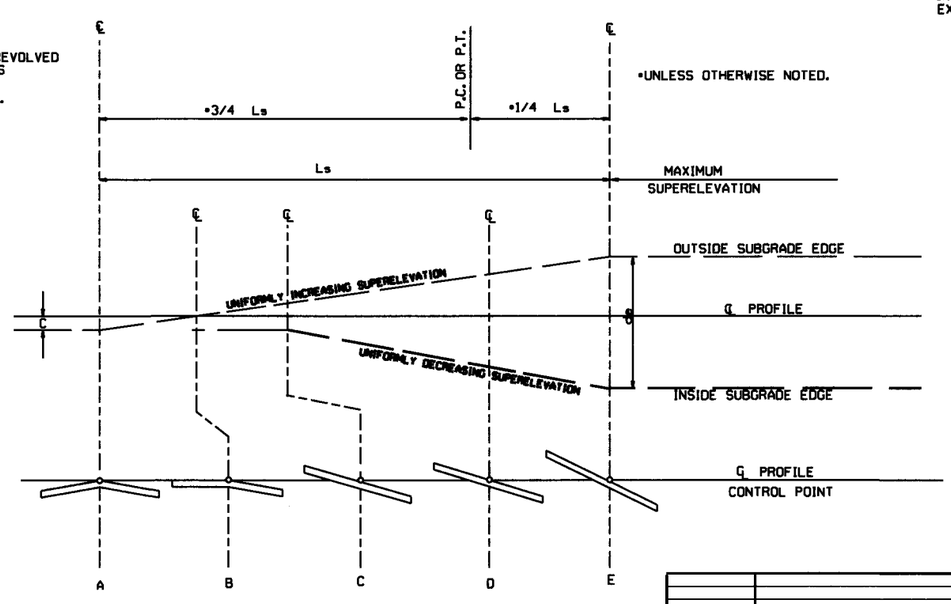
GENERAL NOTES

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

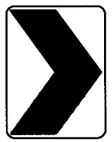
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

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.)

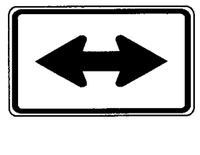
W2-1
30"X30"

S1-1
36"X36"

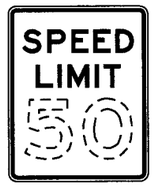
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

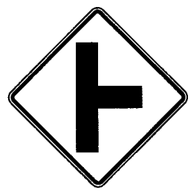


M6-4
21"X15"



R2-1
24"X30"

W1-5
30"X30"
(LT. or RT.)

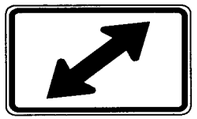


W2-2
30"X30"

W5-2
36"X36"

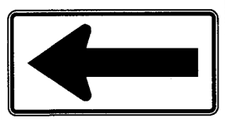
W8-3
36"X36"

RI-3P
18"X6"

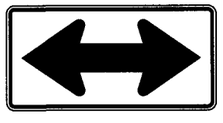


M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"

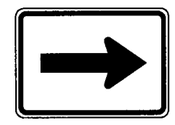


W1-7
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

W13-1P
18"X18"



M6-1
21"X15"

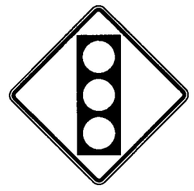
NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.

M6-6
21"X15"

W1-2
30"X30"
(LT. or RT.)

W2-4
30"X30"

W10-1
36" DIAMETER

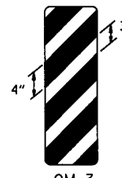


W3-3
36"X36"

M6-2
21"X15"

S4-3P
24"X8"

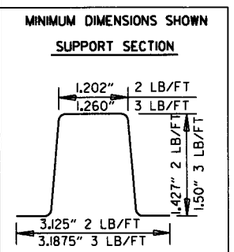
S4-2P
24"X10"



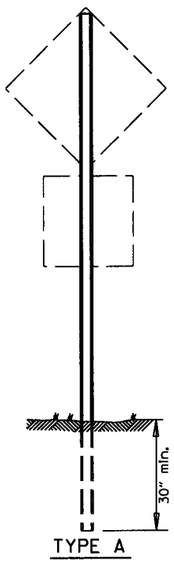
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

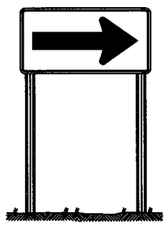


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

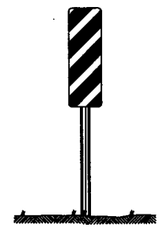


TYPE A

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

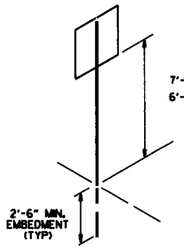
SUPPORT ASSEMBLIES

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 WI-8	
1-15-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

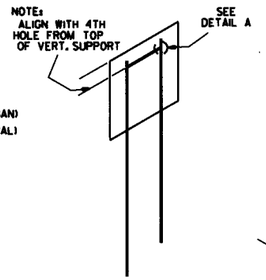
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

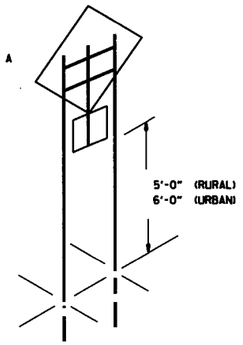
STANDARD DRAWING SHS-1



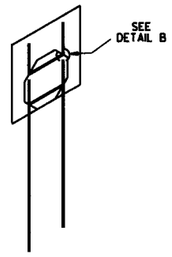
U-1



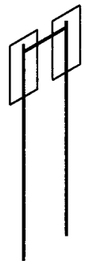
U-2



U-2 (A)



U-2 (B)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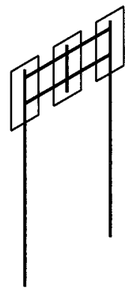
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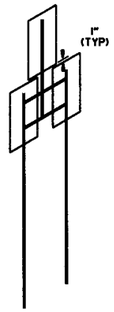

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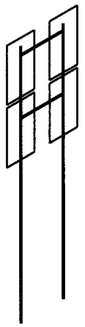
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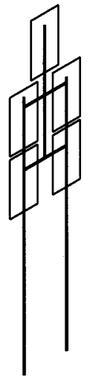
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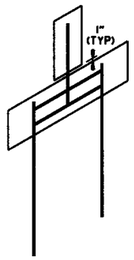

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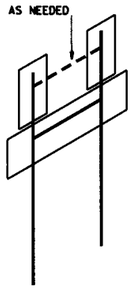

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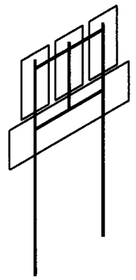
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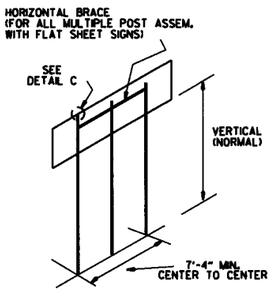
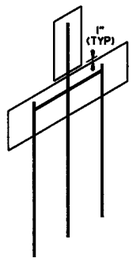


U-3



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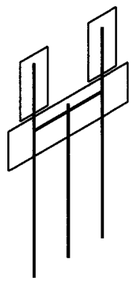
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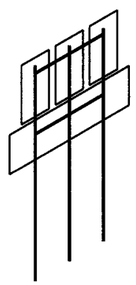
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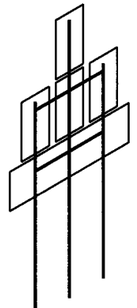
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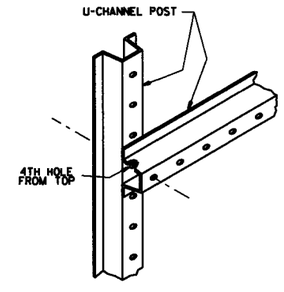
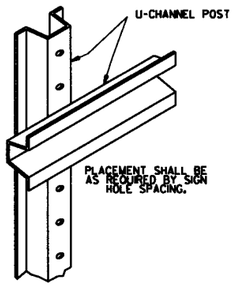
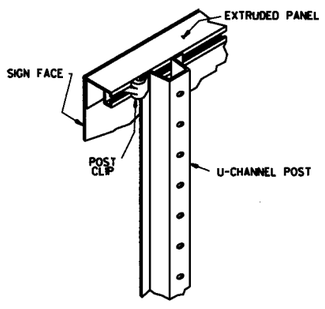


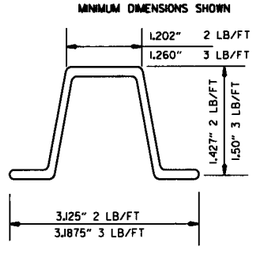
DETAIL A
SHOWING HORIZONTAL BRACE



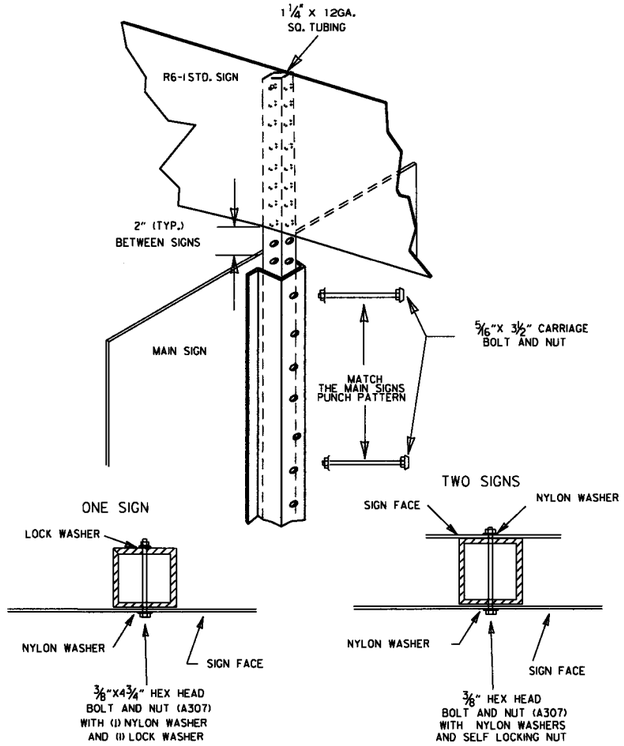
DETAIL B
SHOWING BACK-TO-BACK INSTALLATION



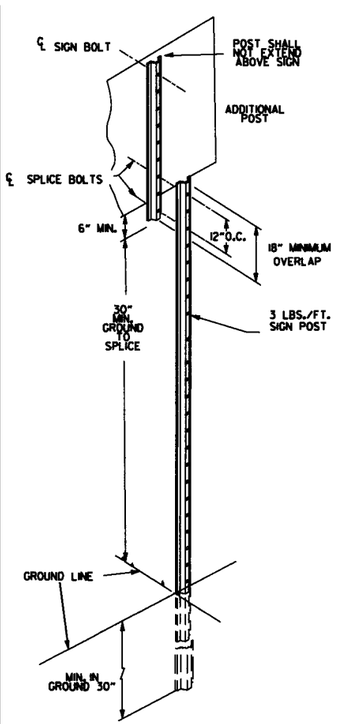
DETAIL C
SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



DETAIL D
U-CHANNEL POST



DETAIL E
R6-1 EXTENSION
FOR U-CHANNEL POST



DETAIL F
DETAIL OF SPLICES

NOTES:

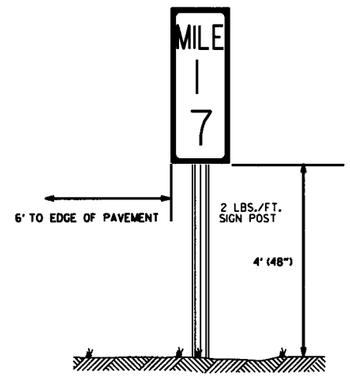
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

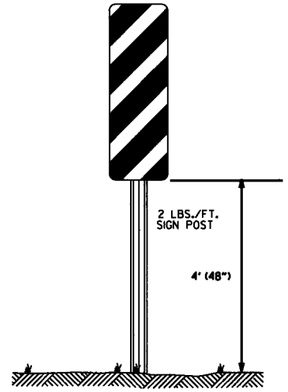
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

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

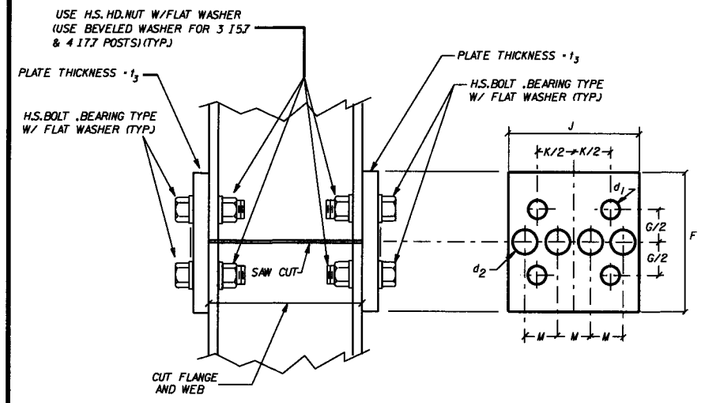
DATE	REVISION	FILMED
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

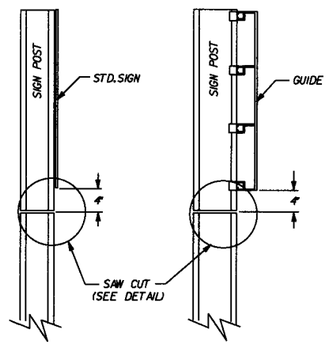
STANDARD DRAWING SHS-2

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																						
W 6X12	5/8" x 2 3/4"	450"-590"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	9/32	4 1/4"	2"		4"	2 1/4"	1"	9/16"	3/4"	1/4"	1/2" x 1 1/2"	1.01
W 6X15												5"	2 1/2"		6"	3 1/2"	1 1/2"	11/16"	1 1/4"	3/8"	5/8" x 2 1/4"	2.51
W 8X18												5"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1 1/16"	3/8"	3/4" x 2 1/4"	2.26
W 8X21												5 1/2"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1"	1/2"	3/4" x 2 1/4"	3.35
W 10X22	3/4" x 3 1/2"	750"-1050"	6"	2 1/4"	1 7/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	3/32"	6"	3"		5 3/4"	2 3/4"	1 7/8"	13/16"	1 1/16"	1/2"	3/4" x 2 1/4"	4.03
W 10X26																						
W 12X26												6"	3"		6 1/2"	3 1/2"	1 7/8"	13/16"	1 7/16"	1/2"	3/4" x 2 1/4"	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 AST M-A36, AST M-A441, AST M-572 GRADE 50, OR AST M-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.

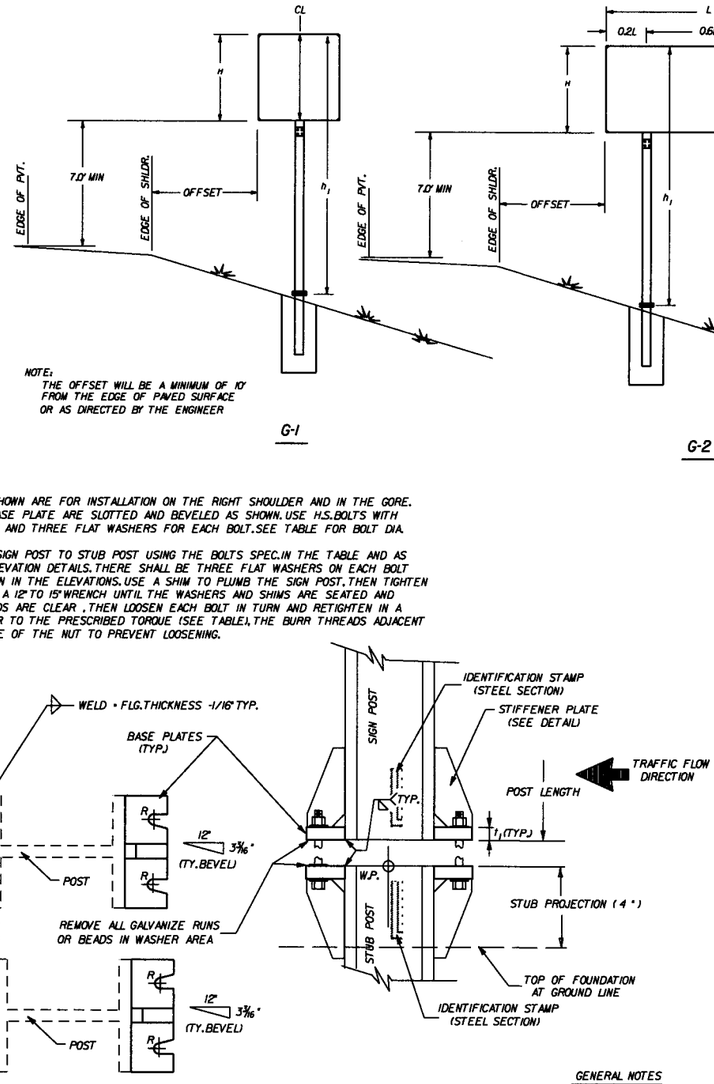
NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE NEAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



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).

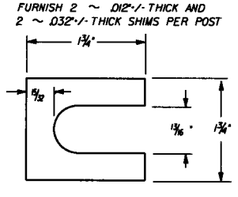
STANDARD SIGNS GUIDE SIGNS

FUSE PLATE DETAILS

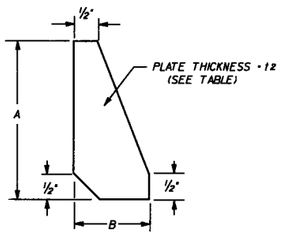


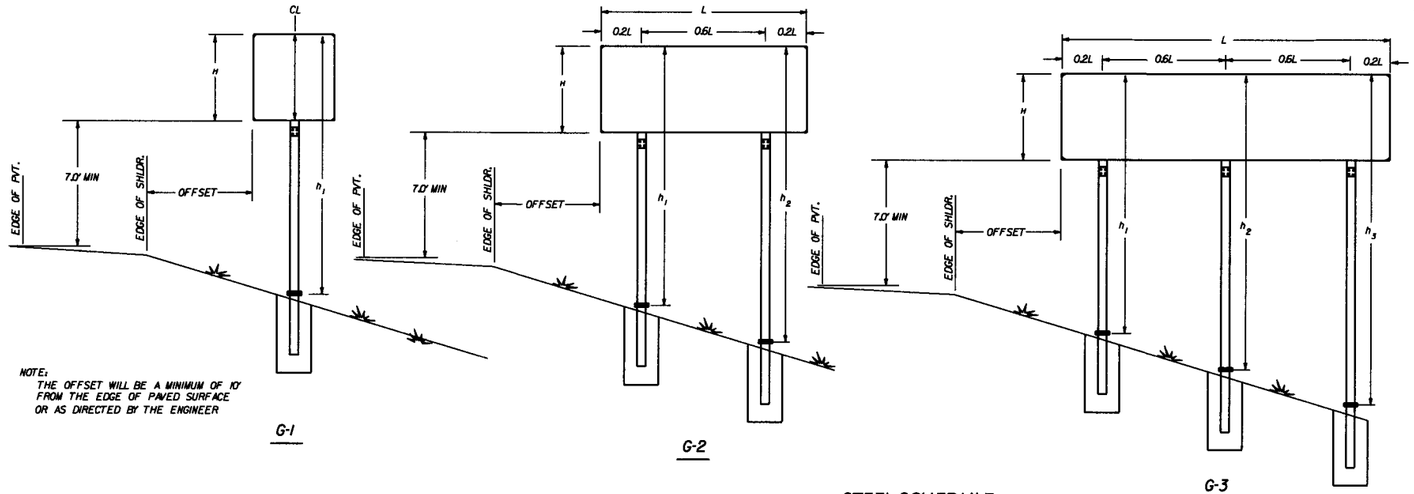
SHIM DETAIL

FURNISH 2 ~ .012"+/- THICK AND 2 ~ .032"+/- THICK SHIMS PER POST



STIFFENER PLATE DETAIL





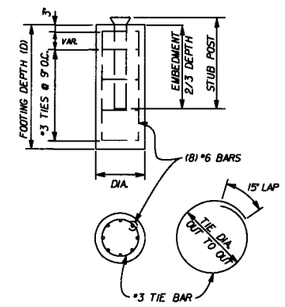
NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S. BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.

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.

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		24" DIAMETER		30" DIAMETER		36" DIAMETER	
		CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	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

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.

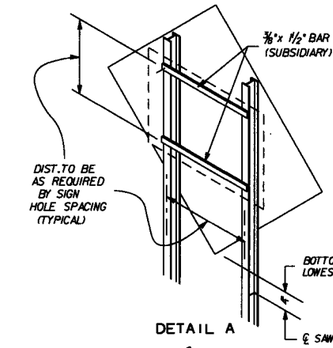
SIGN POST AND STUB POST

DATE	REVISION	FILMED
9-12-13	ISSUED	

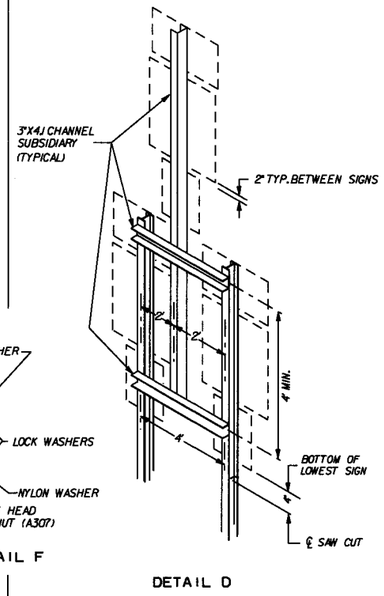
ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

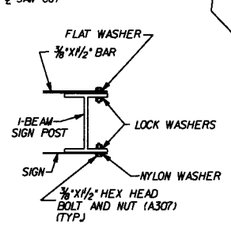
STANDARD DRAWING SHS-3



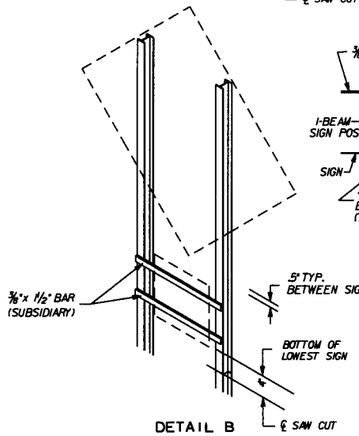
DETAIL A



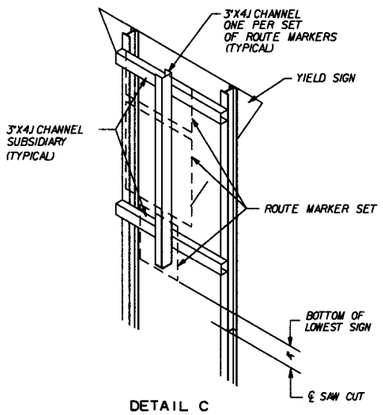
DETAIL D



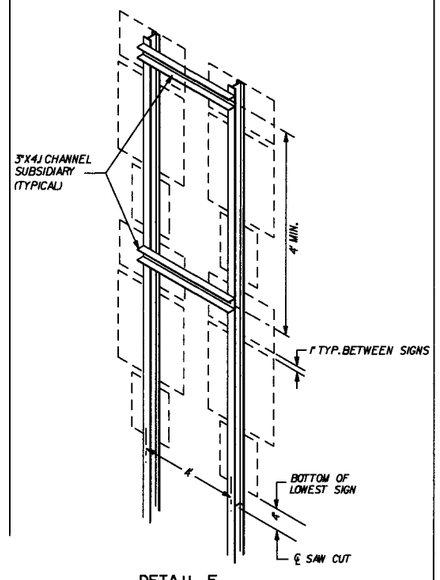
DETAIL F



DETAIL B



DETAIL C



DETAIL E

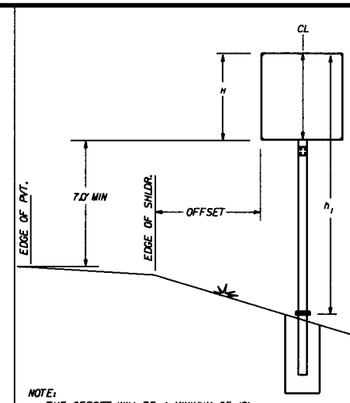
NOTE

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.

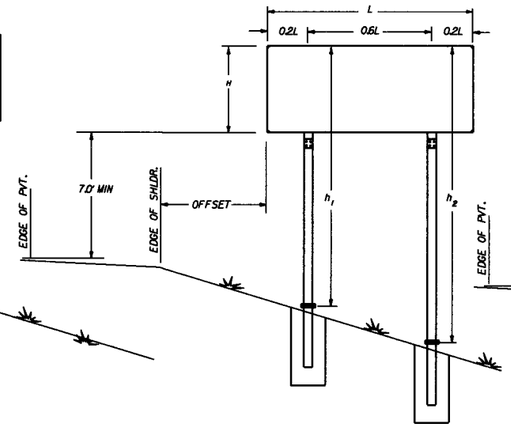
REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE ⅛" 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



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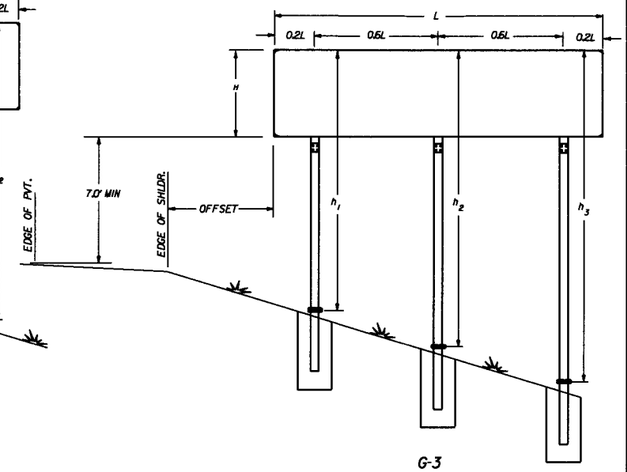
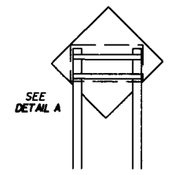
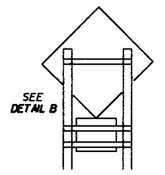


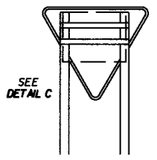
G-3



G2-1



G2-2



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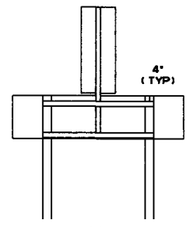

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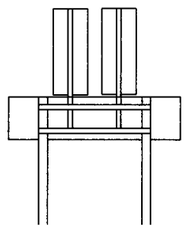

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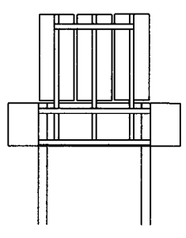

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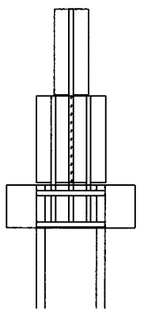

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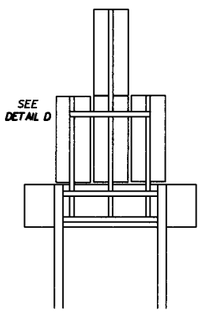

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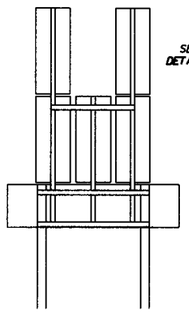
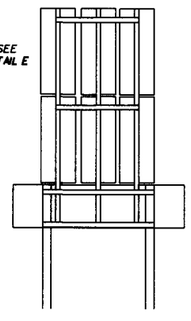
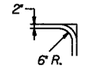


G2-9



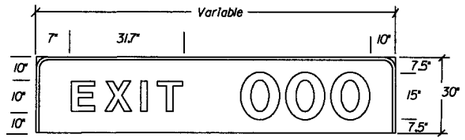
G2-10

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS
9-12-13	ISSUED		STANDARD DRAWING SHS-4
DATE	REVISION	FILMED	



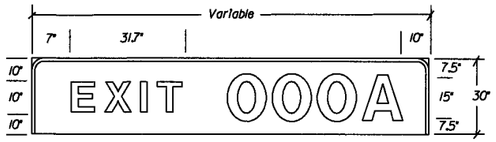
TYPICAL DETAIL

TYPE A



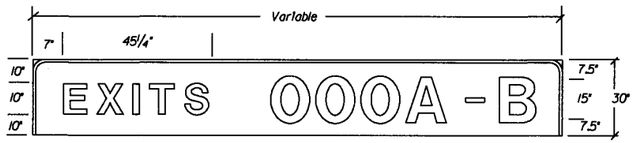
EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



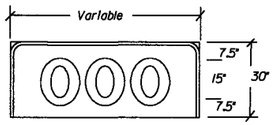
EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



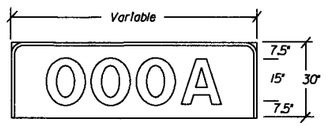
EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D



1 DIGIT 24"X30"=5.0 SF
2 DIGITS 42"X30"=8.75 SF
3 DIGITS 60"X30"=12.50 SF

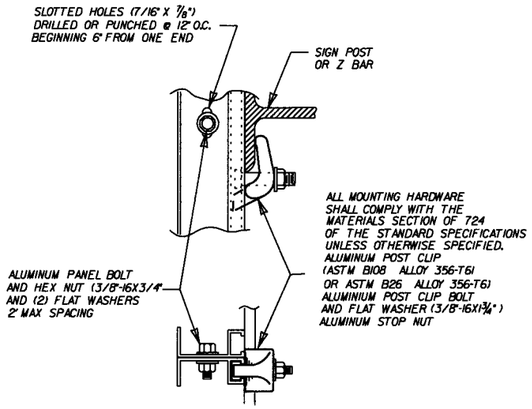
TYPE E

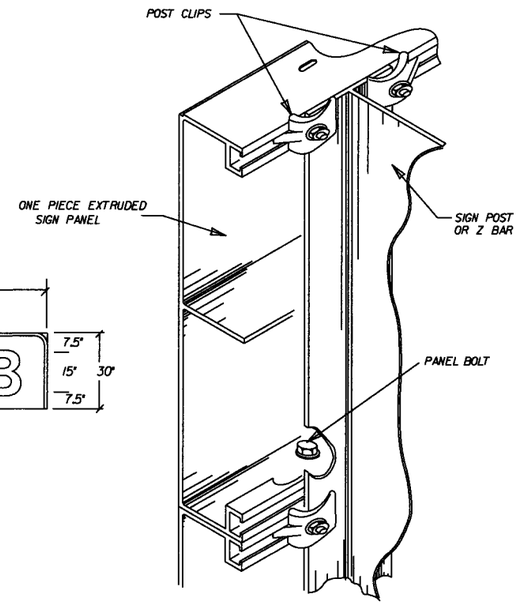


1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

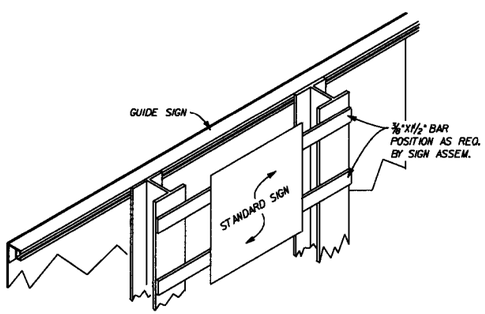
EXIT PANEL DETAILS

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".

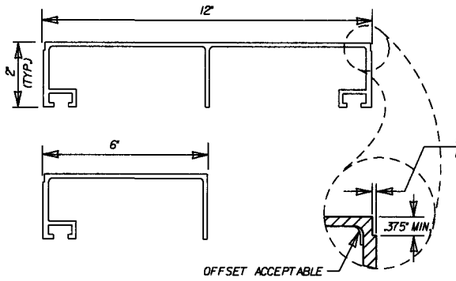




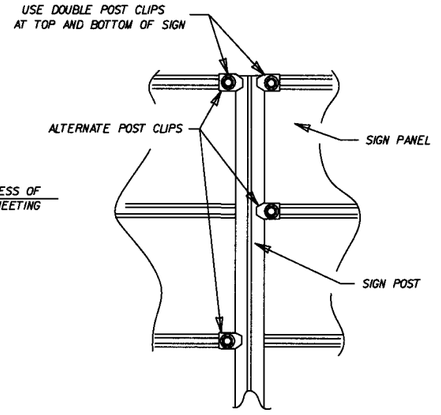
MOUNTING HARDWARE



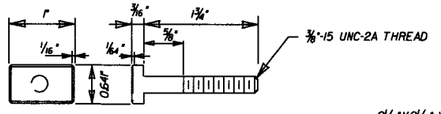
SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



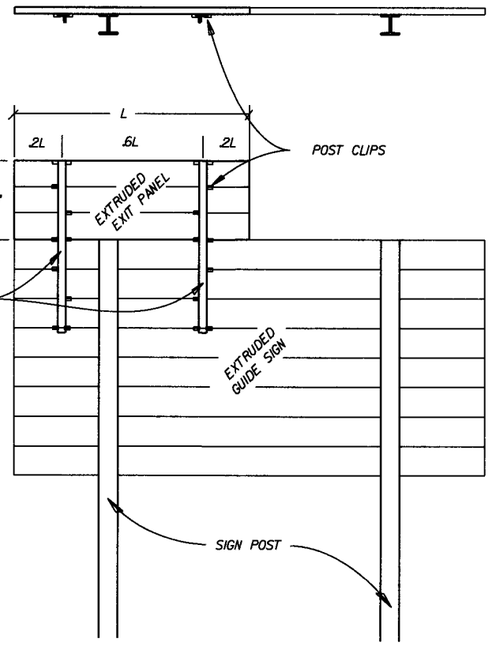
ONE PIECE EXTRUDED SIGN PANELS



POST CLIP PLACEMENT



POST CLIP BOLT

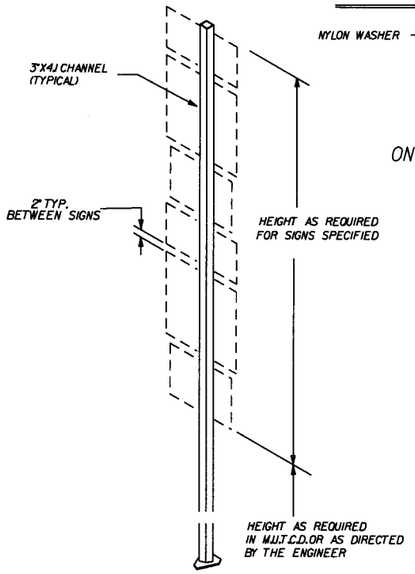


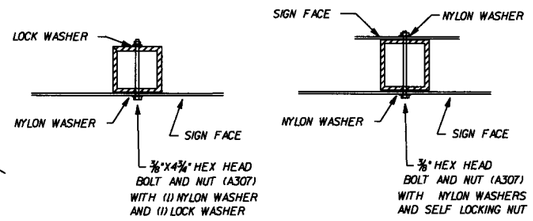
DATE	REVISION	FILMED
9-12-13	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF GUIDE SIGN PANELS

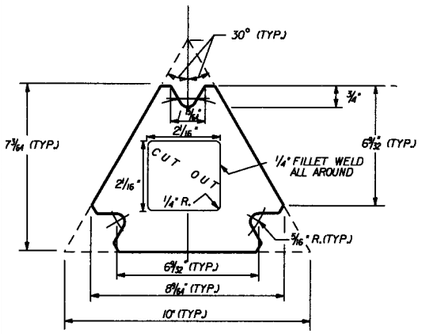
STANDARD DRAWING SHS-5



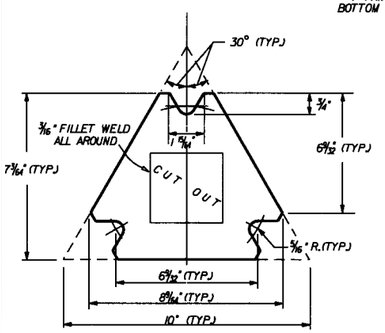


CHANNEL SHALL BE FULL LENGTH OF RECTANGULAR AND SQUARE SIGNS AND SHALL EXTEND 1/2" BEYOND BOLT HOLES ON DIAMOND OR IRREGULAR SHAPED SIGNS.

MOUNTING HARDWARE



TOP PLATE



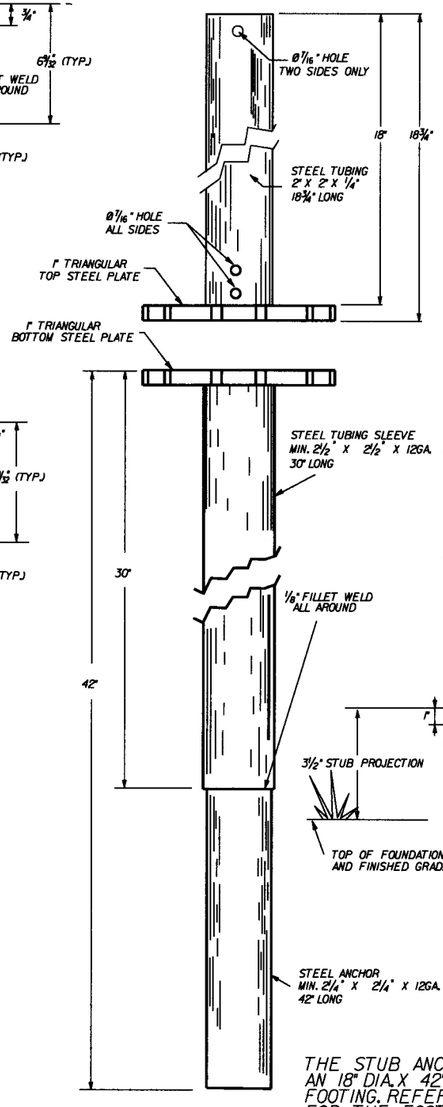
BOTTOM PLATE

GENERAL NOTES:

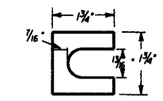
THE TOP PLATE OF TRIANGULAR SLIP BASES SHALL HAVE THE SAME EXTERIOR DIMENSIONS AS THE BOTTOM PLATE.

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 2"A" X 2"A" SQUARE TUBE SIGN POSTS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

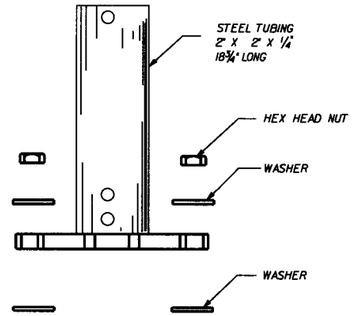


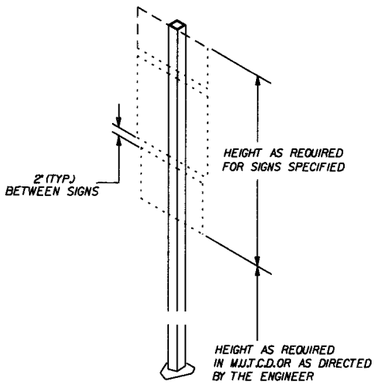
THE STUB ANCHOR SHALL BE SET IN AN 18" DIA. X 42" DEEP CONCRETE FOOTING. REFER TO STD.DRWG.SHS-3 FOR THE FOOTING DETAILS.



FURNISH (2) .012" THICK AND (2) .032" THICK SHIMS PER POST

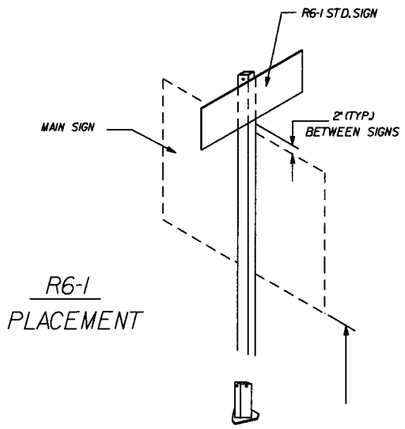
SHIM DETAIL





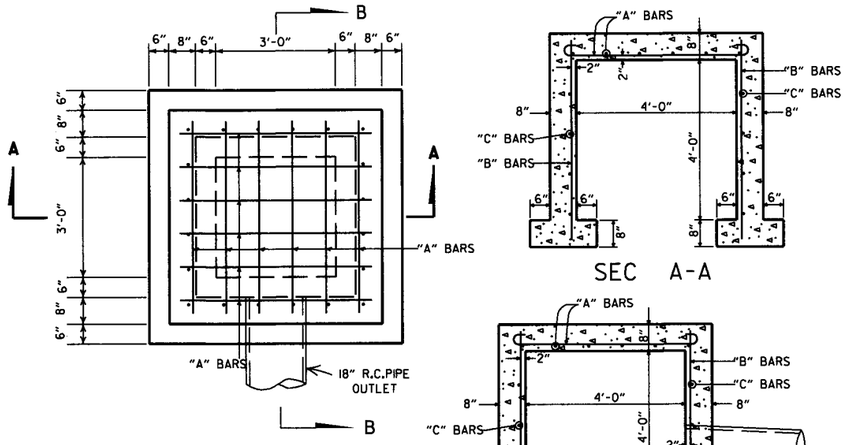
TYPE-I

BASIS OF ESTIMATE
APPROX. 100 lbs STEEL

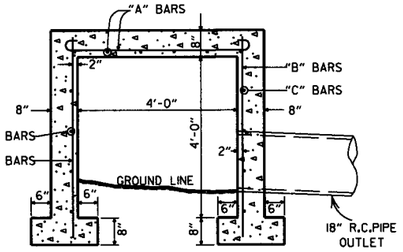


R6-1 PLACEMENT

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
9-12-13 DATE	ISSUED REVISION	FILMED	STANDARD DRAWING SHS-7



SEC A-A



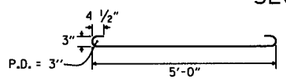
SEC B-B

NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 ½"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



"A" BARS

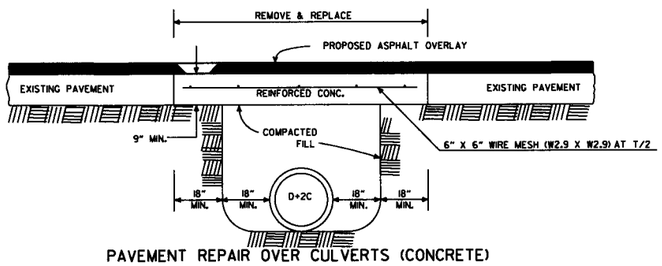
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

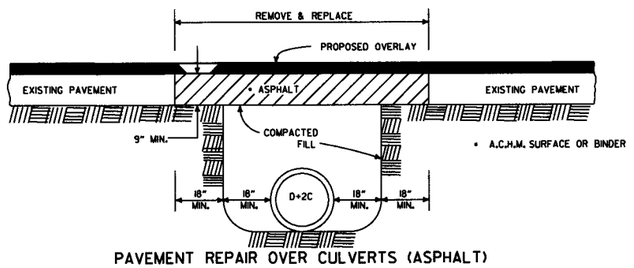
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



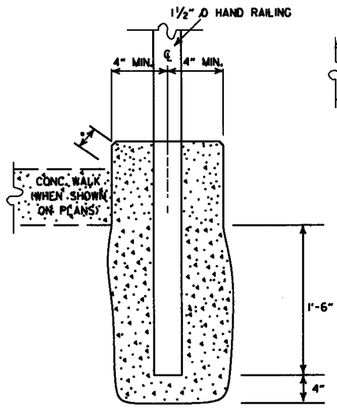
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



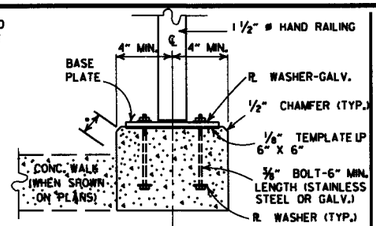
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

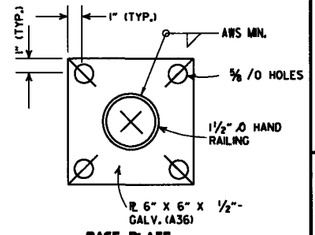
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

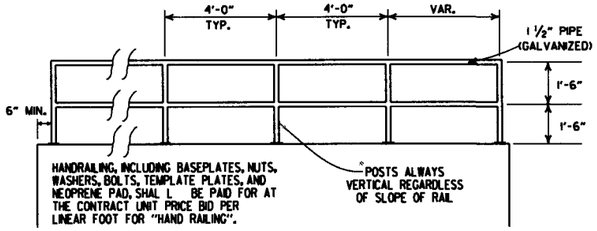


POST CONNECTION TO WALL

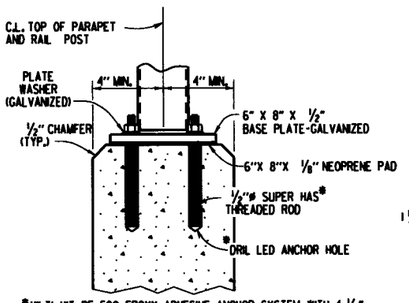


BASE PLATE

POST CONNECTION DETAILS



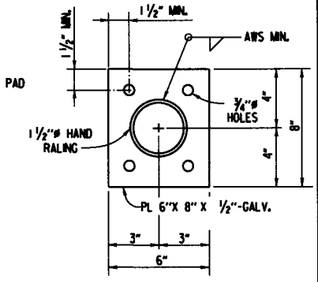
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 ½" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

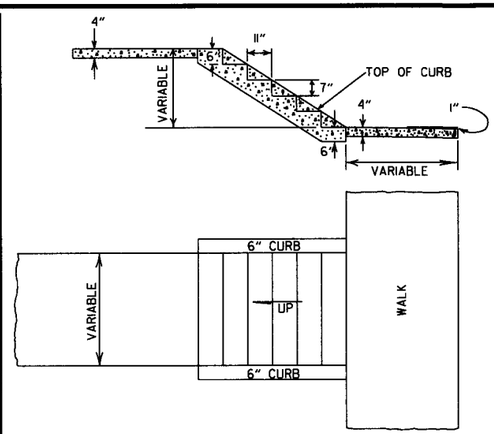
POST CONNECTION TO WALL



BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

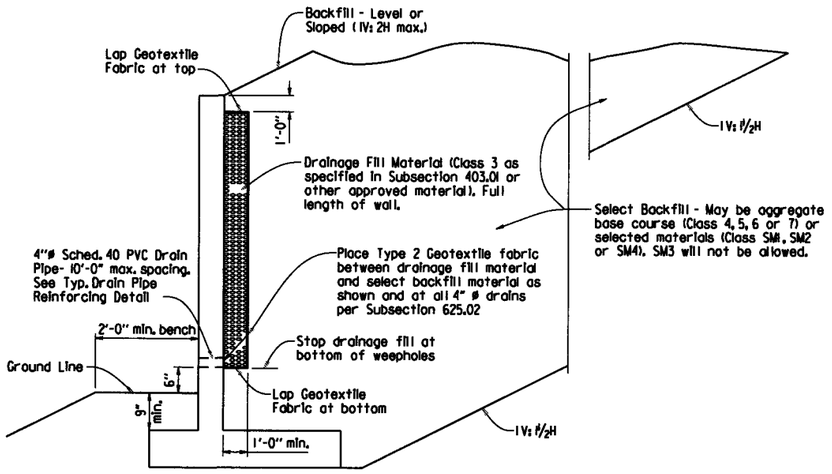
DETAILS OF CONCRETE STEPS & WALKS

DATE	REVISION	DATE FILMED
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	649-7-15-88
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

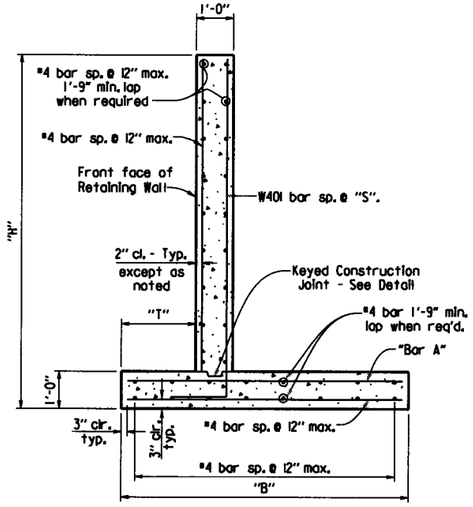
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1



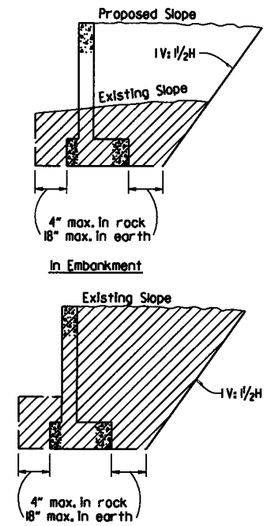
TYPICAL DRAINAGE & BACKFILL DETAILS

N.T.S



TYPICAL SECTION

N.T.S



NOTE: Hatched area denotes maximum limits of pay excavation.

DETAILS OF EXCAVATION

N.T.S

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas state Highway and Transportation Department Standard Specifications for Highway Construction (Current Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOAD: Live Load Surcharge is not included in the design of these walls. Vehicular Live Load shall not be allowed within a distance equal to one-half the height of the wall.

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered 1/2". All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi. A Class 2 Surface finish shall be used on all surfaces of the concrete unless otherwise noted.

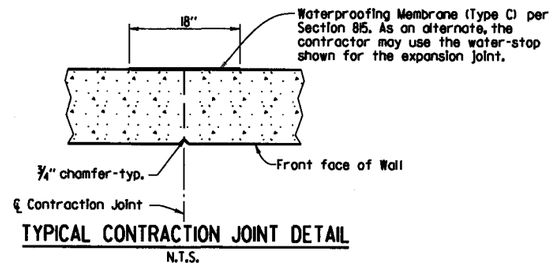
REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

Foundations for footings shall be prepared in accordance with subsection 801.04. Backfill for retaining walls shall be in accordance with subsection 801.08.

Waterproof Membrane (Type C), waterstops, preformed joints, weep holes & geotextile fabric shall not be paid for directly, but shall be considered subsidiary to Class S Concrete.

Drainage fill material (Class 3) and select backfill shall be measured and paid for as Compacted Embankment.

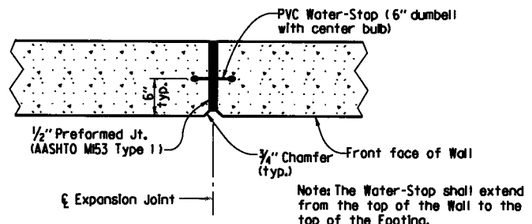
These details are not intended for use along streams or ditches without consideration for scour.



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

Note: 20'-0" Max. Spacing between Contraction Joints. Horizontal reinforcement shall be continuous through Contraction joints.

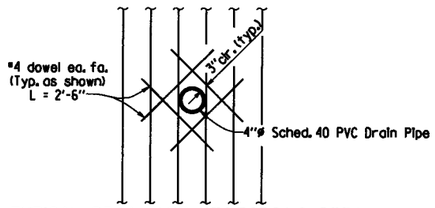


Note: The Water-Stop shall extend from the top of the Wall to the top of the Footing.

TYPICAL EXPANSION JOINT DETAIL

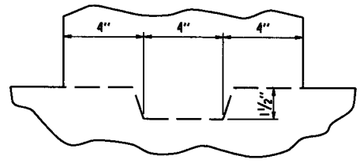
N.T.S.

Note: 60'-0" Max. Spacing between Expansion Joints. Horizontal reinforcing shall stop 2" from ℄ Expansion Joint.



TYPICAL DRAIN PIPE REINFORCING DETAIL

N.T.S



KEYED CONSTRUCTION JOINT DETAIL

N.T.S

SEISMIC ZONE: These walls have been designed for the following site adjusted peak ground accelerations (A_S):
Level Backfill - $A_S \leq .40g$
Sloped Backfill (1V: 2H max.) - $A_S \leq .30g$

TABLE OF RETAINING WALL VARIABLES (LEVEL BACKFILL)

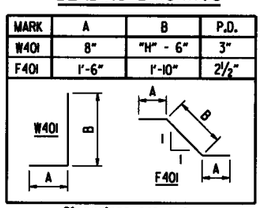
"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-0"	12"	#4 @ 12"
6'-0"	9"	4'-6"	12"	#4 @ 12"
7'-0"	9"	5'-6"	12"	#4 @ 10"
8'-0"	9"	6'-0"	12"	#5 @ 10"
9'-0"	1'-0"	7'-0"	12"	#5 @ 6 1/2"

TABLE OF RETAINING WALL VARIABLES (SLOPED BACKFILL) (1V: 2H MAX.)

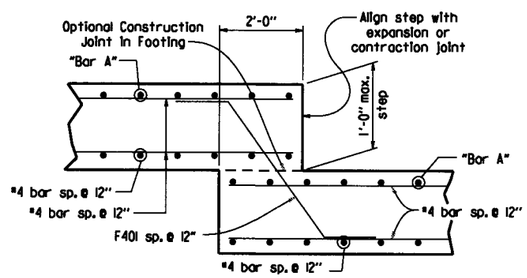
"H"	"T"	"B"	"S"	"Bar A" Size @ Spacing
3'-0"	9"	2'-6"	12"	#4 @ 12"
4'-0"	9"	3'-6"	12"	#4 @ 12"
5'-0"	9"	4'-6"	12"	#4 @ 12"
6'-0"	9"	5'-6"	12"	#4 @ 6"
7'-0"	9"	6'-6"	12"	#5 @ 6 1/2"
8'-0"	1'-6"	8'-0"	7 1/2"	#6 @ 6"
9'-0"	1'-11"	9'-6"	5"	#8 @ 6"

BENDING DIAGRAMS

MARK	A	B	P.D.
W401	8"	"H" - 6"	3"
F401	1'-6"	1'-10"	2 1/2"



Dimensions are out to out of bars.



FOOTING STEP DETAIL

N.T.S.

DATE	REVISION	DATE FILMED
5-12-16	REVISED SLOPES FOR SELECT BACKFILL	
2-27-14	REVISED GENERAL NOTES	
7-26-12	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

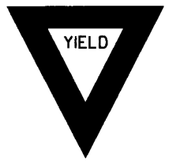
REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)

STANDARD DRAWING SI - 2

R1-1

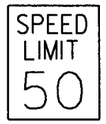
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

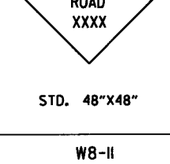
R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

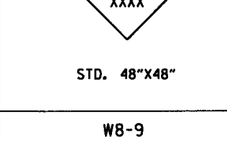
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



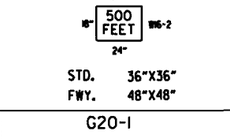
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



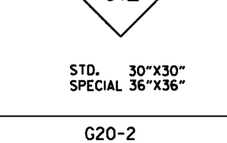
48"X30"

RII-3A



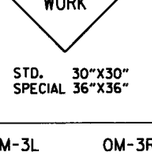
60"X30"

RII-4



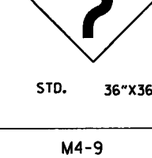
60"X30"

W21-5a



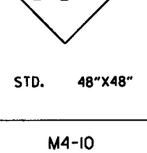
STD. 36"X36"
FWY. 48"X48"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2

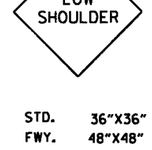


STD. 36"X36"
FWY. 48"X48"

WI-3

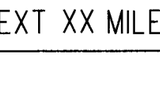
STD. 48"X48"

WI-4



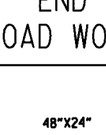
STD. 48"X48"

WI-6



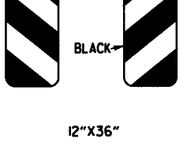
STD. 48"X24"
SPECIAL 60"X30"

WI-8



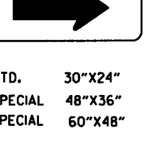
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

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.

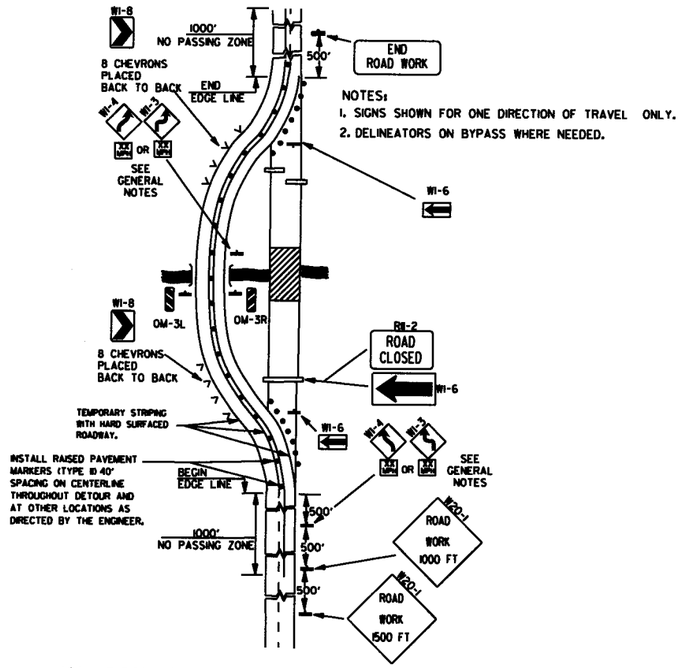
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY 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	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

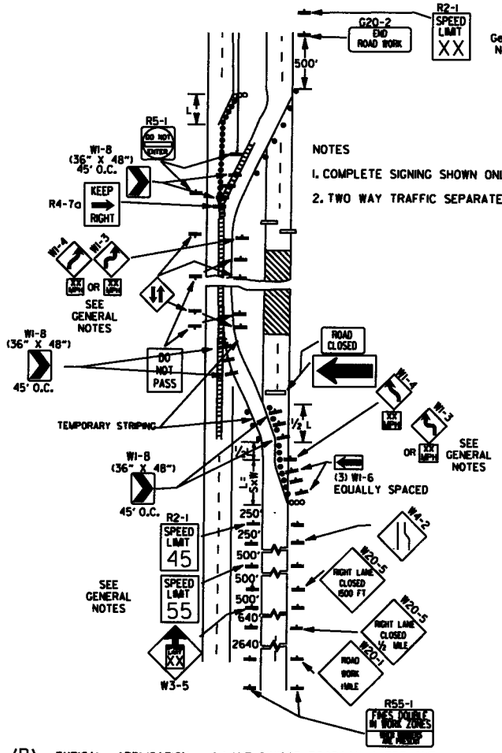
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



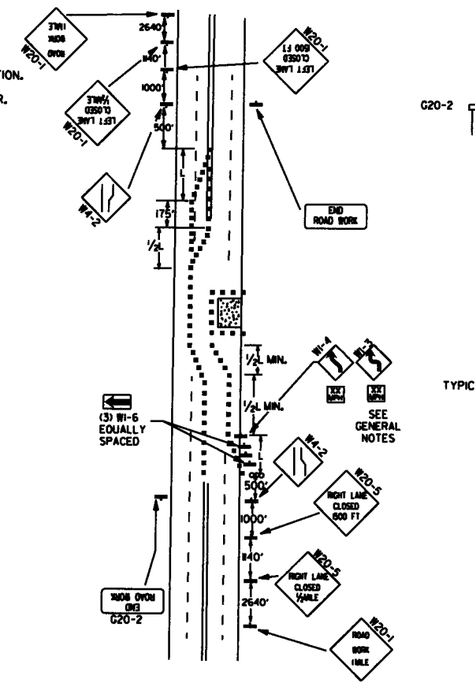
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

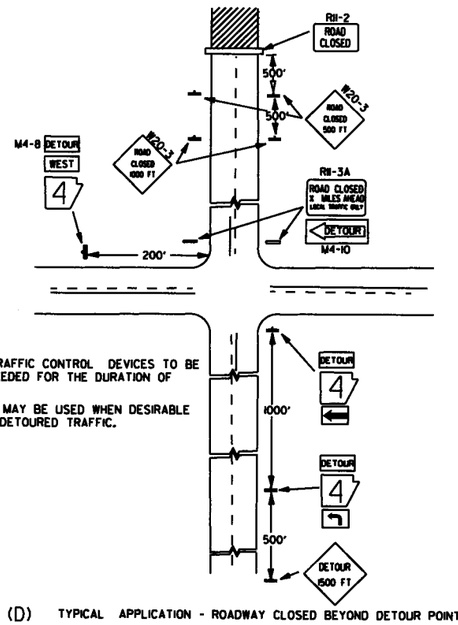


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

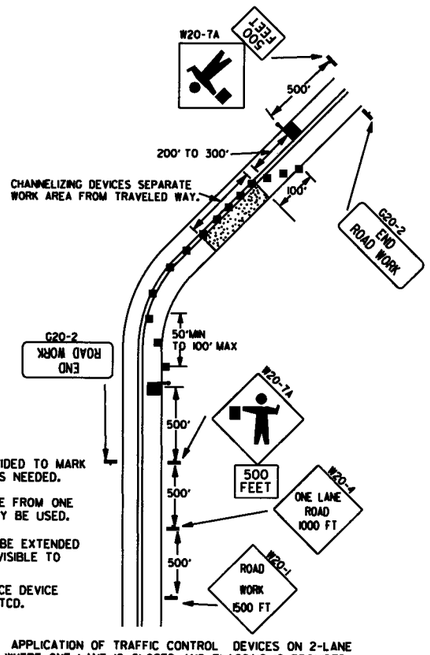


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



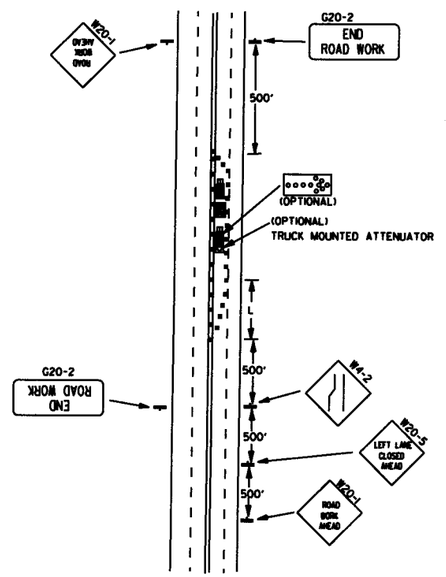
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.

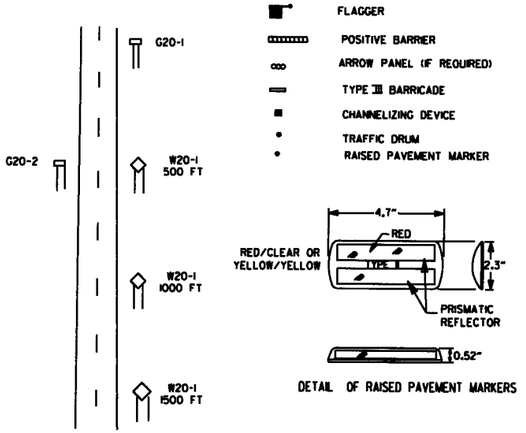


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE 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.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

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:

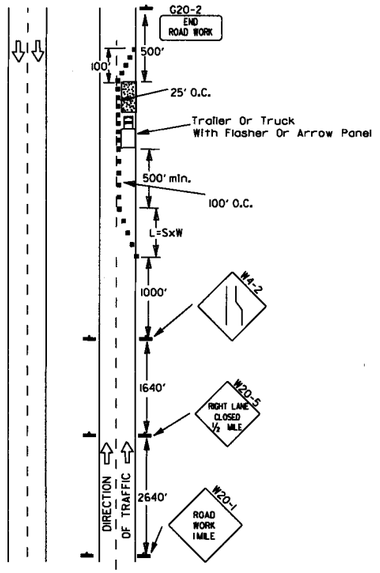
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED 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.

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	
3-8-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

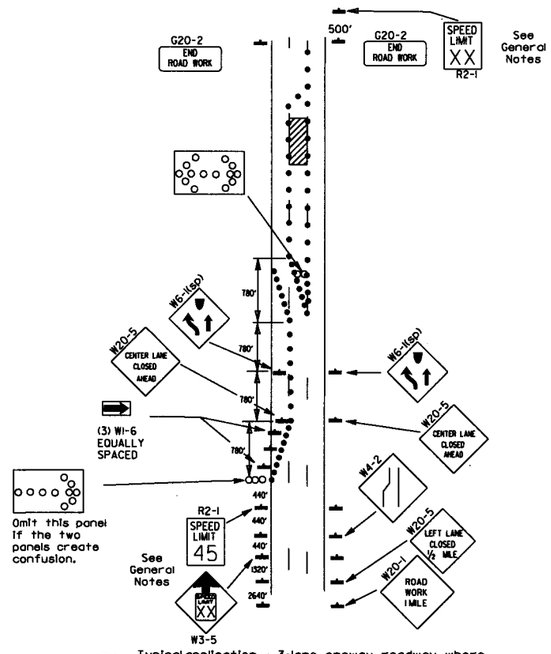
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

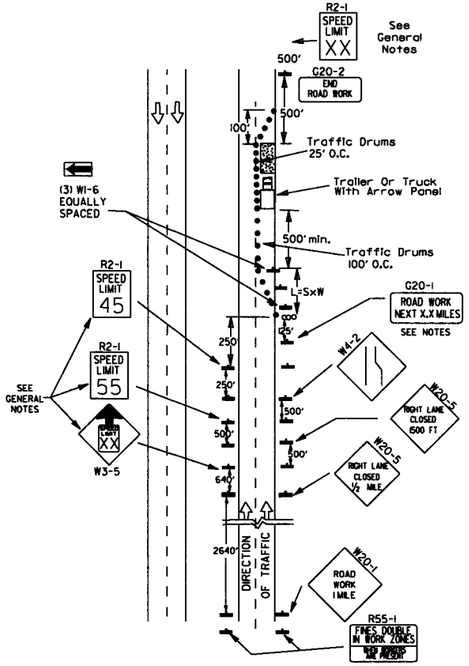
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

ooo Arrow Panel (If Required)

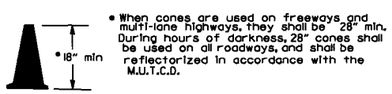
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

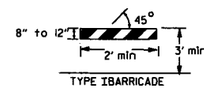
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional 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.

Channelizing devices



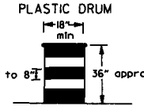
• When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

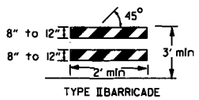
CONES



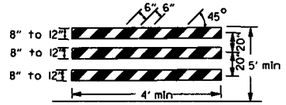
TYPE I BARRICADE

PLASTIC DRUM



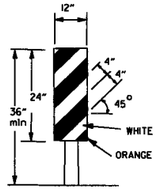


TYPE II BARRICADE



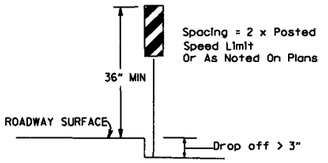
TYPE III BARRICADE

NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



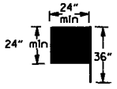
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

• When shown on the plans concrete barrier will be used.

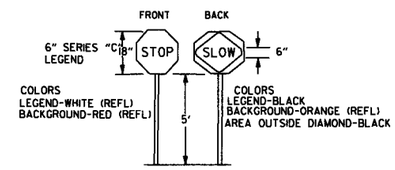
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

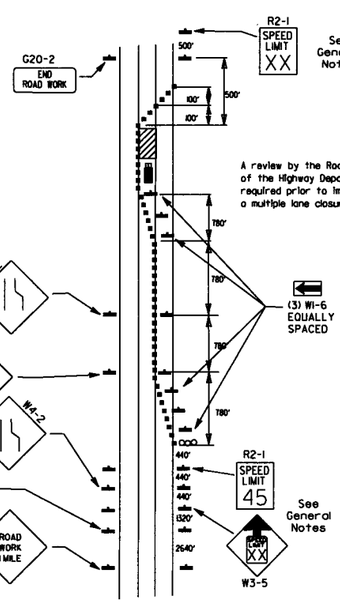
FLAG



Flag shall be of good grade red material

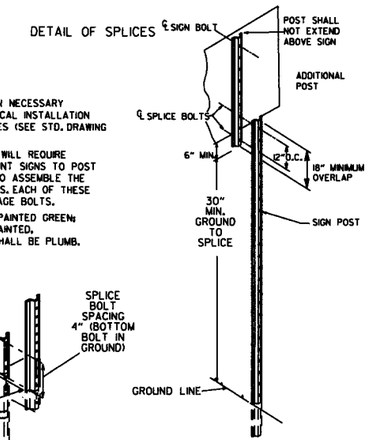
STOP SLOW PADDLE





(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
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	

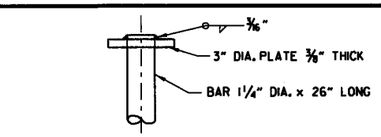
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

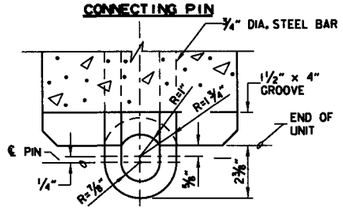
STANDARD DRAWING TC-3

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"

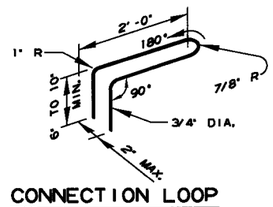


CONNECTING PIN

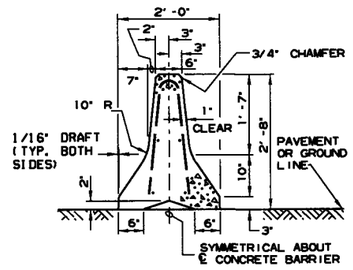


SECTION E-E

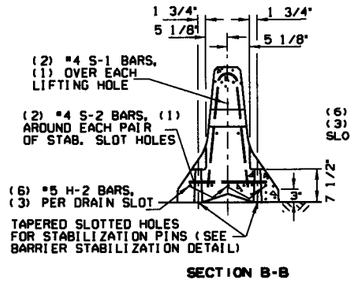
CONNECTION DETAILS



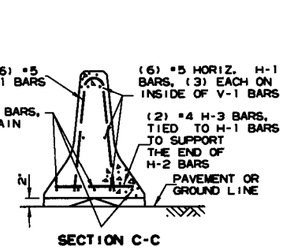
CONNECTION LOOP



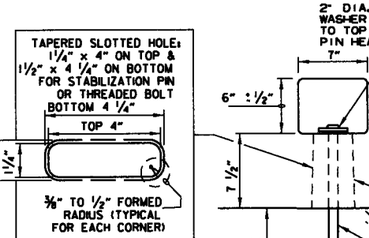
SECTION A-A

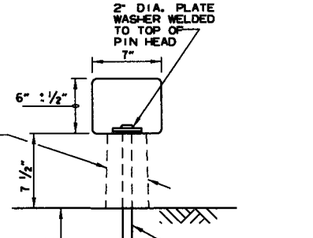


SECTION B-B



SECTION C-C

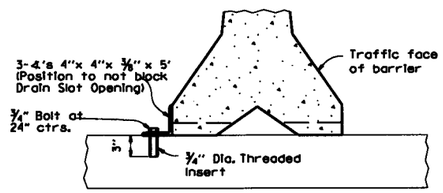




BARRIER STABILIZATION DETAIL

ROADWAY SECTION

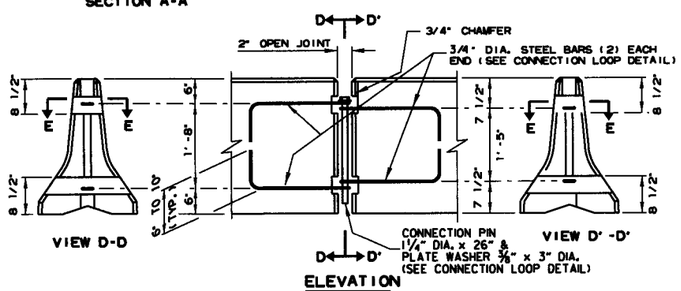
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

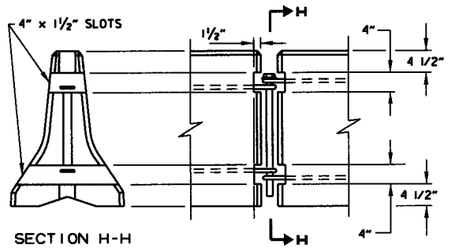
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

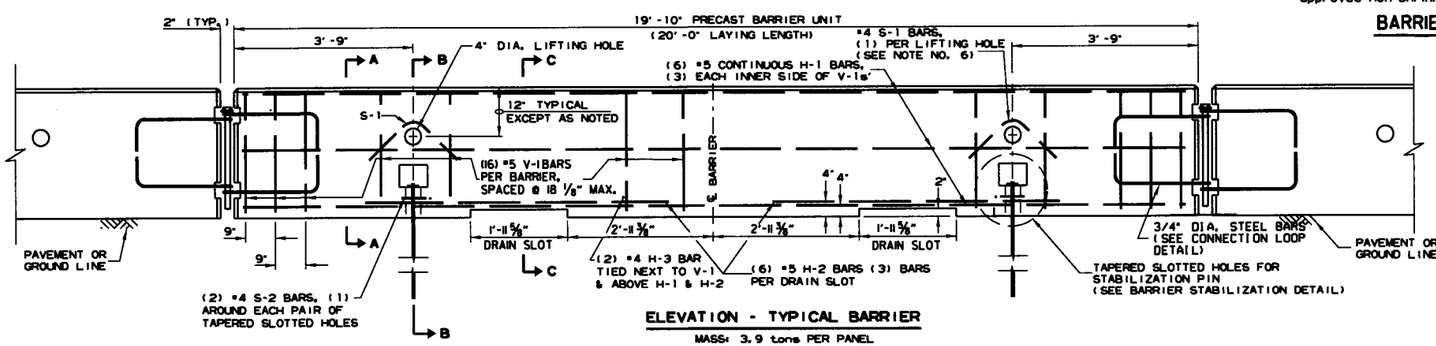
ELEVATION



SECTION H-H

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.

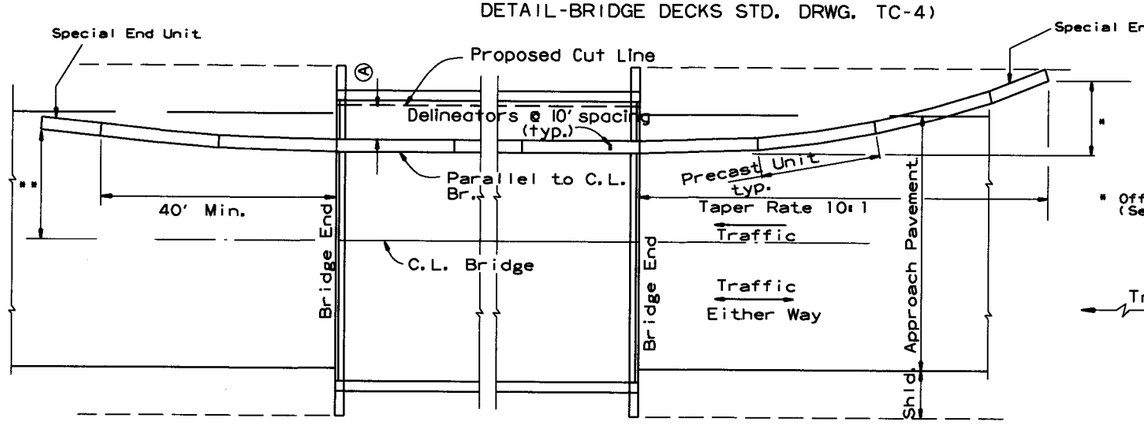
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	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)

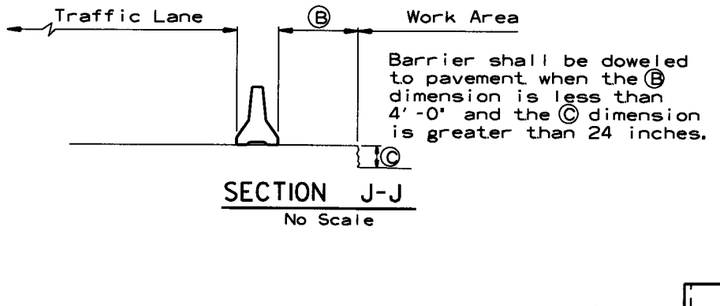


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

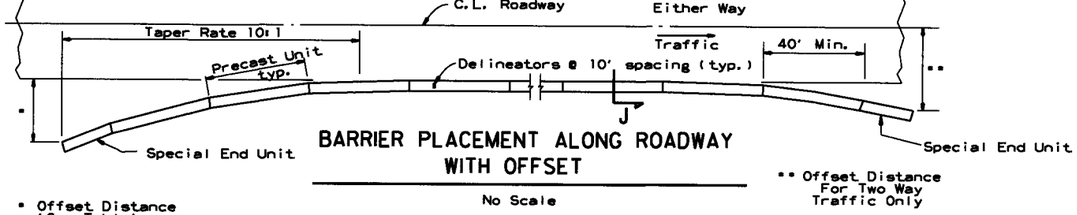
* Offset Distance (See Table)



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

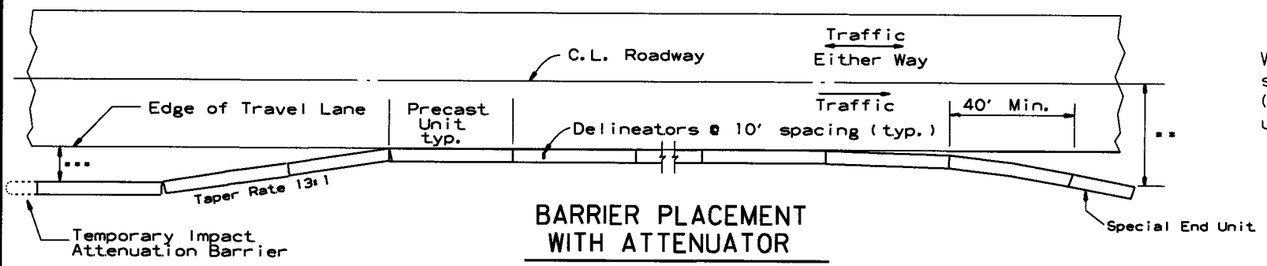
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

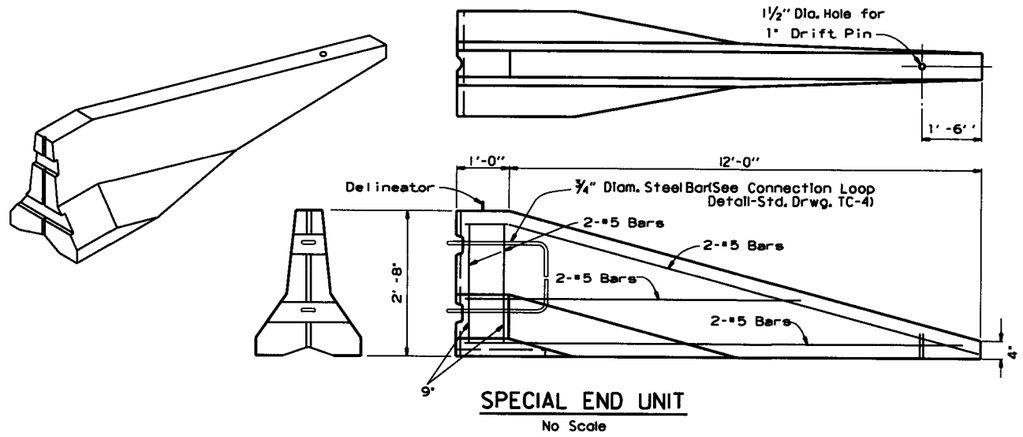


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

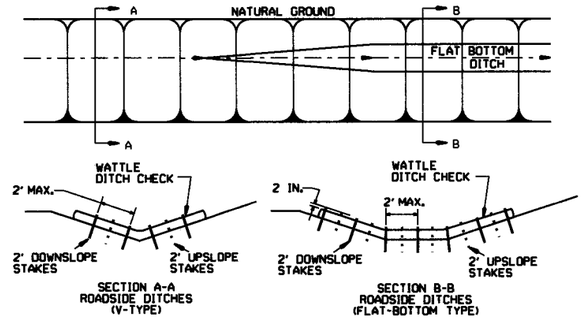
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

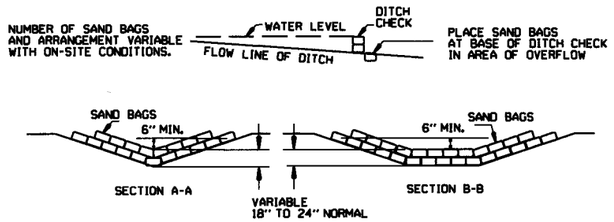
STANDARD DRAWING TC-5

GENERAL NOTES

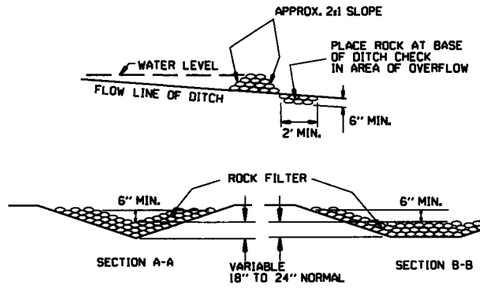
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

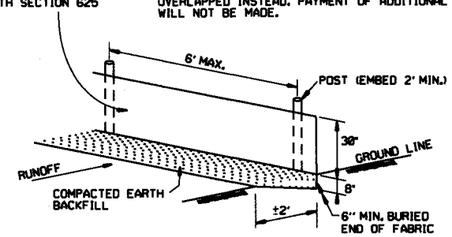


ROCK DITCH CHECK (E-6)

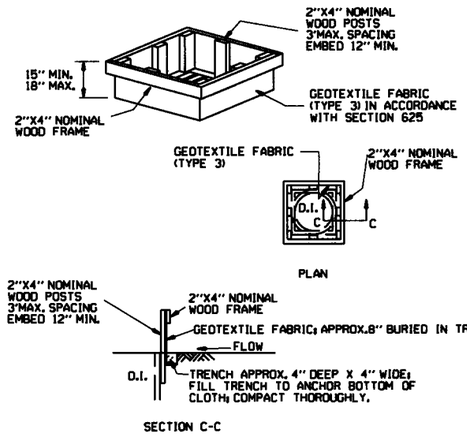
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

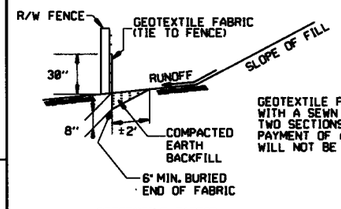
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

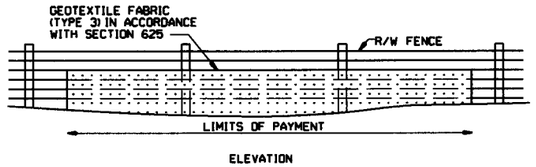


DROP INLET SILT FENCE (E-7)



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.



ELEVATION

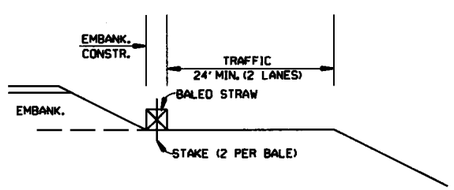
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

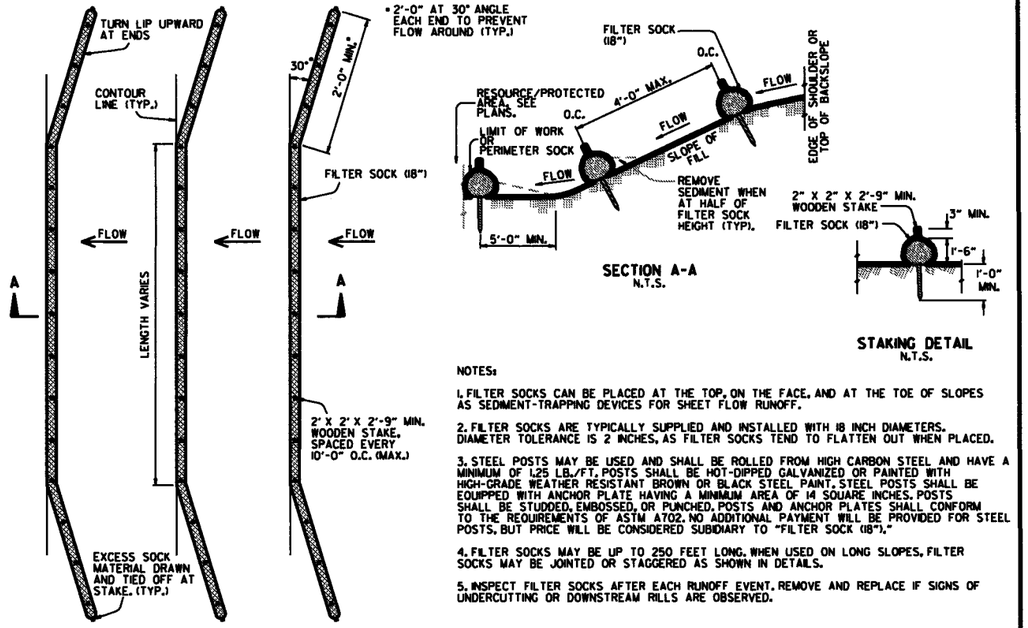
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

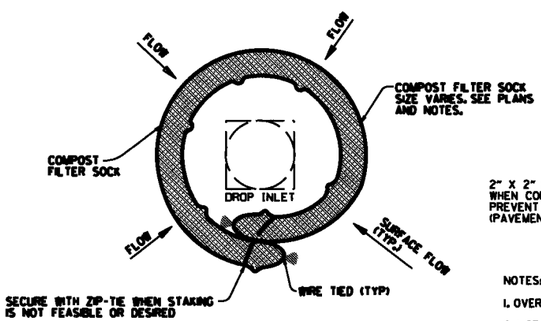
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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")."

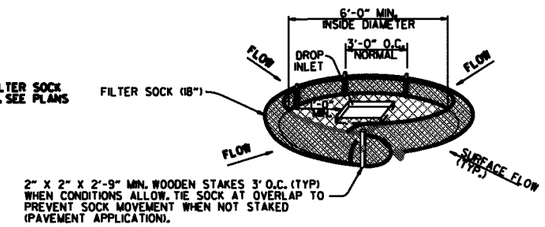
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

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)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

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.

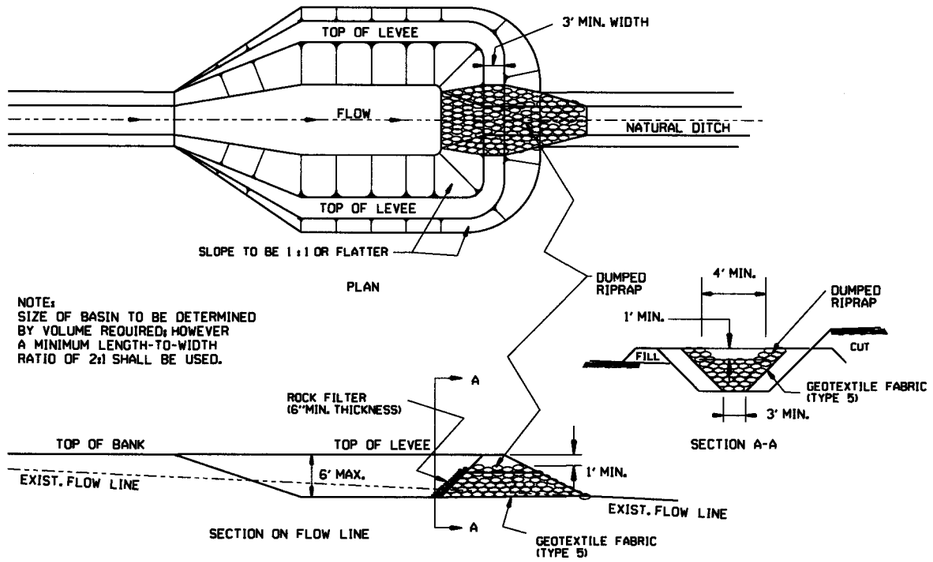
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

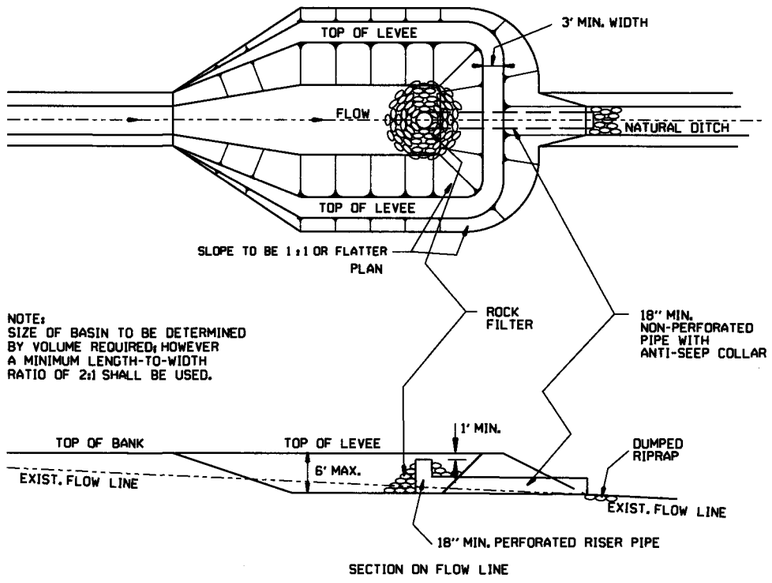
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

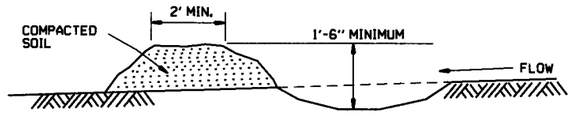
STANDARD DRAWING TEC-1



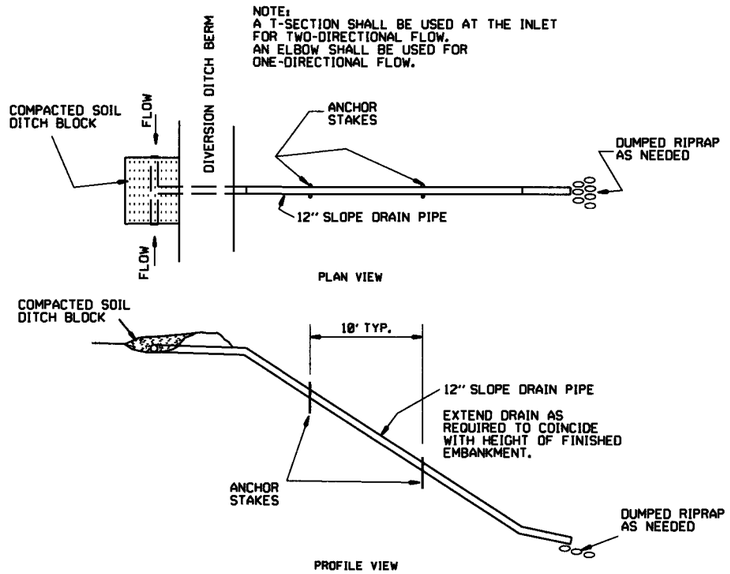
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



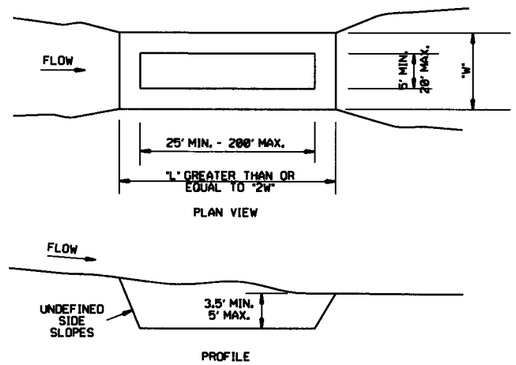
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

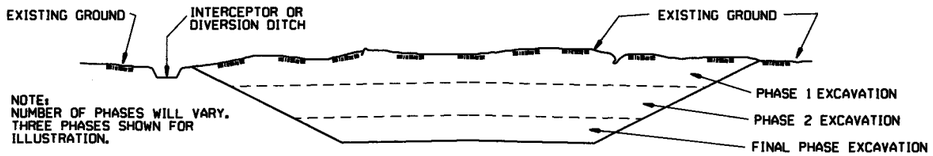
STANDARD DRAWING TEC-2

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



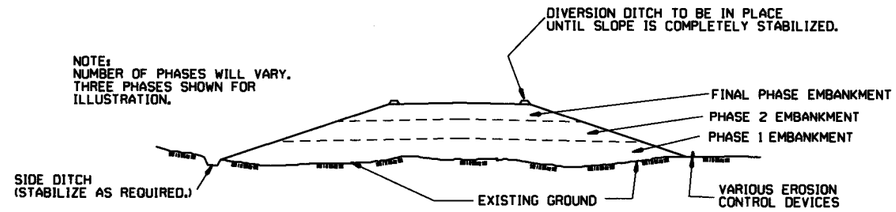
GENERAL NOTE

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

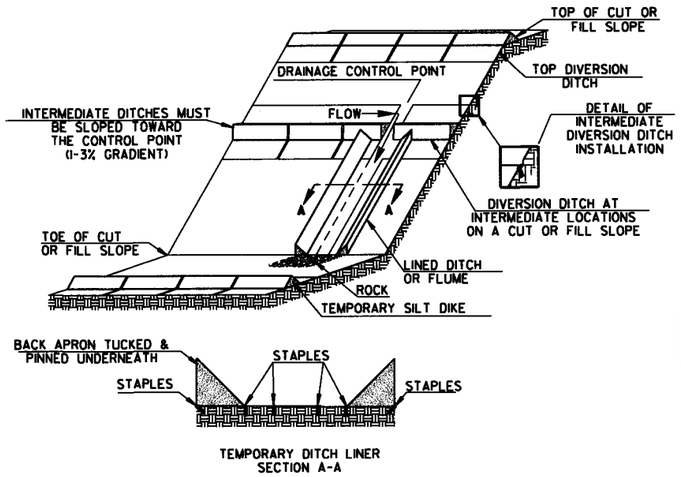
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

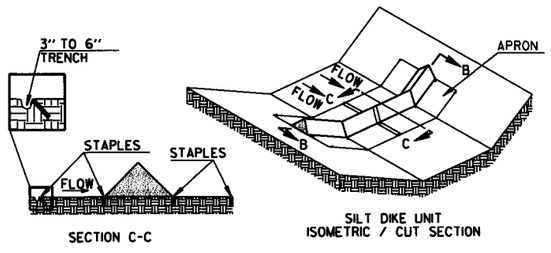
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



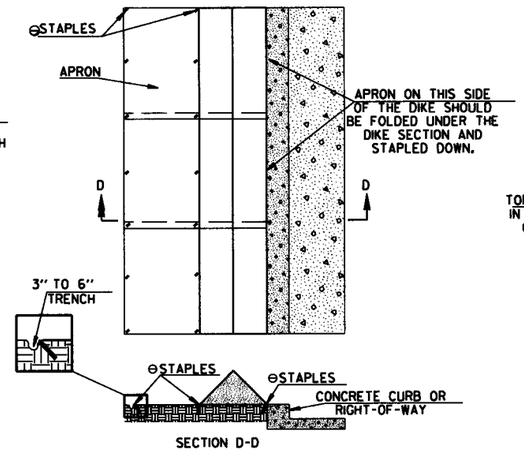
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



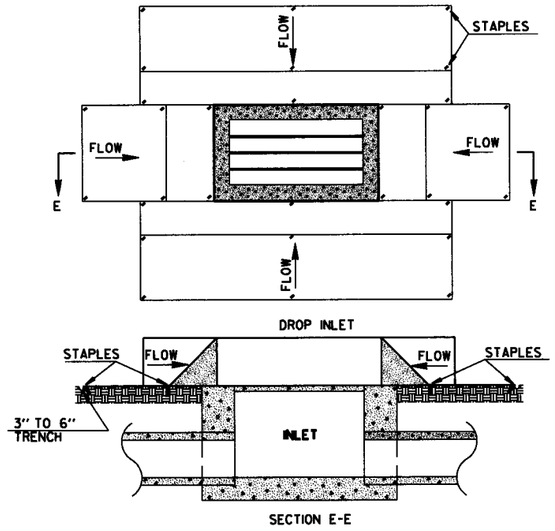
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

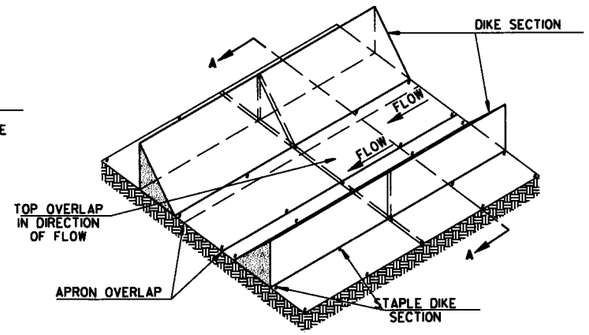
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

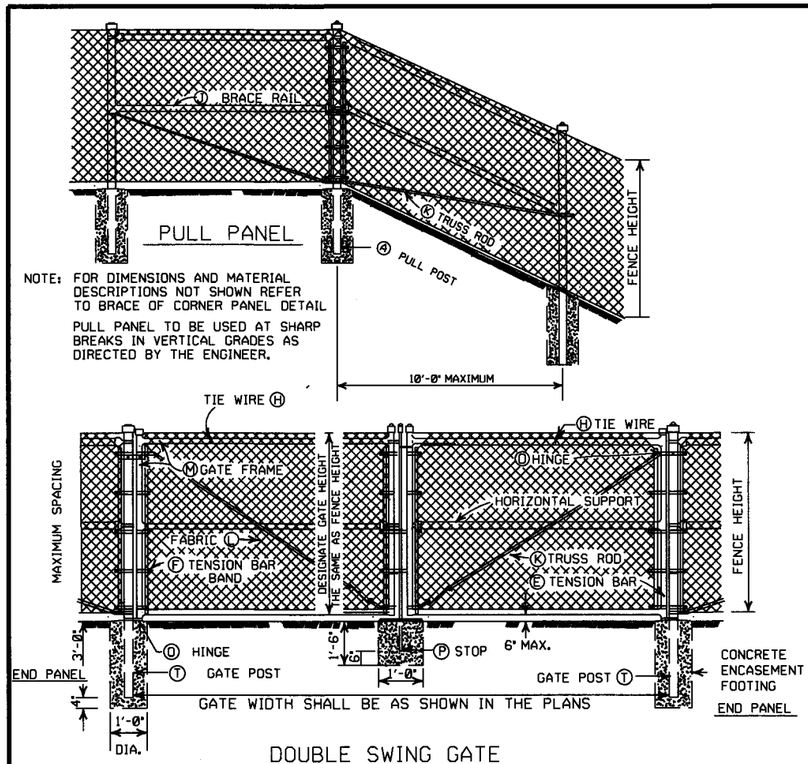
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

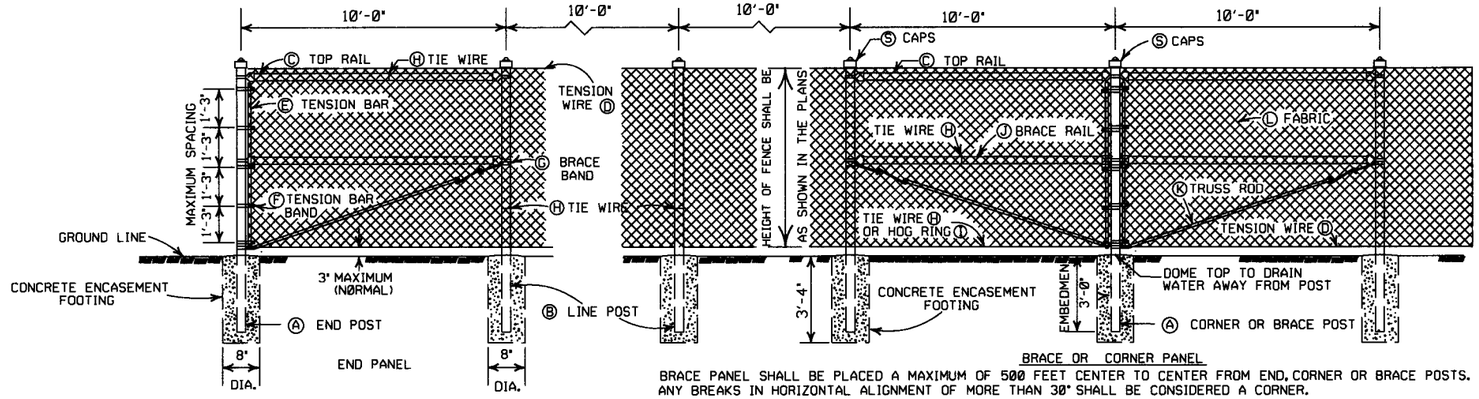
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4



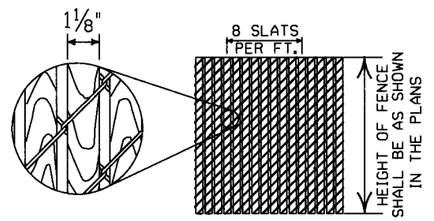
DOUBLE SWING GATE

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)

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.

HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) 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	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) 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 ⅜" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCKLING AND/OR TWISTING	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.

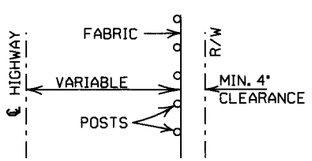
OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

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

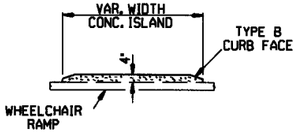
TYPICAL INSTALLATION DIAGRAM

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

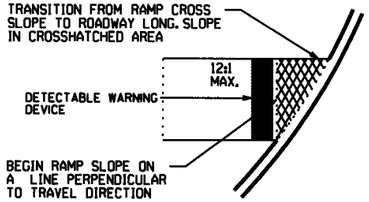
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

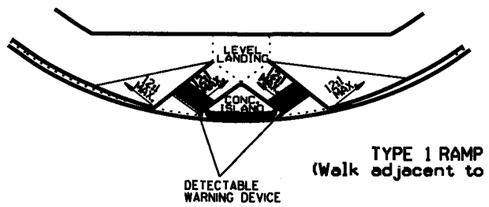
STANDARD DRAWING WF-3



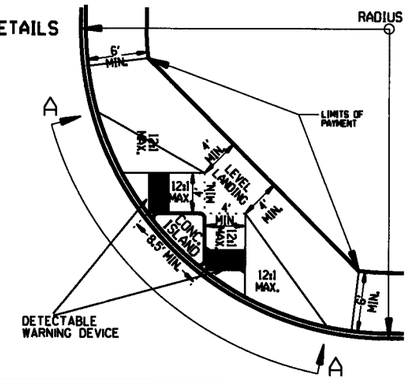
CONCRETE ISLAND DETAIL

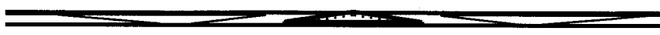


SLOPE TRANSITION DETAILS



TYPE 1 RAMP
(Walk adjacent to curb)



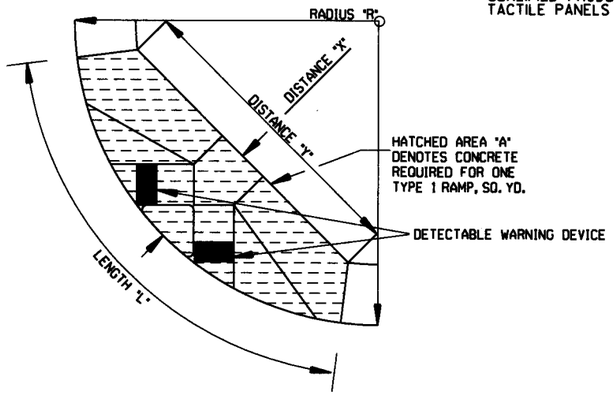


6'-0" MIN. | 4' MIN. RAMP | 8'-6" MIN. ISLAND | 4' MIN. RAMP | 6'-0" MIN.

SECTION A-A

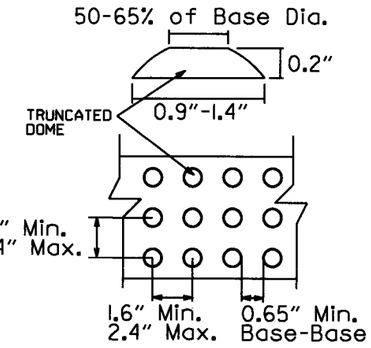
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

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



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

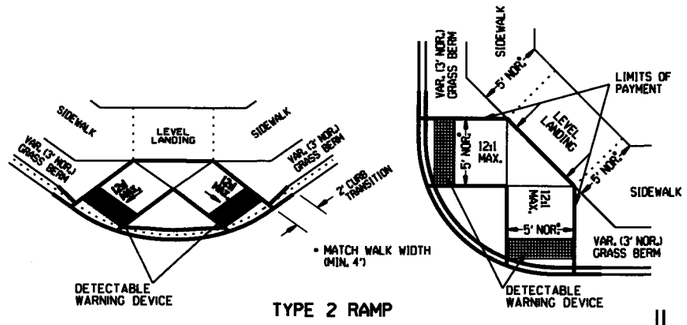
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



DETECTABLE WARNING DEVICE DETAIL

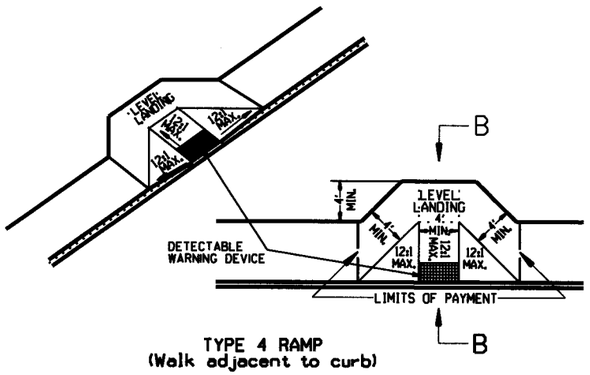
GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

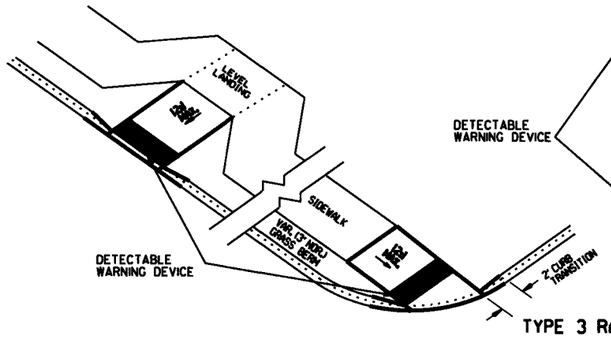


TYPE 2 RAMP

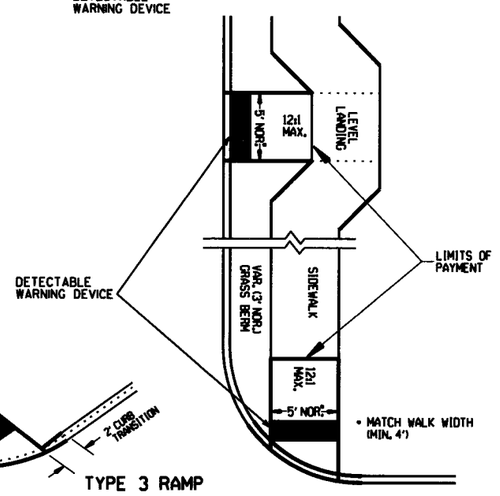
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

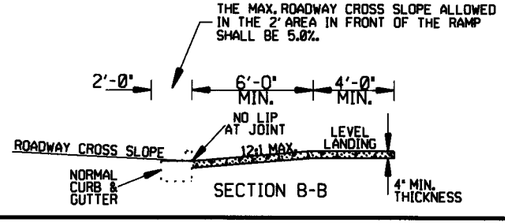


TYPE 4 RAMP
(Walk adjacent to curb)



TYPE 3 RAMP





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.

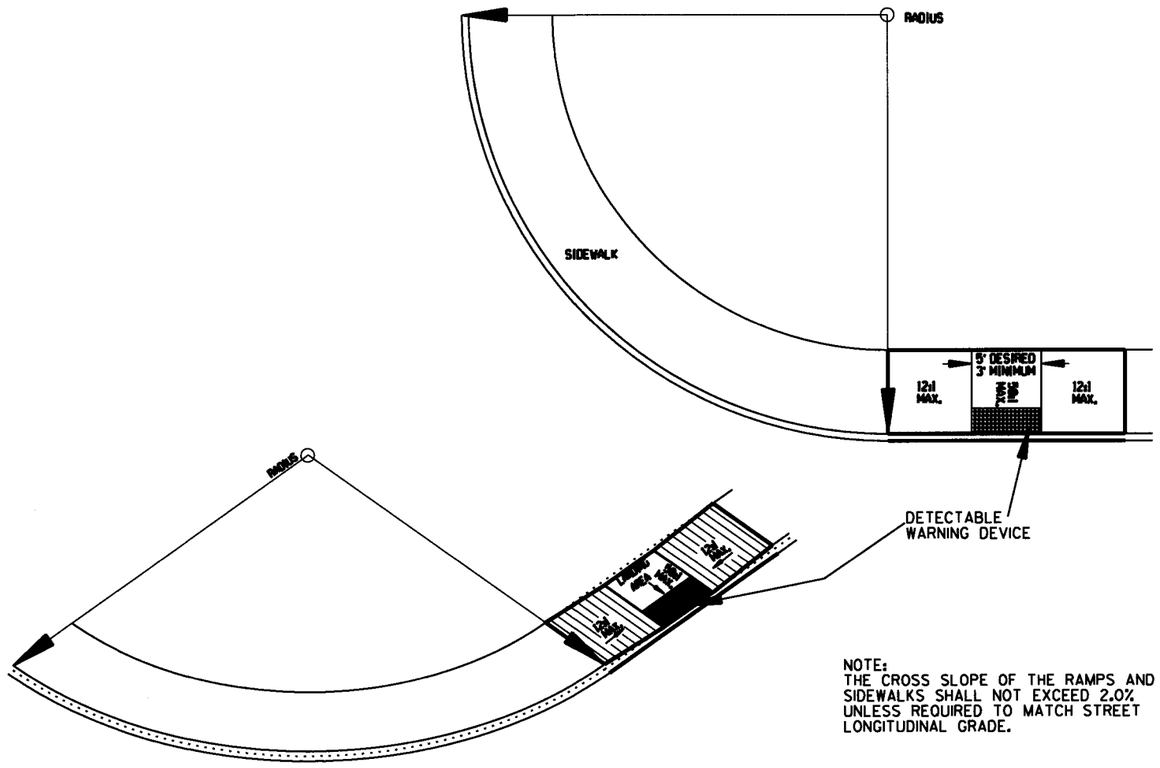
AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

8-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
6-22-02	ADD DETECTABLE WARNING DEVICES	
5-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
8-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM#1702#MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLD." IN PAY ITEM	------
6-02-76	ISSUED-P.A.D.	299-7-26-76
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

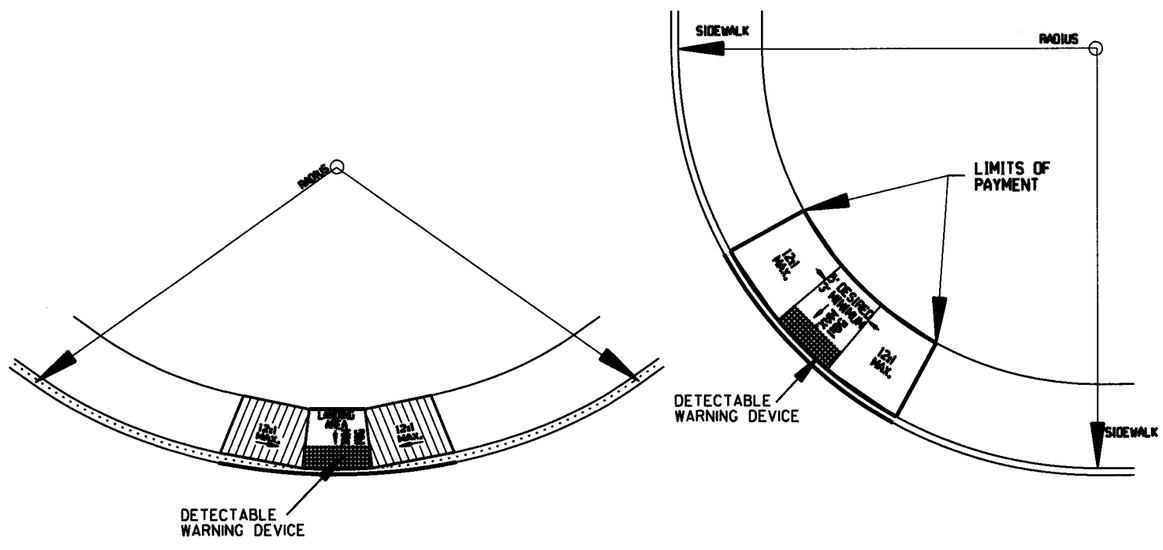
WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

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.

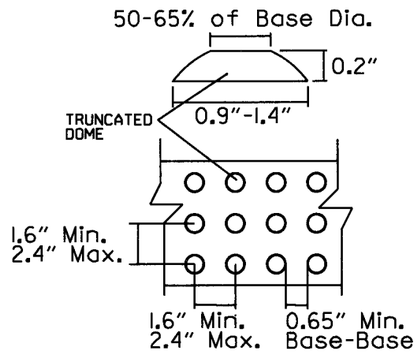
TYPE 5 RAMP



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 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.

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