DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090438	1	69

(2) HWY. 65/HWY. 43/ROCK SPRINGS RD. SIGNAL UPGRADE & INTERS. IMPVTS. (HARRISON) (S)

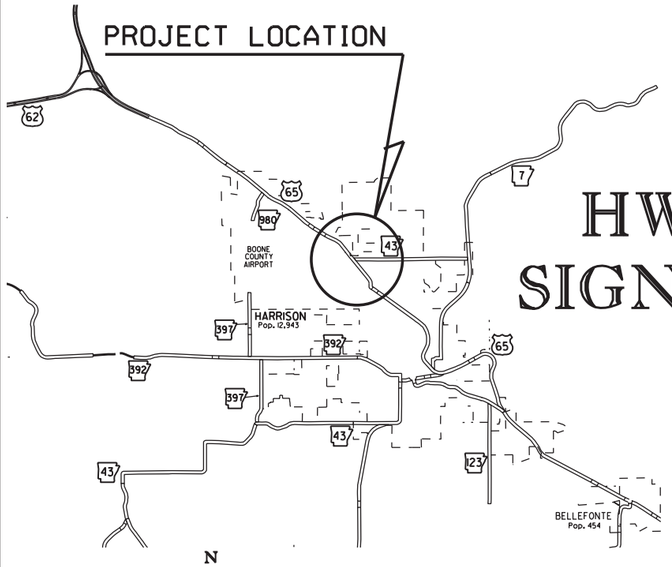
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 65/HWY. 43/ROCK SPRINGS RD. SIGNAL UPGRADE & INTERS. IMPVTS. (HARRISON) (S)

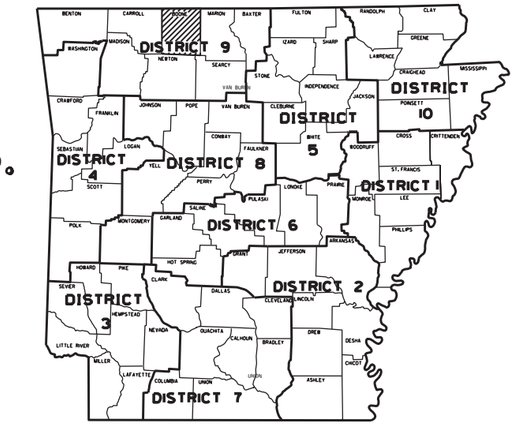
BOONE COUNTY
ROUTE 43 SECTION 3
ROUTE 65 SECTION 1
JOB 090438
FED. AID PROJ. STPC-9191(8)

NOT TO SCALE

PROJECT LOCATION



VICINITY MAP



ARKANSAS HIGHWAY DISTRICT 9

• DESIGN TRAFFIC DATA (HWY. 43) •

DESIGN YEAR	2040
2020 ADT	6120
2040 ADT	7470
2040 DHV	822
DIRECTONAL DISTRIBUTION	0.60
TRUCKS	6%
DESIGN SPEED	35 MPH

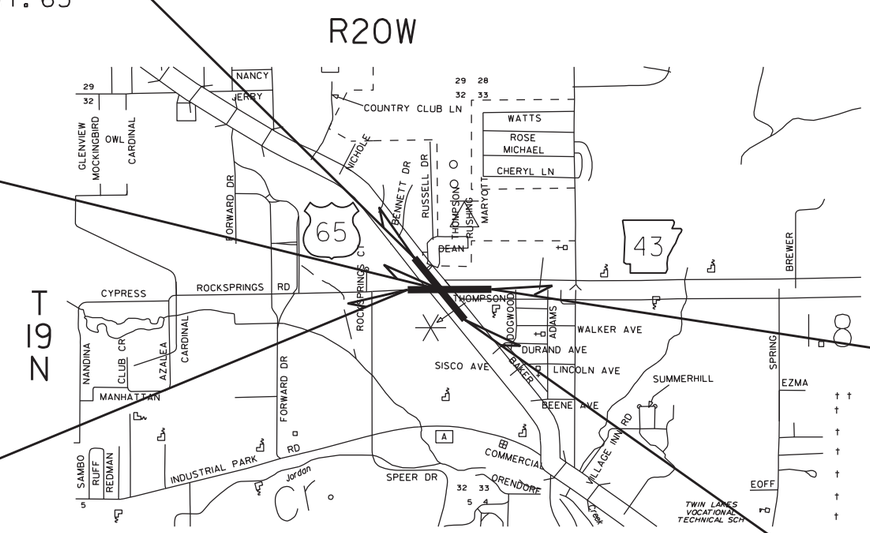
• DESIGN TRAFFIC DATA (HWY. 65) •

DESIGN YEAR	2040
2020 ADT	25800
2040 ADT	35100
2040 DHV	3861
DIRECTONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	45 MPH

STA. 112+80.00
END HWY. 65

C.L. ROCK SPRINGS RD./HWY. 43 STA. 27+63.27 =
C.L. HWY. 65 STA. 109+51.18
∡ = 128°27'23"

STA. 23+65.00
BEGIN JOB 090438
(ROCK SPRINGS RD./HWY. 43)



STA. 35+25.00
END JOB 090438
(ROCK SPRINGS RD./HWY. 43)
LOG MILE 0.16

STA. 106+50.00
BEGIN HWY. 65
LOG MILE 19.47

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N36° 15' 21"	N36° 15' 21"	N36° 15' 20"
LONG.	W93° 07' 29"	W93° 07' 22"	W93° 07' 15"

GROSS	LENGTH OF	PROJECT	1790.00	FEET OR	0.339	MILES
NET	"	" ROADWAY	1790.00	" "	0.339	MILES
NET	"	" BRIDGE	0.00	" "	0.000	MILES
NET	"	" PROJECT	1790.00	" "	0.339	MILES

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 7836
M. E. BANKS

Banks, Emanuel
Aug 11 2020 8:31 PM
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DEPUTY DIRECTOR
AND CHIEF ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 5	TYPICAL SECTIONS OF IMPROVEMENT
6 - 8	SPECIAL DETAILS
9 - 13	TEMPORARY EROSION CONTROL DETAILS
14 - 20	MAINTENANCE OF TRAFFIC DETAILS
21	PERMANENT PAVEMENT MARKING DETAILS
22 - 25	QUANTITIES
26	SUMMARY OF QUANTITIES AND REVISIONS
27 - 29	SURVEY CONTROL DETAILS
30 - 32	PLAN AND PROFILE SHEETS
33	SUMMARY OF TRAFFIC SIGNAL QUANTITIES
34	TRAFFIC SIGNAL NOTES
35	TRAFFIC SIGNAL QUANTITIES AND SIGNS
36 - 51	SIGNALIZATION PLAN SHEETS
52 - 69	CROSS SECTIONS

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

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	11-07-19
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)	08-22-02
FPC-9M	DETAILS OF DROP INLET (TYPE MO)	08-22-02
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SD-1	ANTENNA POLE	11-16-17
SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-7	SPAN WIRE ASSEMBLY WOOD POLE	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-07-19
SD-11	STEEL POLE WITH MAST ARM	11-16-17
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
SI-3	CONCRETE WALKS (TYPE SPECIAL)	05-14-20
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
09-29-2020				6	ARK.			
				JOB NO.		090438	3	69

2 GOVERNING SPECIFICATIONS AND GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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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 - NOTCE 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 - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
404-3_____	DESIGN OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
632-1_____	CONCRETE ISLAND
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
700-2_____	TRAFFIC CONTROL FACILITIES
JOB 090438__	ACTUATED CONTROLLER
JOB 090438__	AIRPORT CLEARANCE REQUIREMENTS
JOB 090438__	ANTENNA SUPPORT
JOB 090438__	ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)
JOB 090438__	ASSESSMENT OF WORKING DAYS – MAINTENANCE OF TRAFFIC
JOB 090438__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 090438__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090438__	CABINET DRAWER ASSEMBLY
JOB 090438__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 090438__	CONCRETE WALKS (TYPE SPECIAL)
JOB 090438__	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 090438__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 090438__	EDGE CARD VIDEO PROCESSOR
JOB 090438__	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 090438__	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 090438__	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 090438__	FLEXIBLE BEGINNING OF WORK
JOB 090438__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090438__	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 090438__	LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB 090438__	LED TRAFFIC SIGNAL HEAD
JOB 090438__	MAINTENANCE OF TRAFFIC
JOB 090438__	MANDATORY ELECTRONIC CONTRACT
JOB 090438__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 090438__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 090438__	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 090438__	RETROREFLECTIVE BACKPLATES
JOB 090438__	SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES)
JOB 090438__	SHORING FOR CULVERTS
JOB 090438__	STORM WATER POLLUTION PREVENTION PLAN
JOB 090438__	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 090438__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090438__	SYSTEM LOCAL CONTROLLER
JOB 090438__	TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS)
JOB 090438__	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
JOB 090438__	UTILITY ADJUSTMENTS
JOB 090438__	VIDEO DETECTOR (COLOR)
JOB 090438__	WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. MATERIAL GENERATED FROM COLD MILLING OPERATIONS SHALL REMAIN THE PROPERTY OF THE DEPARTMENT AND SHALL BE TRANSPORTED TO AND STOCKPILED AT THE LOCATION SPECIFIED ON SHEET 25. NO DIRECT PAYMENT WILL BE MADE FOR LOADING, HAULING, AND STOCKPILING OF EXCESS MILLING MATERIAL; PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR COLD MILLING ASPHALT PAVEMENT. COLD MILLING SHALL BE STOCKPILED IN A TRAPEZOIDAL SHAPE, OR AS DIRECTED BY THE ENGINEER, WHICH CAN BE EASILY MEASURED.

brbe531 9/29/2020
RR090438.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.		090438	4	69

2 TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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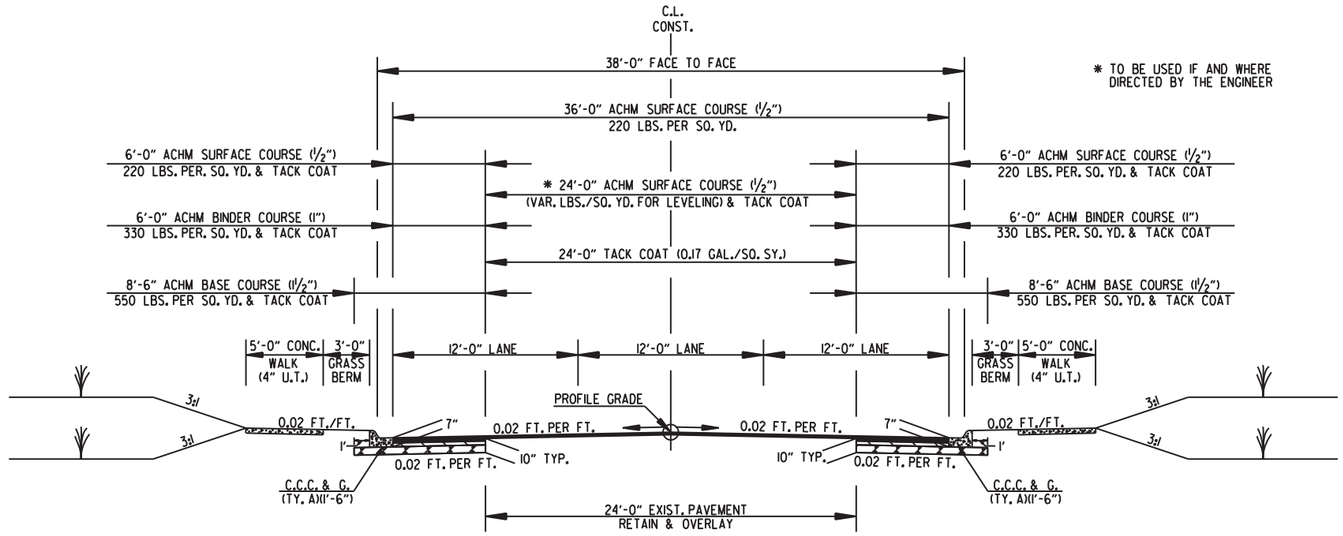


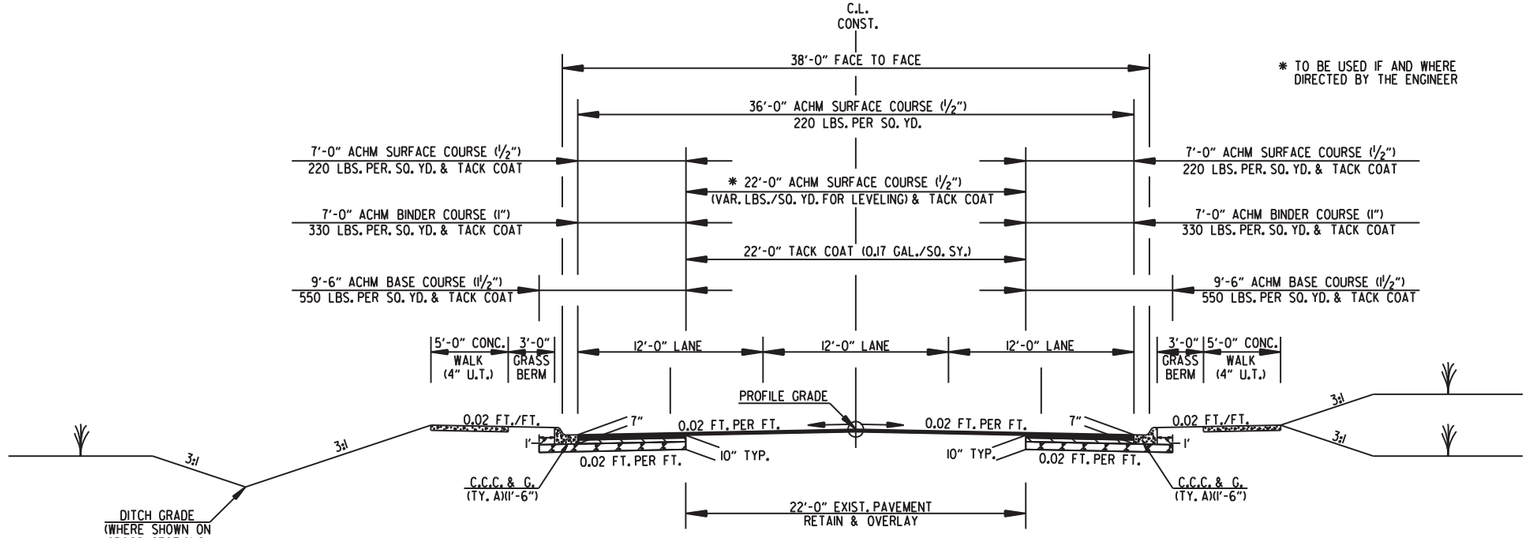
TYPICAL SECTION OF IMPROVEMENT
ROCK SPRINGS ROAD
STA. 23+65.00 - STA. 27+27.52

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

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.

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

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.



TYPICAL SECTION OF IMPROVEMENT
HIGHWAY 43
STA. 27+99.02 - STA. 35+25.00

6/4/2020

RR090438.DGN

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				6	ARK.			
				JOB NO.		090438	5	69

2 TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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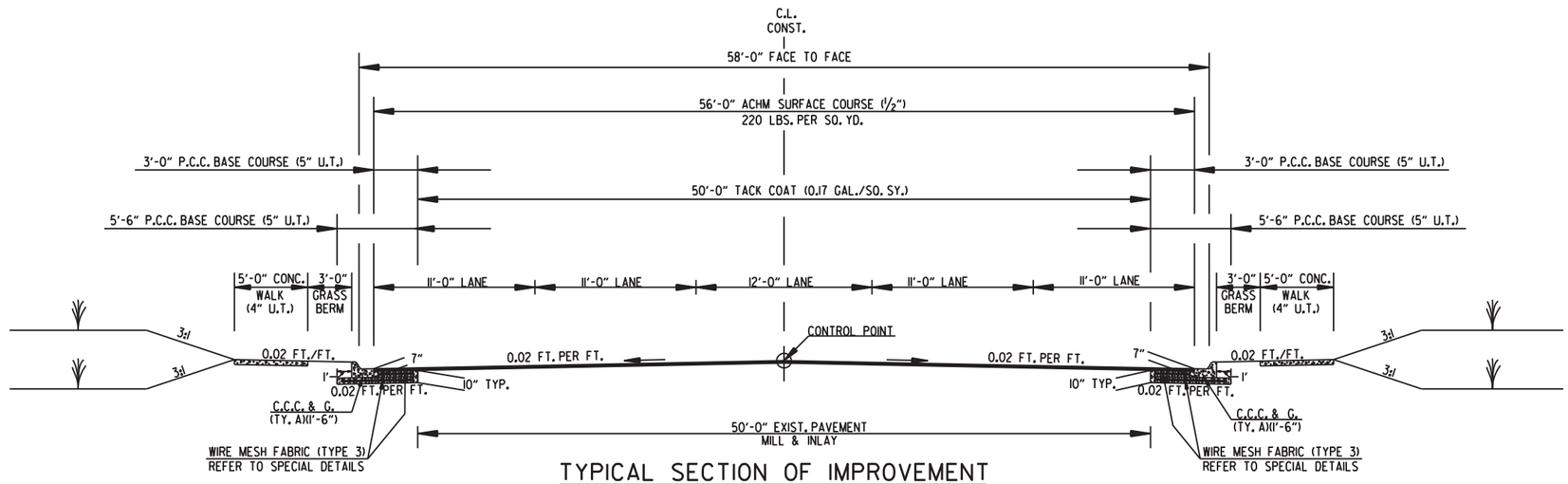

TYPICAL SECTION OF IMPROVEMENT

HIGHWAY 65

STA. 106+50.00 - STA. 112+80.00

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

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.

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

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.

RR090438.DGN 6/4/2020

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				6	ARK.			
				JOB NO.		090438	6	69

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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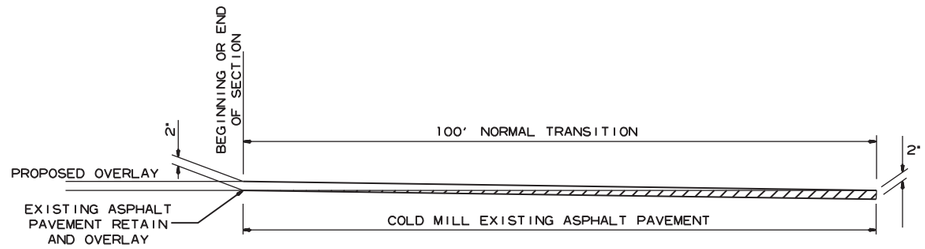
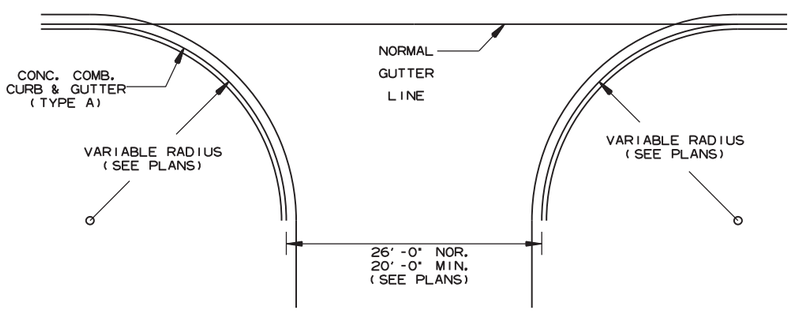
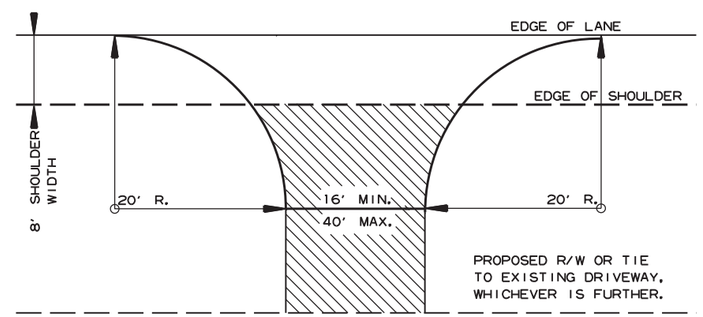


DETAIL FOR TRANSITIONS



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



NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING, OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)

7/21/2020

RR090438.DGN

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(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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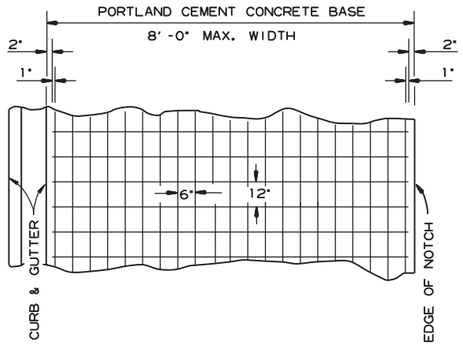
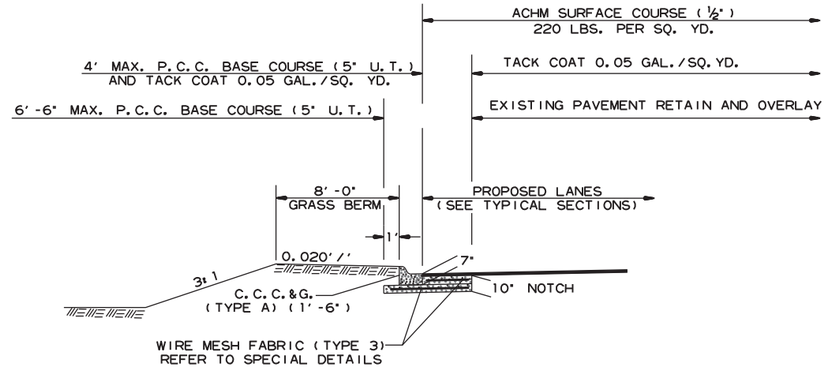


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

NOTES:

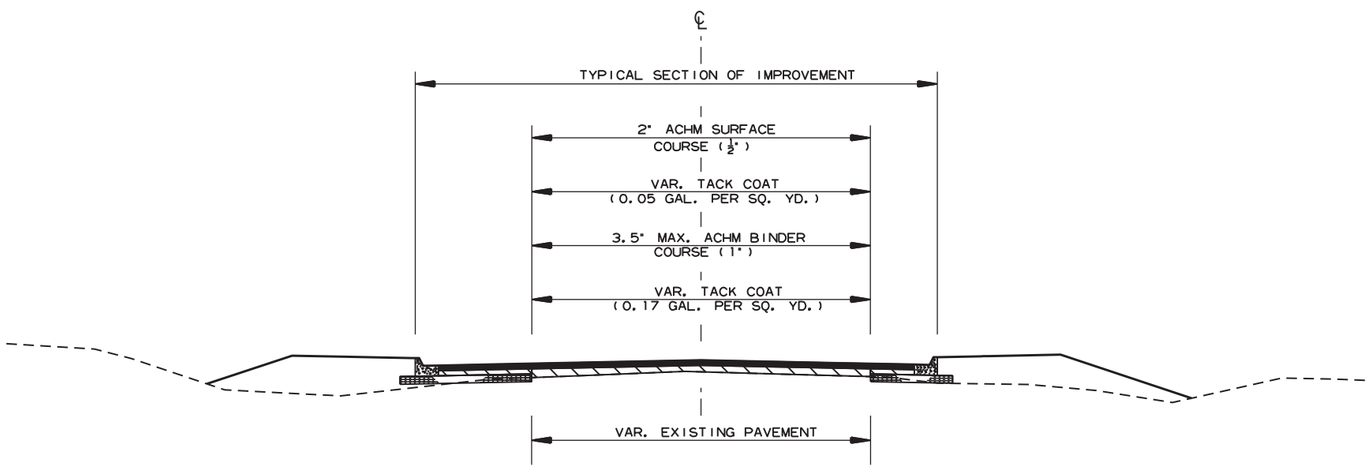
1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (5" U.T.)

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



P.C.C. BASE WIDENING DETAIL

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



METHOD OF RAISING GRADE

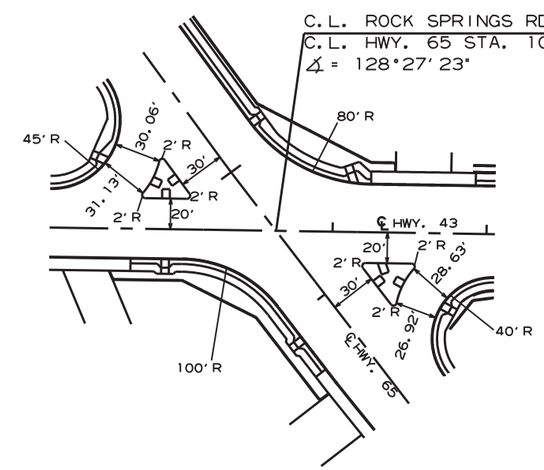
NOTES:

(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.

C.L. ROCK SPRINGS RD./HWY. 43 STA. 27+63.27 =
C.L. HWY. 65 STA. 109+51.98
∡ = 128°27'23"



ISLAND DETAILS

TYPE C CURB FACE

7/21/2020

RR090438.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.		090438	8	69

(2) SPECIAL DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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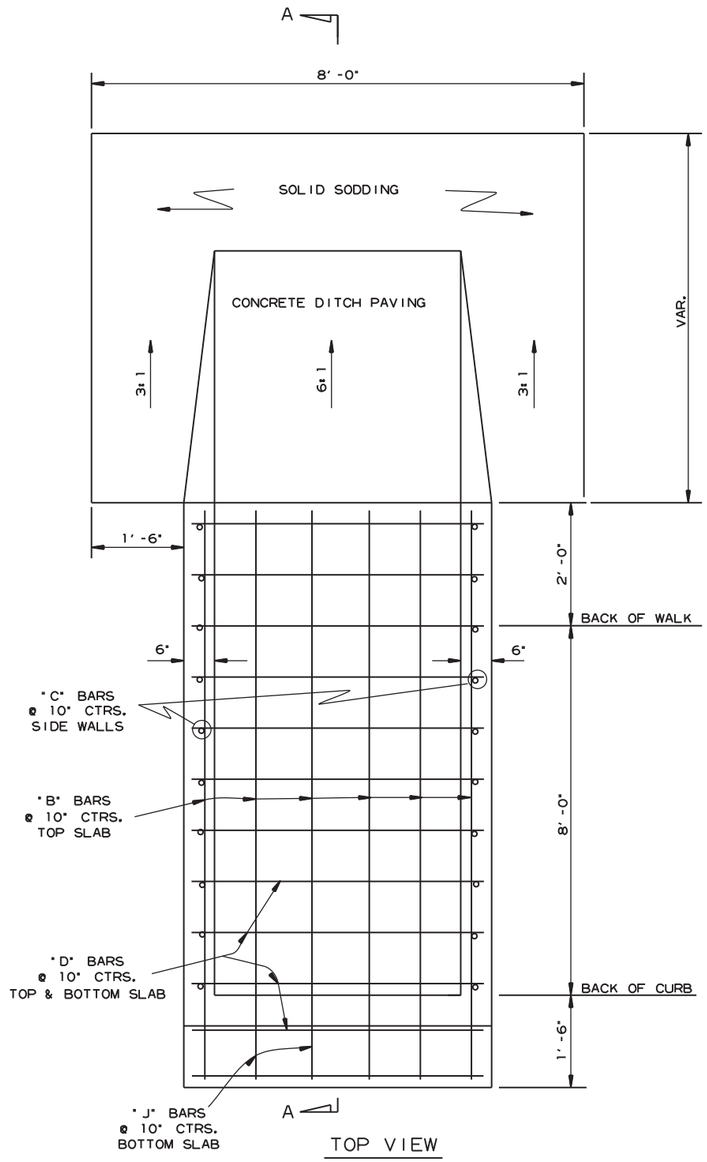
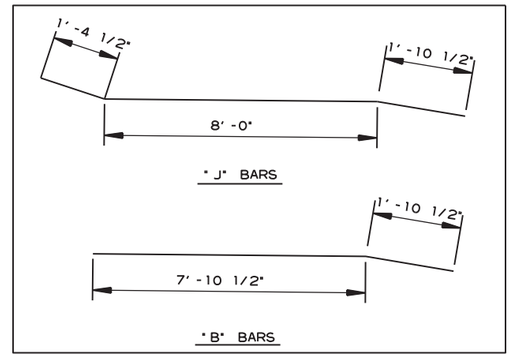


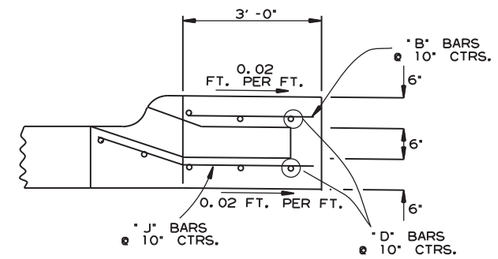
TOP VIEW

BAR DIAGRAM

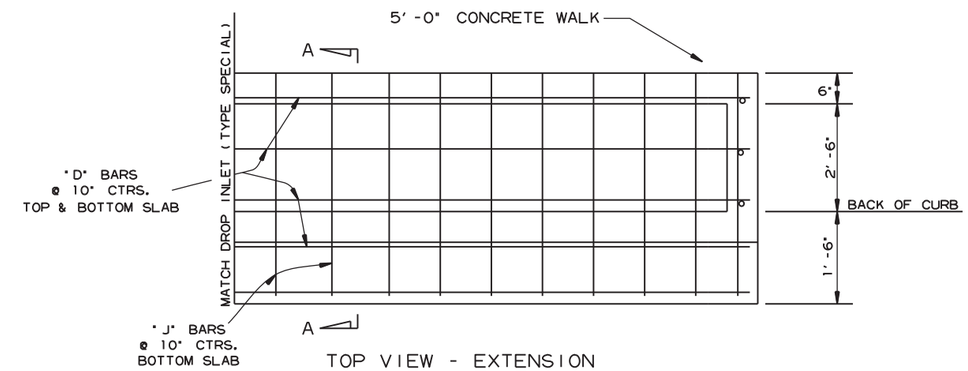


CLASS A CONC.	REINF. STEEL-RDWY. GRADE 60
CU. YDS.	POUND
2.53	207

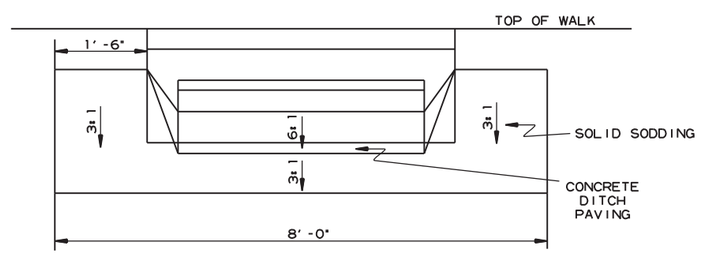
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



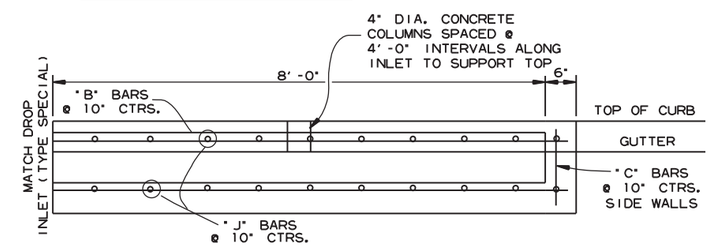
SECTION A-A - EXTENSION



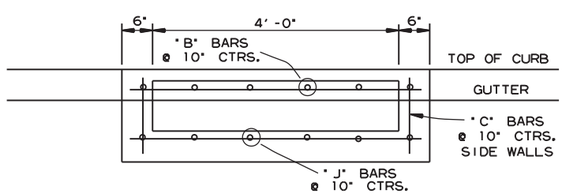
TOP VIEW - EXTENSION



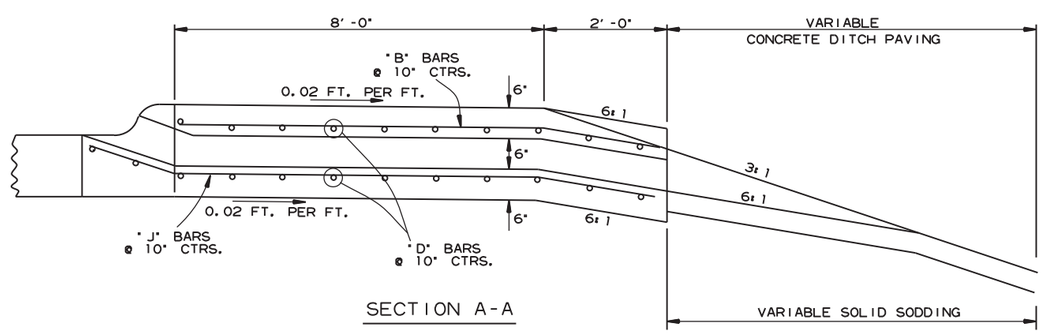
BACK VIEW



FRONT VIEW - EXTENSION



FRONT VIEW



SECTION A-A

GENERAL NOTES:

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

DROP INLET (TYPE SPECIAL)

SPECIAL DETAILS

7/21/2020

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6	ARK.			
JOB NO.		090438	9	69

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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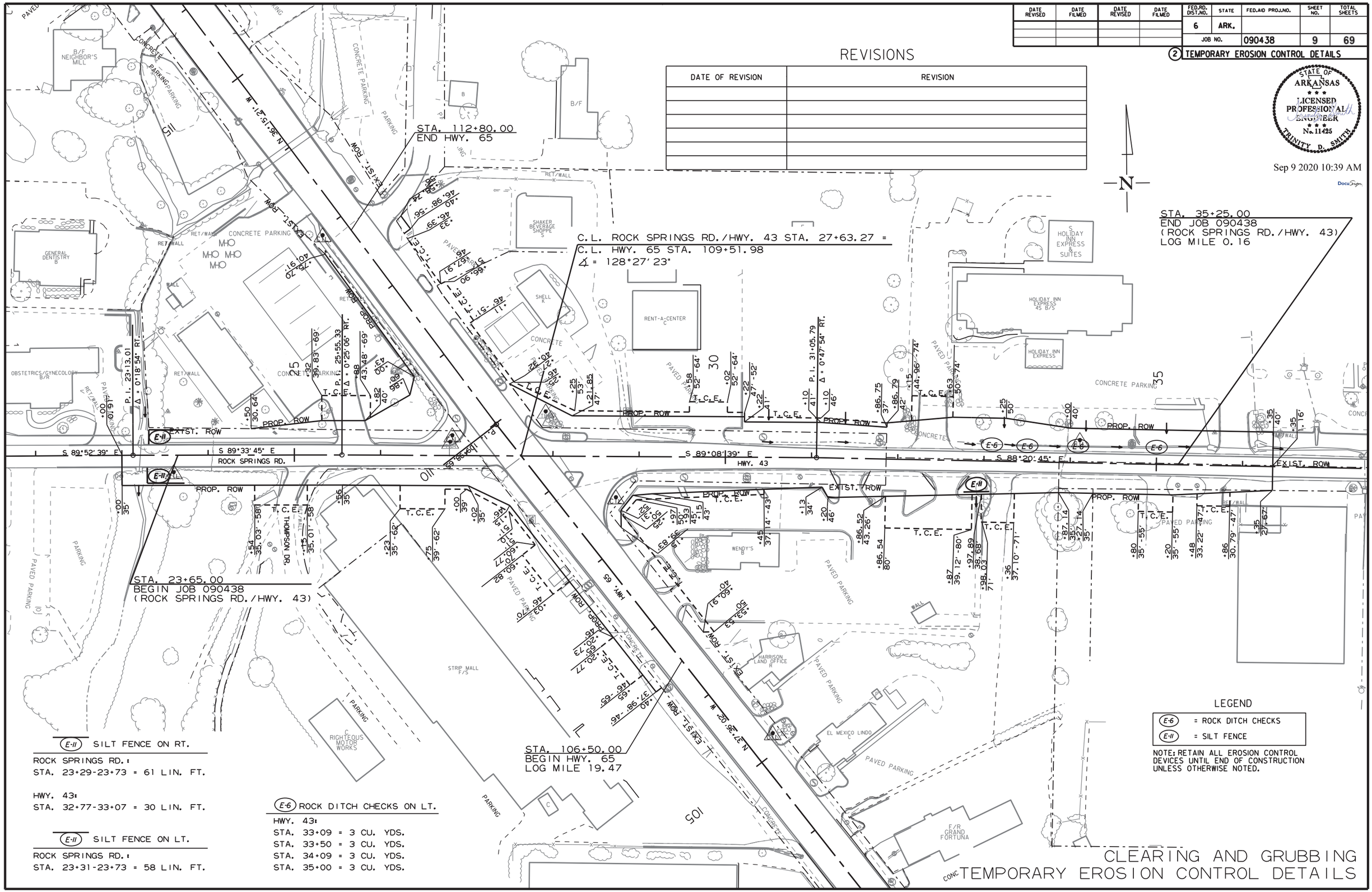
REVISIONS

DATE OF REVISION	REVISION



(E-11) SILT FENCE ON RT.

ROCK SPRINGS RD.:
STA. 23+29-23+73 = 61 LIN. FT.

HWY. 43:
STA. 32+77-33+07 = 30 LIN. FT.

(E-11) SILT FENCE ON LT.

ROCK SPRINGS RD.:
STA. 23+31-23+73 = 58 LIN. FT.

(E-6) ROCK DITCH CHECKS ON LT.

HWY. 43:
STA. 33+09 = 3 CU. YDS.
STA. 33+50 = 3 CU. YDS.
STA. 34+09 = 3 CU. YDS.
STA. 35+00 = 3 CU. YDS.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

JH41264 9/8/2020
RR090438.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.		090438	10	69

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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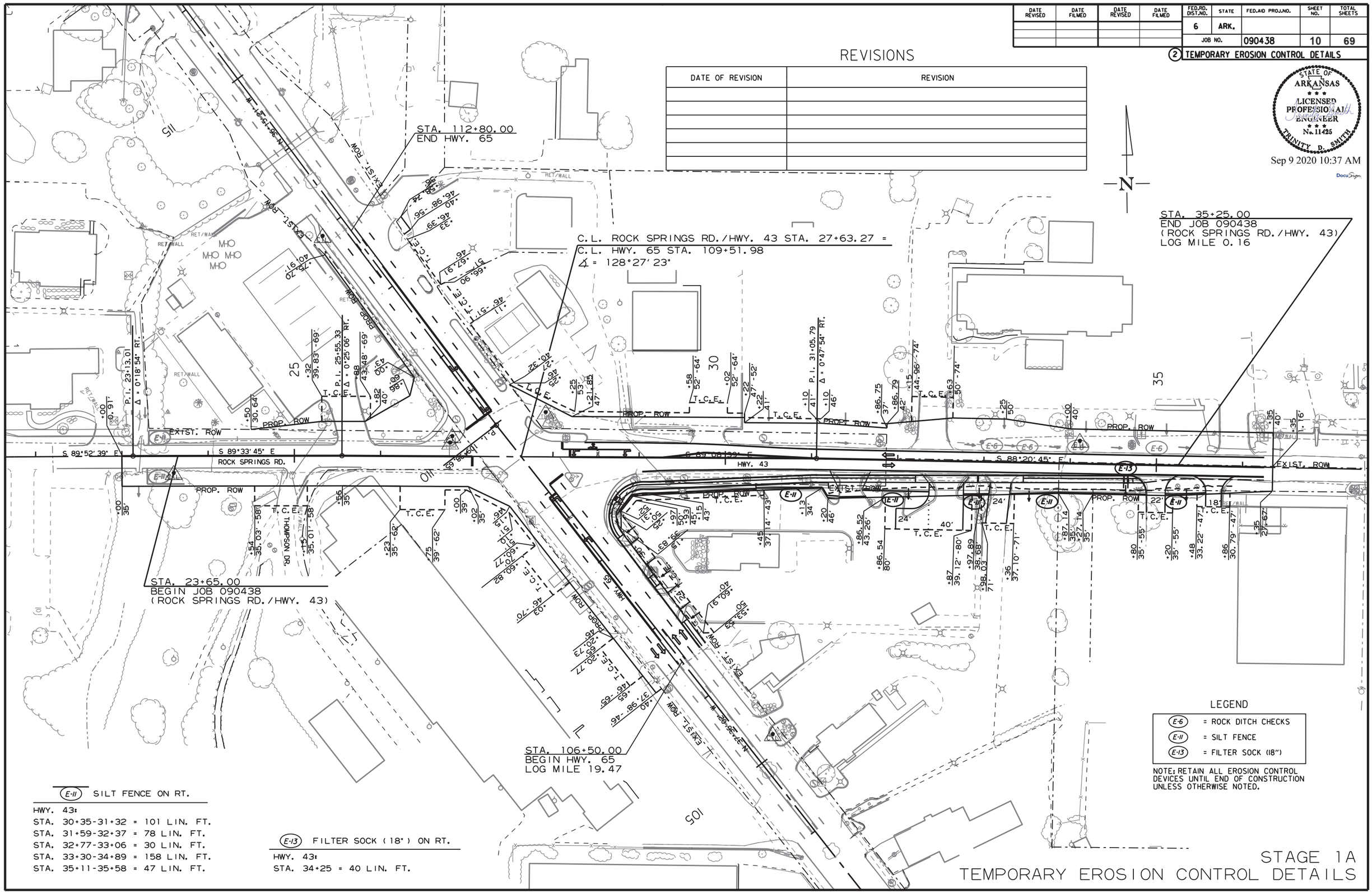
REVISIONS

DATE OF REVISION	REVISION



E-11 SILT FENCE ON RT.

HWY. 43:
STA. 30+35-31+32 = 101 LIN. FT.
STA. 31+59-32+37 = 78 LIN. FT.
STA. 32+77-33+06 = 30 LIN. FT.
STA. 33+30-34+89 = 158 LIN. FT.
STA. 35+11-35+58 = 47 LIN. FT.

E-13 FILTER SOCK (18") ON RT.

HWY. 43:
STA. 34+25 = 40 LIN. FT.

STAGE 1A
TEMPORARY EROSION CONTROL DETAILS

JH41264 9/8/2020
RR090438.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.		090438	11	69

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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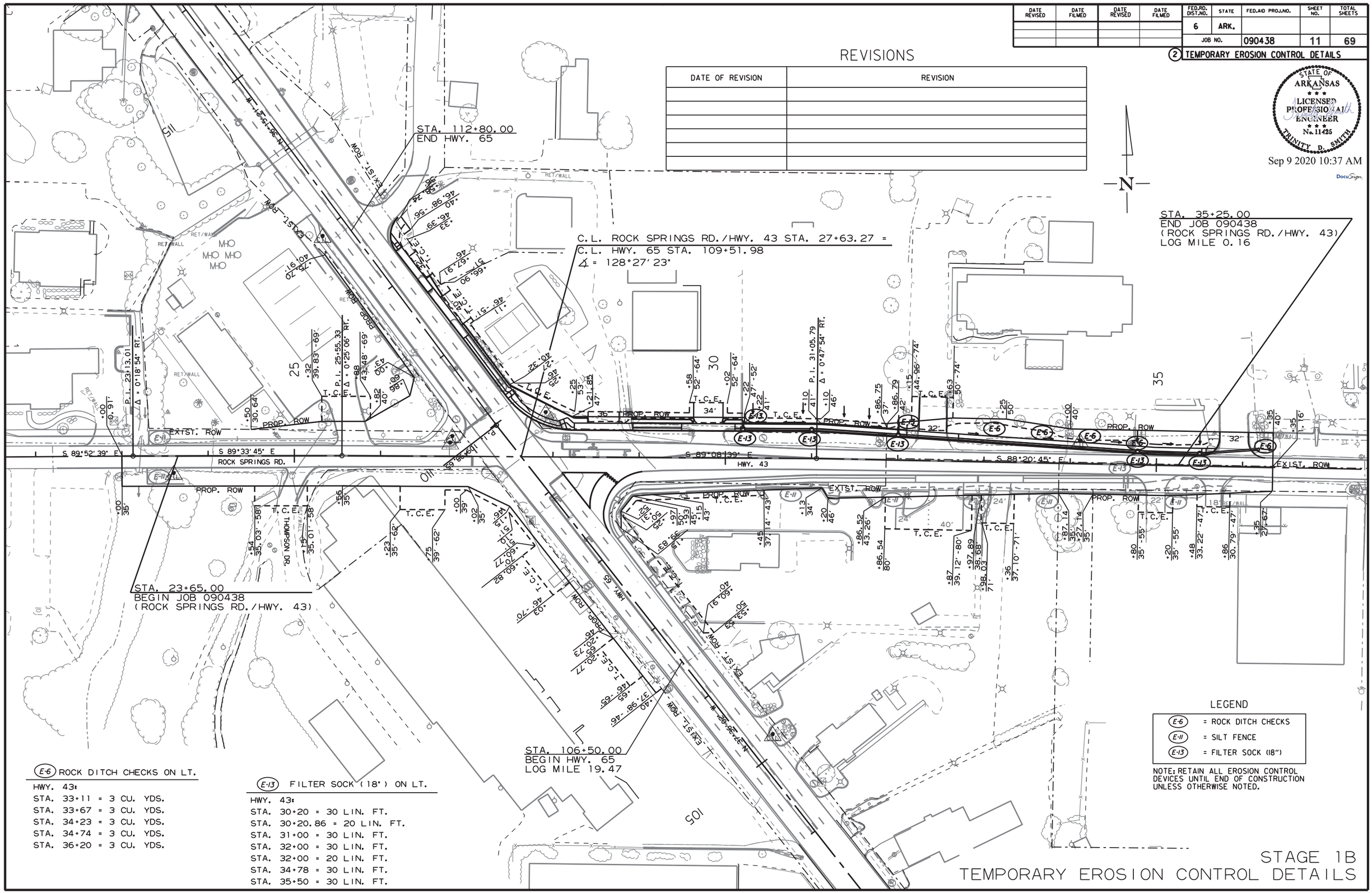
REVISIONS

DATE OF REVISION	REVISION



(E-6) ROCK DITCH CHECKS ON LT.

HWY. 43:
STA. 33+11 = 3 CU. YDS.
STA. 33+67 = 3 CU. YDS.
STA. 34+23 = 3 CU. YDS.
STA. 34+74 = 3 CU. YDS.
STA. 36+20 = 3 CU. YDS.

(E-13) FILTER SOCK (18") ON LT.

HWY. 43:
STA. 30+20 = 30 LIN. FT.
STA. 30+20.86 = 20 LIN. FT.
STA. 31+00 = 30 LIN. FT.
STA. 32+00 = 30 LIN. FT.
STA. 32+00 = 20 LIN. FT.
STA. 34+78 = 30 LIN. FT.
STA. 35+50 = 30 LIN. FT.

LEGEND

(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-13)	= FILTER SOCK (18")

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 1B
TEMPORARY EROSION CONTROL DETAILS

JH41264 9/8/2020
RR090438.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.		090438	12	69

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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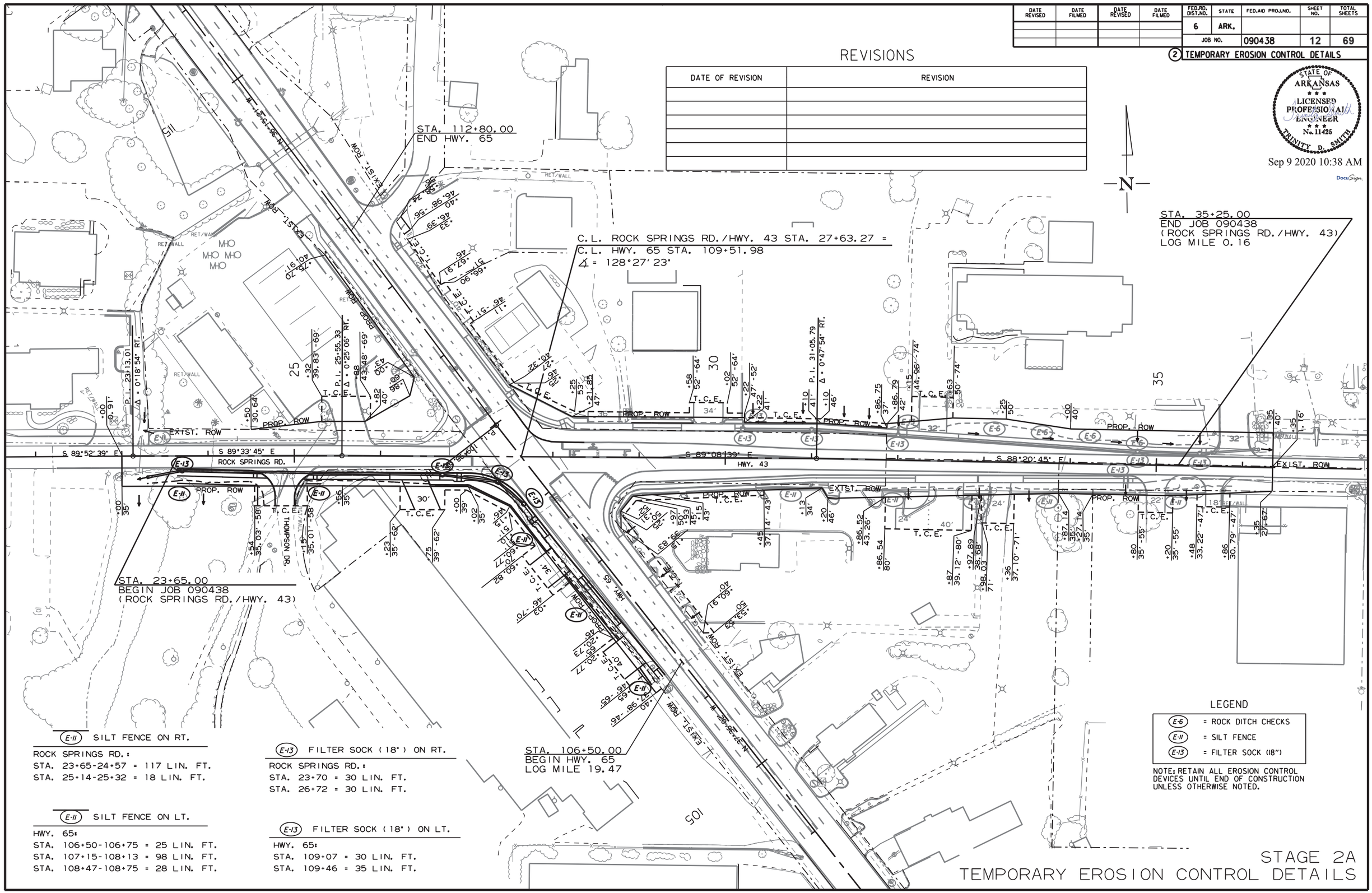

(E-11) SILT FENCE ON RT.

ROCK SPRINGS RD.:
STA. 23+65-24+57 = 117 LIN. FT.
STA. 25+14-25+32 = 18 LIN. FT.

(E-11) SILT FENCE ON LT.

HWY. 65:
STA. 106+50-106+75 = 25 LIN. FT.
STA. 107+15-108+13 = 98 LIN. FT.
STA. 108+47-108+75 = 28 LIN. FT.

(E-13) FILTER SOCK (18") ON RT.

ROCK SPRINGS RD.:
STA. 23+70 = 30 LIN. FT.
STA. 26+72 = 30 LIN. FT.

(E-13) FILTER SOCK (18") ON LT.

HWY. 65:
STA. 109+07 = 30 LIN. FT.
STA. 109+46 = 35 LIN. FT.

LEGEND

(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-13)	= FILTER SOCK (18")

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

STAGE 2A
TEMPORARY EROSION 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.		090438	13	69

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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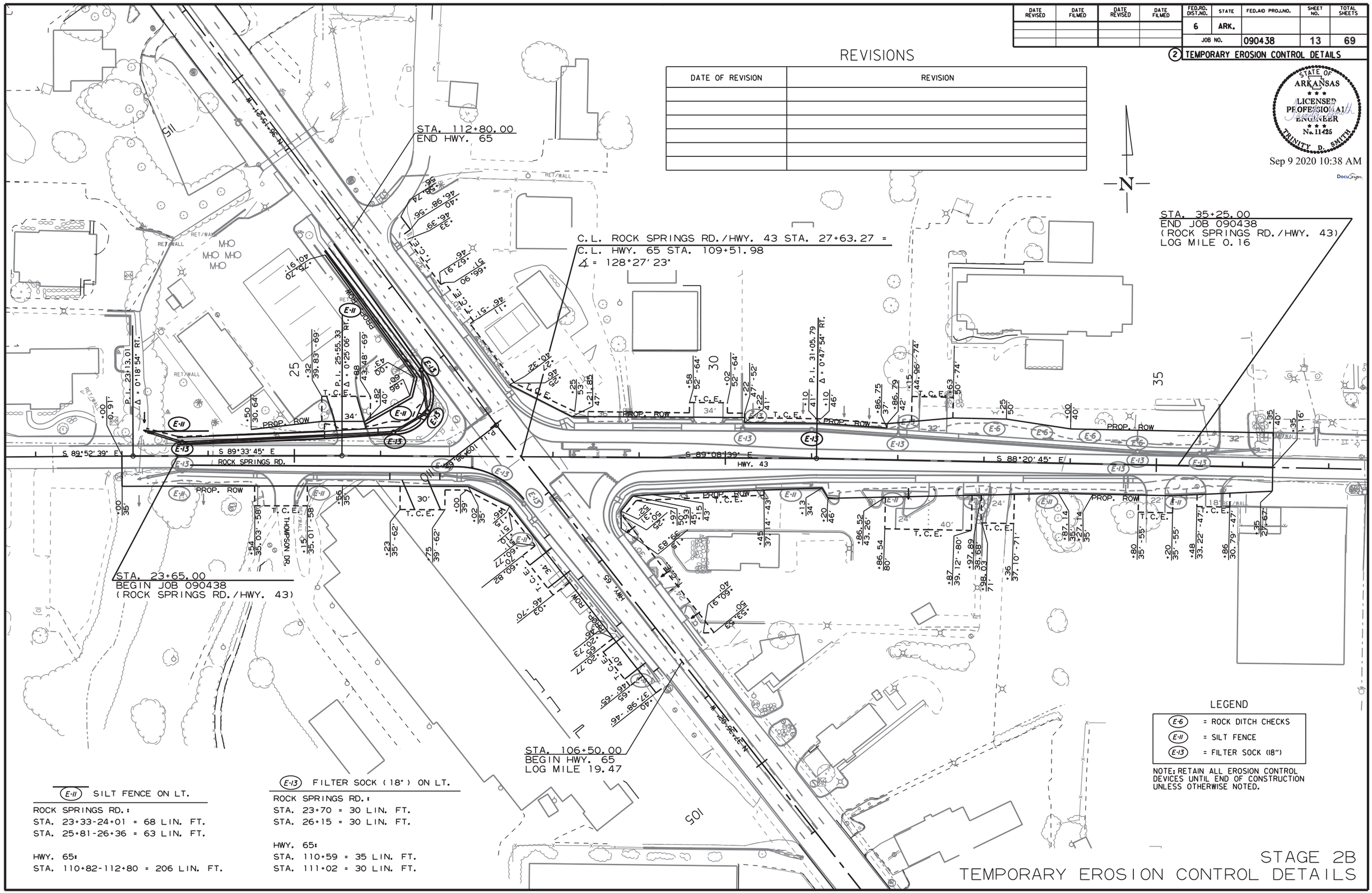
REVISIONS

DATE OF REVISION	REVISION



LEGEND

(E-6)	= ROCK DITCH CHECKS
(E-11)	= SILT FENCE
(E-13)	= FILTER SOCK (18")

NOTE: RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

(E-11) SILT FENCE ON LT.

ROCK SPRINGS RD.:
STA. 23+33-24+01 = 68 LIN. FT.
STA. 25+81-26+36 = 63 LIN. FT.

HWY. 65:
STA. 110+82-112+80 = 206 LIN. FT.

(E-13) FILTER SOCK (18") ON LT.

ROCK SPRINGS RD.:
STA. 23+70 = 30 LIN. FT.
STA. 26+15 = 30 LIN. FT.

HWY. 65:
STA. 110+59 = 35 LIN. FT.
STA. 111+02 = 30 LIN. FT.

STAGE 2B
TEMPORARY EROSION 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.		090438	14	69

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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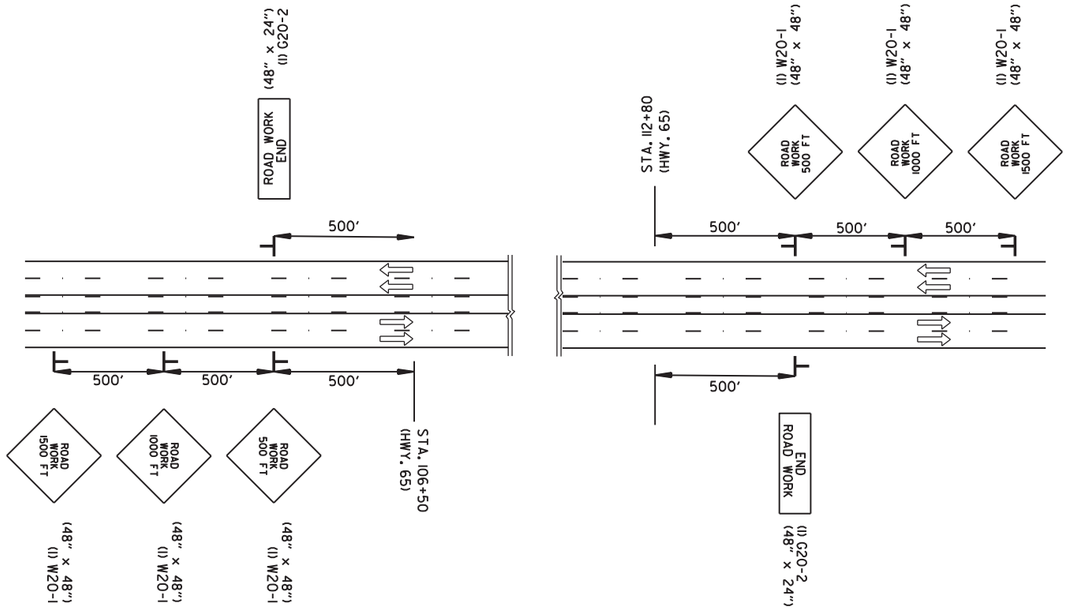
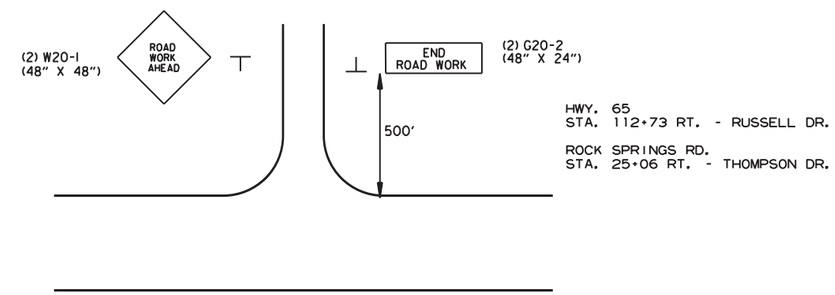
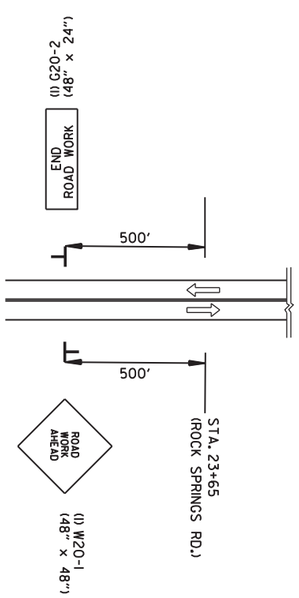


ADVANCE WARNING HWY. 65 (ALL STAGES)

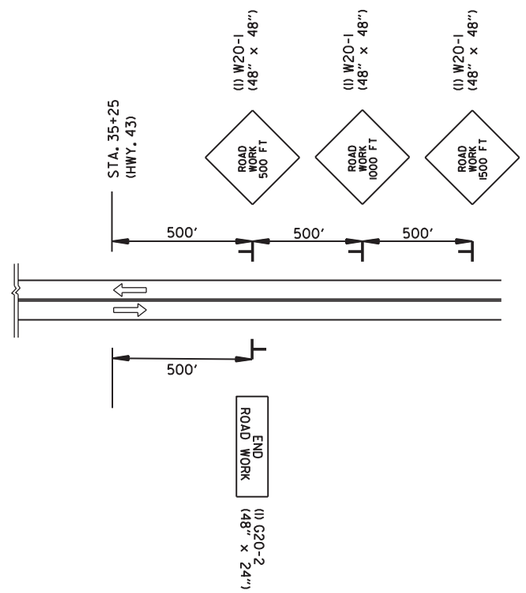
DO NOT PASS	(4) R4-1 (24" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
BUMP	(4) W8-1 (30" X 30")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
RIGHT SHOULDER CLOSED	(4) W21 - 5a (36" X 36")	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



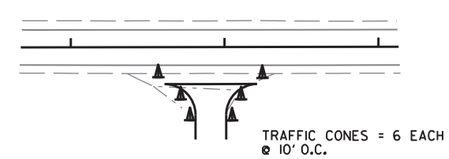
ADVANCE WARNING - SIDE ROADS
(ALL STAGES)



ADVANCE WARNING
ROCK SPRINGS RD. (ALL STAGES)



ADVANCE WARNING HWY. 43 (ALL STAGES)



DRIVEWAY/TRAFFIC CONES DETAIL

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ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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CONSTRUCTION SEQUENCE

STAGE 1A:

INSTALL ADVANCE WARNING SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS. INSTALL END ROAD WORK SIGNS AT THE END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAILS. INSTALL ROAD WORK AHEAD (W20-1) SIGN ON SIDE ROADS AS SHOWN ON THE ADVANCE WARNING DETAILS.

REMOVE CONCRETE ISLAND AS SHOWN IN STAGE 1A OF MAINTENANCE OF TRAFFIC DETAILS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS, TRAFFIC DRUMS, AND TRAFFIC CONES AS SHOWN IN THE STAGE 1A MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT DRAINAGE STRUCTURES AS SHOWN IN THE STAGE 1A MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RT. OF HWY. 65 FROM STA. 106+50 TO STA. 108+47, AND RT. OF HWY. 43 FROM STA. 28+70 TO STA. 36+25 AS SHOWN IN THE STAGE 1A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 1B:

INSTALL CONSTRUCTION PAVEMENT MARKINGS, TRAFFIC DRUMS, AND TRAFFIC CONES AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

MAINTAIN CONSTRUCTION PAVEMENT MARKINGS INSTALLED IN STAGE 1A MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT DRAINAGE STRUCTURES AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RT. OF HWY. 65 FROM STA. 110+20 TO STA. 112+60, AND LT. OF HWY. 43 FROM STA. 27+44 TO STA. 36+25 AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2A:

INSTALL TRAFFIC DRUMS AND TRAFFIC CONES AS SHOWN IN THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

MAINTAIN CONSTRUCTION PAVEMENT MARKINGS INSTALLED IN STAGE 1A AND STAGE 1B.

CONSTRUCT DRAINAGE STRUCTURES AS SHOWN IN THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT LT. OF HWY. 65 FROM STA. 106+50 TO STA. 109+12, AND RT. OF ROCK SPRINGS RD. FROM STA. 23+65 TO STA. 27+65 AS SHOWN IN THE STAGE 2A MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2B:

INSTALL TRAFFIC DRUMS AND TRAFFIC CONES AS SHOWN IN THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

MAINTAIN CONSTRUCTION PAVEMENT MARKINGS INSTALLED IN STAGE 1A AND STAGE 1B.

CONSTRUCT DRAINAGE STRUCTURES AS SHOWN IN THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT LT. OF HWY. 65 FROM STA. 110+54 TO STA. 112+80, AND LT. OF ROCK SPRINGS RD. FROM STA. 23+65 TO STA. 26+54 AS SHOWN IN THE STAGE 2B MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

MILL AND INLAY HWY. 65 FROM STA. 106+50 TO STA. 112+80.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONTRUCT CONCRETE ISLAND RT. OF HWY. 65 FROM STA. 108+66 TO STA. 109+01.

CONSTRUCT CONCRETE ISLAND LT. OF HWY. 65 FROM STA. 110+02 TO STA. 110+34.

APPLY FINAL 2" LIFT OF ACHM AND PLACE PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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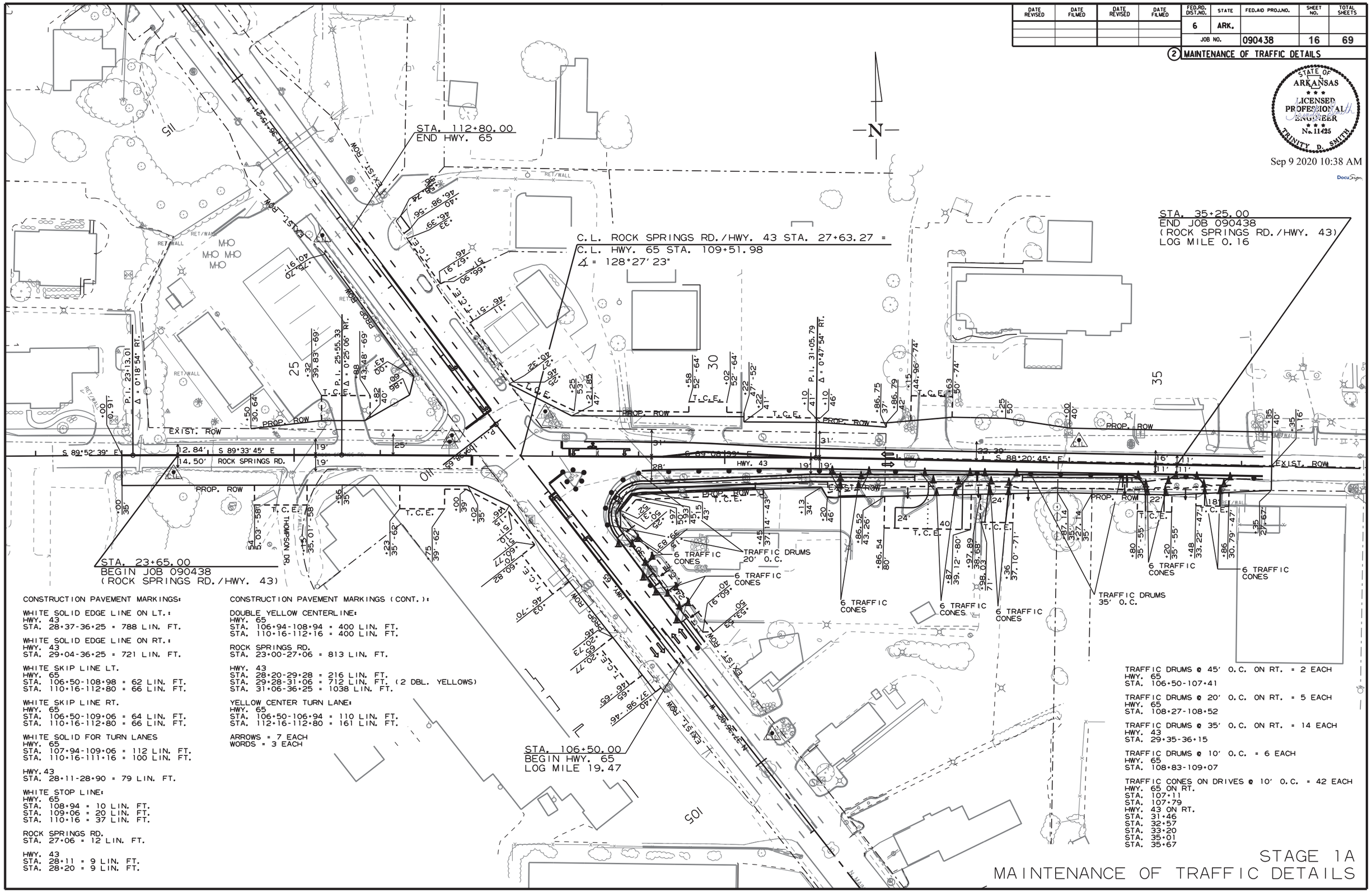

CONSTRUCTION PAVEMENT MARKINGS:

WHITE SOLID EDGE LINE ON LT.:
HWY. 43
STA. 28+37-36+25 = 788 LIN. FT.

WHITE SOLID EDGE LINE ON RT.:
HWY. 43
STA. 29+04-36+25 = 721 LIN. FT.

WHITE SKIP LINE LT.
HWY. 65
STA. 106+50-108+98 = 62 LIN. FT.
STA. 110+16-112+80 = 66 LIN. FT.

WHITE SKIP LINE RT.
HWY. 65
STA. 106+50-109+06 = 64 LIN. FT.
STA. 110+16-112+80 = 66 LIN. FT.

WHITE SOLID FOR TURN LANES
HWY. 65
STA. 107+94-109+06 = 112 LIN. FT.
STA. 110+16-111+16 = 100 LIN. FT.

HWY. 43
STA. 28+11-28+90 = 79 LIN. FT.

WHITE STOP LINE:
HWY. 65
STA. 108+94 = 10 LIN. FT.
STA. 109+06 = 20 LIN. FT.
STA. 110+16 = 37 LIN. FT.

ROCK SPRINGS RD.
STA. 27+06 = 12 LIN. FT.

HWY. 43
STA. 28+11 = 9 LIN. FT.
STA. 28+20 = 9 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS (CONT.):

DOUBLE YELLOW CENTERLINE:
HWY. 65
STA. 106+94-108+94 = 400 LIN. FT.
STA. 110+16-112+16 = 400 LIN. FT.

ROCK SPRINGS RD.
STA. 23+00-27+06 = 813 LIN. FT.

HWY. 43
STA. 28+20-29+28 = 216 LIN. FT.
STA. 29+28-31+06 = 712 LIN. FT. (2 DBL. YELLOWS)
STA. 31+06-36+25 = 1038 LIN. FT.

YELLOW CENTER TURN LANE:
HWY. 65
STA. 106+50-106+94 = 110 LIN. FT.
STA. 112+16-112+80 = 161 LIN. FT.

ARROWS = 7 EACH
WORDS = 3 EACH

TRAFFIC DRUMS @ 45' O.C. ON RT. = 2 EACH
HWY. 65
STA. 106+50-107+41

TRAFFIC DRUMS @ 20' O.C. ON RT. = 5 EACH
HWY. 65
STA. 108+27-108+52

TRAFFIC DRUMS @ 35' O.C. ON RT. = 14 EACH
HWY. 43
STA. 29+35-36+15

TRAFFIC DRUMS @ 10' O.C. = 6 EACH
HWY. 65
STA. 108+83-109+07

TRAFFIC CONES ON DRIVES @ 10' O.C. = 42 EACH
HWY. 65 ON RT.
STA. 107+11
STA. 107+79
HWY. 43 ON RT.
STA. 31+46
STA. 32+57
STA. 33+20
STA. 35+01
STA. 35+67

STAGE 1A
MAINTENANCE OF TRAFFIC DETAILS

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RR090438.DGN

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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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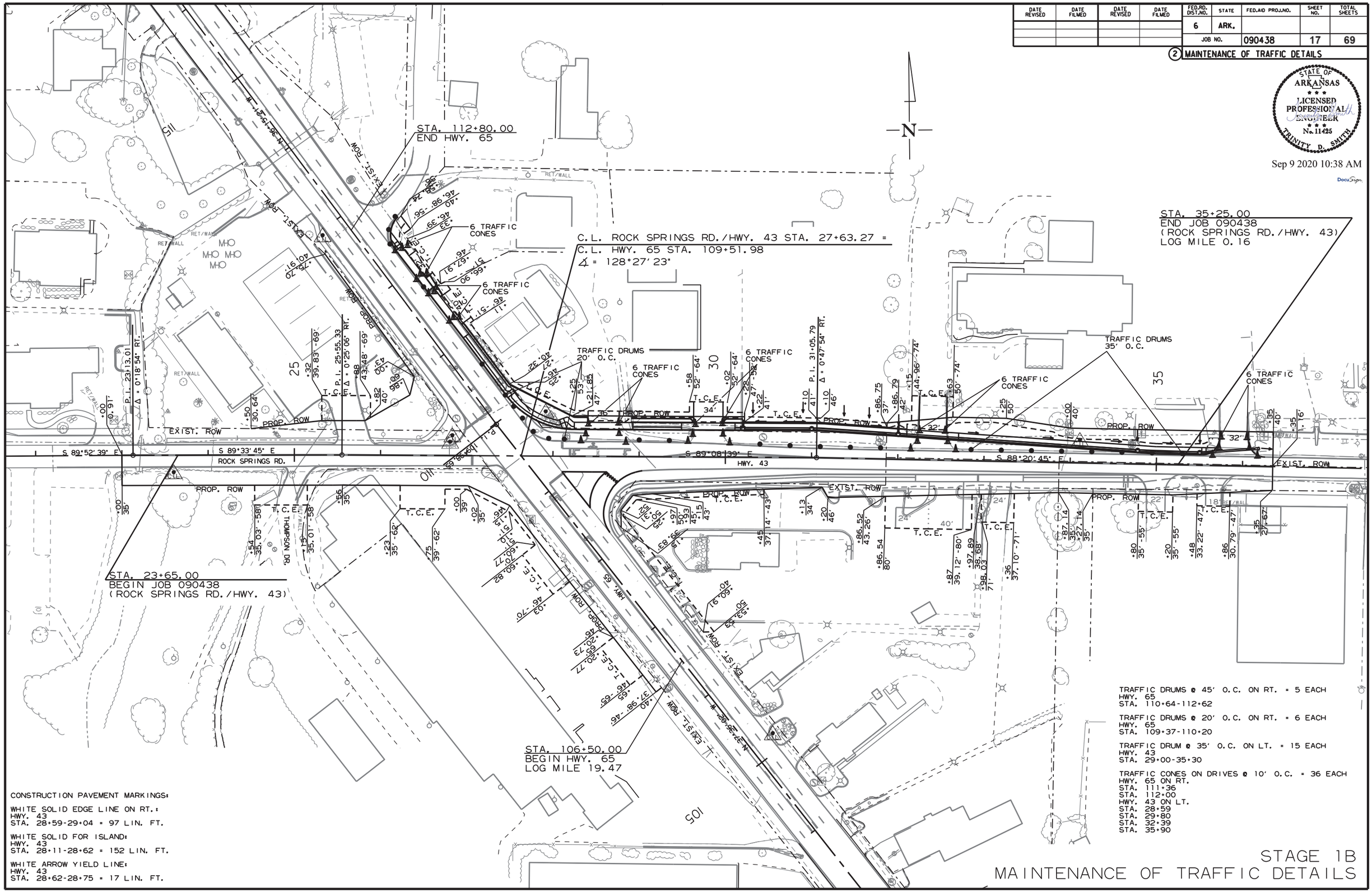

TRAFFIC DRUMS @ 45' O.C. ON RT. = 5 EACH
HWY. 65
STA. 110+64-112+62

TRAFFIC DRUMS @ 20' O.C. ON RT. = 6 EACH
HWY. 65
STA. 109+37-110+20

TRAFFIC DRUM @ 35' O.C. ON LT. = 15 EACH
HWY. 43
STA. 29+00-35+30

TRAFFIC CONES ON DRIVES @ 10' O.C. = 36 EACH
HWY. 65 ON RT.
STA. 111+36
STA. 112+00
HWY. 43 ON LT.
STA. 28+59
STA. 29+80
STA. 32+39
STA. 35+90

CONSTRUCTION PAVEMENT MARKINGS:

WHITE SOLID EDGE LINE ON RT.:
HWY. 43
STA. 28+59-29+04 = 97 LIN. FT.

WHITE SOLID FOR ISLAND:
HWY. 43
STA. 28+11-28+62 = 152 LIN. FT.

WHITE ARROW YIELD LINE:
HWY. 43
STA. 28+62-28+75 = 17 LIN. FT.

STAGE 1B
MAINTENANCE OF TRAFFIC DETAILS

JH41264 9/8/2020
RR090438.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.		090438	18	69

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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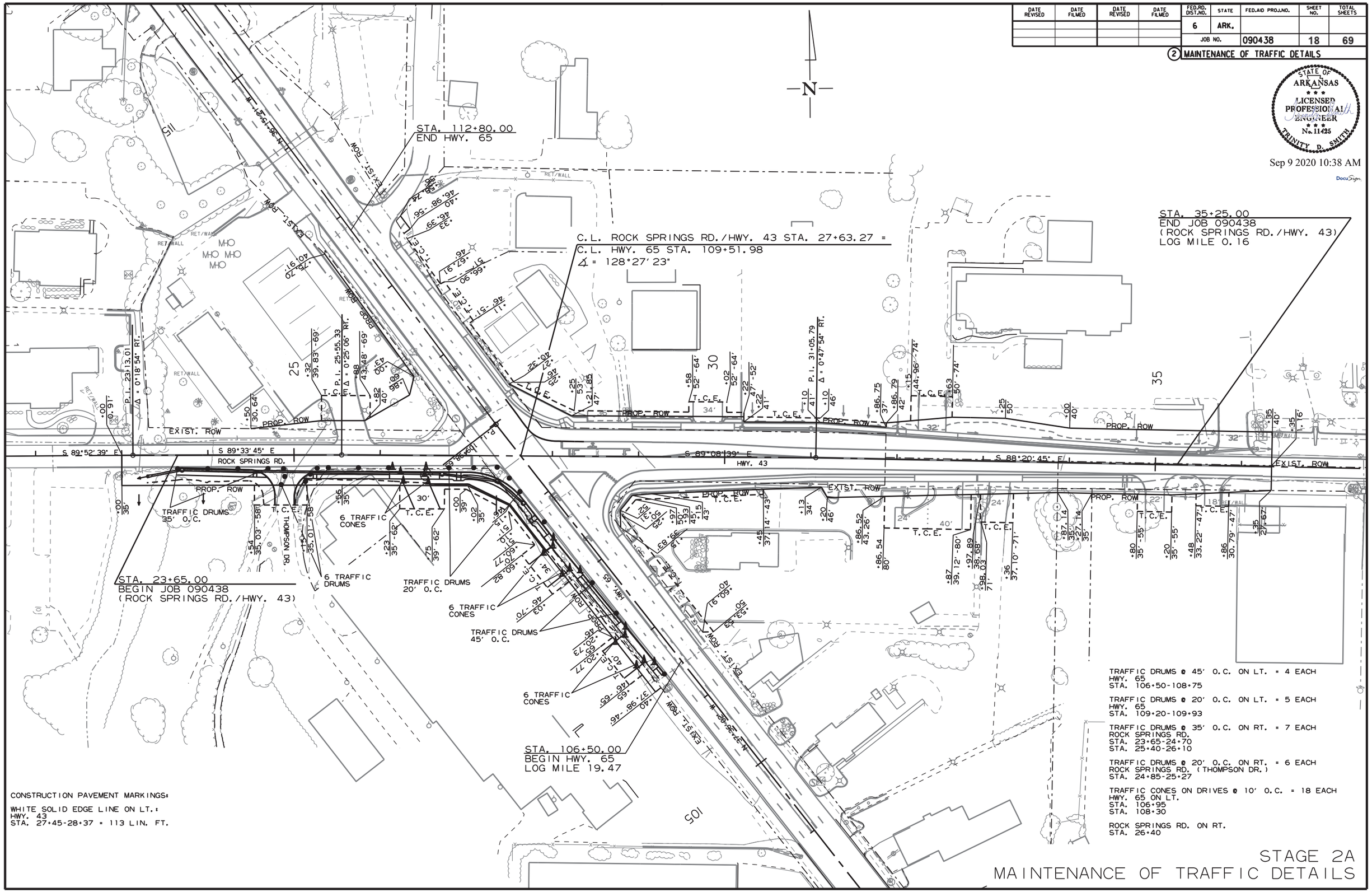

STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

JH41264 9/8/2020
RR090438.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.		090438	19	69

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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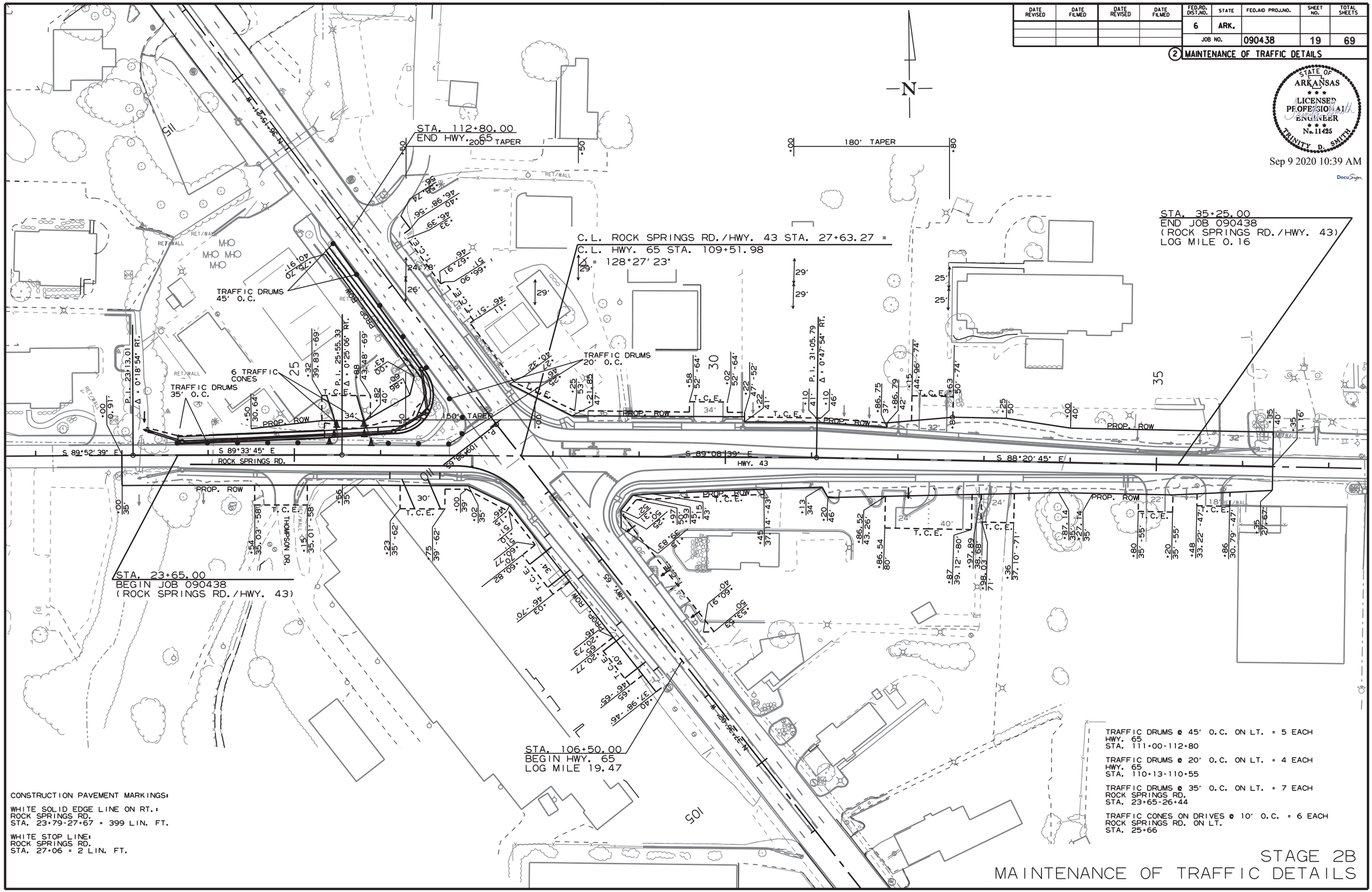

TRAFFIC DRUMS @ 45' O.C. ON LT. = 5 EACH
HWY. 65
STA. 111+00-112+80

TRAFFIC DRUMS @ 20' O.C. ON LT. = 4 EACH
HWY. 65
STA. 110+13-110+55

TRAFFIC DRUMS @ 35' O.C. ON LT. = 7 EACH
ROCK SPRINGS RD.
STA. 23+65-26+44

TRAFFIC CONES ON DRIVES @ 10' O.C. = 6 EACH
ROCK SPRINGS RD. ON LT.
STA. 25+66

CONSTRUCTION PAVEMENT MARKINGS:

WHITE SOLID EDGE LINE ON RT.:
ROCK SPRINGS RD.
STA. 23+79-27+67 = 399 LIN. FT.

WHITE STOP LINE:
ROCK SPRINGS RD.
STA. 27+06 = 2 LIN. FT.

STAGE 2B
MAINTENANCE OF TRAFFIC DETAILS

JH41264 9/8/2020
RR090438.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.		090438	20	69

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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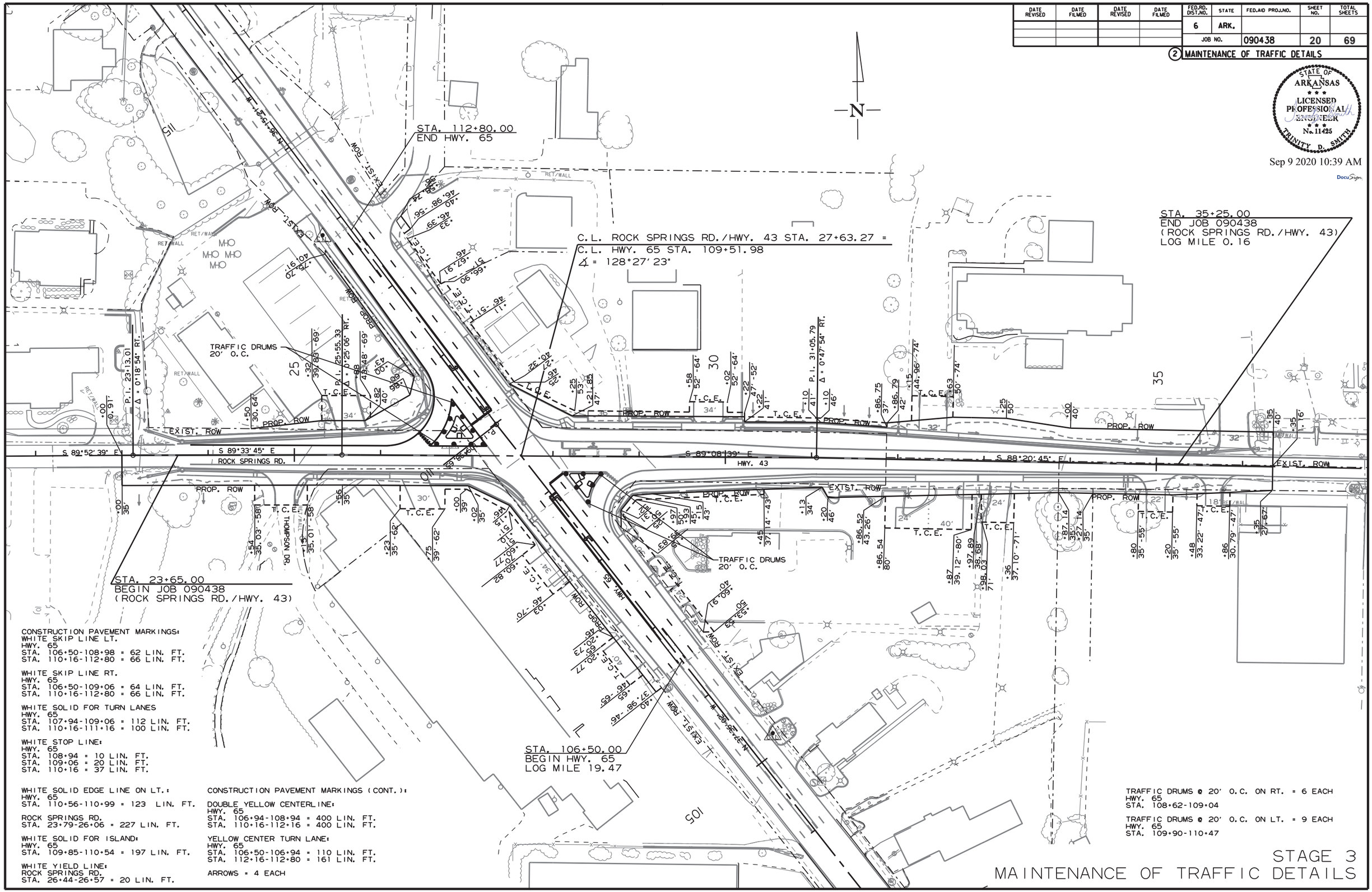

CONSTRUCTION PAVEMENT MARKINGS:
WHITE SKIP LINE LT.
HWY. 65
STA. 106+50-108+98 = 62 LIN. FT.
STA. 110+16-112+80 = 66 LIN. FT.

WHITE SKIP LINE RT.
HWY. 65
STA. 106+50-109+06 = 64 LIN. FT.
STA. 110+16-112+80 = 66 LIN. FT.

WHITE SOLID FOR TURN LANES
HWY. 65
STA. 107+94-109+06 = 112 LIN. FT.
STA. 110+16-111+16 = 100 LIN. FT.

WHITE STOP LINE:
HWY. 65
STA. 108+94 = 10 LIN. FT.
STA. 109+06 = 20 LIN. FT.
STA. 110+16 = 37 LIN. FT.

WHITE SOLID EDGE LINE ON LT.:
HWY. 65
STA. 110+56-110+99 = 123 LIN. FT.

ROCK SPRINGS RD.
STA. 23+79-26+06 = 227 LIN. FT.

WHITE SOLID FOR ISLAND:
HWY. 65
STA. 109+85-110+54 = 197 LIN. FT.

WHITE YIELD LINE:
ROCK SPRINGS RD.
STA. 26+44-26+57 = 20 LIN. FT.

CONSTRUCTION PAVEMENT MARKINGS (CONT.):

DOUBLE YELLOW CENTERLINE:
HWY. 65
STA. 106+94-108+94 = 400 LIN. FT.
STA. 110+16-112+16 = 400 LIN. FT.

YELLOW CENTER TURN LANE:
HWY. 65
STA. 106+50-106+94 = 110 LIN. FT.
STA. 112+16-112+80 = 161 LIN. FT.

ARROWS = 4 EACH

TRAFFIC DRUMS @ 20' O.C. ON RT. = 6 EACH
HWY. 65
STA. 108+62-109+04

TRAFFIC DRUMS @ 20' O.C. ON LT. = 9 EACH
HWY. 65
STA. 109+90-110+47

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

JH41264 9/8/2020
RR090438.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.		090438	21	69

(2) PERMENANT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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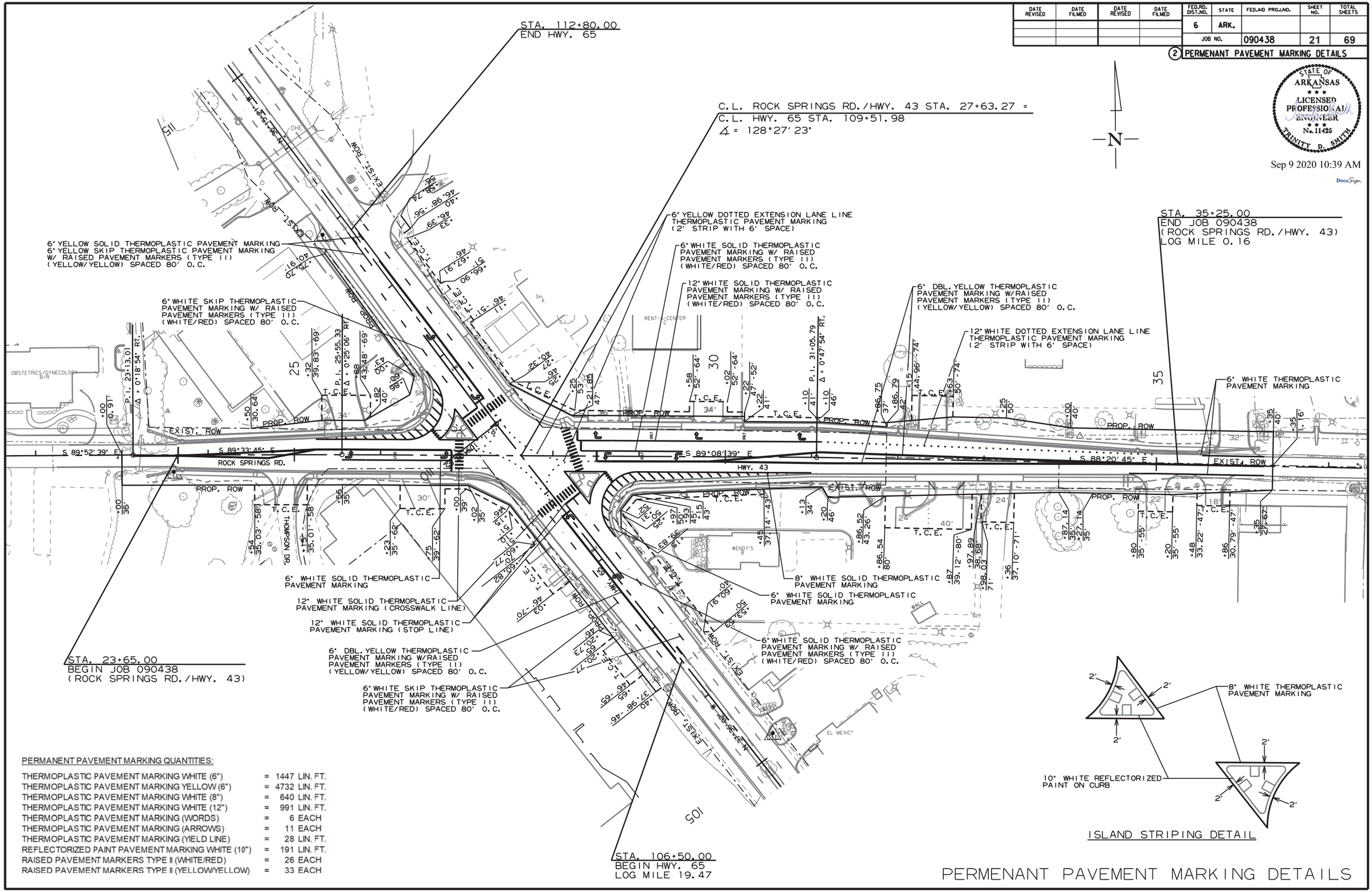

PERMENANT PAVEMENT MARKING DETAILS

PERMANENT PAVEMENT MARKING QUANTITIES:

THERMOPLASTIC PAVEMENT MARKING WHITE (6")	=	1447 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	=	4732 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8")	=	640 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12")	=	991 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (WORDS)	=	6 EACH
THERMOPLASTIC PAVEMENT MARKING (ARROWS)	=	11 EACH
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	=	28 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	=	191 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)	=	26 EACH
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	=	33 EACH

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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.		090438	22	69

(2) QUANTITIES

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	STAGE 2A	STAGE 2B	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	TRAFFIC CONE
			LIN. FT. - EACH						NO.	SQ. FT.	EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	3	3	3	3	3	3	3	48.0		
W20-1	ROAD WORK 1000 FT.	48"x48"	3	3	3	3	3	3	3	48.0		
W20-1	ROAD WORK 500 FT.	48"x48"	3	3	3	3	3	3	3	48.0		
W20-1	ROAD WORK AHEAD	48"x48"	3	3	3	3	3	3	3	48.0		
G20-2	END ROAD WORK	48"x24"	6	6	6	6	6	6	6	48.0		
R4-1	DO NOT PASS	24"x30"	4	4	4	4	4	4	4	20.0		
W21-5A	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	4	4	4	36.0		
W8-1	BUMP	30"x30"	4	4	4	4	4	4	4	25.0		
	TRAFFIC DRUMS		27	26	16	16	15	27			27	
	TRAFFIC CONES		42	36	18	6		42				42
TOTALS:										321.0	27	42

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	11	22
DIRECTED BY THE ENGINEER		
TOTALS:	11	22

NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC....25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	FILTER SOCK (18") (E-13)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING							0.42	0.42	8.6	12	149				10
ENTIRE	PROJECT	STAGE 1A	0.06	0.12	0.06	10.0	0.06	310	0.51	0.51	10.4		414	40			17
ENTIRE	PROJECT	STAGE 1B	0.07	0.14	0.07	10.7	0.07	283	0.65	0.65	13.3	15		190			13
ENTIRE	PROJECT	STAGE 2A	0.05	0.10	0.05	7.3	0.05	176	0.37	0.37	7.5		286	125			15
ENTIRE	PROJECT	STAGE 2B	0.01	0.02	0.01	5.3	0.01	336	0.36	0.36	7.3		337	125			17
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.05	0.10	0.05	8.6	0.05	275	0.58	0.58	11.8	9	300	120	20	20	39
TOTALS:			0.24	0.48	0.24	41.9	0.24	1380	2.89	2.89	58.9	36	1486	600	20	20	111

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
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.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1A	STAGE 1B	STAGE 2A	STAGE 2B	STAGE 3	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING
									TYPE II (WHITE/RED)	TYPE II (YELLOW/YELLOW)	6" WHITE	6" YELLOW	8" WHITE	12" WHITE	WORDS	ARROWS	YIELD LINE	10" WHITE
	LIN. FT. - EACH					LIN. FT.	WORDS	ARROWS	EACH		LIN. FT.				EACH		LIN. FT.	LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS	6005	266	113	402	2175	8961												
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	3						3											
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	7				4			11										
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)					26				26									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)					33					33								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")					1447						1447							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")					4732							4732						
THERMOPLASTIC PAVEMENT MARKING WHITE (8")					640								640					
THERMOPLASTIC PAVEMENT MARKING WHITE (12")					991									991				
THERMOPLASTIC PAVEMENT MARKING (WORDS)					6										6			
THERMOPLASTIC PAVEMENT MARKING (ARROWS)					11											11		
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)					28												28	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")					191													191
TOTALS:						8961	3	11	26	33	1447	4732	640	991	6	11	28	191

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

JH41264 7/29/2020
RR090438.DGN

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.		090438	23	69

(2) QUANTITIES

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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SOIL LOG

STATION	LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
24+47	7.51' RT.	0-5	38	23	A-6(9)	BROWN
24+47	34.51' RT.	0-5	27	9	A-4(0)	BROWN
30+62	5.04' LT.	0-5	23	5	A-4(0)	BROWN
30+62	20.04' LT.	0-3.5Z	25	6	A-4(0)	BROWN
106+00	24' RT.	0-5	21	10	A-4(0)	BROWN
113+00	24' RT.	0-5	22	7	A-4(0)	BROWN

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.
Z- AUGER REFUSAL

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
ENTIRE	PROJECT	STAGE 1A-MAIN LANES	170	498
ENTIRE	PROJECT	STAGE 1B-MAIN LANES	815	171
ENTIRE	PROJECT	STAGE 2A-MAIN LANES	135	338
ENTIRE	PROJECT	STAGE 2B-MAIN LANES	470	25
ENTIRE	PROJECT	APPROACHES	95	360
		THOMPSON DRIVE	27	21
* ENTIRE	PROJECT	TO BE USED IF AND WHERE		
		DIRECTED BY THE ENGINEER		
TOTALS:			1712	1413

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

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS EACH
35+90	HWY. 43 ON LT. - 12" X 50' PIPE CULVERT	1
TOTAL:		1

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

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	ROCK WALLS	CONCRETE PAVEMENT	CONCRETE ISLANDS	CONCRETE DRIVEWAYS	WALKS	LUMINAIRE POLE AND FOUNDATION	SIGN FOUNDATIONS	SPRINKLER SYSTEM	CONCRETE DITCH PAVING	SIGNS	PLANTERS
			LIN. FT.	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	SQ. YD.	EACH	EACH
23+52	26+67	ROCK SPRINGS RD. ON LT.							152						
23+64	24+93	ROCK SPRINGS RD. ON RT.	140												
23+64	25+41	ROCK SPRINGS RD. ON LT.	178												
25+07	25+41	ROCK SPRINGS RD. ON RT.	47												
25+11	25+16	ROCK SPRINGS RD. ON RT.			8										
25+41	25+77	ROCK SPRINGS RD. ON RT.		37											
25+41	26+81	ROCK SPRINGS RD. ON LT.		140											
25+66		ROCK SPRINGS RD. ON LT.						223							
25+70	26+00	ROCK SPRINGS RD. ON RT.							21						
25+82		ROCK SPRINGS RD. ON LT.								1					
27+68	28+40	HWY. 43 ON LT.					81								
28+14	28+35	HWY. 43 ON RT.					26								
28+92	35+74	HWY. 43 ON LT.		201											
28+98	31+13	HWY. 43 ON RT.		215											
29+01		HWY. 43 ON LT.									1			2	
29+51		HWY. 43 ON RT.								1					
31+22	33+08	HWY. 43 ON RT.							37						
31+48		HWY. 43 ON RT.						104							
31+56	32+82	HWY. 43 ON RT.		102											
32+20	32+60	HWY. 43 ON LT.	25												
32+40		HWY. 43 ON LT.						260							
32+57		HWY. 43 ON RT.				287		113							
33+04		HWY. 43 ON RT.									1			1	
33+20		HWY. 43 ON RT.						72							
34+74		HWY. 43 ON LT.											4		
106+50	106+92	HWY. 65 ON RT.	42												
106+50	108+00	HWY. 65 ON RT.		97											
106+50	109+69	HWY. 65 ON LT.	272												
106+54		HWY. 65 ON LT.									1			2	
106+85	108+60	HWY. 65 ON RT.							71						
106+95		HWY. 65 ON LT.						52							
107+11		HWY. 65 ON RT.						63							
107+20		HWY. 65 ON LT.									2			1	
107+25	108+50	HWY. 65 ON RT.										1			
107+30	107+54	HWY. 65 ON RT.	24												
107+53		HWY. 65 ON LT.									1			1	
107+79		HWY. 65 ON RT.						83							
107+97		HWY. 65 ON RT.												1	
108+00		HWY. 65 ON RT.									1			1	
108+00	108+59	HWY. 65 ON RT.	108												
108+05		HWY. 65 ON LT.									2			2	
109+58		HWY. 65 ON LT.									1			2	
109+76		HWY. 65 ON RT.									1			1	
109+49	109+73	HWY. 65 ON RT.													1
109+78	112+60	HWY. 65 ON RT.	453												
110+10	112+80	HWY. 65 ON LT.	281												
110+33	112+80	HWY. 65 ON LT.							146						
110+43	111+20	HWY. 65 ON LT.													1
110+43	112+75	HWY. 65 ON LT.										1			
110+52	110+94	HWY. 65 ON RT.													1
TOTALS:			1570	792	8	287	107	970	427	2	11	2	4	14	3

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	100
ENGINEER	
TOTAL:	100

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

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3 SQ.YD.
24+62	ROCK SPRINGS ON RT.	5.4
25+17	ROCK SPRINGS ON RT.	5.4
26+50	ROCK SPRINGS ON LT.	3.7
26+84	ROCK SPRINGS ON LT.	3.4
26+91	ROCK SPRINGS ON LT.	3.3
26+91	ROCK SPRINGS ON RT.	3.3
28+14	HWY. 43 ON LT.	4.0
28+32	HWY. 43 ON RT.	3.8
28+43	HWY. 43 ON RT.	3.3
28+74	HWY. 43 ON RT.	3.5
34+79	HWY. 43 ON RT.	5.0
35+66	HWY. 43 ON LT.	5.0
108+85	HWY. 65 ON LT.	3.3
108+85	HWY. 65 ON RT.	3.3
110+18	HWY. 65 ON LT.	3.3
110+18	HWY. 65 ON RT.	3.4
112+42	HWY. 65 ON RT.	6.0
TOTAL:		68.4

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	25
DIRECTED BY THE ENGINEER	
TOTAL:	25

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

QUANTITIES

JH41264 7/29/2020
RR090438.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.		090438	24	69

(2) QUANTITIES

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
23+64	24+01	ROCK SPRINGS ON LT.	37	21
23+64	24+57	ROCK SPRINGS ON RT.	93	52
25+22	26+11	ROCK SPRINGS ON RT.	89	49
25+97	26+51	ROCK SPRINGS ON LT.	54	29
26+69	27+35	ROCK SPRINGS ON RT.	66	36
28+11	28+25	HWY. 43 ON LT.	14	11
28+73	28+92	HWY. 43 ON RT.	19	9
31+20	32+21	HWY. 43 ON RT.	101	56
32+70	35+58	HWY. 43 ON LT.	288	160
32+93	32+94	HWY. 43 ON RT.	1	1
33+46	34+74	HWY. 43 ON RT.	128	71
106+50	105+61	HWY. 65 ON LT.	11	6
106+50	105+85	HWY. 65 ON RT.	35	19
107+29	107+99	HWY. 65 ON LT.	70	39
107+37	107+50	HWY. 65 ON RT.	13	7
108+08	108+49	HWY. 65 ON RT.	41	27
108+61	109+49	HWY. 65 ON LT.	88	48
109+47	111+02	HWY. 65 ON RT.	155	80
110+53	112+80	HWY. 65 ON LT.	222	133
112+30	112+33	HWY. 65 ON RT.	3	2
TOTAL:				856

CONCRETE WALKS (TYPE SPECIAL) & HAND RAILING

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS (TYPE SPECIAL)	HAND RAILING	ARCHITECTURAL FINISH	TEXTURED COATING FINISH
			LIN. FT.	SQ.YD.	LIN. FT.	SQ.FT.	SQ.YD.
24+01	24+19	ROCK SPRINGS ON LT.	18	11			2
24+19	25+35	ROCK SPRINGS ON LT.	116	73		318	35
28+91	29+63	HWY. 43 ON LT.	72	45		154	17
28+91	31+20	HWY. 43 ON RT.	229	144	229	781	87
29+97	32+10	HWY. 43 ON LT.	213	134		536	60
TOTALS:				407	229	1789	201

CONCRETE ISLAND

STATION	STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
				SQ.YD.
26+55	27+35	ROCK SPRINGS ON RT. - BEHIND SIDEWALK	D	69
108+47	109+31	HWY. 65 ON LT. - BEHIND SIDEWALK	D	80
108+84		HWY. 65 ON RT.	C	46
110+18		HWY. 65 ON LT.	C	39
109+35	111+16	HWY. 65 ON RT. - BEHIND SIDEWALK	D	138
111+56	111+84	HWY. 65 ON RT. - BEHIND SIDEWALK	D	14
TOTAL:				386

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
23+00	24+00	ROCK SPRINGS RD.	1	1
33+00	34+00	HWY. 43	1	1
TOTALS:			2	2

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	3	3
TOTALS:	3	3

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
23+64	26+51	ROCK SPRINGS ON LT.	283
23+64	24+78	ROCK SPRINGS ON RT.	132
25+00	27+35	ROCK SPRINGS ON RT.	247
28+11	35+73	HWY. 43 ON LT.	744
28+70	34+89	HWY. 43 ON RT.	628
28+77	29+47	HWY. 43 ON RT. - WENDY'S PARKING LOT	79
28+91	29+62	HWY. 43 ON LT. - RENT-A-CENTER PARKING LOT	73
29+54	30+35	HWY. 43 ON RT. - WENDY'S PARKING LOT	81
29+98	30+19	HWY. 43 ON LT. - RENT-A-CENTER PARKING LOT	24
106+50	108+49	HWY. 65 ON RT.	207
106+50	109+49	HWY. 65 ON LT.	286
109+47	112+60	HWY. 65 ON RT.	328
110+53	112+80	HWY. 65 ON LT.	228
TOTAL:			3340

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS
			LIN. FT.
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			450
TOTAL:			450

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

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
34+65.00		HWY. 43 ON RT.	7.41	4.00	3.29	3.29	0.04
TOTALS:					3.29	3.29	0.04

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)	SIDE DRAIN	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2	FLARED END SECTIONS FOR R.C. PIPE	DROP INLETS TYPE MO	DROP INLETS TYPE SPECIAL	DROP INLETS EXT. 4'	JUNCT. BOXES (TYPE E)	YARD DRAINS	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	12"	18"	18"								
		LIN. FT.			EACH	EACH					SQ.YD.	M.GAL.	
23+70	ROCK SPRINGS RD. - CONSTRUCT DROP INLET ON LT.	34			1	1					5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
23+70	ROCK SPRINGS RD. - CONSTRUCT DROP INLET ON RT.	34			1	1					5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
26+15	ROCK SPRINGS RD. - CONSTRUCT DROP INLET ON LT.			245		1							FPC-9E, FPC-9M, PCC-1, PCM-1
26+54	ROCK SPRINGS RD. - CONSTRUCT JUNCTION BOX ON LT.			46					1				FPC-9, PCC-1, PCM-1
26+72	ROCK SPRINGS RD. - CONSTRUCT DROP INLET ON RT.			302		1							FPC-9E, FPC-9M, PCC-1, PCM-1
27+36	ROCK SPRINGS RD. - CONSTRUCT JUNCTION BOX ON RT.			64					1				FPC-9, PCC-1, PCM-1
30+20	HWY. 43 - CONSTRUCT JUNCTION BOX ON LT.			76					1				FPC-9, PCC-1, PCM-1
30+20.86	HWY. 43 - CONSTRUCT YARD DRAIN ON LT.		6							1			FPC-9, PCC-1, PCM-1
31+00	HWY. 43 - CONSTRUCT DROP INLET ON LT.			96		1							FPC-9E, FPC-9M, PCC-1, PCM-1
32+00	HWY. 43 - CONSTRUCT DROP INLET ON LT.			274		1							FPC-9E, FPC-9M, PCC-1, PCM-1
32+00	HWY. 43 - CONSTRUCT YARD DRAIN ON LT.		6							1			FPC-9, PCC-1, PCM-1
34+25	HWY. 43 - CONSTRUCT DROP INLET ON RT.						1						SPECIAL DETAILS
34+78	HWY. 43 - CONSTRUCT DROP INLET ON LT.			68		1		1					FPC-9E, FPC-9M, PCC-1, PCM-1
35+50	HWY. 43 - CONSTRUCT DROP INLET ON LT.	66			1	1					5	0.06	FPC-9E, FPC-9M, PCC-1, FES-1, FES-2
109+07	HWY. 65 - CONSTRUCT DROP INLET ON LT.			36		1							FPC-9E, FPC-9M, PCC-1, PCM-1
111+02	HWY. 65 - CONSTRUCT DROP INLET ON LT.			48		1							FPC-9E, FPC-9M, PCC-1, PCM-1
* ENTIRE PROJECT TO BE USED IF AND WHERE BY THE ENGINEER			300							3			FPC-9, PCC-1, PCM-1
TOTALS:		134	312	1255	3	10	1	1	3	5	15	0.18	

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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RR090438.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.		090438	25	69

(2) QUANTITIES

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

Aug 11 2020 2:03 PM

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DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)
			FEET	STATION	STATION	SQ. YD.	SQ. YD.	TON	TON
25+66	LT.	ROCK SPRINGS RD.	34	25+35	25+97	206.94			
26+40	RT.	ROCK SPRINGS RD.	30	26+11	26+69	51.56	126.00	13.86	51.45
28+59	LT.	HWY. 43	36	28+27	28+91	56.89	54.96	6.05	22.44
29+80	LT.	HWY. 43	34	29+49	30+11	55.11	92.56	10.18	37.80
32+40	LT.	HWY. 43	32	32+10	32+70	197.79			
32+57	RT.	HWY. 43	40	32+23	32+91	419.92			
33+20	RT.	HWY. 43	24	32+94	33+46	46.22	126.64	13.93	51.71
35+00	RT.	HWY. 43	22				150.35	16.54	61.39
35+67	RT.	HWY. 43	18				108.56	11.94	44.33
35+90	LT.	HWY. 43	32			127.89			
106+95	LT.	HWY. 65	40	106+61	107+29	60.44	138.62	15.25	56.60
107+11	RT.	HWY. 65	24	106+85	107+37	84.94			
107+79	RT.	HWY. 65	30	107+50	108+08	95.63			
108+30	LT.	HWY. 65	34	107+99	108+61	55.11	125.72	13.83	51.34
111+36	RT.	HWY. 65	40	111+02	111+70	60.44	61.02	6.71	24.92
112+00	RT.	HWY. 65	32	111+70	112+30	53.33	36.98	4.07	15.10
* ENTIRE PROJECT TEMPORARY DRIVES									240.00
TOTALS:						**1572.21**	**1021.41**	**112.36**	**657.08**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN AGGR.....5.3% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

** FOR INFORMATION ONLY

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
32+56.00	35+61.00	HWY. 43 ON LT.	305.00	271.11
TOTAL:				**271.11**

NOTE: AVERAGE WIDTH = 8'-0"

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
106+50.00	112+80.00	MAIN LANES - HWY. 65	50.00	3500.00
22+65.00	23+65.00	MAIN LANES - ROCK SPRINGS RD.	25.32	281.33
31+95.00	33+20.00	MAIN LANES - HWY. 43	11.00	152.78
35+25.00	36+25.00	MAIN LANES - HWY. 43	22.00	244.44
TOTAL:				**4178.55**

NOTE: AVERAGE MILLING DEPTH 2".
NOTE: MILLINGS WILL BECOME PROPERTY OF ARDOT. CONTRACTOR WILL TRANSPORT AND STOCKPILE MILLINGS LEFT OF HIGHWAY 62, SECTION 6, LOG MILE 5.3.

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT (0.05 GAL. PER SQ. YD.)			TACK COAT (0.17 GAL. PER SQ. YD.)			TACK COAT TOTAL	PORTLAND CEMENT CONCRETE BASE 5" UNIFORM THICKNESS		PORTLAND CEMENT CONCRETE BASE 5" UNIFORM THICKNESS		ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								TOTAL PG 70-22
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	GALLONS	AVG. WID.	SQ. YD.	AVG. WID.	SQ. YD.	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 70-22	
			FEET			FEET			FEET				FEET		FEET		FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																																	
106+50.00	112+80.00	MILL AND INLAY - HWY. 65	630.00						50.00	3500.00	595.00	595.00																	50.00	3500.00	220.00	385.00	385.00
106+50.00	108+10.34	HWY. 65 - NOTCH AND WIDEN, C.C.C. & G. RT.	160.34			1.62	28.86	1.44				1.44	1.62	28.86	4.12	73.40													1.62	28.86	220.00	3.17	3.17
106+50.00	109+12.12	HWY. 65 - NOTCH AND WIDEN, C.C.C. & G. LT.	262.12			3.08	89.70	4.49				4.49	3.08	89.70	5.58	162.51													3.08	89.70	220.00	9.87	9.87
110+19.49	112+30.18	HWY. 65 - NOTCH AND WIDEN, C.C.C. & G. RT.	210.69			1.41	33.01	1.65				1.65	1.41	33.01	3.91	91.53													1.41	33.01	220.00	3.63	3.63
110+96.54	112+80.00	HWY. 65 - NOTCH AND WIDEN, C.C.C. & G. LT.	183.46			2.44	49.74	2.49				2.49	2.44	49.74	4.94	100.70													2.44	49.74	220.00	5.47	5.47
112+30.18	112+61.43	HWY. 65 - NOTCH AND WIDEN, C.C.C. & G. RT.	31.25			VAR.	7.45	0.37				0.37	VAR.	7.45	VAR.	19.38													VAR.	7.45	220.00	0.82	0.82
22+65.00	23+65.00	ROCK SPRINGS ROAD - TRANSITION	100.00						25.32	281.33	47.83	47.83																	25.32	281.33	220.00	30.95	30.95
23+65.00	24+71.09	ROCK SPRINGS ROAD - WIDEN, C.C.C. & G.LT. & RT.	106.08			28.92	340.87	17.04				17.04	3.59	42.31	8.59	101.25													28.92	340.87	220.00	37.50	37.50
24+71.08	24+98.00	ROCK SPRINGS ROAD - WIDEN, C.C.C. & G.LT. & RT.	26.92			42.32	126.58	6.33				6.33	3.48	10.41	5.98	17.89	7.00	20.94	550.00	5.76	4.50	13.46	330.00	2.22	4.50	13.46	220.00	1.48	33.32	99.66	220.00	10.96	12.44
24+98.00	26+16.14	ROCK SPRINGS ROAD - WIDEN, C.C.C. & G.LT. & RT.	118.14			65.83	864.13	43.21				43.21					18.83	247.18	550.00	67.97	13.83	181.54	330.00	29.95	13.83	181.54	220.00	19.97	38.17	501.04	220.00	55.11	75.08
26+16.14	27+27.52	ROCK SPRINGS ROAD - WIDEN, C.C.C. & G.LT. & RT.	111.38			VAR.	1726.65	86.33				86.33					VAR.	544.02	550.00	149.61	VAR.	472.54	330.00	77.97	VAR.	472.54	220.00	51.98	VAR.	781.57	220.00	85.97	137.95
27+99.02	29+05.39	HWY. 43 - NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	106.37			VAR.	1480.15	74.01				74.01					VAR.	367.63	550.00	101.10	VAR.	294.88	330.00	48.66	VAR.	294.88	220.00	32.44	VAR.	890.39	220.00	97.94	130.38
29+05.39	31+92.46	HWY. 43 - NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	287.07			97.76	3118.22	155.91				155.91					28.67	914.48	550.00	251.48	23.67	754.99	330.00	124.57	23.67	754.99	220.00	83.05	50.42	1608.23	220.00	176.91	259.96
31+92.46	34+19.03	HWY. 43 - NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	226.57			54.45	1370.75	68.54				68.54	2.50	62.94	5.00	125.87	12.25	308.39	550.00	84.81	9.75	245.45	330.00	40.50	9.75	245.45	220.00	27.00	34.95	879.85	220.00	96.78	123.78
34+19.03	34+85.00	HWY. 43 - NOTCH AND WIDEN, C.C.C. & G. LT. & RT.	65.97			25.25	185.08	9.25				9.25	2.63	19.28	7.63	55.93													25.25	185.08	220.00	20.36	20.36
34+85.00	35+25.00	HWY. 43 - NOTCH AND WIDEN, C.C.C. & G. LT.	40.00	VAR.	24.20	VAR.	98.61	4.93				4.93	VAR.	0.85	VAR.	11.97													VAR.	128.87	220.00	14.18	14.18
35+25.00	35+96.00	HWY. 43 - TRANSITION	71.00	47.00	33.37				22.00	173.56	29.51	29.51			VAR.	16.39													26.00	205.11	220.00	22.56	22.56
35+96.00	36+25.00	HWY. 43 - TRANSITION	29.00						22.00	70.89	12.05	12.05																	22.00	70.89	220.00	7.80	7.80
ADDITIONAL FOR LEVELING AND GRADE RAISE																																	
23+65.00	26+40.00	ROCK SPRINGS ROAD - LEVELING	275.00						24.75	756.25	128.56	128.56													24.75	756.25	220.00	83.19					83.19
26+40.00	27+27.52	ROCK SPRINGS ROAD - LEVELING	87.52						VAR.	296.06	50.33	50.33													VAR.	296.06	220.00	32.57					32.57
27+99.02	28+70.00	HWY. 43 - LEVELING	70.98						VAR.	495.31	84.20	84.20													VAR.	495.31	220.00	54.48					54.48
28+70.00	29+05.39	HWY. 43 - LEVELING	35.39			VAR.	155.68	7.78				7.78													VAR.	155.68	220.00	17.12					17.12
28+70.00	29+05.39	HWY. 43 - GRADE RAISE	35.39						VAR.	129.74	22.06	22.06									VAR.	129.74	395.00	25.62									
29+05.39	31+00.00	HWY. 43 - LEVELING	194.61			28.33	612.59	30.63				30.63													28.33	612.59	220.00	67.38					67.38
29+05.39	31+00.00	HWY. 43 - GRADE RAISE	194.61						VAR.	579.42	98.50	98.50									VAR.	579.42	395.00	114.44									
31+00.00	35+25.00	HWY. 43 - LEVELING	425.00						VAR.	924.46	157.16	157.16													VAR.	924.46	220.00	101.69					101.69
SIDE STREETS																																	
24+89.00		THOMPSON DRIVE				VAR.	409.74	20.49				20.49					VAR.	167.74	550.00	46.13	VAR.	136.58	330.00	22.54	VAR.	136.58	220.00	15.02	VAR.	136.58	220.00	15.02	30.04
TOTALS:					**57.57**		**10697.81**	**534.89**		**7207.02**	**1225.20**	**1760.09**		**344.55**		**776.82**		**2570.38**		**706.86**		**2808.60**		**486.47**		**5339.79**		**587.37**		**9818.23**		**1080.00**	**1667.37**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR..... 4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% 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 EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

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RR090438.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
09-29-2020				6	ARK.			
				JOB NO.		090438	26	69

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Sep 29 2020 11:12 AM

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SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	2	STATION
201	GRUBBING	2	STATION
202	REMOVAL AND DISPOSAL OF CURB	1570	LIN. FT.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	792	LIN. FT.
202	REMOVAL AND DISPOSAL OF ROCK WALLS	8	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	287	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	107	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	970	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS	427	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	11	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF HEADWALLS	2	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	4	SQ. YD.
202	REMOVAL AND DISPOSAL OF LUMINAIRE POLE AND FOUNDATION	2	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	14	EACH
202	REMOVAL AND DISPOSAL OF PLANTERS	3	EACH
202	REMOVAL AND DISPOSAL OF SPRINKLER SYSTEM	2	EACH
SS & 210	UNCLASSIFIED EXCAVATION	1712	CU. YD.
210	COMPACTED EMBANKMENT	1413	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	715	TON
309	PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS)	1121	SQ. YD.
SS & 401	TACK COAT	1782	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	679	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	28	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	466	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	20	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1686	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	6	TON
SP, SS, & 407	ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2")	88	TON
412	COLD MILLING ASPHALT PAVEMENT	4179	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	11	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	25	TON
SS & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	1572.21	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP, SS, & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	321	SQ. FT.
SS & 604	TRAFFIC DRUMS	27	EACH
SS & 604	TRAFFIC CONE	42	EACH
604	CONSTRUCTION PAVEMENT MARKINGS	8961	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)	3	EACH
604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	11	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)	3	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	134	LIN. FT.
* 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	1255	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	1255	LIN. FT.
SS & 606	12" SIDE DRAIN	312	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
SS & 609	DROP INLETS (TYPE MO)	10	EACH
SS & 609	DROP INLETS (TYPE SPECIAL)	1	EACH
SS & 609	JUNCTION BOXES (TYPE E)	3	EACH
SS & 609	DROP INLET EXTENSIONS (4')	1	EACH
SS & 609	YARD DRAINS	5	EACH
SS & 611	4" PIPE UNDERDRAINS	450	LIN. FT.
620	LIME	1.00	TON
620	SEEDING	0.24	ACRE
SS & 620	MULCH COVER	3.13	ACRE
620	WATER	101.0	M. GAL.
621	TEMPORARY SEEDING	2.89	ACRE
621	SILT FENCE	1486	LIN. FT.
621	SEDIMENT BASIN	20	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	20	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	111	CU. YD.
621	ROCK DITCH CHECKS	36	CU. YD.
SS & 621	FILTER SOCK (18")	600	LIN. FT.
623	SECOND SEEDING APPLICATION	0.24	ACRE
624	SOLID SODDING	1398	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	271	SQ. YD.
SS & 632	CONCRETE ISLAND	386	SQ. YD.
SS & 633	CONCRETE WALKS	856	SQ. YD.
SP, SS, & 633	CONCRETE WALKS (TYPE SPECIAL)	407	SQ. YD.
SS & 633	HAND RAILING	229	LIN. FT.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	3340	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	3	EACH
637	MAILBOX SUPPORTS (SINGLE)	3	EACH
641	WHEELCHAIR RAMPS (TYPE 3)	68	SQ. YD.
SP & 701	ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	75	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	15	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	1	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	3515	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	2022	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	819	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	917	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	220	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	90	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1039	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	40	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	70	LIN. FT.

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
710	NON-METALLIC CONDUIT (2")	150	LIN. FT.
710	NON-METALLIC CONDUIT (3")	848	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	10	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	2	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 45')	3	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	191	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	1447	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	640	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	991	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	4732	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	6	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	11	EACH
SP & 719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	28	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	59	EACH
SP	18" STREET NAME SIGN	4	EACH
SP & 733	VIDEO DETECTOR (CLR)	17	EACH
733	VIDEO CABLE	4178	LIN. FT.
733	VIDEO MONITOR (CLR)	2	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	9	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	2	EACH
SP	ARCHITECTURAL FINISH	1789	SQ. FT.
SP	TEXTURED COATING FINISH	201	SQ. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
9/29/2020	ADDED "DELAY IN RIGHT OF WAY OCCUPANCY" SPECIAL PROVSION TO GOVERNING SPECIFICATIONS LIST AND PROVIDED SPECIAL PROVISION.	3,26

SUMMARY OF QUANTITIES AND REVISIONS

brbe531 9/29/2020
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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.		090438	27	69

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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SURVEY CONTROL COORDINATES
Project Name: 090438
Date: 8/18/2015
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *050408-050409*
Based on NGS PTS : *H 36 & A 194*
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	701334.7163	0.0340	981436.6772	0.0330	1173.16	0.001	CTL	PD:STD AHTD MON. STAMPED PN:1
2	701671.5494	0.0360	981796.0578	0.0340	1181.58	0.001	CTL	PD:STD AHTD MON. STAMPED PN:2
3	701610.0911	0.0470	981257.2545	0.0490	1184.04	0.001	CTL	PD:STD AHTD MON. STAMPED PN:3
4	701683.7892	0.0360	981068.1800	0.0360	1186.69	0.001	CTL	PD:STD AHTD MON. STAMPED PN:4
5	701643.9463	0.0380	980744.6817	0.0370	1170.36	0.001	CTL	PD:STD AHTD MON. STAMPED PN:5
6	701688.0129	0.0320	980436.2074	0.0330	1174.20	0.001	CTL	PD:STD AHTD MON. STAMPED PN:6
7	701917.2990	0.0340	980919.9181	0.0340	1187.54	0.001	CTL	PD:STD AHTD MON. STAMPED PN:7
100	691822.5828	0.0000	985900.3779	0.0000	1052.24	0.000	GPS	PD:AHTD GPS MON 050408
101	711995.0045	0.0000	968433.2382	0.0000	1217.63	0.000	GPS	PD:AHTD GPS MON 050409
900	-99999.0000	#######	-99999.0000	#######	1115.25	0.007	TBM	PD:CHIS SQUARE CONC CURB
901	-99999.0000	#######	-99999.0000	#######	1110.26	0.010	TBM	PD:CHIS SQUARE IN CONCRETE BR, NW COR OF BR(DRY JORDAN)
950	697.0363	10.0000	983.0511	10.0000	1060.14	0.011	BM	PD:NGS BM A 194 PD:BENCH MARK DISK
951	692.0360	10.0000	985.0512	10.0000	1060.14	0.011	BM	PD:NGS BM H 36 PD:BENCH MARK DISK

*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*
Horizontal - Primary (2.0cm± 20PPM): *PN:1-7*
Horizontal - Secondary (3 cm ± 50PPM): *PN:N/A*
Vertical - NGS 1st Order (±4mm x √dist in km) *PN:950 & 951*
Vertical - NGS 2nd Order (±6mm x √dist in km) *PN:N/A*
Vertical - NGS 3rd Order (±8mm x √dist in km) *PN:1-951*

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: 0.999947988 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: H 36 & A 194
A project Elevation Factor of: 0.9999452774 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 1144.09 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-7, 100,101, 900-951 From NGS BM: H 36 & A 194

Basis of Bearing: Grid Bearings based on AHTD GPS points: *050408-050409*
Convergence Angle is: 0°39'14" Left at PN: 4
LT: 36-15-21 N LG: 93-07-25W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

HWY. 65

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	700904.6962	981728.7344
8001	PI	109+98.65	701695.9051	981119.4064
8002	POE	118+88.09	702413.1426	980593.3940

ROCK SPRINGS RD./HWY. 43

POINT NO.	TYPE	STATION	NORTHING	EASTING
8003	POB	20+00.00	701664.5580	980384.6419
8004	PI	23+13.01	701663.8888	980697.6526
8005	PI	25+55.33	701662.0384	980939.9653
8006	PI	31+05.79	701653.8165	981490.3604
8007	POE	39+33.38	701629.9249	982317.6041

7/29/2020

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SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	28	69

(2) SURVEY CONTROL DETAILS

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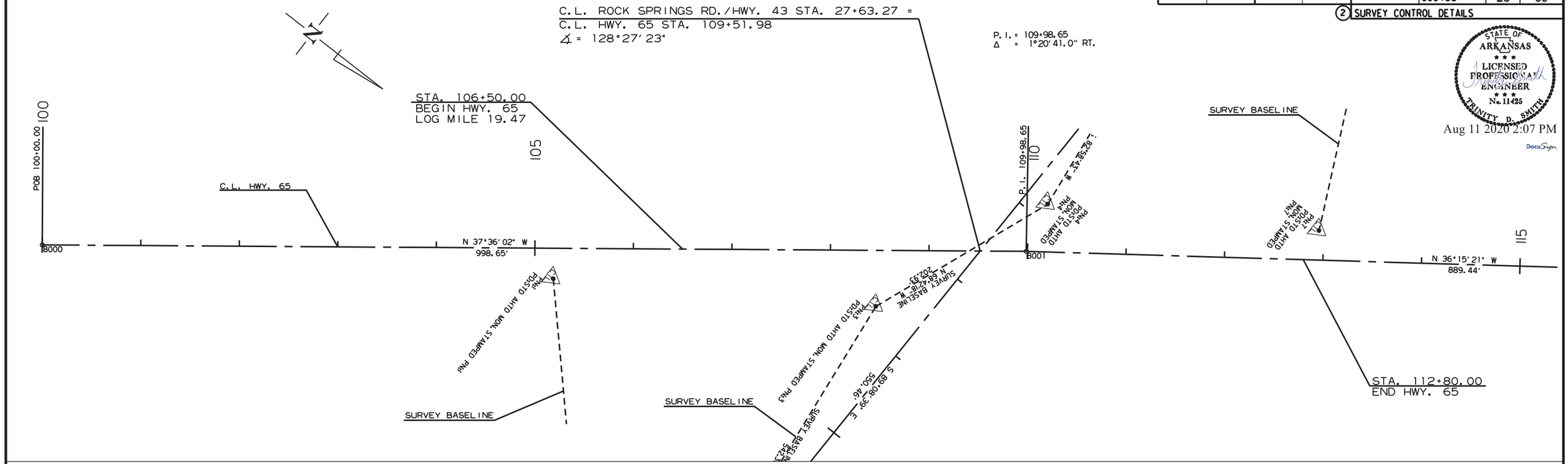

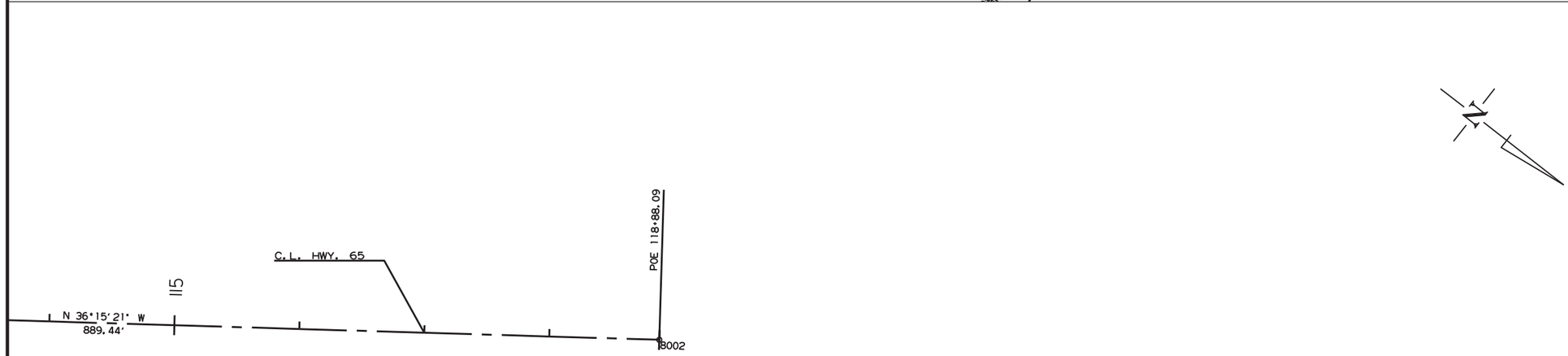

HWY. 65
SURVEY CONTROL DETAILS

7/29/2020

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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.		090438	29	69

(2) SURVEY CONTROL DETAILS

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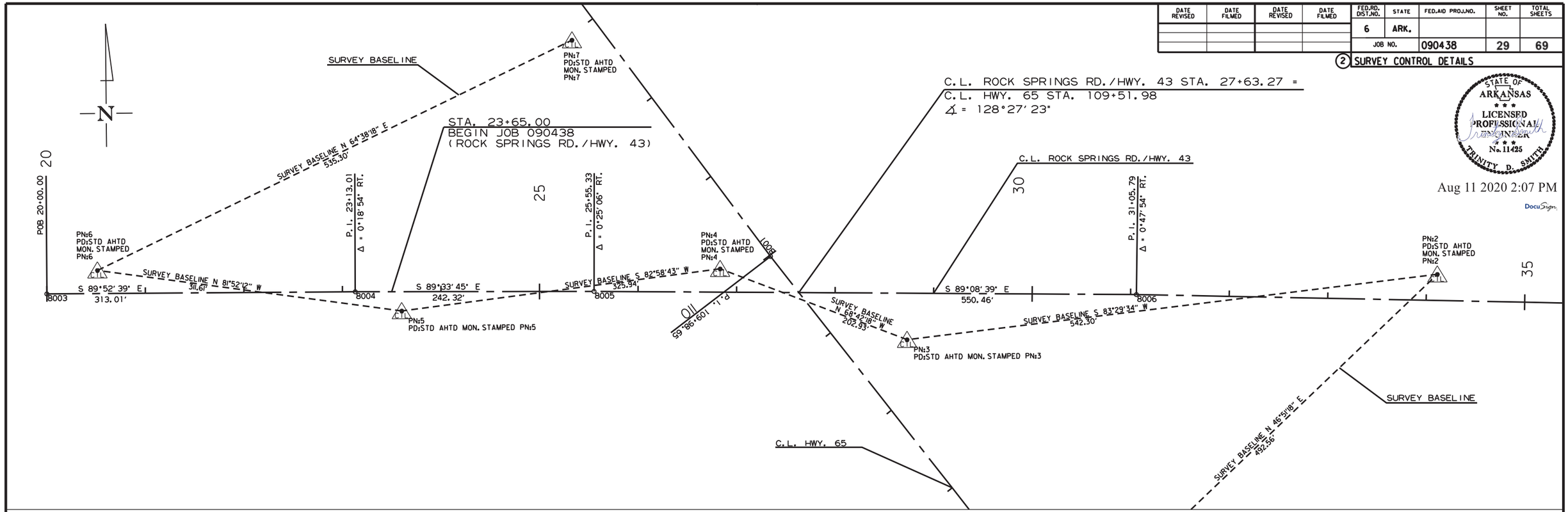

ROCK SPRINGS RD./HWY. 43
SURVEY CONTROL DETAILS

7/29/2020

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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.		090438	30	69

(2) PLAN AND PROFILE SHEETS

STA. 23+70 - CONSTRUCT
DROP INLET ON LT.
& 18" X 34' R.C. PIPE CULVERT OUTLET
WITH FES
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 7'-0"

STA. 26+15 - CONSTRUCT
DROP INLET ON LT.
& 18" X 245' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 23+70
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 5'-0"

STA. 26+54.18 - CONSTRUCT
JUNCTION BOX ON LT.
& 18" X 46' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 26+15
TYPE E JUNCTION BOX = 4' X 4'
DROP INLET H = 4'-0"

STA. 26+84 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 3.4 SQ. YD.

STA. 26+91 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 3.3 SQ. YD

STA. 28+14 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 4.0 SQ. YD.

STA. 28+59 - CONSTRUCT
APPROACH ON LT.

STA. 29+80 - CONSTRUCT
APPROACH ON LT.
UNCLASSIFIED EXCAVATION = 15 CU. YDS.

STA. 30+20 - CONSTRUCT
JUNCTION BOX ON LT.
& 18" X 76' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 31+00
TYPE E JUNCTION BOX = 4'X4'
DROP INLET H = 3'-6"

STA. 30+20.86 - CONSTRUCT
YARD DRAIN ON LT.
& 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET ON LT.
@ STA. 30+20 LT.
H = 5'-2"

STA. 31+00 - CONSTRUCT
DROP INLET ON LT.
& 18" X 96' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 32+00
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 3'-6"

STA. 32+00 - CONSTRUCT
YARD DRAIN ON LT.
& 12" X 5' PIPE OUTLET
CONNECT TO DROP INLET ON LT.
@ STA. 32+00 LT.
H = 4'-10"

STA. 32+00 - CONSTRUCT
DROP INLET ON LT.
& 18" X 274' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 34+78
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4'X4'
DROP INLET H = 3'-6"

STA. 32+40 - CONSTRUCT
APPROACH ON LT.
UNCLASSIFIED EXCAVATION = 50 CU. YDS.

STA. 34+78 - CONSTRUCT
DROP INLET ON LT.
WITH 4' EXTENSION
& OPENING IN BACK
& 18" X 68' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 35+50
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 3'-6"

STA. 35+50 - CONSTRUCT
DROP INLET ON LT.
WITH OPENING IN BACK
& 18" X 66' R.C. PIPE CULVERT OUTLET
WITH FES
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 3'-6"

STA. 35+66 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 5.0 SQ. YD.

STA. 35+90 - IN PLACE
12" X 50' PIPE CULVERT
SIDE DRAIN ON LT. - REMOVE
CONSTRUCT APPROACH ON LT. = 5 CU. YDS.

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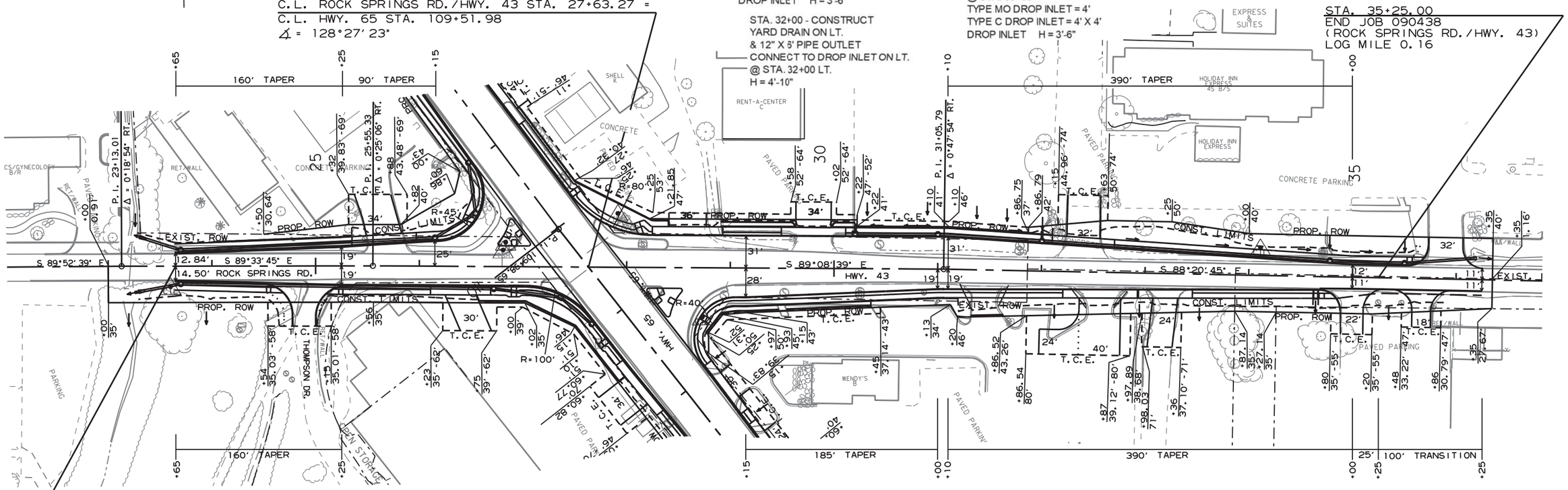
C.L. ROCK SPRINGS RD./HWY. 43 STA. 27+63.27 =
C.L. HWY. 65 STA. 109+51.98
∡ = 128°27'23"

STA. 35+25.00
END JOB 090438
(ROCK SPRINGS RD./HWY. 43)
LOG MILE 0.16



STA. 23+65.00
BEGIN JOB 090438
(ROCK SPRINGS RD./HWY. 43)

STA. 24+62 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 5.4 SQ. YD.

STA. 25+17 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 5.4 SQ. YD.

STA. 26+91 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 3.3SQ. YD.

STA. 26+40 - CONSTRUCT
APPROACH ON RT. = 30 CU. YDS.

STA. 28+32 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 3.8 SQ. YD.

STA. 28+43 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 3.3 SQ. YD.

STA. 28+74 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 3.5 SQ. YD.

STA. 32+57 - CONSTRUCT
APPROACH ON RT. = 130 CU. YDS.

STA. 33+20 - CONSTRUCT
APPROACH ON RT. = 65 CU. YDS.

STA. 34+79 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
RT. = 5.0 SQ. YD.

STA. 35+00 - CONSTRUCT
APPROACH ON RT. = 20 CU. YDS.

STA. 35+67 - CONSTRUCT
APPROACH ON RT. = 15 CU. YDS.

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

STA. 23+70 - CONSTRUCT
DROP INLET ON RT.
& 18" X 34' R.C. PIPE CULVERT OUTLET
WITH FES
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 8'-0"

STA. 26+72 - CONSTRUCT
DROP INLET ON RT.
& 18" X 302' PIPE CULVERT
CONNECT TO DROP INLET ON RT.
@ STA. 23+70
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 7'-0"

STA. 27+36.40 - CONSTRUCT
JUNCTION BOX ON RT.
& 18" X 64' PIPE CULVERT
CONNECT TO DROP INLET ON RT.
@ STA. 26+72
TYPE E JUNCTION BOX = 4' X 4'
DROP INLET H = 6'-0"

STA. 34+65 - CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
DROP INLET H = 1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 34+65 RT. OF C.L.
CONCRETE DITCH PAVING (TYPE B) = 3.29 SQ. YD.

ROCK SPRINGS RD./HWY. 43

9/8/2020

RR090438.DGN

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.

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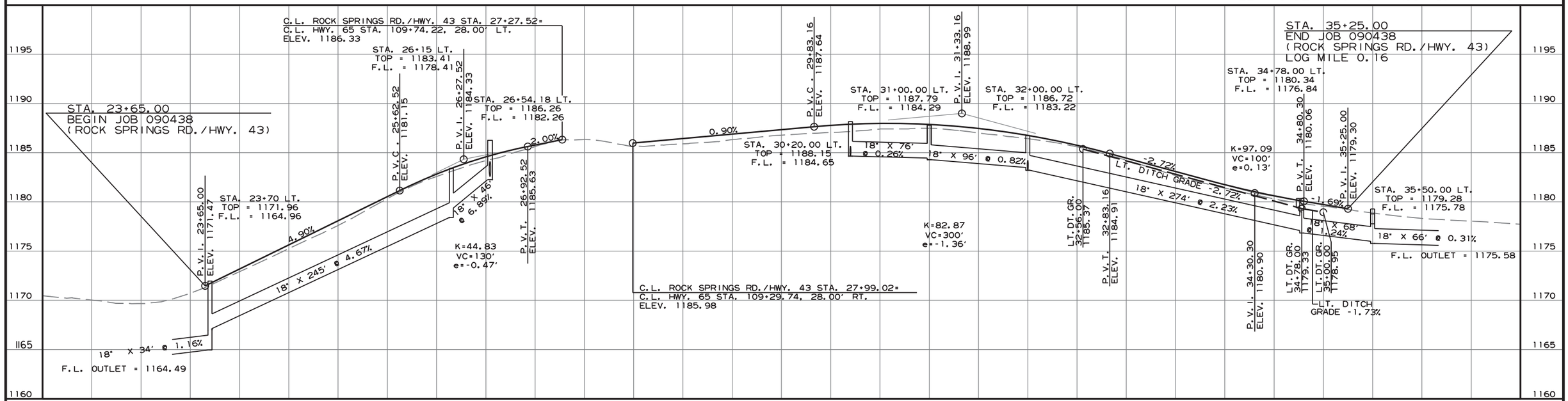
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090438	31	69

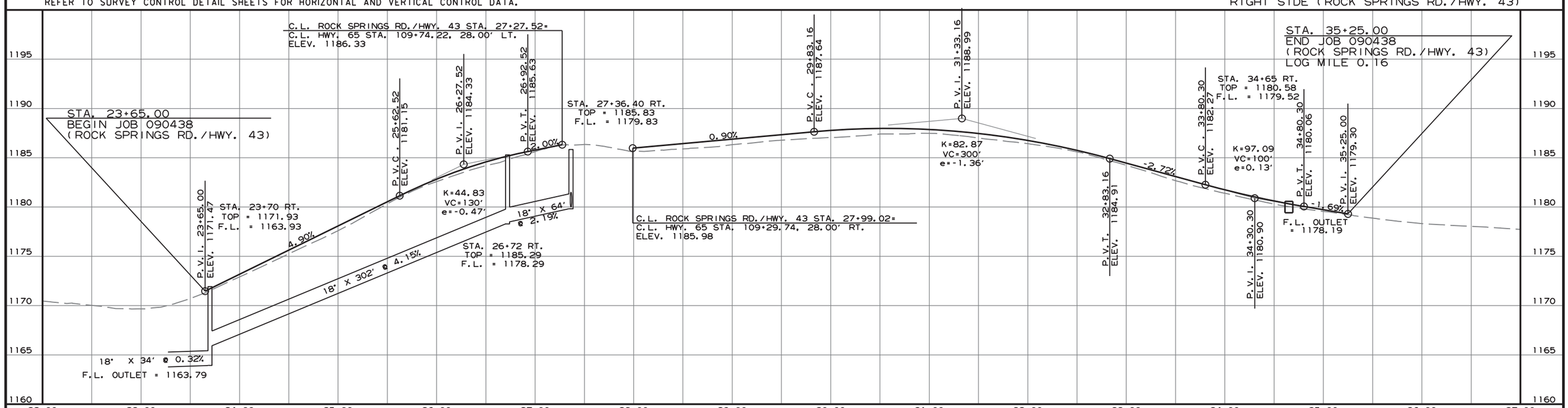
2 PLAN AND PROFILE SHEETS

LEFT SIDE (ROCK SPRINGS RD./HWY. 43)



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

RIGHT SIDE (ROCK SPRINGS RD./HWY. 43)



7/29/2020

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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.		090438	32	69

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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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.

STA. 106+95 - CONSTRUCT
APPROACH ON LT. = 45 CU. YDS.

STA. 108+30 - CONSTRUCT
APPROACH ON LT. = 45 CU. YDS.

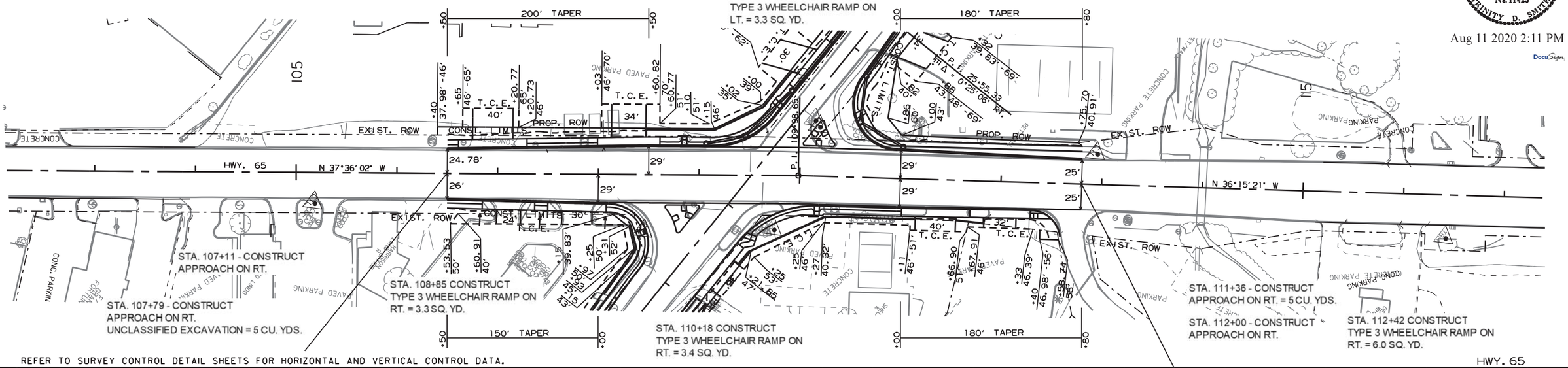
STA. 108+85 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 3.3 SQ. YD.

STA. 109+07 - CONSTRUCT
DROP INLET ON LT.
& 18" X 36' PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT.
@ STA. 27+36.40 RT. OF ROCK SPRINGS RD. C.L.
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 4'-0"

STA. 111+02 - CONSTRUCT
DROP INLET ON LT.
& 18" X 48' R.C. PIPE CULVERT
CONNECT TO JUNCTION BOX ON LT.
@ STA. 26+54.18 LT. OF ROCK SPRINGS RD. C.L.
TYPE MO DROP INLET = 4'
TYPE C DROP INLET = 4' X 4'
DROP INLET H = 4'-0"

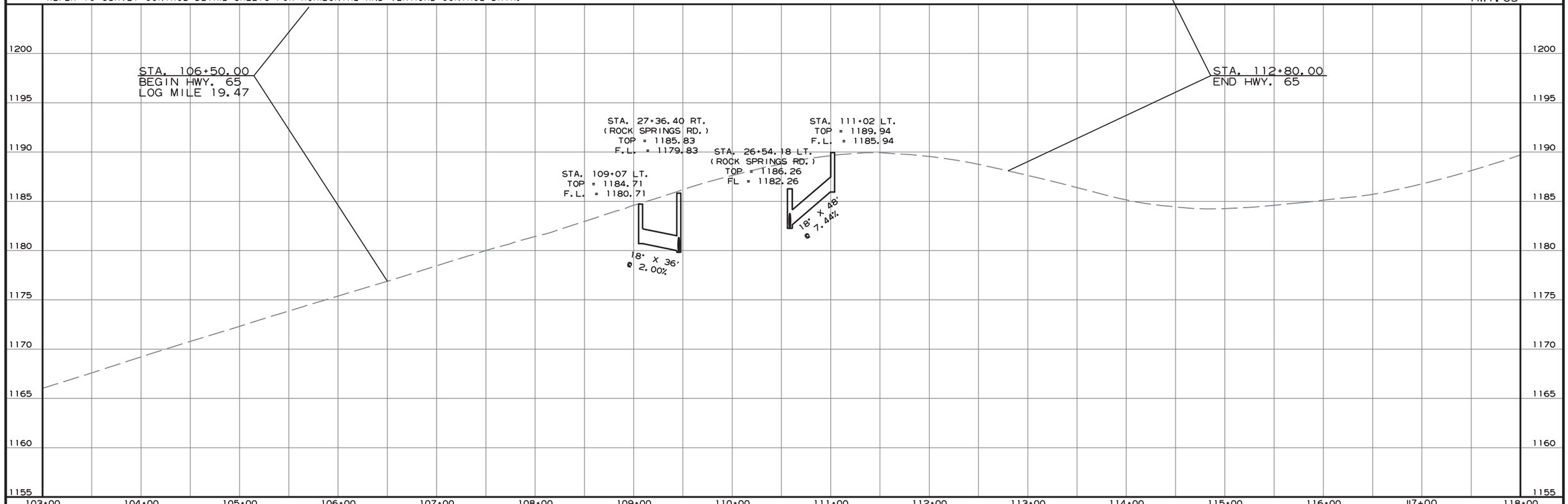
P. I. = 109+98.65
Δ = 1°20' 41.0" RT.

STA. 110+18 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON
LT. = 3.3 SQ. YD.



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

HWY. 65



7/29/2020

RR090438.DGN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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SUMMARY OF TRAFFIC SIGNAL QUANTITIES

	ITEM NUMBER	ITEM	QUANTITY	UNIT
	SP & 701	ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
	SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
	SP	LOCAL RADIO WITH ANTENNA	1	EACH
	SP	ANTENNA CABLE (TYPE 6)	75	LIN. FT.
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	15	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	8	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	1	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	3515	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	2022	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	819	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	917	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	220	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	90	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1039	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	40	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (3")	70	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	150	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	848	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 2)	2	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	10	EACH
	SS & 713	SPAN WIRE ASSEMBLY	1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
	SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	2	EACH
	SP	LED LUMINAIRE ASSEMBLY	4	EACH
	SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	1.00	LUMP SUM
	716	TREATED WOOD POLE (CLASS 2, 45')	3	EACH
	SP	18" STREET NAME SIGN	4	EACH
*	SP & 733	VIDEO DETECTOR (CLR)	17	EACH
	733	VIDEO CABLE	4178	LIN. FT.
	733	VIDEO MONITOR (CLR)	2	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	9	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	2	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED.

STATE OF ARKANSAS
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TRAFFIC SIGNAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (CURRENT EDITION) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.

3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/ COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.

4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.

5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.

6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.

9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.

10. PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

12. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS.

13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

14. LED LUMINAIRE ASSEMBLIES SHALL HAVE A BUG RATING OF U0.

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 PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.

23. TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.

24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.

25. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

26. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

27. IN PULL BOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED BY ATTACHING A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO THE CONDUIT. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. IN INSTANCES WHERE THE CONDUIT OR CONDUIT ENTRANCES ARE NOT VISIBLE OR ACCESSIBLE, A DIRECTION TAG SHALL BE ATTACHED TO EACH CABLE.

28. THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

29. ALL NON-METALLIC CONDUIT RUNS SHALL HAVE BELL RING FITTINGS INSTALLED ON THE TERMINATING ENDS OF THE CONDUIT. THIS INCLUDES PULL BOXES, POLE BASES, AND TRAFFIC SIGNAL CABINETS.

30. ALL CONCRETE PULL BOXES SHALL BE SET ON A GRAVEL OR CRUSHED STONE BEDDING AS SPECIFIED IN SECTION 711, CONCRETE PULL BOX, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	35	69

(2) TRAFFIC SIGNAL QUANTITIES AND SIGNS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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STAGE 1 TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	ACTUATED CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	562	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	1710	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	50	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	50	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	70	LIN. FT.
710	NON-METALLIC CONDUIT (2")	50	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	1	EACH
SS & 713	SPAN WIRE ASSEMBLY	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
716	TREATED WOOD POLE (CLASS 2, 45')	3	EACH
SP & 733	VIDEO DETECTOR (CLR)	8	EACH
733	VIDEO CABLE	2020	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	4	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH

STAGE 1:
INSTALL ALL STAGE 1 TEMPORARY TRAFFIC SIGNAL EQUIPMENT AND REMOVE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT. MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS FOR ALL STAGES OF CONSTRUCTION.
(REFER TO MAINTENANCE OF TRAFFIC DETIALS.)

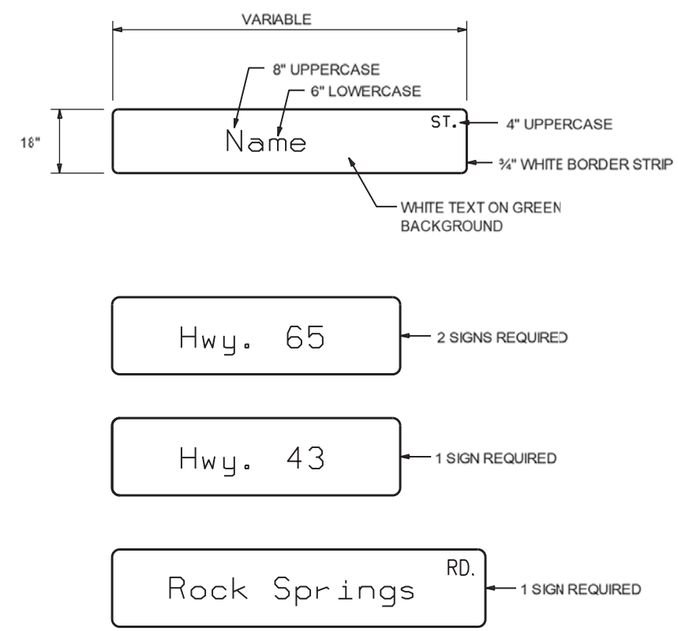
TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH
SP	ANTENNA SUPPORT (SHOE BASE, 35' HT.)	1	EACH
SP	LOCAL RADIO WITH ANTENNA	1	EACH
SP	ANTENNA CABLE (TYPE 6)	75	LIN. FT.
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	9	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	4	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (5 SECTION, 1 WAY)	1	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	8	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2953	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	312	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	819	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	867	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	220	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	40	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	1039	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	100	LIN. FT.
710	NON-METALLIC CONDUIT (3")	848	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	2	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	9	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (34')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	2	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SS & 715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	4	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
SP	18" STREET NAME SIGN	4	EACH
* SP & 733	VIDEO DETECTOR (CLR)	9	EACH
733	VIDEO CABLE	2158	LIN. FT.
733	VIDEO MONITOR (CLR)	1	EACH
* SP & 733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	5	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED

PERMANENT TRAFFIC SIGNAL:
THE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE PERMANENT TRAFFIC SIGNAL IS COMPLETED AND OPERATIONAL. INSTALL THE PERMANENT TRAFFIC SIGNAL AND REMOVE ALL TEMPORARY TRAFFIC SIGNAL COMPONENTS.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

OVERHEAD STREET NAME MARKER STANDARD MAST ARM MOUNTED



NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 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 BE ALSO 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 SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/ COUNTY.
3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEARSIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.			
CITY:	HARRISON			
COUNTY:	BOONE			
DISTRICT:	9	SCALE: N/A	DRAWN BY:	JDH

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090438	36	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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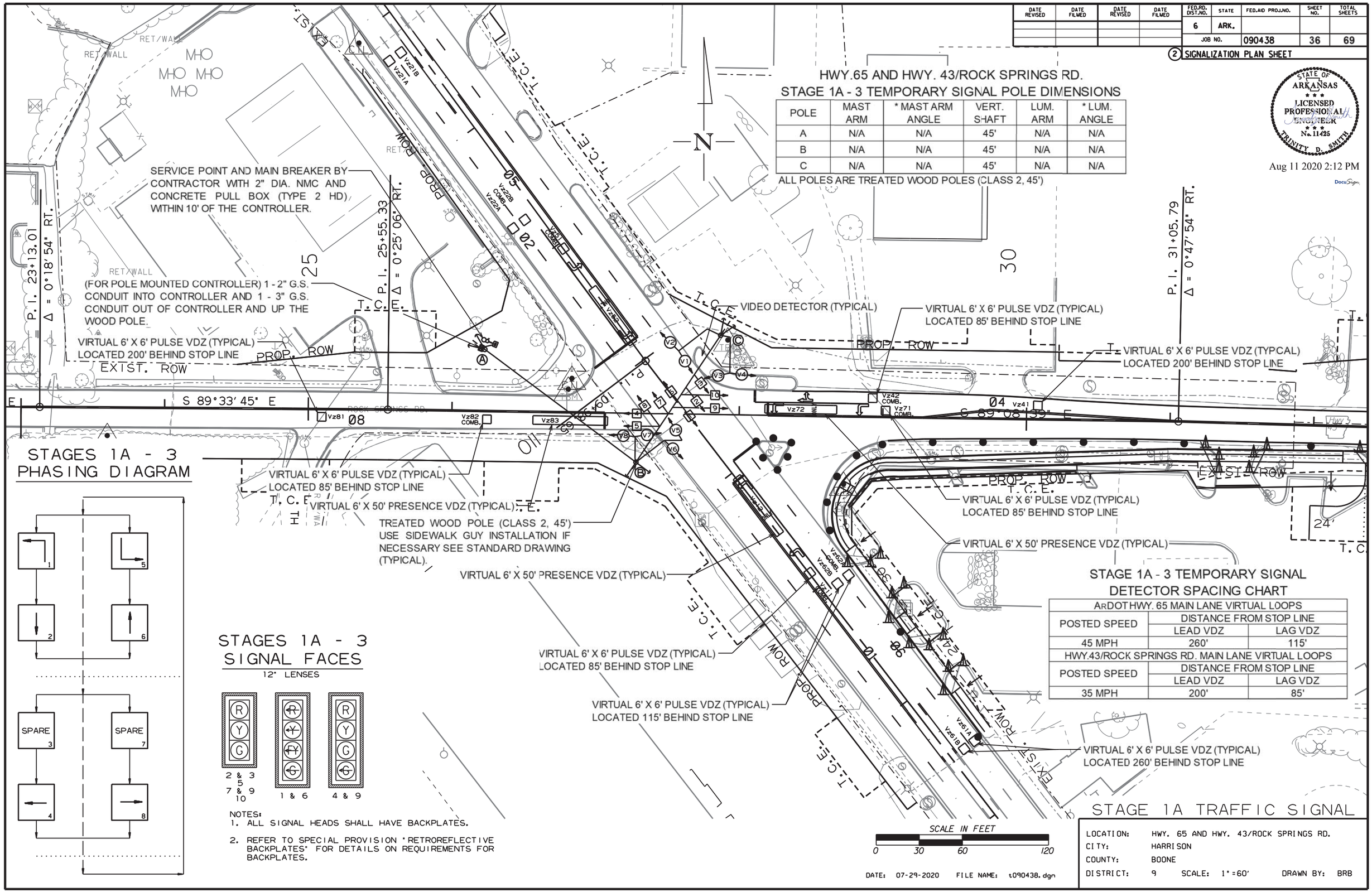
HWY.65 AND HWY. 43/ROCK SPRINGS RD.
STAGE 1A - 3 TEMPORARY SIGNAL POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	N/A	N/A	45'	N/A	N/A
B	N/A	N/A	45'	N/A	N/A
C	N/A	N/A	45'	N/A	N/A

ALL POLES ARE TREATED WOOD POLES (CLASS 2, 45')



STAGES 1A - 3 PHASING DIAGRAM

STAGES 1A - 3 SIGNAL FACES

12" LENSES

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

STAGE 1A - 3 TEMPORARY SIGNAL DETECTOR SPACING CHART

ARDOT HWY. 65 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY.43/ROCK SPRINGS RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'

DATE: 07-29-2020 FILE NAME: t090438.dgn

STAGE 1A TRAFFIC SIGNAL

LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: BRB

T090438.DGN 7/29/2020

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FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090438	37	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

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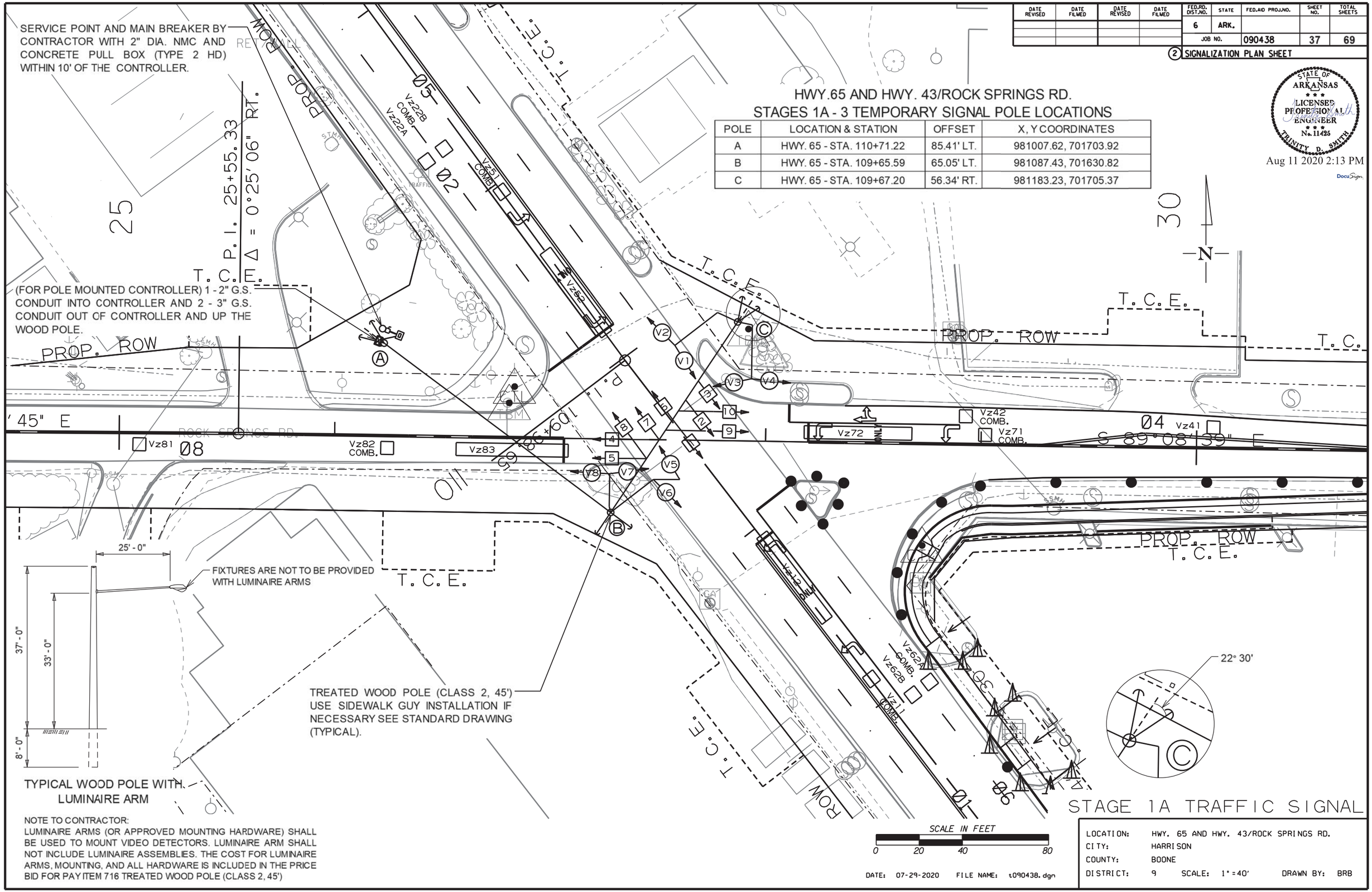

HWY.65 AND HWY. 43/ROCK SPRINGS RD.
STAGES 1A - 3 TEMPORARY SIGNAL POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 65 - STA. 110+71.22	85.41' LT.	981007.62, 701703.92
B	HWY. 65 - STA. 109+65.59	65.05' LT.	981087.43, 701630.82
C	HWY. 65 - STA. 109+67.20	56.34' RT.	981183.23, 701705.37

STAGE 1A TRAFFIC SIGNAL

NOTE TO CONTRACTOR:
LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. THE COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN THE PRICE BID FOR PAY ITEM 716 TREATED WOOD POLE (CLASS 2, 45')

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.		
CITY:	HARRISON		
COUNTY:	BOONE		
DISTRICT:	9	SCALE: 1" = 40'	DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	38	69

2 SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

Aug 11 2020 2:13 PM

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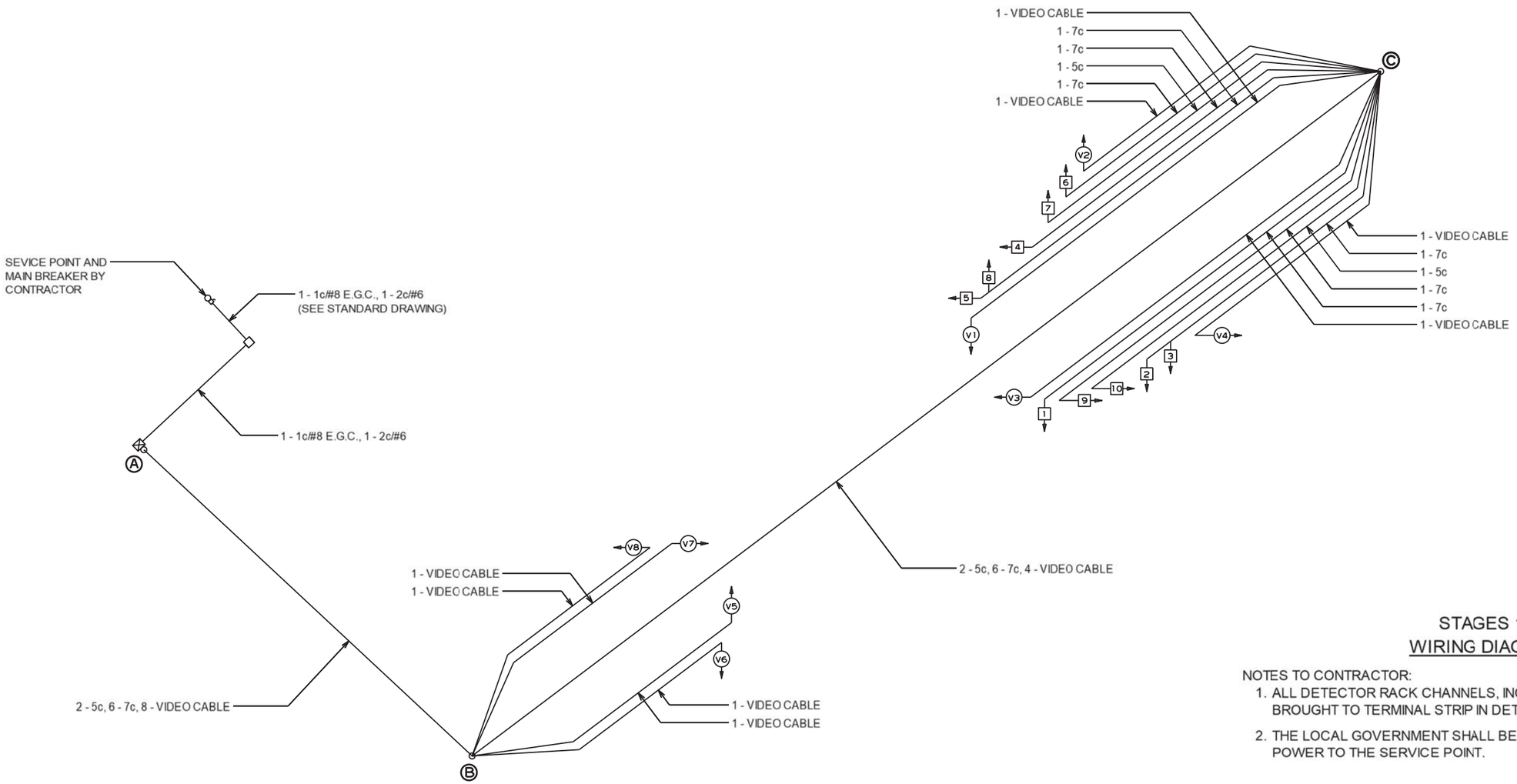

STAGES 1A -3
WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.			
CITY:	HARRISON			
COUNTY:	BOONE			
DISTRICT:	9	SCALE: N/A	DRAWN BY:	BRB

T090438.DGN 7/29/2020

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				6	ARK.			
				JOB NO.		090438	39	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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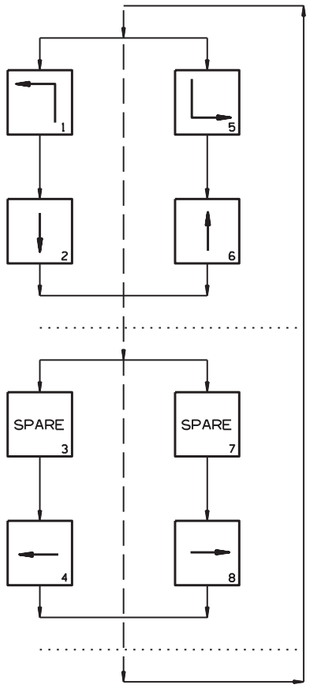
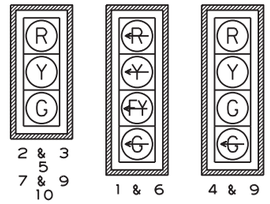
STAGES 1A - 3 PHASING DIAGRAM



STAGES 1A - 3 SIGNAL FACES

12" LENSES



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

DETECTOR CHART

STAGES 1A - 3 TEMPORARY DETECTOR SYSTEM DESCRIPTION: JOB 090438

HWY. 65 AND HWY. 43/ROCK SPRINGS RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM DETECTOR NUMBERS		
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz21 A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	23"
Vz22 A&B	SB NEAR	COMB.			6	V10	2	2		CAMERA V5	23"
Vz41	WB ADVANCE	LOCAL			13	V4	4			CAMERA V4	23"
Vz42	WB NEAR	COMB.			14	V12	4	4		CAMERA V7	23"
Vz51	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	23"
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	23"
Vz61 A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V6	23"
Vz62 A&B	NB NEAR	COMB.			4	V14	6	6		CAMERA V1	23"
Vz71	WB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	23"
Vz72	WB LEFT TURN	LOCAL			16	V7	7			CAMERA V7	23"
Vz81	EB ADVANCE	LOCAL			9	V8	8			CAMERA V8	23"
Vz82	EB INTERMIDIATE	COMB.			10	V16	8	8		CAMERA V3	23"
Vz83	EB NEAR	LOCAL			11	P1	8			CAMERA V3	23"
					SPARE: 12						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

STAGE 1A - 3 TEMPORARY SIGNAL INTERVAL CHART

SIGNAL FACES	HIGHWAY 65 AND HIGHWAY 43/ROCK SPRINGS ROAD												FLASH SEQUENCE
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	4	CLR.	8	CLR.	
1	~~G~~	*	~~G~~	*	~~FY~~	***	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2 & 3	R	R	G	**	R	R	G	**	R	R	R	R	R
4	R	R	R	R	R	R	R	R	R	R	G / ~~G~~	**	R
5	R	R	R	R	R	R	R	R	R	R	G	**	R
6	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
7 & 8	R	R	G	**	R	R	G	**	R	R	R	R	R
9	R	R	R	R	R	R	R	R	G / ~~G~~	**	R	R	R
10	R	R	R	R	R	R	R	R	G	**	R	R	R

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: N/A DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	40	69

2 SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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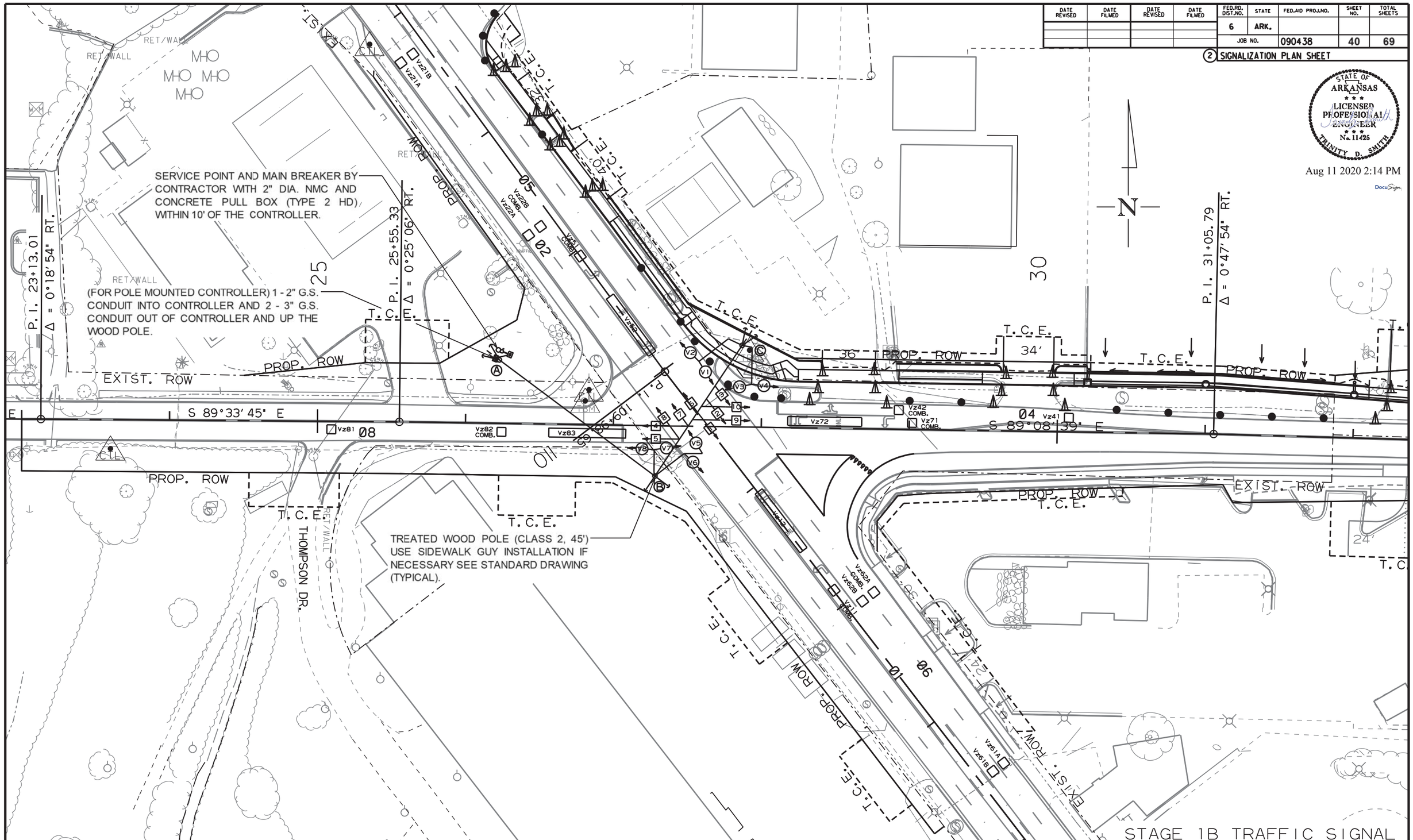

SCALE IN FEET
0 30 60 120

DATE: 07-29-2020 FILE NAME: t090438.dgn

STAGE 1B TRAFFIC SIGNAL

LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	41	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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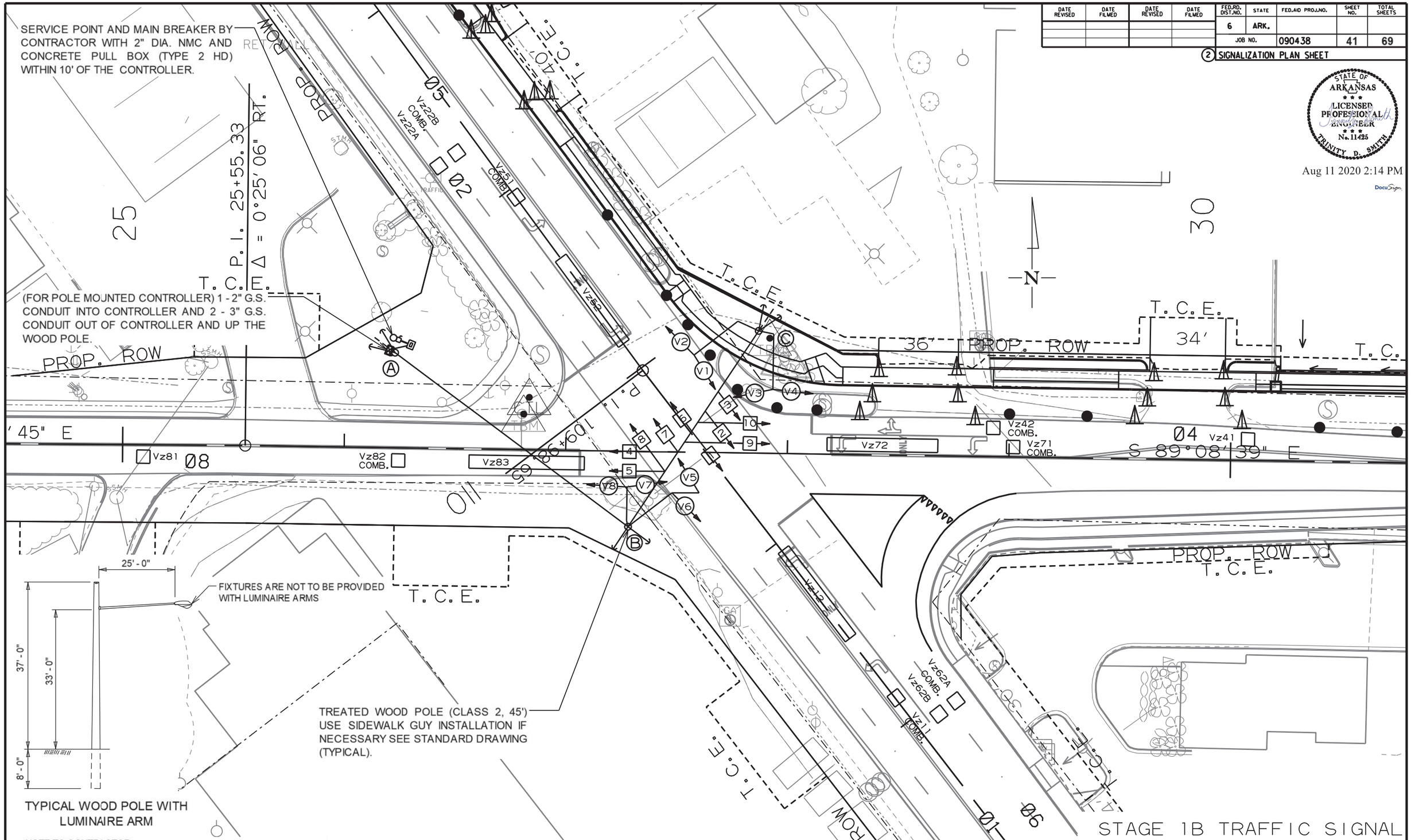

NOTE TO CONTRACTOR:
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DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.		
CITY:	HARRISON		
COUNTY:	BOONE		
DISTRICT:	9	SCALE: 1" = 40'	DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	42	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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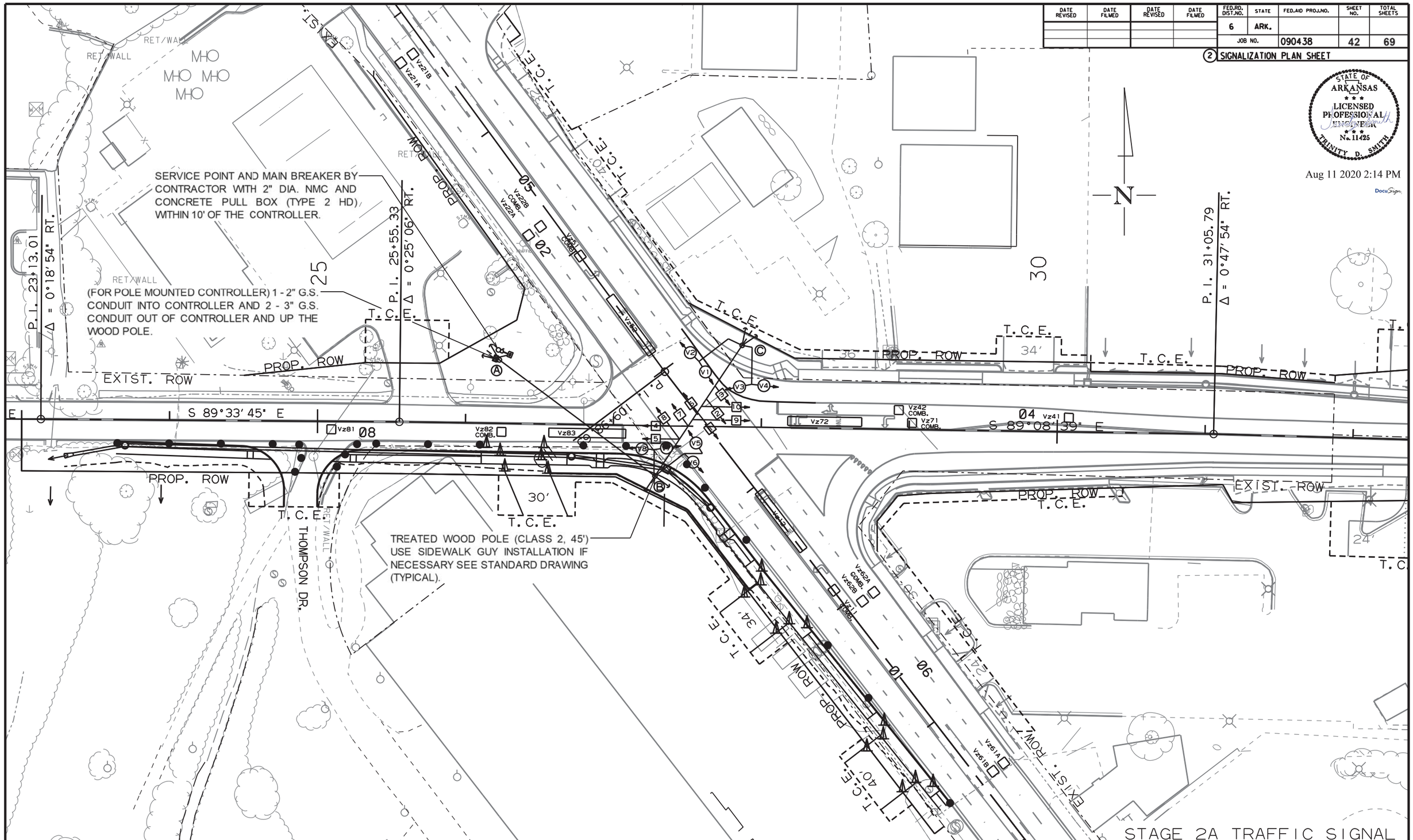

DATE: 07-29-2020 FILE NAME: t090438.dgn

STAGE 2A TRAFFIC SIGNAL

LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	43	69

2 SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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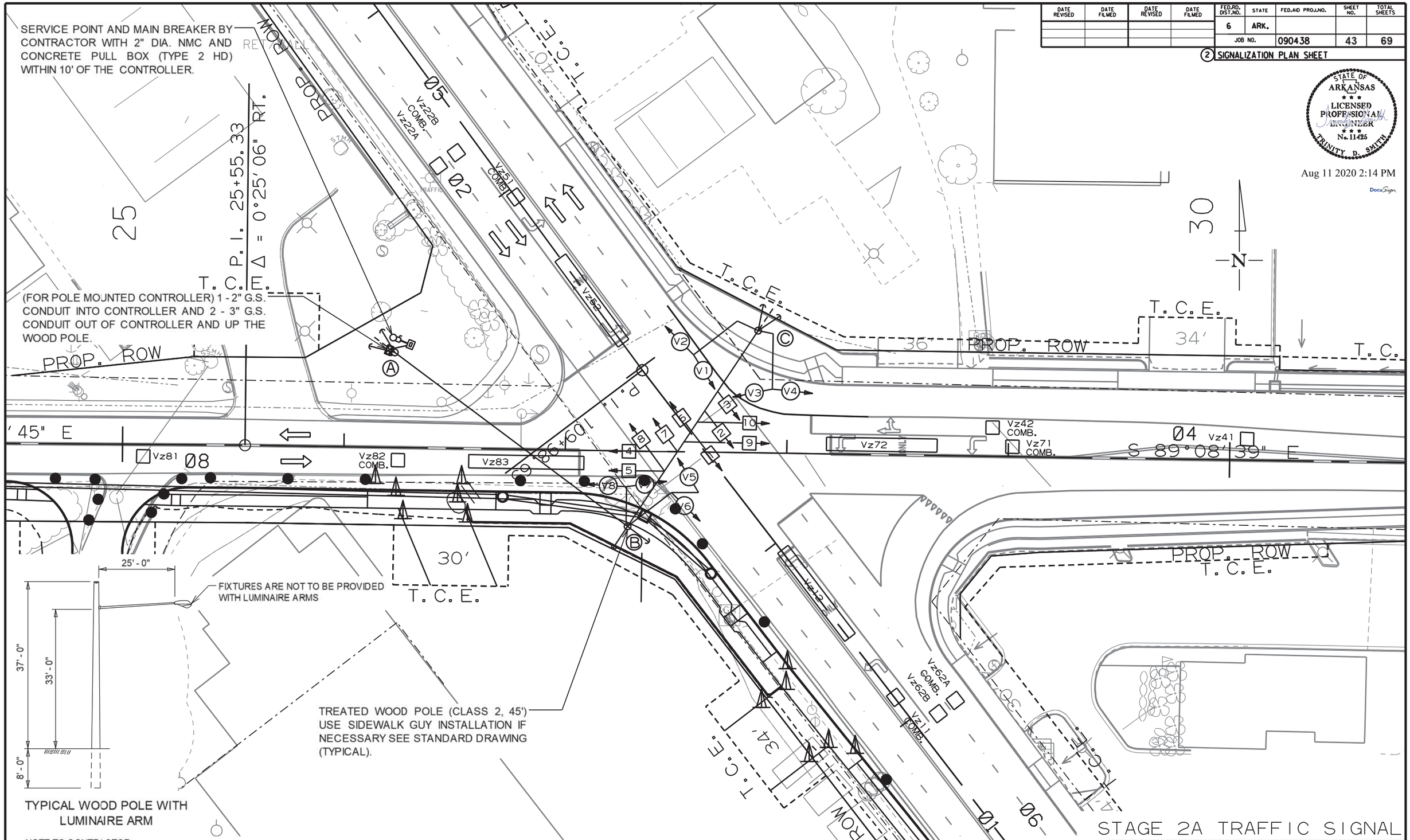

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LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: 1" = 40' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	44	69

2 SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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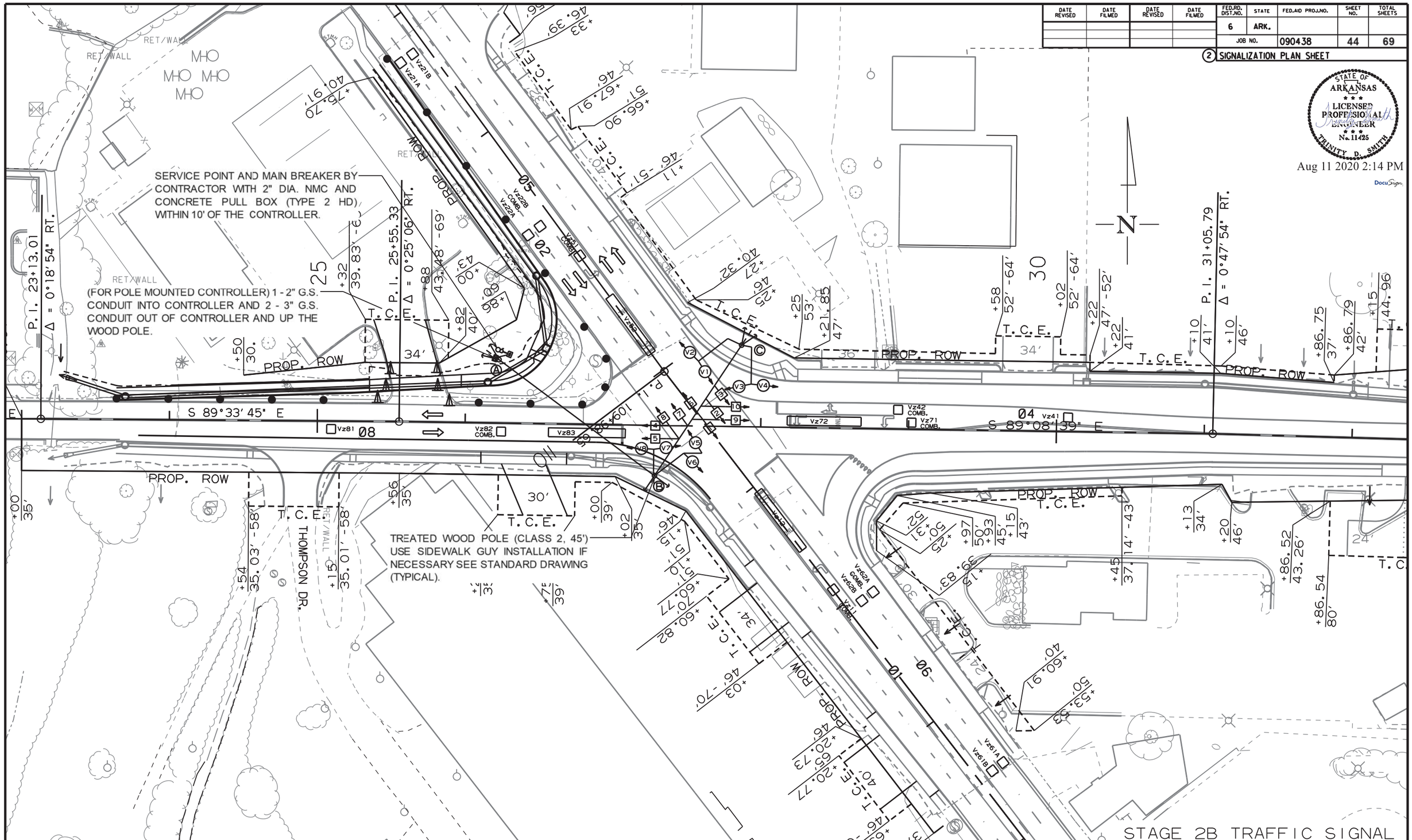

STAGE 2B TRAFFIC SIGNAL

SCALE IN FEET
0 30 60 120

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	45	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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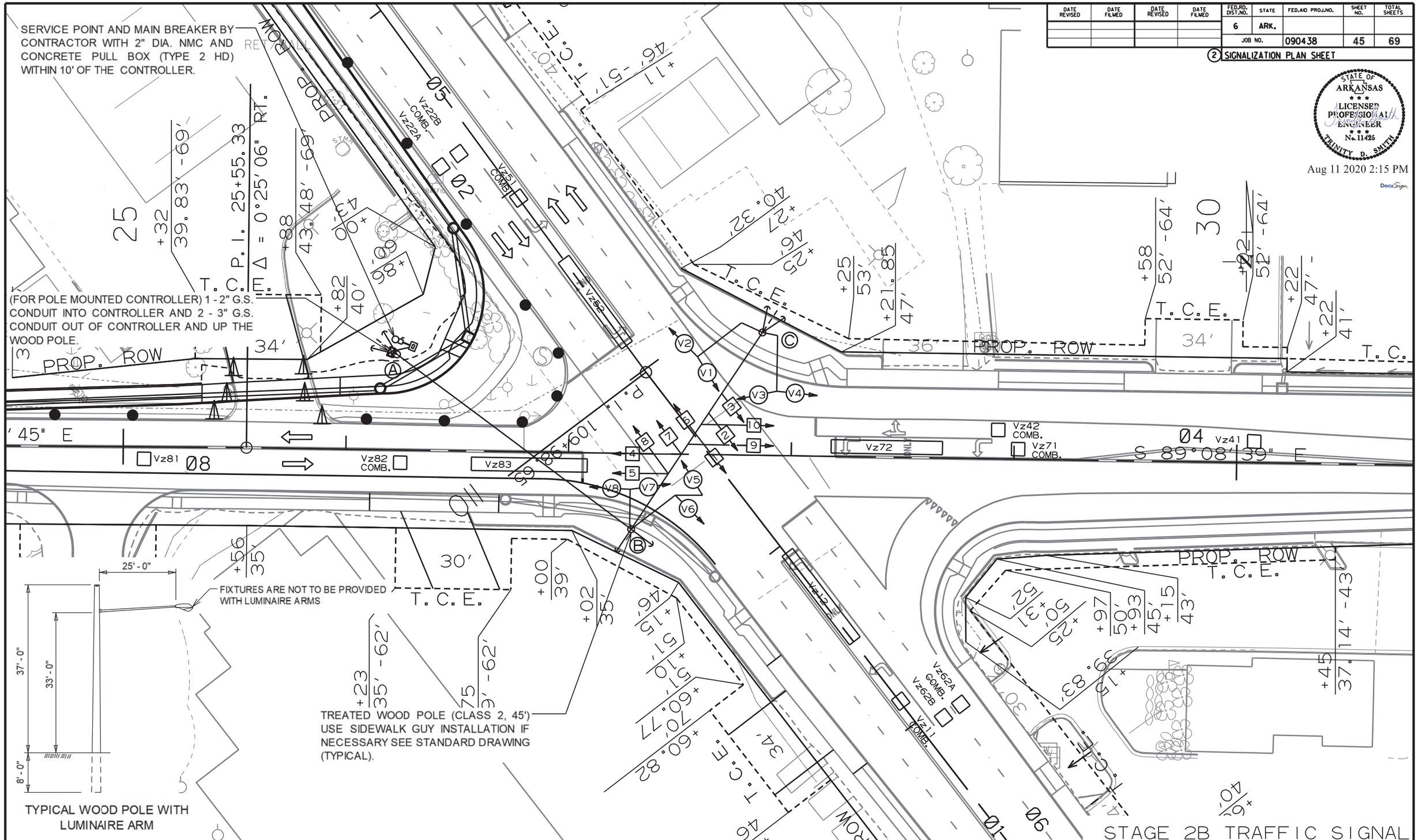

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LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.		
CITY:	HARRISON		
COUNTY:	BOONE		
DISTRICT: 9	SCALE: 1" = 40'	DRAWN BY: BRB	

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	46	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS ★★★ LICENSED PROFESSIONAL ENGINEER ★★★ No. 11425 TRINITY D. SMITH

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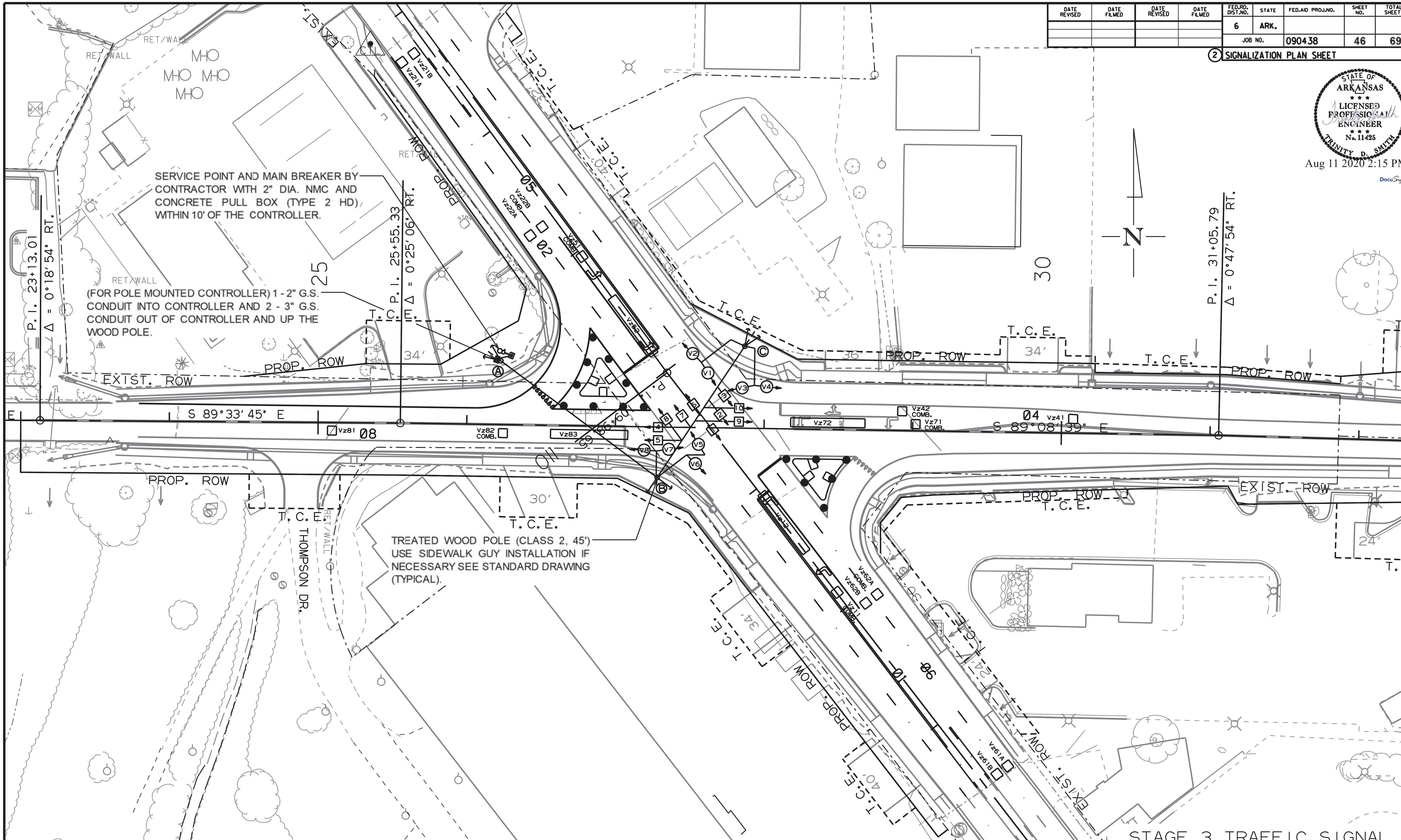

SCALE IN FEET

0 30 60 120

DATE: 07-29-2020 FILE NAME: t090438.dgn

STAGE 3 TRAFFIC SIGNAL

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY:	HARRISON
COUNTY:	BOONE
DISTRICT:	9 SCALE: 1"=60' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	47	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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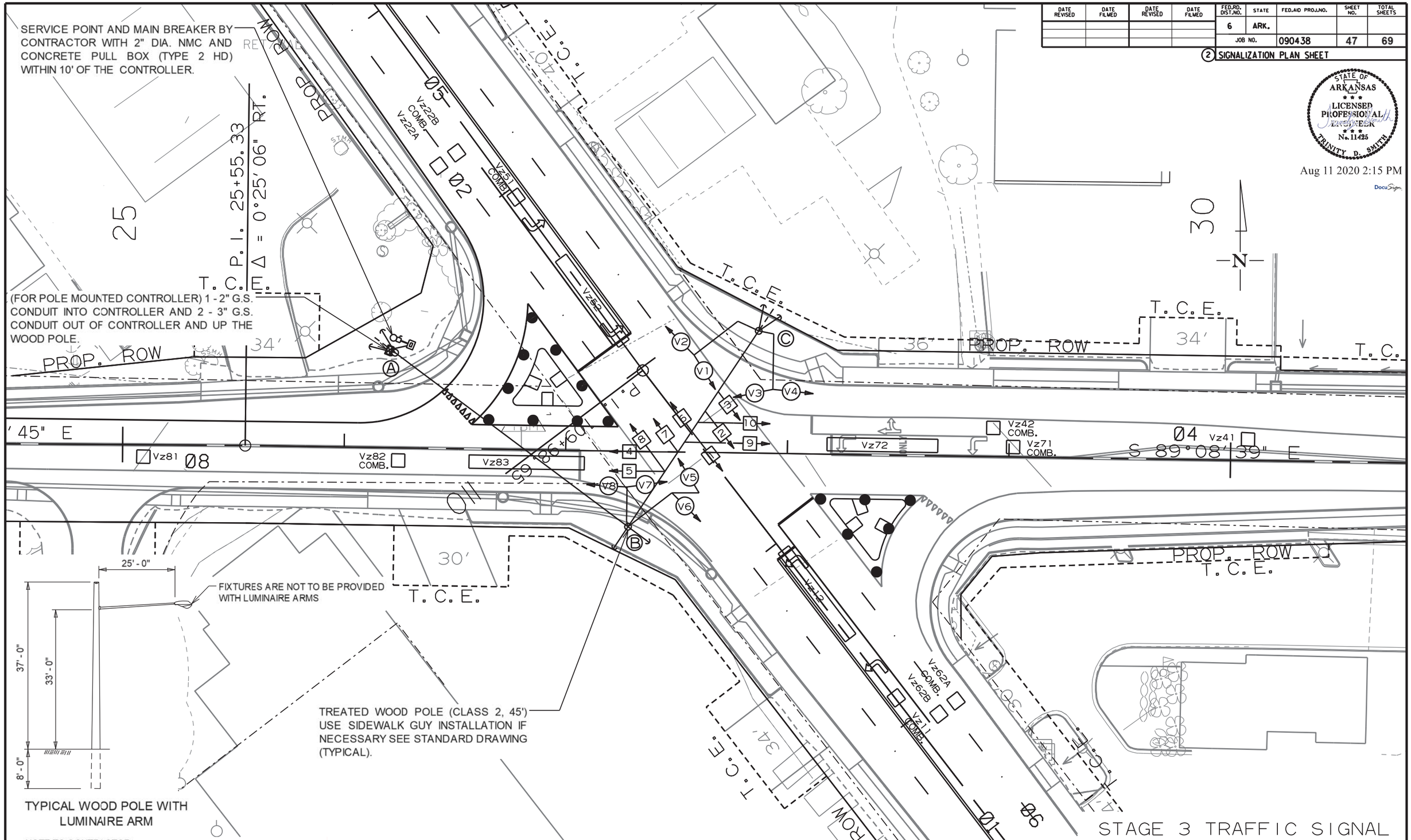

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DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY:	HARRISON
COUNTY:	BOONE
DISTRICT: 9	SCALE: 1"=40' DRAWN BY: BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		090438	48	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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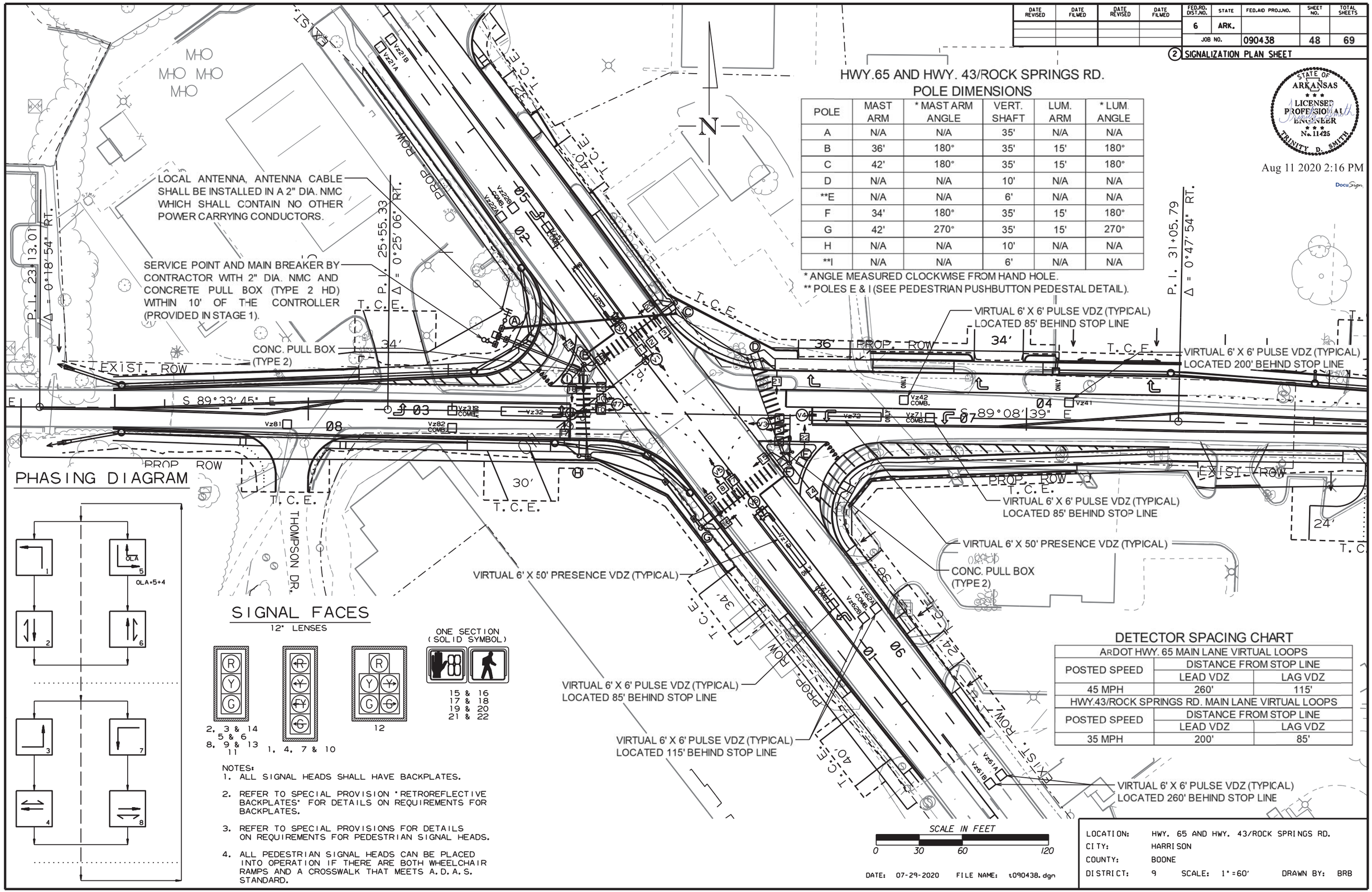

HWY.65 AND HWY. 43/ROCK SPRINGS RD.
POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	N/A	N/A	35'	N/A	N/A
B	36'	180°	35'	15'	180°
C	42'	180°	35'	15'	180°
D	N/A	N/A	10'	N/A	N/A
**E	N/A	N/A	6'	N/A	N/A
F	34'	180°	35'	15'	180°
G	42'	270°	35'	15'	270°
H	N/A	N/A	10'	N/A	N/A
**I	N/A	N/A	6'	N/A	N/A

* ANGLE MEASURED CLOCKWISE FROM HAND HOLE.
** POLES E & I (SEE PEDESTRIAN PUSHBUTTON PEDESTAL DETAIL).

PHASING DIAGRAM

SIGNAL FACES

12" LENSES

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

DETECTOR SPACING CHART

ARDOT HWY. 65 MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
45 MPH	260'	115'
HWY.43/ROCK SPRINGS RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.			
CITY:	HARRISON			
COUNTY:	BOONE			
DISTRICT:	9	SCALE: 1"=60'	DRAWN BY:	BRB

T090438.DGN 7/29/2020

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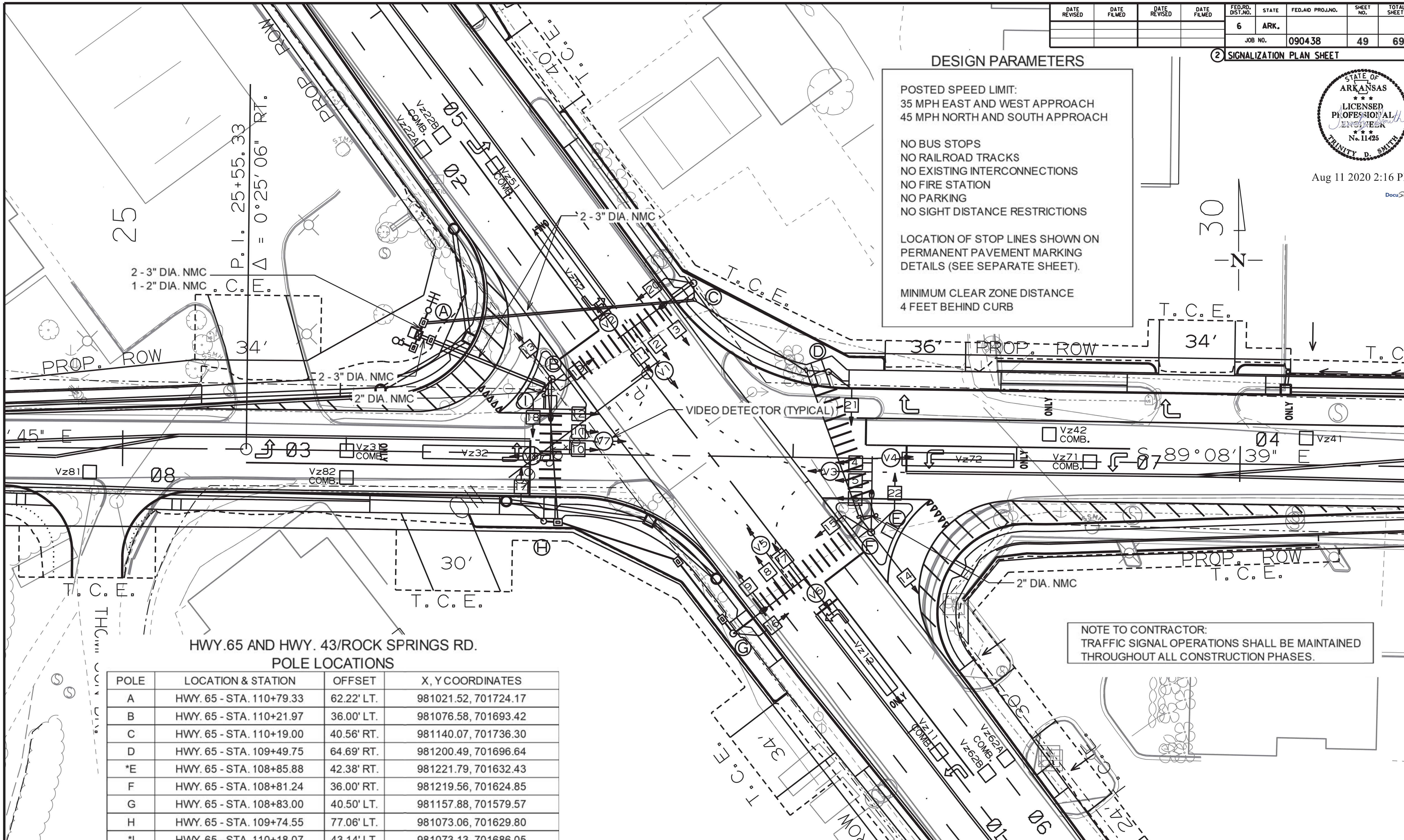
				6	ARK.			
				JOB NO.		090438	49	69

② SIGNALIZATION PLAN SHEET



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
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DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
45 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

HWY.65 AND HWY. 43/ROCK SPRINGS RD.
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	HWY. 65 - STA. 110+79.33	62.22' LT.	981021.52, 701724.17
B	HWY. 65 - STA. 110+21.97	36.00' LT.	981076.58, 701693.42
C	HWY. 65 - STA. 110+19.00	40.56' RT.	981140.07, 701736.30
D	HWY. 65 - STA. 109+49.75	64.69' RT.	981200.49, 701696.64
*E	HWY. 65 - STA. 108+85.88	42.38' RT.	981221.79, 701632.43
F	HWY. 65 - STA. 108+81.24	36.00' RT.	981219.56, 701624.85
G	HWY. 65 - STA. 108+83.00	40.50' LT.	981157.88, 701579.57
H	HWY. 65 - STA. 109+74.55	77.06' LT.	981073.06, 701629.80
*I	HWY. 65 - STA. 110+18.07	43.14' LT.	981073.13, 701686.05

* POLES E & I (SEE PEDESTRIAN PUSHBUTTON PEDESTAL DETAIL).

SCALE IN FEET
0 20 40 80

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY:	HARRISON
COUNTY:	BOONE
DISTRICT:	9 SCALE: 1"=40' DRAWN BY: BRB

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.		090438	50	69

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

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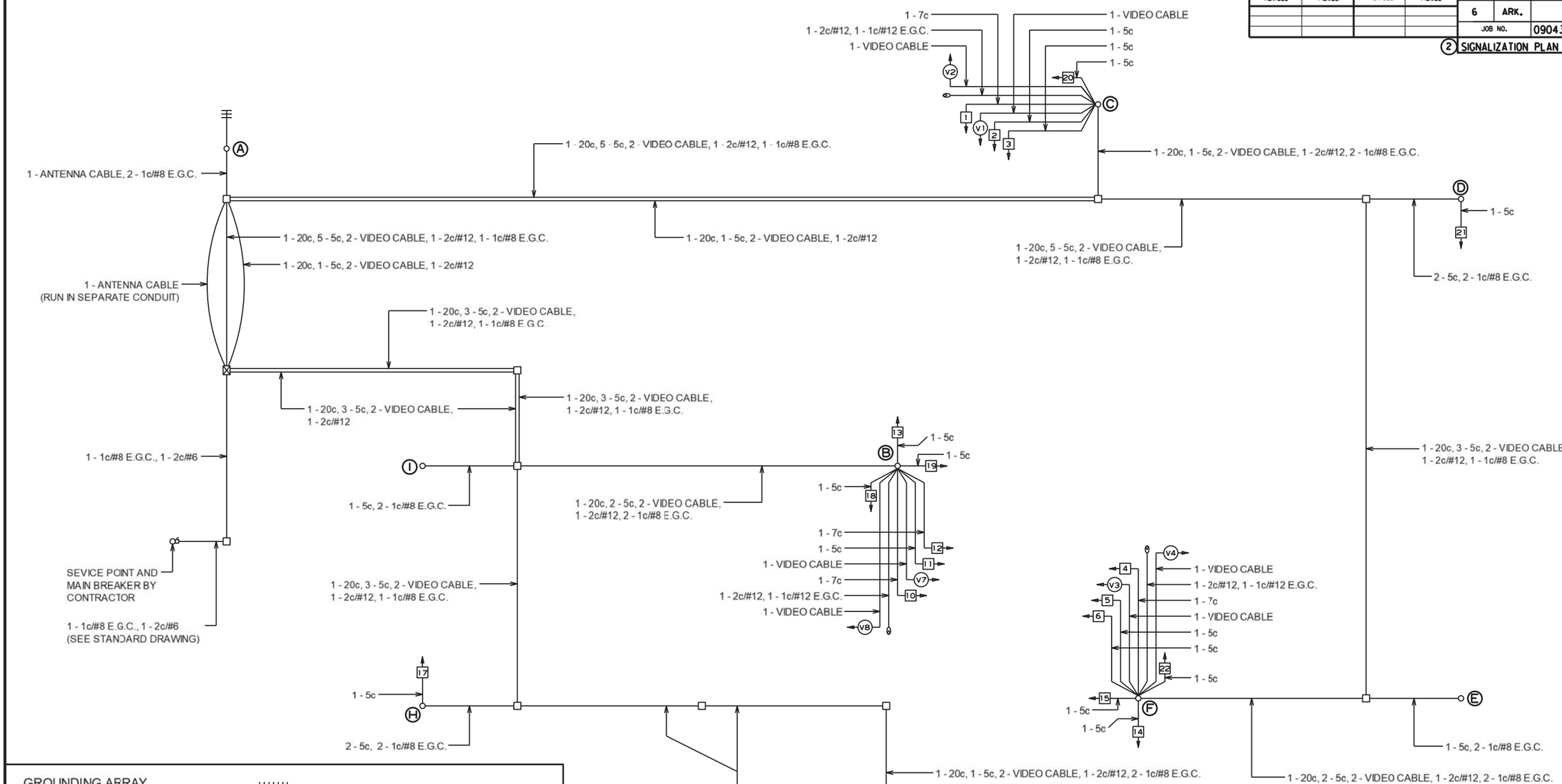
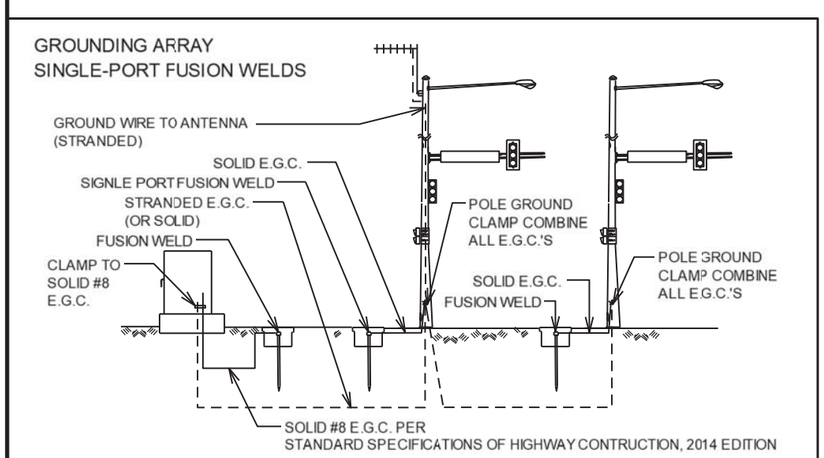




NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

DATE: 07-29-2020 FILE NAME: t090438.dgn

LOCATION:	HWY. 65 AND HWY. 43/ROCK SPRINGS RD.			
CITY:	HARRISON			
COUNTY:	BOONE			
DISTRICT:	9	SCALE: N/A	DRAWN BY:	BRB

T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	51	69

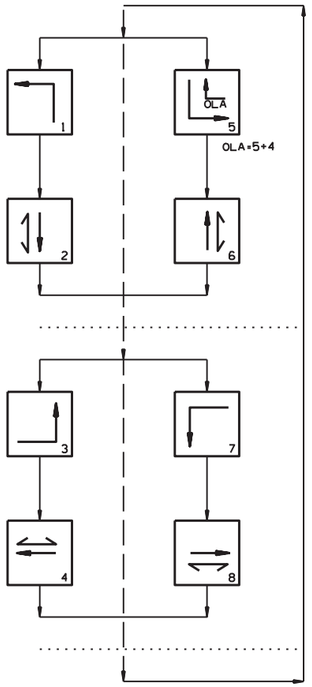
(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

Aug 11 2020 2:17 PM

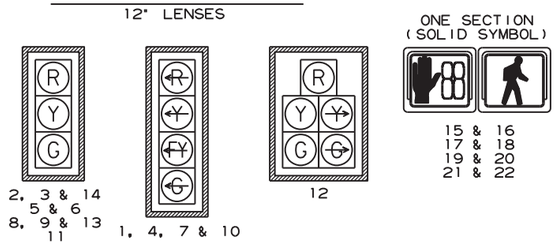
DocuSign

PHASING DIAGRAM



SIGNAL FACES

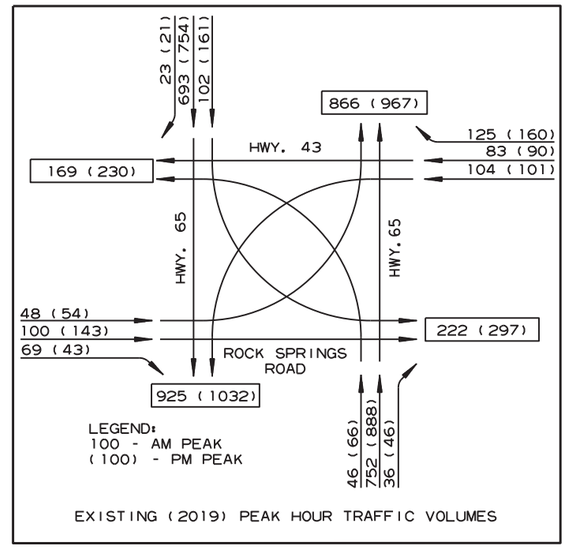
12" LENSES



NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

TRAFFIC FLOW DIAGRAM



DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 090438

HWY. 65 AND HWY. 43/ROCK SPRINGS RD. DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	74"
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	74"
Vz21 A&B	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	74"
Vz22 A&B	SB NEAR	COMB.			6	V10	2	2		CAMERA V5	74"
Vz31	EB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V3	74"
Vz32	EB LEFT TURN	LOCAL			10	V3	3			CAMERA V3	74"
Vz41	WB ADVANCE	LOCAL			13	V4	4			CAMERA V4	46"
Vz42	WB NEAR	COMB.			14	V12	4	4		CAMERA V7	74"
Vz51	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V5	74"
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V5	74"
Vz61 A&B	NB ADVANCE	LOCAL			3	V6	6			CAMERA V6	74"
Vz62 A&B	NB NEAR	COMB.			4	V14	6	6		CAMERA V1	74"
Vz71	WB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V7	74"
Vz72	WB LEFT TURN	LOCAL			16	V7	7			CAMERA V7	74"
Vz81	EB ADVANCE	LOCAL			11	V8	8			CAMERA V8	46"
Vz82	EB NEAR	COMB.			12	V16	8	8		CAMERA V3	74"
PB2 A&B	ROCK SPRINGS RD. W. LEG	PED.				P2	2				
PB4 A&B	HWY. 65 N. LEG	PED.				P4	4				
PB6 A&B	HWY. 43 E. LEG	PED.				P6	6				
PB8 A&B	HWY. 65 S. LEG	PED.				P8	8				
					SPARE						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

INTERVAL CHART

SIGNAL FACES	HIGHWAY 65 AND HIGHWAY 43/ROCK SPRINGS ROAD 1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.	FLASH SEQUENCE
1	~~←G~~	*	~~←G~~	*	~~←FY~~	***	~~←FY~~	***	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~
2, 3 & 14	R	R	G	**	R	R	G	**	R	R	R	R	R	R	R	R	R
4	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←G~~	*	~~←G~~	*	~~←FY~~	***	~~←FY~~	***	~~←R~~
5 & 6	R	R	R	R	R	R	R	R	R	R	G	**	R	R	G	**	R
7	~~←G~~	*	~~←FY~~	***	~~←G~~	*	~~←FY~~	***	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~
8, 9 & 13	R	R	R	R	G	**	G	**	R	R	R	R	R	R	R	R	R
10	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←G~~	*	~~←FY~~	***	~~←G~~	*	~~←FY~~	***	~~←R~~
11	R	R	R	R	R	R	R	R	R	R	R	R	G	**	G	**	R
12	R / ~~G~~	**	R	R	R	R	R	R	R	R	R	R	G / ~~G~~	**	G / ~~G~~	**	R
15 & 16	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	W	FDW	BLK
17 & 18	DW	DW	DW	DW	W	FDW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK
19 & 20	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	W	FDW	BLK
21 & 22	DW	DW	W	FDW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	BLK

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

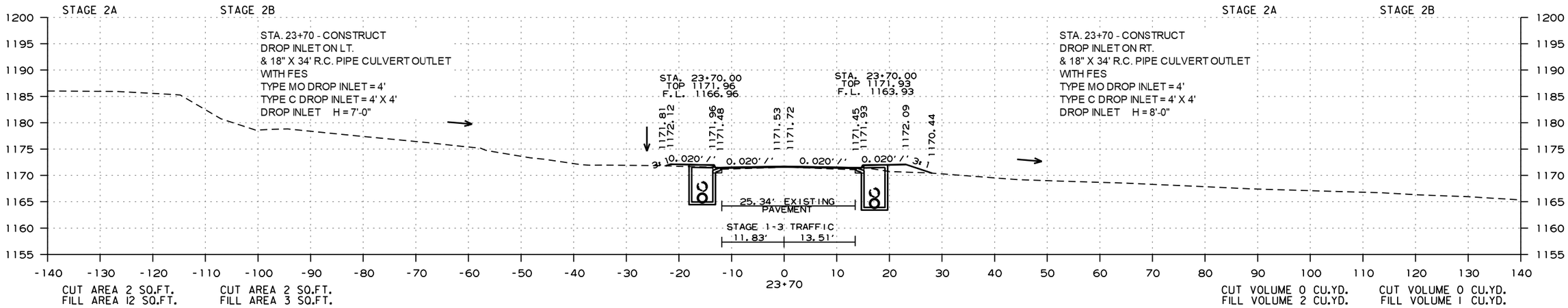
DATE: 07-29-2020 FILE NAME: t090438.dgn

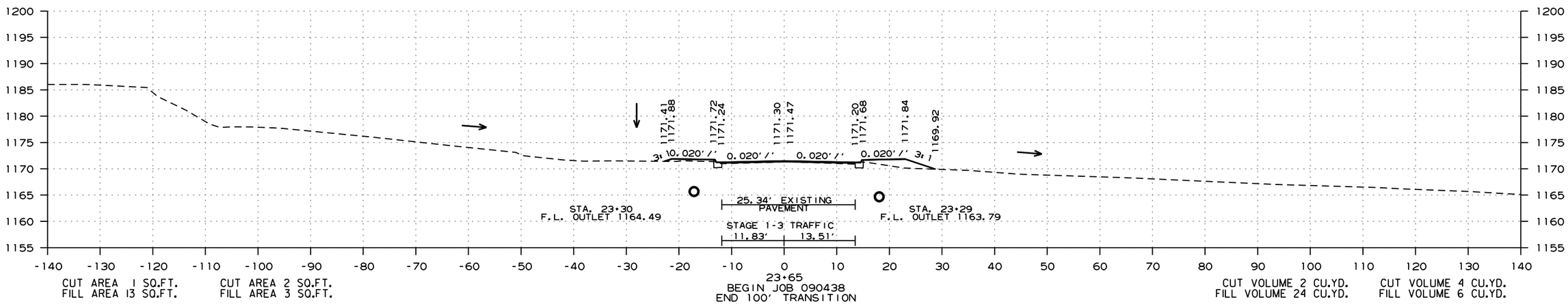
LOCATION: HWY. 65 AND HWY. 43/ROCK SPRINGS RD.
CITY: HARRISON
COUNTY: BOONE
DISTRICT: 9 SCALE: N/A DRAWN BY: BRB

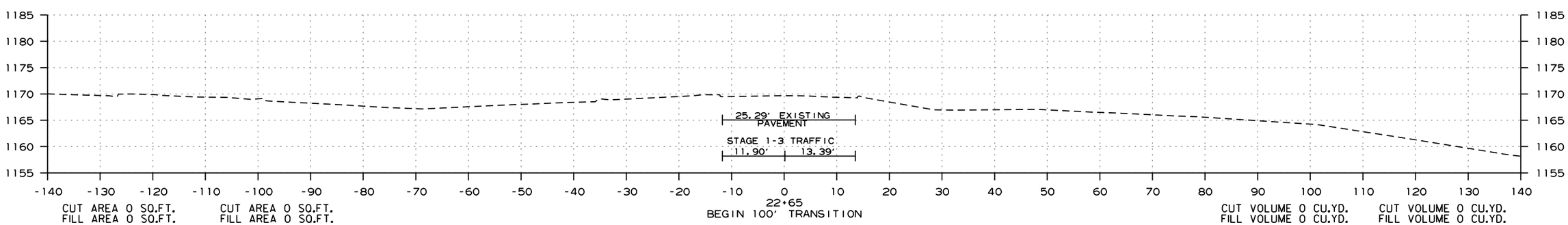
T090438.DGN 7/29/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	52	69

(2) CROSS SECTIONS







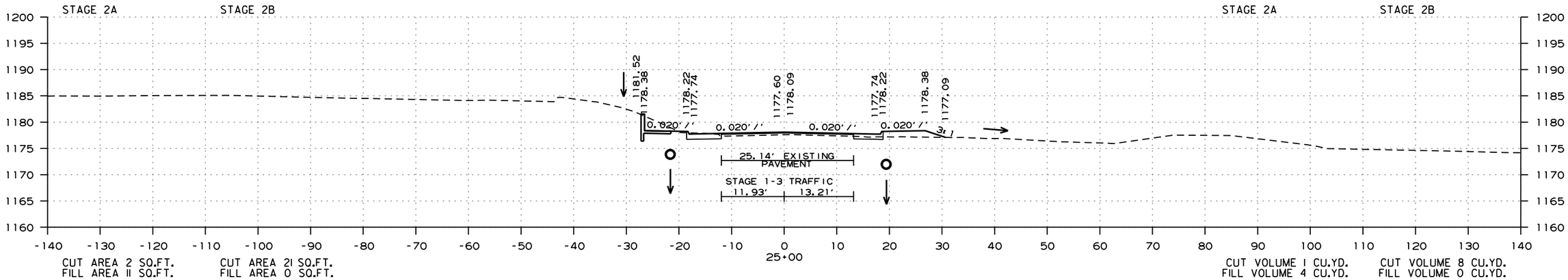
ROCK SPRINGS RD.
CROSS SECTION STA. 22+65 TO STA. 23+70

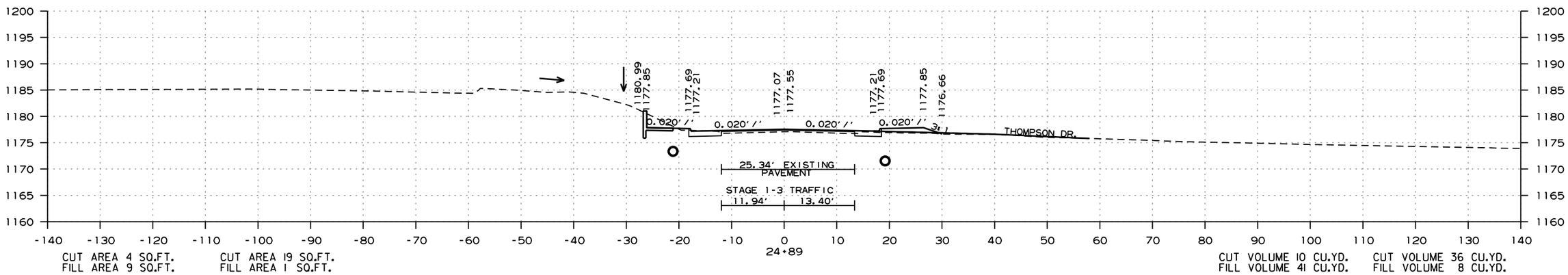
7/28/2020

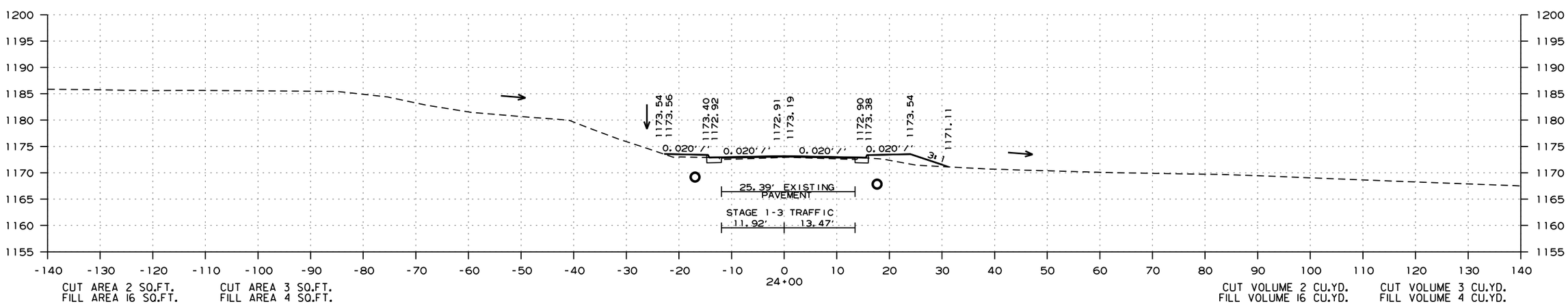
RR090438.DGN

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.		090438	53	69

(2) CROSS SECTIONS







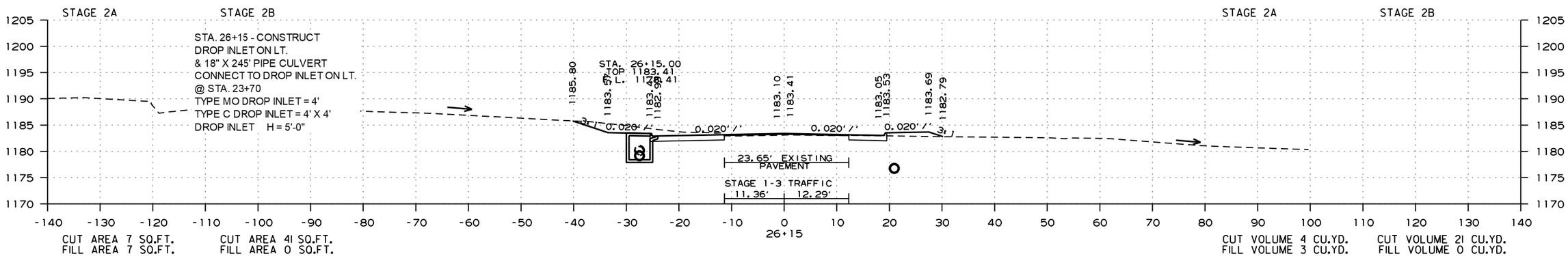
ROCK SPRINGS RD.
CROSS SECTION STA. 24+00 TO STA. 25+00

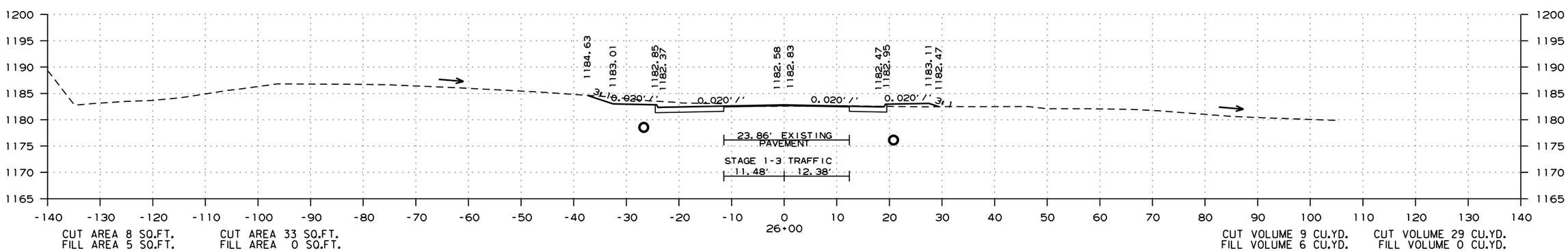
7/28/2020

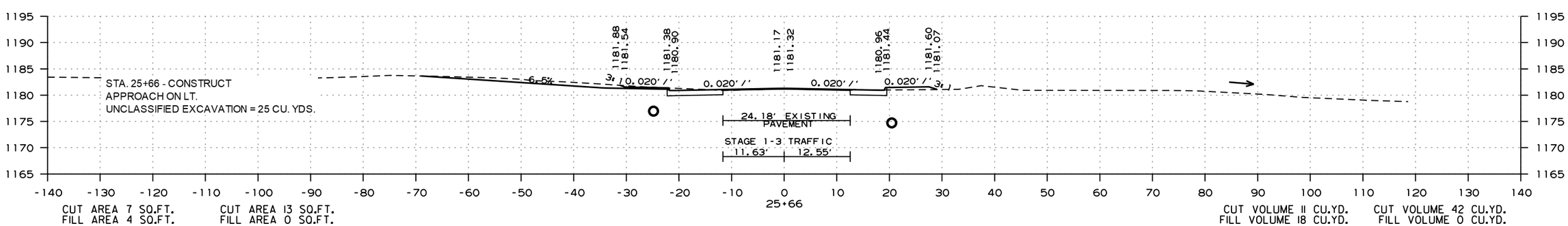
RR090438.DGN

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.		090438	54	69

(2) CROSS SECTIONS







ROCK SPRINGS RD.
CROSS SECTION STA. 25+66 TO STA. 26+15

7/28/2020

RR0904.38.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.		090438	55	69

(2) CROSS SECTIONS

STAGE 2A

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

STAGE 2B

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

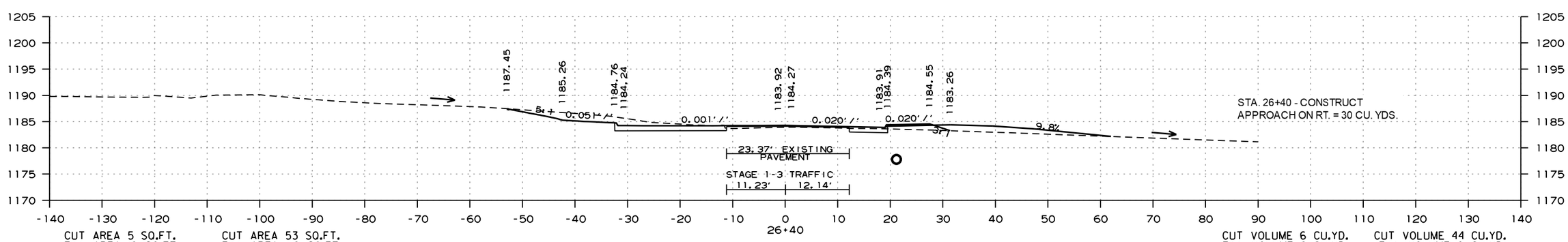
27+27.52 - TIE TO HWY. 65 LEFT LANE EDGE
STA. 109+74.22, ELEVATION = 1186.33

STAGE 2A

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE 2B

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.



CUT AREA 5 SQ.FT.
FILL AREA 10 SQ.FT.

CUT AREA 53 SQ.FT.
FILL AREA 0 SQ.FT.

CUT VOLUME 6 CU.YD.
FILL VOLUME 8 CU.YD.

CUT VOLUME 44 CU.YD.
FILL VOLUME 0 CU.YD.

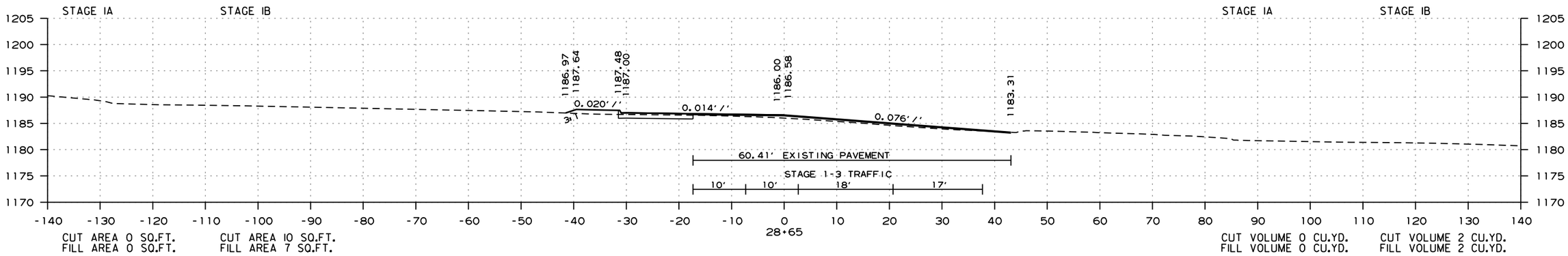
ROCK SPRINGS RD.
CROSS SECTION STA. 26+40 TO STA. 27+27.52

7/28/2020

RR090438.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.		090438	56	69

(2) CROSS SECTIONS

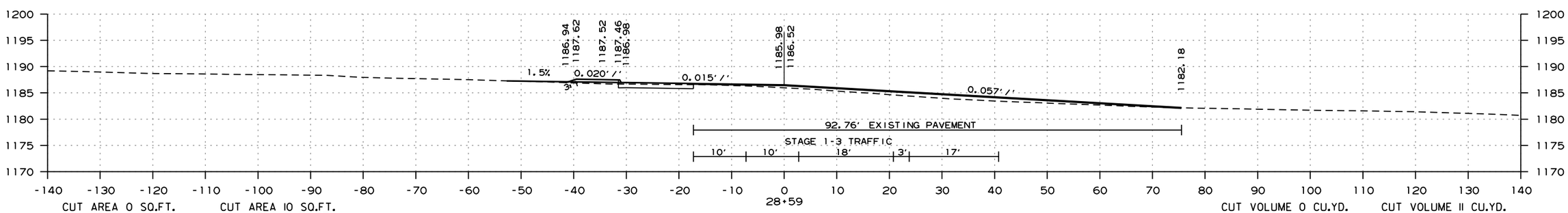


CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 2 CU.YD.
FILL VOLUME 2 CU.YD.



CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 10 SQ.FT.
FILL AREA 7 SQ.FT.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 11 CU.YD.
FILL VOLUME 8 CU.YD.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

27+99.02 - TIE TO HWY. 65 RIGHT LANE EDGE
STA. 109+29.74, ELEVATION = 1185.98

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

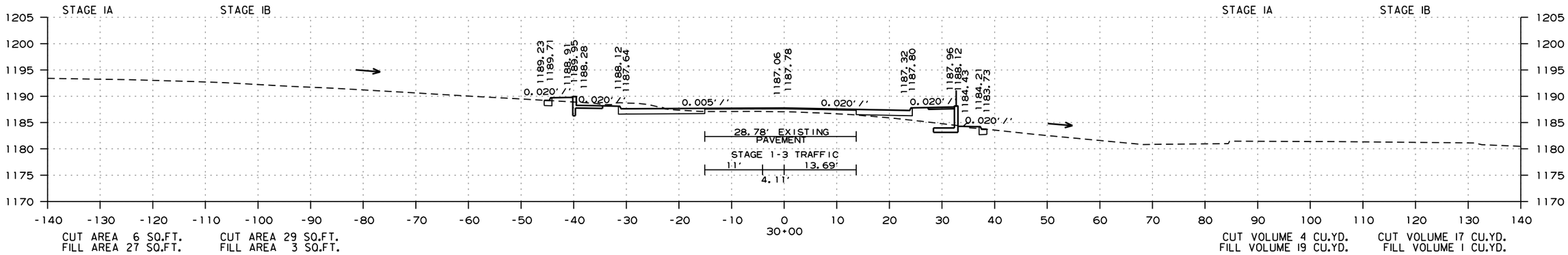
7/28/2020

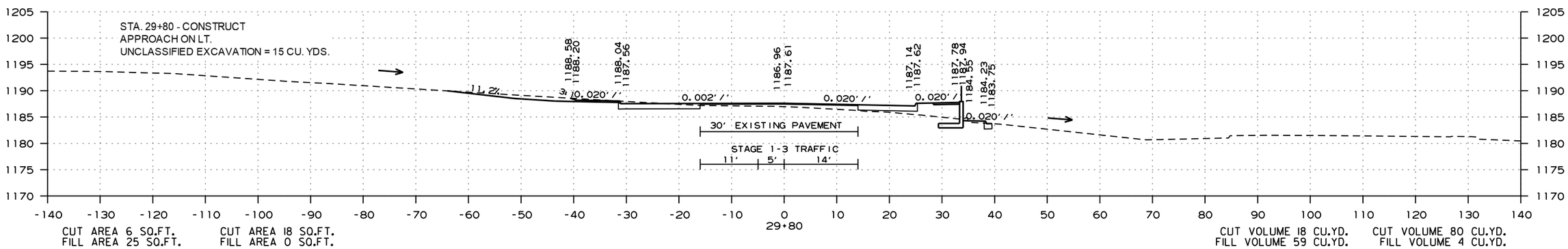
RR090438.DGN

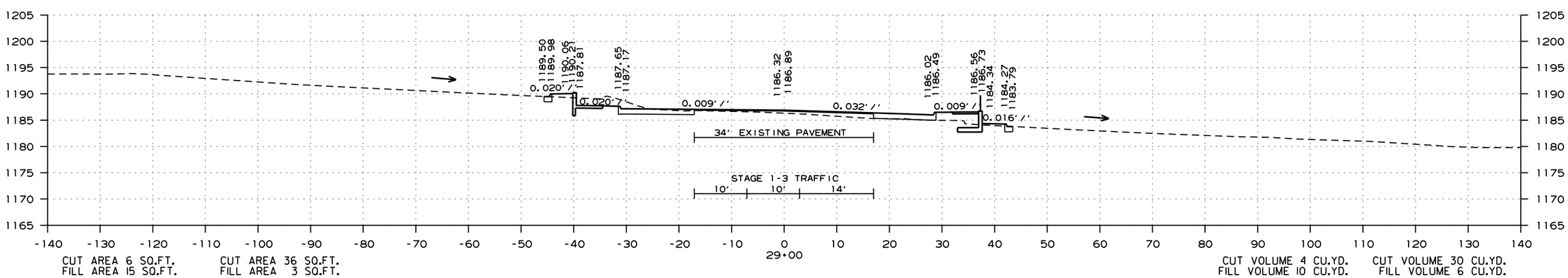
HWY. 43
CROSS SECTION STA. 27+99.02 TO STA. 28+65

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090438	57	69

(2) CROSS SECTIONS







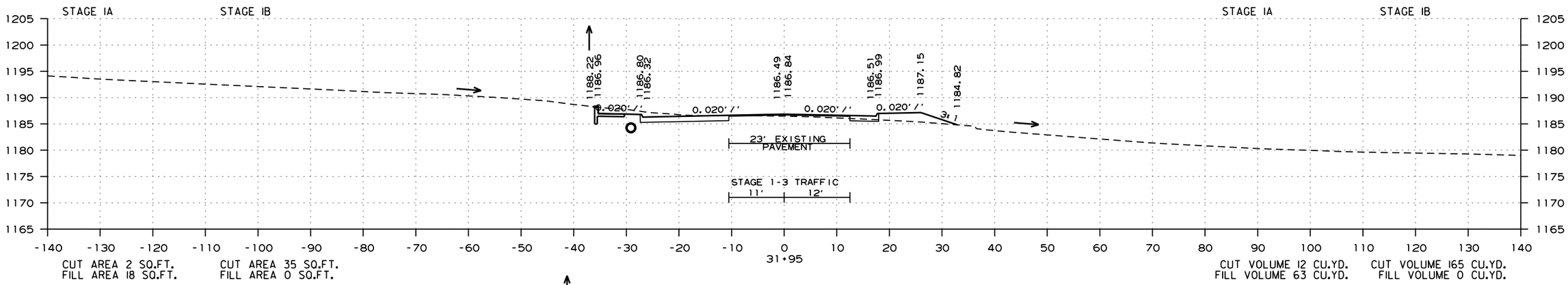
HWY. 43
CROSS SECTION STA. 29+00 TO STA. 30+00

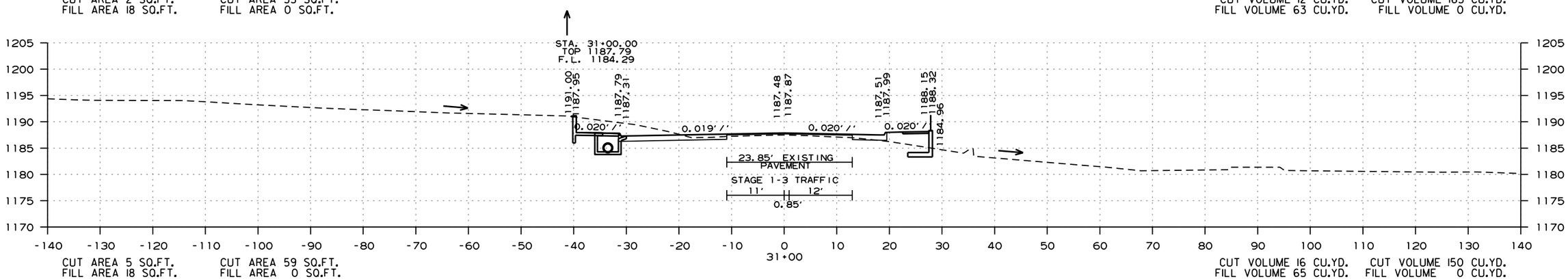
7/28/2020

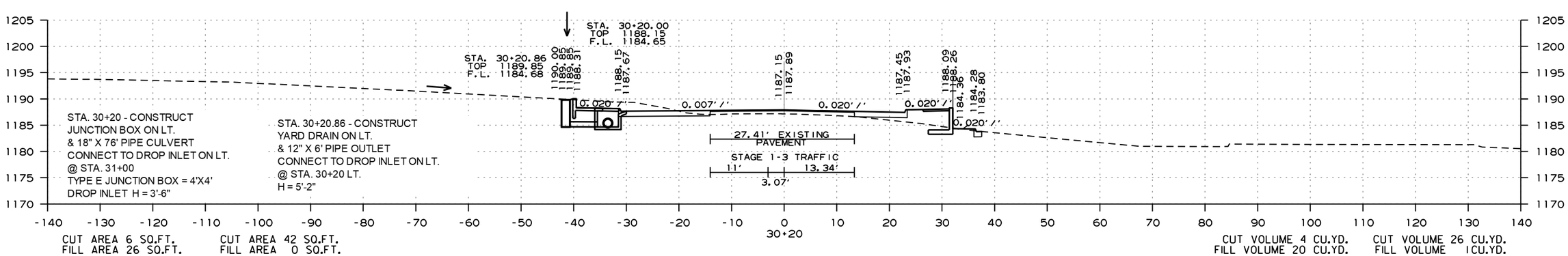
RR090438.DGN

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.		090438	58	69

(2) CROSS SECTIONS







STA. 30+20 - CONSTRUCT
JUNCTION BOX ON LT.
& 18" X 76' PIPE CULVERT
CONNECT TO DROP INLET ON LT.
@ STA. 31+00
TYPE E JUNCTION BOX = 4'X4'
DROP INLET H = 3'-6"

STA. 30+20.86 - CONSTRUCT
YARD DRAIN ON LT.
& 12" X 6' PIPE OUTLET
CONNECT TO DROP INLET ON LT.
@ STA. 30+20 LT.
H = 5'-2"

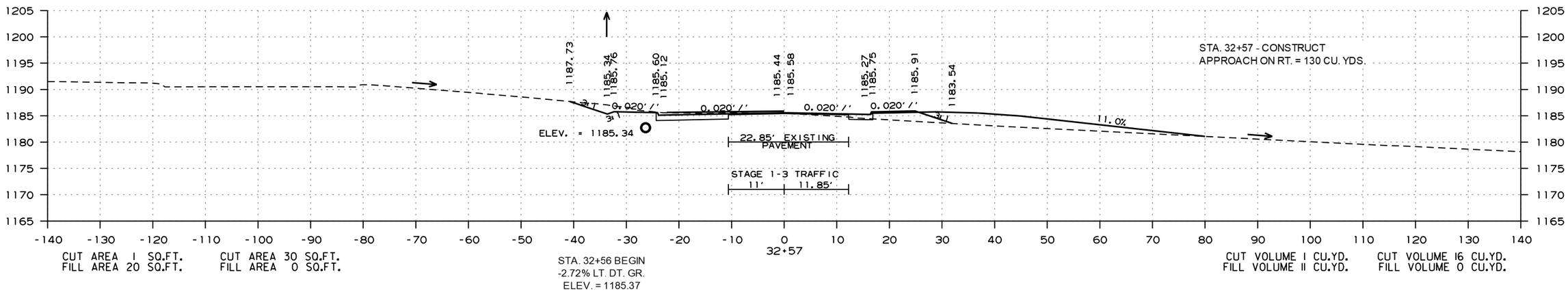
HWY. 43
CROSS SECTION STA. 30+20 TO STA. 31+95

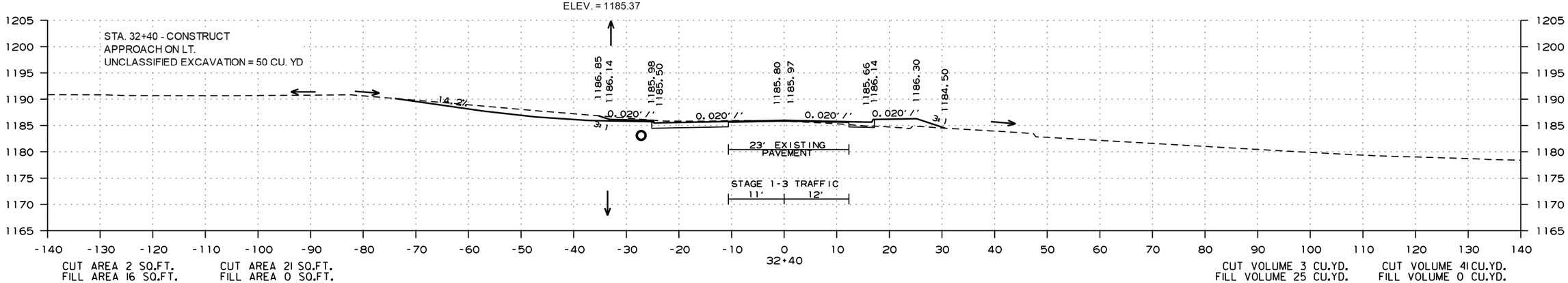
7/28/2020

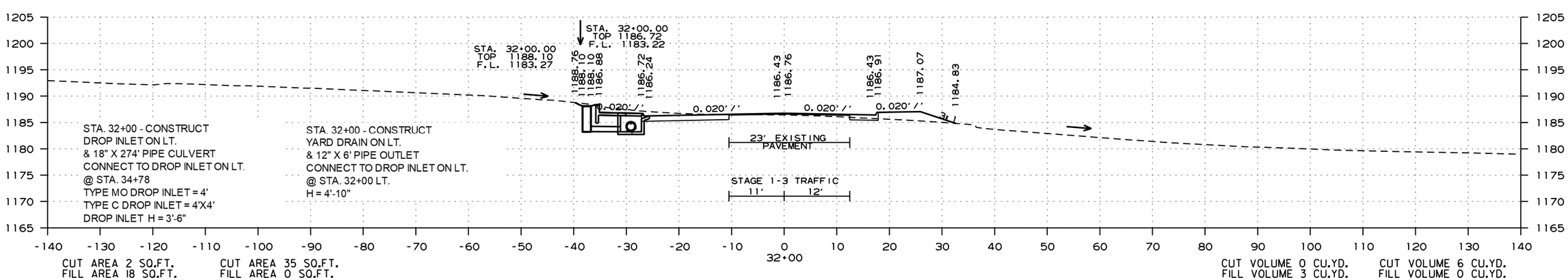
RR090438.DGN

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.		090438	59	69

(2) CROSS SECTIONS





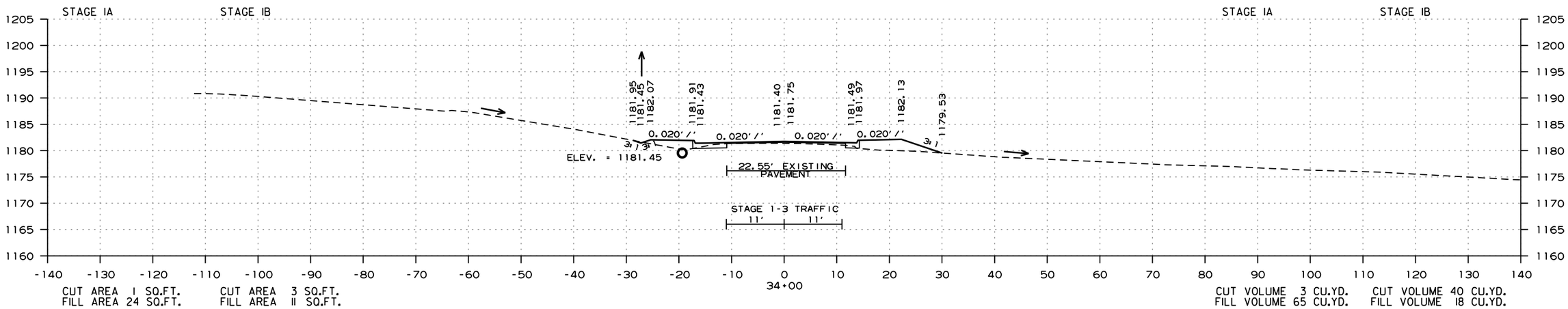


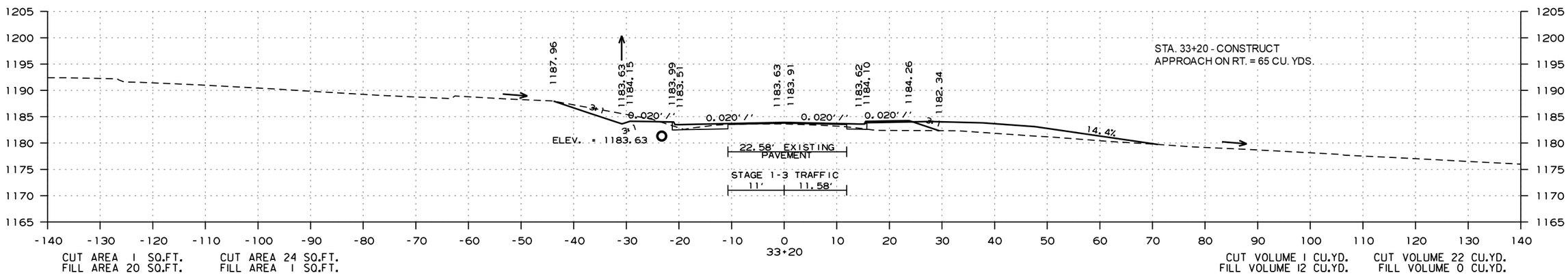
HWY. 43
CROSS SECTION STA. 32+00 TO STA. 32+57

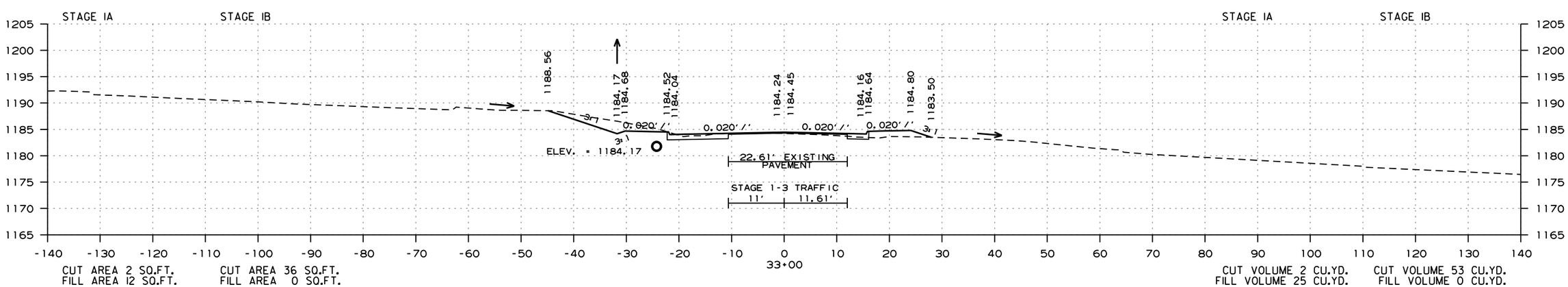
JH41264 7/28/2020
RR090438.DGN

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.		090438	60	69

(2) CROSS SECTIONS





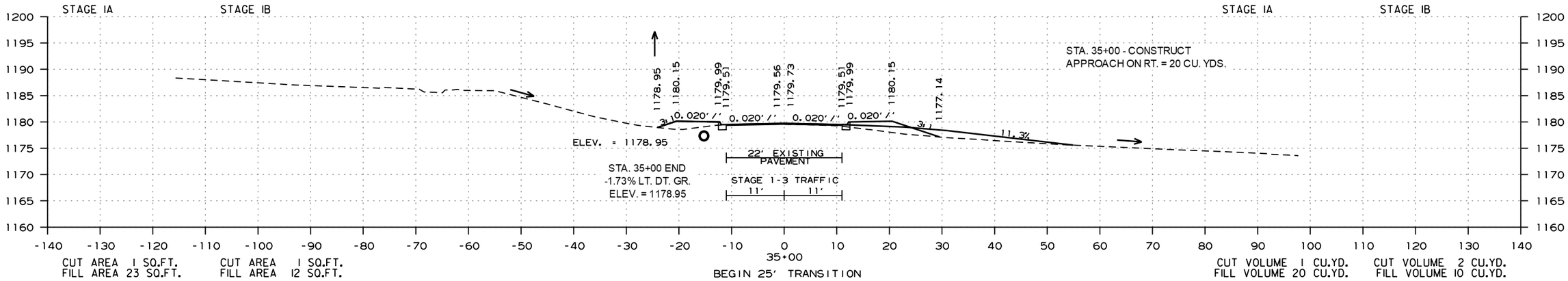


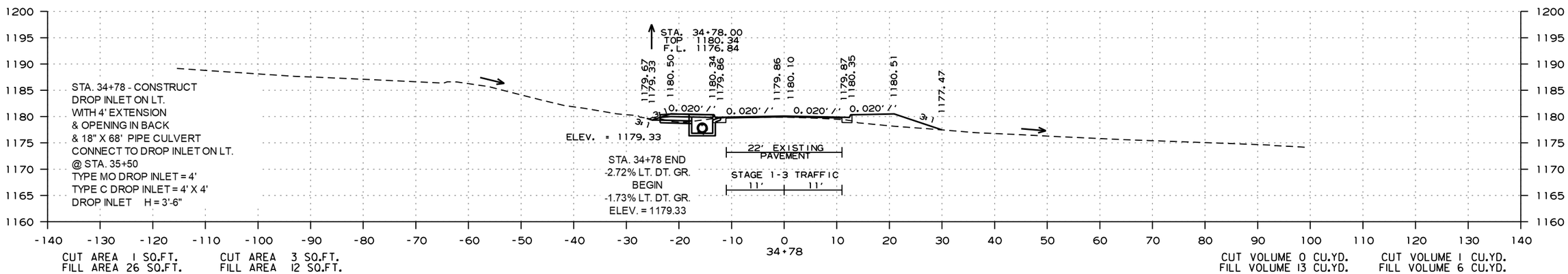
HWY. 43
CROSS SECTION STA. 33+00 TO STA. 34+00

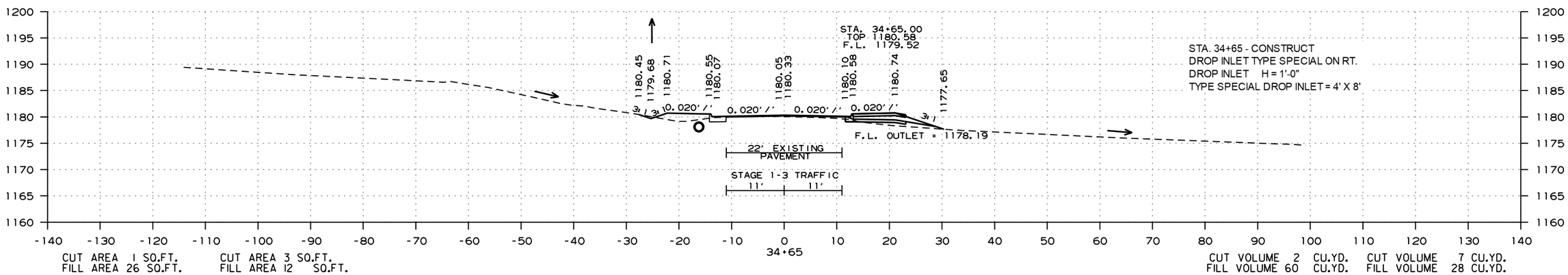
JH41264 7/28/2020
RR090438.DGN

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.		090438	61	69

(2) CROSS SECTIONS





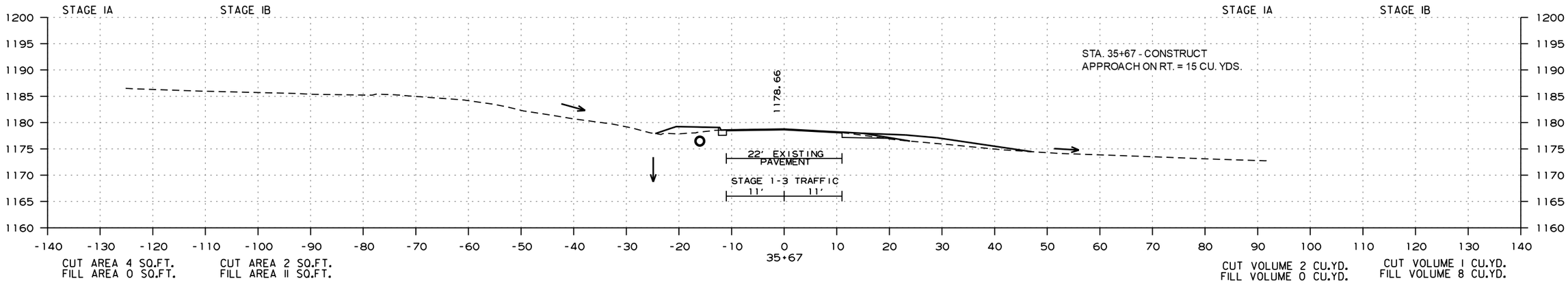


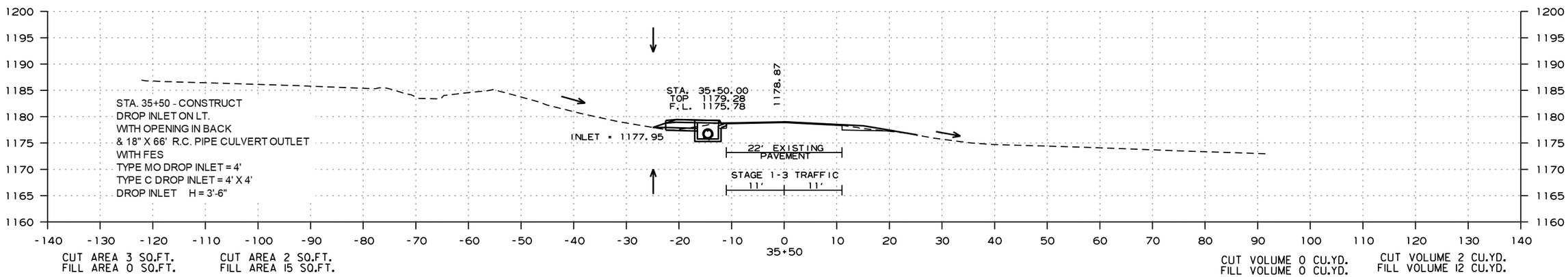
HWY. 43
CROSS SECTION STA. 34+65 TO STA. 35+00

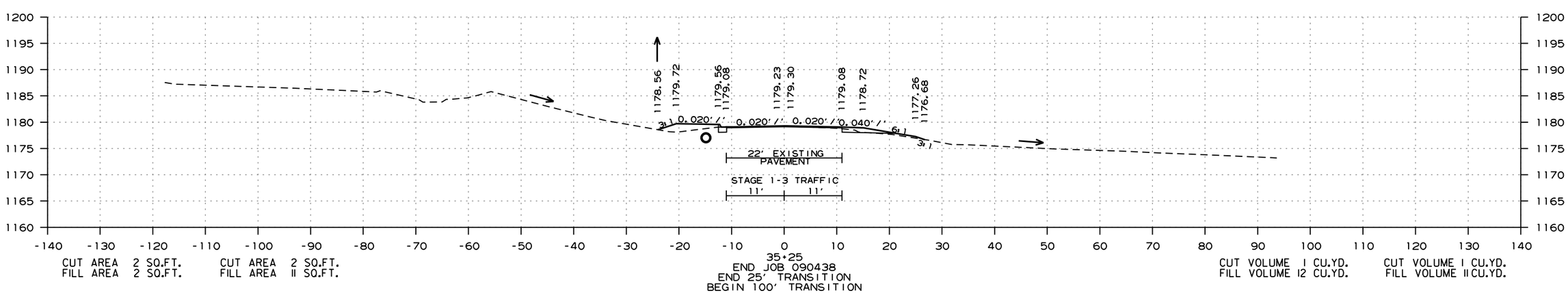
JH41264 7/28/2020
RR090438.DGN

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.		090438	62	69

(2) CROSS SECTIONS





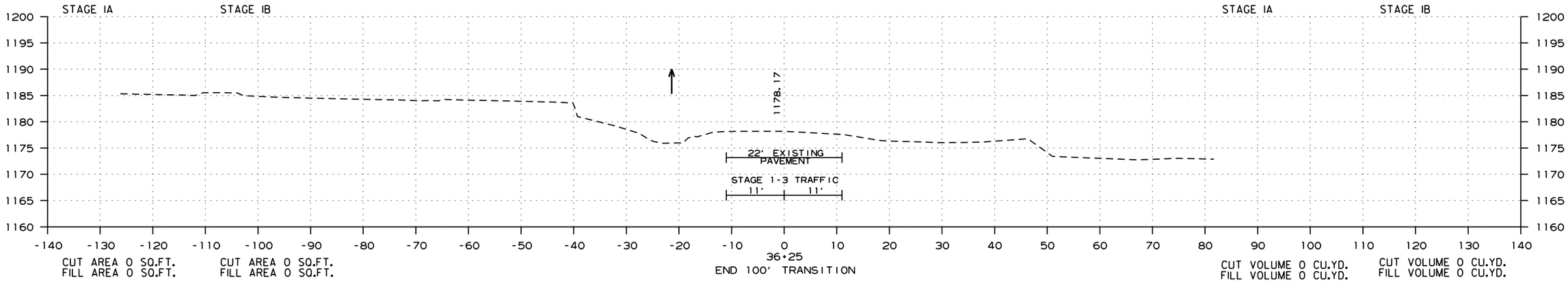


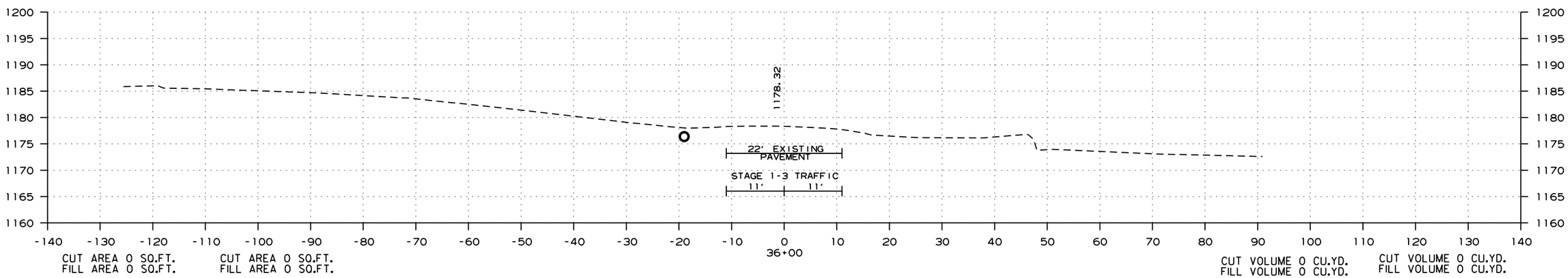
HWY. 43
CROSS SECTION STA. 35+25 TO STA. 35+67

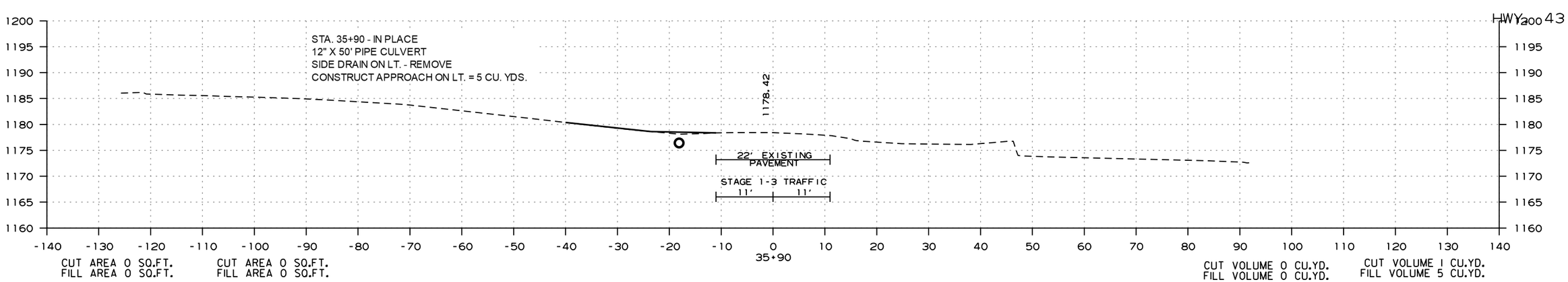
JH41264 7/28/2020
RR090438.DGN

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.		090438	63	69

(2) CROSS SECTIONS





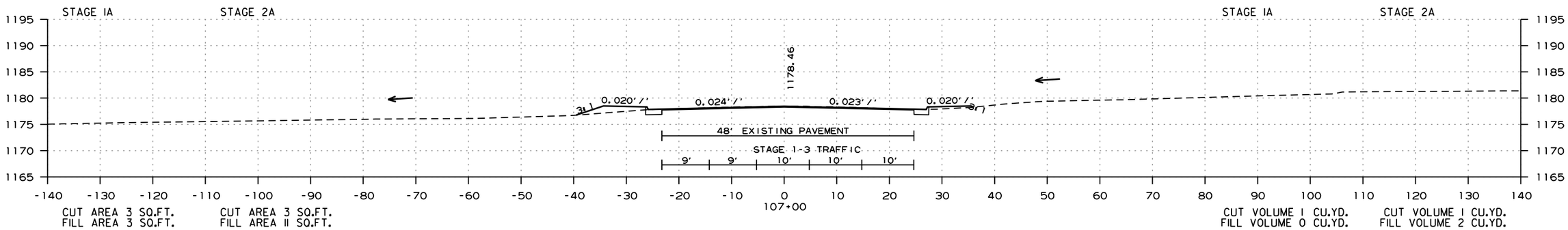


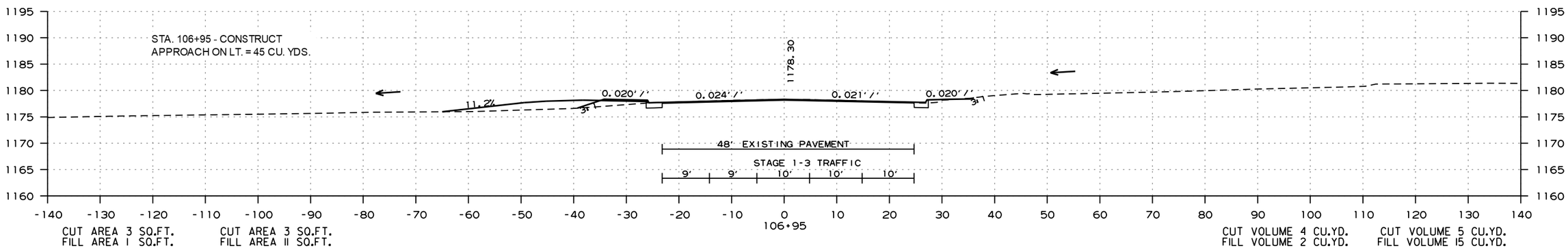
CROSS SECTION STA. 35+90 TO STA. 36+25

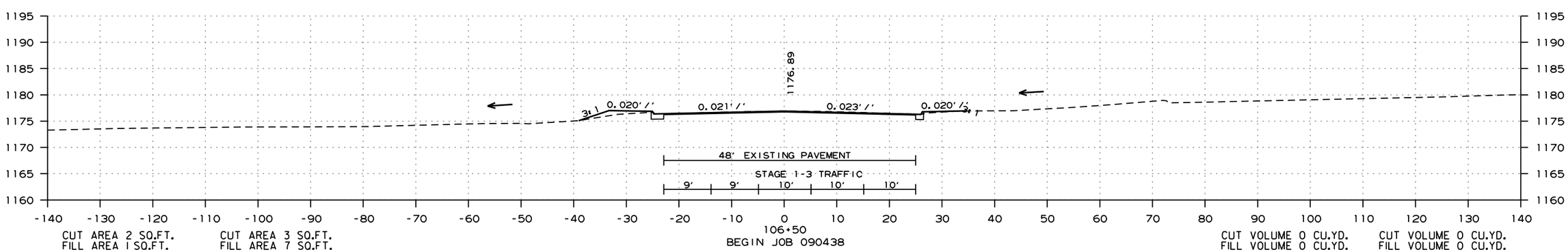
JH41264 7/28/2020
RR090438.DGN

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.		090438	64	69

(2) CROSS SECTIONS







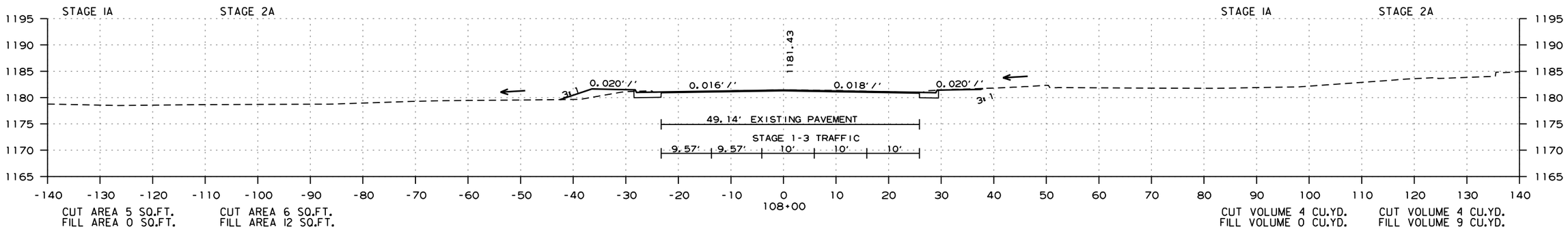
HWY. 65
CROSS SECTION STA. 106+50 TO STA. 107+00

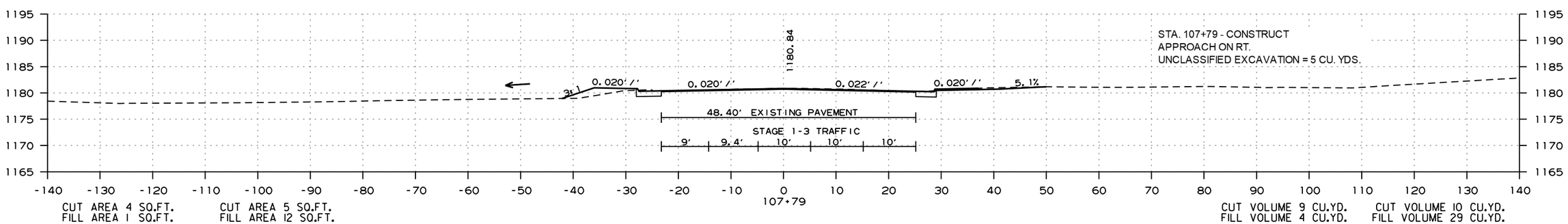
7/28/2020

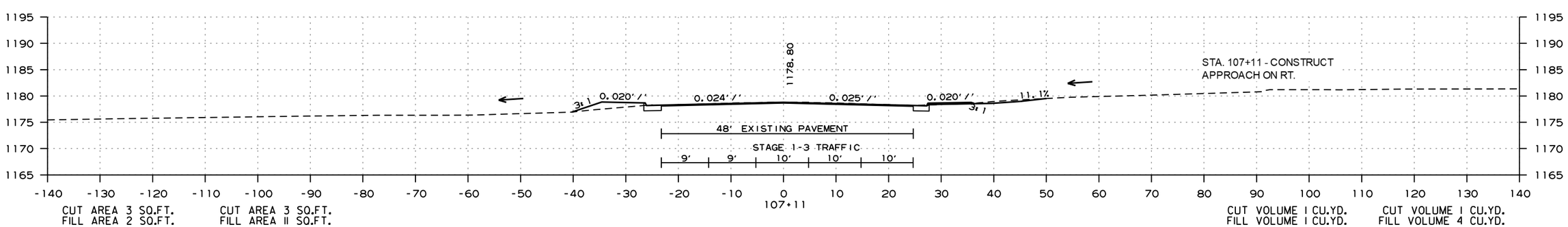
RR090438.DGN

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.		090438	65	69

(2) CROSS SECTIONS







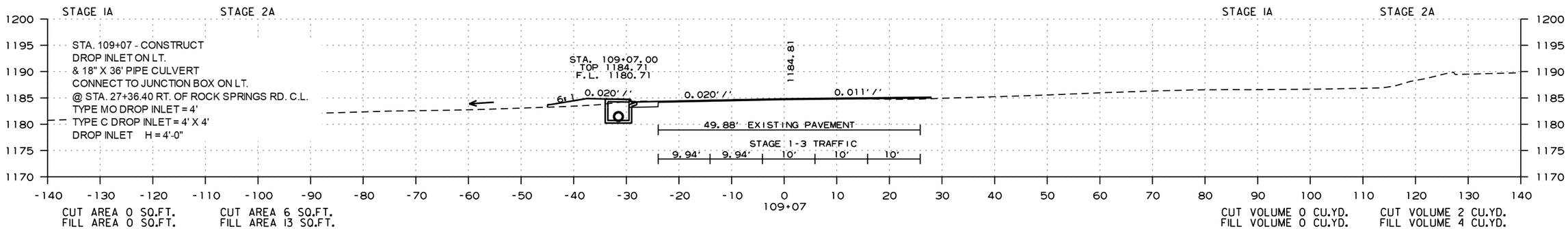
HWY. 65
CROSS SECTION STA. 107+11 TO STA. 108+00

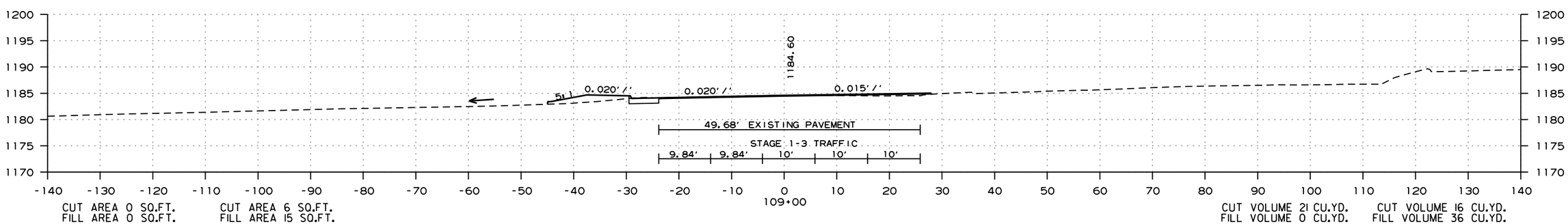
7/28/2020

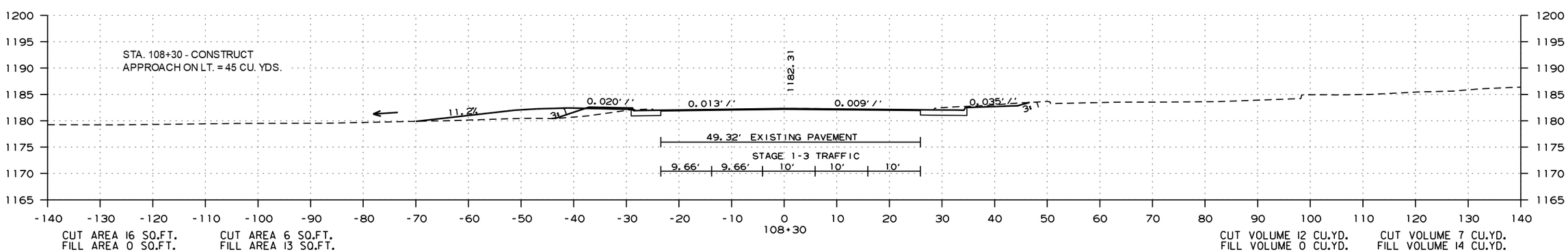
RR090438.DGN

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.		090438	66	69

(2) CROSS SECTIONS







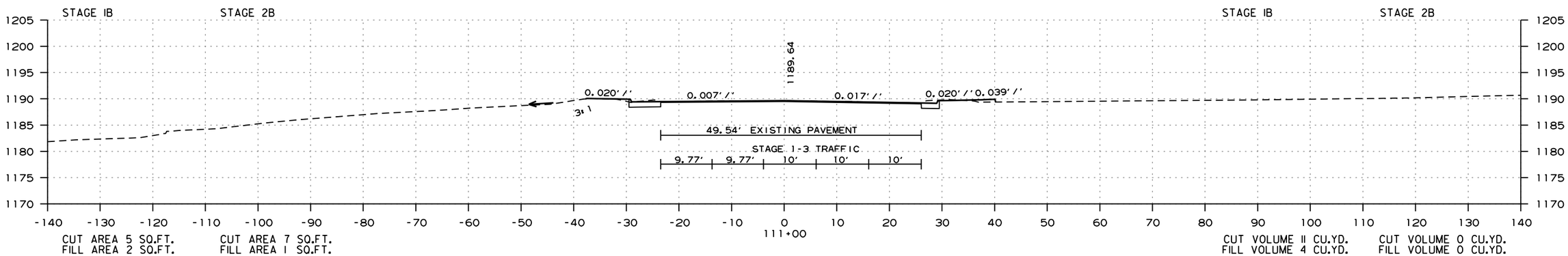
HWY. 65
CROSS SECTION STA. 108+30 TO STA. 109+07

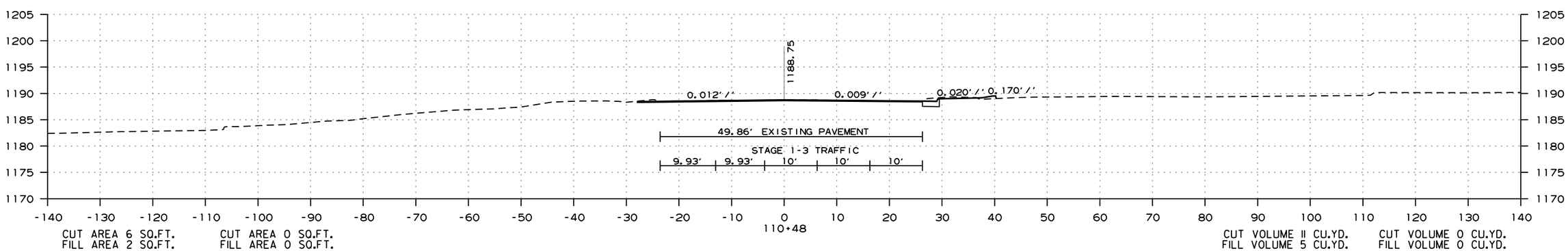
7/28/2020

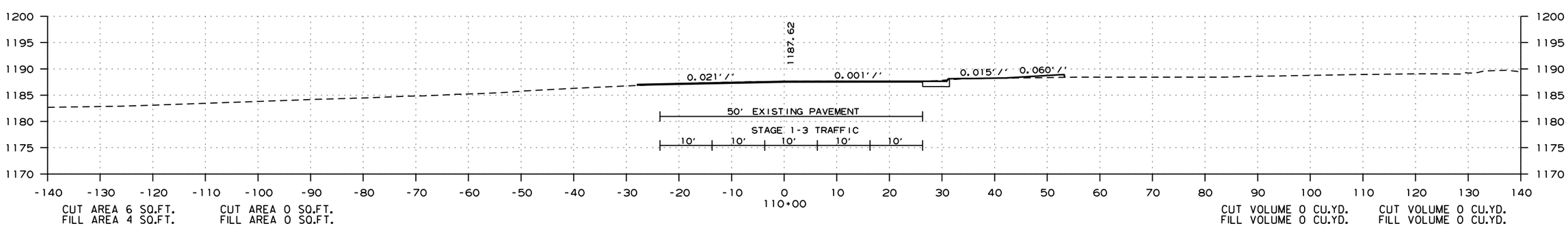
RR090438.DGN

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.		090438	67	69

(2) CROSS SECTIONS





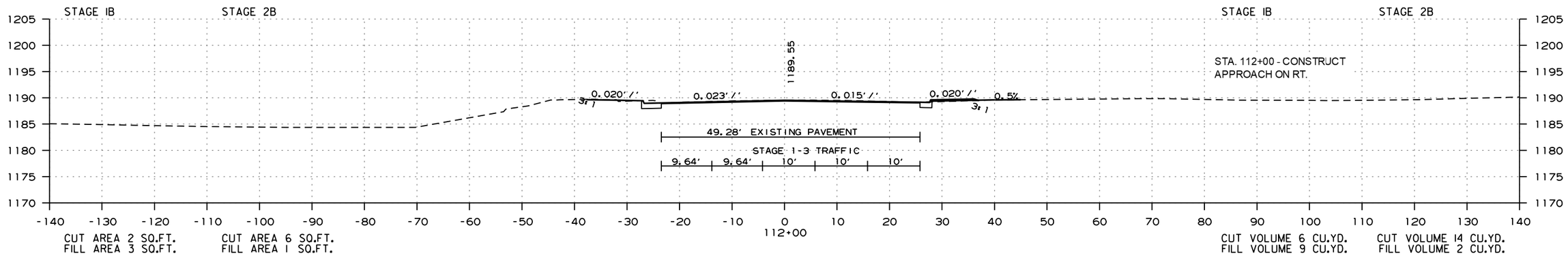


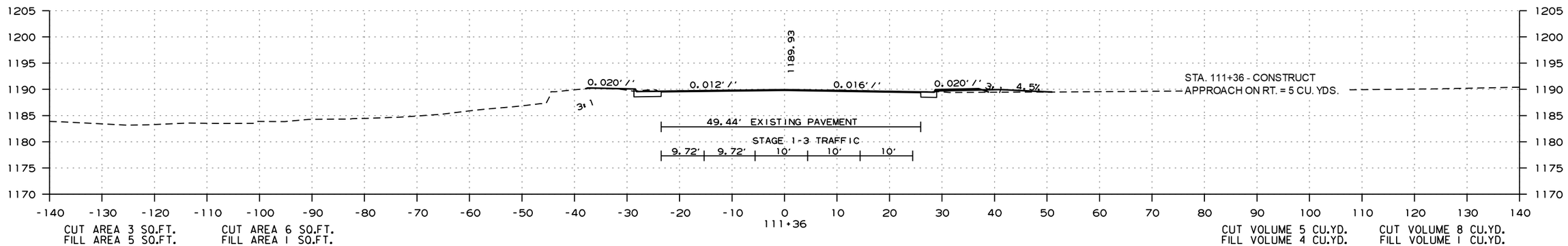
HWY. 65
CROSS SECTION STA. 110+00 TO STA. 111+00

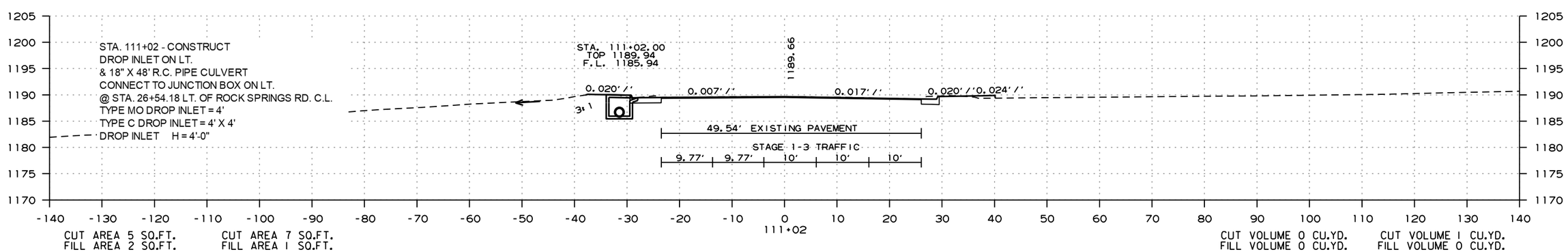
JH41264 7/28/2020
RR0904.38.DGN

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.		090438	68	69

(2) CROSS SECTIONS





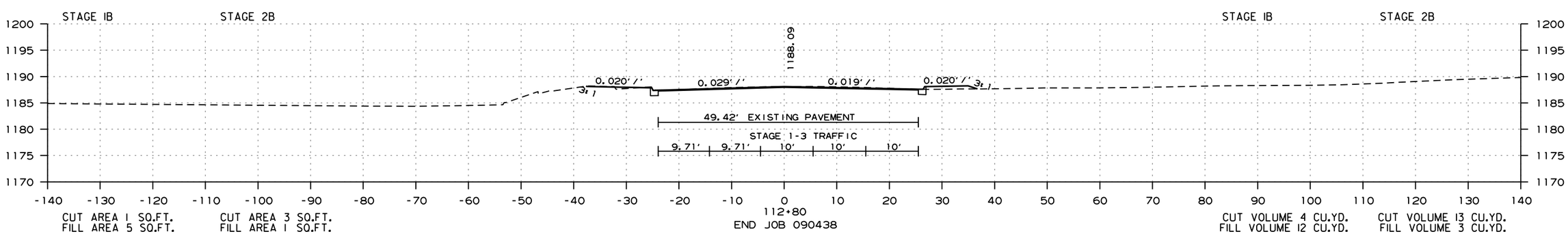


HWY. 65
CROSS SECTION STA. 111+02 TO STA. 112+00

JH41264 7/28/2020
RR090438.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.		090438	69	69

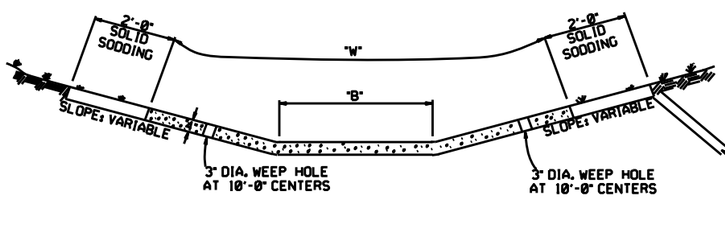
(2) CROSS SECTIONS



HWY. 65
CROSS SECTION STA. 112+80 TO STA. 112+80

JH41264 7/28/2020
RR0904.38.DGN

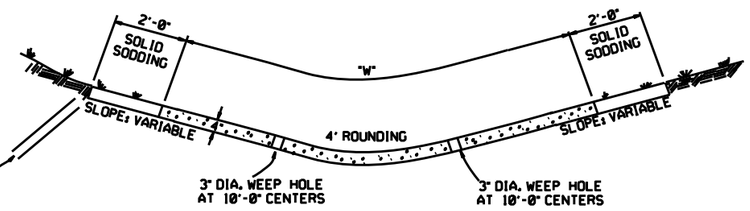
REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



TYPE A

EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

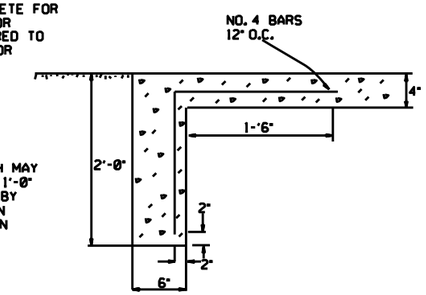
REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



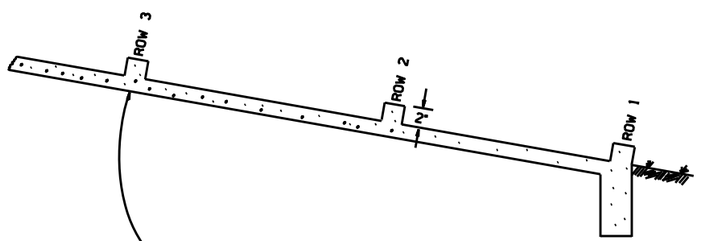
TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

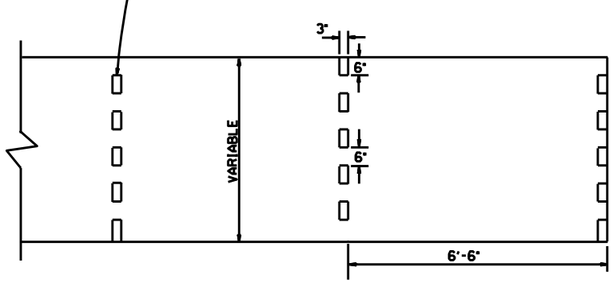


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

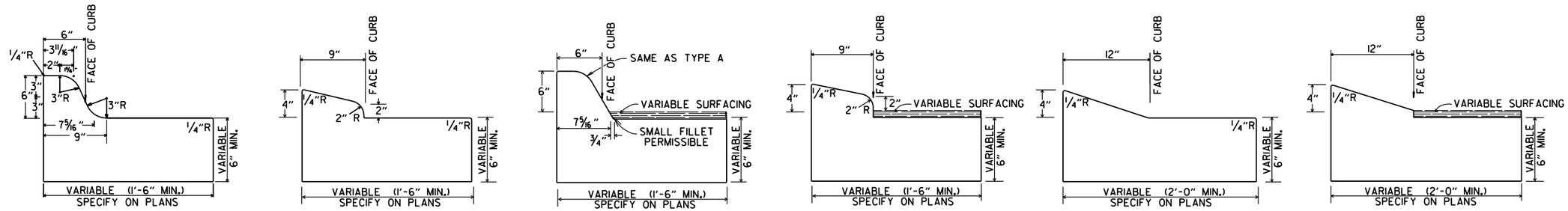
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILMED
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

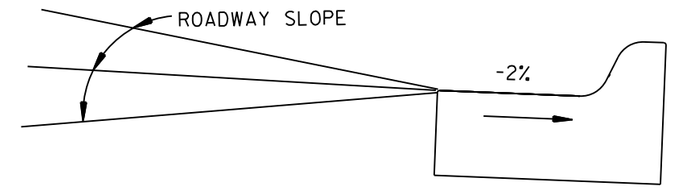
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

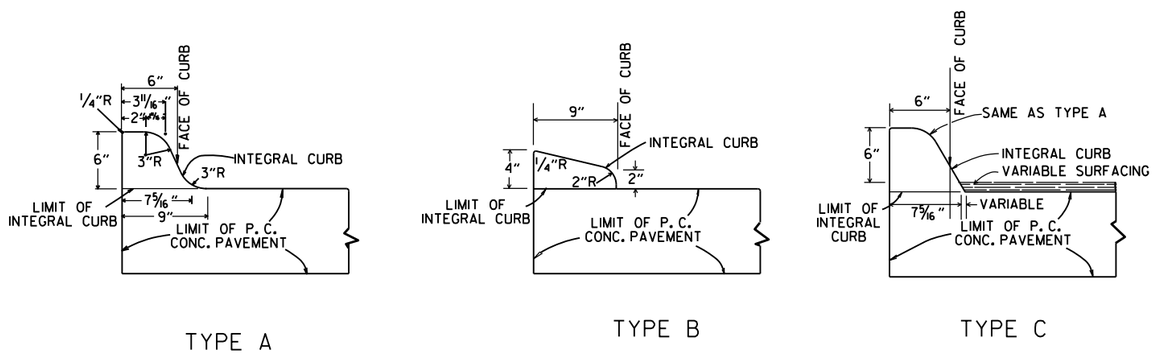


CONCRETE COMBINATION CURB AND GUTTER

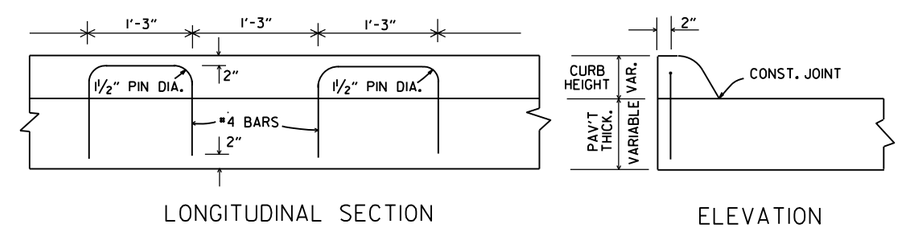


DETAIL OF GUTTER SLOPE

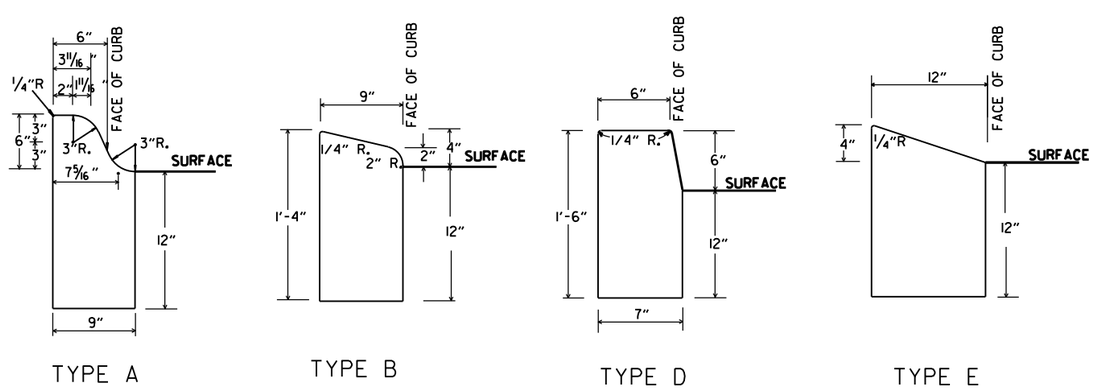
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



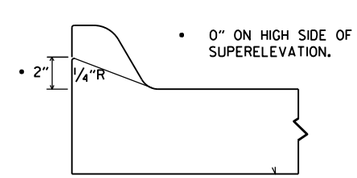
INTEGRAL CURB



ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



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.

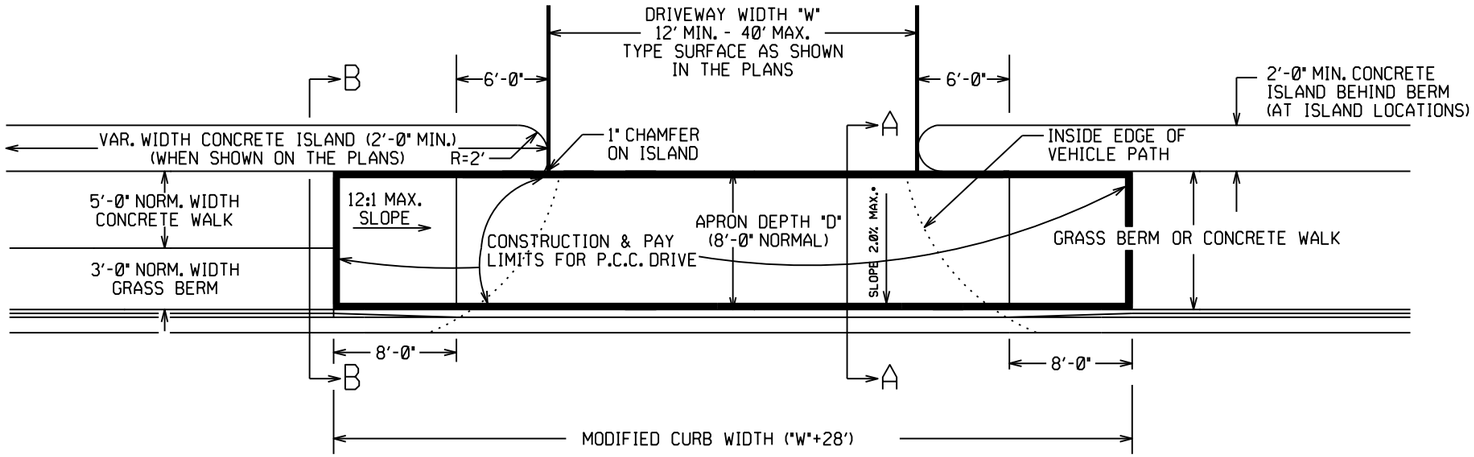
DETAILS OF MODIFIED CURB

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

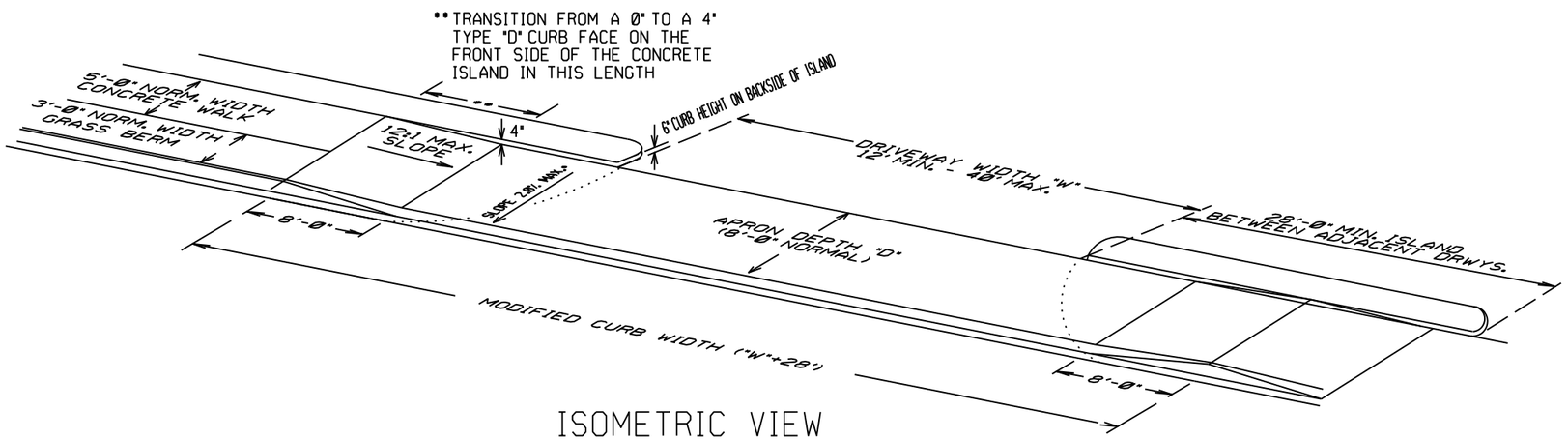
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

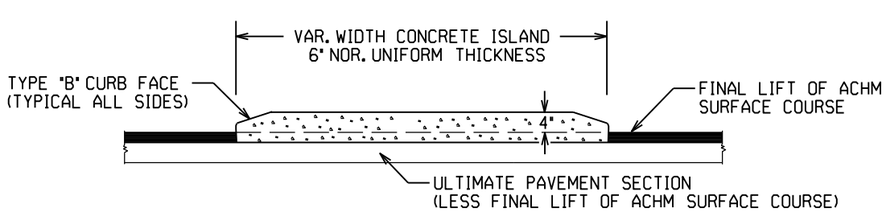
STANDARD DRAWING CG-1

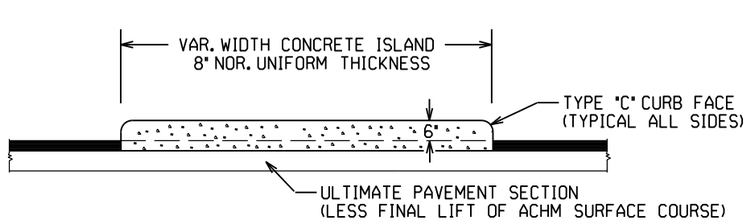


PLAN VIEW



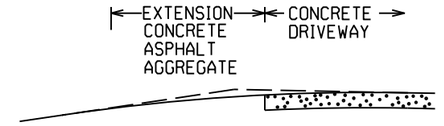
ISOMETRIC VIEW





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

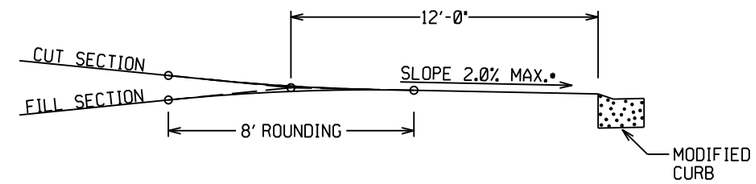
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

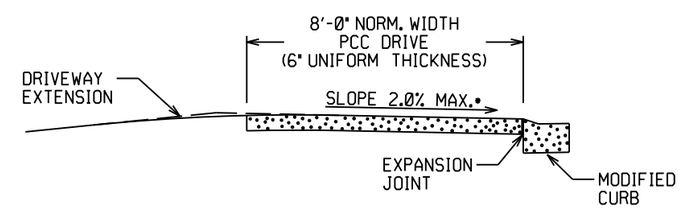
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

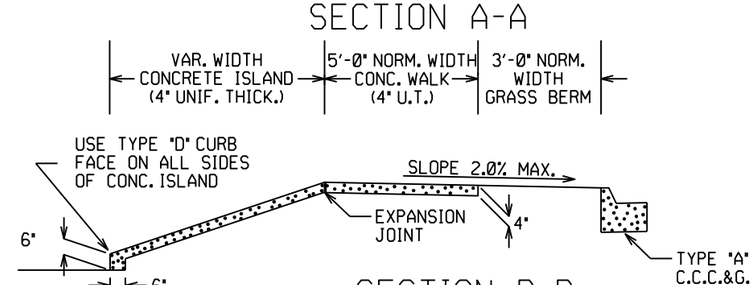


DRIVEWAY VERTICAL ALIGNMENT DETAILS

- NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



SECTION A-A



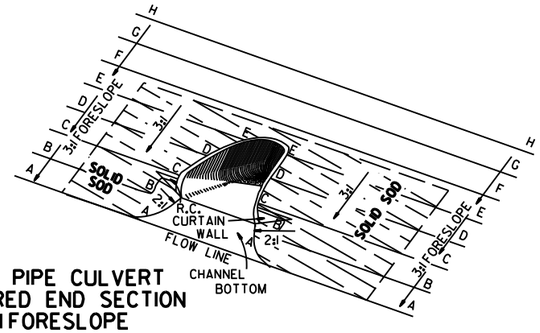
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-07-19		REVISED WALK DETAILS
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

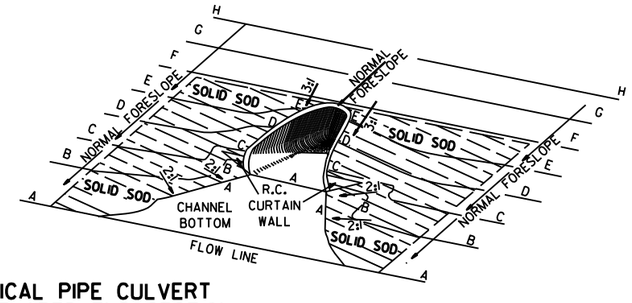
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

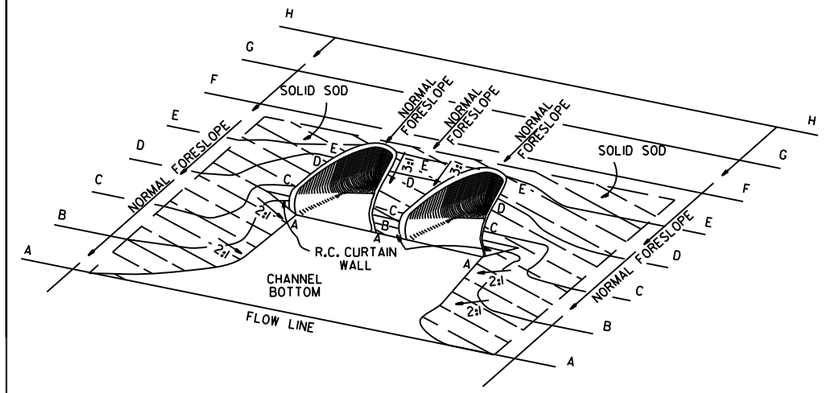
STANDARD DRAWING DR-1



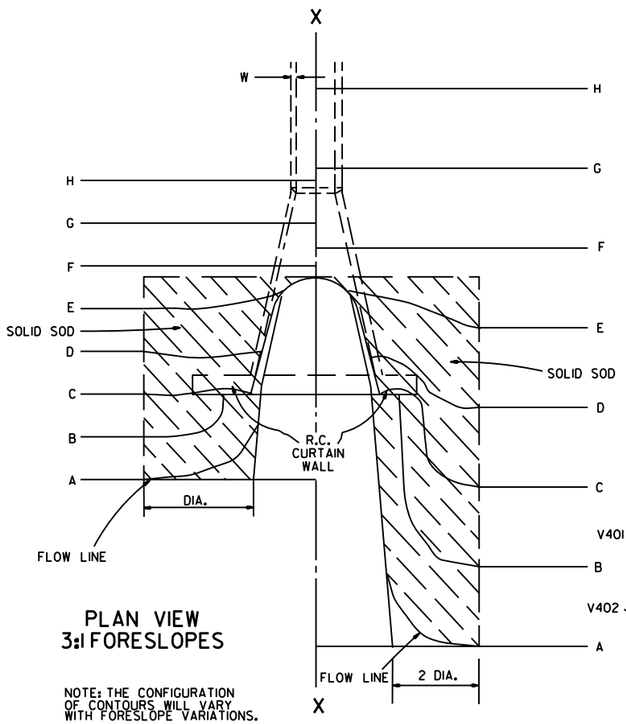
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

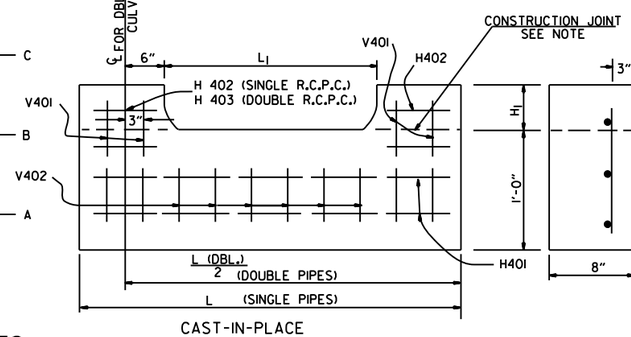
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

REINFORCING STEEL SCHEDULE

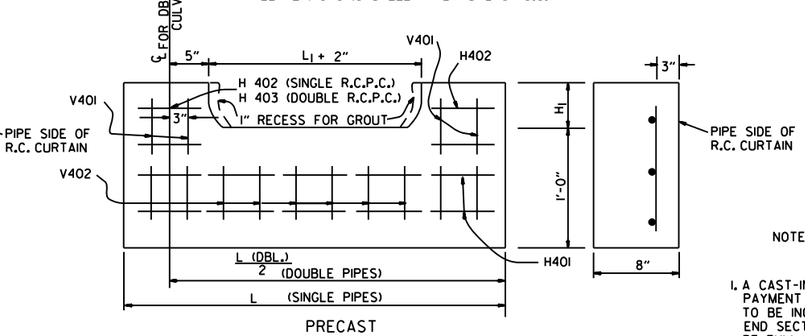
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	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.



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

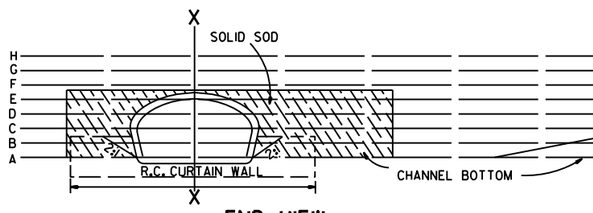
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	SINGLE R.C.P.C. 4:1	SINGLE R.C.P.C. 6:1	DOUBLE R.C.P.C. 3:1	DOUBLE R.C.P.C. 4:1	DOUBLE R.C.P.C. 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

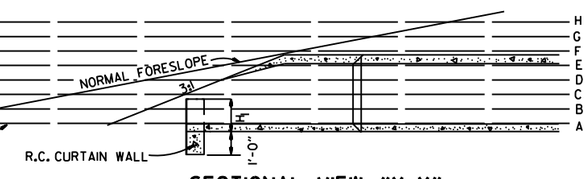
NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

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 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW



SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11- 3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

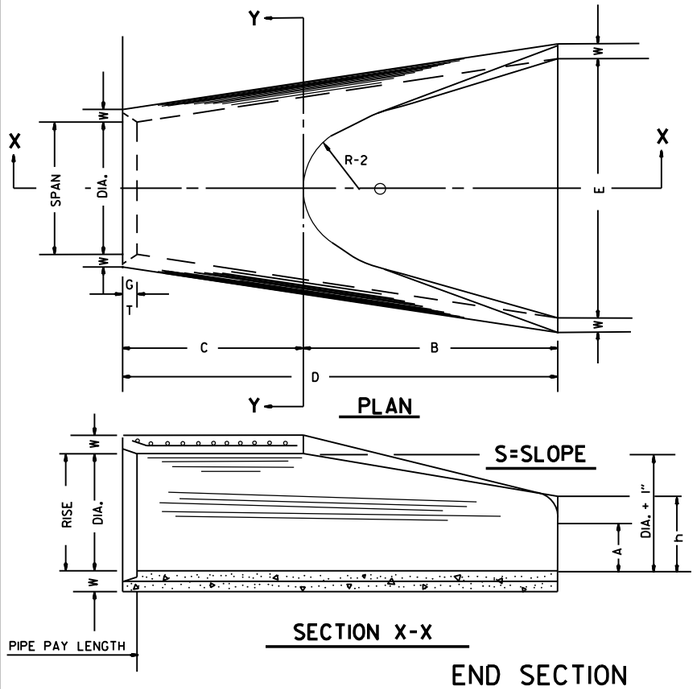


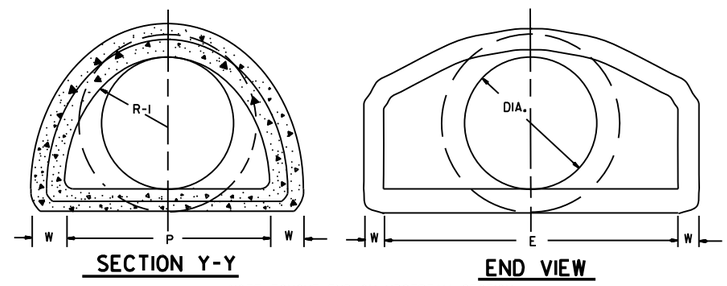
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅞"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

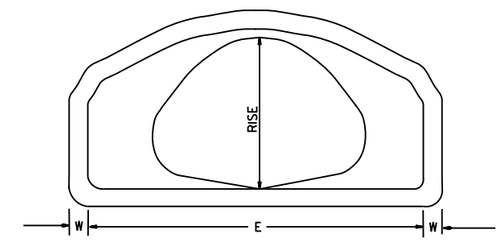
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
INCHES														
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 11/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2¼:1

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

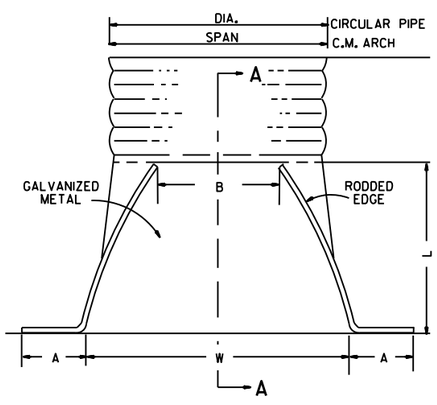


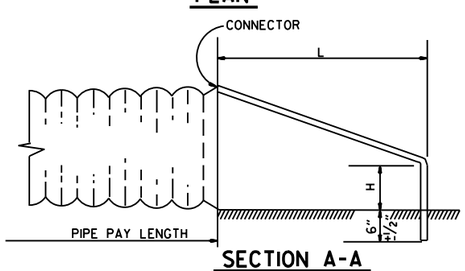
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

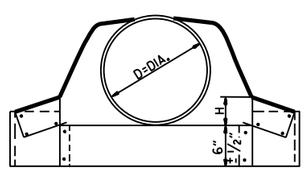


END VIEW
CONCRETE ARCH PIPE

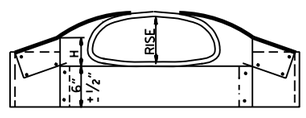
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS







CIRCULAR PIPE



C.M. ARCH PIPE

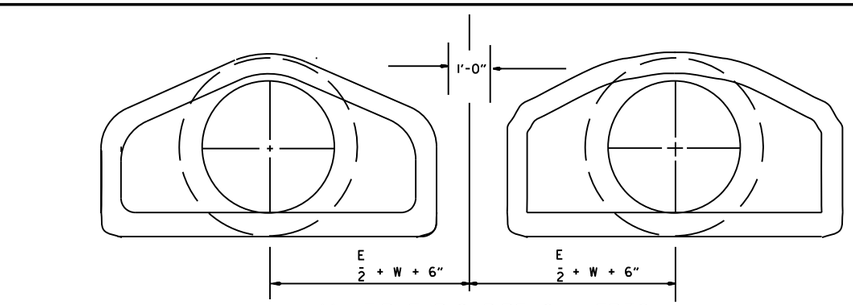
CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1

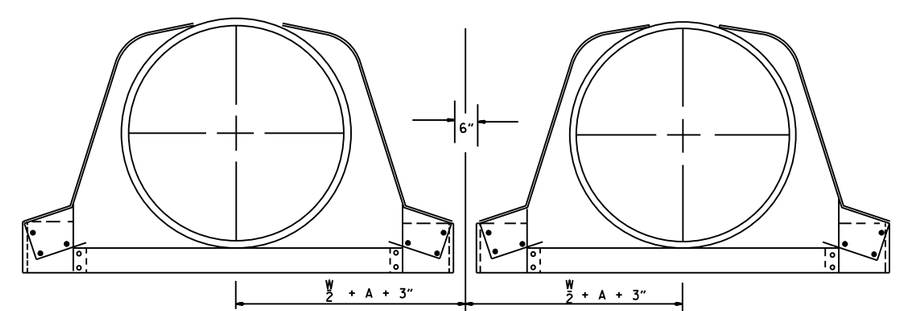
C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

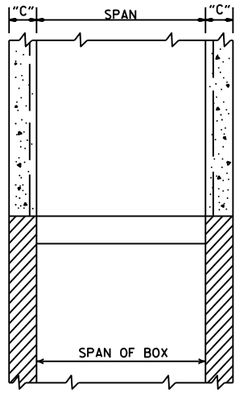
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

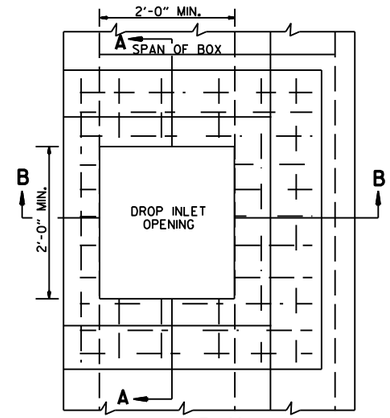
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

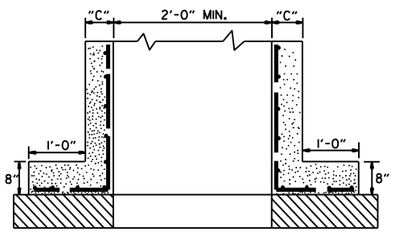
STANDARD DRAWING FES-2



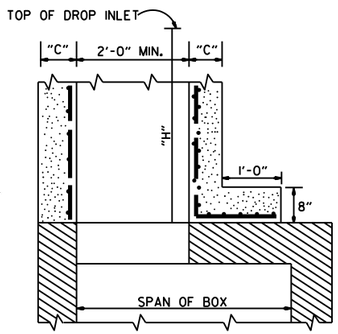
SECTION B-B



PLAN

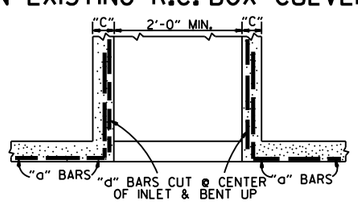


SECTION A-A

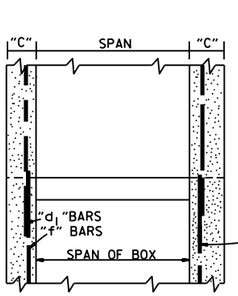


SECTION B-B

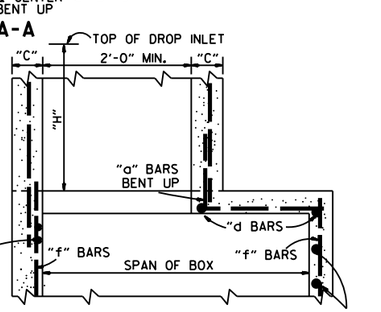
METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



SECTION A-A



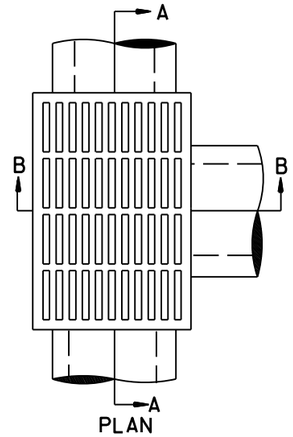
SECTION B-B



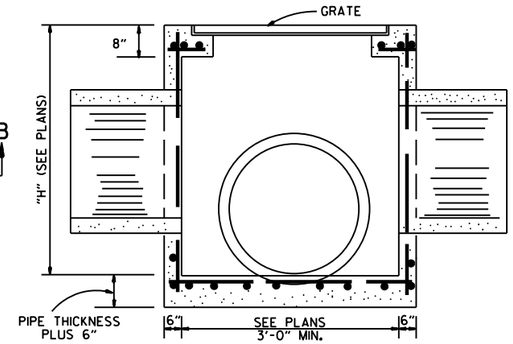
SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

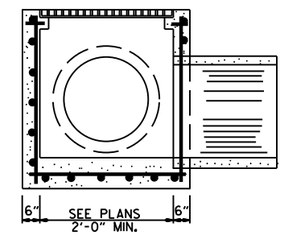


PLAN



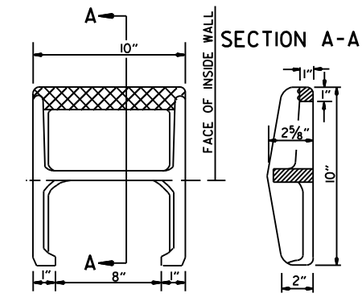
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



SECTION B-B

DROP INLET (TYPE E)



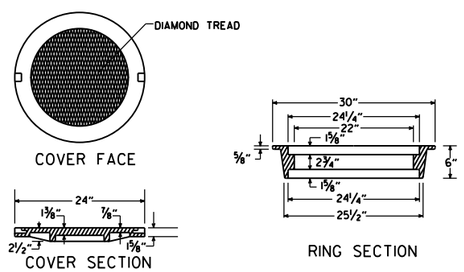
SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

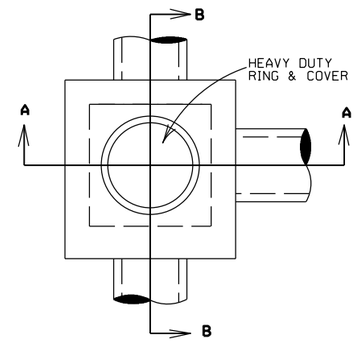
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

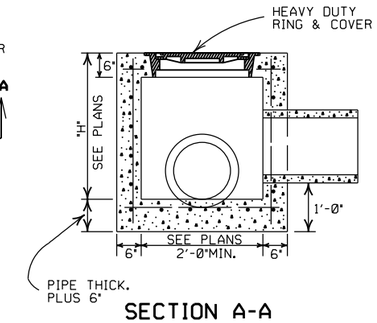


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER

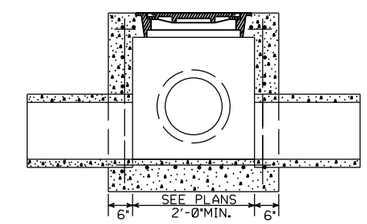


PLAN



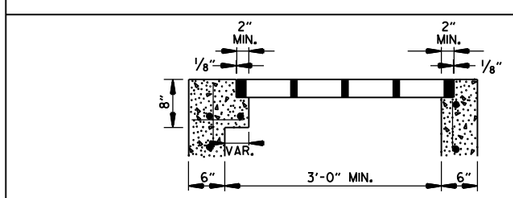
SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

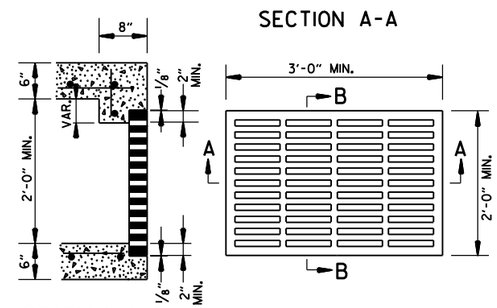


SECTION B-B

JUNCTION BOX (TYPE E)



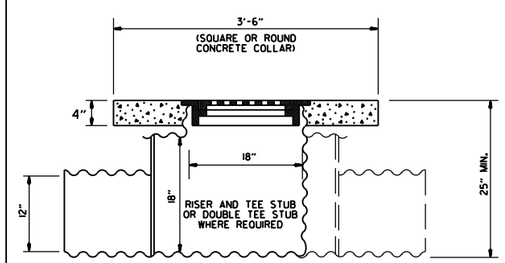
SECTION A-A



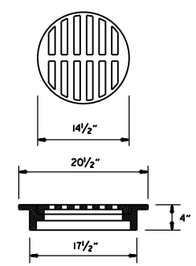
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".



USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

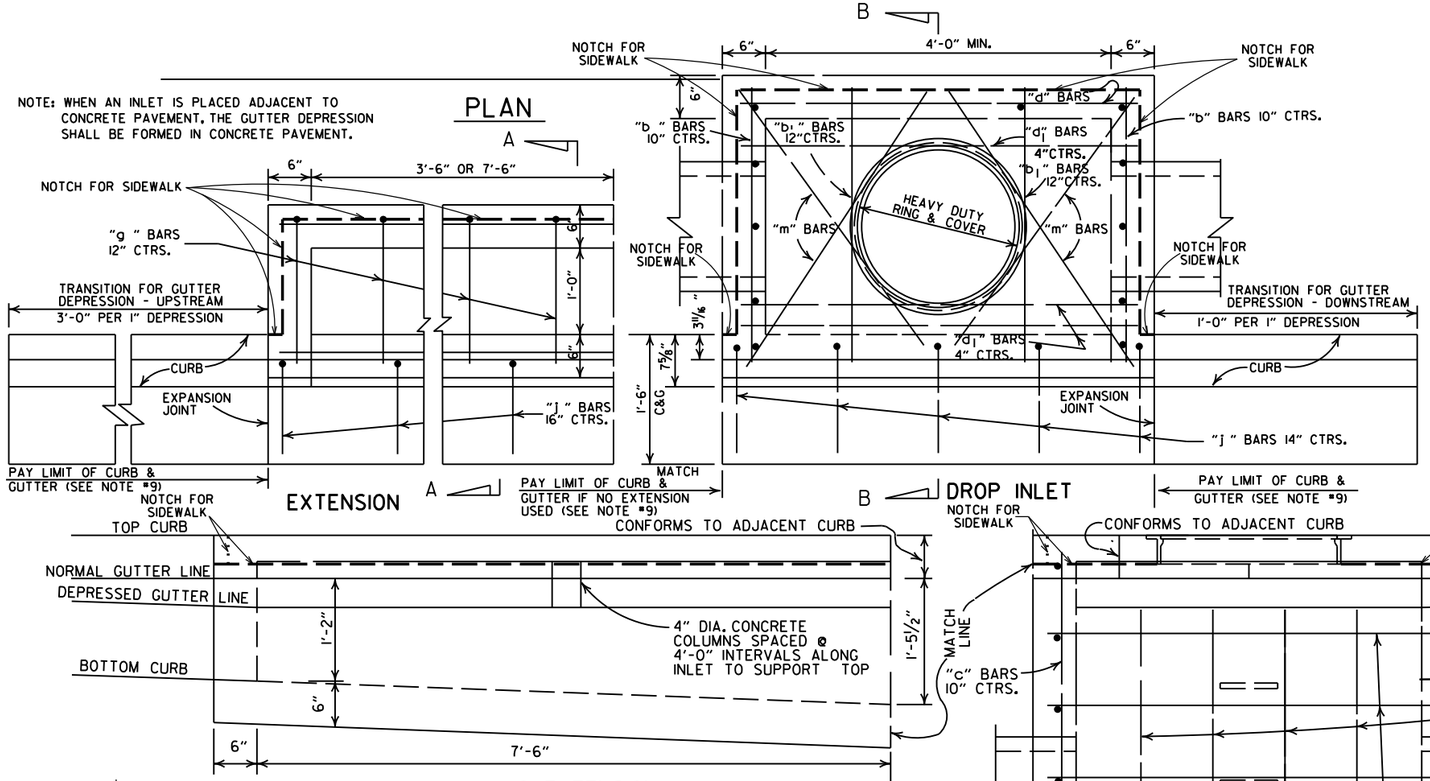
DATE REV.	REVISION	DATE FILMED
11-16-01	ADDED NOTE 10	
1-12-00	REVISED HEAVY DUTY RING & COVER	
7-02-98	CHANGED GRATE DETAIL. DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97	ADDED DIMENSION TO TYPE IV-A	
10-18-96	ADDED DETAIL OF YARD DRAIN	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

NOTE: WHEN AN INLET IS PLACED ADJACENT TO CONCRETE PAVEMENT, THE GUTTER DEPRESSION SHALL BE FORMED IN CONCRETE PAVEMENT.



4'-0" LENGTH DROP INLET / DROP INLET EXTENSION

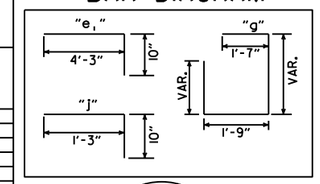
PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL	4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS	CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22	0.58	38	0.87	72
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	DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
42"	4'-4"	2.95	250	0.34	30				
48"	4'-10"	3.21	265	0.36	32				
						0.04	3		

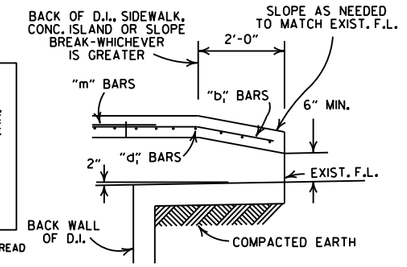
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

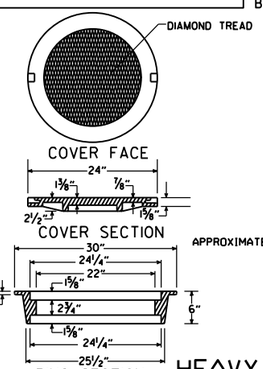
BAR DIAGRAM





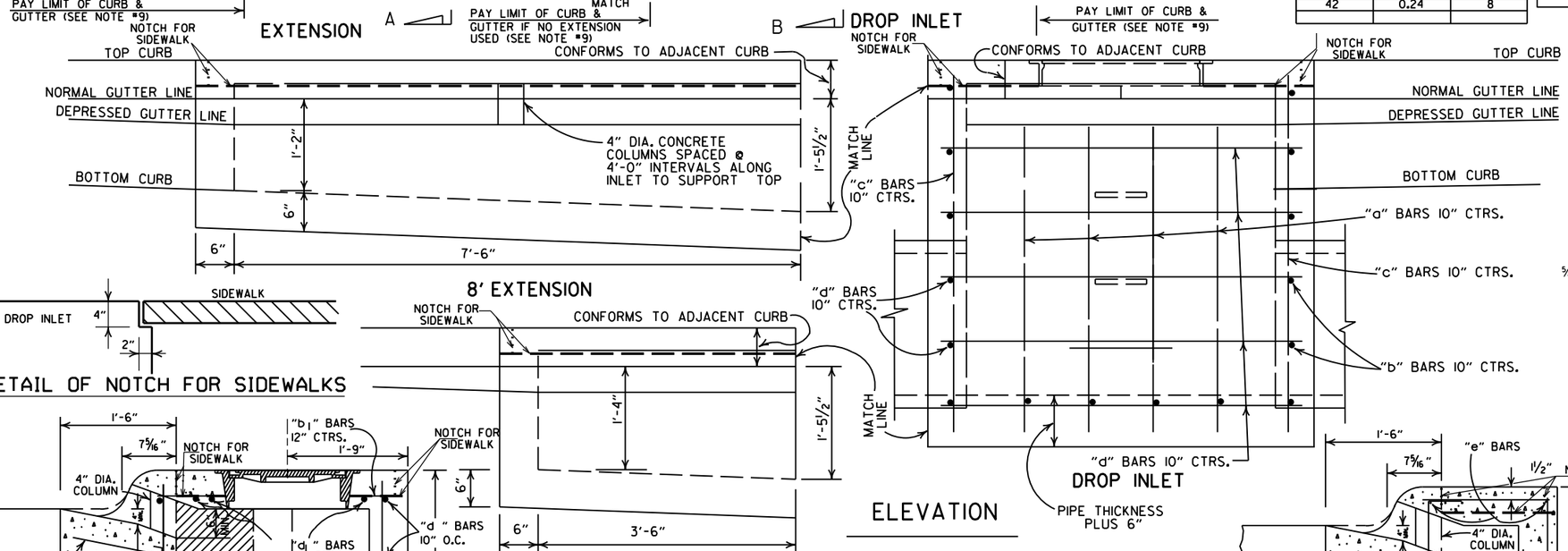
BACK OPENING

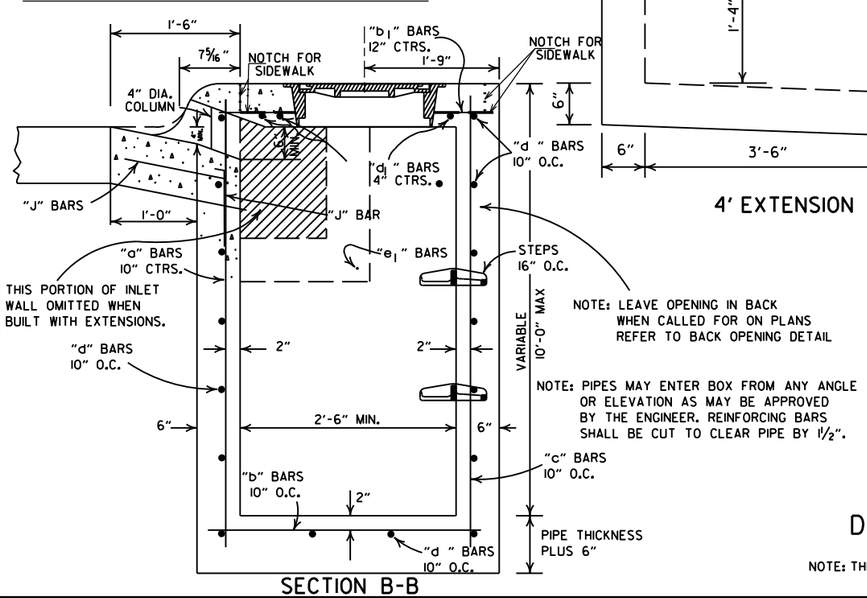
WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).



APPROXIMATE TOTAL WEIGHT = 333 LBS.

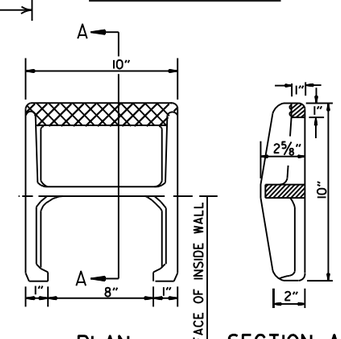
HEAVY DUTY RING & COVER





NOTE: LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

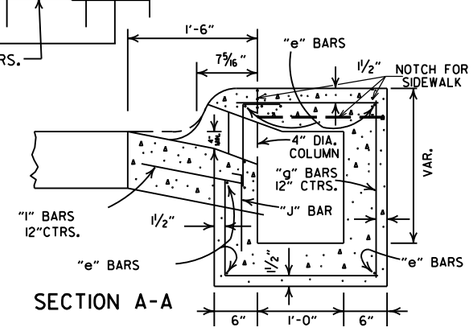
NOTE: PIPES MAY ENTER BOX FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER. REINFORCING BARS SHALL BE CUT TO CLEAR PIPE BY 1½".



DETAIL OF STEP FOR DROP INLET

APPROX. WEIGHT = 11 LBS. (CAST IRON)

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.



GENERAL NOTES:

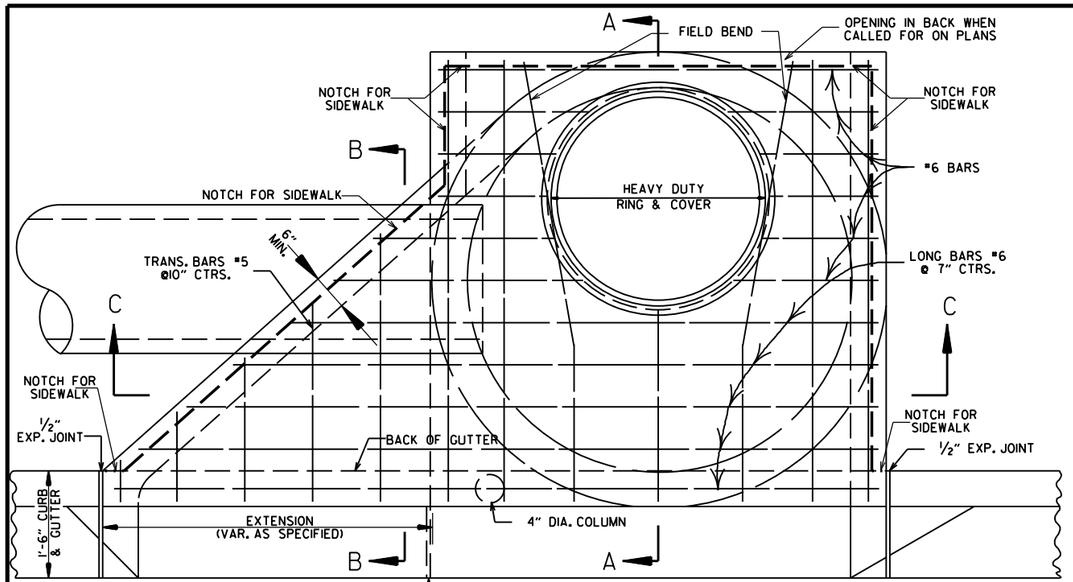
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-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"×2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

DATE REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

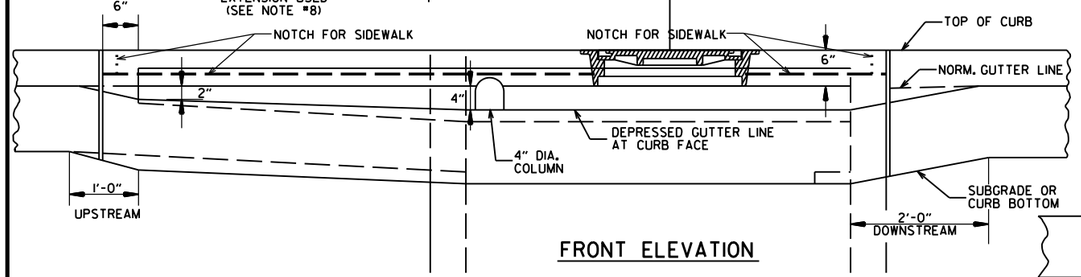
DETAILS OF DROP INLETS (TYPE C)

STANDARD DRAWING FPC-9E

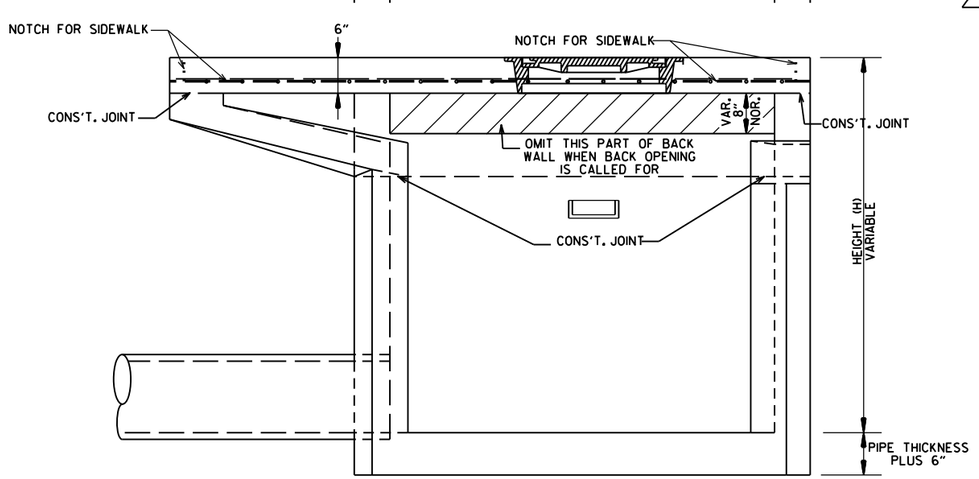


PLAN - W/SINGLE EXTENSION

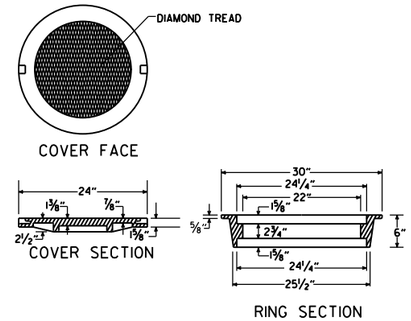
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.



FRONT ELEVATION



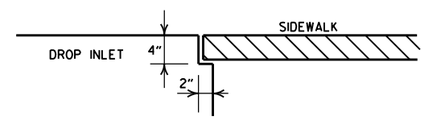
SECTION C-C



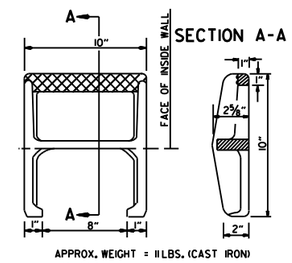
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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

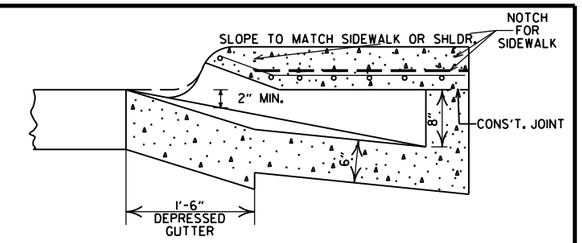


APPROX. WEIGHT = 11 LBS. (CAST IRON)

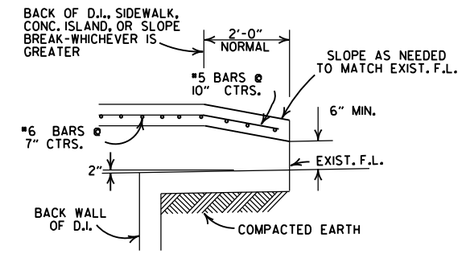
PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



SECTION B-B

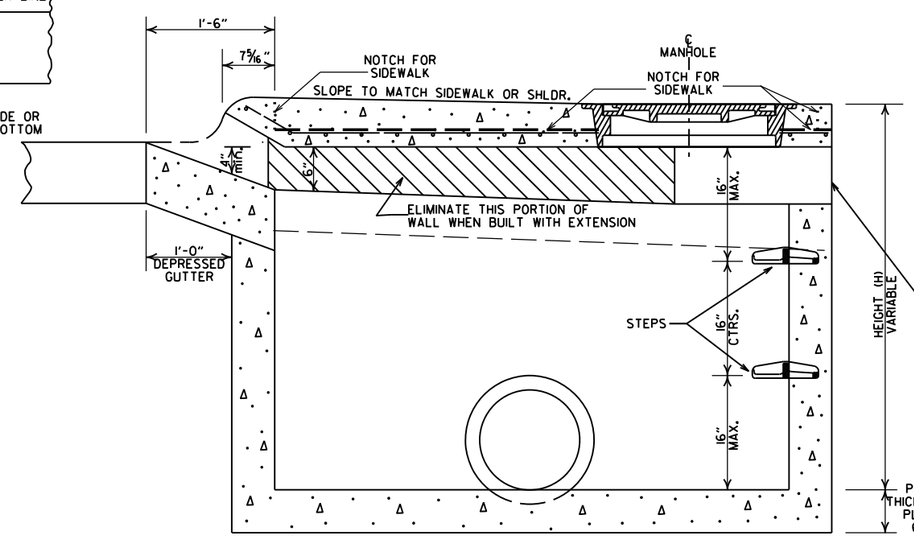


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.



SECTION A-A

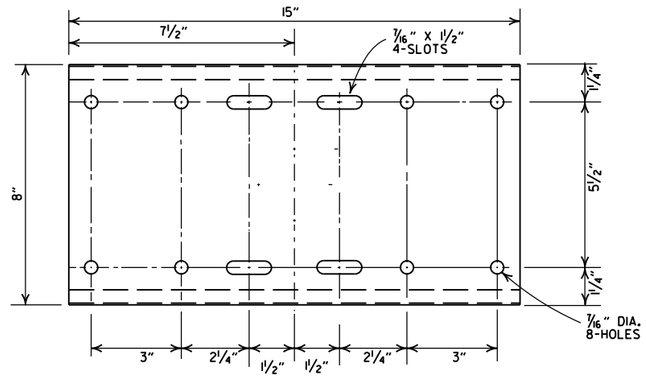
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11, ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
2-2-95	TYPE C TO MO (OPEN. BACK DETAIL)	
11-3-94	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-16-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
3-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-3-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	629-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	4-6-12-87

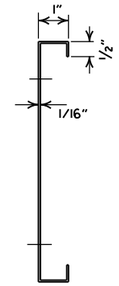
ARKANSAS STATE HIGHWAY COMMISSION

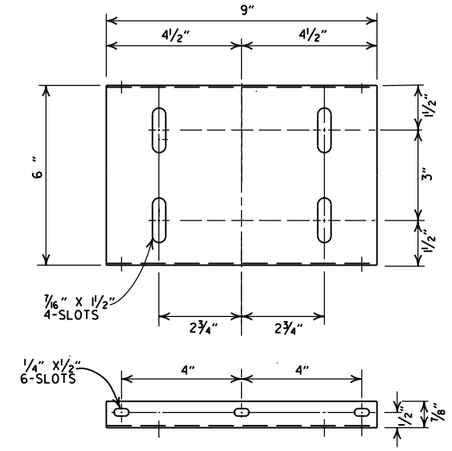
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

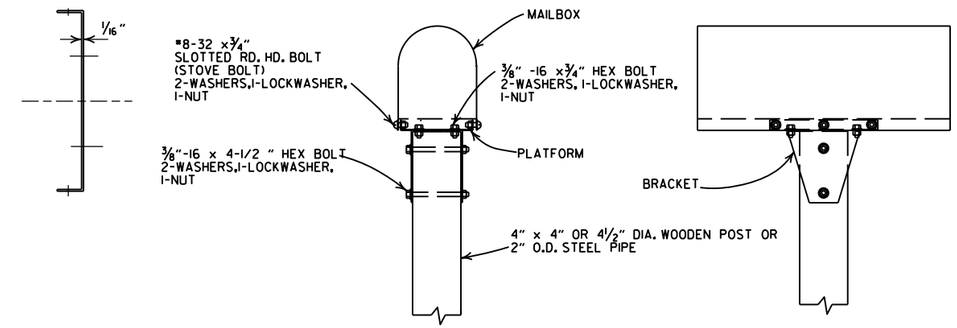


SHELF

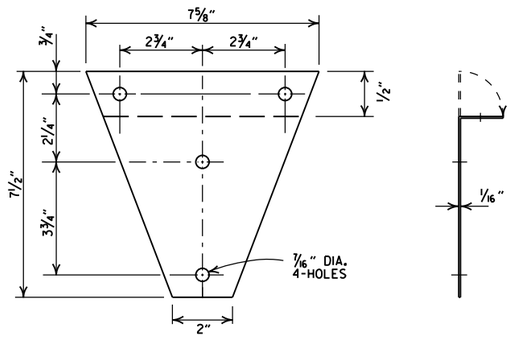




PLATFORM



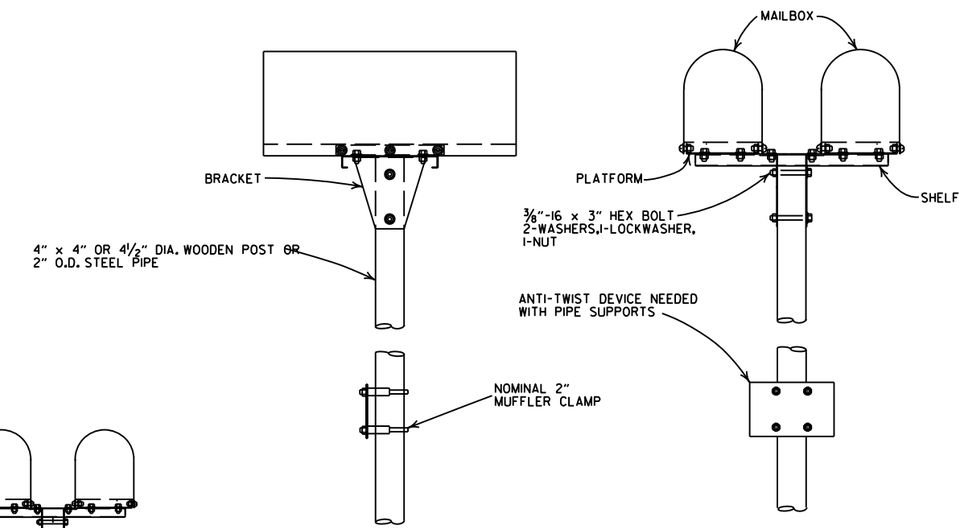
SINGLE INSTALLATION



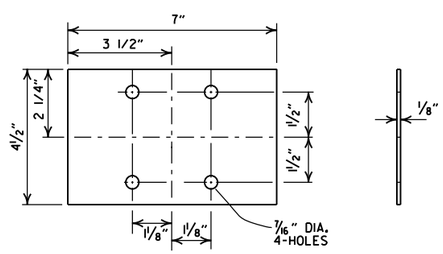
BRACKET

GENERAL NOTES

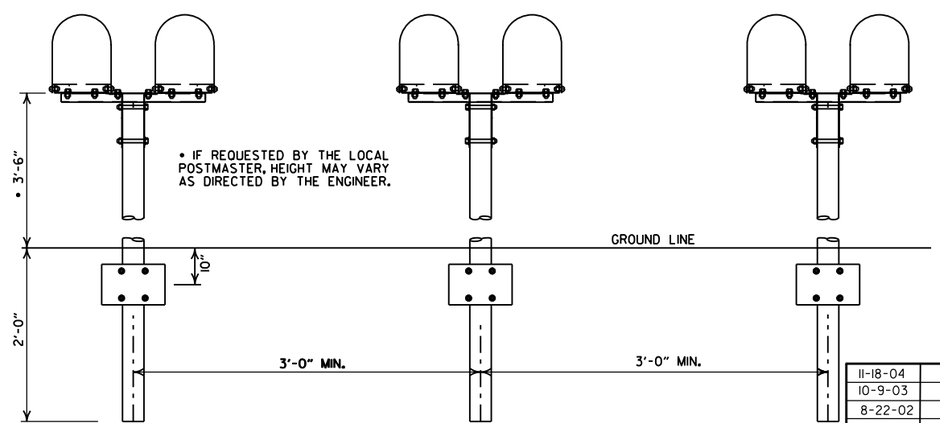
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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 ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



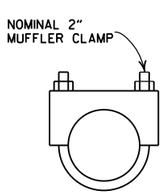
DOUBLE INSTALLATION



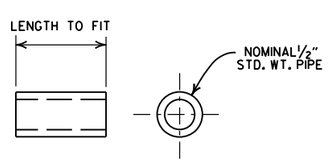
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



SPACER

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	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

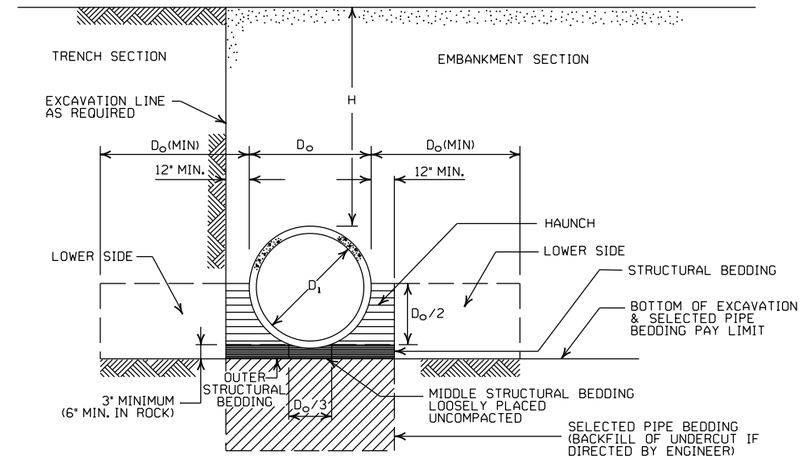
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_O = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

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 DEPARTMENT OF TRANSPORTATION 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

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)
				INSTALLATION		INSTALLATION		INSTALLATION	INSTALLATION
				TYPE 1		TYPE 1		TYPE 1	TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2		15	0.060	2	15
18	21x15	3	0.064	2		15	0.060	2	15
21	24x18	3	0.064	2.25		15	0.060	2.25	15
24	28x20	3	0.064	2.5		15	0.075	2.5	15
30	35x24	3	0.079	3		12	0.075	3	12
36	42x29	3½	0.079	3		12	0.105	3	12
42	49x33	4	0.079	3		12	0.105	3	12
48	57x38	5	0.109	3		13	0.135	3	13
54	64x43	6	0.109	3		14	0.135	3	14
60	71x47	7	0.138	3		15	0.164	3	15
66	77x52	8	0.168	3		15			
72	83x57	9	0.168	3		15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
				INSTALLATION		INSTALLATION			
				TYPE 2	TYPE 1	TYPE 2 TYPE 1			
36	40x31	5	0.079	3	2	12 15			
42	46x36	6	0.079	3	2	13 15			
48	53x41	7	0.079	3	2	13 15			
54	60x46	8	0.079	3	2	13 15			
60	66x51	9	0.079	3	2	13 15			
66	73x55	12	0.079	3	2	15 15			
72	81x59	14	0.079	3	2	15 15			
78	87x63	14	0.079	3	2	15 15			
84	95x67	16	0.109	3	2	15 15			
90	103x71	16	0.109	3	2	15 15			
96	112x75	18	0.109	3	2	15 15			
102	117x79	18	0.109	3	2	15 15			
108	128x83	18	0.138	3	2	15 15			

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

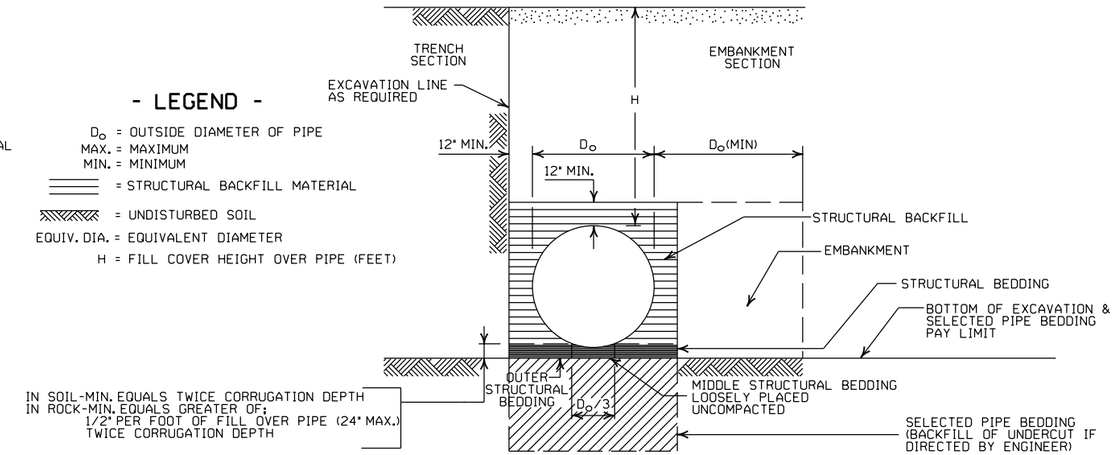
③ SM-3 WILL NOT BE ALLOWED.

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

- 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 DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"× ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" × 1" OR 5" × 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

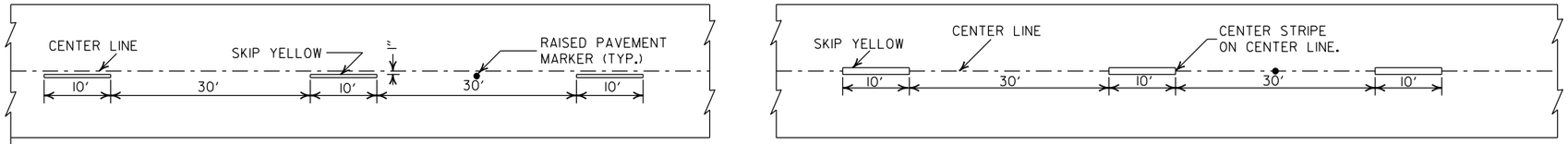
ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

NOTES:

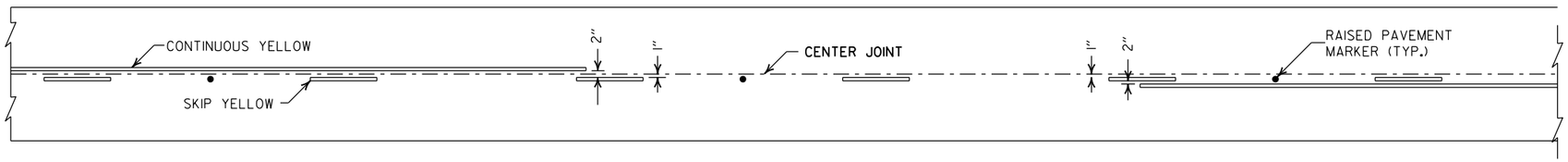
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



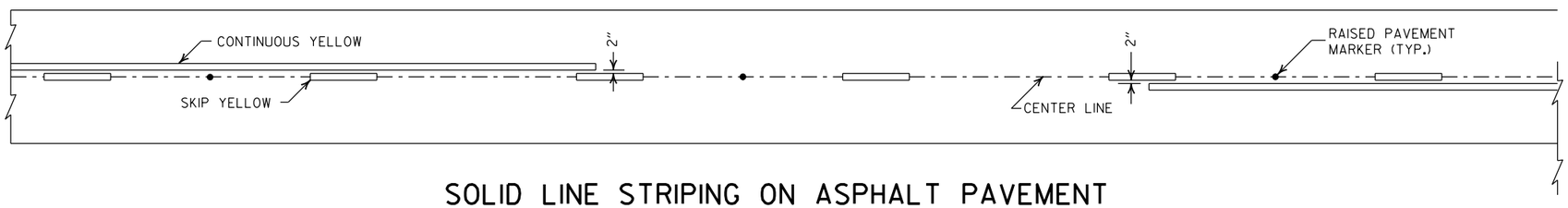
CONCRETE PAVEMENT

ASPHALT PAVEMENT

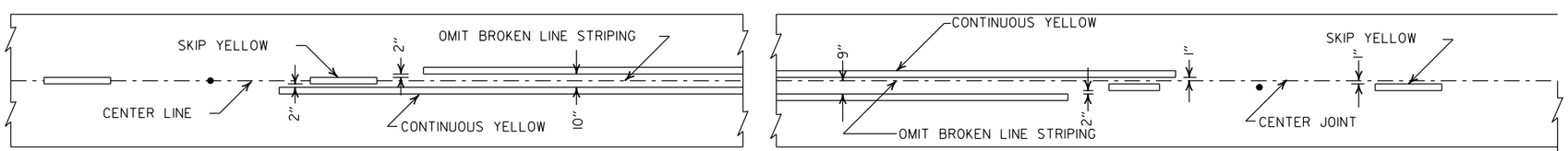
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



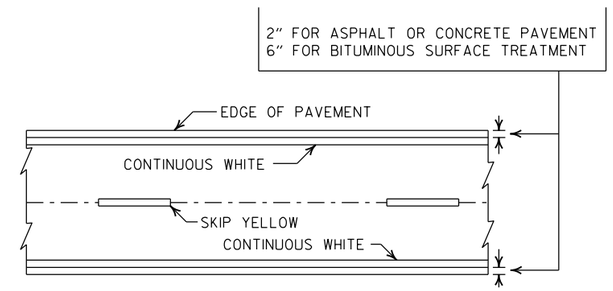
SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT

CONCRETE PAVEMENT

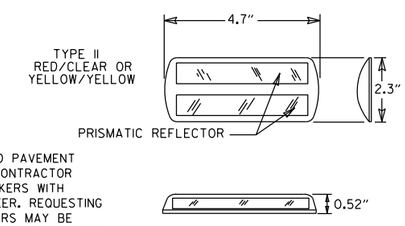
STRIPING AT ADJACENT NO PASSING LANES



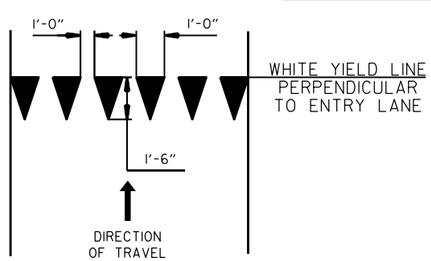
PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

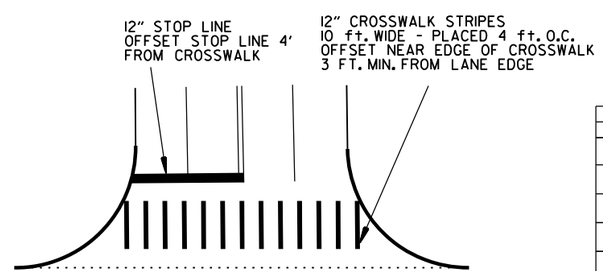
NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS



YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
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

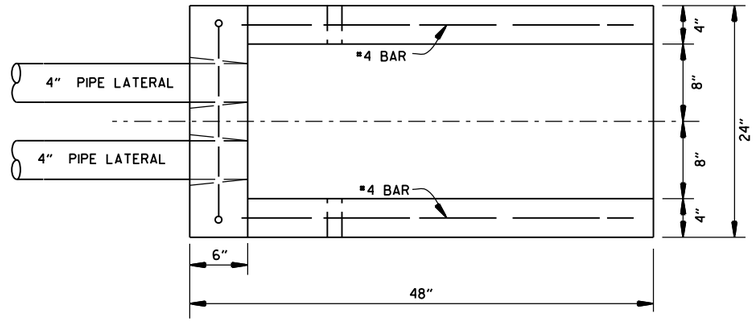
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

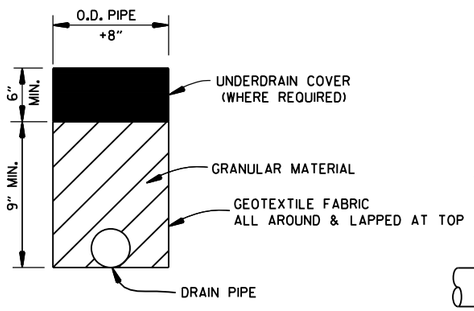
NOTE:

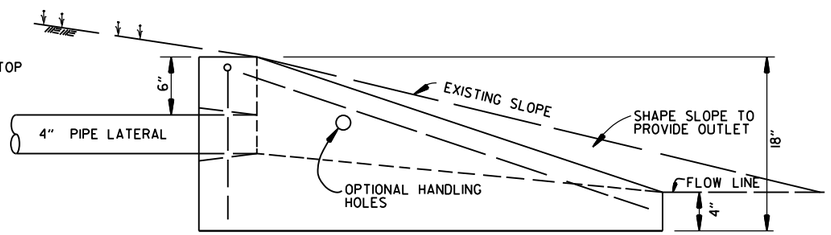
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

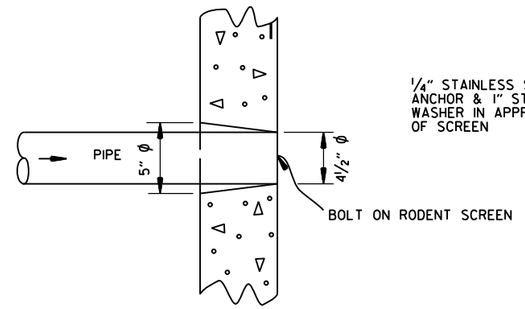


PLAN VIEW

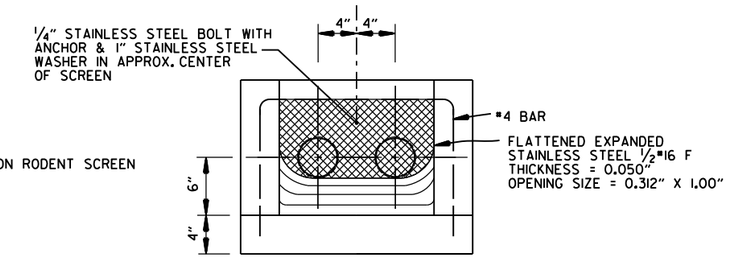




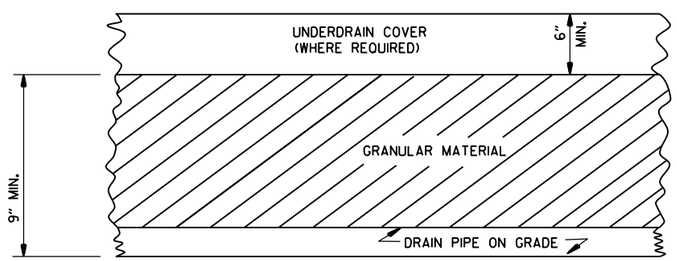
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE

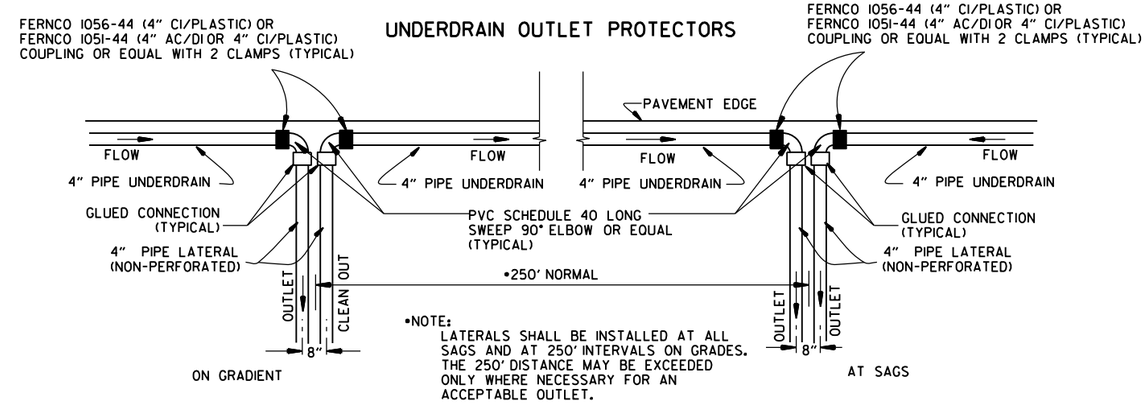


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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 1. 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

MINIMUM STRUCTURAL REQUIREMENTS:

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

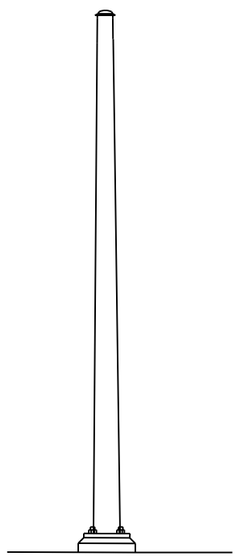
USE FATIGUE CATEGORY II.

CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

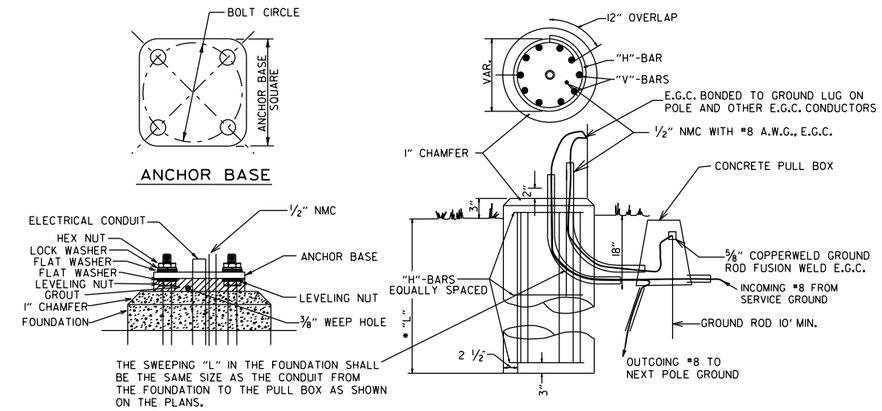
THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX PAID FOR SEPARATELY AS SHOWN ON THE PLANS.



ANTENNA POLE

NOTE:

COMMUNICATION CABLE SHIELD SHALL BE TIED TO THE GROUND AT ONE ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.



TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING.

POLE HEIGHT	FOUNDATION DIAMETER	DEPTH "L"	VERTICAL	HORIZONTAL	TIE SPACING
20.0'	30"	5'-6"	12-#7	#4	5 SP @ 12"
25.0'	30"	6'-0"	12-#7	#4	6 SP @ 11"
30.0'	30"	6'-6"	12-#7	#4	6 SP @ 12"
35.0'	30"	7'-0"	12-#7	#4	7 SP @ 11"
40.0'	30"	7'-6"	12-#7	#4	7 SP @ 12"
45.0'	36"	8'-6"	13-#8	#4	8 SP @ 12"
50.0'	36"	9'-6"	13-#8	#4	9 SP @ 12"
55.0'	36"	10'-0"	13-#8	#4	10 SP @ 11"
60.0'	36"	10'-6"	13-#8	#4	10 SP @ 12"
65.0'	36"	11'-0"	13-#8	#4	12 SP @ 10 ½"
70.0'	36"	11'-6"	13-#8	#4	11 SP @ 12"
75.0'	42"	13'-0"	18-#8	#4	14 SP @ 10 ½"
80.0'	42"	13'-6"	18-#8	#4	13 SP @ 12"
85.0'	42"	14'-6"	18-#8	#4	14 SP @ 12"
90.0'	42"	15'-0"	18-#8	#4	18 SP @ 9 ½"

ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C=3500 PSI. CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS CHAMFERED ¾" UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

PROVIDE 3" CLEAR TIES. DETAIL 3" TO FIRST TIE AT TOP OF SHAFT.

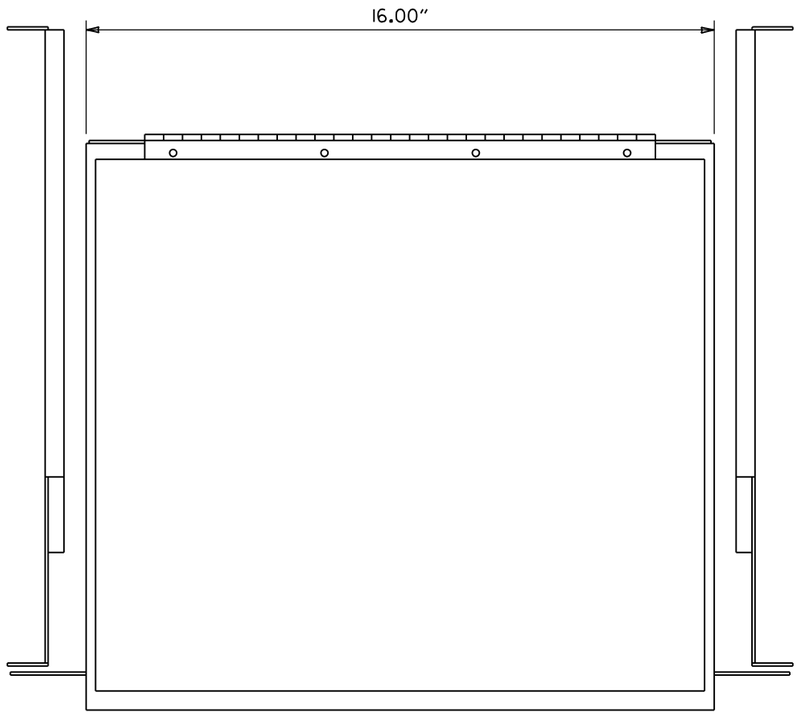
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-18-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
09-06-00	ISSUED	

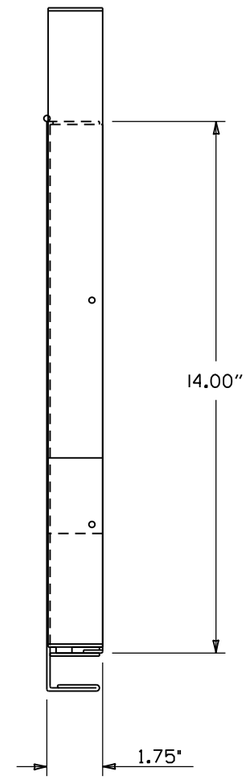
ARKANSAS STATE HIGHWAY COMMISSION

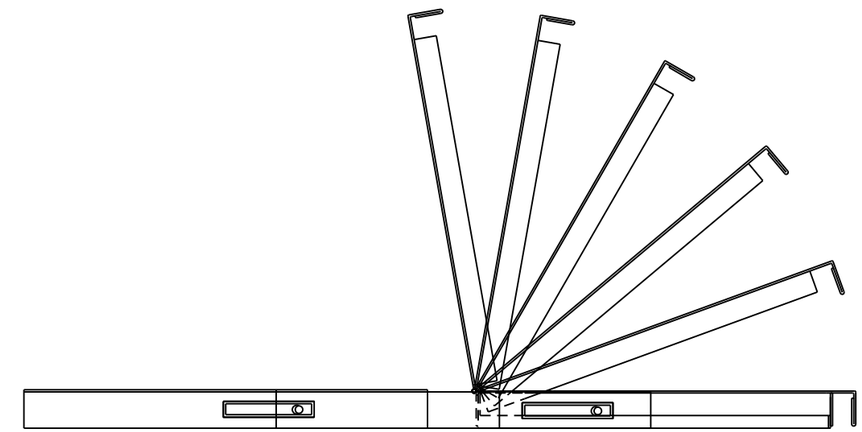
ANTENNA POLE

STANDARD DRAWING SD-1

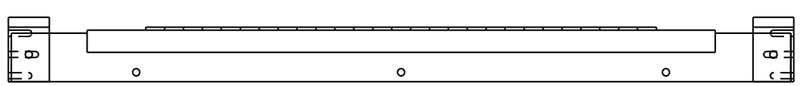
DRAWER PLAN VIEW



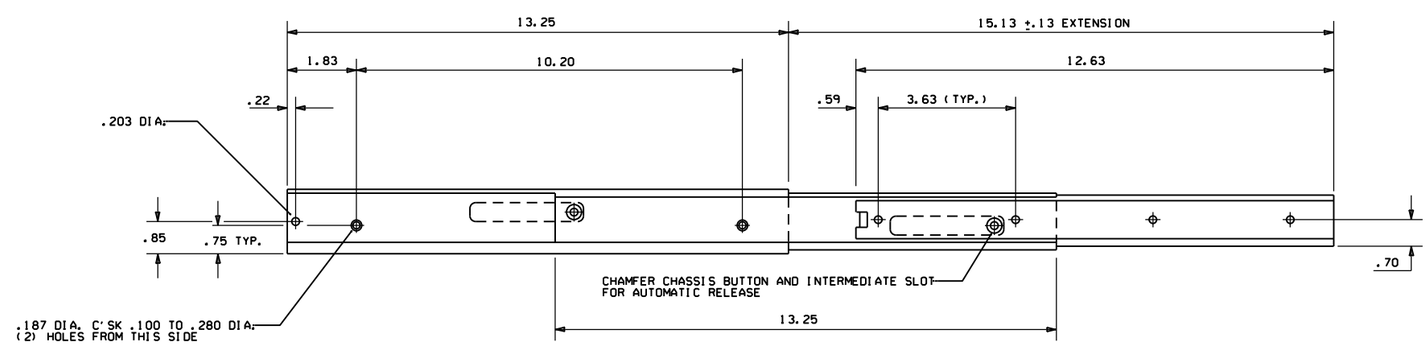




NOTES:
1. RIGHT HAND SLIDE SHOWN. LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

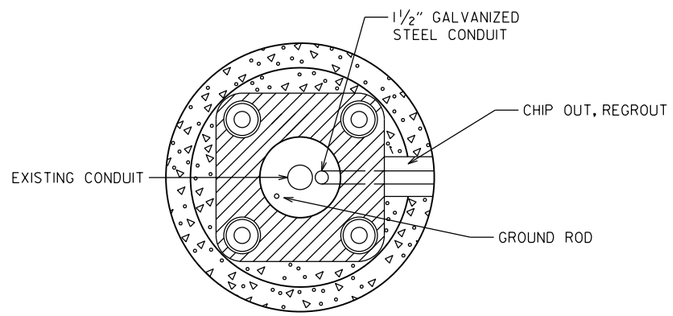
DATE	REVISION	DATE FILM
9-12-13	ISSUED AS STANDARD DRAWING	
6-15-05	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

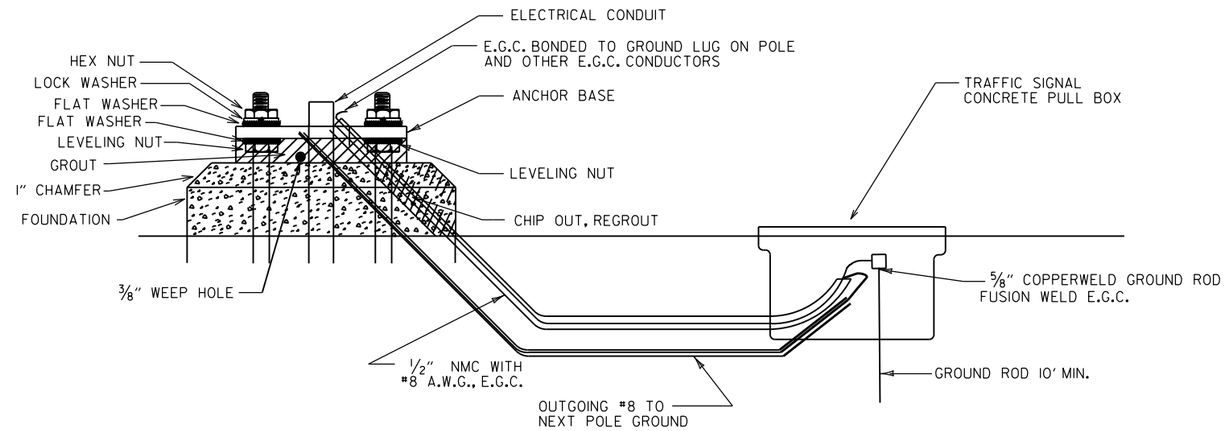
CONTROLLER CABINET UTILITY DRAWER

STANDARD DRAWING SD-5

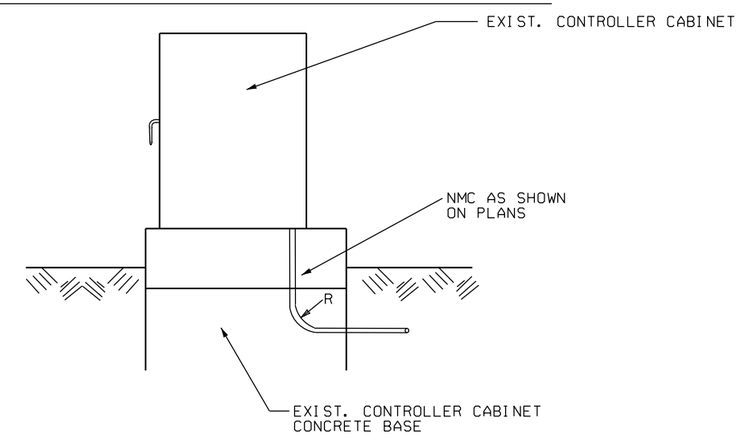
CONDUIT ENTRY TO EXISTING POLE BASE



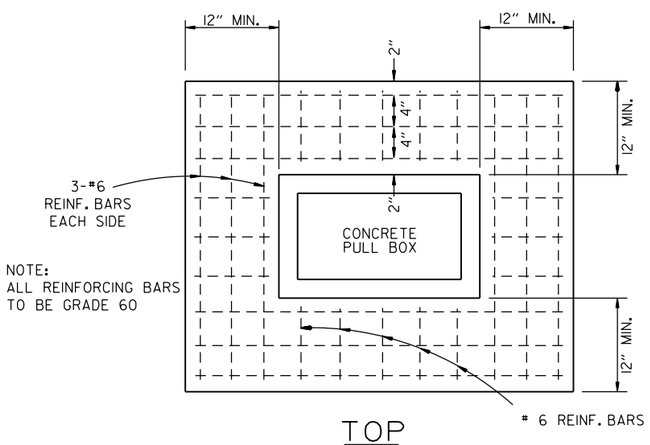
ANCHOR BASE



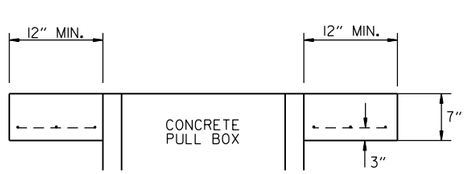
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

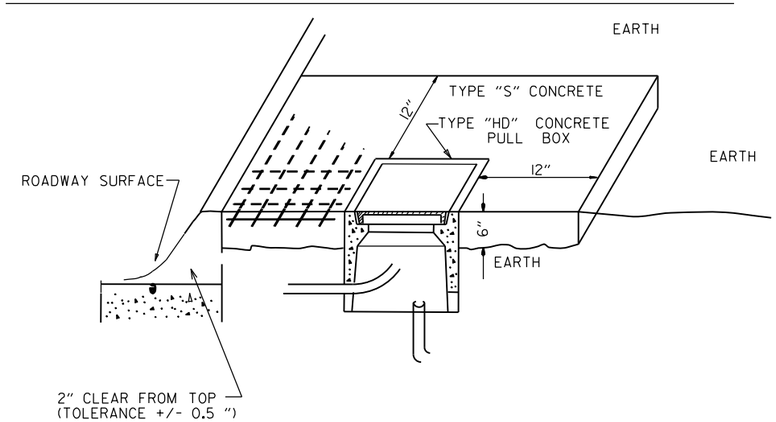


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



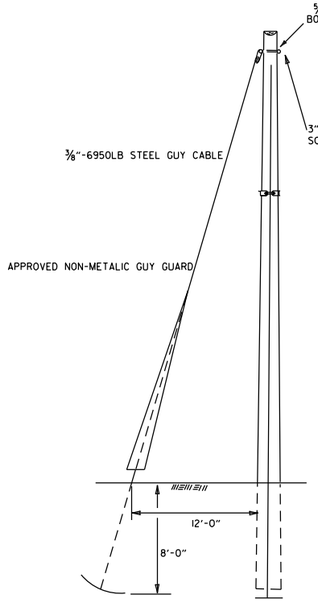
NOTE:
ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-02-15	REVISED PULL BOX DEPTH	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	ADDED & REVISED CONDUIT ENTRY	
06-23-04	REVISED CLEARANCE AT CURB ENTRY	
01-04-02	ADDED REINFORCING TO BOX APRON	
07-02-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

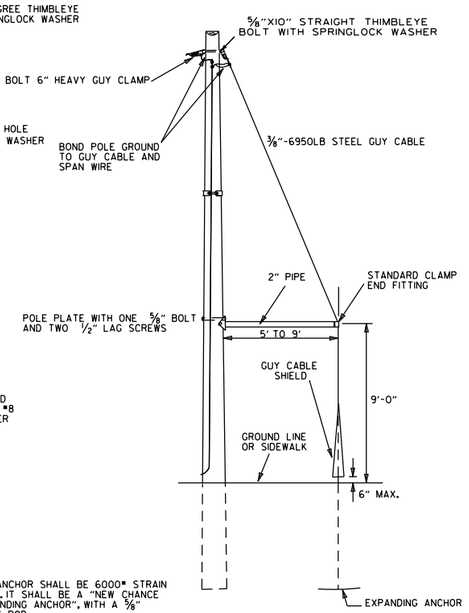
HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6



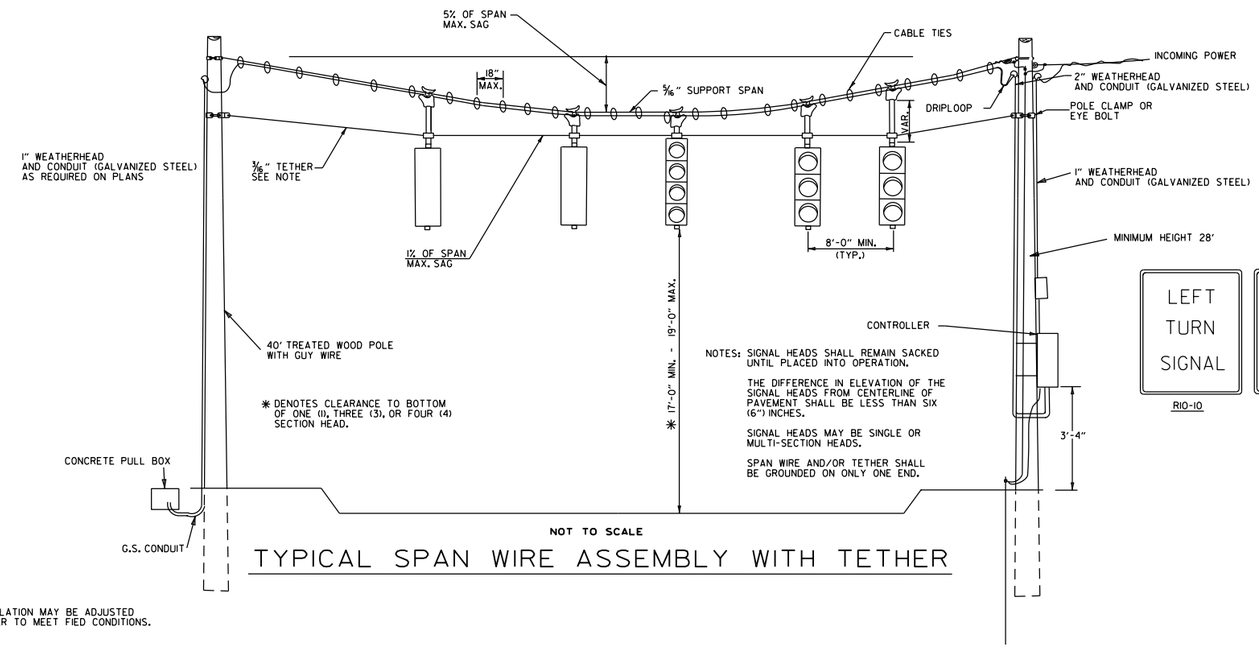
NOTE:
EXPANDING ANCHOR SHALL BE 6000# STRAIN OR GREATER. IT SHALL BE A "NEW CHANCE 8-WAY EXPANDING ANCHOR", WITH A 5/8" MINIMUM GUY ROD.

STANDARD GUY INSTALLATION



SIDEWALK GUY INSTALLATION

NOTE:
CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIED CONDITIONS.



NOTES: SIGNAL HEADS SHALL REMAIN SACKED UNTIL PLACED INTO OPERATION.

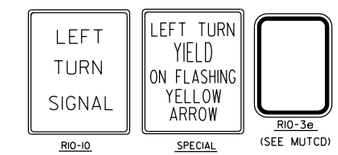
THE DIFFERENCE IN ELEVATION OF THE SIGNAL HEADS FROM CENTERLINE OF PAVEMENT SHALL BE LESS THAN SIX (6") INCHES.

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



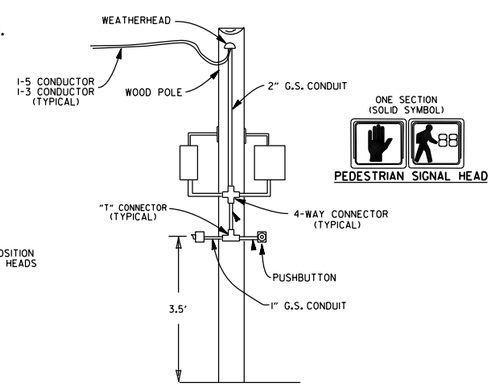
R10-10 SPECIAL R10-3e (SEE MUTCD)

NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

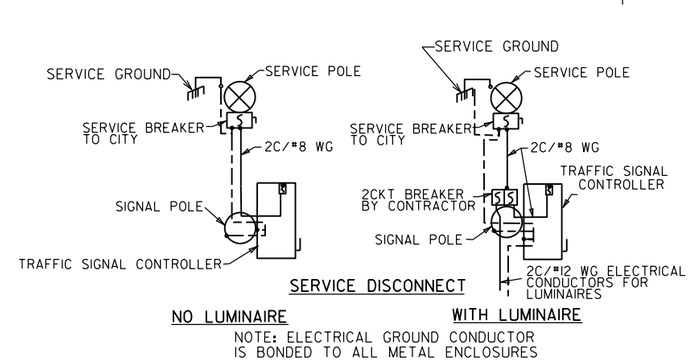
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

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 5/8" COPPERWELD GROUND ROD.



WOODEN POLE INSTALLATION OF PED HEADS



SERVICE DISCONNECT

NO LUMINAIRE WITH LUMINAIRE

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.

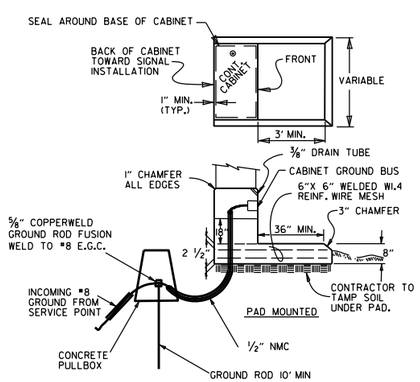
ALL SIGN BLANK SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

ALL SIGN FACE SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

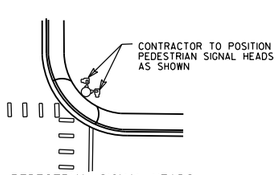
SIGNAL OPERATION NOTES:

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.

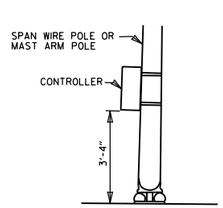
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.



CONCRETE BASE MOUNTED CABINET DETAILS



PEDESTRIAN SIGNAL HEADS



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED

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

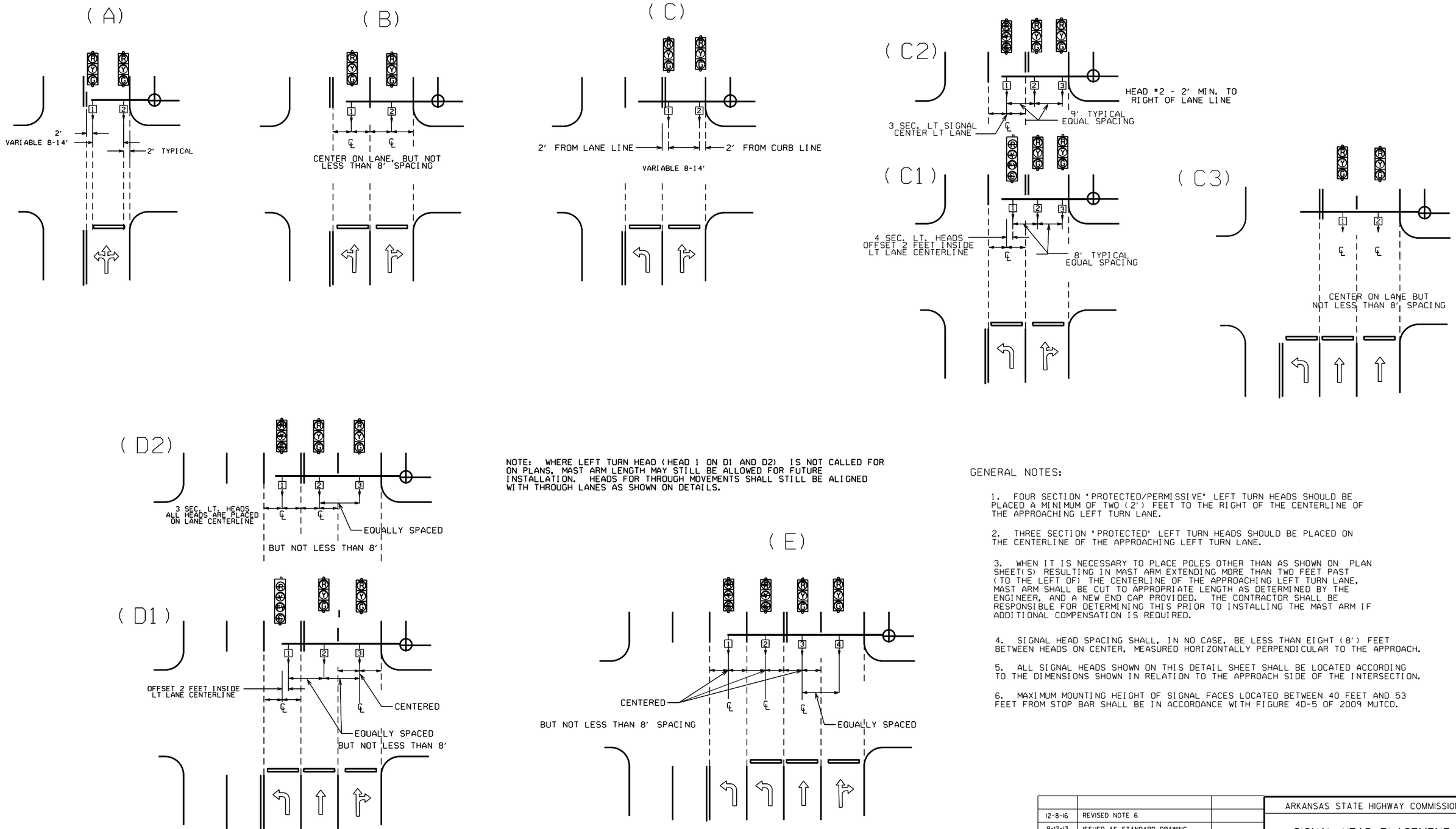
STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

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



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.

℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.

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

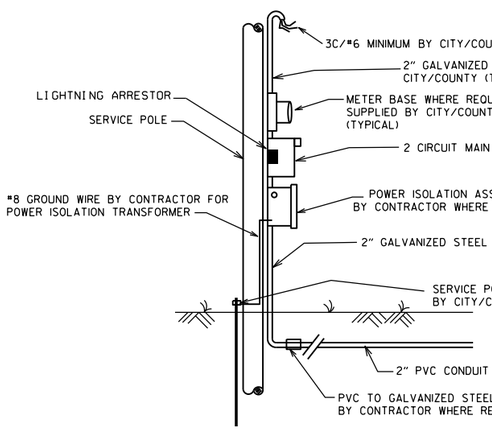
SIGNAL HEAD PLACEMENT

STANDARD DRAWING SD-8

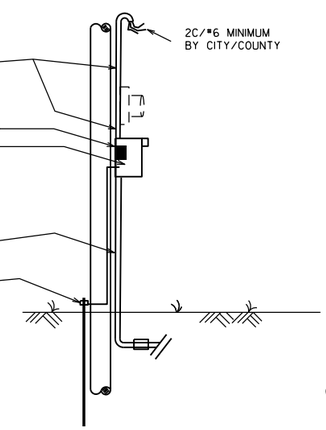
MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

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.

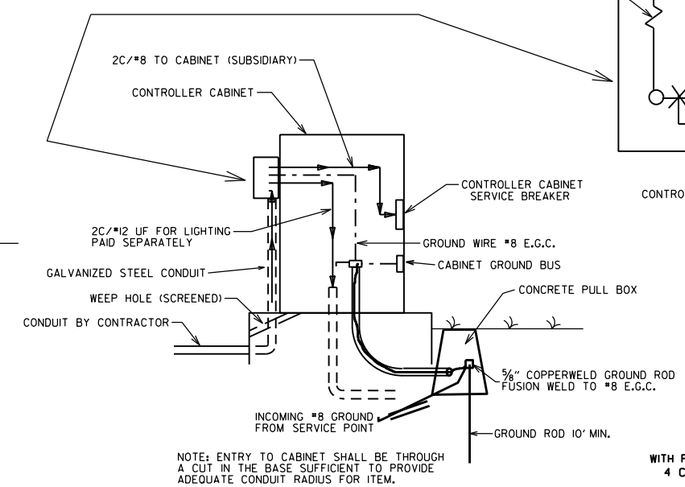
WITH POWER ISOLATION ASSEMBLY



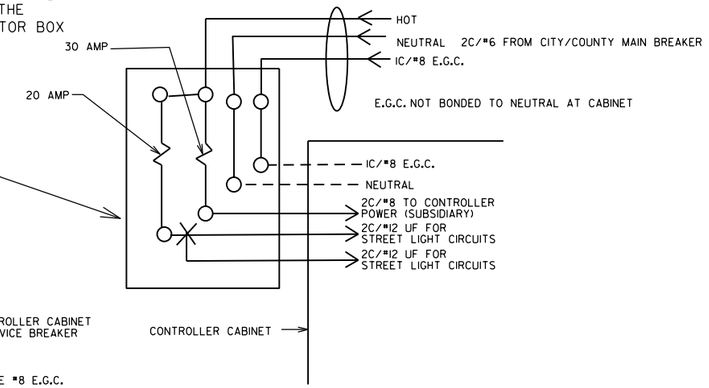
WITHOUT POWER ISOLATION ASSEMBLY



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.

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

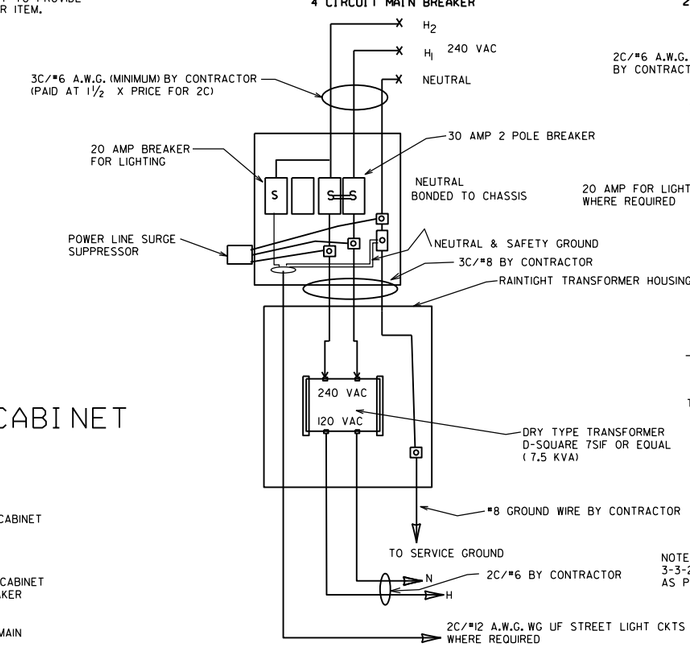
ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES:
MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

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.

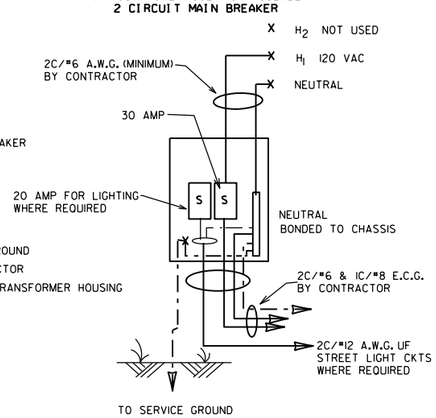
MAIN BREAKER NOT NEAR CONTROLLER CABINET:
THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT. WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

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.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

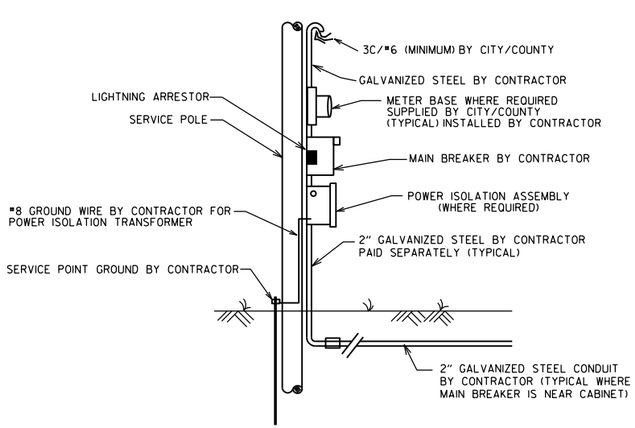


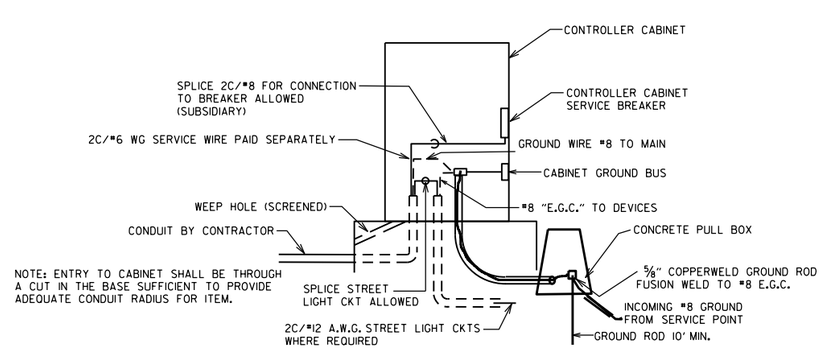
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



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
11-07-19	REVISED	
11-16-17	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
04-18-13	ADDED LIGHTNING ARRESTOR	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
03-03-03	ADDED EGC NOTE	
09-26-01	REVISED	
12-27-99	REVISED	
07-28-99	REVISED	
02-05-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES:
PEDESTRIAN AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES:

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6"; 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (3 SEC., 56 LB., 8.3 SQ. FT.):
DESIGN TO ACCOMMODATE:
2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAT 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT.
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) - VARIABLE ARM LENGTH (MAX. WT. 75 LB., 3.3 SQ. FT.)
PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

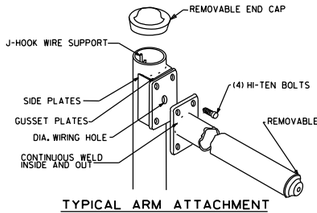
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACCUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

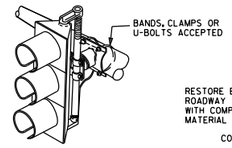
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

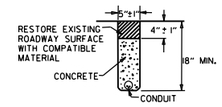
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



TYPICAL ARM ATTACHMENT



NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)

* 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.

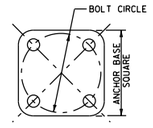
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

SIGNAL OPERATION NOTES:

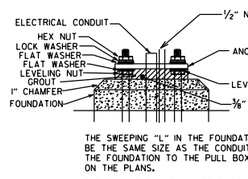
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

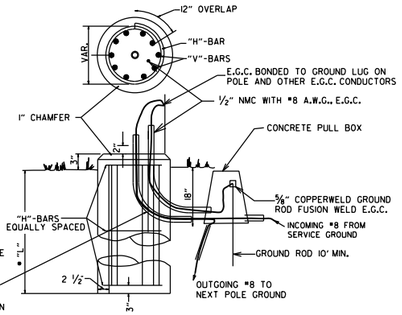
THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATION IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.



ANCHOR BASE





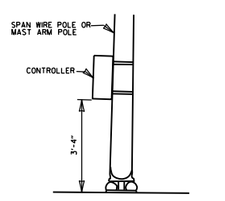
THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#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.

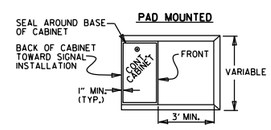
TYPICAL FOUNDATION DETAILS

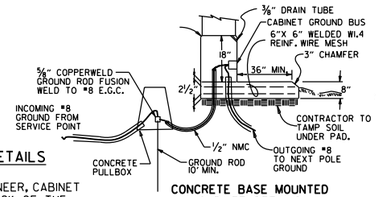
POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

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"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED





CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

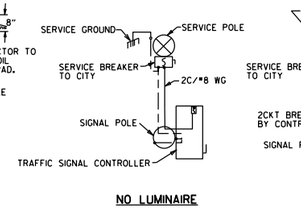
NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X 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 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

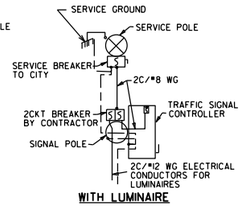
9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 707 PEDESTRIAN SIGNAL HEAD.



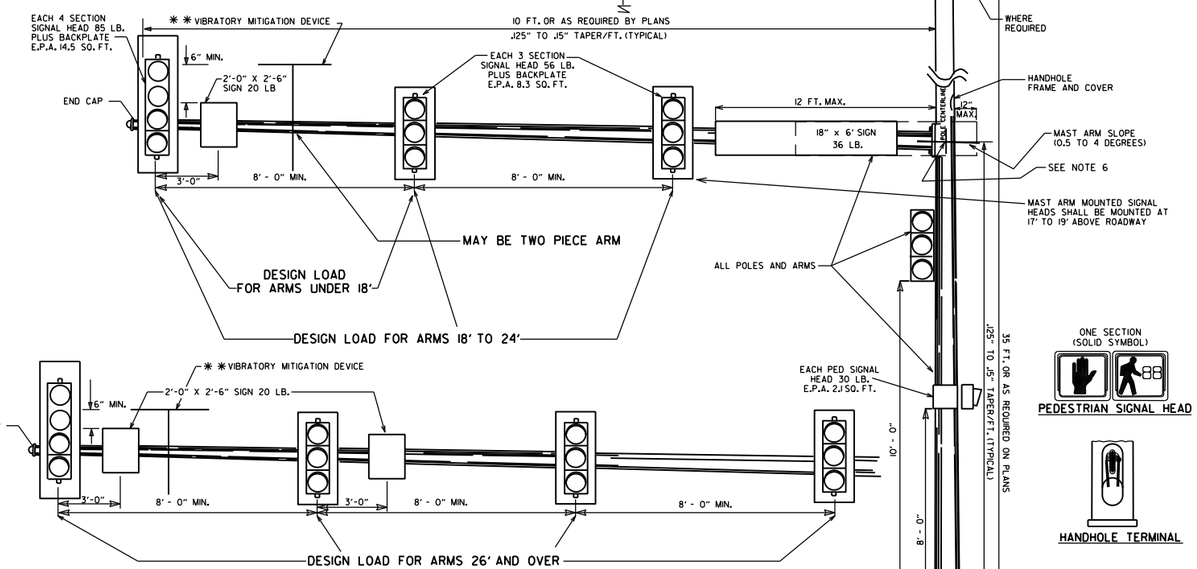
NO LUMINAIRE

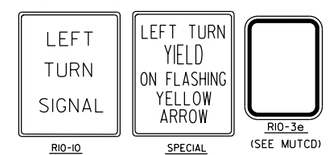


WITH LUMINAIRE

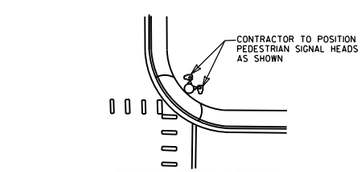
SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES





R10-10 SPECIAL R10-3e (SEE MUTCD)



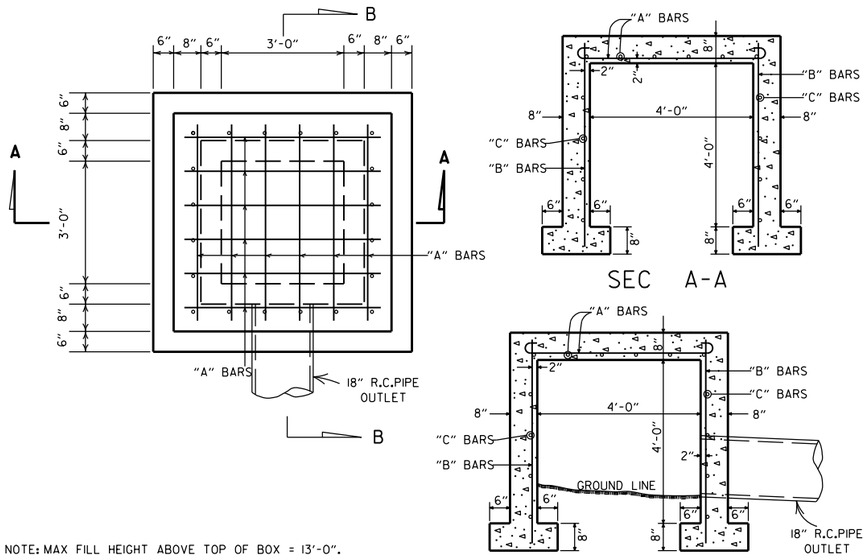
PEDESTRIAN SIGNAL HEADS

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	

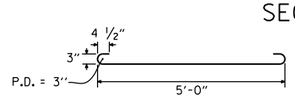
ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11



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 1/2"
"C"	16	5'-0"	12"

ALL STEEL TO BE #4 BARS

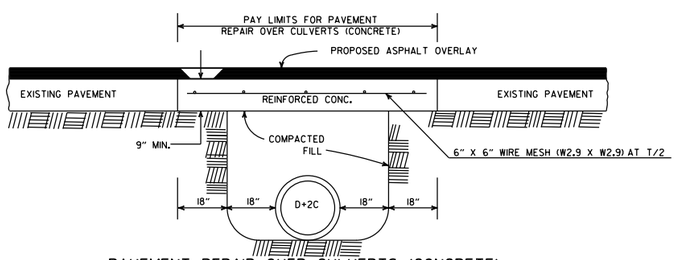
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

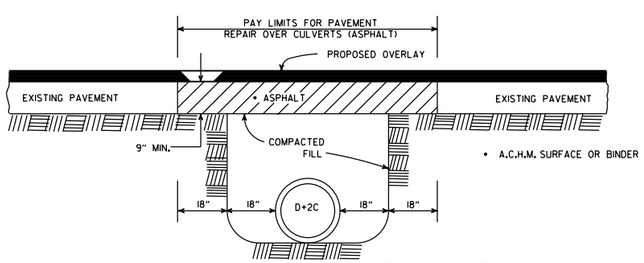
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX



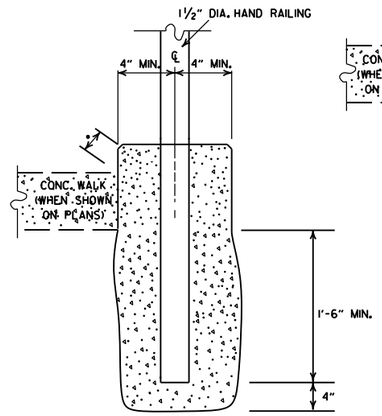
PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



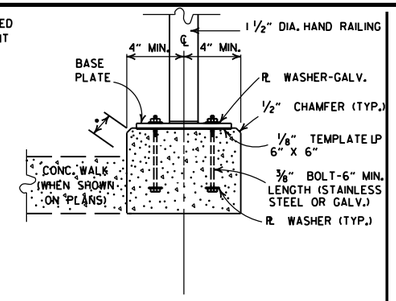
PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

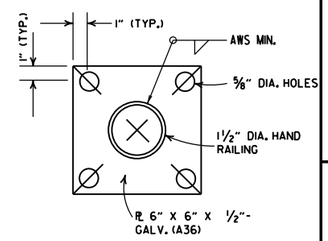
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

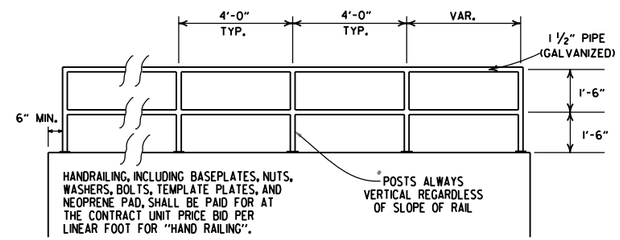


POST CONNECTION TO WALL

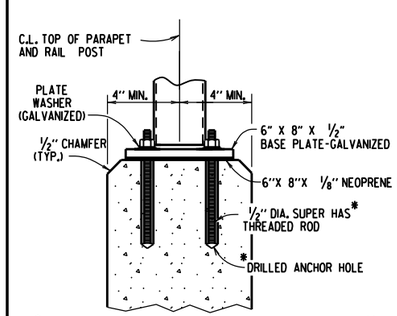


BASE PLATE

POST CONNECTION DETAILS



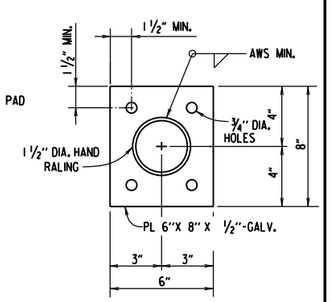
HAND RAILING SHALL CONFORM TO SECTION 633.



*HILTI HIT RE 500 EPOXY ADHESIVE ANCHOR SYSTEM WITH 4 1/2" EMBEDMENT OR APPROVED EQUAL.

THE ADHESIVE ANCHOR SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

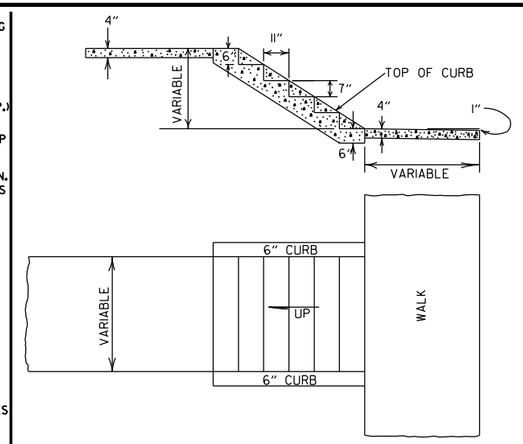
POST CONNECTION TO WALL



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
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
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

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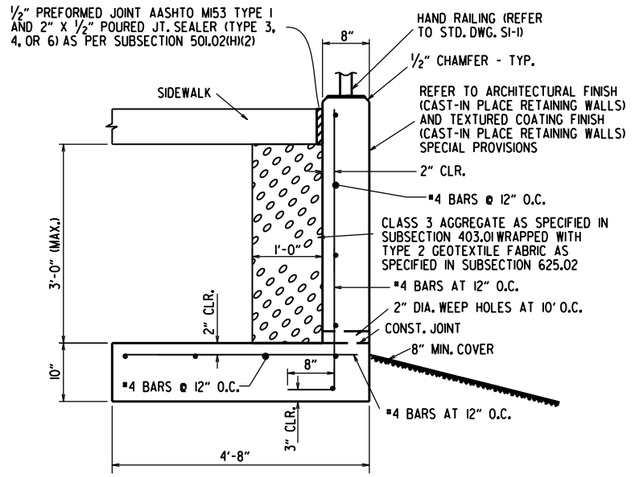
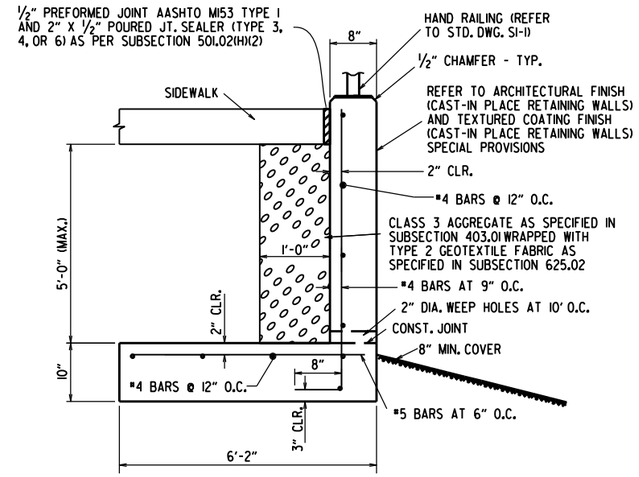
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1



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

N.T.S.



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

N.T.S.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.

DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012).

LIVE LOAD: LIVE LOAD SURCHARGE IS NOT INCLUDED IN THE DESIGN OF THESE WALLS. VEHICULAR LIVE LOAD SHALL NOT BE ALLOWED WITHIN A DISTANCE EQUAL TO ONE-HALF THE HEIGHT OF THE WALL.

CONCRETE: CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS TO BE CHAMFERED ½". ALL CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C = 3,500 PSI. A CLASS 2 SURFACE FINISH SHALL BE USED ON ALL SURFACES OF THE CONCRETE UNLESS OTHERWISE NOTED. REFER TO ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS) AND TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS) SPECIAL PROVISIONS.

REINFORCING STEEL: ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 60.

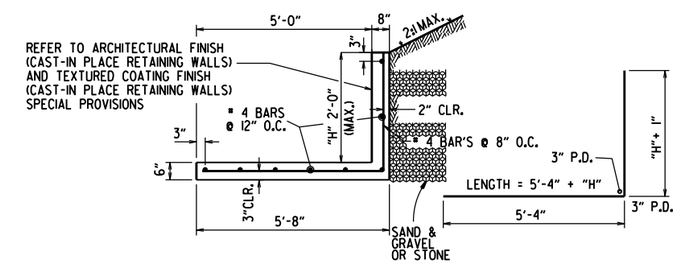
FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH SUBSECTION 801.04. BACKFILL FOR RETAINING WALLS SHALL BE IN ACCORDANCE WITH SUBSECTION 801.08.

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.

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

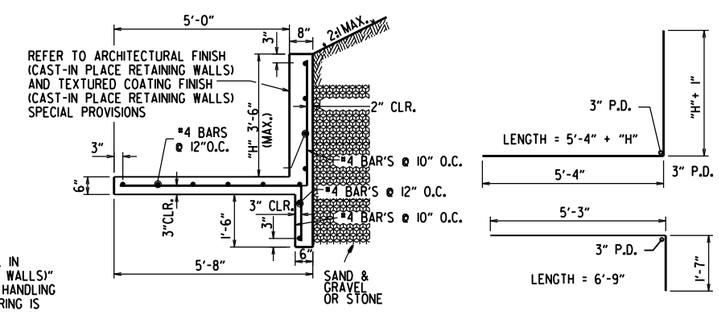
DRAINAGE FILL MATERIAL (CLASS 3) AND SELECT BACKFILL SHALL BE MEASURED AND PAID FOR AS COMPACTED EMBANKMENT.

THESE DETAILS ARE NOT INTENDED FOR USE ALONG STREAMS OR DITCHES WITHOUT CONSIDERATION FOR SCOUR.



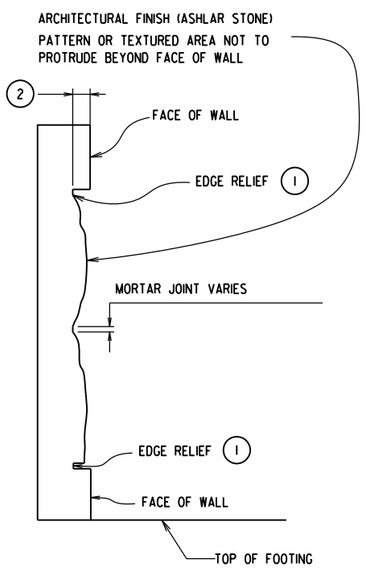
CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 2'-0"

N.T.S.



CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 3'-6"

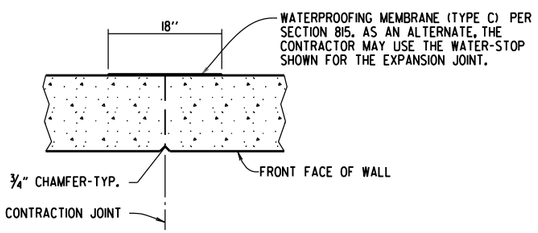
N.T.S.



ARCHITECTURAL FINISH DETAILS

N.T.S.

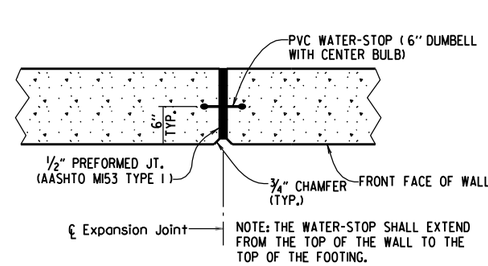
1. PROVIDE EDGE RELIEF AROUND PERIMETER OF TEXTURE. EDGE RELIEF DIMENSIONS SHALL MATCH MANUFACTURERS EDGE DISTANCE.
2. DEPTH OF ASHLAR STONE PATTERN APPROX. 1⅝". SEE SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)".



TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

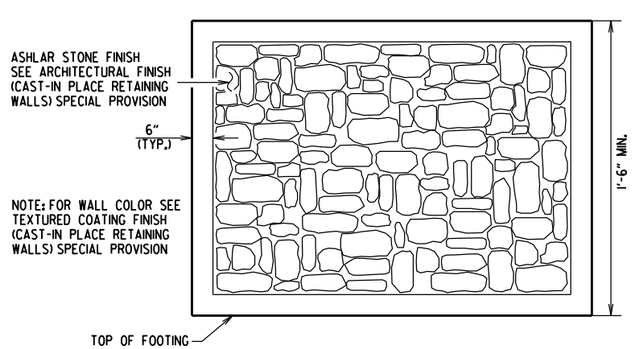
NOTE: 20'-0" MAX. SPACING BETWEEN CONTRACTION JOINTS. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTRACTION JOINTS.



TYPICAL EXPANSION JOINT DETAIL

N.T.S.

NOTE: 60'-0" MAX. SPACING BETWEEN EXPANSION JOINTS. HORIZONTAL REINFORCING SHALL STOP 2" FROM ℄ EXPANSION JOINT.



ASHLAR STONE FINISH DETAIL

NOTES:

WALL PATTERN SHALL BE APPLIED TO THE EXPOSED SURFACES OF WALL IN ACCORDANCE WITH SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)" AND AS SHOWN IN THE PLANS. CARE SHALL BE TAKEN WITH FORM LINER HANDLING AND INSTALLATION TO ENSURE AESTHETIC QUALITY OF THE WALL TEXTURING IS MAINTAINED. WHERE FORM LINER PANELS REQUIRE MODIFICATION TO CONFORM TO THE LOCATION, DIMENSIONS AND LINES SHOWN IN THE PLANS, THE CONTRACTOR SHALL PROVIDE EDGE RELIEF MATCHING THAT OF THE UNALTERED FORM LINER. PAYMENT FOR WALL TEXTURING SHALL BE IN ACCORDANCE WITH SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)".

NO ADJUSTMENTS WILL BE MADE IN CONCRETE VOLUME DUE TO THE USE OF "ARCHITECTURAL FINISH". CLASS "S" CONCRETE SHALL BE MEASURED IN ACCORDANCE WITH SUBSECTION 802.24(A). CARE SHALL BE TAKEN IN PLACING CONCRETE TO AVOID SEGREGATION AND TO ELIMINATE FLOW LINES.

CLASS 3 TEXTURED COATING FINISH SHALL BE APPLIED TO WALL SURFACES AS SPECIFIED IN SP "TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS)" AND IN ACCORDANCE WITH SUBSECTION 802.19(B)(3).

DATE	REVISION	DATE FILMED
5-14-20	DRAWING ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

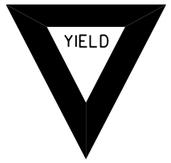
CONCRETE WALK (TYPE SPECIAL)

STANDARD DRAWING SI - 3

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"

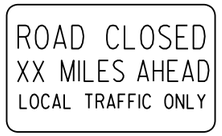
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

STD. 36"X36"
FWY. 48"X48"

W1-1

STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

W1-3

STD. 48"X48"

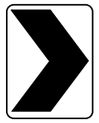
W1-4

STD. 48"X48"

W1-6

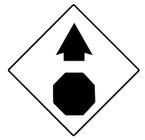
STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

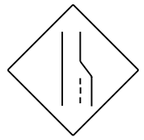


STD. 36"X36"
SPECIAL 48"X48"

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"

W13-1

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"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

STD. 36"X36"
FWY. 48"X48"

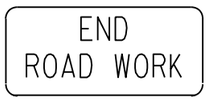
W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1

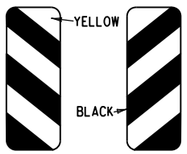
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

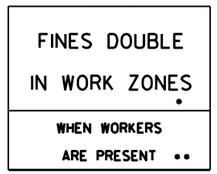
M4-9

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.

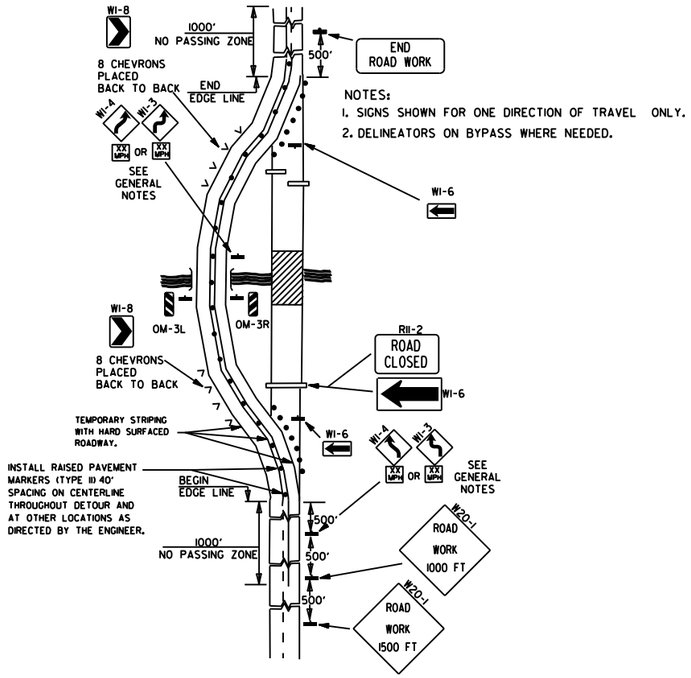
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
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

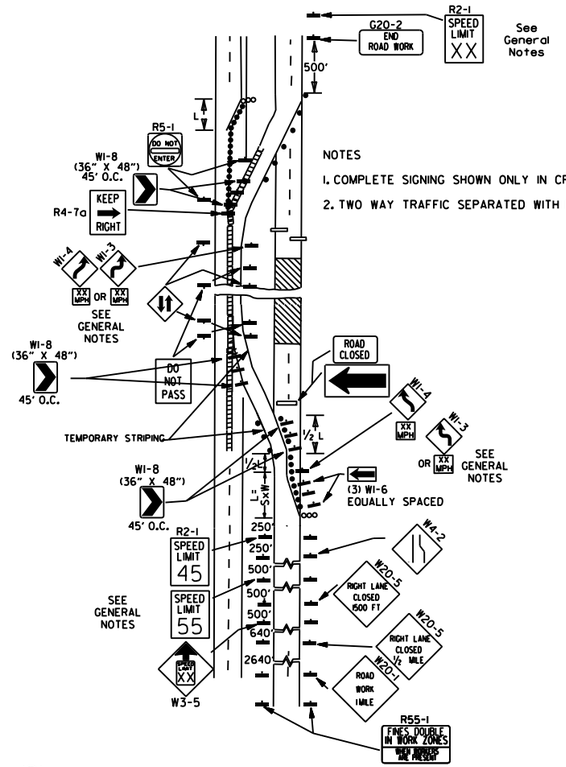
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



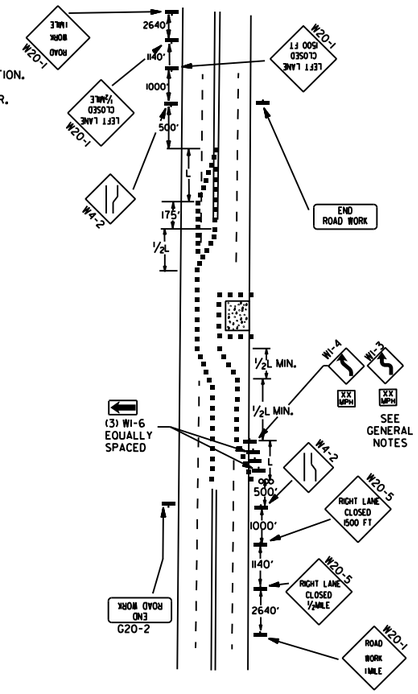
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

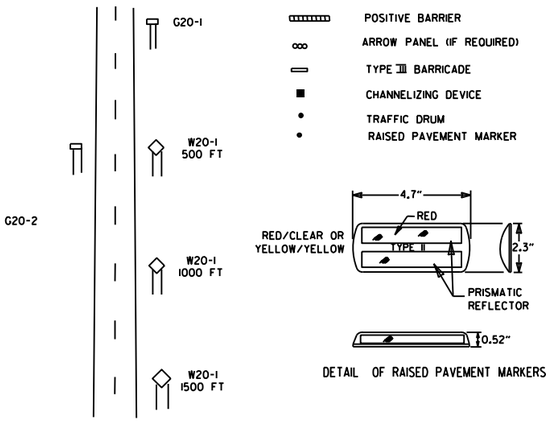


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.



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:

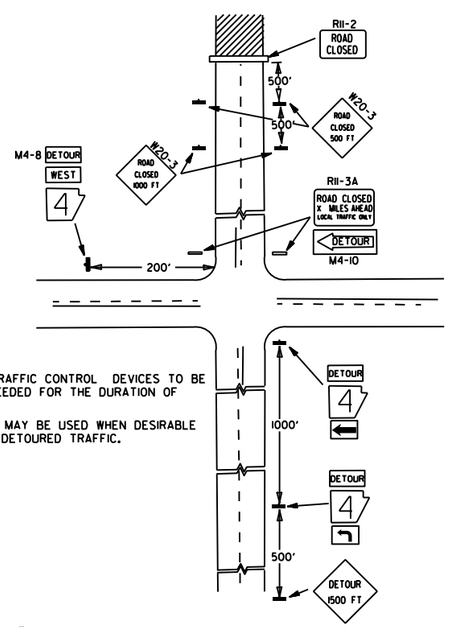
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

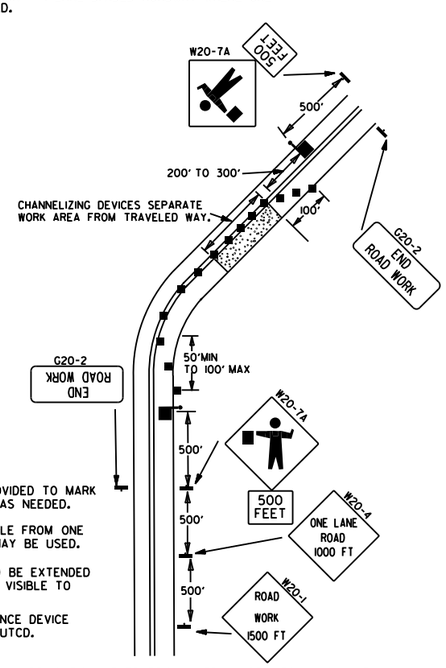
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



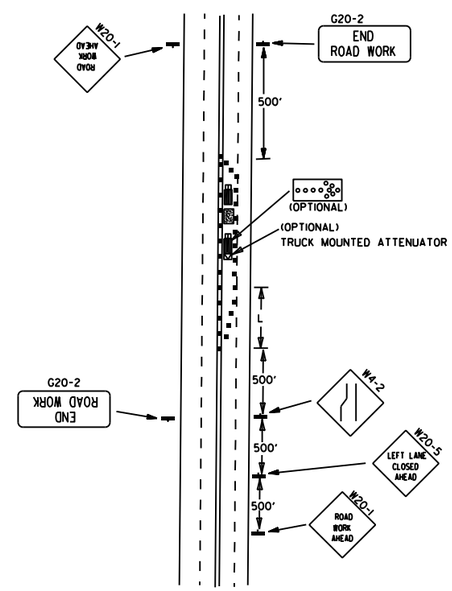
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



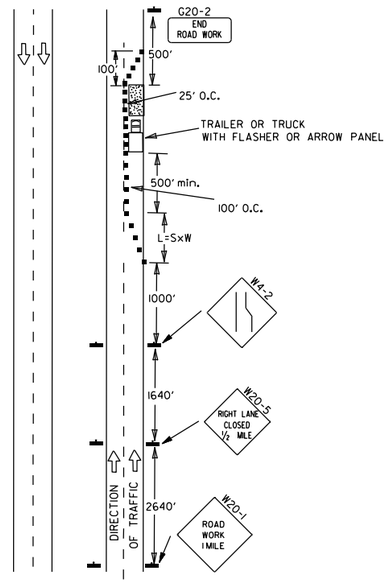
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

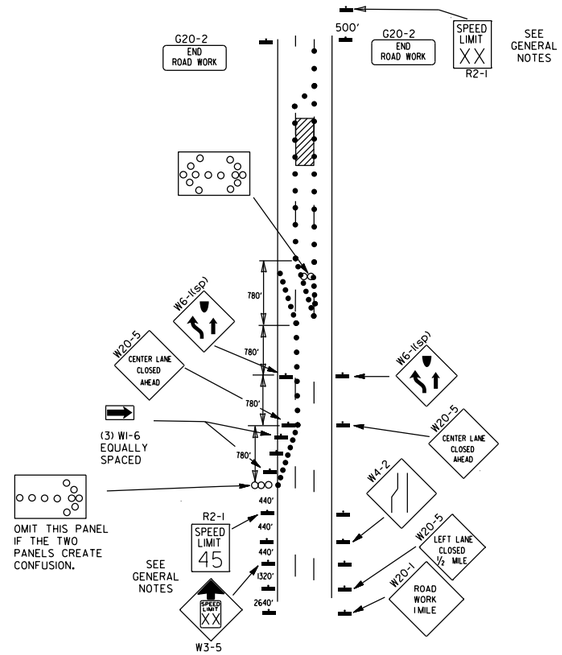
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

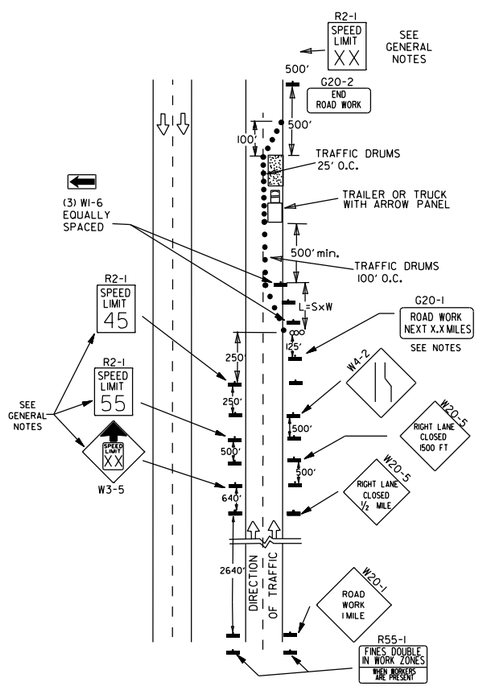
ooo ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

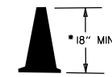
GENERAL NOTES:

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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



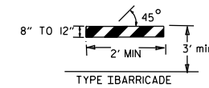
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES



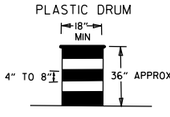
- WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

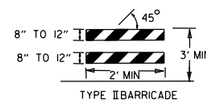
CONES



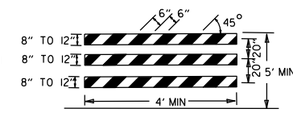
TYPE I BARRICADE

PLASTIC DRUM



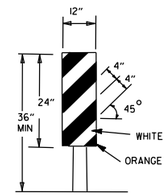


TYPE II BARRICADE



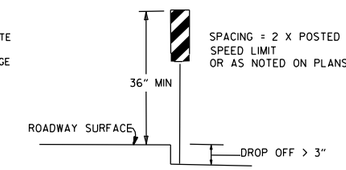
TYPE III BARRICADE

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

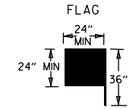


VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

TRAFFIC CONTROL DEVICES

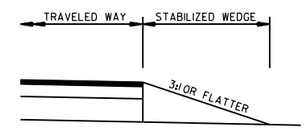
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1)	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS(3)
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER(4) & EDGE LINES	PRECAST CONCRETE BARRIER(4) & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 2" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2)
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

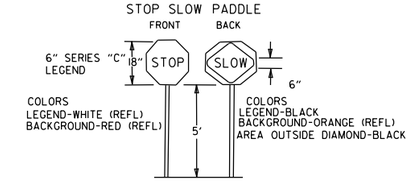
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.



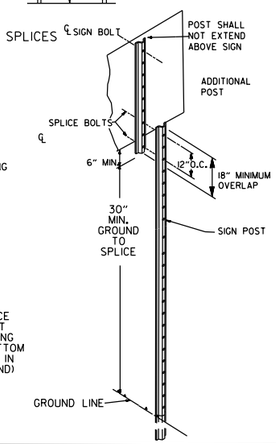
STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE



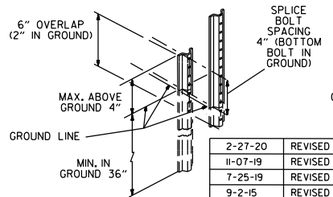
DETAIL OF SPLICES

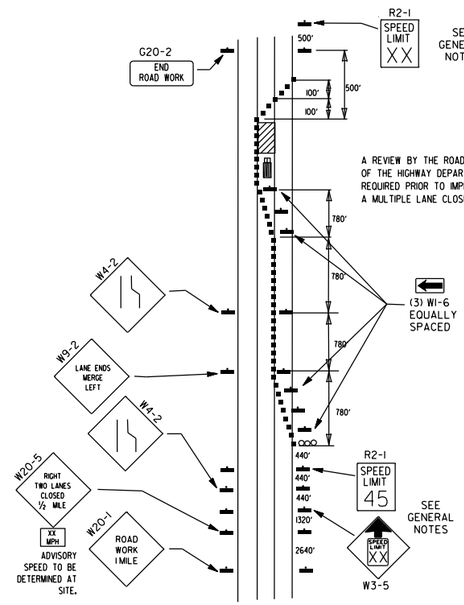


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.





A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
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	

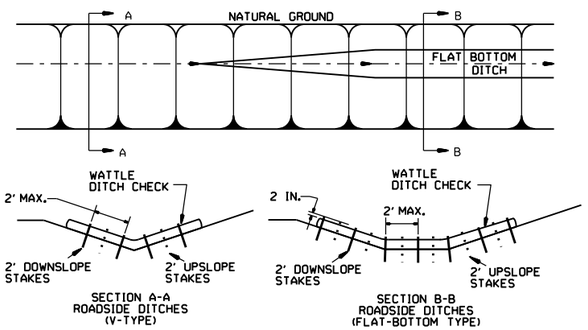
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

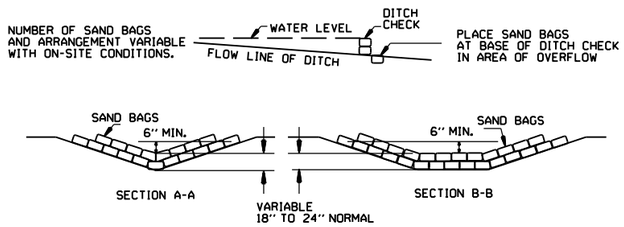
STANDARD DRAWING TC-3

GENERAL NOTES

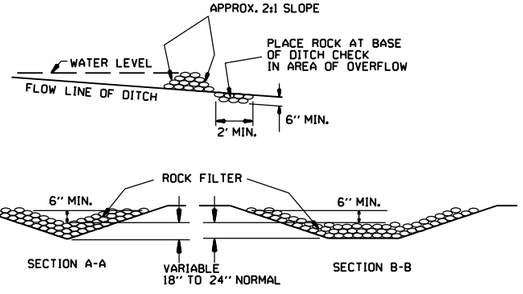
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

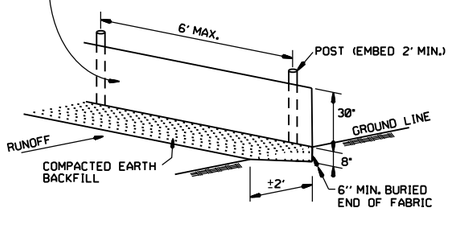


ROCK DITCH CHECK (E-6)

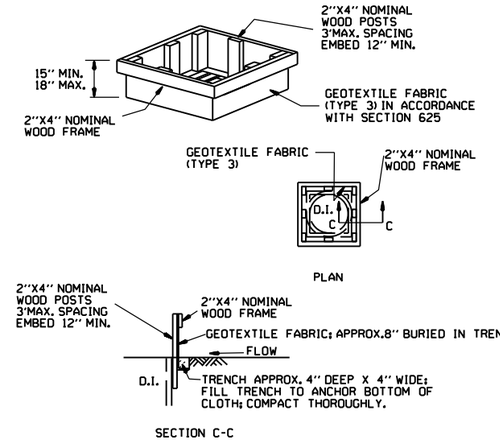
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

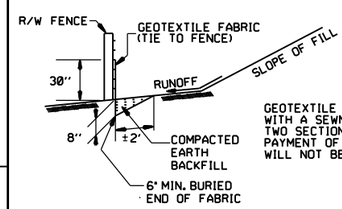
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

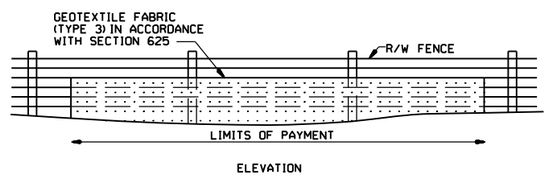


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



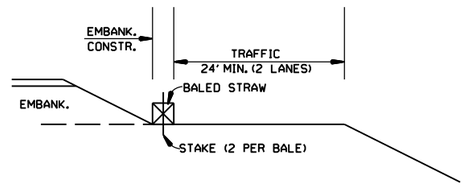
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

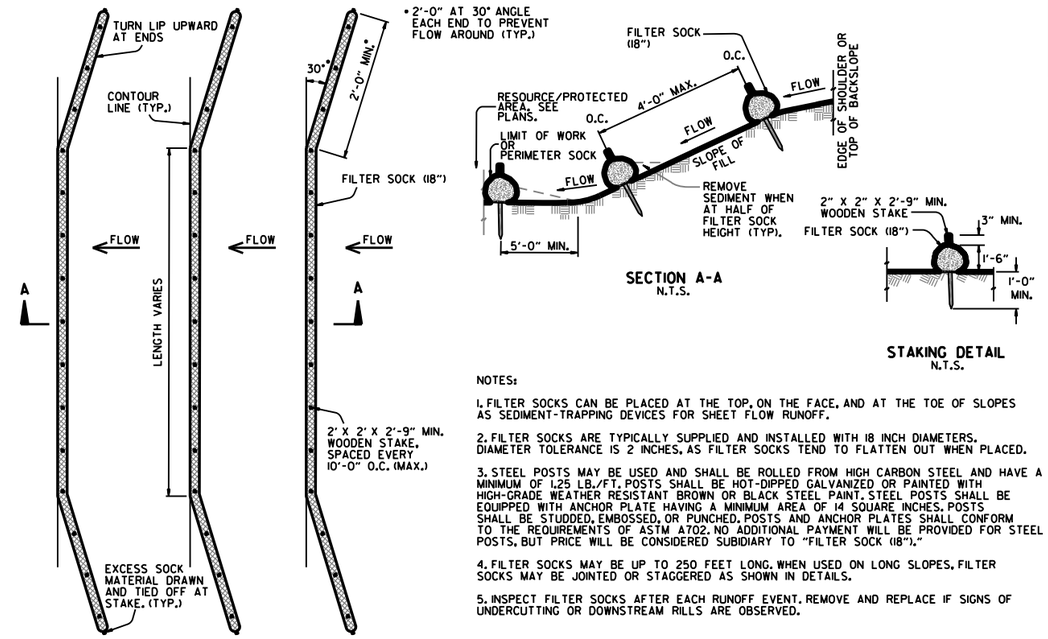
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

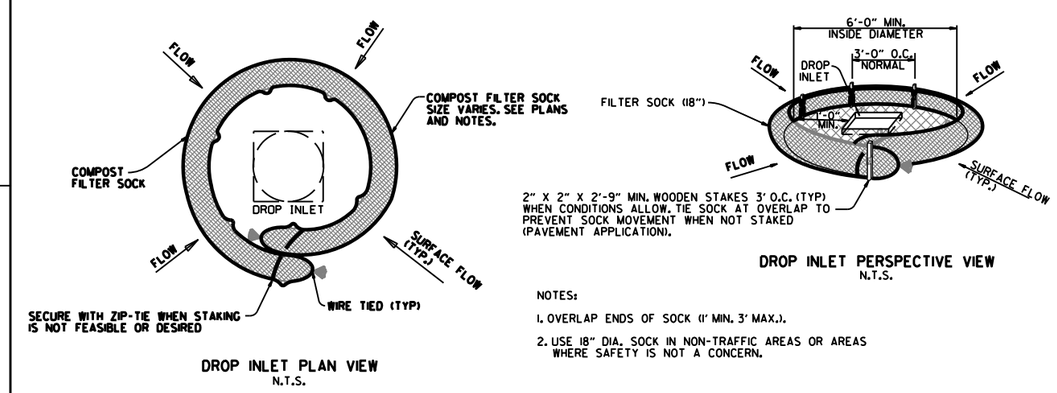
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

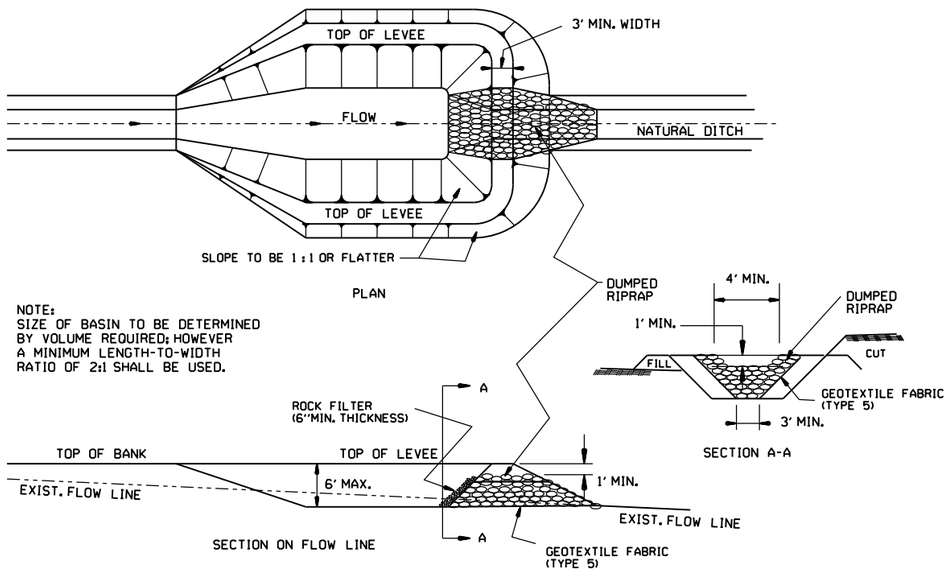
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

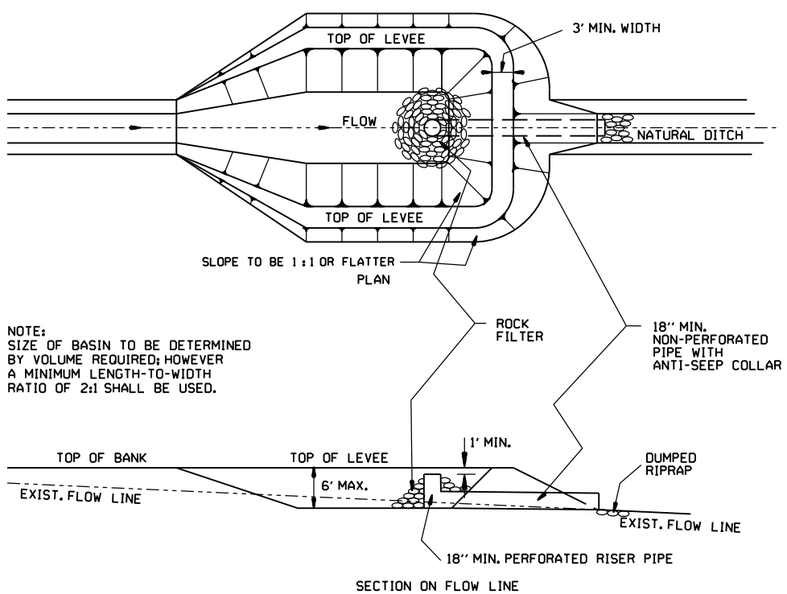
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

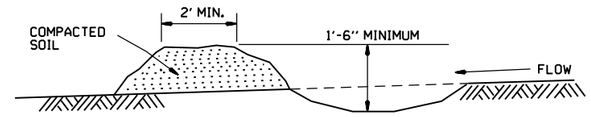
STANDARD DRAWING TEC-1



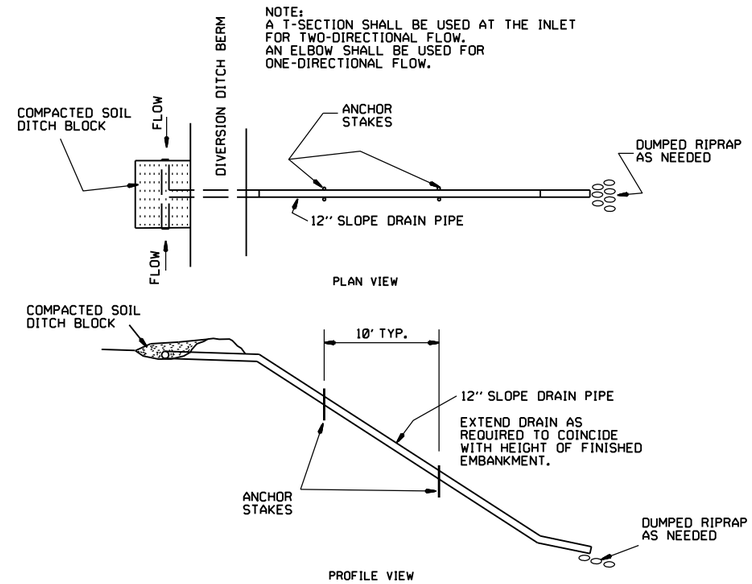
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



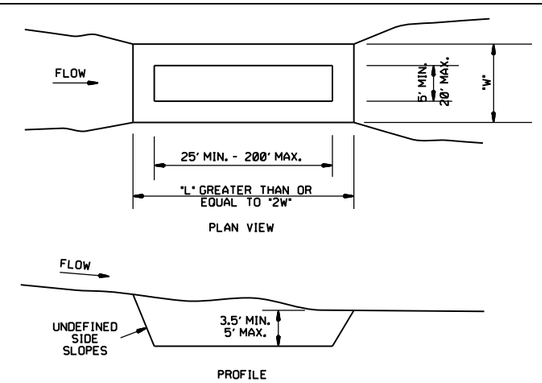
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

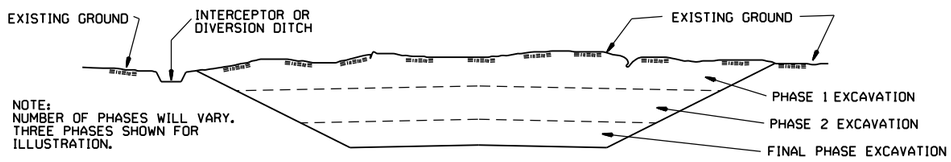
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



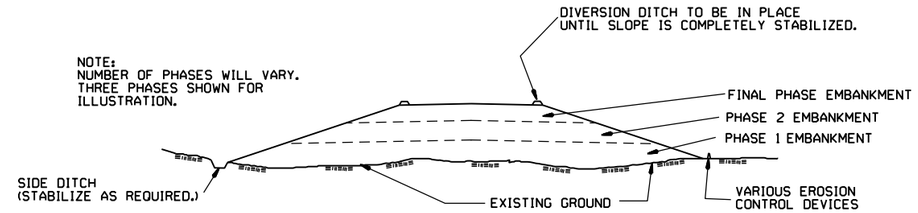
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

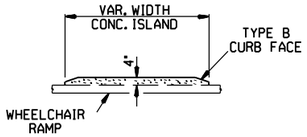
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

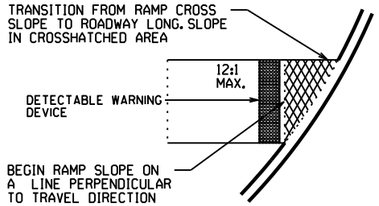
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



CONCRETE ISLAND DETAIL



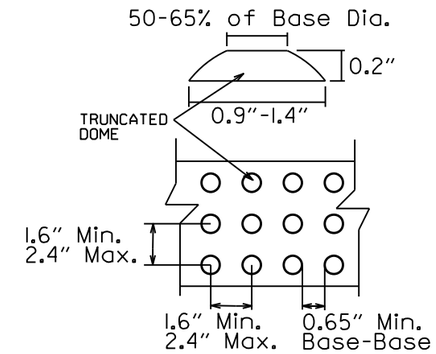
SLOPE TRANSITION DETAILS

TYPE 1 RAMP DIMENSIONS AND QUANTITIES

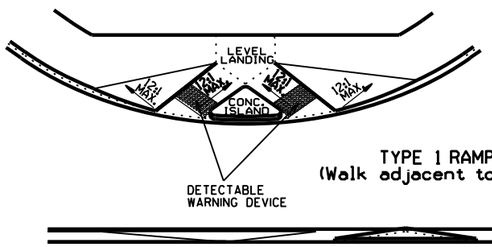
RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

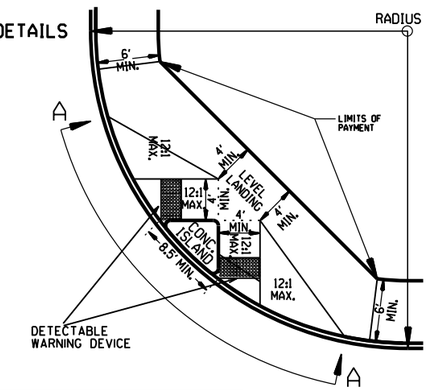
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).

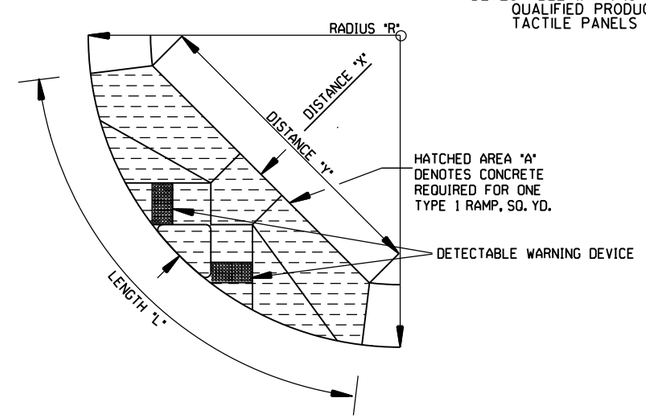


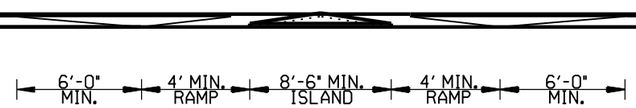
DETECTABLE WARNING DEVICE DETAIL



TYPE 1 RAMP
(Walk adjacent to curb)



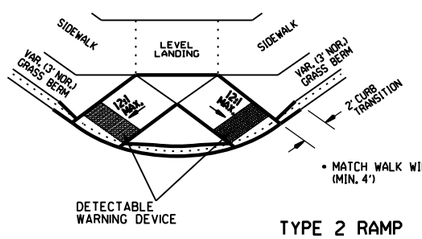




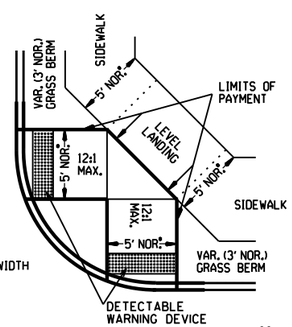
SECTION A-A

GENERAL NOTES:

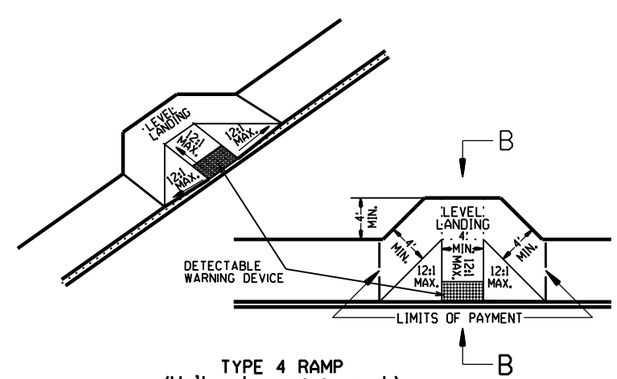
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK 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.



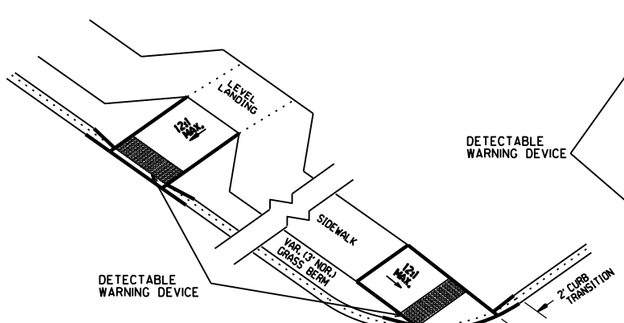
TYPE 4 RAMP
(Walk adjacent to curb)

RAMP SELECTION CRITERIA

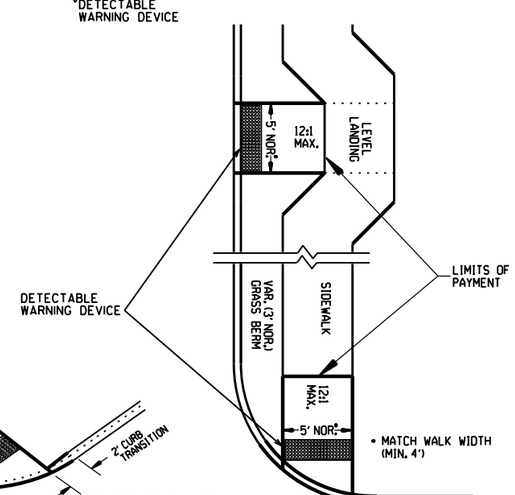
FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH 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.

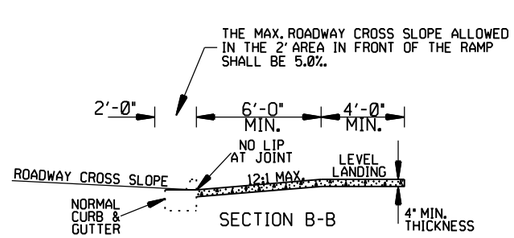
NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

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.



TYPE 3 RAMP





SECTION B-B

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD. SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8 TO 12 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.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1