DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	1	81
				(2) I-430/RODNEY PARHAM RD. INTCHNG. IMPVTS. (S)				

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

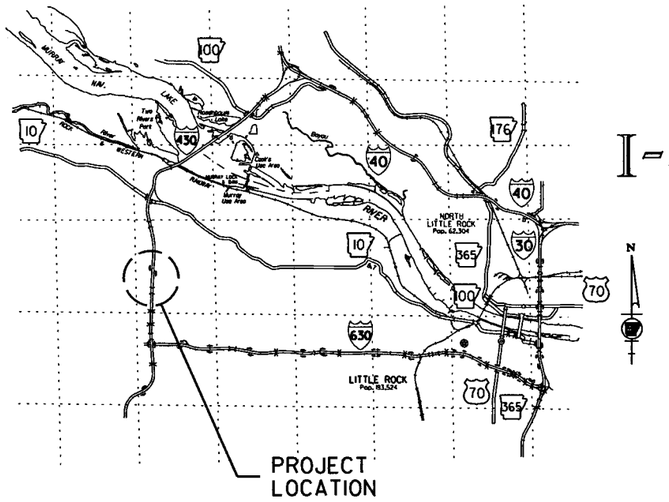
I-430 / RODNEY PARHAM RD. INTCHNG. IMPVTS. (S)

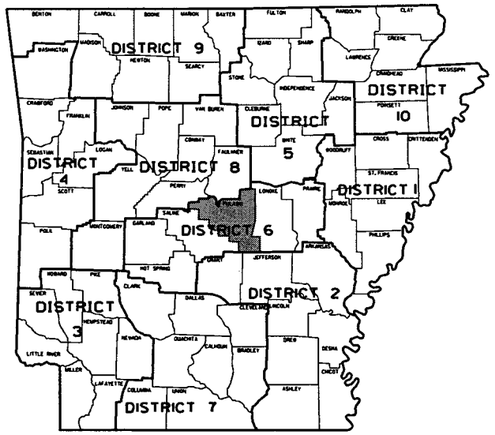
PULASKI COUNTY

ROUTE 430 SECTION 21

FEDERAL AID PROJ. NHPP-430-2(201)8

JOB BB0618





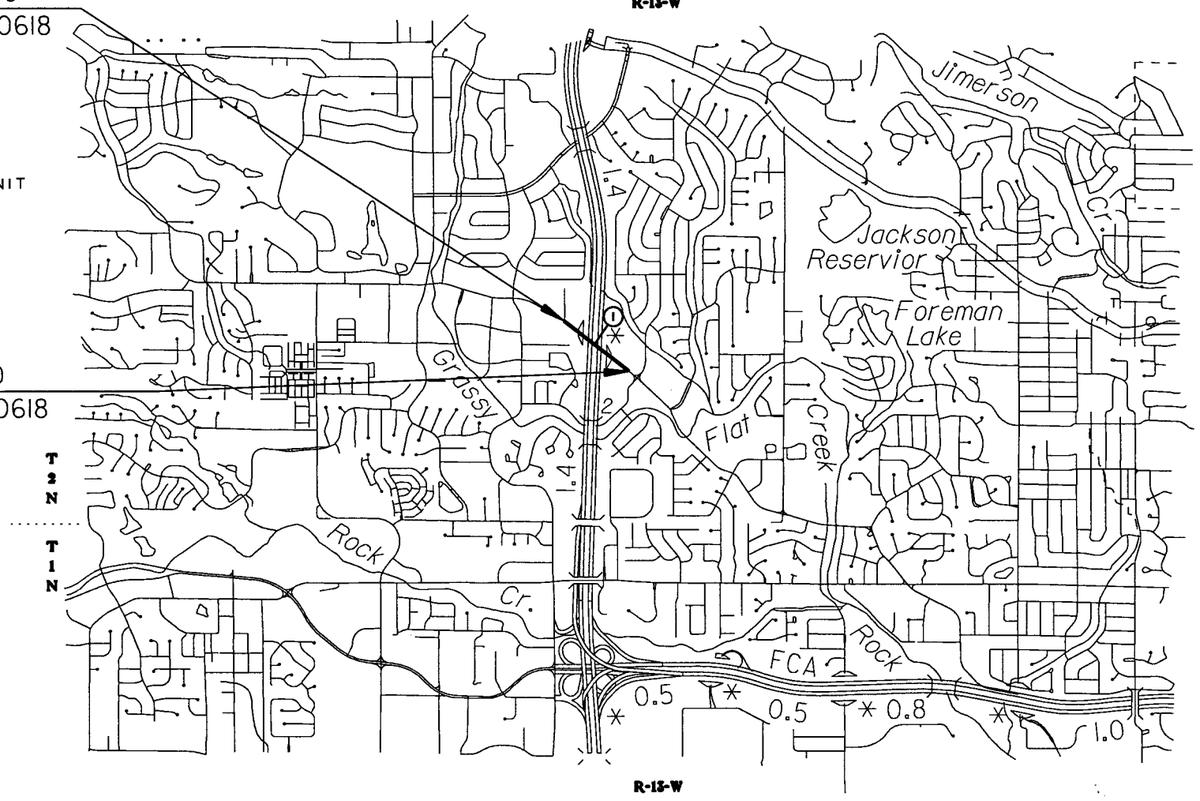
ARK. HWY. DIST. NO. 6

NOT TO SCALE

VICINITY MAP

STA. 123+91.00
END JOB BB0618

STA. 105+77.00
BEGIN JOB BB0618



BRIDGE DATA
(FOR INFORMATION ONLY)

(1) LOG MILE 1.78
BRIDGE NO. B5317
350'-6" FOUR SPAN CONT. COMP. PLATE GIRDER UNIT
88'-0" CLEAR ROADWAY
RETAIN

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 34°46'01"	N 34°46'06"	N 34°46'12"
LONGITUDE	W 92°23'16"	W 92°23'25"	W 92°23'33"

NO LENGTH INVOLVED

GROSS LENGTH OF	PROJECT	0.00	FEET	OR	0.000	MILES
NET	ROADWAY	0.00			0.000	MILES
NET	BRIDGES	0.00			0.000	MILES
NET	PROJECT	0.00			0.000	MILES

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7856
M. E. BANKS

5-8-18

DEPUTY DIRECTOR
AND CHIEF ENGINEER

4/25/2018

RBB0618.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.		BB0618	2	81

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

INDEX OF SHEETS

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

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55014	STANDARD DETAILS FOR TYPE H RAILING	02-11-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
CPCR-2	CONCRETE PAVEMENT DETAILS CONTINUOUSLY REINFORCED DEFORMED WIRE MAT	03-23-89
CPCR-3	DETAILS OF TERMINAL JOINTS FOR CONCRETE PAVEMENT CONTINUOUSLY REINFORCED	10-18-96
CPCR-4	DETAILS OF ENTRANCE & EXIT RAMPS FOR CONCRETE PAVEMENT CONTINUOUSLY REINFORCED	02-27-14
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	02-27-14
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PM-2	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS	12-08-16
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-16-17
SD-11	STEEL POLE WITH MAST ARM	11-16-17
SE-1	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	01-09-87
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TR-1	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS	01-21-00
WR-1	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	11-10-05

4/25/2018

RBB0618.DGN

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6-5-18				6	ARK.			
				JOB NO.		BB0618	3	81

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-6-18

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - 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
303-1_____	AGGREGATE BASE COURSE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1_____	CONCRETE DITCH PAVING
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
632-1_____	CONCRETE ISLAND
633-1_____	CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING
634-1_____	CURBING
JOB BB0618_	ACTUATED CONTROLLER
JOB BB0618_	AIRPORT CLEARANCE REQUIREMENTS
JOB BB0618_	ASSESSMENT OF WORKING DAYS-MAINTENANCE OF TRAFFIC
JOB BB0618_	BIDDING REQUIREMENTS AND CONDITIONS
JOB BB0618_	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BB0618_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BB0618_	CABINET DRAWER ASSEMBLY
JOB BB0618_	CARGO PREFERENCE ACT REQUIREMENTS
JOB BB0618_	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT, LIGHTWEIGHT AGGREGATE CONCRETE (AE), AND CLASS S(AE) CONCRETE
JOB BB0618_	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BB0618_	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB BB0618_	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB BB0618_	EMERGENCY BATTERY BACKUP SYSTEM INSTALLATION
JOB BB0618_	EMPLOYMENT REPORTING
JOB BB0618_	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB BB0618_	EXTENSION FOR PIPE CULVERTS
JOB BB0618_	FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT
JOB BB0618_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BB0618_	IP VIDEO DETECTION SYSTEM
JOB BB0618_	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB BB0618_	LED LUMINAIRE ASSEMBLY (BUG U0 TYPE)
JOB BB0618_	LED TRAFFIC SIGNAL HEAD
JOB BB0618_	LIGHTWEIGHT AGGREGATE CONCRETE (AE)
JOB BB0618_	MAINTENANCE OF TRAFFIC
JOB BB0618_	MANDATORY ELECTRONIC CONTRACT
JOB BB0618_	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB BB0618_	NESTING SITES OF MIGRATORY BIRDS
JOB BB0618_	PAN-TILT-ZOOM CAMERA SYSTEM
JOB BB0618_	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB BB0618_	PROTECTION OF WATER QUALITY AND WETLANDS
JOB BB0618_	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB BB0618_	SERVICE POINT ASSEMBLY (UNDERGROUND SECONDARY SERVICE)
JOB BB0618_	SHORING FOR CULVERTS
JOB BB0618_	SITE USE (A+C METHOD)-CALENDAR DAY CONTRACT
JOB BB0618_	SOIL STABILIZATION
JOB BB0618_	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB BB0618_	STORM WATER POLLUTION PREVENTION PLAN
JOB BB0618_	STREET NAME SIGN (MAST ARM MOUNTED)
JOB BB0618_	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BB0618_	SYSTEM LOCAL CONTROLLER
JOB BB0618_	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)
JOB BB0618_	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB BB0618_	UTILITY ADJUSTMENTS
JOB BB0618_	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. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
7. 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.

6/5/2018

RBB0618.DGN

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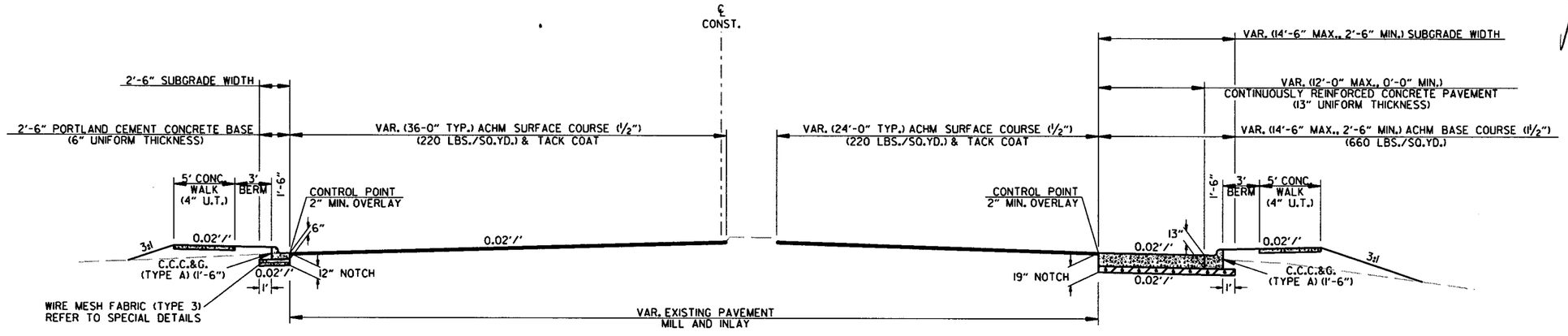
				6	ARK.			
				JOB NO.		BB0618	4	81

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



RODNEY PARHAM RD.-MILL AND INLAY
C.C.C. & G. LT. & RT.

STA. 105+77.00 TO STA. 107+76.00

NOTES:

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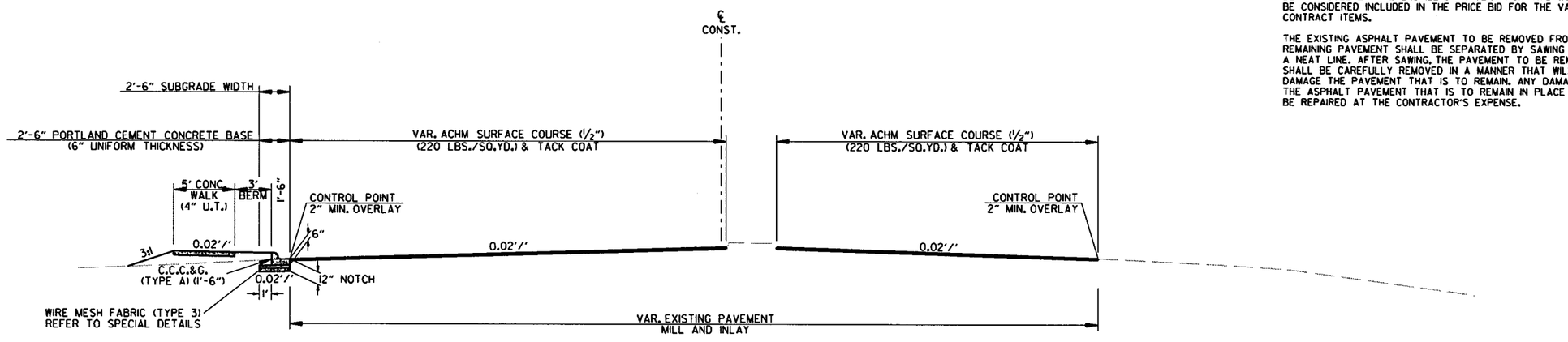

RODNEY PARHAM RD.-MILL AND INLAY
C.C.C. & G. LT.

STA. 107+76.00 TO STA. 108+88.07
STA. 110+75.93 TO STA. 113+68.36
STA. 117+16.30 TO STA. 119+90.59
STA. 121+41.31 TO STA. 123+51.35

4/25/2018

RBB0618.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

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No. 11425
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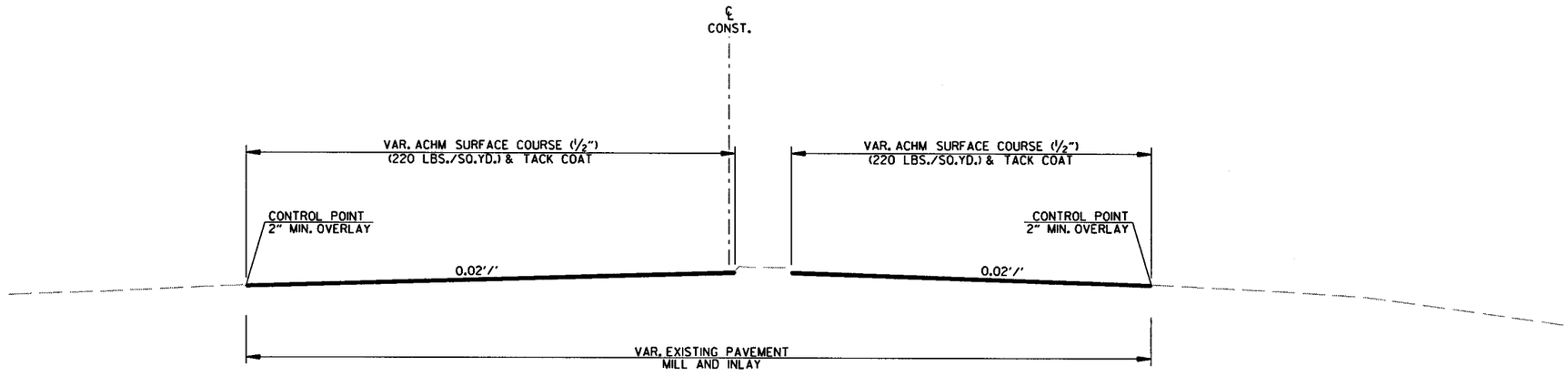
5-7-18



RODNEY PARHAM RD.-MILL AND INLAY

STA. 108+88.07 TO STA. 110+75.93
STA. 119+90.59 TO STA. 121+41.31
STA. 123+51.35 TO STA. 123+91.00

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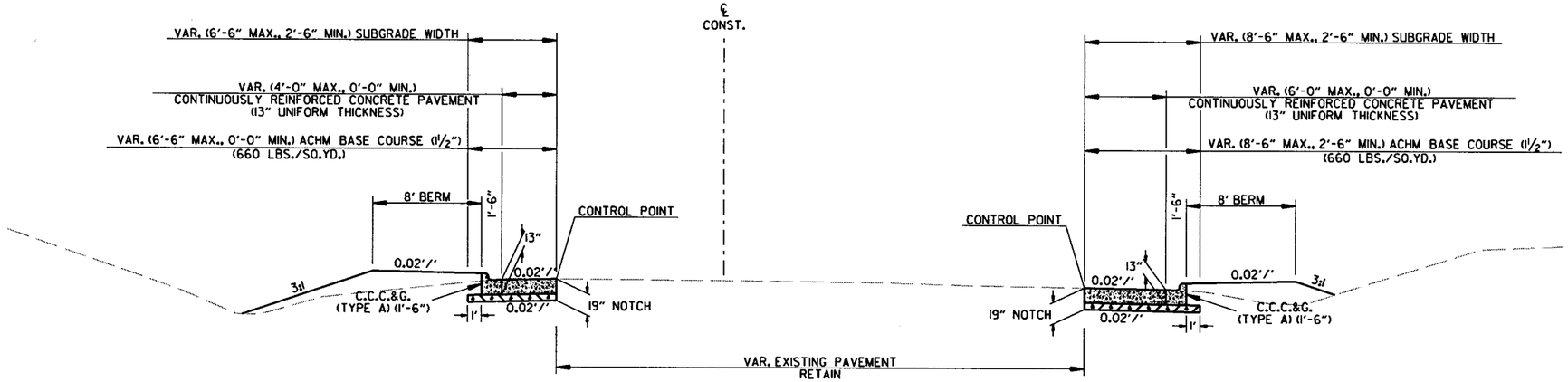
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



RAMP 1
C.C.C. & G. LT. & RT.

STA. 110+30.00 TO STA. 111+25.75

NOTES:

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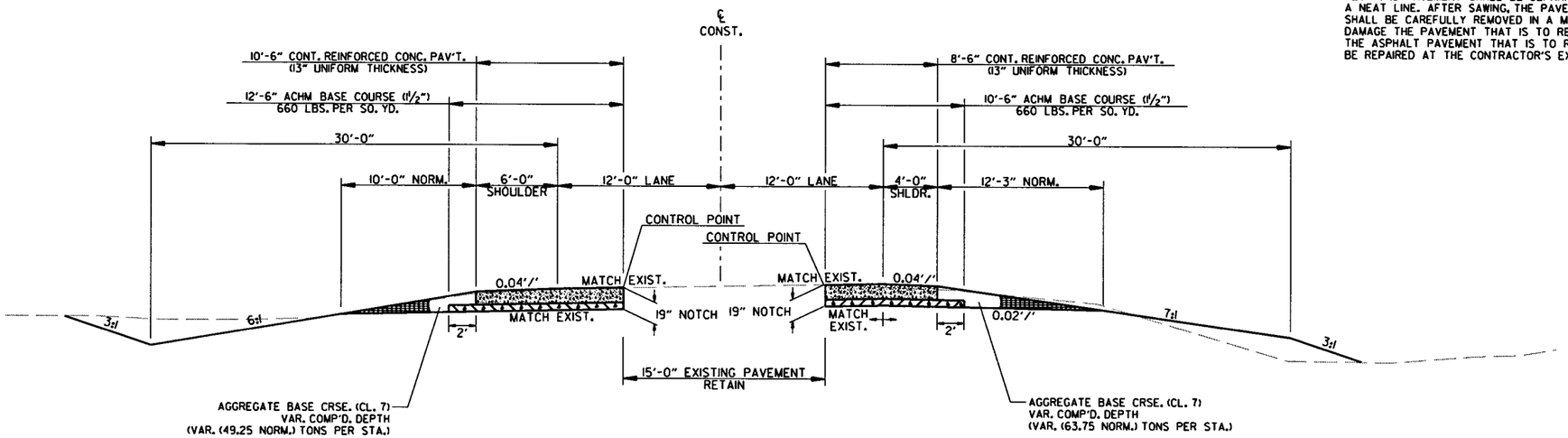

RAMP 4

STA. 400+00.00 TO STA. 408+80.28

4/25/2018

RBB0618.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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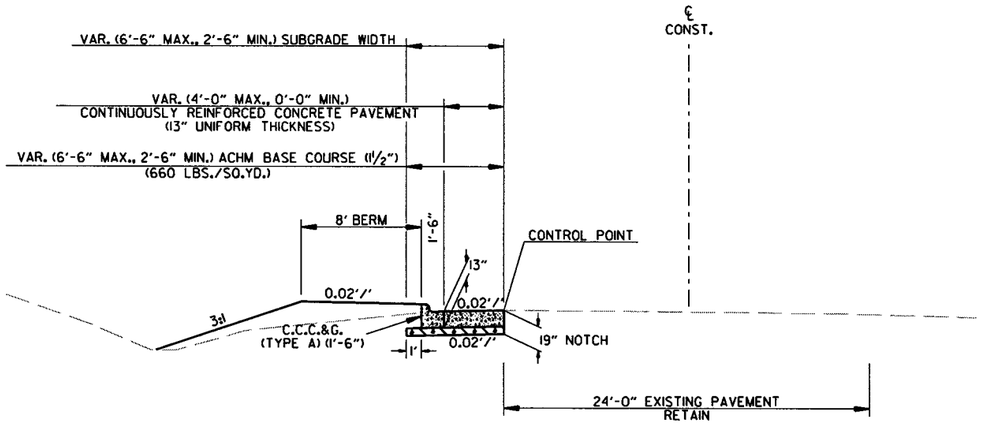
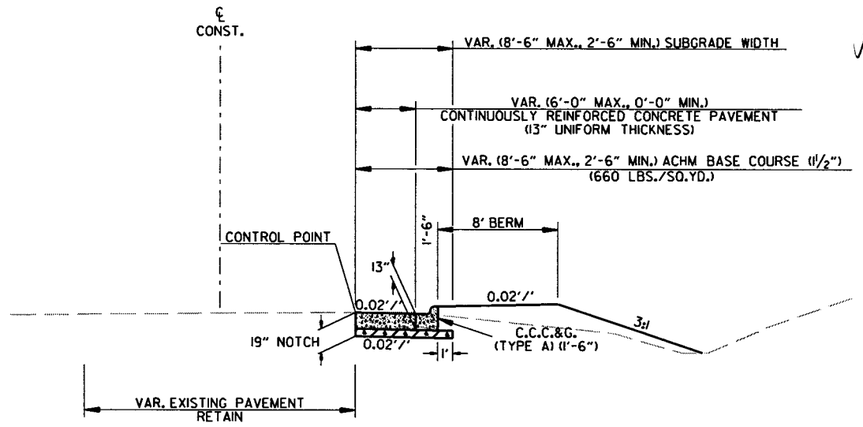


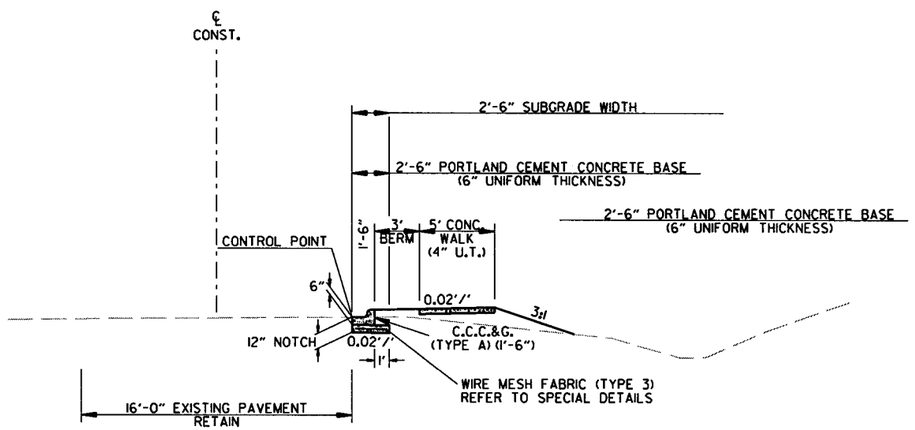
RAMP I
C.C.C. & G. LT.

STA. 111+25.75 TO STA. 112+59.60



RAMP IA-C.C.C. & G. RT.
NOTCH AND WIDEN

STA. 111+25.75 TO STA. 112+38.00



RAMP IA-C.C.C. & G. RT.
NOTCH

STA. 112+38.00 TO STA. 113+39.46

NOTES:

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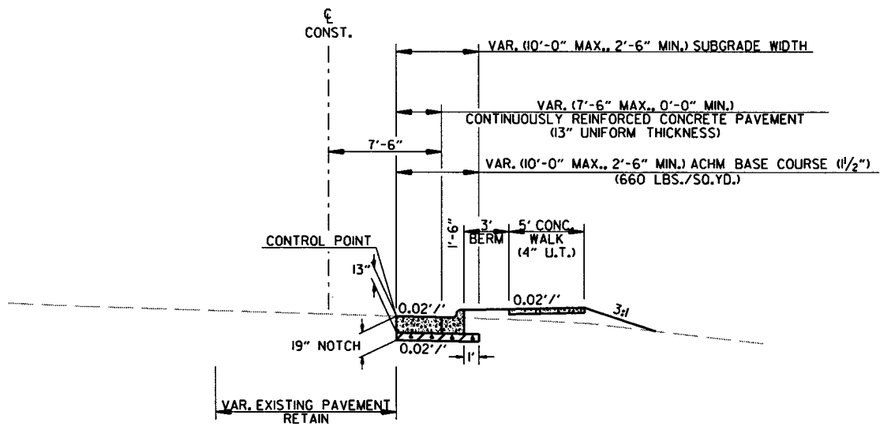
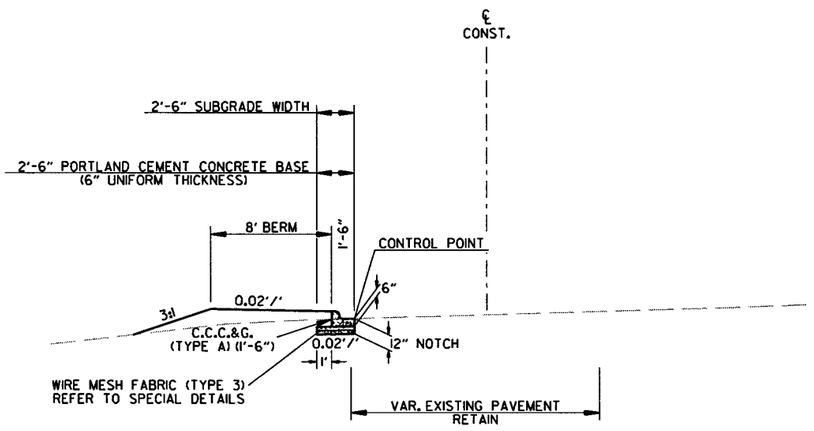
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



RAMP 2A-C.C.C. & G. RT.
NOTCH AND WIDEN

STA. 107+76.00 TO STA. 109+03.59



RAMP 4A-C.C.C. & G. LT.
BERM

STA. 408+34.24 TO STA. 408+71.73

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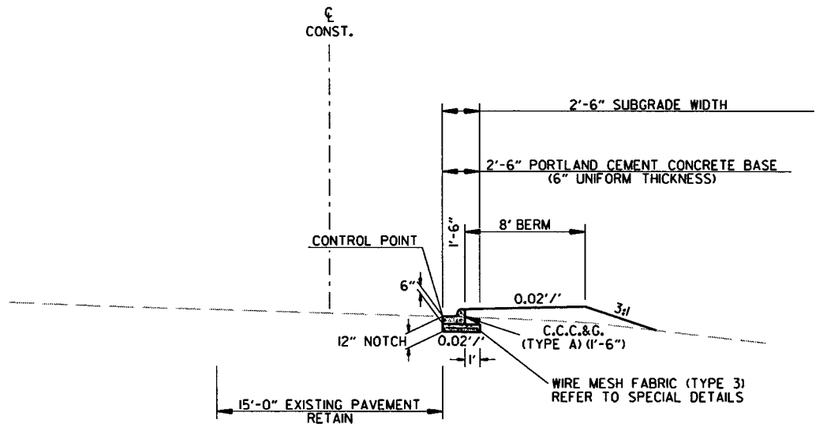
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

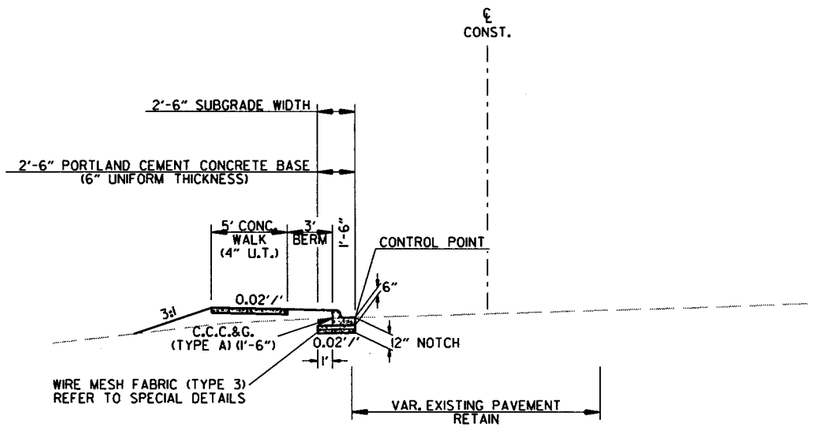
PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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.



RAMP 2A-C.C.C. & G. RT.
NOTCH

STA. 109+03.59 TO STA. 110+51.71



RAMP 4A-C.C.C. & G. LT.
SIDEWALK

STA. 408+71.73 TO STA. 409+45.67

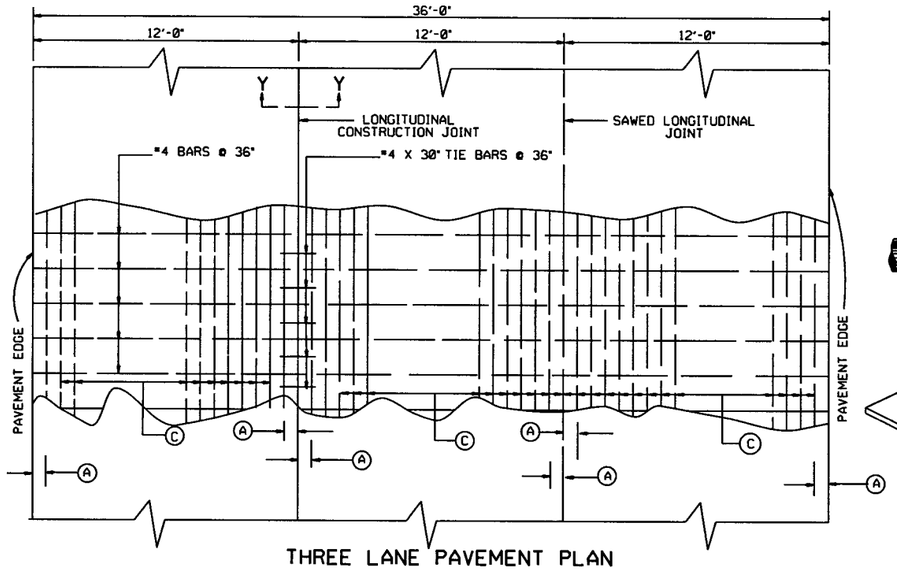
4/25/2018

RBB0618.DGN

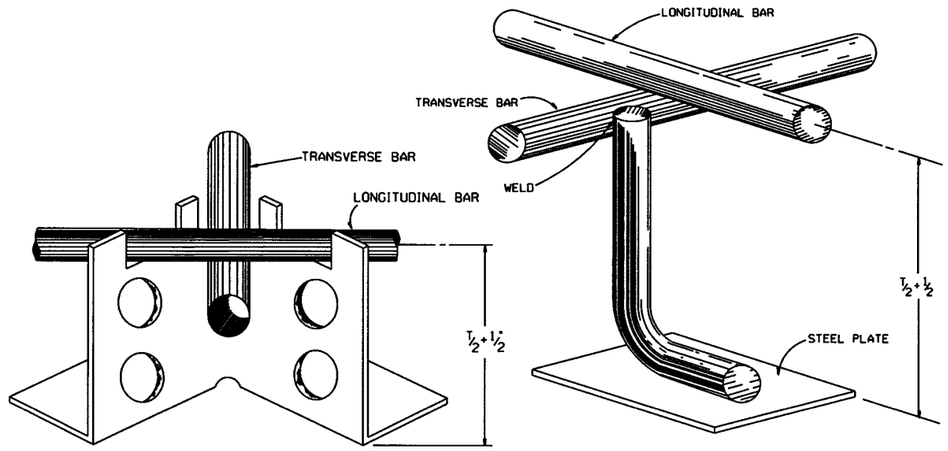
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	9	81

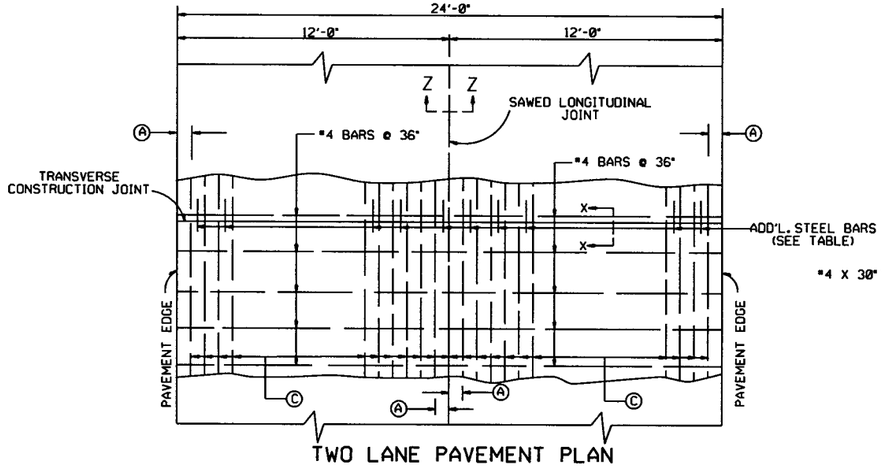
(2) SPECIAL DETAILS



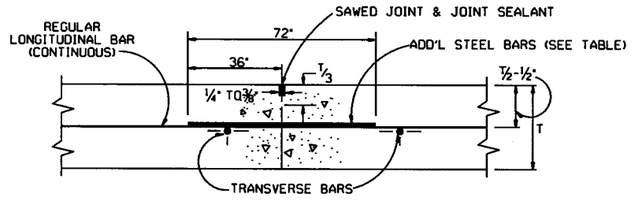
THREE LANE PAVEMENT PLAN
(12 FT. AND 24 FT. PLACEMENT) •



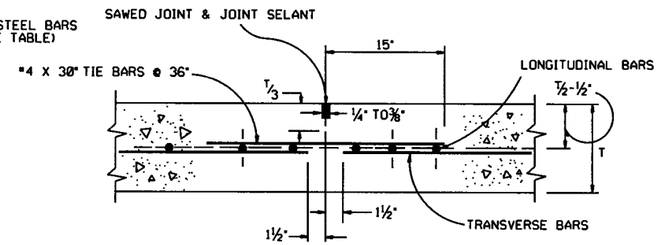
SUGGESTED CHAIR DETAILS



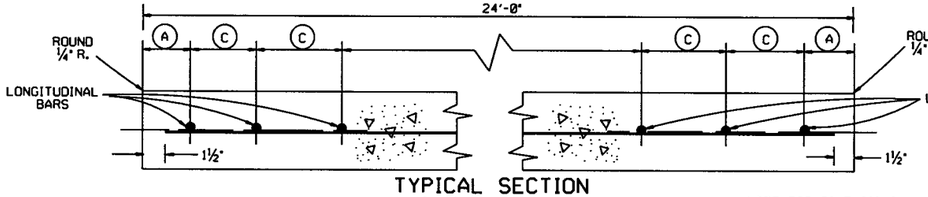
TWO LANE PAVEMENT PLAN
(24 FT. PLACEMENT) •



TRANSVERSE CONSTRUCTION JOINT
SECTION X-X



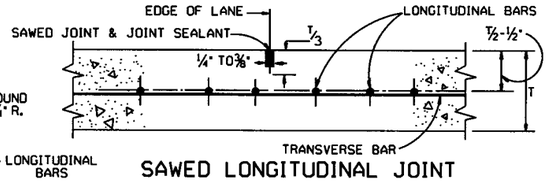
LONGITUDINAL CONSTRUCTION JOINT
SECTION Y-Y



TYPICAL SECTION
(24 FT. PLACEMENT) •

• LANE WIDTHS ARE FOR ILLUSTRATIVE PURPOSES ONLY AND SHOULD NOT BE USED IF IN CONFLICT WITH TYPICAL CROSS SECTIONS SHOWN ELSEWHERE IN THE PLANS.

NOTE: FOR DIMENSIONS A & C SEE TABLE ON RT.



SAWED LONGITUDINAL JOINT
SECTION Z-Z

JOINT DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

• GENERAL NOTES •

SAWED JOINT AND JOINT SEALANT FOR TRANSVERSE CONSTRUCTION JOINT, LONGITUDINAL CONSTRUCTION JOINT AND SAWED LONGITUDINAL JOINT SHALL CONFORM TO THE DETAILS SHOWN FOR SAWED LONGITUDINAL JOINT ON STANDARD DRAWING CPTJ-6A.

NO EXPANSION JOINTS WILL BE USED EXCEPT AT STRUCTURE ENDS OR FIXED OBJECTS AS SHOWN ELSEWHERE IN THE PLANS.

FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCEMENT REFER TO THE GOVERNING SPECIFICATIONS FOR "CONTINUOUSLY REINFORCED CONCRETE PAVEMENT."

FOR DETAILS OF PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE REFER TO TYPICAL SECTIONS.

WITHIN ANY AREA BOUNDED BY TWO FEET PAVEMENT LENGTH, MEASURED PARALLEL TO THE CENTERLINE: AND TWELVE FEET OF PAVEMENT WIDTH, MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE, NOT OVER 33% OF THE REGULAR LONGITUDINAL STEEL SHALL BE SPLICED.

MNINMUM SPLICE REQUIREMENT: 25 TIMES THE NOMINAL DIAMETER OF THE BAR OR 16 INCHES WHICHEVER IS LONGER.

AT TRANSVERSE CONSTRUCTION JOINTS THE REGULAR LONGITUDINAL BARS SHALL EXTEND EITHER SIDE OF THE JOINT SUCH THAT THE BAR SPLICES FOR THE REGULAR LONGITUDINAL BARS SHALL BE A MINIMUM OF FOUR FEET FROM THE CONSTRUCTION JOINT. AT LONGITUDINAL CONSTRUCTION JOINT, IF THE CONTRACTOR ELECTS TO CONTINUE THE REGULAR TRANSVERSE STEEL THROUGH THE JOINTS, THE #4 TIE BARS SHOWN HEREON MAY BE DELETED.

CHAIR DETAILS SHOWN HEREON ARE EXAMPLES ONLY; OTHER APPROVED TYPES WHICH WILL SATISFY THE REQUIREMENTS NOTED HEREIN, WILL BE PERMITTED. CHAIR SPACINGS SHALL NOT BE GREATER THAN 36" C-C (LONGITUDINAL) AND 48" C-C (TRANSVERSE). ADDITIONAL CHAIRS SHALL BE USED IF NECESSARY TO MEET PLACEMENT REQUIREMENTS.

AT ALL LAP SPLICES OCCURRING WITHIN 8 FEET BEYOND THE CONSTRUCTION JOINTS, IN THE DIRECTION OF PAVING AND 4 FEET BACK OF THE CONSTRUCTION JOINTS, THE LENGTH OF LAP SHALL BE DOUBLE THAT NORMALLY SPECIFIED OR EACH SPLICE SHALL BE STRENGTHENED BY SPLICING IN, SYMMETRICALLY WITH THE LAP, A 6 FOOT LENGTH OF DEFORMED BAR OF THE SAME NOMINAL SIZE AS THE LONGITUDINAL REINFORCEMENT.

TABLE OF EQUIVALENT LONGITUDINAL REINFORCEMENT

PAVEM'T. THICKNESS	BAR SIZE	24'-0" PLACEMENT WIDTH				12'-0" PLACEMENT WIDTH				ADD'L STEEL@ TRANS. CONSTR. JOINT			
		SPACING (C-C)		BARS PER PLACE--MENT	STEEL ①	SPACING (C-C)		BARS PER PLACE--MENT	STEEL ①	SIZE	AVG. SPACING	② NO. PER LANE	WEIGHT
		A	C		LBS./ SQ. YD.	A	C		LBS./ SQ. YD.				LBS. PER FOOT
INCHES		INCHES				INCHES					INCHES		
6	#5	5½	7	40	18.28	5½	7	20	18.26	⅝" X 72"	14	10	5.22
8	#6	4½	7½	38	24.55	4½	7½	19	24.41	¾" X 72"	15	10	7.51
9	#6	3¾	6½	44	27.98	3¾	6½	22	27.95	¾" X 72"	13	11	8.26
10	#7	4	8½	34	29.53	4	8½	17	29.51	⅞" X 72"	17	8	8.18
11	#7	4½	7½	38	32.78	4½	7½	19	32.75	⅞" X 72"	15	10	10.22
12	#7	5½	7	40	34.39	5½	7	20	34.37	⅞" X 72"	14	10	10.22
13	#7	3¾	6½	44	37.65	3¾	6½	22	37.62	⅞" X 72"	13	11	11.24

NOTE: WHERE THE PROPOSED PLACEMENT WIDTHS VARY FROM THE BASIC DESIGN WIDTH SHOWN, THE SPACING "A" AND THE ADJACENT SPACING "C" SHALL BE ADJUSTED TO ACCOMODATE A REINFORCEMENT ARRANGEMENT EQUAL TO OR SLIGHTLY HEAVIER THAN THAT SHOWN AS DIRECTED BY THE ENGINEER.

① INCLUDES BOTH REGULAR LONGITUDINAL AND TRANSVERSE BARS. BASED UPON 1 FOOT PAVEMENT FOR THE WIDTH INDICATED. ALL TRANSVERSE STEEL IS #4 BARS AT 36" CENTERS. FOR ESTIMATING PURPOSES IT IS ASSUMED THAT LONGITUDINAL BARS ARE SPLICED AT 32' INTERVALS.

② THIS SHALL BE THE MINIMUM NUMBER OF ADDITIONAL STEEL BARS TO BE PLACED PER LANE. THE SPACING OF THE ADDITIONAL STEEL BARS SHALL BE VARIED AS DIRECTED IN ORDER TO PROVIDE A MINIMUM CLEARANCE OF 2½" FROM EACH REGULAR LONGITUDINAL REINFORCING BAR.

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SPECIAL DETAILS

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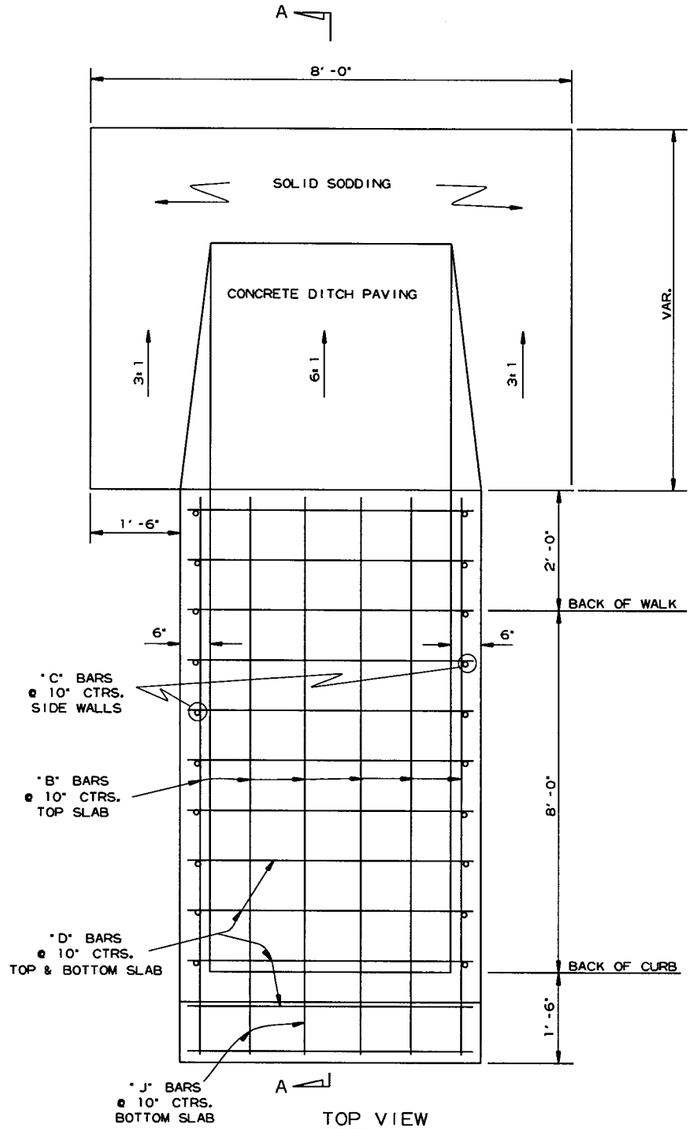
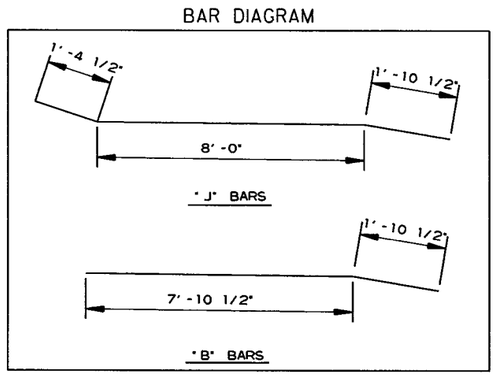
				6	ARK.			
				JOB NO.		BB0618	10	81

(2) SPECIAL DETAILS

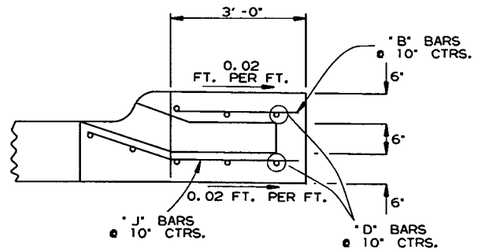


TOP VIEW

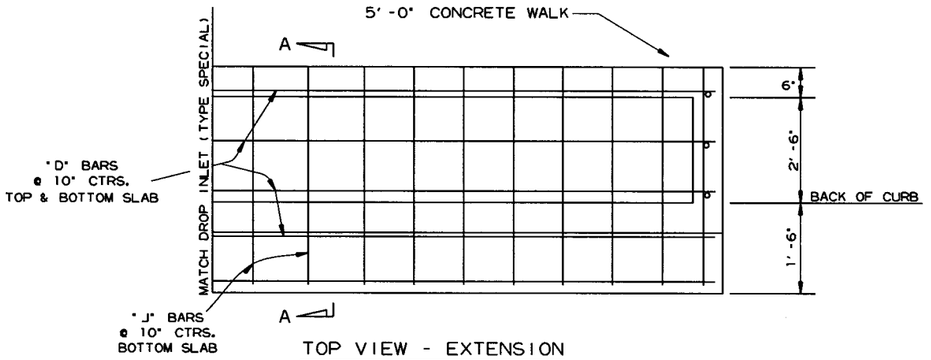


CLASS A CONC.	REINF. STEEL-RDWY. GRADE 60
CU. YDS.	POUND
2.53	207

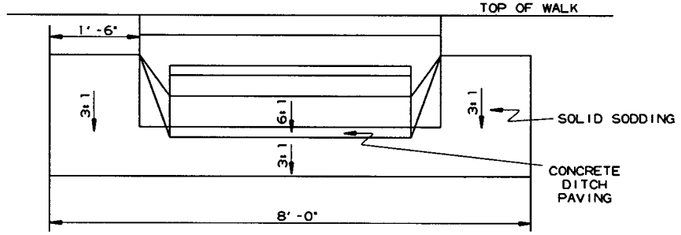
QUANTITIES FOR INFORMATION ONLY
DROP INLET (TYPE SPECIAL)



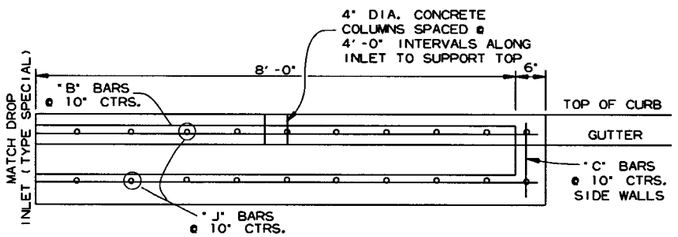
SECTION A-A - EXTENSION



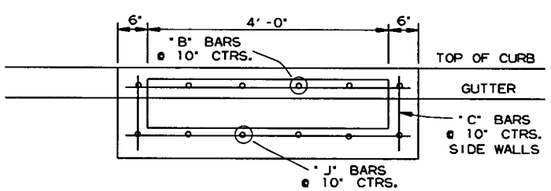
TOP VIEW - EXTENSION



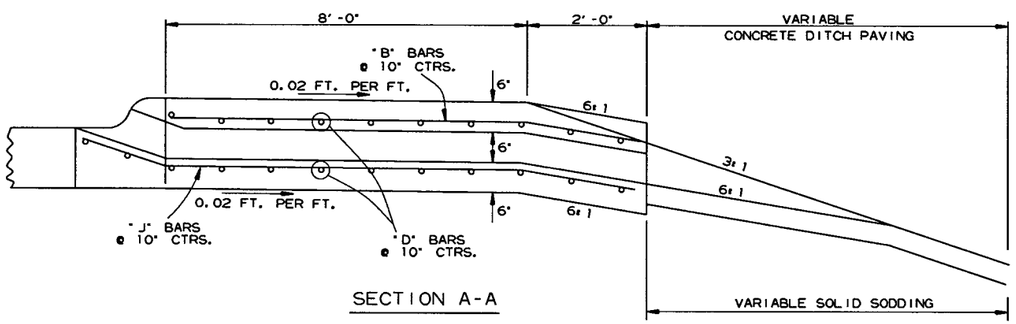
BACK VIEW



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.

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DROP INLET (TYPE SPECIAL)

SPECIAL DETAILS

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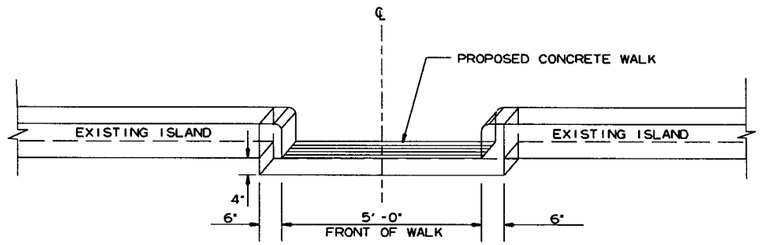
				6	ARK.			
				JOB NO.		BB0618	11	81

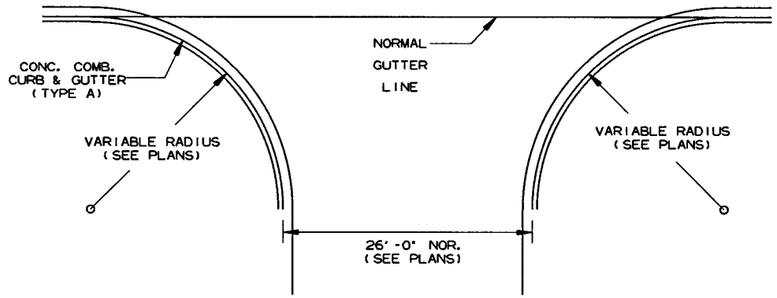
(2) SPECIAL DETAILS



FACE SHALL MEET REQUIREMENTS OF TYPE B CURB

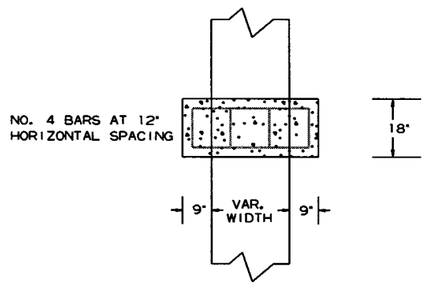
NOTE: CONCRETE WALK THROUGH ISLAND SHALL BE POURED MONOLITHICALLY. ALL MATERIALS REQUIRED TO CONSTRUCT CONCRETE WALK THRU ISLAND SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE ISLAND.

CONCRETE WALK THROUGH ISLAND



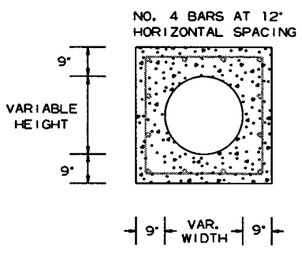
NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

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

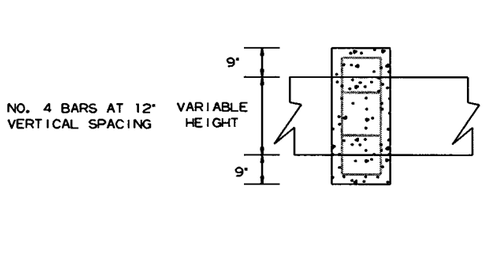


TOP VIEW

MIN 3" COVER

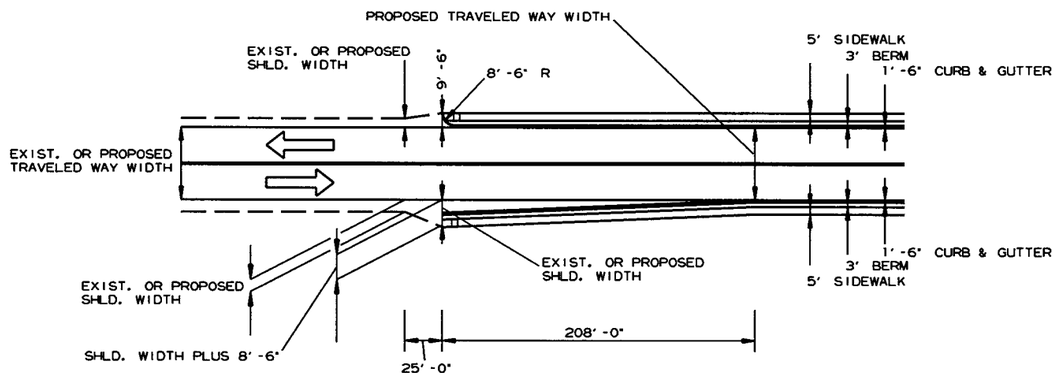


FRONT VIEW



SIDE VIEW

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL



TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

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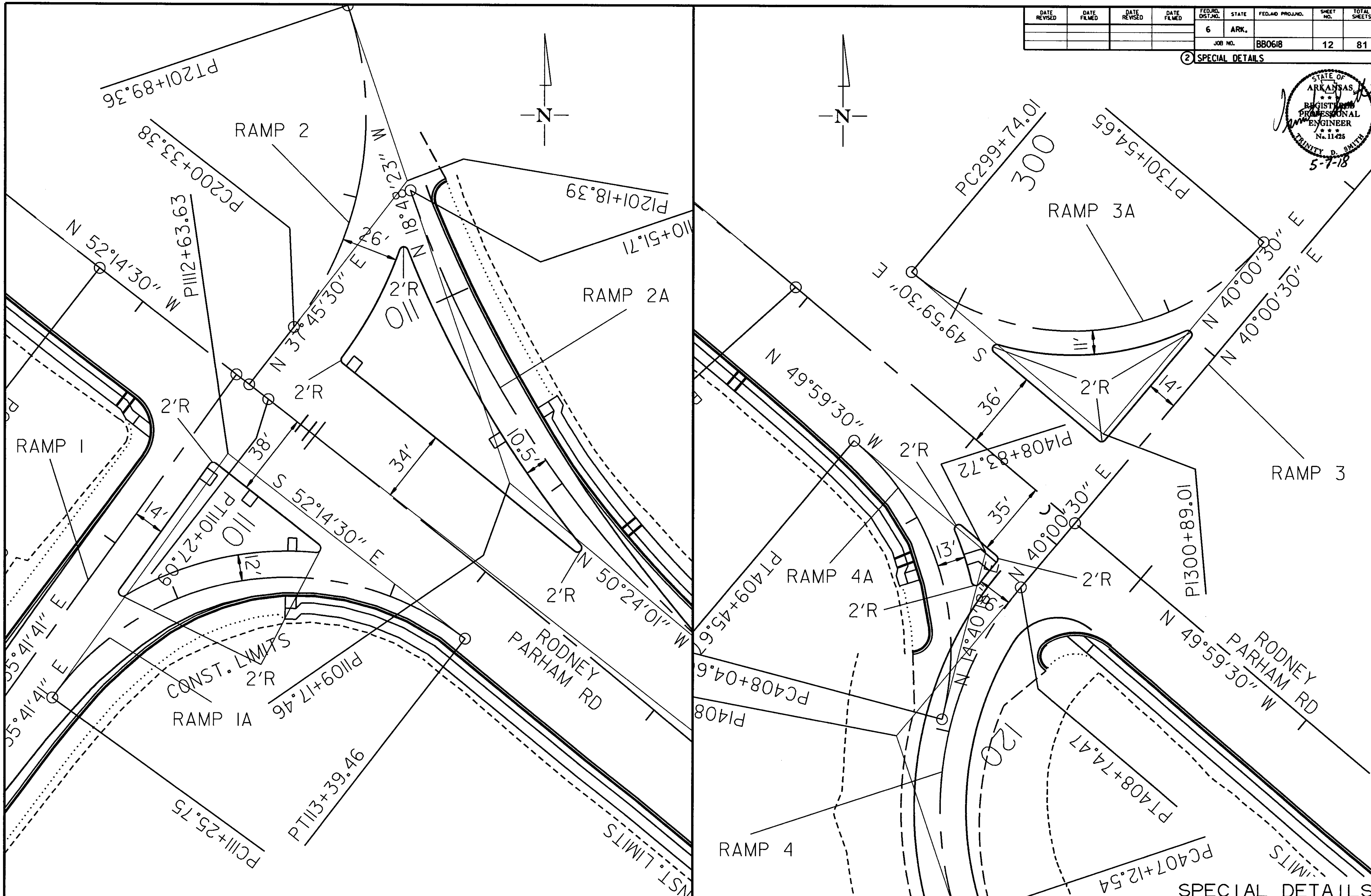
				6	ARK.			
				JOB NO.		BB0618	12	81

(2) SPECIAL DETAILS



STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18
PT201+89.36
RAMP 2
PC200+33.38
PI112+63.63
N 52°14'30" W
N 18°48'23" W
PI201+18.39
110+51.71
RAMP 2A
N 37°45'30" E
26'
2'R
110
2'R
RAMP 1
2'R
38'
34'
14'
PT110+27.09
110
S 52°14'30" E
12'
10.5'
N 50°24'01" W
2'R
CONST. LIMITS
2'R
RAMP 1A
PI109+17.46
RODNEY PARHAM RD
PC111+25.75
PT113+39.46
CONST. LIMITS
55°41'41" E
55°41'41" E
PC299+74.01
300
PT301+54.65
RAMP 3A
S 49°59'30" E
N 40°00'30" E
N 40°00'30" E
11'
2'R
14'
36'
N 49°59'30" W
2'R
PI408+83.72
RAMP 3
35'
N 40°00'30" E
PI300+89.01
13'
RAMP 4A
2'R
2'R
PT409+45.67
N 14°40'18" E
N 49°59'30" W
RODNEY PARHAM RD
PC408+04.6
PI408
120
PT408+74.47
RAMP 4
PC407+12.54
LIMITS
SPECIAL DETAILS

4/25/2018

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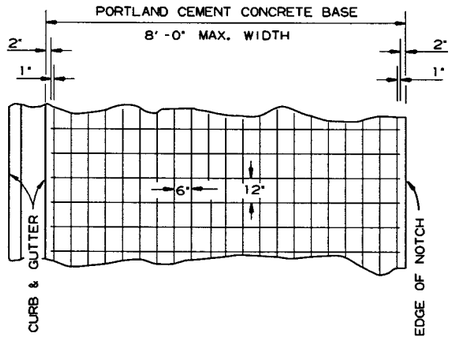
				6	ARK.			
				JOB NO.		BB0618	13	81

(2) SPECIAL DETAILS

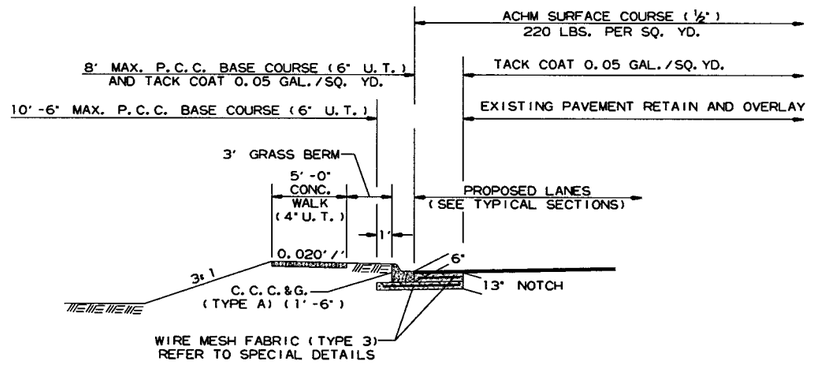


6" X 12" MESH FABRIC (TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ.YD.

NOTES:

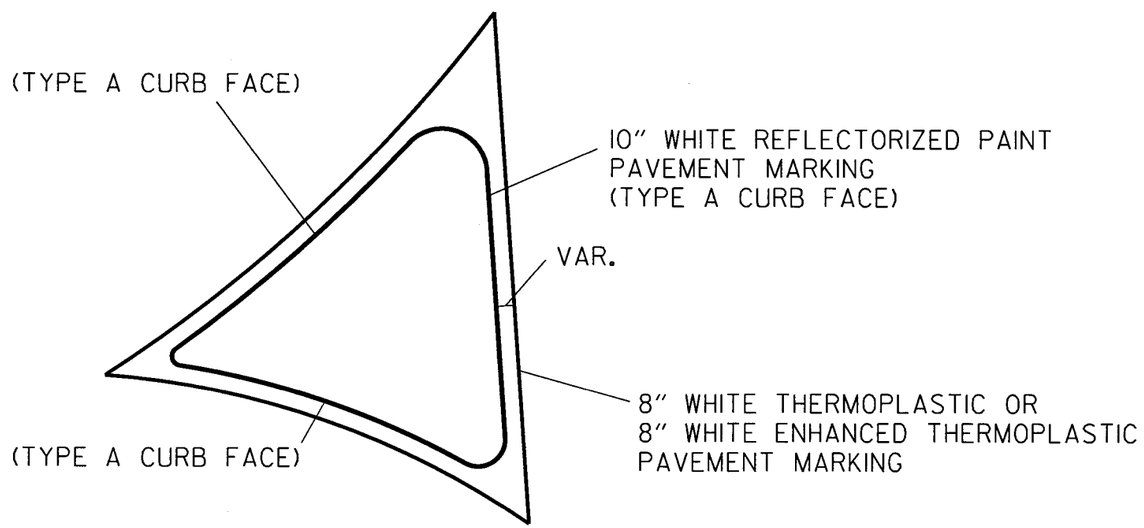
1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (10" U.T.)

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



P.C.C. BASE WIDENING DETAIL

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



ISLAND STRIPING DETAIL

STATE OF ARKANSAS
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(2) SPECIAL DETAILS

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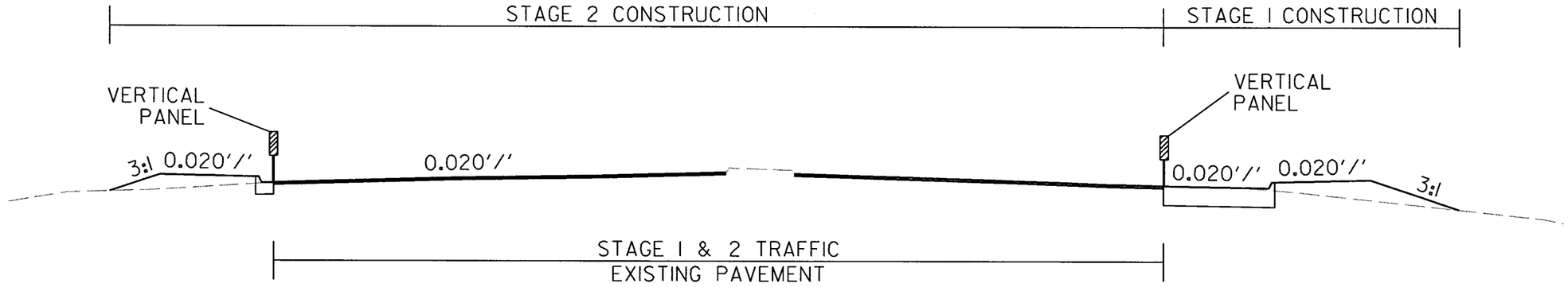
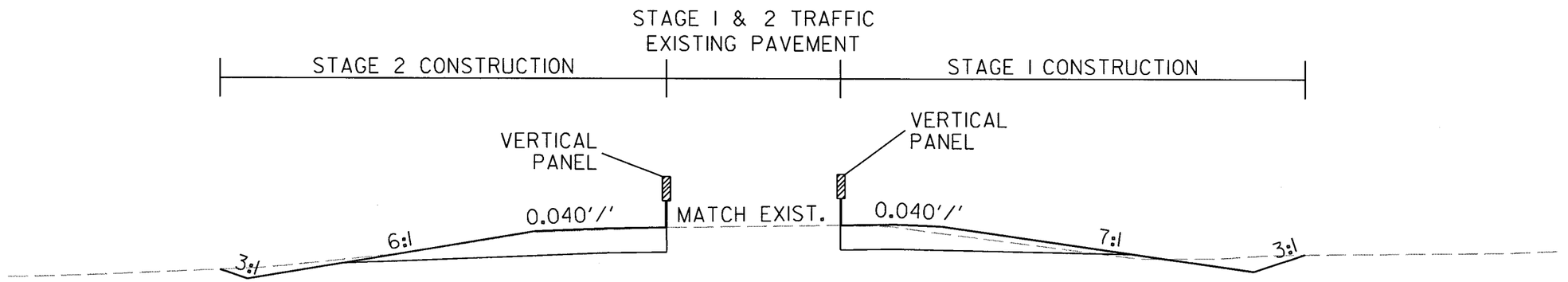


DETAIL FOR STAGE CONSTRUCTION
RODNEY PARHAM RD.



DETAIL FOR STAGE CONSTRUCTION
RAMP 4

4/25/2018

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
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(2) TEMPORARY EROSION CONTROL DETAILS

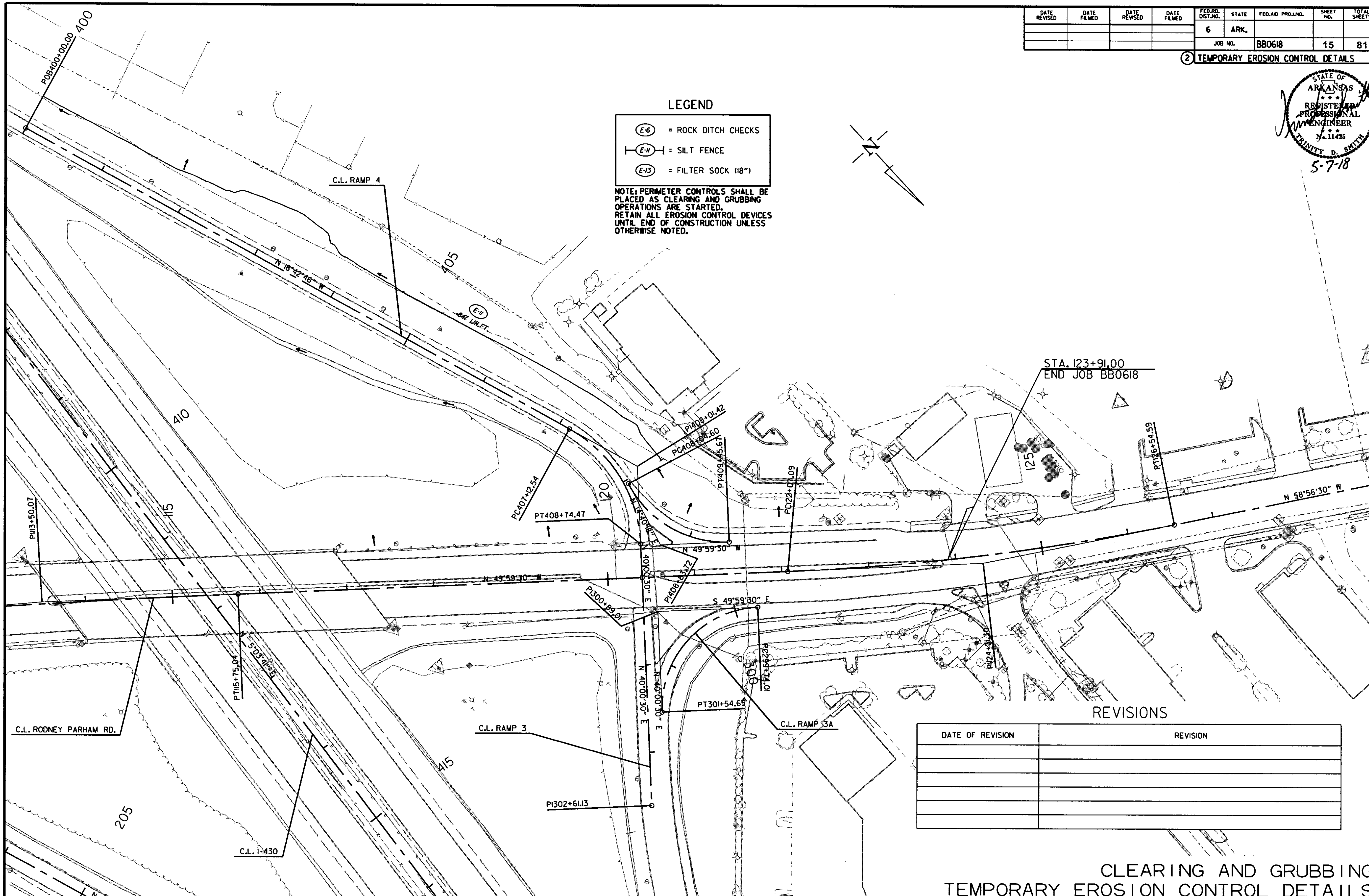
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

5-7-18

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

4/25/2018

RBB0618.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.		BB0618	16	81

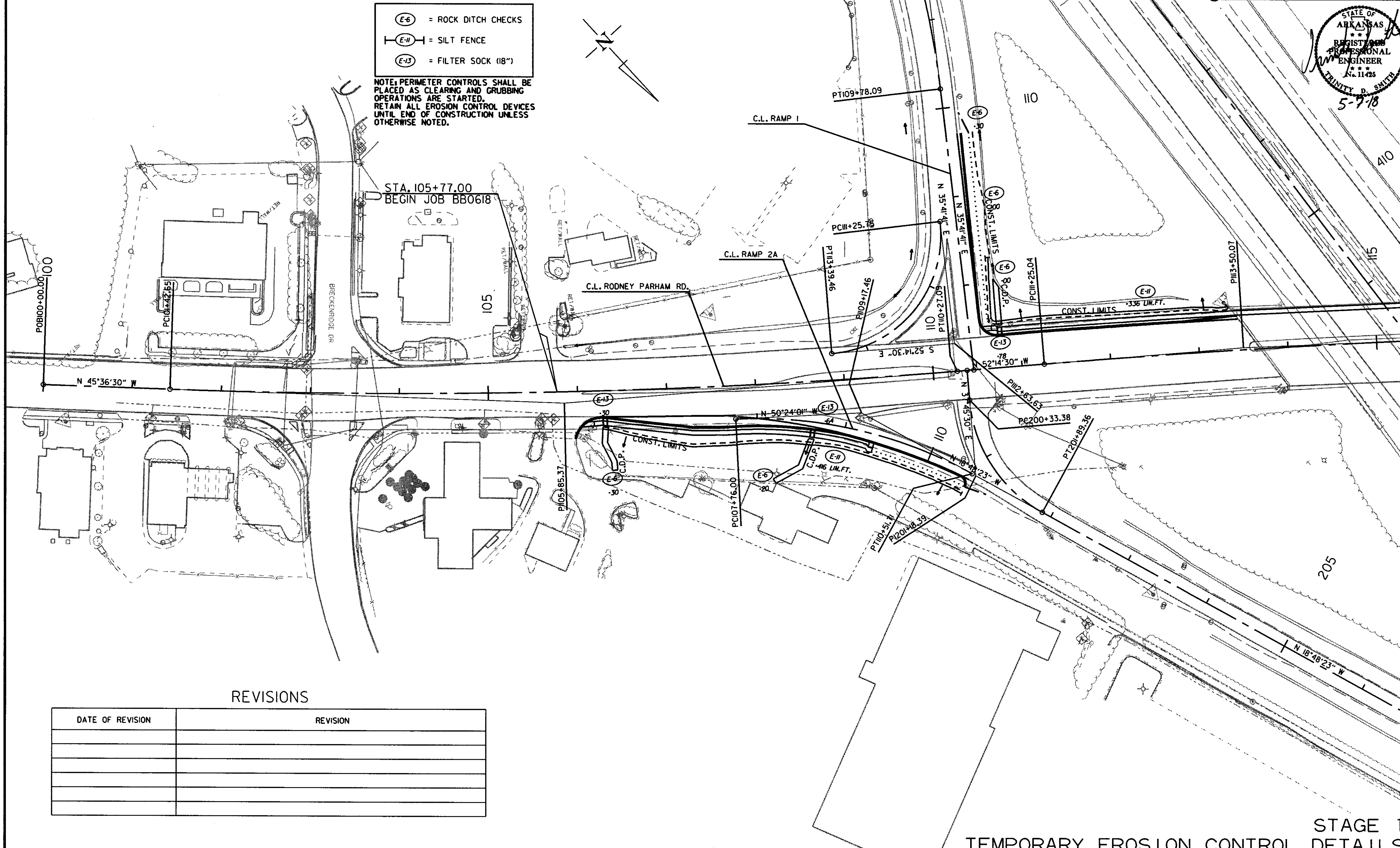
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



REVISIONS

DATE OF REVISION	REVISION

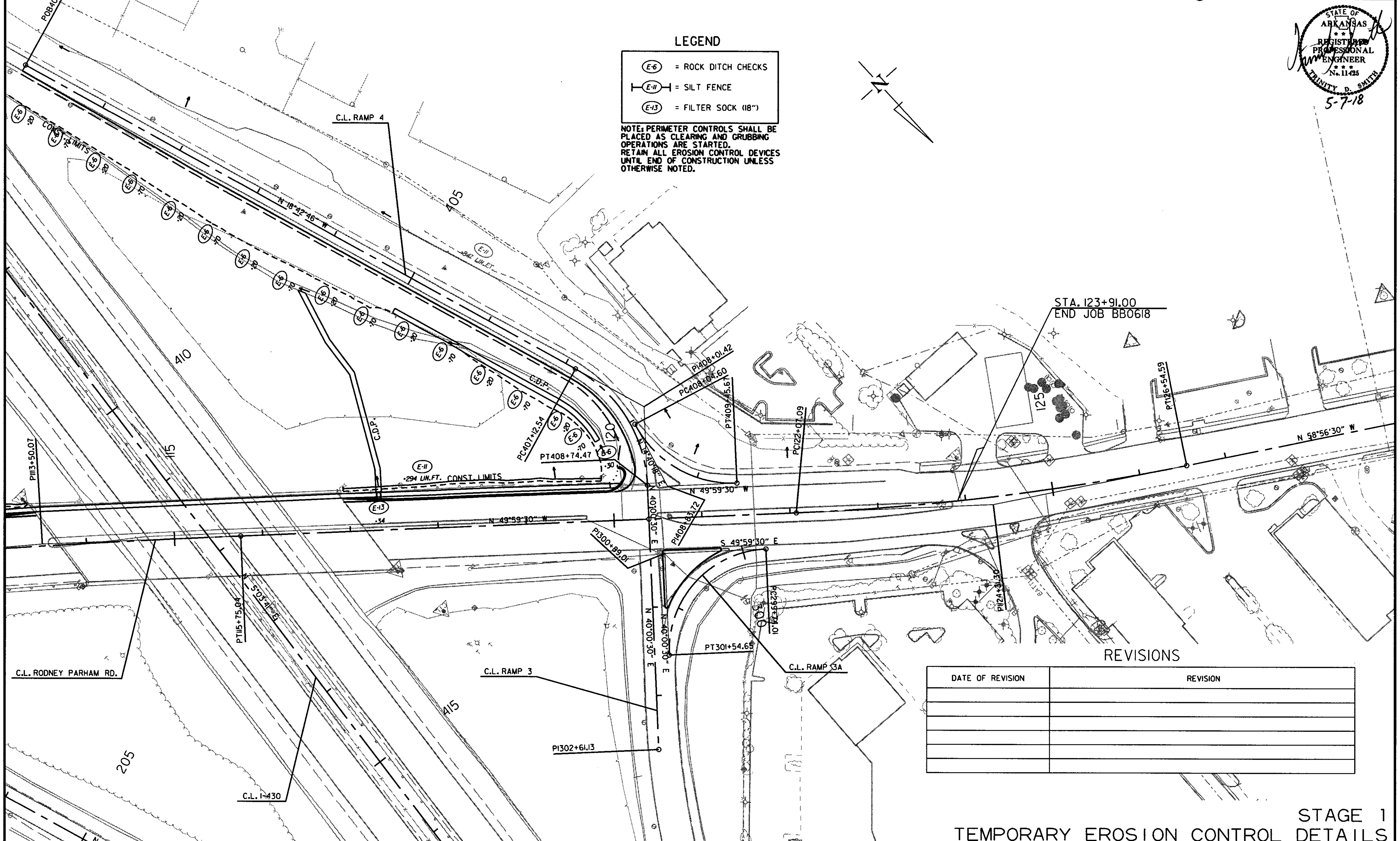
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

4/25/2018
RBB0618.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.		BB0618	17	81

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18



LEGEND
(E-6) = ROCK DITCH CHECKS
(E-11) = SILT FENCE
(E-13) = FILTER SOCK (18")
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.
POB400+00.00
400
405
410
415
115
120
125
205
300
C.L. RAMP 4
N 18°42'46" W
CONST. LIMITS
-941 LIN.FT.
-294 LIN.FT. CONST. LIMITS
C.D.P.
PC407+12.54
PT408+74.47
PI408+01.42
PC408+04.60
PT409+45.67
PC122+07.09
PI408+63.72
PI300+89.01
STA. 123+91.00
END JOB BB0618
PT126+54.59
N 58°56'30" W
N 49°59'30" W
S 49°59'30" E
N 40°00'30" E
PI124+31.30
PI113+50.07
PT115+75.04
N 5°03'41" E
C.L. RODNEY PARHAM RD.
C.L. RAMP 3
C.L. RAMP 3A
PT301+54.65
PI302+61.13
C.L. I-430
N

REVISIONS

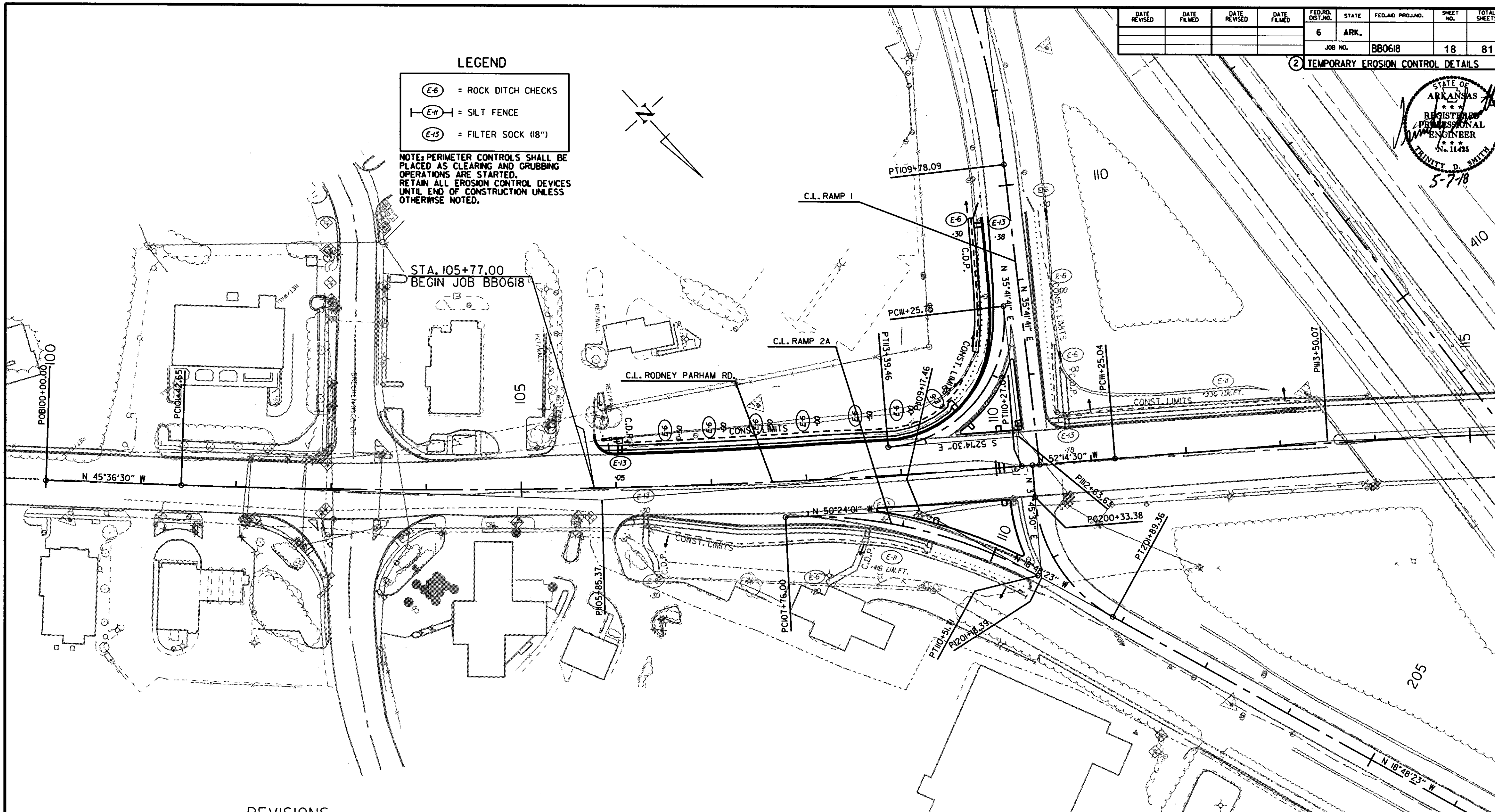
DATE OF REVISION	REVISION

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

4/25/2018
RBB0618.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.		BB0618	18	81

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND
E-6 = ROCK DITCH CHECKS
E-11 = SILT FENCE
E-13 = FILTER SOCK (18")
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18
STA. 105+77.00
BEGIN JOB BB0618
C.L. RAMP 1
C.L. RAMP 2A
C.L. RODNEY PARHAM RD.
PT109+78.09
PC111+25.78
PT113+39.46
PI109+17.46
PT110+27.00
PC111+25.04
PI113+50.07
POB100+00.00
PC101+42.65
PI105+85.37
PC107+76.00
PT110+51.11
PI201+18.39
PI112+63.63
P0200+33.38
PT201+89.36
N 45°36'30" W
N 35°41'41" E
S 52°14'30" E
N 52°14'30" W
N 50°24'01" W
N 18°48'23" W
CONST. LIMITS
336 LIN.FT.
416 LIN.FT.
C.D.P.
100
105
110
115
205
410

REVISIONS

DATE OF REVISION	REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

4/25/2018

RBB0618.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.		BB0618	19	81

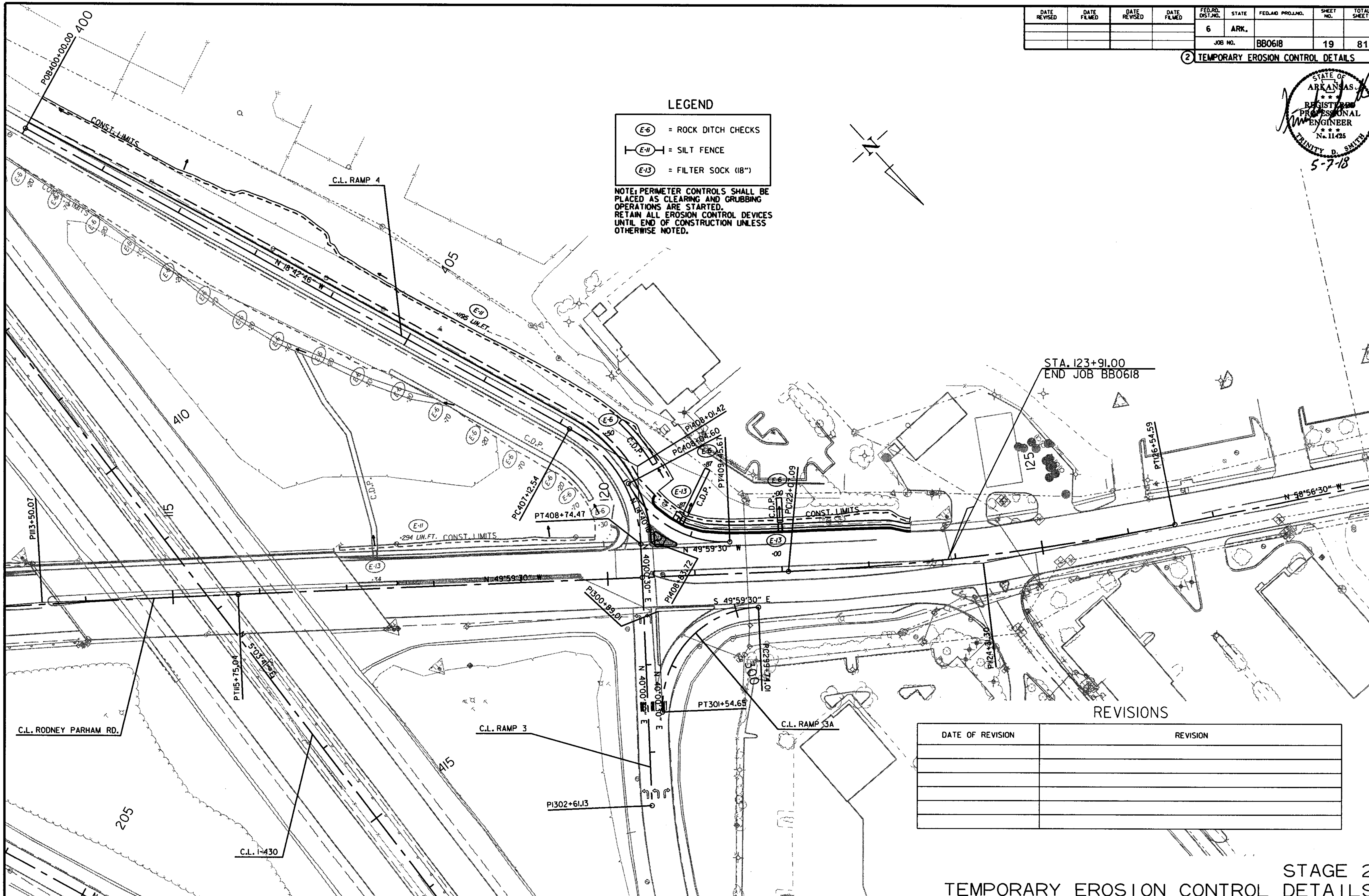
(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 5-7-18

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.



REVISIONS

DATE OF REVISION	REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

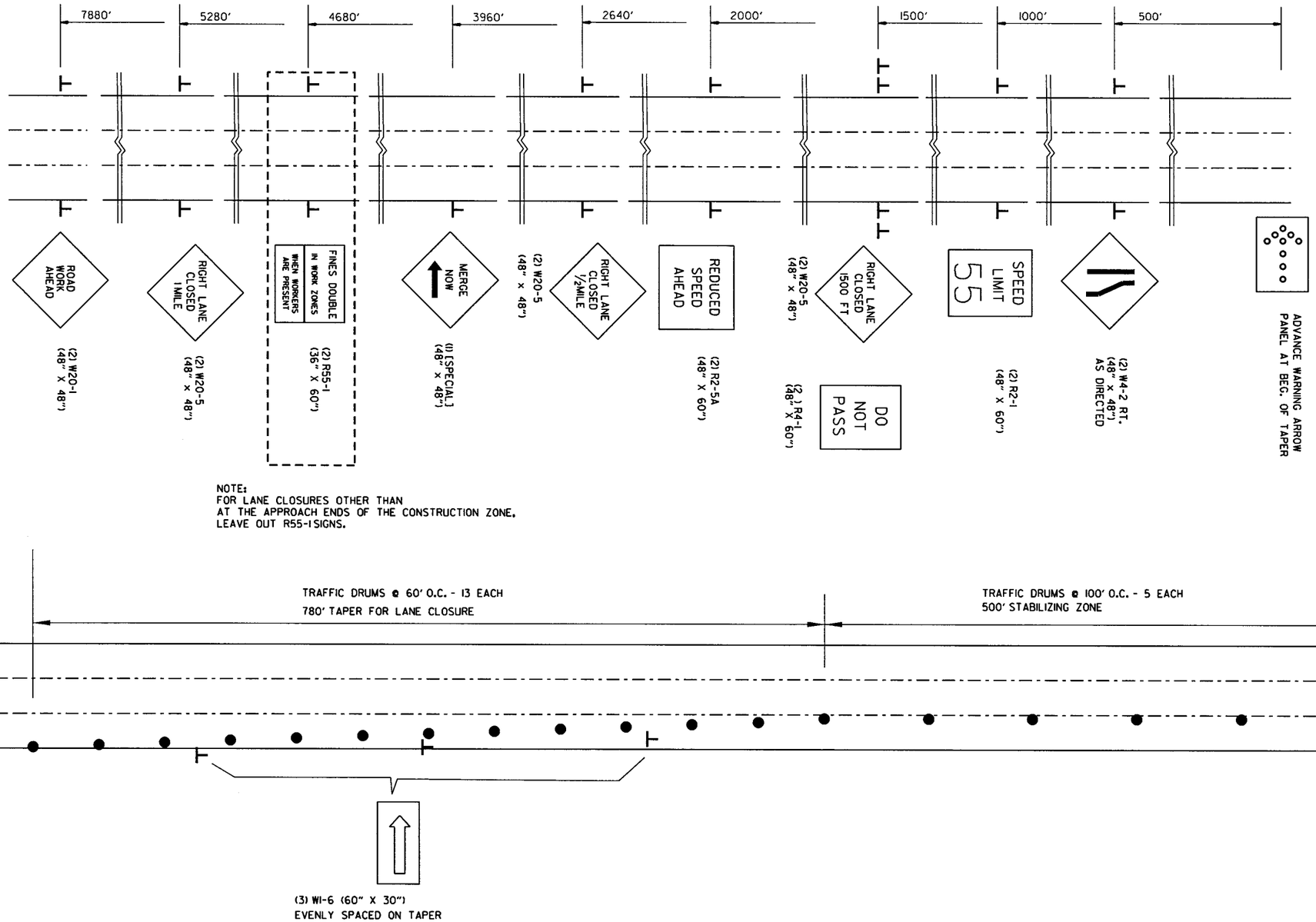
4/25/2018

RBB0618.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.		BB0618	20	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



ADVANCE WARNING SIGNS & TYPICAL TRAFFIC DRUM PLACEMENT
FOR OUTSIDE LANE CLOSURE
(I-430)

LANE CLOSURE
MAINTENANCE OF TRAFFIC DETAILS

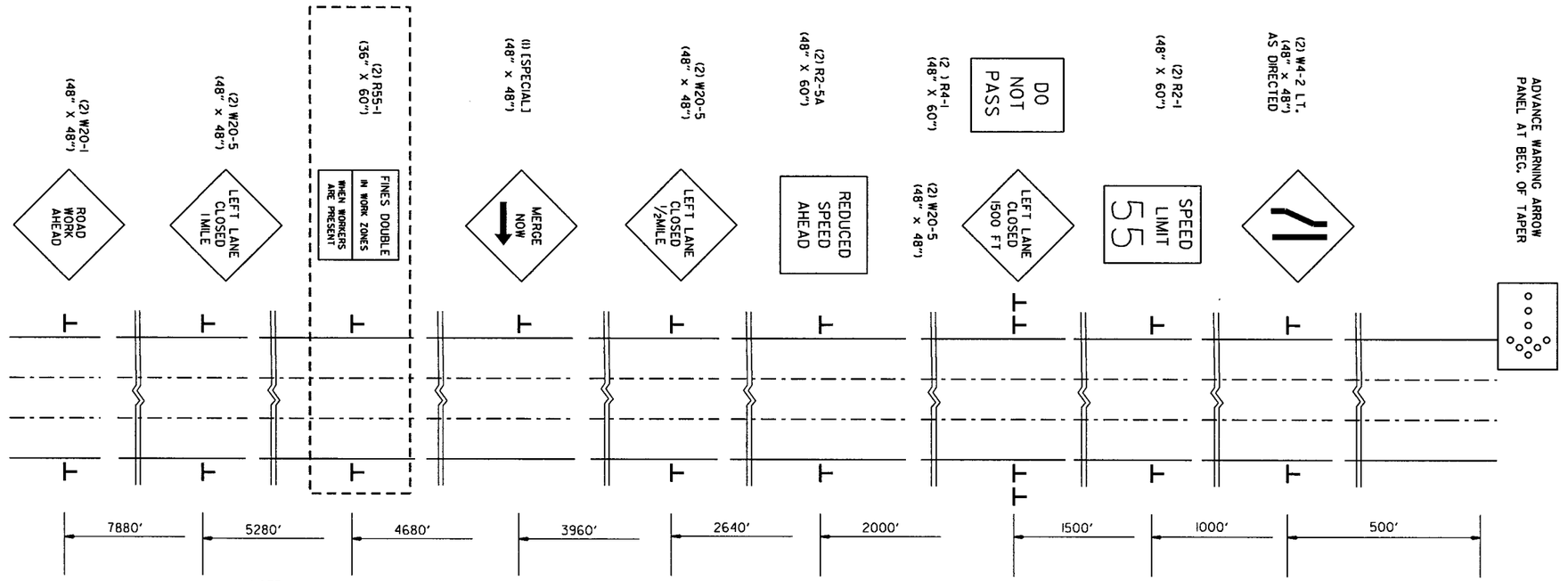
4/25/2018

RBB0618.DGN

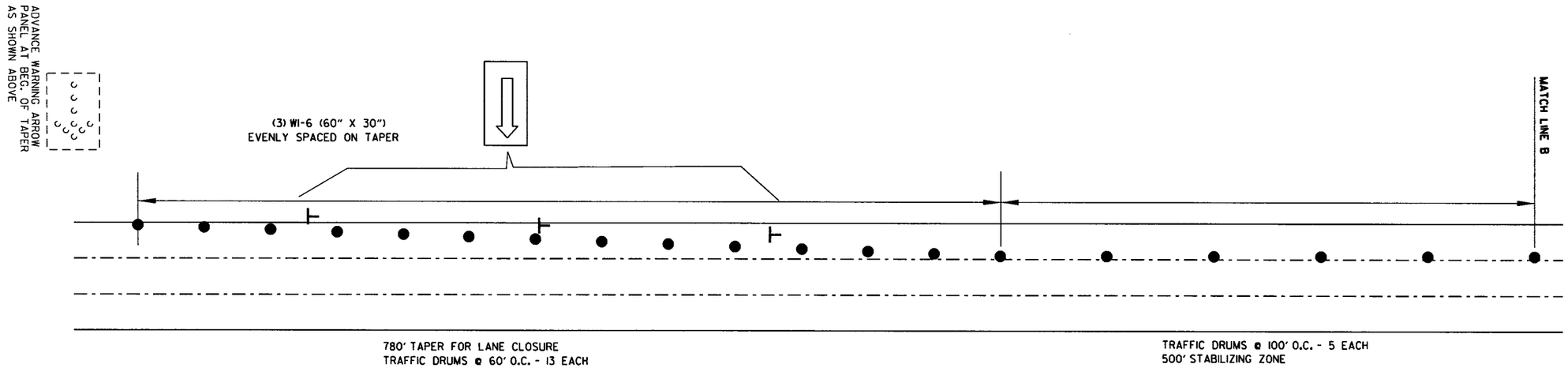
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	21	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



NOTE:
FOR LANE CLOSURES OTHER THAN
AT THE APPROACH ENDS OF THE CONSTRUCTION ZONE.
LEAVE OUT R55-1 SIGNS.



ADVANCE WARNING SIGNS & TYPICAL TRAFFIC DRUM LAYOUT
FOR INSIDE LANE CLOSURES
(I-430)

LANE CLOSURE
MAINTENANCE OF TRAFFIC DETAILS

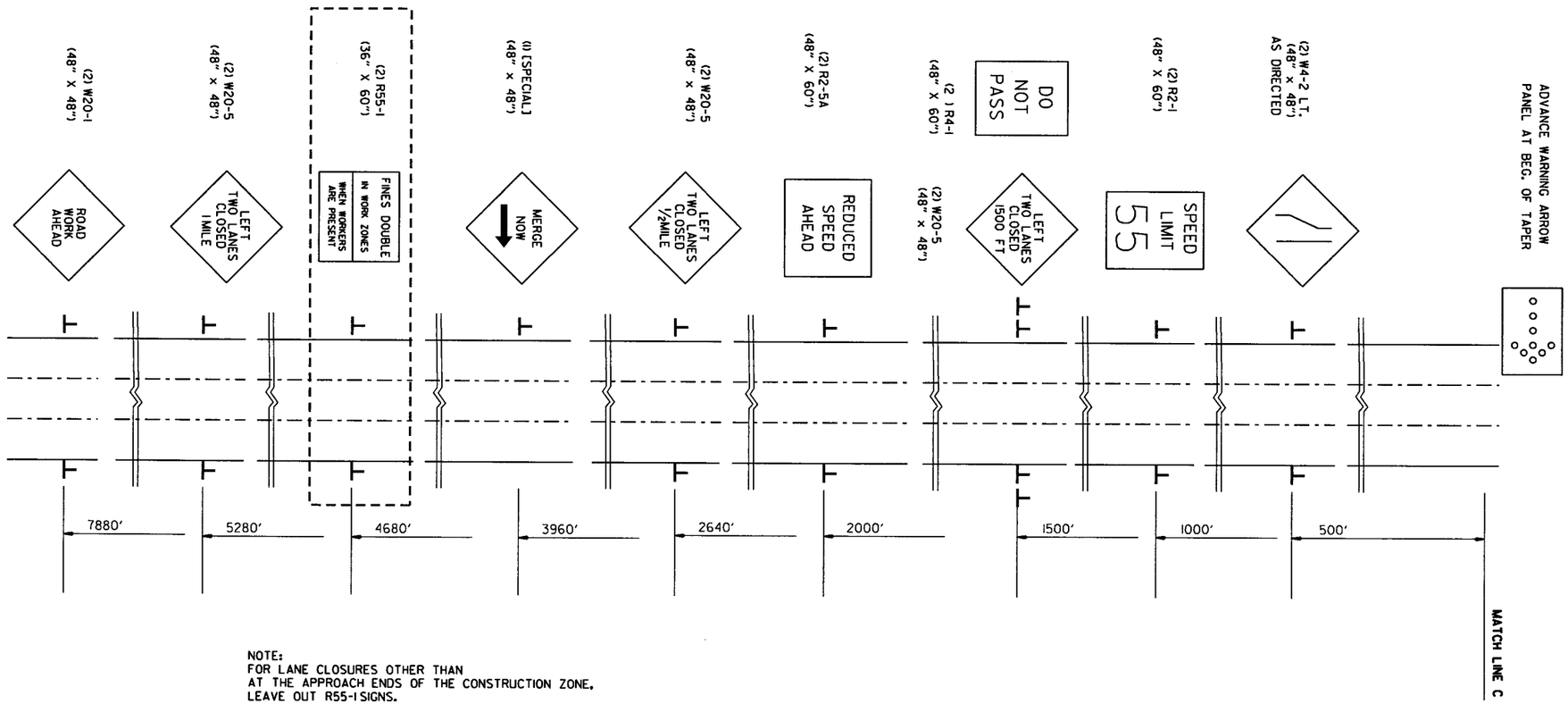
4/25/2018

RBB0618.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.		BB0618	22	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



NOTE:
FOR LANE CLOSURES OTHER THAN
AT THE APPROACH ENDS OF THE CONSTRUCTION ZONE,
LEAVE OUT R55-1 SIGNS.

ADVANCE WARNING SIGNS
FOR INSIDE & MIDDLE LANE CLOSURES
(I-430)

4/25/2018

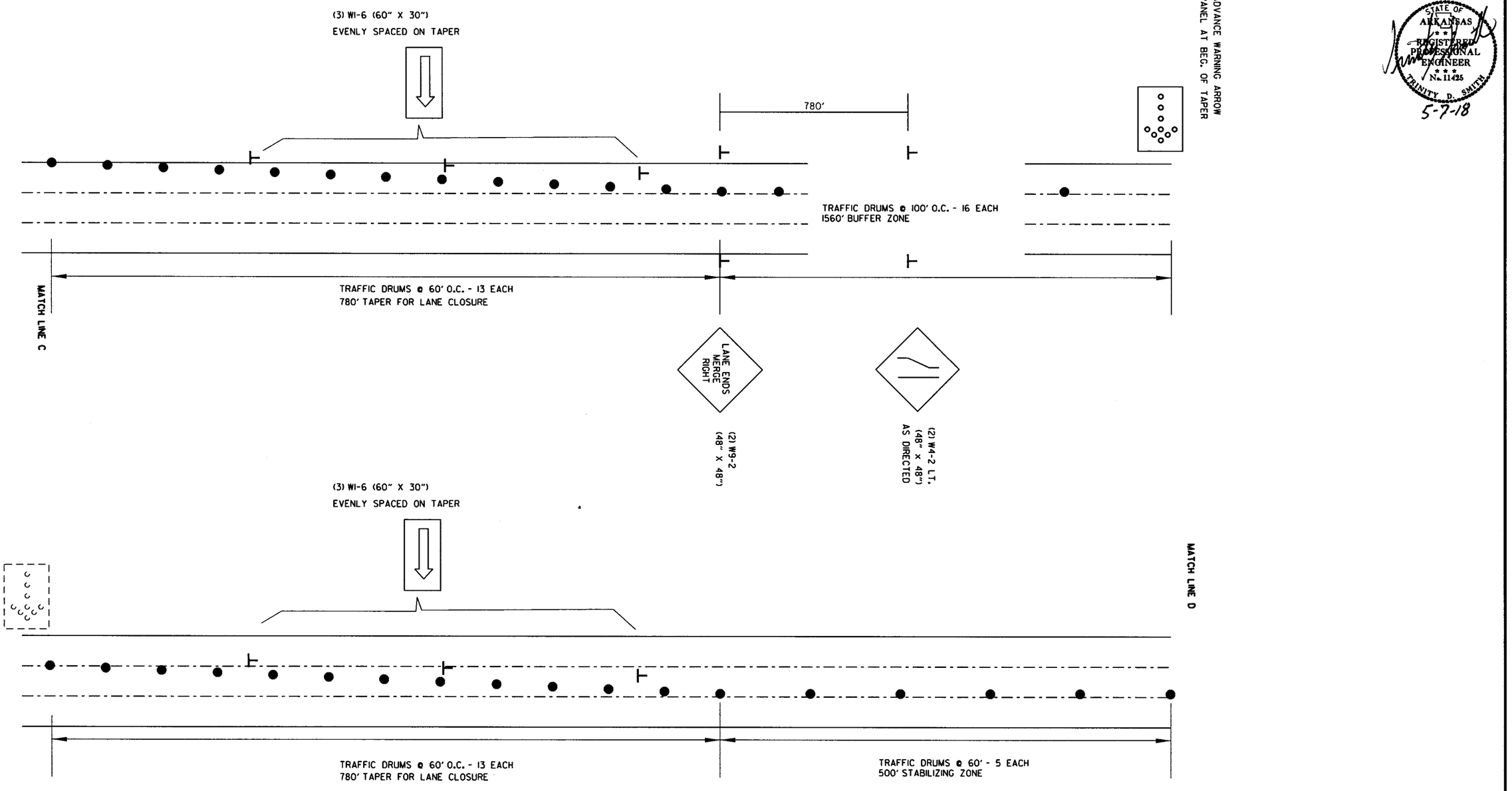
RBB0618.DGN

LANE CLOSURE
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	23	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



ADVANCE WARNING SIGNS & TYPICAL TRAFFIC DRUM LAYOUT
FOR INSIDE & MIDDLE LANE CLOSURES
(I-430)

4/25/2018

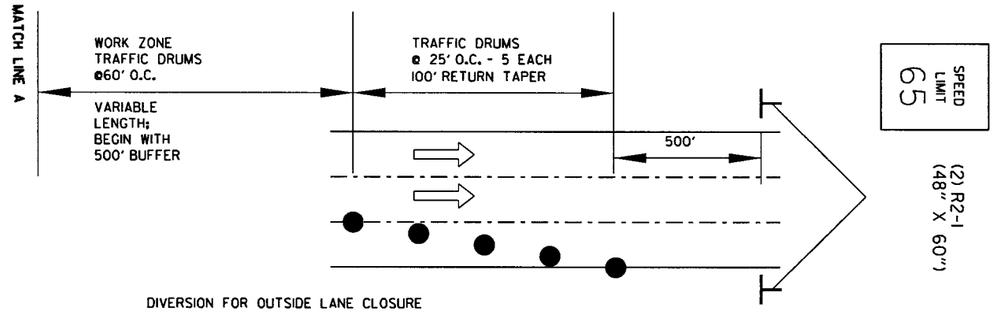
RBB0618.DGN

LANE CLOSURE
MAINTENANCE OF TRAFFIC DETAILS

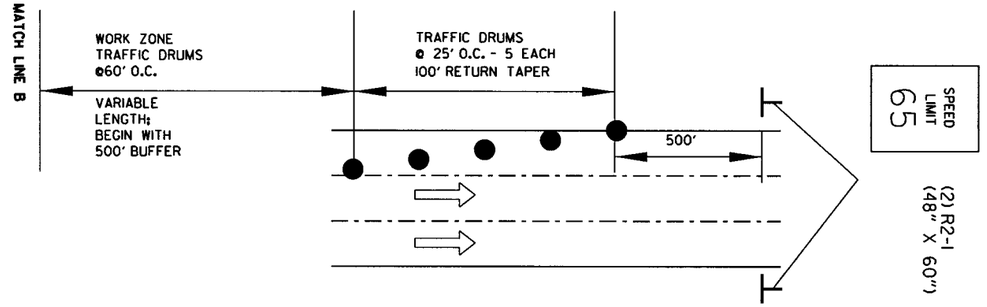
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	24	81

(2) MAINTENANCE OF TRAFFIC DETAILS

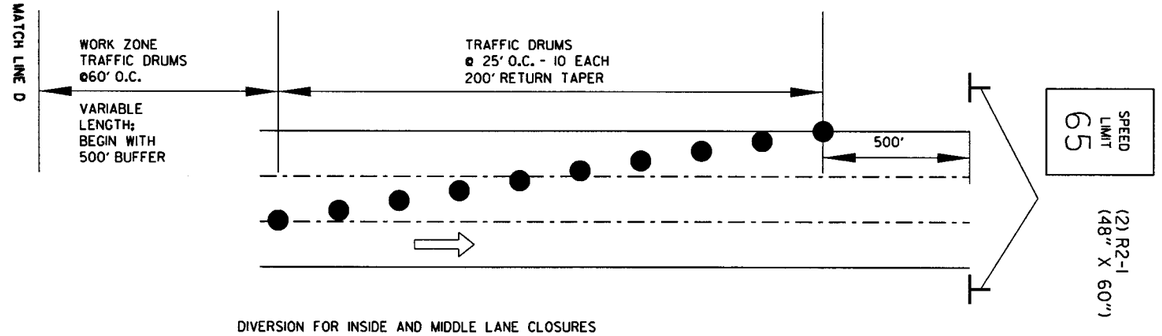
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



DIVERSION FOR OUTSIDE LANE CLOSURE



DIVERSION FOR INSIDE LANE CLOSURE



DIVERSION FOR INSIDE AND MIDDLE LANE CLOSURES

TYPICAL TRAFFIC DRUM LAYOUT FOR DIVERSION OF LANE CLOSURES (I-430)

4/25/2018

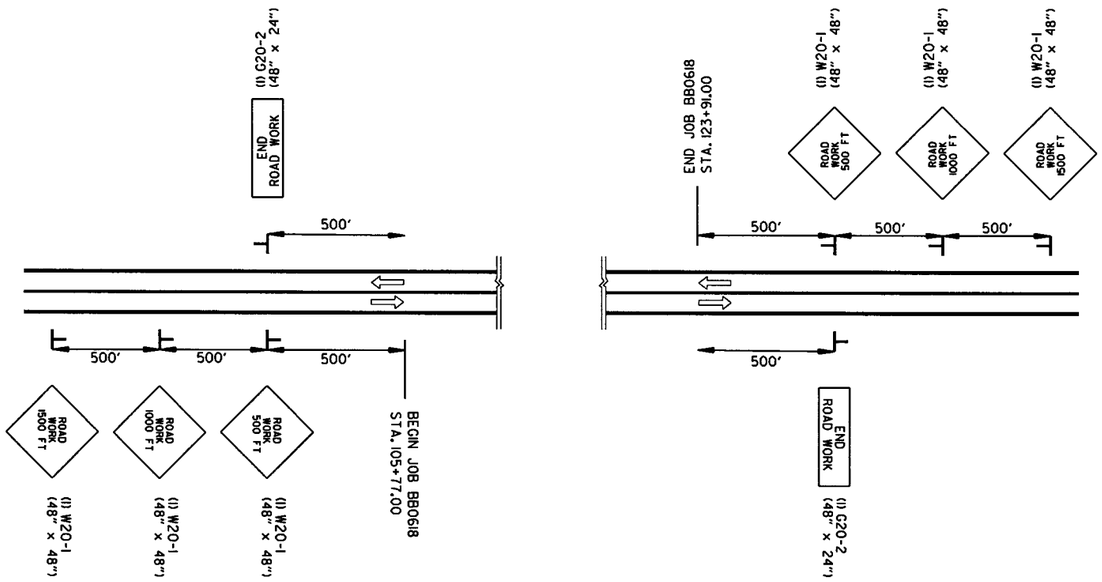
RBB0618.DGN

LANE CLOSURE
MAINTENANCE OF TRAFFIC DETAILS

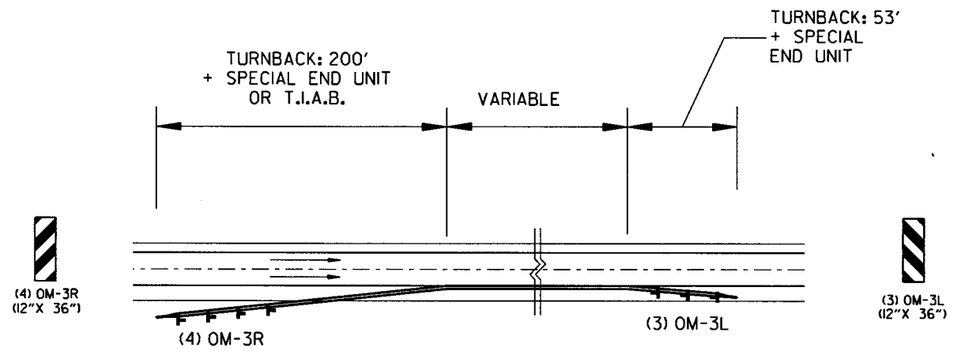
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	25	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



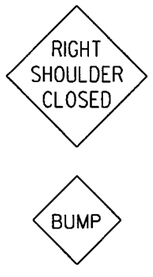
ADVANCE WARNING RODNEY PARHAM RD. (ALL STAGES)



REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

NOTE: OM-3L & OM-3R SIGNS SHALL BE EQUALLY SPACED ALONG P.C.C.B. TURNBACK.

DETAIL OF OBJECT MARKERS AT PRECAST CONCRETE BARRIER TURNBACKS

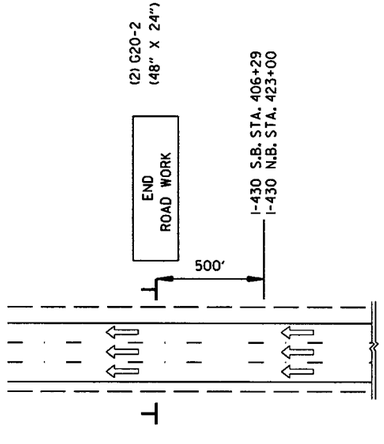


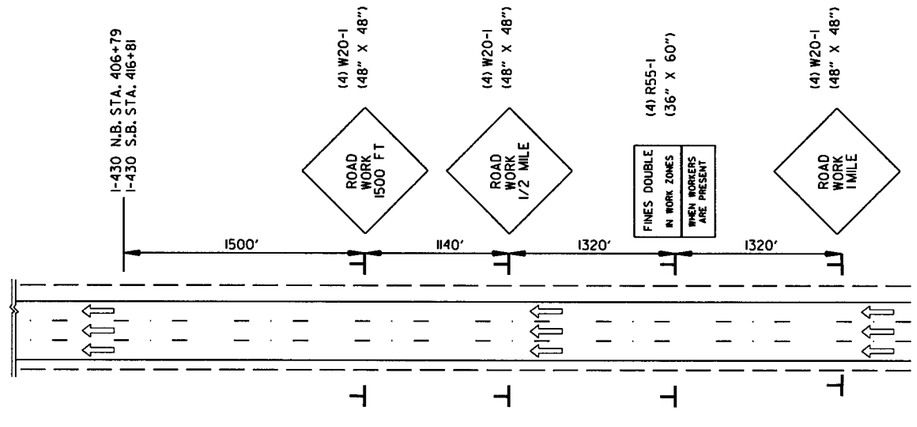
(5) W21-5a (48" X 48")

ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

(5) W8-1 (30" X 30")

ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER





PORTABLE CHANGEABLE MESSAGE SIGN PLACED AS DIRECTED BY THE ENGINEER

ADVANCE WARNING I-430 (ALL STAGES)

4/25/2018

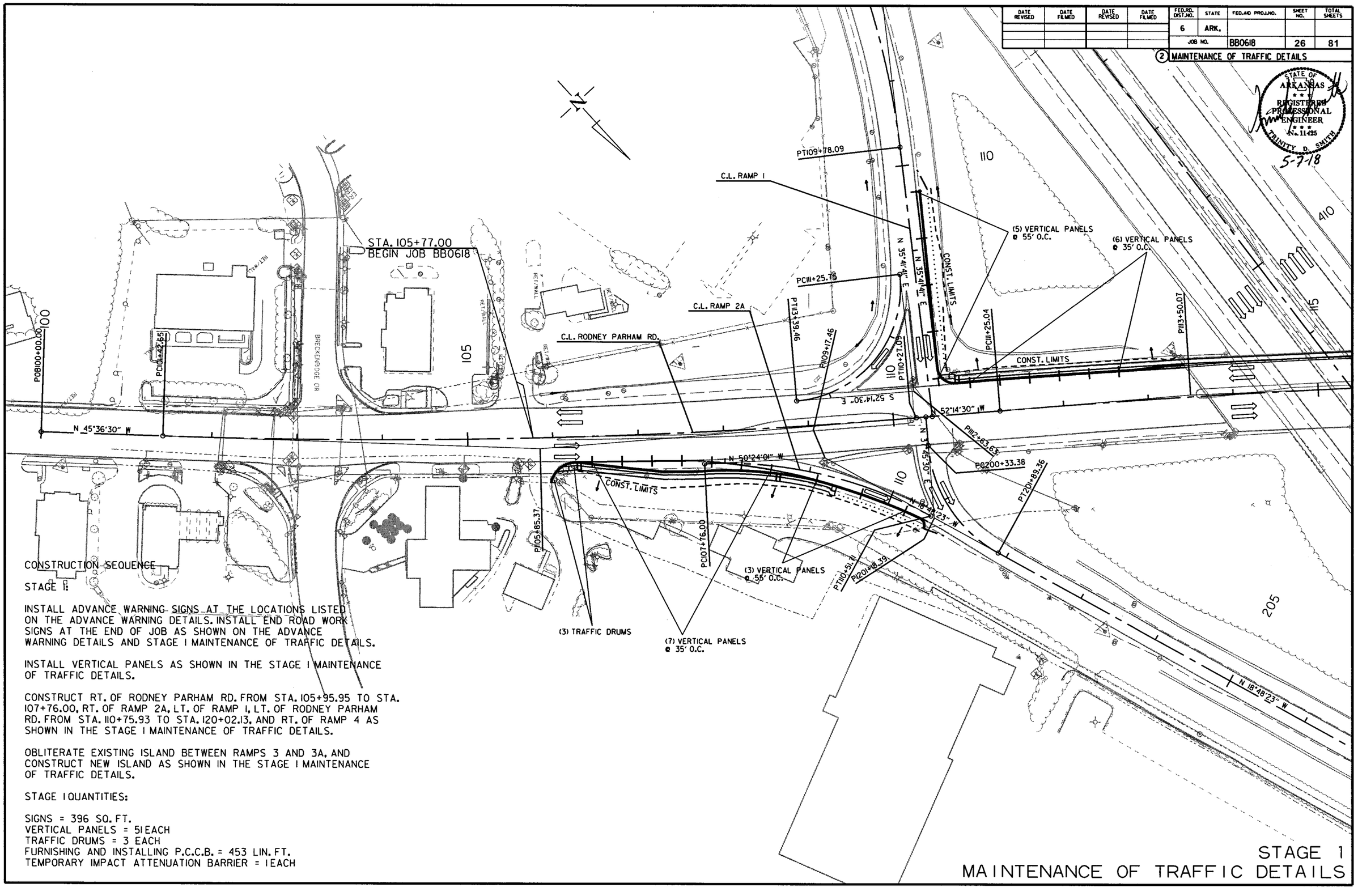
RBB0618.DGN

ADVANCE WARNING
MAINTENANCE OF TRAFFIC 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.		BB0618	26	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



CONSTRUCTION SEQUENCE

STAGE I:

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 AND STAGE I MAINTENANCE OF TRAFFIC DETAILS.

INSTALL VERTICAL PANELS AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT RT. OF RODNEY PARHAM RD. FROM STA. 105+95.95 TO STA. 107+76.00, RT. OF RAMP 2A, LT. OF RAMP 1, LT. OF RODNEY PARHAM RD. FROM STA. 110+75.93 TO STA. 120+02.13, AND RT. OF RAMP 4 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

OBLITERATE EXISTING ISLAND BETWEEN RAMPS 3 AND 3A, AND CONSTRUCT NEW ISLAND AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

STAGE I QUANTITIES:

SIGNS = 396 SQ. FT.
VERTICAL PANELS = 51 EACH
TRAFFIC DRUMS = 3 EACH
FURNISHING AND INSTALLING P.C.C.B. = 453 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

4/25/2018

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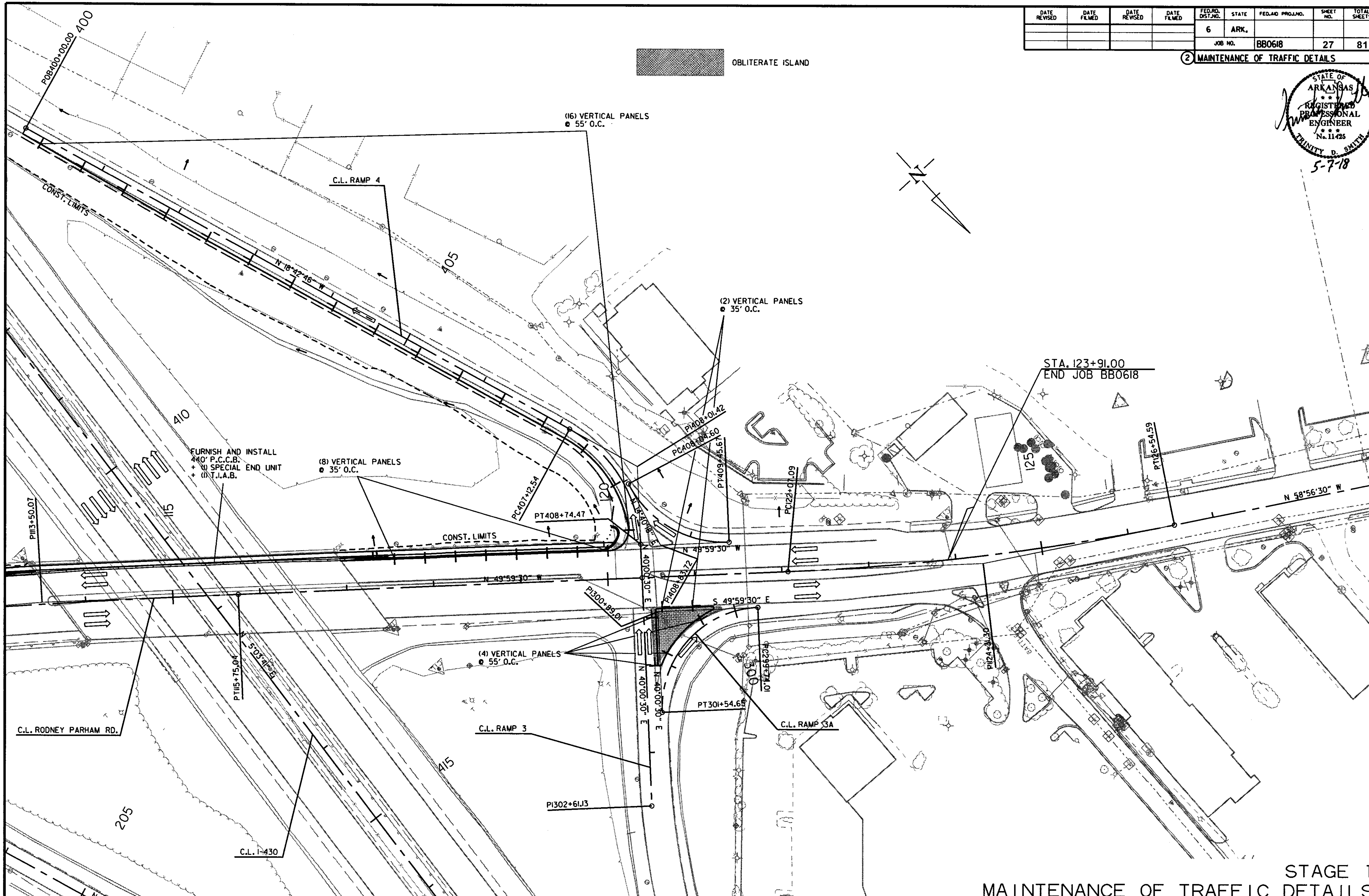
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

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.		BB0618	27	81

(2) MAINTENANCE OF TRAFFIC DETAILS



OBLITERATE ISLAND
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18
POB400+00.00 400
(16) VERTICAL PANELS @ 55' O.C.
C.L. RAMP 4
CONST. LIMITS
405
N 18°42'46" W
(2) VERTICAL PANELS @ 35' O.C.
STA. 123+91.00
END JOB BB0618
PI408+01.42
PC408+64.60
PT409+45.61
PC122+07.09
PT126+54.59
125
N 58°56'30" W
410
FURNISH AND INSTALL 440' P.C.C.B. + (1) SPECIAL END UNIT + (1) T.I.A.B.
(8) VERTICAL PANELS @ 35' O.C.
PC407+12.54
PT408+74.47
120
115
PI113+50.07
CONST. LIMITS
N 49°59'30" W
PI408+83.72
PI300+89.01
S 49°59'30" E
N 40°00'30" E
(4) VERTICAL PANELS @ 55' O.C.
PI124+31.30
PC299+74.01
300
PI115+75.04
N 5°03'41" E
PT301+54.69
C.L. RAMP 3A
C.L. RODNEY PARHAM RD.
C.L. RAMP 3
415
PI302+61.13
205
C.L. I-430

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

4/25/2018
RBB0618.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.		BB0618	28	81

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

OBLITERATE ISLAND

STA. 105+77.00
BEGIN JOB, BB0618

POB100+00.00

PC101+42.65

(6) VERTICAL PANELS @ 55' O.C.

PT109+78.09

(3) TRAFFIC DRUMS

(11) VERTICAL PANELS @ 35' O.C.

(2) VERTICAL PANELS @ 55' O.C.

PC111+25.78

PT113+39.46

PC109+17.46

(6) VERTICAL PANELS @ 35' O.C.

PC111+25.04

PI113+50.07

CONST. LIMITS

N 45°36'30" W

S 52°14'30" E

52°14'30" W

N 35°41'14" E

N 35°45'30" E

PI103+85.37

N 50°24'01" W

PC107+76.00

(4) VERTICAL PANELS @ 55' O.C.

PT110+51.11

PI201+48.39

N 18°48'23" W

PI202+63.63

PC200+33.38

PT201+89.36

(12) VERTICAL PANELS @ 35' O.C.

105

110

115

205

410

CONSTRUCTION SEQUENCE

STAGE 2:
INSTALL VERTICAL PANELS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT LT. OF RODNEY PARHAM RD FROM STA. 105+77.00 TO STA. 108+88.07, RT. OF RAMP 1A, RT. OF RAMP 1, LT. OF RAMP 4, AND LT. OF RODNEY PARHAM RD. FROM STA. 121+41.31 TO STA. 123+51.35 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

OBLITERATE EXISTING ISLANDS BETWEEN RAMPS 1 AND 1A, RAMPS 2 AND 2A, AND RAMPS 4 AND 4A. CONSTRUCT NEW ISLANDS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT CENTRAL ISLAND WALK THROUGH ON RODNEY PARHAM RD. AT STA. 110+05. OBLITERATE EXISTING CENTRAL ISLAND ON RODNEY PARHAM RD. FROM STA. 117+56.62 TO STA. 119+69.26. MILL & INLAY RODNEY PARHAM RD FROM STA. 105+77.00 TO STA. 123+91.00 AND INSTALL CONSTRUCTION PAVEMENT MARKINGS AS NEEDED.

REMOVE CONSTRUCTION PAVEMENT MARKINGS AS PERMANENT PAVEMENT MARKINGS ARE INSTALLED AS SHOWN IN THE PERMANENT PAVEMENT MARKING DETAILS.

STAGE 2 QUANTITIES:

SIGNS = 396 SQ. FT.
VERTICAL PANELS = 58 EACH
CONSTRUCTION PAVEMENT MARKINGS = 3998 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS (WORDS) = 5 EACH
CONSTRUCTION PAVEMENT MARKINGS (ARROWS) = 9 EACH
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 3998 LIN. FT.

4/25/2018

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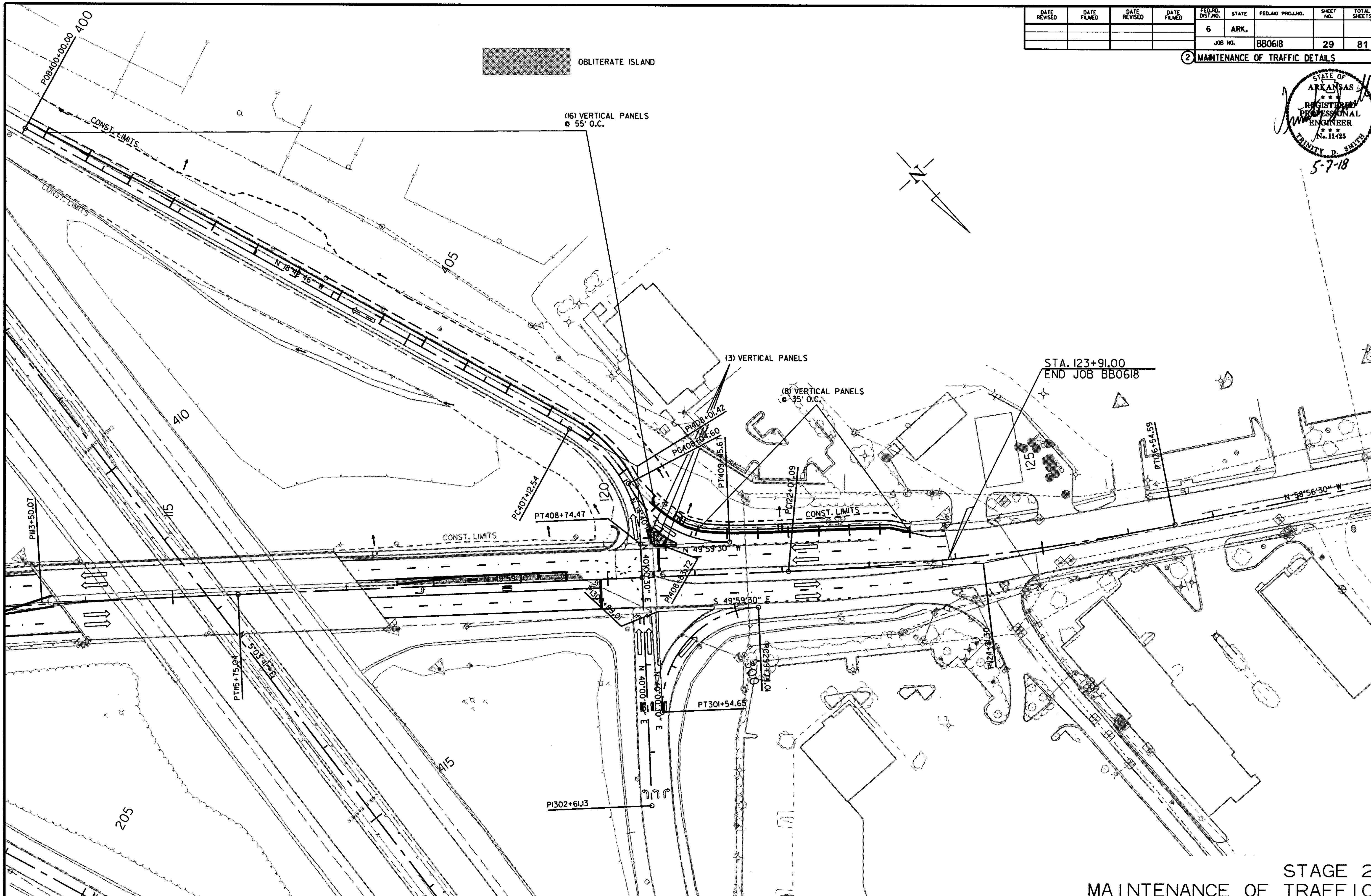
STAGE 2
MAINTENANCE OF TRAFFIC

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	29	81

(2) MAINTENANCE OF TRAFFIC DETAILS

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

5-7-18



STAGE 2
MAINTENANCE OF TRAFFIC

4/25/2018

RBB0618.DGN

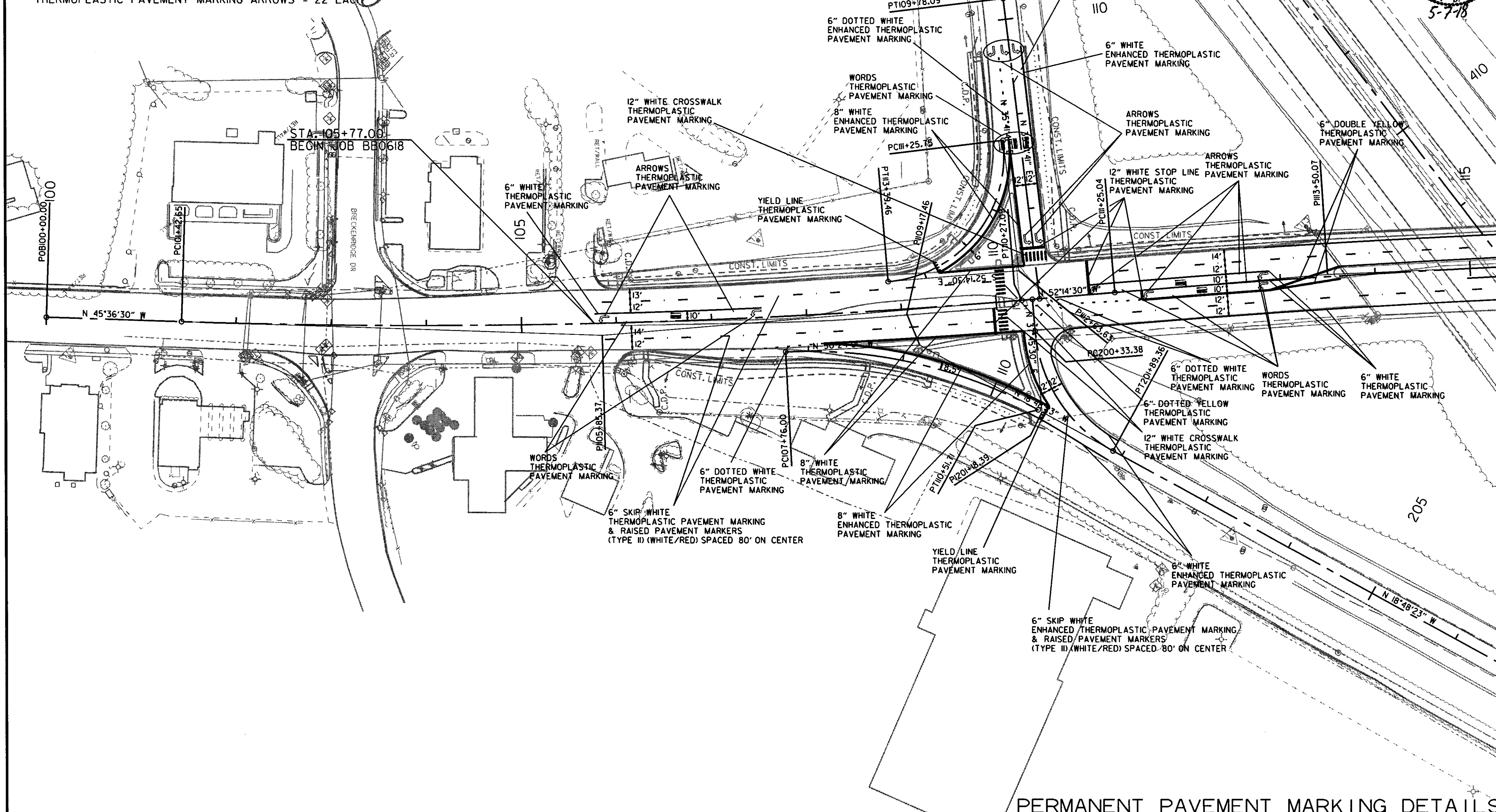
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	30	81

② PERMANENT PAVEMENT MARKING DETAILS

FINAL STRIPING QUANTITIES

RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) @ 80' O.C. = 53 EACH
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 3103 LIN. FT.
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 937 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (6") = 3910 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YELLOW (6") = 1570 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 437 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 585 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING YIELD LINE = 40 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING WORDS = 12 EACH
THERMOPLASTIC PAVEMENT MARKING ARROWS = 22 EACH

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18



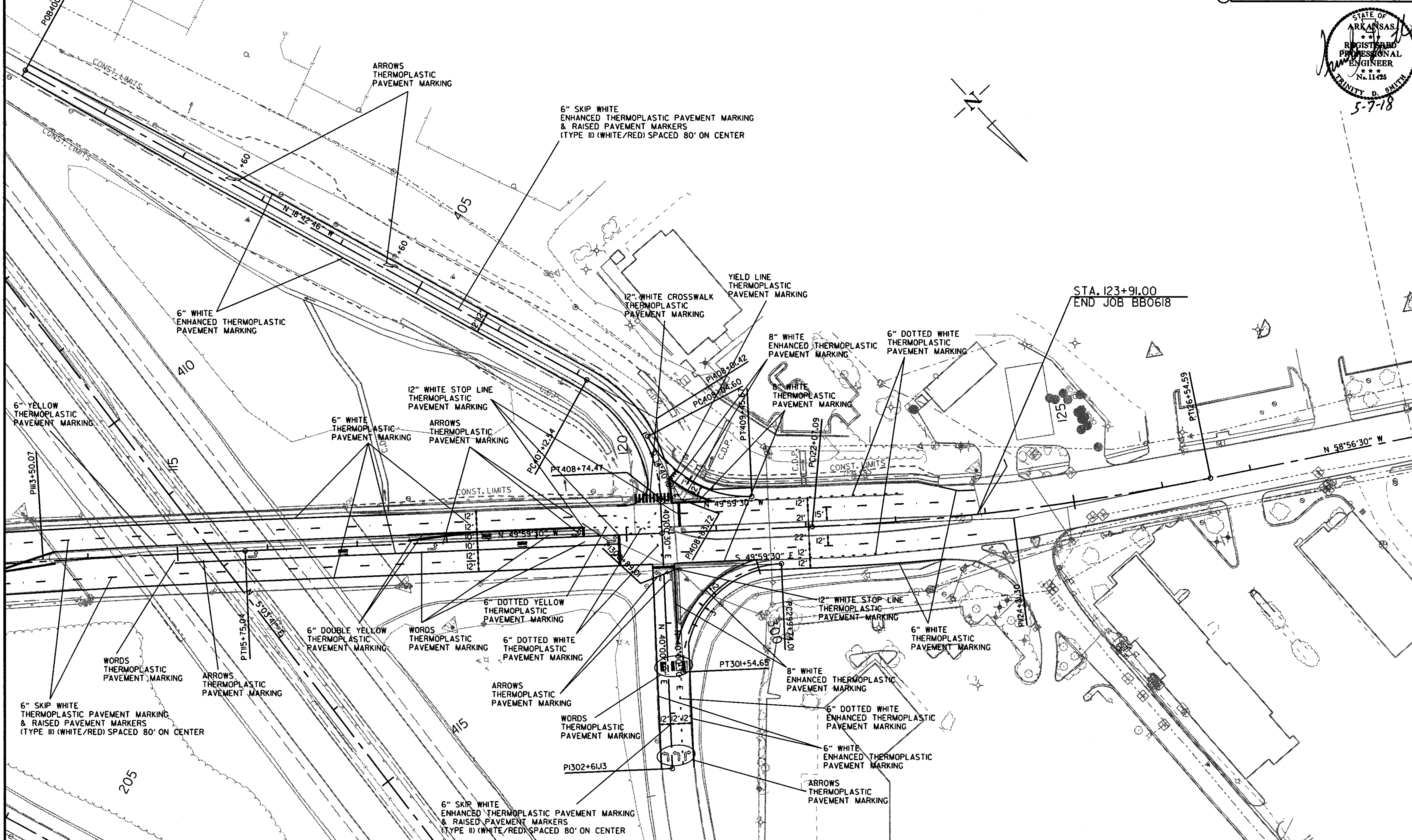
PERMANENT PAVEMENT MARKING DETAILS

4/25/2018

RBB0618.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.		BB0618	31	81

(2) PERMANENT PAVEMENT MARKING DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18
POB400+00.00
400
405
410
415
205
115
120
125
CONST. LIMITS
N 18°42'46" W
+60
ARROWS THERMOPLASTIC PAVEMENT MARKING
6" SKIP WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 80' ON CENTER
6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
12" WHITE CROSSWALK THERMOPLASTIC PAVEMENT MARKING
YIELD LINE THERMOPLASTIC PAVEMENT MARKING
8" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING
STA. 123+91.00
END JOB BB0618
PI408+01.42
PC408+04.60
PT409+45.57
8" WHITE THERMOPLASTIC PAVEMENT MARKING
PC122+07.09
PT126+54.59
N 58°56'30" W
12" WHITE STOP LINE THERMOPLASTIC PAVEMENT MARKING
6" YELLOW THERMOPLASTIC PAVEMENT MARKING
6" WHITE THERMOPLASTIC PAVEMENT MARKING
ARROWS THERMOPLASTIC PAVEMENT MARKING
PC407+12.54
PT408+74.47
PI113+50.07
N 49°59'30" W
S 49°59'30" E
N 40°00'30" E
PI408+63.72
PI124+31.30
12'
21'
15'
22'
10'
PT115+75.04
N 5°03'41" E
6" DOTTED YELLOW THERMOPLASTIC PAVEMENT MARKING
6" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING
WORDS THERMOPLASTIC PAVEMENT MARKING
6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING
12" WHITE STOP LINE THERMOPLASTIC PAVEMENT MARKING
6" WHITE THERMOPLASTIC PAVEMENT MARKING
PT301+54.65
8" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
6" DOTTED WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
ARROWS THERMOPLASTIC PAVEMENT MARKING
WORDS THERMOPLASTIC PAVEMENT MARKING
ARROWS THERMOPLASTIC PAVEMENT MARKING
6" SKIP WHITE THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 80' ON CENTER
PI302+61.13
6" SKIP WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING & RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) SPACED 80' ON CENTER

PERMANENT PAVEMENT MARKING DETAILS

4/25/2018

RBB0618.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.		BB0618	32	81

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS		REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	ENHANCED THERMOPLASTIC PAVEMENT MARKING		THERMOPLASTIC PAVEMENT MARKING							REFLECTORIZED PAINT PAVEMENT MARKING
				WORDS	ARROWS		TYPE II	6"	8"	6"		8"	12"	YIELD LINE	WORDS	ARROWS	10"
							(WHITE/RED)	WHITE	WHITE	WHITE	YELLOW	WHITE	WHITE				WHITE
	LIN. FT. - EACH		LIN. FT.	EACH		LIN. FT.	EACH	LIN. FT.							EACH		LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS	3998		3998														
CONSTRUCTION PAVEMENT MARKINGS (WORDS)	5			5													
CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	9				9												
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	3998					3998											
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)		53					53										
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")		3103						3103									
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")		937							937								
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		3910								3910							
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		1570									1570						
THERMOPLASTIC PAVEMENT MARKING WHITE (8")		437										437					
THERMOPLASTIC PAVEMENT MARKING WHITE (12")		585											585				
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)		40												40			
THERMOPLASTIC PAVEMENT MARKING (WORDS)		12													12		
THERMOPLASTIC PAVEMENT MARKING (ARROWS)		22														22	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		900															900
TOTALS:			**3998**	**5**	**9**	**3998**	**53**	**3103**	**937**	**3910**	**1570**	**437**	**585**	**40**	**12**	**22**	**900**

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

4/25/2018

BB0618.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.		BB0618	33	81

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	LANE CLOSURE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	* ADVANCE WARNING ARROW PANEL	* PORTABLE CHANGEABLE MESSAGE SIGN
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.	EACH		DAY	WEEK
W20-1	ROAD WORK 1500 FT.	48"x48"		6	6	6	6	96.0							
W20-1	ROAD WORK 1000 FT.	48"x48"		6	6	6	6	96.0							
W20-1	ROAD WORK 500 FT.	48"x48"		6	6	6	6	96.0							
W20-1	ROAD WORK AHEAD	48"x48"	2			2	2	32.0							
G20-2	END ROAD WORK	48"x24"		6	6	6	6	48.0							
W20-5	RIGHT LANE CLOSED 1 MILE	48"x48"	2			2	2	32.0							
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"x48"	2			2	2	32.0							
W20-5	RIGHT LANE CLOSED 1500 FT.	48"x48"	2			2	2	32.0							
W20-5	LEFT LANE CLOSED 1 MILE	48"x48"	2			2	2	32.0							
W20-5	LEFT LANE CLOSED 1/2 MILE	48"x48"	2			2	2	32.0							
W20-5	LEFT LANE CLOSED 1500 FT.	48"x48"	2			2	2	32.0							
W20-5	LEFT TWO LANES CLOSED 1 MILE	48"x48"	2			2	2	32.0							
W20-5	LEFT TWO LANES CLOSED 1/2 MILE	48"x48"	2			2	2	32.0							
W20-5	LEFT TWO LANES CLOSED 1500 FT.	48"x48"	2			2	2	32.0							
W9-2	LANE ENDS MERGE RIGHT	48"x48"	2			2	2	32.0							
R2-5A	REDUCED SPEED AHEAD	48"x48"	2			2	2	32.0							
R2-1	SPEED LIMIT 55	48"x48"	2			2	2	32.0							
R2-1	SPEED LIMIT 65	48"x48"	2			2	2	32.0							
SPECIAL	MERGE NOW W/ARROW GRAPHIC (RIGHT)	48"x48"	1			1	1	16.0							
SPECIAL	MERGE NOW W/ARROW GRAPHIC (LEFT)	48"x48"	1			1	1	16.0							
W4-2 RT	RIGHT LANE ENDS GRAPHIC	48"x48"	2			2	2	32.0							
W4-2 LT	LEFT LANE ENDS GRAPHIC	48"x48"	4			4	4	64.0							
R55-1	FINES DOUBLE IN WORK ZONES	36"x60"	2	4	4	4	4	60.0							
OM-3L	OBJECT MARKER	12"x36"		4		4	4	12.0							
OM-3R	OBJECT MARKER	12"x36"		3		3	3	9.0							
W1-6	LARGE ARROW	48"x24"	6			6	6	48.0							
W21-5a	RIGHT SHOULDER CLOSED	48"x48"		5	5	5	5	80.0							
W8-1	BUMP	30"x30"		5	5	5	5	31.3							
	VERTICAL PANELS			51	58	58			58						
	TRAFFIC DRUMS		107	3	3	107				107					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			453		453					453				
	TEMPORARY IMPACT ATTENUATION BARRIER			1		1						1			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			1		1							1		
	ADVANCE WARNING ARROW PANEL		8			8								8	
	PORTABLE CHANGEABLE MESSAGE SIGN			13	13	13									13
TOTALS:								1152.3	58	107	453	1	1	8	13

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

NOTE: THE QUANTITY OF TRAFFIC DRUMS PROVIDED IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. HOWEVER, THE INSTALLATION OF TRAFFIC DRUMS SHALL NEVER EXCEED THE ACTUAL WORK AREA BY MORE THAN 1/4 MILE, UNLESS APPROVED BY THE ENGINEER.

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

4/25/2018

BB0618.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.		BB0618	34	81

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
400+00	408+00	RAMP 4 LT.	8	8
TOTALS:			8	8

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
ENTIRE	PROJECT	STAGE 1	1675	404	
ENTIRE	PROJECT	STAGE 2	1176	480	
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			30
		DIRECTED BY THE ENGINEER			
TOTALS:			2851	884	30

* 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 ITEMS

STATION	STATION	LOCATION	CURB	CURB AND GUTTER	CONCRETE ISLANDS	APPROACH GUTTERS	WALKS	HEADWALLS	GUARDRAIL
			LIN. FT.	LIN. FT.	SQ. YD.	EACH	SQ. YD.	EACH	LIN. FT.
105+77	105+91	RODNEY PARHAM RD. LT.	25						
105+97	106+24	RODNEY PARHAM RD. RT.		41					
109+10	110+30	RODNEY PARHAM RD. RT.			457				
109+60	110+30	RODNEY PARHAM RD. LT.			290				
117+57	119+69	RODNEY PARHAM RD.			96				
120+48	120+53	RODNEY PARHAM RD.			2				
120+48	120+76	RODNEY PARHAM RD. LT.			46				
120+50	121+30	RODNEY PARHAM RD. RT.			240				
117+30	113+11	RODNEY PARHAM RD. LT.				2			
106+00	106+20	RODNEY PARHAM RD. RT.					8		
105+86	105+86	RODNEY PARHAM RD. LT.						1	
116+87	118+89	RODNEY PARHAM RD. LT.							202
TOTALS:			25	41	1131	2	8	1	202

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

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS
			LIN. FT.	SQ.YD.
105+93	108+88	RODNEY PARHAM RD. LT.	295	164
106+18	107+76	RODNEY PARHAM RD. RT.	158	88
110+69	119+97	RODNEY PARHAM RD. LT.	928	516
121+41	123+51	RODNEY PARHAM RD. LT.	210	117
112+50	113+39	RAMP 1A RT.	89	49
107+76	109+35	RAMP 2A RT.	159	88
408+72	409+46	RAMP 4A LT.	74	41
TOTAL:				1063

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	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	FILTER SOCK (18") (E-13)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING													847	31
ENTIRE	PROJECT	STAGE 1							2.53	2.53	51.6		66	100	1046	61
ENTIRE	PROJECT	STAGE 2	1.50	3.00	1.50	171.7	1.50	1485	2.43	2.43	49.6		33	100	1195	55
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.38	0.76	0.38	43.4	0.38	371	1.24	1.24	25.3	110	25	50	560	21
TOTALS:			1.88	3.76	1.88	215.1	1.88	1856	6.20	6.20	126.5	110	124	250	3648	168

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
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.

4/25/2018

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	35	81

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
107+00	34	46	1.50	92	23	16.50	43' RT.	0-5	29	9	A-4(0)	BROWN
107+00	34	46	1.30	92	23	16.70	21' RT.	0-5	25	9	A-4(1)	GRAY
107+00	34	46	1.40	92	23	16.60	31' RT.	0-5	27	9	A-4(1)	BROWN
107+00	34	46	1.50	92	23	16.50	43' RT.	0-5	27	9	A-4(3)	BROWN
108+00	34	46	1.50	92	23	18.10	37' LT.	0-5	ND	NP	A-4(0)	BROWN
108+00	34	46	1.40	92	23	18.10	50' LT.	0-4Z	22	5	A-4(0)	GRAY
123+00	34	46	11.60	92	23	31.70	34' RT.	0-5	25	8	A-4(2)	GRAY
123+00	34	46	11.70	92	23	31.70	55' RT.	0-5	33	14	A-6(4)	GRAY
123+00	34	46	10.90	92	23	32.40	54' LT.	0-3.5Z	31	13	A-6(6)	GRAY
123+00	34	46	10.80	92	23	32.50	64' LT.	0-5	32	12	A-6(3)	GRAY

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
NP - NON-PLASTIC
ND - NOT DETERMINABLE

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3
		SQ.YD.
105+88	RODNEY PARHAM RD. LT.	4.9
106+13	RODNEY PARHAM RD. RT.	6.1
110+06	RODNEY PARHAM RD. LT.	3.3
110+06	RODNEY PARHAM RD. RT.	3.3
112+51	RAMP 1 LT.	4.9
112+51	RAMP 1 RT.	4.0
112+53	RAMP 1A LT.	2.7
112+53	RAMP 1A RT.	3.3
109+33	RAMP 2A LT.	3.3
109+33	RAMP 2A RT.	3.3
408+73	RAMP 4 RT.	5.1
408+75	RAMP 4A LT.	3.3
TOTAL:		47.5

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
110+00	RODNEY PARHAM RD. LT.	A	239
110+00	RODNEY PARHAM RD. RT.	A	420
120+60	RODNEY PARHAM RD. LT.	A	29
120+60	RODNEY PARHAM RD. RT.	A	213
TOTAL:			901

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.
106+05.00	106+05.00	RODNEY PARHAM RD. LT.	5.00	6.00	3.33	2.22	0.03
106+30.00	106+30.00	RODNEY PARHAM RD. RT.	50.00	6.00	33.33	22.22	0.28
110+78.00	110+78.00	RODNEY PARHAM RD. LT.	47.00	6.00	31.33	20.89	0.26
117+34.00	117+34.00	RODNEY PARHAM RD. LT.	247.00	6.00	164.67	109.78	1.38
122+00.00	122+00.00	RODNEY PARHAM RD. LT.	28.00	6.00	18.67	12.44	0.16
110+30.00	111+70.00	RAMP 1 RT.	140.00	6.32	98.31	62.22	0.78
108+64.00	108+64.00	RAMP 2A RT.	67.00	6.00	44.67	29.78	0.38
405+00.00	408+00.00	RAMP 4 RT.	300.00	6.32	210.67	133.33	1.68
407+50.00	408+00.00	RAMP 4 LT.	50.00	6.32	35.11	22.22	0.28
408+87.00	408+87.00	RAMP 4A LT.	59.00	6.00	39.33	26.22	0.33
TOTALS:					679.42	441.32	5.56

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

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
105+78	108+88	RODNEY PARHAM RD. LT.	310
105+96	107+76	RODNEY PARHAM RD. RT.	180
110+76	119+91	RODNEY PARHAM RD. LT.	915
121+41	123+51	RODNEY PARHAM RD. LT.	210
110+30	112+61	RAMP 1 LT.	231
110+30	111+26	RAMP 1 RT.	96
111+26	113+39	RAMP 1A RT.	213
107+76	110+52	RAMP 2A RT.	276
408+47	408+80	RAMP 4 RT.	45
TOTAL:			2476

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	10
ENGINEER	
TOTAL:	10

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	DROP INLETS			SOLID SODDING	WATER	STD. DWG. NOS.
		18"	18"	TYPE SPECIAL	EXT. 4'	EXT. 8'			
		LIN. FT.	EACH	EACH			SQ.YD.	M.GAL.	
105+86	RODNEY PARHAM RD. LT.	8	1				5	0.06	FES-1, FES-2, PCC-1
106+05	RODNEY PARHAM RD. LT.			1		1			SPECIAL DETAILS
106+30	RODNEY PARHAM RD. RT.			1	1				SPECIAL DETAILS
110+78	RODNEY PARHAM RD. LT.			1		1			SPECIAL DETAILS
117+34	RODNEY PARHAM RD. LT.			1	1				SPECIAL DETAILS
122+00	RODNEY PARHAM RD. LT.			1	1				SPECIAL DETAILS
108+64	RAMP 2A RT.			1		1			SPECIAL DETAILS
408+87	RAMP 4A LT.			1					SPECIAL DETAILS
TOTALS:		8	1	7	3	3	5	0.06	

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.

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			1000	4
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			1000	4

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

4/25/2018

RBB0618.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.		BB0618	36	81

(2) QUANTITIES

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
105+77.00	113+33.75	RODNEY PARHAM RD.	63.09	5304.82
117+53.23	123+91.00	RODNEY PARHAM RD.	73.65	5219.08
TOTAL:				10523.90

NOTE: AVERAGE MILLING DEPTH 2".

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	8
DIRECTED BY THE ENGINEER	
TOTAL:	8

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

SURFACING

STATION	STATION	LOCATION	LENGTH	TACK COAT				ACHM SURFACE COURSE (1/2")			
				AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22
			FEET	FEET				FEET			TON
MAIN LANES											
105+77.00	113+33.75	RODNEY PARHAM RD.-MILL AND INLAY	756.75	63.09	5304.82	0.17	901.82	63.09	5304.82	220.00	583.53
117+53.23	123+91.00	RODNEY PARHAM RD.-MILL AND INLAY	637.77	73.65	5219.08	0.17	887.24	73.65	5219.08	220.00	574.10
TOTALS:					10523.90		1789.06		10523.90		1157.63

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	8	16
DIRECTED BY THE ENGINEER		
TOTALS:	8	16

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

PORTLAND CEMENT CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		ACHM BASE COURSE (1 1/2") 660 LBS. PER SQ. YD.			PORTLAND CEMENT CONCRETE BASE			CONTINUOUSLY REINFORCED CONCRETE		REINFORCING STEEL FOR PAVEMENT (BARS)
				TON / STATION	TON	AVG. WID.	SQ. YD.	PG 76-22	AVG. WID.	6" U.T.	13" U.T.	AVG. WID.	13" U.T.	
			FEET			FEET		TON	FEET	SQ. YD.	SQ. YD.	FEET	SQ. YD.	POUND
105+77.00	107+76.00	RODNEY PARHAM RD.-MILL AND INLAY (C.C.C. & G LT. & RT.)	199.00			8.45	186.84	61.66	2.50	55.28		5.95	131.56	4953.23
107+76.00	108+88.07	RODNEY PARHAM RD.-MILL AND INLAY (C.C.C. & G LT.)	112.07						2.50	31.13				
110+75.93	113+69.27	RODNEY PARHAM RD.-MILL AND INLAY (C.C.C. & G LT.)	293.34						2.50	81.48				
117+18.13	119+90.59	RODNEY PARHAM RD.-MILL AND INLAY (C.C.C. & G LT.)	272.46						2.50	75.68				
121+41.31	123+51.35	RODNEY PARHAM RD.-MILL AND INLAY (C.C.C. & G LT.)	210.04						2.50	58.34				
110+30.00	111+25.75	RAMP 1 (C.C.C. & G. LT. & RT.)	95.75			12.28	130.65	43.11				7.28	77.45	2915.99
111+25.75	112+59.60	RAMP 1 (C.C.C. & G. LT.)	133.85			3.83	56.96	18.80				1.33	19.78	744.72
111+25.75	112+38.00	RAMP 1A-C.C.C.. & G. RT. (NOTCH AND WIDEN)	112.25			4.12	51.39	16.96				1.62	20.21	760.91
112+38.00	113+39.46	RAMP 1A-C.C.C.. & G. RT. (NOTCH)	101.46						2.50	28.18				
107+76.00	109+03.59	RAMP 2A-C.C.C. & G. RT. (NOTCH AND WIDEN)	127.59			6.83	96.83	31.95				4.33	61.38	2310.96
109+03.59	110+51.71	RAMP 2A-C.C.C. & G. RT. (NOTCH)	148.12						2.50	41.14				
400+00.00	402+50.00	RAMP 4-TAPER	250.00	113.00	282.50	18.50	513.89	169.58				14.50	402.78	15164.67
402+50.00	408+80.28	RAMP 4	630.28	113.00	712.22	23.00	1610.72	531.54				19.00	1330.59	50096.71
408+34.24	409+45.67	RAMP 4A (C.C.C. & G. LT.)	111.43						2.50	30.95				
117+57.00	119+69.00	RODNEY PARHAM RD.-REMOVED CENTRAL ISLAND	212.00						4.09		96.34			
120+48.00	120+53.00	RODNEY PARHAM RD.-REMOVED CENTRAL ISLAND	5.00						2.90		1.61			
TOTALS:					994.72			873.60		402.18	97.95		2043.75	76947.19

BASIS OF ESTIMATE:
ACHM BASE COURSE (1 1/2").....96.4% MIN. AGGR.....3.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

4/25/2018

RBB0618.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0618	37	81

① B5317 - QUANTITIES - 60114

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. BB0618

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	802	SP & 802	803	804	806	806	807	812	821	SP JOB BB0618
			ITEM	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	METAL BRIDGE RAILING (TYPE H)	TRANSITIONAL APPROACH RAILING	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GRADE 50W)	BRIDGE NAME PLATE (TYPE D)	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO.)	LIGHTWEIGHT AGGREGATE CONCRETE (AE)
			UNIT	CU. YD.	CU. YD.	GAL.	LB.	LIN. FT.	EACH	LB.	EACH	LUMP SUM	CU. YD.
B5317	RODNEY PARHAM RD. OVER I-430	BENT 1		0.40		0.1	53		1	120			
		BENT 5		0.40		0.1	47		1	120			
		347'-0" CONT. COMP. PLATE GIRDER UNIT			32.20	6.8	7,980	342		330	1		36.50
		EXIST. BR. NO. B5317										1	
		TOTALS FOR JOB NO. BB0618		0.80	32.20	7.0	8,080	342	2	570	1		36.50

THOMAS GERARD
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-26-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
I-430/RODNEY PARHAM RD.
INTCHNG. IMPVTS. (S)
PULASKI COUNTY
ROUTE 430 SEC. 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJF DATE: 04/24/18 FILENAME: bbb0618_qt.dgn
CHECKED BY: DHP DATE: 4/25/18 SCALE: No Scale
DESIGNED BY: _____ DATE: _____
BRIDGE NO. B5317 DRAWING NO. 60114

PRINT DATE: 4/25/2018

RBB0618.DGN 6/5/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
5-17-18			
6-5-18			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0618	38	81

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
6-6-18

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	8	STATION
201	GRUBBING	8	STATION
202	REMOVAL AND DISPOSAL OF CURB	25	LIN. FT.
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	41	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	1131	SQ. YD.
202	REMOVAL AND DISPOSAL OF APPROACH GUTTERS	2	EACH
202	REMOVAL AND DISPOSAL OF WALKS	8	SQ. YD.
202	REMOVAL AND DISPOSAL OF HEADWALLS	1	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	202	LIN. FT.
210	UNCLASSIFIED EXCAVATION	2851	CU. YD.
210	COMPACTED EMBANKMENT	864	CU. YD.
SP & 210	SOIL STABILIZATION	30	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	995	TON
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)	402	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (13" UNIFORM THICKNESS)	98	SQ. YD.
SS & 401	TACK COAT	1805	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	843	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")	31	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1101	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	57	TON
412	COLD MILLING ASPHALT PAVEMENT	10524	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	8	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	8	TON
502	REINFORCING STEEL FOR PAVEMENT (BARS)	76947	POUND
503	CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (13" UNIFORM THICKNESS)	2044	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	1152	SQ. FT.
SS & 604	TRAFFIC DRUMS	107	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	453	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	3998	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS (WORDS)	5	EACH
604	CONSTRUCTION PAVEMENT MARKINGS (ARROWS)	9	EACH
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	3998	LIN. FT.
604	ADVANCE WARNING ARROW PANEL	8	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	13	WEEK
SS & 604	VERTICAL PANELS	58	EACH
SS & 605	CONCRETE DITCH PAVING (TYPE B)	679	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	8	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
606	SELECTED PIPE BEDDING	10	CU. YD.
609	DROP INLETS (TYPE SPECIAL)	7	EACH
609	DROP INLET EXTENSIONS (4')	3	EACH
609	DROP INLET EXTENSIONS (8')	4	EACH
611	UNDERDRAIN OUTLET PROTECTORS	1000	LIN. FT.
611	4" PIPE UNDERDRAINS	4	TON
620	LIME	1.88	ACRE
620	SEEDING	8.09	ACRE
SS & 620	MULCH COVER	3417.2	M. GAL.
620	WATER	6.20	ACRE
621	TEMPORARY SEEDING	3648	LIN. FT.
621	SILT FENCE	110	BAG
621	SAND BAG DITCH CHECKS	168	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	124	CU. YD.
621	ROCK DITCH CHECKS	250	LIN. FT.
SS & 621	FILTER SOCK (18")	1.88	ACRE
623	SECOND SEEDING APPLICATION	2302	SQ. YD.
624	SOLID SODDING	901	SQ. YD.
SS & 632	CONCRETE ISLAND	1063	SQ. YD.
SS & 633	CONCRETE WALKS	2476	LIN. FT.
SS & 634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1'-6")	1.00	LUMP SUM
635	ROADWAY CONSTRUCTION CONTROL	48	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 3)	2	EACH
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	2	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	2951	LIN. FT.
SP	E-NET CABLE (EXTERIOR CAT 5E)	4	EACH
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	2	EACH
SP	BATTERY BACKUP SYSTEM	2	EACH
SP	PTZ CAMERA SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	6	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	2	EACH
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	1.00	LUMP SUM
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	900	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	3910	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	437	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINARES	585	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	1570	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	12	EACH
710	NON-METALLIC CONDUIT (2")	22	EACH
710	NON-METALLIC CONDUIT (3")	40	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	3103	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2 HD)	937	LIN. FT.
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	53	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38'-50')	6	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32'-50')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	1	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	1	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	6	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	4	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	2	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	1.00	LUMP SUM
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	1.00	LUMP SUM
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	0.80	CU. YD.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	32.20	CU. YD.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	36.50	CU. YD.
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	7.0	GAL.
SP & 719	THERMOPLASTIC PAVEMENT MARKING (YELD LINE)	8080	POUND
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	342	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")	2	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	570	POUND
SP	18" STREET NAME SIGN	1	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	1.00	LUMP SUM
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		
SP & 733	VIDEO DETECTOR (IP)		
733	VIDEO MONITOR (CLR)		
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)		
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)		
SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)		
	STRUCTURES OVER 20' SPAN		
636	BRIDGE CONSTRUCTION CONTROL		
802	CLASS S CONCRETE-BRIDGE		
SP & 802	CLASS S(AE) CONCRETE-BRIDGE		
SP	LIGHTWEIGHT AGGREGATE CONCRETE (AE)		
803	CLASS 1 PROTECTIVE SURFACE TREATMENT		
804	REINFORCING STEEL-BRIDGE (GRADE 60)		
806	METAL BRIDGE RAILING (TYPE H)		
806	TRANSITIONAL APPROACH RAILING		
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)		
812	BRIDGE NAME PLATE (TYPE D)		
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. B5317)		

REVISIONS

DATE	REVISION
5/17/2018	REVISED THE "EMPLOYMENT REPORTING" SPECIAL PROVISION
6/5/2018	ADDED SS 605-1, SS 632-1, SS 633-1, & SS 634-1 TO GOVERNING SPECIFICATIONS & TO PAY ITEMS IN SUMMARY

SHEET NUMBER
38
3 & 38

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES
Project Name: BB0618
Date: 4/15/2015
Coordinate System: Arkansas State Plane Coordinates
Based on AHTD GPS PTS : *600041 - 600055A*
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	2075981.4721	0.0180	1196819.1627	0.0140	394.63	0.005	CTL	PD:STD AHTD MON STAMPED PN 1
2	2076490.8993	0.0170	1196321.5598	0.0140	414.06	0.005	CTL	PD:STD AHTD MON STAMPED PN 2
3	2076890.2798	0.0160	1195705.5821	0.0130	441.49	0.004	CTL	PD:STD AHTD MON STAMPED PN 3
4	2077269.1179	0.0170	1195270.9587	0.0130	455.34	0.004	CTL	PD:STD AHTD MON STAMPED PN 4
5	2077684.6988	0.0170	1195002.9103	0.0140	470.56	0.003	CTL	PD:STD AHTD MON STAMPED PN 5
6	2077949.4101	0.0160	1194455.1292	0.0140	466.72	0.003	CTL	PD:STD AHTD MON STAMPED PN 6
7	2078403.7820	0.0160	1193906.5841	0.0140	468.55	0.003	CTL	PD:STD AHTD MON STAMPED PN 7
8	2078599.6927	0.0180	1193378.2295	0.0150	472.95	0.003	CTL	PD:STD AHTD MON STAMPED PN 8
9	2076211.7406	0.0160	1195029.6559	0.0130	415.91	0.003	CTL	PD:STD AHTD MON STAMPED PN 9
10	2076817.7171	0.0160	1195228.1477	0.0130	439.41	0.003	CTL	PD:STD AHTD MON STAMPED PN 10
11	2076930.6328	0.0180	1194992.4560	0.0160	431.21	0.003	CTL	PD:STD AHTD MON STAMPED PN 11
12	2077456.4923	0.0170	1195550.0734	0.0140	446.72	0.005	CTL	PD:STD AHTD MON STAMPED PN 12
13	2077553.7217	0.0190	1195146.6117	0.0150	438.38	0.005	CTL	PD:STD AHTD MON STAMPED PN 13
14	2078039.4973	0.0180	1195312.6157	0.0150	434.96	0.005	CTL	PD:STD AHTD MON STAMPED PN 14
15	2078099.6527	0.0220	1195033.1420	0.0170	451.72	0.003	CTL	PD:STD AHTD MON STAMPED PN 15
16	2078722.7236	0.0190	1195263.0325	0.0160	441.16	0.005	CTL	PD:STD AHTD MON STAMPED PN 16
100	2073408.5226	0.0000	1194986.3379	0.0000	441.92	0.000	GPS	PD:AHTD GPS MON 600041
101	2087215.5205	0.0000	1195931.0345	0.0000	376.15	0.000	GPS	PD:AHTD GPS MON 600055A
900	2078599.9367	0.0260	1193358.1630	0.0210	470.07	0.003	TBM	PD:CHIS SQR CONC DI
901	2077616.3622	0.0260	1195011.1775	0.0200	465.12	0.003	TBM	PD:CHIS SQR CONC NW COR BR OVER 430
902	2075994.9304	0.0340	1196813.8496	0.0260	395.15	0.005	TBM	PD:CHIS SQR CONC TRAF SIGBOX
990	2074159.5796	30.0000	1194120.6292	30.0000	480.21	0.003	BM	PD:NGS BM B 321
991	2079638.7022	30.0000	1193562.8742	30.0000	502.09	0.003	BM	PD:NGS BM D 321

*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: 1-16*
Horizontal - Secondary (3 cm ± 50PPM): *PN: NA*
Vertical - NGS 1st Order (±4mm x √dist in km) *PN: 990 & 991*
Vertical - NGS 2nd Order (±6mm x √dist in km) *PN: NA*
Vertical - NGS 3rd Order (±8mm x √dist in km) *PN: 1-902*

Horizontal Datum: NAD 1983 (1997) State Plane Zone: 0302 - South Zone
The adjustment year is based on metadata in the SDMS Control file
A project CAF of: 0.999977047 has been used to compute the above coordinates.
The project CAF shall have a minimum precision of 9 digits right of the decimal.
This CAF is intended for use within the project limits only.
Grid Distance = Ground Distance X CAF
If Coordinates are listed as Ground:
To compute Grid Coordinates, multiply the Ground Coordinates by CAF about the origin of X=0 & Y=0
If Coordinates are listed as Grid:
To compute Ground Coordinates, divide the Grid Coordinates by CAF about the origin of X=0 & Y=0

Vertical Datum: NAVD 1988 based NGS BM:
A project Elevation Factor of: 0.9999787574 has been computed and incorporated in the above CAF.
This is based on the average elevation of the project: 444.11 Feet
3-Wire Leveling techniques have been used to establish elevations on
Points: 1-16, 100,101, 900-902 From NGS BM: B 321 - D 321

Basis of Bearing: Grid Bearings based on AHTD GPS points: *600041 - 600055A*
Convergence Angle is: 00-13-07 LEFT at PN: 901
LT: 34-46-08 N LG: 92-23-27 W
Grid Azimuth = Astronomical Azimuth - Convergence Angle

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

SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
KELLY D. HOLMES
5-7-18

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FEDERAL DIST./REG.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BB0618	39	81

(2) 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.		BB0618	40	81

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

RODNEY PARHAM

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	2076553.5510	1195064.5106
8001	PC	101+42.65	2076643.6076	1195072.4869
8003	PT	110+27.09	2077161.3226	1195118.3411
8004	PC	111+25.04	2077214.0261	1195123.0091
8006	PT	115+75.04	2077463.5088	1195145.1058
8007	PC	122+07.09	2077824.1469	1195177.0477
8009	PT	126+54.59	2078049.9661	1195197.0486
8010	POE	129+82.18	2078192.9944	1195209.7166

RAMP 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	100+00.00	2075944.4229	1195084.0164
8012	PC	105+49.14	2076485.2879	1195178.9742
8014	PT	109+78.09	2076877.3292	1195343.9844
8015	POE	112+95.35	2077134.9914	1195529.0974

RAMP 1A

POINT NO.	TYPE	STATION	NORTHING	EASTING
8017	PC	111+25.75	2077016.7950	1195105.5402
8019	PT	113+39.45	2077060.7789	1195109.4359

RAMP 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8021	POB	200+00.00	2077167.2667	1195118.8676
8022	PC	200+33.38	2077195.2445	1195121.3456
8024	PT	201+89.36	2077343.9447	1195134.5160
8025	POE	208+94.27	2077986.0603	1195191.3884

RAMP 2A

POINT NO.	TYPE	STATION	NORTHING	EASTING
8027	PC	107+76.00	2077053.5353	1195108.7943
8029	PT	110+51.71	2077262.2765	1195127.2826

RAMP 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8031	POB	300+00.00	2077728.5045	1195168.5766
8032	POE	302+61.13	2077941.7173	1195187.4609

RAMP 3A

POINT NO.	TYPE	STATION	NORTHING	EASTING
8034	PC	299+74.01	2077835.9118	1195178.0897
8036	PT	301+54.65	2077864.1909	1195180.5944

RAMP 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8038	POB	400+00.00	2076893.9674	1195094.6613
8039	PC	407+12.54	2077543.4967	1195152.1904
8041	PT	408+74.47	2077697.0958	1195165.7947
8031	POE	409+12.94	2077728.5045	1195168.5766

RAMP 4A

POINT NO.	TYPE	STATION	NORTHING	EASTING
8042	PC	408+04.60	2077633.9662	1195160.2033
8044	PT	409+45.67	2077756.8137	1195171.0839

I-430

POINT NO.	TYPE	STATION	NORTHING	EASTING
8045	POB	400+00.00	2076267.3030	1195039.1575
8046	POE	425+37.19	2078794.6024	1195263.0012

4/25/2018

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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.		BB0618	41	81

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

N 9°51'28" E 218.16'

P.I. 107+67.29

N 35°41'41" E 218.16'

PN10 PD:STD AHTD MON STAMPED PN 10

PN11 PD:STD AHTD MON STAMPED PN 11

C.L. RAMP 1

RAMP 1A
PI = 112+63.63
Δ = 92°03'49"RT.
D = 43°04'44"
T = 137.88'
L = 213.71'
PC = 111+25.75
PT = 113+39.46
MATCH EXISTING

P.T. 109+78.09

8017

110

STA. 111+25.75 ON RAMP 1 =
STA. 111+25.75 ON RAMP 1A
18.00' RT.

C.L. I-430

C.L. RAMP 1A

P.C. 111+25.75

8017

N 35°41'41" E 317.26'

N 35°41'41" E 137.88'

STA. 110+38.14 ON RODNEY PARHAM =
STA. 200+00.00 ON RAMP 2
Δ 90°00'00"

P.I. 112+63.63

115

P.I. 113+50.07

N 15°07'41" E 2537.19'

RODNEY PARHAM
PI = 105+85.37
Δ = 6°38'00"LT.
D = 0°45'00"
T = 442.72'
L = 884.44'
PC = 101+42.65
PT = 110+27.09
MATCH EXISTING

100

105

SURVEY BASELINE

P.O.B. 100+00.00

P.C. 101+42.65

PN3 PD:STD AHTD MON STAMPED PN 3

P.T. 113+39.46

SURVEY BASELINE N48°55'23"W 576.56'

P.O.B. 200+00.00

P.O.E. 112+99.35

PN4 PD:STD AHTD MON STAMPED PN 4

SURVEY BASELINE N32°49'19"W 494.53'

8000

N 45°36'30" W 142.65'

8001

SURVEY BASELINE N57°02'31"W 734.12'

STA. 108+88.07 ON RODNEY PARHAM =
STA. 113+39.46 ON RAMP 1A
29.79' LT.

8019

S 52°14'30" E 137.88'

110

N 52°14'30" W 97.95'

8004

200

N 52°14'30" W 225.03'

N 49°59'30" W 225.03'

PN2 PD:STD AHTD MON STAMPED PN 2

N 45°36'30" W 442.72'

N 52°14'30" W 442.72'

8003

P.I. 109+17.46

P.I. 110+27.09

8005

8021

N 37°45'30" E 33.38'

P.C. 200+33.38

STA. 110+45.63 ON RODNEY PARHAM =
STA. 112+95.35 ON RAMP 1
Δ 87°56'11"

C.L. RODNEY PARHAM

STA. 105+77.00
BEGIN JOB BB0618

P.I. 105+85.37

P.C. 107+76.00

8027

N 50°24'01" W 141.46'

N 18°48'23" W 141.46'

N 37°45'30" E 85.01'

P.C. 111+25.04

P.T. 201+89.36

RODNEY PARHAM
PI = 113+50.07
Δ = 2°15'00"RT.
D = 0°30'00"
T = 225.03'
L = 450.00'
PC = 111+25.04
PT = 115+75.04
MATCH EXISTING

STA. 107+76.00 ON RODNEY PARHAM =
STA. 107+76.00 ON RAMP 2A
37.50' RT.

RAMP 2A
PI = 109+17.46
Δ = 31°35'38"RT.
D = 11°27'33"
T = 141.46'
L = 275.71'
PC = 107+76.00
PT = 110+51.71
MATCH EXISTING

8029

N 18°48'23" W 85.01'

8024

205

P.I. 110+51.71

P.I. 201+18.39

RAMP 2
PI = 201+18.39
Δ = 56°33'53"LT.
D = 36°15'51"
T = 85.01'
L = 155.98'
PC = 200+33.38
PT = 201+89.36
MATCH EXISTING

STA. 201+07.82 ON RAMP 2 =
STA. 110+51.71 ON RAMP 2A
23.71' RT.

PN12 PD:STD AHTD MON STAMPED PN 12

C.L. RAMP 2

N 18°48'23" W 704.91'

C.L. RAMP 2A

4/25/2018

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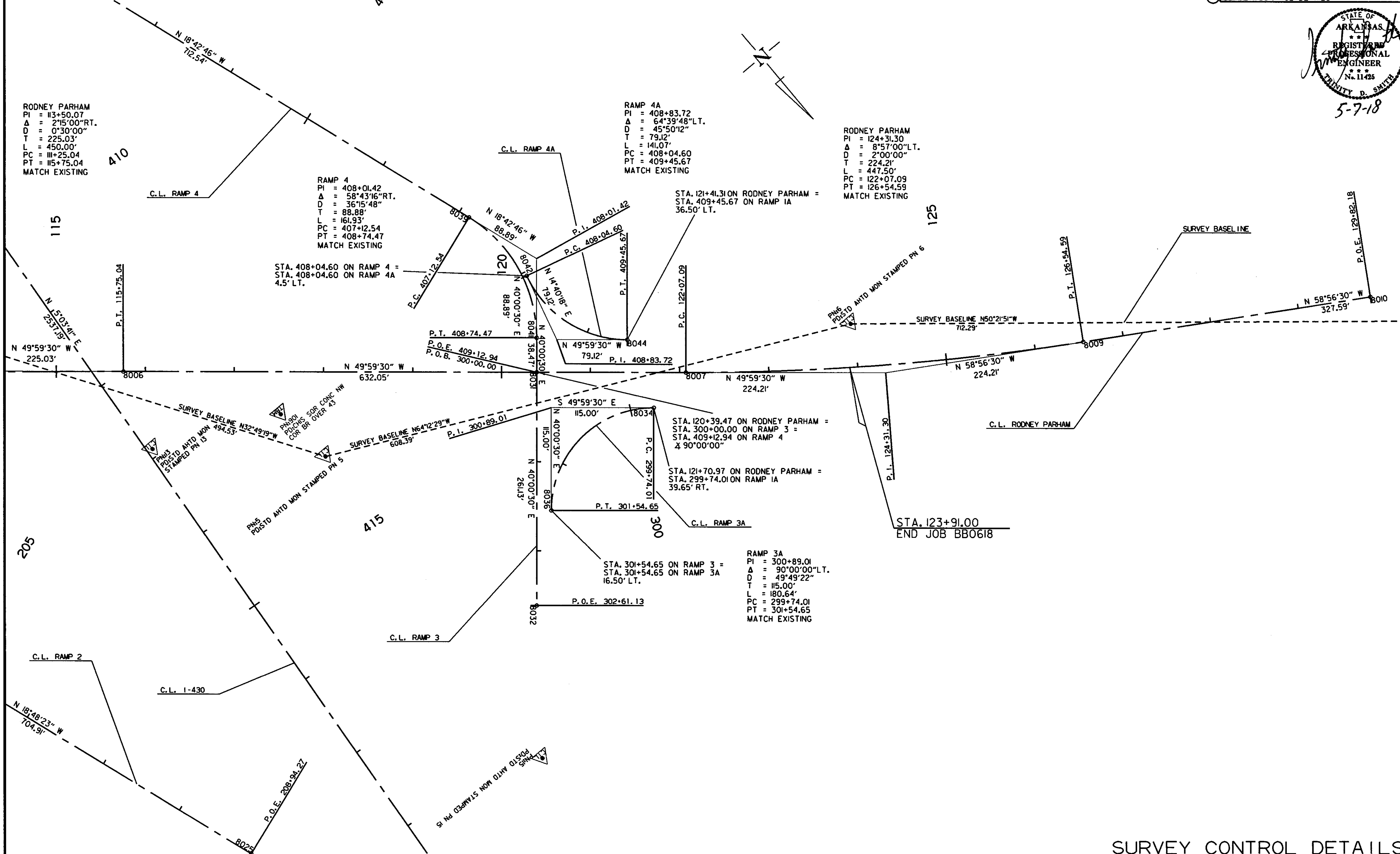
SURVEY CONTROL DETAILS

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.		BB0618	42	81

(2) SURVEY CONTROL DETAILS



STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
5-7-18
RODNEY PARHAM
PI = 113+50.07
Δ = 2°15'00"RT.
D = 0°30'00"
T = 225.03'
L = 450.00'
PC = 111+25.04
PT = 115+75.04
MATCH EXISTING
RAMP 4
PI = 408+01.42
Δ = 58°43'16"RT.
D = 36°15'48"
T = 88.88'
L = 161.93'
PC = 407+12.54
PT = 408+74.47
MATCH EXISTING
RAMP 4A
PI = 408+83.72
Δ = 64°39'48"LT.
D = 45°50'12"
T = 79.12'
L = 141.07'
PC = 408+04.60
PT = 409+45.67
MATCH EXISTING
RODNEY PARHAM
PI = 124+31.30
Δ = 8°57'00"LT.
D = 2°00'00"
T = 224.21'
L = 447.50'
PC = 122+07.09
PT = 126+54.59
MATCH EXISTING
RAMP 3A
PI = 300+89.01
Δ = 90°00'00"LT.
D = 49°49'22"
T = 115.00'
L = 180.64'
PC = 299+74.01
PT = 301+54.65
MATCH EXISTING
STA. 408+04.60 ON RAMP 4 = STA. 408+04.60 ON RAMP 4A 4.5' LT.
STA. 121+41.31 ON RODNEY PARHAM = STA. 409+45.67 ON RAMP 1A 36.50' LT.
STA. 120+39.47 ON RODNEY PARHAM = STA. 300+00.00 ON RAMP 3 = STA. 409+12.94 ON RAMP 4 ∡ 90°00'00"
STA. 121+70.97 ON RODNEY PARHAM = STA. 299+74.01 ON RAMP 1A 39.65' RT.
STA. 301+54.65 ON RAMP 3 = STA. 301+54.65 ON RAMP 3A 16.50' LT.
STA. 123+91.00
END JOB BB0618
C.L. RAMP 4
C.L. RAMP 4A
C.L. RAMP 3
C.L. RAMP 3A
C.L. RAMP 2
C.L. I-430
C.L. RODNEY PARHAM
SURVEY BASELINE
SURVEY BASELINE N50°21'51"W 712.29'
SURVEY BASELINE N32°49'19"W 494.53'
SURVEY BASELINE N64°12'29"W 608.39'
N 18°42'46" W 712.54'
N 18°42'46" W 88.89'
N 14°40'18" E 79.12'
N 5°03'41" E 253.19'
N 49°59'30" W 225.03'
N 49°59'30" W 632.05'
N 49°59'30" W 79.12'
N 49°59'30" W 224.21'
N 58°56'30" W 224.21'
N 58°56'30" W 327.59'
N 40°00'30" E 88.89'
N 40°00'30" E 38.47'
N 40°00'30" E 115.00'
N 40°00'30" E 261.13'
S 49°59'30" E 115.00'
N 18°48'23" W 704.91'
P.C. 407+12.54
P.I. 408+01.42
P.C. 408+04.60
P.T. 409+45.67
P.T. 408+74.47
P.O.E. 409+12.94
P.O.B. 300+00.00
P.I. 408+83.72
P.T. 115+75.04
P.C. 122+07.09
P.T. 126+54.59
P.O.E. 129+82.18
P.I. 124+31.30
P.I. 300+89.01
P.C. 299+74.01
P.T. 301+54.65
P.O.E. 302+61.13
P.O.E. 208+94.27
8006 8007 8009 8010 8031 8032 8034 8036 8039 8041 8042 8044 8025
PN6 PD:STD AHTD MON STAMPED PN 6
PN13 PD:STD AHTD MON STAMPED PN 13
PN901 PD:CHIS SQR CONC NW COR BR OVER 43
PN5 PD:STD AHTD MON STAMPED PN 5
PN15 PD:STD AHTD MON STAMPED PN 15
405 410 415 115 120 125 205 300
N

4/25/2018

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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.		BB0618	43	81

2 PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

STA. 104+60 IN PLACE
DROP INLET ON LT.
WITH 18" X 124' R.C. PIPE INLET
REMOVE HDWL. AND EXTEND
4' RT WITH CONCRETE COLLAR
TO A COMPLETED LENGTH OF 128'
(CLASS III) (TYPE 3 BEDDING)
WITH F.E.S.
18" R.C. PIPE = 8 LIN. FT.
18" F.E.S. = 1EA.

STA. 105+88 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 4.9 SQ. YDS.

STA. 110+06 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 3.3 SQ. YDS.

STA. 106+05 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 106+05.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 3.33 SQ. YD.

STA. 110+78.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 31.33 SQ. YD.

STA. 110+78 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

RAMP 1A
PI = 112+63.63
Δ = 92°03'49"RT.
D = 43°04'44"
T = 137.88'
L = 213.71'
PC = 111+25.75
PT = 113+39.46
MATCH EXISTING

STA. 111+25.75 ON RAMP 1 =
STA. 111+25.75 ON RAMP 1A
18.00' RT.

STA. 108+88.07 ON RODNEY PARHAM =
STA. 113+39.46 ON RAMP 1A
29.79' LT.

STA. 110+45.63 ON RODNEY PARHAM =
STA. 112+95.35 ON RAMP 1
Δ 87°56'11"

STA. 105+77.00
BEGIN JOB BB0618

POB 100+00.00

PC 101+42.65

N 45°36'30" W

BRECKENRIDGE DR

C.D.P.

CONST. LIMITS

PI 109+17.46

PT 110+27.09

N 35°41'41" E

S 52°14'30" E

N 52°14'30" W

RODNEY PARHAM
PI = 105+85.37
Δ = 6°38'00"LT.
D = 0°45'00"
T = 442.72'
L = 884.44'
PC = 101+42.65
PT = 110+27.09
MATCH EXISTING

RAMP 2A
PI = 109+17.46
Δ = 31°35'38"RT.
D = 11°27'33"
T = 141.46'
L = 275.71'
PC = 107+76.00
PT = 110+51.71
MATCH EXISTING

STA. 109+33 (RAMP 2A) CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON LT.
= 3.3 SQ. YDS.

STA. 109+33 (RAMP 2A) CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.3 SQ. YDS.

STA. 106+13 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 6.1 SQ. YDS.

STA. 110+06 CONSTRUCT
TYPE 3 WHEELCHAIR RAMP ON RT.
= 3.3 SQ. YDS.

STA. 106+30.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 33.33 SQ. YD.

STA. 106+30 CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 4' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 107+76.00 ON RODNEY PARHAM =
STA. 107+76.00 ON RAMP 2A
37.50' RT.

STA. 108+64.00 (RAMP 2A) ON RT.
CONC. DITCH PAVING (TYPE B) = 44.67 SQ. YD.

STA. 110+38.14 ON RODNEY PARHAM =
STA. 200+00.00 ON RAMP 2
Δ 90°00'00"

STA. 108+64 (RAMP 2A) CONSTRUCT
DROP INLET TYPE SPECIAL ON RT.
WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 201+07.82 ON RAMP 2 =
STA. 110+51.71 ON RAMP 2A
23.71' RT.

RODNEY PARHAM
PI = 113+50.07
Δ = 2°15'00"RT.
D = 0°30'00"
T = 225.03'
L = 450.00'
PC = 111+25.04
PT = 115+75.04
MATCH EXISTING

RAMP 2
PI = 201+18.39
Δ = 56°33'53"LT.
D = 36°15'51"
T = 85.01'
L = 155.98'
PC = 200+33.38
PT = 201+89.36
MATCH EXISTING

PC 200+33.38

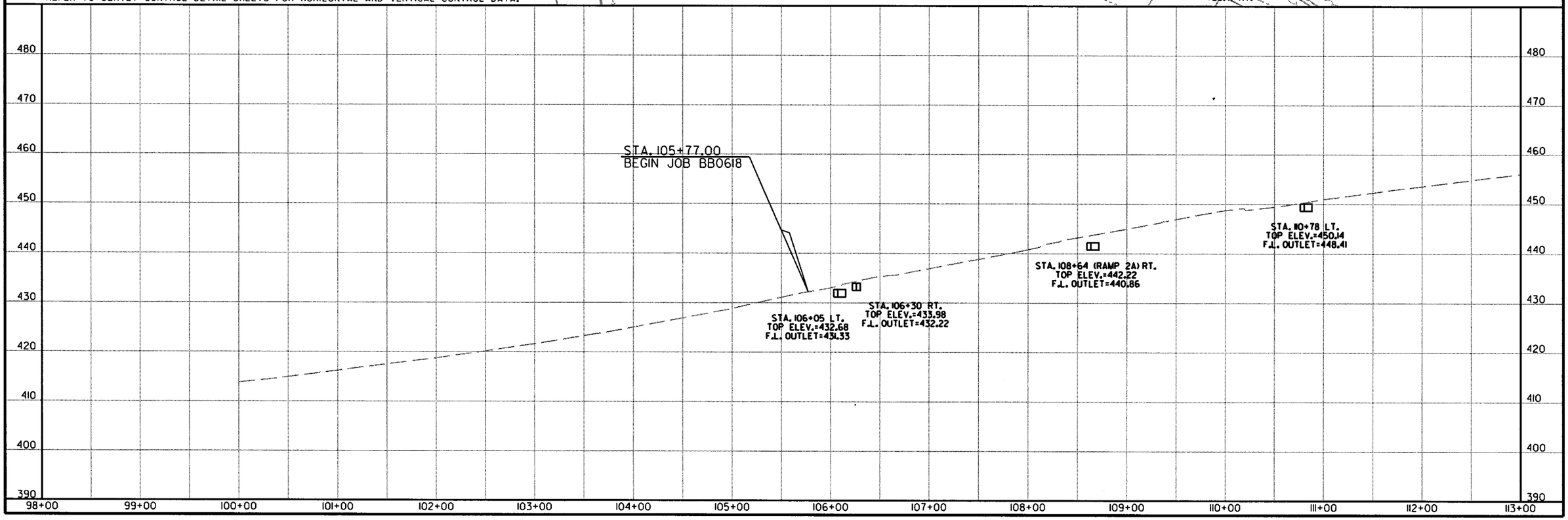
PT 201+89.36

N 34°45'30" E

N 18°48'23" W

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

RODNEY PARHAM



4/25/2018

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	44	81

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

STA. 117+34.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 164.67 SQ. YD.

STA. 117+34 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 4' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

RAMP 4
PI = 408+01.42
Δ = 58°43'16"RT.
D = 36°15'48"
T = 88.88'
L = 161.93'
PC = 407+12.54
PT = 408+74.47
MATCH EXISTING

STA. 408+87.00 (RAMP 4A) ON LT.
CONC. DITCH PAVING (TYPE B) = 39.33 SQ. YD.

STA. 408+04.60 ON RAMP 4 = PC = 408+04.60
STA. 408+04.60 ON RAMP 4A PT = 409+45.67
4.5' LT.

RAMP 4A
PI = 408+83.72
Δ = 64°39'48"LT.
D = 45°50'12"
T = 79.12'
L = 141.07'
MATCH EXISTING

STA. 408+87 (RAMP 4A) CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 122+00.00 ON LT.
CONC. DITCH PAVING (TYPE B) = 18.67 SQ. YD.

STA. 121+41.31 ON RODNEY PARHAM =
STA. 409+45.67 ON RAMP 1A
36.50' LT.

STA. 122+00 CONSTRUCT
DROP INLET TYPE SPECIAL ON LT.
WITH 4' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 123+91.00
END JOB BB0618

RODNEY PARHAM
PI = 113+50.07
Δ = 2°15'00"RT.
D = 0°30'00"
T = 225.03'
L = 450.00'
PC = 111+25.04
PT = 115+75.04
MATCH EXISTING

STA. 120+39.47 ON RODNEY PARHAM =
STA. 300+00.00 ON RAMP 3 =
STA. 409+12.94 ON RAMP 4
90°00'00"

STA. 121+70.97 ON RODNEY PARHAM =
STA. 299+74.01 ON RAMP 1A
39.65' RT.

RAMP 3A
PI = 300+89.01
Δ = 90°00'00"LT.
D = 49°49'22"
T = 115.00'
L = 180.64'
PC = 299+74.01
PT = 301+54.65
MATCH EXISTING

STA. 301+54.65 ON RAMP 3 =
STA. 301+54.65 ON RAMP 3A
16.50' LT.

RODNEY PARHAM
PI = 124+31.30
Δ = 8°57'00"LT.
D = 2°00'00"
T = 224.21'
L = 447.50'
PC = 122+07.09
PT = 126+54.59
MATCH EXISTING

RODNEY PARHAM

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

STA. 113+68.36 B.E.

STA. 117+16.30 B.E.

STA. 117+34 LT.
TOP ELEV.=464.79
F.L. OUTLET=463.30

STA. 408+84 (RAMP 4A) LT.
TOP ELEV.=466.90
F.L. OUTLET=465.46

STA. 122+00 LT.
TOP ELEV.=467.06
F.L. OUTLET=465.70

STA. 123+91.00
END JOB BB0618

4/25/2018

RBB0618.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.		BB0618	45	81

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

STA. 112+51 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON LT. = 4.9 SQ. YDS.

25' TRANSITION | 208' TAPER

STA. 110+30.00
BEGIN RAMP I

STA. 110+45.63 ON RODNEY PARHAM = STA. 112+95.35 ON RAMP I
Δ 87°56'11"

C.D.P.

CONST. LIMITS

PC111+25.04

PI107+67.29

N 35°41'41" E

N 9°57'28" E

RAMP I
PI = 107+67.29
Δ = 25°44'13"RT.
D = 6°00'00"
T = 218.16'
L = 428.95'
PC = 105+49.14
PT = 109+78.09
MATCH EXISTING

PT109+78.09

GRADE TO DRAIN

STA. 111+25.75 ON RAMP I = STA. 111+25.75 ON RAMP IA
18.00' RT.

PC111+25.75

PT113+39.46

PC105+49.14

STA. 112+53 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON LT. = 2.7 SQ. YDS.

STA. 110+38 CONSTRUCT DROP INLET TYPE SPECIAL ON RT. WITH 8' EXTENSION
DROP INLET H=1'-0"
TYPE SPECIAL DROP INLET = 4' X 8'

STA. 112+53 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 3.3 SQ. YDS.

STA. 110+30.00 TO STA. 111+70.00 ON RT.
CONC. DITCH PAVING (TYPE B) = 98.31 SQ. YD.

RAMP IA
PI = 112+63.63
Δ = 92°03'49"RT.
D = 43°04'44"
T = 137.88'
L = 213.71'
PC = 111+25.75
PT = 113+39.46
MATCH EXISTING

STA. 108+88.07 ON RODNEY PARHAM = STA. 113+39.46 ON RAMP IA
29.79' LT.

STA. 112+51 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 4.0 SQ. YDS.

PI112+63.63

PC200+33.38

PT201+89.36

52°14'30" W

N 37°45'30" E

RAMP 2
PI = 201+18.39
Δ = 56°33'53"LT.
D = 36°15'51"
T = 85.01'
L = 155.98'
PC = 200+33.38
PT = 201+89.36
MATCH EXISTING

PI109+17.46

PC201+46.39

PT110+51.71

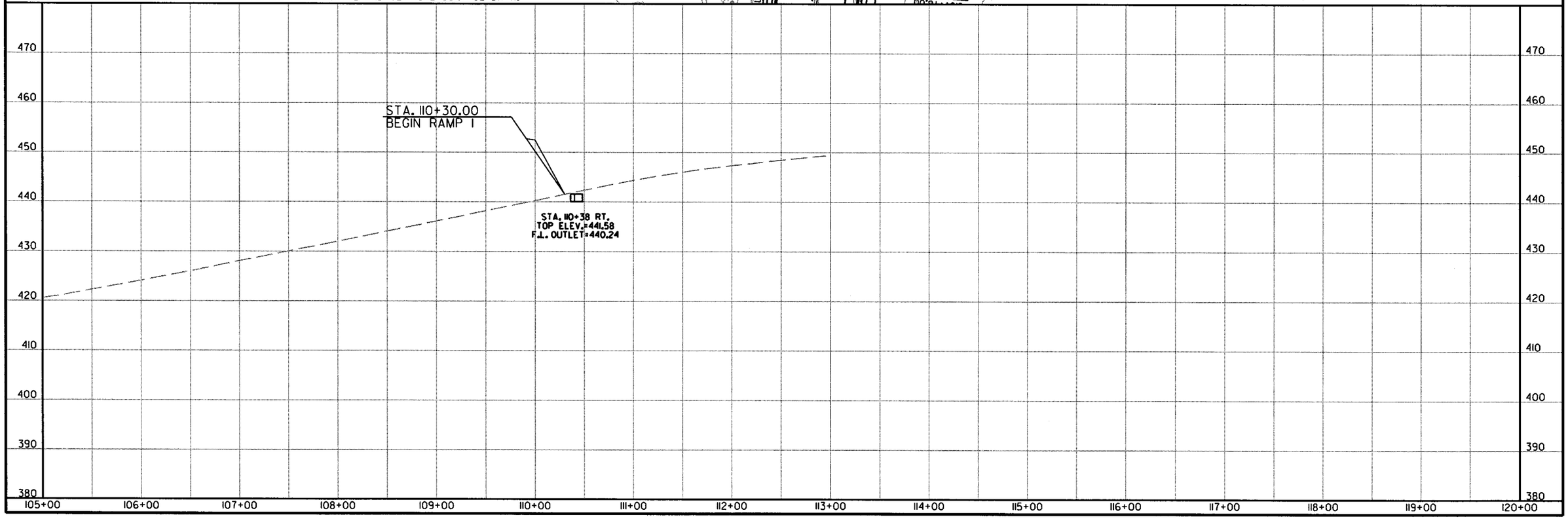
RAMP 2A
PI = 109+17.46
Δ = 31°35'38"RT.
D = 11°27'33"
T = 141.46'
L = 275.71'
PC = 107+76.00
PT = 110+51.71
MATCH EXISTING

N 56°24'49" W

C.D.P.

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

RAMP I



4/25/2018

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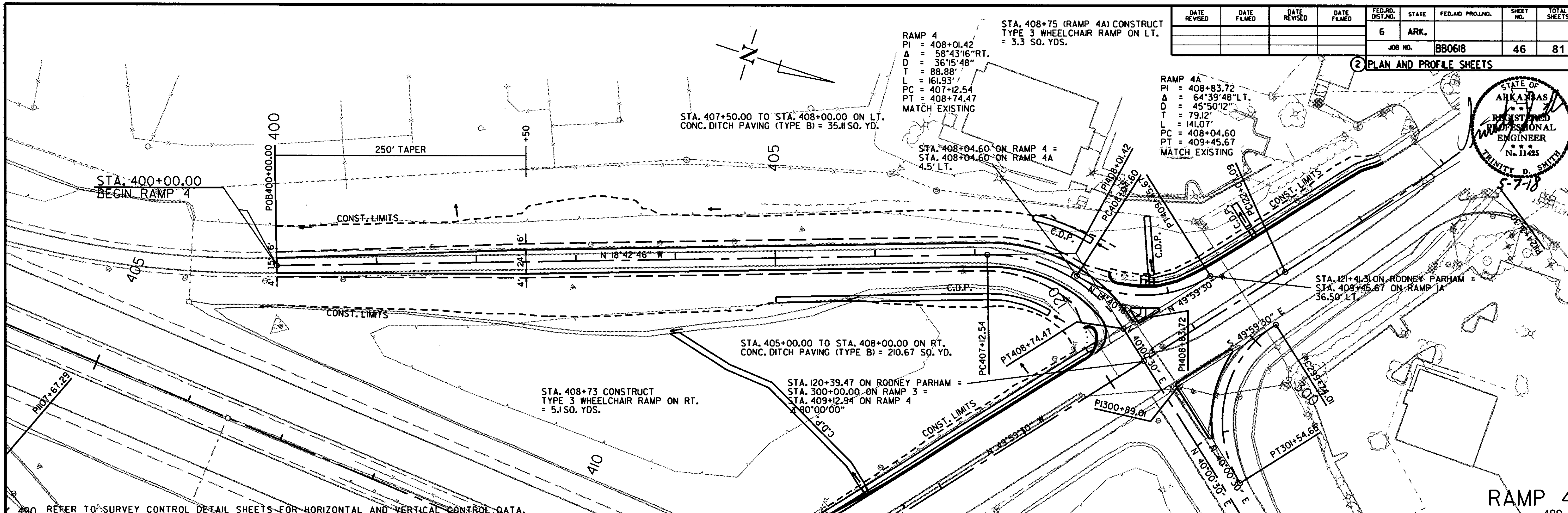
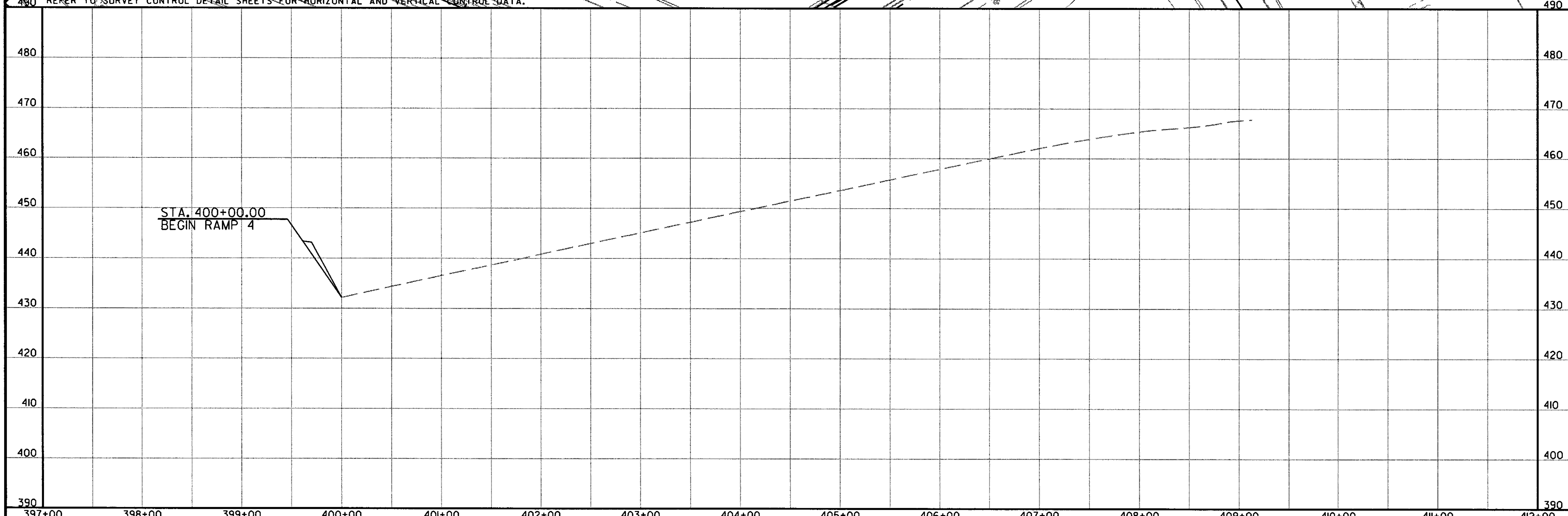
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	46	81

(2) PLAN AND PROFILE SHEETS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18
RAMP 4
PI = 408+01.42
Δ = 58°43'16"RT.
D = 36°15'48"
T = 88.88'
L = 161.93'
PC = 407+12.54
PT = 408+74.47
MATCH EXISTING
STA. 408+75 (RAMP 4A) CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON LT. = 3.3 SQ. YDS.
RAMP 4A
PI = 408+83.72
Δ = 64°39'48"LT.
D = 45°50'12"
T = 79.12'
L = 141.07'
PC = 408+04.60
PT = 409+45.67
MATCH EXISTING
STA. 407+50.00 TO STA. 408+00.00 ON LT. CONC. DITCH PAVING (TYPE B) = 35.11 SQ. YD.
STA. 408+04.60 ON RAMP 4 = STA. 408+04.60 ON RAMP 4A 4.5' LT.
STA. 400+00.00
BEGIN RAMP 4
250' TAPER
POB400+00.00
CONST. LIMITS
N 18°42'46" W
C.D.P.
STA. 121+41.31 ON RODNEY PARHAM = STA. 409+45.67 ON RAMP 1A 36.50' LT.
STA. 405+00.00 TO STA. 408+00.00 ON RT. CONC. DITCH PAVING (TYPE B) = 210.67 SQ. YD.
STA. 120+39.47 ON RODNEY PARHAM = STA. 300+00.00 ON RAMP 3 = STA. 409+12.94 ON RAMP 4 ∡ 90°00'00"
STA. 408+73 CONSTRUCT TYPE 3 WHEELCHAIR RAMP ON RT. = 5.1 SQ. YDS.
PI107+67.29
PC407+12.54
PT408+74.47
PI408+01.42
PC408+04.60
PI408+83.72
PI300+89.01
PT301+54.66
N 40°00'30" E
N 49°59'30" E
S 49°59'30" E
N 49°59'30" W
RAMP 4
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



4/25/2018

RBB0618.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.		BB0618	47	81

(2) SUMMARY OF TRAFFIC SIGNAL QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

SUMMARY OF TRAFFIC SIGNAL QUANTITIES

	ITEM NUMBER	ITEM	I-430 SB RAMPS	I-430 NB RAMPS	QUANTITY	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	1	2	EACH
	SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	1	2	EACH
	SP	E-NET CABLE (EXTERIOR CAT 5E)	1522	1429	2951	LIN. FT.
	SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	2	2	4	EACH
	SP	BATTERY BACKUP SYSTEM	1	1	2	EACH
	SP	PTZ CAMERA SYSTEM	1	1	2	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	8	16	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	2	4	6	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	821	1900	2721	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	346	303	649	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	364	483	847	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	244	123	367	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	60	65	125	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	866	420	1286	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	20	23	43	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (3")	20	20	40	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	20	23	43	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	300	425	725	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 2)	3	3	6	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	4	4	8	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	1	1	2	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38'-50')		1	1	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32'-50')	1		1	EACH
	SP	LED LUMINAIRE ASSEMBLY	4	2	6	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	1	3	4	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	1	2	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	0.50	1.00	LUMP SUM
	SP	18" STREET NAME SIGN	3	3	6	EACH
*	SP & 733	VIDEO DETECTOR (IP)	6	6	12	EACH
	733	VIDEO MONITOR (CLR)	1	1	2	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	1	2	EACH
	SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	2	4	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)	4	4	8	EACH

* ONE SPARE VIDEO DETECTOR (IP) AND ONE SPARE VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA) SHALL BE SUPPLIED PER INTERSECTION.

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

LOCATION: I-430 NB & SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

TBB0618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	48	81

(2) TRAFFIC SIGNAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

TRAFFIC SIGNAL NOTES:

1. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2017) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL

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

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

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

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

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

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

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

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

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

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

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

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

14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.

15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.

16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY/COUNTY.

17. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.

20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

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

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

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

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

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

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

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

LOCATION: I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

TBB0618_01.DGN 4/27/2018

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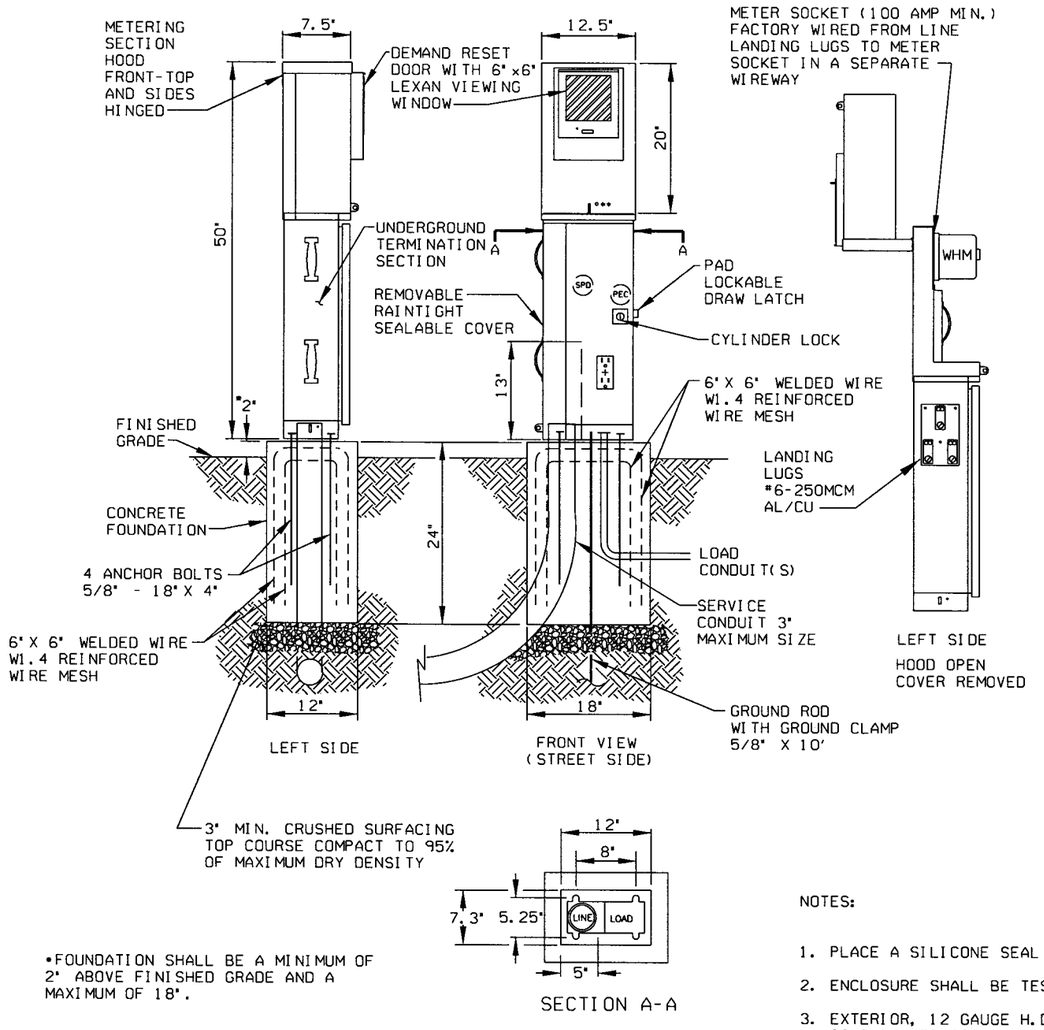
				6	ARK.			
				JOB NO.		BB0618	49	81

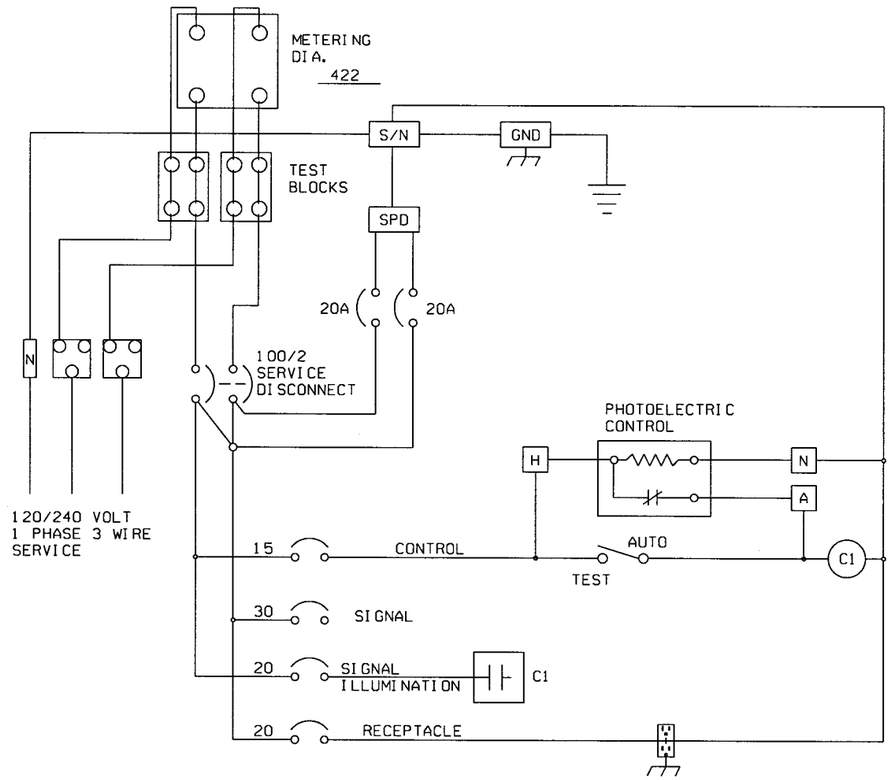
(2) SIGNALIZATION DETAILS

UNDERGROUND SERVICE POINT PEDESTAL DETAIL



•FOUNDATION SHALL BE A MINIMUM OF 2" ABOVE FINISHED GRADE AND A MAXIMUM OF 18".

WIRING DIAGRAM



NOTES:

1. PLACE A SILICONE SEAL BETWEEN THE CABINET FOUNDATION AND THE CABINET.
2. ENCLOSURE SHALL BE TESCO CLASS 26-000-M-G OR CITY APPROVED EQUAL PRIOR TO BID.
3. EXTERIOR, 12 GAUGE H.D. GALVANIZED STEEL, AND INTERIOR 14 GAUGE COLD ROLLED STEEL ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
4. CONSTRUCTION WILL BE NEMA 4X, RAINTIGHT.
5. ALL NUTS, BOLTS, AND SCREWS WILL BE STAINLESS STEEL.
6. NUTS, BOLTS, AND SCREWS WILL NOT BE VISIBLE FROM OUTSIDE OF ENCLOSURE.
7. NAME PLATES WILL BE PROVIDED AS REQUIRED.
8. CONTROL WIRING WILL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
9. A PLASTIC COVERED WIRING DIAGRAM WILL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
10. ENCLOSURE WILL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
11. INTERNAL WIRING DIAGRAM SHALL BE SUBMITTED.
12. ALL CONCRETE FOR SERVICE POINT PEDESTAL FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

LOCATION: I-430 NB & SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 5-7-18

TBB0618_01.DGN 4/27/2018

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(2) TRAFFIC SIGNAL QUANTITIES AND SIGNS

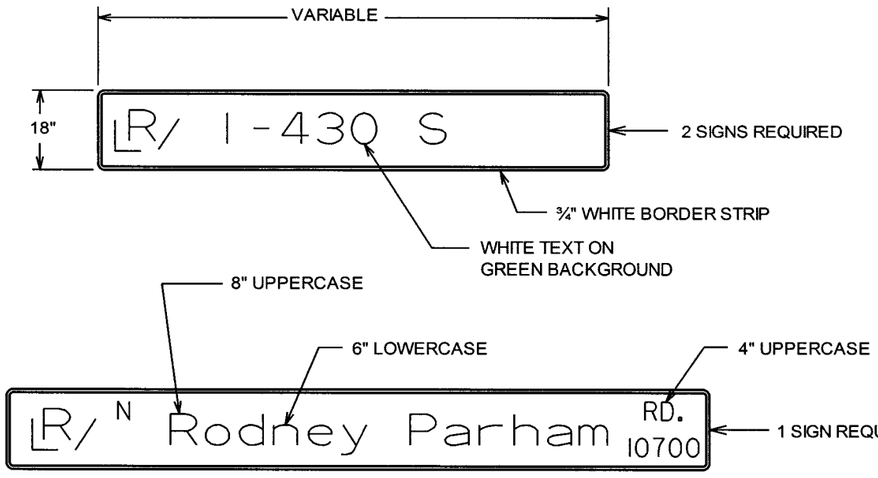
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

TRAFFIC SIGNAL QUANTITIES

	ITEM NUMBER	ITEM	QUANTITY	UNIT
	SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	EACH
	SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	EACH
	SP	E-NET CABLE (EXTERIOR CAT 5E)	1522	LIN. FT.
	SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	2	EACH
	SP	BATTERY BACKUP SYSTEM	1	EACH
	SP	PTZ CAMERA SYSTEM	1	EACH
	SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
	SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	2	EACH
	708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	821	LIN. FT.
	708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	346	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	364	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	244	LIN. FT.
	SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	60	LIN. FT.
	SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	866	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (2")	20	LIN. FT.
	709	GALVANIZED STEEL CONDUIT (3")	20	LIN. FT.
	710	NON-METALLIC CONDUIT (2")	20	LIN. FT.
	710	NON-METALLIC CONDUIT (3")	300	LIN. FT.
	711	CONCRETE PULL BOX (TYPE 2)	3	EACH
	711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	1	EACH
	714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32'-50')	1	EACH
	SP	LED LUMINAIRE ASSEMBLY	4	EACH
	715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	1	EACH
	SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
	SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
	SP	18" STREET NAME SIGN	3	EACH
*	SP & 733	VIDEO DETECTOR (IP)	6	EACH
	733	VIDEO MONITOR (CLR)	1	EACH
	SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
	SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH
*	SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)	4	EACH

* ONE SPARE VIDEO DETECTOR (IP) AND ONE SPARE VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA) SHALL BE SUPPLIED.

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.
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: 4-27-18 FILE NAME: tBB0618_01.dgn

LOCATION: I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

TBB0618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		B80618	51	81

(2) SIGNALIZATION PLAN SHEET

I-430 SB RAMPS/ RODNEY PARHAM RD.
POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	32'/50'	180 DEGREES / 90 DEGREES	50'	15' / 25'	180 DEGREES / 90 DEGREES
B	52'	180 DEGREES	35'	15' / 25'	180 DEGREES / 90 DEGREES
C	N/A	N/A	15'	N/A	N/A

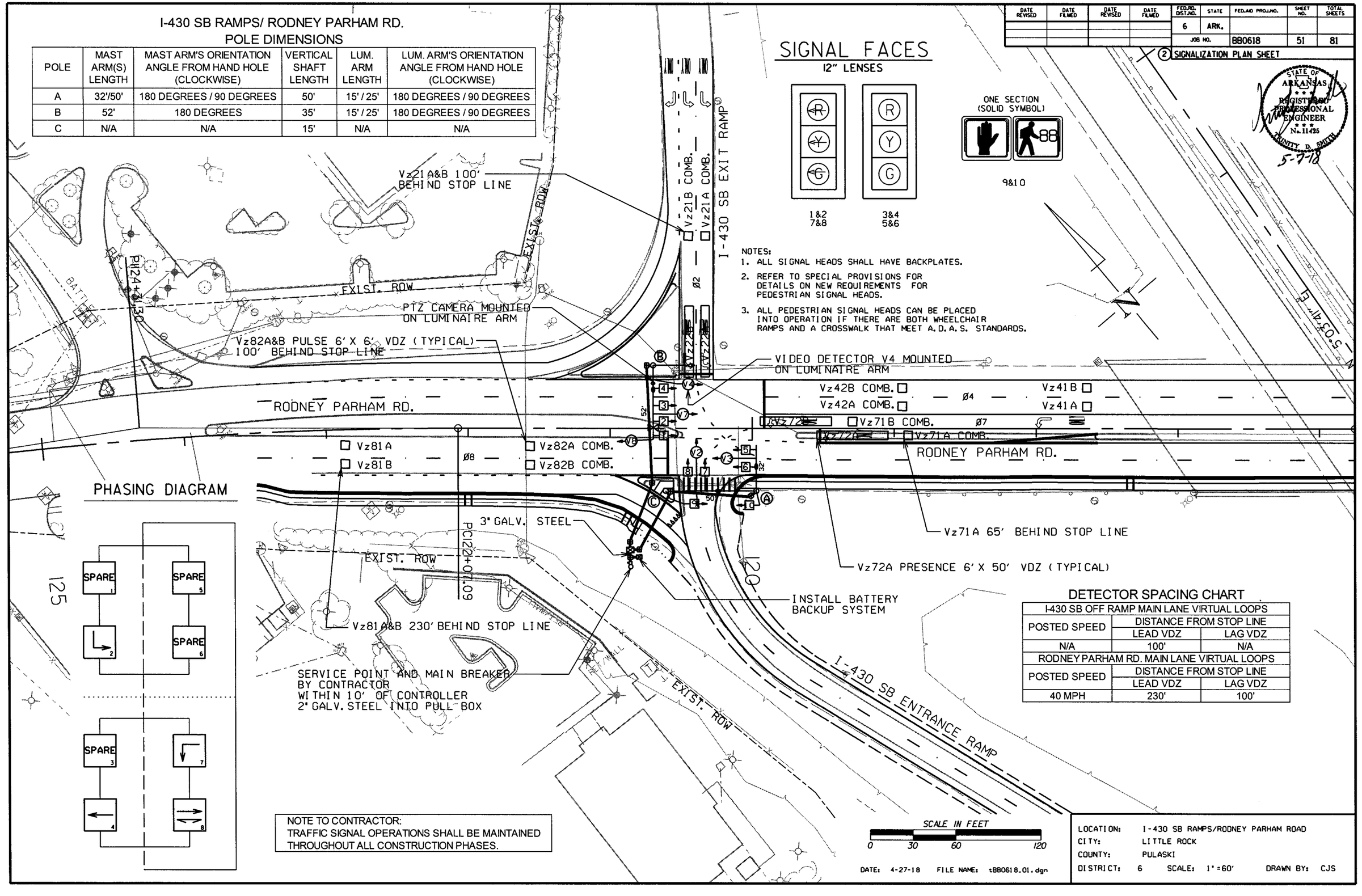
SIGNAL FACES
12" LENSES

ONE SECTION
(SOLID SYMBOL)

9&10

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18



DETECTOR SPACING CHART

I-430 SB OFF RAMP MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
N/A	100'	N/A
RODNEY PARHAM RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	230'	100'

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

SCALE IN FEET
0 30 60 120

DATE: 4-27-18 FILE NAME: tB80618.01.dgn

LOCATION: I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: 1"=60' DRAWN BY: CJS

TB80618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	52	81

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

DESIGN PARAMETERS

POSTED SPEED LIMIT:
40 MPH EAST AND WEST APPROACH
30 MPH NORTH 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 BACK OF CURB

EXIST. ROW
TYPE 2 PULL BOX
TWO LOCAL RADIOS WITH ANTENNAS MOUNTED ON MAST ARM
ONE FACING EAST
ONE FACING WEST
PTZ CAMERA
RODNEY PARHAM RD.
I-430 SB EXIT RAMP
Ø2
Vz22B
Vz22A
Vz42B COMB.
Vz42A COMB.
Ø4
Vz72B
Vz72A
Vz71B COMB.
Vz71A COMB.
Ø7
Vz82A COMB.
Vz82B COMB.
Ø8
52'
32'
50'
V1
V2
V3
V4
V7
V8
1
2
3
4
5
6
7
8
9
A
B
C
D
TRAFFIC FLOW DIAGRAM
575 (406)
0 (0)
499 (242)
RODNEY PARHAM RD.
1581 (2007)
1006 (1601)
161 (295)
I-40 SB ENTRANCEM RAMP
1296 (1052)
544 (673)
1538 (1294)
RODNEY PARHAM RD.
705 (968)
LEGEND:
100 - AM PEAK
(100) - PM PEAK
EXISTING (2015) PEAK HOUR TRAFFIC VOLUMES
EXIST. ROW
PC12+04.09
I-430 SB ENTRANCE RAMP
120

I-430 SB RAMPS/ RODNEY PARHAM RD.
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	R. PARHAM - STA. 119+97.17	43.73' LT.	1194764.59, 2077703.97
B	R. PARHAM - STA. 120+69.65	44.15' RT.	1194765.58, 2077817.89
C	R. PARHAM - STA. 120+61.01	43.74' LT.	1194715.69, 2077745.01

SCALE IN FEET
0 30 60 120

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

LOCATION: I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: 1"=60' DRAWN BY: CJS

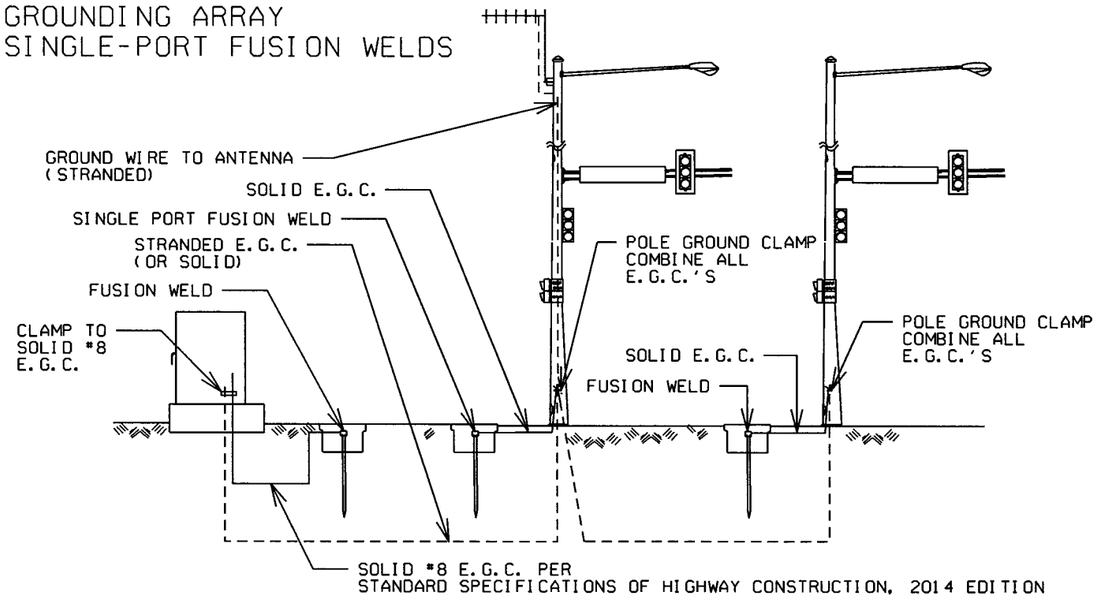
TBB0618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	53	81

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

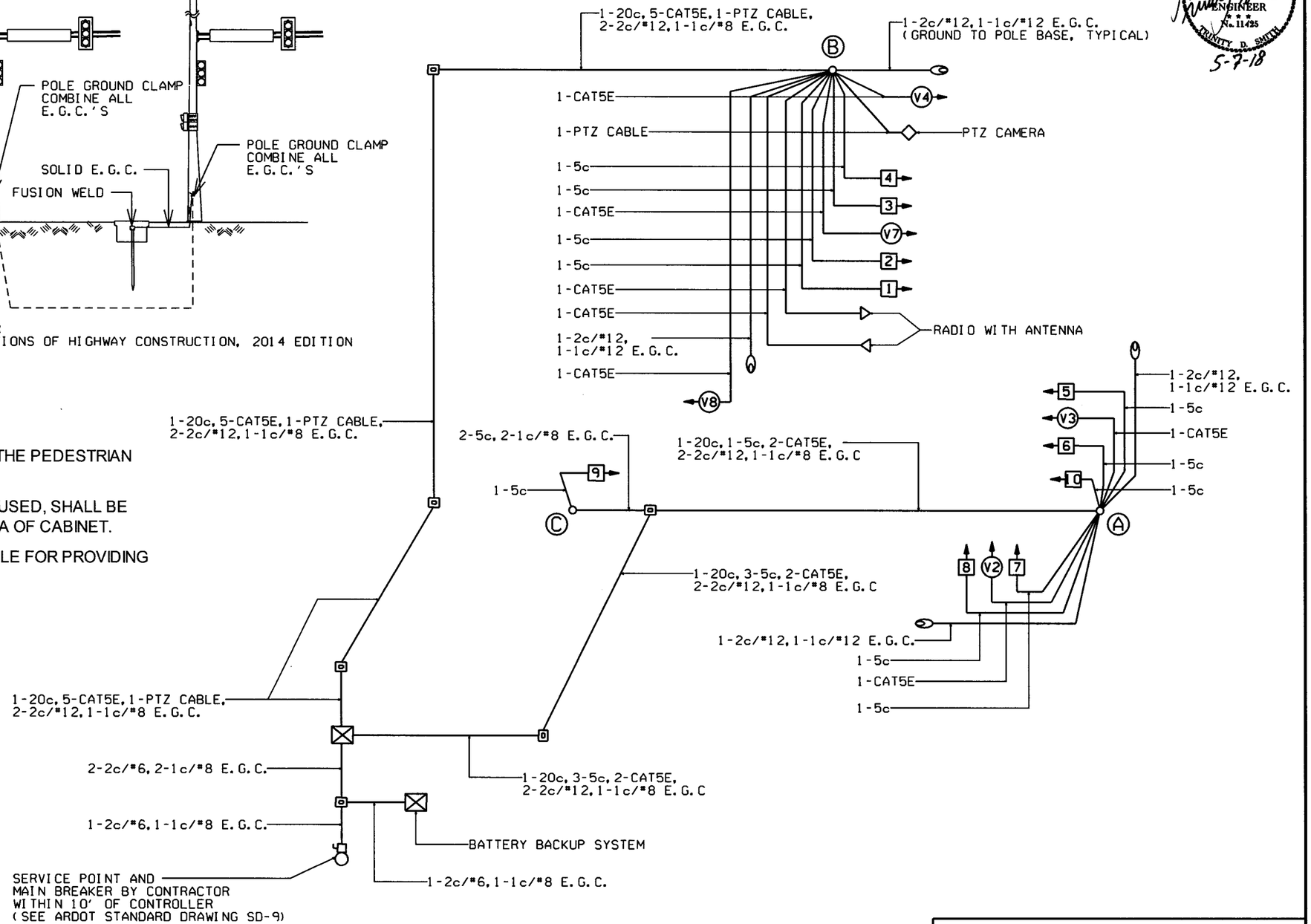
GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



WIRING DIAGRAM

NOTES TO CONTRACTOR:

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



LOCATION:	I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	6
SCALE:	N/A
DRAWN BY:	CJS

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

TBB0618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	54	81

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-718

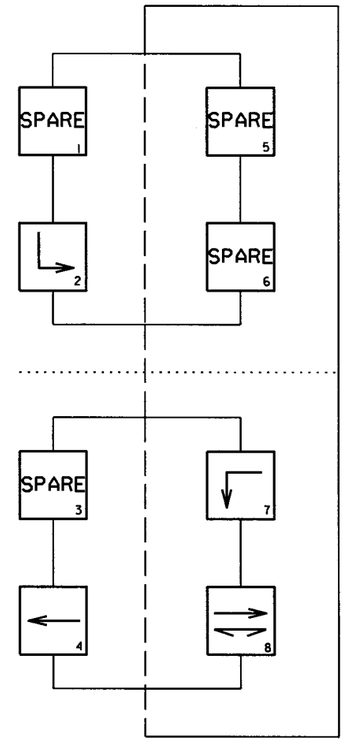
DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB BB0618											
RODNEY PARHAM RD./I-40 SB RAMPS DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS LOCAL		MASTER SYSTEM DETECTOR NUMBERS	COMMENTS	TUBE LENGTHS
DET. ID #	LOCATION DIRECTION	TPYE	DET. #	CAB. TRM. #	AMP. CHN. #	CON. IMP. #	PHS	SYSTEM DET. #			
Vz21 A&B	SB LEFT TURN FAR	COMB.			1	V10	2	2		CAMERA V2	23"
Vz22 A&B	SB LEFT TURN NEAR	LOCAL			2	V2	2			CAMERA V2	23"
Vz41A&B	WB FAR	LOCAL			5	V4	4			CAMERA V4	23"
Vz42A&B	WB NEAR	COMB.			6	V12	4	4		CAMERA V7	23"
Vz71 A&B	WB LEFT TURN FAR	COMB.			7	V15	7	7		CAMERA V7	23"
Vz72 A&B	WB LEFT TURN NEAR	LOCAL			8	V7	7			CAMERA V7	23"
Vz81 A&B	EB FAR	LOCAL			9	V8	8			CAMERA V8	23"
Vz82 A&B	EB NEAR	COMB.			10	V16	8	8		CAMERA V3	37"
PB8 A&B	WEST TO EAST	PED.				P8	8			R. PARHAM SOUTH LEG	
					SPARE AMP. CHN. #: 3,4,11-16						

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

PHASING DIAGRAM



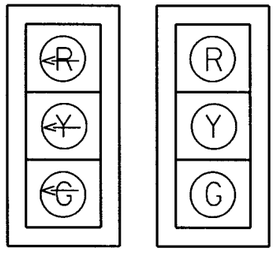
INTERVAL CHART

SIGNAL FACES	R. PARHAM RD./I-40 SB RAMPS							FLASH SEQ.
	2	CLR.	4+7	CLR.	4+8	CLR.		
1&2	~~R~~	~~R~~	~~G~~	•	~~R~~	~~R~~		~~R~~
3&4	R	R	G	••	G	••		R
5&6	R	R	R	R	G	••		R
7&8	~~G~~	•	~~R~~	~~R~~	~~R~~	~~R~~		~~R~~
9&10	DW	DW	DW	DW	W	FDW		BLK

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

SIGNAL FACES

12" LENSES



1&2
7&8

3&4
5&6

ONE SECTION
(SOLID SYMBOL)

9&10

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

LOCATION: I-430 SB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

DATE: 4-27-18 FILE NAME: tBB0618_01.dgn

TBB0618_01.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	55	81

(2) TRAFFIC SIGNAL QUANTITIES AND SIGNS

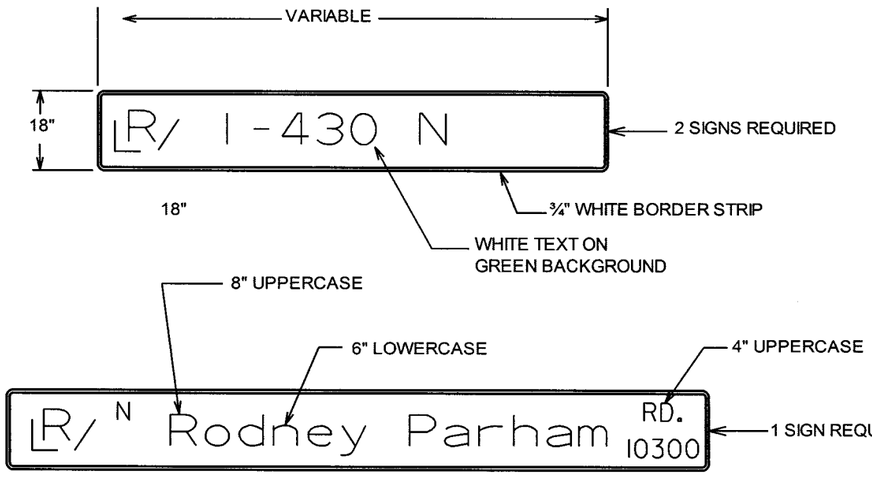
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
TRINITY D. SMITH
5-7-18

TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	EACH
SP	ETHERNET SWITCH, T100 HARDENED (8-PORT)	1	EACH
SP	E-NET CABLE (EXTERIOR CAT 5E)	1429	LIN. FT.
SP	LOCAL RADIO (E-NET 5.8) WITH ANTENNA	2	EACH
SP	BATTERY BACKUP SYSTEM	1	EACH
SP	PTZ CAMERA SYSTEM	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	4	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1900	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	303	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	483	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.)	123	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	65	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	420	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	23	LIN. FT.
709	GALVANIZED STEEL CONDUIT (3")	20	LIN. FT.
710	NON-METALLIC CONDUIT (2")	23	LIN. FT.
710	NON-METALLIC CONDUIT (3")	425	LIN. FT.
711	CONCRETE PULL BOX (TYPE 2)	3	EACH
711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (52')	1	EACH
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (38'-50')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	2	EACH
715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.50	LUMP SUM
SP	18" STREET NAME SIGN	3	EACH
* SP & 733	VIDEO DETECTOR (IP)	6	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP & 733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH
SP & 733	CENTRAL CONTROL UNIT (8 CHANNEL)	2	EACH
* SP & 733	VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA)	4	EACH

* ONE SPARE VIDEO DETECTOR (IP) AND ONE SPARE VIDEO PROCESSOR, EDGE CARD IP (2 CAMERA) SHALL BE SUPPLIED.

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.
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: 4-27-18 FILE NAME: tBB0618_02.dgn

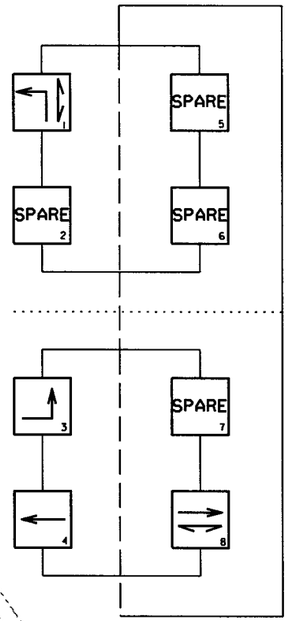
LOCATION: I-430 NB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

TBB0618_02.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	56	81

(2) SIGNALIZATION PLAN SHEET

PHASING DIAGRAM



DETECTOR SPACING CHART

I-430 NB OFF RAMP MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
N/A	100'	N/A
RODNEY PARHAM RD. MAIN LANE VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	230'	100'

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

I-430 NB ENTRANCE RAMP

EXIST. ROW

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10' OF CONTROLLER 2" GALV. STEEL INTO PULL BOX

INSTALL BATTERY BACKUP SYSTEM

3" GALV. STEEL

Vz32A PRESENCE 6' X 50' VDZ (TYPICAL)

Vz31A 65' BEHIND STOP LINE

Vz42A&B PULSE 6' X 6' VDZ (TYPICAL) 100' BEHIND STOP LINE

TYPE 2 PULL BOX

Vz42B COMB.
Vz42A COMB.
Ø4
Vz41B
Vz41A

RODNEY PARHAM RD.

Vz31A COMB.
Vz31B COMB.
Ø3
Vz81A
Vz81B
Ø8
Vz82A COMB.
Vz82B COMB.

VIDEO DETECTOR V8 MOUNTED ON LUMINAIRE ARM

PTZ CAMERA MOUNTED ON LUMINAIRE ARM

Vz41A&B 230' BEHIND STOP LINE

Vz11A&B 100' BEHIND STOP LINE

PI113+50.07

PCIII+25.04

PI110+27.09

I-430 NB EXIT RAMP

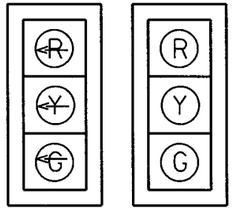
Vz11B COMB.
Vz11A COMB.
Ø1

EXIST. ROW

PI105+85.37

SIGNAL FACES

12" LENSES



3&4
5&6

1&2
7&8

ONE SECTION (SOLID SYMBOL)

9&10
11&12

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

I-430 NB RAMPS/ RODNEY PARHAM RD.
POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM'S ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)
A	38'/50'	180 DEGREES / 90 DEGREES	50'	20' / N/A	180 DEGREES / N/A
B	52'	180 DEGREES	35'	15'	180 DEGREES
C	N/A	N/A	15'	N/A	N/A
D	N/A	N/A	15'	N/A	N/A
E	N/A	N/A	15'	N/A	N/A

SCALE IN FEET
0 30 60 120

DATE: 4-27-18 FILE NAME: tBB0618_02.dgn

LOCATION: I-430 NB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: 1"=60' DRAWN BY: CJS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

TBB0618_02.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	57	81

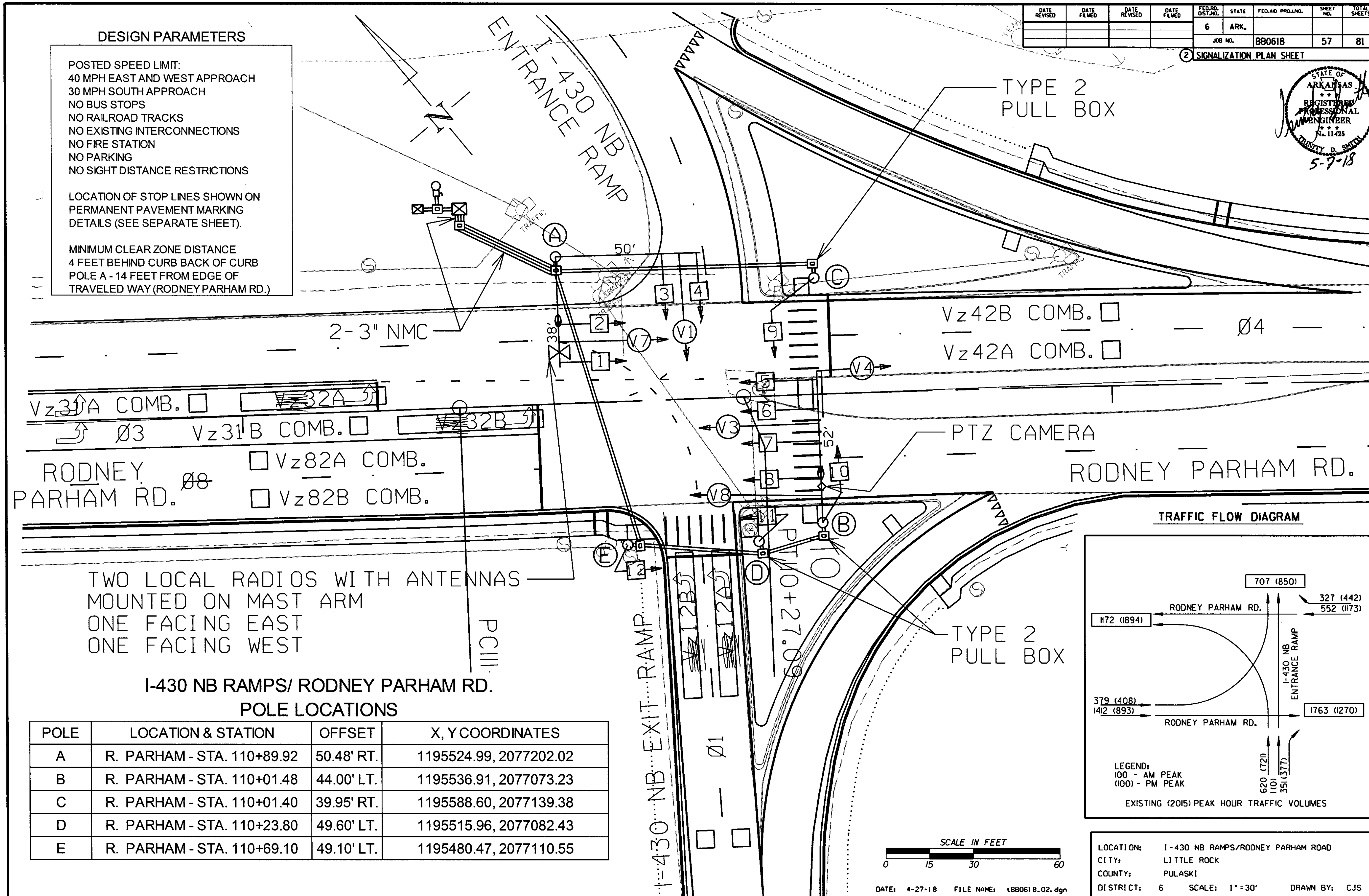
(2) SIGNALIZATION PLAN SHEET

DESIGN PARAMETERS

POSTED SPEED LIMIT:
40 MPH EAST AND WEST APPROACH
30 MPH 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 BACK OF CURB
POLE A - 14 FEET FROM EDGE OF TRAVELED WAY (RODNEY PARHAM RD.)



I-430 NB RAMPS/ RODNEY PARHAM RD. POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	R. PARHAM - STA. 110+89.92	50.48' RT.	1195524.99, 2077202.02
B	R. PARHAM - STA. 110+01.48	44.00' LT.	1195536.91, 2077073.23
C	R. PARHAM - STA. 110+01.40	39.95' RT.	1195588.60, 2077139.38
D	R. PARHAM - STA. 110+23.80	49.60' LT.	1195515.96, 2077082.43
E	R. PARHAM - STA. 110+69.10	49.10' LT.	1195480.47, 2077110.55

DATE: 4-27-18 FILE NAME: tBB0618_02.dgn

LOCATION: I-430 NB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: 1" = 30' DRAWN BY: CJS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		B80618	58	81

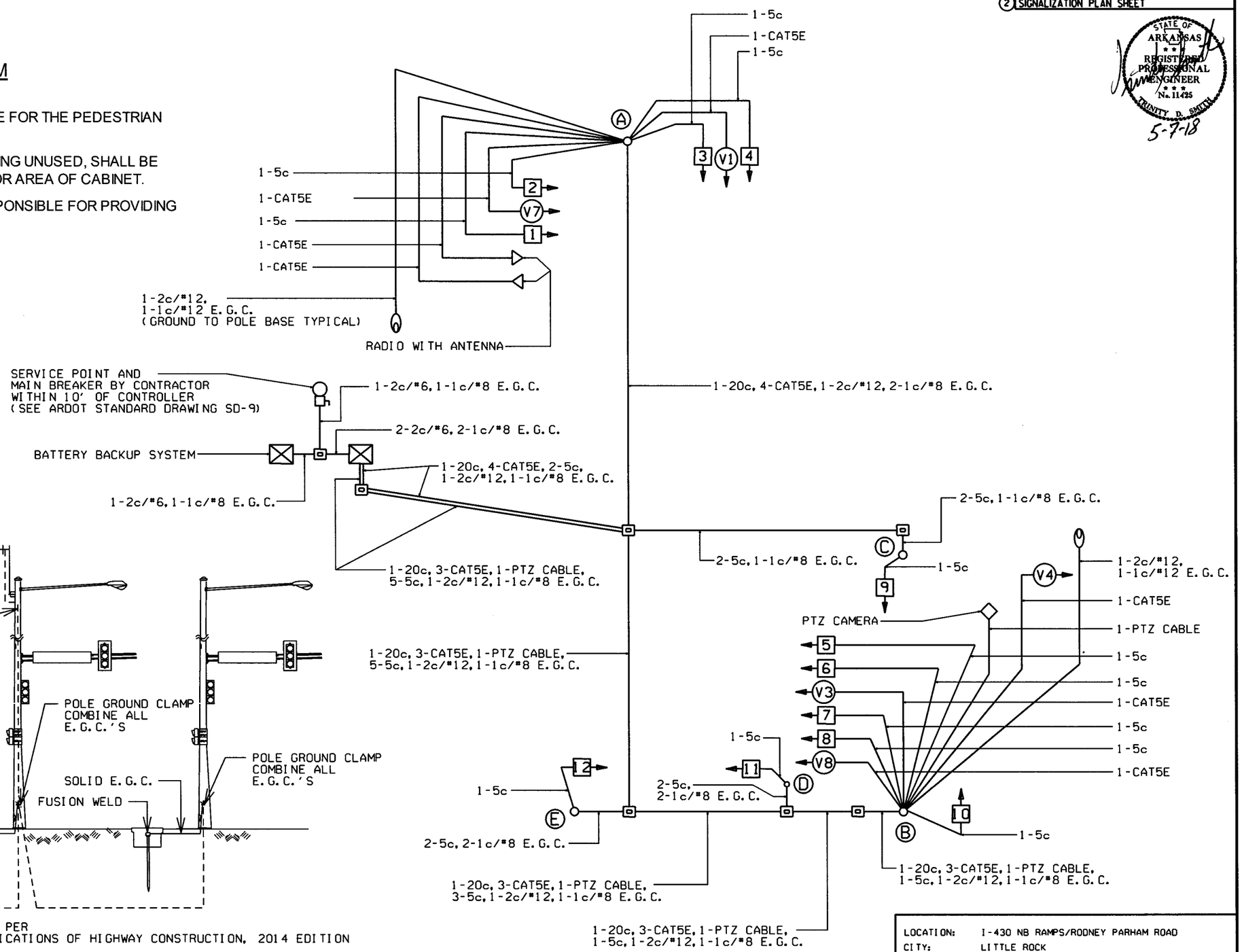
(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

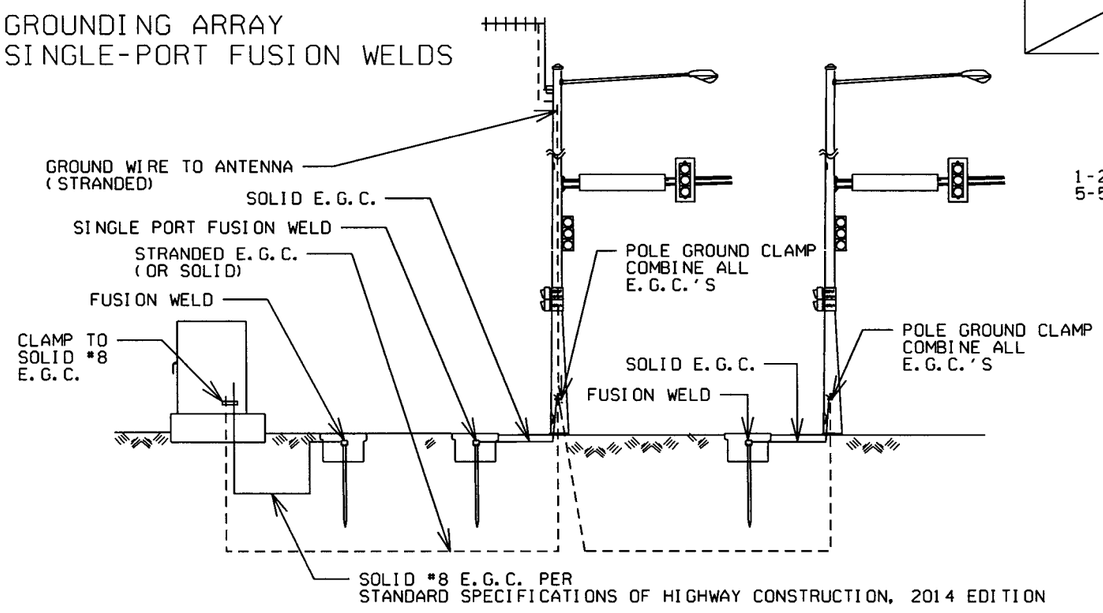
WIRING DIAGRAM

NOTES TO CONTRACTOR:

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



GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



LOCATION:	I-430 NB RAMPS/RODNEY PARHAM ROAD
CITY:	LITTLE ROCK
COUNTY:	PULASKI
DISTRICT:	6
SCALE:	N/A
DRAWN BY:	CJS

DATE: 4-27-18 FILE NAME: t.B80618.02.dgn

TB80618_02.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	59	81

(2) SIGNALIZATION PLAN SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
5-7-18

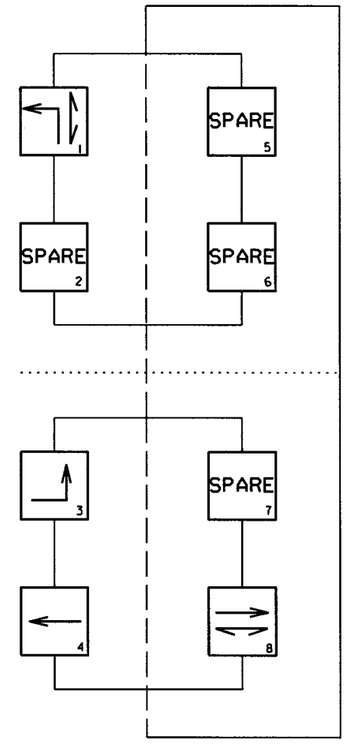
DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB BB0618											
RODNEY PARHAM RD./I-40 NB RAMPS DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM		
DET. ID #	LOCATION DIRECTION	TPYE	DET. #	CAB. TRM. #	AMP. CHN. #	CON. IMP. #	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11A&B	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	23"
Vz12A&B	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	23"
Vz31 A&B	EB LEFT TURN FAR	COMB.			5	V11	3	3		CAMERA V3	37"
Vz32 A&B	EB LEFT TURN	LOCAL			6	V3	3			CAMERA V3	37"
Vz41 A&B	WB FAR	LOCAL			9	V4	4			CAMERA V4	74"
Vz42 A&B	WB NEAR	COMB.			10	V12	4	4		CAMERA V7	23"
Vz81 A&B	EB FAR	LOCAL			7	V8	8			CAMERA V8	23"
Vz82 A&B	EB NEAR	COMB.			8	V16	8	8		CAMERA V3	37"
PB1 A&B	SOUTH TO NORTH	PED.				P1	1			R. PARHAM EAST LEG	
PB8 A&B	WEST TO EAST	PED.				P8	8			R. PARHAM SOUTH LEG	
					SPARE AMP. CHN. #: 3,4,11-16						

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

PHASING DIAGRAM



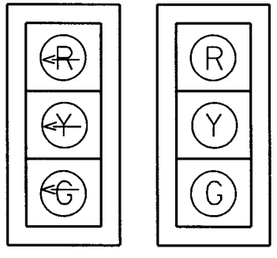
INTERVAL CHART

SIGNAL FACES	R. PARHAM RD./I-40 NB RAMPS							FLASH SEQ.
	1	CLR.	3+8	CLR.	4+8	CLR.		
1&2	R	R	R	R	G	••		R
3&4	~~G~~	•	~~R~~	~~R~~	~~R~~	~~R~~		~~R~~
5&6	~~R~~	~~R~~	~~G~~	•	~~R~~	~~R~~		~~R~~
7&8	R	R	G	••	G	••		R
9&10	W	FDW	DW	DW	DW	DW		BLK
11&12	DW	DW	W	FDW	W	FDW		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

SIGNAL FACES

12" LENSES



3&4
5&6

1&2
7&8

ONE SECTION
(SOLID SYMBOL)

9&10
11&12

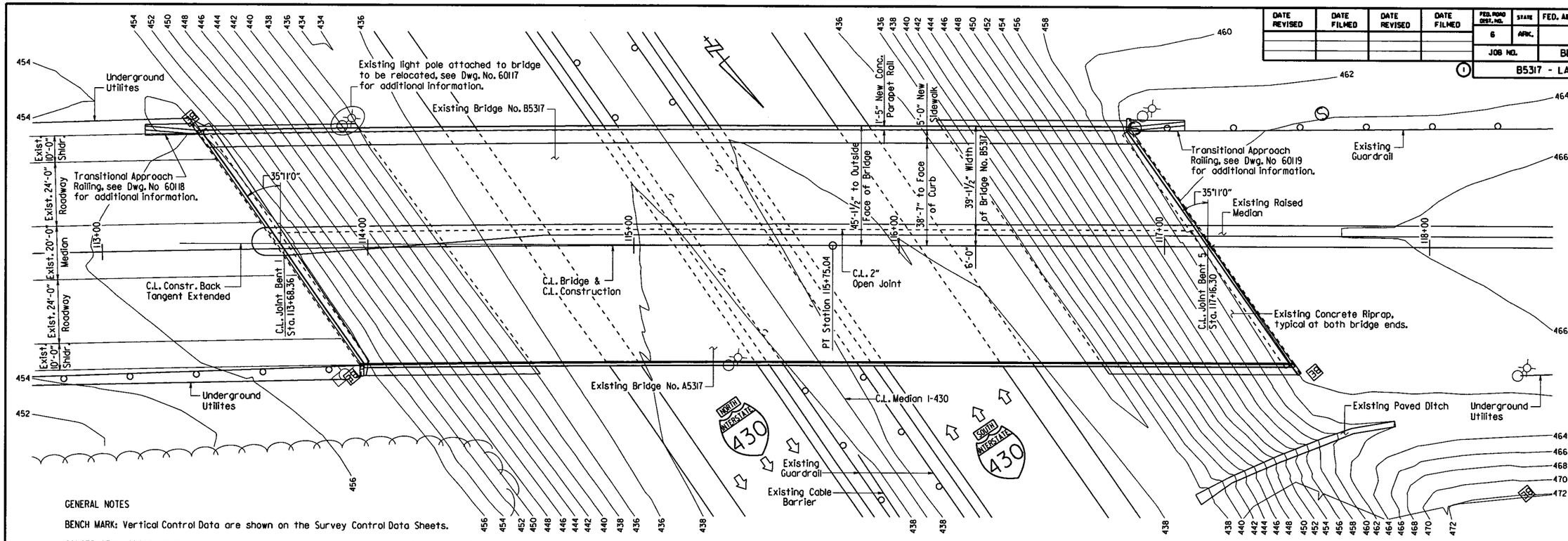
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS FOR DETAILS ON NEW REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEET A.D.A.S. STANDARDS.

DATE: 4-27-18 FILE NAME: tBB0618_02.dgn

LOCATION: I-430 NB RAMPS/RODNEY PARHAM ROAD
CITY: LITTLE ROCK
COUNTY: PULASKI
DISTRICT: 6 SCALE: N/A DRAWN BY: CJS

TBB0618_02.DGN 4/27/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	60	81
				B5317 - LAYOUT - 60115				



PLAN

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges 17th Edition (2002) with interim Specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: LOAD FACTOR

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S (AE) Concrete	f'c = 4,000 psi
Class S Concrete	f'c = 3,500 psi
Lightweight Aggregate Concrete (AE)	f'c = 3,000 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Grade 36)	Fy = 36,000 psi
Structural Steel (AASHTO M 270, Grade 50)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Grade 50W)	Fy = 50,000 psi

BRIDGE DECK: Sidewalk shall be given a broom finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed Finish.

DETAIL DRAWINGS:	DRAWING NUMBER
End Bent Modifications	60116 & 60117
Transitional Approach Railing	60118 & 60119
Superstructure Modifications	60120 - 60122
Type H Railing	55014

EXISTING BRIDGE: The Existing Bridge No. B5317 is approximately 350.5' long (measured along C.L. 2" open joint) and 39.1' wide and consists of a four span continuous composite plate girder unit supported by multi-column intermediate bents on spread footings and end bent caps on spread footings.

THE PROPOSED WORK CONSISTS OF: Removing portions of the existing bridge railing and end bent railing and adding a sidewalk and new railing to the bridge deck and end bents on the south side of the bridge. For additional requirements in conducting the work, see Section 821.

VERIFICATION: Except as noted, components of the existing bridge are to be retained and joined to the proposed work. Information and dimensions shown are based on the existing bridge plans. The Contractor is to adhere strictly to the requirements for verification of the geometry of the existing bridge and its relationship to the proposed work described in Subsection 821.02 and make necessary adjustments to fit the proposed work to the existing structure. Payment for this work shall be considered subsidiary to the pay item "Modification of Existing Bridge Structure (Br. No. B5317)".

REMOVAL AND SALVAGE: All material removed from the existing bridge under item 821 shall be disposed of according to Section 205. All material removed from the existing bridge, except for the metal bridge railing, shall become the property of the Contractor. The metal bridge railing shall remain the property of the State. The Contractor shall coordinate with the Engineer to provide temorary storage and on-site loading onto Department equipment.

MAINTENACE OF TRAFFIC: See Roadway Plans.

NOTES:

C.L. Construction before Sta. 115+75.04 is on a 0°30'00" curve right. The longitudinal lines of both the sidewalk and railing shall be constructed on curves concentric with C.L. Bridge.

For Right of Way data and typical sections of improvement, see Roadway Plans.

PI = Sta. 113+50.07
Delta = 02°15'00" Rt.
D = 0°30'00"
T = 225.03'
L = 450.00'

HORIZONTAL ALIGNMENT DATA

Along C.L. Construction

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-26-18
CHARLES R. ELLIS
BRIDGE ENGINEER

LAYOUT OF OVERPASS
RODNEY PARHAM ROAD OVER I-430
I-430/RODNEY PARHAM RD.
INTCHNG. IMPVTS. (S)
PULASKI COUNTY

ROUTE 430 SEC. 21

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 3/6/18 FILENAME: bbb0618_ll.dgn
CHECKED BY: DHP DATE: 4/25/18 SCALE: 1" = 20'
DESIGNED BY: KWY DATE: 1/19

BRIDGE NOS. B5317 DRAWING NO. 60115

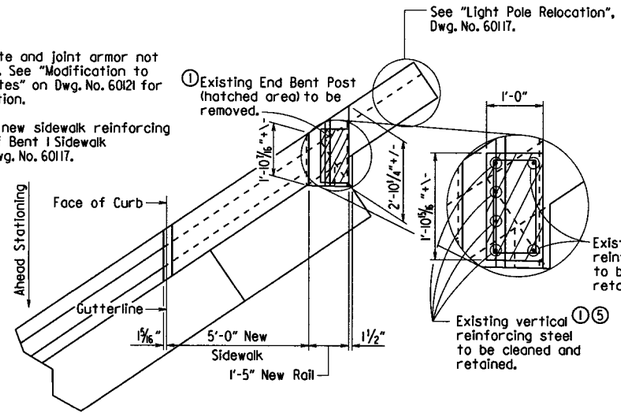
PRINT DATE: 4/25/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	61	81

(1) B5317 - END BENTS - 60116

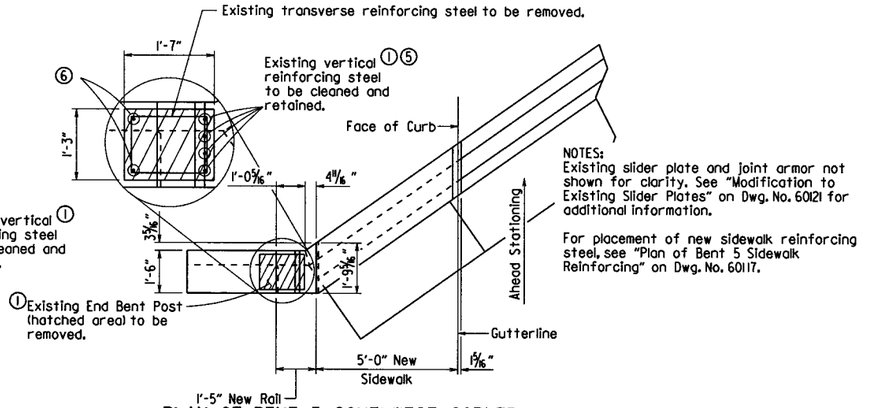
NOTES:
Existing slider plate and joint armor not shown for clarity. See "Modification to Existing Slider Plates" on Dwg. No. 60121 for additional information.

For placement of new sidewalk reinforcing steel, see "Plan of Bent 1 Sidewalk Reinforcing" on Dwg. No. 60117.



PLAN OF BENT 1, SOUTHEAST CORNER

⅜" = 1'-0"

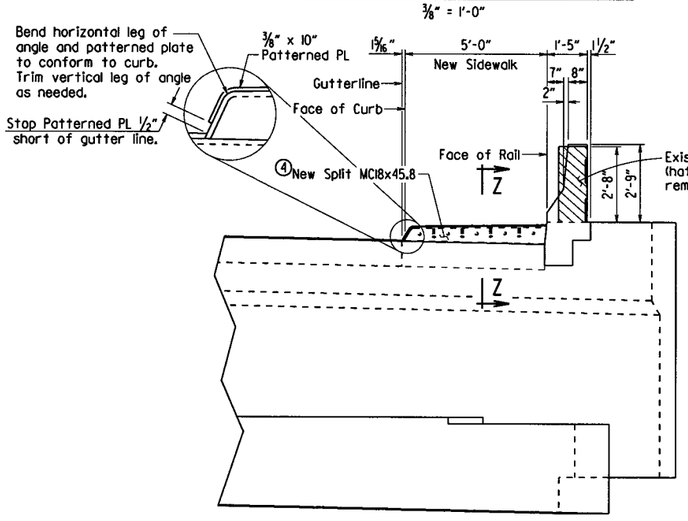


NOTES:
Existing slider plate and joint armor not shown for clarity. See "Modification to Existing Slider Plates" on Dwg. No. 60121 for additional information.

For placement of new sidewalk reinforcing steel, see "Plan of Bent 5 Sidewalk Reinforcing" on Dwg. No. 60117.

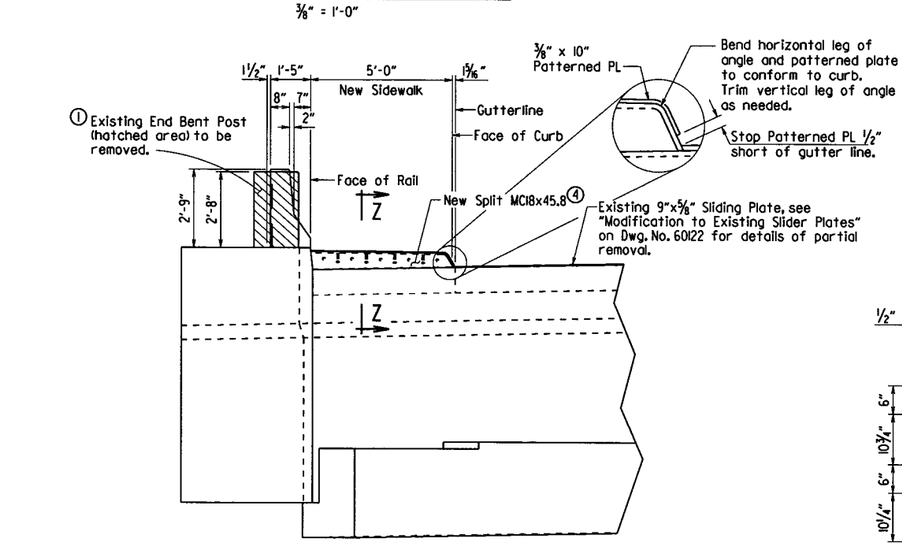
PLAN OF BENT 5, SOUTHWEST CORNER

⅜" = 1'-0"



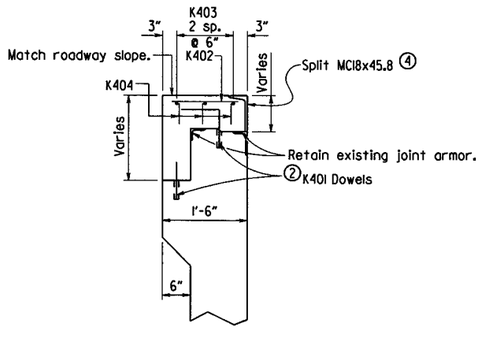
ELEVATION OF BENT 1, SOUTHEAST CORNER

Looking Back
⅜" = 1'-0"



ELEVATION OF BENT 5, SOUTHWEST CORNER

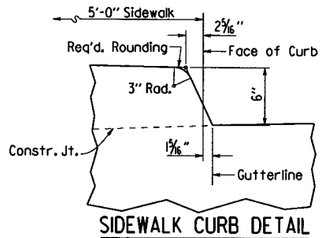
Looking Ahead
⅜" = 1'-0"



NOTE: For additional information, see "Section A-A" on Dwg. No. 60120.

SECTION Z-Z

Taken Perpendicular to Backwall
¾" = 1'-0"



SIDEWALK CURB DETAIL

Perpendicular or Radial to Existing Curb
No Scale

GENERAL NOTES

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

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) and shall conform to AASHTO M 31 or M 322, Type A with mill test reports..

Structural steel in end bents shall be M270, Gr. 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

Class I Protective Surface Treatment shall be applied to the new roadway face of curb, sidewalk surface, and face & top of the concrete parapet post.

For additional information, see Dwg. No. 60115.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
4-26-18

BRIDGE ENGINEER

(1) Care shall be exercised during the removal of the existing end posts to ensure that the existing vertical reinforcing steel that is to be retained is not damaged beyond repair. Any vertical reinforcing steel damaged beyond repair during removal of the concrete shall be replaced as directed by the Engineer at the Contractor's expense. Minor straightening of the vertical reinforcing steel after the removal of the concrete will be allowed. Drilling and grouting new reinforcing steel of equal number and size with a OPL approved Epoxy Resin System may be used to replace any damaged vertical reinforcing steel.

(2) Dowel into existing concrete backwall using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations:

4" for K401 Dowels Bars

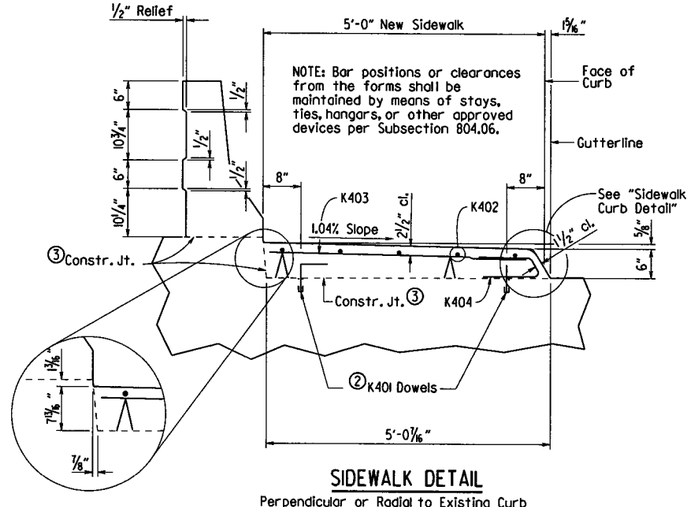
Care shall be exercised not to damage existing reinforcing steel during drilling. Hole diameter and installation procedure shall be as recommended by the Grout Manufacturer. Payment for grouting and placement shall be considered subsidiary to "Reinforcing Steel-Bridge (Grade 60)".

(3) Roughen existing concrete surfaces in accordance with Subsection 802.12(b).

(4) Trim new MC18x45.8 as necessary. Adjust for skew effects as required. Set channel normal to grade. All structural steel shall be AASHTO M 270, Gr. 50W unless otherwise noted. For additional information, see "Section A-A" on Dwg. No. 60120.

(5) Field bending will be required to maintain minimum concrete cover and to avoid conflicts with new reinforcing steel for the new rail. Field bending of this reinforcing steel shall be performed using the appropriate pin diameter based on the existing bar diameter. This work will not be paid for directly, but shall be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. B5317)".

(6) Remove existing vertical reinforcing steel 2" below the top of concrete and fill void with an approved non-shrink epoxy grout from the OPL.



SIDEWALK DETAIL

Perpendicular or Radial to Existing Curb
No Scale

SHEET 1 OF 2
DETAILS OF END BENT MODIFICATIONS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

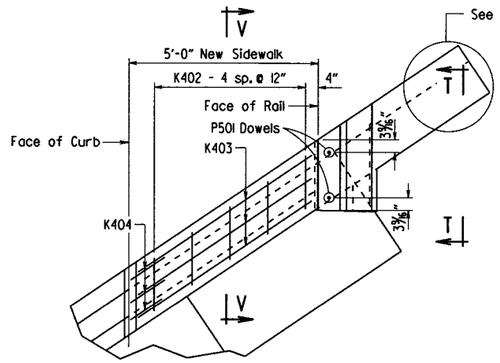
DRAWN BY: KWY DATE: 3/23/18
CHECKED BY: DHP DATE: 4/25/18
DESIGNED BY: DHP DATE: 2/18

FILENAME: bbb0618_b1.dgn
SCALE: As Noted

BRIDGE NO. B5317
DRAWING NO. 60116

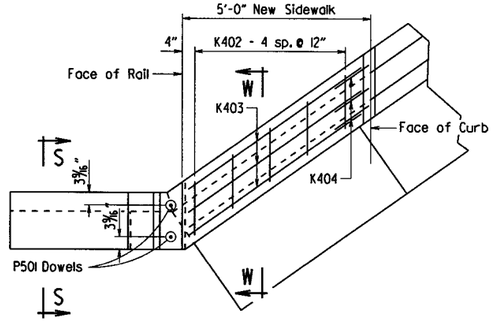
PRINT DATE: 4/24/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	62	87
				①	B5317 - END BENTS - 60117			



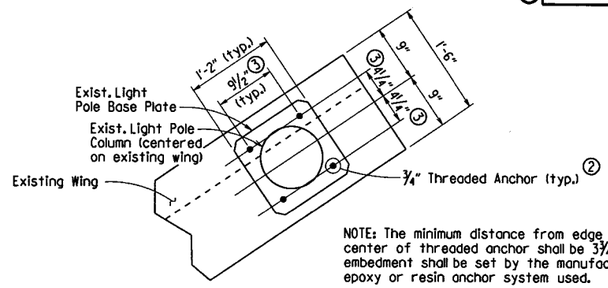
PLAN OF BENT 1 SIDEWALK REINFORCING

½" = 1'-0"



PLAN OF BENT 5 SIDEWALK REINFORCING

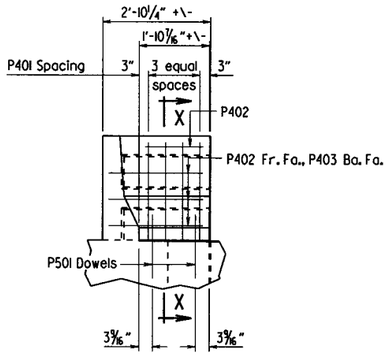
½" = 1'-0"



NOTE: The minimum distance from edge of concrete to center of threaded anchor shall be 3¾". Minimum embedment shall be set by the manufacturer of the epoxy or resin anchor system used.

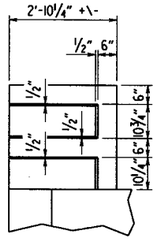
LIGHT POLE RELOCATION

No Scale



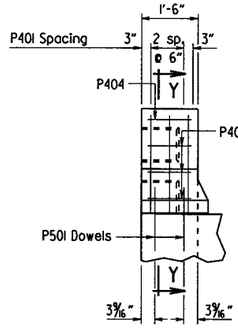
VIEW V-V

½" = 1'-0"



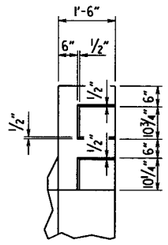
VIEW T-T

½" = 1'-0"



VIEW W-W

½" = 1'-0"



VIEW S-S

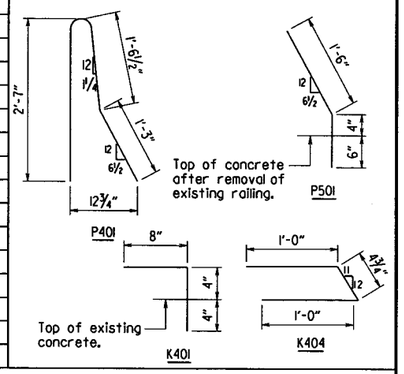
½" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
P401	7	5'-6"	3"
P402	4	1'-6"	Str.
P403	3	2'-6"	Str.
P404	7	1'-2"	Str.
P501	4	2'-4"	2"
K401	8	1'-3"	2"
K402	10	1'-5"	Str.
K403	6	5'-7"	Str.
K404	6	2'-3"	2"

BENDING DIAGRAMS

Dimensions are out to out of bars.



① Dowel into existing concrete curb using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations:

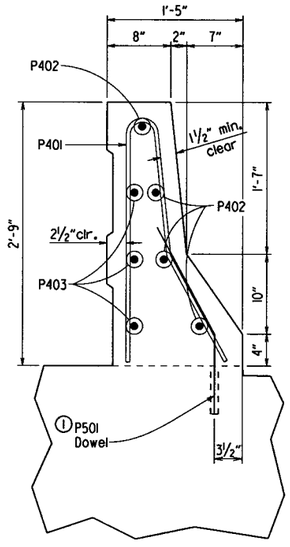
6" for P501 dowel bars

Care shall be exercised not to damage existing reinforcing during drilling. Hole diameter and installation procedure shall be as recommended by the Grout Manufacturer. Payment for grouting and placement shall be considered subsidiary to "Reinforcing Steel-Bridge (Grade 60)".

② Install threaded anchors using a OPL approved non-shrink grout or a resin anchoring system in accordance with the Manufacturer's recommendations. Anchors and all associated hardware shall conform to the requirements of Subsection 807.07 or equivalent. Install ⅛" thick bearing pad meeting the requirements of Subsection 807.15 between the light pole base plate and concrete surface. All work and material associated with the light pole relocation will not be paid for directly, but shall be considered included in the item "Modification of Exitisting Bridge Structure (Bridge No. B5317)".

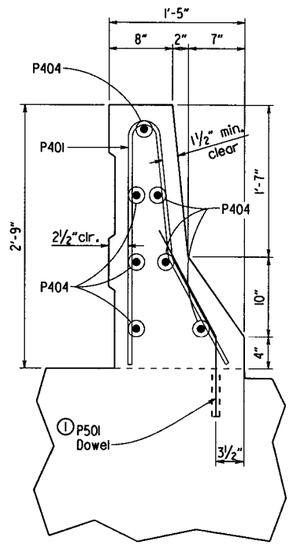
③ The Contractor shall verify these dimensions match the existing light pole base plate prior to installation of threaded anchors.

BRIDGE ENGINEER



SECTION X-X

No Scale



SECTION Y-Y

No Scale

SHEET 2 OF 2
DETAILS OF END BENT MODIFICATIONS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 3/23/18 FILENAME: bbb0618_s2.dgn

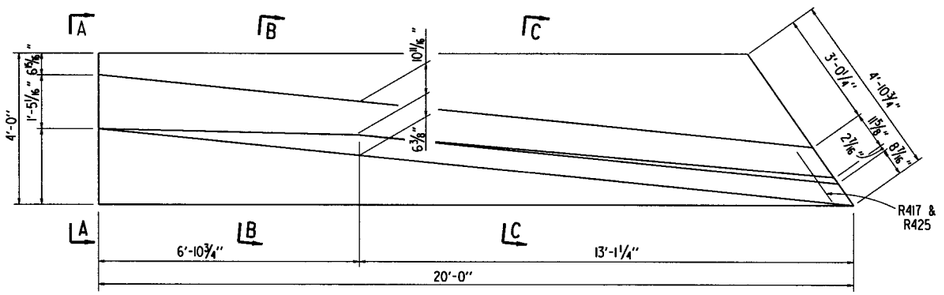
CHECKED BY: DHP DATE: 5/2/18 SCALE: As Noted

DESIGNED BY: DHP DATE: 2018

BRIDGE NO. B5317 DRAWING NO. 60117

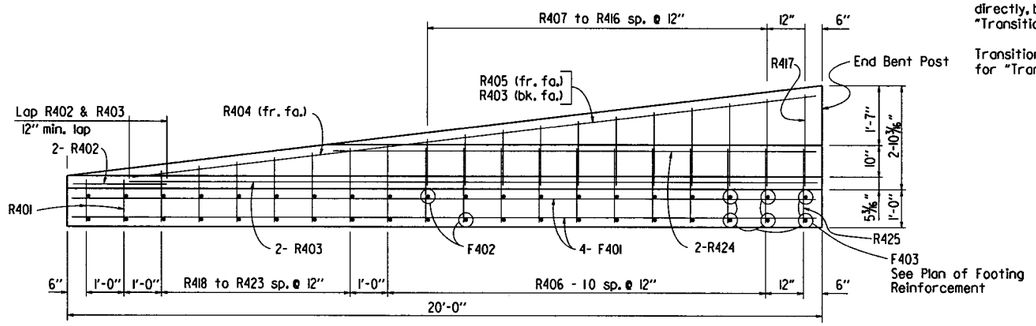
PRINT DATE: 5/2/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	63	81
				B5317 - TRANS. RAIL - 60118				



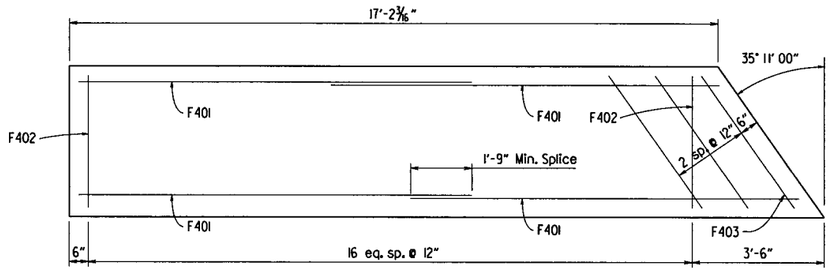
PLAN OF BENT 1 TRANSITIONAL APPROACH RAILING

½" = 1'-0"



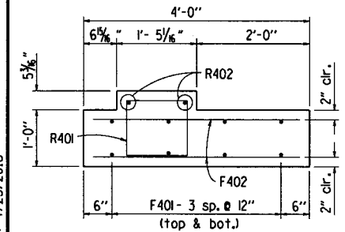
ELEVATION OF BENT 1 TRANSITIONAL APPROACH RAILING

½" = 1'-0"



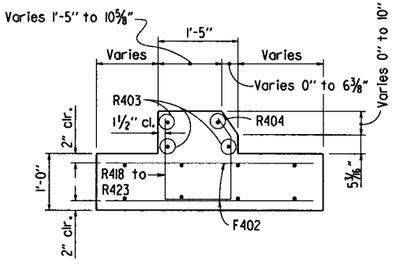
PLAN OF FOOTING REINFORCING

½" = 1'-0"



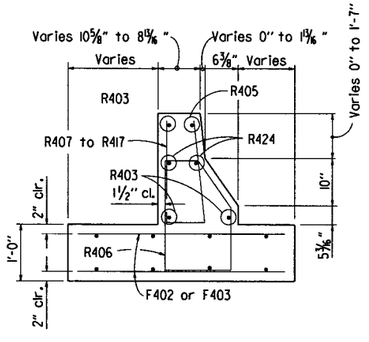
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"

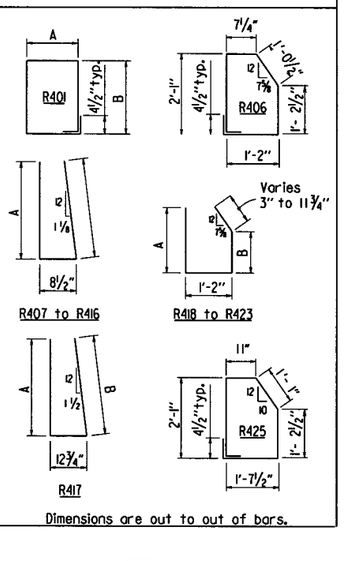


SECTION C-C

¾" = 1'-0"

BAR LIST

Mark	No.	Length	A	B	Pin Dia.	Bending Diagram
F401	16	10'-9"			str.	
F402	34	3'-8"			str.	
F403	6	4'-6"			str.	
R401	2	5'-0"	1'-2"	1'-2"	2"	
R402	2	3'-0"			str.	
R403	3	17'-9"			str.	
R404	1	5'-0"			str.	
R405	1	12'-9"			str.	
R406	II	6'-5"			2"	
R407 to R416	lea.	3'-3" to 5'-8"	1'-4" to 2'-6½"	1'-4" to 2'-6½"	2"	
R417	1	6'-0"	2'-6½"	2'-6½"	2"	
R418 to R423	lea.	3'-11" to 5'-3"	1'-5" to 2'-0¼"	1'-2½"	2"	
R424	2	12'-0"			str.	
R425	1	7'-3"			2"	



GENERAL NOTES

Transitional Approach Railing shall be placed at locations shown in the plans.

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

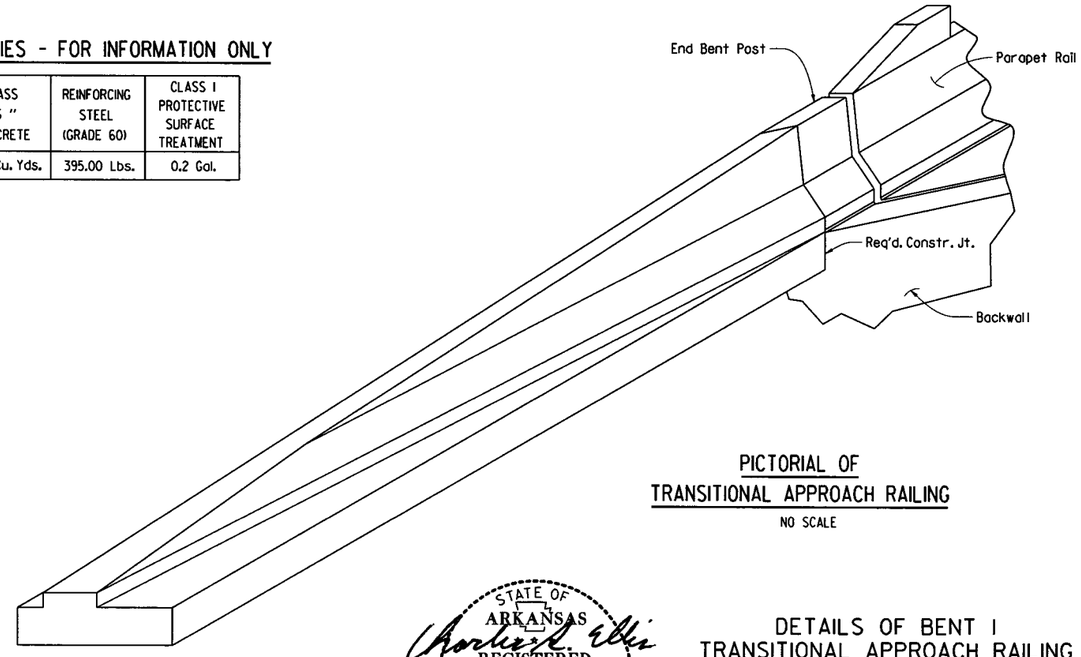
All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Unless otherwise required in the plans, curing and finishing shall be in accordance with Subsection 806.05(c) and the surface finish type and areas of application shall match that used on the adjacent bridge railing or concrete barrier wall. See Subsection 803.03(a) for Class I Protective Surface Treatment. Payment for surface finishes shall not be paid for directly, but shall be considered incidental to the unit price bid for "Transitional Approach Railing".

Transitional Approach Railing shall be paid for at the contract unit price bid for "Transitional Approach Railing". See Section 806 for additional information.

QUANTITIES - FOR INFORMATION ONLY

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS I PROTECTIVE SURFACE TREATMENT
4.10 Cu. Yds.	395.00 Lbs.	0.2 Gal.



PICTORIAL OF
TRANSITIONAL APPROACH RAILING

NO SCALE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
4-26-18

BRIDGE ENGINEER

DETAILS OF BENT 1 TRANSITIONAL APPROACH RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DHP DATE: 3/5/18 FILENAME: bbb0618_trl.dgn
CHECKED BY: DHP DATE: 4/25/18 SCALE: As Shown
DESIGNED BY: DHP DATE: 2/18

BRIDGE NO. B5317 DRAWING NO. 60118

PRINT DATE: 4/25/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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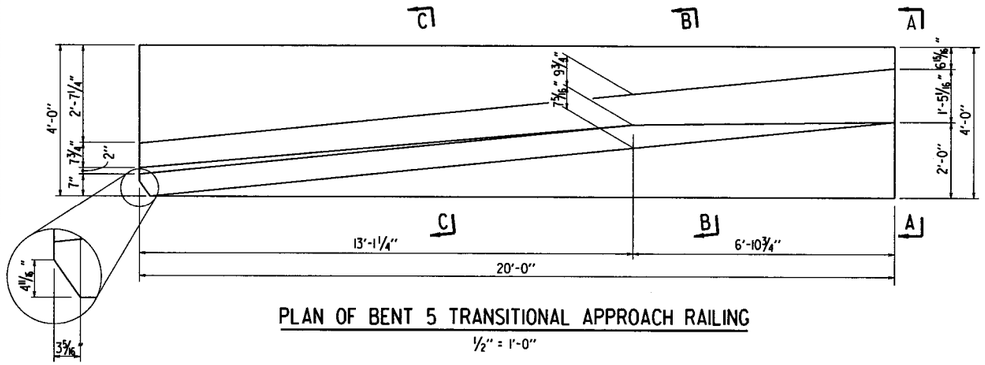
				JOB NO.		BB0618	64	81
				①	B5317 - TRANS. RAIL - 60119			



PLAN OF BENT 5 TRANSITIONAL APPROACH RAILING

½" = 1'-0"

GENERAL NOTES

Transitional Approach Railing shall be placed at locations shown in the plans.

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

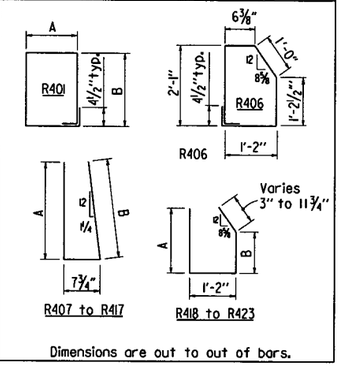
All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

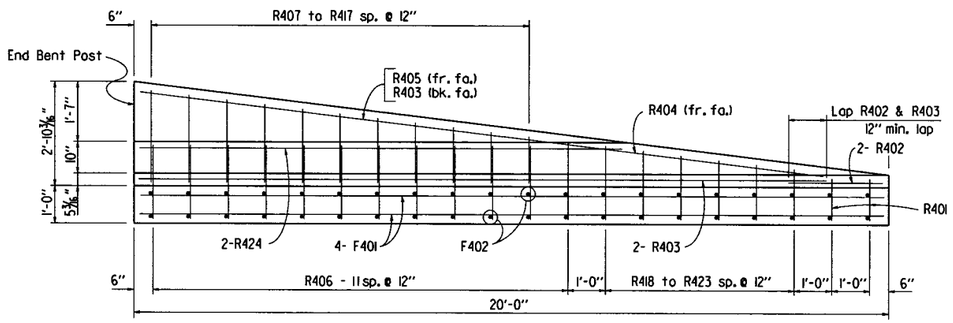
Unless otherwise required in the plans, curing and finishing shall be in accordance with Subsection 806.05(c) and the surface finish type and areas of application shall match that used on the adjacent bridge railing or concrete barrier wall. See Subsection 803.03(a) for Class I Protective Surface Treatment. Payment for surface finishes shall not be paid for directly, but shall be considered incidental to the unit price bid for "Transitional Approach Railing".

Transitional Approach Railing shall be paid for at the contract unit price bid for "Transitional Approach Railing". See Section 806 for additional information.

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.	Bending Diagram
F401	8	19'-8"			str.	
F402	40	3'-8"			str.	
R401	2	5'-0"	1'-2"	1'-2"	2"	
R402	2	3'-0"			str.	
R403	3	17'-9"			str.	
R404	1	5'-0"			str.	
R405	1	12'-9"			str.	
R406	12	6'-4"			2"	
R407 to R417	lea.	3'-2" to 5'-7"	1'-4" to 2'-6½"	1'-4" to 2'-6½"	2"	
R418 to R423	lea.	3'-11" to 5'-3"	1'-5" to 2'-0¼"	1'-2 ½"	2"	
R424	2	12'-0"			str.	



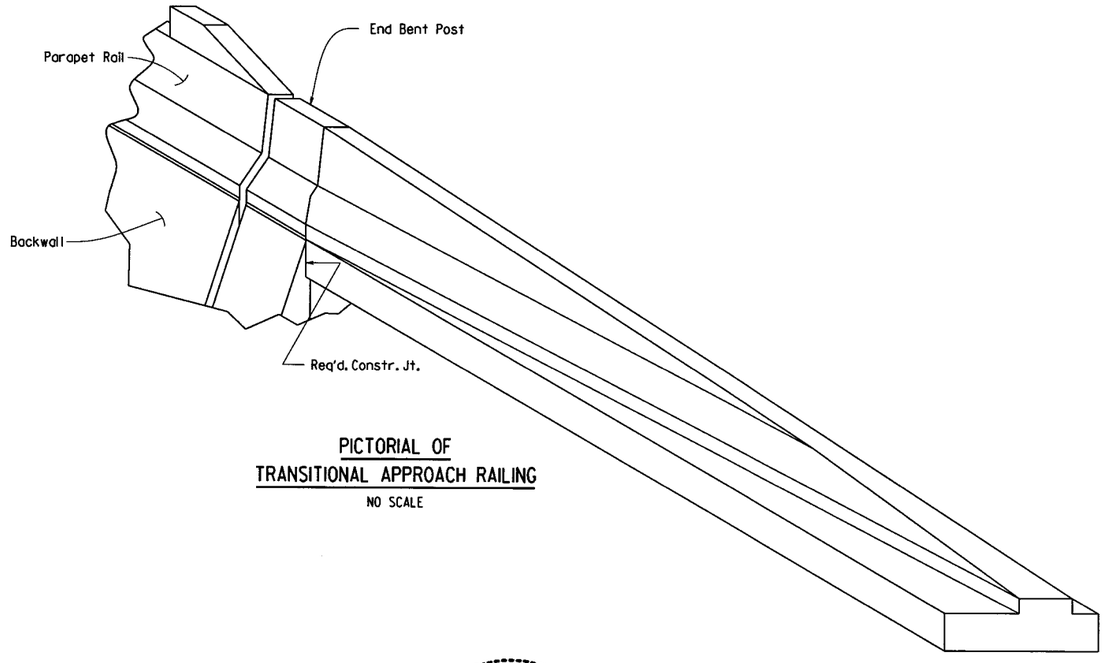


ELEVATION OF BENT 5 TRANSITIONAL APPROACH RAILING

½" = 1'-0"

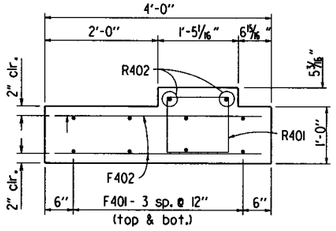
QUANTITIES - FOR INFORMATION ONLY

CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS I PROTECTIVE COATING TREATMENT
4.30 Cu. Yds.	379.00 Lbs.	0.2 Gal.



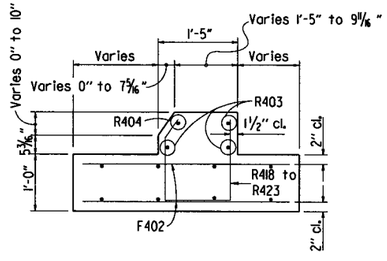
PICTORIAL OF TRANSITIONAL APPROACH RAILING

NO SCALE



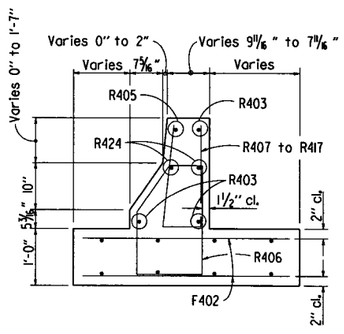
VIEW A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-26-18
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF BENT 5 TRANSITIONAL APPROACH RAILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DHP DATE: 3/6/18 FILENAME: bbb0618_tr2.dgn
CHECKED BY: DHP DATE: 4/25/18 SCALE: As Shown
DESIGNED BY: DHP DATE: 2/18

BRIDGE NO. B5317 DRAWING NO. 60119

PRINT DATE: 4/25/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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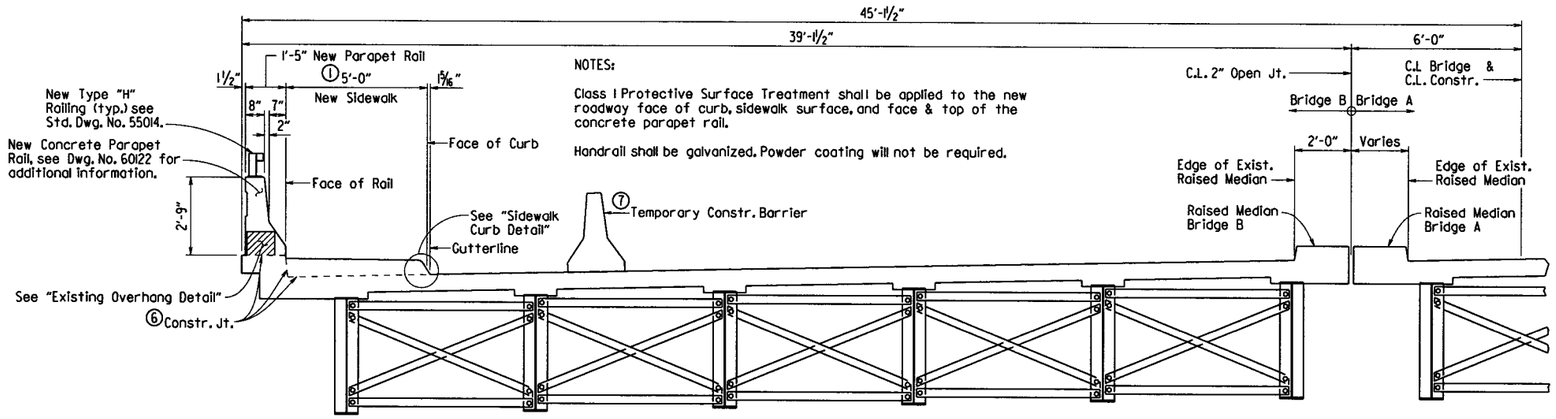
				JOB NO.		BB0618	65	81
				①	B5317 - SUPERSTRUCTURE - 60120			



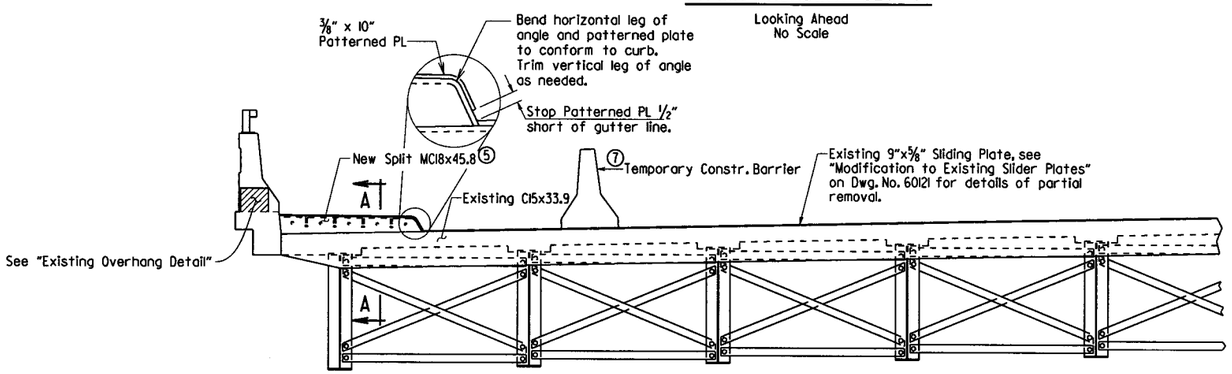
NOTES:

Class I Protective Surface Treatment shall be applied to the new roadway face of curb, sidewalk surface, and face & top of the concrete parapet rail.

Handrail shall be galvanized. Powder coating will not be required.

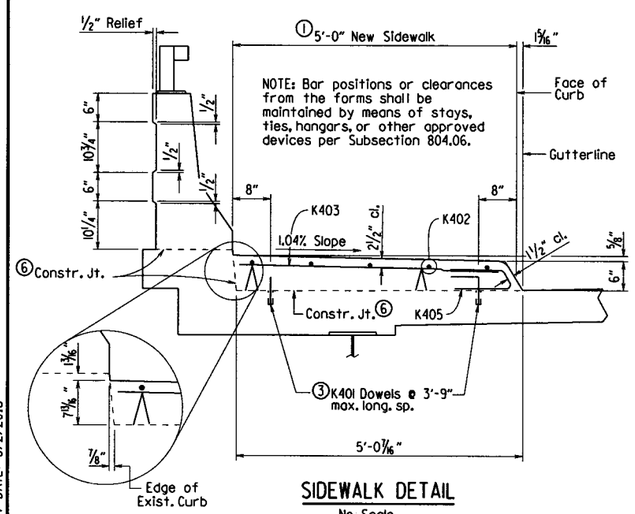
TYPICAL ROADWAY SECTION

Looking Ahead
No Scale



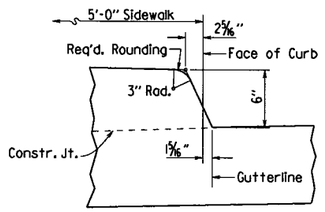
TYPICAL SECTION THRU JOINT

Looking Ahead
No Scale



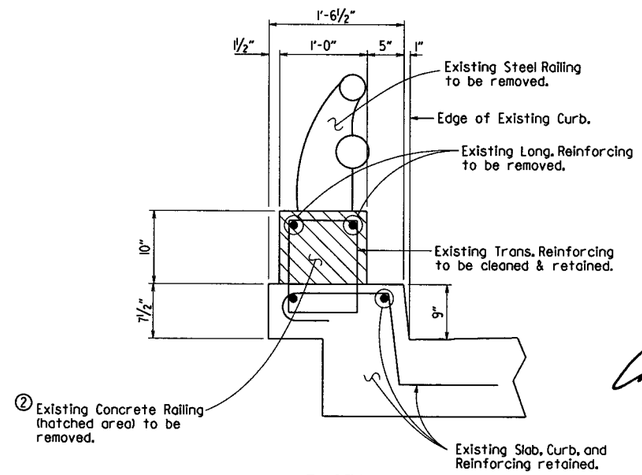
SIDEWALK DETAIL

No Scale



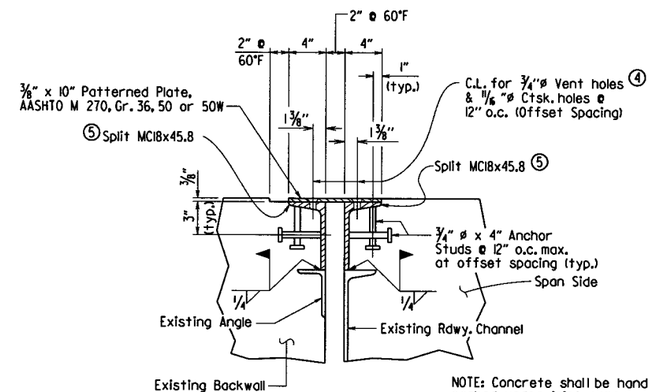
SIDEWALK CURB DETAIL

Perpendicular or Radial to Existing Curb
No Scale



EXISTING OVERHANG DETAIL

No Scale



NOTE: Concrete shall be hand packed under joint armor in sidewalk.

SECTION A-A

Section Taken Normal to Joint
No Scale

① Lightweight concrete, see Special Provision Job No. BB0618 "Lightweight Aggregate Concrete (AE)".

② Care shall be exercised during the removal of the existing concrete parapet rail to ensure that the existing transverse reinforcing steel is not damaged beyond repair. Any transverse reinforcing steel damaged beyond repair during removal of the rail concrete shall be replaced as directed by the Engineer at the Contractor's expense. Minor straightening of the transverse reinforcing steel after the removal of the rail concrete will be allowed. Drilling and grouting new reinforcing steel of equal number and size with a OPL approved Epoxy Resin System may be used to replace any damaged transverse reinforcing steel.

③ Dowel into existing concrete slab using a OPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations:

4" for K401 Dowels Bars

Care shall be exercised not to damage existing reinforcing steel during drilling. Hole diameter and installation procedure shall be as recommended by the Grout Manufacturer. Payment for grouting and placement shall be considered subsidiary to "Reinforcing Steel-Bridge (Grade 60)".

④ Countersink 11/16 "ø holes in patterned plate. Tap 4" leg of angles for ASTM A449 5/8" ø screws @ 12" o.c. Install screws in the shop and ship as a unit. Screws on the backwall side to be removed. Screws on span side to remain in place after erection.

⑤ Trim new MC18x45.8 as necessary. Adjust for skew effects as required. Set channel normal to grade. All structural steel shall be AASHTO M 270, Gr. 50W unless otherwise noted.

⑥ Roughen existing concrete surfaces in accordance with Subsection 802.12(b).

⑦ Temporary Construction Barrier, do not connect to existing bridge deck, see Roadway Std. Dwgs. TC-4 and TC-5 for additional information. See Roadway Plans for placement.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-2-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF SUPERSTRUCTURE MODIFICATIONS

ROUTE SEC.

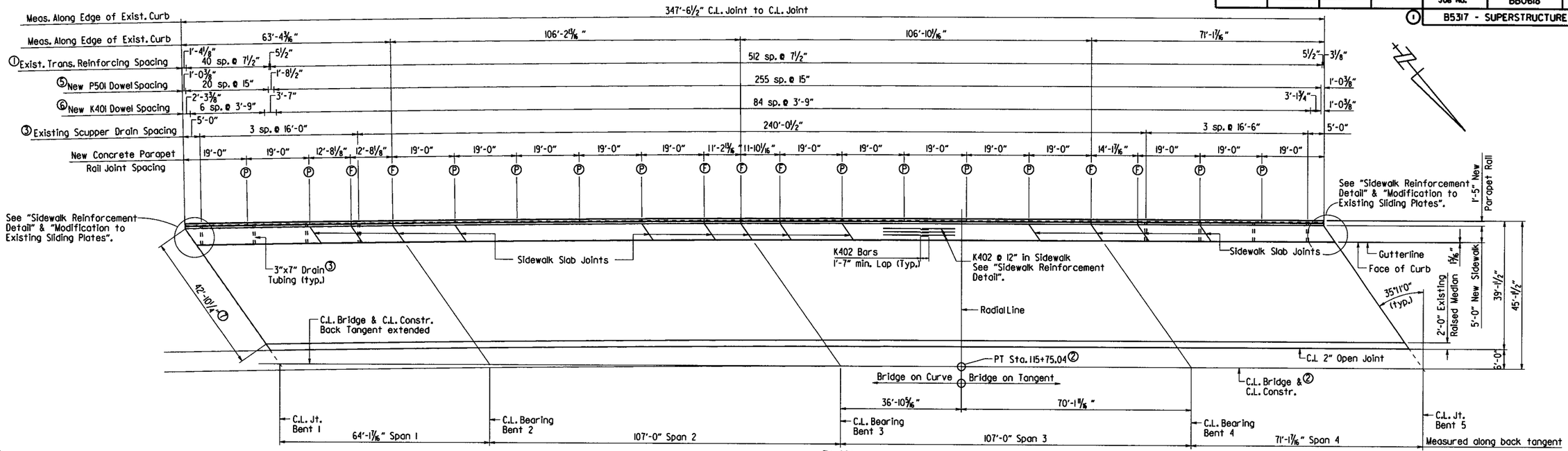
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJF DATE: 01/18
CHECKED BY: DHP DATE: 5/2/18
DESIGNED BY: DHP DATE: 2/18
FILENAME: bbb0618_sl.dgn
SCALE: As Noted

BRIDGE NO. B5317
DRAWING NO. 60120

PRINT DATE: 5/2/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	66	81
				①	B5317 - SUPERSTRUCTURE - 60121			



PLAN
1/16" = 1'-0"

①New P501 and K401 dowel spacing shown is intended to not interfere with existing transverse reinforcing bars. The Contractor shall make minor adjustments if necessary to avoid damaging the existing transverse reinforcing bars. Spacing shown is measured along Edge of Existing Curb.

②C.L. Construction before Sta. 115+75.04 is on a 0°30'00" curve right. The longitudinal lines of both the sidewalk and railing shall be constructed on curves concentric with C.L. Construction.

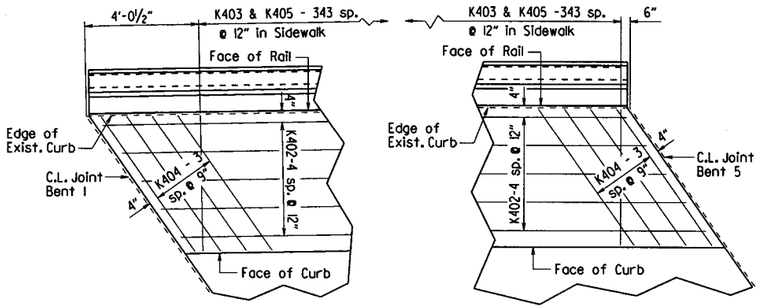
③The Contractor shall connect these drains to existing scupper drains. Minor adjustments in dimensions shown may be required to match as-built conditions. The material chosen for forming shall be strong enough to prevent displacement during pouring of the sidewalk concrete and capable of being completely removed after sidewalk concrete has attained set. Forming is to be held in place by methods approved by the Engineer to prevent movement during the course of construction. Spacing shown is measured along Edge of Existing Curb to center of drains. All work and material associated with forming these drains will not be paid for directly, but shall be considered subsidiary to "Lightweight Aggregate Concrete (AE)".

④Removed to facilitate installation of sidewalk expansion device, see "Section A-A" on Dwg. No. 60120. Payment for this work shall be considered included in the item "Modification of Existing Bridge Structure (Br. No. B5317)".

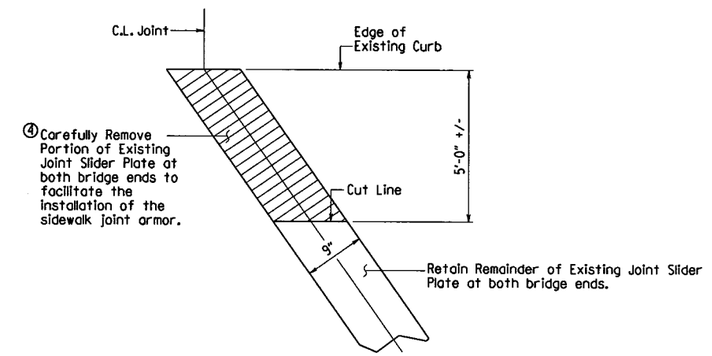
⑤See "Section A-A", Dwg. No. 60122. Spacing shown is measured along Edge of Existing Curb. The Contractor shall make minor adjustments as required to avoid conflicts with partial-depth and full-depth parapet joints.

⑥See "Sidewalk Detail", Dwg. No. 60120. Spacing shown is measured along Edge of Existing Curb.

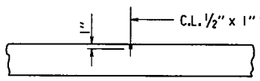
⑦Measured from Edge of Existing Raised Median to Edge of Existing Curb along face of existing channel.



SIDEWALK REINFORCEMENT DETAIL
⅜" = 1'-0"



MODIFICATION TO EXISTING SLIDER PLATES
No Scale

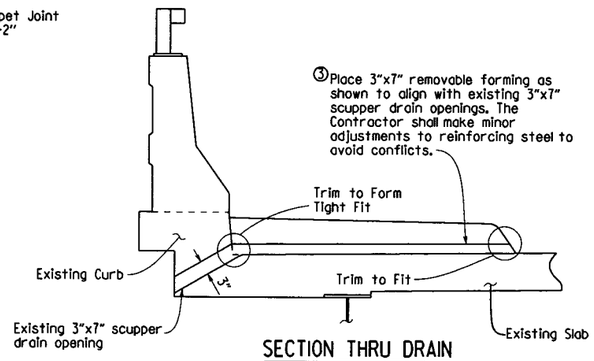


Use ½" X 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Sidewalk Slab Joints shall be installed before parapet railing is to be poured. Sidewalk Slab Joints and Joint Sealer to be placed in sidewalk as shown. If Sidewalk Slab Joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Sidewalk Slab Joints shall align with parapet open joints at the front face of the parapet.

SIDEWALK SLAB JOINT DETAIL
No Scale

Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" Max.) Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" Max.) Stop 1'-2" from top of slab.



SECTION THRU DRAIN
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
4-24-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF SUPERSTRUCTURE MODIFICATIONS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJF DATE: 01/18 FILENAME: bbb0618_sl.dgn
CHECKED BY: DHP DATE: 4/26/18 SCALE: As Noted
DESIGNED BY: DHP DATE: 2/18

BRIDGE NO. B5317 DRAWING NO. 60121

PRINT DATE: 4/24/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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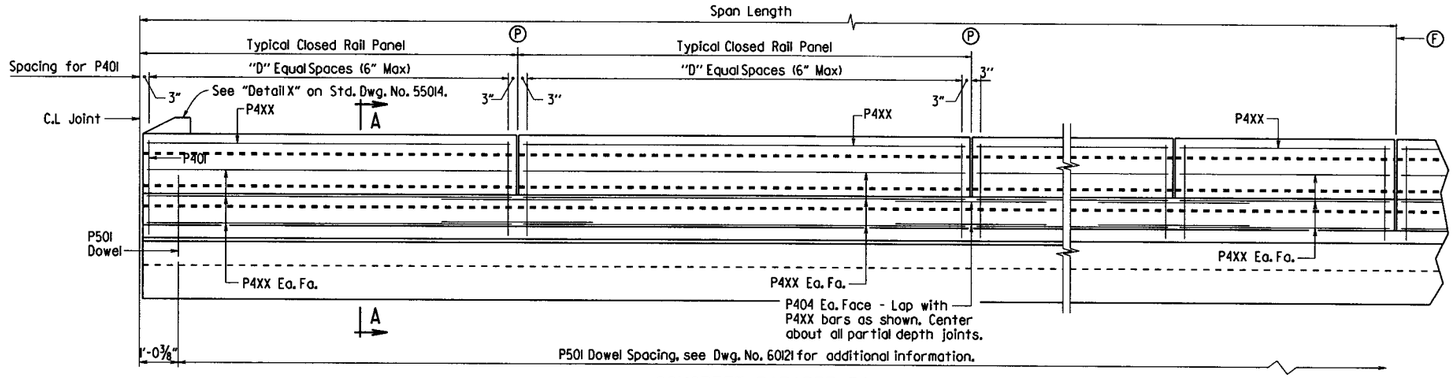
				JOB NO.		BB0618	67	81
				① B5317 - SUPERSTRUCTURE - 60122				



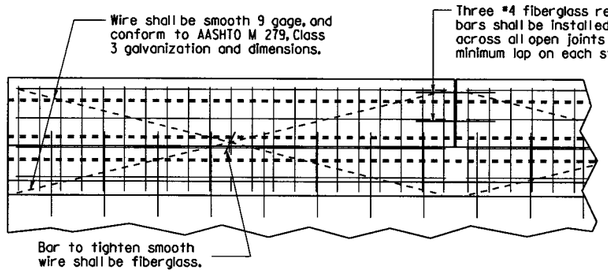
CONCRETE PARAPET RAIL

No Scale

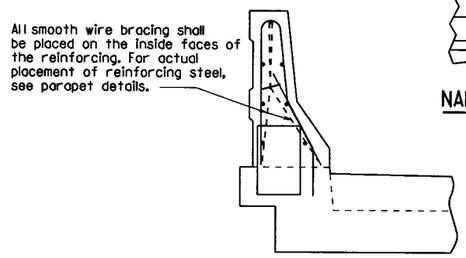
Ⓟ C.L. Partial Depth Parapet Jt. (1/4" to 1" max.) Stop 1'-2" from top of slab.

Ⓕ C.L. Full-Depth Parapet Jt. (1/4" to 1" max.) Stop 4" from top of slab.

NOTE: For location of full and partial depth parapet joints, See Dwg. No. 60121

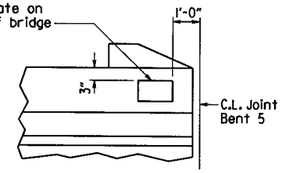


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.



The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

Place Type D Bridge Name Plate on right parapet rail at end of bridge approx. 1'-0" from C.L. Joint.



NAME PLATE DETAIL

No Scale

TABLE OF VARIABLES

Closed Rail Panels		
Panel Length	"D"	P4XX
11'-2 15/16"	22	P402
11'-10 1/16"	23	P403
12'-8 1/8"	25	P405
14'- 1 7/16"	28	P406
19'-0"	37	P407

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

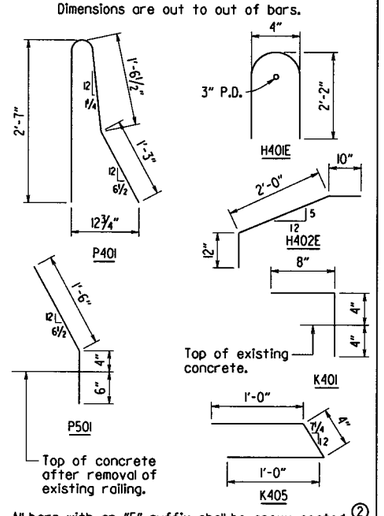
No Scale

BAR LIST

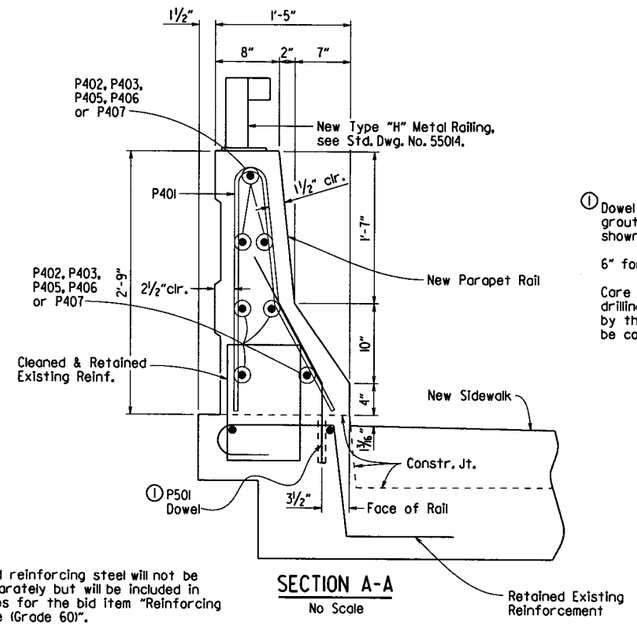
MARK	NO. REQ'D.	LENGTH	P.D.
P401	698	5'-6"	3"
P402	7	10'-8"	Str.
P403	7	11'-4"	Str.
P404	48	5'-6"	Str.
P405	14	12'-2"	Str.
P406	7	13'-7"	Str.
P407	105	18'-6"	Str.
P501	278	2'-4"	2"
K401	184	1'-3"	2"
K402	45	40'-0"	Str.
K403	344	4'-6"	Str.
K404	8	5'-8"	Str.
K405	344	2'-3"	2"
H401E	12	4'-6"	3"
H402E	4	3'-10"	2"

BENDING DIAGRAMS

Dimensions are out to out of bars.



All bars with an "E" suffix shall be epoxy coated. ②



SECTION A-A

No Scale

② Epoxy coated reinforcing steel will not be paid for separately but will be included in the quantities for the bid item "Reinforcing Steel - Bridge (Grade 60)".

① Dowel into existing concrete curb using a QPL approved non-shrink grout or a resin anchoring system. Modify the embedment depth shown if required by the Manufacturer's recommendations:

6" for P501 dowel bars

Care shall be exercised not to damage existing reinforcing during drilling. Hole diameter and installation procedure shall be as recommended by the Grout Manufacturer. Payment for grouting and placement shall be considered subsidiary to "Reinforcing Steel-Bridge (Grade 60)".

GENERAL NOTES

CONCRETE: Parapet Rail concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Sidewalk concrete shall be Lightweight Aggregate Concrete (AE) with a minimum 28 day compressive strength f'c = 3,000 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted. Concrete shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed Finish.

A minimum of 72 hours shall elapse between completion of the bridge sidewalk and the pouring of the parapet railing.

Work required to remove and dispose portions of the existing bridge and any required doweling will not be paid for directly, but will be considered subsidiary to the item "Modification of Existing Bridge Structure (Bridge No. B5317)."

REINFORCING STEEL: All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. These wire supports will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)".

STRUCTURAL STEEL: All structural steel shall be AASHTO M 270 Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". AASHTO M 270, Gr. 50W steel shall not be painted unless otherwise noted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84e unless noted otherwise. Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted, and approval secured before fabrication is begun.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with the recommendations of the manufacturer.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the new roadway face of curb, sidewalk surface, and the front face and top of the concrete parapet rail.

PAINTING: The top surface of the 3/8" patterned plate shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but shall be considered subsidiary to "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

STATE OF ARKANSAS
CHARLES R. ELLIS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
5-2-18

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF SUPERSTRUCTURE MODIFICATIONS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

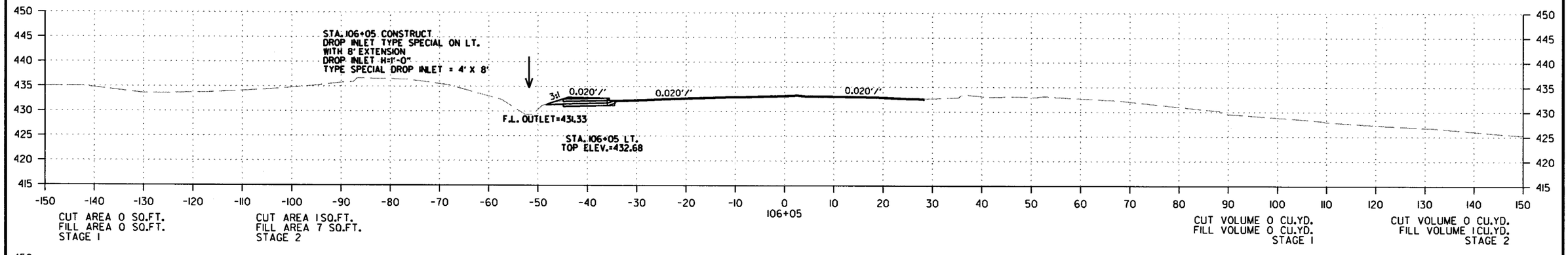
DRAWN BY: KJF DATE: 01/18
CHECKED BY: DHP DATE: 5/2/18
DESIGNED BY: DHP DATE: 2/18
FILENAME: bbb0618_sl.dgn
SCALE: As Noted

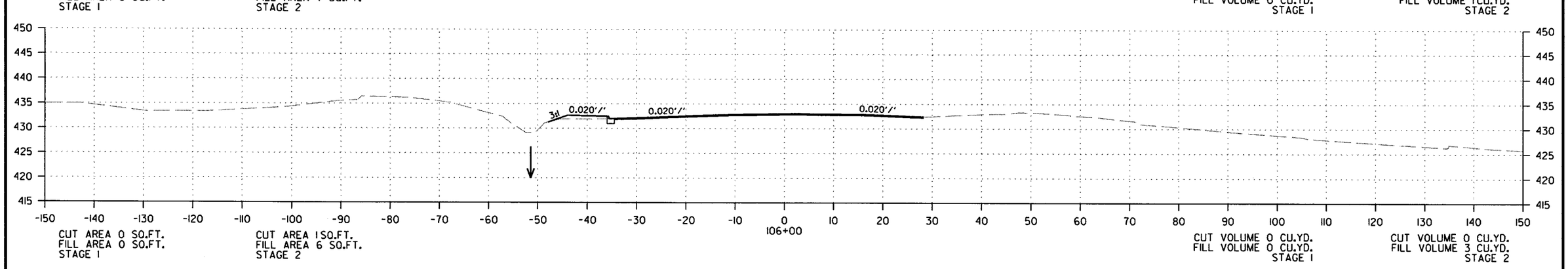
BRIDGE NO. B5317 DRAWING NO. 60122

PRINT DATE: 5/2/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0618	68	81

(2) CROSS SECTIONS





RODNEY PARHAM
CROSS SECTION STA. 105+77 TO STA. 106+05

4/25/2018

RBB0618.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.		BB0618	69	81

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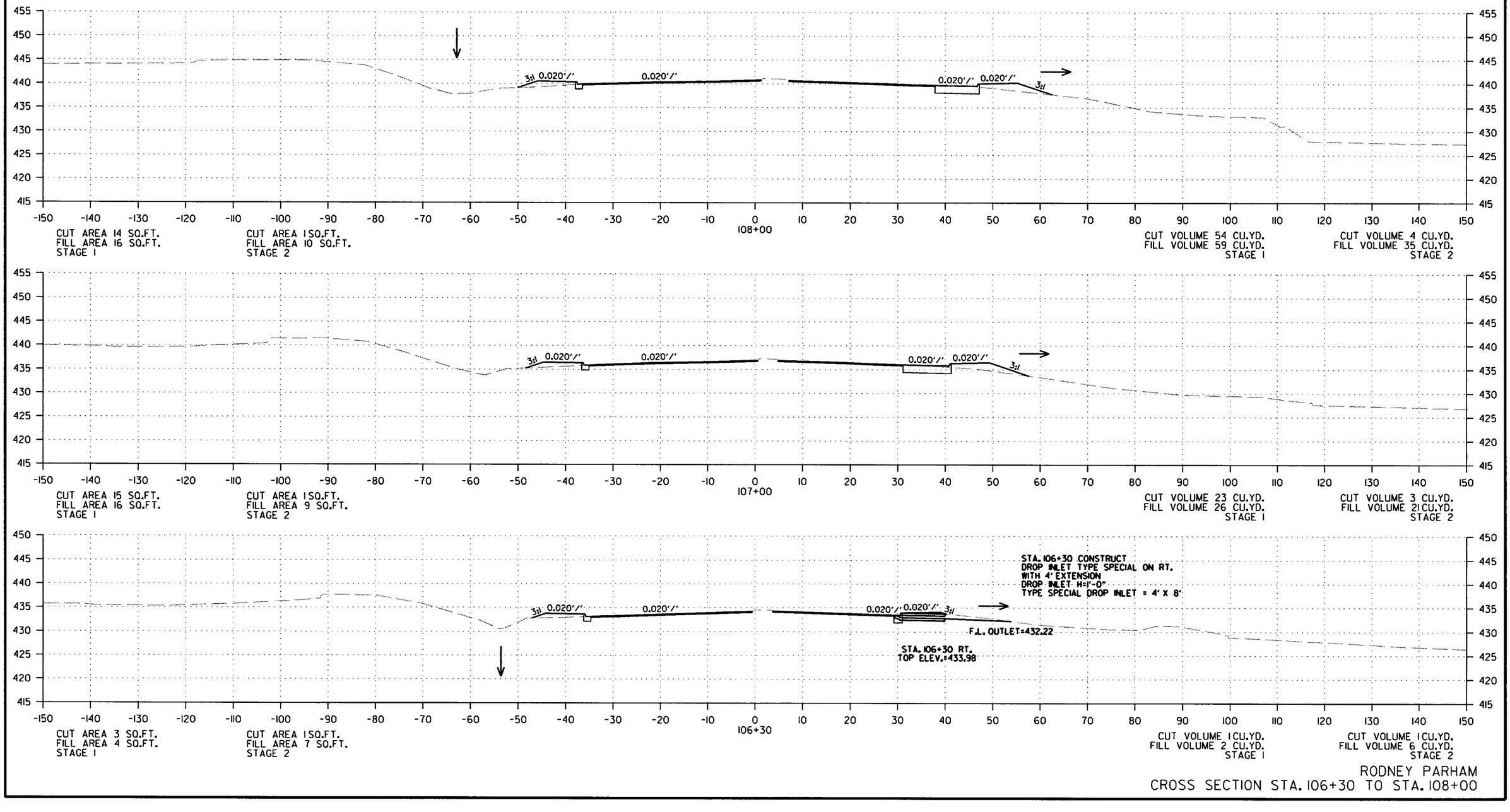

RODNEY PARHAM

CROSS SECTION STA. 106+30 TO STA. 108+00

4/25/2018

RBB0618.DGN

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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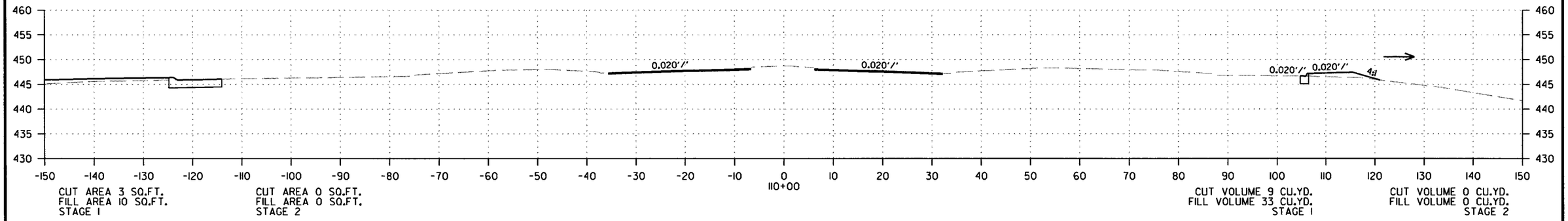

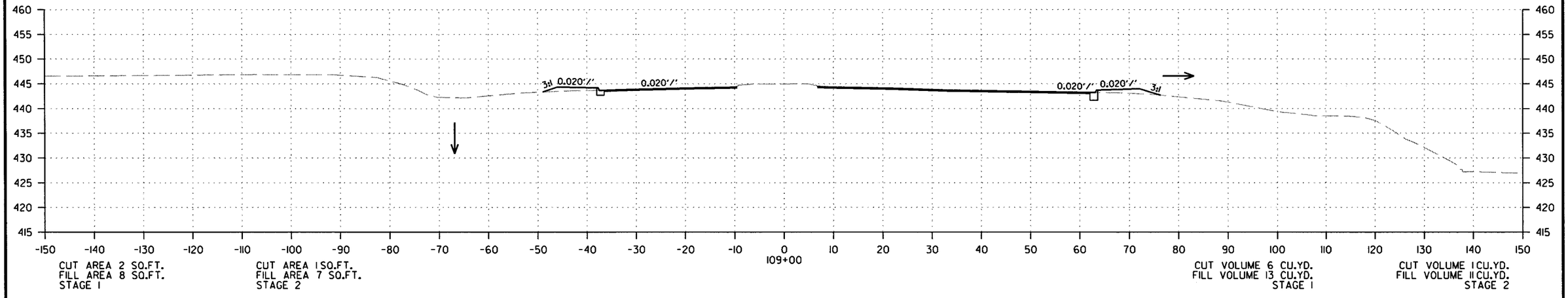

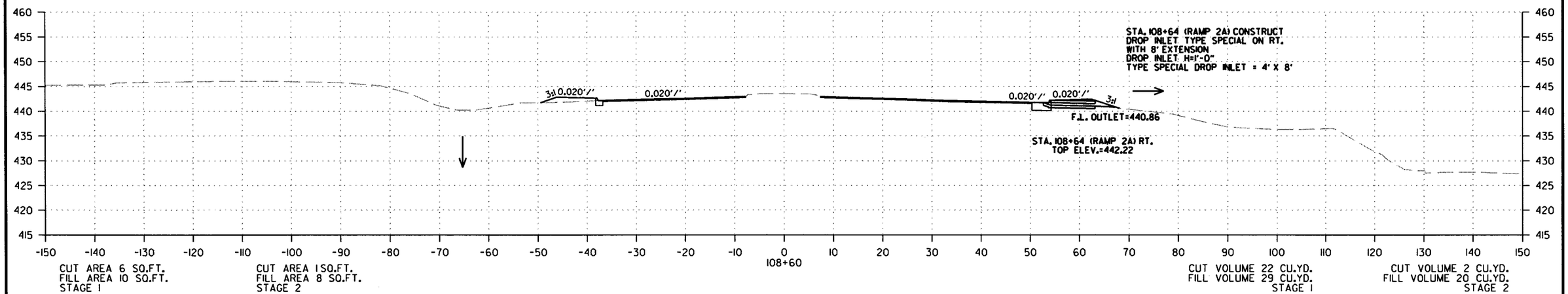

RODNEY PARHAM

CROSS SECTION STA. 108+60 TO STA. 110+00

4/25/2018

RBB0618.DGN

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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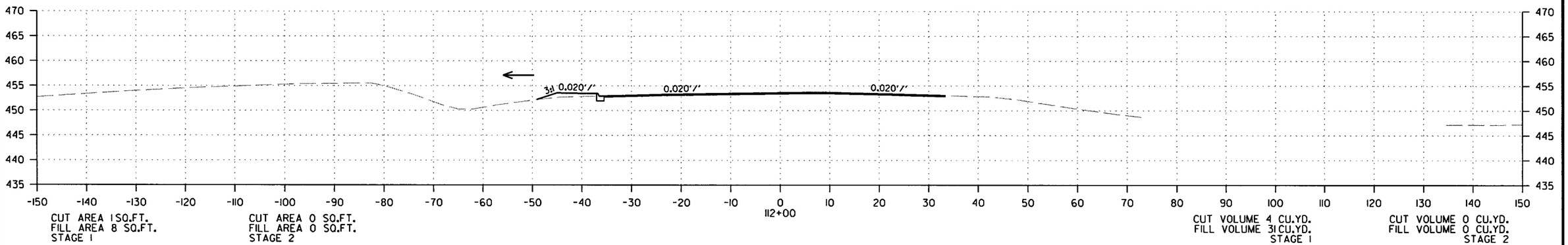

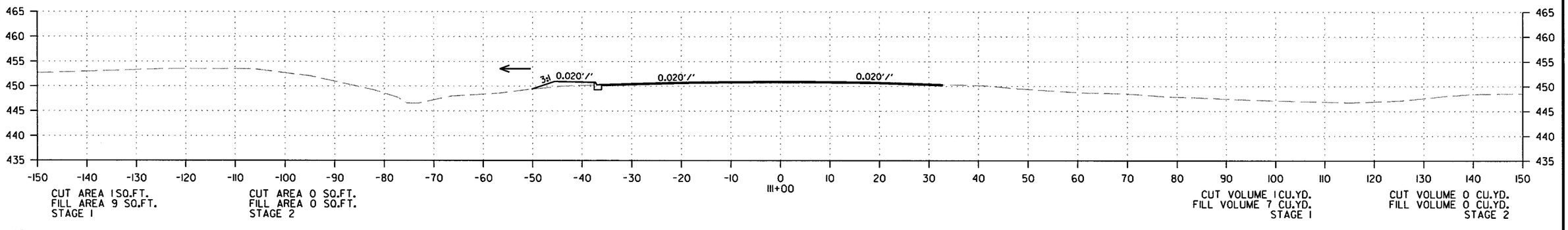

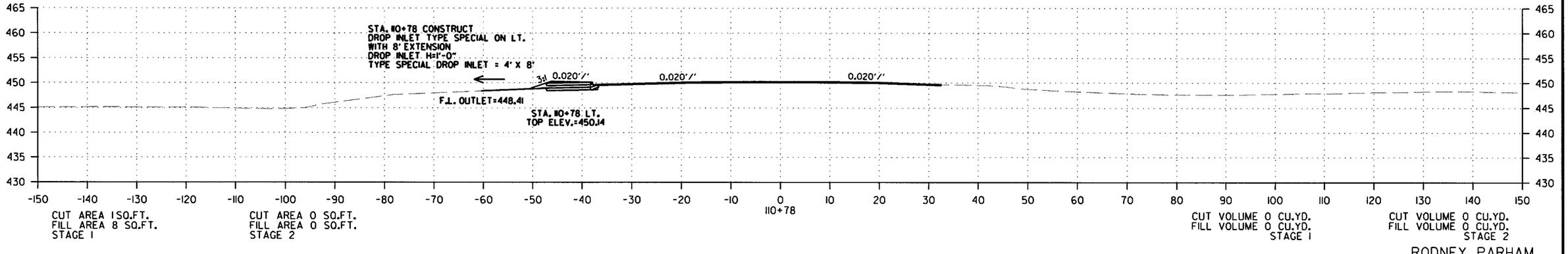

RODNEY PARHAM

CROSS SECTION STA. 110+78 TO STA. 110+78

4/25/2018

RBB0618.DGN

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.		BB0618	72	81

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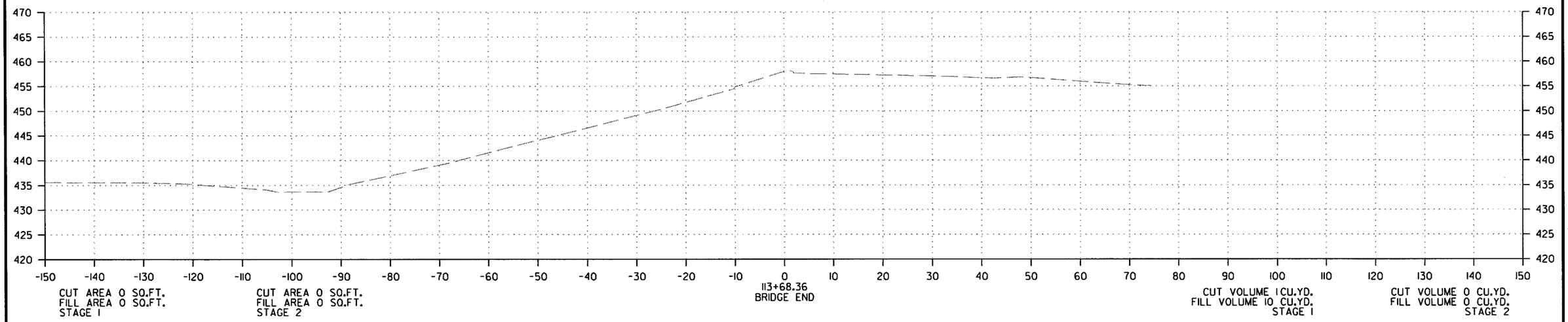

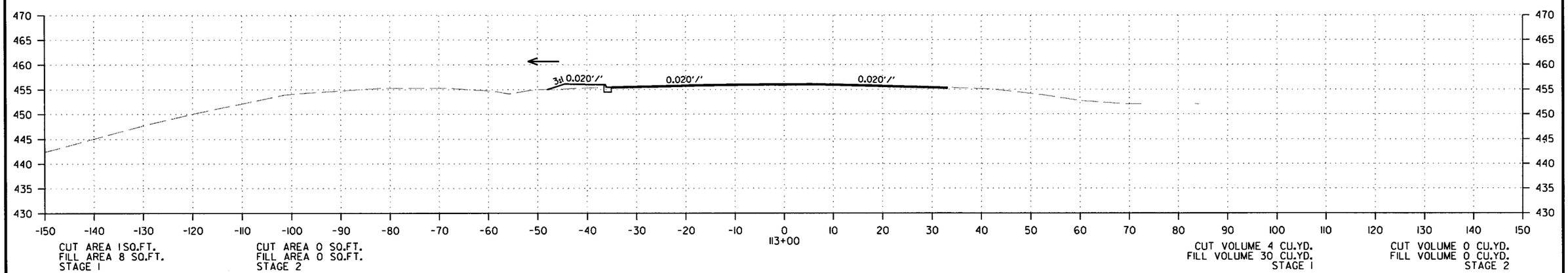

RODNEY PARHAM

CROSS SECTION STA. 113+00 TO STA. 113+69

4/25/2018

RBB0618.DGN

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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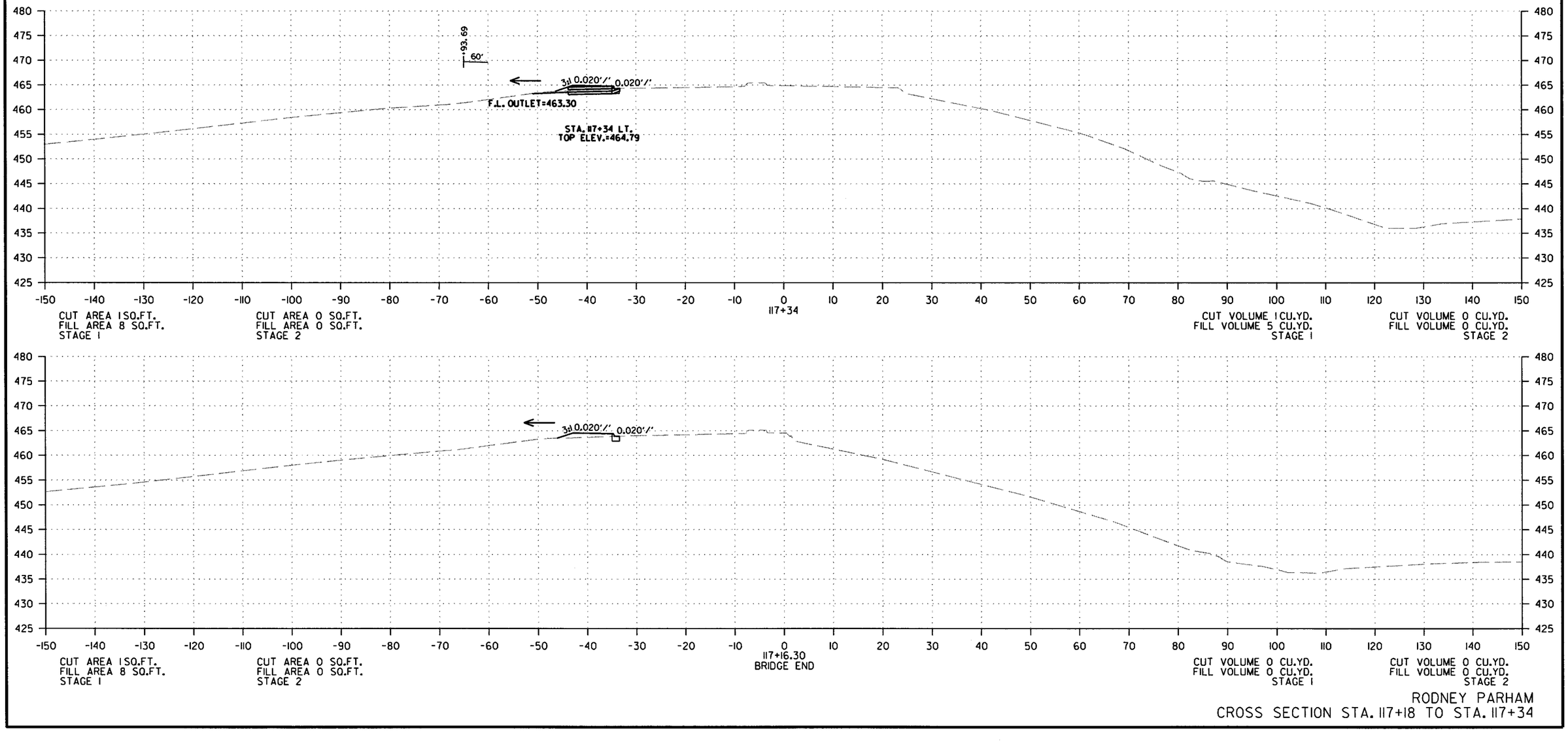

RODNEY PARHAM

CROSS SECTION STA. 117+18 TO STA. 117+34

4/25/2018

RBB0618.DGN

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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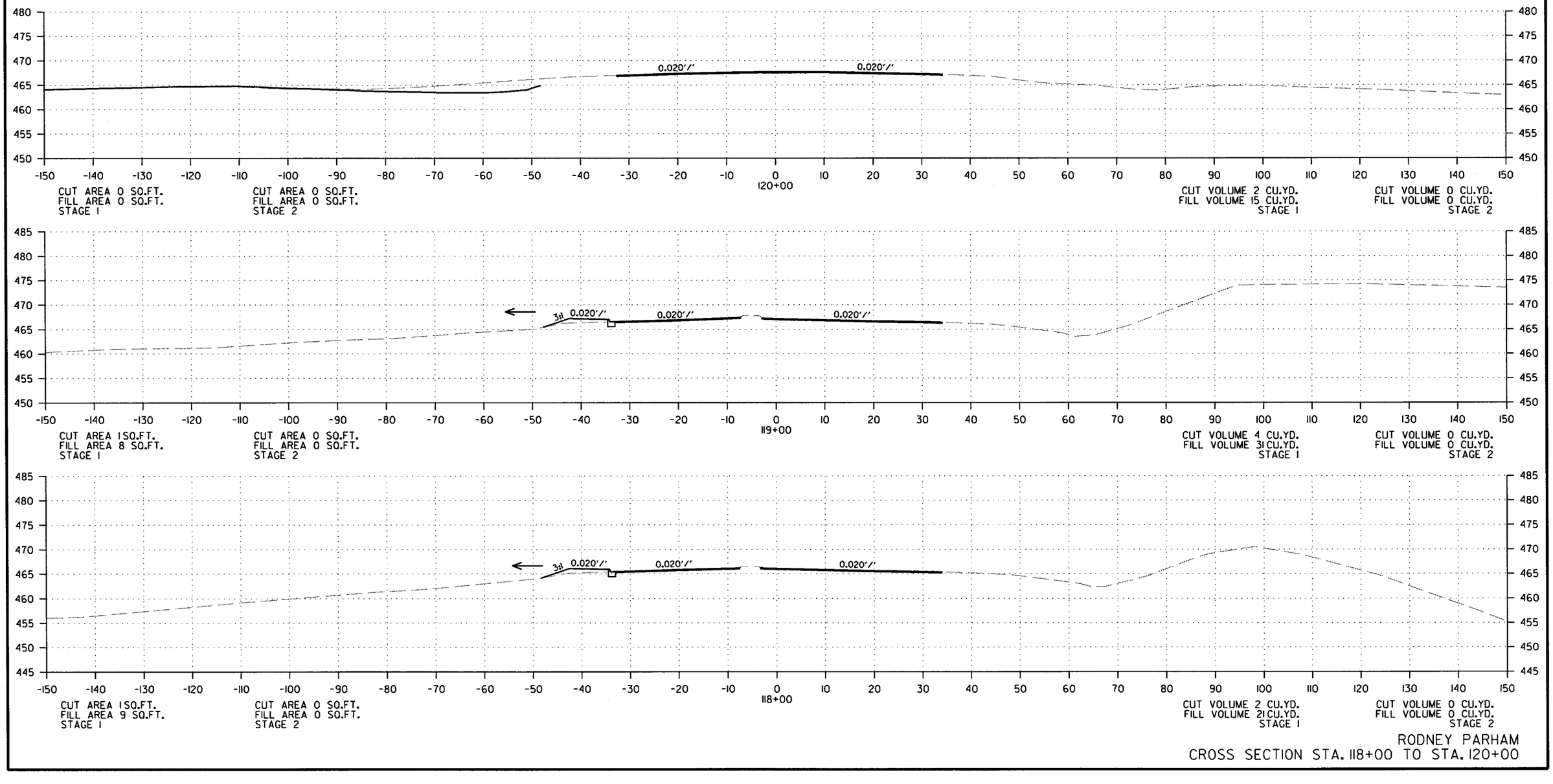

RODNEY PARHAM

CROSS SECTION STA. 118+00 TO STA. 120+00

4/25/2018

RBB0618.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.		BB0618	75	81

(2) CROSS SECTIONS

RODNEY PARHAM

CROSS SECTION STA. 120+87 TO STA. 122+00

4/25/2018

RBB0618.DGN

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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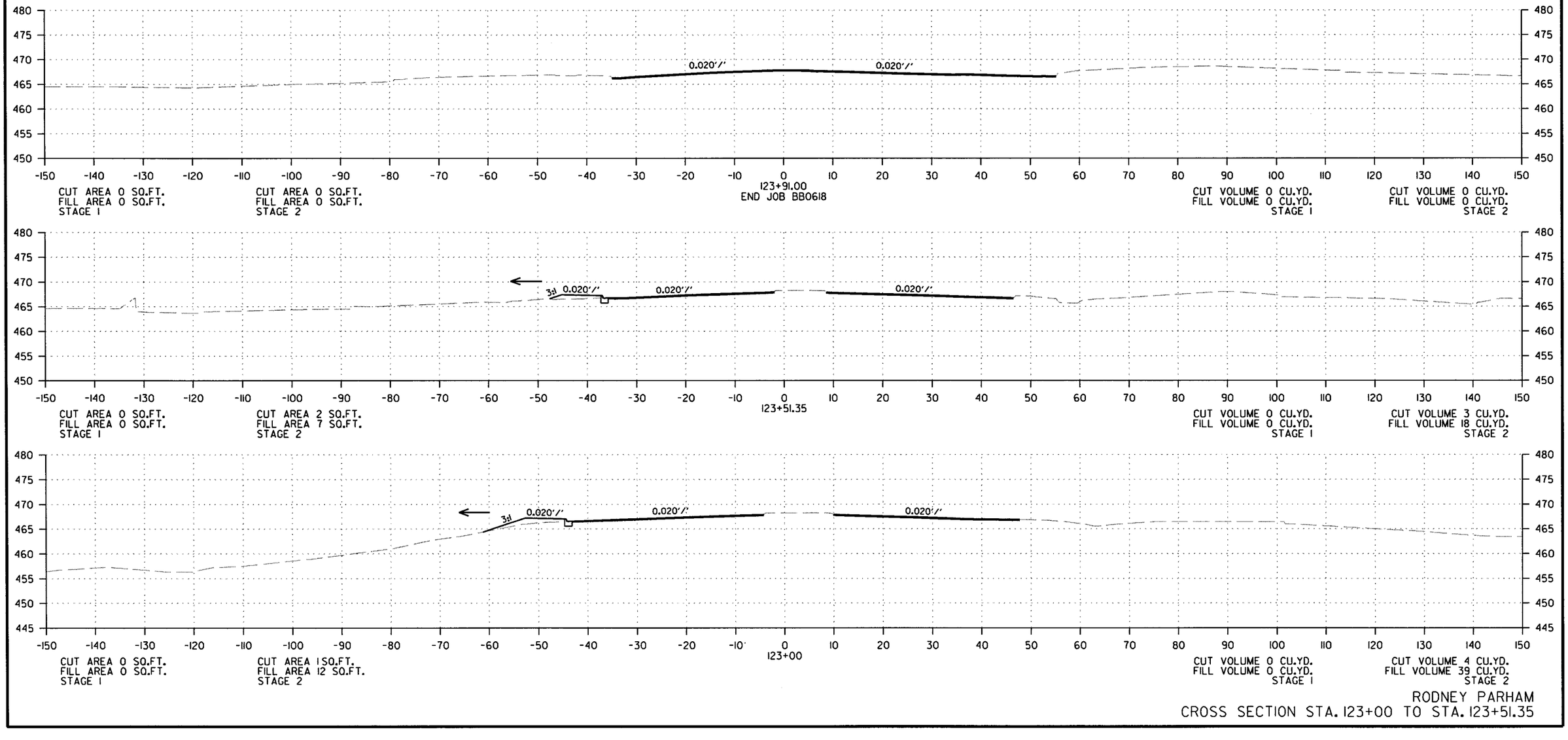

RODNEY PARHAM

CROSS SECTION STA. 123+00 TO STA. 123+51.35

4/25/2018

RBB0618.DGN

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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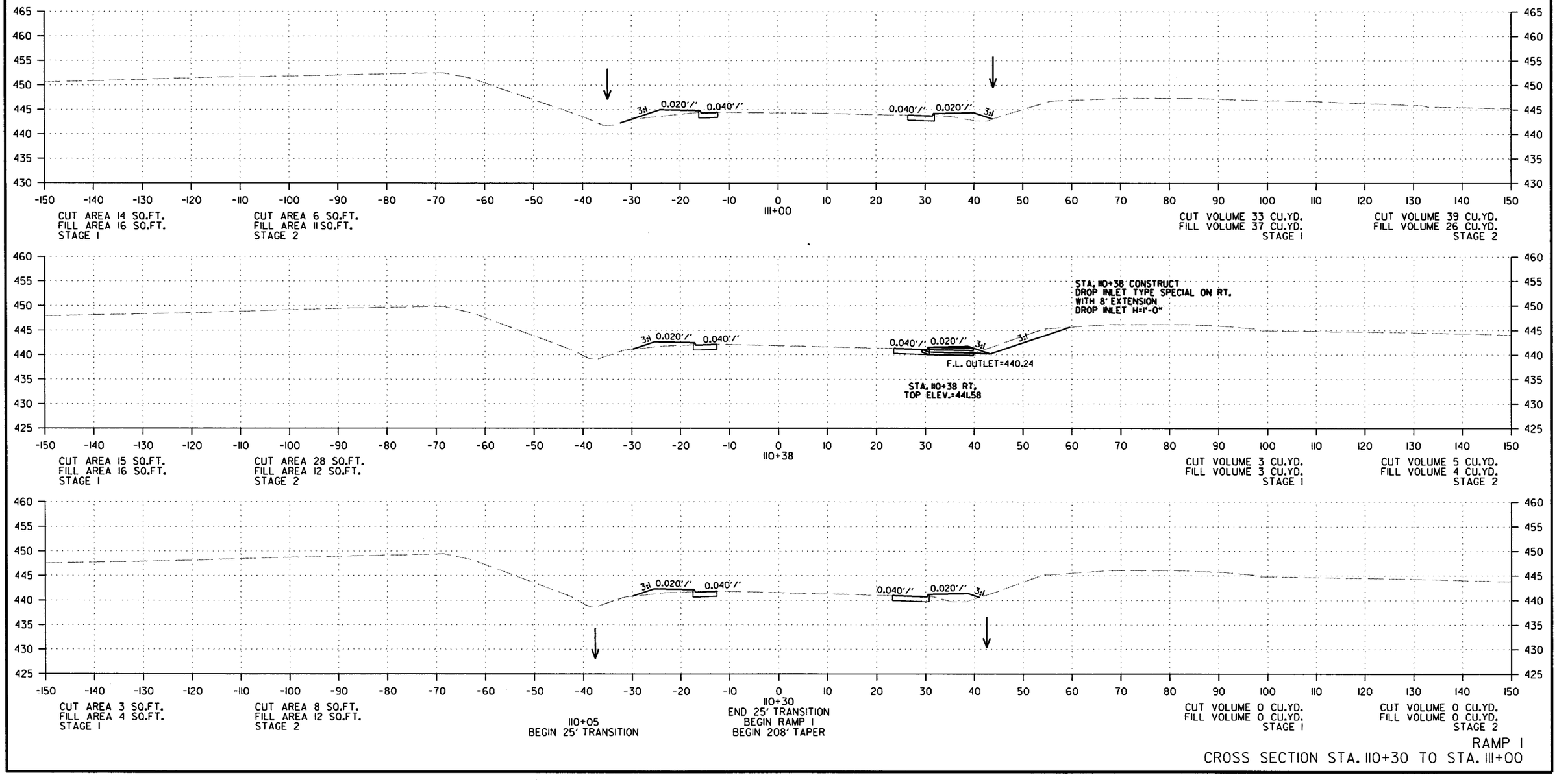

RAMP 1
CROSS SECTION STA. 110+30 TO STA. 111+00

4/25/2018

RB80618.DGN

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.		BB0618	78	81

(2) CROSS SECTIONS

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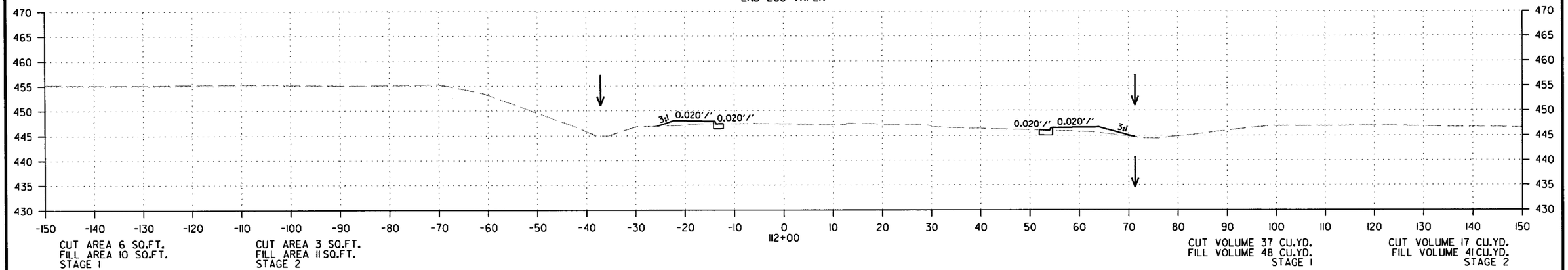
STA. 112+95.35 ON RAMP 1
Δ 87°56'11"

112+38
END 208' TAPER



RAMP 1
CROSS SECTION STA. 112+00 TO STA. 112+00

4/25/2018

RBB0618.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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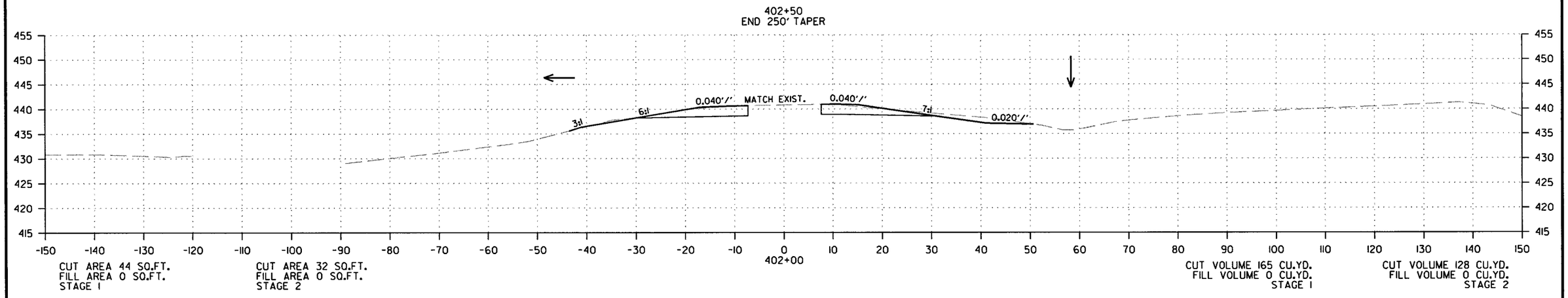
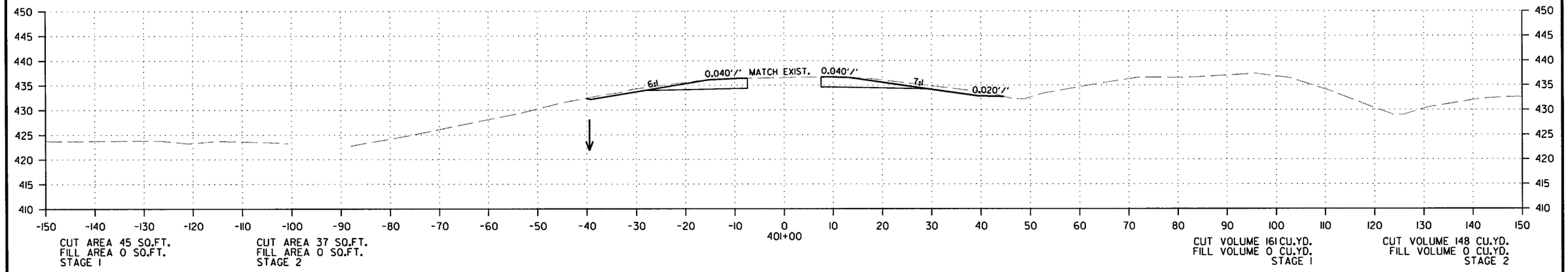
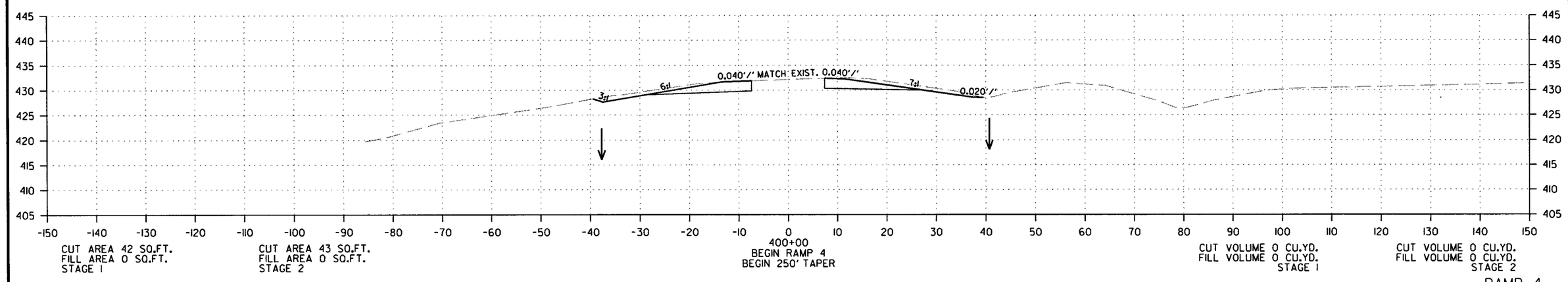
(2) CROSS SECTIONS







RAMP 4
CROSS SECTION STA. 400+00 TO STA. 402+00

4/25/2018

RBB0618.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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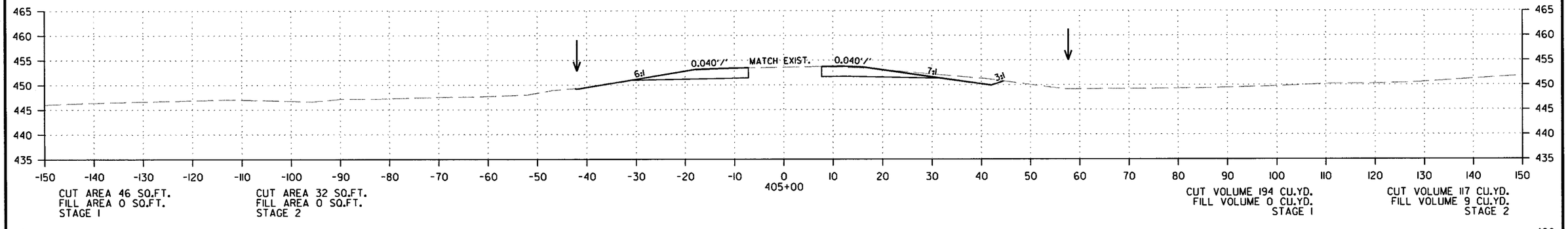
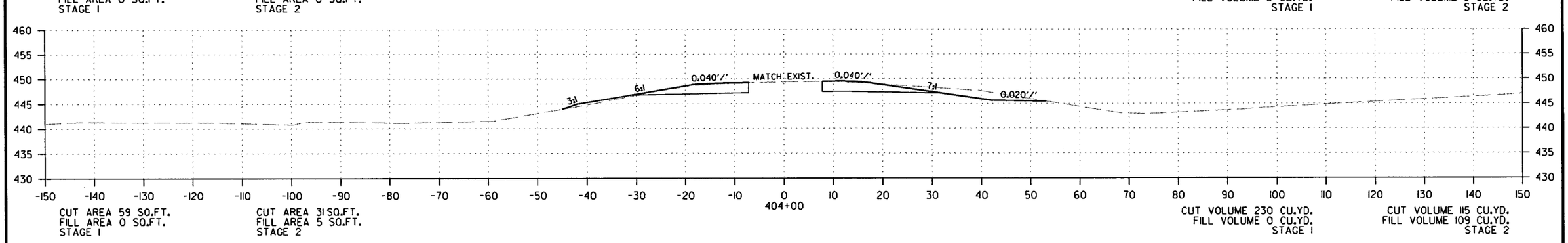
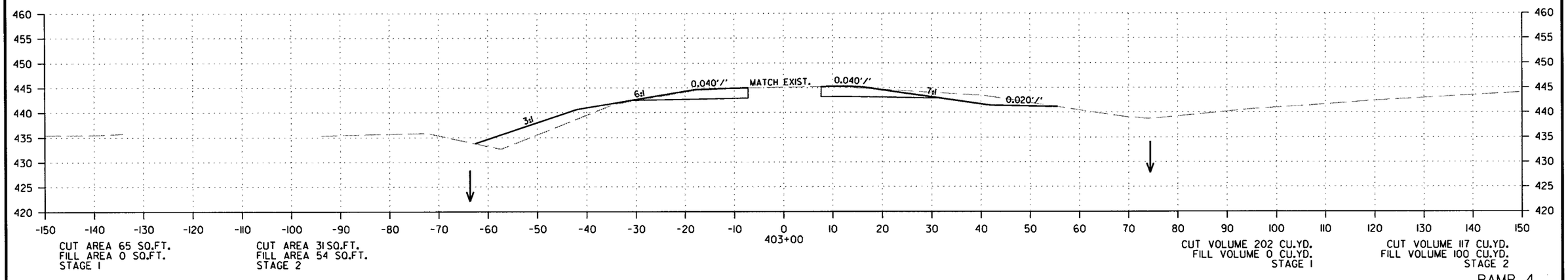
(2) CROSS SECTIONS







RAMP 4
CROSS SECTION STA. 403+00 TO STA. 405+00

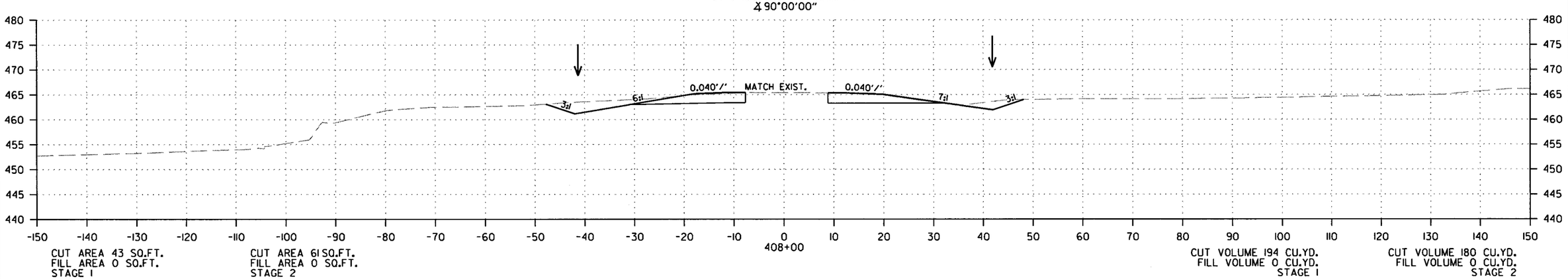
4/25/2018

RBB0618.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.		BB0618	81	81

(2) CROSS SECTIONS

STA. 120+39.47 ON RODNEY PARHAM =
STA. 300+00.00 ON RAMP 3 =
STA. 409+12.94 ON RAMP 4
Δ 90°00'00"

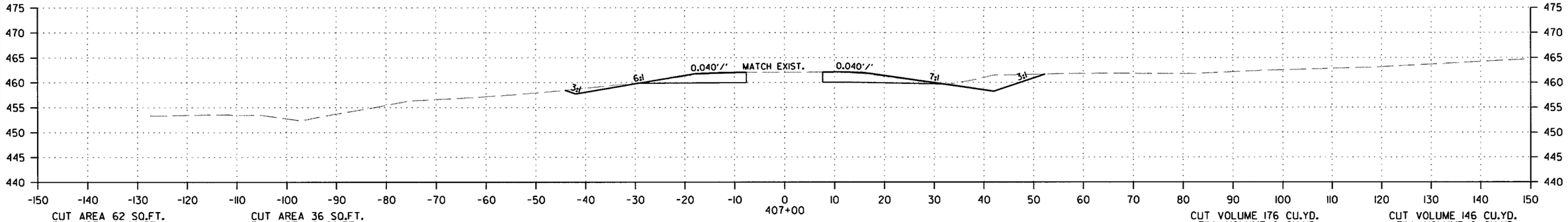


CUT AREA 43 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 1

CUT AREA 61 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 2

CUT VOLUME 194 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 180 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2

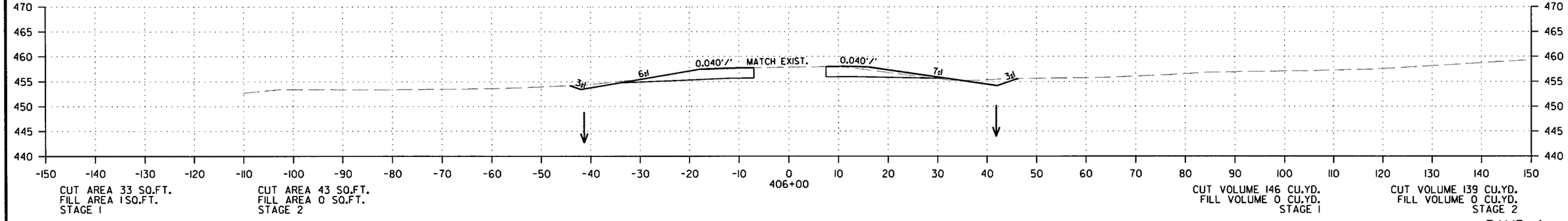


CUT AREA 62 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 1

CUT AREA 36 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 2

CUT VOLUME 176 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 146 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2



CUT AREA 33 SQ.FT.
FILL AREA 1 SQ.FT.
STAGE 1

CUT AREA 43 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 2

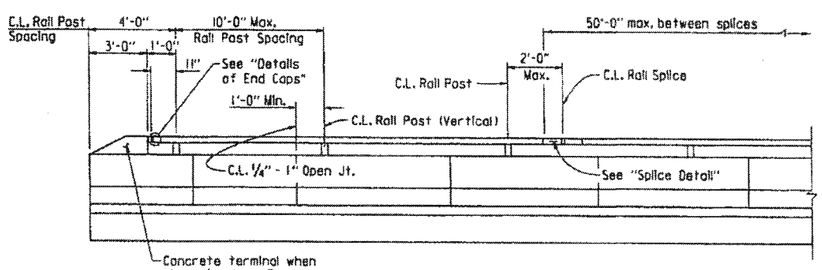
CUT VOLUME 146 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 139 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2

RAMP 4
CROSS SECTION STA. 406+00 TO STA. 408+00

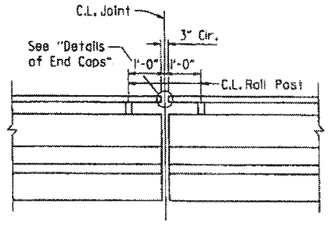
4/25/2018

RBB0618.DGN

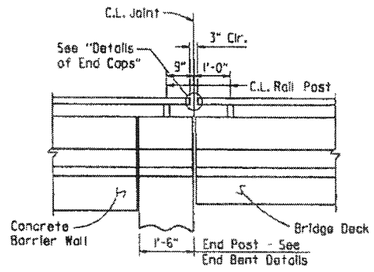


RAIL POST SPACING DETAIL

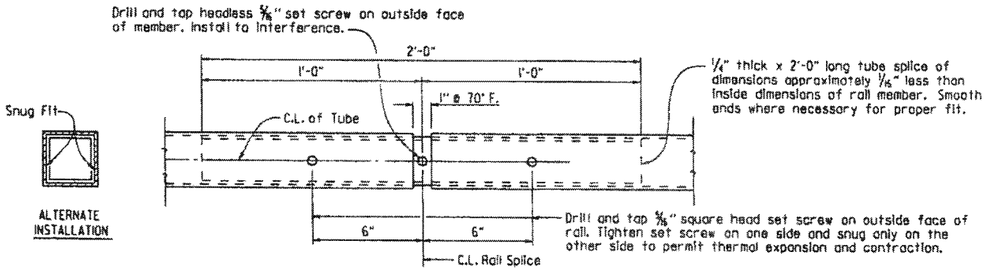
(Horizontal dimensions are along face of rail)



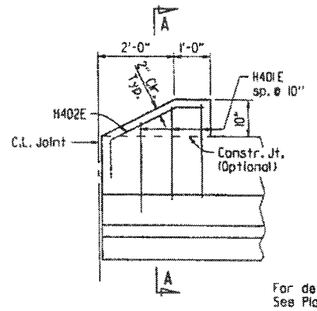
RAIL POST SPACING AT EXPANSION JOINTS



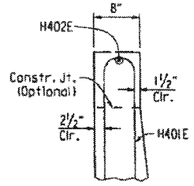
RAIL POST SPACING AT BRIDGE ENDS WITH CONCRETE BARRIER WALL



SPLICE DETAIL

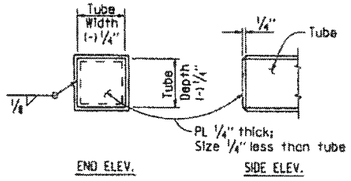


DETAIL X

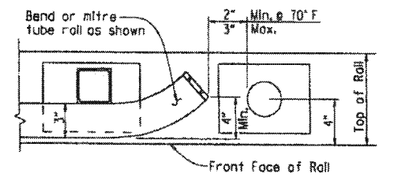


SECTION A-A

For details of reinforcing steel, See Plan Details.

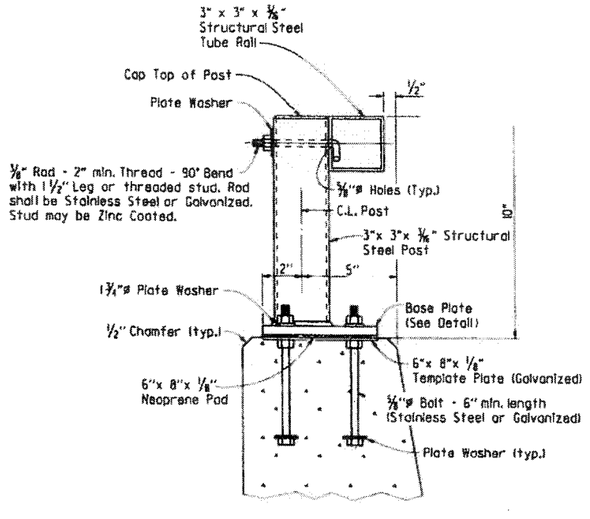


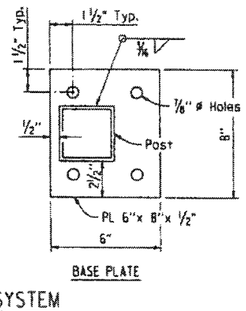
DETAILS OF END CAPS



DETAILS OF RAIL TERMINUS AT FENCE POST

(When Chain Link Fence is required)

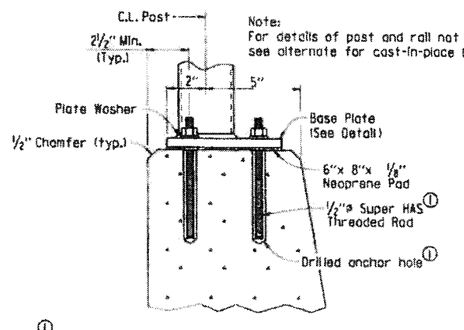


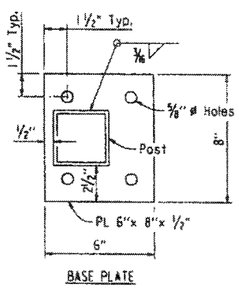


BASE PLATE

DETAILS OF POST ANCHOR SYSTEM

(CAST-IN-PLACE BOLTS)





BASE PLATE

① HILTI HIT RE 500 Epoxy Adhesive Anchor System with 4 1/2" embedment or an approved equal.

The HILTI Epoxy Adhesive Anchor System (or approved equal) shall be installed in accordance with Manufacturer's recommendations.

DETAILS OF ALTERNATE POST ANCHOR SYSTEM

(EPOXY ADHESIVE ANCHORS)

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

① TYPE H RAILING 55014

MATERIALS:

Rail tubing, posts, end caps, and base plates shall conform to AASHTO M 270, Gr. 36 or ASTM A 500-Grade B, and shall be galvanized after fabrication in accordance with Subsection 806.02(c). When required elsewhere in the plans, steel rail members shall receive a powder coating process after galvanizing. Galvanized surfaces shall be prepared in accordance with Subsection 807.87 and the manufacturer's recommendations prior to application of the powder coating process.

The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2 to 4 mils. The top coat shall be tough polyester powder with a minimum thickness of 2 to 4 mils. The color shall be as shown in the plans. Coated galvanized framework shall have a salt spray resistance of 3000 hours using ASTM B 117 without loss of adhesion. The powder coating process shall be in accordance with manufacturer's recommendations. Any damage to the powder coated finish shall be repaired with a compatible touch-up system in accordance with manufacturer's recommendations and to the satisfaction of the Engineer at the Contractor's expense.

Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized fasteners and stainless steel will not be permitted.

High-Strength Steel:
Cast-in-place anchor bolts shall conform to ASTM A325, Type I.
Nuts shall conform to ASTM A563, Grade DH or AASHTO M 292, Grade 2H.
Washers shall conform to ASTM F436.
Plate Washers shall conform to AASHTO M 270, Gr. 36.
Splice Set Screws shall conform to AASHTO M 270, Grade 36.
Anchor bolts, nuts, washers, plate washers, and set screws shall be galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50.

Stainless Steel:
Cast-in-place anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi.
Nuts shall conform to AASHTO M 292, Grade 8 or ASTM A563.
Washers shall conform to ASTM A240, Type 302.
Plate Washers shall conform to ASTM A240, Type 302.
Splice Set Screws shall conform to ASTM A193 or A320-Grade B8.

Threads on bolts, screws, and nuts shall conform to American Standard Coarse Series, Class 2 FIT, ASA Specification B1.1. Plate washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series). Neoprene pads shall conform to the requirements of Subsection 807.15(b).

GENERAL NOTES FOR BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of bridge. All posts shall be vertical.

Maximum post spacing = 10'-0". Minimum distance from centerline post to centerline open or contraction joints in parapet rail = 1'-0".

Splices in rail tubing shall be at 50' maximum spacing. The centerline of splices shall be located a maximum of 2 feet from centerline of post. Rail sections shall be fabricated to attach to at least three posts.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Bridge railing, including posts, template and base plates, fasteners, and neoprene pads shall be paid for at the contract unit price bid per linear foot for "Metal Bridge Railing (Type H)". When required elsewhere in the plans, powdered coating finish and repair of powdered coating finish shall be considered subsidiary to the item "Metal Bridge Railing (Type H)".

Shop drawings showing details of railing shall be submitted and approval secured prior to fabrication.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS OR SUPPLEMENTAL SPECIFICATIONS.

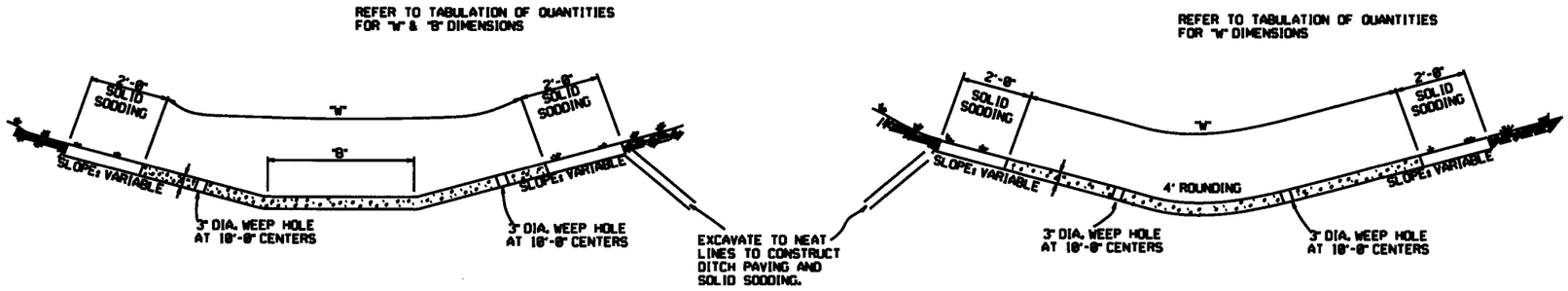
STANDARD DETAILS FOR TYPE H RAILING

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55014.dgn
CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: ——

BRIDGE NO. DRAWING NO. 55014

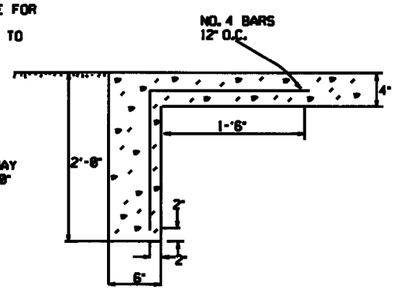


TYPE A

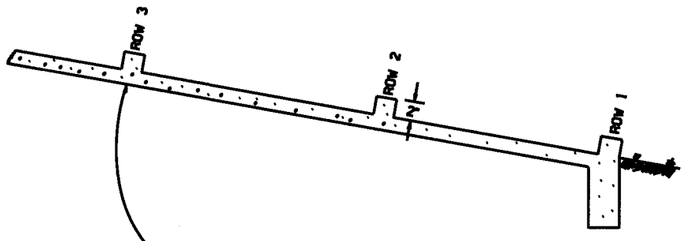
TYPE B

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

TOE WALL DEPTH MAY BE ALTERED TO 1'-8" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

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

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

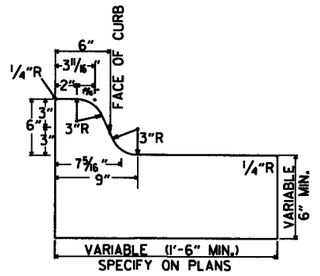
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE 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	
11-30-89	REVISED NOTE ON NO. ROWS OF ELEMENTS	1111-30-89
7-19-88	REVISED DISSIPATOR NOTE	663-7-19-88
4-4-87	REVISED ENERGY DISSIPATOR	671-4-4-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	632-1-9-87
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 TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

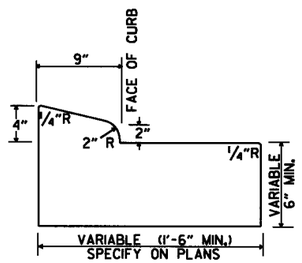
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

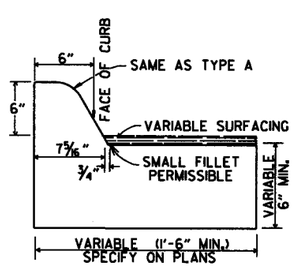
STANDARD DRAWING CDP-1



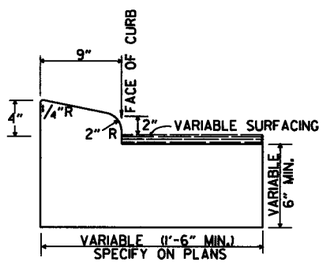
TYPE A



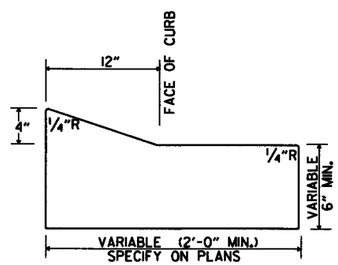
TYPE B-1



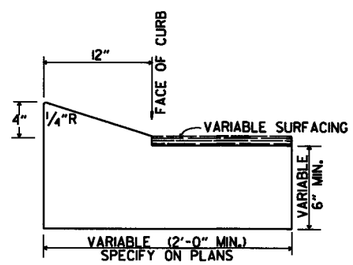
TYPE C



TYPE B-2

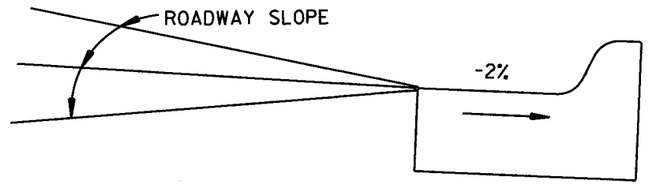


TYPE E-1



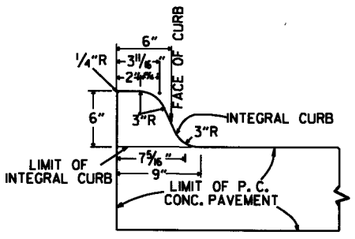
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

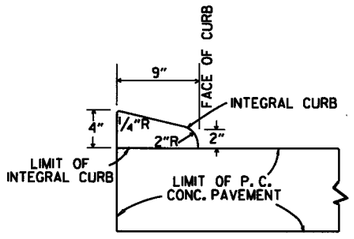


DETAIL OF GUTTER SLOPE

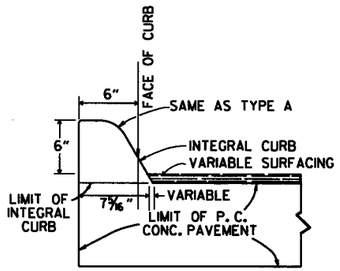
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

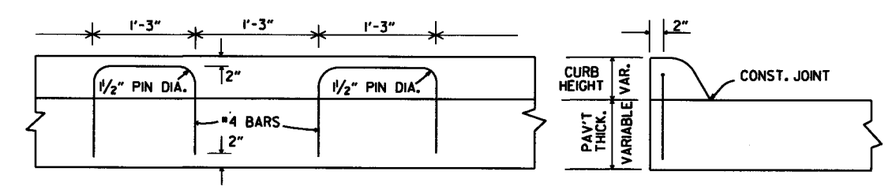


TYPE B



TYPE C

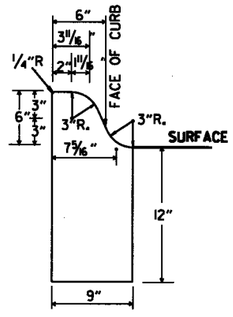
INTEGRAL CURB



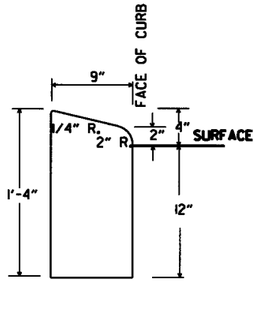
LONGITUDINAL SECTION

ELEVATION

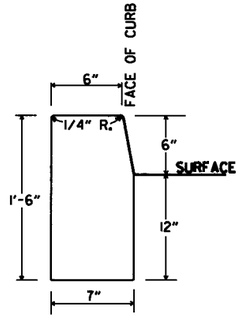
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



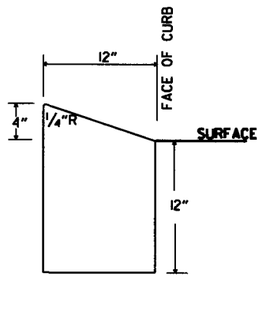
TYPE A



TYPE B

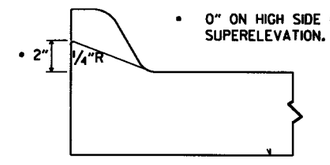


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

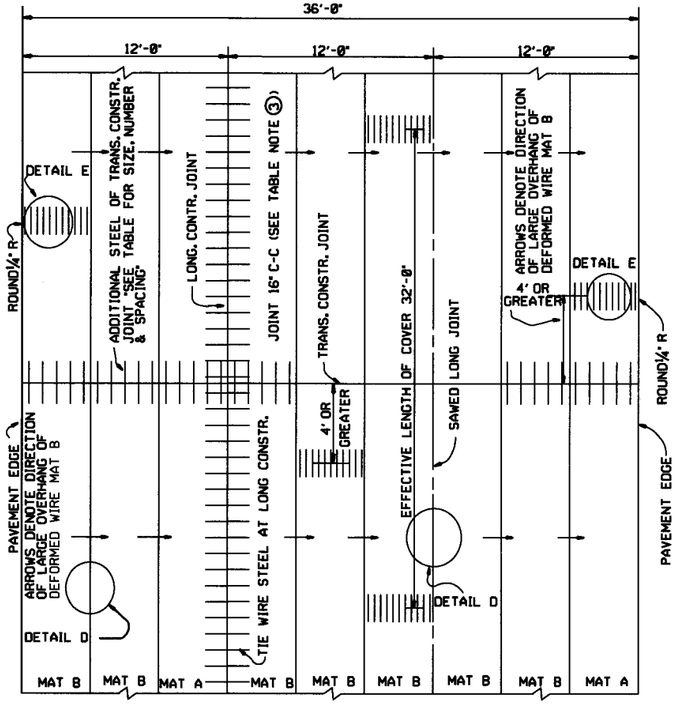
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
8-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
8-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
8-18-98	REVISED MODIFIED CURB	
5-2-94	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
8-30-89	VARIABLE DEPTH TYPES A & B1	8-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
8-1-73	REVISED MODIFIED CURB	500-8-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

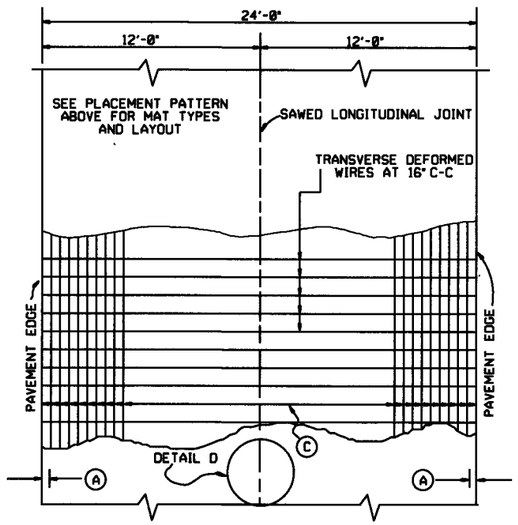
CURBING DETAILS

STANDARD DRAWING CG-1



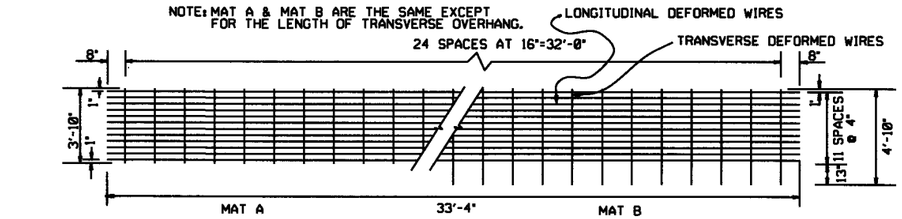
THREE LANE PAVEMENT PLAN

(12' AND 24' PLACEMENT)

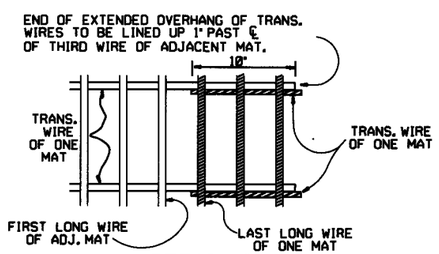


TWO LANE PAVEMENT PLAN

(24' PLACEMENT)

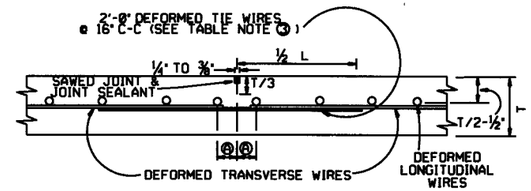


PREFABRICATED DEFORMED WIRE MATS

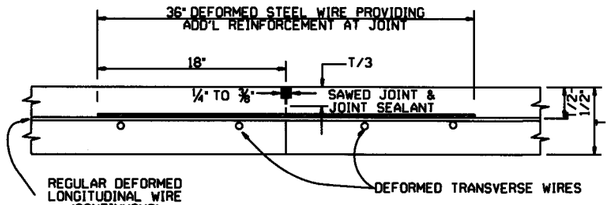


DETAIL D

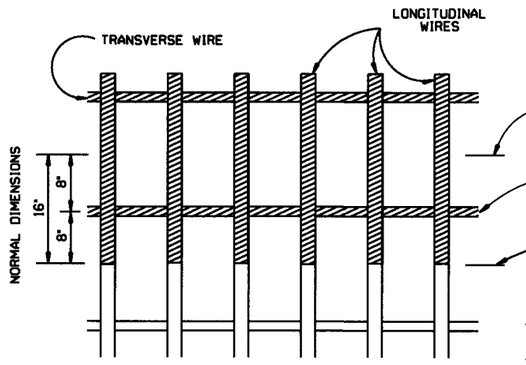
TYPICAL LAP OF TRANSVERSE WIRES



LONGITUDINAL CONSTRUCTION JOINT



TRANSVERSE CONSTRUCTION JOINT

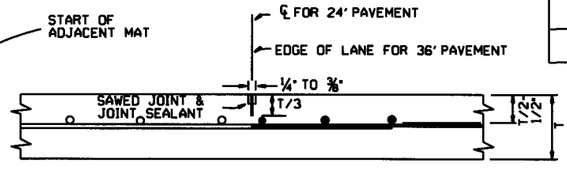


PLAN

SECTION

DETAIL E

TYPICAL LAP OF LONGITUDINAL WIRES



SAWED LONGITUDINAL JOINT

GENERAL NOTES

NO EXPANSION JOINTS WILL BE USED EXCEPT AT STRUCTURAL ENDS OR FIXED OBJECTS AS SHOWN ELSEWHERE IN THE PLANS.

JOINT AND JOINT SEAL DETAILS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.

CONSTRUCTION JOINTS MAY BE FORMED BY THE USE OF METAL OR WOOD FORMS EQUAL IN DEPTH TO THE NOMINAL DEPTH OF THE PAVEMENT, OR BY THE OTHER MEANS WHICH HAVE BEEN APPROVED BY THE ENGINEER PRIOR TO THIER USE.

REFER TO TYPICAL SECTION FOR PAVEMENT WIDTH, THICKNESS AND CROWN.

IT IS THE INTENT OF THIS DESIGN THAT THE LONGITUDINAL STEEL BE AT THE CENTER OF THE SLAB. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE ALL NECESSARY PRECAUTIONS TO INSURE THAT THE FINAL POSITION OF THE STEEL IS NOT BELOW THE CENTER OF THE SLAB.

WITHIN ANY AREA BOUNDED BY TWO FEET OF PAVEMENT LENGTH MEASURED PARALLEL TO THE CENTERLINE, AND TWELVE FEET OF PAVEMENT WIDTH MEASURED PERPENDICULAR TO THE PAVEMENT CENTERLINE, NOT OVER 33% OF THE REGULAR LONGITUDINAL STEEL SHALL BE SPLICED.

ALL SPLICES SHALL BE A MINIMUM OF 16" FOR LONGITUDINAL STEEL AND 10" FOR TRANSVERSE STEEL.

AT TRANSVERSE CONSTRUCTION JOINTS THE REGULAR LONGITUDINAL STEEL SHALL EXTEND A MINIMUM OF FOUR FEET ON EITHER SIDE OF THE JOINT.

IF WIDTHS GREATER THAN TYPICAL WIDTHS OCCUR, INDIVIDUAL WIRES MAY BE ADDED TO OBTAIN ADDITIONAL WIDTH, PROVIDED THE C-C SPACING IS NOT EXCEEDED AND LAP REQUIREMENTS ARE MET.

AT ALL LAP SPLICES OCCURRING WITHIN EIGHT FEET BEYOND THE CONSTRUCTION JOINT, IN THE DIRECTION OF PAVING AND FOUR FEET BACK OF THE CONSTRUCTION JOINT, THE LENGTH OF LAP SHALL BE DOUBLE THAT NORMALLY SPECIFIED OR EACH SPLICE SHALL BE STRENGTHENED BY SPLICING IN, SYMMETRICALLY WITH THE LAP, A SIX-FOOT LENGTH OF DEFORMED BAR OF THE SAME NOMINAL SIZE AS THE LONGITUDINAL REINFORCEMENT.

SAWED JOINT AND JOINT SEALANT FOR TRANSVERSE CONSRTUCTION JOINT, LONGITUDINAL CONSTRUCTION JOINT AND SAWED LONGITUDINAL JOINT SHALL CONFORM TO THE DETAILS SHOWN FOR SAWED LONGITUDINAL JOINT ON STANDARD DRAWING CPTJ-6A.

PAVEMENT THICKNESS (T) IN.	LONGITUDINAL REINFORCEMENT											TRANS. REINF. FOR LONG. CONSTR. JOINT	
	WIRE SIZE	24' PLACEMENT SPACING C-C		① STEEL LB/SY	12' PLACEMENT SPACING C-C		① STEEL LB/SY	ADDITIONAL STEEL TRANS. CONSTR. JOINT WIRE SIZE	LENGTH IN.	② NO. PER LANE	WEIGHT LB./FT OF WIDTH	WIRE SIZE	TIE WIRES ③ WEIGHT LB./FT. OF LENGTH
		Ⓐ IN.	Ⓒ IN.		Ⓐ IN.	Ⓒ IN.							
8	D-19.2	2	4	20.59	2	4	20.51	D-19.2	36	16	2.61	D-8	.408
6	D-14.4	2	4	14.90	2	4	14.86	D-14.4	36	16	1.96	D-4	.204

TABLE NOTE

① INCLUDES BOTH LONGITUDINAL AND TRANSVERSE WIRES BASED ON THE WIDTH INDICATED AND AN EFFECTIVE COVER LENGTH OF 32 FEET. (ESTIMATING QUANTITIES INCLUDE SPLICES)

② THIS SHALL BE THE MINIMUM NUMBER OF ADDITIONAL STEEL WIRES TO BE PLACED PER LANE. THE ADDITIONAL STEEL WIRES SHALL BE PLACED EQUIDISTANT BETWEEN TWO REGULAR LONGITUDINAL REINFORCING WIRES AT AS NEAR A UNIFORM SPACING ACROSS THE LANE AS POSSIBLE.

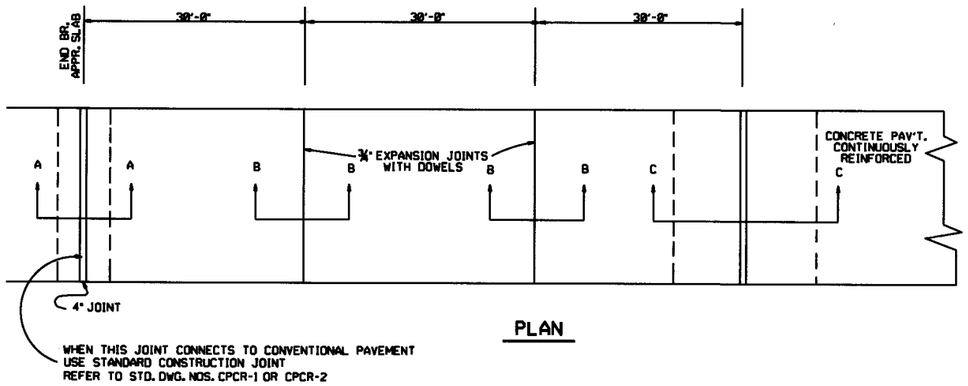
③ AT THE OPTION OF THE CONTRACTOR, #4 BARS X 30 IN. AT 30 IN. C-C MAY BE USED IN LIEU OF THE DEFORMED TIE WIRES AT 16 IN. C-C SHOWN, PROVIDED WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE ENGINEER.

DATE	REVISION	DATE FILMED
3-23-89	ALTERED SAWED JOINT & ADDED NOTE	509-3-23-89
11-3-86	DIMEN'S. OF LONG. JTS.	651-11-3-86
1-4-83	DEPTH OF SAWED TRANSVERSE CONST. JOINT	676-1-4-83
10-2-72	REVISED AND REDRAWN	505-10-2-72

ARKANSAS HIGHWAY COMMISSION

CONCRETE PAVEMENT DETAILS CONTINUOUSLY REINFORCED DEFORMED WIRE MAT

STANDARD DRAWING CPCR-2



PLAN

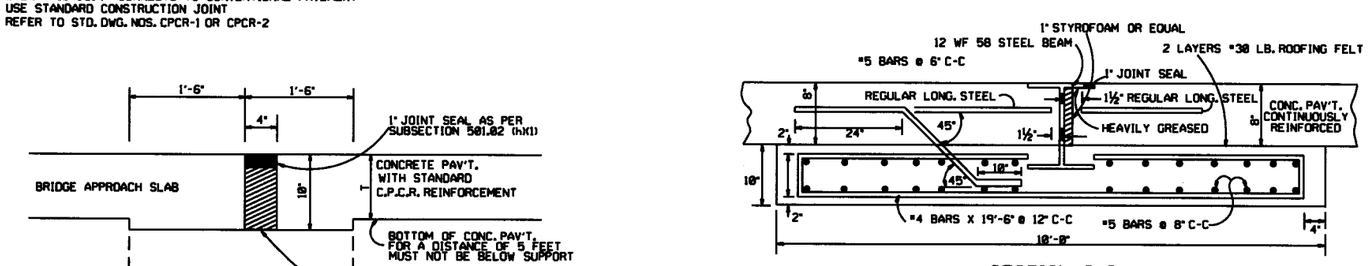
GENERAL NOTES

OTHER TYPES OF EXPANSION JOINTS MAY BE CONSTRUCTED AT THE OPTION OF THE CONTRACTOR AFTER APPROVAL BY THE ENGINEER.

LOAD TRANSMISSION UNITS AND DOWELS SHALL BE SECURED PARALLEL TO THE PAVEMENT SURFACE AND CENTERLINE.

ALL EXPANSION JOINTS, INCLUDING ALL MATERIALS, DEVICES, AND WORK REQUIRED SHALL BE CONSIDERED AS SUBSIDIARY WORK AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT. NO DIRECT PAYMENT WILL BE MADE FOR ANY MATERIAL, BAR CHAIR, STEEL OR ANY OTHER DEVICE SHOWN NOR FOR ITS INSTALLATION.

"T" DENOTES THICKNESS OF SLAB.

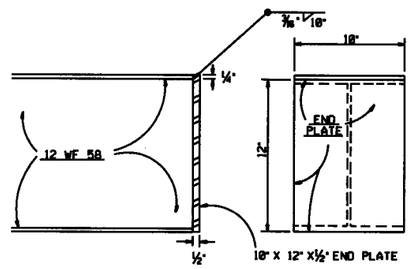


SECTION A-A

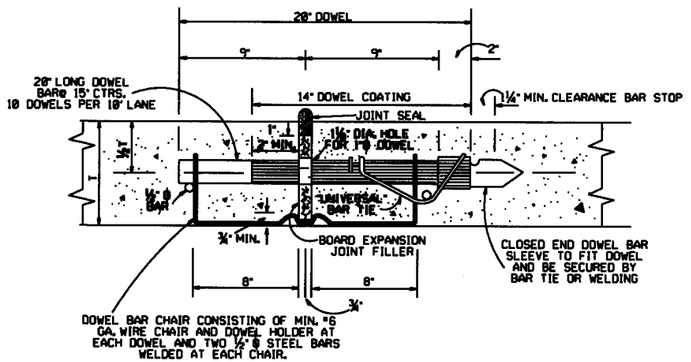
SECTION C-C

DETAIL OF WIDE FLANGE BEAM & JOINT SUPPORT

NOTE: WELD 12" X 18" X½" STEEL PLATE TO ENDS OF BEAM AFTER PLACEMENT OF CONCRETE PAVEMENT.

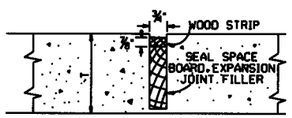


DETAIL OF END PLATE ATTACHMENT TO WIDE FLANGE BEAM



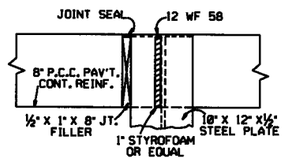
SECTION B-B
DETAIL OF EXPANSION JOINT

STRUCT-URAL EXCA-VATION	CLASS A CON-CRETE	REINF-ORCING STEEL	STRUCT-URAL STEEL
CU. YD.		LB.	
0.31	0.31	46.2	58.8

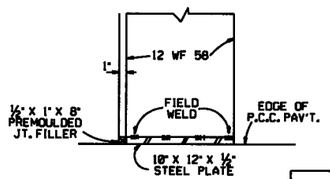


SEAL SPACE FOR EXPANSION JOINT

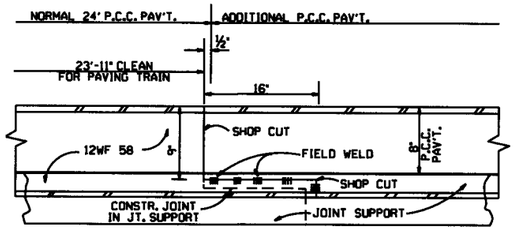
NOTE: BOARD JOINT FILLER OF SPECIFIED TYPE SHALL BE SECURED ON SUBGRADE IN EXACT POSITION AND LINE AS ILLUSTRATED OR BY OTHER APPROVED DEVICE.
JOINT ASSEMBLY SHALL BE SECURELY FASTENED INTO PLACE PRIOR TO PLACING CONCRETE.
AFTER SECOND PASSAGE OF FINISHING MACHINE REMOVE CONCRETE TO 1" BELOW TOP OF BOARD AND NAIL ¾" X ⅜" WOOD STRIP TO TOP OF BOARD FILLER TO FORM JOINT SEAL SPACE.
REPLACE CONCRETE AND FINISH WITH LONGITUDINAL FLOAT.
THE WOOD STRIP SHALL NOT BE REMOVED UNTIL IMMEDIATELY PRIOR TO POURING JOINT SEAL.



ELEVATION



PLAN



TRANSVERSE SECTION THROUGH WF BEAM AND JOINT SUPPORT

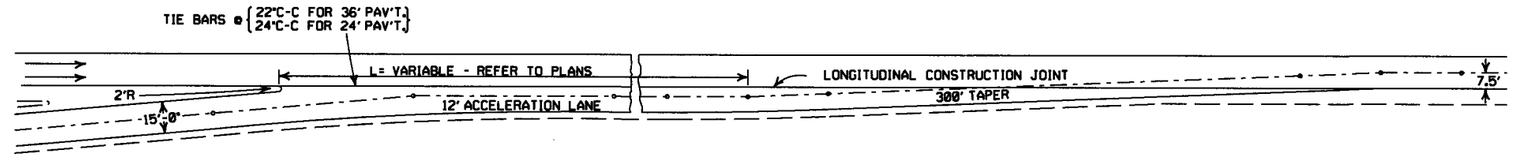
DATE	REVISION	DATE FILM'D
10-18-96	CORRECTED SUBSECTION AND SPELLING	
4-26-96	DELETE DOWEL BAR NOTE	
7-15-88	SUB-SECT. 501.03 (f)(1)TO 501.03 (h)(1)	
8-22-75	REVISED 4" EXP. JOINT MAT'L	
11-1-73	REVISED JOINT SEAL A-A	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF TERMINAL JOINTS FOR CONCRETE PAVEMENT

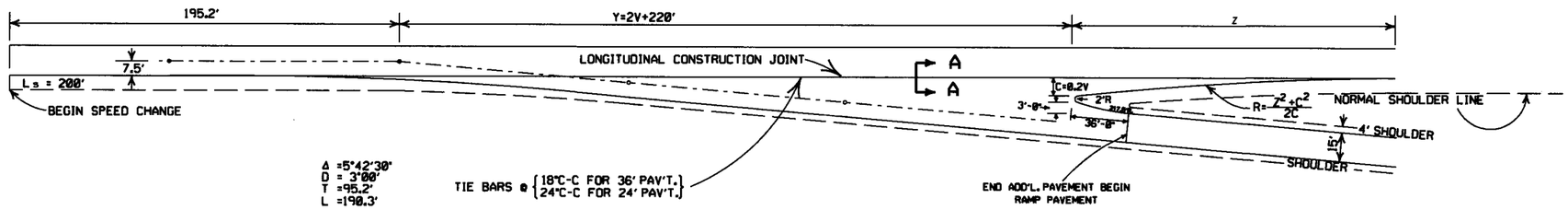
CONTINUOUSLY REINFORCED

STANDARD DRAWING CPCR-3



ENTRANCE RAMP

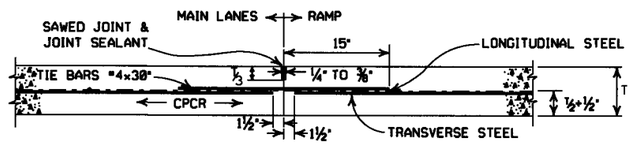
RETURN CURVES
Δ =2°17'30"
D = 3°00'
T =38.2'
L =76.4'



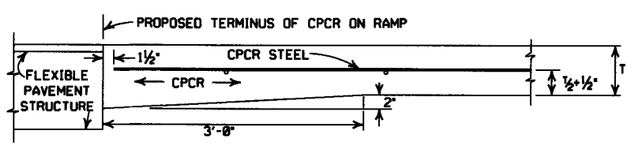
EXIT RAMP

DESIGN SPEED V	Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADD'L. SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.29
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27

NOTE: ON GRADES IN EXCESS OF 4%, THE LENGTHS "Y" & "L" MAY BE VARIED TO FIT THE CASE IN THE RATION OF $\frac{1 \pm \%GRADE}{2}$ (LENGTH AS SHOWN).



LONGITUDINAL CONSTRUCTION JOINT
SECTION A - A



DETAIL FOR JUNCTION WITH FLEXIBLE TYPE PAVEMENT STRUCTURE

GENERAL NOTES

THE SEQUENCE OF OPERATION ON PLACING THE RAMP SHALL BE AS DIRECTED BY THE ENGINEER. THE LONGITUDINAL STEEL SHALL BE PLACED IN A DIRECTION APPROXIMATELY PARALLEL TO THE DIRECTION OF THE RAMP.

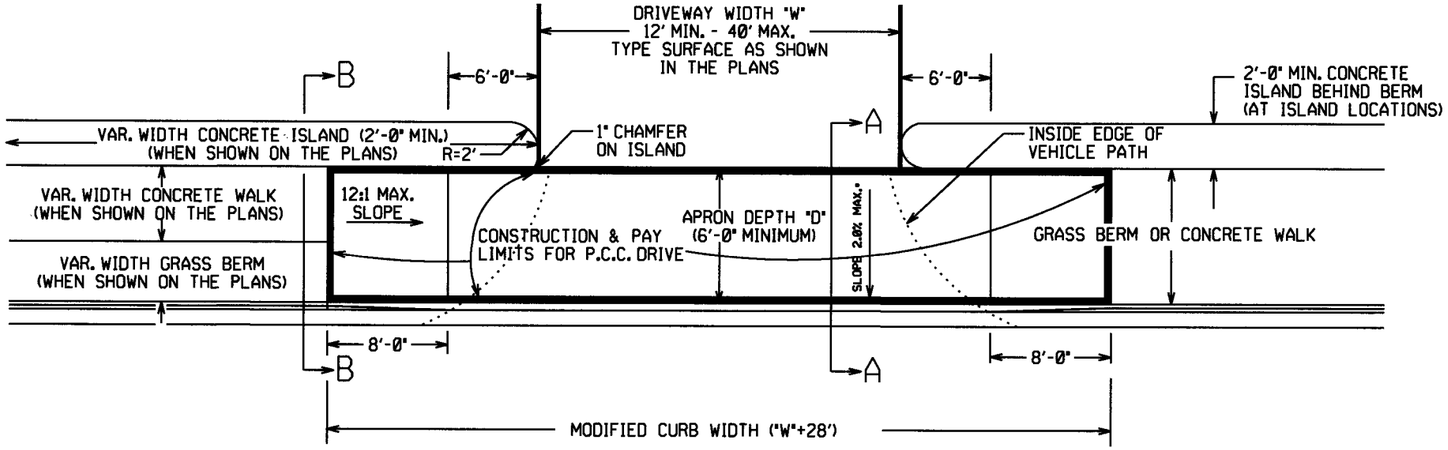
SAWED JOINT AND JOINT SEALANT FOR LONGITUDINAL CONSTRUCTION JOINT SHALL CONFORM TO THE DETAILS SHOWN FOR SAWED LONGITUDINAL JOINT ON STANDARD DRAWING CPTJ-6A.

DATE	REVISION	DATE FILMED
2-27-14	CORRECTED SPELLING	
3-23-89	ALTERED SAWED JOINT & ADDED NOTE	510-3-23-89
11-3-86	DIMEN'S. OF LONG. JTS.	652-11-1-86
10-2-72	REVISED AND REDRAWN	507-10-2-72

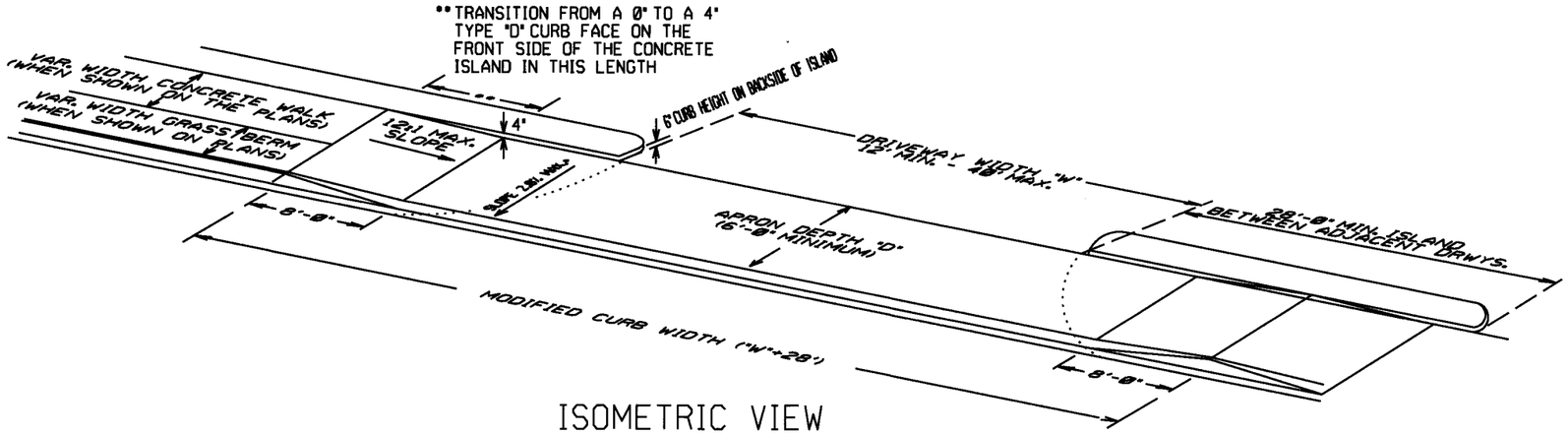
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF ENTRANCE & EXIT RAMPS FOR CONCRETE PAVEMENT CONTINUOUSLY REINFORCED

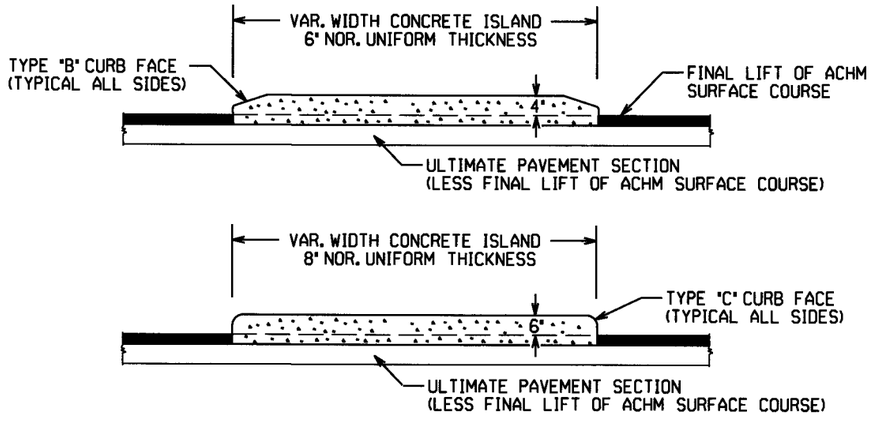
STANDARD DRAWING CPCR-4



PLAN VIEW

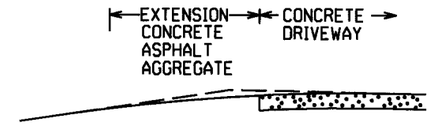


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

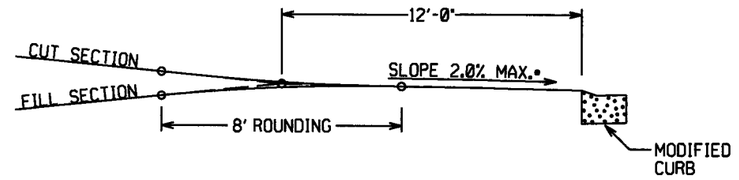
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

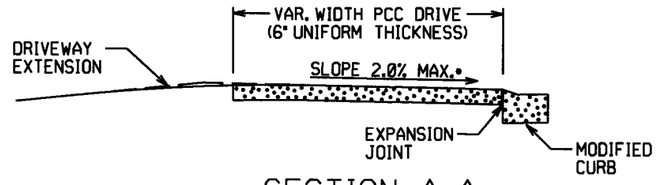
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

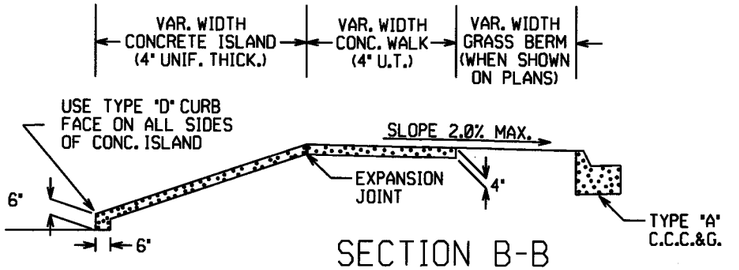


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



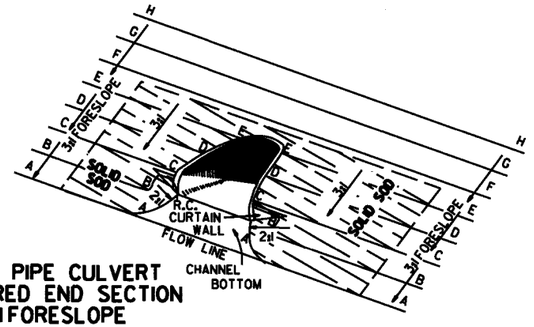
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

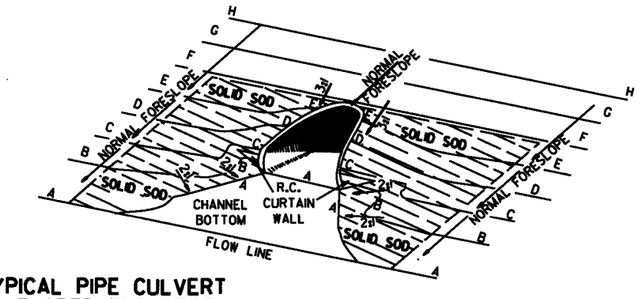
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

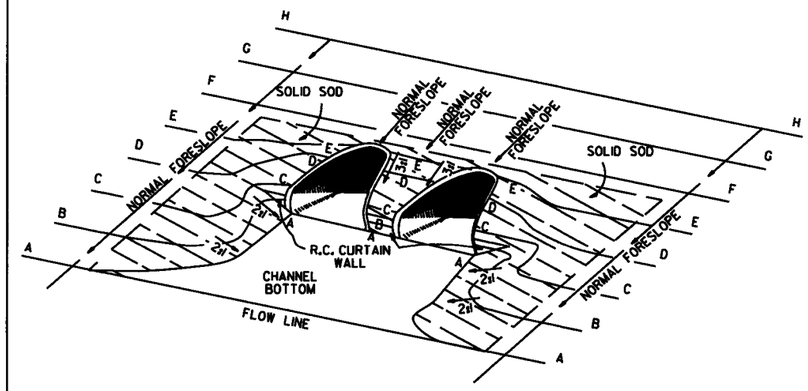
STANDARD DRAWING DR-1



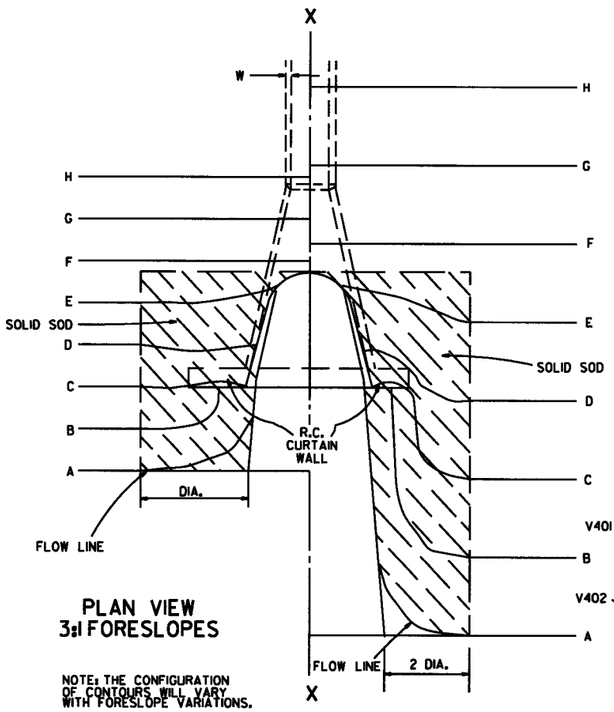
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

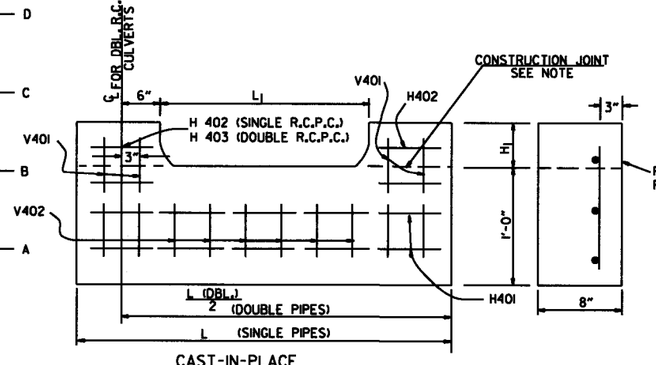
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

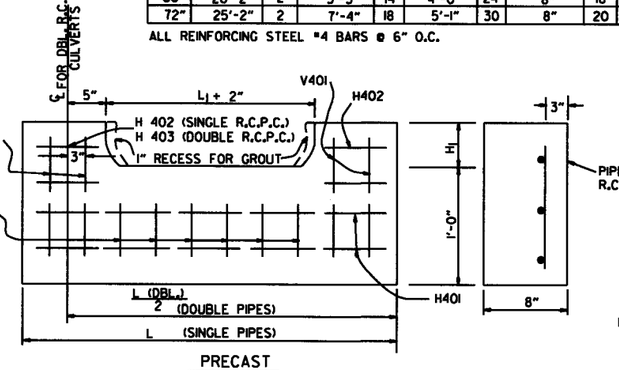
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	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.



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

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.

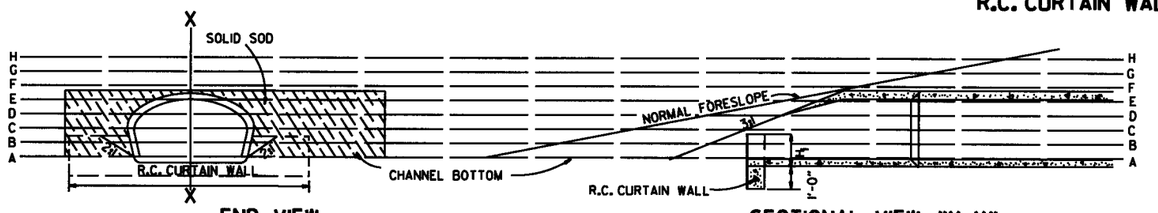
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C. 3:1	4:1	6:1	DOUBLE R.C.P.C. 3:1	4:1	6:1
	SQ. YDS.			SQ. YDS.		
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
11-3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.	
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

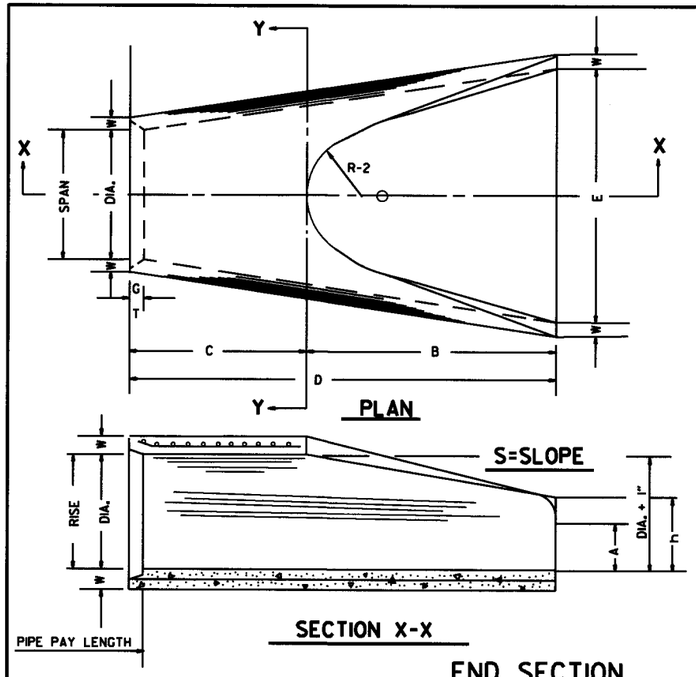


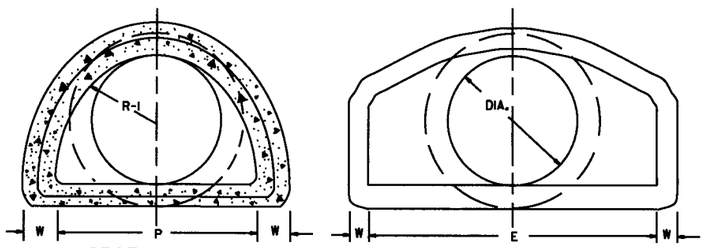
TABLE OF DIMENSIONS

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"	33⅜"	16⅛"	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'-4⅜"
36"	4"	1'-3"	5'-3"	2'-10¼"	8'-1¾"	6'-0"	3#1	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3#1	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3#1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3#1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3#1	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3#1	73"	77⅛"	38⅝"	24"	5"	13250	4'-6"

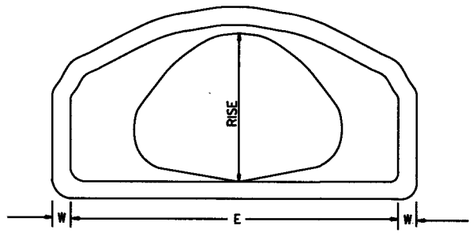
ARCH PIPE

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"	2#2#1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2#2#1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2#2#1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2#2#1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½#2#1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2#2#1
42	51⅛	51	31⅞	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2#2#1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2#2#1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2#4#1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2#4#1

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

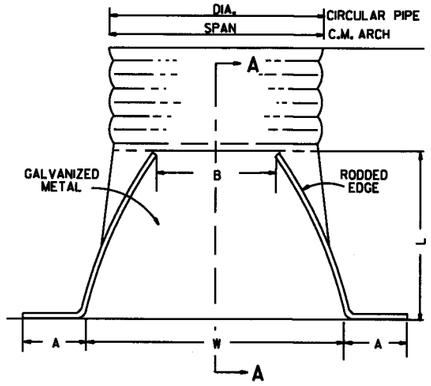


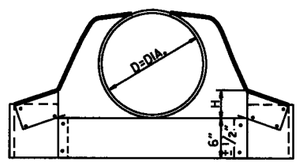
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



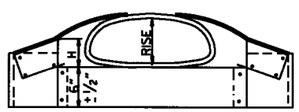
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

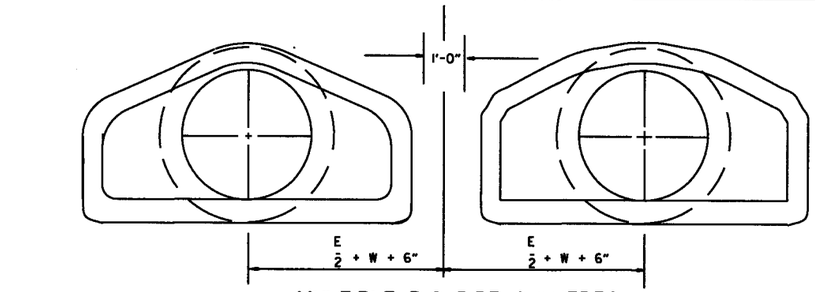
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2#2#1
15	16	7	8	6	26	30	2#2#1
18	16	8	10	6	31	36	2#2#1
21	16	9	12	6	36	42	2#2#1
24	16	10	13	6	41	48	2#2#1
30	14	12	16	8	51	60	2#2#1
36	14	14	19	9	60	72	2#2#1
42	12	16	22	11	69	84	2#2#1
48	12	18	27	12	78	90	2#2#1
54	12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

C.M. ARCH PIPE

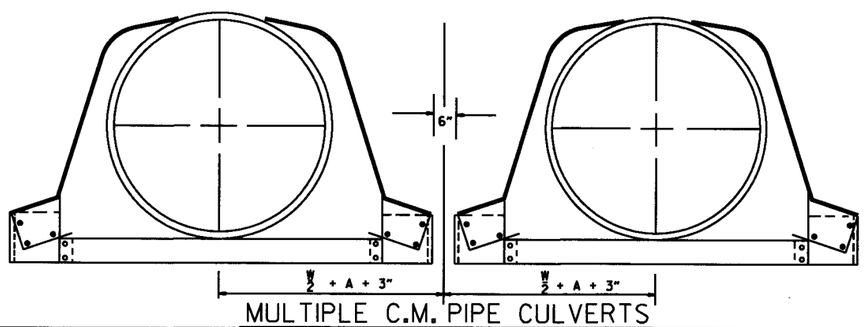
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2#2#1	16
18"	21	15	7	10	6	23	36	2#2#1	16
21"	24	18	8	12	6	28	42	2#2#1	16
24"	28	20	9	14	6	32	48	2#2#1	16
30"	35	24	10	16	6	39	60	2#2#1	14
36"	42	29	12	18	8	46	75	2#2#1	14
42"	49	33	13	21	9	53	85	2#2#1	12
48"	57	38	18	26	12	63	90	2#2#1	12
54"	64	43	18	30	12	70	102	2#4#1	12
60"	71	47	18	33	12	77	114	2#4#1	12

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
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

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31 5/16	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

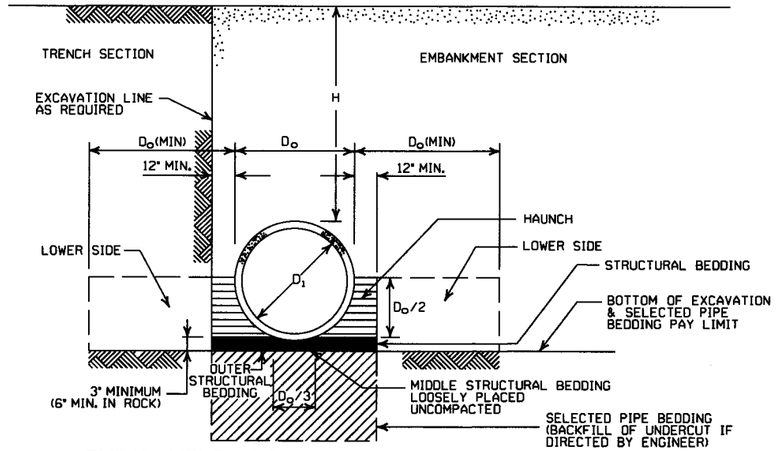
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170. R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

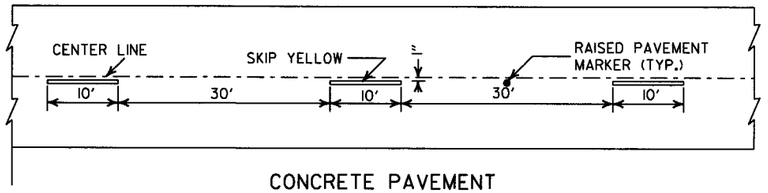
NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

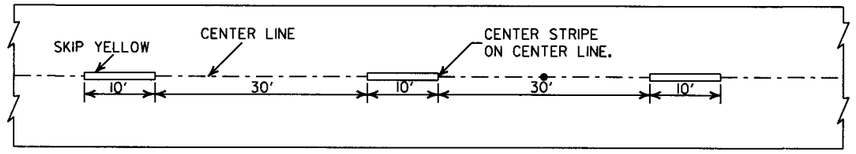
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

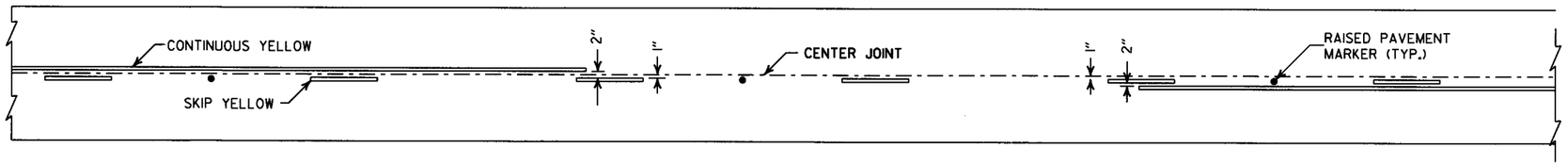


CONCRETE PAVEMENT

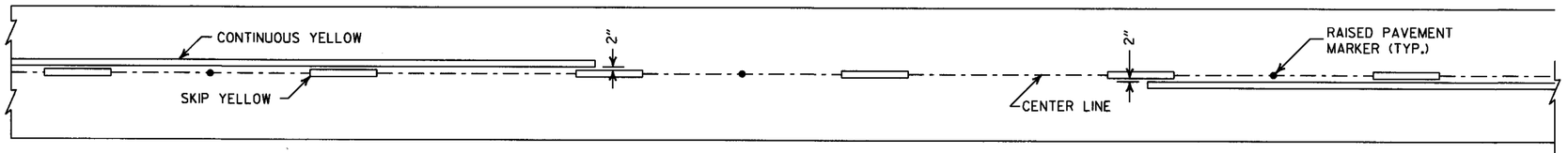


ASPHALT PAVEMENT

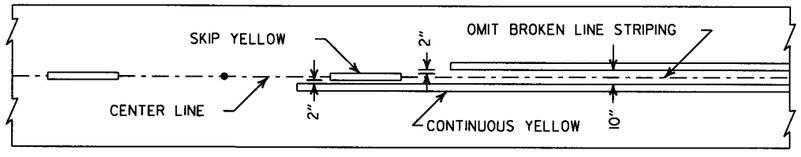
BROKEN LINE STRIPING



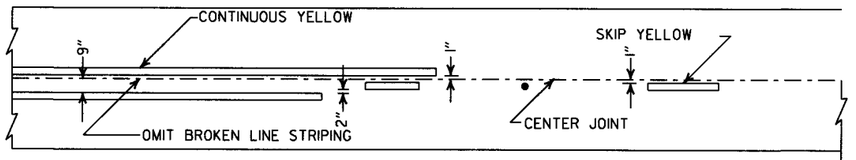
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

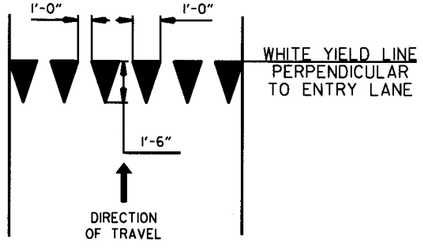


ASPHALT PAVEMENT

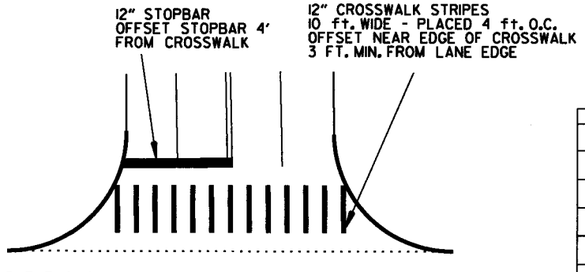


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

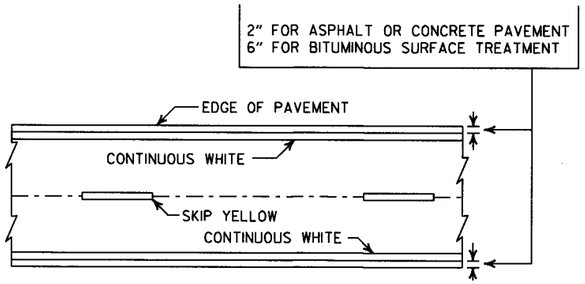


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

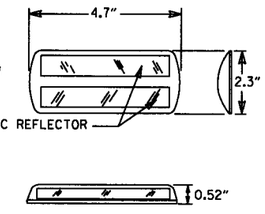
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

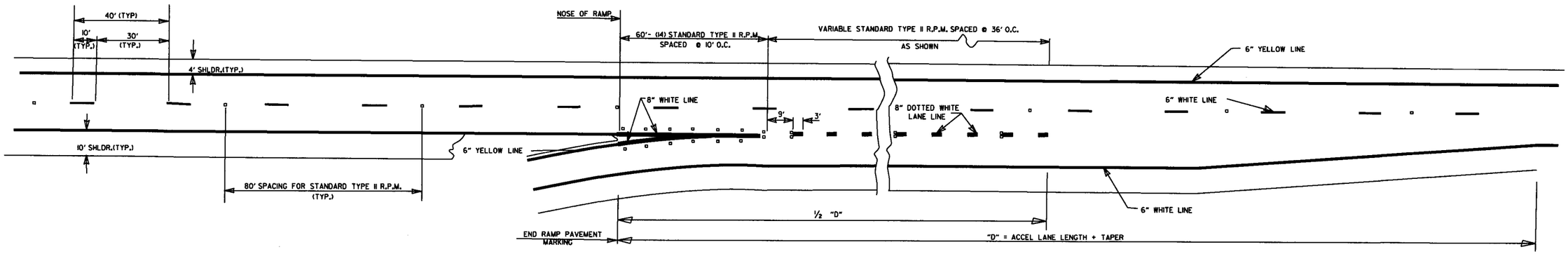
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

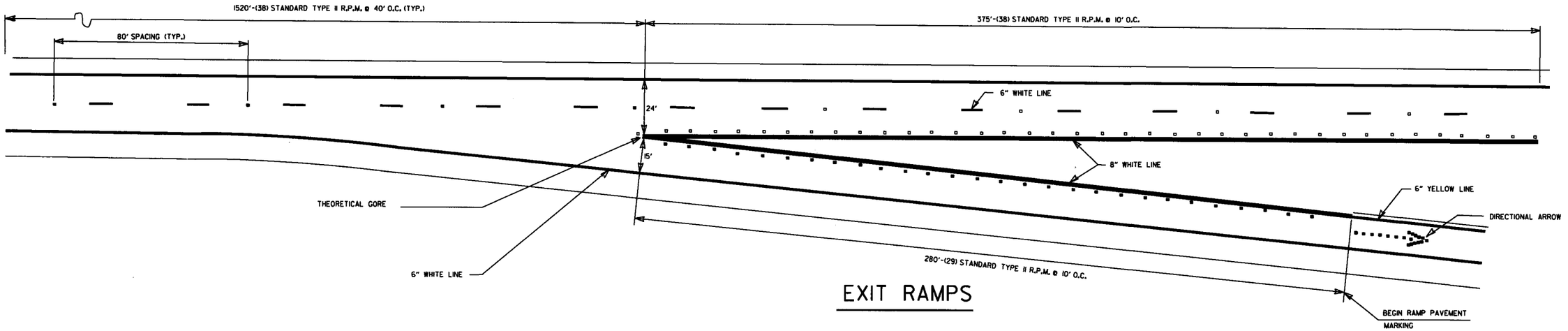
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

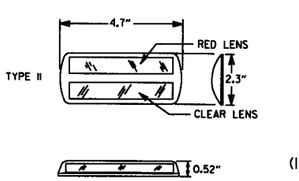
6" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

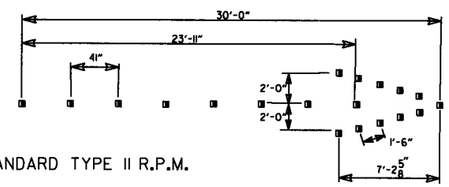


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

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



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

DATE	REVISION	FILMED
12-8-16	REVISED RAISED PAV'T MARKERS FOR 80' SPACING; REVISED WIDTH OF STRIPING	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

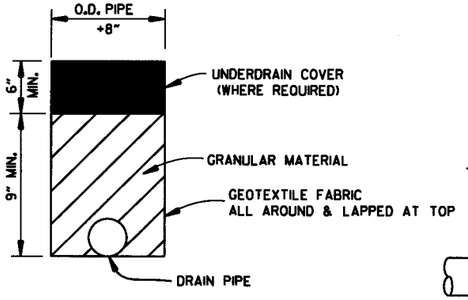
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

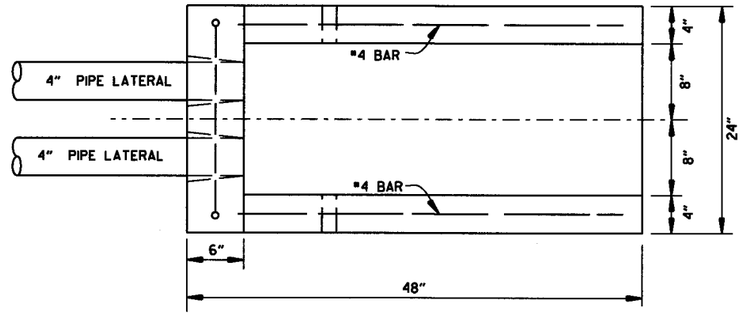
STANDARD DRAWING PM-2

NOTE:

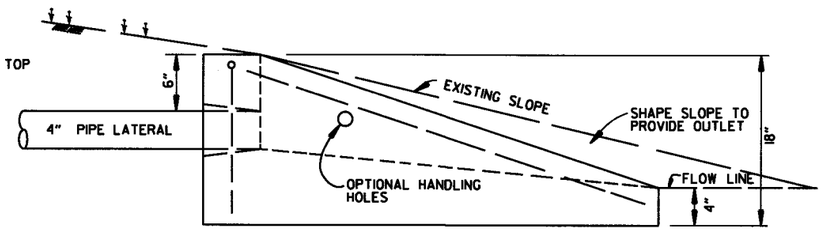
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

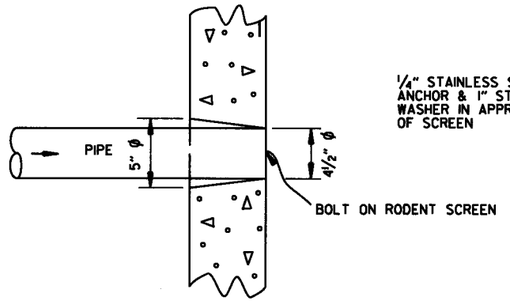




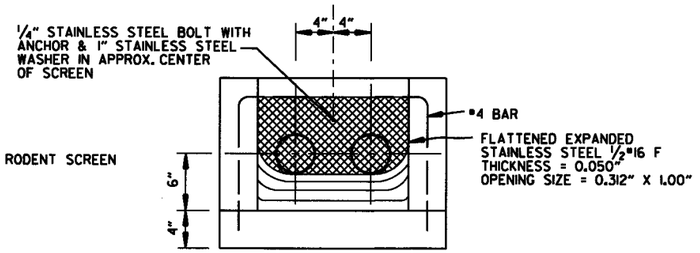
PLAN VIEW



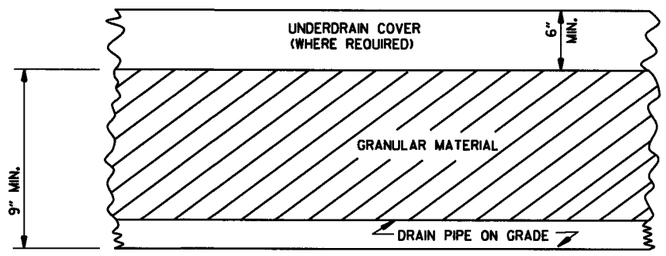
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

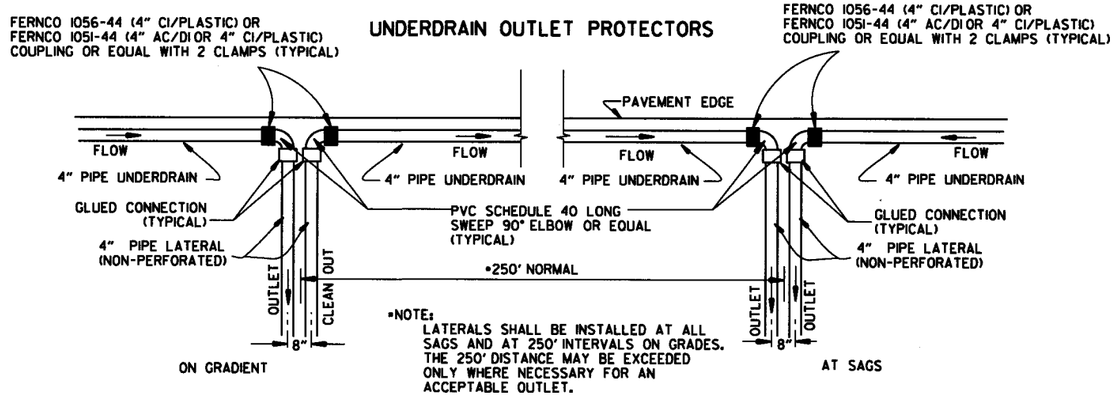
3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.



•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.

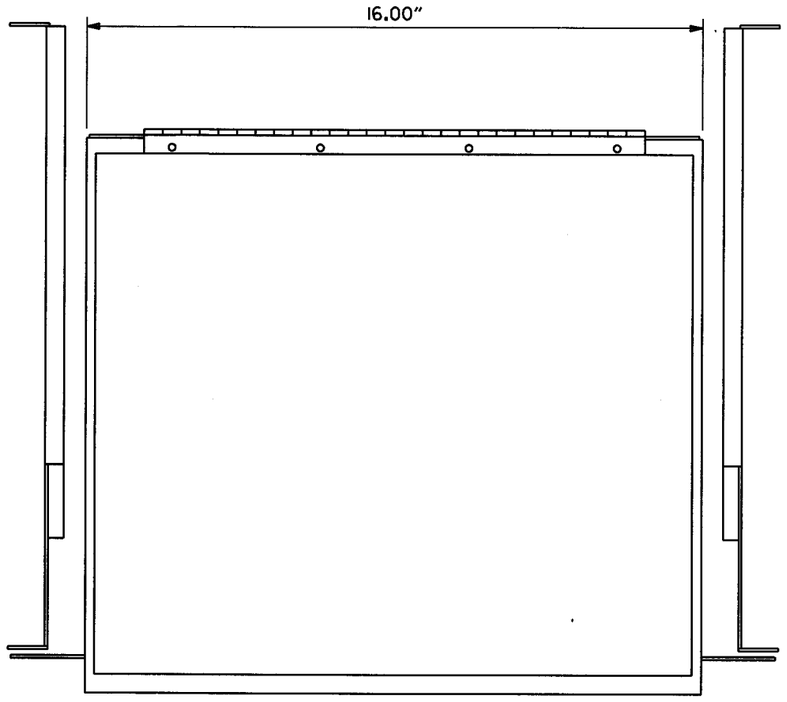
DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & 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

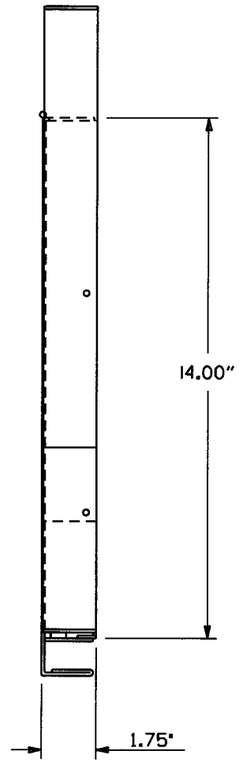
ARKANSAS STATE HIGHWAY COMMISSION

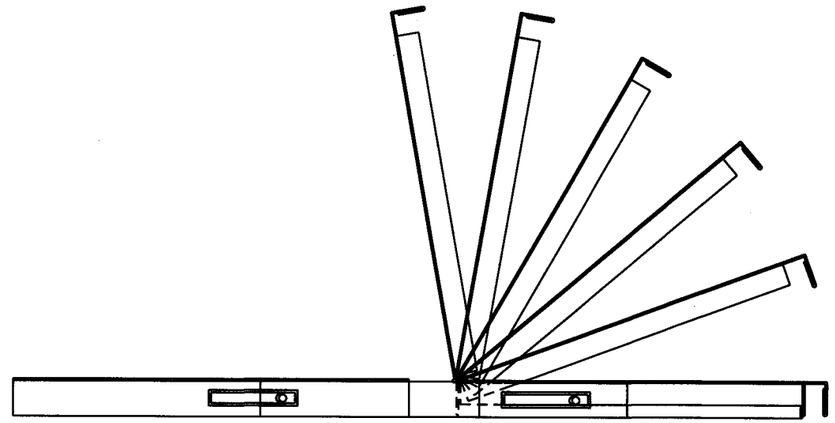
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

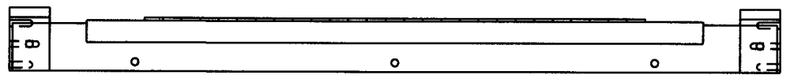
DRAWER PLAN VIEW



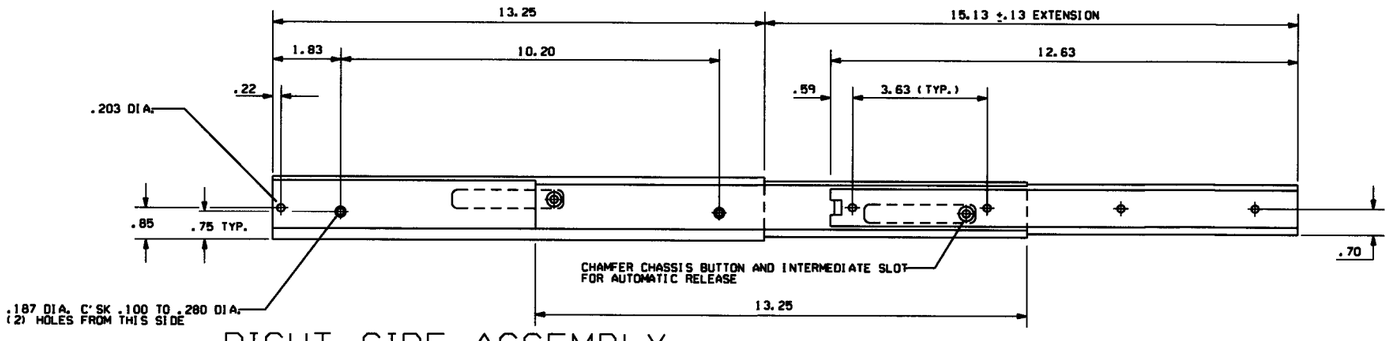




NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



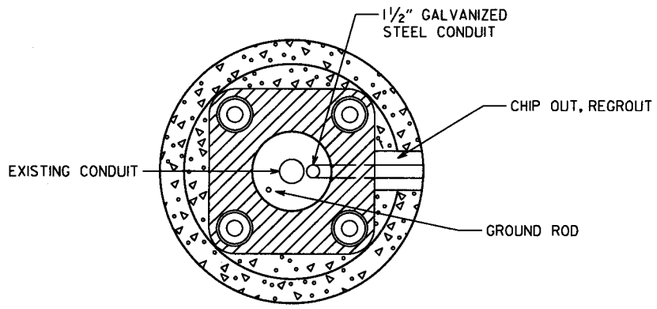
FRONT VIEW



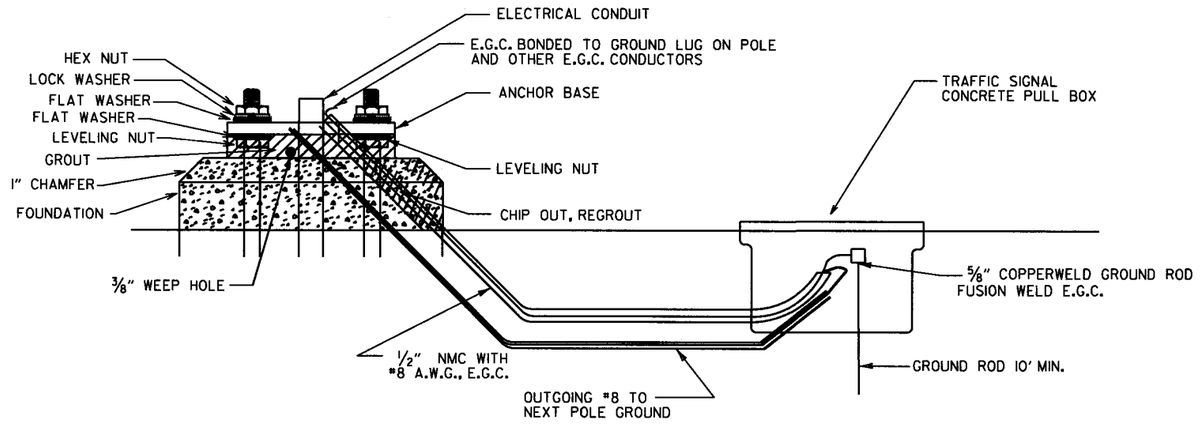
RIGHT SIDE ASSEMBLY

			ARKANSAS STATE HIGHWAY COMMISSION
			CONTROLLER CABINET UTILITY DRAWER
9-12-13	ISSUED AS STANDARD DRAWING		
6-15-05	ISSUED		STANDARD DRAWING SD-5
DATE	REVISION	DATE FILM	

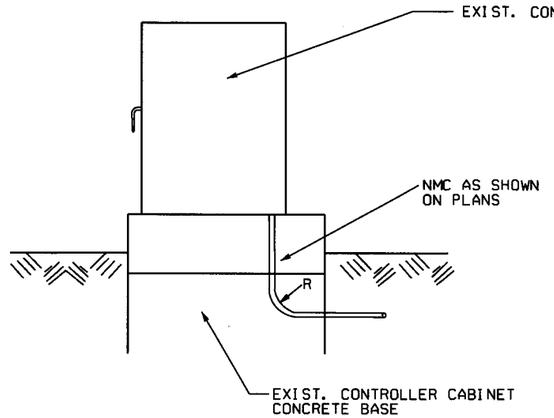
CONDUIT ENTRY TO EXISTING POLE BASE



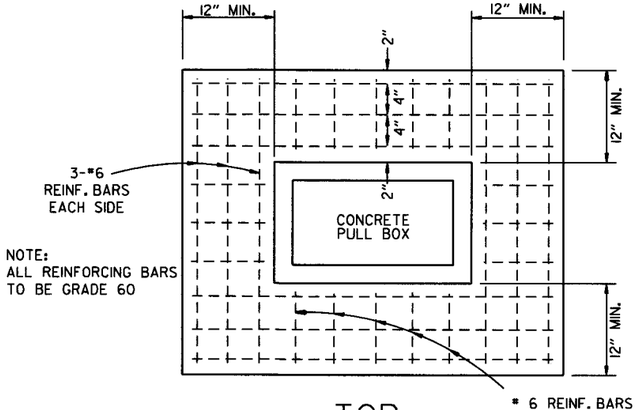
ANCHOR BASE



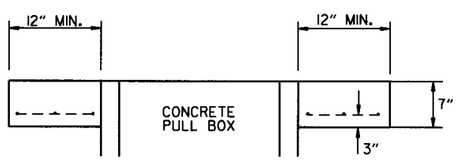
CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



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

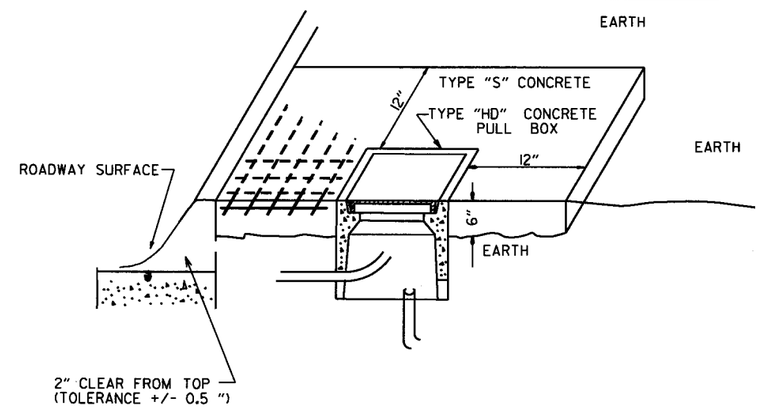


TOP



ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



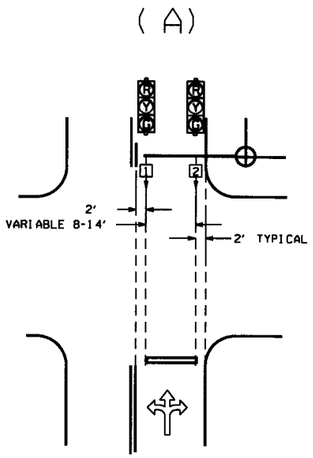
NOTE:
ALL TYPE I AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.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

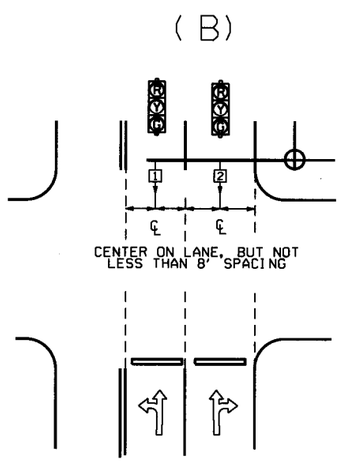
DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-02-15	REVISED PULL BOX DEPTH	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	ADDED & REVISED CONDUIT ENTRY	
06-23-04	REVISED CLEARANCE AT CURB ENTRY	
01-04-02	ADDED REINFORCING TO BOX APRON	
07-02-01	REVISED	
12-27-99	REVISED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

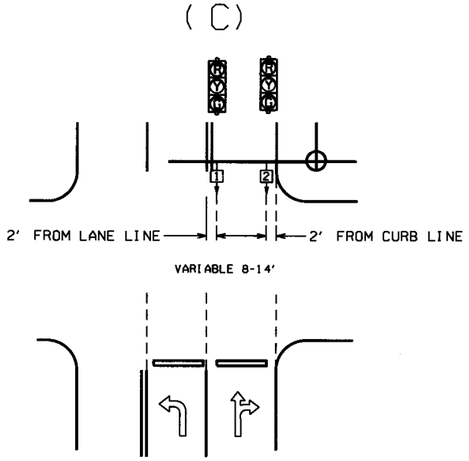
ARKANSAS STATE HIGHWAY COMMISSION

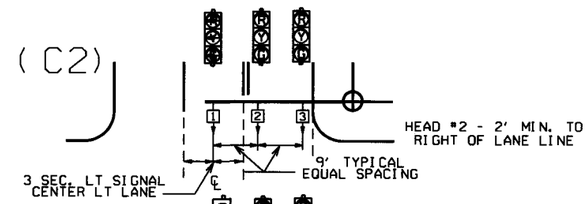
HEAVY DUTY PULL BOX

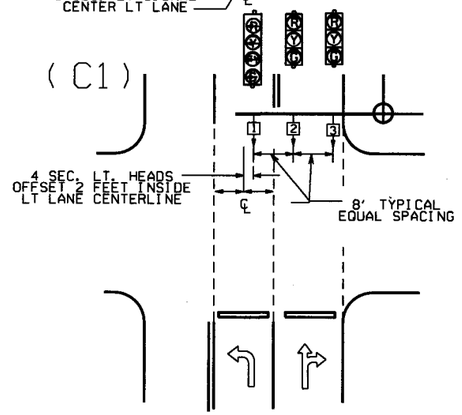
STANDARD DRAWING SD-6

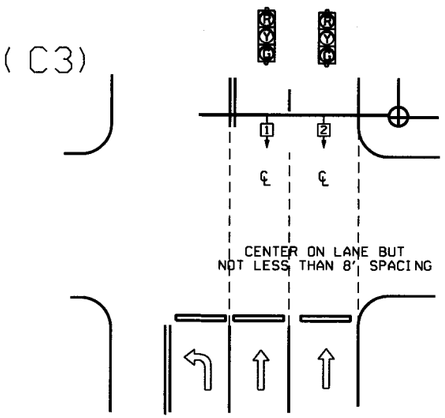


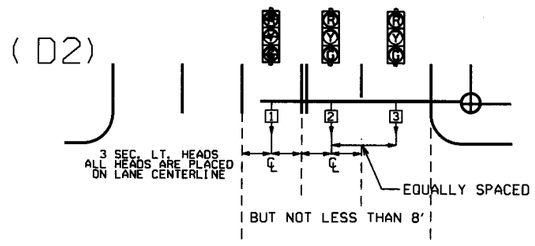


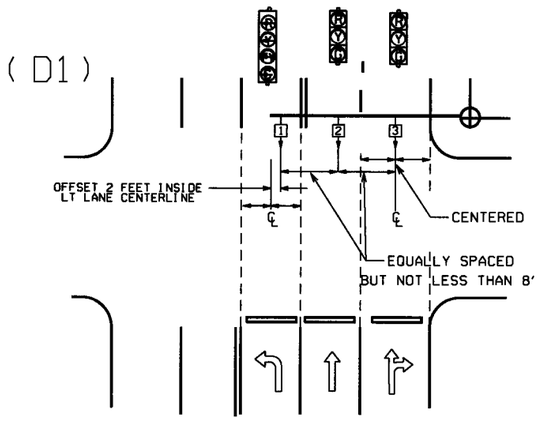




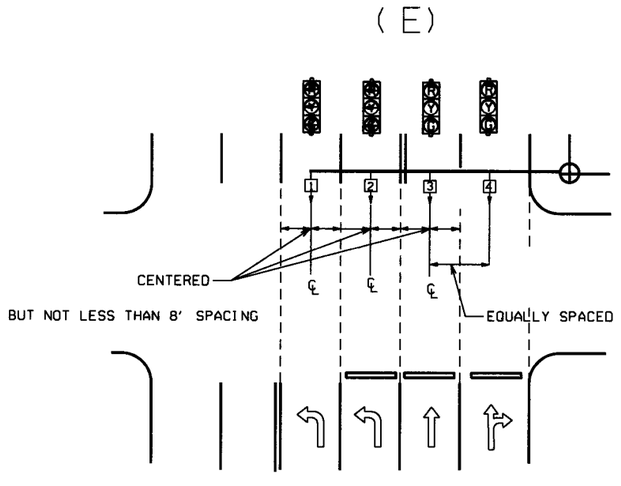








NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

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

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

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

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

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

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

12-8-16	REVISED NOTE 6	
9-12-13	ISSUED AS STANDARD DRAWING	
3-11-10	2009 MUTCD	
12-9-99	ISSUED	
DATE	REVISION	DATE FILM

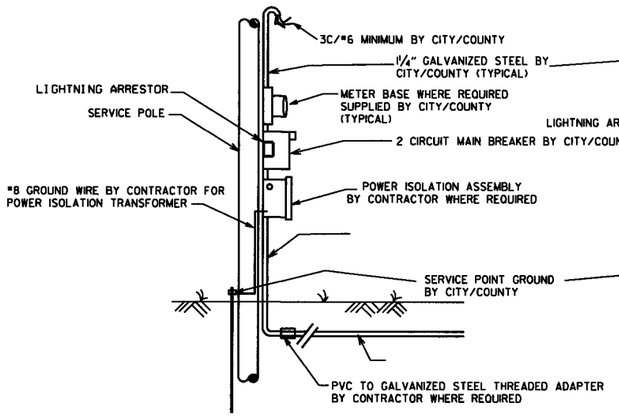
ARKANSAS STATE HIGHWAY COMMISSION

SIGNAL HEAD PLACEMENT

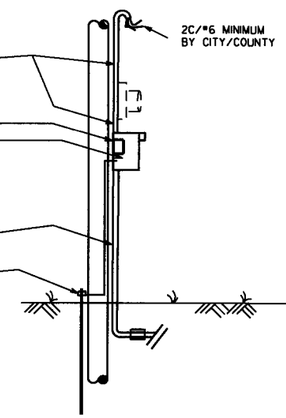
STANDARD DRAWING SD-8

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY



WITHOUT POWER ISOLATION ASSEMBLY



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

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

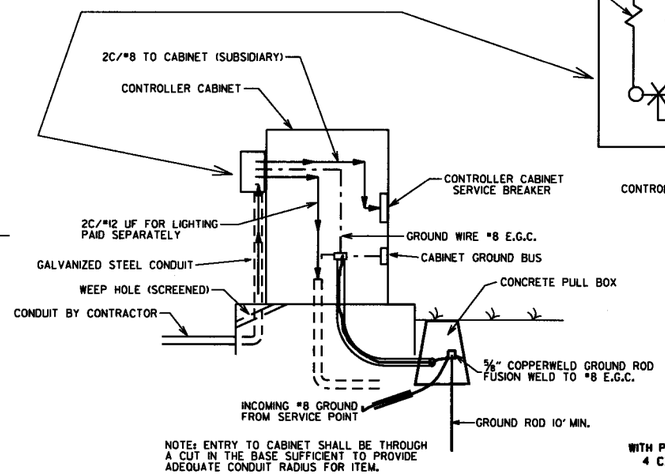
ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, POWER ISOLATION ASSEMBLY WHERE REQUIRED, METER LOOP IF REQUIRED BY LOCAL UTILITY COMPANY, ELECTRICAL CONDUCTORS AND WEATHERHEAD. WHERE STREET LIGHTING IS INCLUDED AS PART OF SIGNAL INSTALLATION STREET LIGHTING CIRCUIT (2C/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT SEPARATE FROM THE CIRCUIT SERVING TRAFFIC SIGNAL. SERVICE WIRE AND WIRING FROM THE CONTROLLER TO MAIN BREAKER IS PROVIDED BY THE CONTRACTOR AS A PART OF THIS CONTRACT. WIRE AND WIRING FROM MAIN BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

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

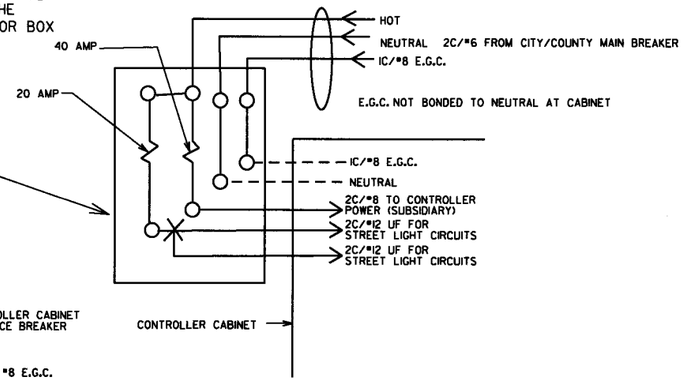
MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



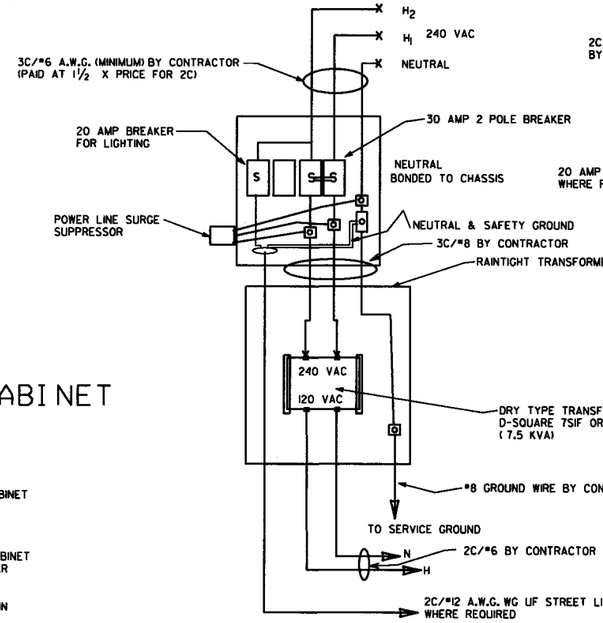
NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



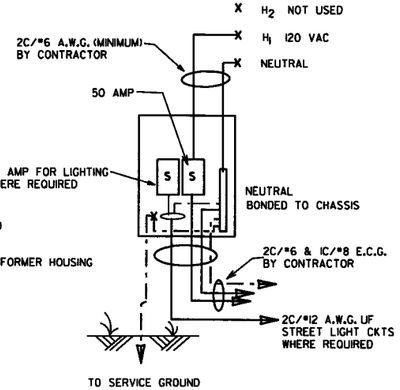
MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

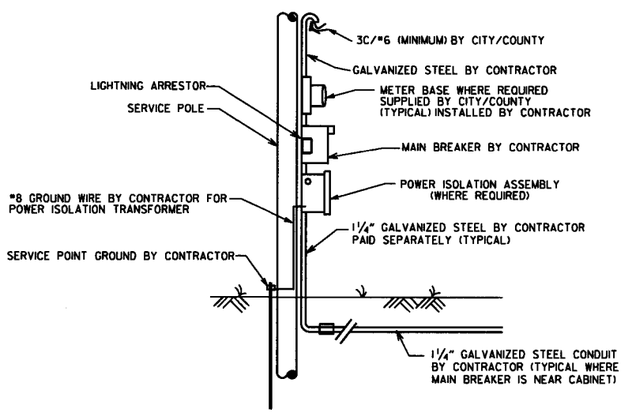


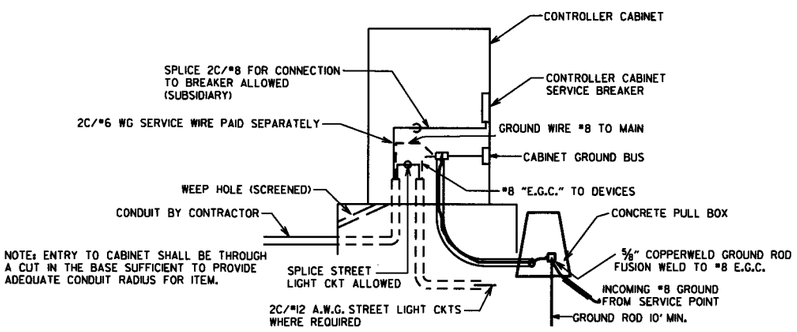
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (E.C.G.) ADDED 3-3-2003, CONSISTING OF A IC/#8 A.W.G. CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED





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

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

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

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

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

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

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

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

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

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

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

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

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

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

BASE WIND SPEED: 90 MPH.

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

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

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

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

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

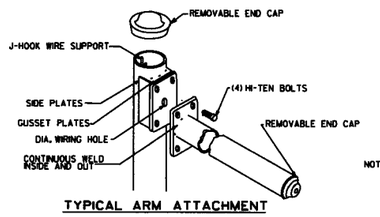
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

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

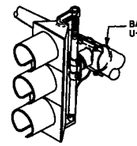
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

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

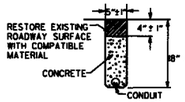
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



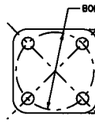
TYPICAL ARM ATTACHMENT



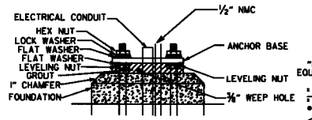
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



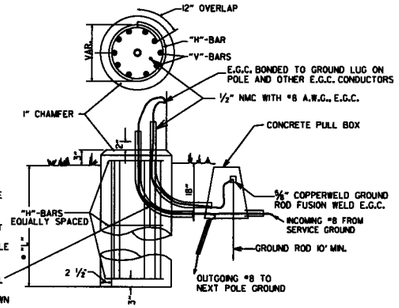
TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



ANCHOR BASE



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

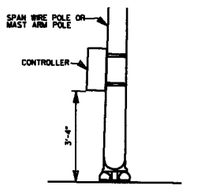


THE GROUND ROD SHALL BE FUSION WELDED TO A #C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE GROUND ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

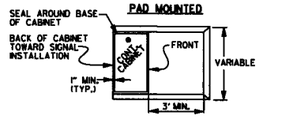
TYPICAL FOUNDATION DETAILS

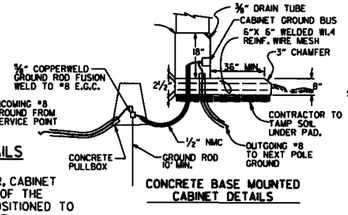
POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL VERTICAL	STEEL HORIZONTAL	STEEL O.C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' TO 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
OVER 12' TO 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
OVER 20' TO 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
OVER 35' TO 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
OVER 50' TO 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
TWINS TO 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
TWINS OVER 20' TO 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
TWINS OVER 44' TO 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
TWINS OVER 50' TO 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED





CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

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

8. GROUND ROD - A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A ¼" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

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

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

* 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.

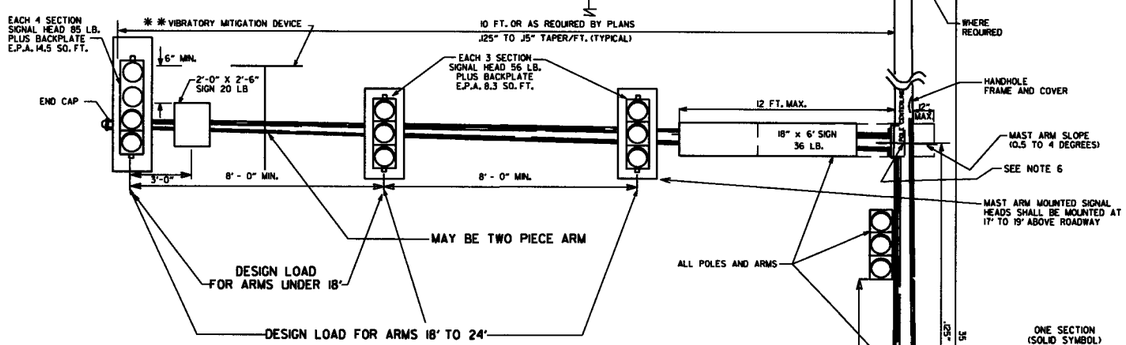
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

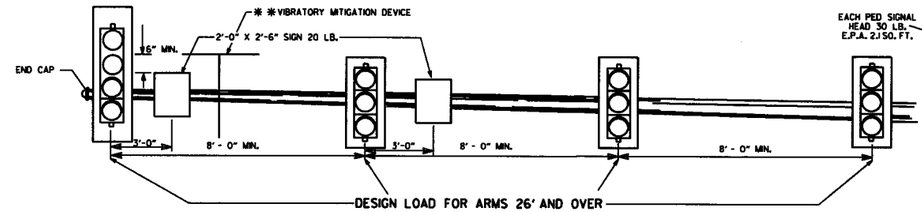
SIGNAL OPERATION NOTES:

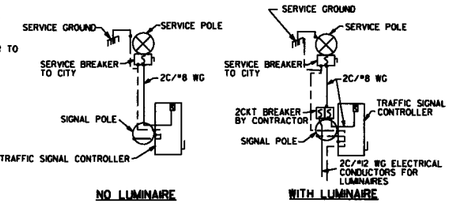
FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

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.

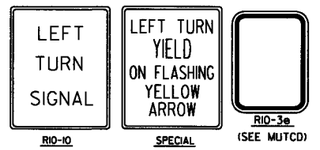


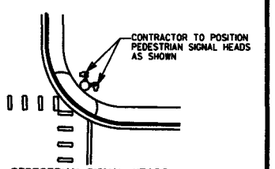




SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES





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	
05-23-04	REVISED	
05-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
06-11-01	REV. NOTES & POLE MAST ARM SLOPE	
04-11-01	REVISED POLE TAPERS	
04-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.022			0.023			0.025			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.033	250	350	0.037	275	350
1° 15'	N.C.			R.C.			0.026			0.032			0.037	250	350	0.041			0.046		
1° 30'	N.C.			0.021			0.031	200		0.037	225	350	0.043			0.048			0.054		
1° 45'	N.C.			0.025	175		0.036			0.043			0.049			0.055			0.062		
2° 00'	R.C.			0.028			0.040		300	0.048			0.055			0.062			0.070		
2° 15'	R.C.			0.031			0.045			0.053			0.061			0.069	285		0.078	300	
2° 30'	0.021			0.034			0.049			0.058			0.067	260		0.075	300	400	0.085	315	400
2° 45'	0.023			0.037		250	0.053			0.063			0.072			0.081	300		0.091	335	
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.087	315		0.096	350	
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.093	325	400	0.103	360	450
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.095	340		0.106	370	
3° 45'	0.031		250	0.049			0.069	215		0.080	265		0.090	295	400	0.097	345		0.108	380	
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305		0.099	350		0.110	385	
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315							
5° 00'	0.040			0.061			0.083	250		0.091	295		0.098	320							
5° 30'	0.043			0.066	185		0.088	260		0.094	300	400									
6° 00'	0.046			0.070	190		0.092	270		0.098	305										
6° 30'	0.050			0.074	200		0.095	280	350	0.100	315										
7° 00'	0.053			0.078	210		0.098	285													
7° 30'	0.056			0.081	215		0.099	290													
8° 00'	0.058			0.084	220		0.100	290													
8° 30'	0.061			0.087	225	300															
9° 00'	0.063			0.089	230																
10° 00'	0.068	160		0.094	235																
11° 00'	0.072	170		0.097	250																
12° 00'	0.076	175		0.099	250																
13° 00'	0.080	180		0.100	250																
14° 00'	0.083	190																			
15° 00'	0.086	195																			
16° 00'	0.089	200																			
17° 00'	0.091	200																			
18° 00'	0.093	205																			
19° 00'	0.095	210																			
20° 00'	0.097	215	300																		
21° 00'	0.098	215																			
22° 00'	0.099	215																			
23° 00'	0.099	215																			
24° 00'	0.100	220																			

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 4° 15' | D MAX = 3° 30'

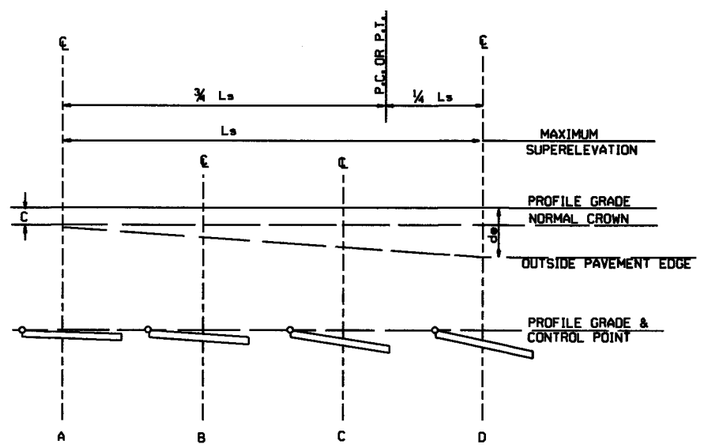
GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%

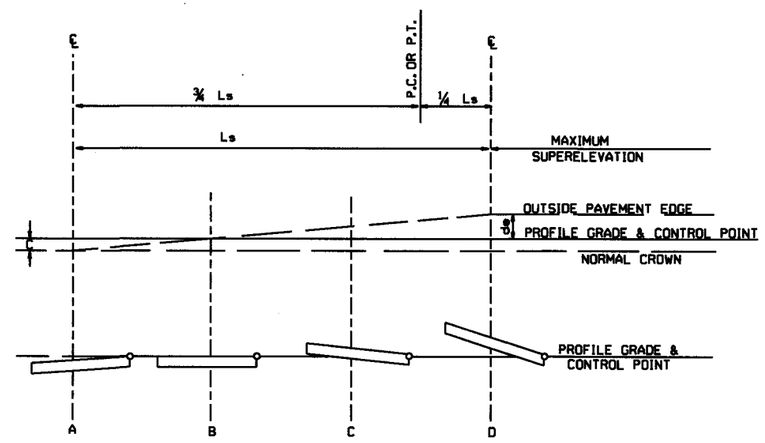
ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
S - SUPERELEVATION
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT
e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
C - NORMAL CROWN (FT.)



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

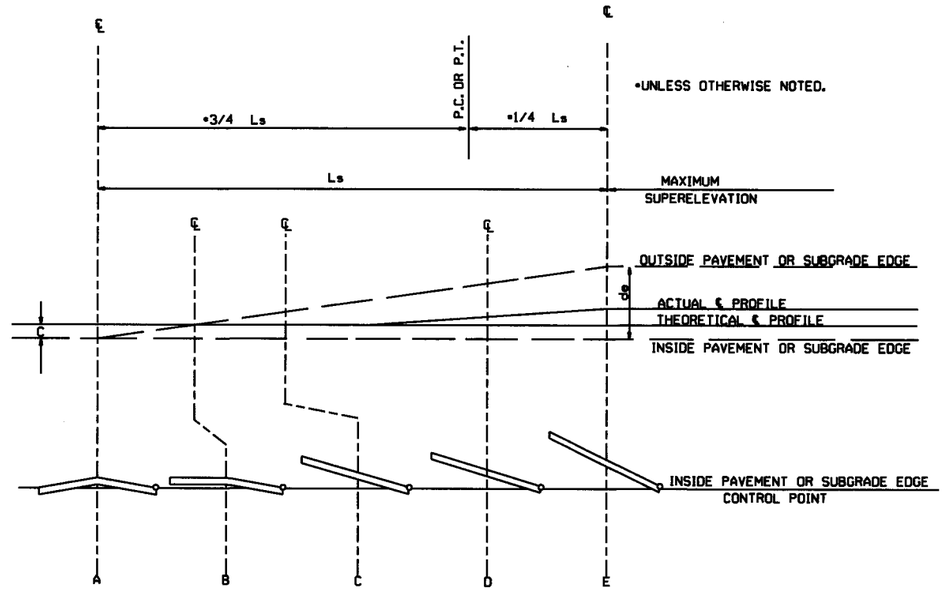
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.032		
1° 15'	N.C.			R.C.			0.026			0.029			0.037			0.037	275	300
1° 30'	N.C.			0.021			0.031	200		0.037	225	300	0.043	250	300	0.046		
1° 45'	N.C.			0.025	175		0.036			0.043			0.049			0.054		
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.062		
2° 15'	R.C.			0.031			0.045		250	0.053			0.061			0.070		
2° 30'	0.021			0.034			0.049			0.058			0.067			0.078	300	
2° 45'	0.023			0.037		200	0.053			0.063			0.072			0.085	315	350
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.091	335	
3° 15'	0.027	150		0.043			0.061			0.072	245		0.082	275		0.096	350	
3° 30'	0.029		200	0.046			0.065	205		0.076	255		0.086	285		0.098	360	400
3° 45'	0.031			0.049			0.069	215		0.080	265		0.090	295		0.100	360	
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305	350	D MAX = 3° 30'		
4° 30'	0.037			0.056			0.078	240		0.087	280		0.095	315				
5° 00'	0.040			0.061			0.083	250		0.091	295	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300		D MAX = 5° 15'					
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285		D MAX = 6° 30'								
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220		0.100	290										
8° 30'	0.061			0.087	225		D MAX = 8° 15'											
9° 00'	0.063			0.089	230	250												
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190		D MAX = 13° 15'														
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

D MAX = 24° 45'

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

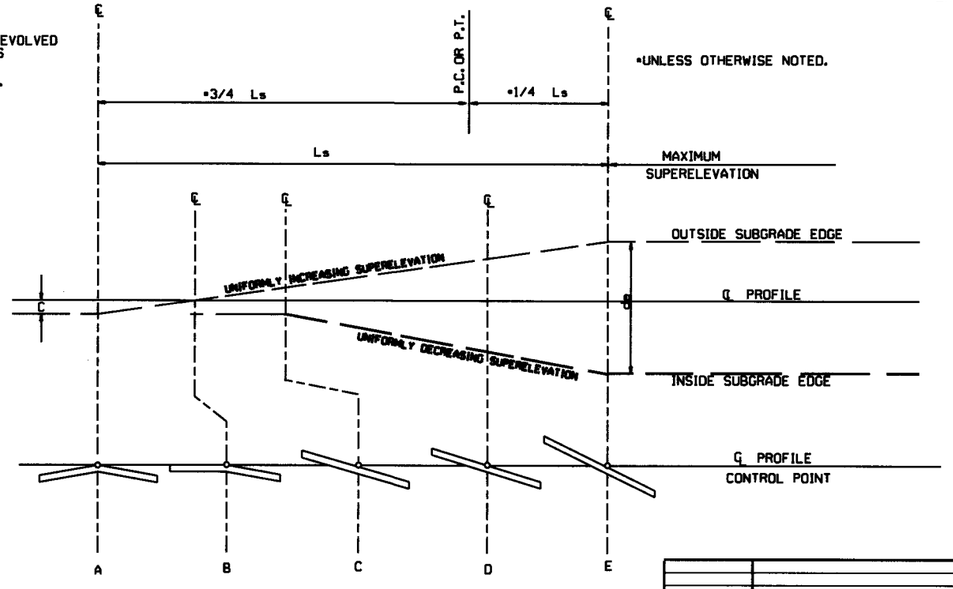
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

$$\text{SUPERELEVATION FORMULA} = \frac{Lde}{Ls}$$

DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1

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"

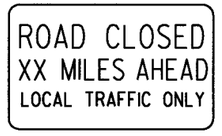
R5-1

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

R11-2

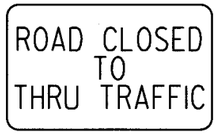
48"X30"

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"

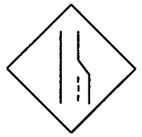
W3-1

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"

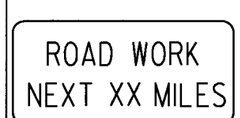
W8-11

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

W8-9

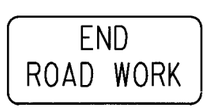
STD. 36"X36"
FWY. 48"X48"

G20-1



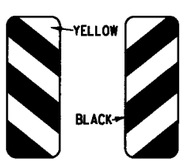
60"X24"

G20-2



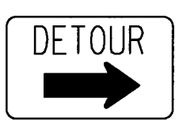
48"X24"

OM-3L OM-3R



12"X36"

M4-9

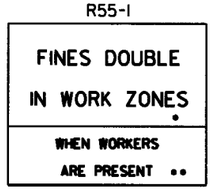


STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

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.

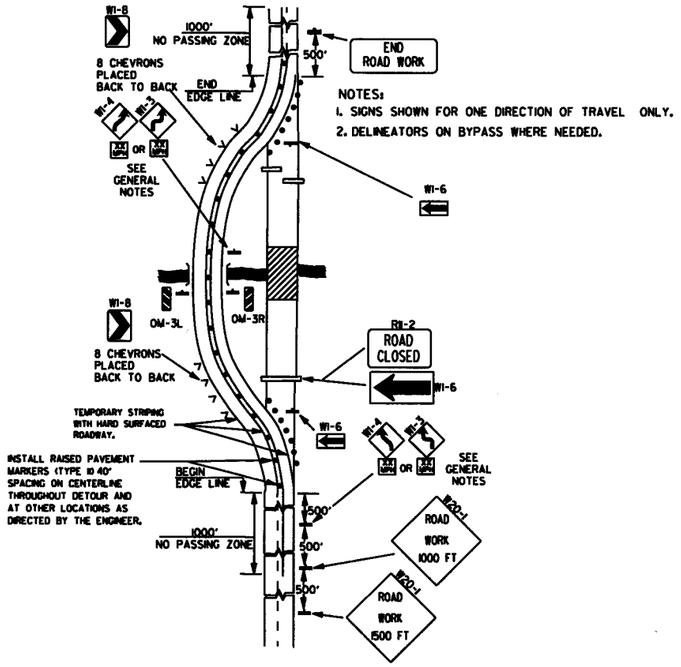
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
8-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
8-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
8-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
1-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

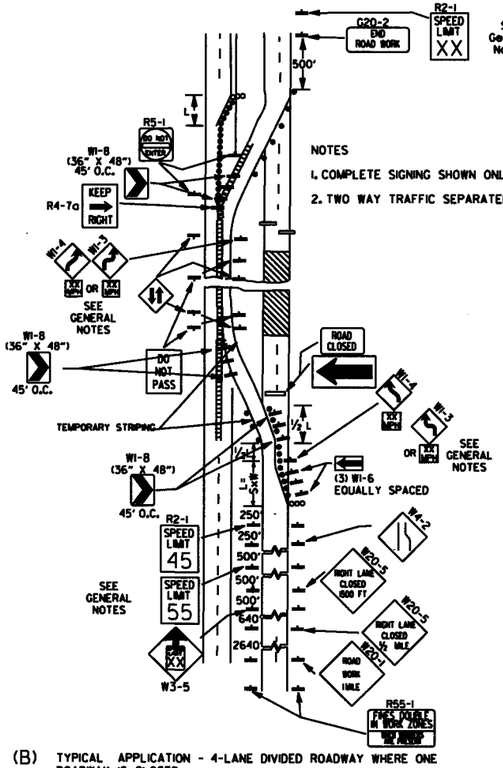
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



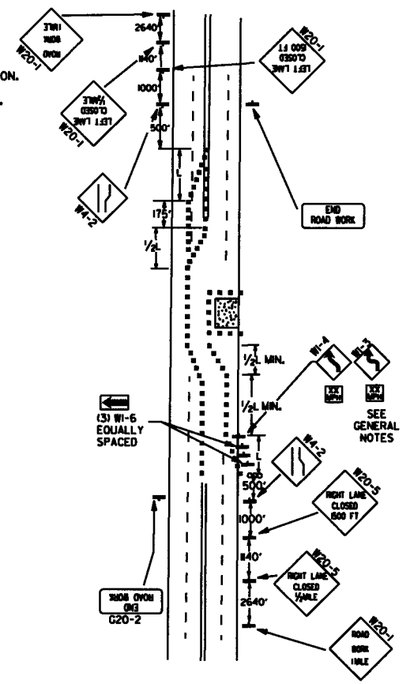
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

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

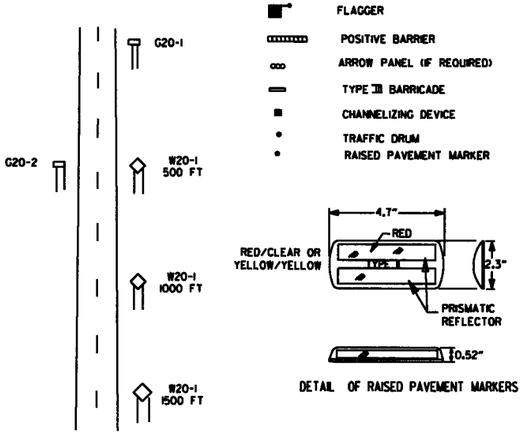


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

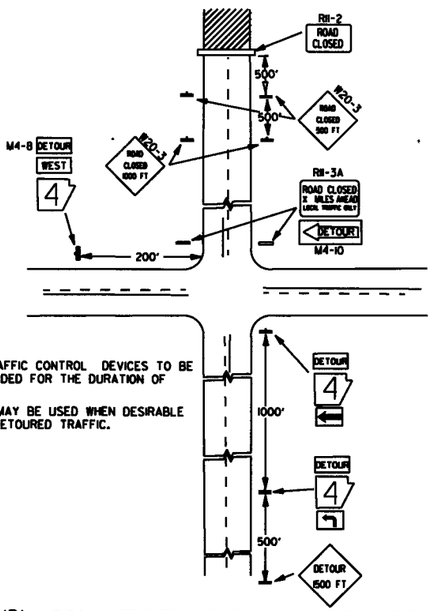
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

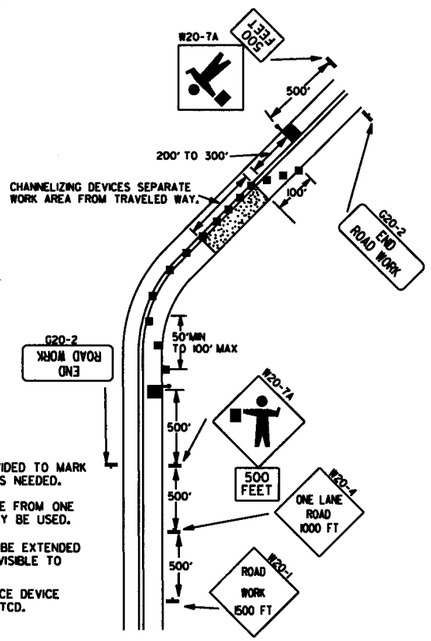
GENERAL NOTES:

1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) 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-K45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



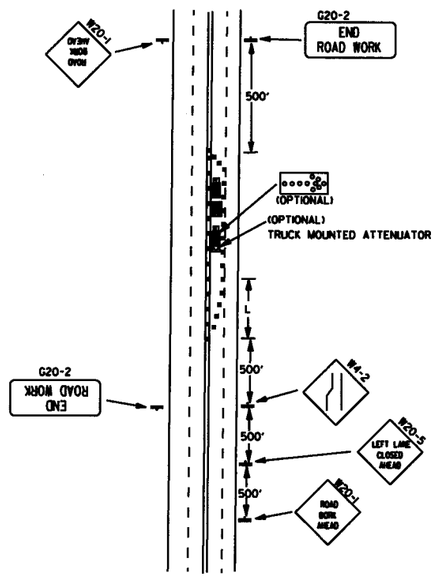
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



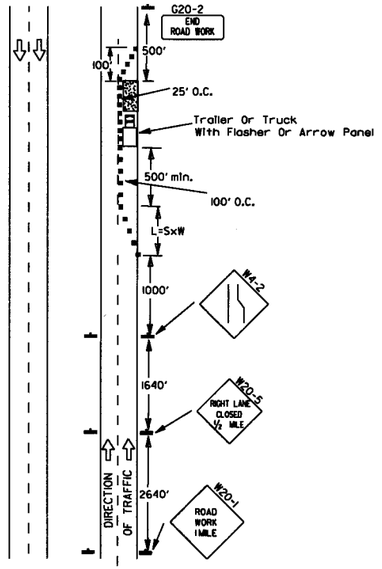
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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

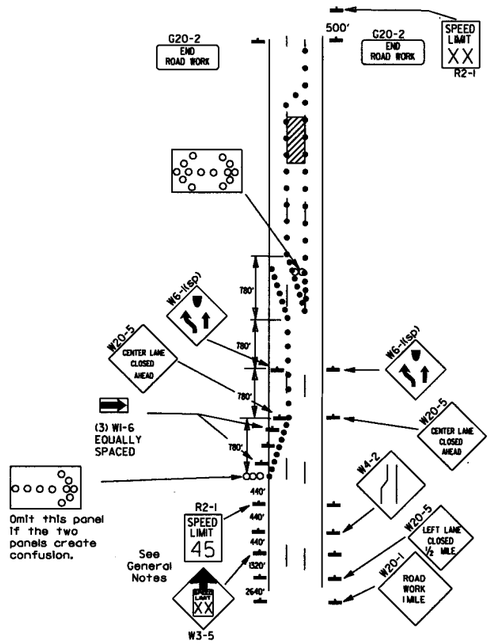
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

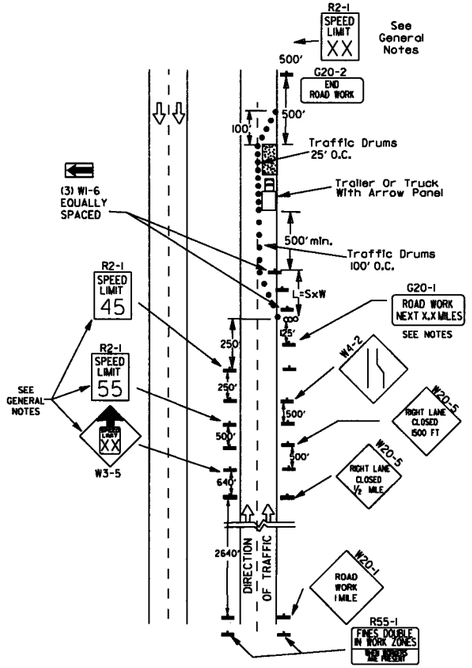
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operatipns of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

ooo Arrow Panel (if Required)

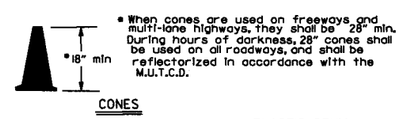
■ Channelizing Device

● 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 R2-145mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



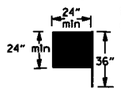
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

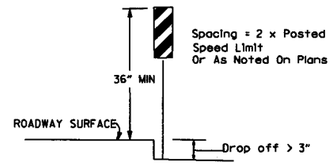
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

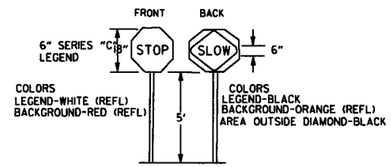


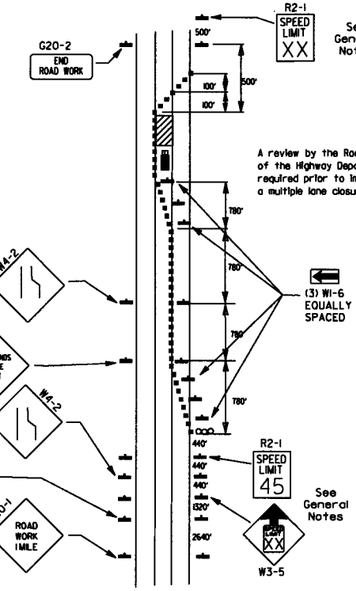
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



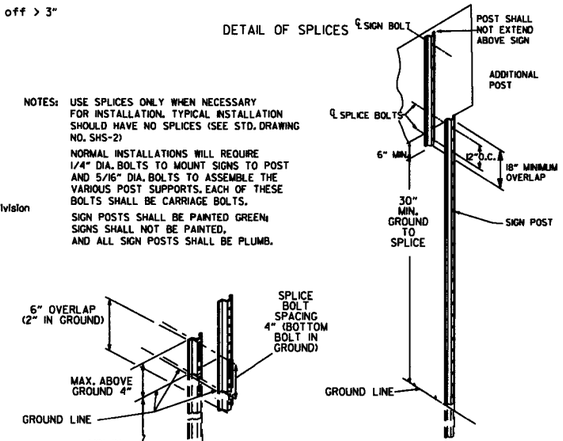
STOP SLOW PADDLE





(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES



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

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
8-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

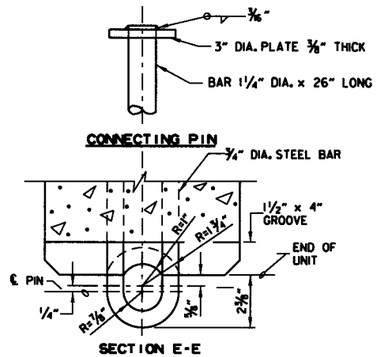
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

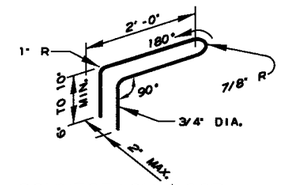
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

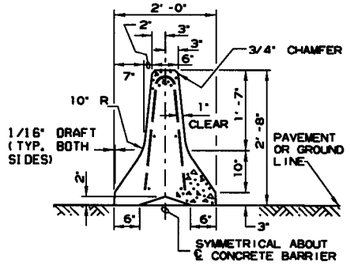
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-3", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 1" MIN. CLEAR TO BAR, 1'-6", 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 19 1/2", 2'-1 3/8", 4 3/8"



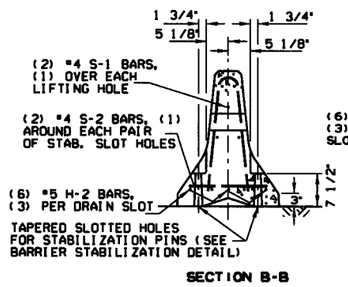
CONNECTION DETAILS



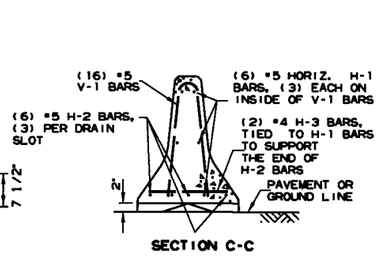
CONNECTION LOOP



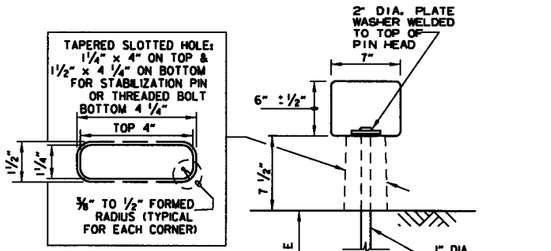
SECTION A-A



SECTION B-B



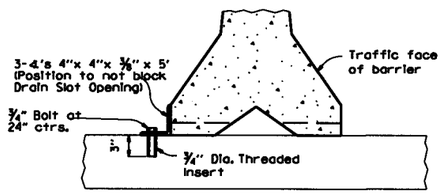
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

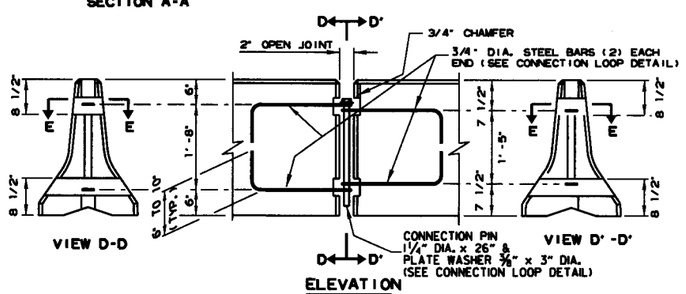
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas

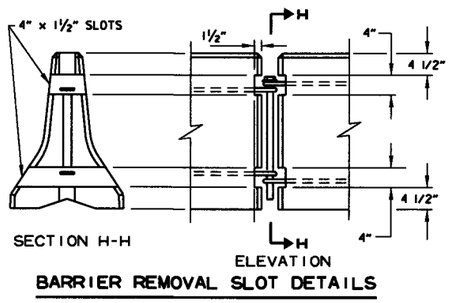


NOTE: 3/4" Threaded inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

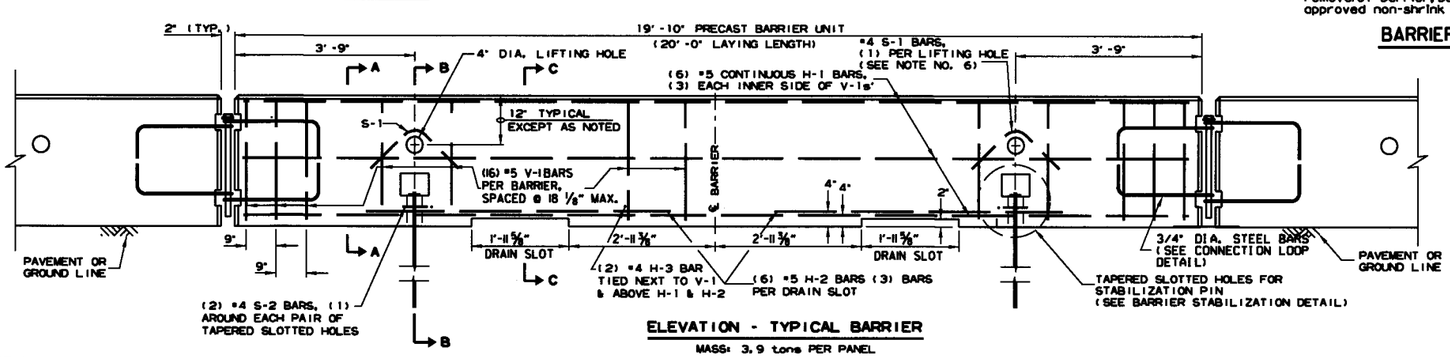
BARRIER STABILIZATION DETAIL

BRIDGE DECKS





BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

2. Materials shall meet the following minimum requirements:
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

   In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
   Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
   Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

3. Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

4. Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

5. Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

6. A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

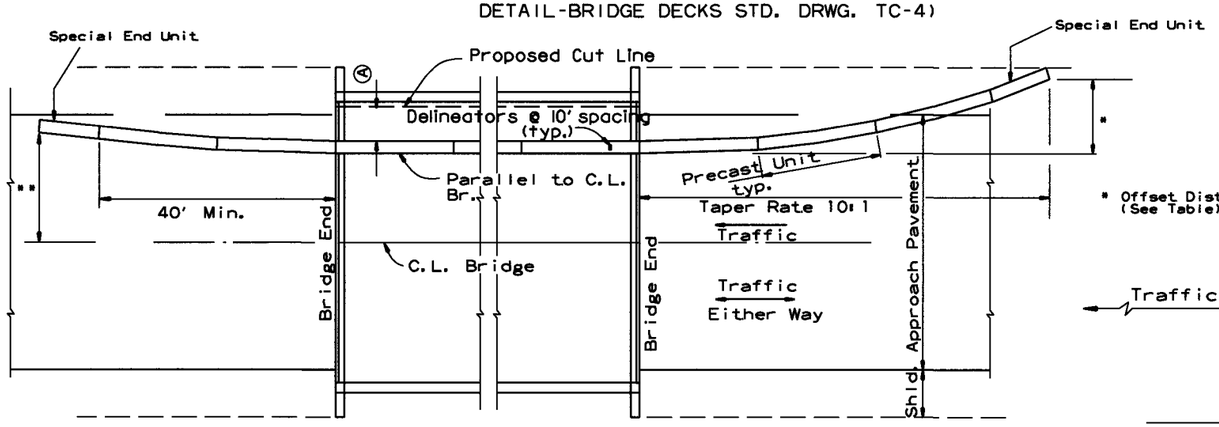
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
8-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)

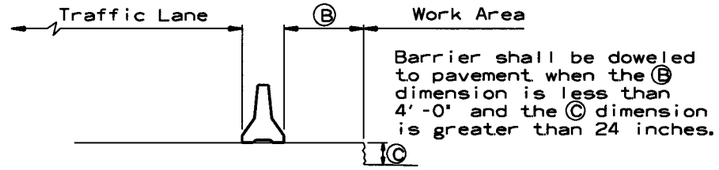


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

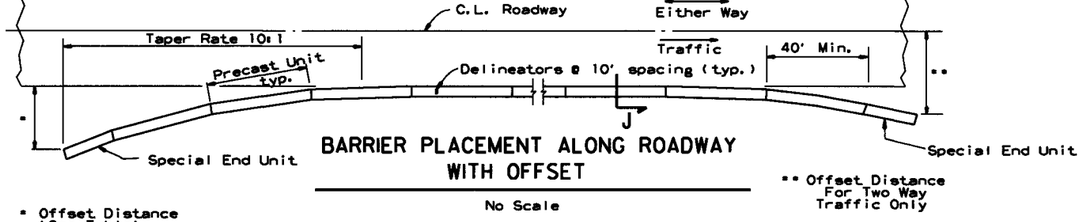
* Offset Distance (See Table)



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

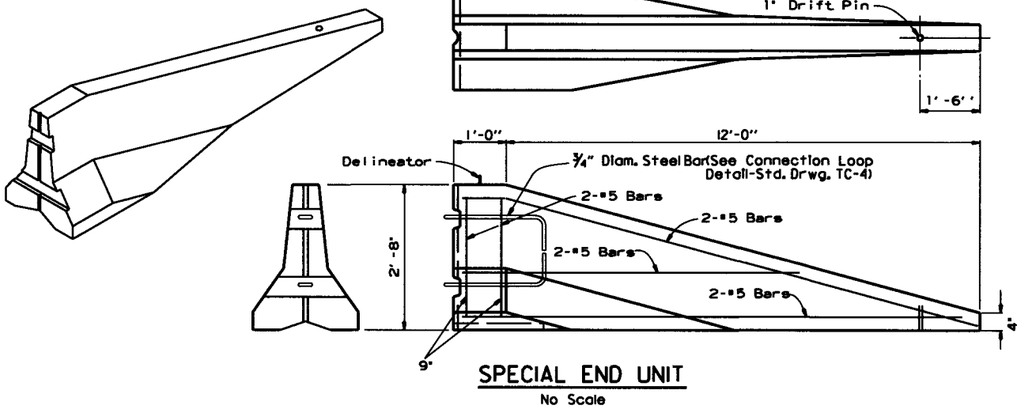
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

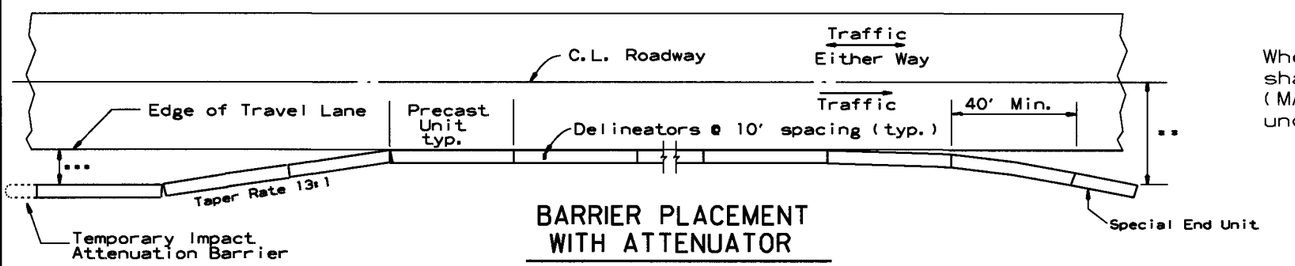
Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.



SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

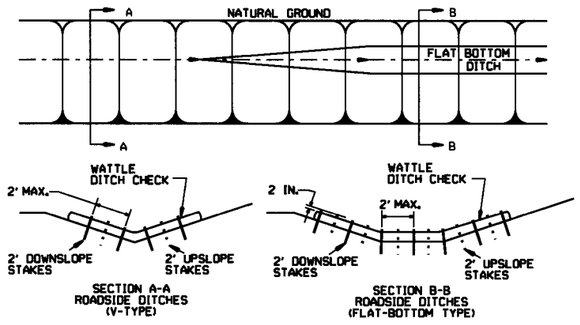
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

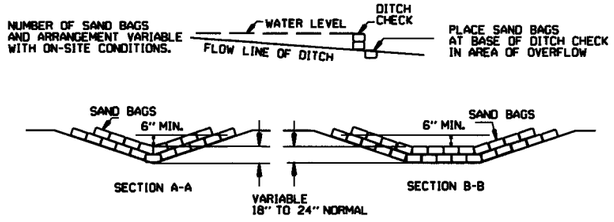
STANDARD DRAWING TC-5

GENERAL NOTES

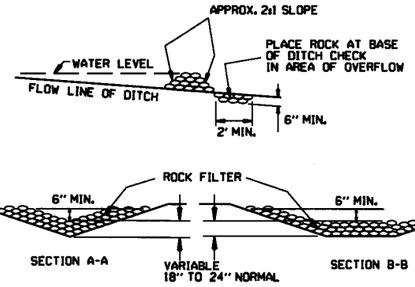
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

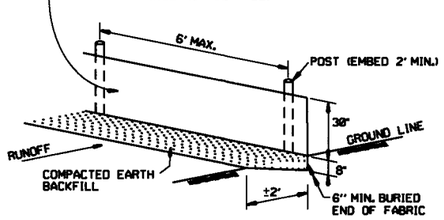


ROCK DITCH CHECK (E-6)

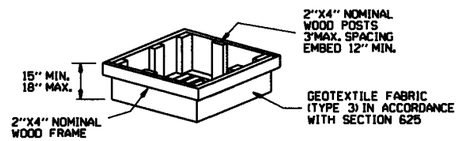
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

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

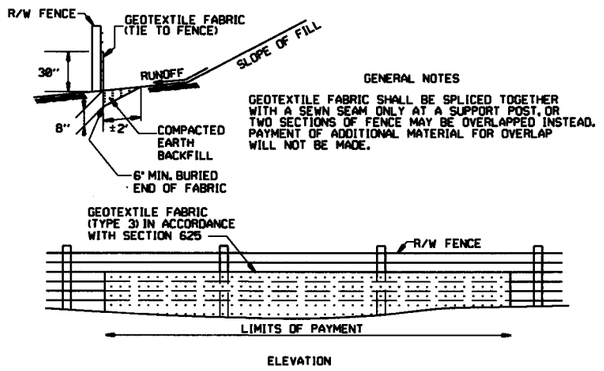


SILT FENCE (E-11)



SECTION C-C

DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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

ELEVATION

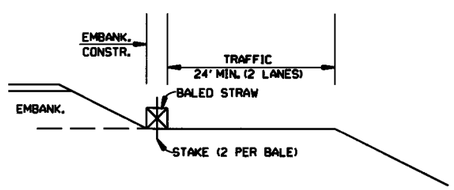
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

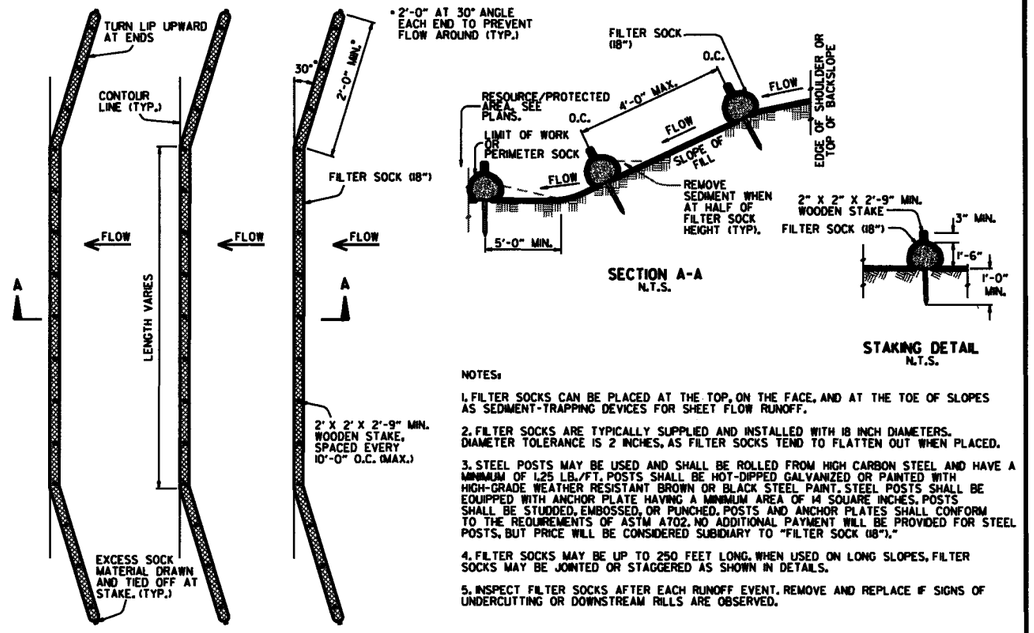
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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



BALED STRAW FILTER BARRIER (E-2)



NOTES:

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

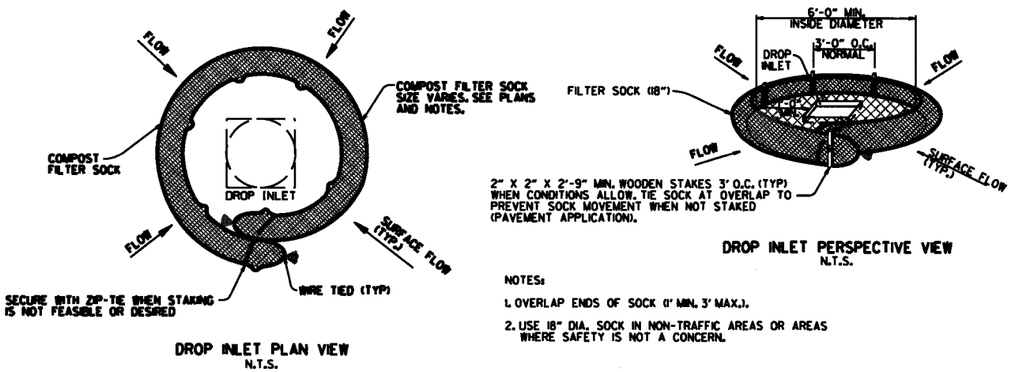
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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

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

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

FILTER SOCK ALONG SLOPE (E-3)



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	
8-18-98	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. 15" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 14, 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

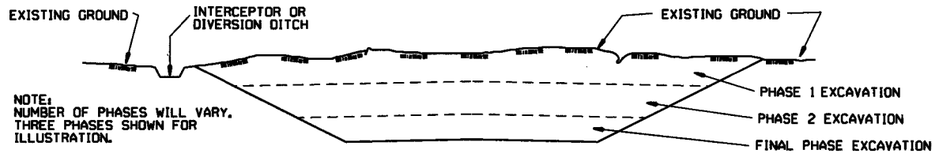
STANDARD DRAWING TEC-1

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



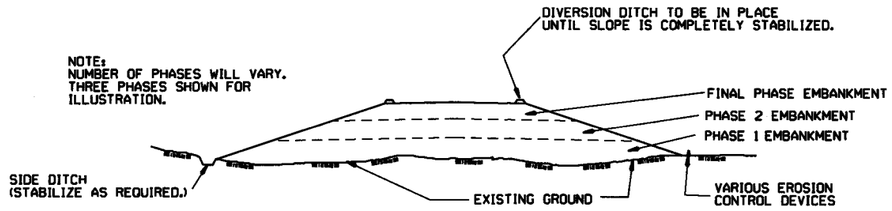
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

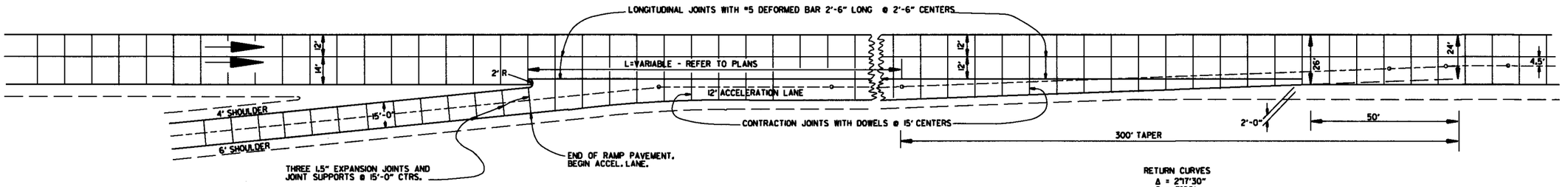
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

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

ARKANSAS STATE HIGHWAY COMMISSION

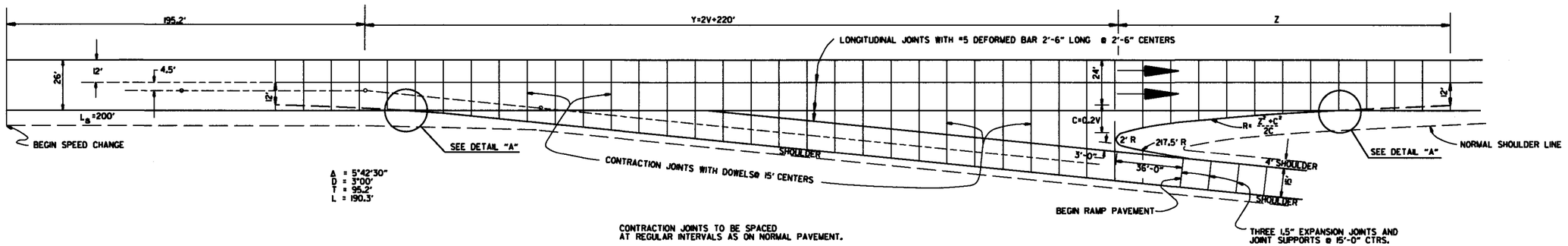
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



ENTRANCE RAMP

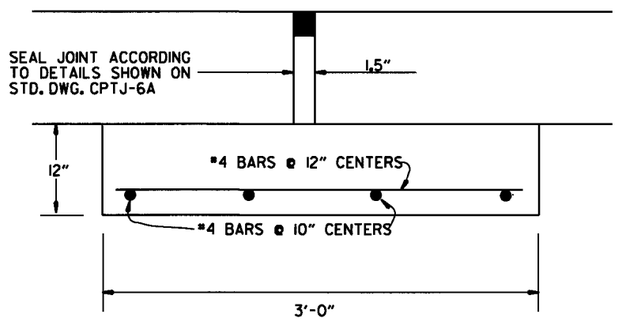
RETURN CURVES
Δ = 2°17'30"
D = 3°00'
T = 38.2'
L = 76.4'



Δ = 5°42'30"
D = 3°00'
T = 95.2'
L = 190.3'

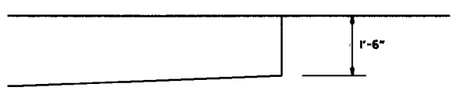
CONTRACTION JOINTS TO BE SPACED AT REGULAR INTERVALS AS ON NORMAL PAVEMENT.

EXIT RAMP



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS).
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE SUBSIDIARY TO THE ABOVE ITEMS.



DETAIL "A"

EXIT RAMP

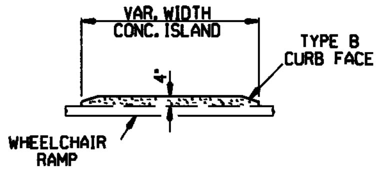
DESIGN SPEED V	X Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R
40	300.0	8.0	96.0	580.0
50	320.0	10.0	120.0	725.0
60	340.0	12.0	168.0	1182.0
70	360.0	14.0	210.0	1582.0

DATE	REVISION	DATE FILM'D
1-12-00	REDRAWN & REISSUED	

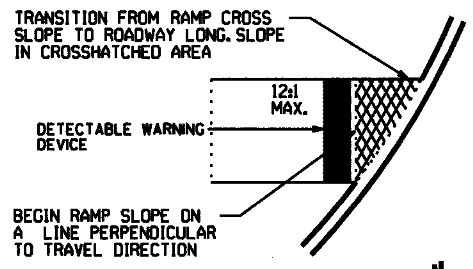
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS

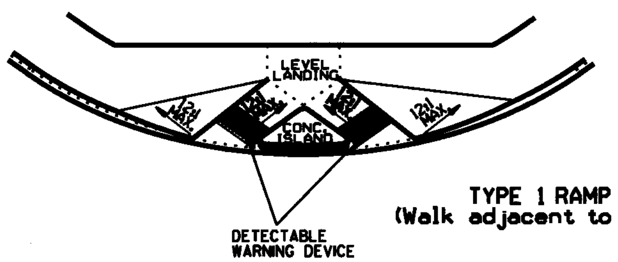
STANDARD DRAWING TR-1

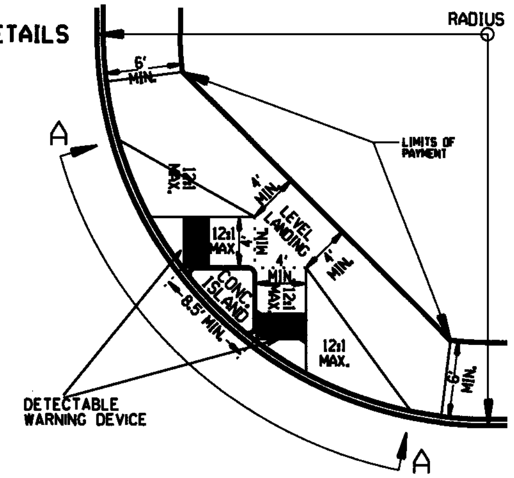


CONCRETE ISLAND DETAIL

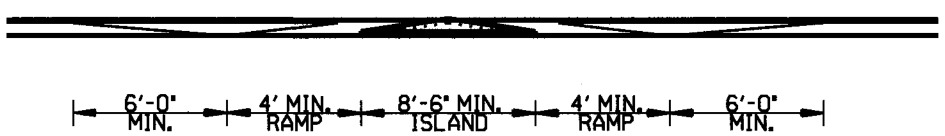


SLOPE TRANSITION DETAILS





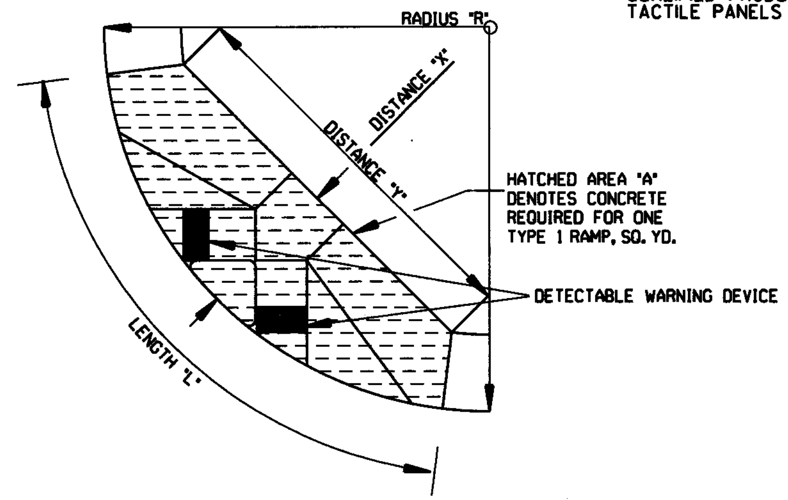
TYPE 1 RAMP
(Walk adjacent to curb)



SECTION A-A

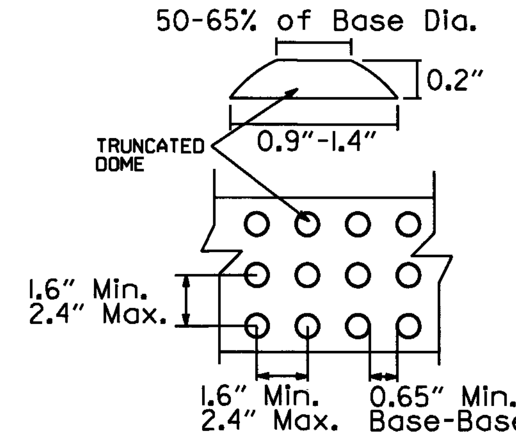
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

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



GENERAL NOTES FOR DETECTABLE WARNING DEVICES

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



DETECTABLE WARNING DEVICE DETAIL

GENERAL NOTES:

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

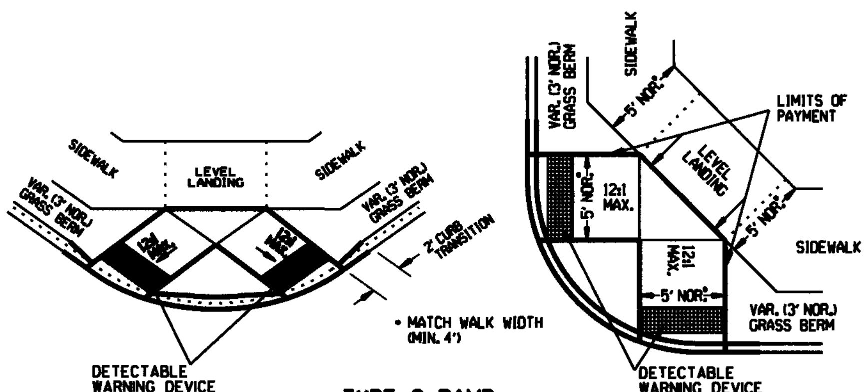
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.

THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.

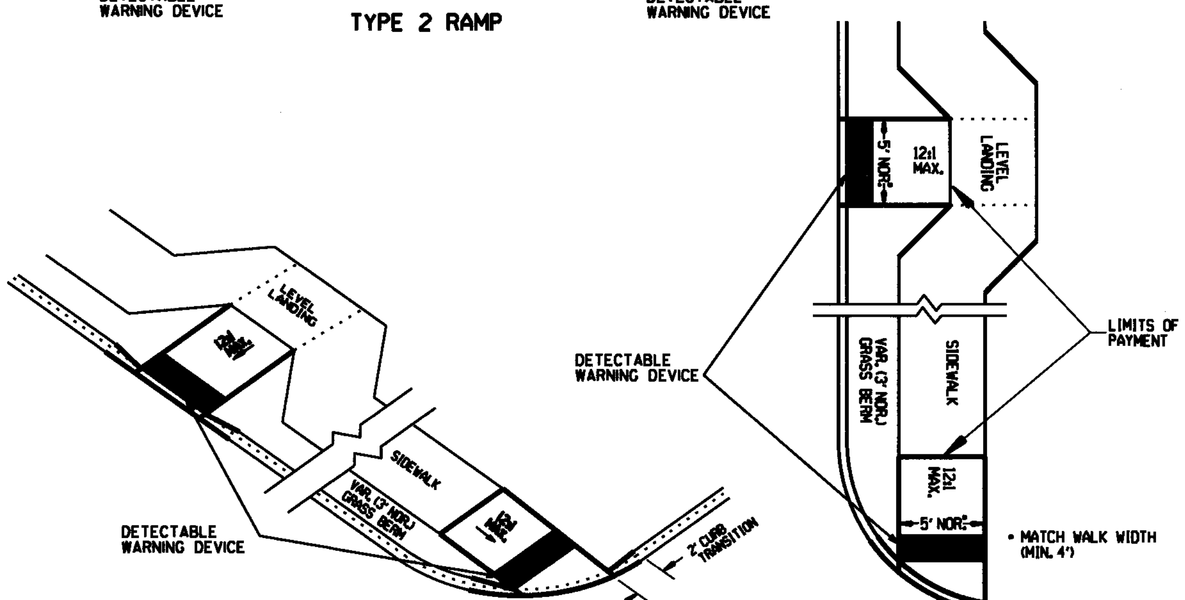
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.

THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

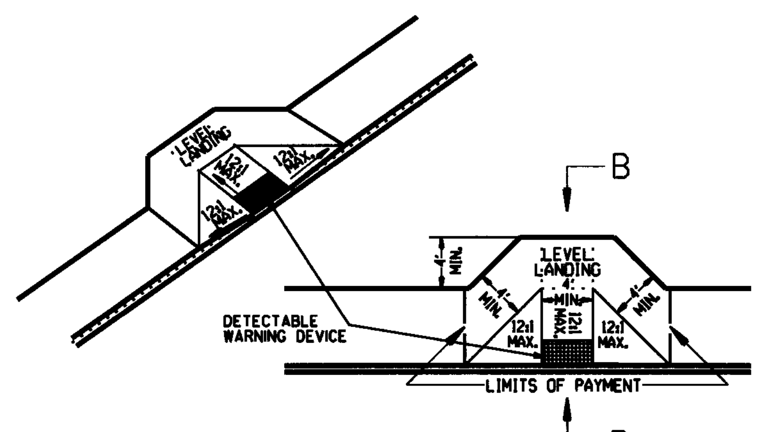
NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.



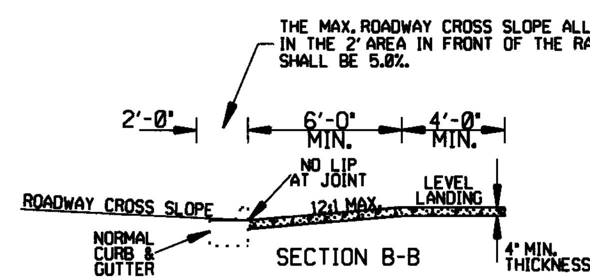
TYPE 2 RAMP



TYPE 3 RAMP



TYPE 4 RAMP
(Walk adjacent to curb)



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

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

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

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 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISLD." IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1