DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	1	86

(2) HWY. 391 INTCHNG. IMPVTS. (S)

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 391 INTCHNG. IMPVTS. (S)

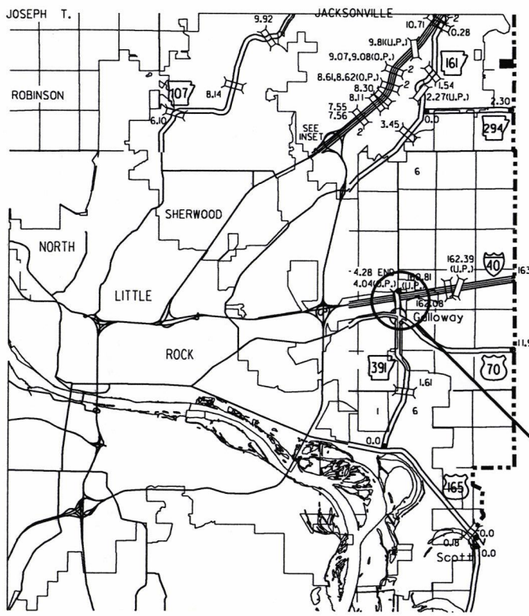
PULASKI COUNTY

ROUTE 40 SECTION 33

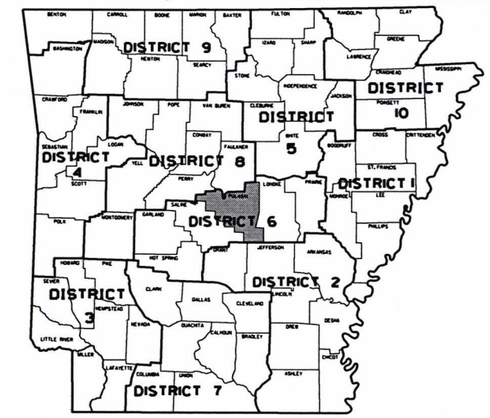
FEDERAL AID PROJ. NHPP-40-4(86)161

JOB BB0620

NOT TO SCALE



VICINITY MAP



ARK. HWY. DIST. NO. 6

DESIGN TRAFFIC DATA

DESIGN YEAR	2037
2017 ADT	6,700
2037 ADT	7,400
2037 DHV	814
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	6%
DESIGN SPEED	70 MPH

BRIDGE DATA

(1) C.L. HWY. 391
STA. 18+87.20 BR. END
BRIDGE NO. 3197
EXISTING 222.21'
26'-0" CLEAR ROADWAY
STA. 21+09.41 BR. END
RETAIN

STA. 452+15.32
END RAMP 4

STA. 447+00.00
BEGIN RAMP 4

STA. 16+22.79
BEGIN HWY. 391

STA. 432+21.29
BEGIN JOB BB0620
BEGIN RAMP 1
LOG MILE 160.53

STA. 443+83.07
END RAMP 1

STA. 31+37.04
END HWY. 391

STA. 447+17.06
BEGIN RAMP 3

STA. 458+25.00
END RAMP 3

STA. 459+85.10
BEGIN DECELERATION LANE

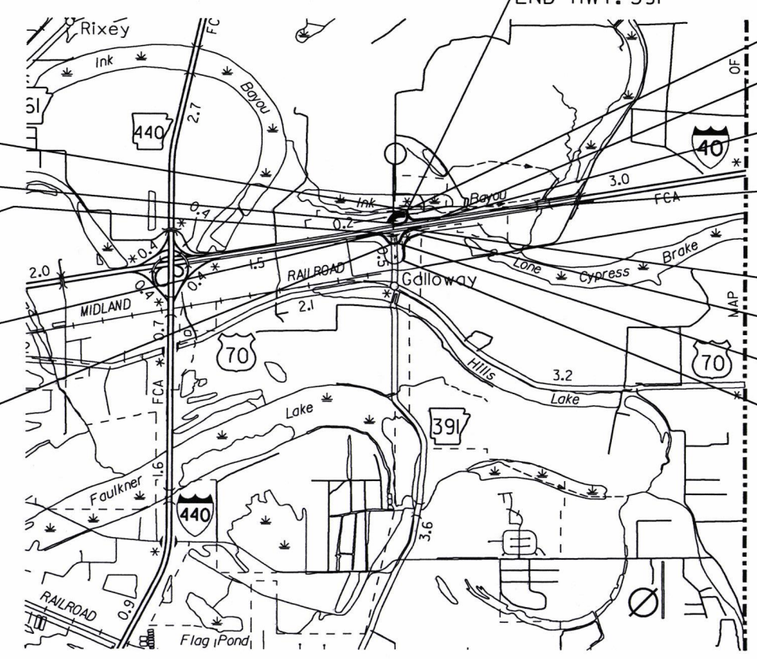
STA. 473+09.98
END DECELERATION LANE
END JOB BB0620
LOG MILE 161.30

STA. 452+00.00
END RAMP 2

STA. 314+00.00
END MAYBELLINE RD.

STA. 442+98.93
BEGIN RAMP 2

STA. 302+00.00
BEGIN MAYBELLINE RD.



APPROVED

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

7-28-17

DEPUTY DIRECTOR
AND CHIEF ENGINEER

BEGINNING OF PROJECT	MID-POINT OF PROJECT	END OF PROJECT
LATITUDE = N 34°47'03"	LATITUDE = N 34°47'07"	LATITUDE = N 34°47'10"
LONGITUDE = W 92°07'57"	LONGITUDE = W 92°07'33"	LONGITUDE = W 92°07'08"

NO LENGTH INVOLVED

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

7/28/2017

RBB0620.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.		BB0620	2	86

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 7	TYPICAL SECTIONS OF IMPROVEMENT
8 - 10	SPECIAL DETAILS
11 - 28	TEMPORARY EROSION CONTROL DETAILS
29 - 54	MAINTENANCE OF TRAFFIC DETAILS
55 - 56	PERMANENT PAVEMENT MARKING DETAILS
57 - 60	QUANTITIES
61	SUMMARY OF QUANTITIES AND REVISIONS
62 - 70	SURVEY CONTROL DETAILS
71 - 77	PLAN AND PROFILE SHEETS
78 - 86	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CG-1	CURBING DETAILS	11-29-07
CPTJ-6A	TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)	5-25-06
DR-1	DETAILS OF DRIVEWAYS & ISLANDS	2-27-14
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
FPC-9N	DETAILS OF DROP INLETS AND SPILLWAY OUTLET	7-02-98
GR-8	GUARD RAIL DETAILS	7-14-10
GR-8A	GUARD RAIL DETAILS	7-14-10
GR-9	GUARD RAIL DETAILS	4-17-08
GR-9A	GUARD RAIL DETAILS	4-17-08
GR-10A	GUARD RAIL DETAILS	7-14-10
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PM-1	PAVEMENT MARKING DETAILS	6-01-17
PM-2	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS	12-08-16
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-1	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	1-09-87
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SHS-8	TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEM	6-01-17
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	4-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	2-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	12-15-11
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	7-26-12
TR-1A	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)	8-22-02

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

8-21-17

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
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
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
620-1_____	MULCH COVER
JOB BB0620_	ASSESSMENT OF WORKING DAYS-MAINTENANCE OF TRAFFIC
JOB BB0620_	BIDDING REQUIREMENTS AND CONDITIONS
JOB BB0620_	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BB0620_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BB0620_	CARGO PREFERENCE ACT REQUIREMENTS
JOB BB0620_	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB BB0620_	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BB0620_	EMPLOYMENT REPORTING
JOB BB0620_	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB BB0620_	EXTENSION FOR PIPE CULVERTS
JOB BB0620_	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB BB0620_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BB0620_	MAINTENANCE OF TRAFFIC
JOB BB0620_	MANDATORY ELECTRONIC CONTRACT
JOB BB0620_	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB BB0620_	PARTNERING REQUIREMENTS
JOB BB0620_	PRECAST CONCRETE SLABS
JOB BB0620_	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB BB0620_	PROTECTION OF WATER QUALITY AND WETLANDS
JOB BB0620_	ROADWAY CONSTRUCTION CONTROL
JOB BB0620_	SEQUENCE OF CONSTRUCTION
JOB BB0620_	SHORING FOR CULVERTS
JOB BB0620_	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB BB0620_	SOIL STABILIZATION
JOB BB0620_	STORM WATER POLLUTION PREVENTION PLAN
JOB BB0620_	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BB0620_	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB BB0620_	UTILITY ADJUSTMENTS
JOB BB0620_	VALUE ENGINEERING
JOB BB0620_	VERY EARLY STRENGTH CONCRETE
JOB BB0620_	WARM MIX ASPHALT

GENERAL NOTES

1. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.

2. 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.

3. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.

4. 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.

5. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

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.

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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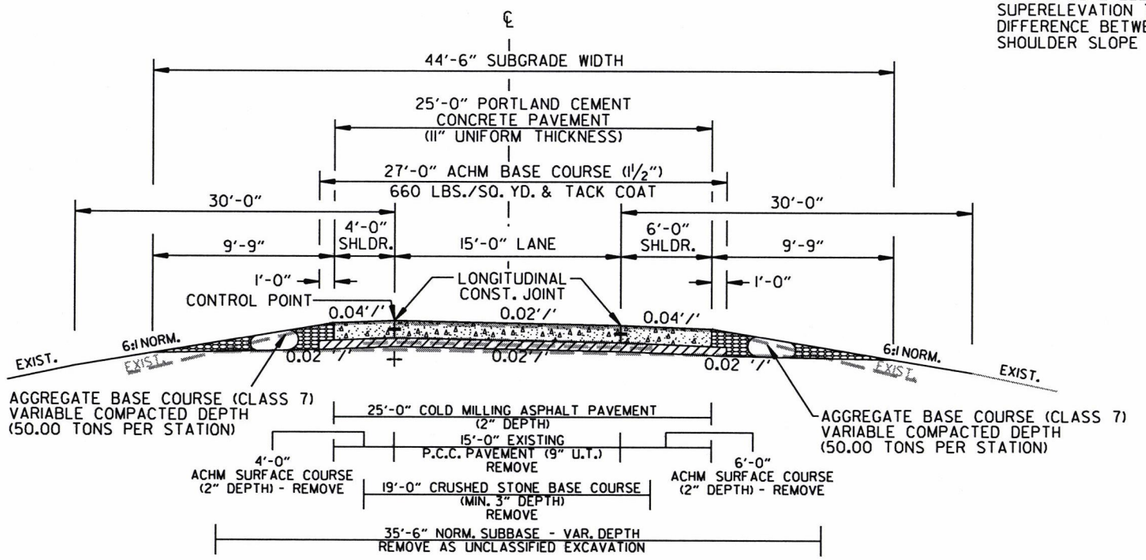
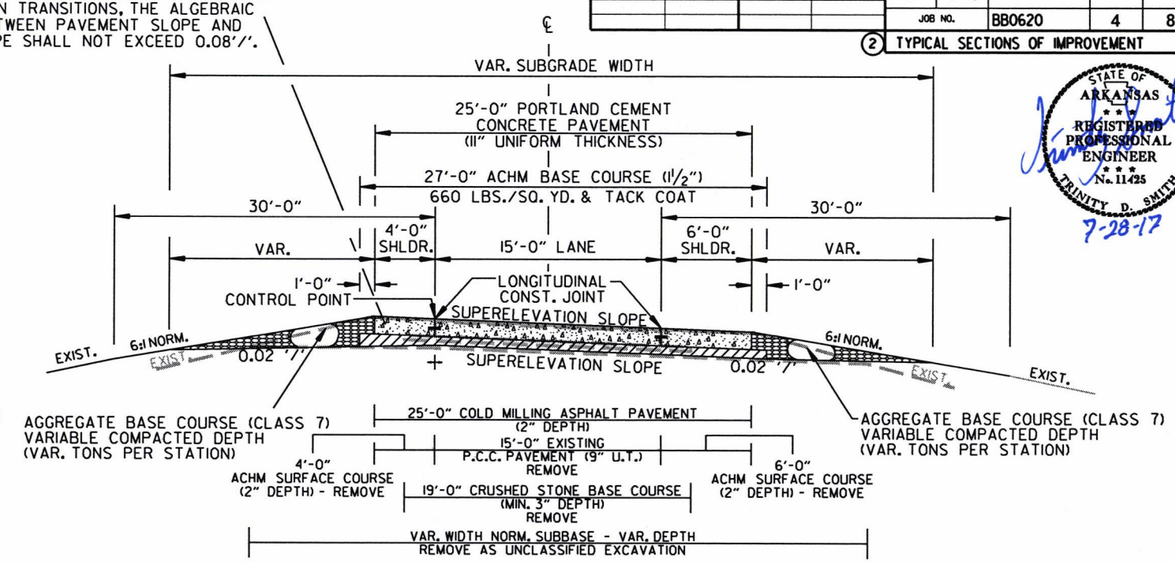
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17

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



RAMP
(SHOWN IN DIRECTION OF TRAFFIC)



RAMP
SUPERELEVATION
(SHOWN IN DIRECTION OF TRAFFIC)

RAMP 1 - STA. 432+21.29 TO STA. 443+83.07
RAMP 2 - STA. 442+98.93 TO STA. 452+00.00
RAMP 3 - STA. 448+63.73 TO STA. 458+25.00
RAMP 4 - STA. 450+64.43 TO STA. 452+15.32

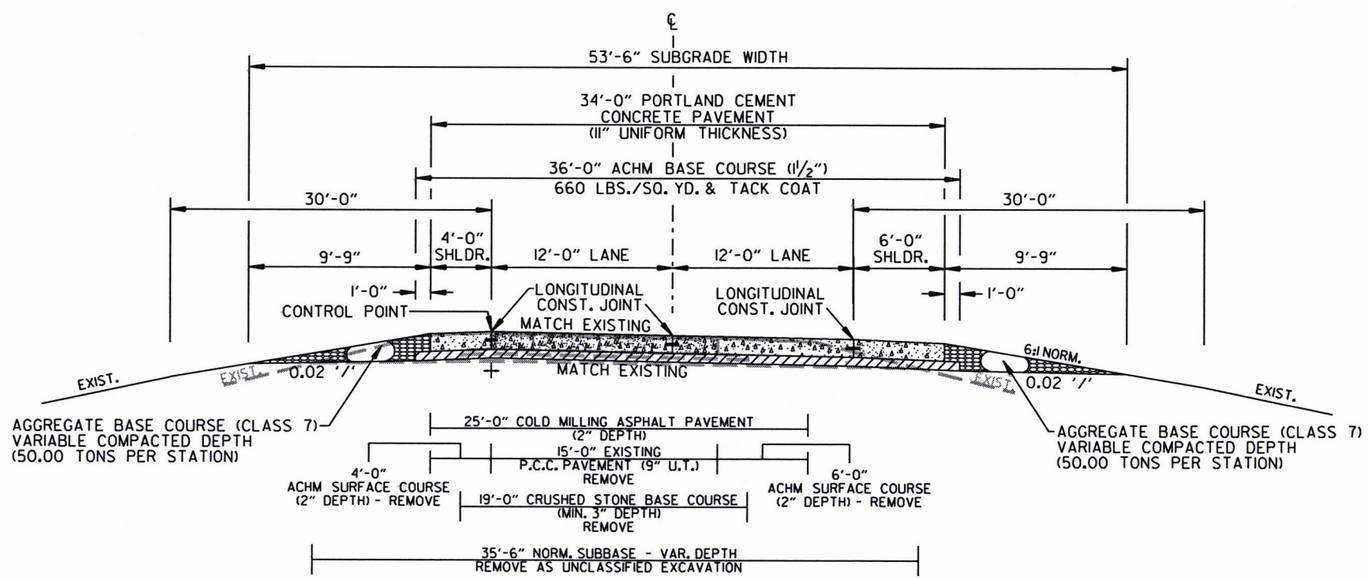
RAMP 1 - STA. 436+80.84 TO STA. 437+55.84 - LANE TAPERS FROM 15' TO 19.5'.
RAMP 1 - STA. 441+48.53 TO STA. 443+83.07 - LANE TAPERS FROM 19.5' TO 28.5'.

RAMP 3 - STA. 449+30.00 TO STA. 450+30.00 - RIGHT TURN LANE TAPERS FROM 12' TO 0'.
RAMP 3 - STA. 449+30.00 TO STA. 450+30.00 - LEFT TURN LANE TAPERS FROM 12' TO 15'.

NOTES:

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

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



RAMP WITH TURNING LANE
(SHOWN IN DIRECTION OF TRAFFIC)

RAMP 3 - STA. 447+17.06 TO STA. 449+30.00

7/28/2017

RBB0620.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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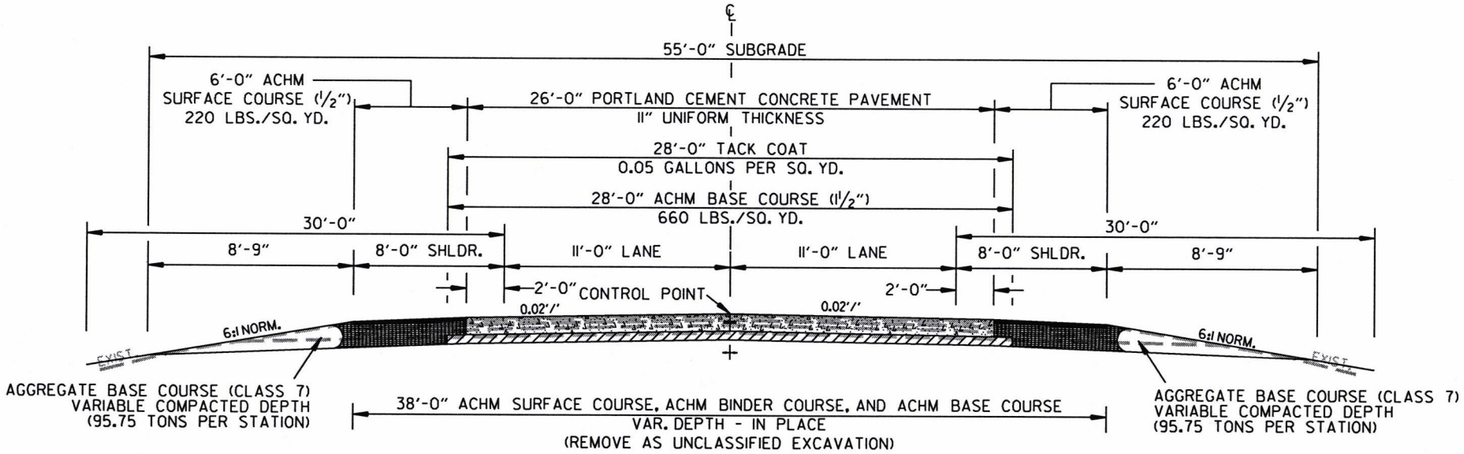
(2) TYPICAL SECTIONS OF IMPROVEMENT

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

7-28-17



HWY. 391

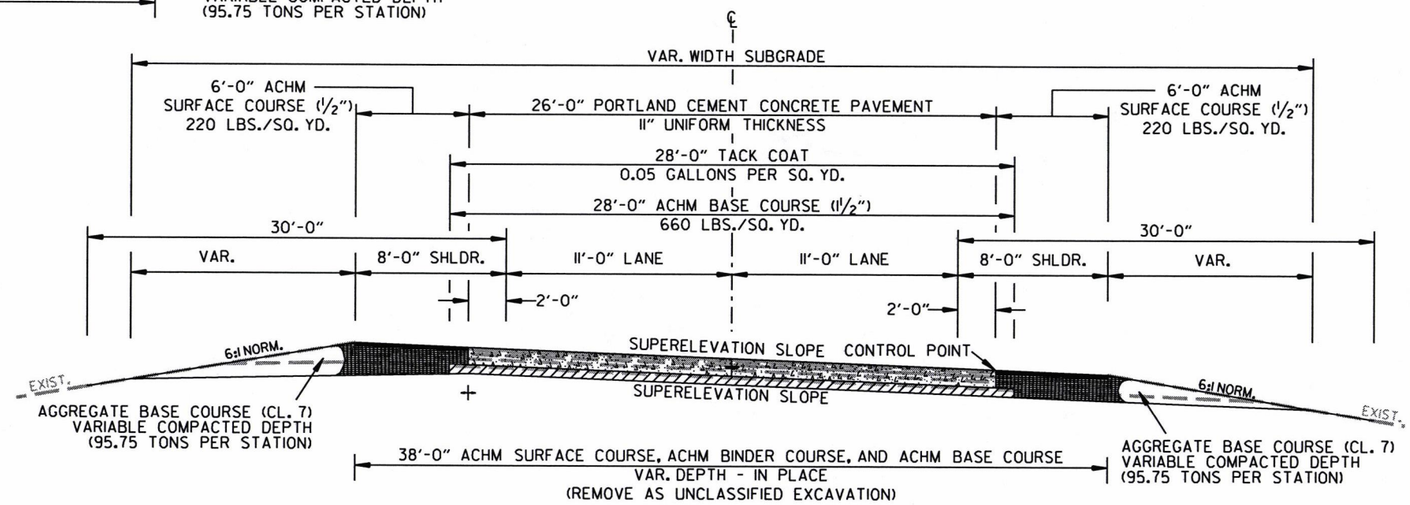
STA. 16+22.79 TO STA. 18+87.20
STA. 21+09.41 TO STA. 27+30.00

HWY. 391 - STA. 16+22.79 TO STA. 17+82.79 - TURN LANE TAPERS FROM 12' TO 0'.
HWY. 391 - STA. 16+22.79 TO STA. 17+82.79 - LT. LANE TAPERS FROM 12' TO 11'.
HWY. 391 - STA. 16+22.79 TO STA. 17+82.79 - RT. LANE TAPERS FROM 12' TO 11'.
HWY. 391 - STA. 21+96.00 TO STA. 23+50.00 - LT. LANE TAPERS FROM 11' TO 17'.
HWY. 391 - STA. 21+96.00 TO STA. 23+50.00 - RT. LANE TAPERS FROM 11' TO 17'.
HWY. 391 - STA. 25+00.00 TO STA. 27+30.00 - LT. LANE TAPERS FROM 17' TO 12'.
HWY. 391 - STA. 25+30.00 TO STA. 26+30.00 - RT. SHLDR. TAPERS FROM 8' TO 6'.
HWY. 391 - STA. 26+30.00 TO STA. 27+30.00 - RT. LANE TAPERS FROM 17' TO 12'
HWY. 391 - STA. 26+30.00 TO STA. 27+30.00 - RT. TURN LANE TAPERS FROM 0' TO 12'.

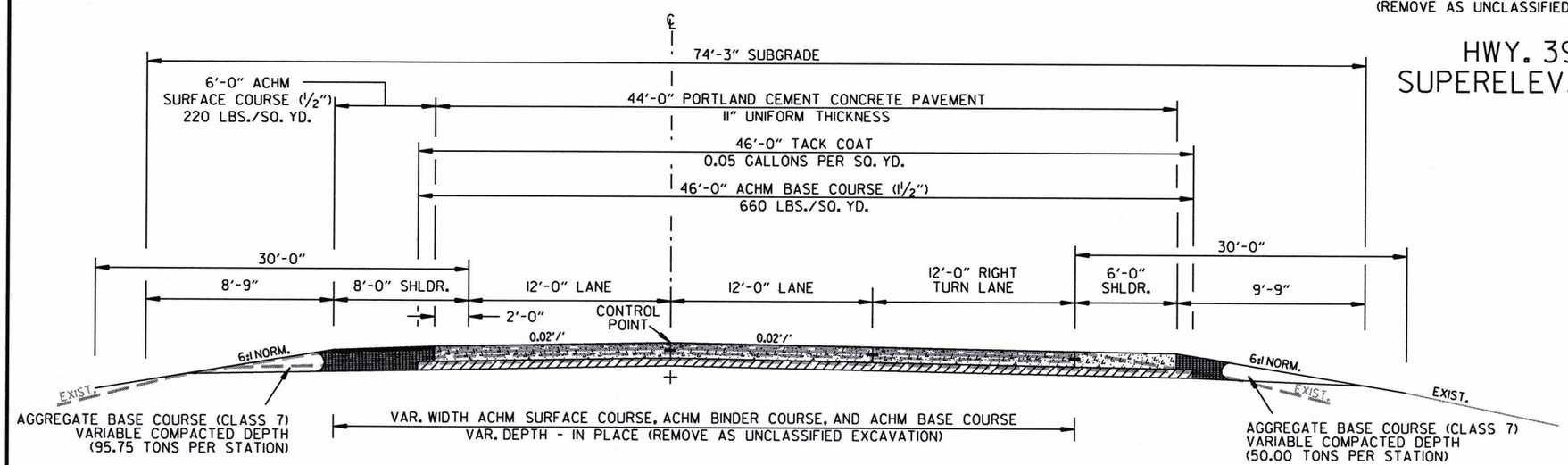
NOTES:

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

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



HWY. 391 SUPERELEVATION



HWY. 391 WITH RIGHT TURN LANE

STA. 27+30.00 TO STA. 31+37.04

7/28/2017

RBB0620.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
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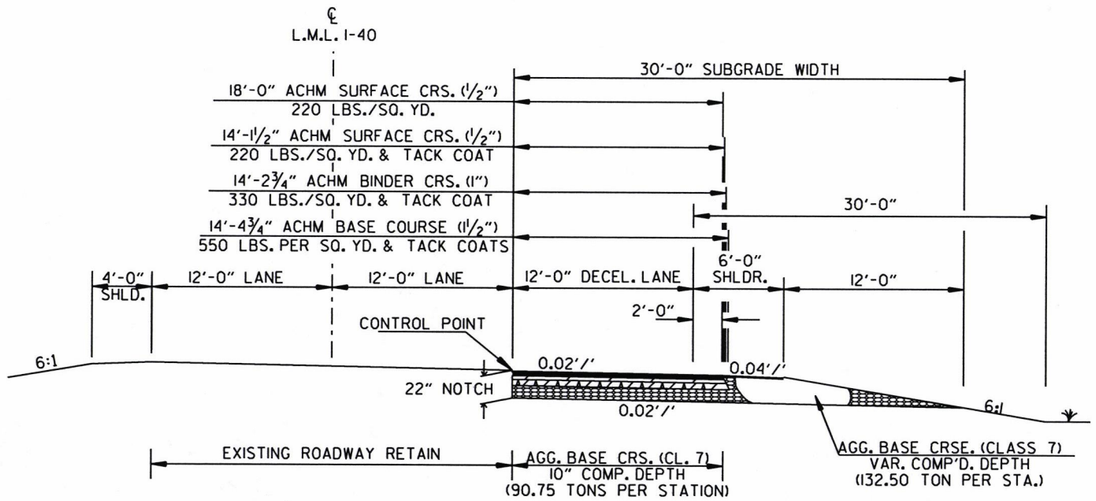
(2) TYPICAL SECTIONS OF IMPROVEMENT

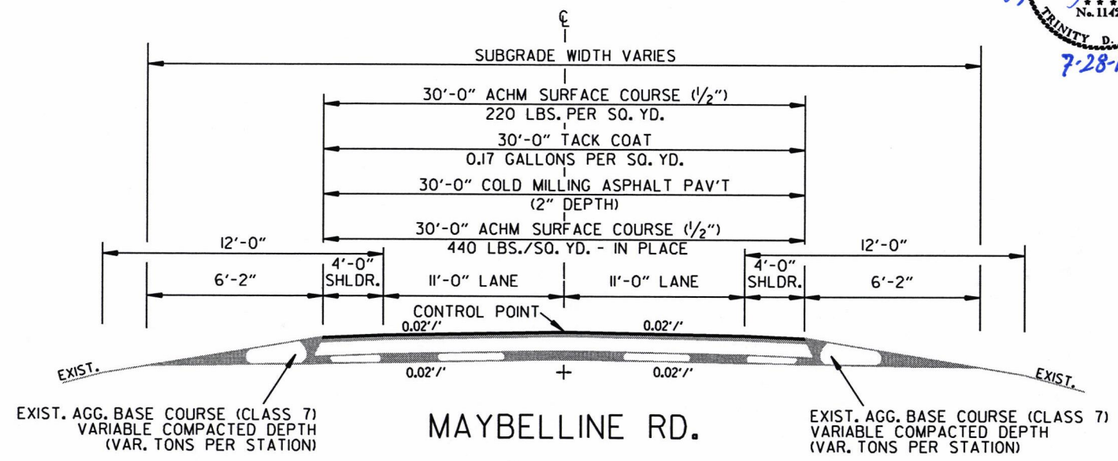
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

7-28-17



DECELERATION LANE
(SHOWN IN DIRECTION OF TRAFFIC)

STA. 459+85.10 TO STA. 473+09.98



MAYBELLINE RD.

MAYBELLINE RD. - STA. 302+00.00 TO STA. 314+00.00

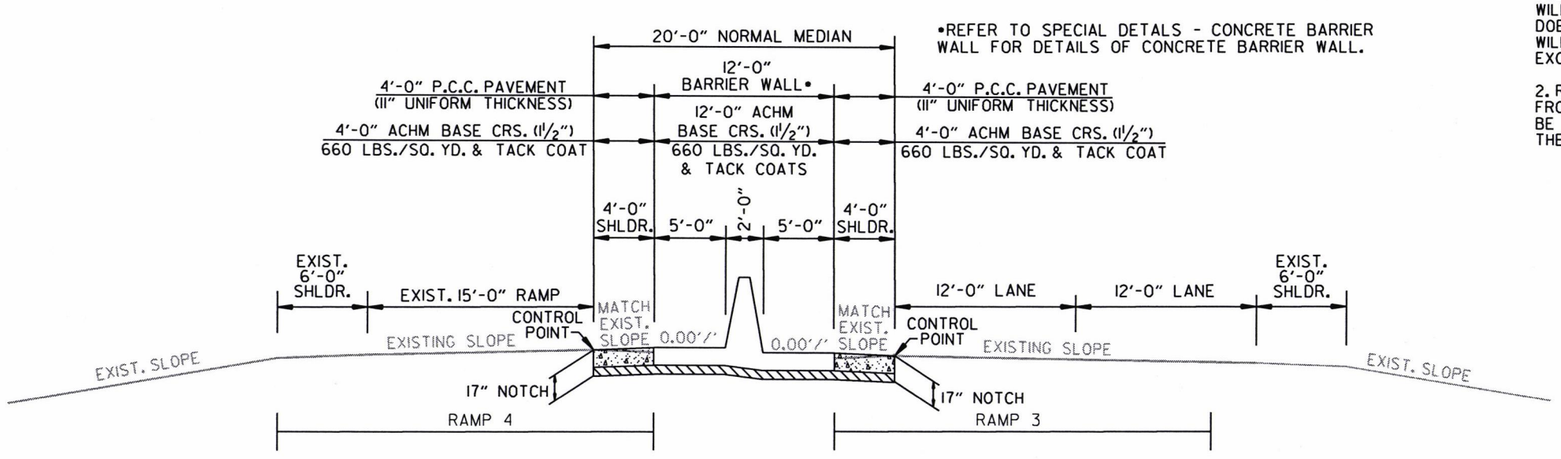
MAYBELLINE RD. - STA. 302+00.00 TO STA. 304+40.00 - LT. LANE TAPERS FROM 18' TO 11'.
MAYBELLINE RD. - STA. 302+00.00 TO STA. 304+40.00 - RT. LANE TAPERS FROM 18' TO 11'.
MAYBELLINE RD. - STA. 305+05.43 TO STA. 307+74.82 - LT. SHLDR. TAPERS FROM 8' TO 4'.

NOTES:

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

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

•REFER TO SPECIAL DETAILS - CONCRETE BARRIER WALL FOR DETAILS OF CONCRETE BARRIER WALL.



RAMP 3 AND RAMP 4
WITH MEDIAN BARRIER WALL

C.L. RAMP 4 - STA. 450+63.54 TO STA. 452+00.00

7/28/2017

RBB0620.DGN

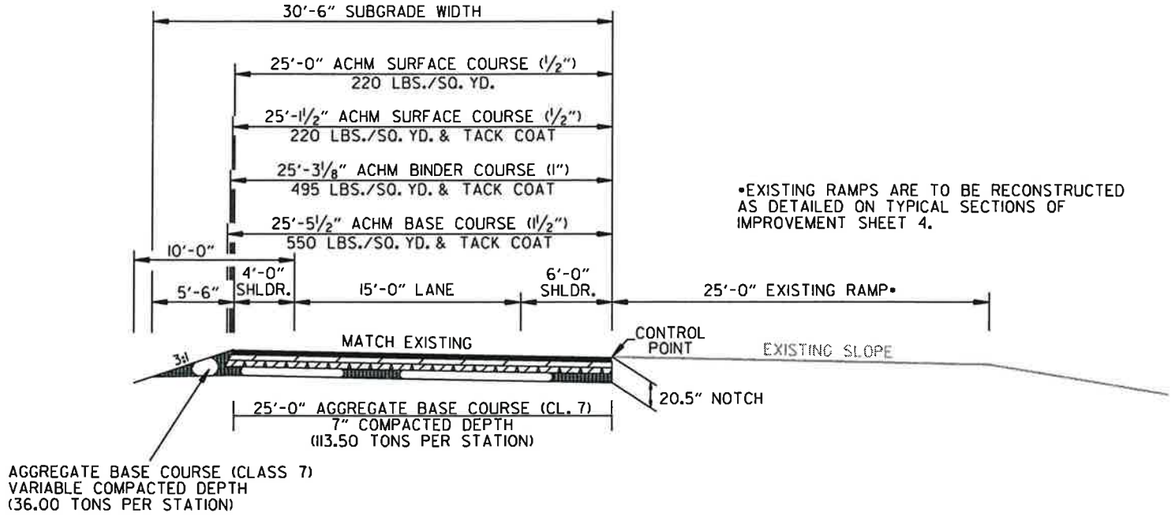
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	7	86

(2) TYPICAL SECTIONS OF IMPROVEMENT

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

8-21-17

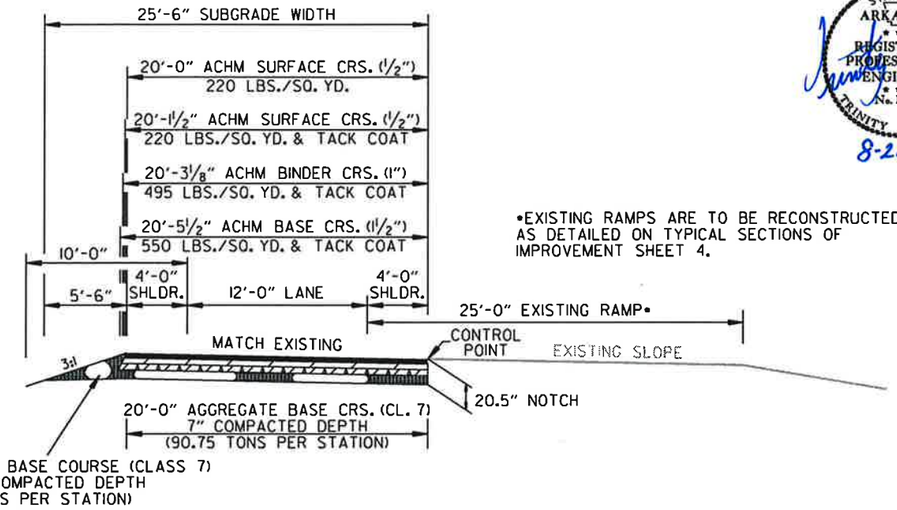


•EXISTING RAMPS ARE TO BE RECONSTRUCTED AS DETAILED ON TYPICAL SECTIONS OF IMPROVEMENT SHEET 4.

TEMPORARY WIDENING RAMP 1 AND 2

(SHOWN IN DIRECTION OF TRAFFIC)

C.L. RAMP 1 STA. 432+18.77 TO C.L. RAMP 1 STA. 445+15.45
C.L. RAMP 2 STA. 441+52.76 TO C.L. RAMP 2 STA. 452+00.00



•EXISTING RAMPS ARE TO BE RECONSTRUCTED AS DETAILED ON TYPICAL SECTIONS OF IMPROVEMENT SHEET 4.

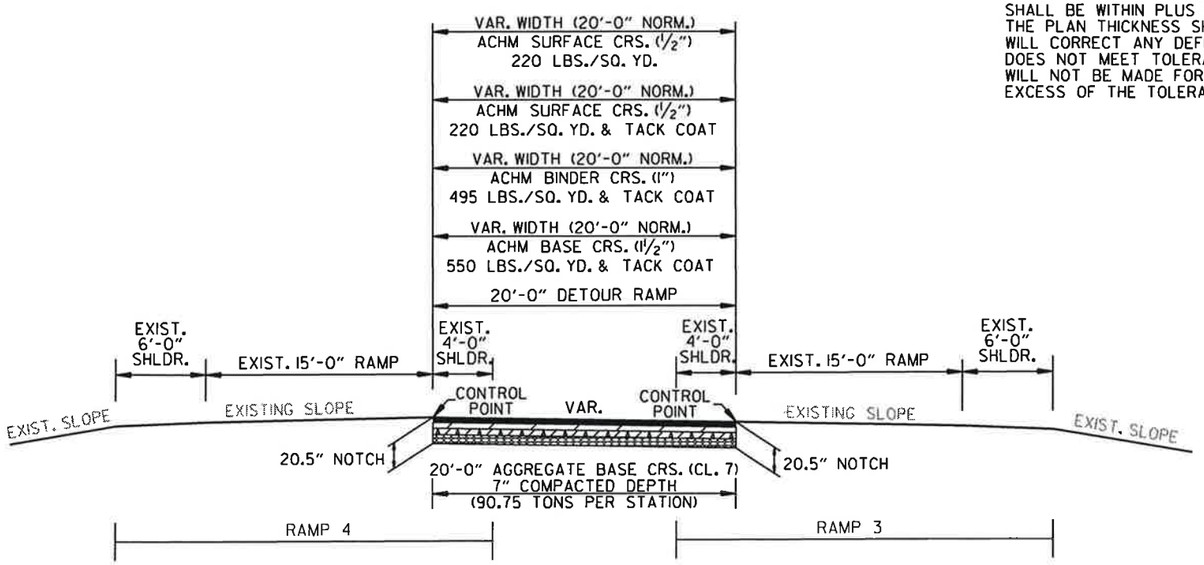
TEMPORARY WIDENING RAMP 3 AND 4

(SHOWN IN DIRECTION OF TRAFFIC)

C.L. RAMP 3 STA. 449+00.00 TO C.L. RAMP 3 STA. 457+72.40
C.L. RAMP 4 STA. 447+00.00 TO C.L. RAMP 4 STA. 450+27.46

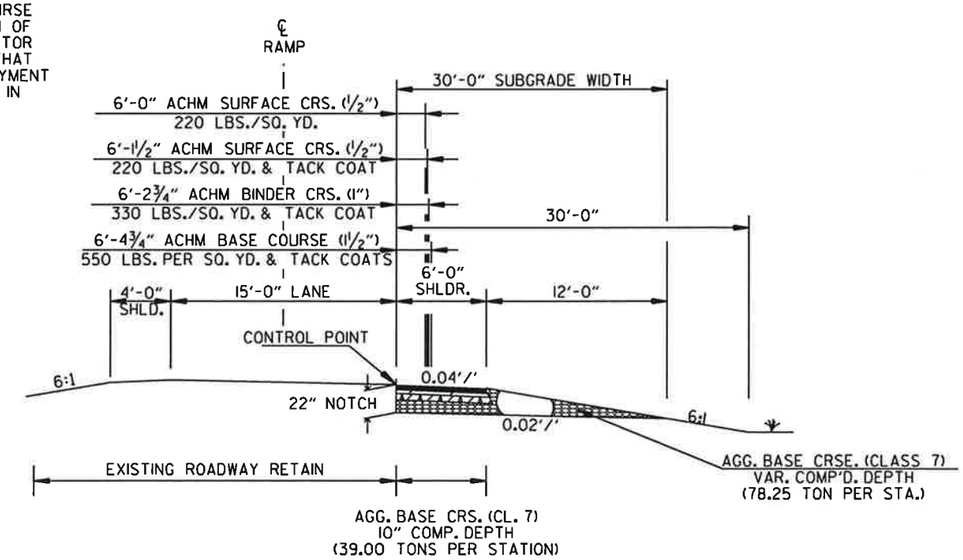
NOTES:

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



MAINTENANCE OF TRAFFIC DETOUR RAMP 3 AND RAMP 4

C.L. RAMP 3 STA. 447+17.06 TO C.L. RAMP 3 STA. 449+00.00



RAMP 3 FULL DEPTH SHOULDER

(SHOWN IN DIRECTION OF TRAFFIC)

C.L. RAMP 3 STA. 458+25.00 TO STA. 459+85.10

TYPICAL SECTIONS OF IMPROVEMENT

8/18/2017

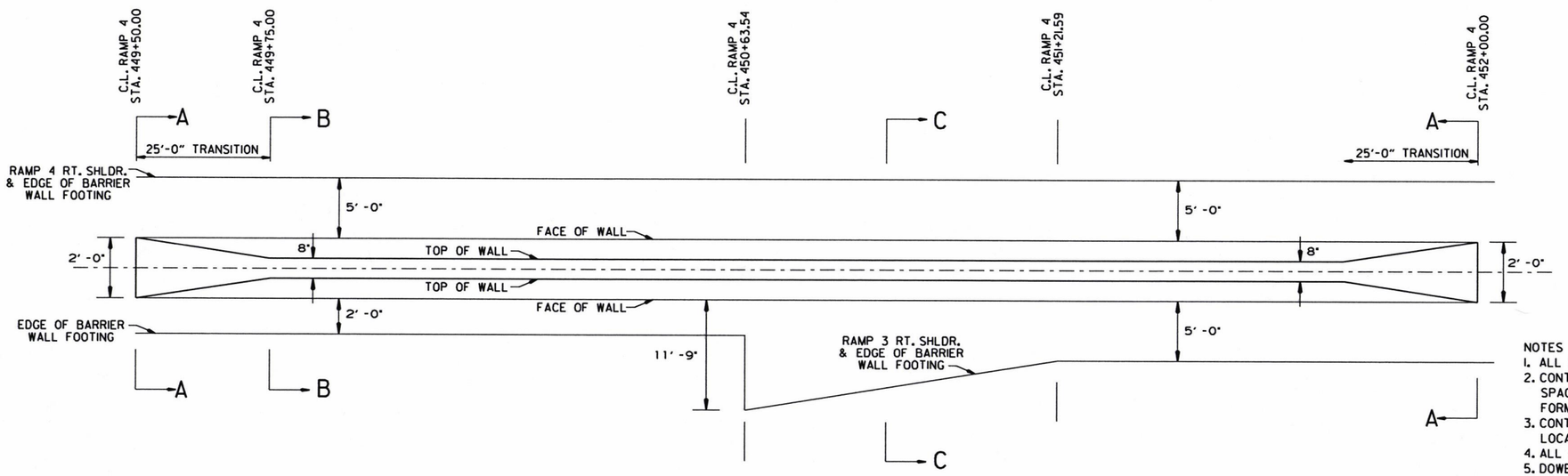
RBB0620.DGN

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.		BB0620	8	86

(2) SPECIAL DETAILS

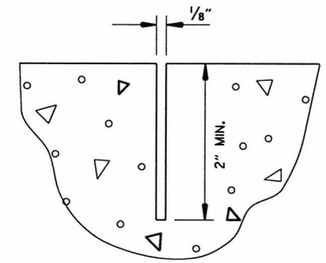
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

7-28-17



PLAN VIEW
CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL) TRANSITION

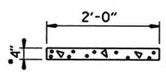
NOTE: TRANSITION TO BE CONSTRUCTED AT BEGINNING AND END OF BARRIER WALL.



CONTRACTION JOINT DETAIL

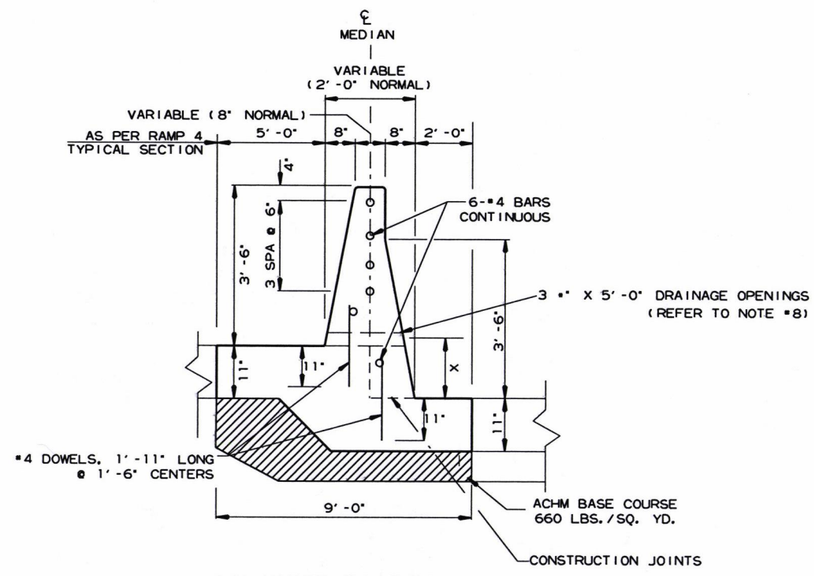
NOTES FOR MEDIAN BARRIER:

1. ALL EXPOSED EDGES SHALL HAVE 3/4" CHAMFERS.
2. CONTRACTION JOINTS SHALL BE CONSTRUCTED AT 15'-0" MAXIMUM SPACING IN TOP AND SIDES OF MEDIAN BARRIER AND SHALL BE FORMED IN FRESH CONCRETE.
3. CONTRACTION JOINTS ARE NOT PERMITTED AT THE DOWEL BAR LOCATIONS.
4. ALL REINFORCING BARS SHALL HAVE 2" MINIMUM COVER.
5. DOWEL BARS WILL NOT BE REQUIRED IF BARRIER AND BASE ARE CAST AS A COMPLETE UNIT.
6. DRAINAGE OPENINGS TO BE CONSTRUCTED ADJACENT TO TYPE ST DROP INLETS. DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.

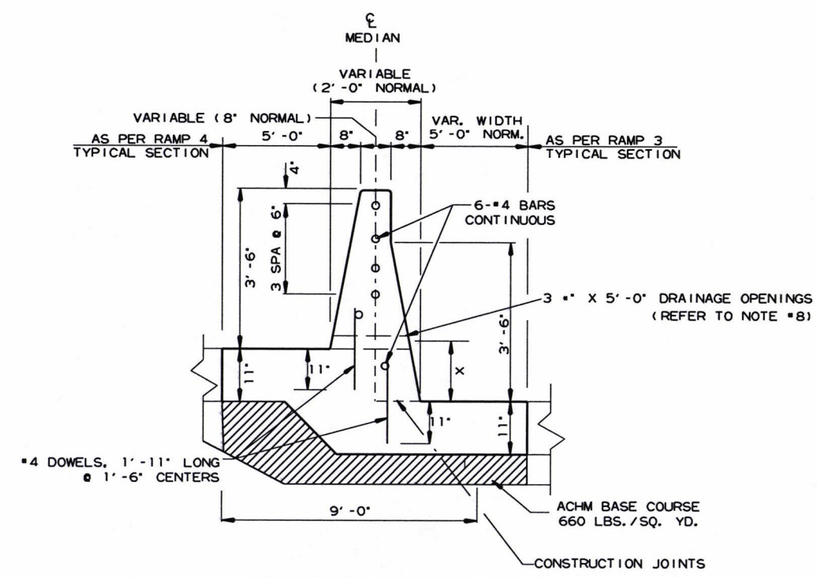


CONCRETE BARRIER WALL
(MEDIAN TYPE B)
(SECTION A-A)

*NOTE: 4" HEIGHT DIMENSION WILL COINCIDE WITH PROPOSED CONCRETE ISLAND HEIGHT DIMENSION.



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



CONCRETE BARRIER WALL
(MEDIAN TYPE B)
(SECTION C-C)

7/28/2017

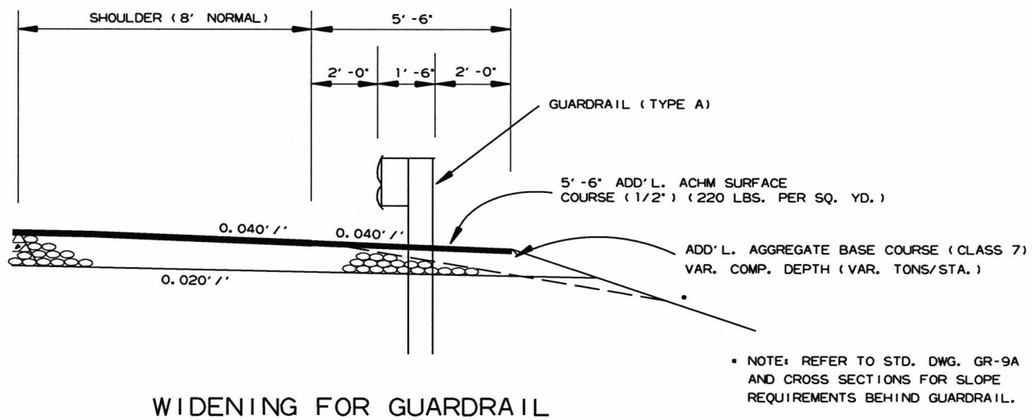
RBB0620.DGN

SPECIAL DETAILS

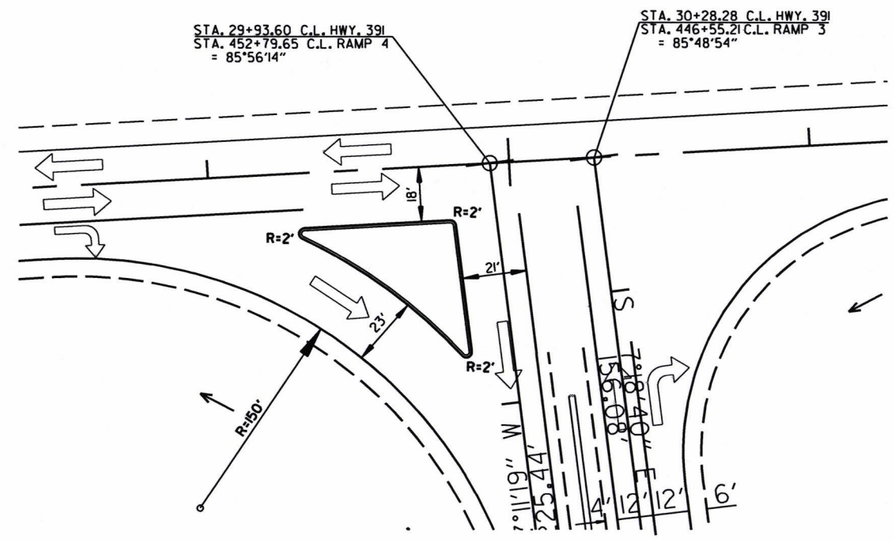
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	9	86

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



WIDENING FOR GUARDRAIL



DETAIL OF CONCRETE ISLAND
W/ TYPE B CURB FACE

7/28/2017

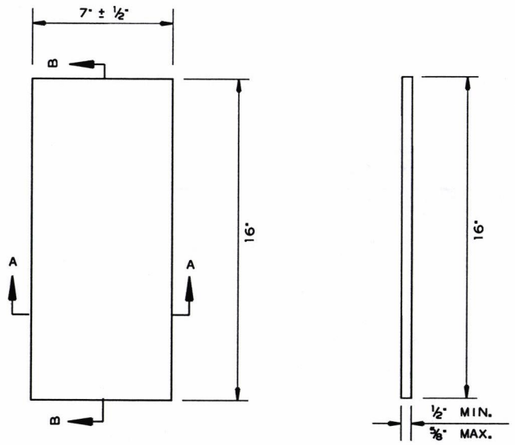
RBB0620.DGN

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.		BB0620	10	86

(2) SPECIAL DETAILS

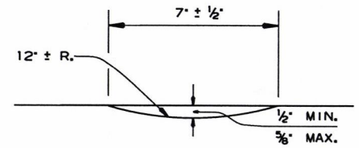
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

7-28-17



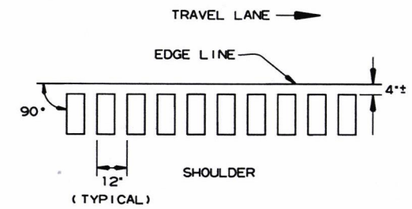
PLAN

SECTION B-B



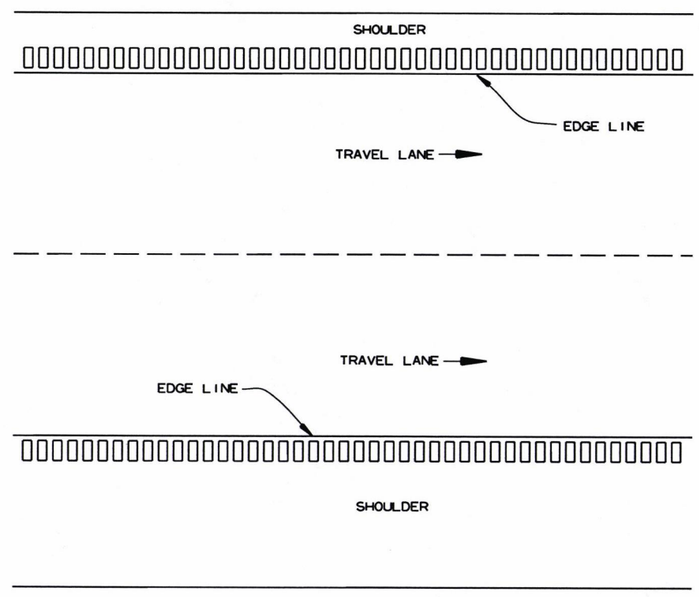
SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS

LEFT OR RIGHT SHOULDER



PLAN VIEW

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE.
2. THE ½" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

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

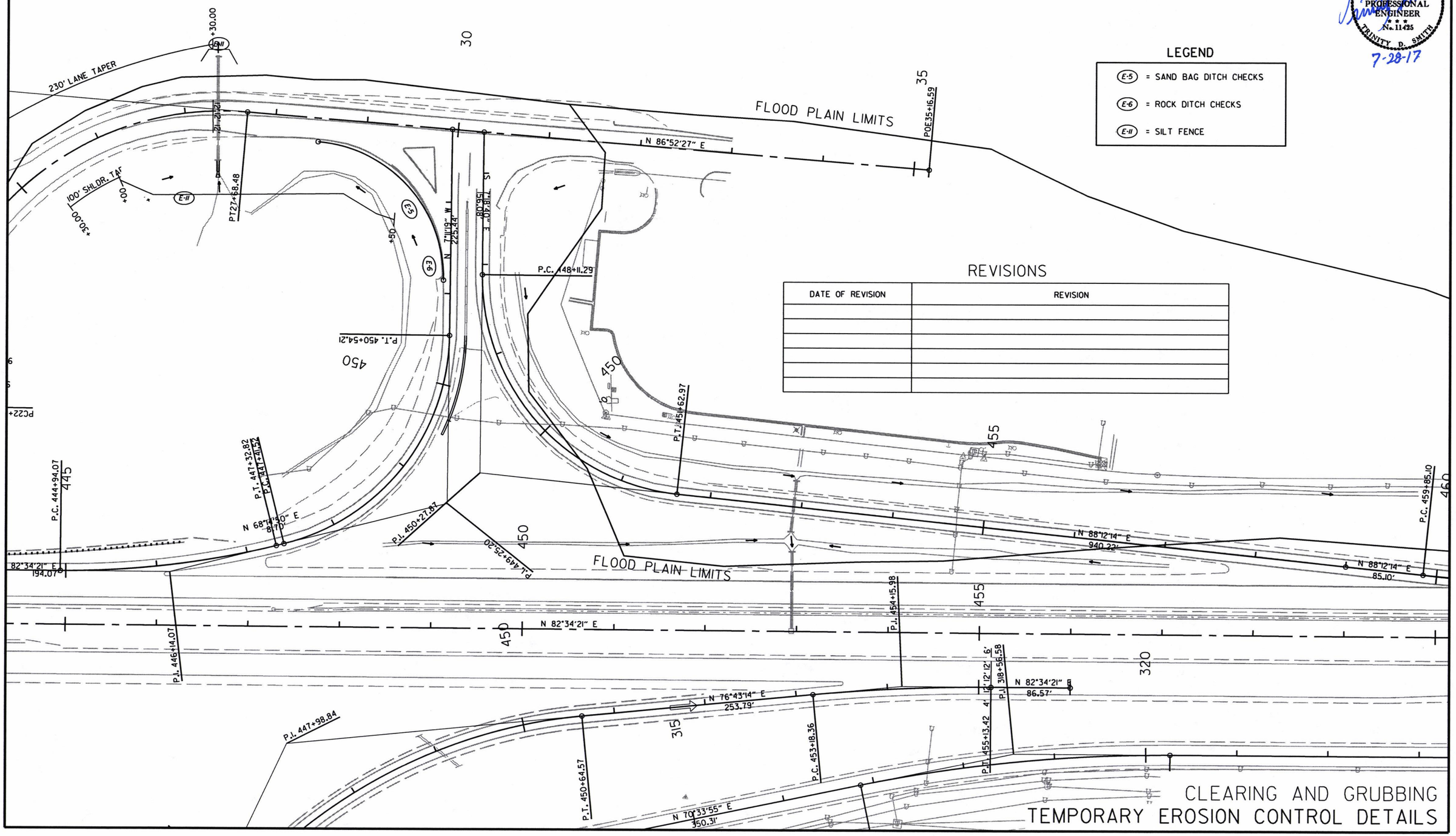
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION



CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.DGN

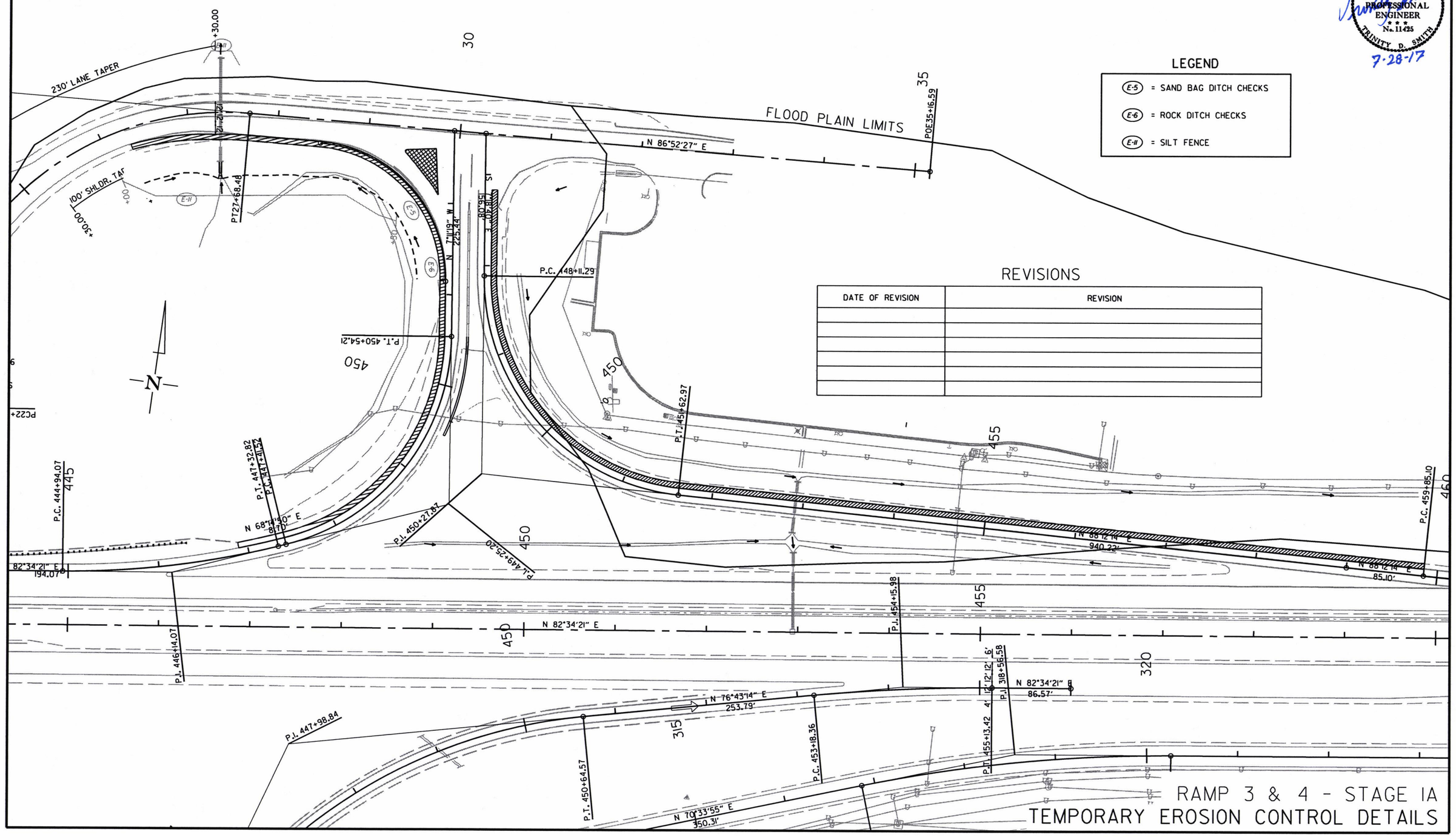
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	12	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

REMOVAL OF CONCRETE ISLAND

PROPOSED CONSTRUCTION



LEGEND

E-5	= SAND BAG DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-11	= SILT FENCE

REVISIONS

DATE OF REVISION	REVISION

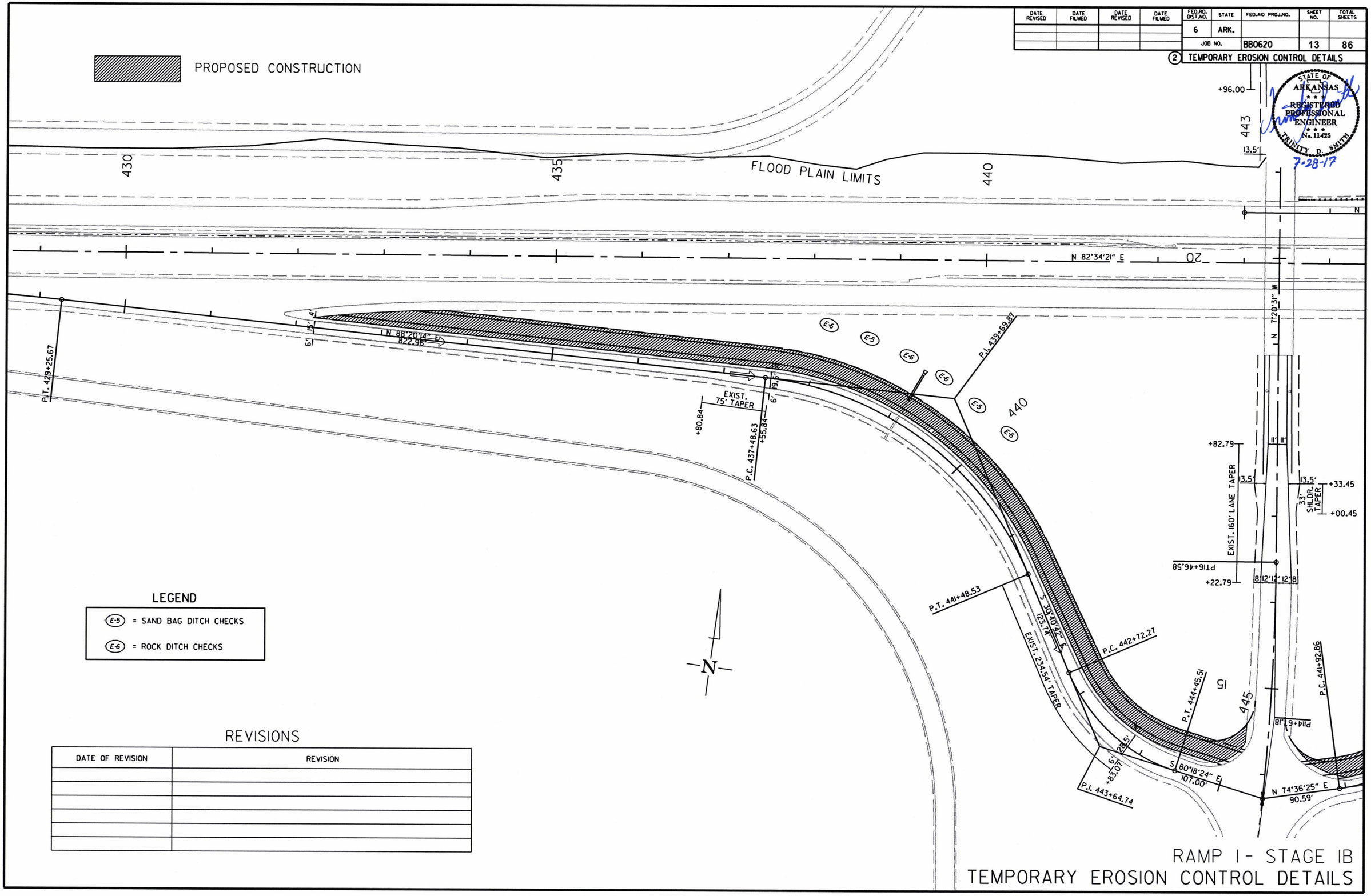
RAMP 3 & 4 - STAGE IA
TEMPORARY EROSION CONTROL DETAILS

RBB0620.DGN 7/28/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	13	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION

RAMP I - STAGE IB

TEMPORARY EROSION CONTROL DETAILS

7/28/2017

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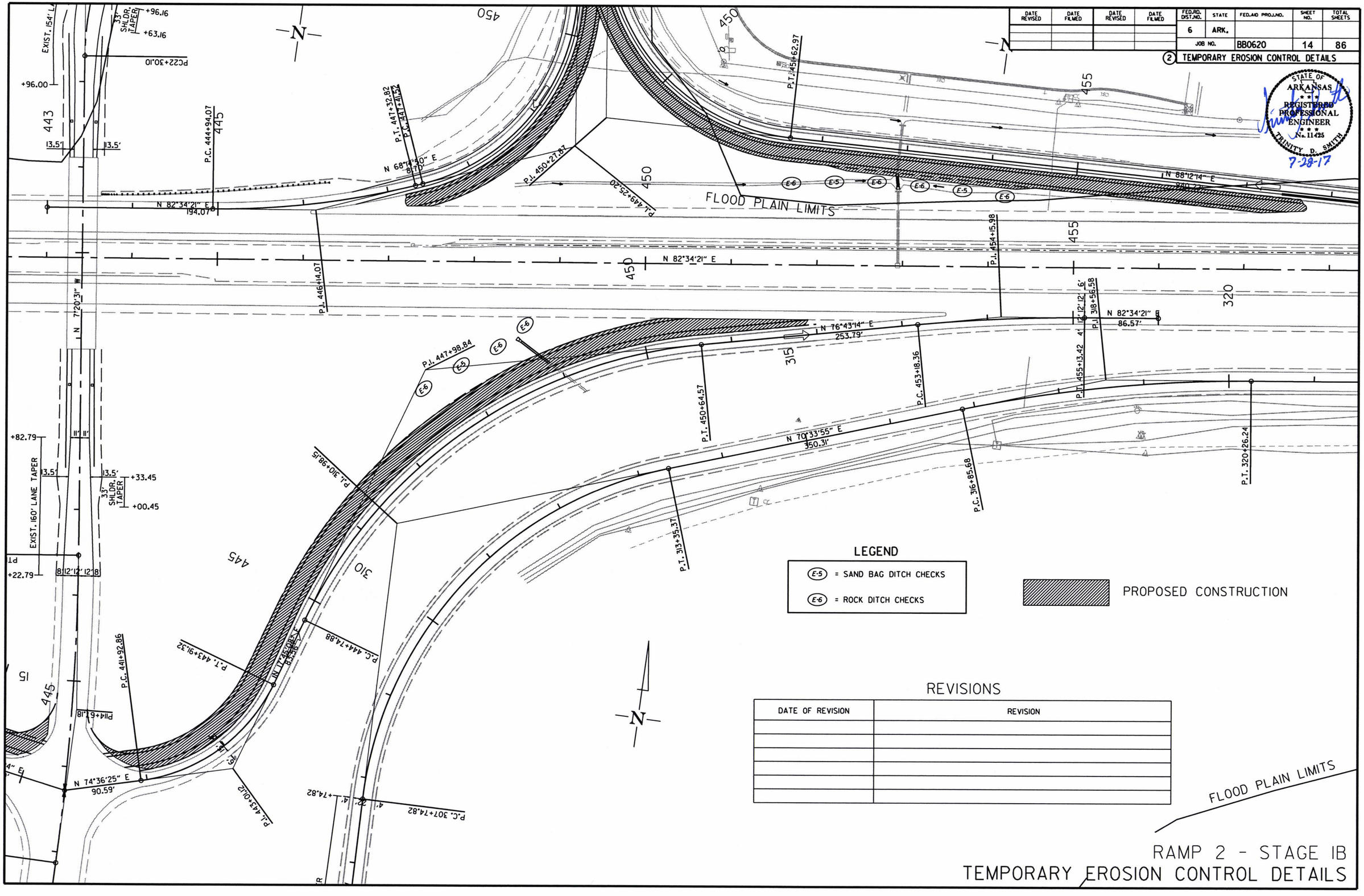
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0620	14	86

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

PROPOSED CONSTRUCTION

REVISIONS

DATE OF REVISION	REVISION

7/28/2017

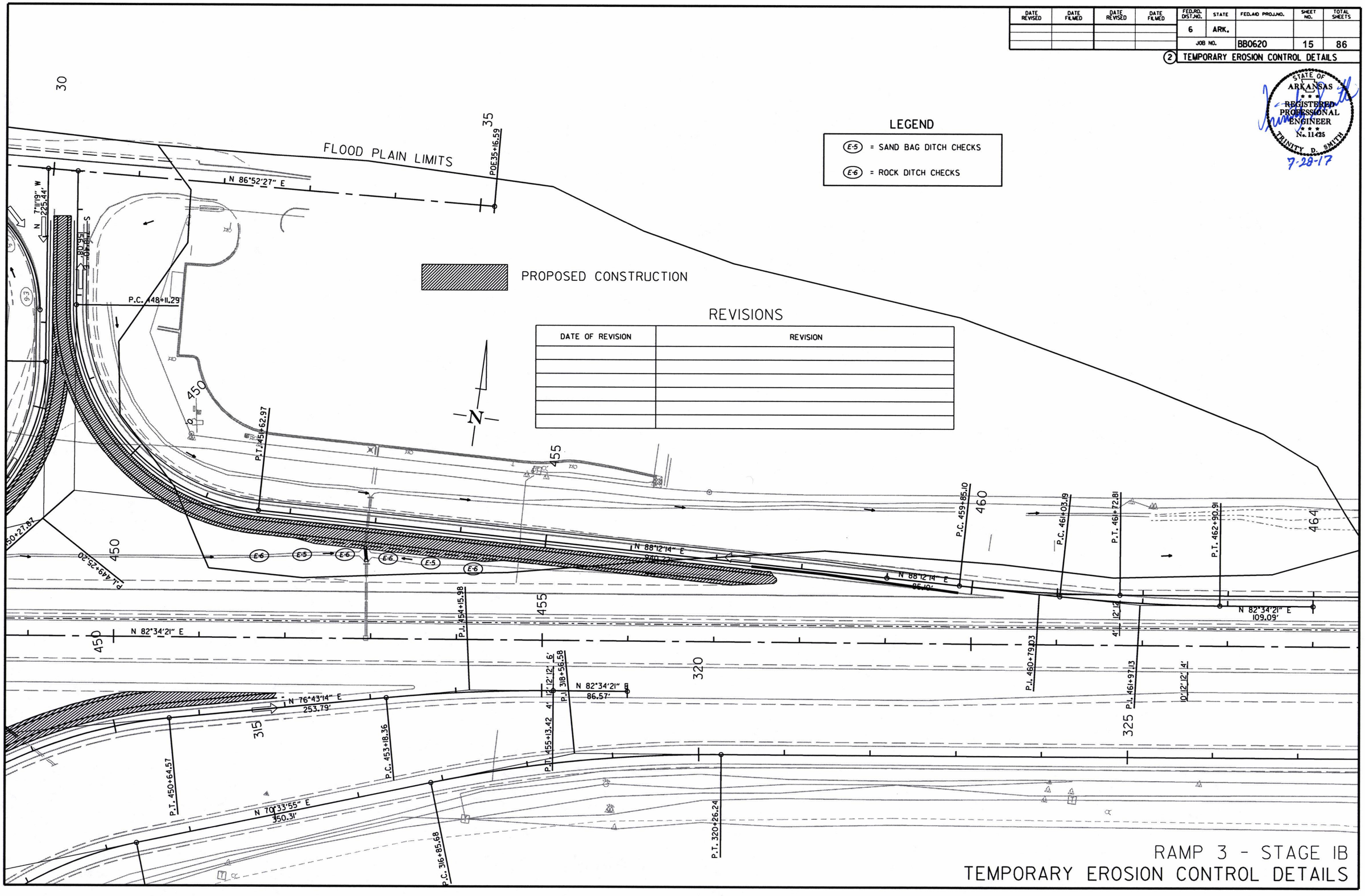
RBB0620.DGN

RAMP 2 - STAGE IB
TEMPORARY EROSION 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.		BB0620	15	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



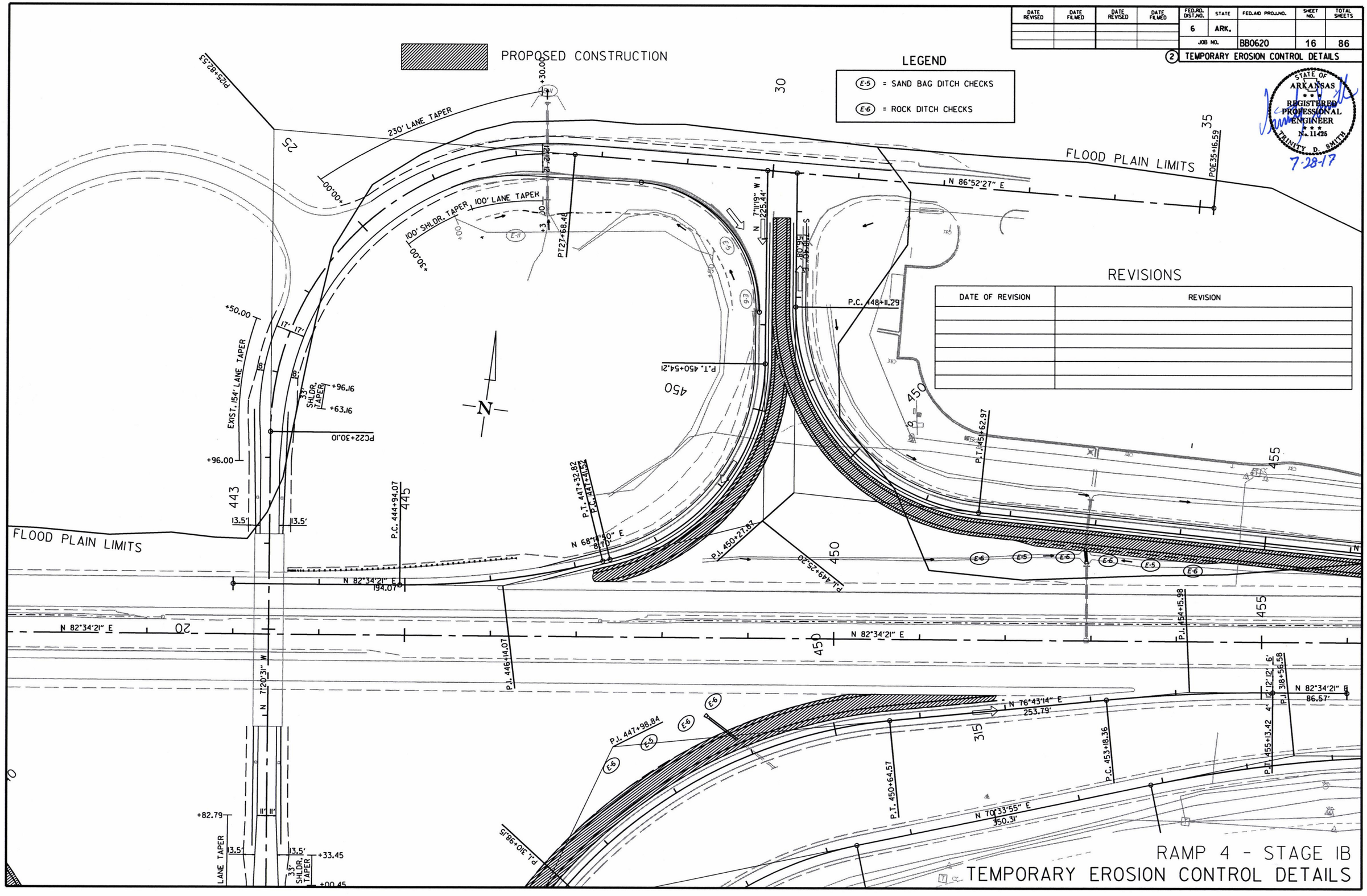
RAMP 3 - STAGE IB
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	16	86

(2) TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

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

7-28-17

RAMP 4 - STAGE IB

TEMPORARY EROSION CONTROL DETAILS

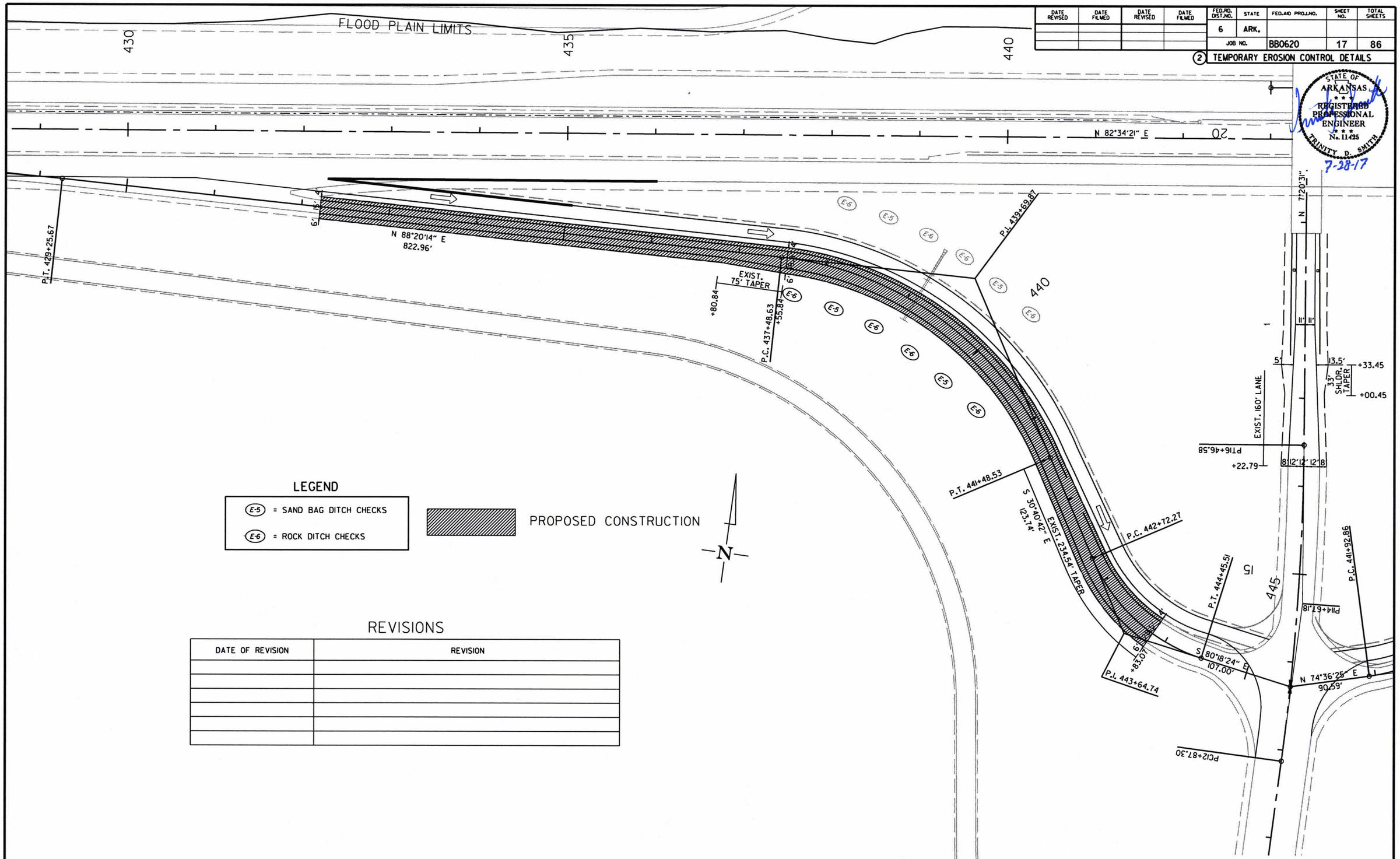
RBB0620.DGN 7/28/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0620	17	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

PROPOSED CONSTRUCTION

N

REVISIONS

DATE OF REVISION	REVISION

RAMP I - STAGE IC

TEMPORARY EROSION CONTROL DETAILS

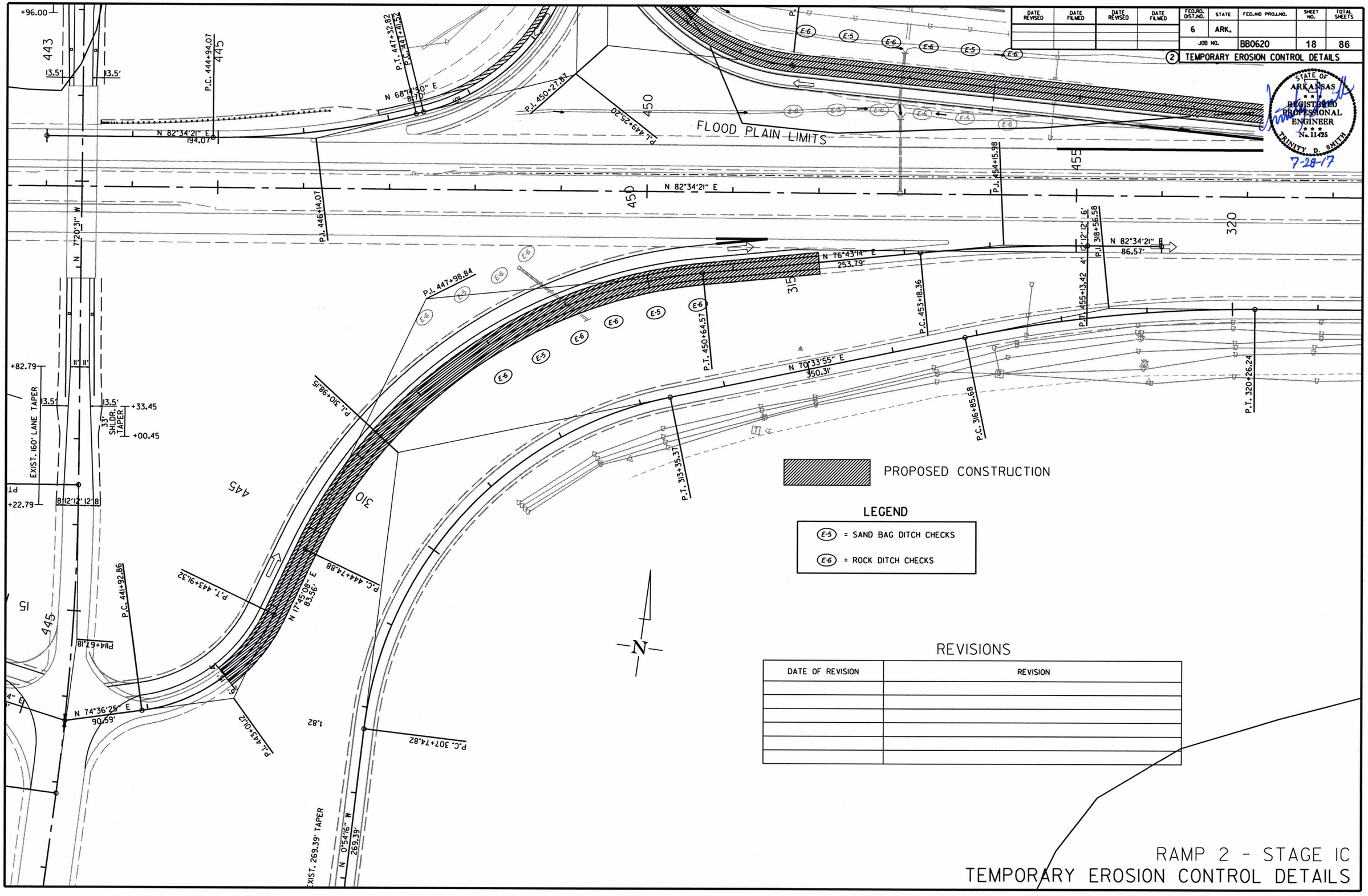
7/28/2017

RBB0620.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.		BB0620	18	86

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



REVISIONS

DATE OF REVISION	REVISION

RAMP 2 - STAGE IC
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	19	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

PROPOSED CONSTRUCTION

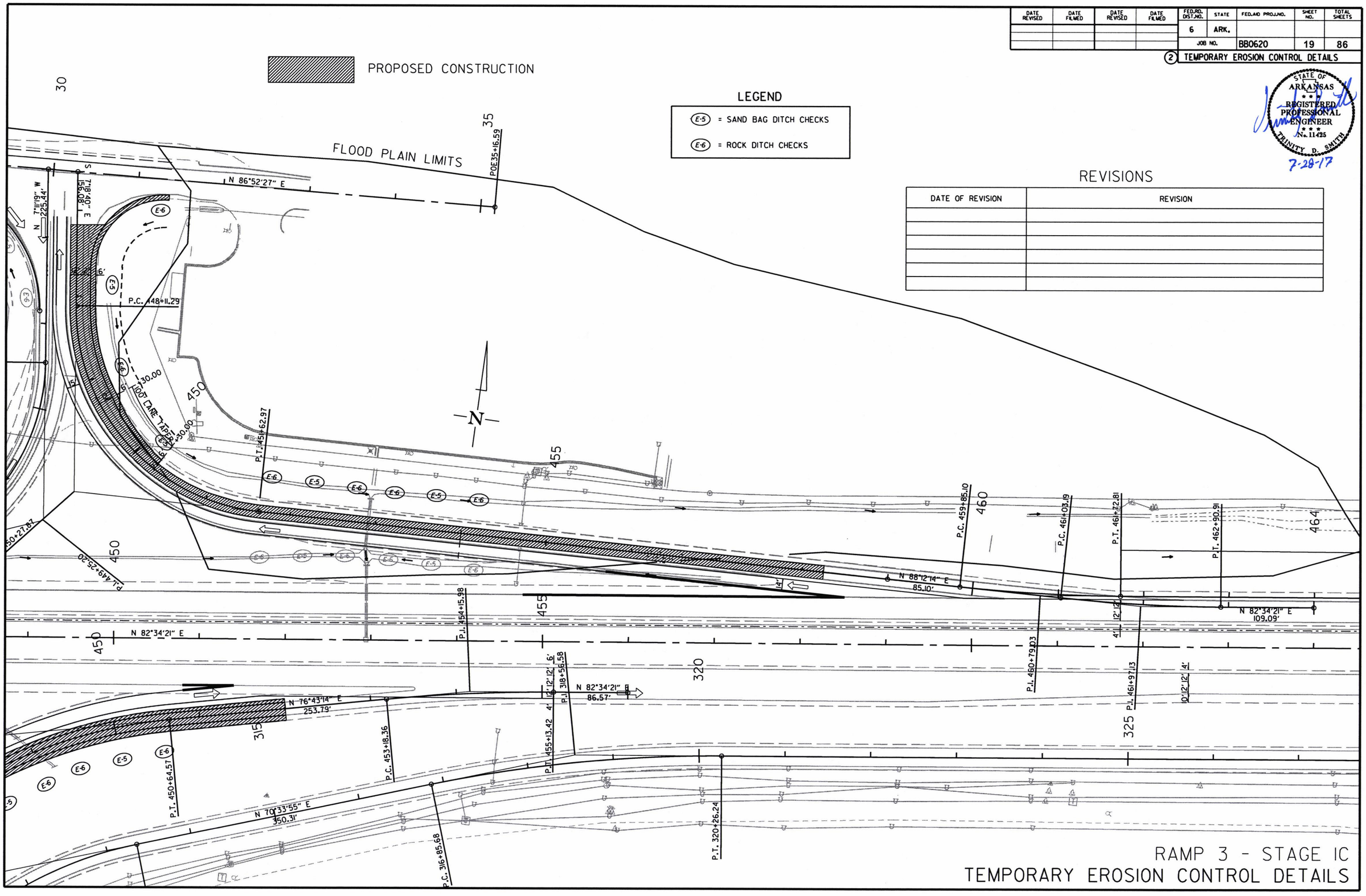
LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION



RAMP 3 - STAGE IC
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	20	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

PROPOSED CONSTRUCTION

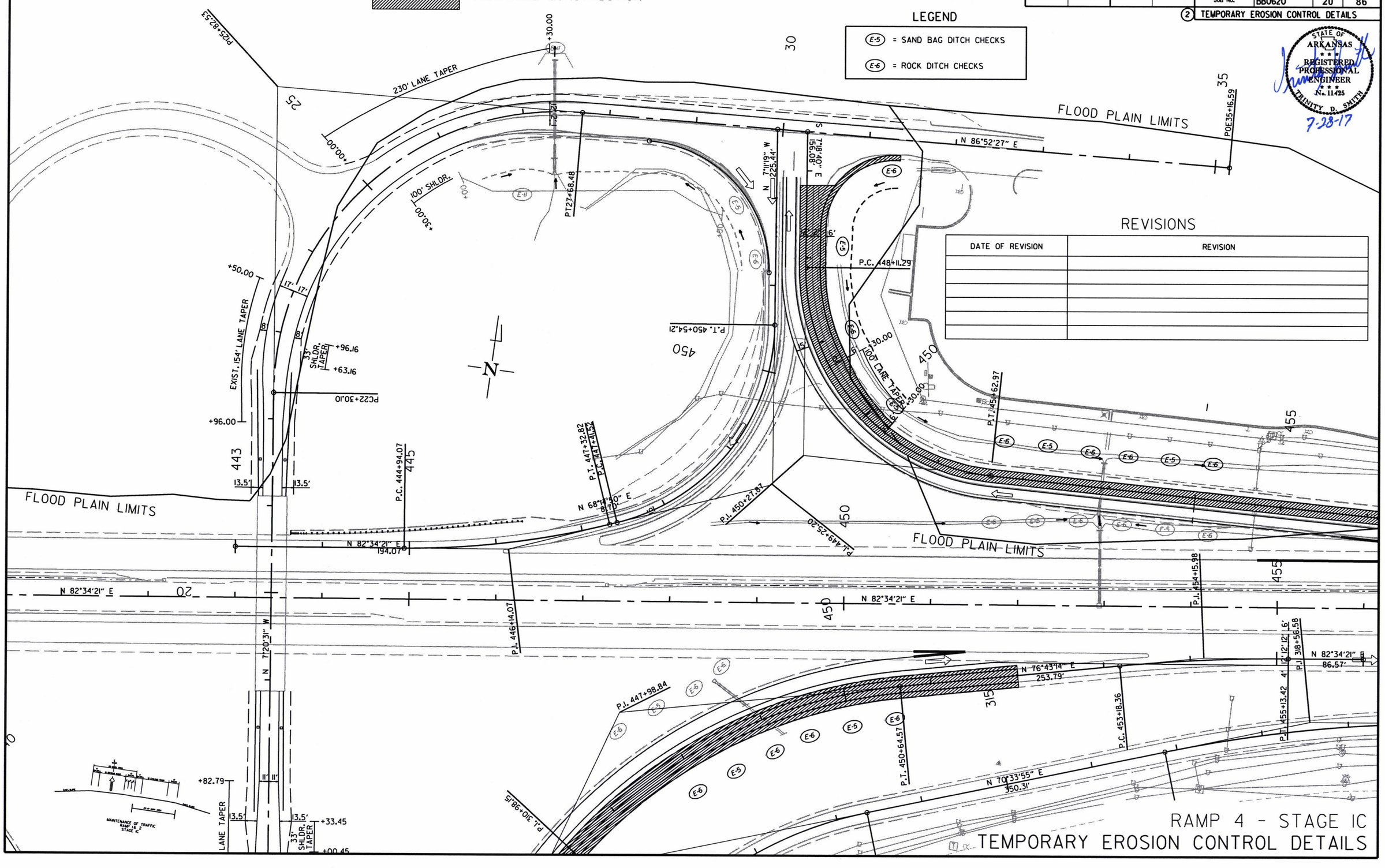
LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION



RAMP 4 - STAGE IC
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	21	86

(2) TEMPORARY EROSION CONTROL DETAILS

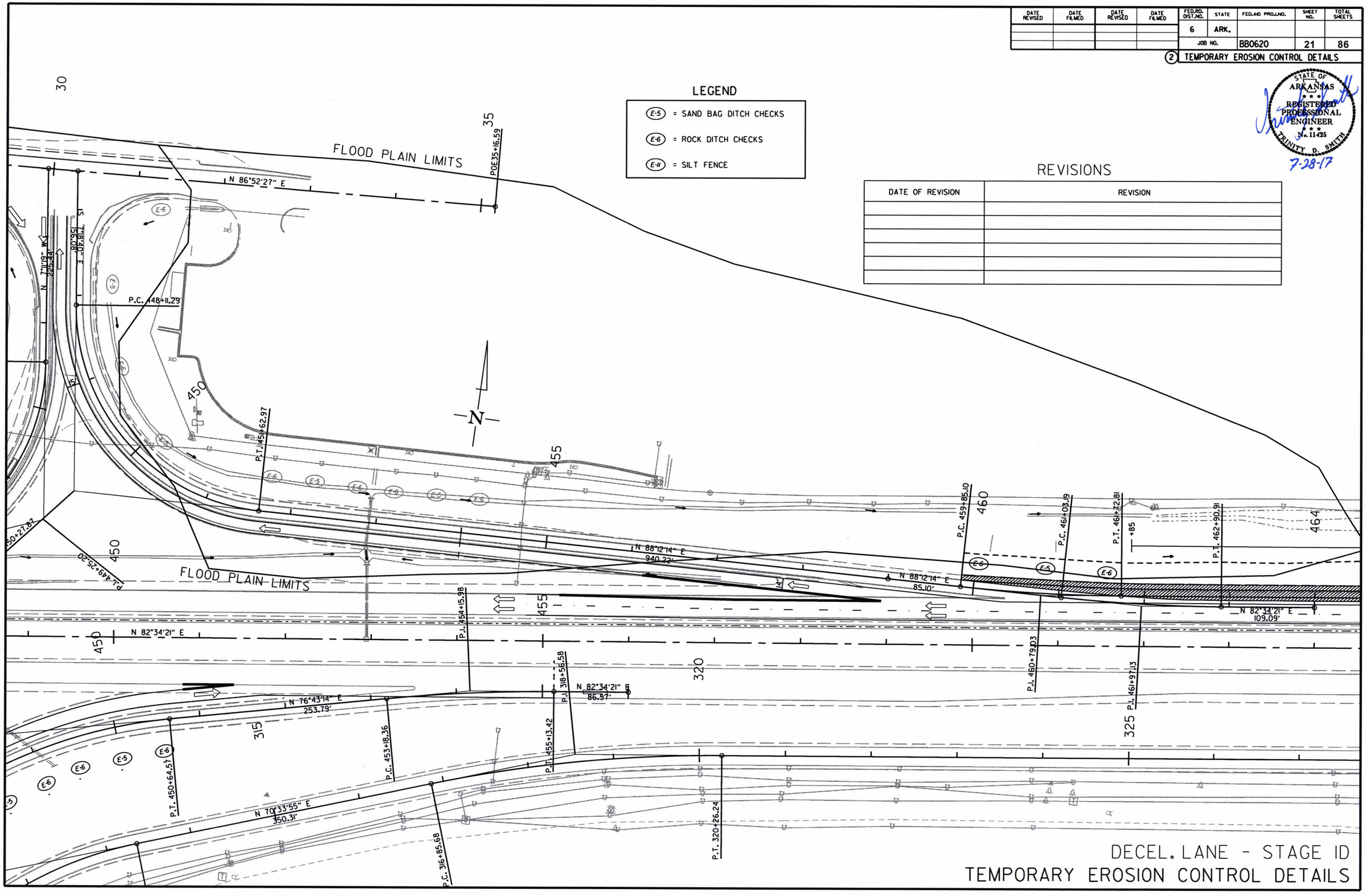
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION



DECEL. LANE - STAGE ID
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	22	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

LEGEND

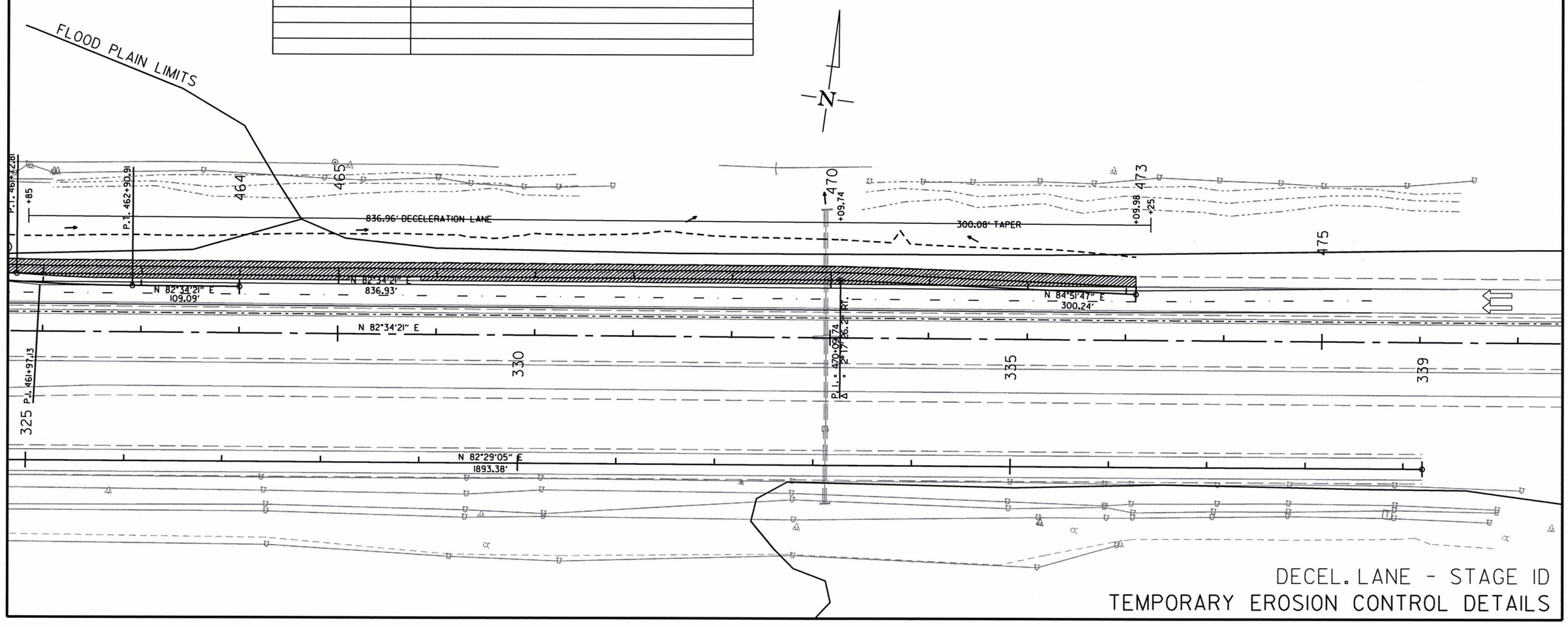
(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

(E-11) = SILT FENCE

REVISIONS

DATE OF REVISION	REVISION



DECEL. LANE - STAGE ID
TEMPORARY EROSION CONTROL DETAILS

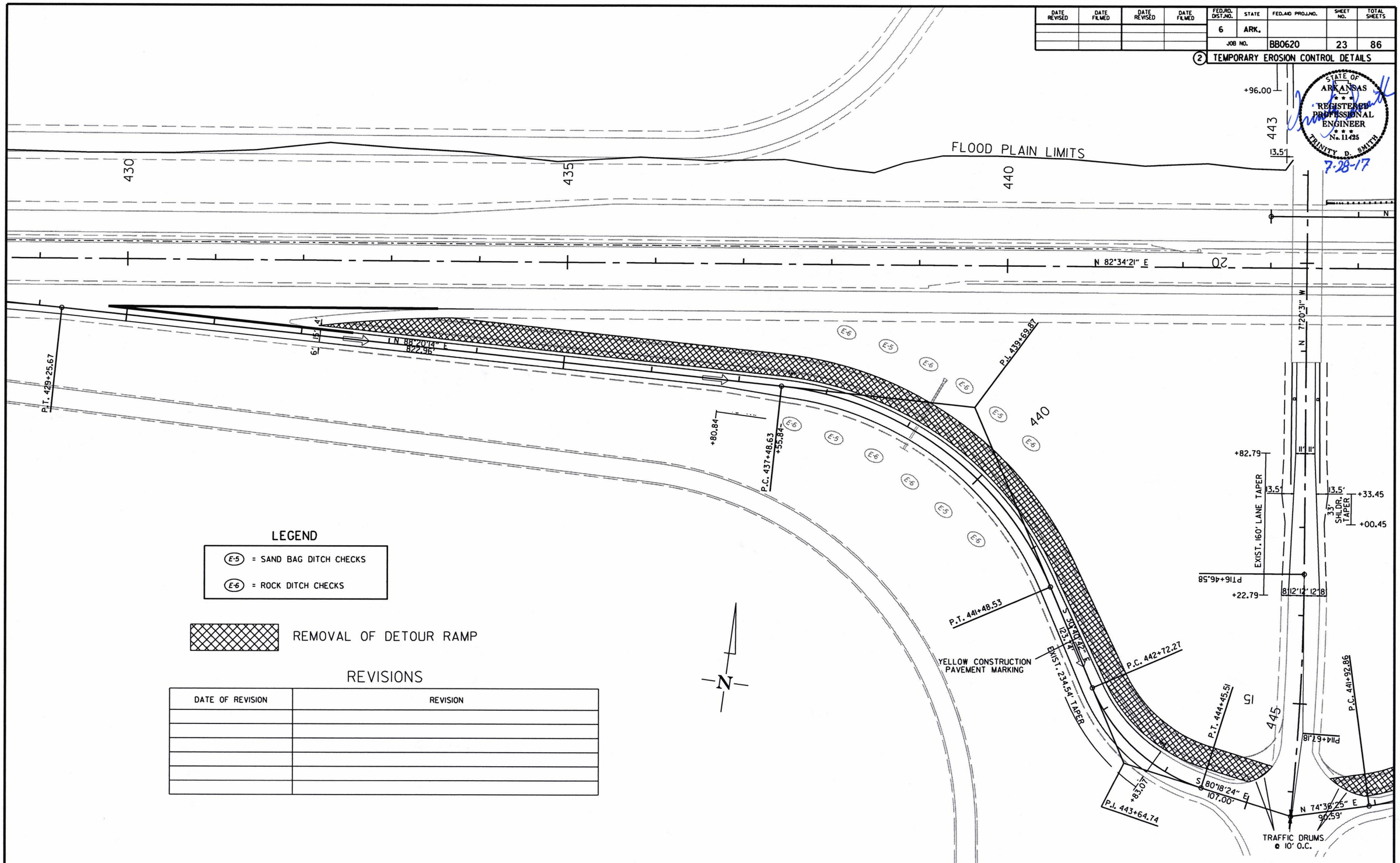
7/28/2017

RBB0620.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.		BB0620	23	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REMOVAL OF DETOUR RAMP

REVISIONS

DATE OF REVISION	REVISION

RAMP I - STAGE 2A

TEMPORARY EROSION CONTROL DETAILS

7/28/2017

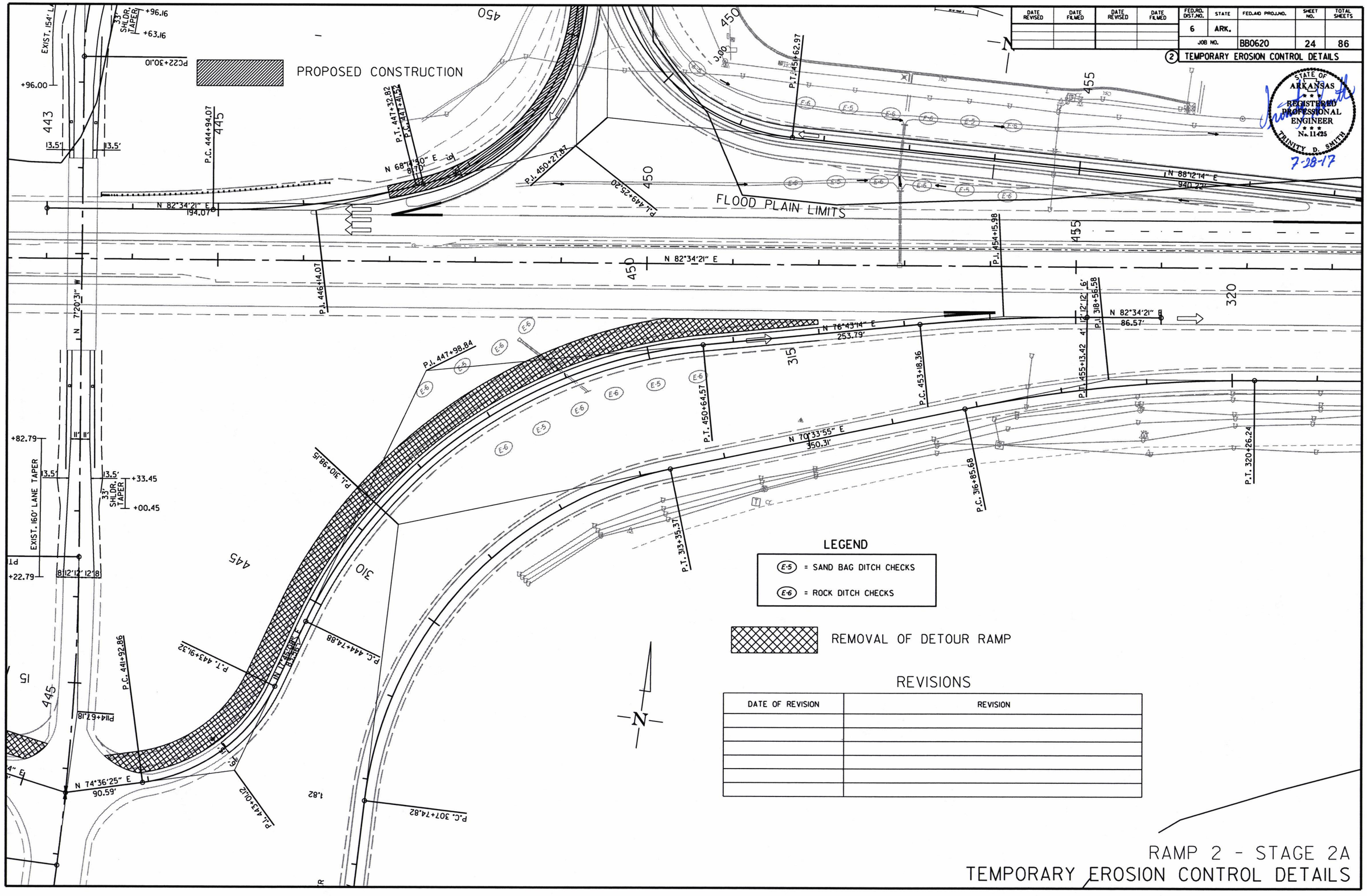
RBB0620.DGN

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.		BB0620	24	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REMOVAL OF DETOUR RAMP

REVISIONS

DATE OF REVISION	REVISION

RAMP 2 - STAGE 2A

TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	25	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

PROPOSED CONSTRUCTION

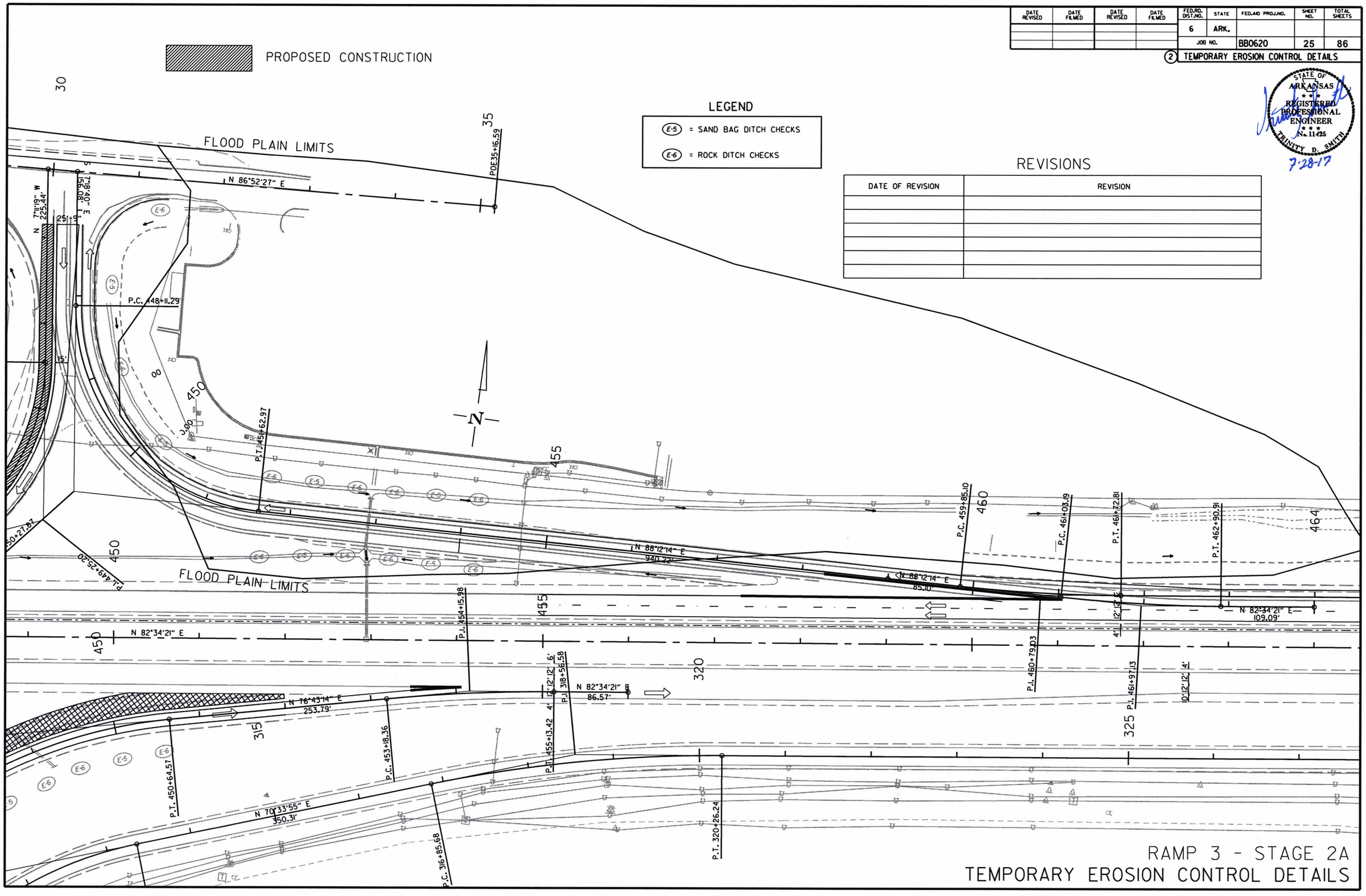
LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION



RAMP 3 - STAGE 2A
TEMPORARY EROSION CONTROL DETAILS

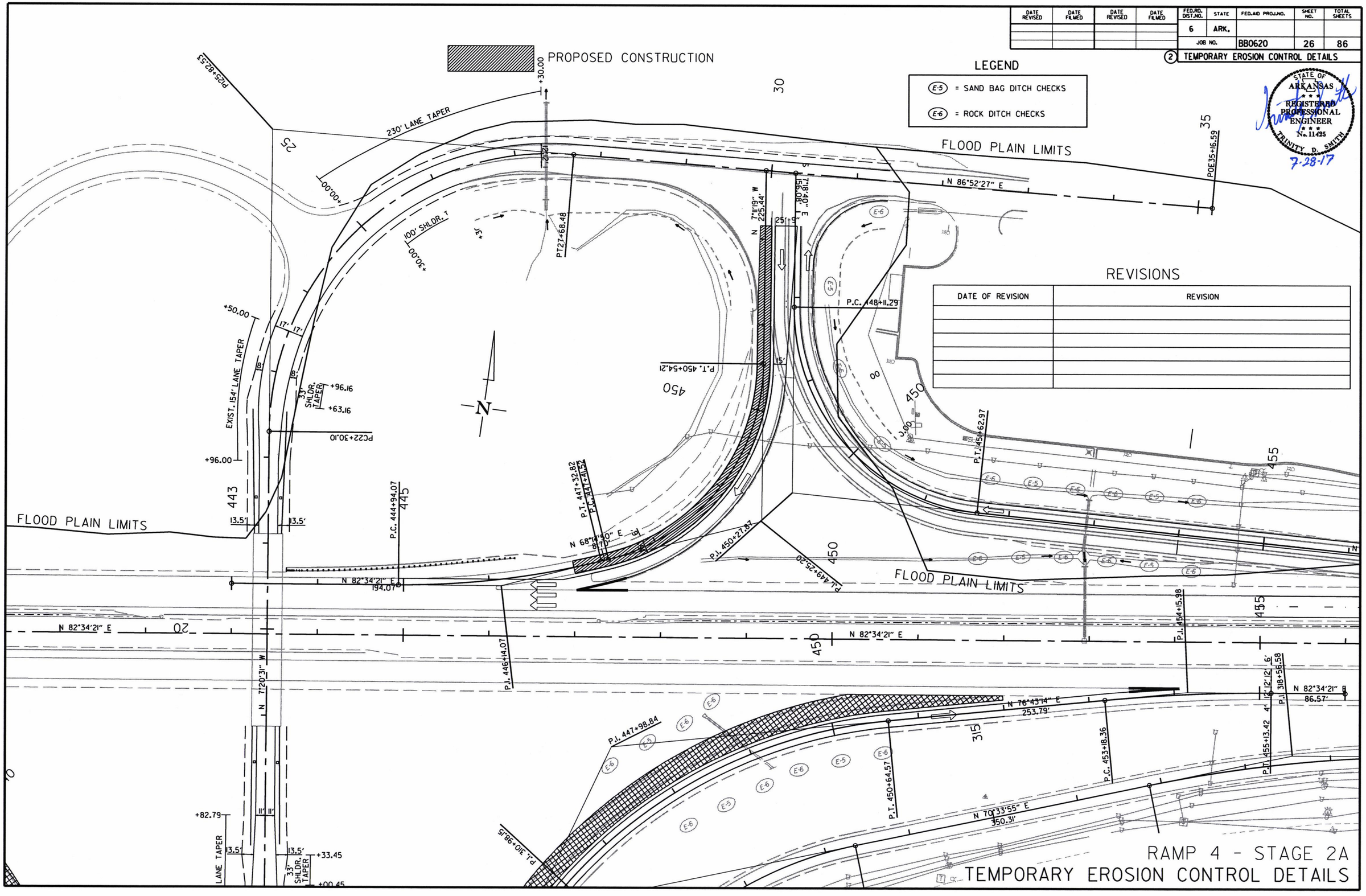
7/28/2017

RBB0620.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.		BB0620	26	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17



7/28/2017

RBB0620.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.		BB0620	27	86

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

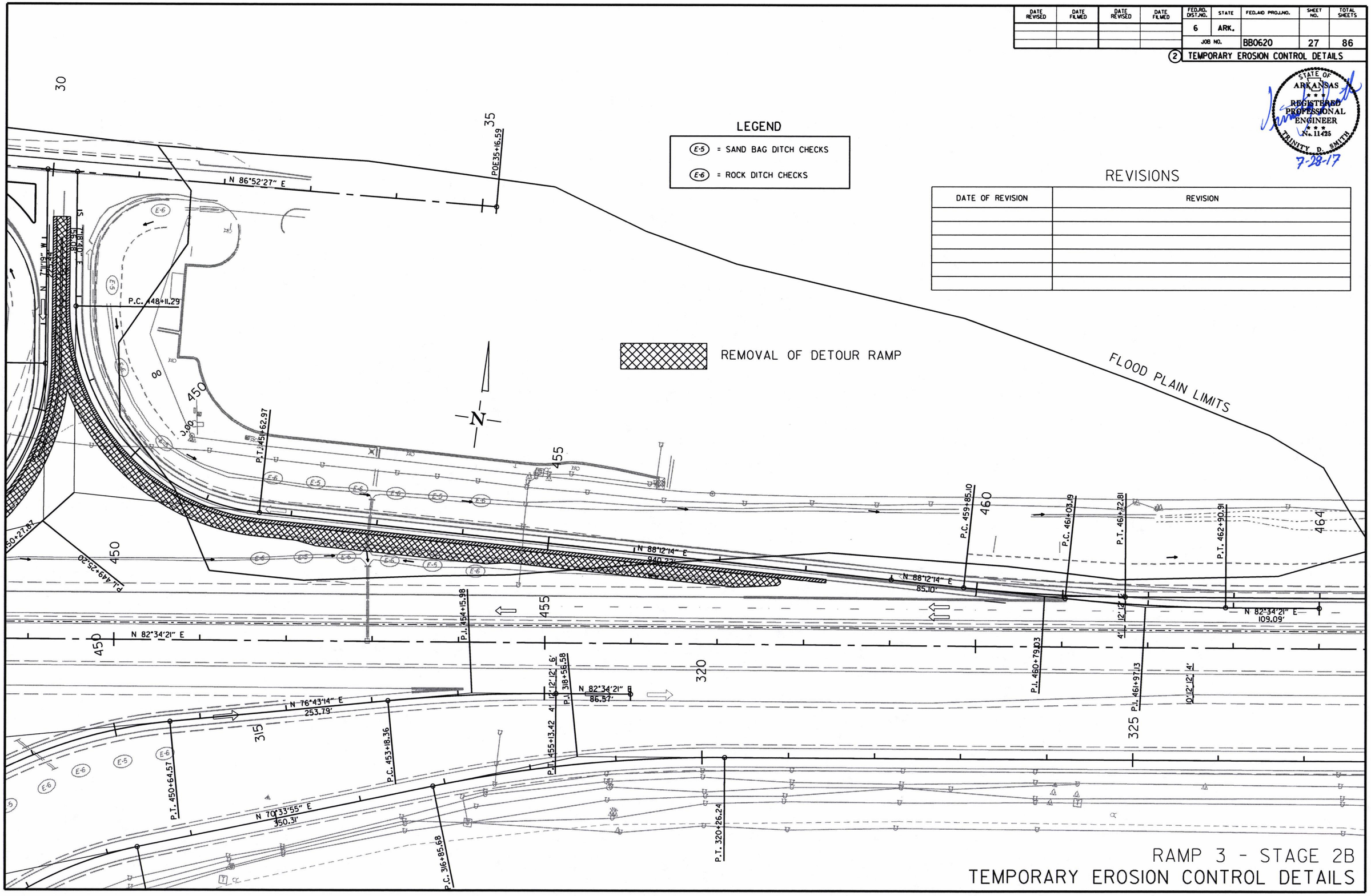
LEGEND

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

REVISIONS

DATE OF REVISION	REVISION



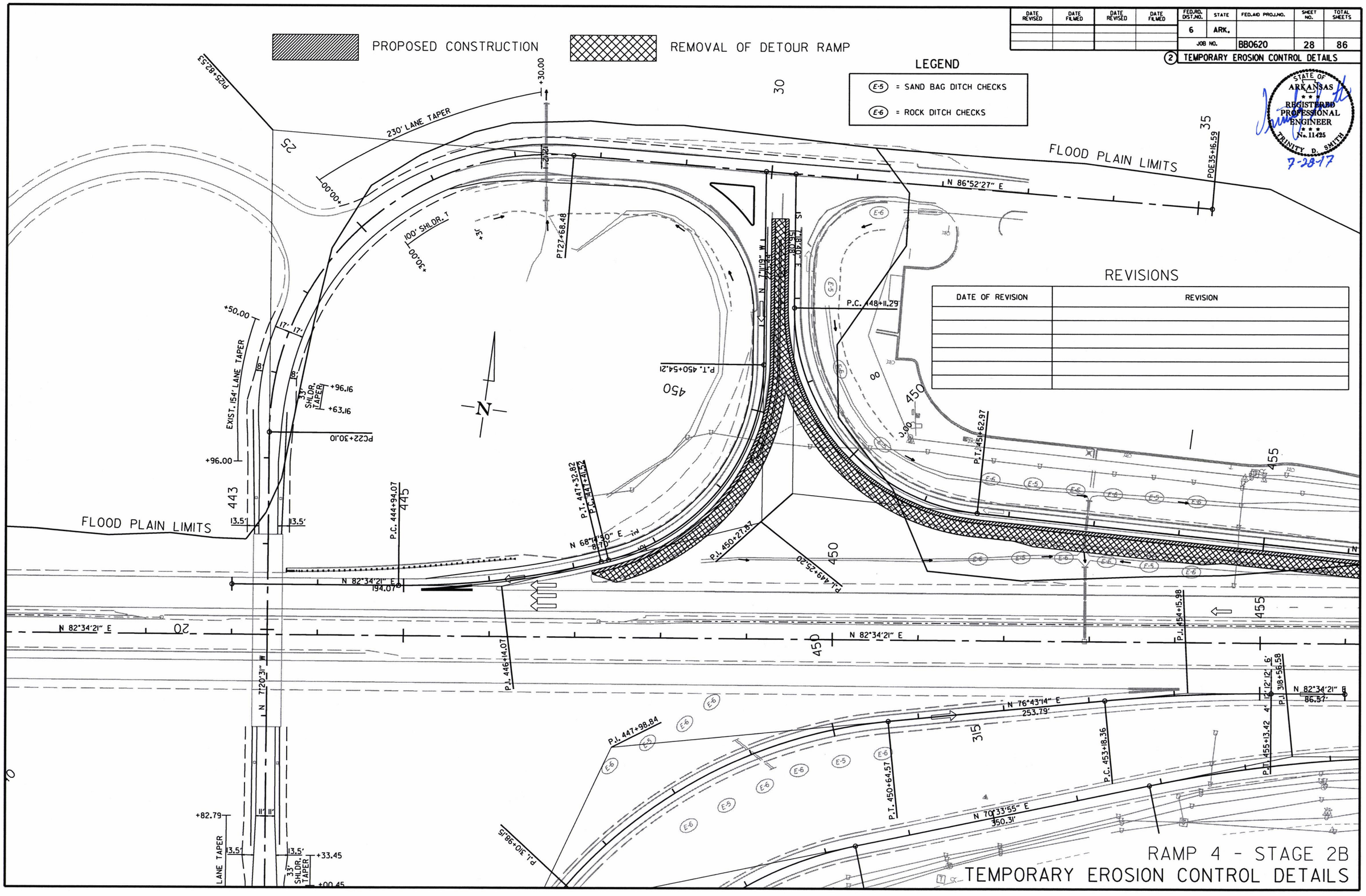
RAMP 3 - STAGE 2B
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.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.		BB0620	28	86

(2) TEMPORARY EROSION CONTROL DETAILS



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

REVISIONS

DATE OF REVISION	REVISION

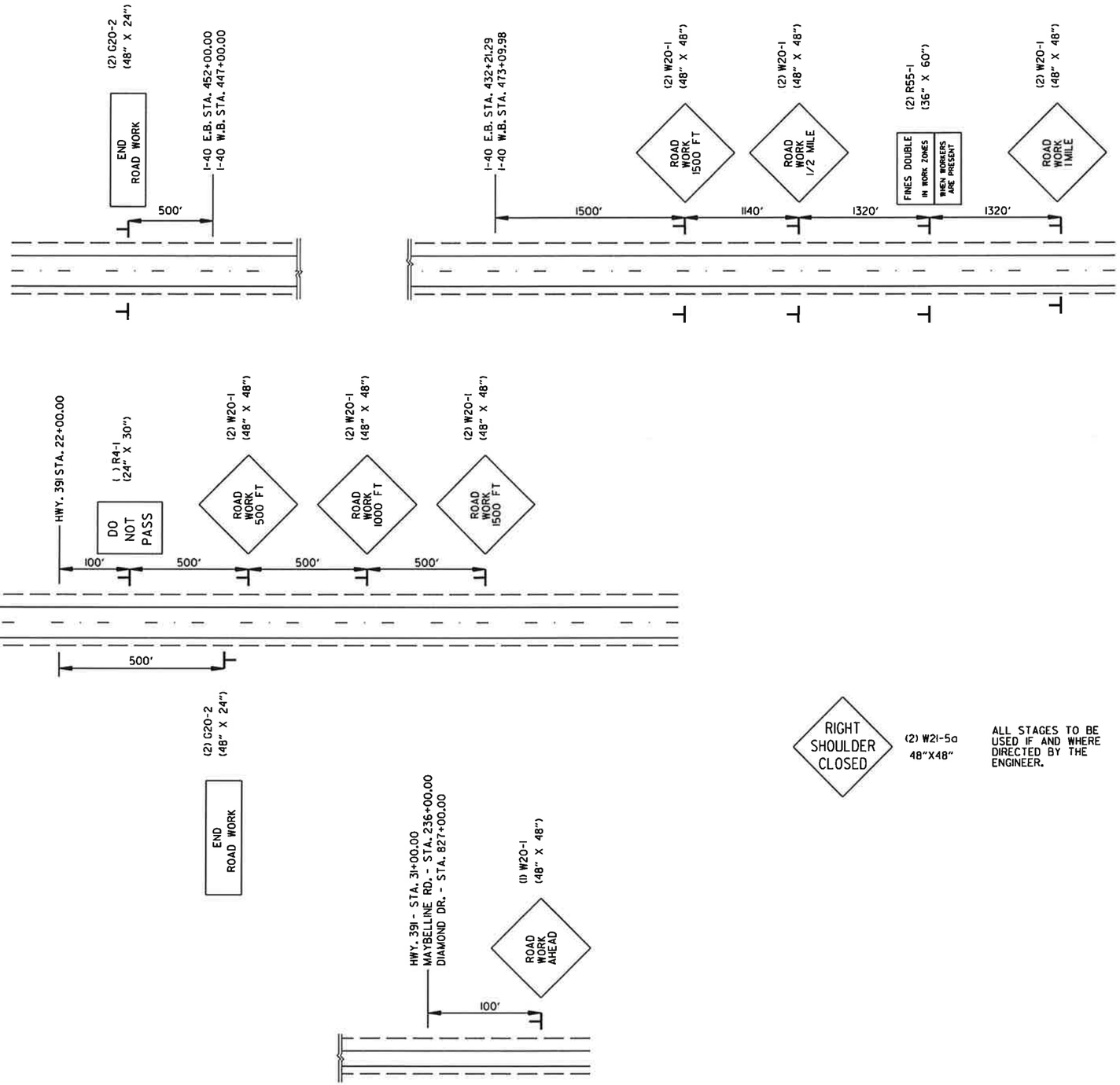
RAMP 4 - STAGE 2B
TEMPORARY EROSION CONTROL DETAILS

7/28/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	29	86

(2) MAINTENANCE OF TRAFFIC DETAILS



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

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17

SEQUENCE OF CONSTRUCTION
INSTALL ADVANCE WARNING SIGNS.

STAGE IA

1. INSTALL TRAFFIC DRUMS FOR HWY. 391, RAMP 3, AND RAMP 4.
2. EXTEND R.C. PIPE CULVERT.
   C.L. HWY. 391 STA. 27+36
3. CONSTRUCT PERMANENT WIDENING FOR HWY. 391.
   C.L. HWY. 391 STA. 26+30.00 TO STA. 29+97.82
4. CONSTRUCT PERMANENT OUTSIDE SHOULDER FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 450+30.00 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 451+14.54
   CONSTRUCT TEMPORARY OUTSIDE SHOULDER FOR RAMP 3.
   C.L. RAMP 3 STA. 447+16.75 TO STA. 450+30.00
   C.L. RAMP 3 STA. 458+25.00 TO STA. 459+85.10

STAGE IB

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE IB.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

STAGE ID

1. INSTALL TEMPORARY STRIPING, RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL, AND TRAFFIC DRUMS AS SHOWN.
2. CONSTRUCT DECELERATION LANE.
   DECELERATION LANE C.L. STA. 459+85.10 TO STA. 473+09.98

STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE IC. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32

STAGE 2B

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT RAMP 4 DETOUR TRAFFIC ONTO RECONSTRUCTED RAMP 4.
3. REMOVE DETOUR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
4. CONSTRUCT PERMANENT INSIDE SHOULDERS FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32
5. CONSTRUCT BARRIER WALL FOR RAMP 4 AS SHOWN.
   C.L. RAMP 4 STA. 449+50.00 TO STA. 452+00.00

HWY. 391 RECONSTRUCTION WILL NOT BE PERMITTED UNTIL ALL OTHER WORK IS COMPLETE. A SINGLE LANE CLOSURE AS DIRECTED BY THE ENGINEER WILL BE UTILIZED FOR RECONSTRUCTION OF HWY. 391. THE LANE CLOSURE MUST ADHERE TO THE TIME RESTRICTIONS DETAILED IN THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION. WHEN RECONSTRUCTION OF HWY. 391 IS COMPLETE, CONSTRUCT CONCRETE ISLAND FOR HWY. 391 TO RAMP 4 TURNOUT.

ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

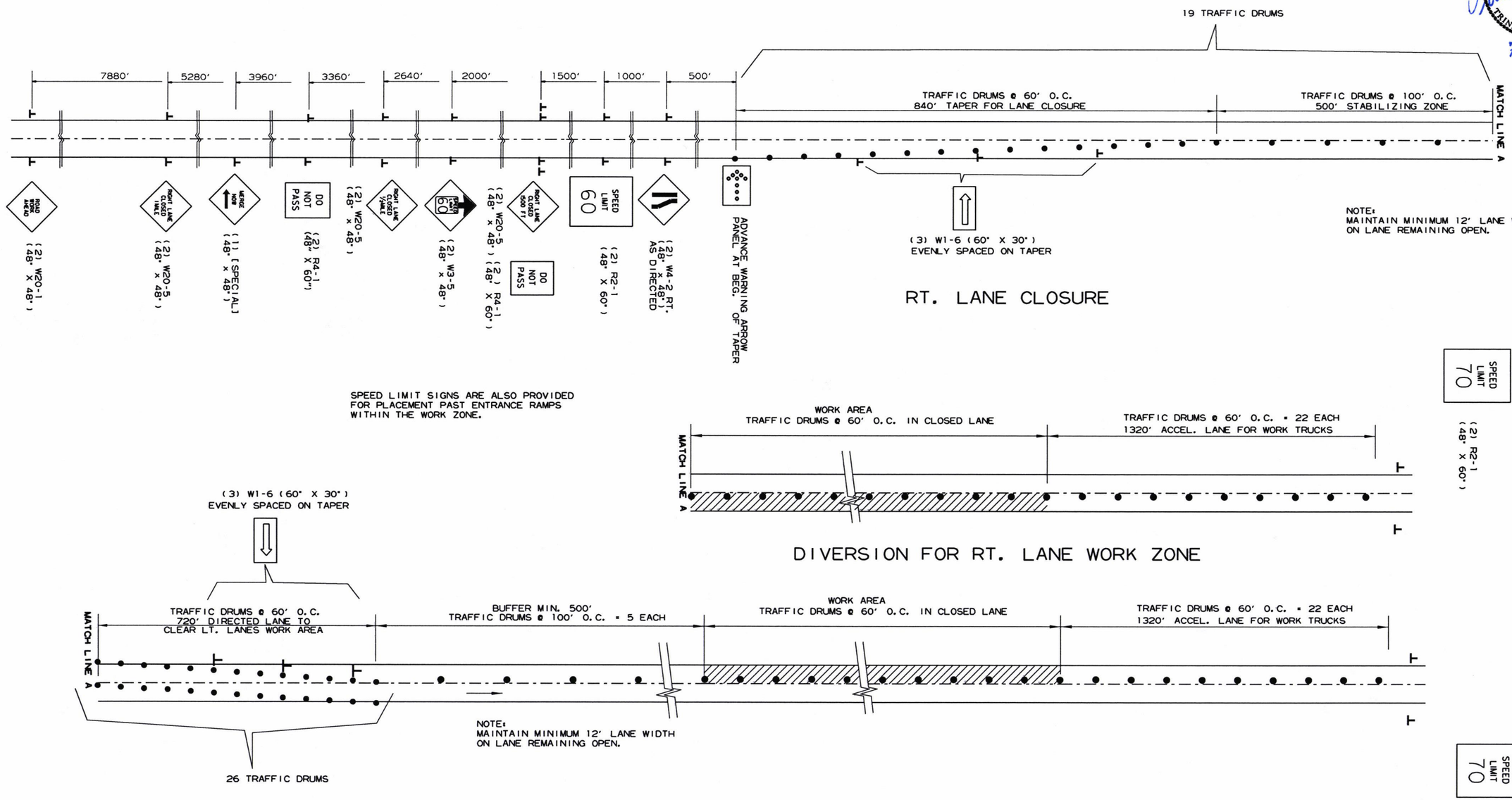
RBB0620.DGN

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.		BB0620	30	86

(2) MAINTENANCE OF TRAFFIC DETAILS

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

7-28-17

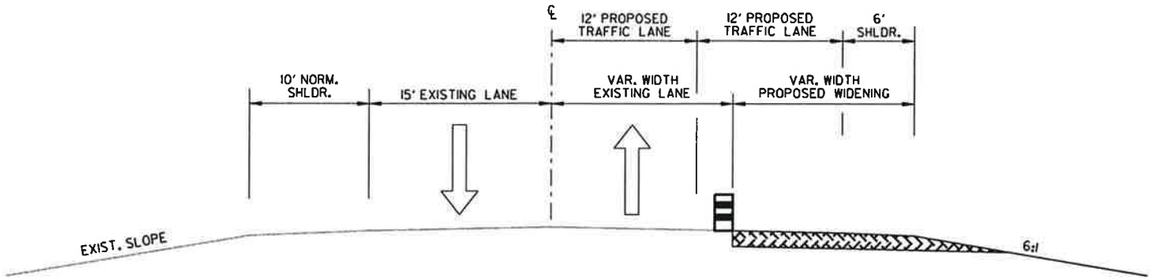

19 TRAFFIC DRUMS
7880'
5280'
3960'
3360'
2640'
2000'
1500'
1000'
500'
TRAFFIC DRUMS @ 60' O.C.
840' TAPER FOR LANE CLOSURE
TRAFFIC DRUMS @ 100' O.C.
500' STABILIZING ZONE
MATCH LINE A
ROAD WORK AHEAD
(2) W20-1 (48" X 48")
RIGHT LANE CLOSED 1 MILE
(2) W20-5 (48" x 48")
WORKERS NOW
(1) [SPECIAL] (48" x 48")
DO NOT PASS
(2) R4-1 (48" X 60")
(2) W20-5 (48" x 48")
RIGHT LANE CLOSED 1 MILE
PREPARE TO STOP
(2) W3-5 (48" x 48")
(2) W20-5 (48" x 48")
RIGHT LANE CLOSED 500 FT
DO NOT PASS
(2) R4-1 (48" X 60")
SPEED LIMIT 60
(2) R2-1 (48" X 60")
(2) W4-2 RT. (48" x 48") AS DIRECTED
ADVANCE WARNING ARROW PANEL AT BEG. OF TAPER
(3) W1-6 (60" X 30") EVENLY SPACED ON TAPER
NOTE:
MAINTAIN MINIMUM 12' LANE WIDTH ON LANE REMAINING OPEN.
RT. LANE CLOSURE
SPEED LIMIT 70
(2) R2-1 (48" X 60")
SPEED LIMIT CHANGE AHEAD
(2) W3-5 (48" x 48")
SPEED LIMIT 60
(2) R2-1 (48" X 60")
SPEED LIMIT 60
(2) R2-1 (48" X 60")
SPEED LIMIT 60
(2) R2-1 (48" X 60

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	31	86

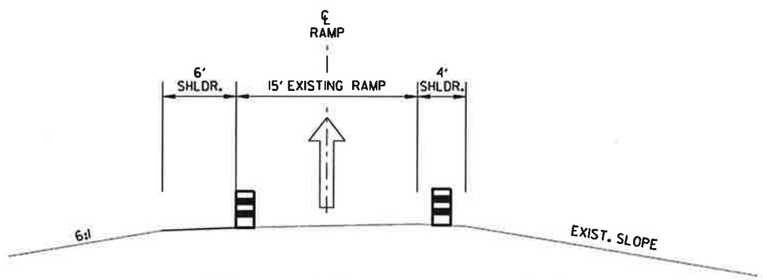
(2) MAINTENANCE OF TRAFFIC DETAILS

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

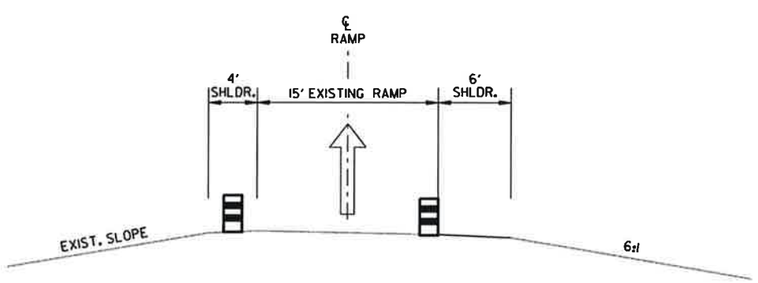
8-21-17



MAINTENANCE OF TRAFFIC
HWY. 391
STAGE IA
STA. 26+30.00 TO STA. 29+97.82



MAINTENANCE OF TRAFFIC
RAMP 4
STAGE IA
STA. 447+00.00 TO STA. 451+14.54



MAINTENANCE OF TRAFFIC
RAMP 3
STAGE IA
STA. 447+16.75 TO STA. 459+85.10

STAGE IA

1. INSTALL TRAFFIC DRUMS
   FOR HWY. 391, RAMP 3, AND RAMP 4.
2. EXTEND R.C. PIPE CULVERT.
   C.L. HWY. 391 STA. 27+36
3. CONSTRUCT PERMANENT WIDENING FOR HWY. 391.
   C.L. HWY. 391 STA. 26+30.00 TO STA. 29+97.82
4. CONSTRUCT PERMANENT OUTSIDE SHOULDER FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 450+30.00 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 451+14.54
   CONSTRUCT TEMPORARY OUTSIDE SHOULDER FOR RAMP 3.
   C.L. RAMP 3 STA. 447+16.75 TO STA. 450+30.00
   C.L. RAMP 3 STA. 458+25.00 TO STA. 459+85.10

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MAINTENANCE OF TRAFFIC DETAILS

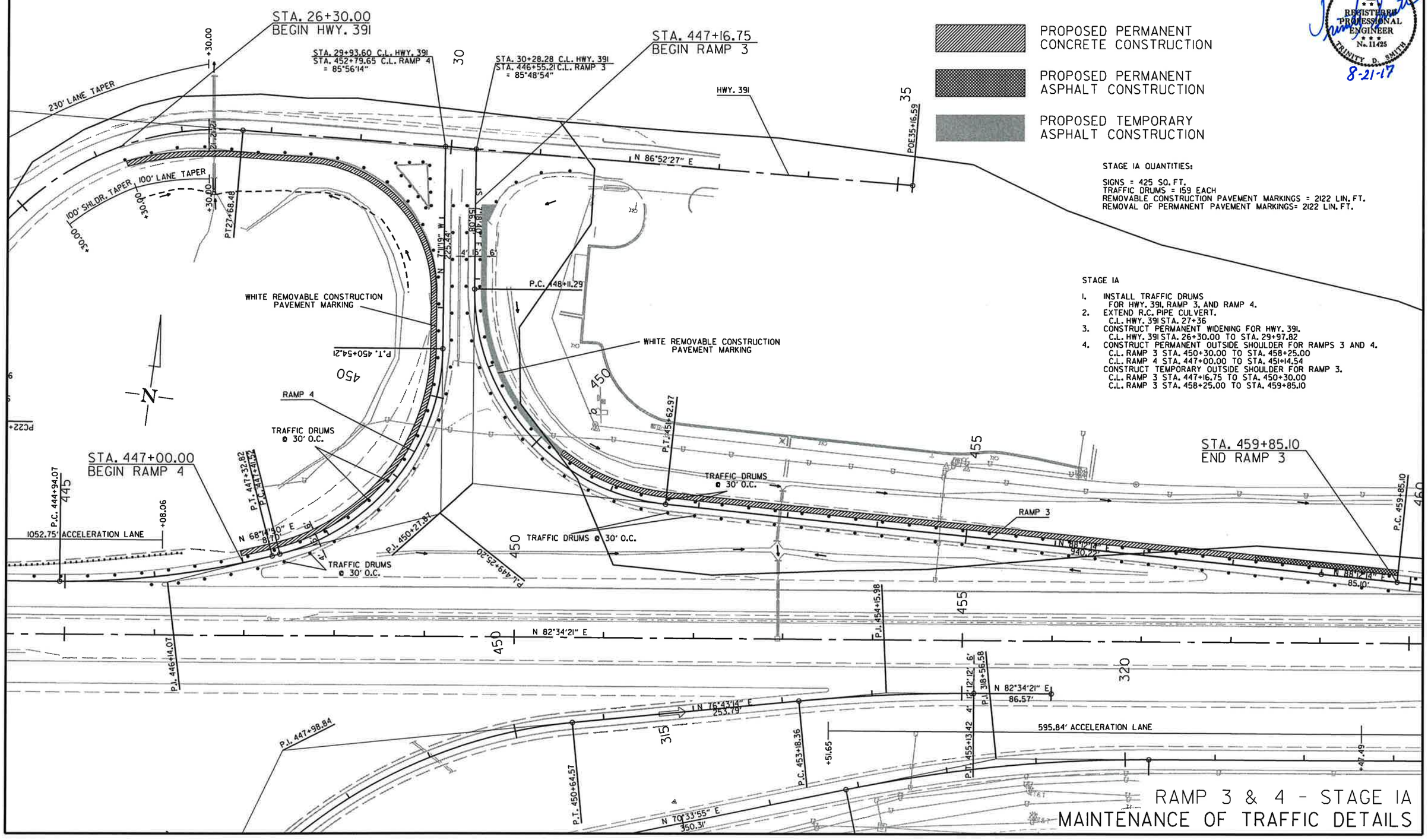
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	32	86

(2) MAINTENANCE OF TRAFFIC DETAILS

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

8-21-17

STA. 27+36 IN PLACE
24" X 115' R.C. PIPE CULVERT
WITH HEADWALL LT. & RT.
REMOVE RT. HEADWALL AND EXTEND R.C. PIPE
12' RT. FOR A COMPLETED LENGTH OF 127'
(CLASS III) (TYPE 3 BEDDING) WITH F.E.S.
24" R.C. PIPE = 16 LIN. FT.
24" F.E.S. = 1 EACH



STAGE IA QUANTITIES:

SIGNS = 425 SQ. FT.
TRAFFIC DRUMS = 159 EACH
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 2122 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS= 2122 LIN. FT.

STAGE IA

1. INSTALL TRAFFIC DRUMS
   FOR HWY. 391, RAMP 3, AND RAMP 4.
2. EXTEND R.C. PIPE CULVERT.
   C.L. HWY. 391 STA. 27+36
3. CONSTRUCT PERMANENT WIDENING FOR HWY. 391.
   C.L. HWY. 391 STA. 26+30.00 TO STA. 29+97.82
4. CONSTRUCT PERMANENT OUTSIDE SHOULDER FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 450+30.00 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 451+14.54
   CONSTRUCT TEMPORARY OUTSIDE SHOULDER FOR RAMP 3.
   C.L. RAMP 3 STA. 447+16.75 TO STA. 450+30.00
   C.L. RAMP 3 STA. 458+25.00 TO STA. 459+85.10

RAMP 3 & 4 - STAGE IA
MAINTENANCE OF TRAFFIC DETAILS

8/21/2017

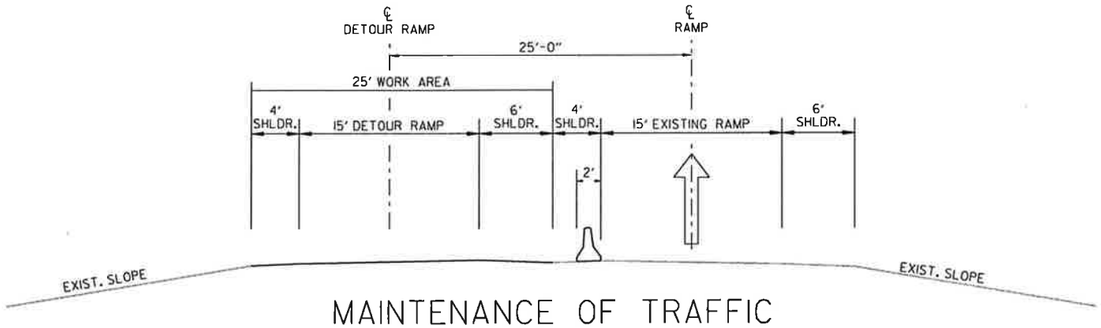
RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	33	86

(2) MAINTENANCE OF TRAFFIC DETAILS

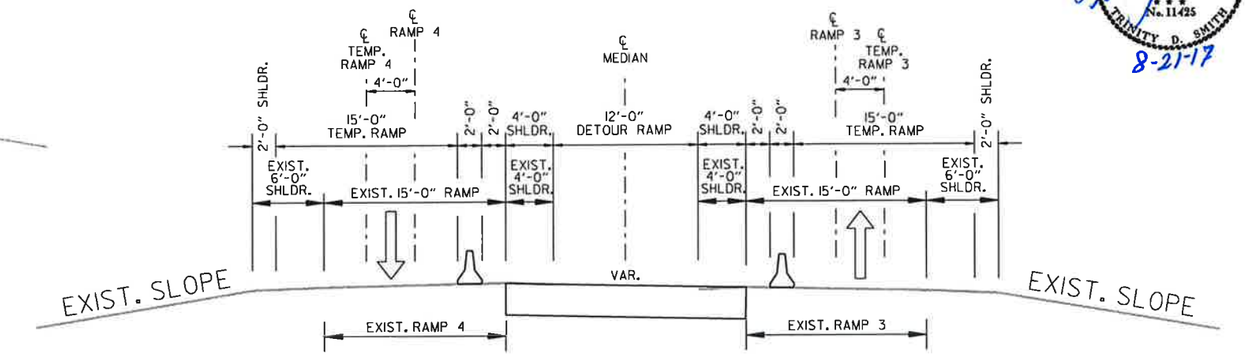
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17



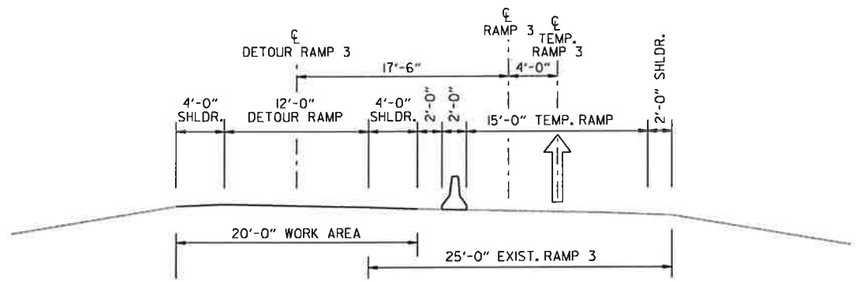
MAINTENANCE OF TRAFFIC
RAMP 1 & 2
STAGE 1B

RAMP 1 - STA. 432+18.77 TO STA. 445+15.45
RAMP 2 - STA. 441+52.76 TO STA. 452+00.00



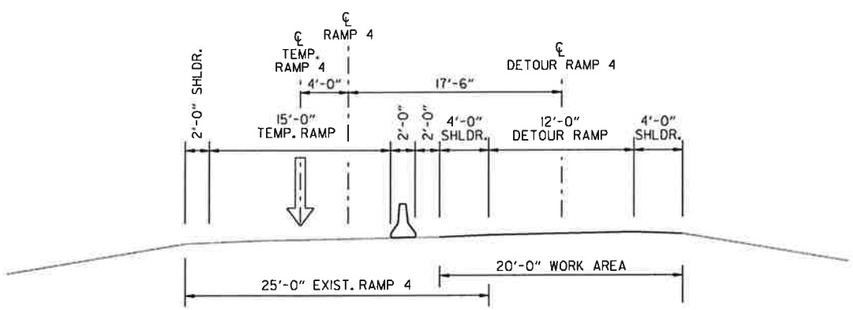
MAINTENANCE OF TRAFFIC
RAMP 3 AND RAMP 4
STAGE 1B

C.L. RAMP 3 - STA. 447+17.06 TO STA. 449+00.00



MAINTENANCE OF TRAFFIC
RAMP 3
STAGE 1B

STA. 449+00.00 TO STA. 457+72.40



MAINTENANCE OF TRAFFIC
RAMP 4
STAGE 1B

STA. 447+00.00 TO STA. 450+27.46

STAGE 1B

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

STAGE 1B
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

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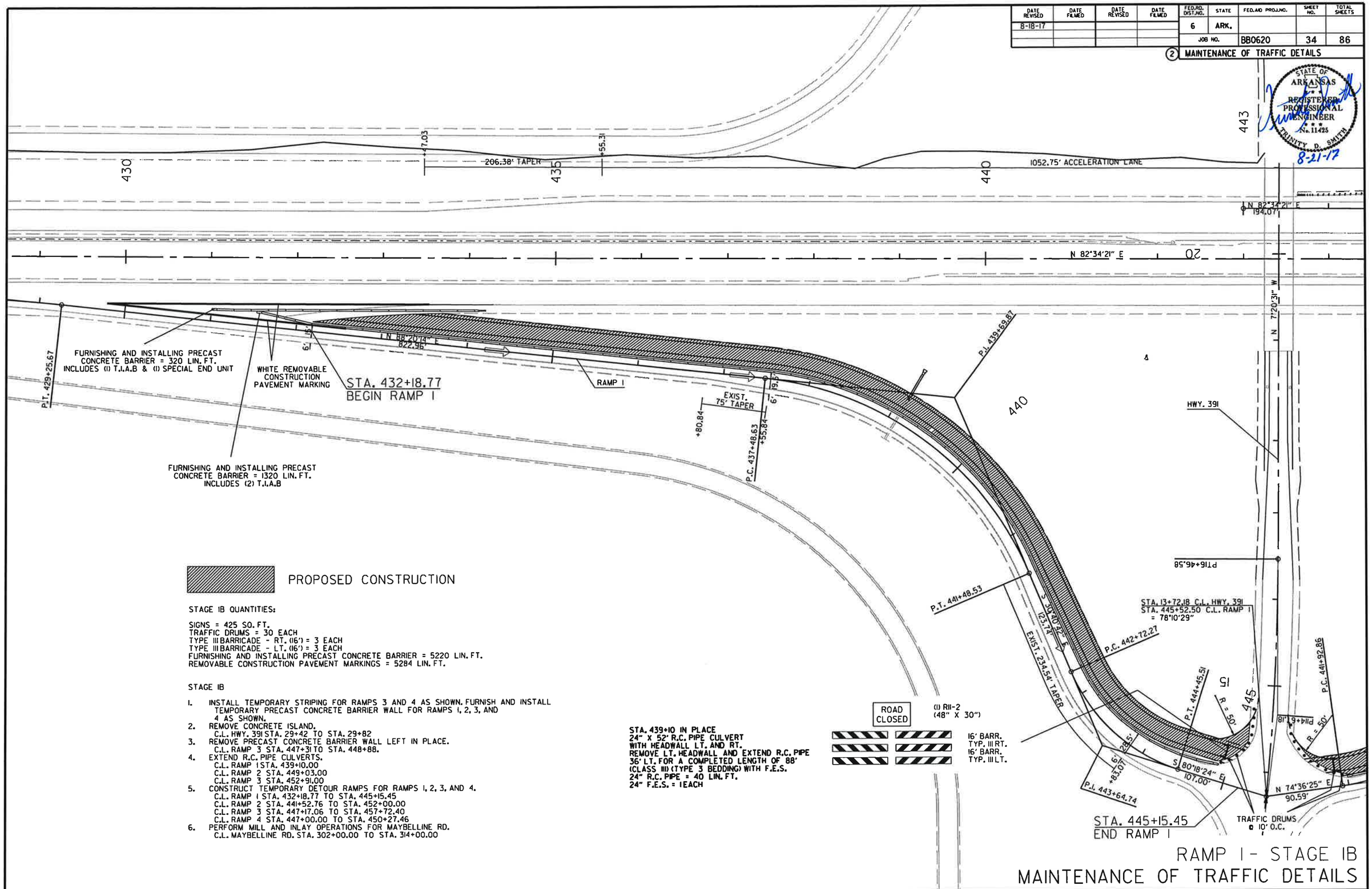
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-18-17			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0620	34	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



PROPOSED CONSTRUCTION

STAGE 1B QUANTITIES:

SIGNS = 425 SQ. FT.
TRAFFIC DRUMS = 30 EACH
TYPE III BARRICADE - RT. (16') = 3 EACH
TYPE III BARRICADE - LT. (16') = 3 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 5220 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 5284 LIN. FT.

STAGE 1B

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

STA. 439+10 IN PLACE
24" X 52' R.C. PIPE CULVERT
WITH HEADWALL LT. AND RT.
REMOVE LT. HEADWALL AND EXTEND R.C. PIPE
36' LT. FOR A COMPLETED LENGTH OF 88'
(CLASS III) (TYPE 3 BEDDING) WITH F.E.S.
24" R.C. PIPE = 40 LIN. FT.
24" F.E.S. = 1 EACH

ROAD CLOSED

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

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

RAMP 1 - STAGE 1B
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

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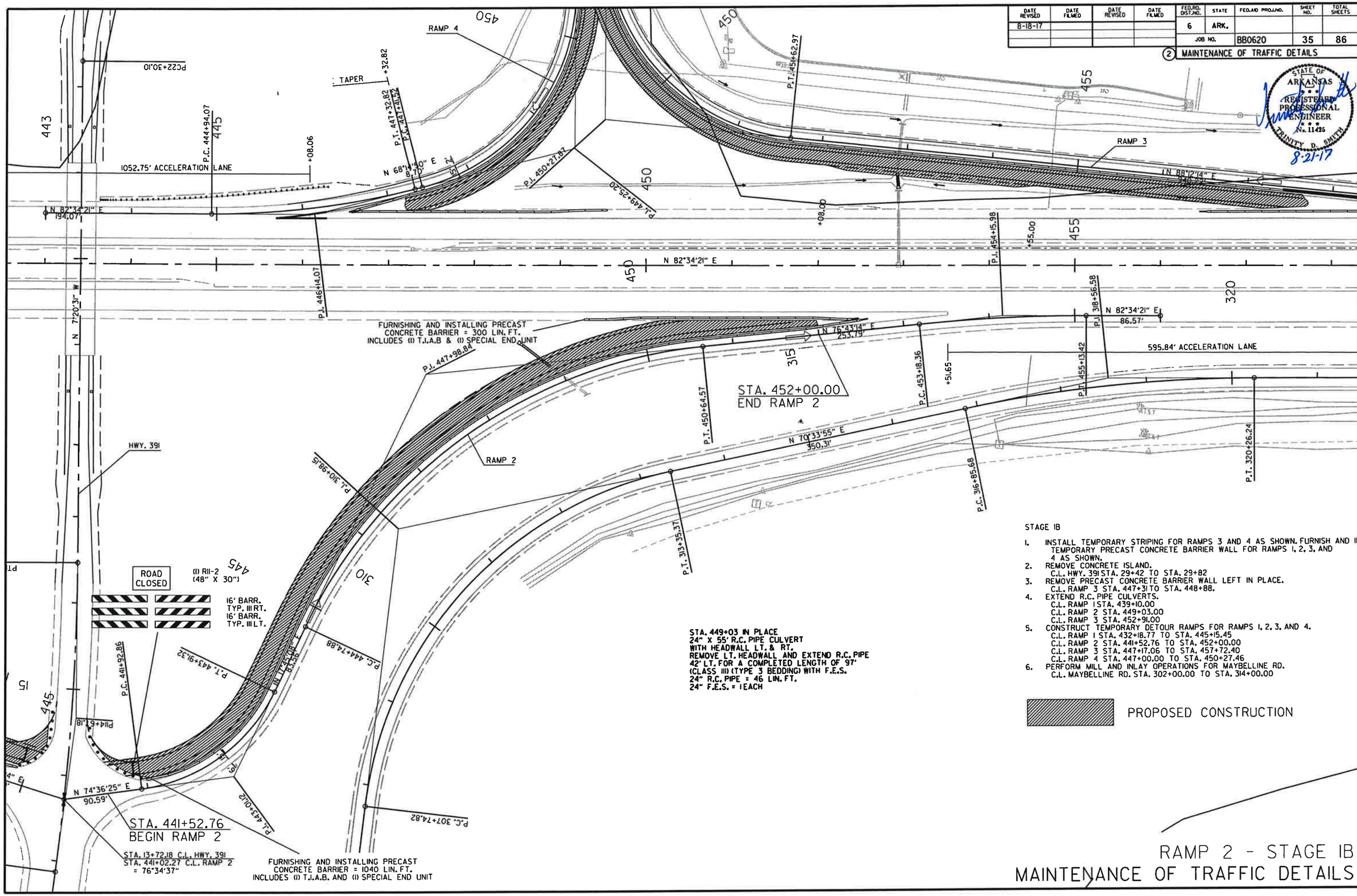
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	35	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



STAGE 1B

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

PROPOSED CONSTRUCTION

RAMP 2 - STAGE 1B
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	36	86

(2) MAINTENANCE OF TRAFFIC DETAILS

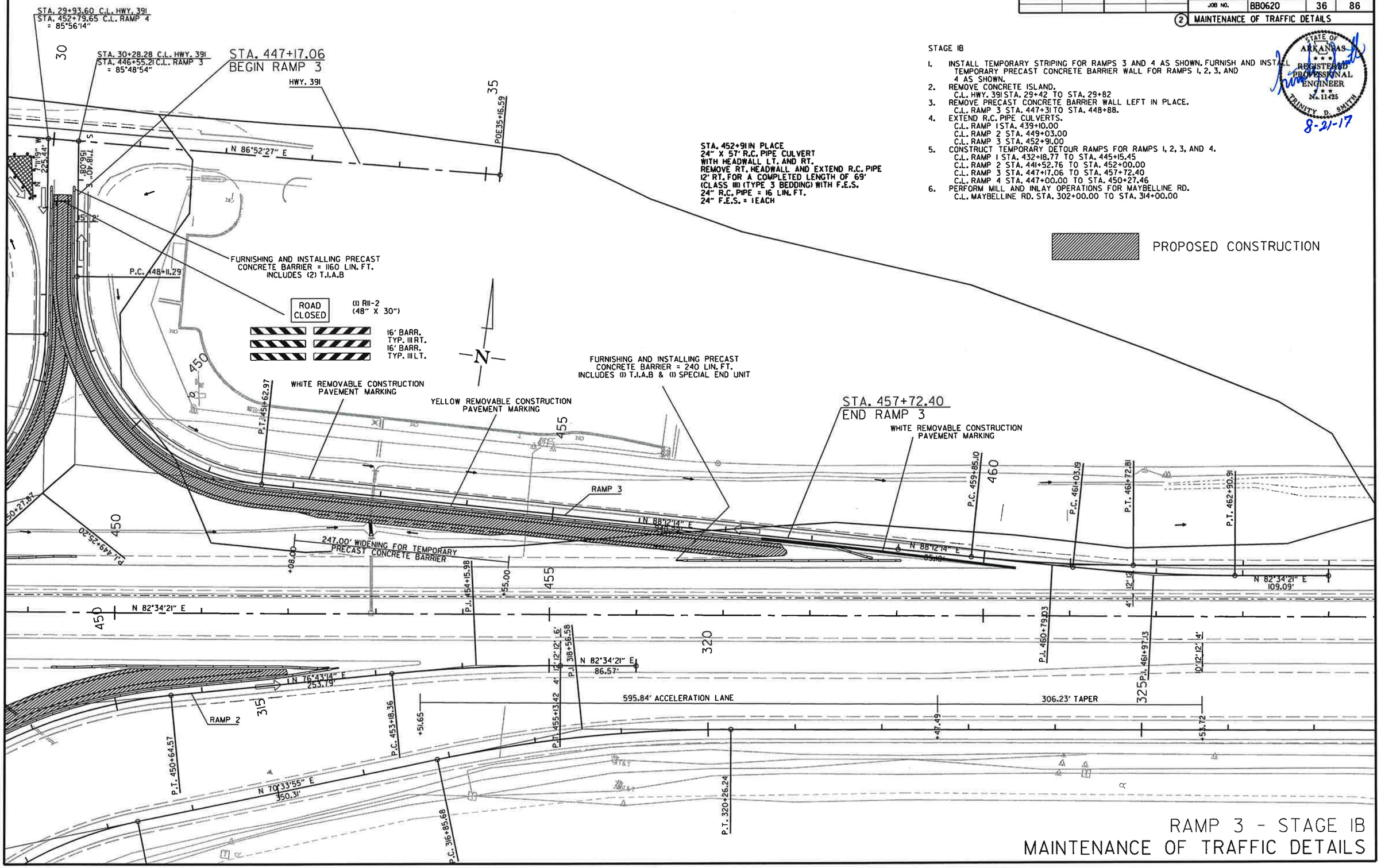
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17

STAGE 1B

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

PROPOSED CONSTRUCTION



RAMP 3 - STAGE 1B
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	37	86

(2) MAINTENANCE OF TRAFFIC DETAILS

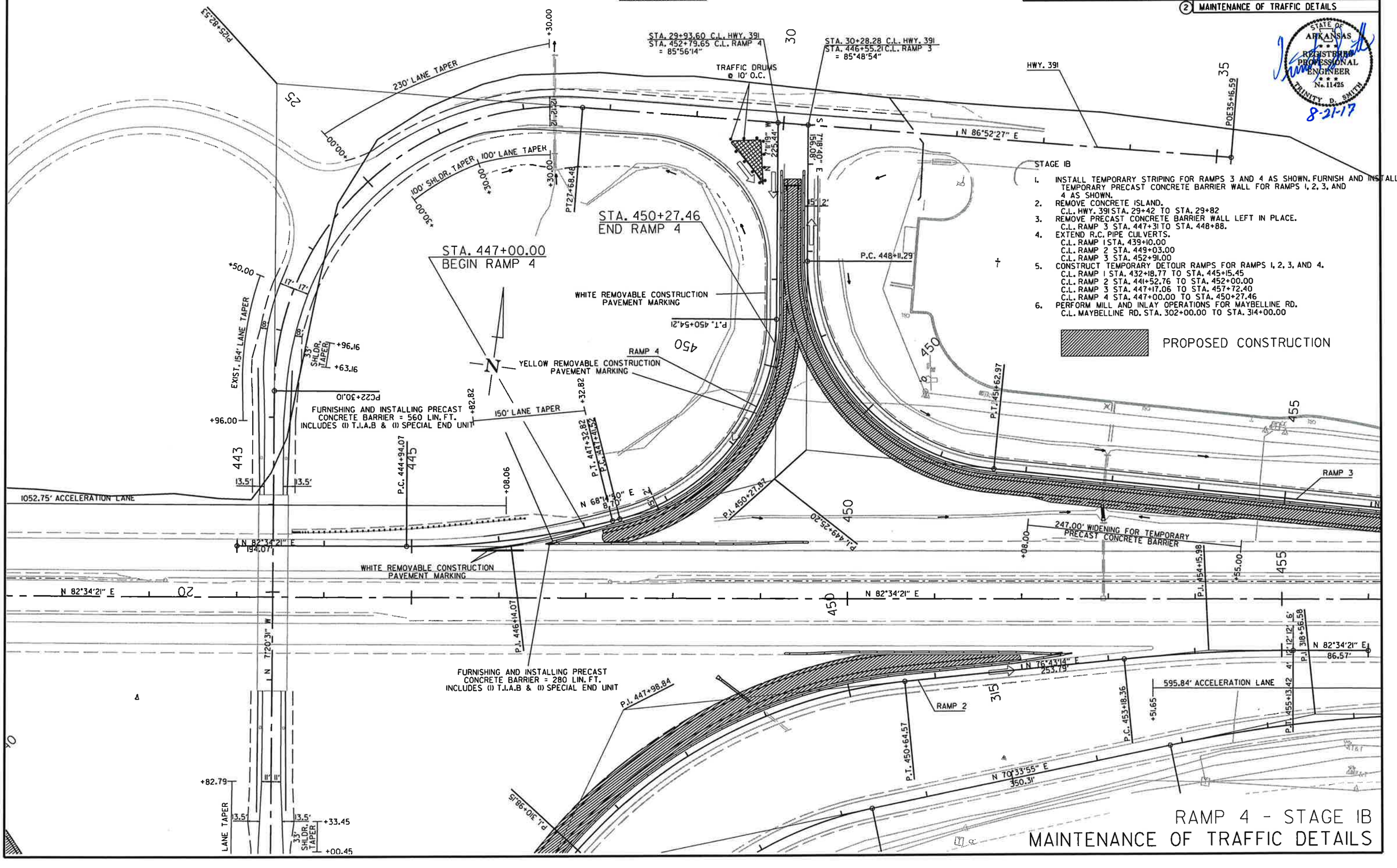
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17

REMOVAL OF CONCRETE ISLAND

STAGE IB

1. INSTALL TEMPORARY STRIPING FOR RAMPS 3 AND 4 AS SHOWN. FURNISH AND INSTALL TEMPORARY PRECAST CONCRETE BARRIER WALL FOR RAMPS 1, 2, 3, AND 4 AS SHOWN.
2. REMOVE CONCRETE ISLAND.
   C.L. HWY. 391 STA. 29+42 TO STA. 29+82
3. REMOVE PRECAST CONCRETE BARRIER WALL LEFT IN PLACE.
   C.L. RAMP 3 STA. 447+31 TO STA. 448+88.
4. EXTEND R.C. PIPE CULVERTS.
   C.L. RAMP 1 STA. 439+10.00
   C.L. RAMP 2 STA. 449+03.00
   C.L. RAMP 3 STA. 452+91.00
5. CONSTRUCT TEMPORARY DETOUR RAMPS FOR RAMPS 1, 2, 3, AND 4.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
6. PERFORM MILL AND INLAY OPERATIONS FOR MAYBELLINE RD.
   C.L. MAYBELLINE RD. STA. 302+00.00 TO STA. 314+00.00

PROPOSED CONSTRUCTION



RAMP 4 - STAGE IB
MAINTENANCE OF TRAFFIC DETAILS

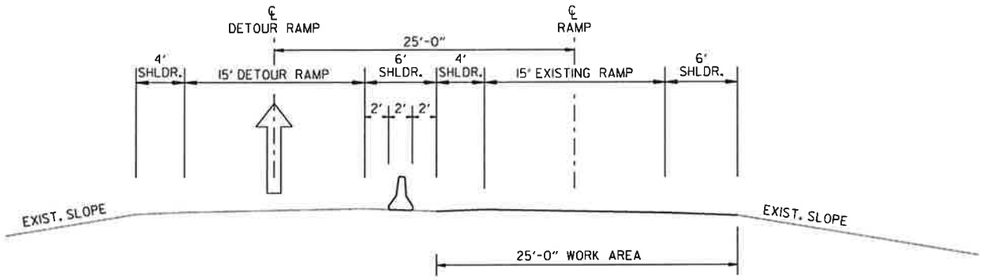
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	38	86

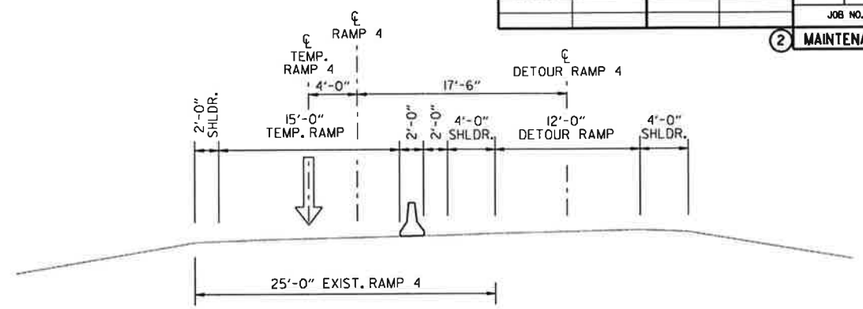
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



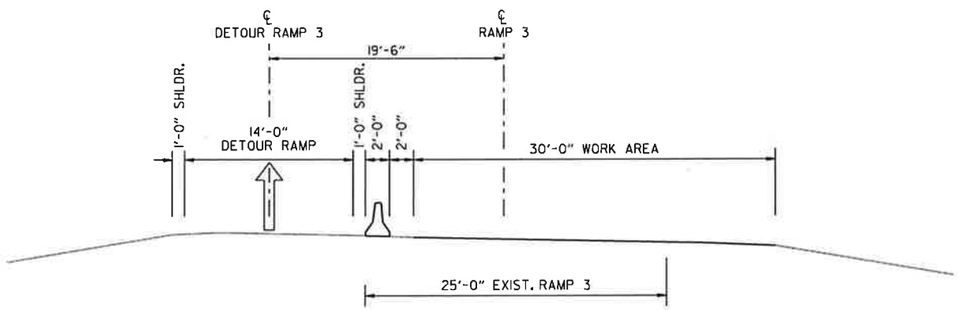
MAINTENANCE OF TRAFFIC
RAMP 1 & 2
STAGE IC

RAMP 1 - STA. 432+21.29 TO STA. 443+83.07
RAMP 2 - STA. 442+98.93 TO STA. 452+00.00



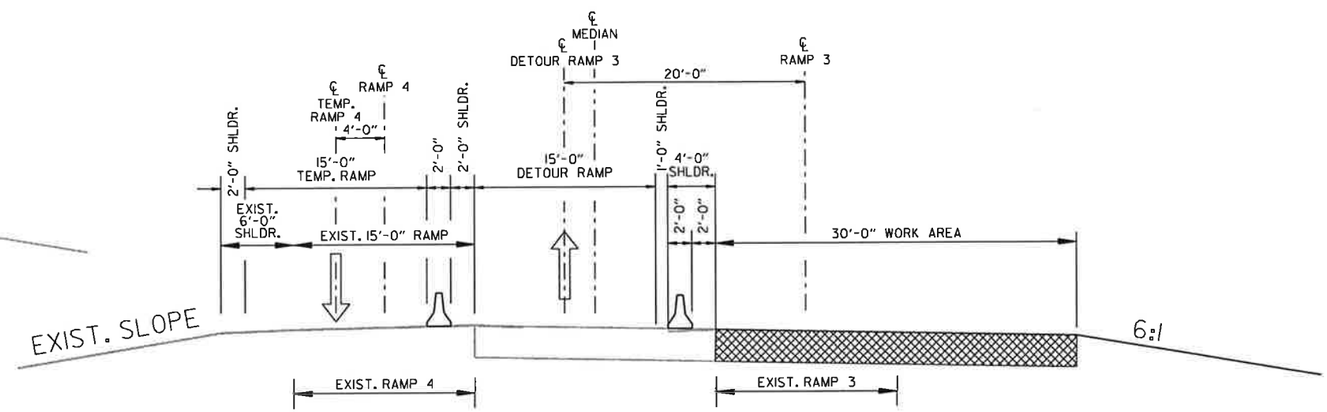
MAINTENANCE OF TRAFFIC
RAMP 4
STAGE IC

STA. 447+00.00 TO STA. 450+27.46



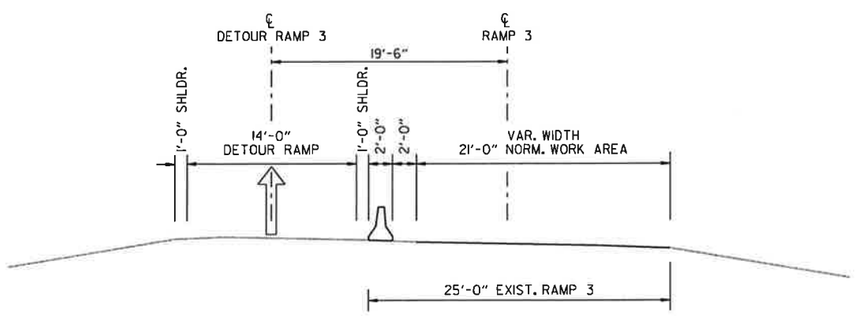
MAINTENANCE OF TRAFFIC
RAMP 3 WITH TURNING LANE
STAGE IC

STA. 449+00.00 TO STA. 449+30.00



MAINTENANCE OF TRAFFIC
RAMP 3 AND RAMP 4
STAGE IC

C.L. RAMP 3 - STA. 447+17.06 TO STA. 449+00.00



MAINTENANCE OF TRAFFIC
RAMP 3
STAGE IC

STA. 449+30.00 TO STA. 458+25.00

STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE 1B.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

STAGE IC
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

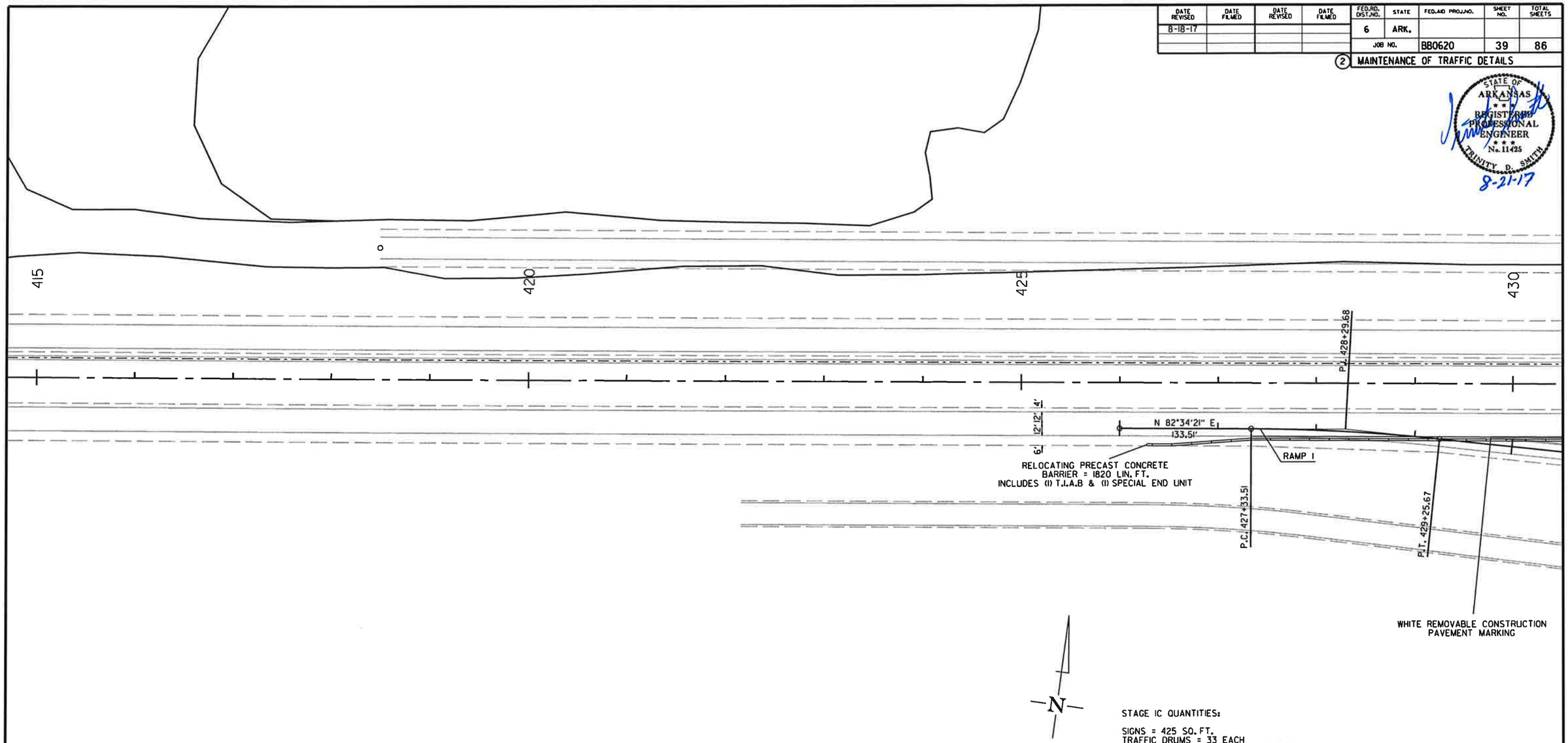
RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	39	86

(2) MAINTENANCE OF TRAFFIC DETAILS

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

8-21-17



STAGE IC QUANTITIES:

SIGNS = 425 SQ. FT.
TRAFFIC DRUMS = 33 EACH
TYPE III BARRICADE - RT. (16') = 3 EACH
TYPE III BARRICADE - LT. (16') = 3 EACH
RELOCATING PRECAST CONCRETE BARRIER = 4240 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4661 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 4073 LIN. FT.

STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE IB.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

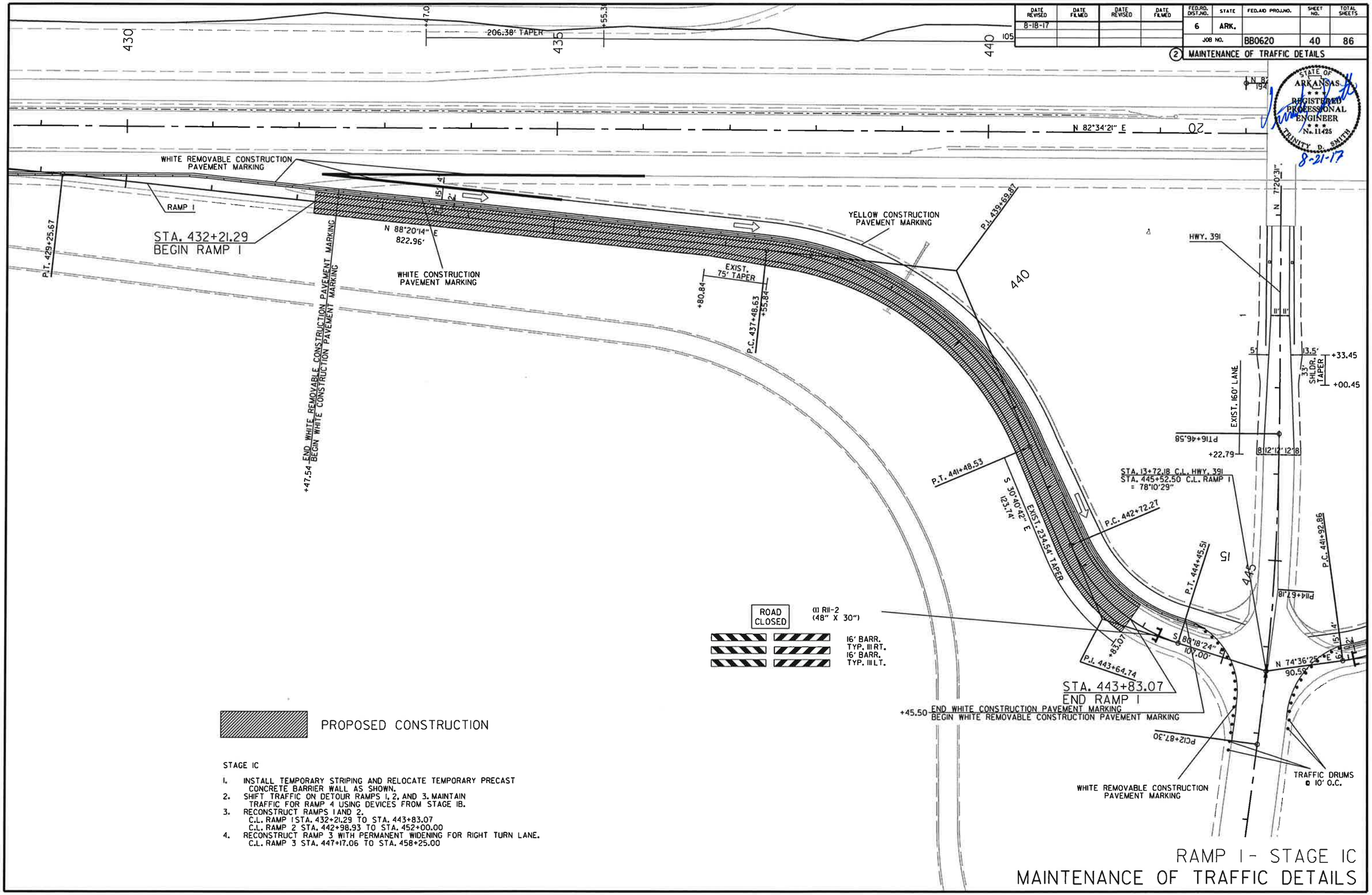
RAMP 1 - STAGE IC
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	40	86

(2) MAINTENANCE OF TRAFFIC DETAILS



STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE IB.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

RAMP I - STAGE IC
MAINTENANCE OF TRAFFIC DETAILS

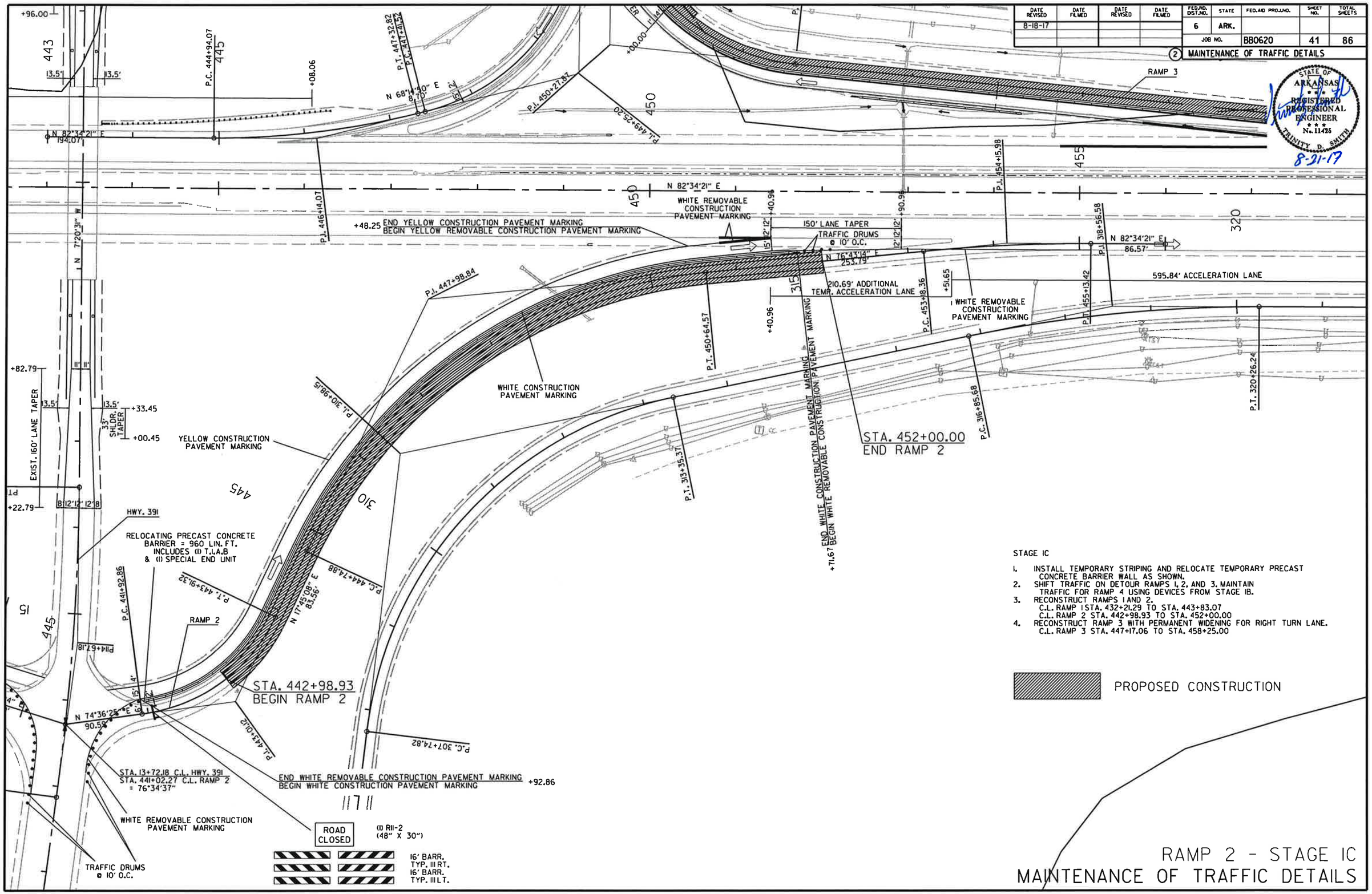
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	41	86

② MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE IB.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

PROPOSED CONSTRUCTION

RAMP 2 - STAGE IC
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	42	86

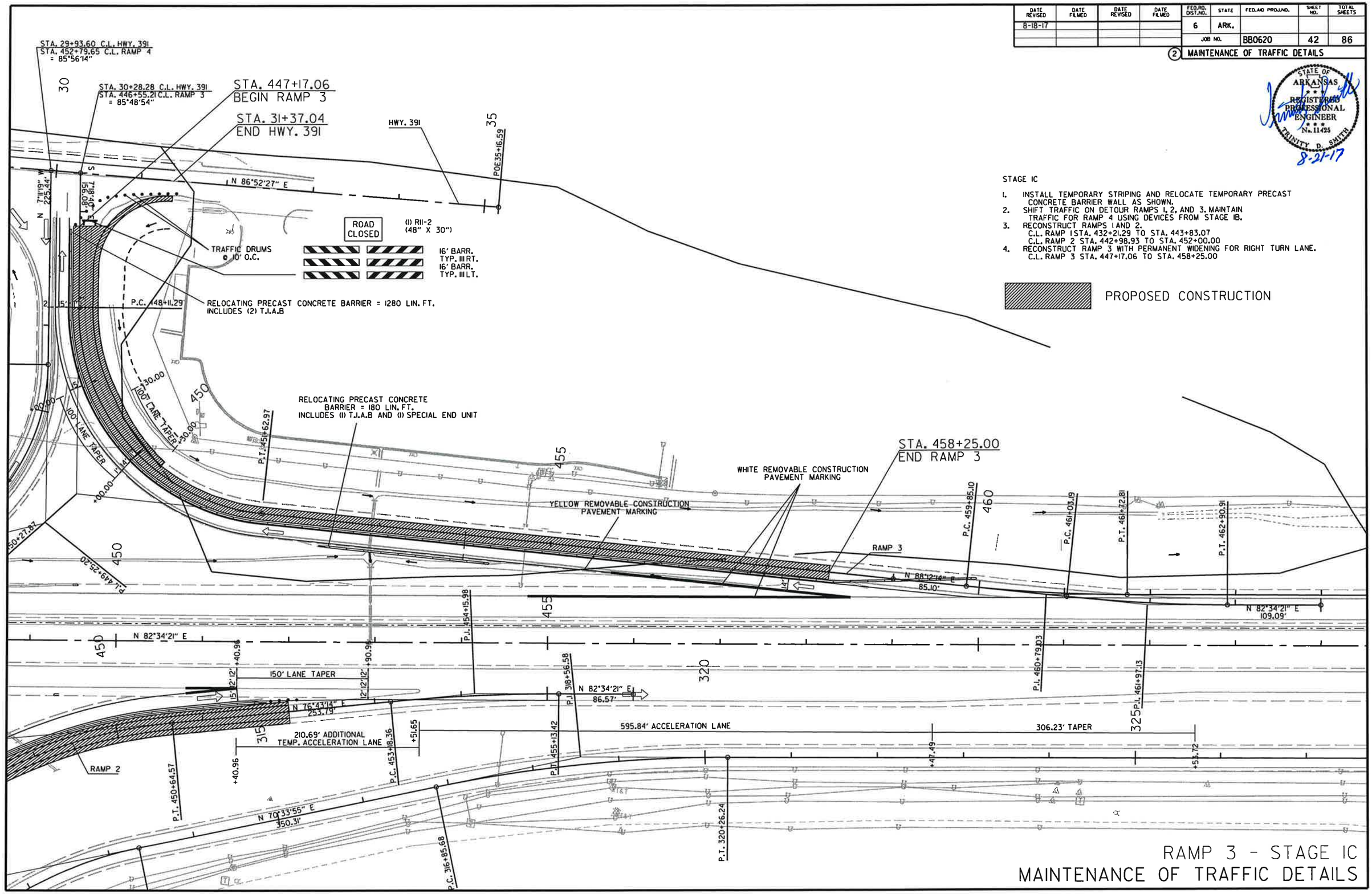
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17

STAGE IC

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT TRAFFIC ON DETOUR RAMPS 1, 2, AND 3. MAINTAIN TRAFFIC FOR RAMP 4 USING DEVICES FROM STAGE 1B.
3. RECONSTRUCT RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+21.29 TO STA. 443+83.07
   C.L. RAMP 2 STA. 442+98.93 TO STA. 452+00.00
4. RECONSTRUCT RAMP 3 WITH PERMANENT WIDENING FOR RIGHT TURN LANE.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00

PROPOSED CONSTRUCTION



RAMP 3 - STAGE IC
MAINTENANCE OF TRAFFIC DETAILS

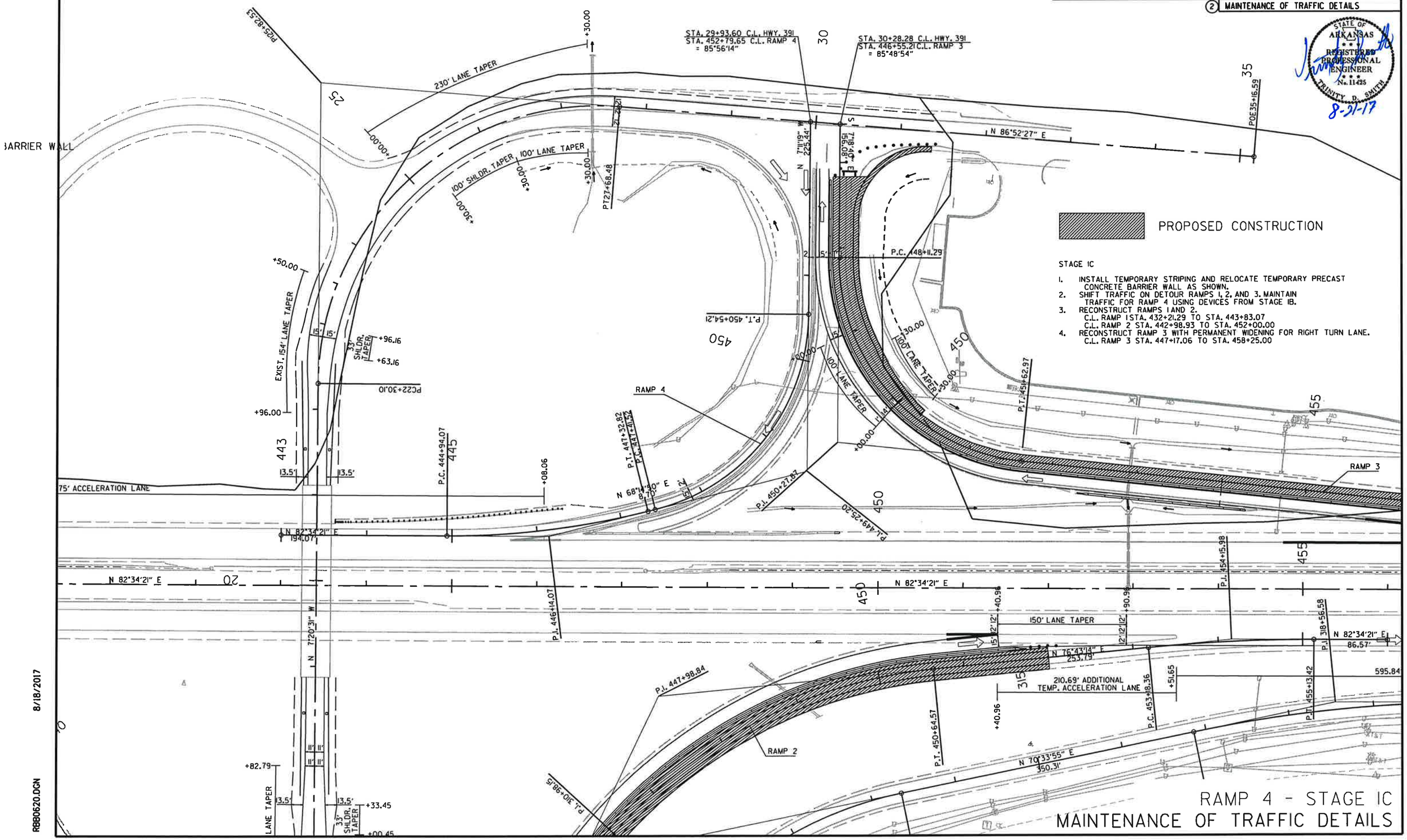
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	43	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



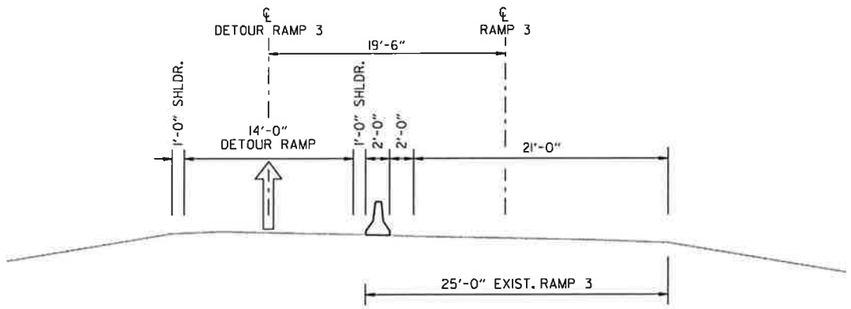
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	44	86

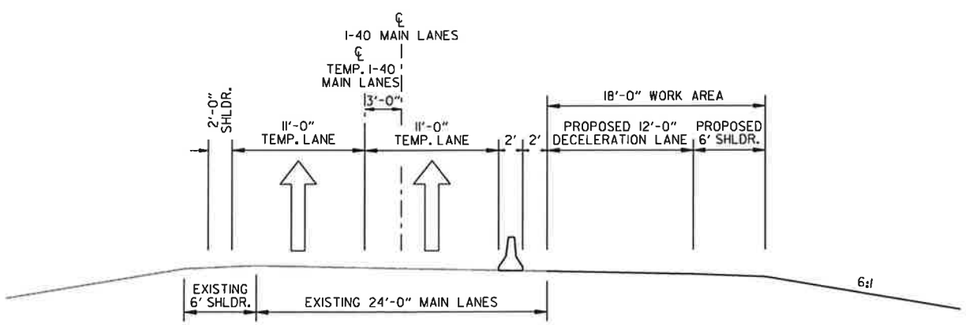
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



MAINTENANCE OF TRAFFIC
RAMP 3
STAGE ID

STA. 449+00.00 TO STA. 458+94.98



MAINTENANCE OF TRAFFIC
DECELERATION LANE
STAGE ID

STA. 459+85.10 TO STA. 473+09.98

STAGE ID

1. INSTALL TEMPORARY STRIPING, RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL, AND TRAFFIC DRUMS AS SHOWN.
2. CONSTRUCT DECELERATION LANE.
   DECELERATION LANE C.L. STA. 459+85.10 TO STA. 473+09.98

8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	45	86

(2) MAINTENANCE OF TRAFFIC DETAILS

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

8-21-17

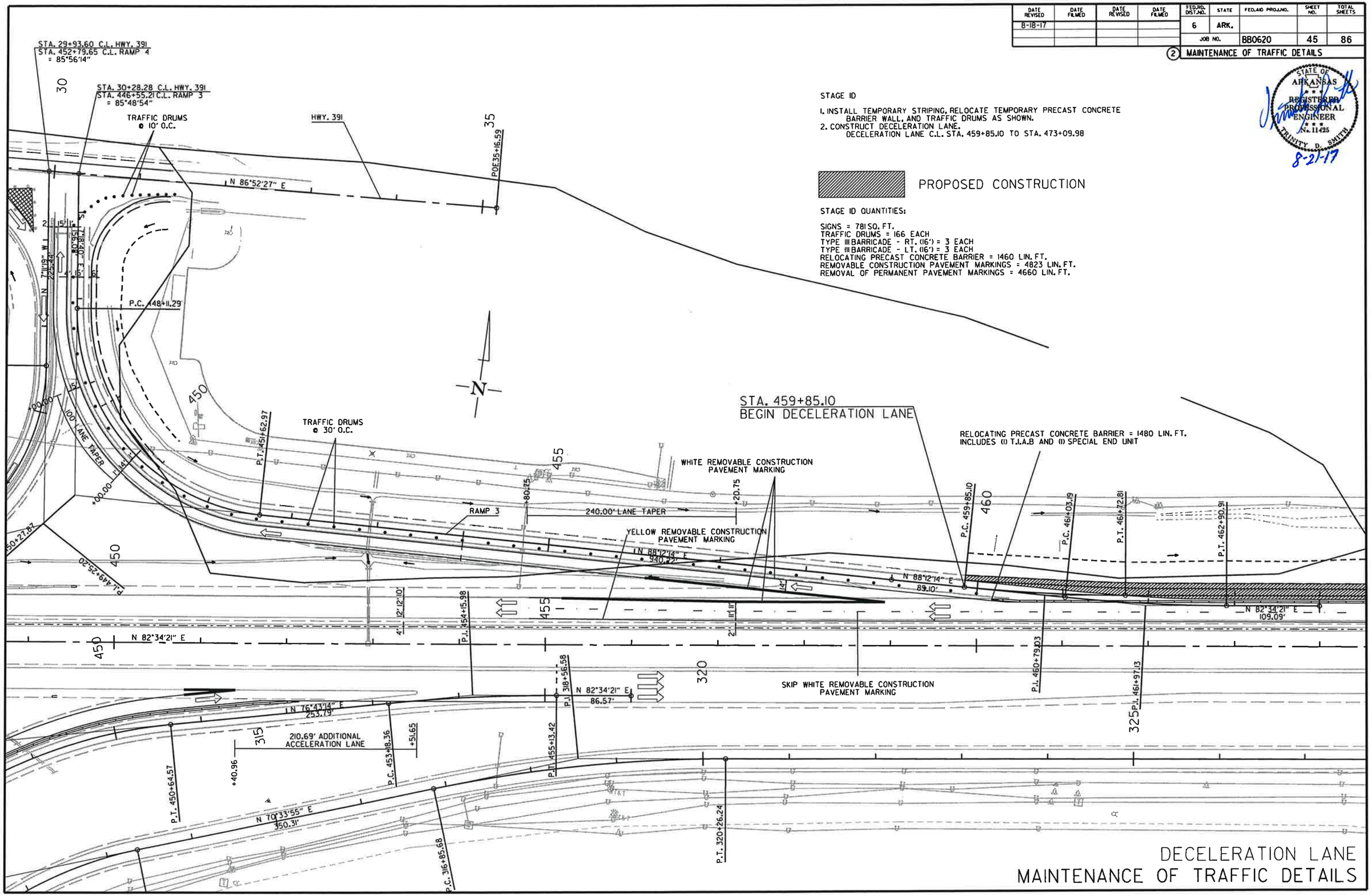
STAGE ID

1. INSTALL TEMPORARY STRIPING, RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL, AND TRAFFIC DRUMS AS SHOWN.
2. CONSTRUCT DECELERATION LANE.
   DECELERATION LANE C.L. STA. 459+85.10 TO STA. 473+09.98

PROPOSED CONSTRUCTION

STAGE ID QUANTITIES:

SIGNS = 781 SQ. FT.
TRAFFIC DRUMS = 166 EACH
TYPE III BARRICADE - RT. (16') = 3 EACH
TYPE III BARRICADE - LT. (16') = 3 EACH
RELOCATING PRECAST CONCRETE BARRIER = 1460 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4823 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 4660 LIN. FT.



DECELERATION LANE
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	46	86

(2) MAINTENANCE OF TRAFFIC DETAILS

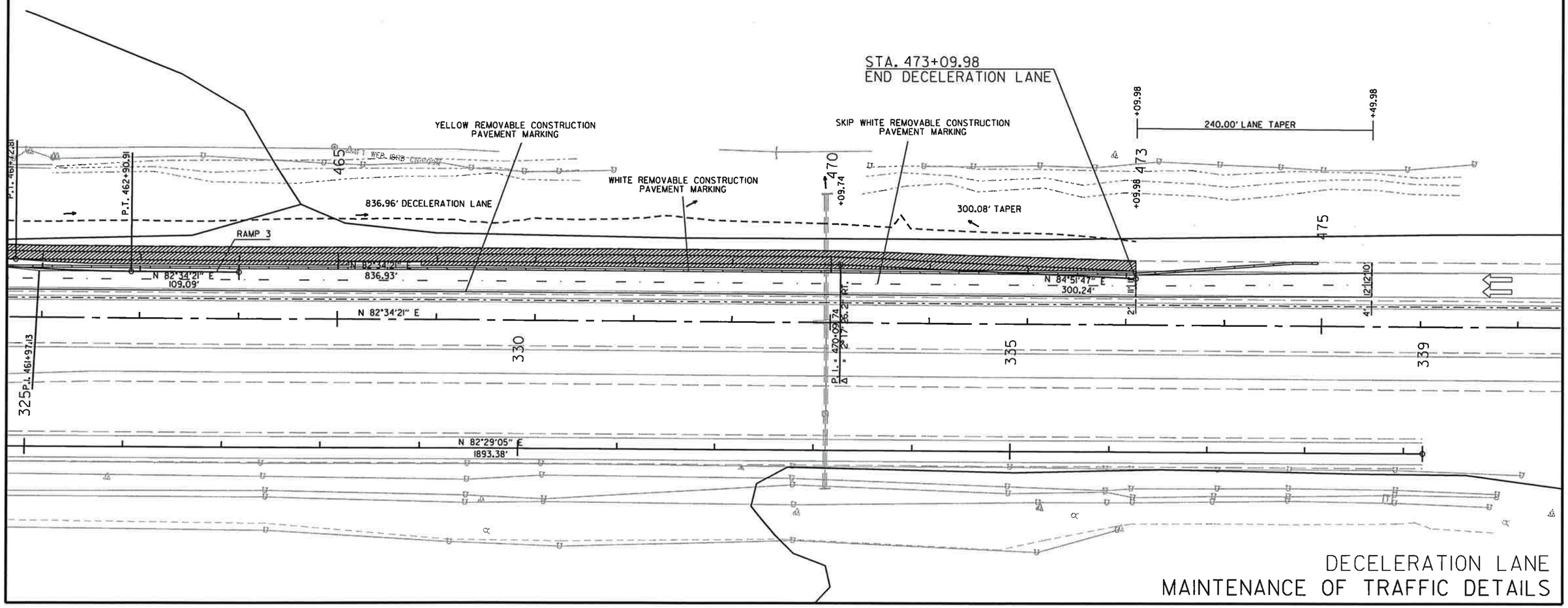
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17

PROPOSED CONSTRUCTION

STAGE ID

1. INSTALL TEMPORARY STRIPING, RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL, AND TRAFFIC DRUMS AS SHOWN.
2. CONSTRUCT DECELERATION LANE.
   DECELERATION LANE C.L. STA. 459+85.10 TO STA. 473+09.98



DECELERATION LANE
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

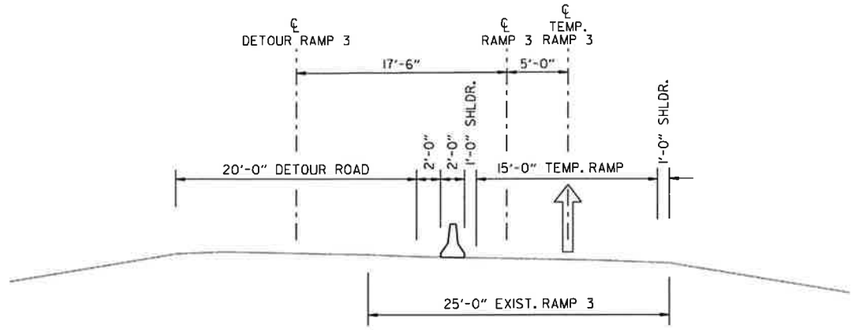
RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	47	86

(2) MAINTENANCE OF TRAFFIC DETAILS

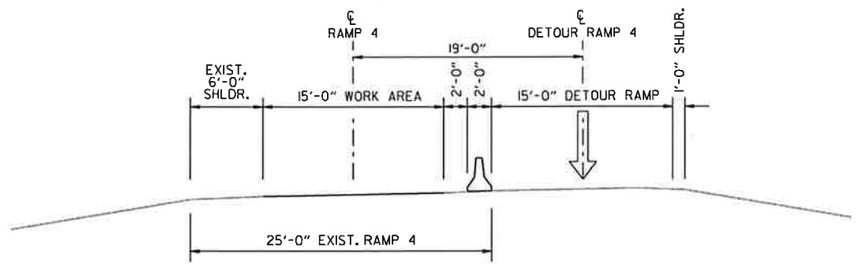
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17



MAINTENANCE OF TRAFFIC
RAMP 3
STAGE 2A

STA. 449+00.00 TO STA. 461+05.32

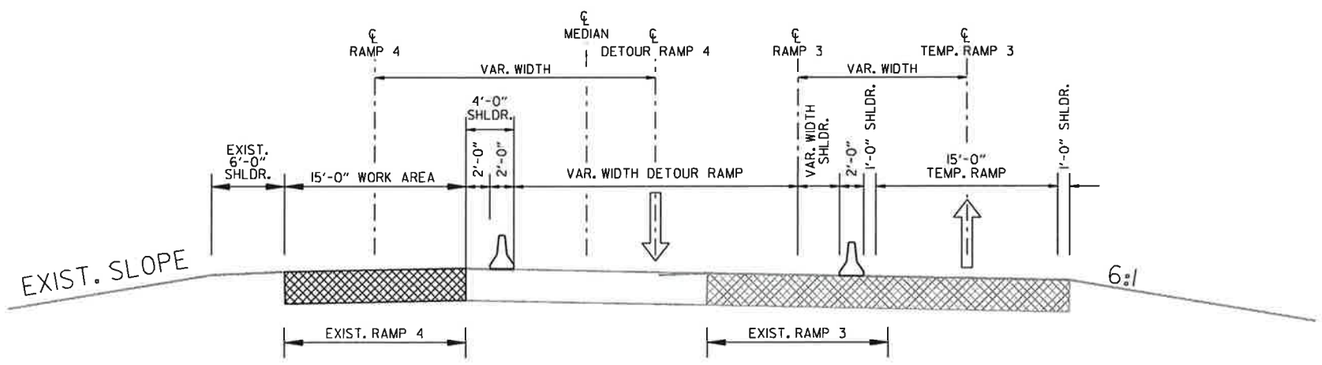


MAINTENANCE OF TRAFFIC
RAMP 4
STAGE 2A

STA. 447+00.00 TO STA. 450+27.46

STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE 1C. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32



MAINTENANCE OF TRAFFIC
RAMP 3 AND RAMP 4
STAGE 2A

C.L. RAMP 3 - STA. 447+17.06 TO STA. 449+00.00

STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

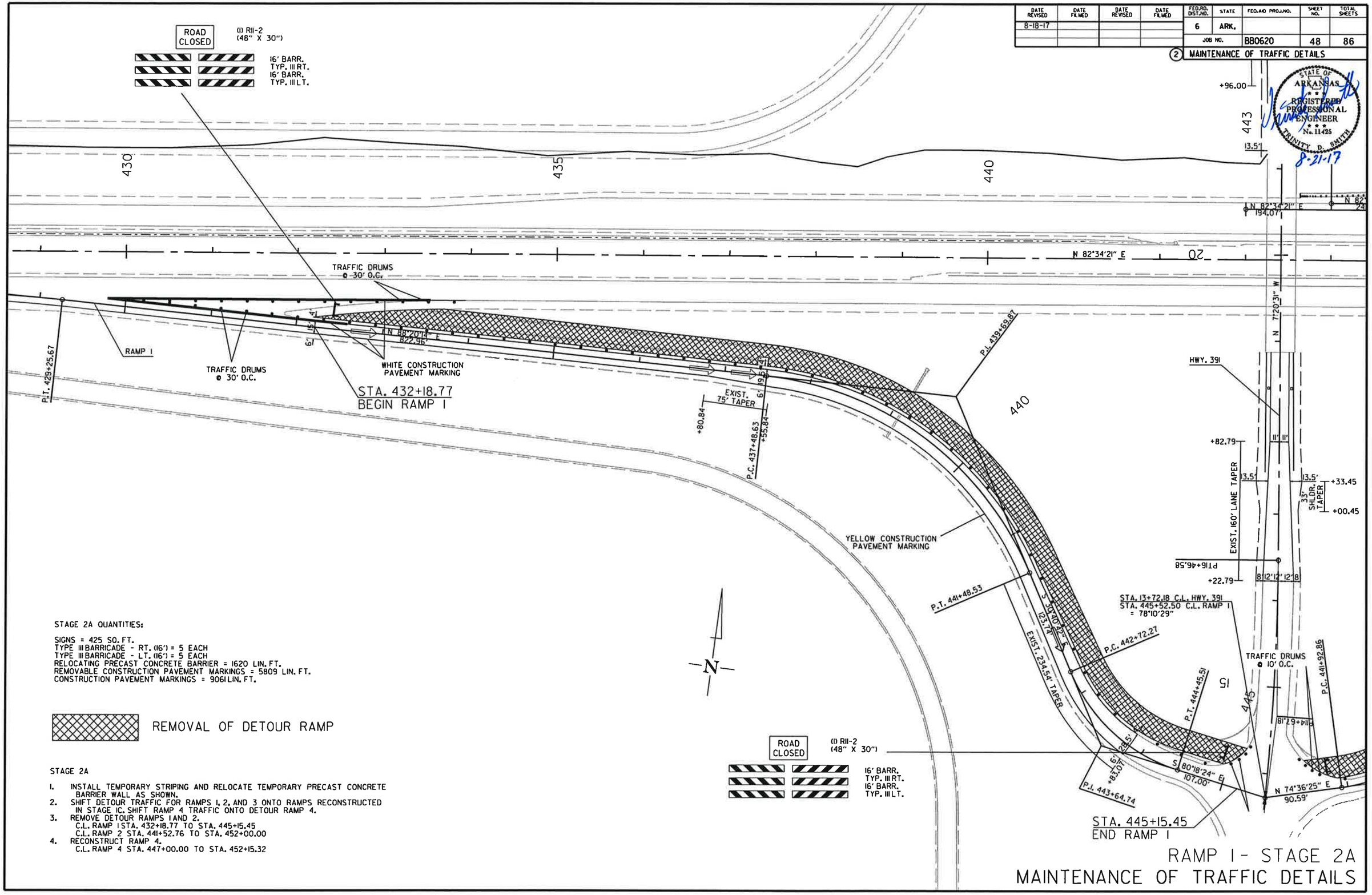
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	48	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



STAGE 2A QUANTITIES:

SIGNS = 425 SQ. FT.
TYPE III BARRICADE - RT. (16') = 5 EACH
TYPE III BARRICADE - LT. (16') = 5 EACH
RELOCATING PRECAST CONCRETE BARRIER = 1620 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 5809 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 9061 LIN. FT.

REMOVAL OF DETOUR RAMP

STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE 1C. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32

RAMP 1 - STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

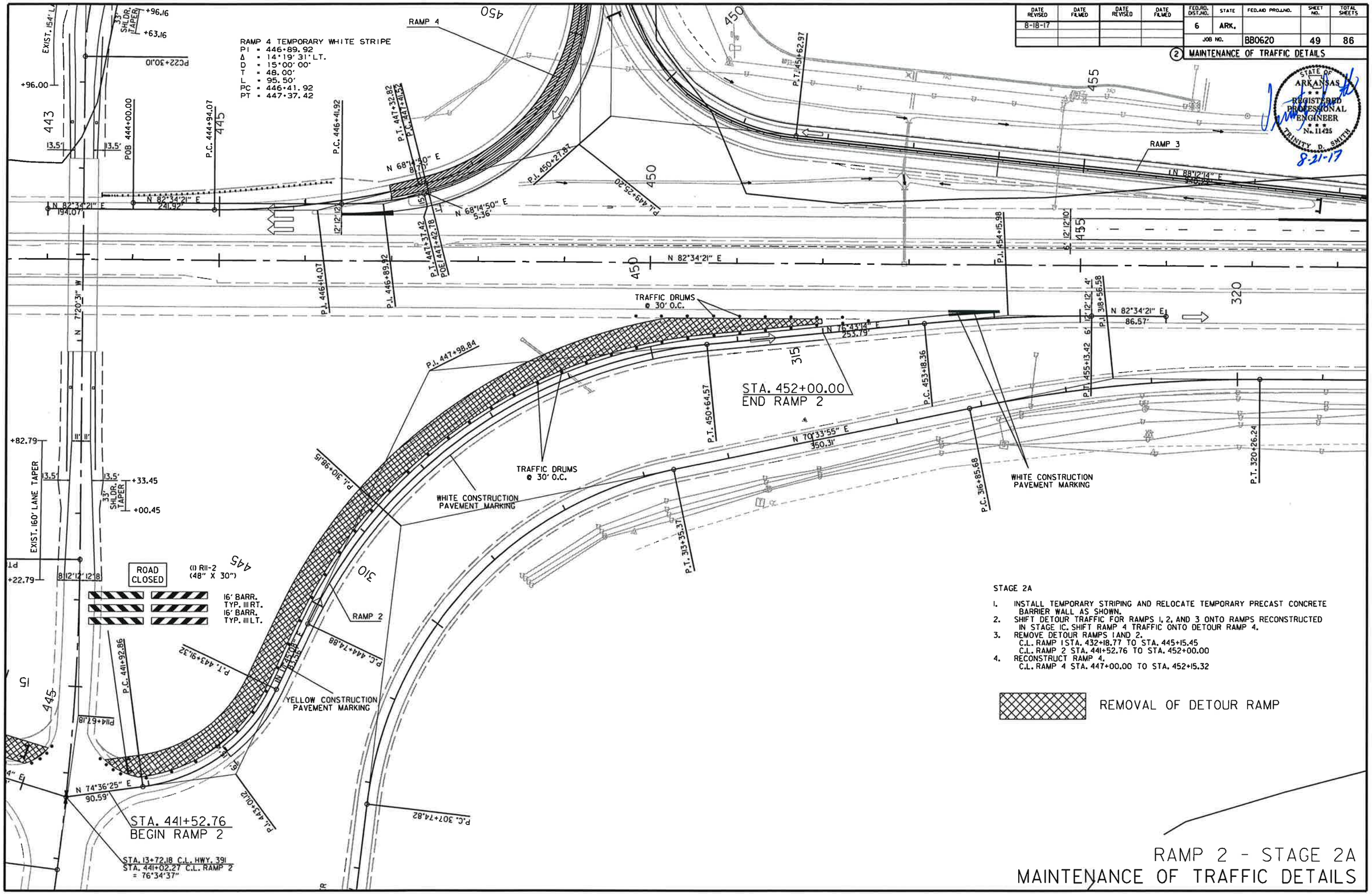
8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	49	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE 1C. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32

REMOVAL OF DETOUR RAMP

RAMP 2 - STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	50	86

(2) MAINTENANCE OF TRAFFIC DETAILS

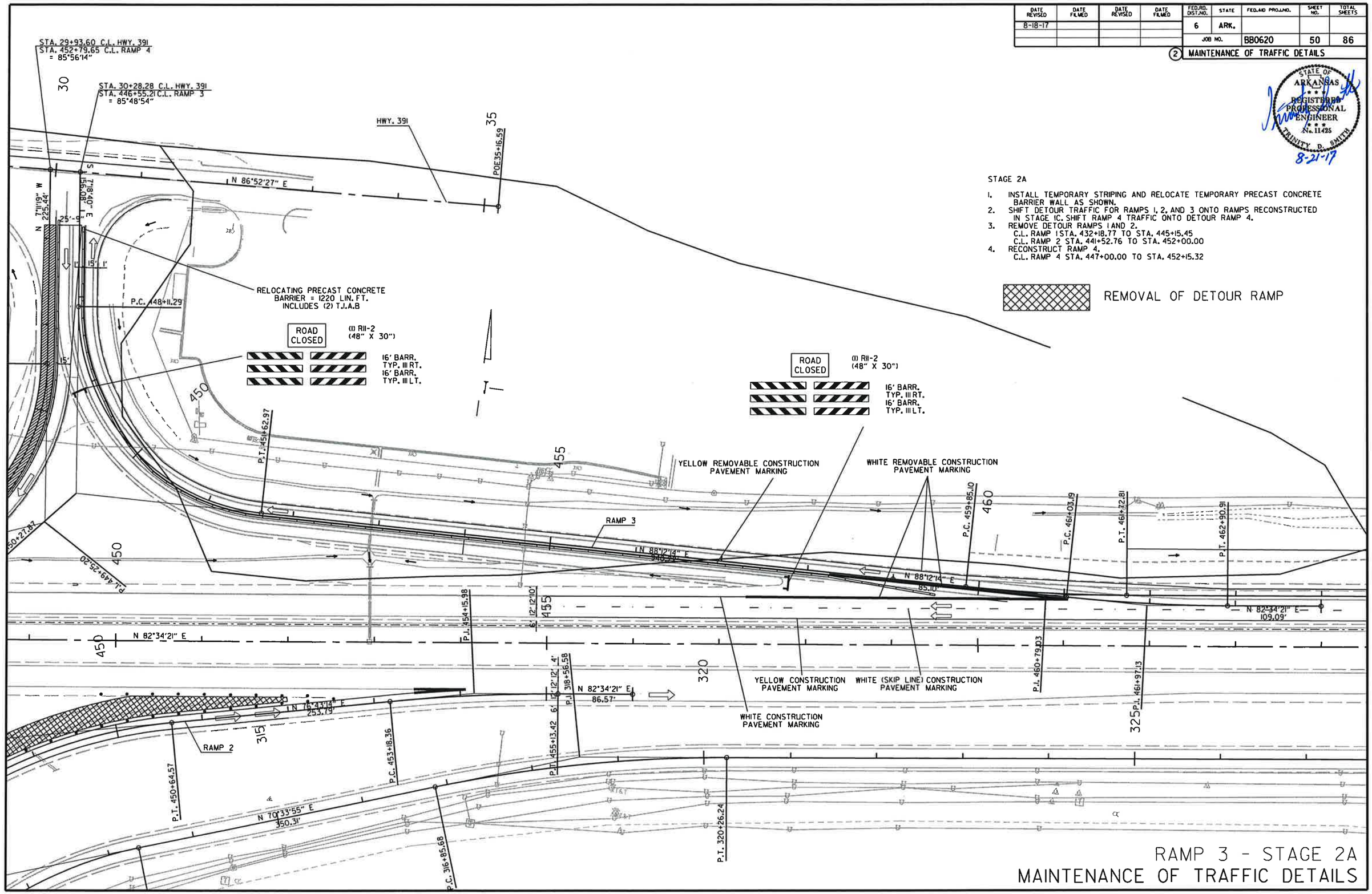
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17

STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE 1C. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32

REMOVAL OF DETOUR RAMP



RAMP 3 - STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

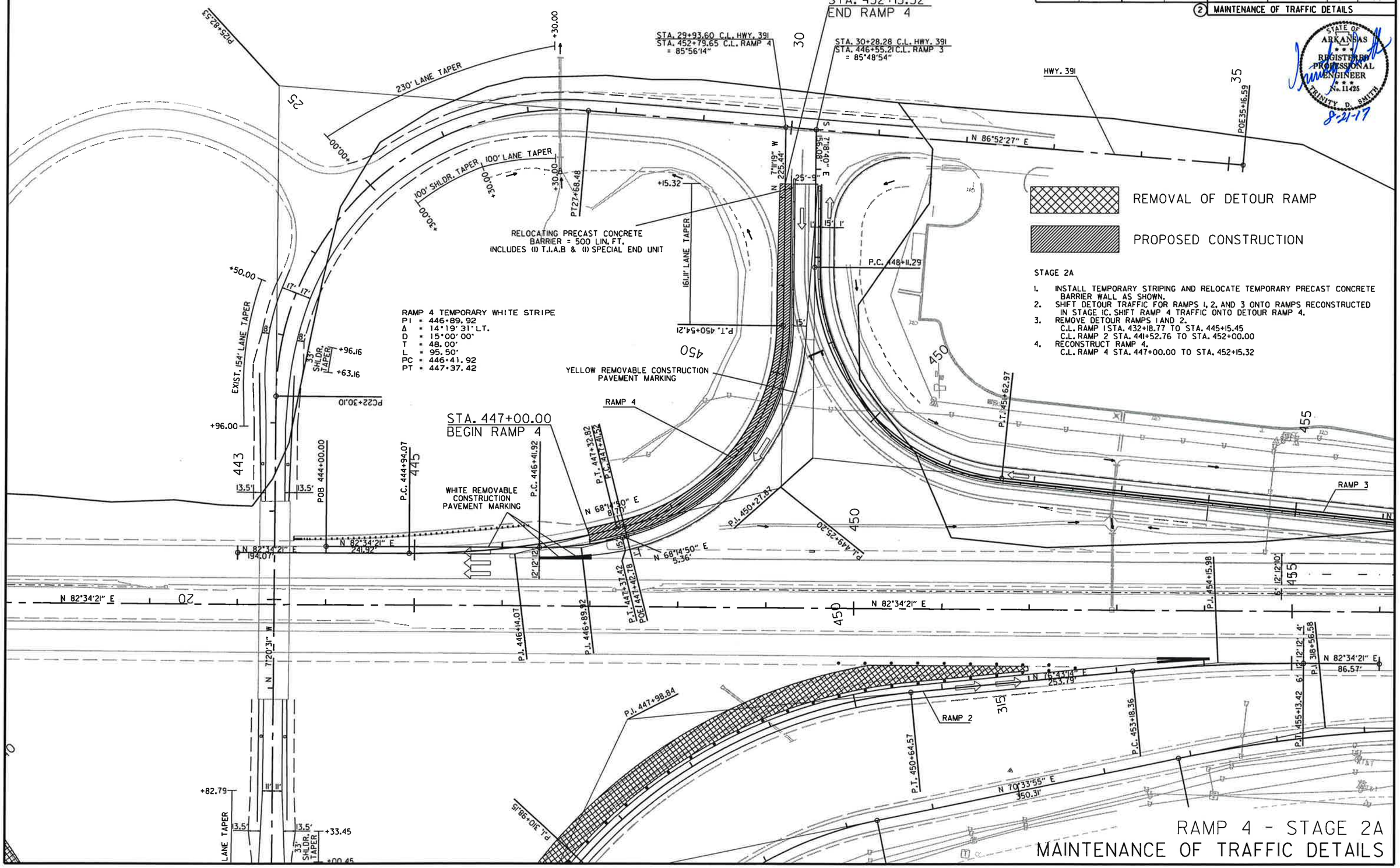
8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	51	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



STAGE 2A

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT DETOUR TRAFFIC FOR RAMPS 1, 2, AND 3 ONTO RAMPS RECONSTRUCTED IN STAGE 1C. SHIFT RAMP 4 TRAFFIC ONTO DETOUR RAMP 4.
3. REMOVE DETOUR RAMPS 1 AND 2.
   C.L. RAMP 1 STA. 432+18.77 TO STA. 445+15.45
   C.L. RAMP 2 STA. 441+52.76 TO STA. 452+00.00
4. RECONSTRUCT RAMP 4.
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32

RAMP 4 - STAGE 2A
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

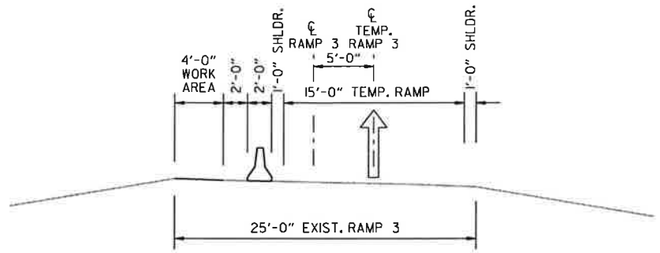
RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	52	86

(2) MAINTENANCE OF TRAFFIC DETAILS

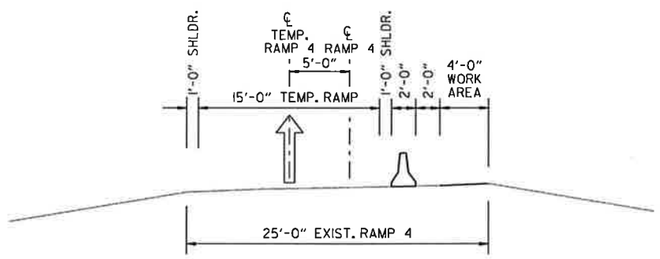
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH

8-21-17



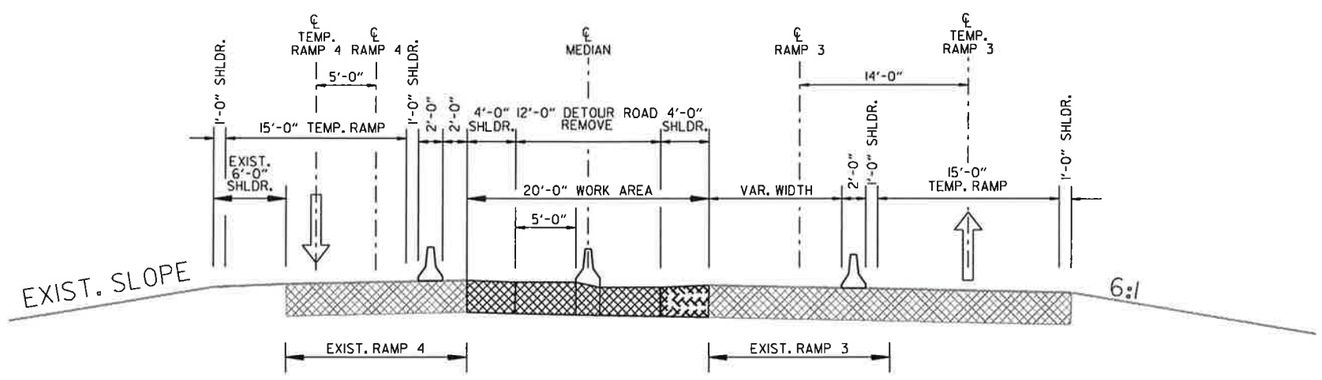
MAINTENANCE OF TRAFFIC
RAMP 3
STAGE 2B

STA. 449+00.00 TO STA. 458+25.00



MAINTENANCE OF TRAFFIC
RAMP 4
STAGE 2B

STA. 447+00.00 TO STA. 450+27.46



MAINTENANCE OF TRAFFIC
RAMP 3 AND RAMP 4
STAGE 2B

C.L. RAMP 3 - STA. 447+17.06 TO STA. 449+00.00

STAGE 2B

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT RAMP 4 DETOUR TRAFFIC ONTO RECONSTRUCTED RAMP 4.
3. REMOVE DETOUR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
4. CONSTRUCT PERMANENT INSIDE SHOULDERS FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32
5. CONSTRUCT BARRIER WALL FOR RAMP 4 AS SHOWN.
   C.L. RAMP 4 STA. 449+50.00 TO STA. 452+00.00

NOTE: CONCRETE ISLAND TO BE CONSTRUCTED AFTER COMPLETION OF HWY. 391 CONSTRUCTION.

STAGE 2B
MAINTENANCE OF TRAFFIC DETAILS

8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	53	86

(2) MAINTENANCE OF TRAFFIC DETAILS

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

8-21-17

STAGE 2B QUANTITIES:

SIGNS = 425 SQ. FT.
TYPE III BARRICADE - RT. (16') = 2 EACH
TYPE III BARRICADE - LT. (16') = 2 EACH
RELOCATING PRECAST CONCRETE BARRIER = 620 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 2034 LIN. FT.

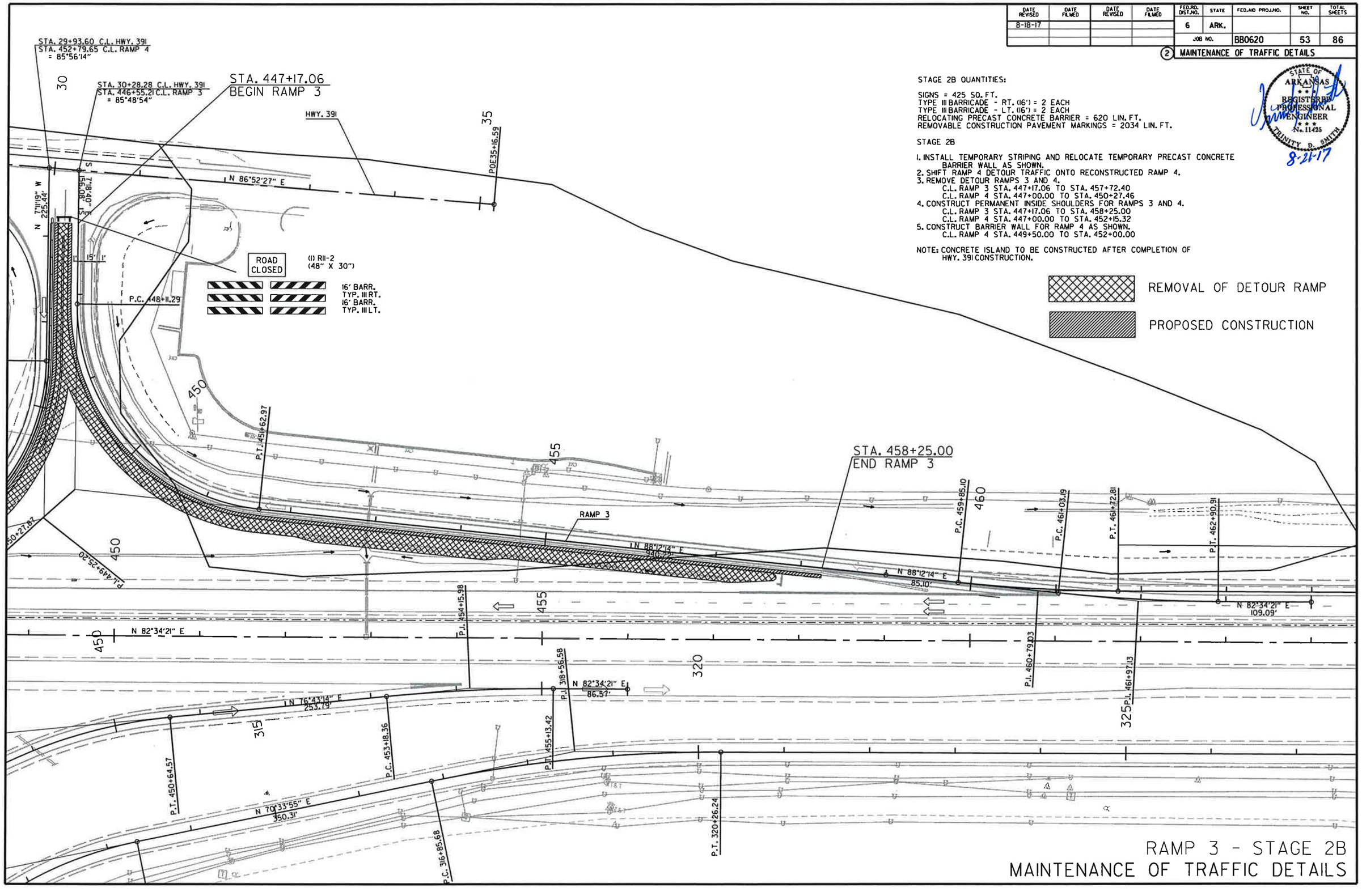
STAGE 2B

1. INSTALL TEMPORARY STRIPING AND RELOCATE TEMPORARY PRECAST CONCRETE BARRIER WALL AS SHOWN.
2. SHIFT RAMP 4 DETOUR TRAFFIC ONTO RECONSTRUCTED RAMP 4.
3. REMOVE DETOUR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 457+72.40
   C.L. RAMP 4 STA. 447+00.00 TO STA. 450+27.46
4. CONSTRUCT PERMANENT INSIDE SHOULDERS FOR RAMPS 3 AND 4.
   C.L. RAMP 3 STA. 447+17.06 TO STA. 458+25.00
   C.L. RAMP 4 STA. 447+00.00 TO STA. 452+15.32
5. CONSTRUCT BARRIER WALL FOR RAMP 4 AS SHOWN.
   C.L. RAMP 4 STA. 449+50.00 TO STA. 452+00.00

NOTE: CONCRETE ISLAND TO BE CONSTRUCTED AFTER COMPLETION OF HWY. 391 CONSTRUCTION.

REMOVAL OF DETOUR RAMP

PROPOSED CONSTRUCTION



RAMP 3 - STAGE 2B
MAINTENANCE OF TRAFFIC DETAILS

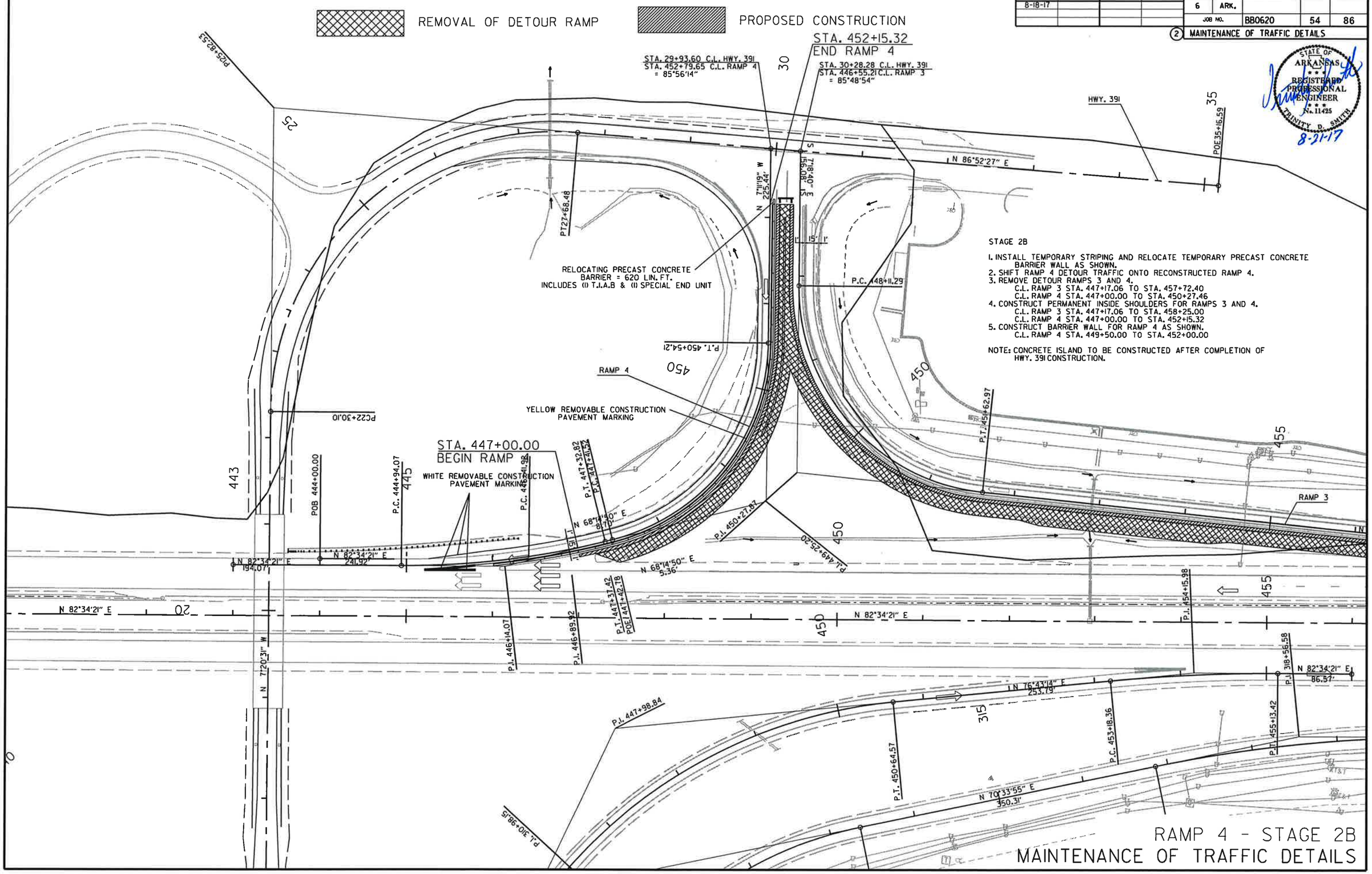
8/18/2017

BB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	54	86

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-21-17



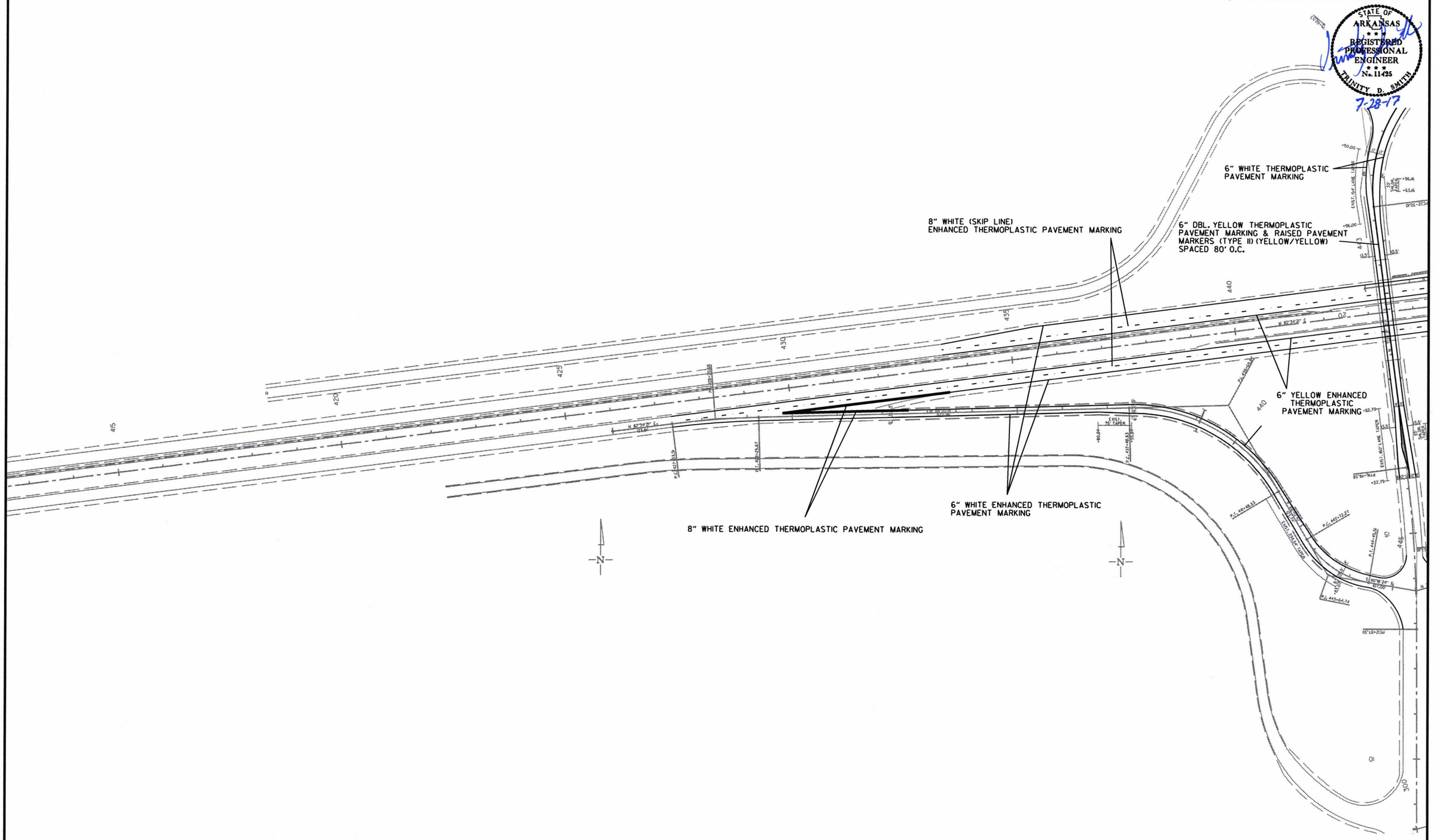
8/18/2017

RBB0620.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.		BB0620	55	86

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



PERMANENT PAVEMENT MARKING DETAILS

RBB0620.DGN 7/28/2017

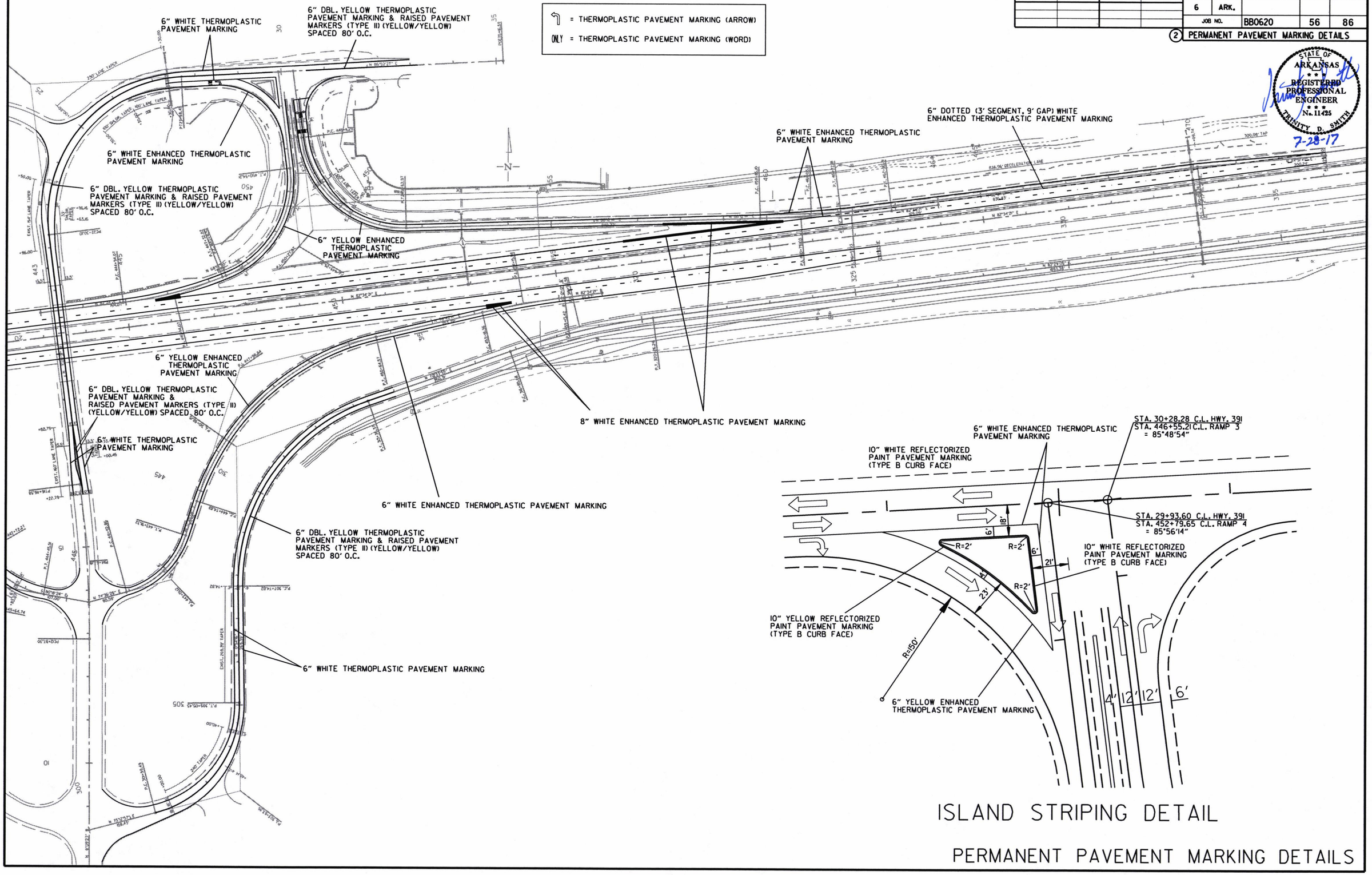
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	56	86

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17

↰ = THERMOPLASTIC PAVEMENT MARKING (ARROW)

ONLY = THERMOPLASTIC PAVEMENT MARKING (WORD)



ISLAND STRIPING DETAIL

PERMANENT PAVEMENT MARKING DETAILS

7/28/2017

RBB0620.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	57	86

(2) QUANTITIES

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

8-21-17

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1A	STAGE 1B	STAGE 1C	STAGE 1D	STAGE 2A	STAGE 2B	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS		ENHANCED THERMOPLASTIC PAVEMENT MARKING			THERMOPLASTIC PAVEMENT MARKING				REFLECTORIZED PAINT PAVEMENT MARKING	
											TYPE II (WHITE/RED)	TYPE II (YEL/YEL)	6" WHITE	6" YELLOW	8" WHITE	6" WHITE	6" YELLOW	WORDS	ARROWS	10" WHITE	10" YELLOW
	LIN. FT. - EACH							LIN. FT.		LIN. FT.	EACH		LIN. FT.					EACH		LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2122			4660				6782													
CONSTRUCTION PAVEMENT MARKINGS			4073		9061		39854		52988												
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2122	5284	4661	4823	5809	2034				24733											
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)							342				342										
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)							38					38									
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")							14710						14710								
ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")							11790							11790							
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")							1550								1550						
THERMOPLASTIC PAVEMENT MARKING WHITE (6")							5753									5753					
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")							6051										6051				
THERMOPLASTIC PAVEMENT MARKING (WORDS)							3											3			
THERMOPLASTIC PAVEMENT MARKING (ARROWS)							3												3		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")							99													99	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (10")							71														71
TOTALS:								6782	52988	24733	342	38	14710	11790	1550	5753	6051	3	3	99	71

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

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	STAGE 1C	STAGE 1D	STAGE 2A	STAGE 2B	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	ADVANCE WARNING ARROW PANEL	PORTABLE CHANGEABLE MESSAGE SIGN
											NO.	SQ. FT.		RIGHT	LEFT							
			LIN. FT. - EACH										EACH	LIN. FT.				EACH			DAY	WEEK
W20-1	ROAD WORK 1 MILE	48"x48"	4	4	4	4	4	4	4	4	4	64.0										
W20-1	ROAD WORK 1/2 MILE	48"x48"	4	4	4	4	4	4	4	4	4	64.0										
W20-1	ROAD WORK 1500 FT.	48"x48"	5	5	5	5	5	5	5	5	5	80.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	1	1	1	1	1	1	1	1	1	16.0										
W20-1	ROAD WORK 500 FT.	48"x48"	1	1	1	1	1	1	1	1	1	16.0										
W20-1	ROAD WORK AHEAD	48"x48"	3	3	3	5	3	3	3	5	5	80.0										
G20-2	END ROAD WORK	48"x24"	5	5	5	5	5	5	5	5	5	40.0										
W21-5a	SHOULDER CLOSED	48"X48"	2	2	2	2	2	2	2	2	2	32.0										
R55-1	FINES DOUBLE IN WORK ZONES	36"X60"	4	4	4	4	4	4	4	4	4	60.0										
W1-4AL	RIGHT LANE CLOSED 1 MILE	48"x48"				2				2	2	32.0										
W13-1	RIGHT LANE CLOSED 1/2 MILE	48"x48"				2				2	2	32.0										
R11-2	RIGHT LANE CLOSED 1500 FT.	48"X48"				2				2	2	32.0										
SPECIAL	MERGE NOW W/ ARROW	48"X48"				1				1	1	16.0										
W3-5	REDUCED SPEED AHEAD	48"x48"				2				2	2	32.0										
W1-6	LARGE ARROW	48"x24"				6				6	6	48.0										
R2-1	SPEED LIMIT 60 MPH	48"X60"				2				2	2	40.0										
R2-1	SPEED LIMIT 70 MPH	48"X60"				2				2	2	40.0										
R4-1	DO NOT PASS	24"x30"	1	1	1	5	1	1	1	5	5	25.0										
W4-2 RT.	MERGE RIGHT	48"x48"				2				2	2	32.0										
	TRAFFIC DRUMS		159	30	33	166			40	166			166									
	TYPE III BARRICADE-RT. (16')			3	3	3	5	2		5				80								
	TYPE III BARRICADE-LT. (16')			3	3	3	5	2		5					80							
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			5220						5220						5220						
	RELOCATING PRECAST CONCRETE BARRIER				4240	1460	1620	620		7940							7940					
	TEMPORARY IMPACT ATTENUATION BARRIER			10						10								10				
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			10	4	1	3	1		19									19			
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)				4	1	3	1		9										9		
	ADVANCE WARNING ARROW PANEL					1				1											10	
	PORTABLE CHANGEABLE MESSAGE SIGN		2	2	2	2	2	2	2	2												30
TOTALS:												781	166	80	80	5220	7940	10	19	9	10	30

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

8/18/2017

RBB0620.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	58	86

(2) QUANTITIES

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

8-21-17

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
26+00	30+00	RT. OF HWY. 391	4	4
TOTALS:			4	4

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB	CONCRETE PAVEMENT	CONCRETE ISLANDS	PRECAST CONCRETE BARRIER WALL LEFT IN PLACE	GUARDRAIL
			LIN. FT.	SQ. YD.	SQ. YD.	LIN. FT.	
432+21	443+83	RAMP 1		2381			
442+99	452+00	RAMP 2		1498			
447+17	458+25	RAMP 3		1853			
447+31	448+88	RT. OF RAMP 3				166	
447+00	452+44	RAMP 4 & TURNOUT		1032			
17+43	18+87	LT. OF HWY. 391					144
17+43	18+87	RT. OF HWY. 391					144
21+11	22+55	LT. OF HWY. 391					144
21+11	22+55	RT. OF HWY. 391					144
26+14	29+92	HWY. 391 & TURNOUT	306				
29+42	29+82	HWY. 391			96		
447+17	450+30	RAMP 3 TEMPORARY SHOULDER		220			
TOTALS:			306	6984	96	166	576

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.

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
432+18.77	445+15.45	TEMPORARY RAMP 1	420	4063	
441+52.76	452+00.00	TEMPORARY RAMP 2	339	3281	
447+17.06	457+72.40	TEMPORARY RAMP 3	1001	1367	
447+00.00	452+15.32	TEMPORARY RAMP 4	489	668	
432+21.29	443+83.07	RAMP 1	1216	75	
442+98.93	452+00.00	RAMP 2	875	75	
447+17.06	458+25.00	RAMP 3	1090	125	
447+00.00	452+15.32	RAMP 4	168	75	
459+85.10	473+09.98	DECELERATION LANE	975	1110	
16+22.79	18+87.20	HWY. 391	785	75	
21+09.41	31+37.04	HWY. 391	3671	475	
432+18.77	445+15.45	OBLITERATION OF TEMPORARY RAMP 1	4063		
441+52.76	452+00.00	OBLITERATION OF TEMPORARY RAMP 2	3282		
449+00.00	457+72.40	OBLITERATION OF TEMPORARY RAMP 3	1419		
447+00.00	450+27.46	OBLITERATION OF TEMPORARY RAMP 4	424		
ENTIRE	PROJECT	TO BE USED IF AND WHERE			100
		DIRECTED BY THE ENGINEER			
TOTALS:			20217	11389	100

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

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
432+21.29	436+80.84	RAMP 1	25.00	1276.53
436+80.84	437+55.84	RAMP 1	27.25	227.08
437+55.84	441+48.53	RAMP 1	29.50	1287.15
441+48.53	443+83.07	RAMP 1	34.00	886.04
442+98.93	452+00.00	RAMP 2	25.00	2502.97
451+93.46	458+25.00	RAMP 3	25.00	1754.28
447+00.00	449+64.82	RAMP 4	25.00	735.61
302+00.00	304+40.00	MAYBELLINE RD. MAIN LANES	29.00	773.33
302+00.00	304+40.00	MAYBELLINE RD. SHOULDERS	VAR.	254.16
304+40.00	305+05.43	MAYBELLINE RD.	34.00	247.18
305+05.43	307+74.82	MAYBELLINE RD.	32.00	957.83
307+74.82	314+00.00	MAYBELLINE RD.	30.00	2083.93
TOTAL:				12986.09

NOTE: AVERAGE MILLING DEPTH 2".

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.

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
2+00	34	47	10.00	92	7	37.00	CL	0-5	29	15	A-6(10)	BR/GR
7+00	34	47	9.40	92	7	37.20	5' LT.	0-5	29	15	A-6(8)	BR/GR
9+00	34	47	1.60	92	7	40.00	6' LT.	0-5	25	8	A-4(1)	BROWN
10+00	34	47	2.10	92	7	53.40	5' RT.	0-5	31	18	A-6(5)	BR/GR
12+00	34	47	2.40	92	7	47.70	6' RT.	0-5	29	15	A-6(10)	BROWN
12+00	34	47	2.30	92	7	47.80	21' RT.	0-5	50	34	A-7-6(24)	BROWN
14+00	34	47	4.30	92	7	34.00	6' RT.	0-5	18	3	A-4(0)	BR/GR

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	MODIFYING DROP INLETS	SOLID SODDING	WATER	STD. DWG. NOS.
		24"	24"				
		LIN. FT.	EACH		SQ.YD.	M.GAL.	
27+36	HWY. 391 - EXTEND R.C. PIPE CULV'T.	16	1		8	0.10	PCC-1, FES-1, FES-2
439+10	RAMP 1 - EXTEND R.C. PIPE CULV'T.	40	1		8	0.10	PCC-1, FES-1, FES-2
449+03	RAMP 2 - EXTEND R.C. PIPE CULV'T.	46	1		8	0.10	PCC-1, FES-1, FES-2
452+91	RAMP 3 - EXTEND R.C. PIPE CULV'T.	16	1		8	0.10	PCC-1, FES-1, FES-2
18+47	MODIFY TYPE N-1 D.I.			1			FPC-9N
18+47	MODIFY TYPE N-1 D.I.			1			FPC-9N
21+49	MODIFY TYPE N-1 D.I.			1			FPC-9N
21+49	MODIFY TYPE N-1 D.I.			1			FPC-9N
TOTALS:		118	4	4	32	0.40	

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.

QUANTITIES

8/18/2017

RBB0620.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.		BB0620	59	86

(2) QUANTITIES

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

7-28-17

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	25	50
DIRECTED BY THE ENGINEER		
TOTALS:	25	50

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS LIN. FT.	UNDERDRAIN OUTLET PROTECTORS EACH
* ENTIRE PROJECT TO BE USED IF AND			3675	16
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			3675	16

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
17+43.45	18+87.20	LT. OF HWY. 391	75	1	1
17+43.45	18+87.20	RT. OF HWY. 391	75	1	1
21+09.41	22+53.16	LT. OF HWY. 391	75	1	1
21+09.41	22+53.16	RT. OF HWY. 391	75	1	1
TOTALS:			300	4	4

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	MEDIAN TYPE B LIN. FT.
449+50.00	452+00.00	RT. OF RAMP 4	250
TOTAL:			250

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
29+57	HWY. 391 TO RAMP 4 TURNOUT	B	133
TOTAL:			133

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS LIN.FT.
459+85	473+10	DECELERATION LANE	1325
TOTAL:			1325

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

JOINT SUPPORT

STATION	LOCATION	LENGTH LIN. FT.	WIDTH FEET	DEPTH INCH	CLASS "S" CONCRETE - RDWY. CU.YD.
432+21.29	RAMP 1	15	3	12	1.67
432+36.29	RAMP 1	15	3	12	1.67
432+51.29	RAMP 1	15	3	12	1.67
451+70.00	RAMP 2	15	3	12	1.67
451+85.00	RAMP 2	15	3	12	1.67
452+00.00	RAMP 2	15	3	12	1.67
457+95.00	RAMP 3	15	3	12	1.67
458+10.00	RAMP 3	15	3	12	1.67
458+25.00	RAMP 3	15	3	12	1.67
447+00.00	RAMP 4	15	3	12	1.67
447+15.00	RAMP 4	15	3	12	1.67
447+30.00	RAMP 4	15	3	12	1.67
TOTAL:					20.04

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL: SEEDING ACRE	LIME TON	MULCH COVER ACRE	WATER M.GAL.	SECOND SEEDING APPLICATION ACRE	TEMPORARY EROSION CONTROL: TEMPORARY SEEDING ACRE	MULCH COVER ACRE	WATER M.GAL.	SAND BAG DITCH CHECKS (E-5) BAG	ROCK DITCH CHECKS (E-6) CU.YD.	TRIANGULAR SILT DIKE LIN. FT.	SILT FENCE (E-11) LIN. FT.	*SEDIMENT REMOVAL & DISPOSAL CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						0.75	0.75	15.3	22	3		366	16
ENTIRE	PROJECT	STAGE 1A						0.30	0.30	6.1					
ENTIRE	PROJECT	STAGE 1B						2.14	2.14	43.7	110	33			16
ENTIRE	PROJECT	STAGE 1C						1.97	1.97	40.2	176	42			22
ENTIRE	PROJECT	STAGE 1D						0.82	0.82	16.7	22	6		1140	45
ENTIRE	PROJECT	STAGE 2A						2.89	2.89	59.0					3
ENTIRE	PROJECT	STAGE 2B	8.55	17.10	8.55	872.1	8.55	1.25	1.25	25.5					
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			2.14	4.28	2.14	218.3	2.14	2.34	2.34	47.7	200	60	1000	500	19
TOTALS:			10.69	21.38	10.69	1090.4	10.69	12.46	12.46	254.2	530	144	1000	2006	121

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
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

7/28/2017

RBB0620.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-18-17				6	ARK.			
				JOB NO.		BB0620	60	86

(2) QUANTITIES

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

8-21-17

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	ACHM BASE COURSE (1-1/2") 660 LBS. PER SQ. YD.			TACK COAT 0.05 GAL. PER SQ. YD.			PORTLAND CEMENT CONCRETE PAVEMENT		VERY EARLY STRENGTH CONCRETE PAVEMENT	
				AVG. WID.	SQ. YD.	PG 64-22	AVG. WID.	SQ. YD.	GAL.	AVG. WID.	11" U.T.	AVG. WID.	11" U.T.
			FEET	FEET		TON	FEET			FEET	SQ. YD.	FEET	SQ. YD.
432+21.29	436+80.84	RAMP 1	459.55	27.00	1378.65	454.95	27.00	1378.65	68.93	25.00	1276.53		
436+80.84	437+55.84	RAMP 1	75.00	29.25	243.75	80.44	29.25	243.75	12.19	27.25	227.08		
437+55.84	441+48.53	RAMP 1	392.69	31.50	1374.42	453.56	31.50	1374.42	68.72	29.50	1287.15		
441+48.53	443+83.07	RAMP 1	234.54	36.00	938.16	309.59	36.00	938.16	46.91	34.00	886.04		
442+98.93	452+00.00	RAMP 2	901.07	27.00	2703.21	892.06	27.00	2703.21	135.16	25.00	2502.97		
447+17.06	449+30.00	RAMP 3 - TURN LANES	212.94	36.00	851.76	281.08	36.00	851.76	42.59	34.00	804.44		
449+30.00	450+30.00	RAMP 3 - TRANSITION TO TURN LANES	100.00	31.50	350.00	115.50	31.50	350.00	17.50	29.50	327.78		
450+30.00	458+25.00	RAMP 3	795.00	27.00	2385.00	787.05	27.00	2385.00	119.25	25.00	2208.33		
447+17.06	447+35.42	RAMP 3 - TEMPORARY SHOULDER	18.36	VAR.	25.66	8.47	VAR.	25.66	1.28	23.62	48.18		
447+35.42	450+30.00	RAMP 3 - TEMPORARY SHOULDER	294.58	7.00	229.12	75.61	7.00	229.12	11.46	6.00	196.39		
447+00.00	451+16.40	RAMP 4	416.40	27.00	1249.20	412.24	27.00	1249.20	62.46	25.00	1156.67		
451+16.40	452+15.32	RAMP 4 ADJACENT OT HWY. 391 TURNOUT	98.92	20.00	219.82	72.54	20.00	219.82	10.99	19.00	208.83		
16+22.79	17+82.79	HWY. 391 - TRANSITION TO TURN LANE	160.00	35.00	622.22	205.33	35.00	622.22	31.11			33.00	586.67
17+82.79	18+47.20	HWY. 391	64.41	28.00	200.39	66.13	28.00	200.39	10.02			26.00	186.07
18+47.20	18+87.20	HWY. 391	40.00	22.00	97.78	32.27	22.00	97.78	4.89			22.00	97.78
21+09.41	21+49.41	HWY. 391	40.00	22.00	97.78	32.27	22.00	97.78	4.89			22.00	97.78
21+49.41	21+96.00	HWY. 391	46.59	28.00	144.95	47.83	28.00	144.95	7.25			26.00	134.59
21+96.00	23+50.00	HWY. 391	154.00	34.00	581.78	191.99	34.00	581.78	29.09			32.00	547.56
23+50.00	25+00.00	HWY. 391	150.00	40.00	666.67	220.00	40.00	666.67	33.33			38.00	633.33
25+00.00	27+30.00	HWY. 391 - LT. LANE TRANSITION	230.00	17.50	447.22	147.58	17.50	447.22	22.36			16.50	421.67
25+00.00	26+30.00	HWY. 391 - RT. LANE	130.00	20.00	288.89	95.33	20.00	288.89	14.44			19.00	274.44
26+30.00	27+30.00	HWY. 391 - RT. LANE TRANSITION	100.00	17.50	194.44	64.17	17.50	194.44	9.72			16.50	183.33
27+30.00	28+48.90	HWY. 391 WITH RT. TURN LANE	118.90	46.00	607.71	200.54	46.00	607.71	30.39			44.00	581.29
28+48.90	31+37.04	HWY. 391 TURN OUT AND INTERSECTION	288.14	VAR.	2316.79	764.54	VAR.	2316.79	115.84			VAR.	2252.14
TOTALS:					18215.37	6011.07		18215.37	910.77		11130.39		5996.65

BASIS OF ESTIMATE:
ACHM BASE COURSE (1-1/2").....96.2% MIN. AGGR.....3.8% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1-1/2")					ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	TOTAL PG 76-22
			FEET			FEET				FEET			TON	TON	FEET			TON	FEET			TON	FEET			TON	TON
HWY. 391 SHOULDERS																											
16+22.79	18+47.20	HWY. 391 - LT. & RT. SHOULDER	224.41	191.50	429.75																		12.00	299.21	220.00	32.91	32.91
21+49.41	23+71.27	HWY. 391 - LT. & RT. SHOULDER	221.86	191.50	424.86																		12.00	295.81	220.00	32.54	32.54
23+71.27	25+30.00	HWY. 391 - RT. SHOULDER	158.73	95.75	151.98																		6.00	105.82	220.00	11.64	11.64
25+25.28	31+37.04	HWY. 391 - LT. SHOULDER	611.76	95.75	585.76																		6.00	407.84	220.00	44.86	44.86
25+30.00	26+30.00	HWY. 391 - RT. SHOULDER	100.00	84.75	84.75																		5.00	55.56	220.00	6.11	6.11
26+30.00	29+97.69	HWY. 391 TO RAMP 4 TURNOUT - RT. SHOULDER	434.87	50.00	217.44																						
30+64.29	31+37.04	RAMP 3 TO HWY. 391 TURNOUT - RT. SHOULDER	82.84	50.00	41.42																						
RAMP SHOULDERS																											
432+21.29	443+83.07	RAMP 1	1161.78	100.00	1161.78																						
442+98.93	452+00.00	RAMP 2	901.07	100.00	901.07																						
447+17.06	448+64.57	RAMP 3 - LT. SHOULDER	147.51	50.00	73.76																						
448+64.57	458+25.00	RAMP 3	960.43	100.00	960.43																						
447+00.00	449+50.00	RAMP 4	250.00	100.00	250.00																						
449+50.00	451+16.40	RAMP 4 - LT. SHOULDER	166.40	50.00	83.20																						
458+25.00	459+85.10	RAMP 3 - FULL DEPTH RT. SHLDR.	160.10	117.25	187.72	25.16	447.57	0.05	22.38	6.40	113.85	550.00		31.31	6.23	110.82	330.00	18.29	6.13	109.05	220.00	12.00	6.00	106.73	220.00	11.74	23.74
MAYBELLINE RD.																											
302+00.00	304+40.00	MAYBELLINE RD. MAIN LANES	240.00			29.00	773.33	0.17	131.47														29.00	773.33	220.00	85.07	85.07
302+00.00	304+40.00	MAYBELLINE RD. SHOULDERS	240.00			VAR.	254.16	0.17	43.21														VAR.	254.16	220.00	27.96	27.96
304+40.00	305+05.43	MAYBELLINE RD.	65.43			34.00	247.18	0.17	42.02														34.00	247.18	220.00	27.19	27.19
305+05.43	307+74.82	MAYBELLINE RD.	269.39			32.00	957.83	0.17	162.83														32.00	957.83	220.00	105.36	105.36
307+74.82	314+00.00	MAYBELLINE RD.	625.18			30.00	2083.93	0.17	354.27														30.00	2083.93	220.00	229.23	229.23
ADDITIONAL FOR GUARDRAIL																											
17+00.45	17+33.45	LT. OF HWY. 391 TRANSITION	33.00	VAR.	3.50																		2.75	10.08	220.00	1.11	1.11
17+00.45	17+33.45	RT. OF HWY. 391 TRANSITION	33.00	VAR.	3.50																		2.75	10.08	220.00	1.11	1.11
17+33.45	18+87.20	LT. OF HWY. 391	153.75	21.50	33.06																		5.50	93.96	220.00	10.34	10.34
17+33.45	18+87.20	RT. OF HWY. 391	153.75	21.50	33.06																		5.50	93.96	220.00	10.34	10.34
21+09.41	22+63.16	LT. OF HWY. 391	153.75	21.50	33.06																		5.50	93.96	220.00	10.34	10.34
21+09.41	22+63.16	RT. OF HWY. 391	153.75	21.50	33.06																		5.50	93.96	220.00	10.34	10.34
22+63.16	22+96.16	LT. OF HWY. 391 TRANSITION	33.00	VAR.	3.50																		2.75	10.08	220.00	1.11	1.11
22+63.16	22+96.16	RT. OF HWY. 391 TRANSITION	33.00	VAR.	3.50																		2.75	10.08	220.00	1.11	1.11
DETOUR RAMPS																											
432+18.77	445+15.45	DETOUR RAMP 1	1296.68	149.50	1938.54	101.31	14596.29	0.05	729.81	25.46	3668.16	550.00		1008.74	25.26	3639.35	495.00	900.74	25.13	3620.62	220.00	398.27	25.00	3601.89	220.00	396.21	794.48
441+52.76	452+00.00	DETOUR RAMP 2	1047.24	149.50	1565.62	101.31	11788.43	0.05	589.42	25.46	2962.53	550.00		814.70	25.26	2939.25	495.00	727.46	25.13	2924.13	220.00	321.65	25.00	2909.00	220.00	319.99	641.64
449+00.00	457+72.40	DETOUR RAMP 3	872.40	126.75	1105.77	81.31	7881.65	0.05	394.08	20.46	1983.26	550.00		545.40	20.26	1963.87	495.00	486.06	20.13	1951.27	220.00	214.64	20.00	1938.67	220.00	213.25	427.89
447+00.00	450+27.46	DETOUR RAMP 4	327.46	126.75	415.06	81.31	2958.42	0.05	147.92	20.46	744.43	550.00		204.72	20.26	737.15	495.00	182.44	20.13	732.42	220.00	80.57	20.00	727.89	220.00	80.05	160.62
447+17.06	449+00.00	DETOUR RAMP 3 AND 4	182.94	VAR.	206.55	VAR.	2023.36	0.05	101.17	VAR.	505.84	550.00		139.11	VAR.	505.84	495.00	125.20	VAR.	505.84	220.00	55.64	VAR.	505.84	220.00	55.64	111.28
444+81.33	445+08.91	ADDITIONAL FOR RAMP 1 TURNOUT	27.58	VAR.	17.78	VAR.	171.67	0.05	8.58	VAR.	43.54	550.00		11.97	VAR.	42.60	495.00	10.54	VAR.	41.99	220.00	4.62	VAR.	41.42	220.00	4.56	9.18
441+48.30	441+70.70	ADDITIONAL FOR RAMP 2 TURNOUT	22.40	VAR.	3.60	VAR.	33.34	0.05	1.67	VAR.	8.82	550.00		2.43	VAR.	8.08	495.00	2.00	VAR.	7.62	220.00	0.84	VAR.	7.16	220.00	0.79	1.63
MEDIAN BARRIER WALL ALONG RAMP 4																											
449+50.00	450+63.54	RAMP 4 CONCRETE BARRIER WALL	113.54							9.00	113.54	660.00	37.47														
450+63.54	451+21.09	RAMP 4 CONCRETE BARRIER WALL	57.55							15.38	98.35	660.00	32.46														
451+21.09	452+00.00	RAMP 4 CONCRETE BARRIER WALL	78.91							12.00	105.21	660.00	34.72														
ADDITIONAL FOR WIDENING FOR TEMPORARY PRECAST BARRIER																											
452+08.00	454+55.00	DETOUR RAMP 3	247.00	VAR.	35.00																		VAR.	99.11	220.00	10.90	10.90
DECELERATION LANE																											
459+85.10	461+72.81	DECELERATION LANE	187.71	177.88	333.90	32.59	679.72	0.05	33.99	8.20	171.02	550.00		47.03	8.12	169.36	330.00	27.94	8.07	168.31	220.00	18.51	12.00	250.28	220.00	27.53	46.04
461+72.81	470+09.74	DECELERATION LANE	836.93	223.25	1868.45	57.16	5315.44	0.05	265.77	14.40	1339.09	550.00		368.25	14.23	1323.28	330.00	218.34	14.13	1313.98	220.00	144.54	18.00	1673.86	220.00	184.12	328.66
470+09.74	473+09.98	DECELERATION LANE	300.24	192.13	576.85	32.59	1087.20	0.05	54.36	8.20	273.55	550.00		75.23	8.12	270.88	330.00	44.70	8.07	269.22	220.00	29.61	14.00	467.04	220.00	51.37	80.98
TOTALS:					13767.28		51299.52		3082.95		12131.19		104.65	3248.89		11710.48		2743.71		11644.45		1280.89		18225.52		2004.82	3285.71

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.1% MIN. AGGR.....4.9% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.2% MIN. AGGR.....3.8% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

8/18/2017

BB0620.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
8-3-17			
8-18-17			
8-25-17			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BB0620	61	86

(2) SUMMARY OF QUANTITIES AND REVISIONS

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

8-25-17

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	4	STATION
201	GRUBBING	4	STATION
202	REMOVAL AND DISPOSAL OF CURB	306	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	6984	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	96	SQ. YD.
202	REMOVAL AND DISPOSAL OF PRECAST CONCRETE BARRIER WALL LEFT IN PLACE	166	LIN. FT.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	576	LIN. FT.
210	UNCLASSIFIED EXCAVATION	20217	CU. YD.
210	COMPACTED EMBANKMENT	11389	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	13767	TON
SS & 401	TACK COAT	4044	GAL.
SP & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	9009	TON
SP & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	232	TON
SP & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")	123	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2629	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")	115	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3125	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	161	TON
412	COLD MILLING ASPHALT PAVEMENT	12986	SQ. YD.
SP & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	25	TON
SP & 501	PORTLAND CEMENT CONCRETE PAVEMENT (11" UNIFORM THICKNESS)	11130	SQ. YD.
SP & 501	VERY EARLY STRENGTH CONCRETE PAVEMENT (11" UNIFORM THICKNESS)	5997	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	781	SQ. FT.
SS & 604	BARRICADES	160	LIN. FT.
SS & 604	TRAFFIC DRUMS	166	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	5220	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	7940	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	52988	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	24733	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	6782	LIN. FT.
604	ADVANCE WARNING ARROW PANEL	10	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	30	WEEK
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	118	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	10	CU. YD.
611	UNDERDRAIN OUTLET PROTECTORS	16	EACH
611	4" PIPE UNDERDRAINS	3675	LIN. FT.
617	GUARDRAIL (TYPE A)	300	LIN. FT.
617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
617	THRIE BEAM GUARDRAIL TERMINAL	4	EACH
620	LIME	21	TON
620	SEEDING	10.69	ACRE
SS & 620	MULCH COVER	23.15	ACRE
620	WATER	1345.0	M. GAL.
621	TEMPORARY SEEDING	12.46	ACRE
621	SILT FENCE	2006	LIN. FT.
621	SAND BAG DITCH CHECKS	530	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	121	CU. YD.
621	ROCK DITCH CHECKS	144	CU. YD.
621	TRIANGULAR SILT DIKE	1000	LIN. FT.
623	SECOND SEEDING APPLICATION	10.69	ACRE
624	SOLID SODDING	32	SQ. YD.
631	CONCRETE BARRIER WALL (MEDIAN TYPE B)	250	LIN. FT.
632	CONCRETE ISLAND	133	SQ. YD.
SP & 635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
640	MODIFYING DROP INLETS	4	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	1325	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	99	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (10")	71	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	5753	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	6051	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	3	EACH
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	14710	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")	1550	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	11790	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	380	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	10	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	19	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	9	EACH
802	CLASS S CONCRETE-ROADWAY	20.04	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
8/3/2017	REVISED THE UNIT FOR VERY EARLY STRENGTH CONCRETE PAVEMENT (11" UNIFORM THICKNESS) TO SQ. YD IN THE SUMMARY OF QUANTITIES; REVISED THE QUANTITY FOR "UNCLASSIFIED EXCAVATION" IN THE SCHEDULE OF ITEMS; REVISED THE "PROSECUTION AND PROGRESS WITH BID SCHEDULE" SPECIAL PROVISION.	61
8/18/2017	ADDED "PRECAST CONCRETE SLABS" SPECIAL PROVISION, REVISED "MAINTENANCE OF TRAFFIC," "SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT" AND "CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE" SPECIAL PROVISIONS, ADDED TYPICAL SECTION FOR FULL DEPTH ASPHALT SHOULDER ON RAMP 3, REVISED MAINTENANCE OF TRAFFIC DETAILS.	3, 7, 29, 31-54, 57-58, 60-61
8/25/2017	REVISED "PROSECUTION AND PROGRESS WITH BID SCHEDULE" SPECIAL PROVISION.	61

(2) SURVEY CONTROL DETAILS

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

7-28-17

SURVEY CONTROL COORDINATES

Project Name: sbb0620
Date: 12/6/2016
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL.
COORDINATES ARE IN GRID.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	2084054.1320	1280006.8720	247.22	CTL	STD AHTD MON STAMPED PN: 1 GALLOWAY
2	2083959.9390	1279288.6230	247.15	CTL	STD AHTD MON STAMPED PN: 2 GALLOWAY
3	2083843.5940	1278400.5790	246.71	CTL	STD AHTD MON STAMPED PN: 3 GALLOWAY
4	2083742.7970	1277627.2530	247.15	CTL	STD AHTD MON STAMPED PN: 4 GALLOWAY
5	2083636.3030	1276812.6150	247.10	CTL	STD AHTD MON STAMPED PN: 5 GALLOWAY
6	2083561.7540	1276226.5130	246.93	CTL	STD AHTD MON STAMPED PN: 6 GALLOWAY
7	2083451.9830	1275230.6520	247.37	CTL	STD AHTD MON STAMPED PN: 7 GALLOWAY
8	2083424.7760	1274221.0190	246.14	CTL	STD AHTD MON STAMPED PN: 8 GALLOWAY
9	2083734.3680	1274263.2170	245.57	CTL	STD AHTD MON STAMPED PN: 9 GALLOWAY
10	2083796.3220	1274906.4980	242.83	CTL	STD AHTD MON STAMPED PN: 10 GALLOWAY
11	2083707.3550	1273724.8260	259.42	CTL	STD AHTD MON STAMPED PN: 11 GALLOWAY
12	2083165.2600	1273855.1120	247.75	CTL	STD AHTD MON STAMPED PN: 12 GALLOWAY
100	2099922.0980	1267312.3460	259.80	GPS	AHTD GPS MON 600045A
101	2079492.9650	1267099.7640	250.19	GPS	AHTD GPS MON 600076A
303	2083689.0400	1273546.3490	265.24	CTL	OLD AHTD MON STAMPED PN: 3 JOB 060994060994

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
COORDINATES ARE IN GRID FEET.
GRID COORDINATES ARE STORED UNDER FILE NAME. sbb0620gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED. REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302- SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 600045A - 600076A
CONVERGENCE ANGLE: 00 04 16 LEFT AT LT:N 34-47-08 LG:W092-07-37
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

I-40

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	384+05.56	2082389.1988	1267772.5127
8001	POE	498+53.69	2083869.1164	1279124.5814

RAMP 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8002	POB	426+00.00	2082885.3109	1271937.7693
8003	PC	427+33.51	2082902.5705	1272070.1634
8004	PT	429+25.67	2082917.7916	1272261.6384
8005	PC	437+48.63	2082941.6701	1273084.2503
8006	PT	441+48.53	2082757.8118	1273418.2795
8007	PC	442+72.27	2082651.3928	1273481.4119
8008	PT	444+45.50	2082556.2915	1273619.7461
8009	POE	445+52.50	2082538.2763	1273725.2137

RAMP 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8009	POB	441+02.27	2082538.2763	1273725.2137
8010	PC	441+92.86	2082562.3225	1273812.5544
8011	PT	443+91.32	2082694.1682	1273949.9435
8012	PC	444+74.88	2082773.7534	1273975.4221
8013	PT	450+64.57	2083156.6970	1274389.4900
8014	PC	453+18.36	2083214.9934	1274636.4981
8015	PT	455+13.43	2083250.0350	1274828.3019
8016	POE	456+00.00	2083261.2264	1274914.1482

RAMP 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8017	POB	446+55.21	2083773.3552	1274194.9338
8018	PC	448+11.29	2083618.5446	1274214.7960
8019	PT	451+62.97	2083410.5126	1274458.8318
8020	PC	461+03.02	2083439.9746	1275398.4198
8021	PT	462+91.08	2083455.1055	1275585.7905
8022	POE	464+00.01	2083469.2063	1275693.8042

RAMP 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8023	POB	443+00.00	2083209.1916	1273609.9314
8024	PC	444+94.07	2083234.2788	1273802.3691
8025	PT	447+32.82	2083294.2660	1274032.8250
8026	PC	447+41.52	2083297.4901	1274040.9051
8027	PT	450+54.21	2083547.7972	1274188.5198
8028	POE	452+79.65	2083771.4644	1274160.3097

I-40 WEST DECELERATION LANE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8029	POB	459+00.00	2083433.6117	1275195.4986
8030	PC	459+85.10	2083436.2787	1275280.5531
8031	PT	461+72.81	2083451.3657	1275467.5869
8032	PI	470+09.74	2083559.5570	1276297.4947
8033	POE	473+09.98	2083586.4391	1276596.5288

HWY. 391

POINT NO.	TYPE	STATION	NORTHING	EASTING
8034	POB	-5+04.03	2080663.8712	1273680.0424
8035	PC	-1+53.22	2081013.4596	1273709.3182
8036	PT	3+41.11	2081507.2275	1273729.2827
8037	PC	12+87.30	2082453.4204	1273726.7023
8038	PT	16+46.58	2082811.6951	1273703.2257
8039	PC	22+30.10	2083390.4330	1273628.6583
8040	PT	27+68.48	2083759.1889	1273935.5256
8041	POE	35+16.59	2083799.9825	1274682.5258

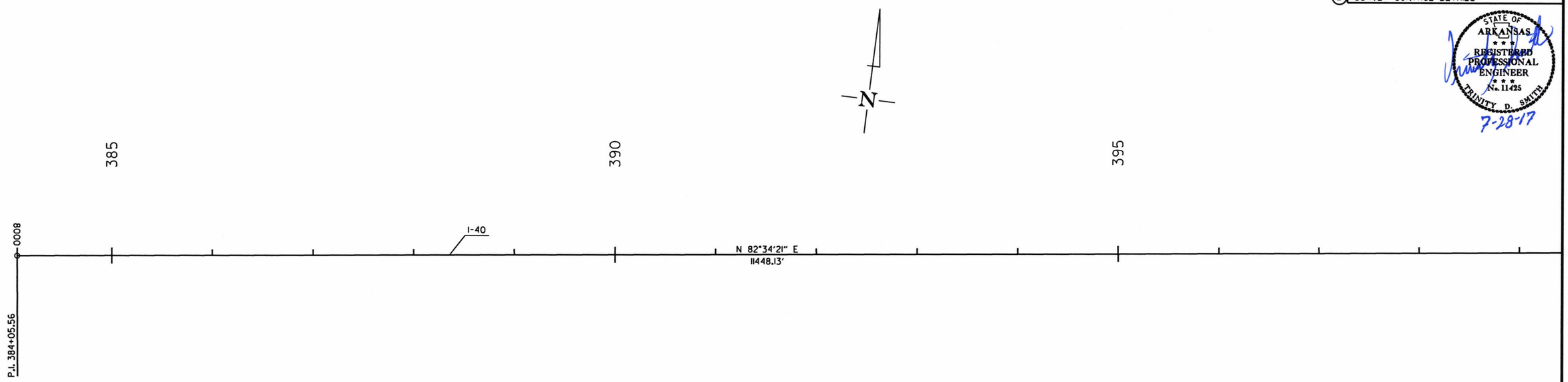
MAYBELLINE RD. EAST

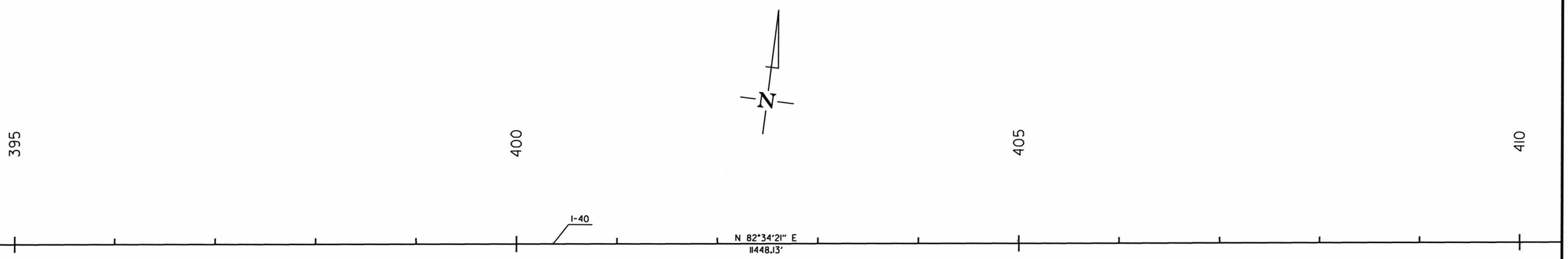
POINT NO.	TYPE	STATION	NORTHING	EASTING
8042	POB	300+00.00	2082011.0920	1273727.9087
8043	PC	301+59.43	2082051.7754	1273882.0617
8044	PT	305+05.43	2082307.6995	1274076.0071
8045	PC	307+74.82	2082577.0574	1274071.7551
8046	PT	313+35.37	2083007.9237	1274371.5542
8047	PC	316+85.68	2083124.4849	1274701.9072
8048	PT	320+26.24	2083203.6996	1275032.4954
8049	POE	339+19.62	2083451.3330	1276909.6101

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	63	86

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17





7/28/2017

RBB0620.DGN

SURVEY CONTROL DETAILS

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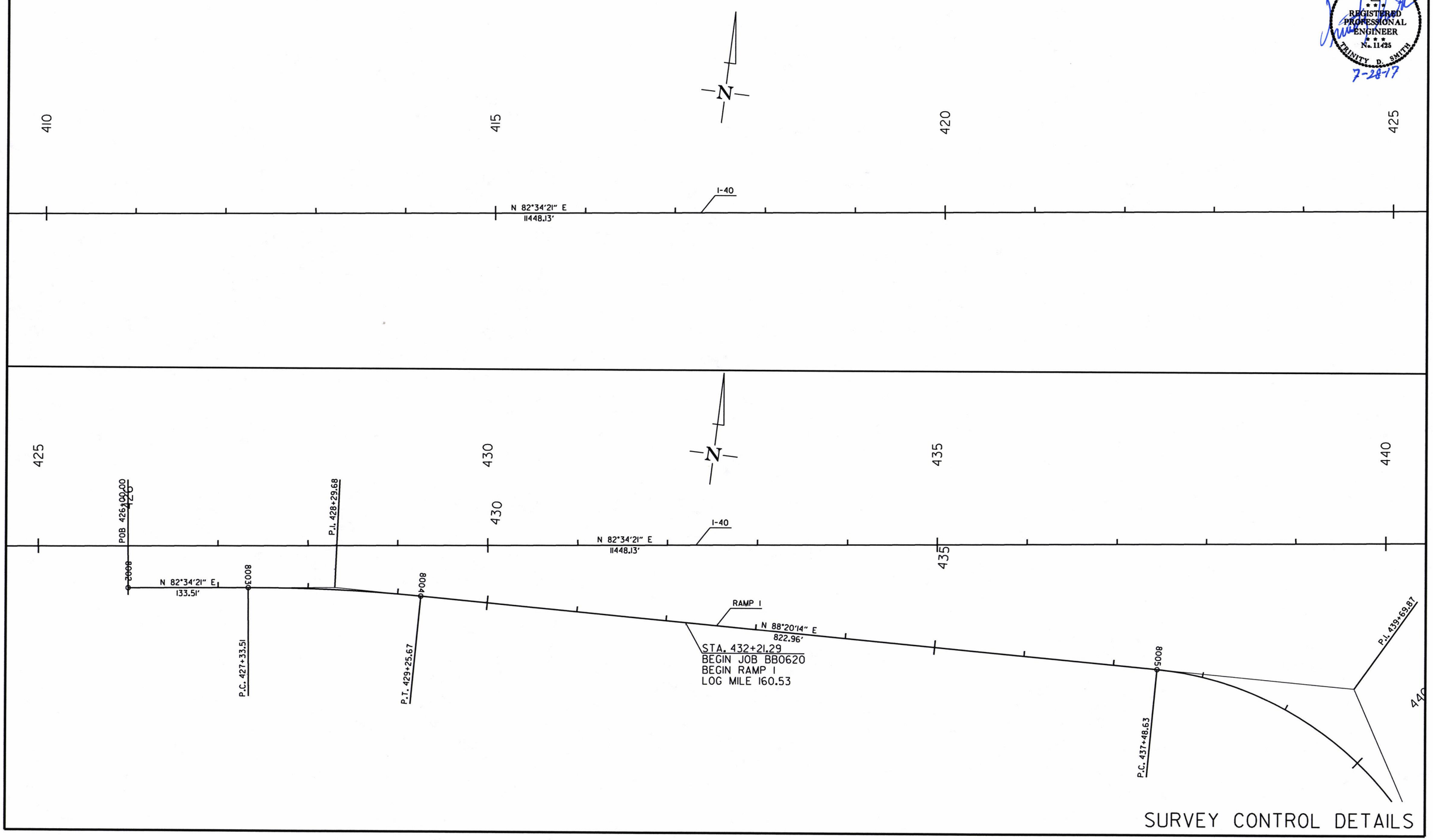

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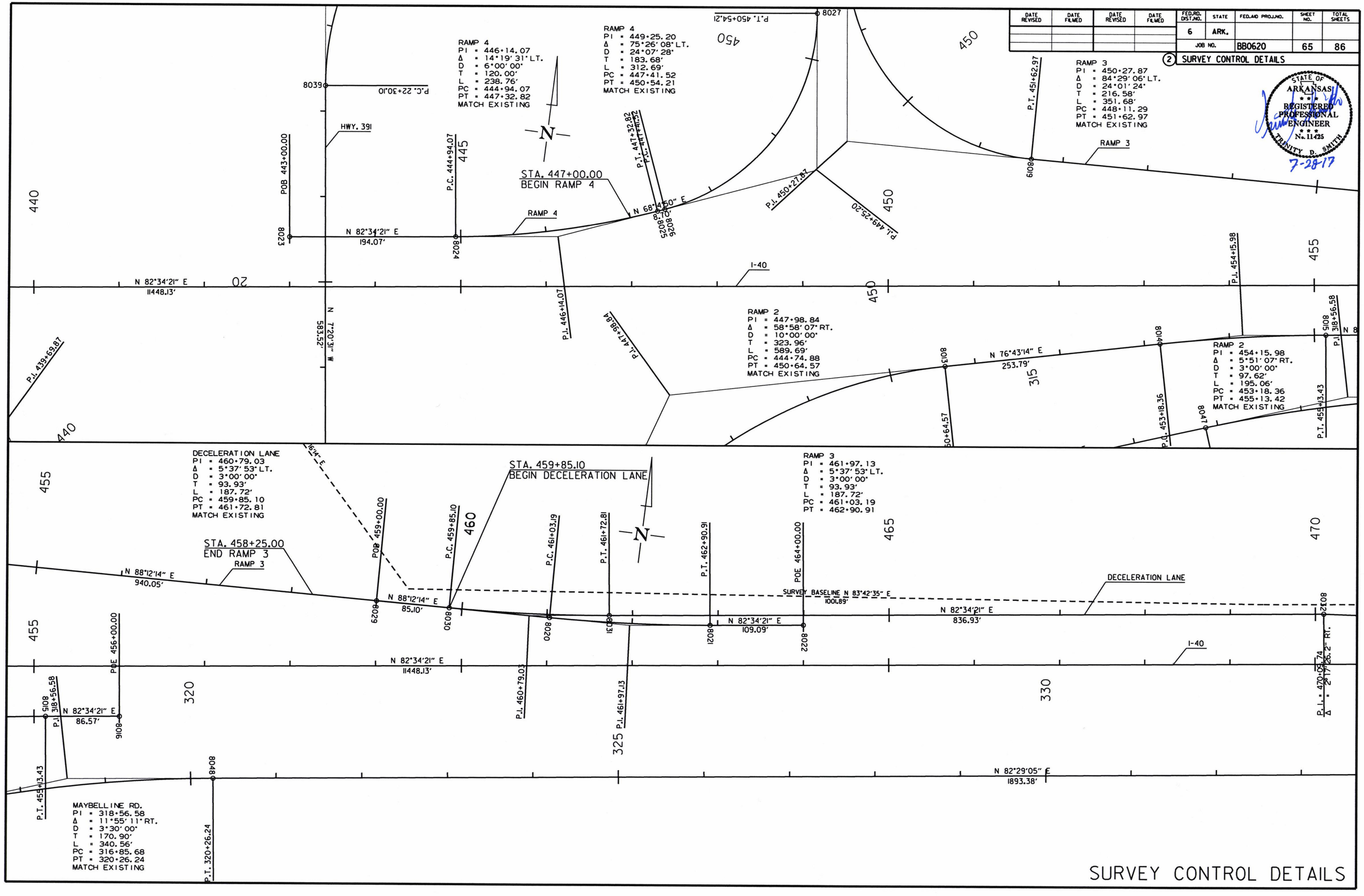

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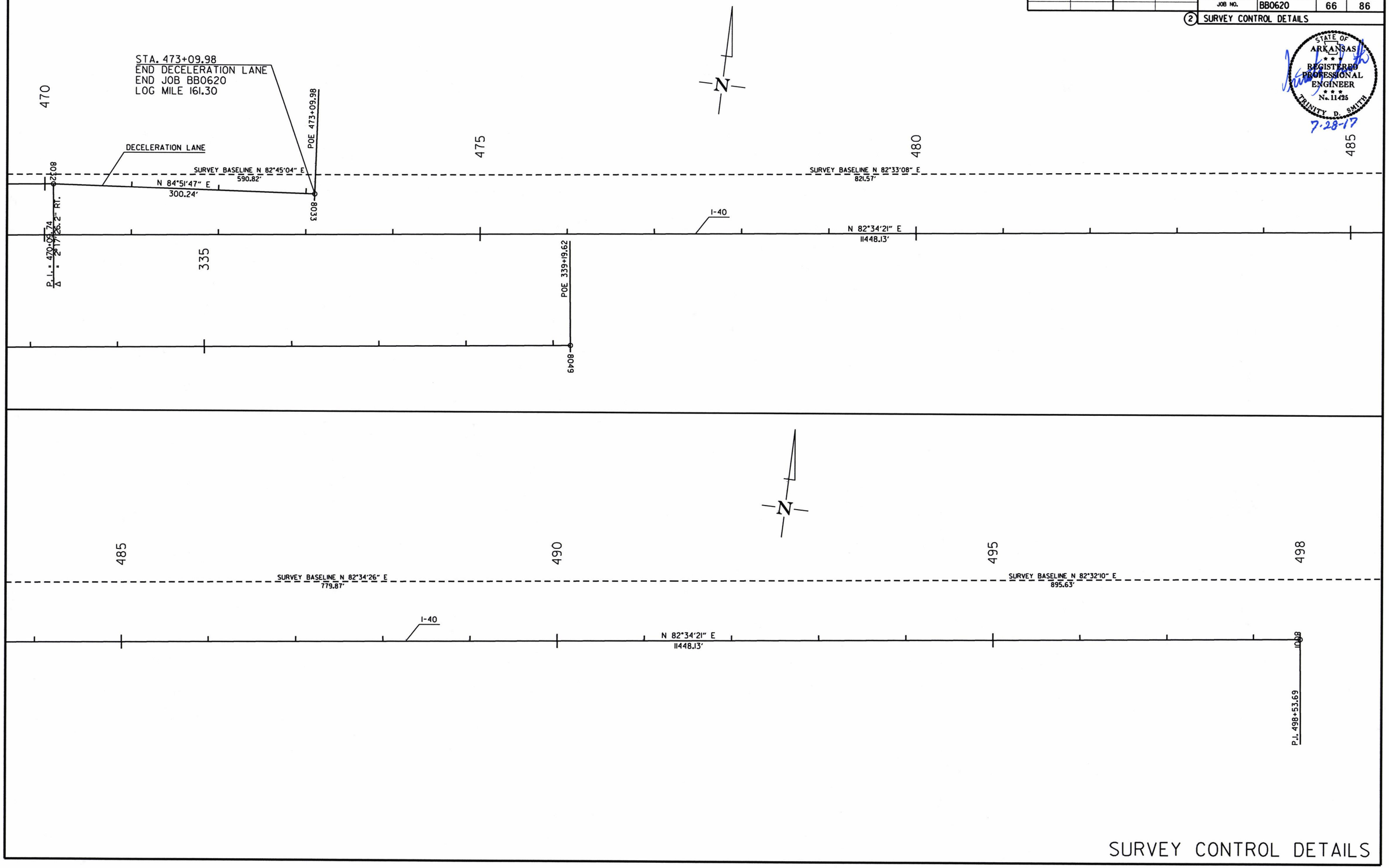

SURVEY CONTROL DETAILS

7/28/2017

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2 SURVEY CONTROL DETAILS

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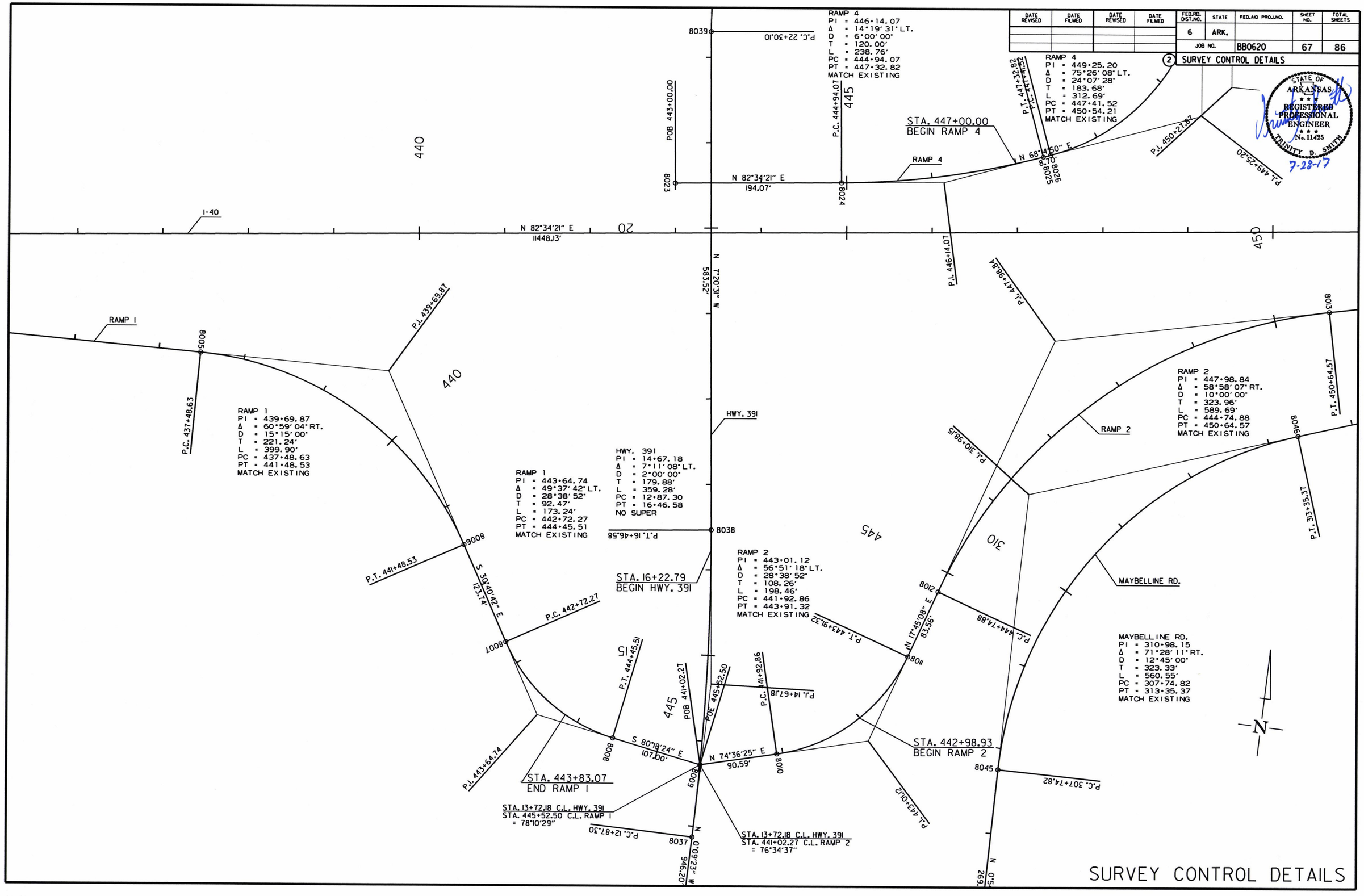

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(2) SURVEY CONTROL DETAILS

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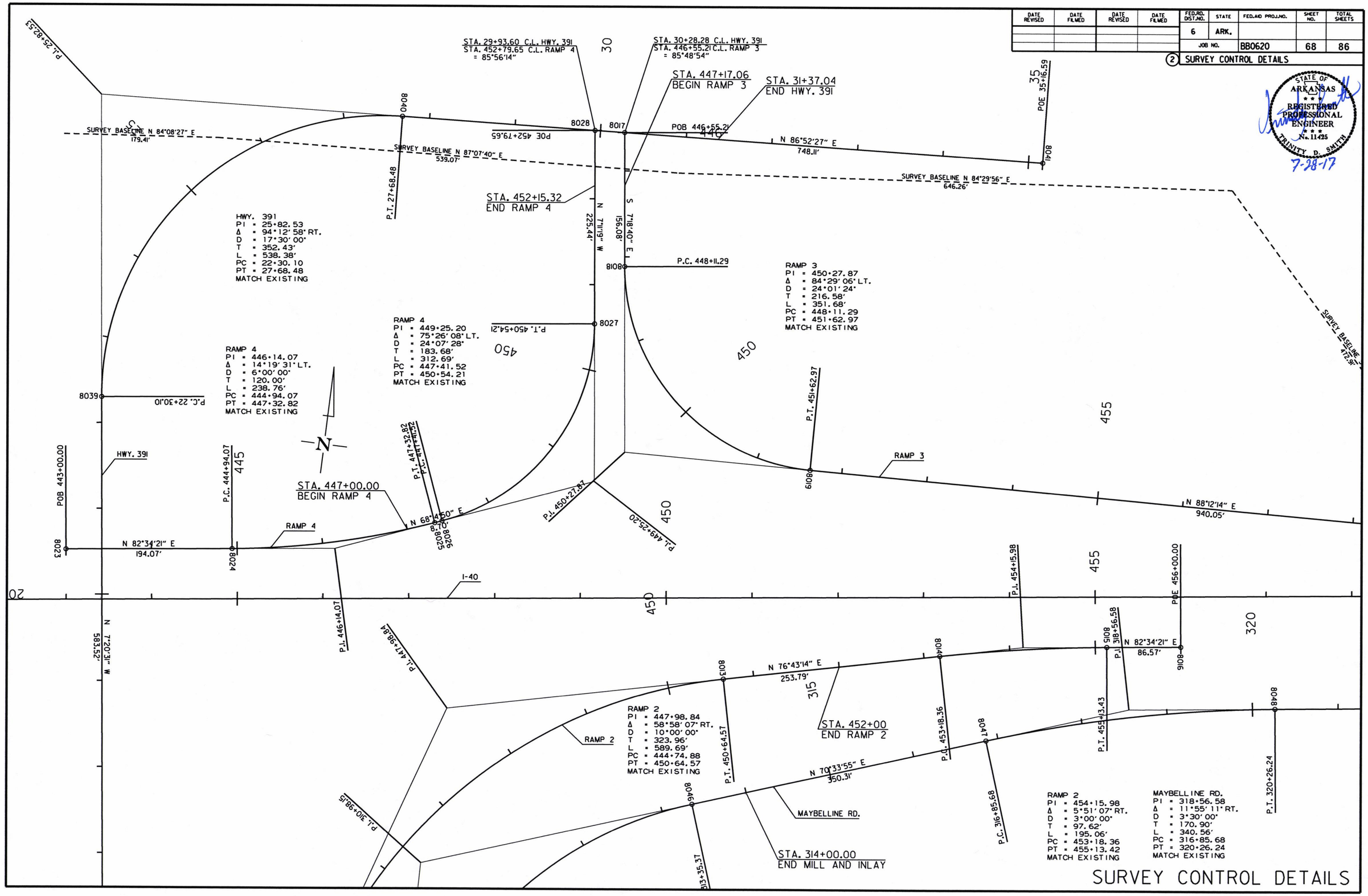

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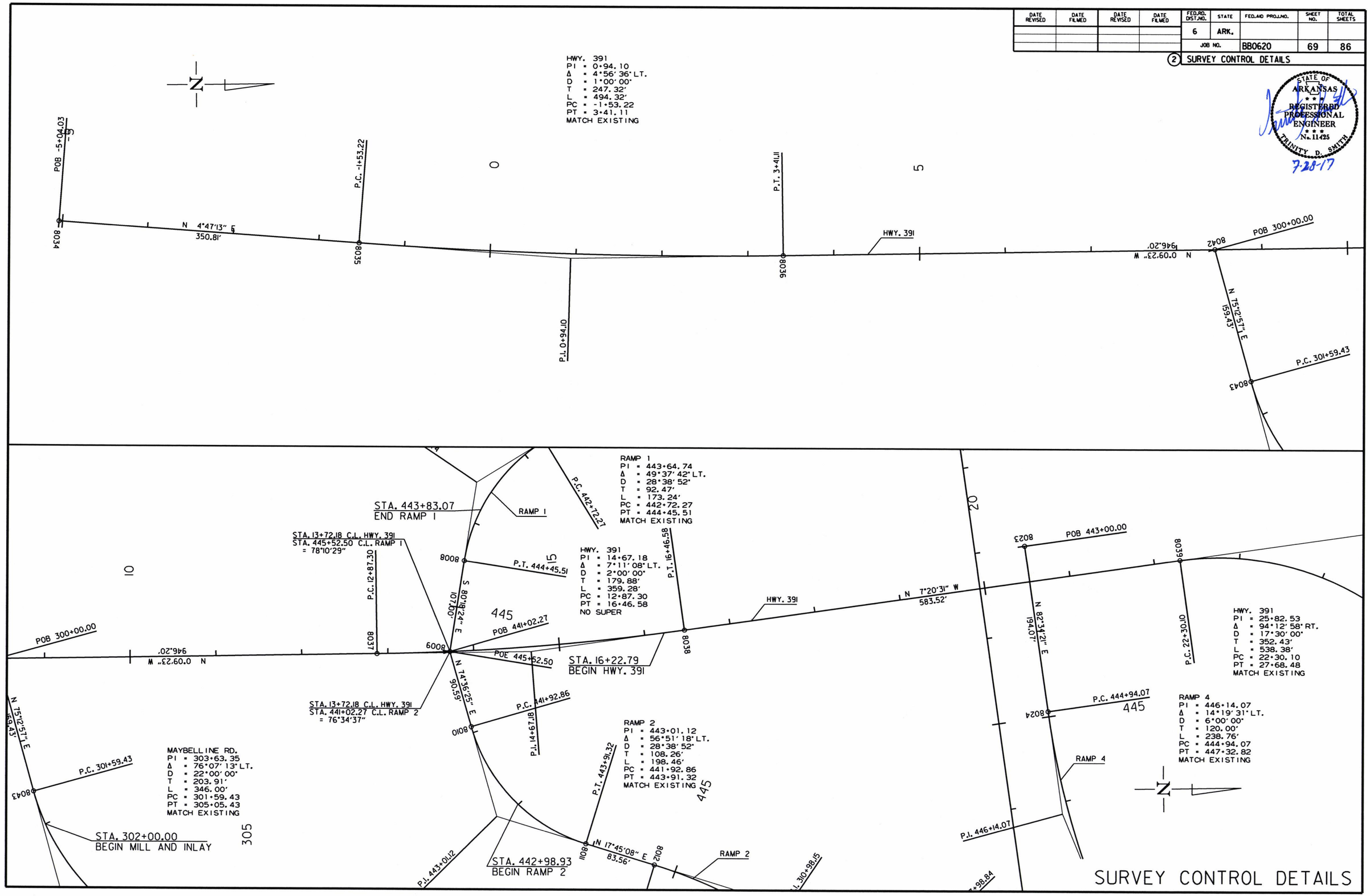

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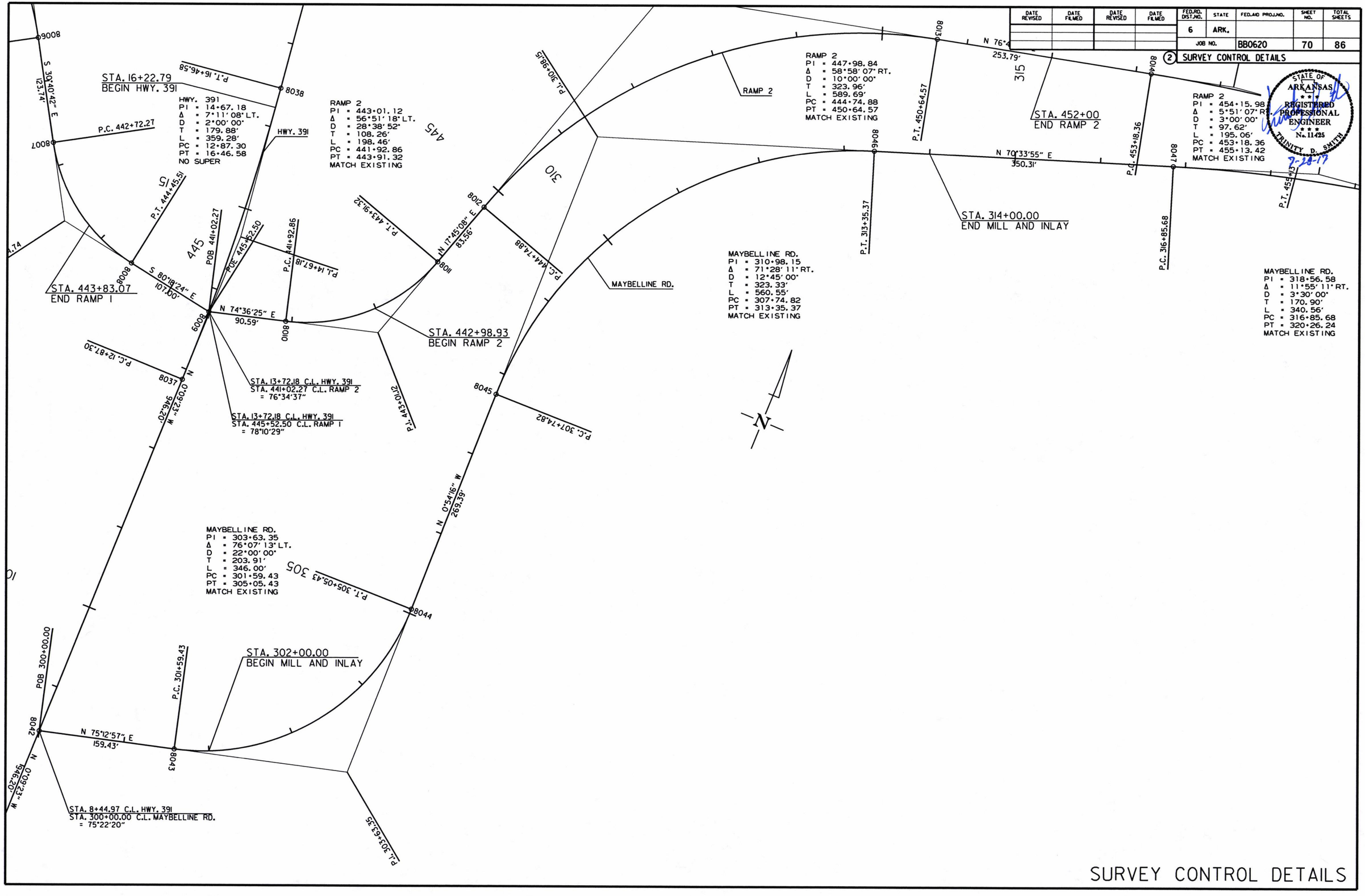
2 SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17



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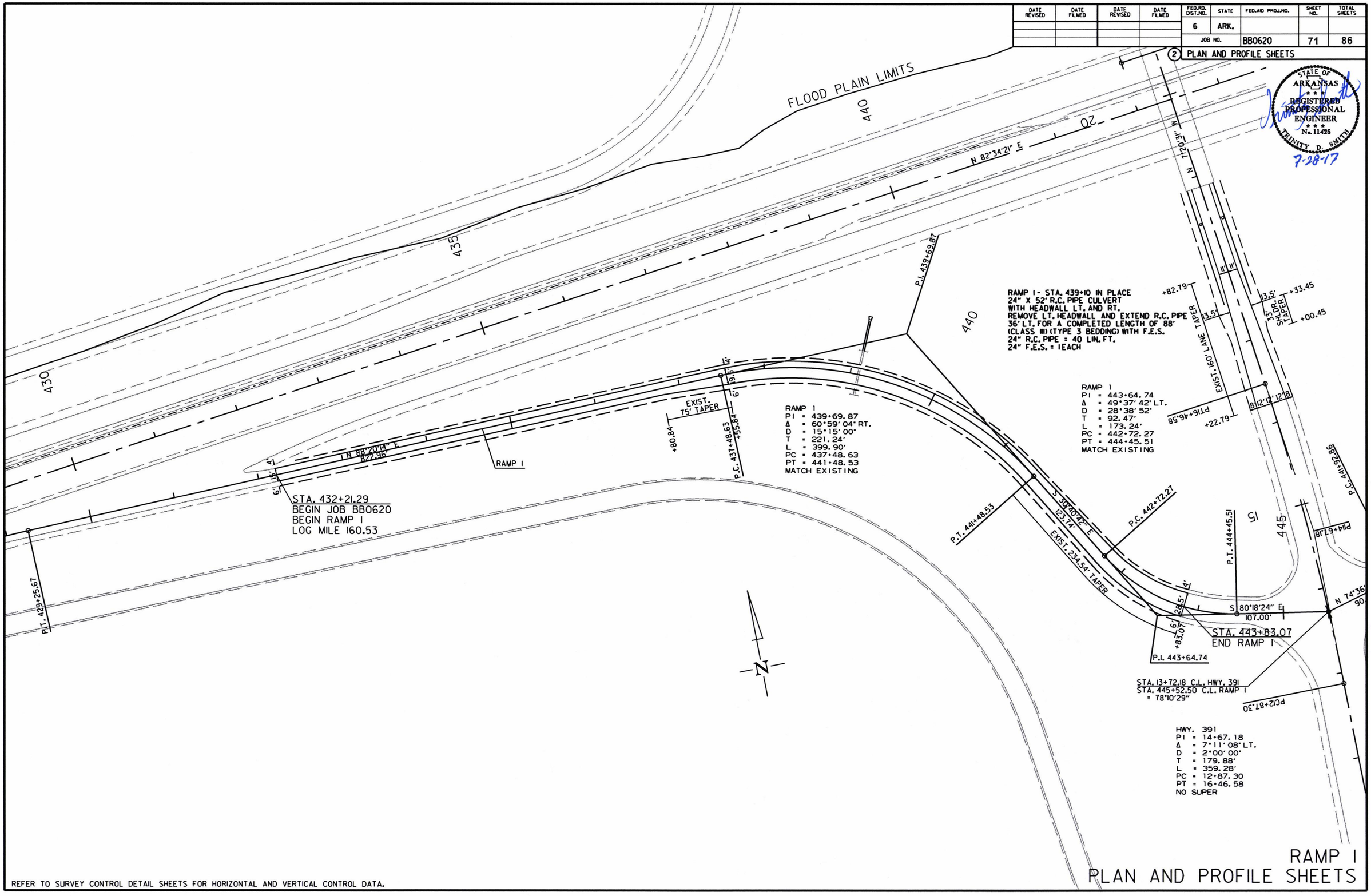
2 PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



RAMP 1
PLAN AND PROFILE SHEETS

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

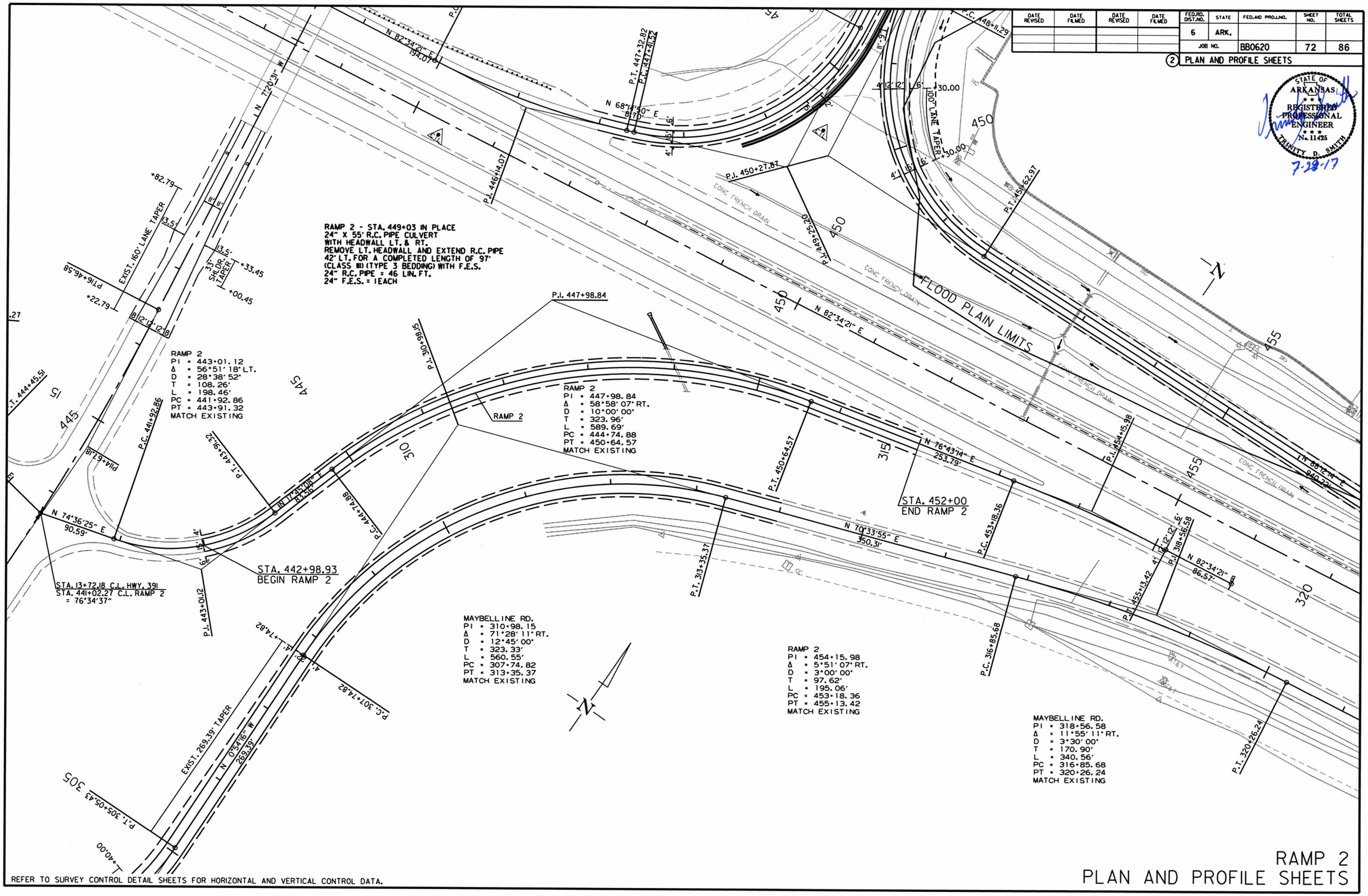
7/28/2017

RBB0620.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.		BB0620	72	86

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



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

RAMP 2
PLAN AND PROFILE SHEETS

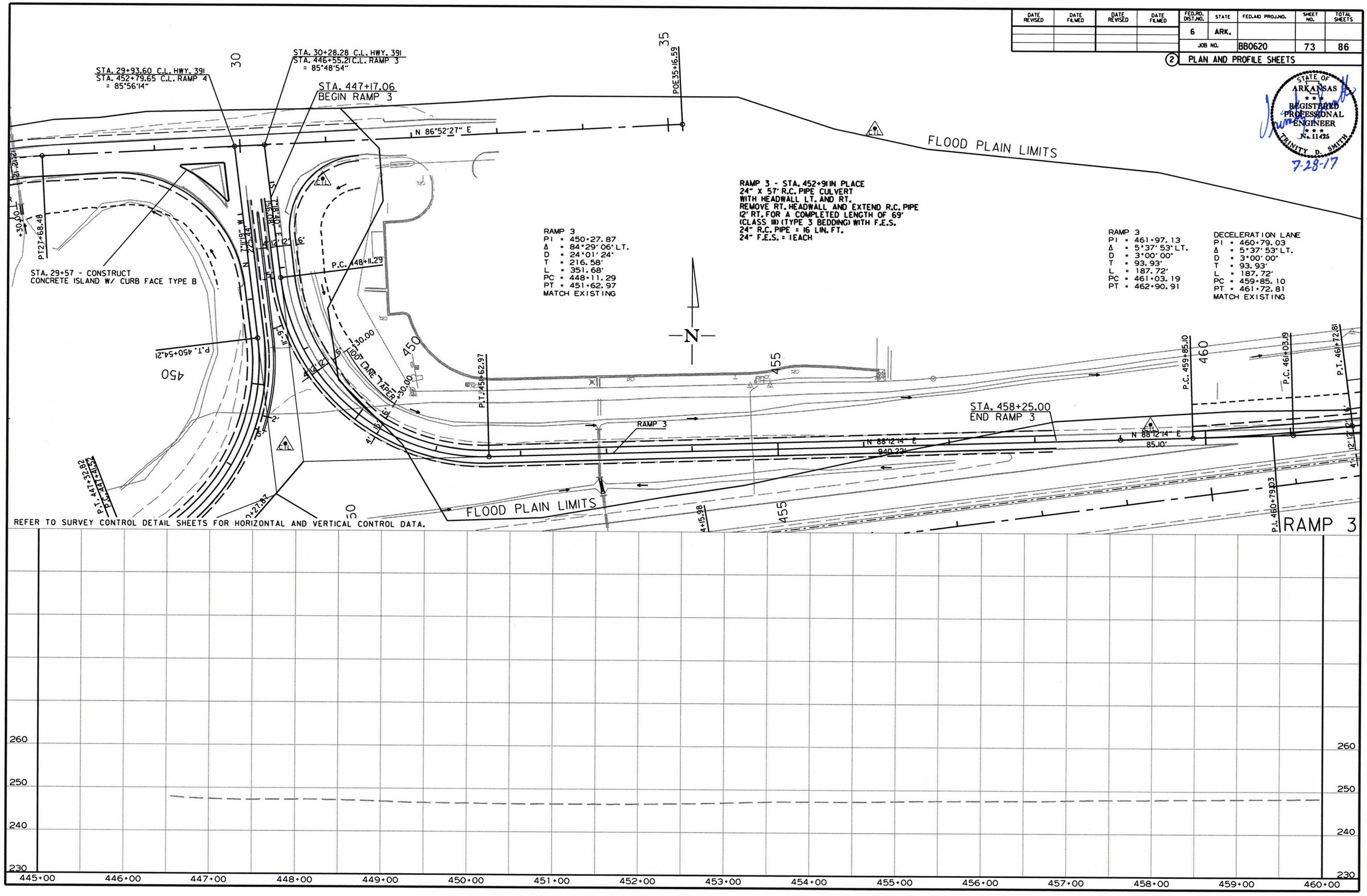
7/28/2017

RBB0620.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.		BB0620	73	86

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



RBB0620.DGN 7/28/2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	74	86

2 PLAN AND PROFILE SHEETS

RAMP 3
PI = 461+97.13
Δ = 5°37'53" LT.
D = 3°00'00"
T = 93.93'
L = 187.72'
PC = 461+03.19
PT = 462+90.91

DECELERATION LANE
PI = 460+79.03
Δ = 5°37'53" LT.
D = 3°00'00"
T = 93.93'
L = 187.72'
PC = 459+85.10
PT = 461+72.81
MATCH EXISTING

STA. 469+96 IN PLACE
36" X 129' R.C. PIPE CULVERT
WITH HEADWALL LT.
(CLASS III) (TYPE 3 BEDDING)
RETAIN

STA. 469+96 IN PLACE
36" X 93' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
RETAIN

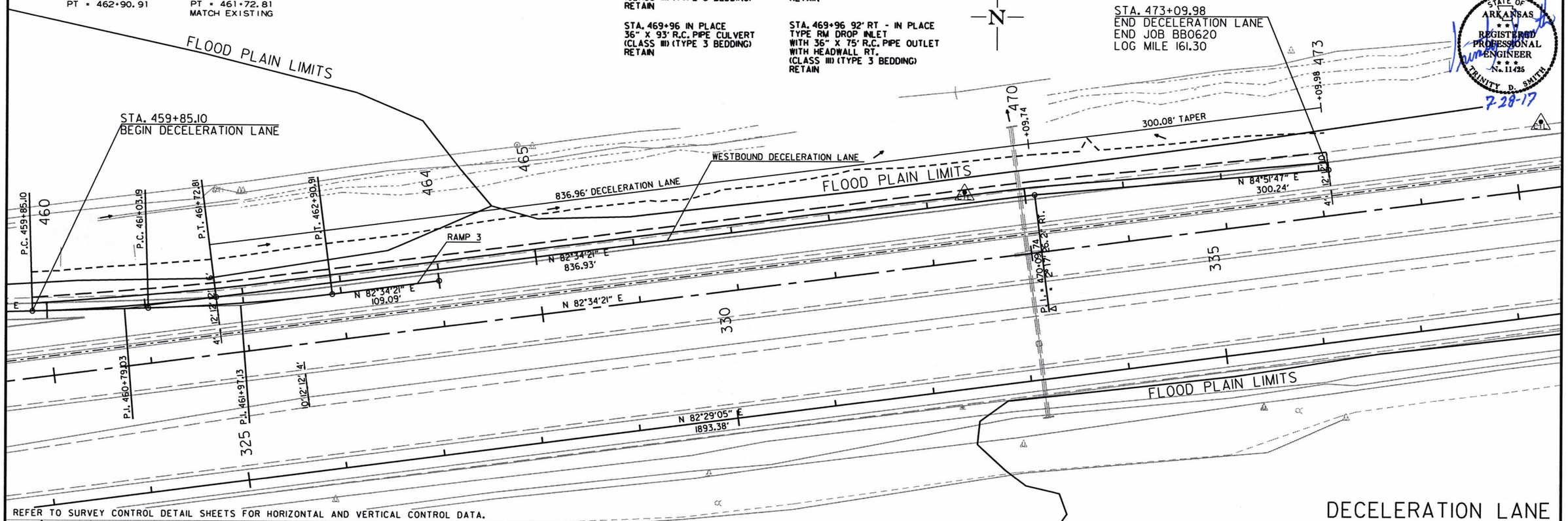
STA. 469+96 IN PLACE
TYPE RM DROP INLET
WITH OUTLET LT. & RT.
RETAIN

STA. 469+96 92' RT - IN PLACE
TYPE RM DROP INLET
WITH 36" X 75' R.C. PIPE OUTLET
WITH HEADWALL RT.
(CLASS III) (TYPE 3 BEDDING)
RETAIN

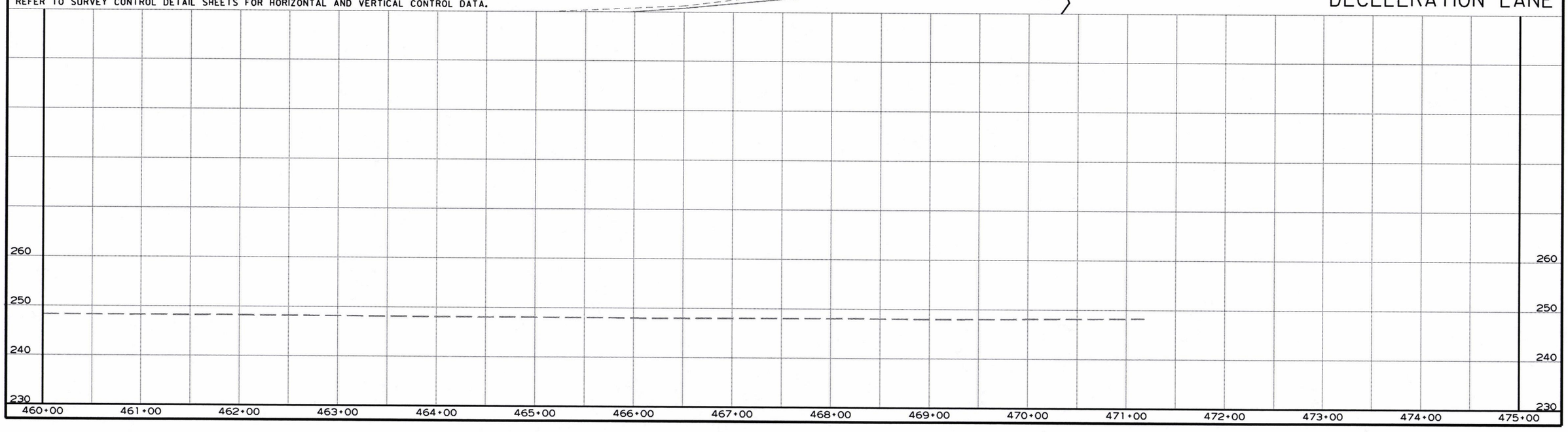
N

STA. 473+09.98
END DECELERATION LANE
END JOB BB0620
LOG MILE 161.30

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



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

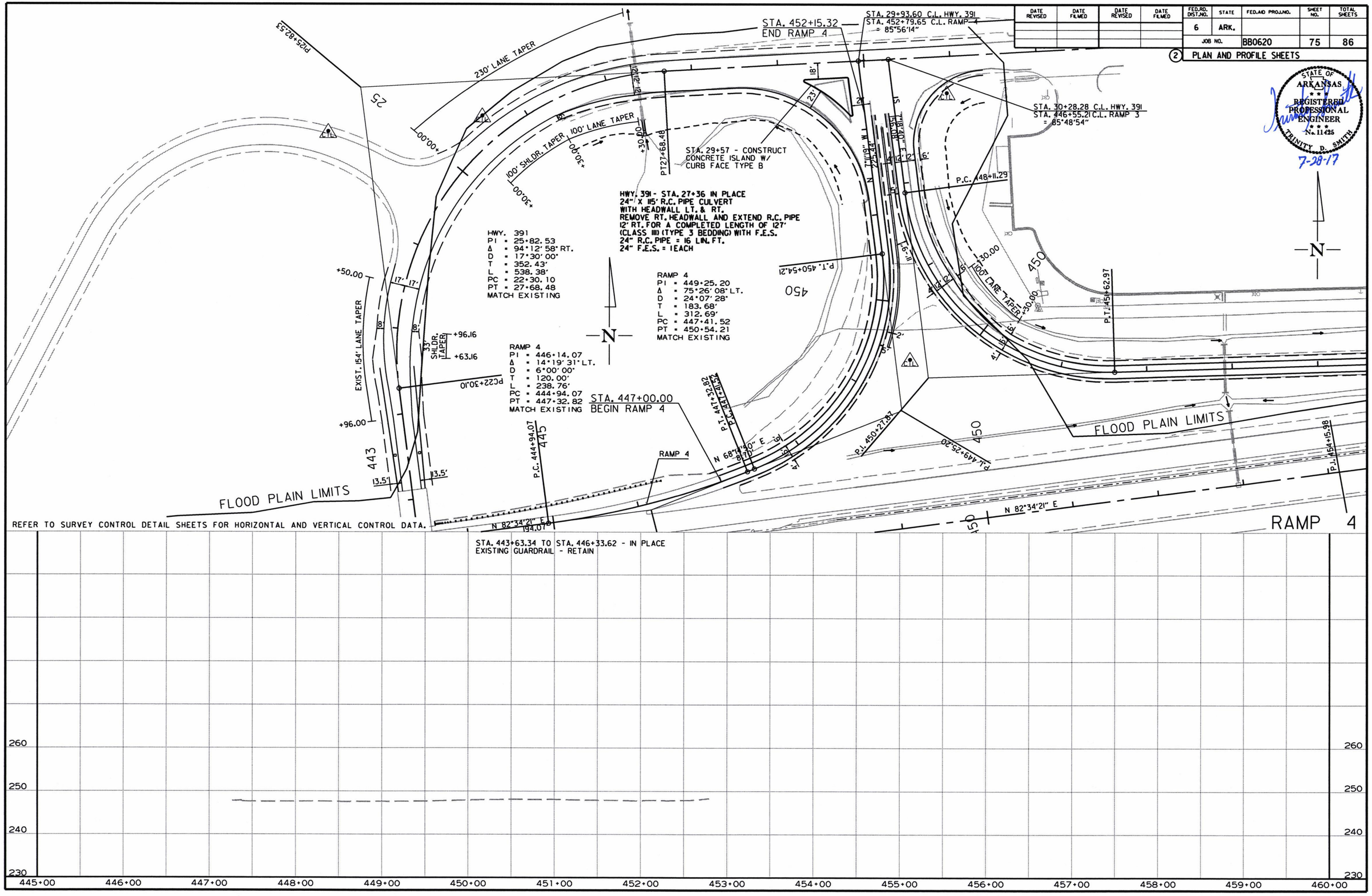


7/28/2017

RBB0620.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.		BB0620	75	86

(2) PLAN AND PROFILE SHEETS



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

STA. 443+63.34 TO STA. 446+33.62 - IN PLACE
EXISTING GUARDRAIL - RETAIN

260 250 240 230

445+00 446+00 447+00 448+00 449+00 450+00 451+00 452+00 453+00 454+00 455+00 456+00 457+00 458+00 459+00 460+00

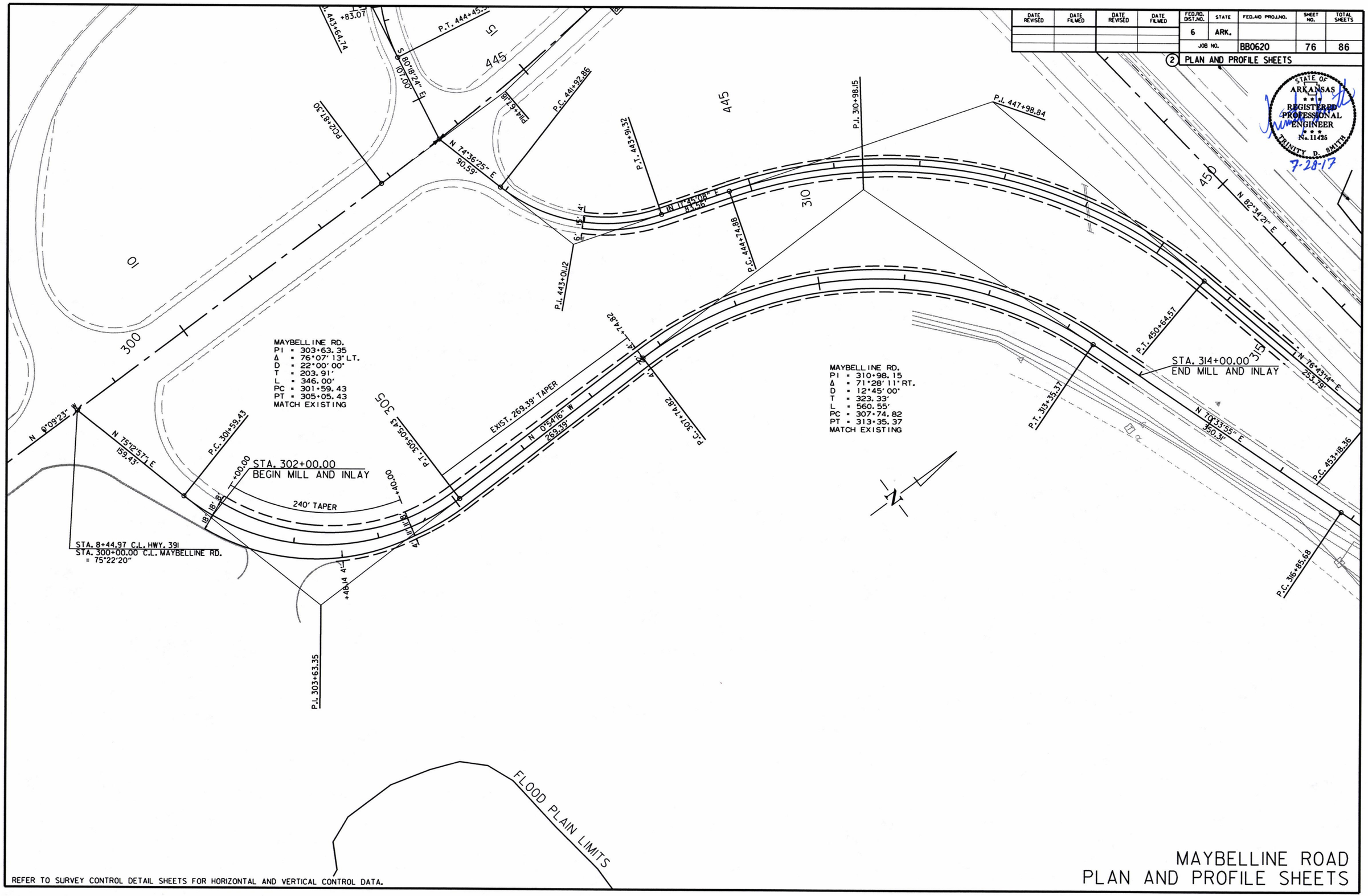
7/28/2017

RBB0620.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.		BB0620	76	86

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 7-28-17



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

MAYBELLINE ROAD
PLAN AND PROFILE SHEETS

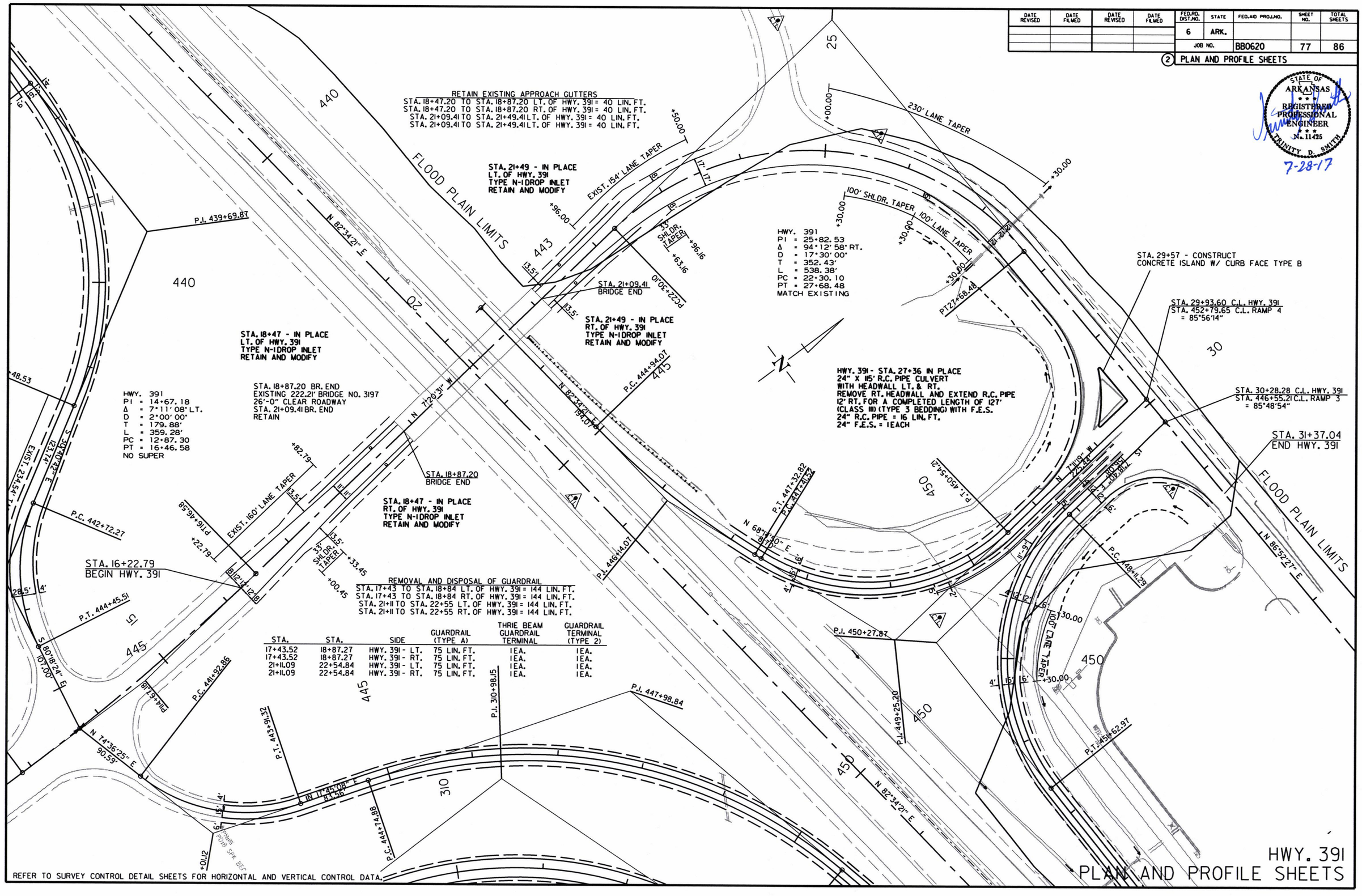
7/28/2017

RBB0620.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.		BB0620	77	86

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
7-28-17



STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
17+43.52	18+87.27	HWY. 391 - LT.	75 LIN. FT.	1 EA.	1 EA.
17+43.52	18+87.27	HWY. 391 - RT.	75 LIN. FT.	1 EA.	1 EA.
21+11.09	22+54.84	HWY. 391 - LT.	75 LIN. FT.	1 EA.	1 EA.
21+11.09	22+54.84	HWY. 391 - RT.	75 LIN. FT.	1 EA.	1 EA.

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

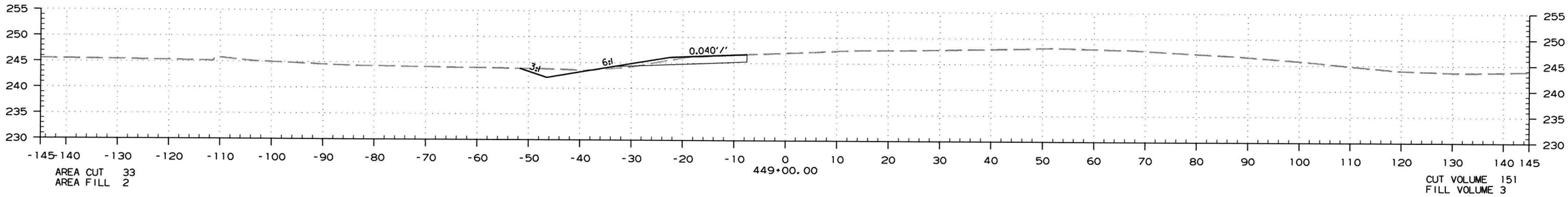
7/28/2017

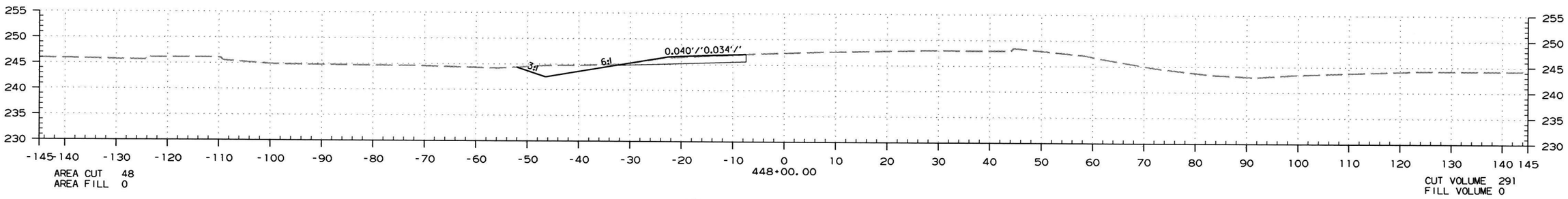
BB0620.DGN

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.		BB0620	78	86

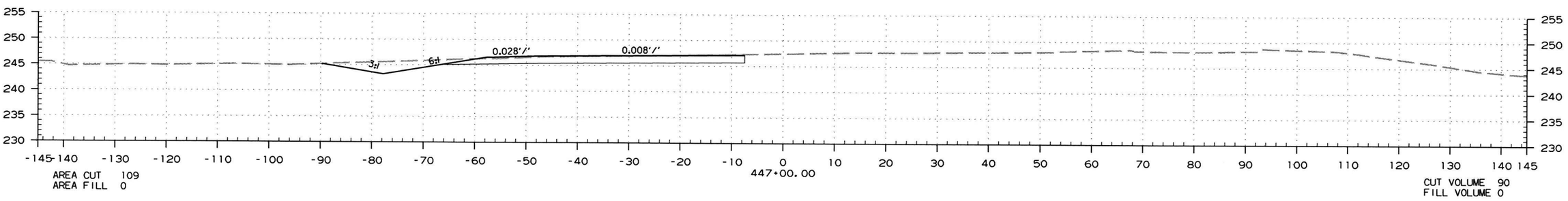
(2) CROSS SECTIONS

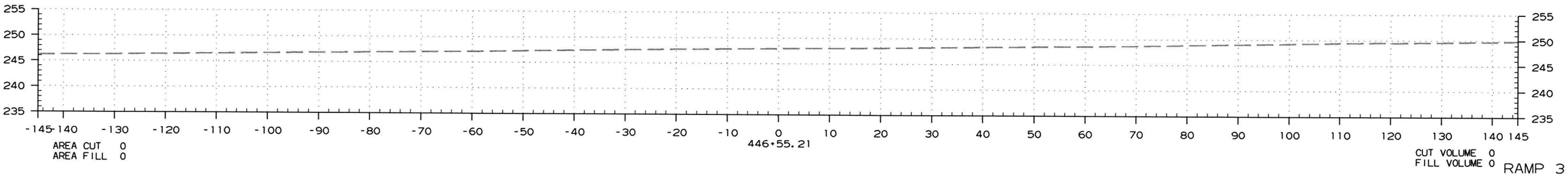
STA. 449+30.00 BEGIN RAMP 3 TAPER





STA. 447+17.06 BEGIN RAMP 3





RAMP 3

STA. 446+55.21 TO STA. 449+00.00

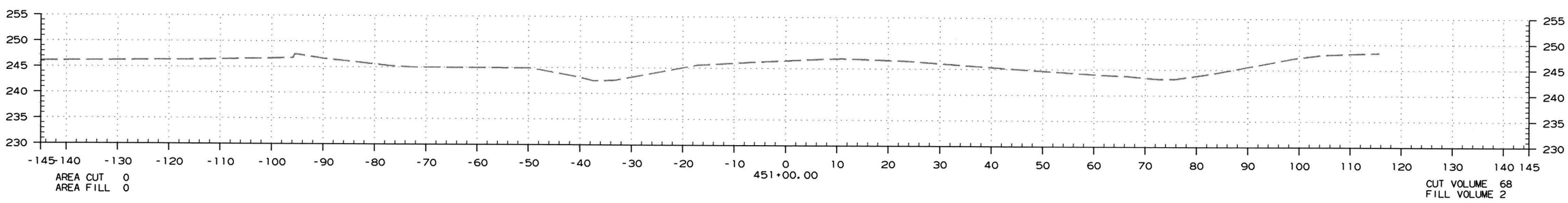
7/28/2017

RBB0620.DGN

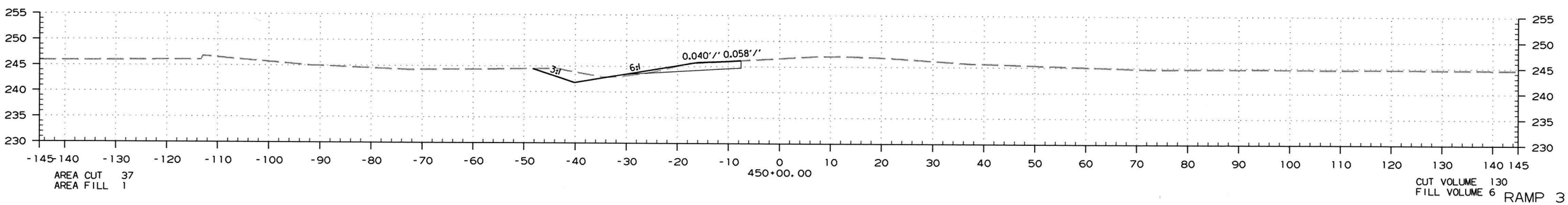
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	79	86

(2) CROSS SECTIONS

STA. 458+25.00 END RAMP 3



STA. 450+30.00 END RAMP 3 TAPER



RAMP 3

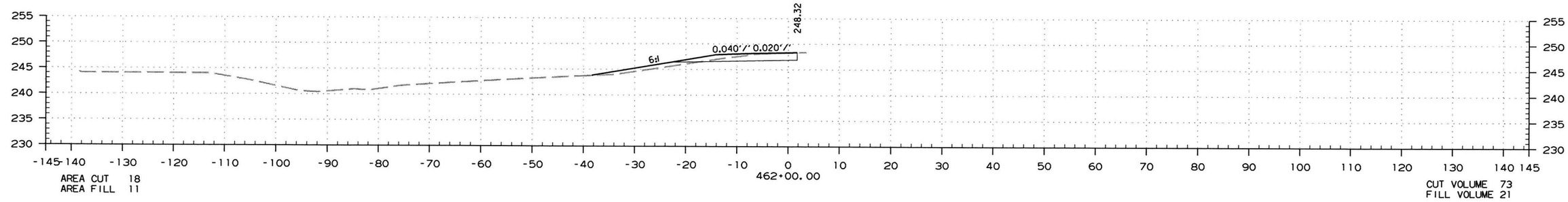
STA. 450+00.00 TO STA. 451+00.00

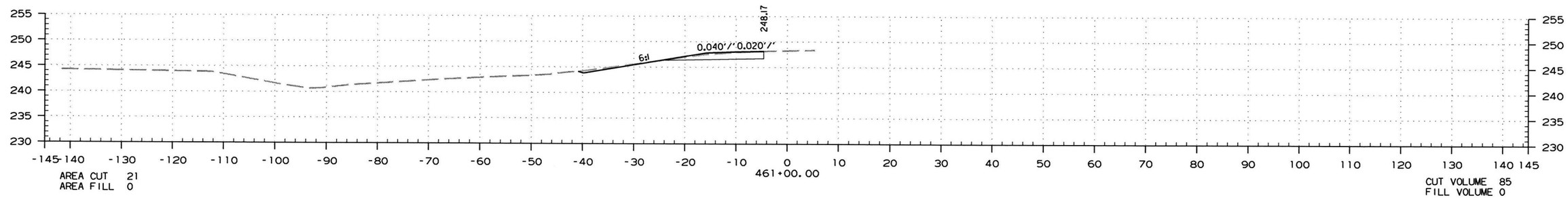
7/28/2017

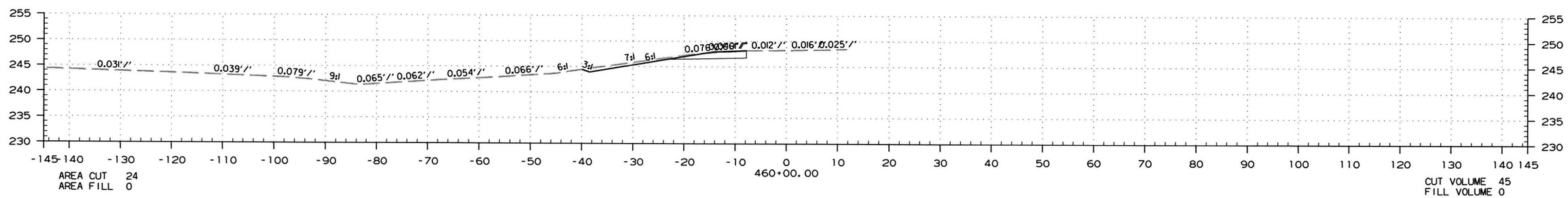
RBB0620.DGN

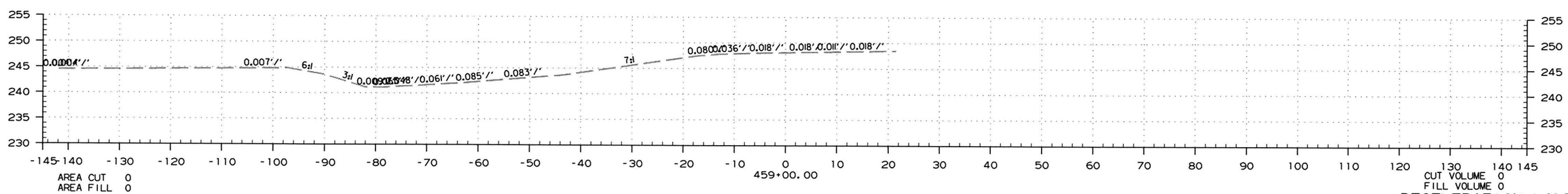
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	80	86

(2) CROSS SECTIONS









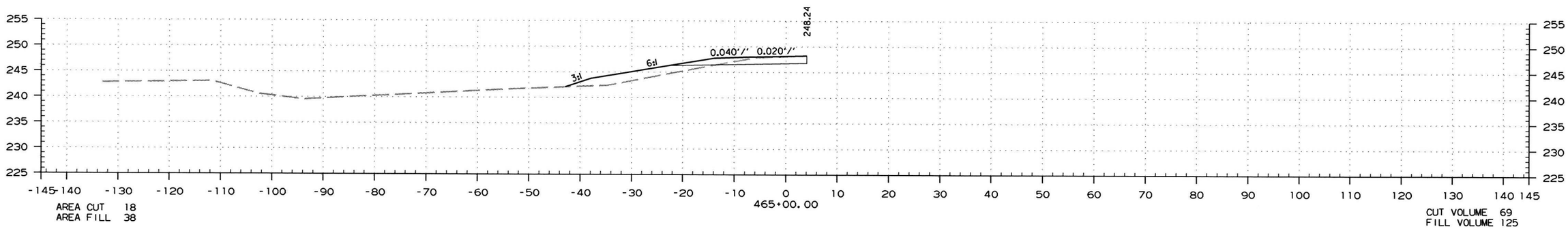
DECELERATION LANE
STA. 459+00.00 TO STA. 462+00.00

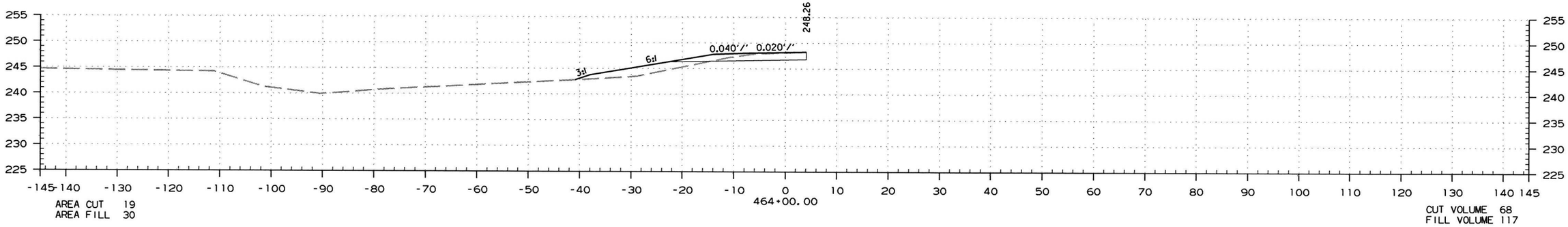
7/28/2017

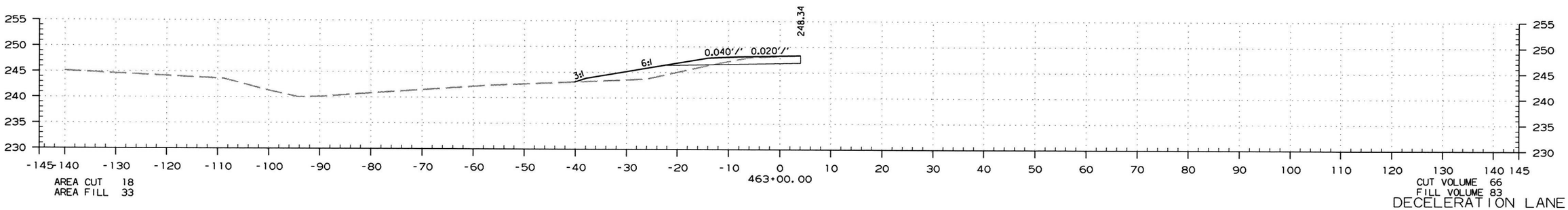
RBB0620.DGN

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.		BB0620	81	86

(2) CROSS SECTIONS







DECELERATION LANE

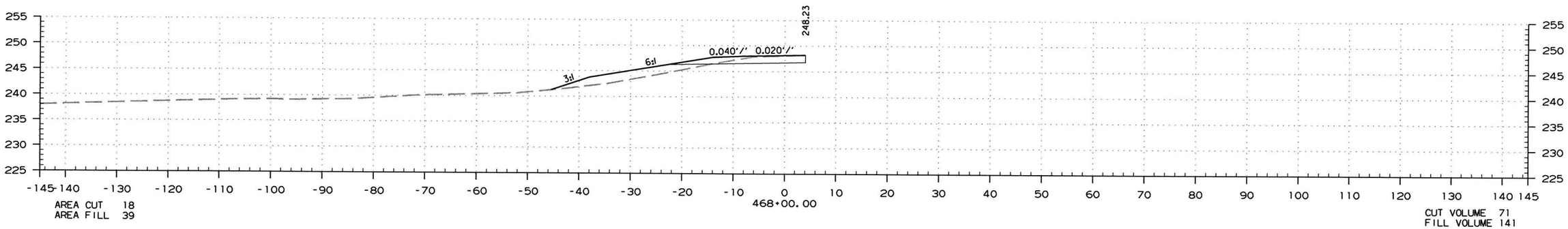
STA. 463+00.00 TO STA. 465+00.00

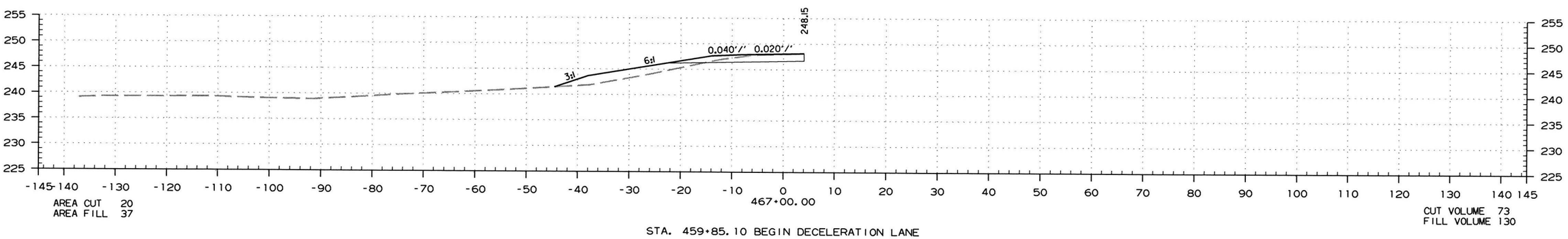
7/28/2017

RBB0620.DGN

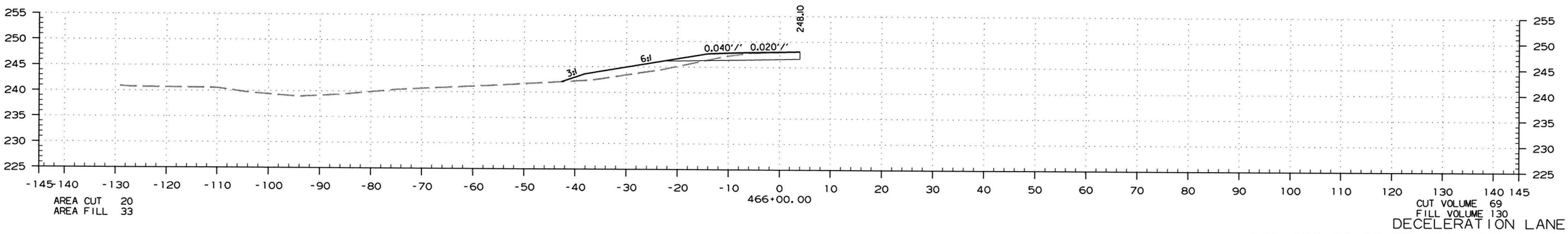
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BB0620	82	86

(2) CROSS SECTIONS





STA. 459+85.10 BEGIN DECELERATION LANE



DECELERATION LANE

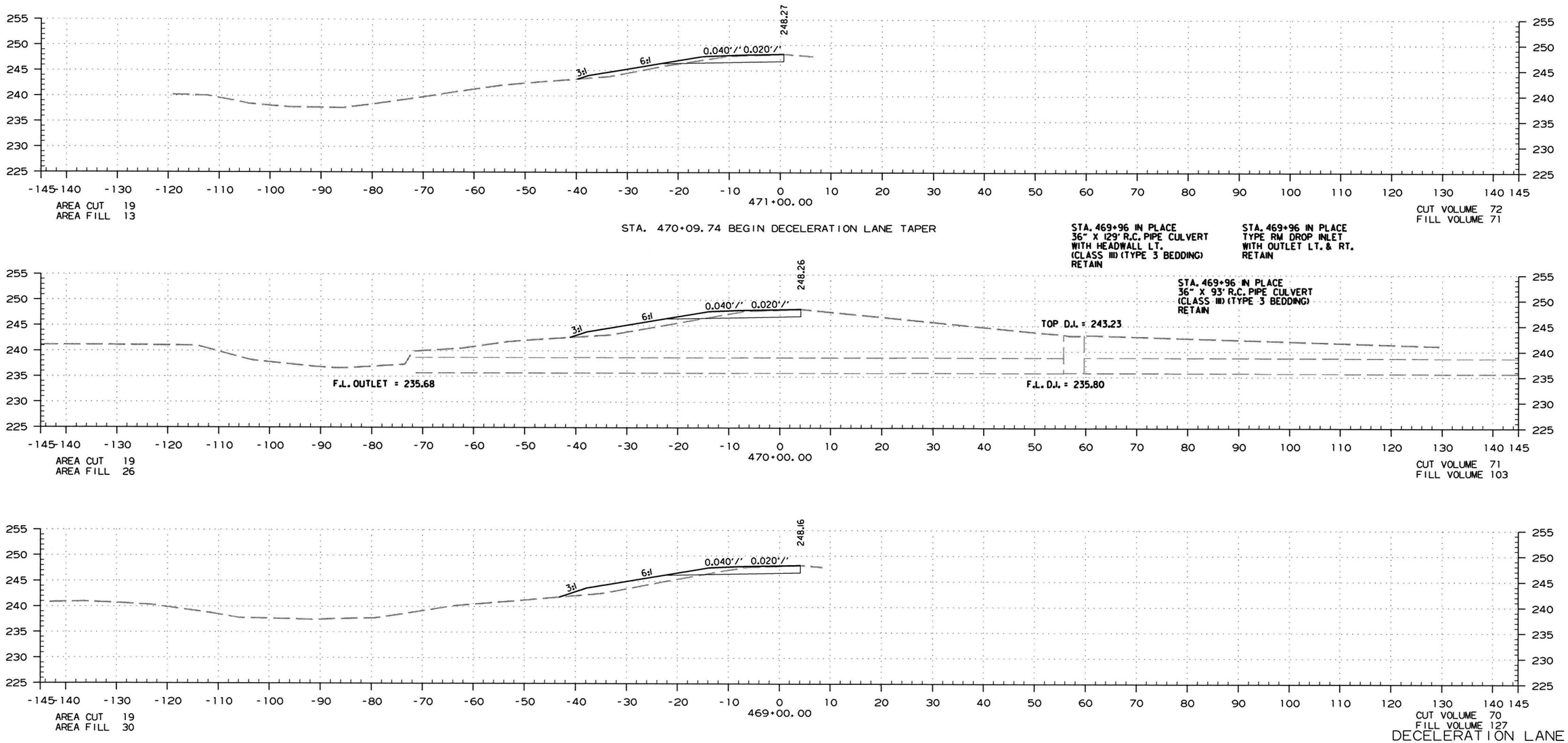
STA. 466+00.00 TO STA. 468+00.00

7/28/2017

RBB0620.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.		BB0620	83	86

(2) CROSS SECTIONS



DECELERATION LANE

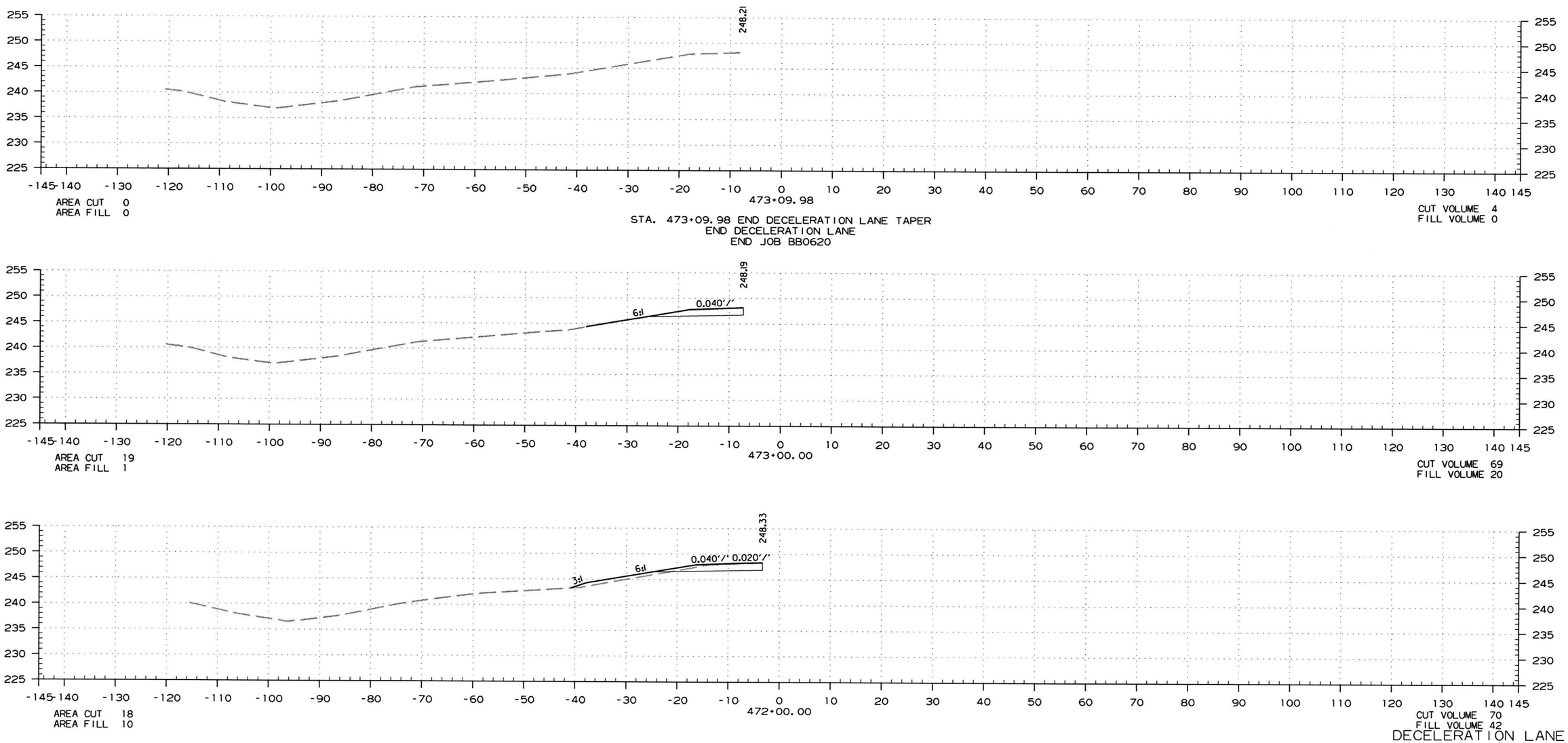
STA. 469+00.00 TO STA. 471+00.00

7/28/2017

RBB0620.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.		BB0620	84	86

(2) CROSS SECTIONS



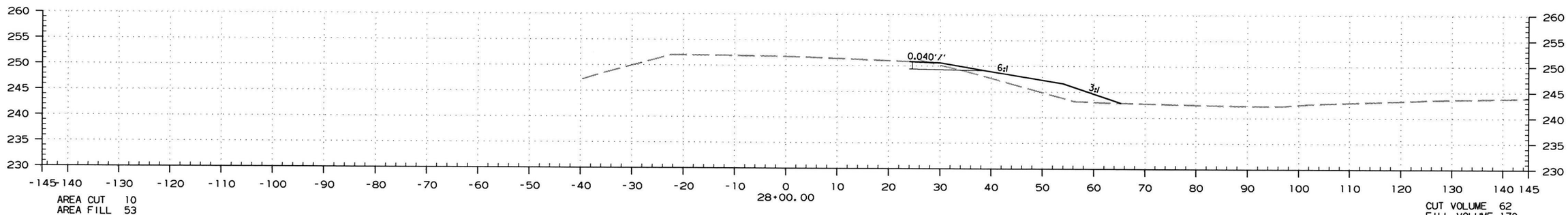
DECELERATION LANE
STA. 472+00.00 TO STA. 473+09.98

7/28/2017

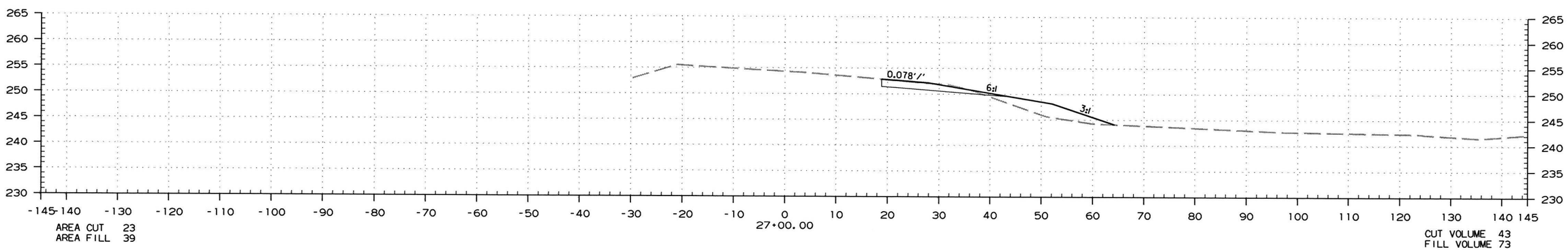
RBB0620.DGN

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.		BB0620	85	86

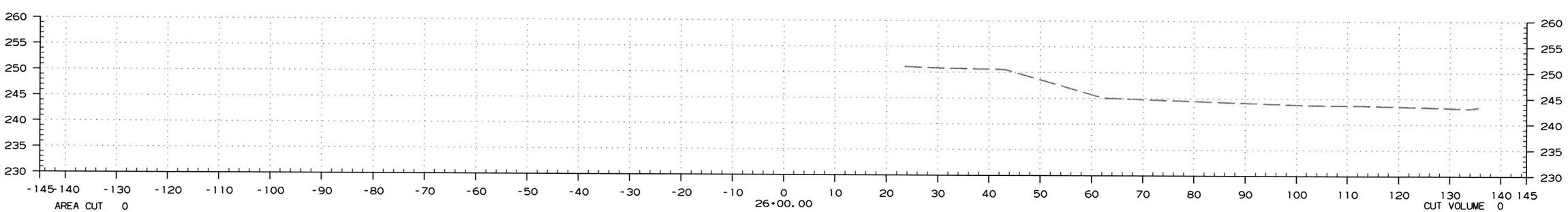
(2) CROSS SECTIONS



STA. 27+30.00 END HWY. 391 RT. TURN LANE TAPER



STA. 26+30.00 BEGIN HWY. 391 RT. TURN LANE TAPER



STA. 16+22.79 BEGIN HWY. 391

HWY. 391 TURNOUT

STA. 26+00.00 TO STA. 28+00.00

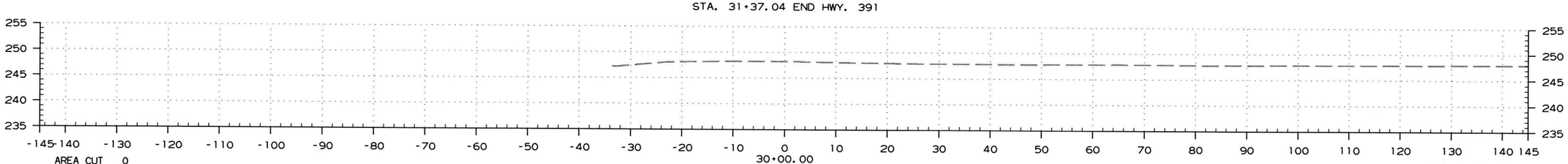
7/28/2017

RBB0620.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.		BB0620	86	86

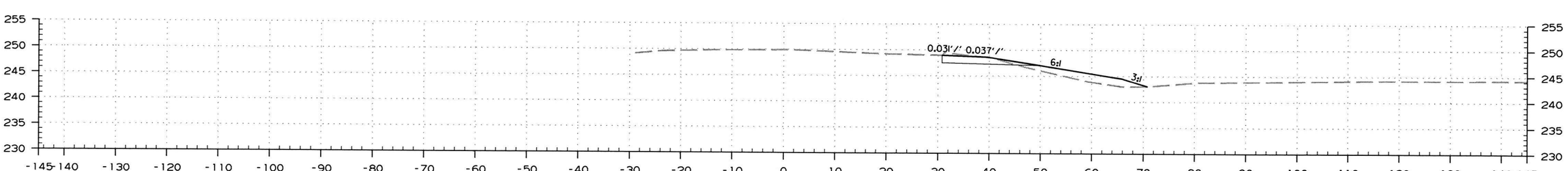
(2) CROSS SECTIONS

STA. 31+37.04 END HWY. 391



AREA CUT 0
AREA FILL 0

CUT VOLUME 34
FILL VOLUME 53



AREA CUT 18
AREA FILL 29

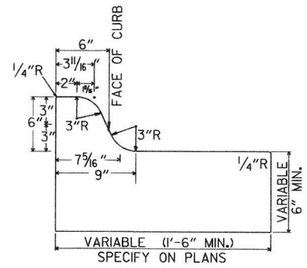
CUT VOLUME 53
FILL VOLUME 151

HWY. 391 TURNOUT

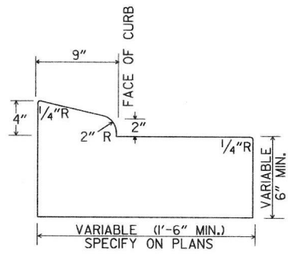
STA. 29+00.00 TO STA. 30+00.00

7/28/2017

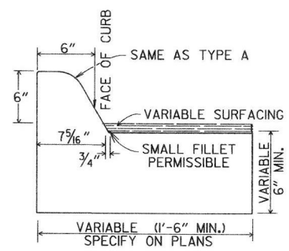
RBB0620.DGN



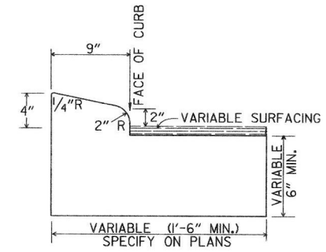
TYPE A



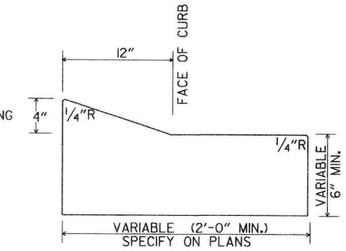
TYPE B-1



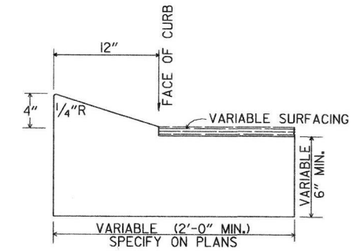
TYPE C



TYPE B-2

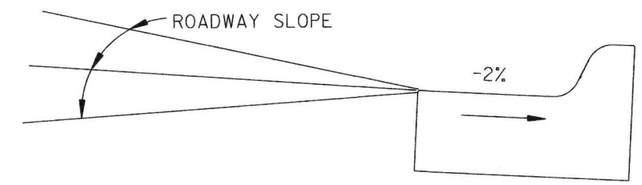


TYPE E-1



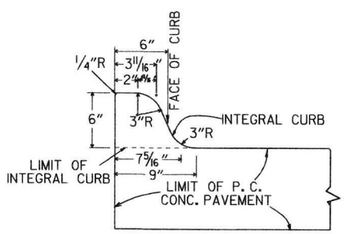
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

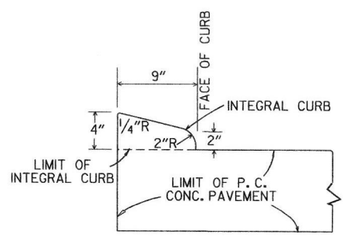


DETAIL OF GUTTER SLOPE

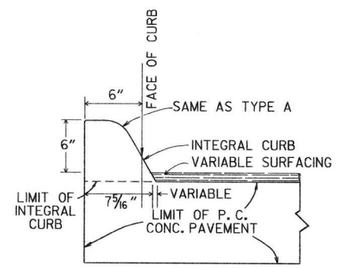
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

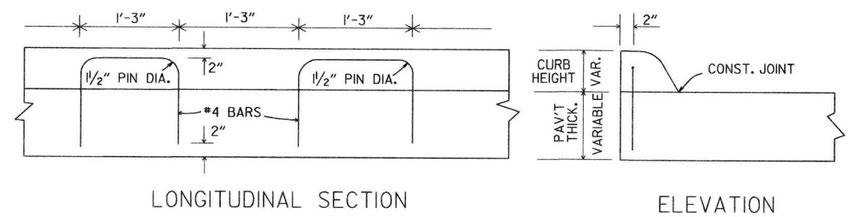


TYPE B

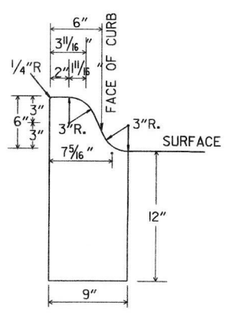


TYPE C

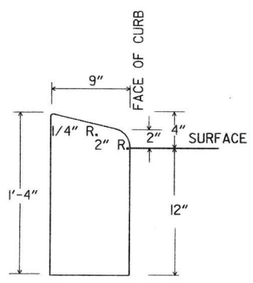
INTEGRAL CURB



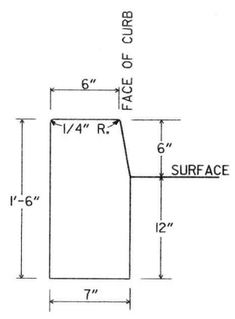
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



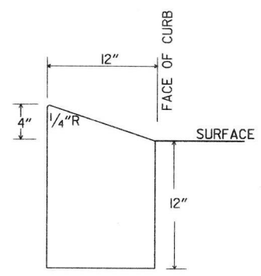
TYPE A



TYPE B

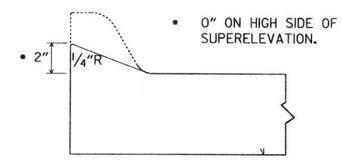


TYPE D



TYPE E

CONCRETE CURB



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

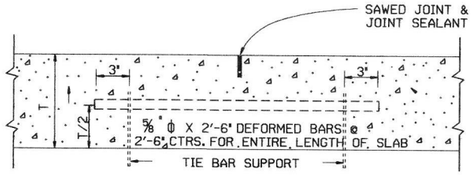
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

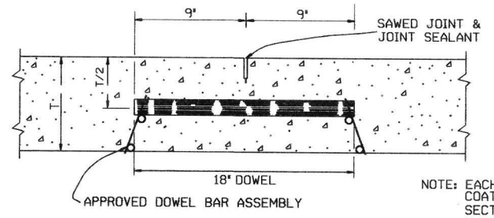
STANDARD DRAWING CG-1



LONGITUDINAL JOINT

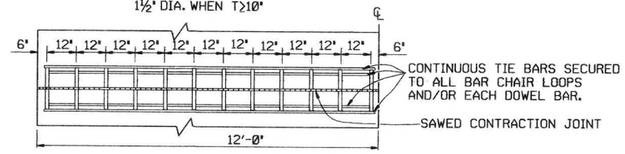
NOTE: THE TIE BAR SUPPORT SHOWN ABOVE MAY BE ELIMINATED IF OTHER APPROVED METHODS FOR PLACING AND SUPPORTING THE TIE BARS ARE PROVIDED.

TIE BARS SHALL BE 15" FROM TRANSVERSE JOINTS.



NOTE: EACH DOWEL TO BE COATED ACCORDING TO SECTION 502 OF THE STANDARD SPECIFICATIONS.

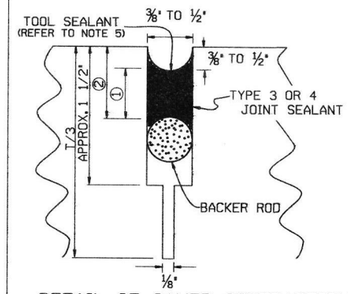
ROUND STEEL BAR DOWEL
1¼" DIA. WHEN T<10"
1½" DIA. WHEN T≥10"



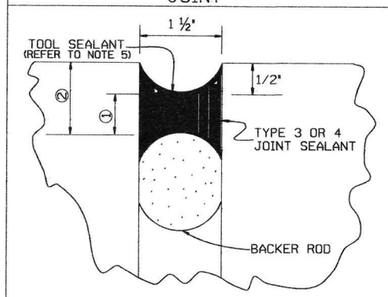
ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

NOTE: FOR 20' PAVEMENT USE 20 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 15' PAVEMENT USE 15 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 26' PAVEMENT USE 26 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12" CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12" DOWEL BAR SPACING

CONTRACTION JOINT DETAILS



DETAIL OF SAWED CONTRACTION JOINT



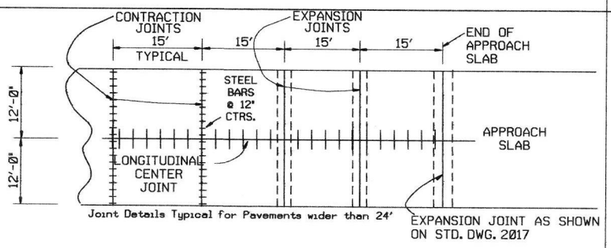
DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR TYPE 3 OR 4 JOINT SEALANT

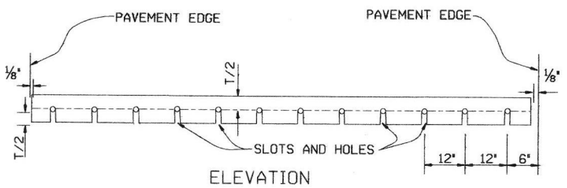
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
¼	¼	⅜	½
⅜	¼	½	½
½	¼	⅝	½
⅝	⅜	¾	½
⅞	⅜	¾	⅝
¾	⅜	⅞	⅞
1 ½	¾	2	1 ¼

JOINT CONFIGURATION FOR TYPE 5 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
¼	½	⅜	¾
⅜	¾	½	1

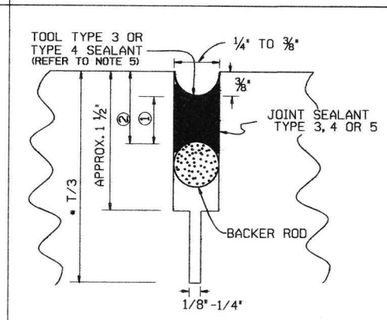


PLAN SHOWING EXPANSION JOINTS AT BRIDGE APPROACH SLABS



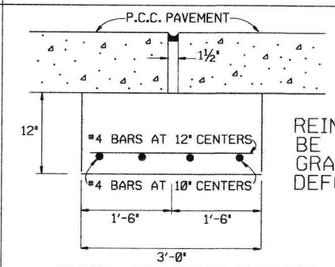
ELEVATION

NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



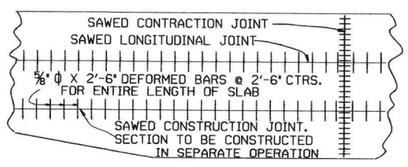
*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

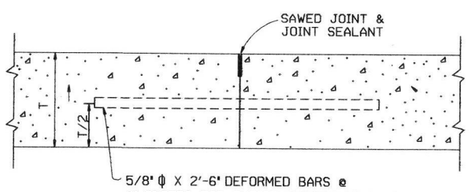
DETAIL OF SAWED LONGITUDINAL JOINT AND LONGITUDINAL CONSTRUCTION JOINT



REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

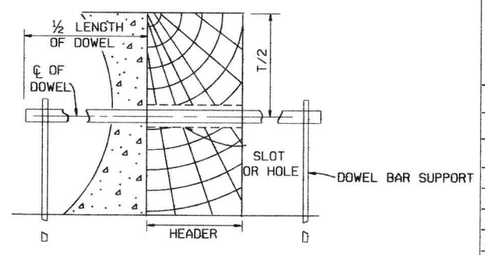
DETAIL OF JOINT SUPPORT FOR EXPANSION JOINTS





NOTE: TIE BARS SHALL BE 15" FROM TRANSVERSE JOINTS.

LONGITUDINAL CONSTRUCTION JOINT



SECTION

TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES

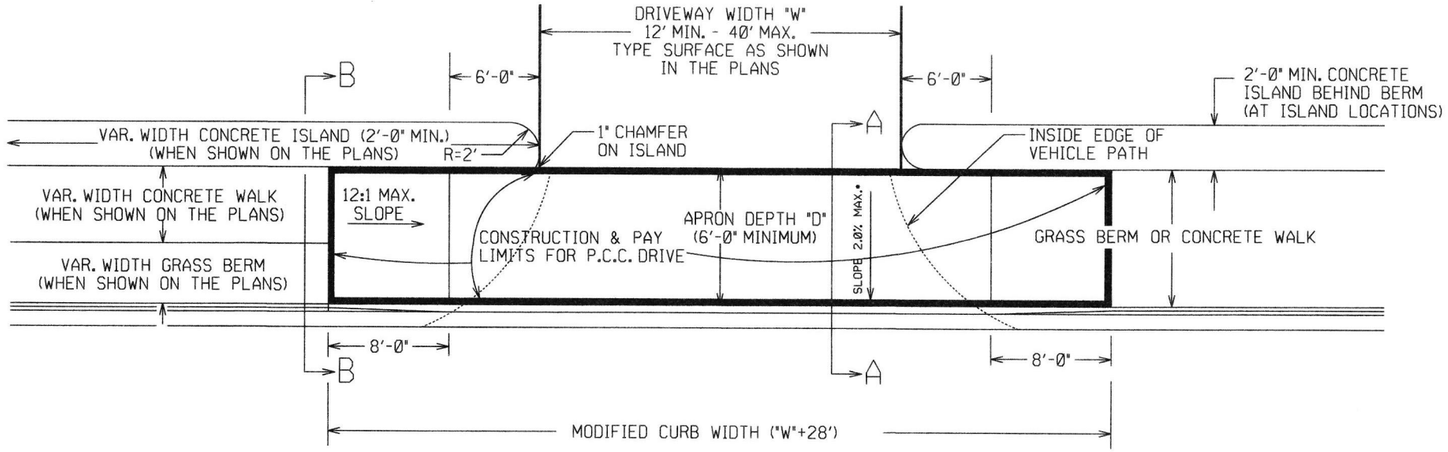
1. "T" DENOTES THICKNESS OF SLAB.
2. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS ¼" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL BE FIELD COATED FOR A MINIMUM DISTANCE OF 2" GREATER THAN HALF THE LENGTH OF THE BAR WITH AN APPROVED GREASE AS A BOND BREAKER JUST PRIOR TO PLACEMENT OF CONCRETE.
3. THE EXPANSION JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S" OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE SPECIFIED IN THE PLANS. PAYMENT FOR ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.
4. CONTRACTION JOINTS SHALL BE CONSTRUCTED ON 15' CENTERS.
5. TOOLING NOT REQUIRED FOR SELF-LEVELING SILICONE.
6. UNLESS OTHERWISE SPECIFIED IN THE PLANS, CONCRETE SHOULDERS SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN HEREON. CONTRACTION JOINTS SHALL MATCH CONTRACTION JOINTS IN THE LANES.
7. TIE WIRES IN DOWEL BAR ASSEMBLIES SHALL NOT BE CUT PRIOR TO PLACEMENT OF PAVING CONCRETE.

DATE	REVISION	DATE FILMED
5-25-06	ADDED GENERAL NOTE 7	
10-9-03	REMOVED TIE BAR COATING & REVISED GENERAL NOTES	
11-16-01	ADDED TOOL SEALANT AND NOTE 5; REVISED NOTE 3	
4-26-96	REVISED CONTRACTION JOINT NOTE	
11- 3-94	ADDED NOTE RE: REINF. BARS	
4- 1-93	REVISED DOWEL BARS & GEN. NOTES	4- 1-93
10- 1-92	REVISED DOWEL SPACING	10- 1-92
8- 15-91	ADDED SPAC FOR CONTR JTS & DEL KEYWAY	
05-24-90	REVISED TIE BAR, DOWEL & JOINT SIZE	
01-25-90	ADDED EXPANSION JOINT	01-25-90
11-30-89	CHANGED T/4+1 TO T/3+1	11-30-89
03-23-89	ALTERED SAWED JOINT & ADDED NOTE	512-03-23-89
07-15-88	REVISED AND REDRAWN	632-07-15-88

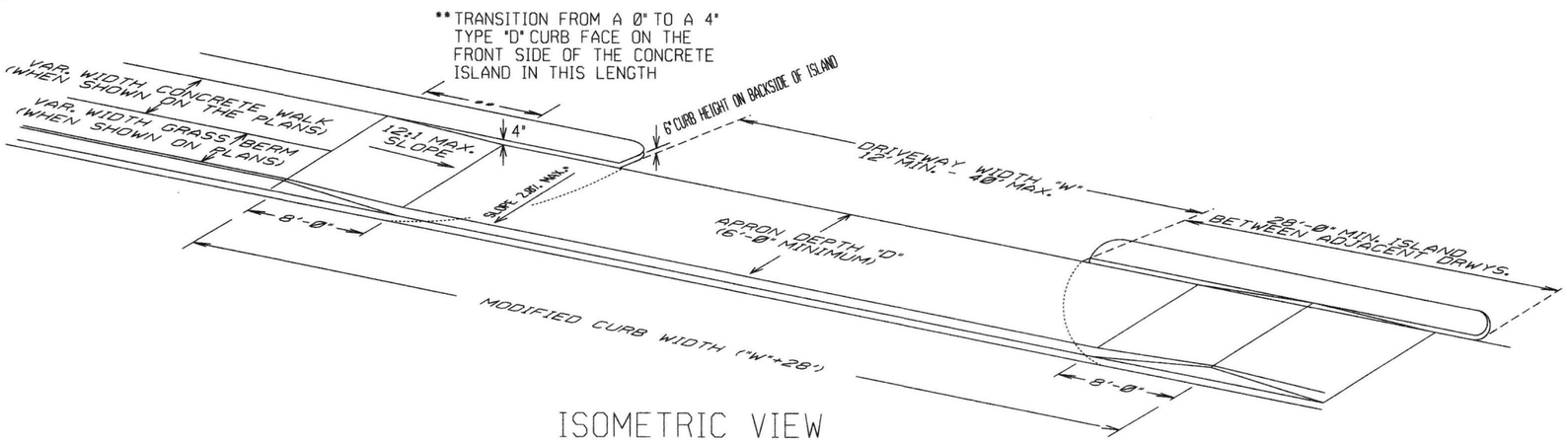
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)

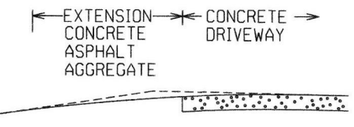
STANDARD DRAWING CPTJ - 6A



PLAN VIEW



ISOMETRIC VIEW



EXTENSION TYPICAL SECTIONS

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

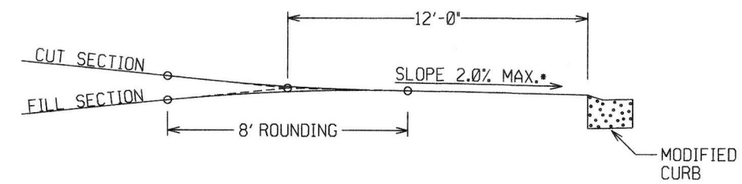
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

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

4: AGGREGATE - 6" AGGREGATE BASE COURSE

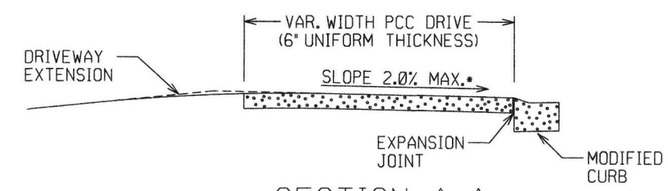
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

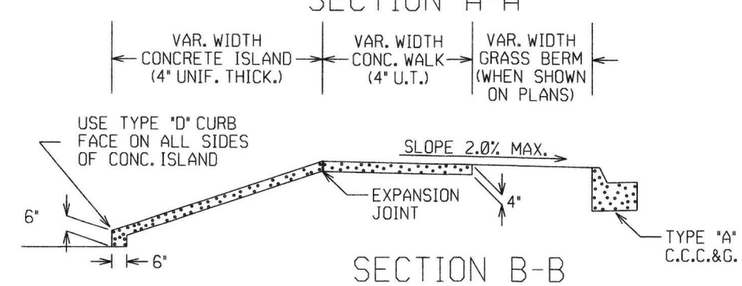


DRIVEWAY VERTICAL ALIGNMENT DETAILS

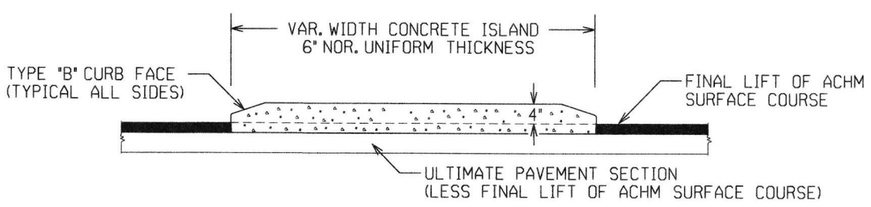
* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.

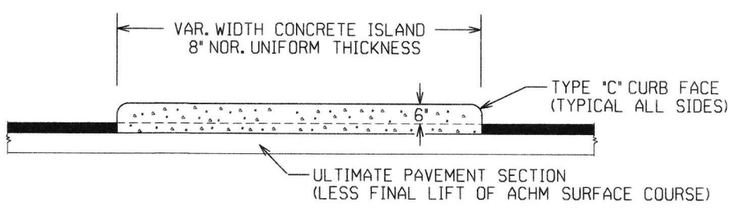


SECTION A-A



SECTION B-B
CURBED ISLAND BEHIND WALK



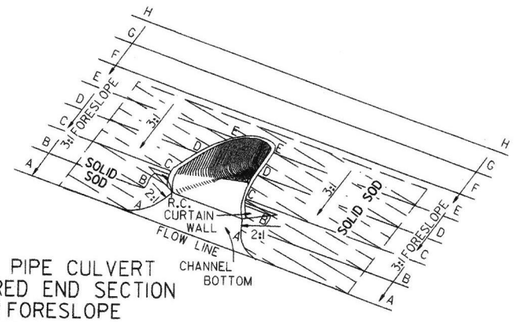


CURBED ISLANDS FOR CHANNELIZATION

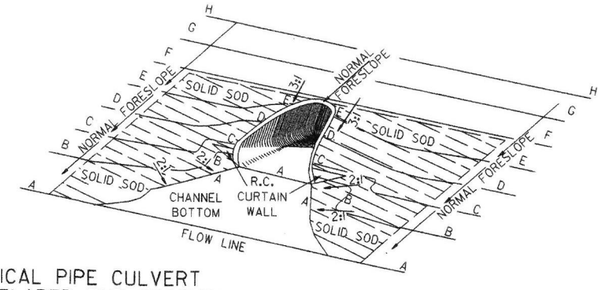
REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".

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

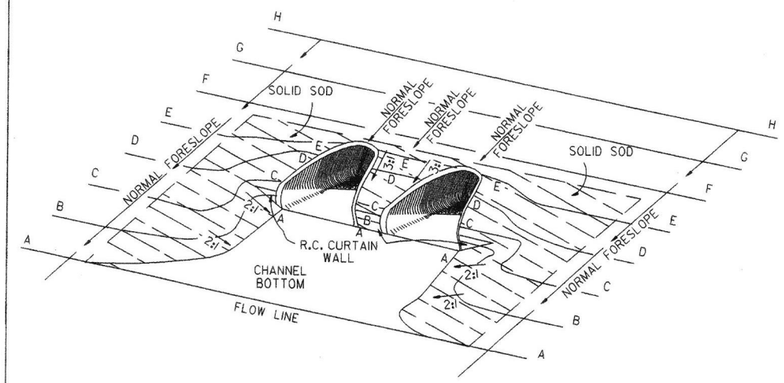
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



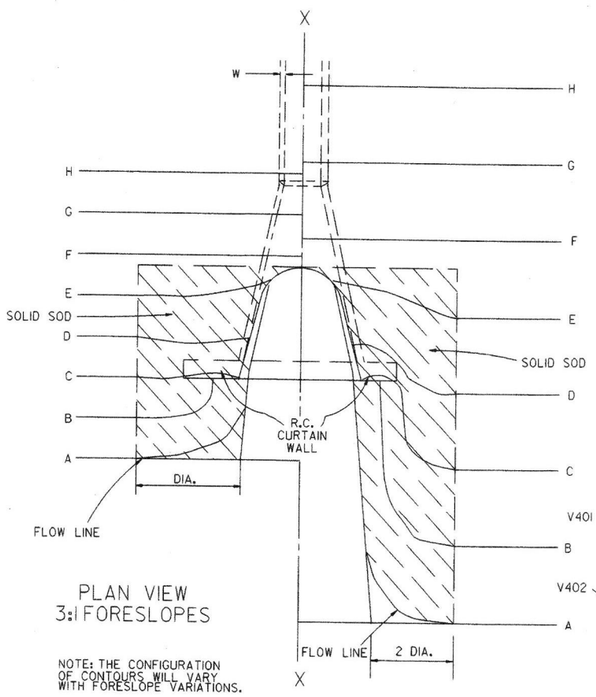
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

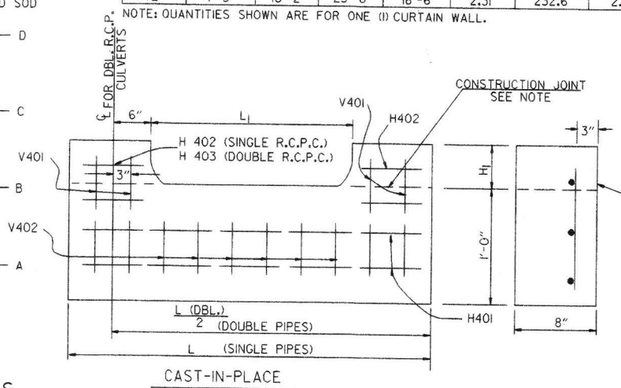
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

REINFORCING STEEL SCHEDULE

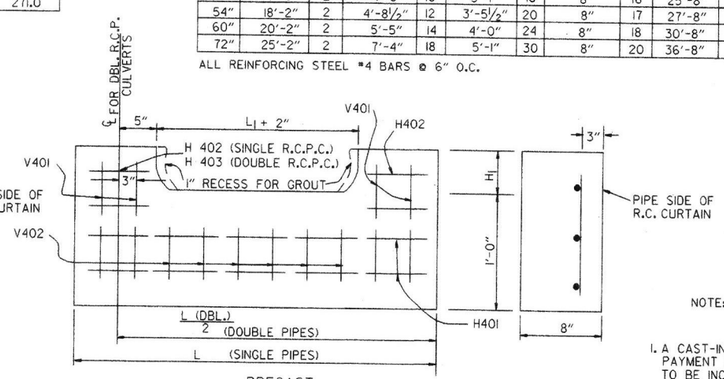
PIPE DIA.	SINGLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	V401 L	V401 NO.	V402 L	V402 NO.	DOUBLE R.C. PIPE CULVERT H401 L	H401 NO.	H402 L	H402 NO.	H403 L	H403 NO.	V401 L	V401 NO.	V402 L	V402 NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

ALL REINFORCING STEEL #4 BARS @ 6" O.C.



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

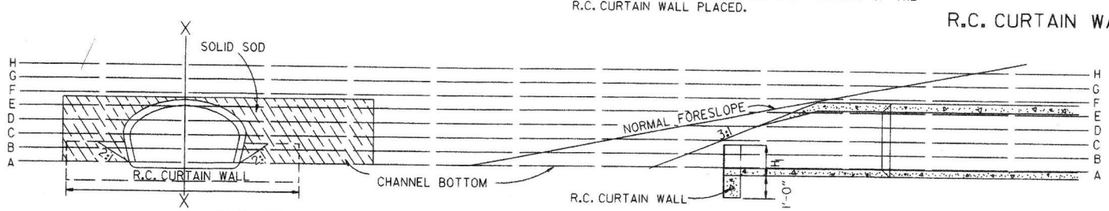
SOLID SODDING

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

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

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 × 3 W/10 × 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	10-18-96
10-12-95	CORRECTED SPELLING	
11-3-94	ADDED GENERAL NOTE NO. 4	
8-15-91	REV. CURTAIN WALL QUANT., STEEL SCH. & SOLID SOD QUANT.	
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES	
5-15-80	ADDED PRECAST WALL & GENERAL NOTES	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

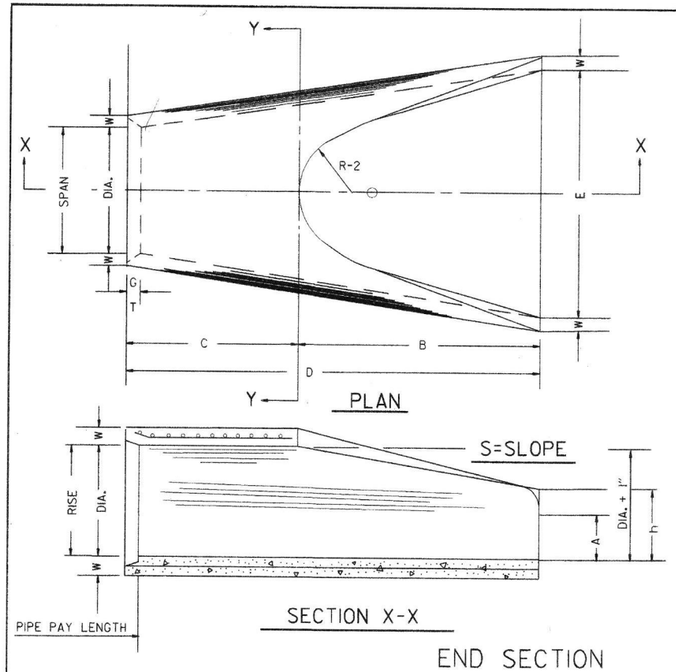


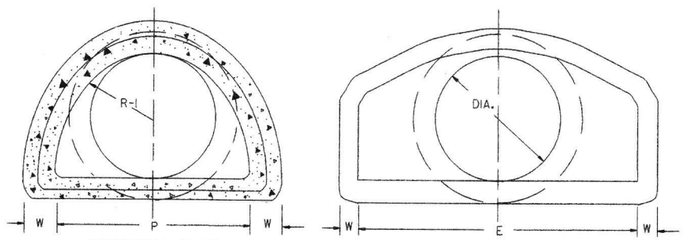
TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 7/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 15/16"	24"	5"	13250	4'-6"

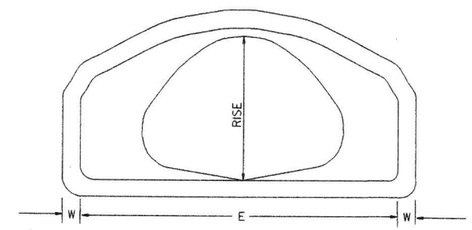
ARCH PIPE

EQUIV. DIA.	* SPAN		* RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1
21	26	26	15 1/2	16	2 3/4"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2:1
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 13/16"	15"	2 1/2"	2 1/2:1
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 13/16"	20"	3"	2 1/2:1
36	43 3/4	44	26 5/8	27	4"	10 1/2"	4'-0"	2'-11 1/2"	6'-1 1/2"	6'-6"	54 5/16"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 5/16	31	4 1/2"	11 1/2"	4'-7"	1-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2:1
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	7'-10"	70 5/16"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4 3/4"	2 1/4:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2 1/4:1

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

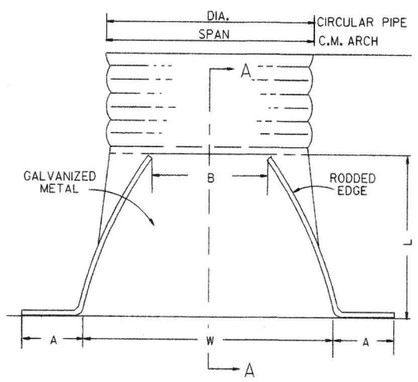


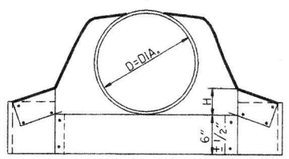
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION



END VIEW
CONCRETE ARCH PIPE

END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

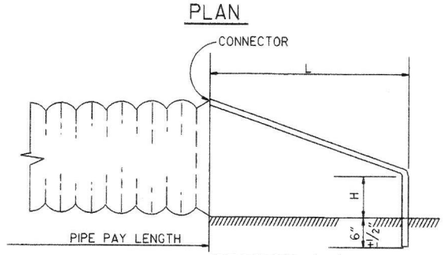


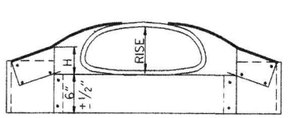


CIRCULAR PIPE

CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	12	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1





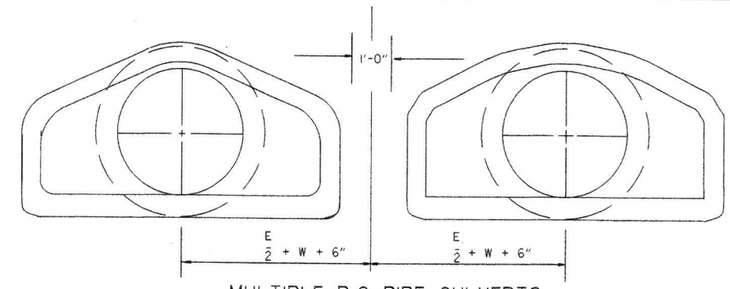
C.M. ARCH PIPE

C.M. ARCH PIPE

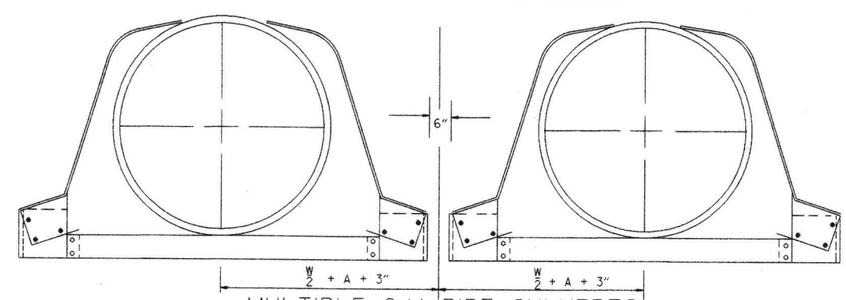
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13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

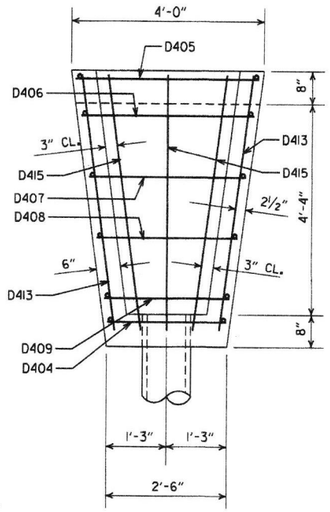
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74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

ARKANSAS STATE HIGHWAY COMMISION

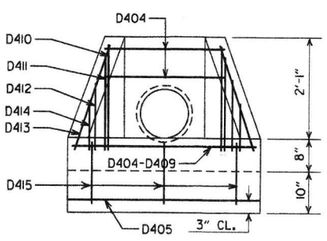
FLARED END SECTION

STANDARD DRAWING FES-2

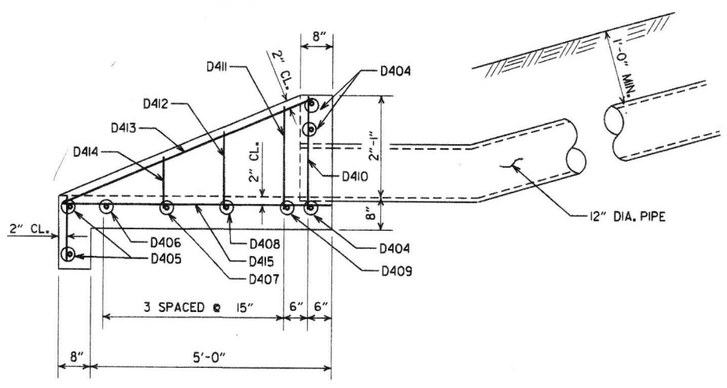
stdfes2.dgn



PLAN



FRONT ELEVATION

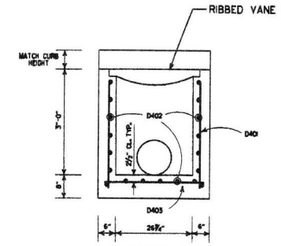


SIDE ELEVATION
CONCRETE SPILLWAY

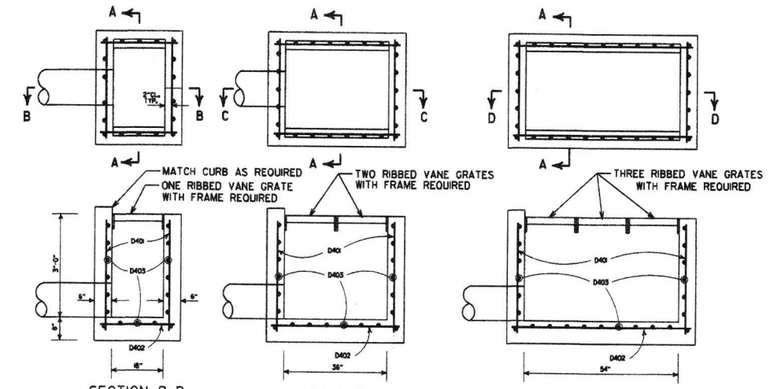
BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	5'-4" / 1'-2" / 2" P.D. / D415
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	

DETAILS OF CONCRETE SPILLWAY (TYPE A)



SECTION A-A



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

BAR LIST (DROP INLET)

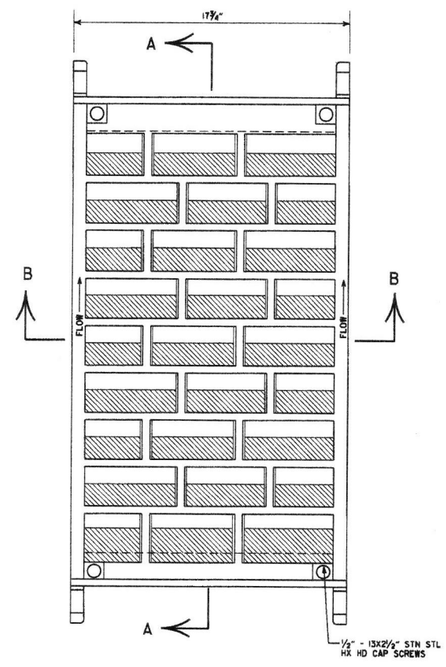
MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

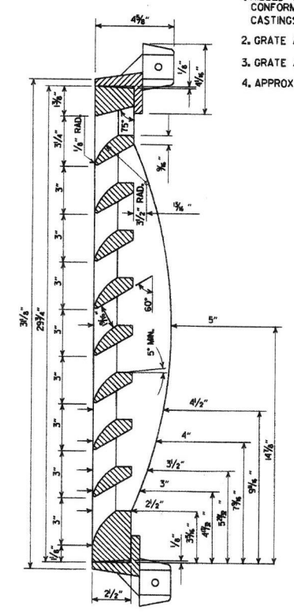
ALL BARS #4 @ 6" SPACING

DETAILS OF DROP INLET

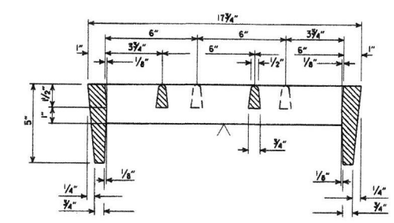
GENERAL NOTES (GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

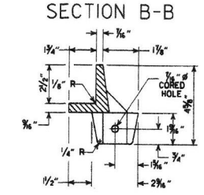




SECTION A-A



SECTION B-B



SECTION THRU FRAME

DETAILS OF RIBBED VANE GRATE AND FRAME

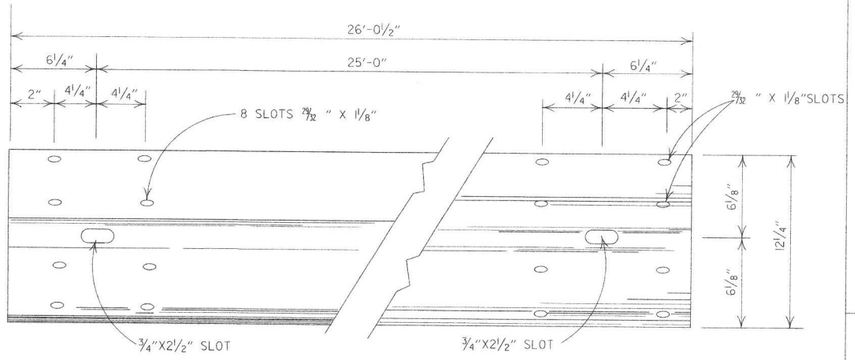
DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98	7-2-98	REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1, REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

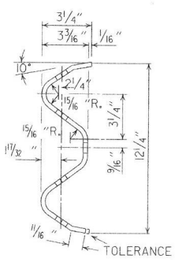
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N

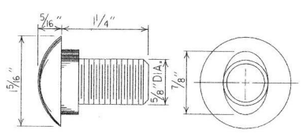
STDfpc9N.DGN



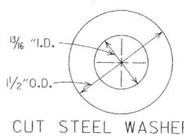


DETAILS OF
W-BEAM GUARD RAIL

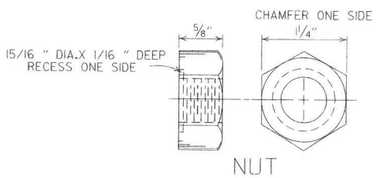
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



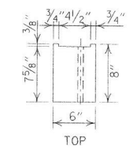
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

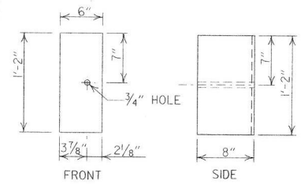


NUT

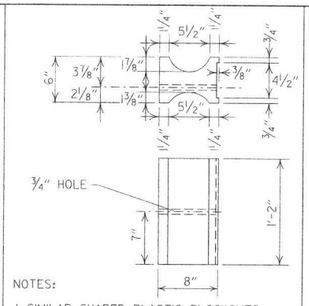


WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP



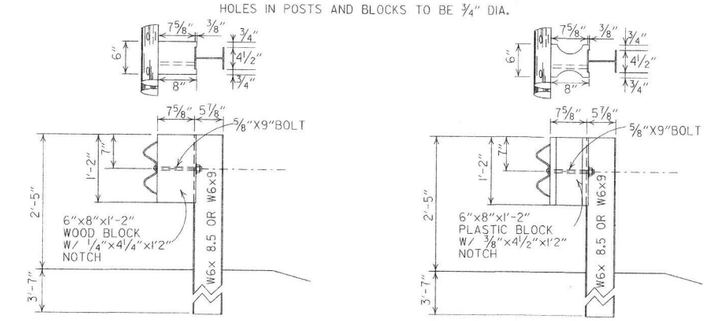
WOOD BLOCKOUT
(W-BEAM)



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

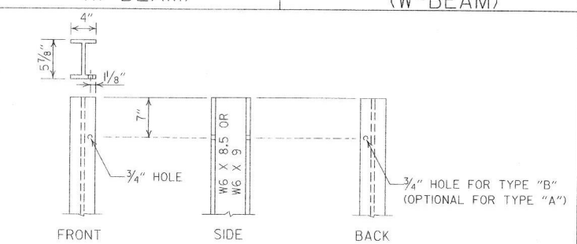
PLASTIC BLOCKOUT
(W-BEAM)



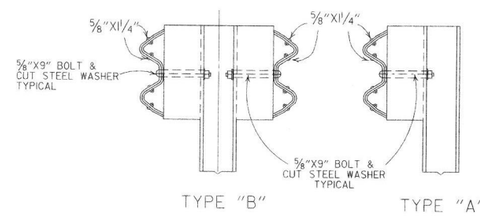
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

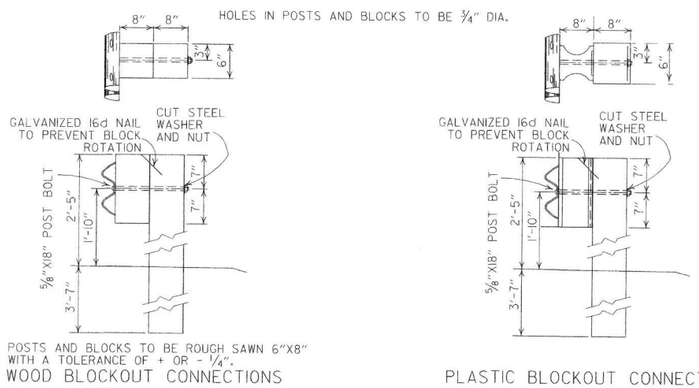
DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS
(W-BEAM)



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS
(W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

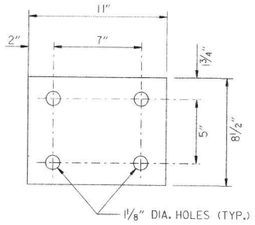
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87

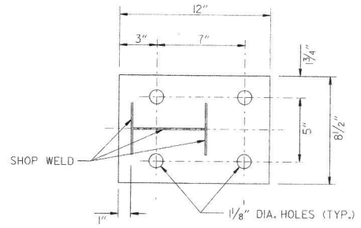
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8

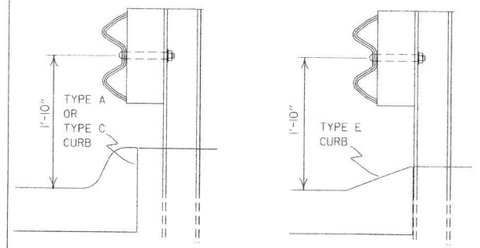


WASHER PLATE



BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.



FOR DESIGN SPEEDS OF 50 MPH OR LESS

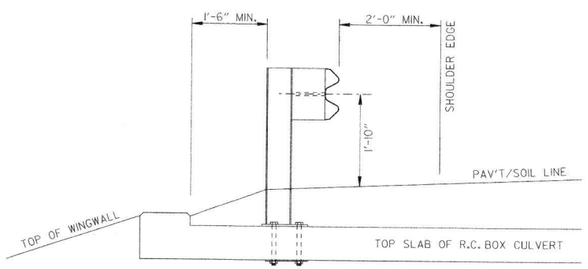
ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

FOR DESIGN SPEEDS OF 55 MPH OR MORE

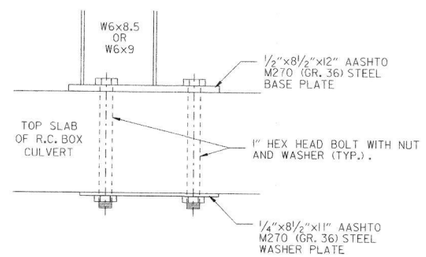
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

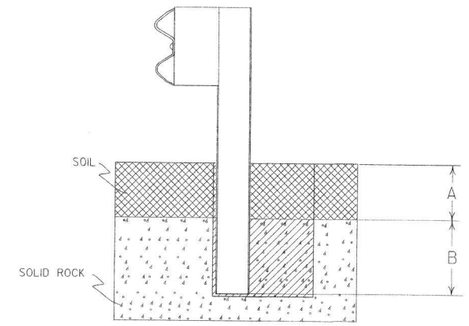


SECTION A-A

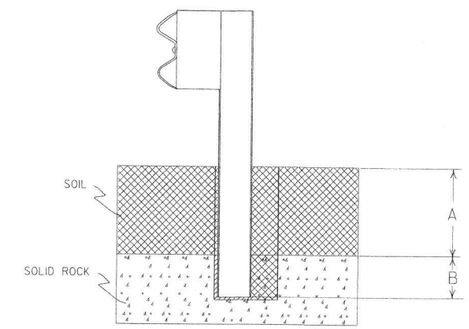


DETAIL OF CONNECTION

Case 1

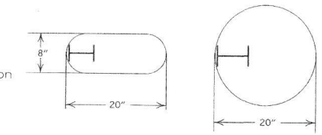


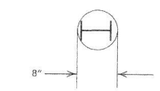
Case 2



Plan View Steel Posts

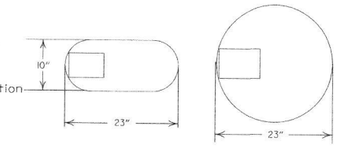
Either hole configuration acceptable

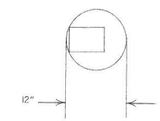




Plan View Wood Posts

Either hole configuration acceptable





Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

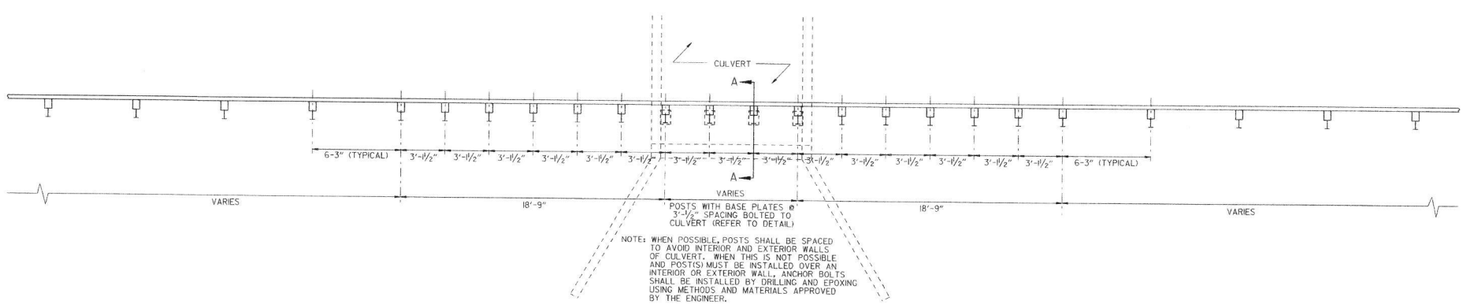
Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

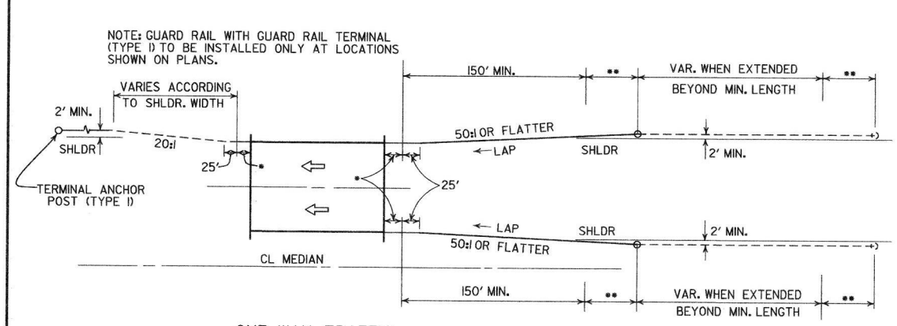
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
7-15-88	CONFORMED TO 1988 SPECS	
3-4-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-9-87	REDRAWN & REVISED	803-10-9-87

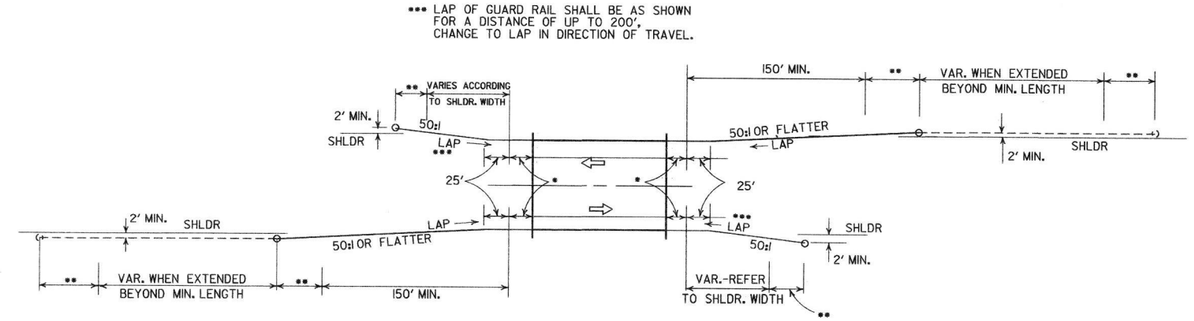
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A



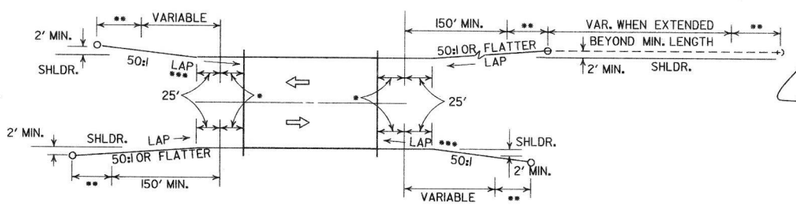
ONE-WAY TRAFFIC



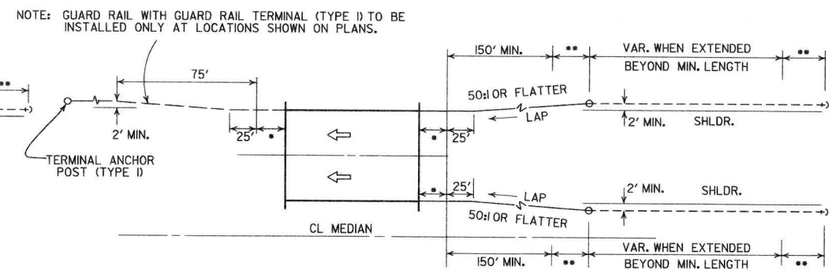
TWO-WAY TRAFFIC

METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



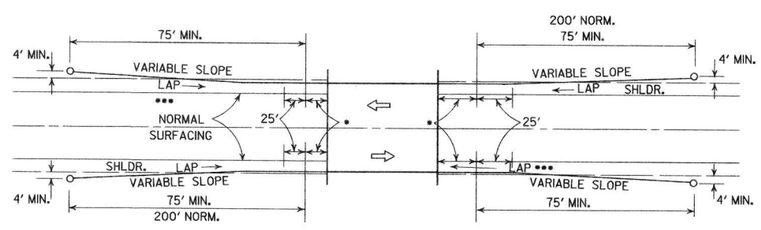
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



LEGEND

- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

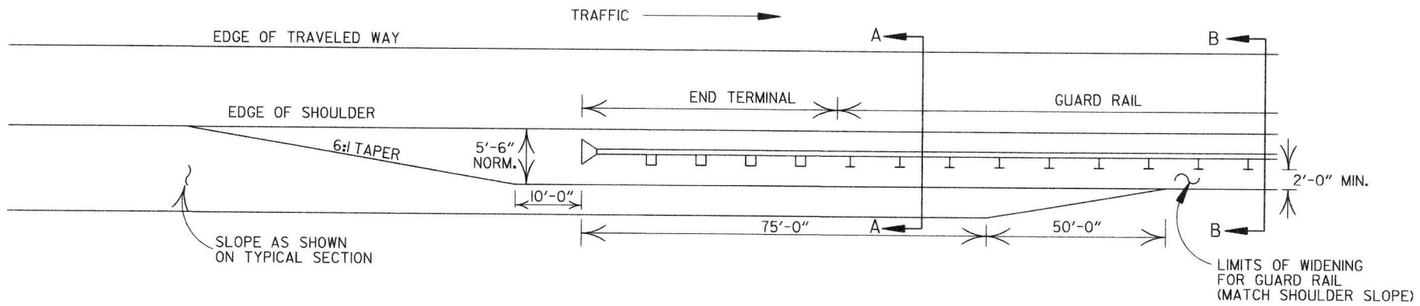
METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

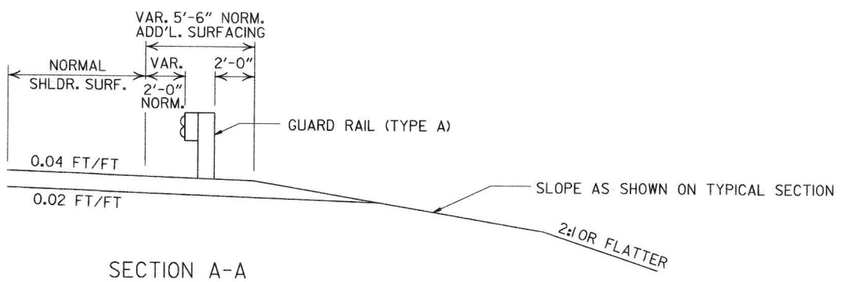
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

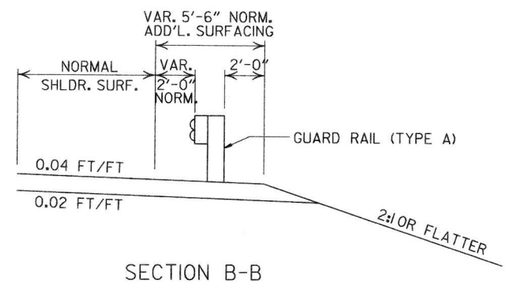
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





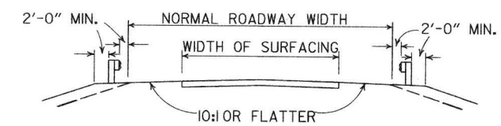
SECTION A-A



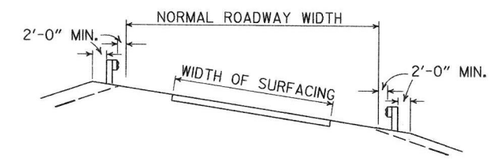
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

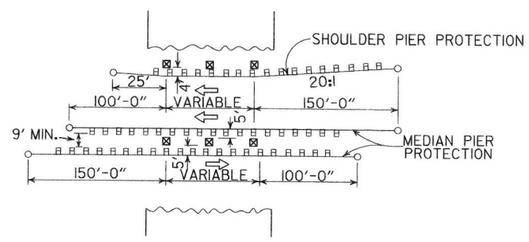


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



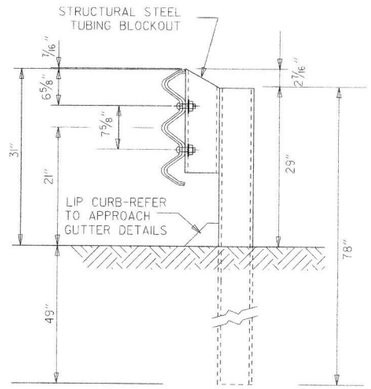
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

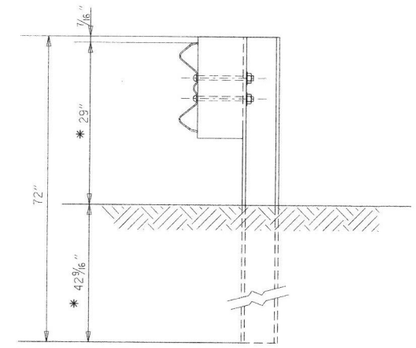
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

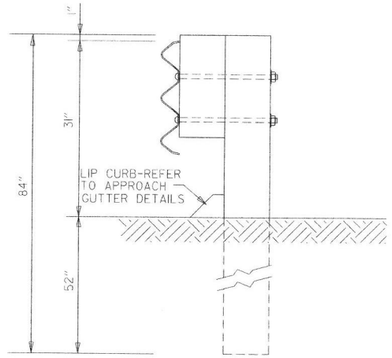


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

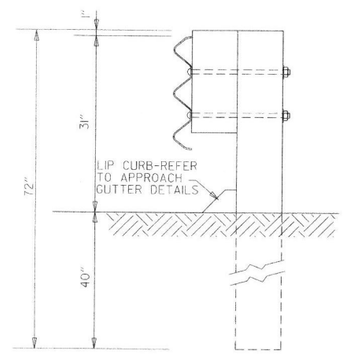


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

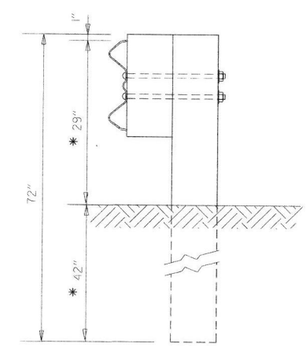
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

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.

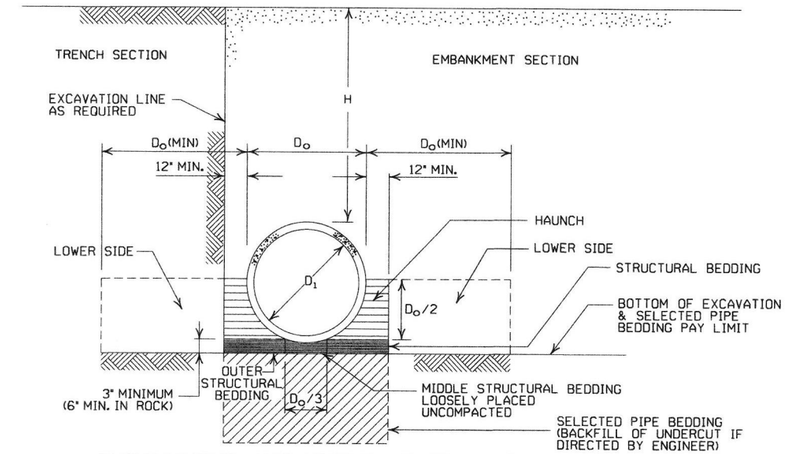
- LEGEND -

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.

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.

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 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	

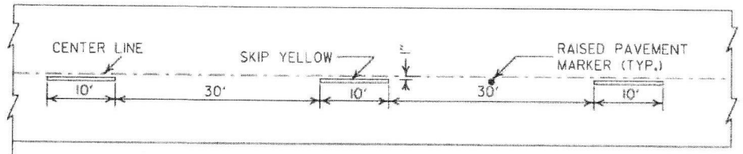
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

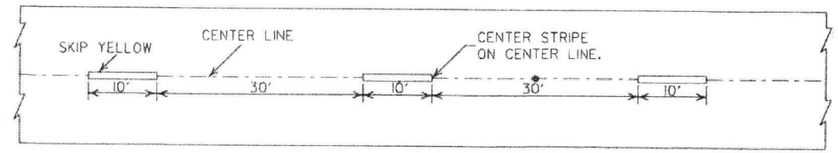
STANDARD DRAWING PCC-1

NOTES:

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

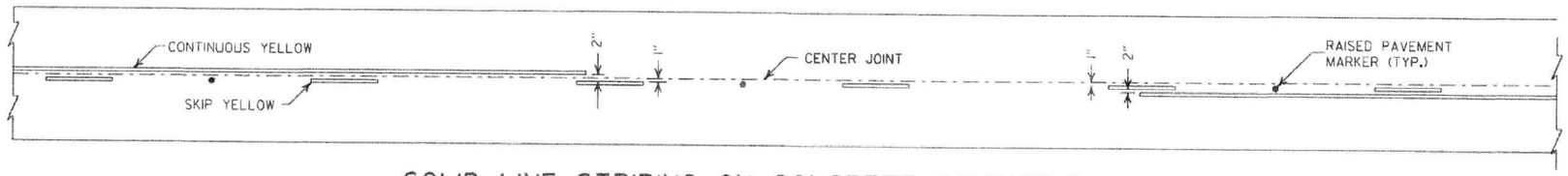


CONCRETE PAVEMENT

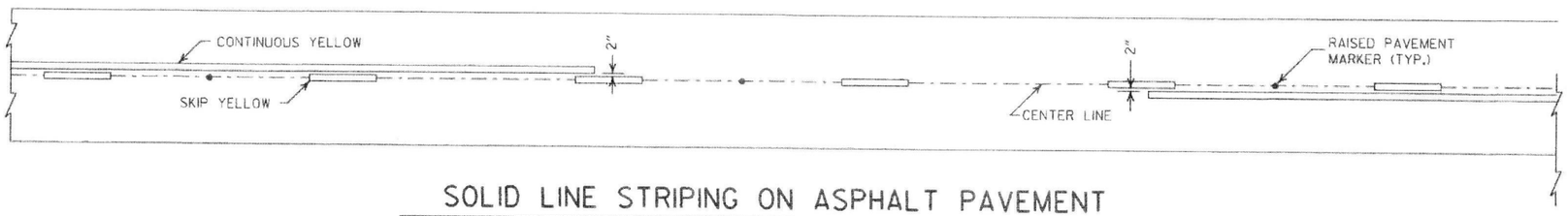


ASPHALT PAVEMENT

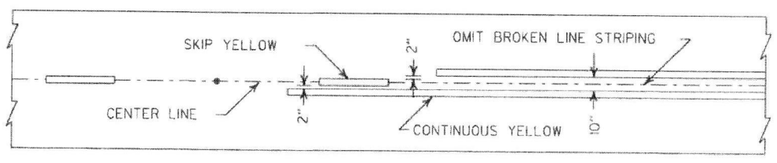
BROKEN LINE STRIPING



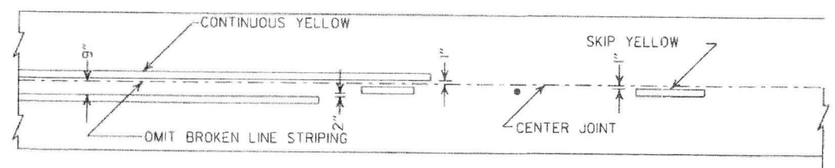
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

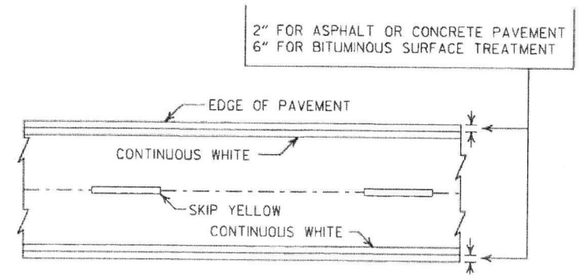


ASPHALT PAVEMENT



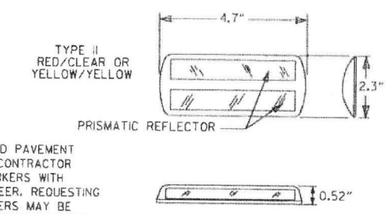
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



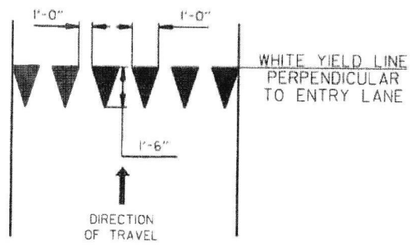
PAVEMENT EDGE LINE MARKING

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

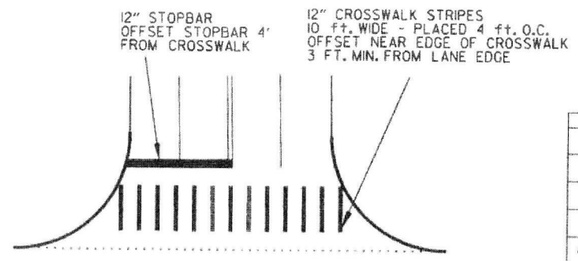


NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS



YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

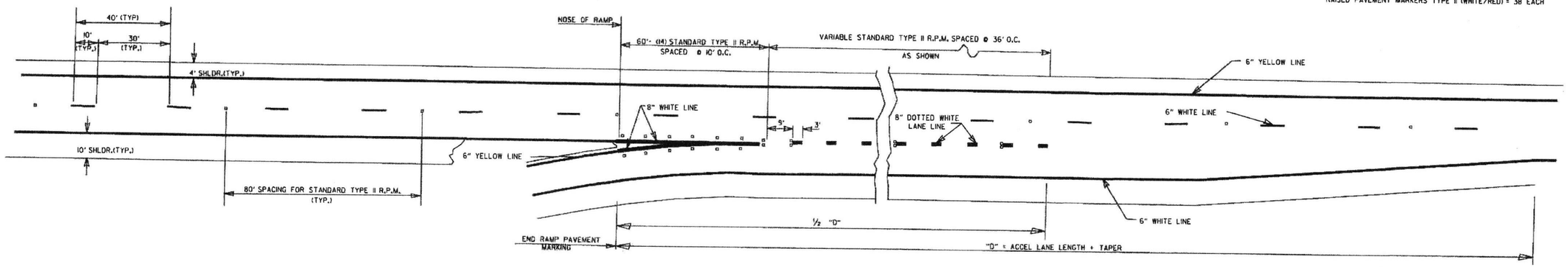
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

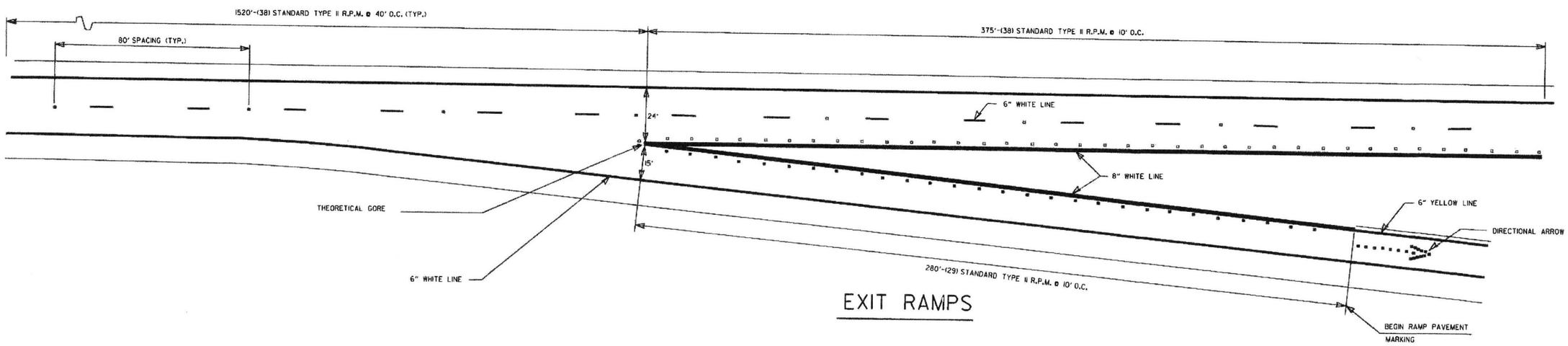
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

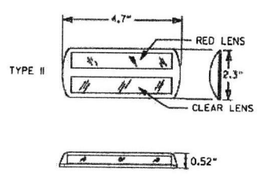
6" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

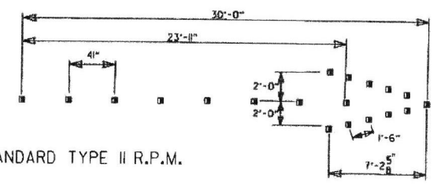


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

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



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

DIRECTIONAL ARROWS

GENERAL NOTES:

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

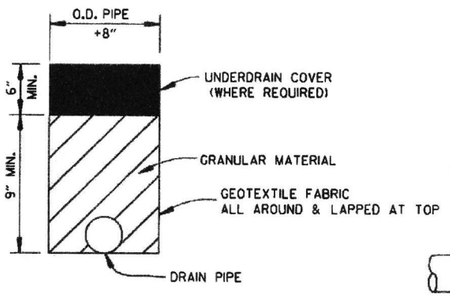
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

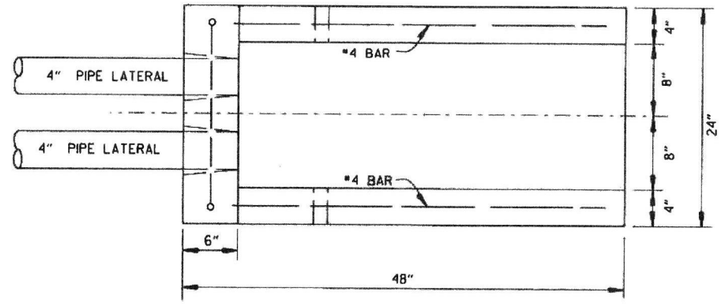
STANDARD DRAWING PM-2

NOTE:

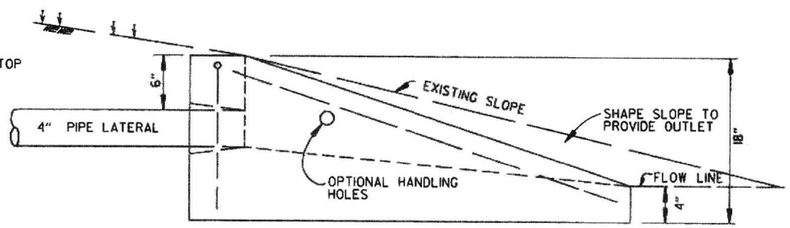
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

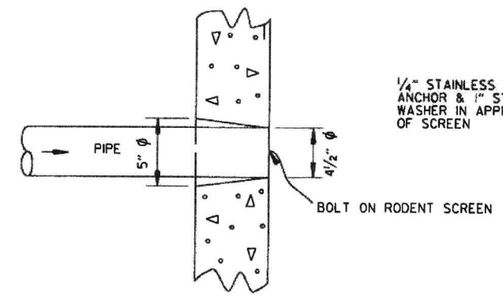




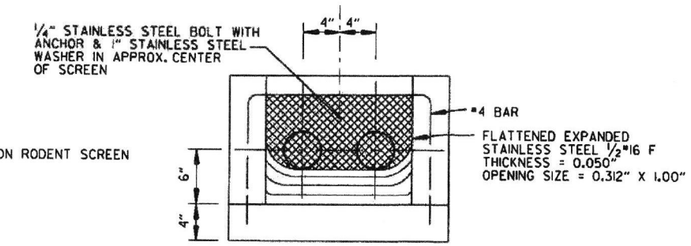
PLAN VIEW



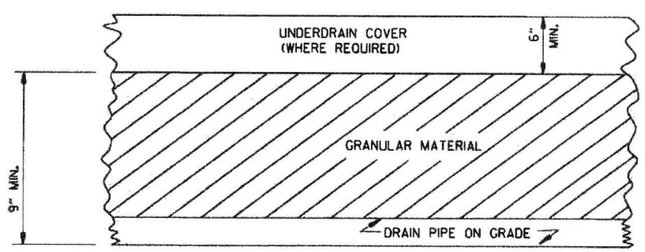
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE

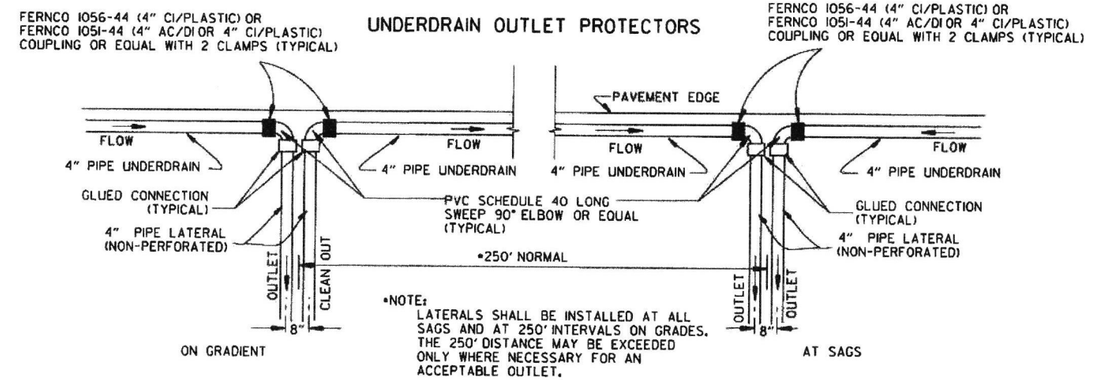


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



*NOTE:
LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

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

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

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

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

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

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

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

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

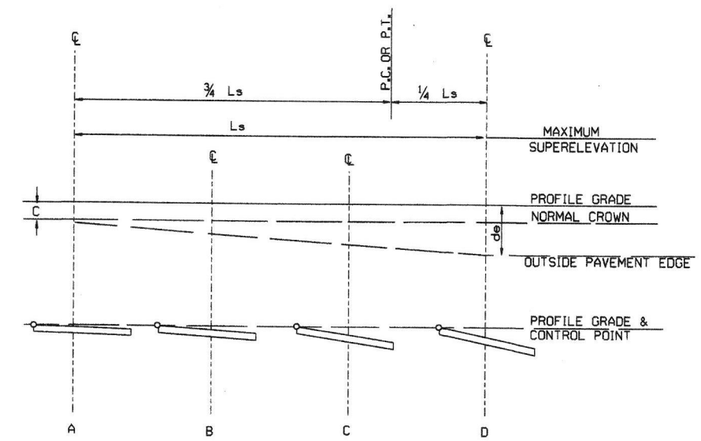
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			40 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	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.			N.C.			0.022			0.023			N.C.			N.C.		
1° 00′	N.C.			N.C.			R.C.			0.026			0.030			0.025			0.028		
1° 15′	N.C.			R.C.			0.021			0.032			0.037			0.033			0.037		
1° 30′	N.C.			0.021			0.026			0.037			0.043			0.041			0.046		
1° 45′	N.C.			0.025			0.031			0.043			0.049			0.048			0.054		
2° 00′	R.C.			0.028			0.036			0.048			0.055			0.055			0.062		
2° 15′	R.C.			0.031			0.040			0.053			0.061			0.062			0.070		
2° 30′	0.021			0.034			0.045			0.058			0.067			0.069	265		0.078	300	
2° 45′	0.023			0.037			0.049			0.063			0.072			0.075	280		0.085	315	
3° 00′	0.025	150		0.040			0.053			0.067	230		0.077	260		0.081	300		0.091	335	
3° 15′	0.027			0.043			0.057			0.072	245		0.082	275		0.087	315		0.096	350	
3° 30′	0.029			0.046			0.061			0.076	255		0.086	285		0.090	325		0.098	360	
3° 45′	0.031			0.049			0.065	205		0.080	265		0.090	295		0.095	340		0.100	360	
4° 00′	0.033			0.051			0.069	215		0.083	270		0.093	305		0.097	345				
4° 30′	0.037			0.056			0.072	225		0.087	280		0.096	315		0.099	350				
5° 00′	0.040			0.061			0.078	240		0.091	295		0.098	320							
5° 30′	0.043			0.066	185		0.083	250		0.094	300										
6° 00′	0.046			0.070	190		0.088	260		0.096	305										
6° 30′	0.050			0.074	200		0.092	270		0.100	315										
7° 00′	0.053			0.078	210		0.095	280													
7° 30′	0.056			0.081	215		0.098	285													
8° 00′	0.058			0.084	220		0.099	290													
8° 30′	0.061			0.087	225		0.100	290													
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′		



ONE-WAY TRAFFIC
INSIDE LANE

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

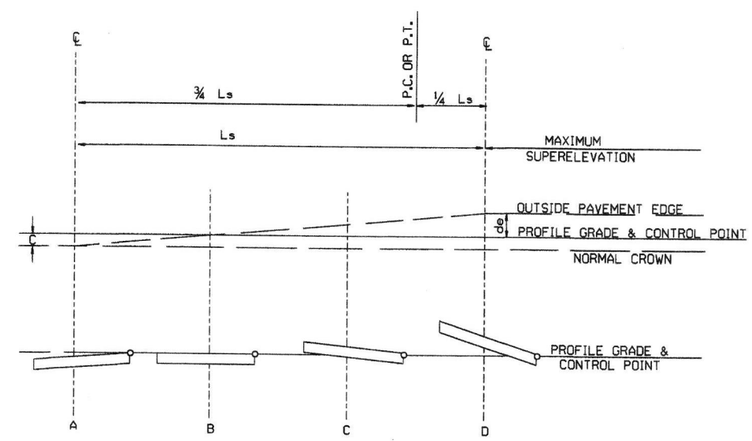
ABBREVIATIONS

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.)

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%



ONE-WAY TRAFFIC
OUTSIDE LANE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

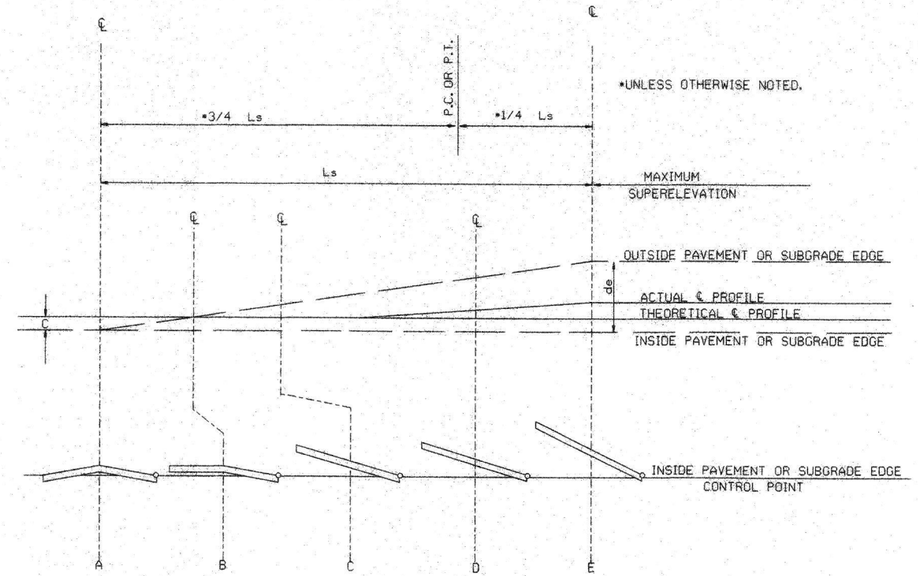
STANDARD DRAWING SE-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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

ABBREVIATIONS

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



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

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

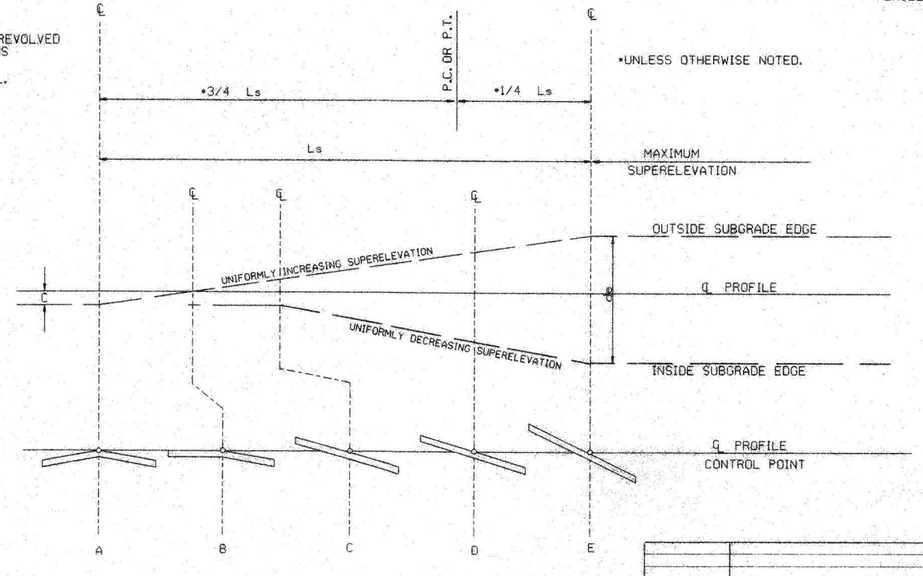
GENERAL NOTES

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

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

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

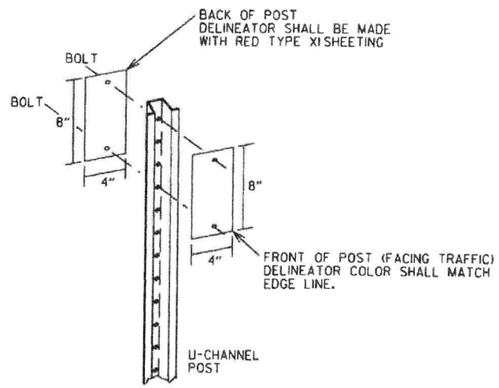
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

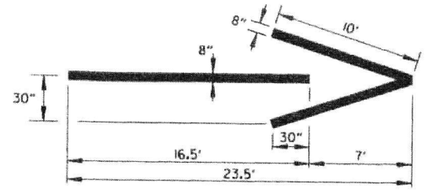
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN



TYPE 2 DELINEATOR DETAILS

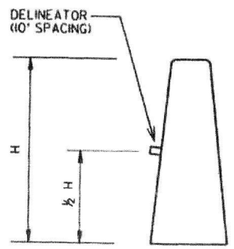


THERMOPLASTIC WRONG-WAY
PAVEMENT ARROWS

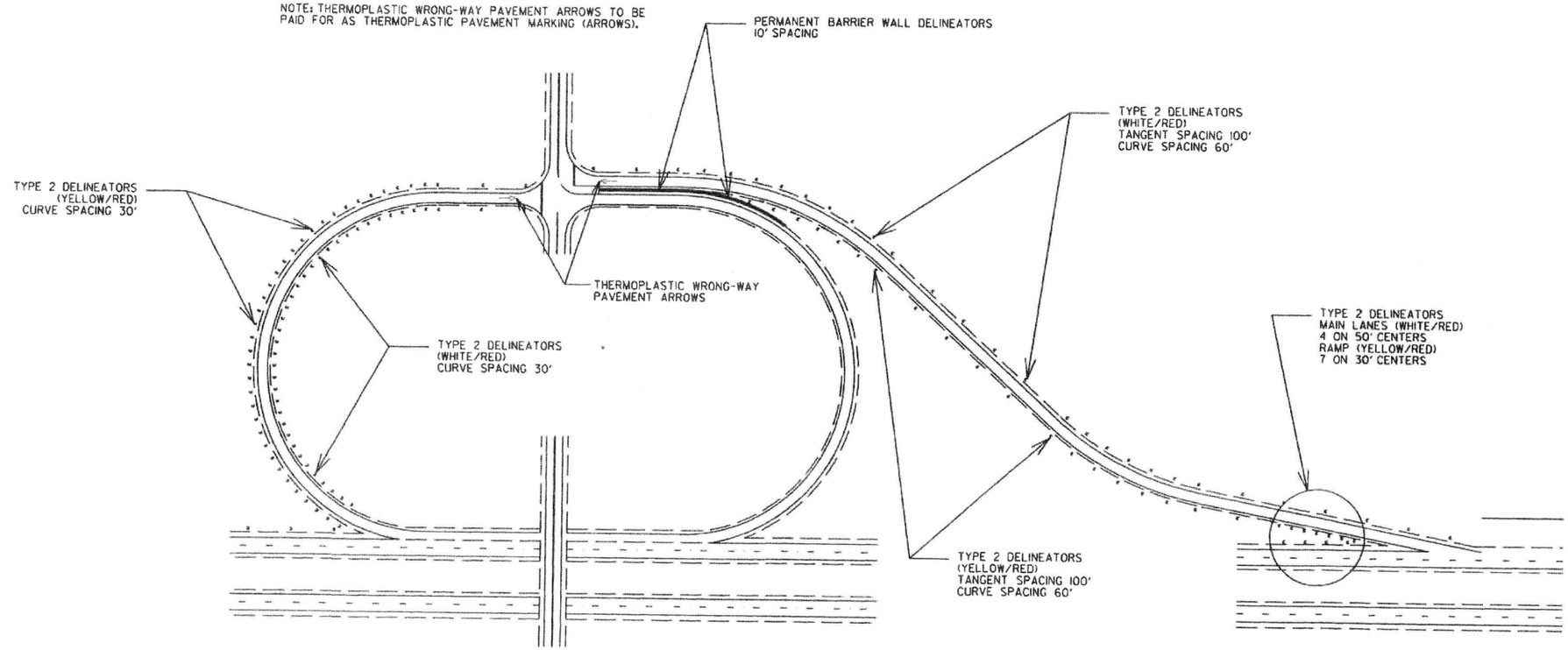
NOTE: THERMOPLASTIC WRONG-WAY PAVEMENT ARROWS TO BE PAID FOR AS THERMOPLASTIC PAVEMENT MARKING (ARROWS).

LEGEND

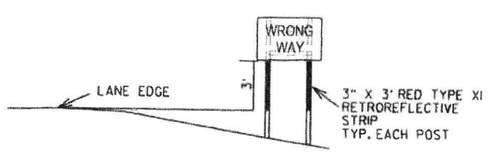
DELINEATOR



PERMANENT BARRIER WALL
DELINEATOR DETAIL

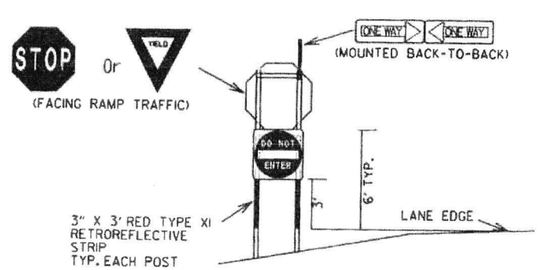


TYPICAL EXIT RAMP DELINEATOR PLACEMENT



WRONG-WAY SIGN ASSEMBLY DETAILS

NOTES
1. WRONG-WAY SIGNS MAY BE MOUNTED ON THE BACK SIDE OF EXISTING SIGN SUPPORTS WHERE POSSIBLE.
2. WRONG-WAY SIGNS ARE NORMALLY GATED, BUT MAY BE OFFSET WHEN BARRIER WALLS ARE PRESENT ON THE INSIDE SHOULDER. IN SUCH CASES, THE SIGN ON THE INSIDE SHOULDER SIDE MAY BE LOCATED PAST THE END OF THE BARRIER WALL. IN RARE CASES WHERE THE BARRIER WALL EXTENDS TO OR NEAR THE MAIN LANES, BOTH SIGNS MAY BE LOCATED ON THE OUTSIDE SHOULDER SIDE OF THE RAMP, WITH APPROXIMATELY 300' SPACING BETWEEN THE SIGNS.



RAMP INTERSECTION SIGN ASSEMBLY DETAILS

THE DELINEATORS SHALL BE PLACED AT A 4' HEIGHT MEASURED FROM THE PAVEMENT EDGE TO THE BOTTOM OF THE DELINEATOR. DELINEATOR POSTS SHALL BE PLACED 2 TO 8 FT. OUTSIDE THE OUTER EDGE OF THE SHOULDER, OR IF APPROPRIATE, IN LINE WITH THE ROADSIDE BARRIER THAT IS 8 FT. OR LESS OUTSIDE THE OUTER EDGE OF THE SHOULDER.

DELINEATOR SPACING IN CURVES SHALL BE REDUCED TO 30' WHEN THE RAMP ADVISORY SPEED IS 30 MPH OR LESS.

IF MULTIPLE LANES EXIST AT THE RAMP TERMINAL, THE THERMOPLASTIC WRONG-WAY ARROW SHALL BE PLACED AS CLOSE TO THE RAMP TERMINAL TURNOUT AS POSSIBLE.

DATE	REVISION	FILMED
6-1-17	RE-DRAWN	
9-12-13	ISSUED AS STANDARD DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

TYPICAL EXIT RAMP
SIGN AND DELINEATOR DETAILS

STANDARD DRAWING SHS - 8

R1-1 STOP STANDARD 30"X30" EXPRESSWAY 36"X36" SPECIAL 48"X48"	R1-2 YIELD STD. 36"X36"X36" EXPWY. 48"X48"X48" FWY. 60"X60"X60"	R2-1 SPEED LIMIT 50 STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"	W3-5 SPEED LIMIT XX STD. 36"X36" EXPWY. 48"X48" FWY. 48"X48"	W3-5a XX MPH SPEED ZONE AHEAD STD. 36"X36" EXPWY. 48"X48" FWY. 48"X48"	R4-1 DO NOT PASS STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"	R4-2 PASS WITH CARE STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"
R5-1 DO NOT ENTER STD. 30"X30" EXPWY. 36"X36" SPECIAL 48"X48"	R11-2 ROAD CLOSED 48"X30"	R11-3A ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY 60"X30"	R11-4 ROAD CLOSED TO THRU TRAFFIC 60"X30"	W21-5a RIGHT SHOULDER CLOSED 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 ROAD NARROWS STD. 36"X36" SPECIAL 48"X48"	W6-3 EXPWY. 36"X36" SPECIAL 48"X48"	W8-7 LOOSE GRAVEL EXPWY. 36"X36" FWY. 48"X48"	W9-2 LANE ENDS MERGE RIGHT STD. 36"X36" FWY. 48"X48"	W13-1 XX M.P.H. STD. 24"X24"	W20-1 ROAD WORK XXXX STD. 48"X48"	W20-2 DETOUR XXXX STD. 48"X48"
W20-4 ONE LANE ROAD XXXX STD. 48"X48"	W20-5 RIGHT LANE CLOSED XXXX STD. 48"X48"	W20-7a 18" 500 FEET W16-2 24" STD. 36"X36" FWY. 48"X48"	W21-2 FRESH OIL STD. 30"X30" SPECIAL 36"X36"	W21-5 SHOULDER WORK STD. 30"X30" SPECIAL 36"X36"	W24-1 STD. 36"X36"	W1-4b STD. 48"X48"
W8-11 UNEVEN LANES STD. 36"X36" FWY. 48"X48"	W8-9 LOW SHOULDER STD. 36"X36" FWY. 48"X48"	G20-1 ROAD WORK NEXT XX MILES 60"X24"	G20-2 END ROAD WORK 48"X24"	OM-3L OM-3R YELLOW BLACK 12"X36"	M4-9 DETOUR STD. 30"X24" SPECIAL 48"X36" SPECIAL 60"X48"	M4-10 DETOUR 48"X18"

R56-1

CONTROLLED ACCESS HWY.
NO EXIT

STD. 18"X18"

R55-1

FINES DOUBLE IN WORK ZONES •

WHEN WORKERS ARE PRESENT ••

36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
4. • SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
5. • SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

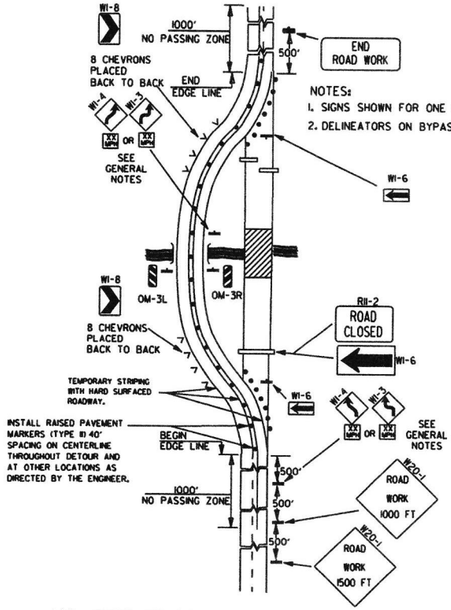
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

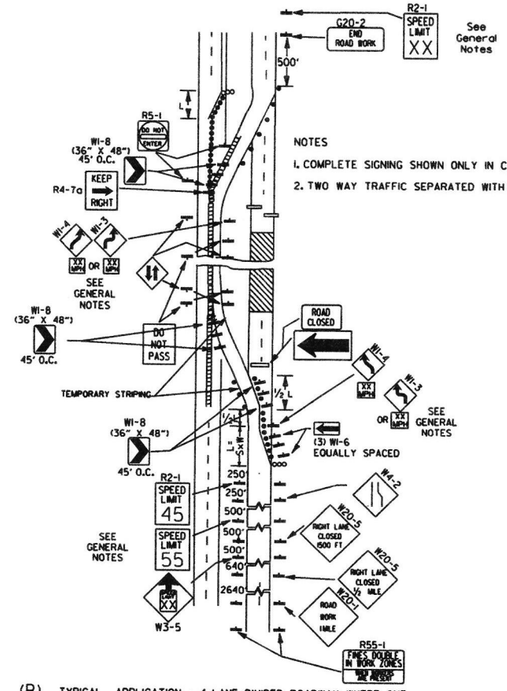
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



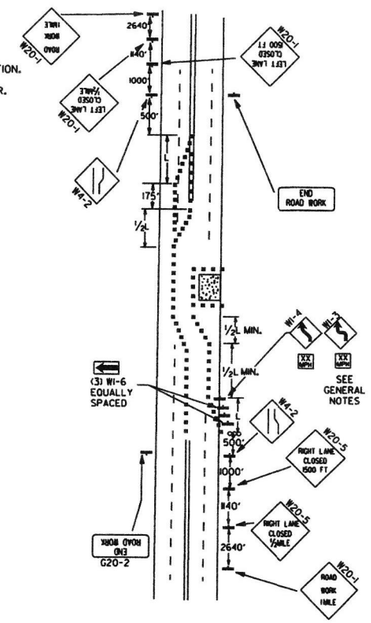
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

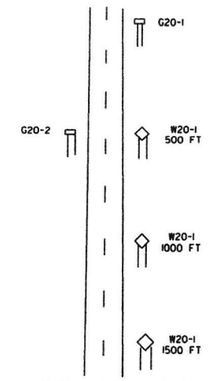


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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

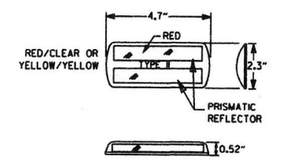


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



TYPICAL ADVANCE WARNING SIGN PLACEMENT

KEY:
- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER



DETAIL OF RAISED PAVEMENT MARKERS

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

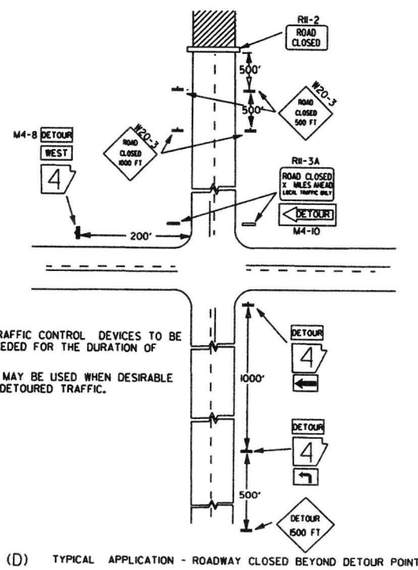
WHERE:

L= MINIMUM LENGTH OF TAPER.

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

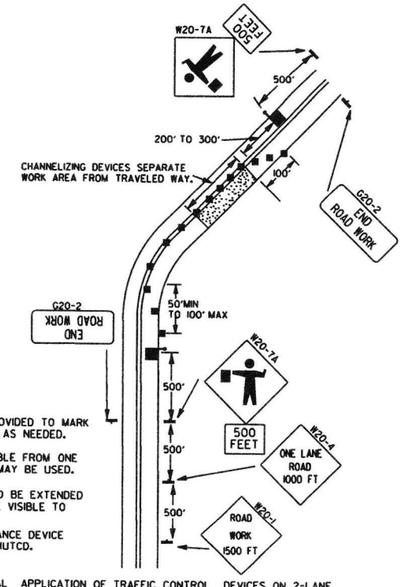
W= WIDTH OF OFFSET.

GENERAL NOTES:
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



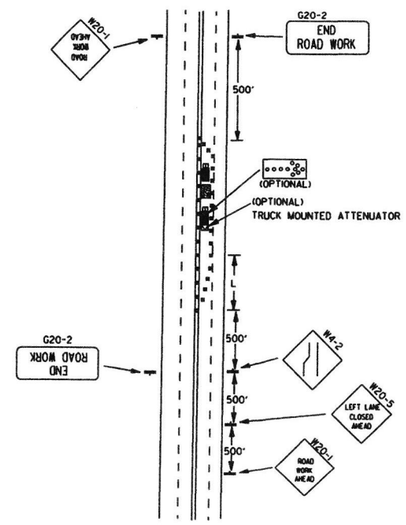
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



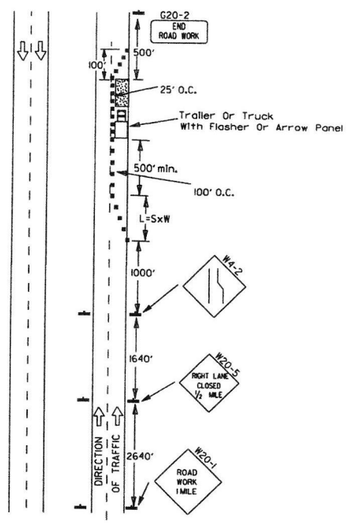
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-8-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (c) 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	

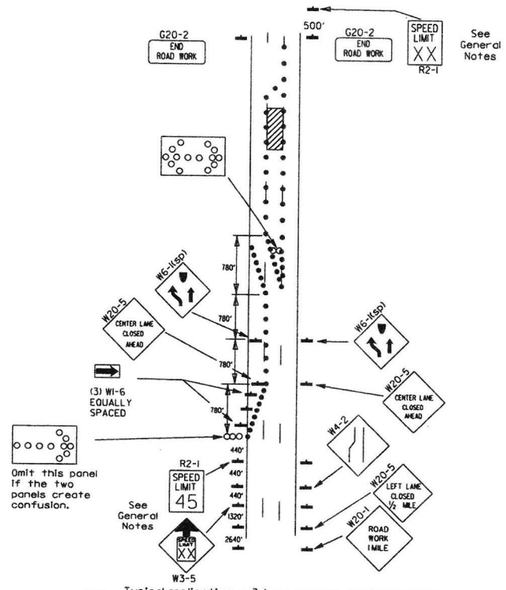
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

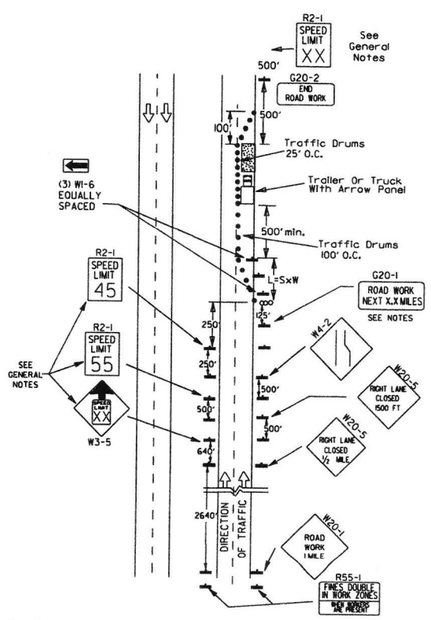
STANDARD DRAWING TC-2



(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)

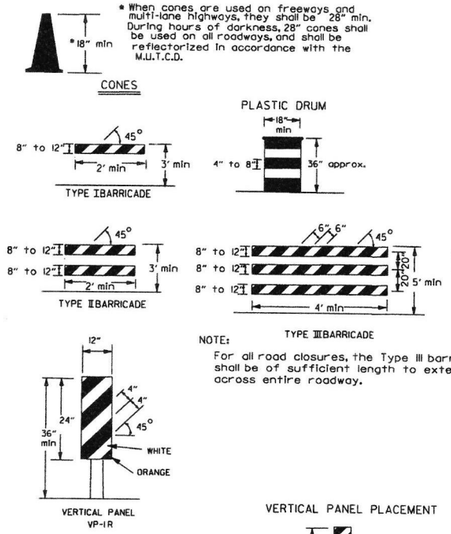
■ Channelizing Device

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

Channelizing devices



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

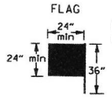
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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

* When shown on the plans concrete barrier will be used.

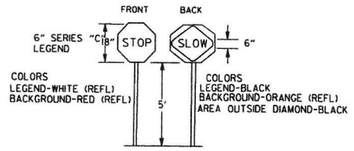
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

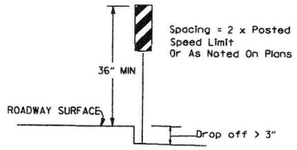


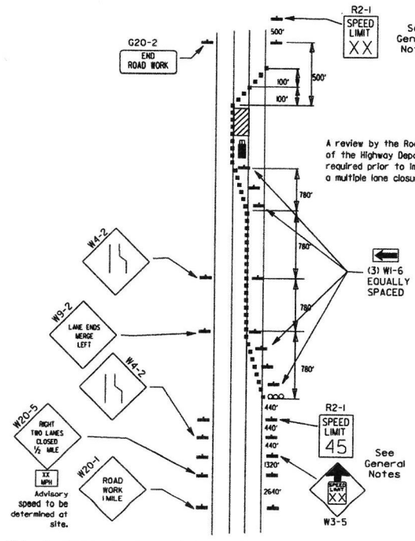
Flag shall be of good grade red material

STOP SLOW PADDLE



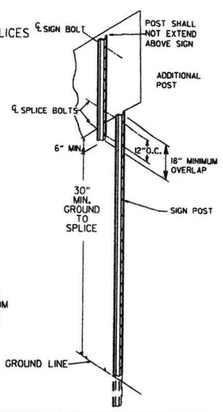
VERTICAL PANEL PLACEMENT





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

DETAIL OF SPLICES



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

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

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

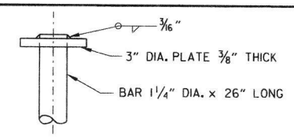
DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95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

ARKANSAS STATE HIGHWAY COMMISSION

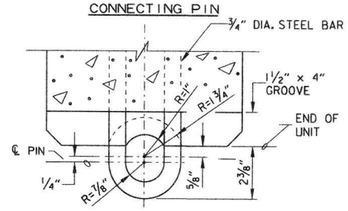
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1" MIN. CLEAR TO BAR, 1'-6", 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP, TOTAL LENGTH 4'-9"
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	2 3/16" R, 12", 9 1/2", 2'-1 3/8", 4 3/8"

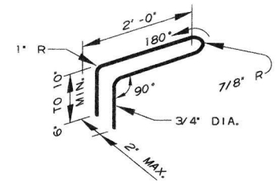


CONNECTING PIN

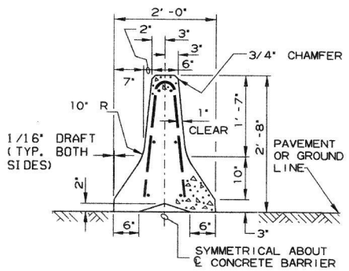


SECTION E-E

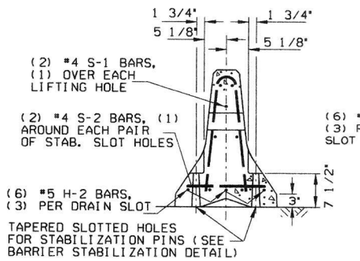
CONNECTION DETAILS



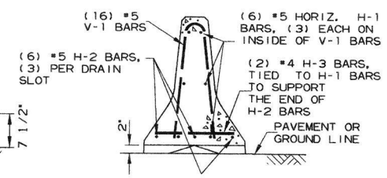
CONNECTION LOOP



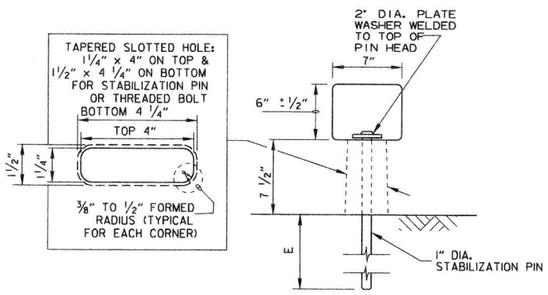
SECTION A-A



SECTION B-B



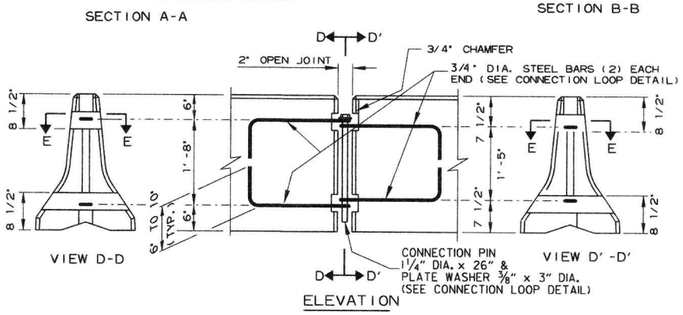
SECTION C-C



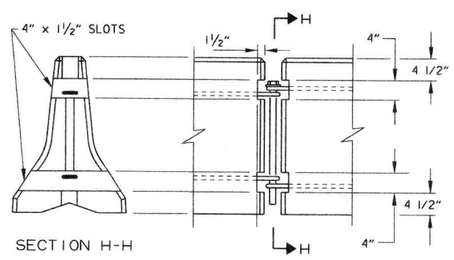
BARRIER STABILIZATION DETAIL

ROADWAY SECTION

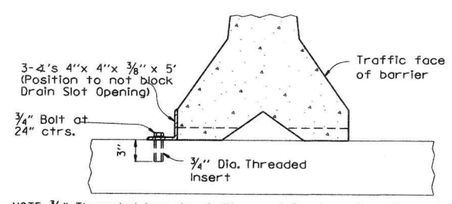
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



ELEVATION



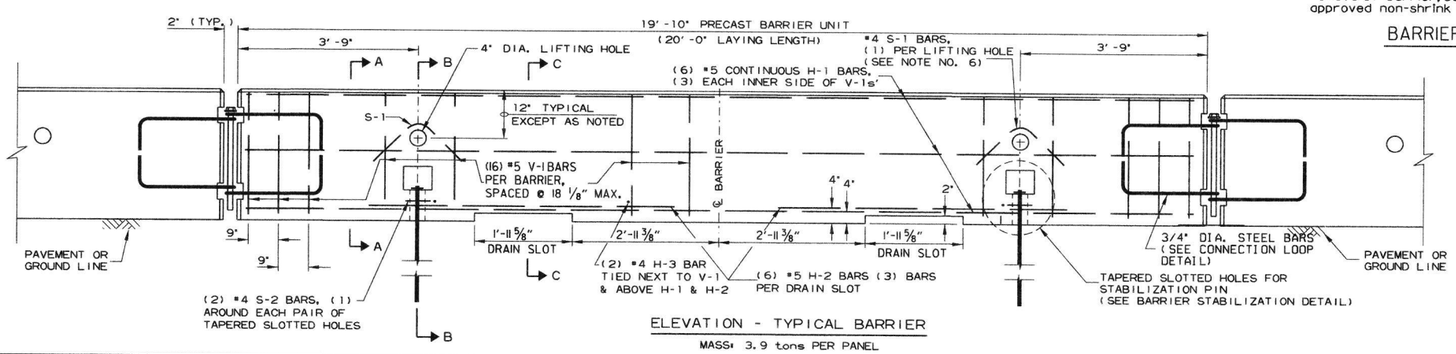
BARRIER REMOVAL SLOT DETAILS



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

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



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

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

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

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

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

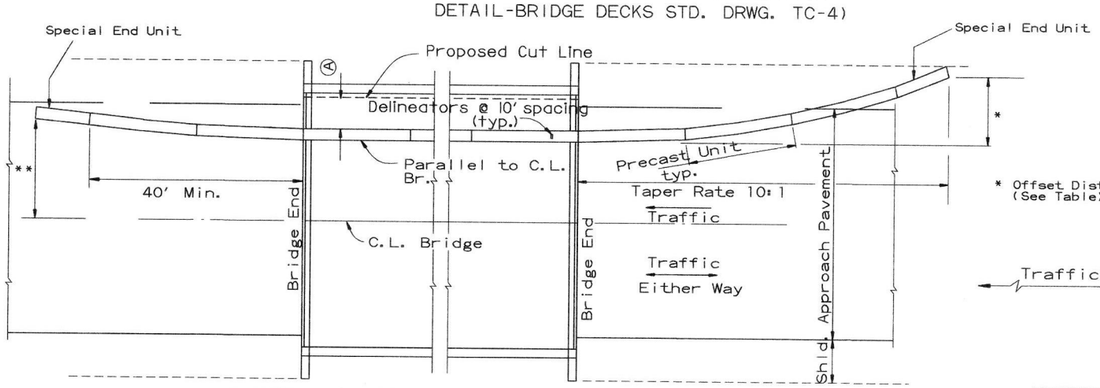
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

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

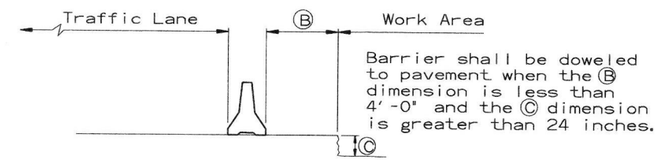


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

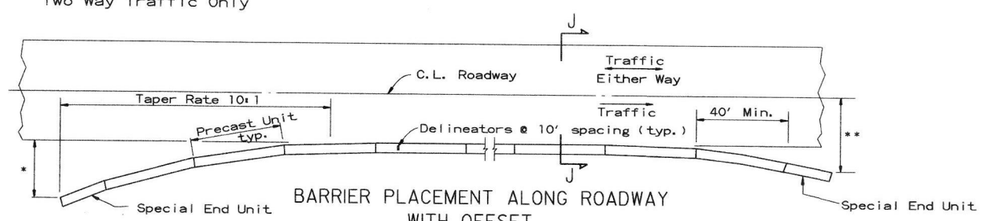
** Offset Distance for Two Way Traffic Only



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

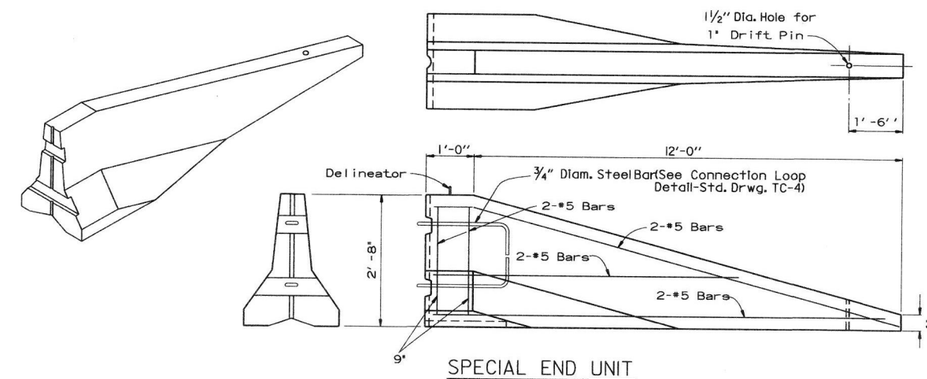
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

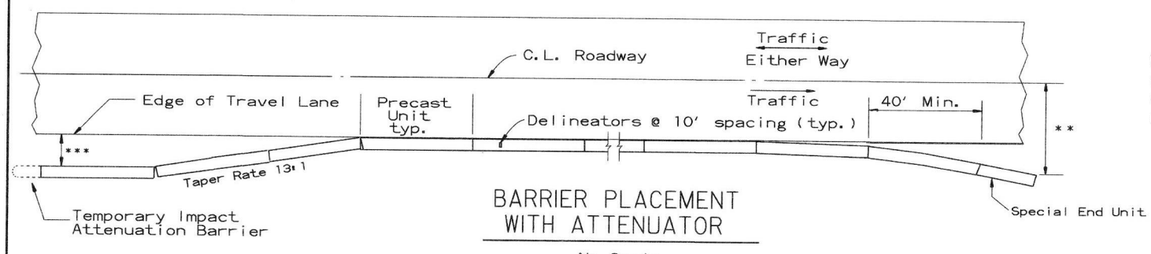
Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

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



SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only

General Notes

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

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

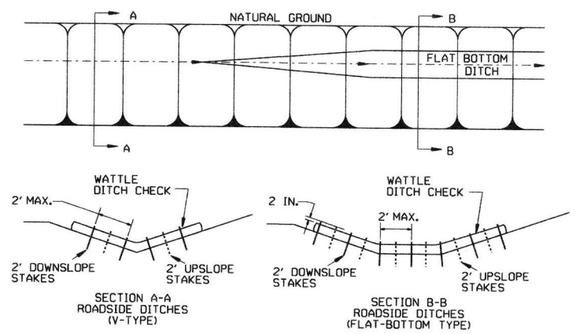
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

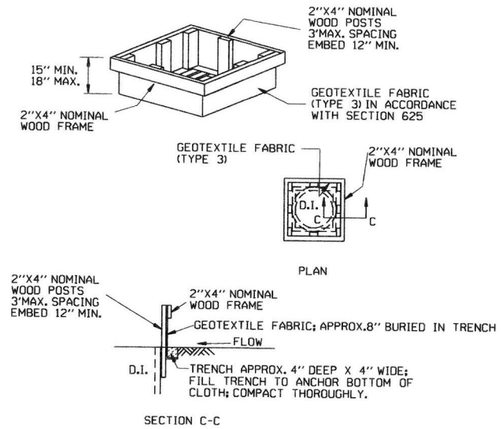
STANDARD DRAWING TC-5

GENERAL NOTES

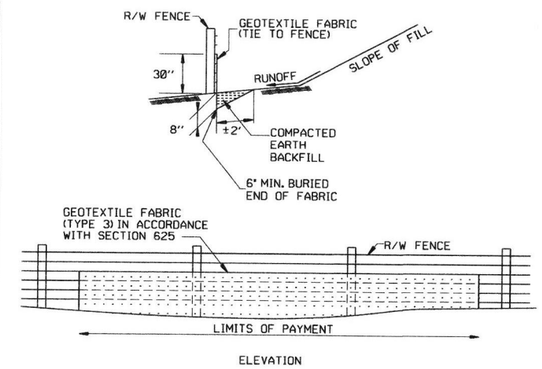
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



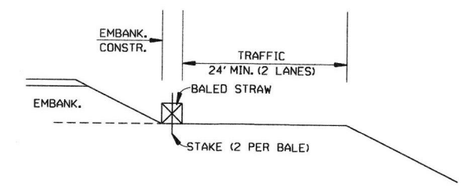
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

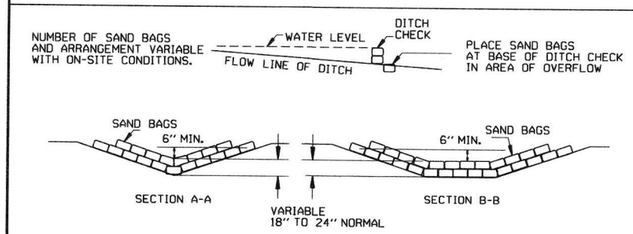
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

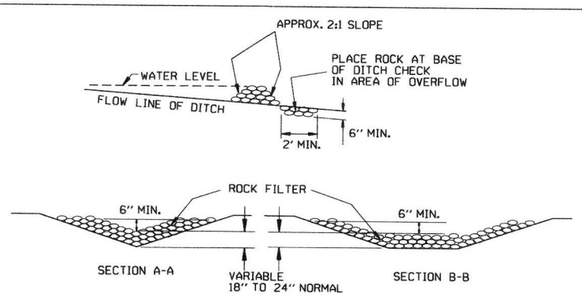
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



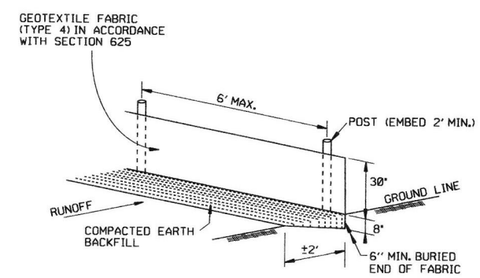
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

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

DATE	REVISION	FILMED
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
6-2-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
4-1-93	REDRAWN	
10-1-92	REDRAWN	
8-2-76	ISSUED R.D.M.	298-7-28-76

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

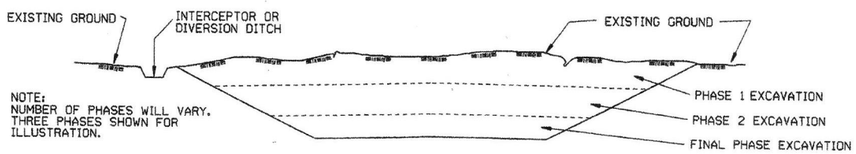
STANDARD DRAWING TEC-1

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR ILLUSTRATION.

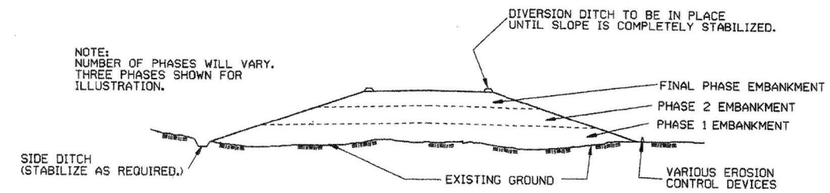
GENERAL NOTE

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR ILLUSTRATION.

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.

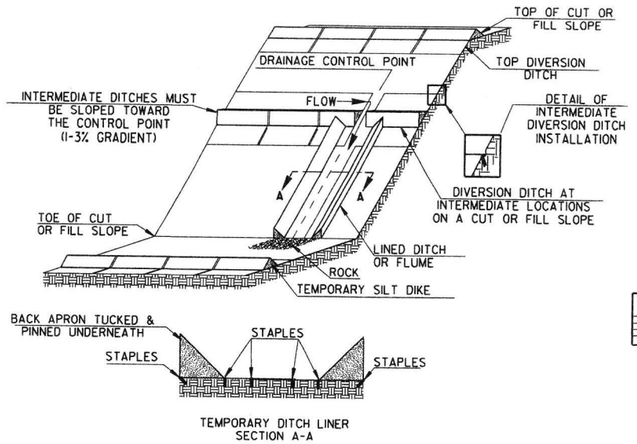
DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

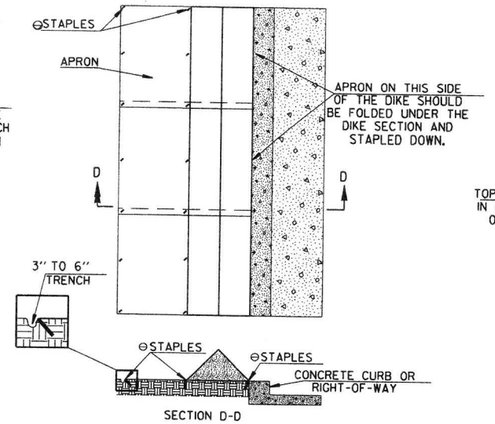
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

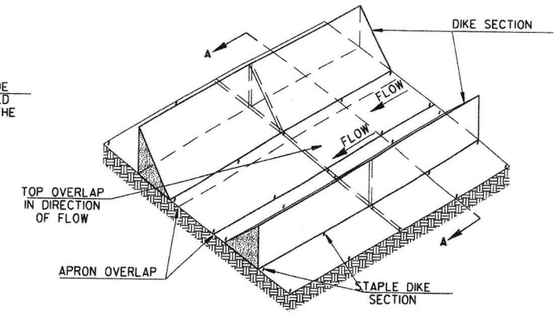
stdtec3.dgn



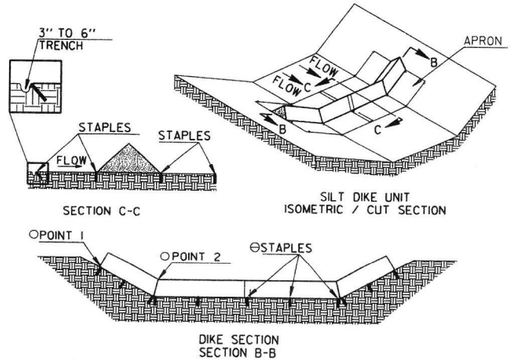
TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER



TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER



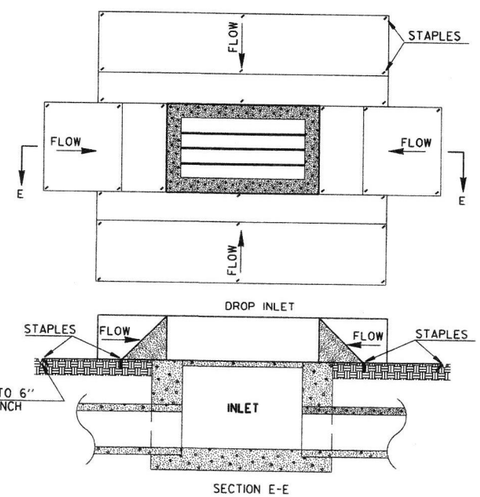
TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER



TRIANGULAR SILT DIKE INSTALLATION
FOR
ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION
FOR
DROP INLETS

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

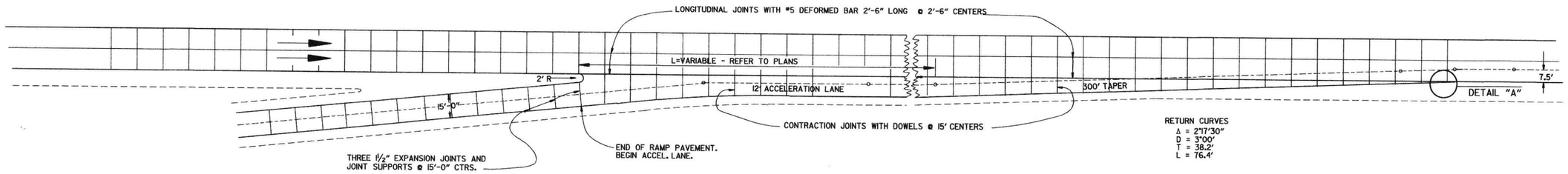
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

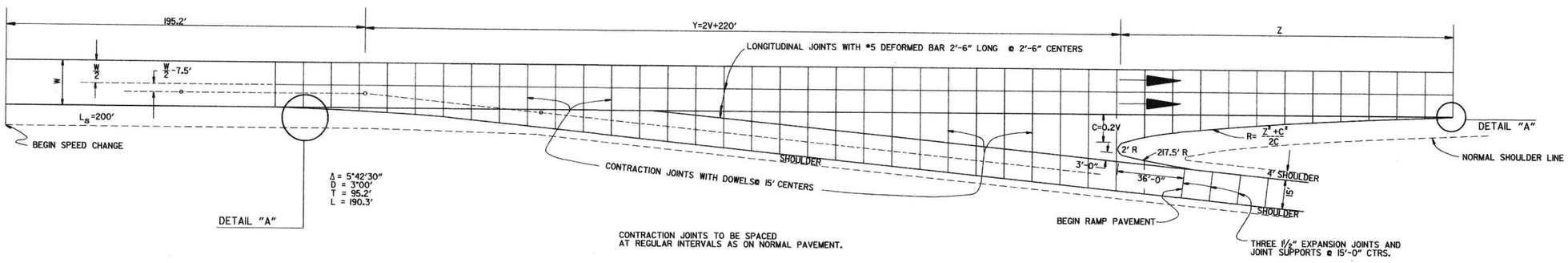
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4



ENTRANCE RAMP

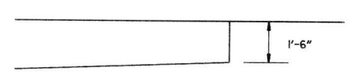
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



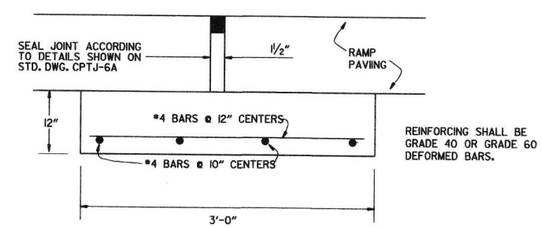
EXIT RAMP

EXIT RAMP

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



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORM'D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A