DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100871		1	87
				(2)	HWY. 14 STR. & APPRS. (S)			

"A FULLY CONTROLLED ACCESS FACILITY"
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 14 STR. & APPRS. (S)

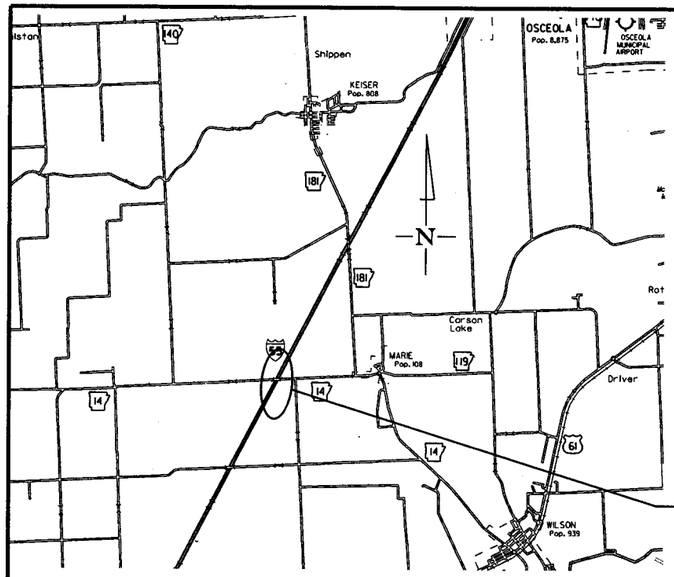
MISSISSIPPI COUNTY

ROUTE 14 SECTION 16

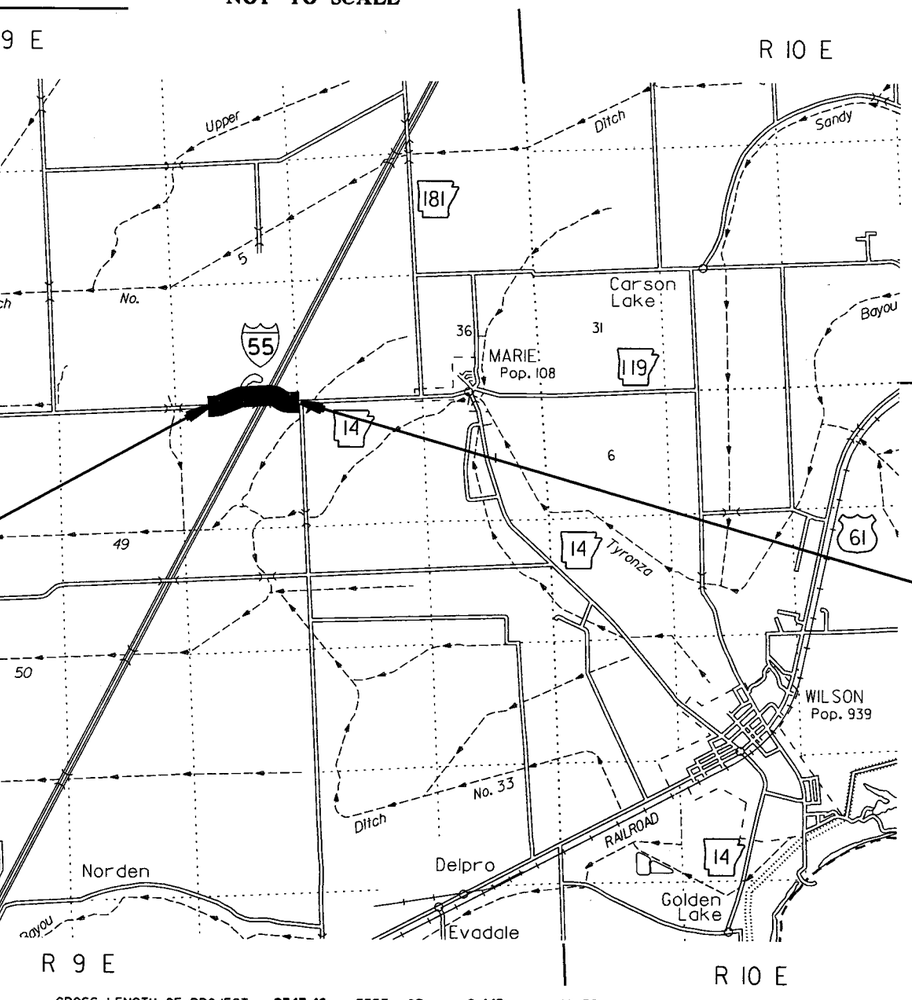
FEDERAL AID PROJ. NHPP-0047(53)

JOB 100871

NOT TO SCALE



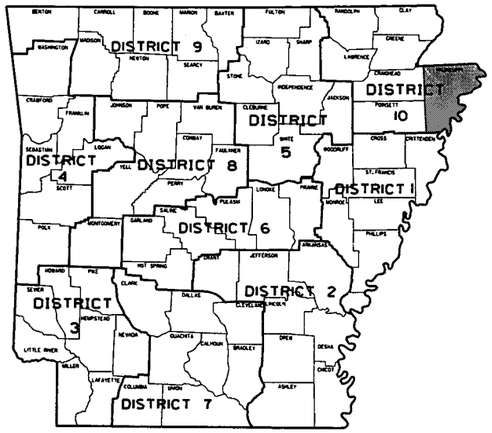
VICINITY MAP



PROJECT AREA

STA. 98+80.54
BEGIN JOB 100871
L.M. 9.63

STA. 122+28.00
END JOB 100871



ARK. HWY. DIST. NO. 10

DESIGN TRAFFIC DATA

DESIGN YEAR	2038
2018 ADT	1100
2038 ADT	1400
2038 DHV	154
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	7%
DESIGN SPEED	55 MPH

BRIDGE DATA

STA. 109+21.74 BRIDGE END
BRIDGE NO. 07425
330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(68', 97', 97', 68')
30'-0" CLEAR ROADWAY WIDTH
332'-6¼" BRIDGE LENGTH
STA. 112+54.26 BRIDGE END

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LONGITUDE	N 90°06'58"	N 90°06'44"	N 90°06'30"
LATITUDE	W 35°36'41"	W 35°36'41"	W 35°36'41"

GROSS LENGTH OF PROJECT	2347.46	FEET	OR	0.445	MILES
NET " " ROADWAY	2014.94	"	"	0.382	"
NET " " BRIDGES	332.52	"	"	0.063	"
NET " " PROJECT	2347.46	"	"	0.445	"

APPROVED

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

8-10-18

DEPUTY DIRECTOR
AND CHIEF ENGINEER

8/2/2018

R100871.DGN

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				6	ARK.			
				JOB NO.		100871	2	87

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 11425
TRINITY D. SMITH
8-10-18

INDEX OF SHEETS

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

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55002	STANDARD DETAILS FOR CONCRETE RIPRAP	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55006	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	09-02-15
55007	STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	02-11-16
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	01-17-17

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
CG-1	CURBING DETAILS	11-29-07
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	07-02-98
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
GRT-1	GUARD RAIL DETAILS	11-16-17
IB-1	IMPACT ATTENUATION BARRIER	10-15-09
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12

8/2/2018

R100871.DGN

INDEX OF SHEETS AND STANDARD DRAWINGS

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(2) GOVERNING SPECIFICATIONS AND GEN. NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
303-1_____	AGGREGATE BASE COURSE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1_____	CONCRETE DITCH PAVING
617-1_____	GUARDRAIL TERMINAL (TYPE 2)
620-1_____	MULCH COVER
JOB 100871__	ARCHITECTURAL FINISH
JOB 100871__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 100871__	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 100871__	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 100871__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 100871__	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 100871__	CONCRETE DITCH PAVING
JOB 100871__	CULVERT CLEAN OUT
JOB 100871__	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 100871__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 100871__	EXTENSION FOR PIPE CULVERTS
JOB 100871__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 100871__	GEOSYNTHETIC INTERNAL REINFORED EMBANKMENT CONSTRUCTION
JOB 100871__	MAINTENANCE OF TRAFFIC
JOB 100871__	MANDATORY ELECTRONIC CONTRACT
JOB 100871__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 100871__	NESTING SITES OF MIGRATORY BIRDS
JOB 100871__	PARTNERING REQUIREMENTS
JOB 100871__	PROTECTION OF WATER QUALITY AND WETLANDS
JOB 100871__	REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE
JOB 100871__	SCARIFYING CONCRETE PAVEMENT
JOB 100871__	SHORING
JOB 100871__	SHORING FOR CULVERTS
JOB 100871__	SOIL STABILIZATION
JOB 100871__	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 100871__	STORM WATER POLLUTION PREVENTION PLAN
JOB 100871__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 100871__	TEMPORARY TERMINAL ANCHOR FOR WIRE ROPE SAFETY FENCE
JOB 100871__	TEXTURED COATING FINISH
JOB 100871__	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 100871__	UTILITY ADJUSTMENTS
JOB 100871__	VALUE ENGINEERING
JOB 100871__	WARM MIX ASPHALT
JOB 100871__	WIRE ROPE SAFETY FENCE (POST REPAIR)
JOB 100871__	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS
JOB 100871__	WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
6. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
7. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

8/9/2018

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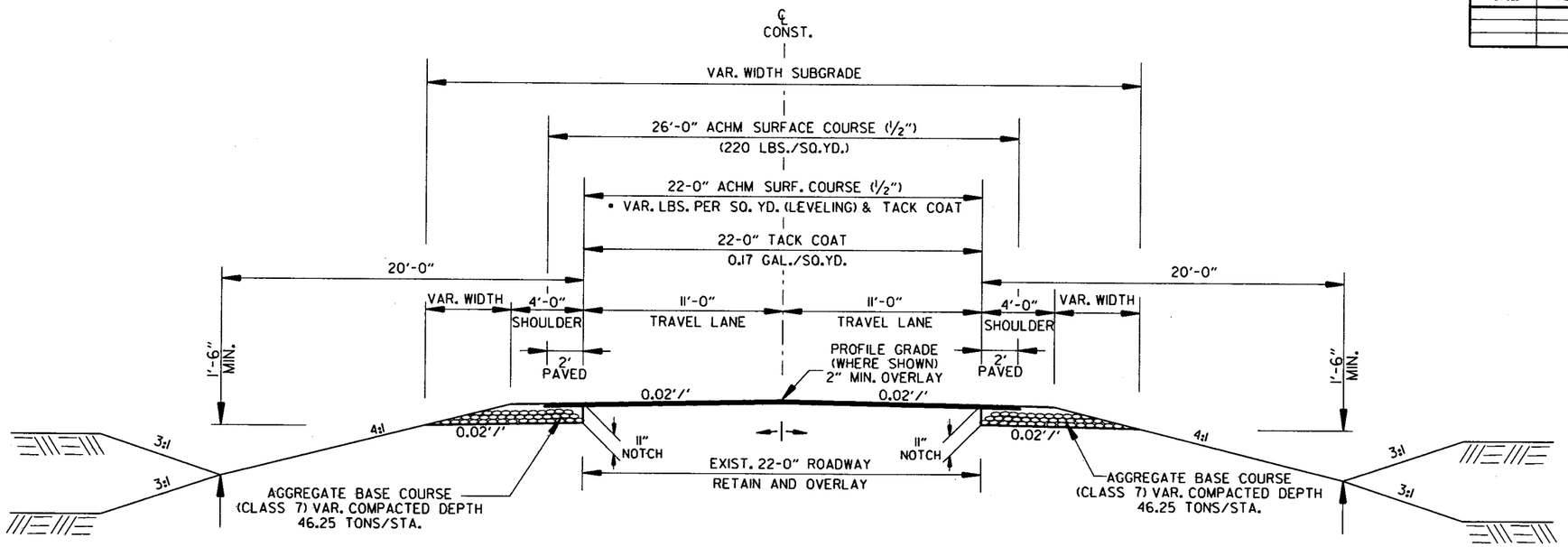
				6	ARK.			
				JOB NO.		100871	4	87

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



NOTCH AND WIDENING
STA. 100+33.92 - STA. 100+56.37

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTES:

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

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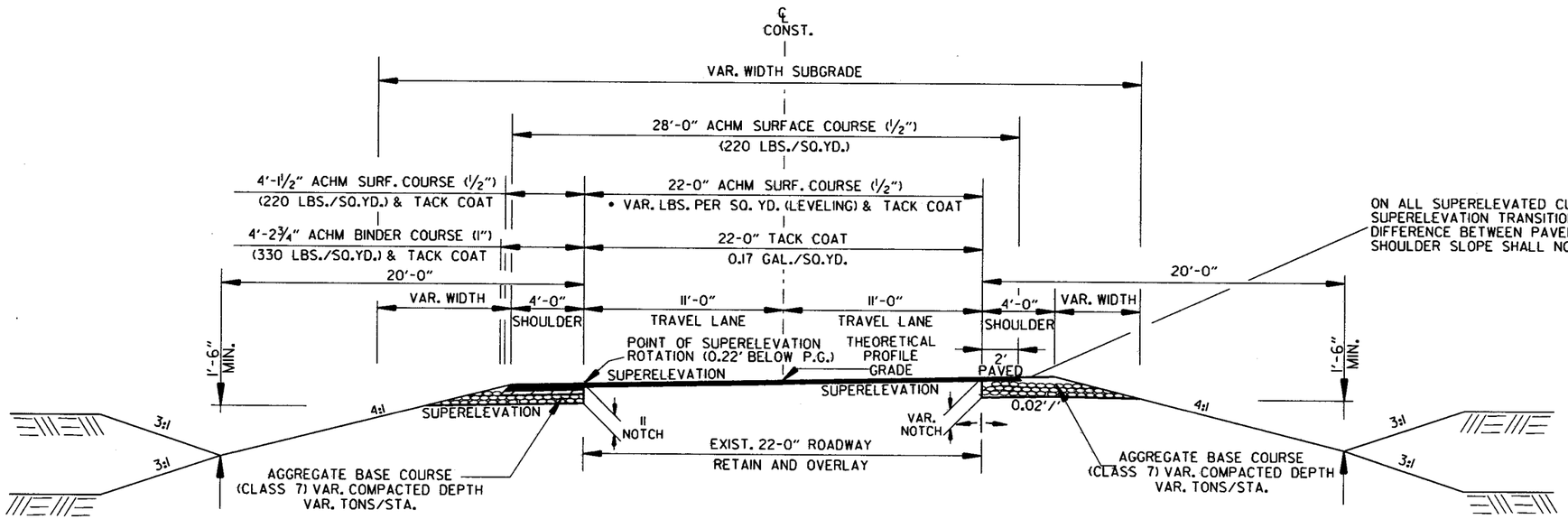

ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

NOTCH AND WIDENING - SUPERELEVATION
STA. 100+56.37 - STA. 101+94.05

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

8/10/2018

R100871.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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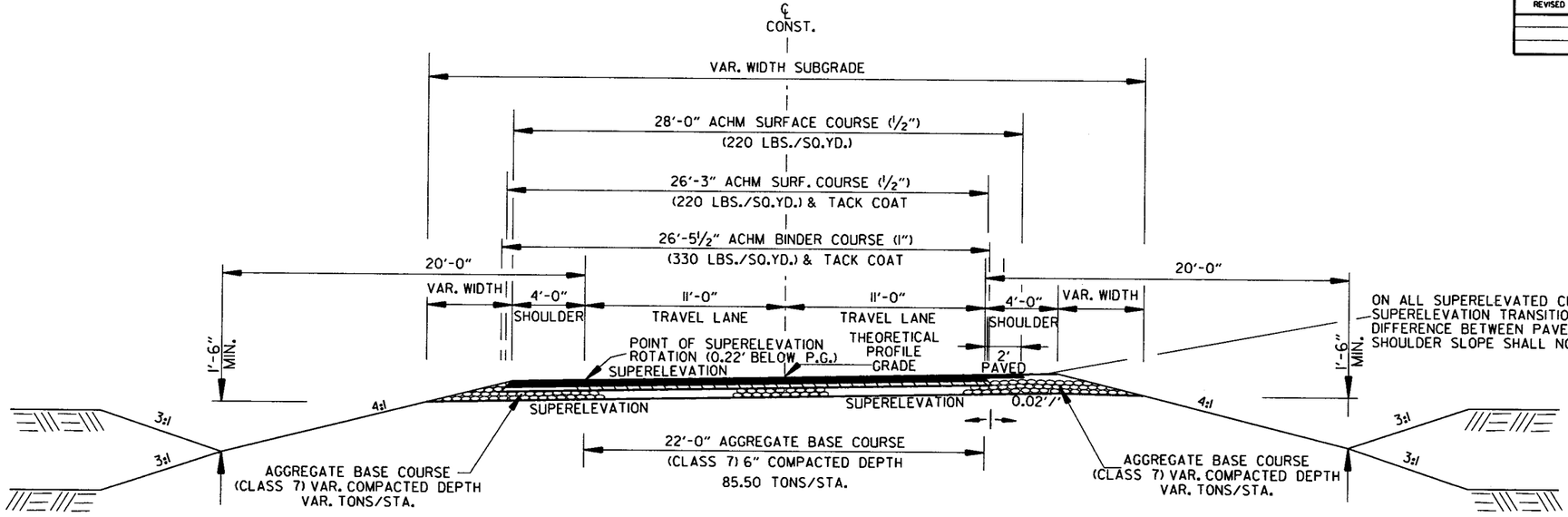
No. 11425
TRINITY D. SMITH
8-10-18



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FULL DEPTH SECTION - SUPERELEVATION
STA. 101+94.05 - STA. 104+00.00

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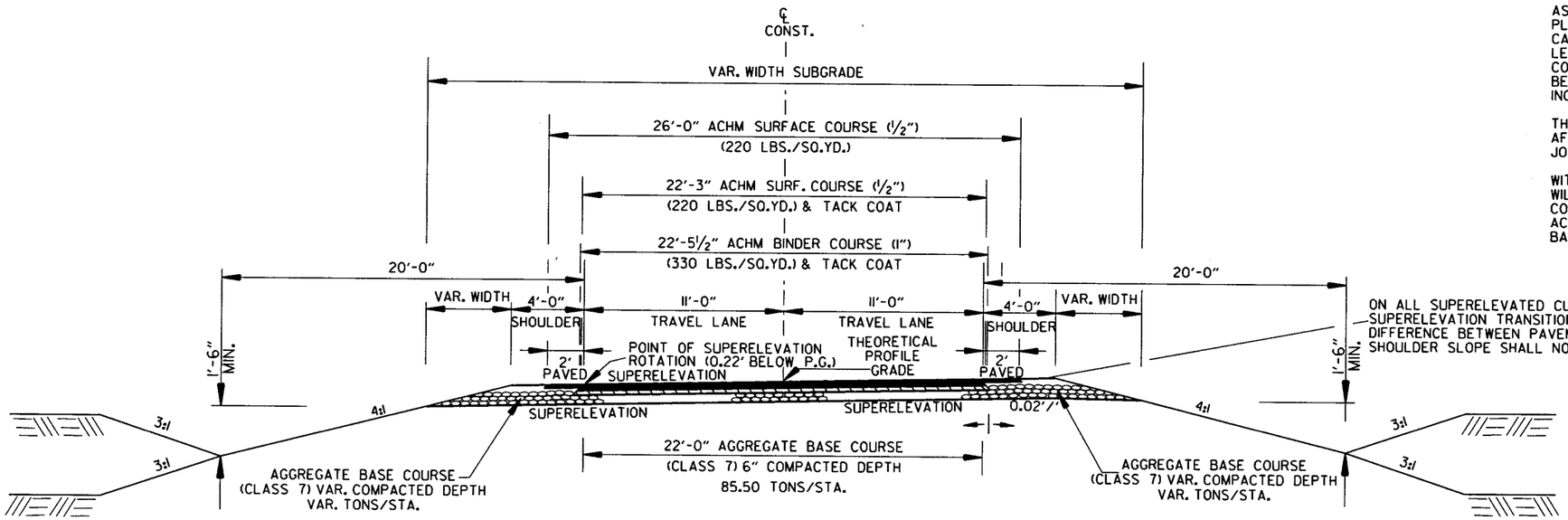

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FULL DEPTH SECTION - SUPERELEVATION
STA. 104+00.00 - STA. 108+79.32

8/8/2018

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TYPICAL SECTIONS OF IMPROVEMENT

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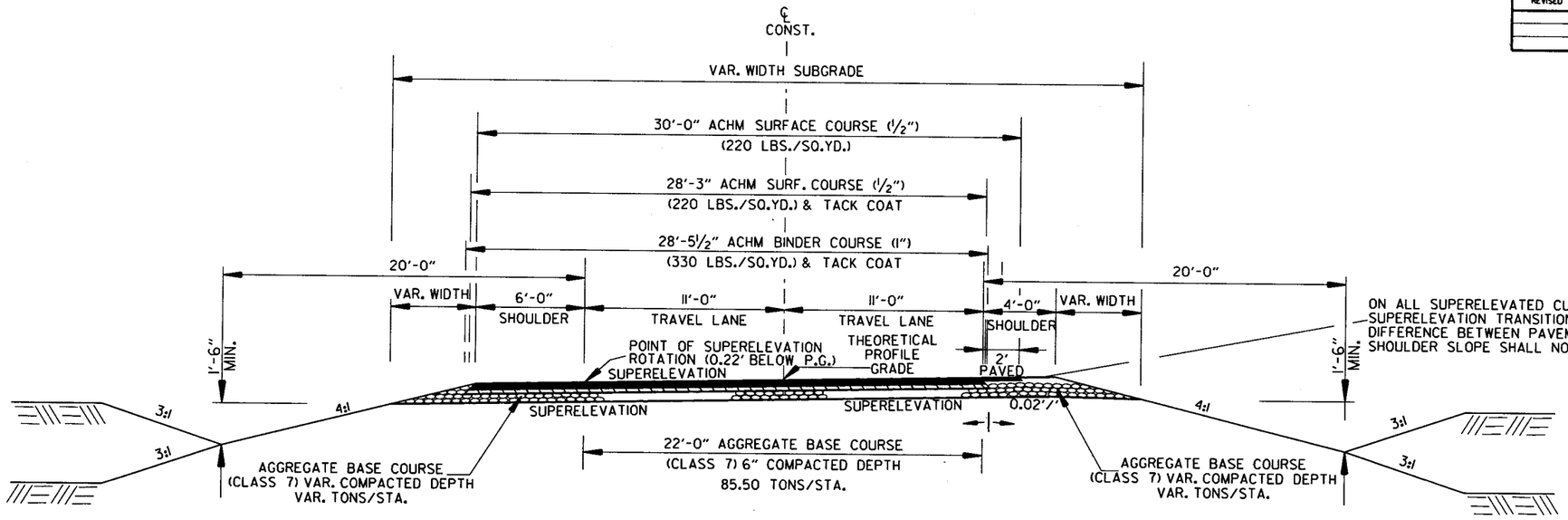
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



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FULL DEPTH SECTION - SUPERELEVATION
STA. 112+96.68 - STA. 119+58.71

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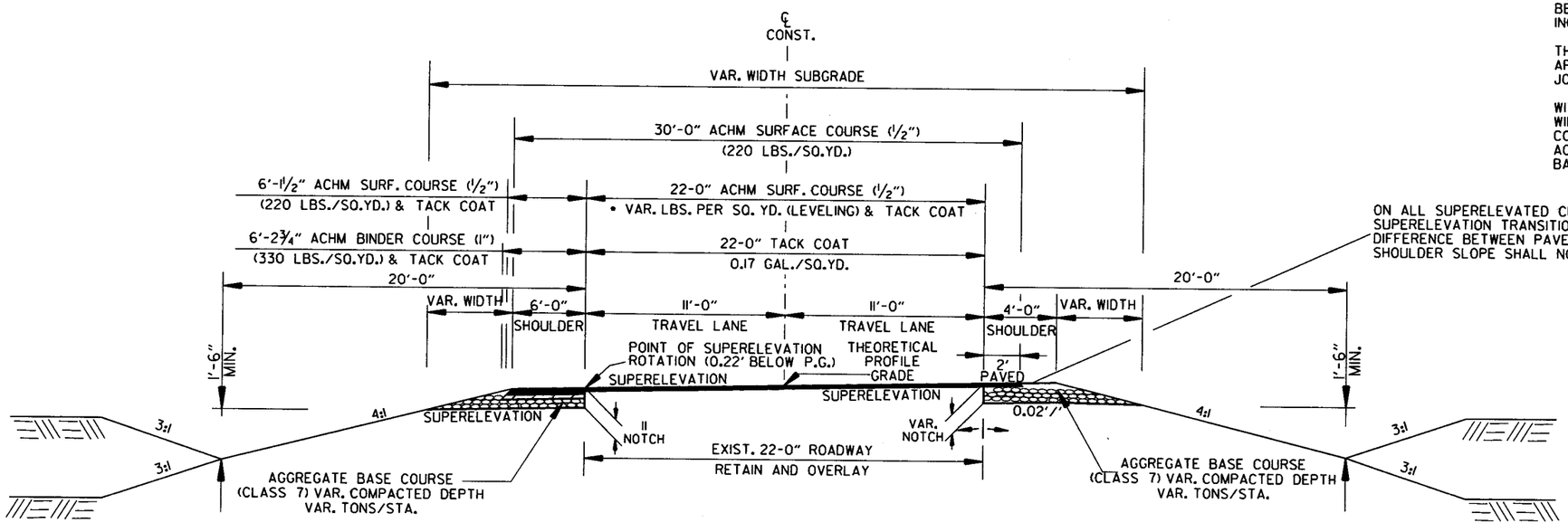

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NOTCH AND WIDENING - SUPERELEVATION
STA. 119+58.71 - STA. 120+74.55

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

8/8/2018

R100871.DGN

TYPICAL SECTIONS OF IMPROVEMENT

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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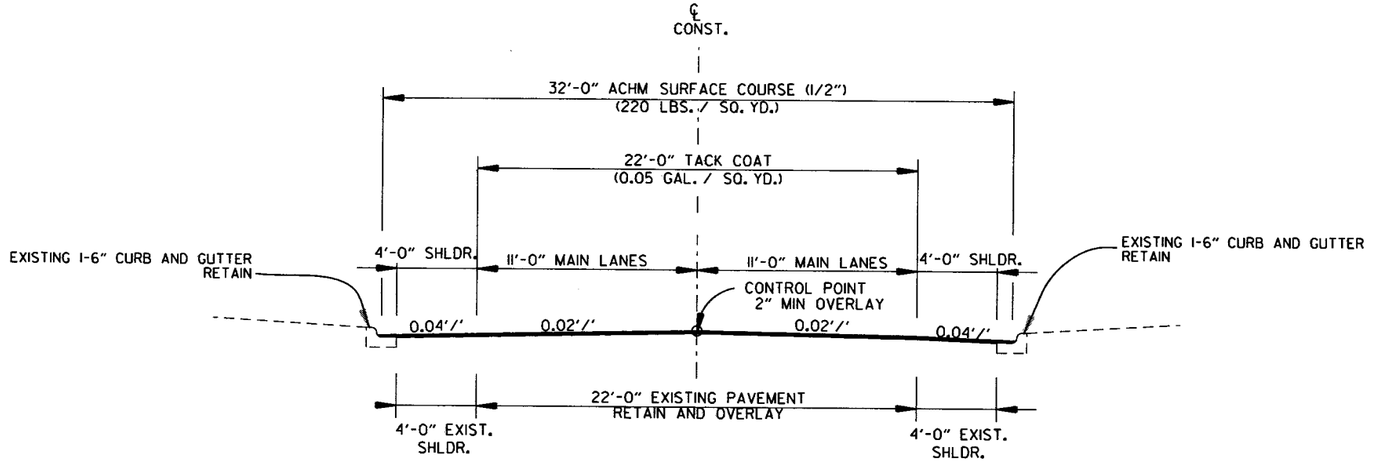
No. 11425
TRINITY D. SMITH
8-10-18



OVERLAY SECTION
STA. 98+80.54 - STA. 100+~~33.92~~
STA. 120+74.55 - STA. 122+28.00

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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
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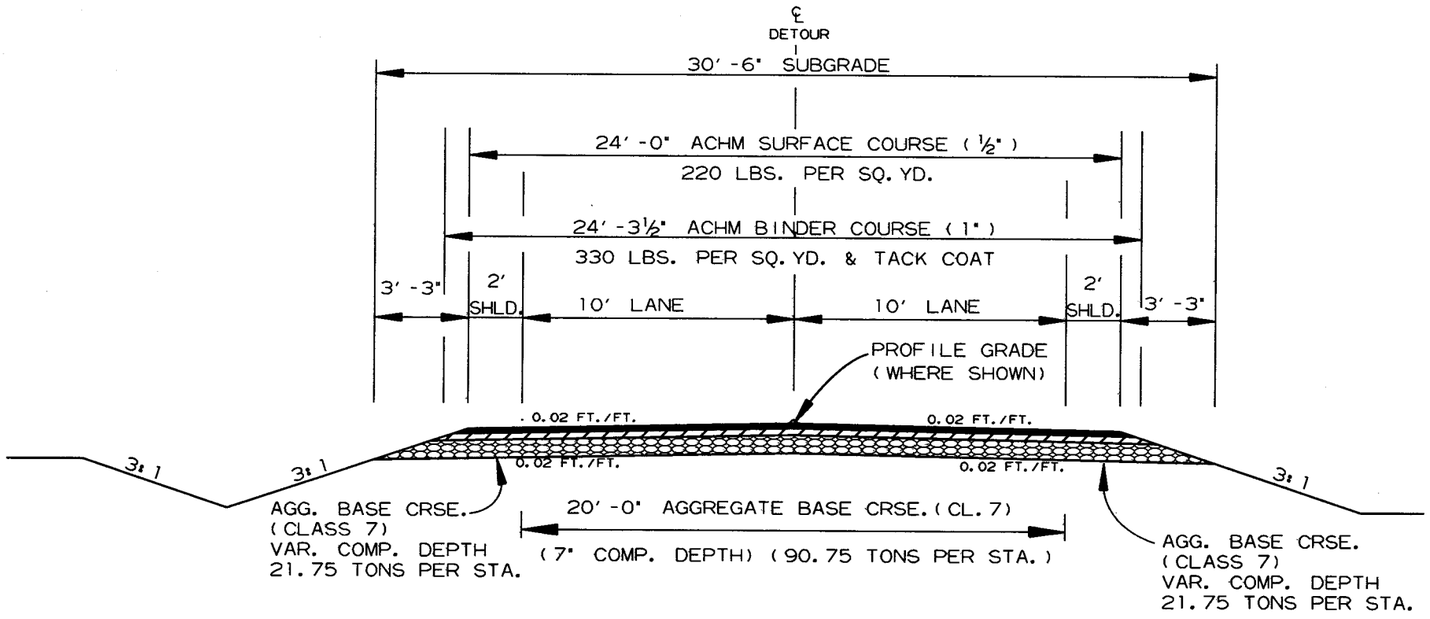
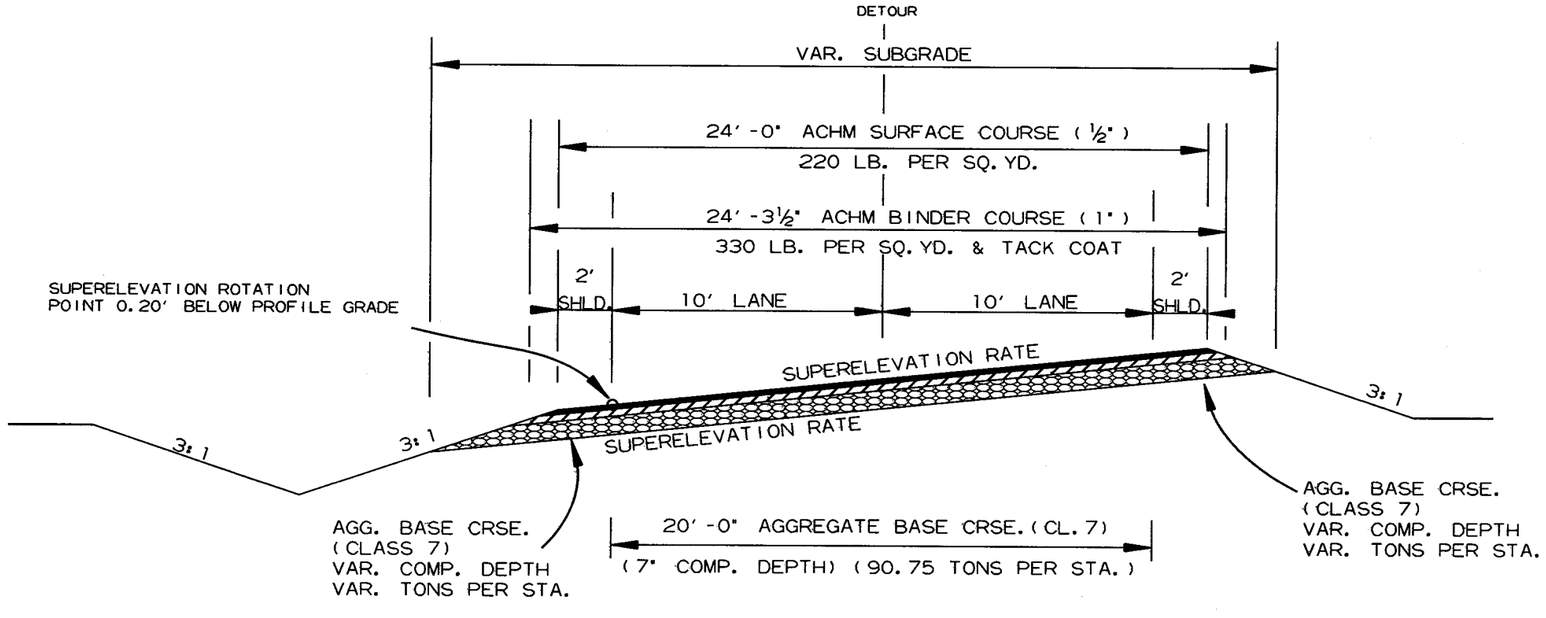
No. 11435
TRINITY D. SMITH
8-10-18



TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD
NORMAL CROWN



TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD
SUPERELEVATION

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

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.

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

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TYPICAL SECTIONS OF IMPROVEMENT

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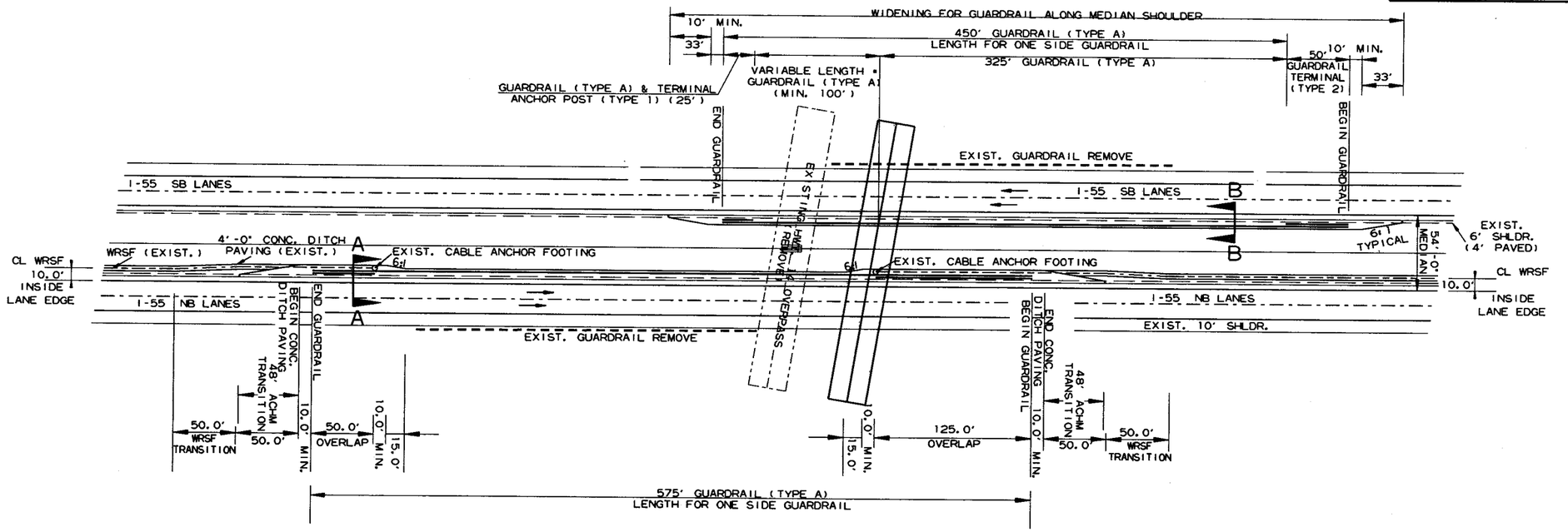
				6	ARK.			
				JOB NO.		100871	9	87

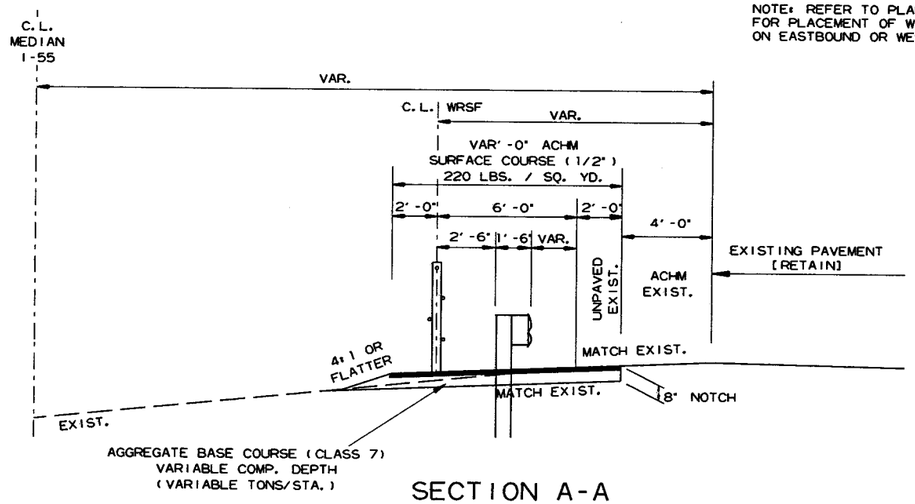
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

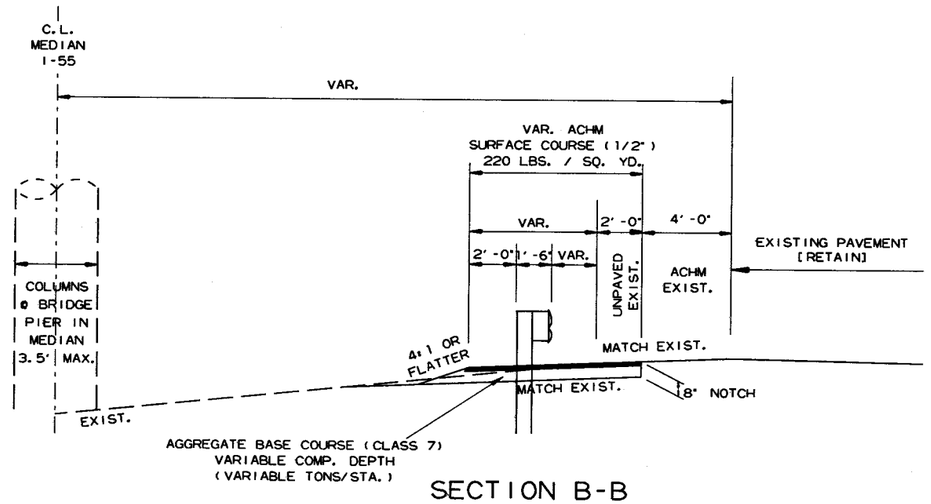


DETAIL AT OVERPASSES

NOTE: REFER TO PLAN SHEETS FOR PLACEMENT OF WIRE ROPE SAFETY FENCE ON EASTBOUND OR WESTBOUND FORESLOPES.



SECTION A-A



SECTION B-B

DETAILS OF SHOULDER WIDENING FOR GUARDRAIL AND OVERLAPS WITH ENDS OF WIRE ROPE SAFETY FENCE

8/2/2018

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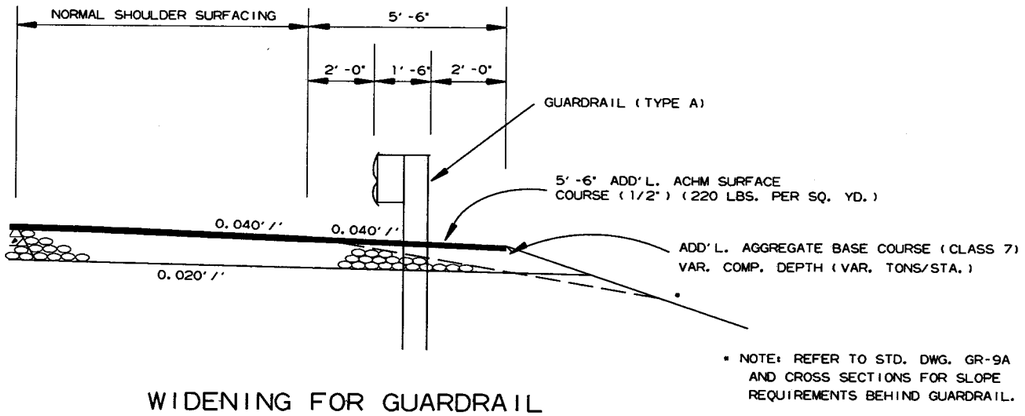
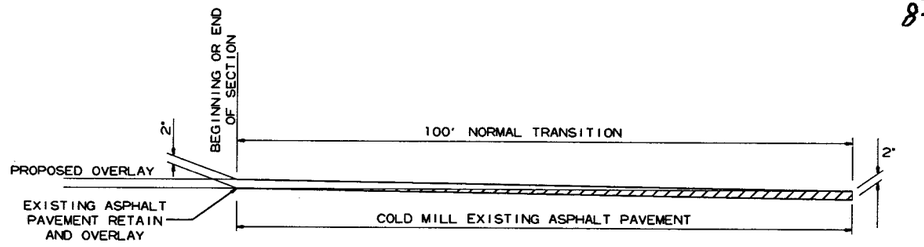
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	10	87

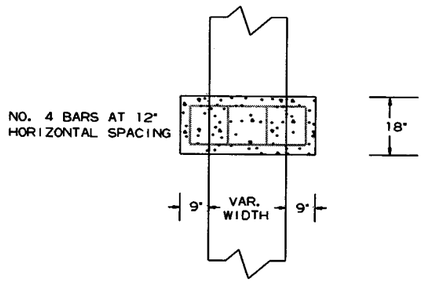
(2) SPECIAL DETAILS



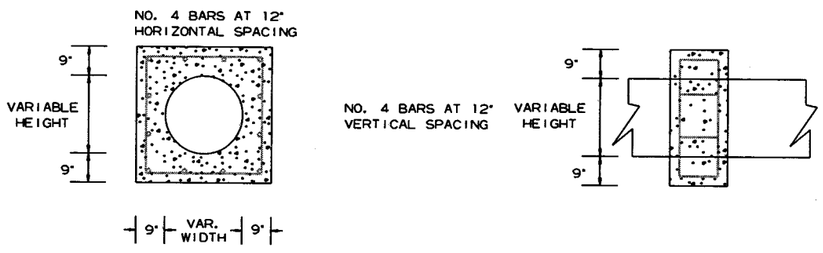
WIDENING FOR GUARDRAIL



DETAIL FOR TRANSITIONS

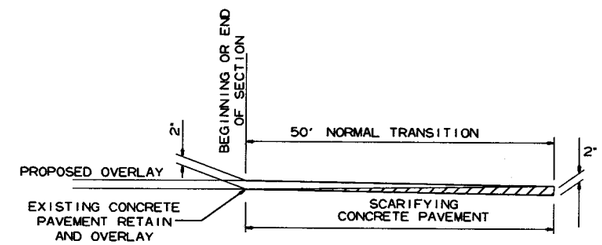


TOP VIEW



FRONT VIEW SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



DETAIL FOR TRANSITIONS

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REGISTERED PROFESSIONAL ENGINEER
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SPECIAL DETAILS

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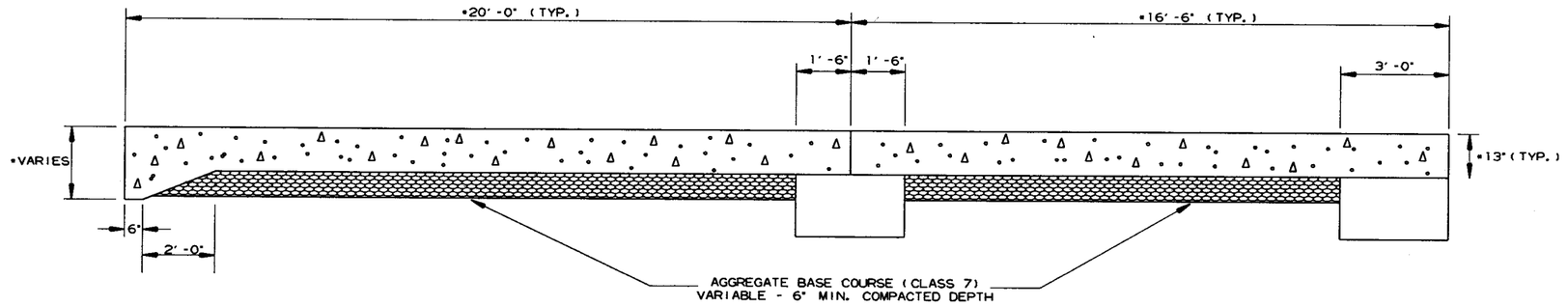
				6	ARK.			
				JOB NO.		100871	11	87

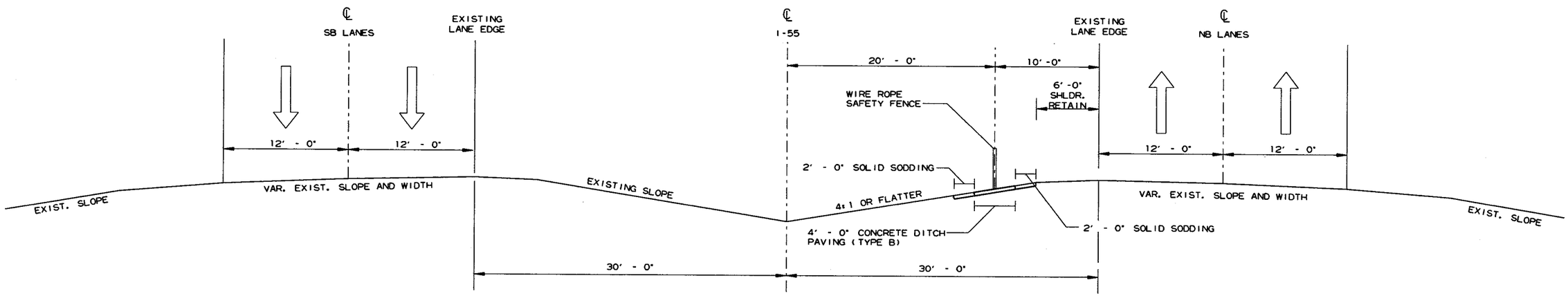
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



• SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB



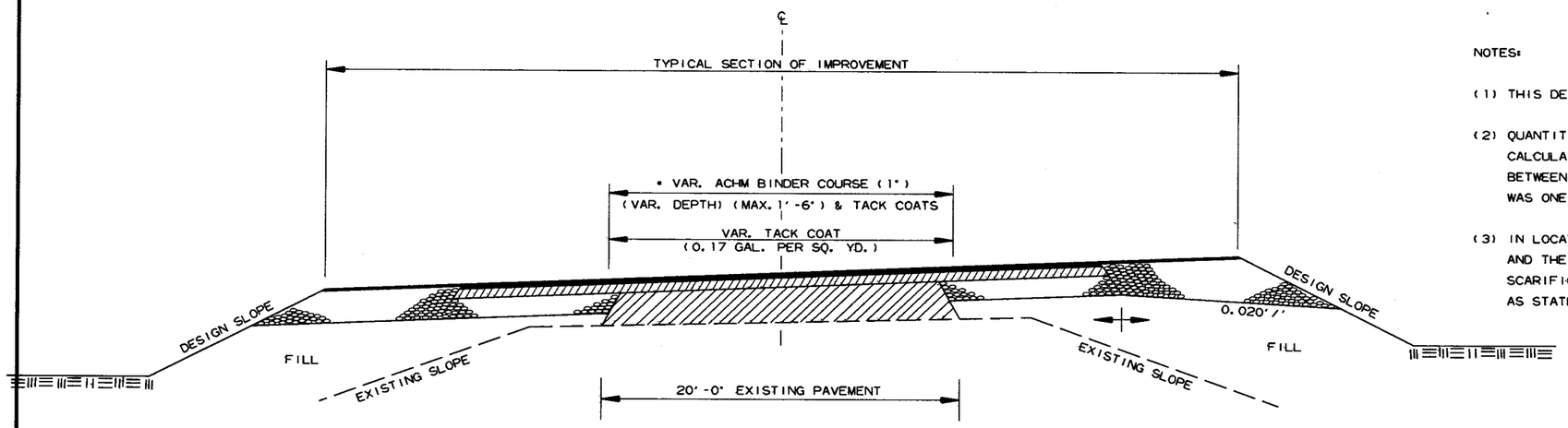
TYPICAL SECTION OF IMPROVEMENT FOR WIRE ROPE SAFETY FENCE RIGHT OF CENTERLINE

8/2/2018

R100871.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.		100871	12	87

(2) SPECIAL DETAILS



* 6" AGGREGATE BASE COURSE (CLASS 7) TO BE REPLACED WITH ACHM BINDER COURSE (1")

METHOD OF RAISING GRADE

NOTES:

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

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

(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.

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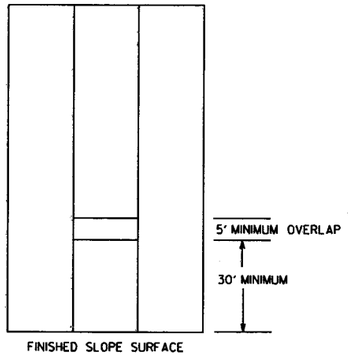
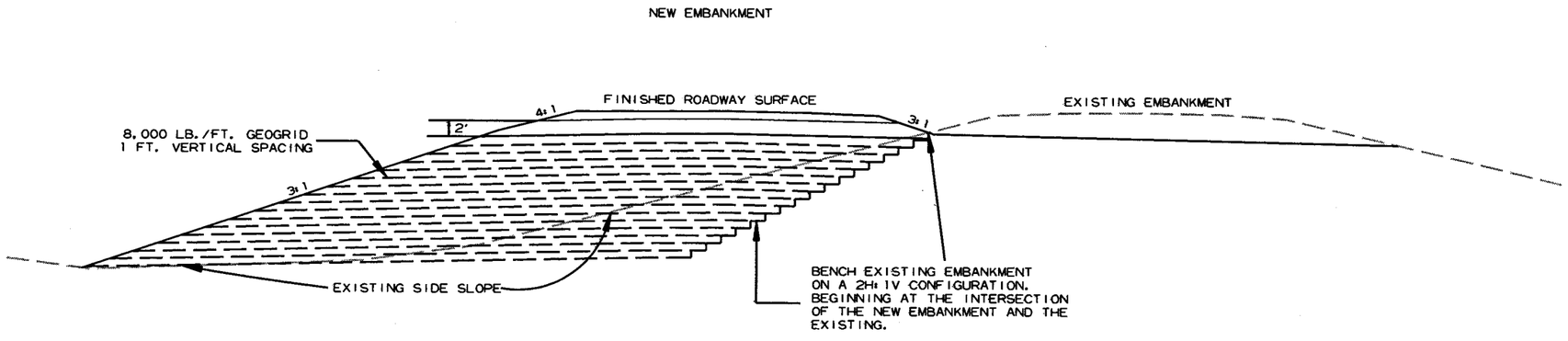
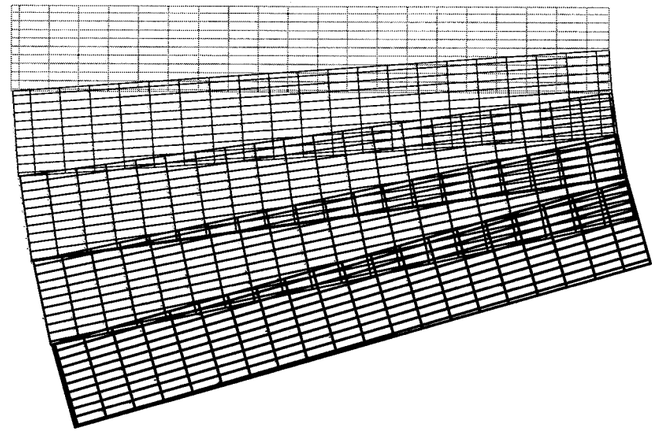


GEOGRID OVERLAP



REINFORCED SLOPE DESIGN



SIDE SLOPE TO END SLOPE GEOGRID TRANSITION

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SPECIAL DETAILS

DATE OF REVISION	REVISIONS

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				6	ARK.			
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(2) TEMPORARY EROSION CONTROL DETAILS

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STA. 100+09 - STA. 103+37
INSTALL E-II = 500 LIN. FT.

STA. 103+73 - STA. 109+20
INSTALL E-II = 1000 LIN. FT.

RAMP 3

RAMP 4

STA. 100+00 - STA. 103+41
INSTALL E-II = 425 LIN. FT.

STA. 103+56 - STA. 109+20
INSTALL E-II = 600 LIN. FT.

STA. 331+47 - STA. 337+58
INSTALL E-II = 625 LIN. FT.

STA. 331+91 - STA. 341+00
INSTALL E-II = 925 LIN. FT.

STA. 110+27 - STA. 117+67
INSTALL E-II = 875 LIN. FT.

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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CLEARING AND GRUBBING
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.		100871	14	87

(2) TEMPORARY EROSION CONTROL DETAILS

DATE OF REVISION	REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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RAMP 2

STA. 341+00 - STA. 120+89
INSTALL E-II = 2150 LIN. FT.

STA. 110+27 - STA. 117+67
INSTALL E-II = 875 LIN. FT.

STA. 117+76 - STA. 120+77
INSTALL E-II = 500 LIN. FT.

RAMP 1

P.I. 114+22.67
P.C. 112+71.24
P.T. 115+73.85
P.C. 117+66.50
P.I. 119+21.76
P.T. 120+76.73
P.I. 121+38.25
POE 122+27.98

S 85°10'58" E
N 88°36'45" E
N 88°31'25" E

SURVEY BASELINE N 86°22'23" E 916.59'
SURVEY BASELINE S 87°57'06" E 620.54'

PN4 PD=STD ALUM. MON. STAMPED PN=4 MARIE
STAMPED PN=5 MARIE

PN#214 PD=ST60DNL
PN#208 PD=ST60DNL
PN#213 PD=ST60DNL
PN#212 PD=ST60DNL
PN#211 PD=ST60DNL
PN#210 PD=ST60DNL

DON SLATON DRIVE

115 120 122

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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DATE OF REVISION	REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	15	87

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
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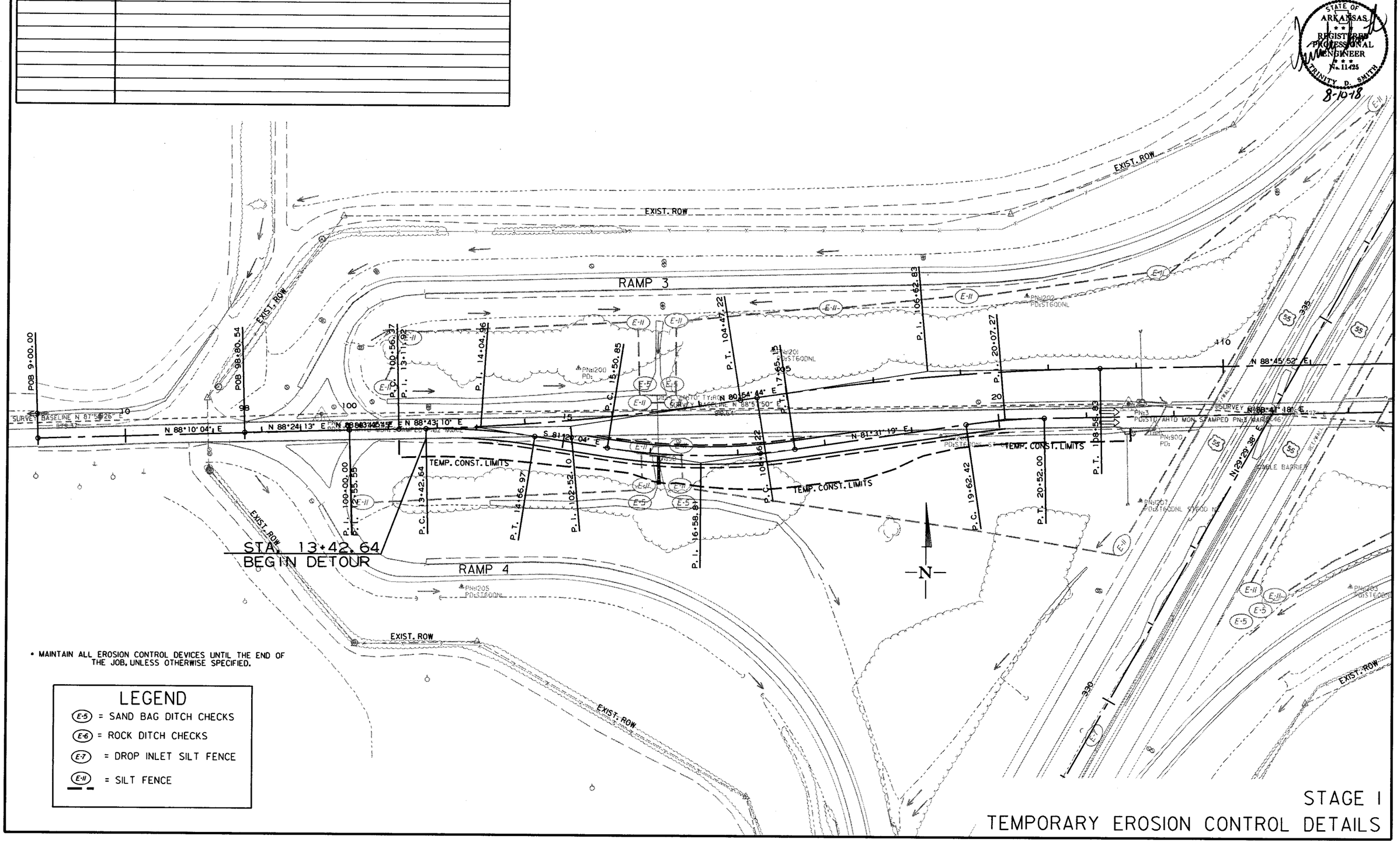
8-10-18



- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

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

STAGE I
TEMPORARY EROSION CONTROL DETAILS

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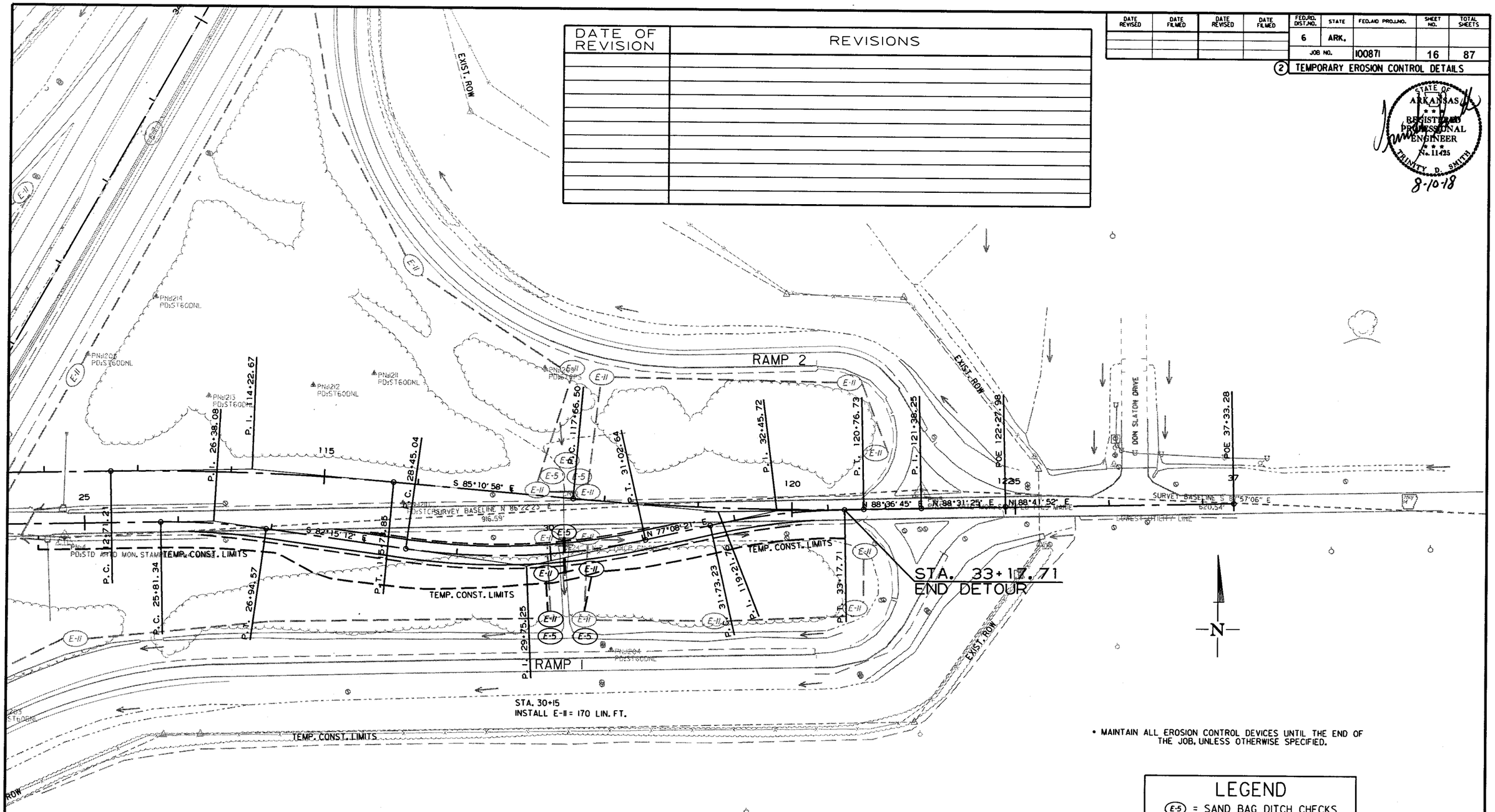
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100871		16	87

(2) TEMPORARY EROSION CONTROL DETAILS

DATE OF REVISION	REVISIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

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

STAGE I
TEMPORARY EROSION CONTROL DETAILS

8/8/2018

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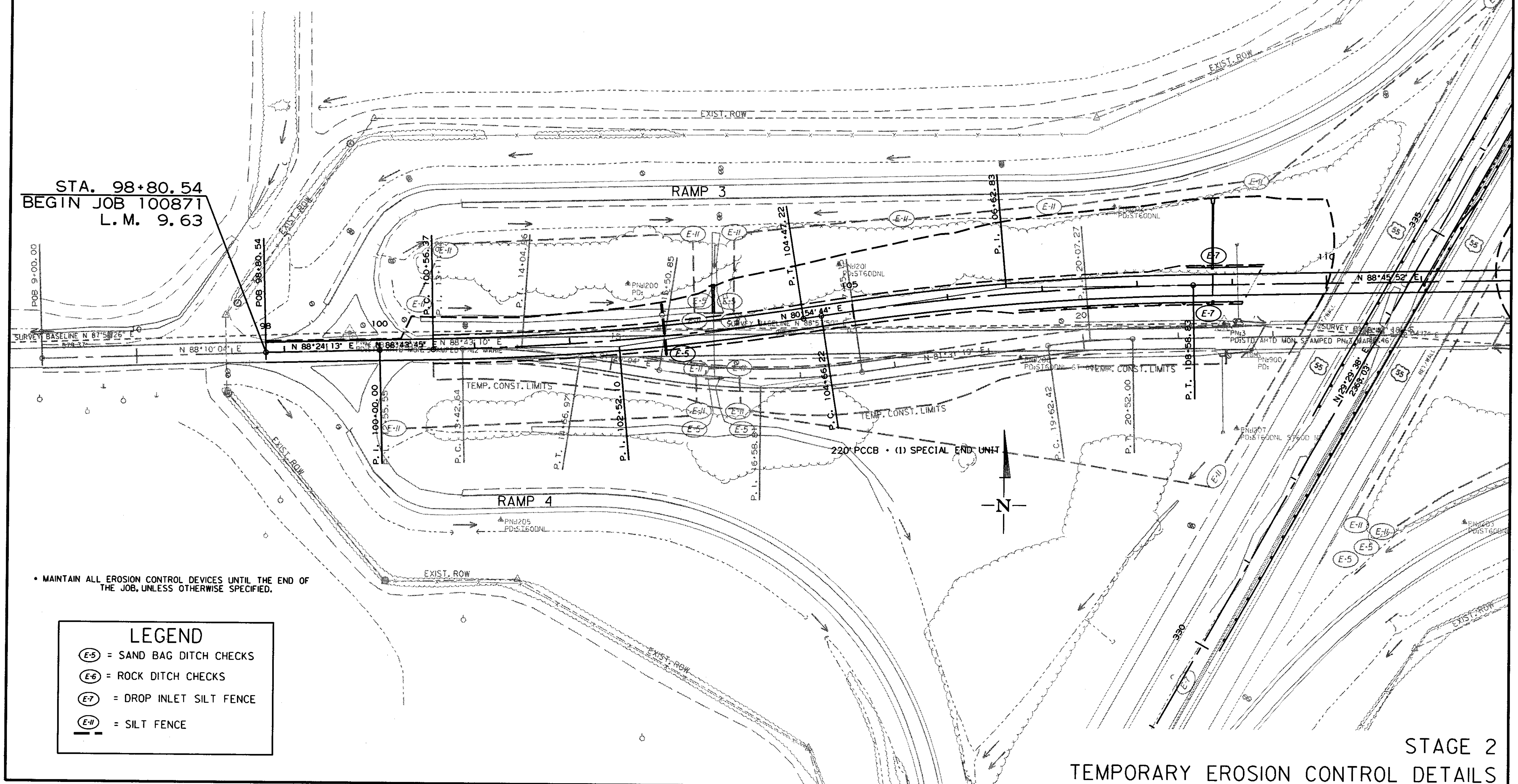
DATE OF REVISION	REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	17	87

(2) TEMPORARY EROSION CONTROL DETAILS



• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

STAGE 2
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.		100871	18	87

(2) TEMPORARY EROSION CONTROL DETAILS

DATE OF REVISION	REVISIONS

STATE OF ARKANSAS
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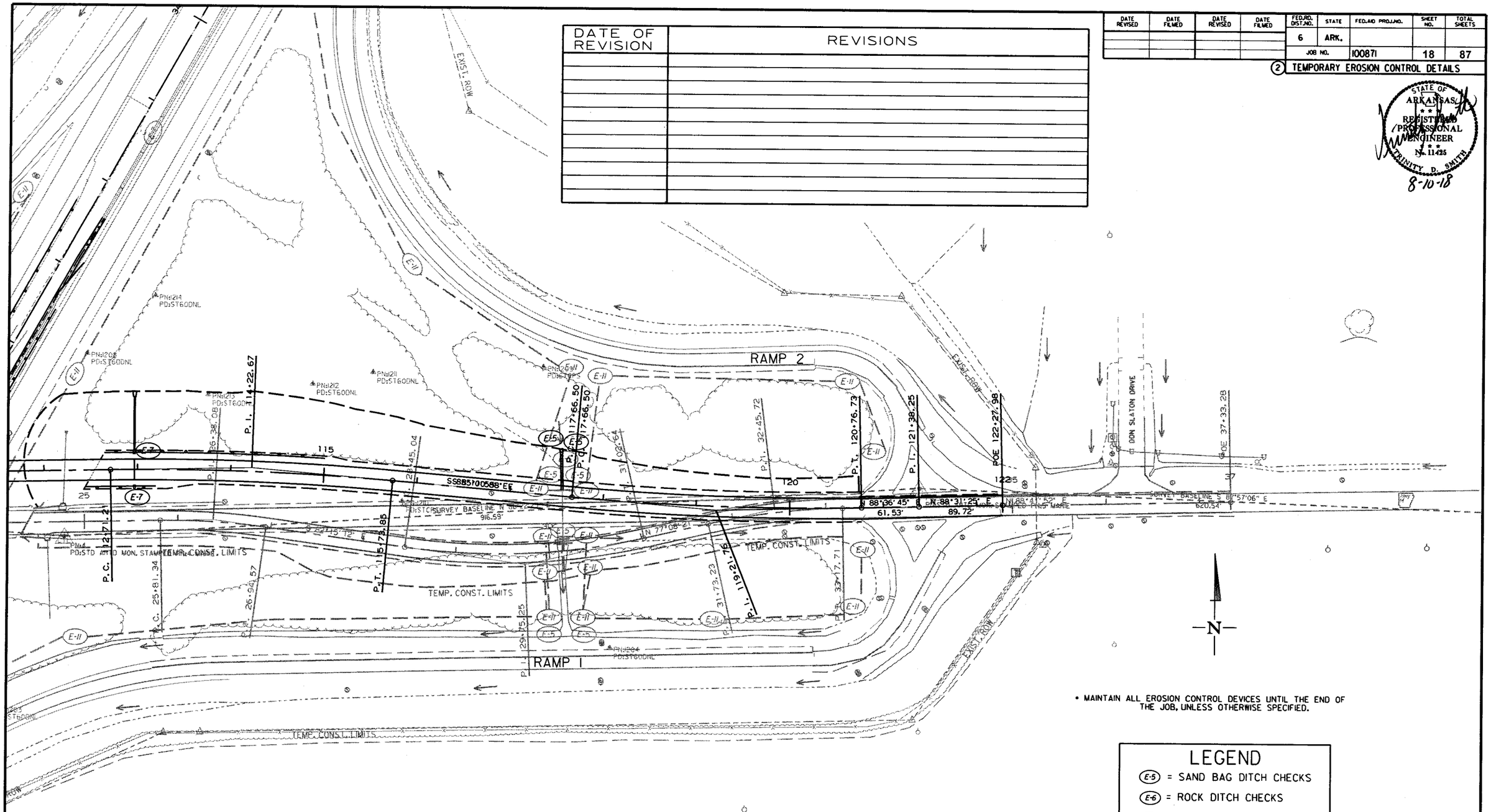

• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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DATE OF REVISION	REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	19	87

(2) TEMPORARY EROSION CONTROL DETAILS

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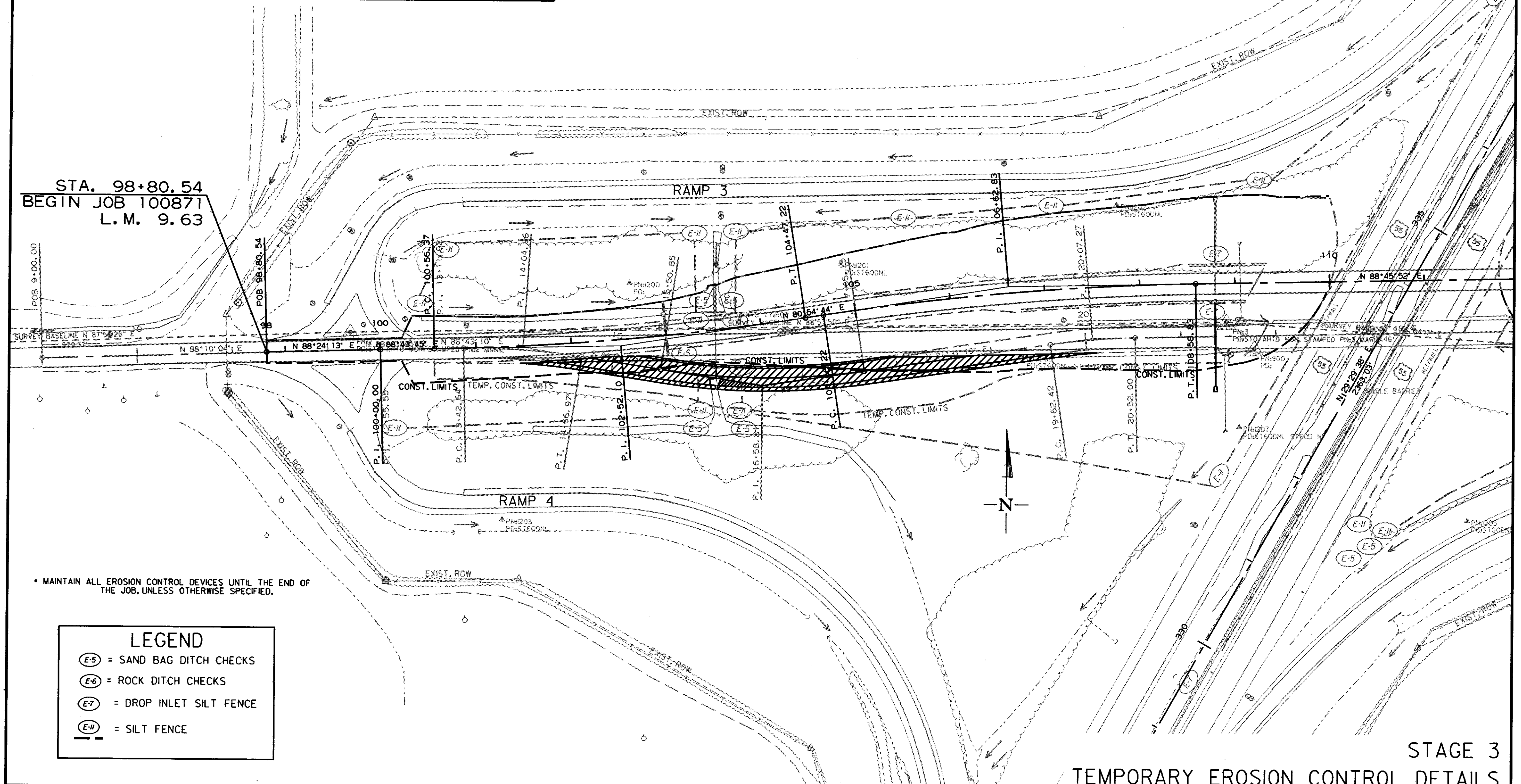
8-10-18



• MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

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

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

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DATE OF REVISION	REVISIONS

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				6	ARK.			
				JOB NO.		100871	20	87

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

RAMP 2

RAMP 1

EXIST. ROW

CONST. LIMITS

TEMP. CONST. LIMITS

SURVEY BASELINE N 88°45'59" E 916.59'

SURVEY BASELINE S 87°57'06" E 820.34'

DON SLATON DRIVE

STA. 122+28.00
END JOB 100871

N

- MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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STAGE 3
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.		100871	21	87

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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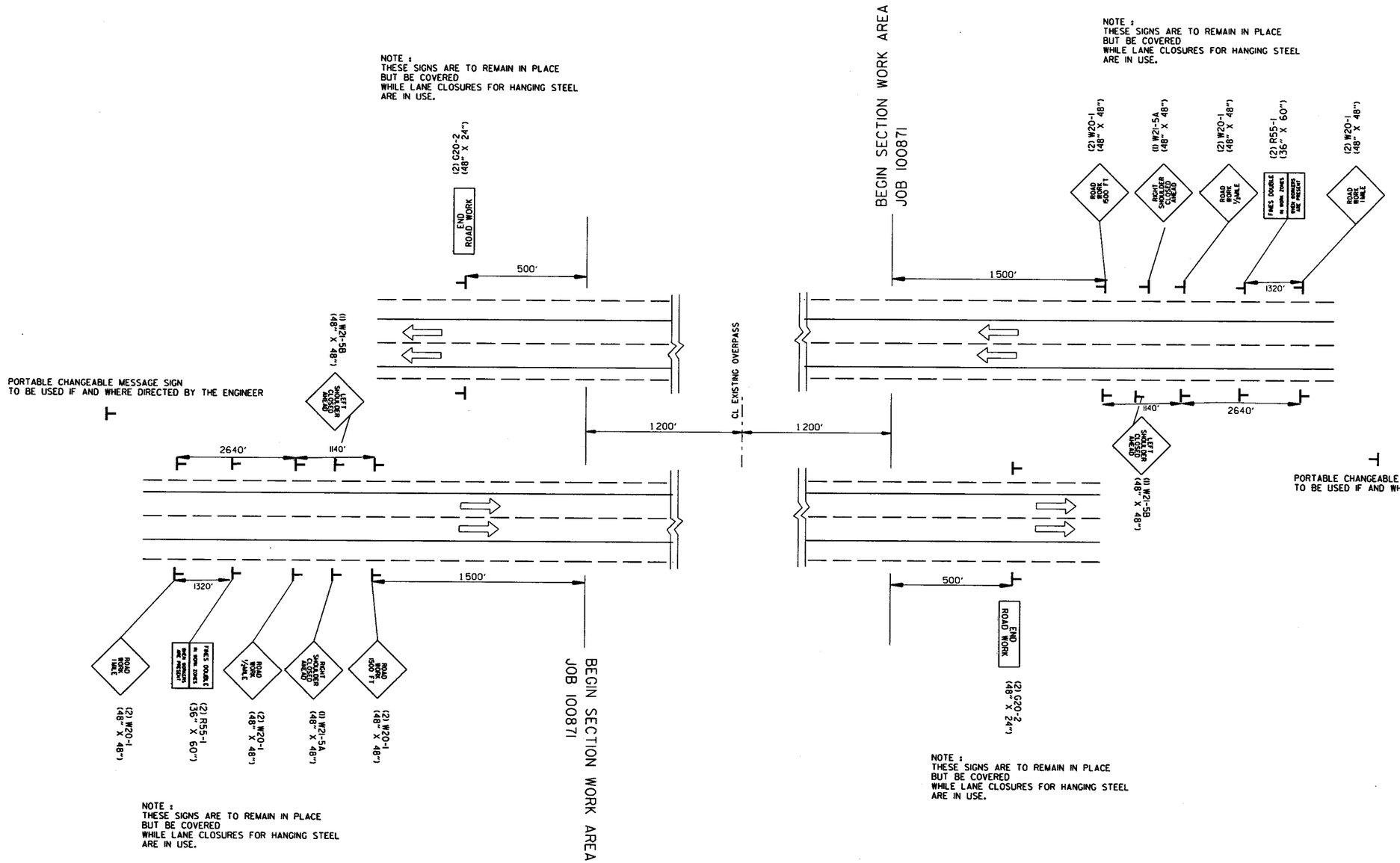
8-10-18



ADVANCE SIGNS AT BEGINNING AND END OF JOB ON I-55
ALL STAGES
ONE SET NEEDED

8/8/2018

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MAINTENANCE OF TRAFFIC DETAILS

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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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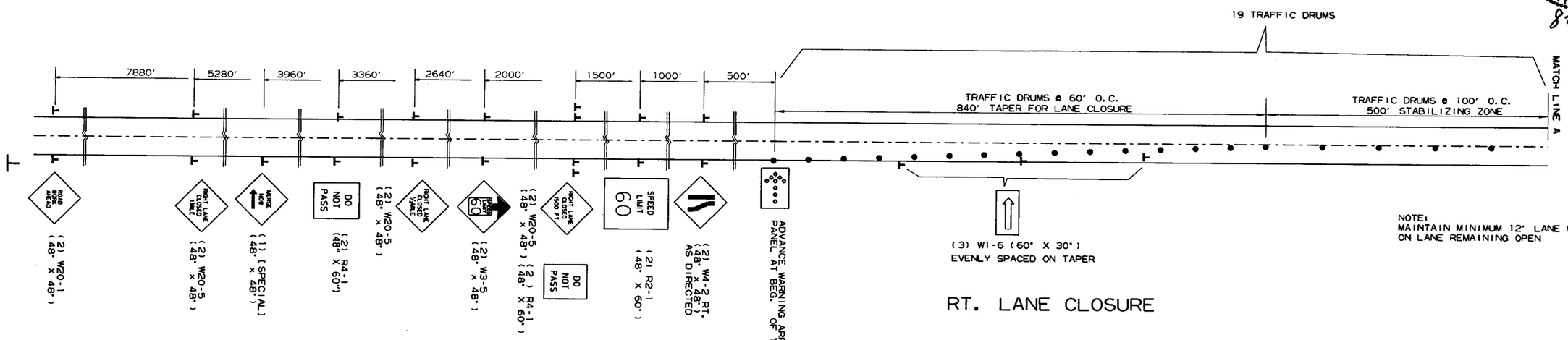
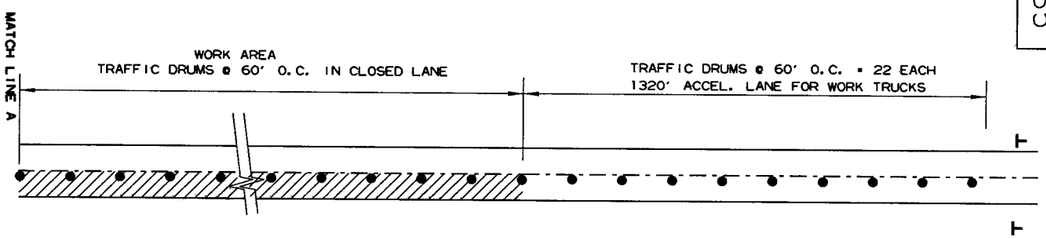
No. 11425
TRINITY D. SMITH
8-10-18

PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



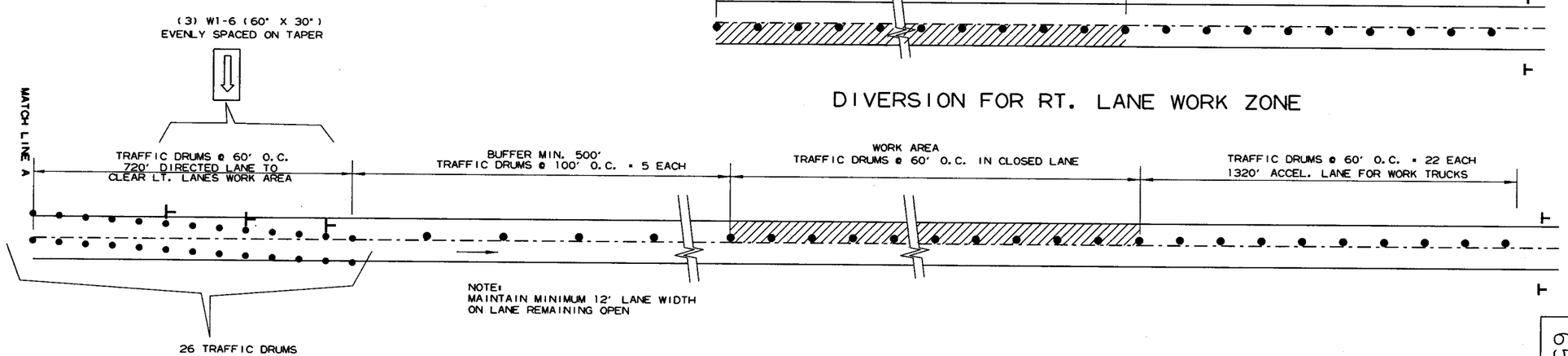
RT. LANE CLOSURE

SPEED LIMIT 70 / TRUCKS 65
(2) R2-1 (48" X 60")
(2) R2-2 (48" X 48")



DIVERSION FOR RT. LANE WORK ZONE

SPEED LIMIT 70 / TRUCKS 65
(2) R2-1 (48" X 60")
(2) R2-2 (48" X 48")



DIVERSION FOR LT. LANE WORK ZONE

SPEED LIMIT 70 / TRUCKS 65
(2) R2-1 (48" X 60")
(2) R2-2 (48" X 48")

SPEED LIMIT SIGNS ARE ALSO PROVIDED FOR PLACEMENT PAST ENTRANCE RAMPS WITHIN THE WORK ZONE.

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MAINTENANCE OF TRAFFIC DETAILS

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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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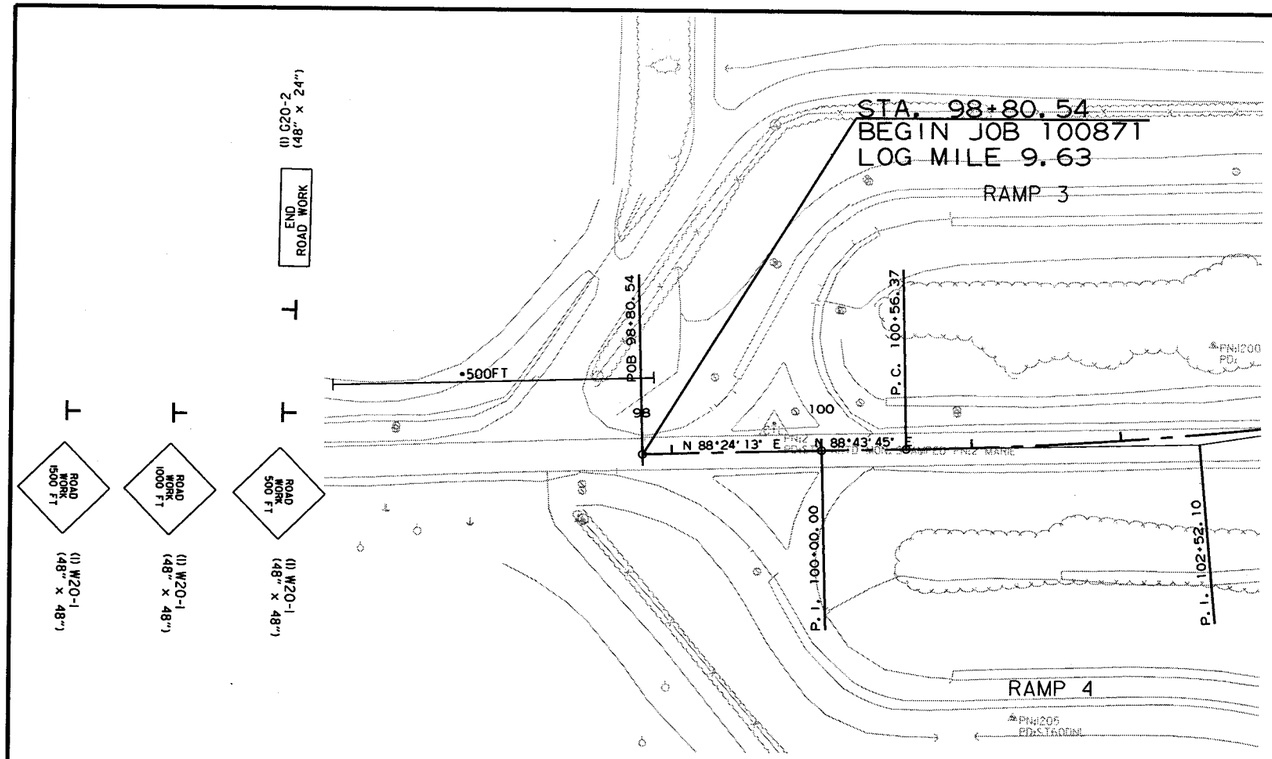
TRINITY D. SMITH
8-10-18



HWY. 14 - ADVANCE WARNING
END OF JOB
NOT TO SCALE

END ROAD WORK	(2) G20-2 (48" X 24")	PLACE ON RAMP 2 & RAMP 4
ROAD WORK AHEAD	(2) W20-1 (48" x 48")	PLACE ON RAMP 1& RAMP 3

* SHOULDER CLOSED — (2) RSP-1 (48" X 30")

* DO NOT PASS — (2) R4-1 (24" X 30")

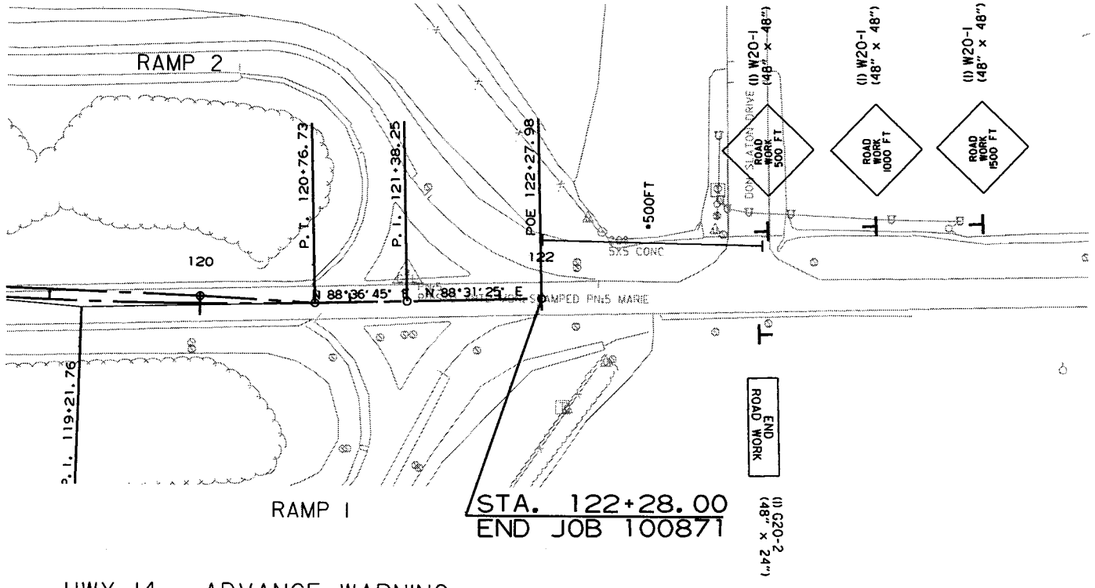
* IF AND WHERE DIRECTED BY THE ENGINEER

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.



HWY. 14 - ADVANCE WARNING
END OF JOB
NOT TO SCALE

8/8/2018

R100871.DGN

MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	24	87

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
8-10-18

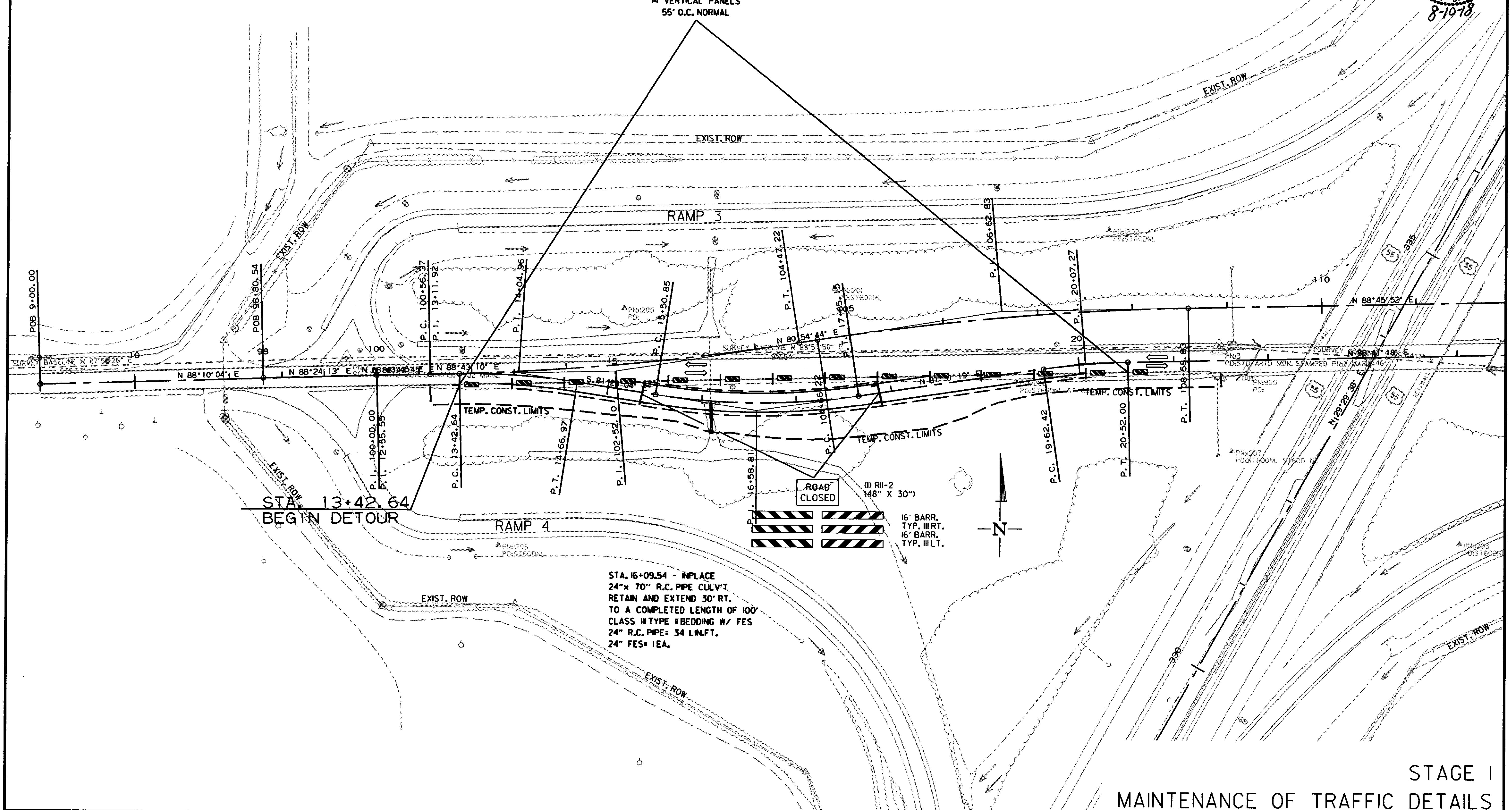
SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

STA. 100+56.37 - STA. 120+76.73
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 8082 LIN. FT.



STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

8/8/2018

R100871.DGN

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55, ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	25	87

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

STA. 100+56.37 - STA. 120+76.73
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 8082 LIN. FT.

14 VERTICAL PANELS
55' O.C. NORMAL

EXIST. ROW

RAMP 2

RAMP 1

EXIST. ROW

DON SLATON DRIVE

STA. 33+17.71
END DETOUR

TEMP. CONST. LIMITS

ROAD CLOSED

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

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

STA. 30+15.00 - INPLACE
24" x 58" R.C. PIPE CULVT
RETAIN AND EXTEND 36' RT.
TO A COMPLETED LENGTH OF 94'
CLASS III TYPE II BEDDING W/ FES
24" R.C. PIPE= 40 LIN.FT.
24" FES= 1EA.

N

8/8/2018

R100871.DGN

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	100871	26	87

(2) MAINTENANCE OF TRAFFIC DETAILS

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

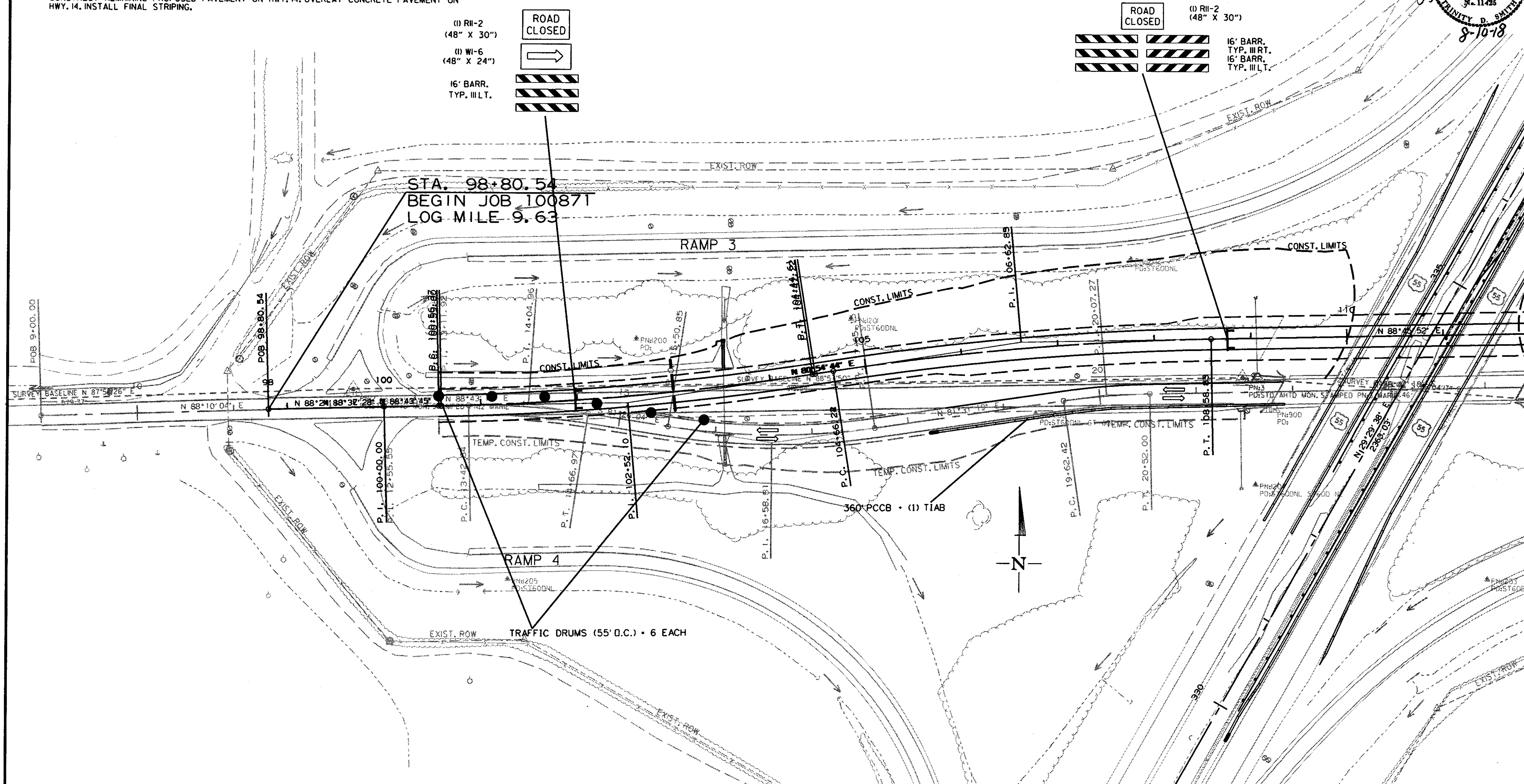
STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

DETOUR
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 6998 LIN. FT.

REMOVAL OF PERMANENT PAVEMENT MARKINGS
LT. AND RT. EDGE LINES AND DBL. C.L.
PERMANENT PAVEMENT MARKINGS = 1600 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
TRINITY D. SMITH
8-10-18



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

8/8/2018

R100871.DGN

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	27	87

(2) MAINTENANCE OF TRAFFIC DETAILS

DETOUR
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 6998 LIN. FT.

REMOVAL OF PERMANENT PAVEMENT MARKINGS
LT. AND RT. EDGE LINES AND DBL. C.L.
PERMANENT PAVEMENT MARKINGS = 1600 LIN. FT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. III RT.

RAMP 2
RAMP 1
CONST. LIMITS
TEMP. CONST. LIMITS
EXIST. ROW
SURVEY BASELINE
DON SLATON DRIVE
TRAFFIC DRUMS (55' O.C.) - 7 EACH

STA. 122+28.00
END JOB 100871

N

8/8/2018

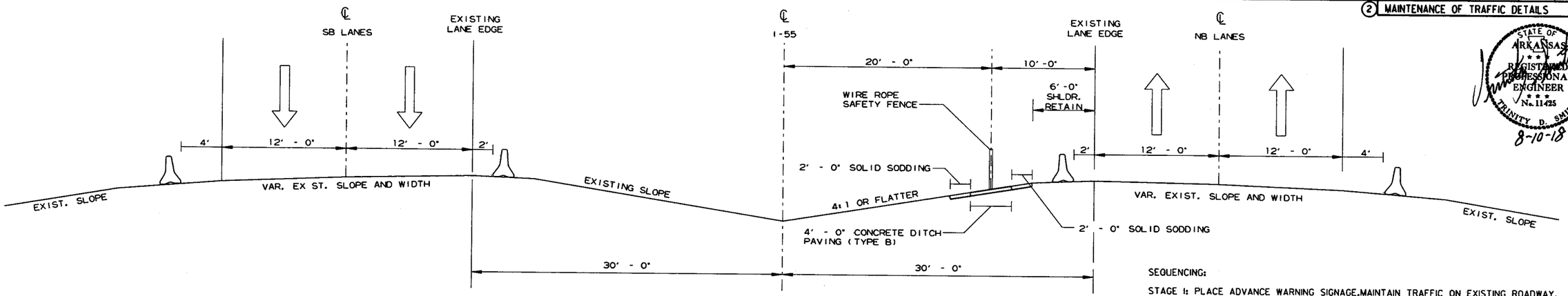
R100871.DGN

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	28	87

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



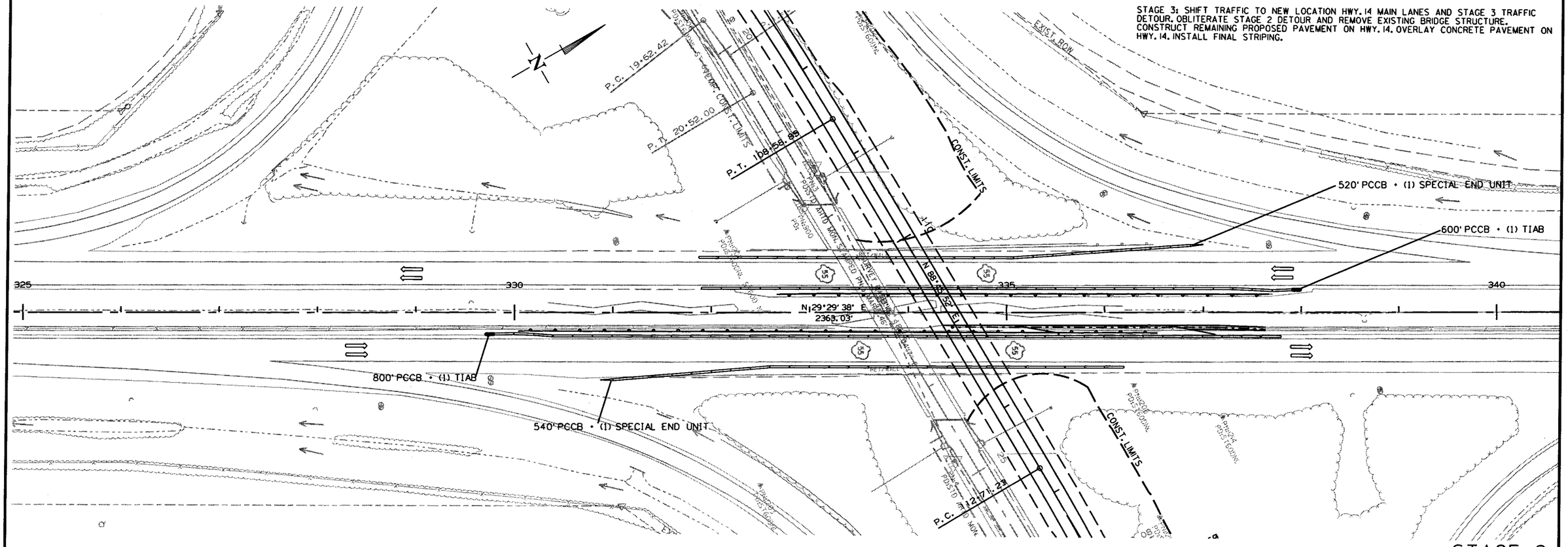
LOCATION OF TEMPORARY PRECAST CONCRETE BARRIER FOR MAINTENANCE OF TRAFFIC ON I-55

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.



STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

8/8/2018

R100871.DGN

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

STA. 97+80.54 - STA. 108+79.32
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 4396 LIN. FT.

STA. 108+79.32 - STA. 112+96.88
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
LT. AND RT. EDGE LINES AND DBL. C.L. = 1671 LIN. FT.

STA. 112+96.88 - STA. 123+28.00
LT. AND RT. EDGE LINES AND DBL. C.L.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4125 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	29	87

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

TRAFFIC DRUMS (55' O.C.) - 8 EACH

STA. 98+80.54
BEGIN JOB 100871
LOG MILE 9.63

RAMP 3

RAMP 4

EXIST. ROW

CONST. LIMITS

TEMP. CONST. LIMITS

ROAD CLOSED

(1) R11-2 (48" X 36")

(1) W1-6 (48" X 24")

16' BARR. TYP. III RT.

OBLITERATION OF DETOUR

N 88°45'52" E

N 88°24'13" E

N 88°10'04" E

N 80°54'44" E

N 29°29'38" E 2362.03'

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

8/8/2018

R100871.DGN

SEQUENCING:

STAGE 1: PLACE ADVANCE WARNING SIGNAGE. MAINTAIN TRAFFIC ON EXISTING ROADWAY. EXTEND EXISTING CULVERT CROSS DRAIN. CONSTRUCT DETOUR. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55' O.C. SPACING.

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. PLACE TRAFFIC DRUMS AT 55' O.C. SPACING ON LEFT DETOUR SHOULDER. NOTCH AND WIDEN EXISTING PAVEMENT, AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED PAVEMENT ON HWY. 14. PLACE TEMPORARY CONCRETE BARRIER WALL ON SHOULDERS OF I-55. CONSTRUCT NEW BRIDGE STRUCTURE WITH GUARDRAIL. REMOVE AND REPLACE GUARDRAIL ON I-55. ADJUST WIRE ROPE SAFETY FENCE IN MEDIAN, AND GRADE I-55 DITCHES TO DRAIN.

STAGE 3: SHIFT TRAFFIC TO NEW LOCATION HWY. 14 MAIN LANES AND STAGE 3 TRAFFIC DETOUR. OBLITERATE STAGE 2 DETOUR AND REMOVE EXISTING BRIDGE STRUCTURE. CONSTRUCT REMAINING PROPOSED PAVEMENT ON HWY. 14. OVERLAY CONCRETE PAVEMENT ON HWY. 14. INSTALL FINAL STRIPING.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	30	87

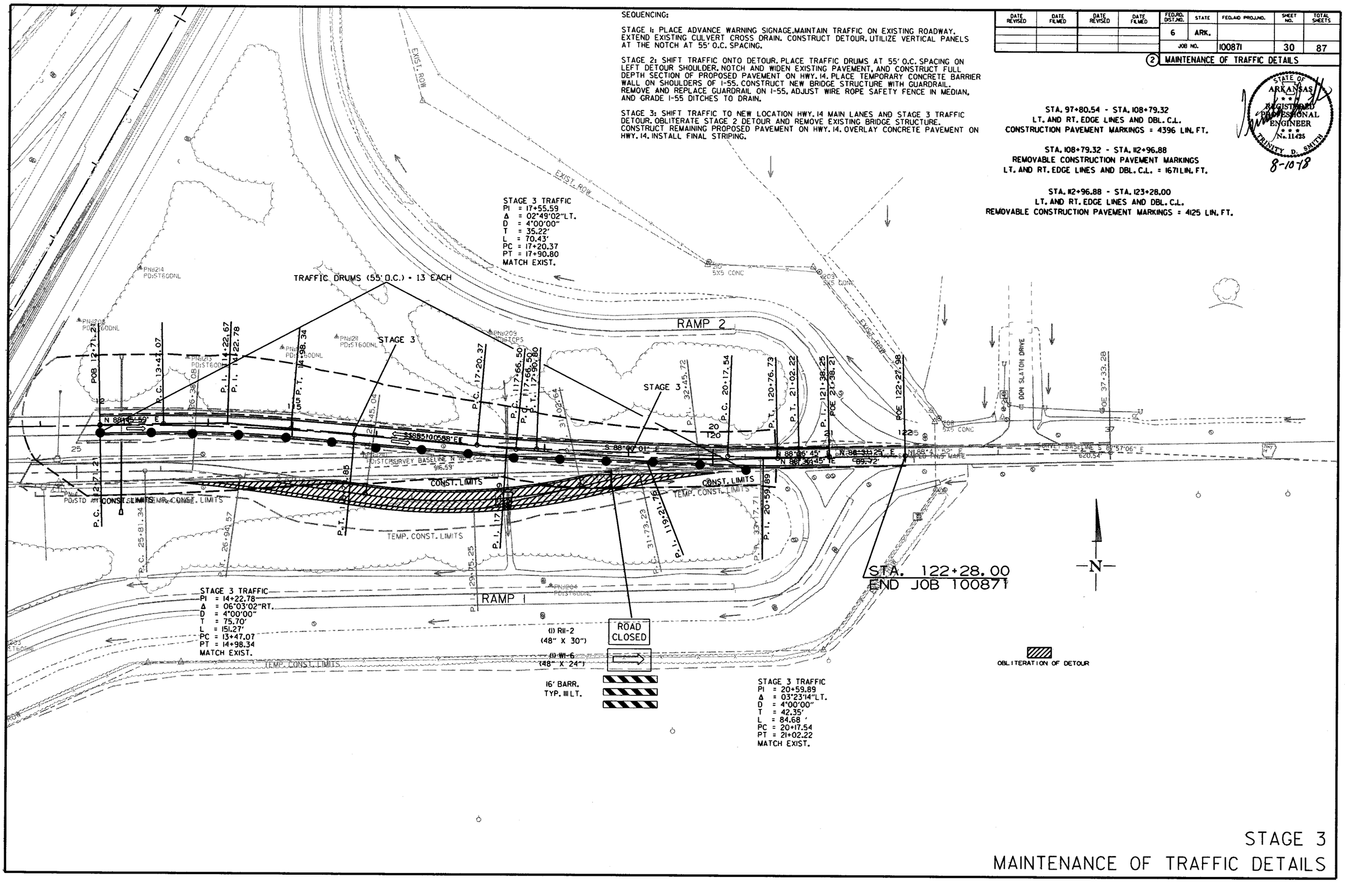
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

STA. 97+80.54 - STA. 108+79.32
LT. AND RT. EDGE LINES AND DBL. C.L.
CONSTRUCTION PAVEMENT MARKINGS = 4396 LIN. FT.

STA. 108+79.32 - STA. 112+96.88
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
LT. AND RT. EDGE LINES AND DBL. C.L. = 1671 LIN. FT.

STA. 112+96.88 - STA. 123+28.00
LT. AND RT. EDGE LINES AND DBL. C.L.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4125 LIN. FT.



8/8/2018

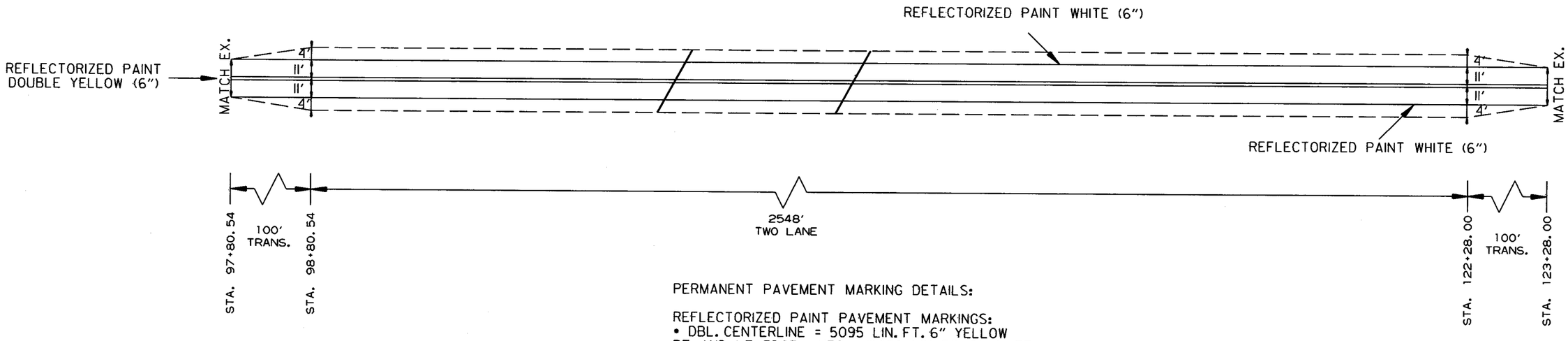
R100871.DGN

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	31	87

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



PERMANENT PAVEMENT MARKING DETAILS:

REFLECTORIZED PAINT PAVEMENT MARKINGS:
• DBL. CENTERLINE = 5095 LIN. FT. 6" YELLOW
RT. AND LT. EDGE LINES = 5095 LIN. FT. 6" WHITE

RAISED PAVEMENT MARKERS 80' O.C.
• TYPE II (YEL/YEL) ON DBL YELLOW LINES = 32 EACH

REFLECTORIZED PAINT PAVEMENT MARKINGS:
WORD "SCHOOL" = 1 EACH

RAMP 2 AND RAMP 4:
REFLECTORIZED PAINT PAVEMENT MARKINGS:
CONCRETE ISLAND CURB FACE 198 LIN. FT. 10" WHITE
CONCRETE ISLAND OUTLINE 212 LIN. FT. 8" WHITE
RT. AND LT. EDGE CURB = 100 LIN. FT. 6" WHITE

RAMP 1 AND RAMP 3:
REFLECTORIZED PAINT PAVEMENT MARKINGS:
CONCRETE ISLAND CURB FACE 165 LIN. FT. 10" WHITE
CONCRETE ISLAND OUTLINE 180 LIN. FT. 8" WHITE
RT. EDGE CURB = 50 LIN. FT. 6" WHITE
LT. EDGE CURB = 50 LIN. FT. 6" YELLOW

• NOTE
THE 4" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

8/8/2018

R100871.DGN

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	32	87

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING				
								TYPE II	6"		8"	10"	WORDS
	LIN. FT. - EACH				LIN. FT.		LIN. FT.	(YEL/YEL) EACH	WHITE	YELLOW	WHITE	WHITE	EACH
									LIN. FT.				
REMOVAL OF PERMANENT PAVEMENT MARKINGS		1600			1600								
CONSTRUCTION PAVEMENT MARKINGS	8082	6998	8521			23601							
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS			1671				1671						
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				32				32					
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")				5195					5195				
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")				5195						5195			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (8")				784							784		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")				726								726	
REFLECTORIZED PAINT PAVEMENT MARKING (WORDS)				1									1
TOTALS:					**1600**	**23601**	**1671**	**32**	**5195**	**5195**	**784**	**726**	**1**

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	* 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	64.0				4					
W20-1	ROAD WORK 1/2 MILES	48"x48"	4	4	4	4	4	4	64.0									
W20-1	ROAD WORK 1500 FT.	48"x48"	6	6	6	6	6	6	96.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	2	32.0									
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	2	32.0									
W20-1	ROAD WORK AHEAD	48"x48"	2	4	4	4	4	4	64.0									
W20-5	RIGHT LANE CLOSED 1 MILE	48"x48"		2	2	2	2	2	32.0									
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"x48"		2	2	2	2	2	32.0									
W20-5	RIGHT LANE CLOSED 1500 FT.	48"x48"		2	2	2	2	2	32.0									
G20-2	END ROAD WORK	48"x24"	8	8	8	8	8	8	64.0									
R11-2	ROAD CLOSED	48"x30"	2	4	2	4	4	4	40.0									
W1-6	LARGE ARROW	48"x24"		2	2	2	2	2	16.0									
* R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	2	10.0									
R55-1	FINE DOUBLE IN WORK ZONES WHEN WORKER ARE PRESENT	36"X60"	4	4	4	4	4	4	72.0									
W21-5A	RIGHT SHOULDER CLOSED AHEAD	48"x48"	2	2	2	2	2	2	32.0									
W21-5B	LEFT SHOULDER CLOSED AHEAD	48"x48"	2	2	2	2	2	2	32.0									
* RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	2	2	20.0									
W3-5	REDUCED SPEED LIMIT AHEAD	48"x48"		2	2	2	2	2	32.0									
SPECIAL	MERGE NOW	48"x48"		1	1	1	1	1	16.0									
W4-2 RT.	RIGHT LANE ENDS	48"x48"		2	2	2	2	2	32.0									
R2-1	SPEED LIMIT (ADVISORY)	48"x60"		4	4	4	4	4	80.0									
R4-1	DO NOT PASS	48"x60"		4	4	4	4	4	80.0									
W1-6	LARGE ARROW	60"x30"		6	6	6	6	6	75.0									
	VERTICAL PANELS		28				28			28								
	TRAFFIC DRUMS		28	99	107		107				107							
	TYPE III BARRICADE-RT. (16')		2	3	1		3					48						
	TYPE III BARRICADE-LT. (16')		2	3	1		3						48					
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			2820			2820							2820				
	TEMPORARY IMPACT ATTENUATION BARRIER			3			3								3			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			3			3									3		
	ADVANCE WARNING ARROW PANEL			1			3										3	
	PORTABLE CHANGEABLE MESSAGE SIGN			1			4											4
TOTALS:								**1049.0**		**28**	**107**	**48**	**48**	**2820**	**3**	**3**	**3**	**4**

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

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

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

8/9/2018

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
9-6-18				6	ARK.			
				JOB NO.		100871	33	87

(2) QUANTITIES

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CONCRETE PAVEMENT	GUARDRAIL	CONCRETE PIER PROTECTION	WIRE ROPE SAFETY FENCE
			SQ. YD.	LIN. FT.	LIN. FT.	LIN. FT.
333+35.00	334+75.00	LT. OF LT. LANES OF I-55			140	
334+15.00	335+55.00	RT. OF RT. LANES OF I-55			140	
333+75.43	334+15.43	RT. MEDIAN OF I-55			40	
333+75.43	334+15.43	LT. MEDIAN OF I-55			40	
331+06.25	333+75.00	RT. OF RT. LANES OF I-55		200		
333+75.00	336+43.75	LT. OF LT. LANES OF I-55		200		
330+03.77	335+47.52	RT. MEDIAN OF I-55		475		
332+66.84	337+70.74	LT. MEDIAN OF I-55		425		
335+03.55	337+38.55	RT. MEDIAN OF I-55	104			235
102+06.50	104+40.77	HWY. 14	260			
104+40.77	109+27.28	HWY. 14	1081			
111+81.70	116+85.51	HWY. 14	1120			
116+85.51	119+27.33	HWY. 14	269			
TOTALS:			2834	1300	360	235

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.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
			LIN. FT.	EACH		
108+37.51	109+31.26	LT. SIDE	75	1		1
106+94.67	109+13.42	RT. SIDE OF RT. MAIN LANES	150	1	1	
112+62.58	114+81.33	LT. SIDE OF LT. MAIN LANES	150	1	1	
112+44.74	113+38.49	RT. SIDE	75	1		1
330+03.77	335+68.55	RT. MEDIAN OF I-55	550		1	1
332+66.84	337+70.74	LT. MEDIAN OF I-55	425		1	1
TOTALS:			1425	4	4	4

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:	50

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
109+21.74	BRIDGE END	1
TOTAL:		1

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
9-7-18

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
102+00	35	36	40.70	90	6	54.20	6 RT.	0-5	65	42	A-7-6(37)	GRAY
102+00	35	36	40.50	90	6	54.20	21 RT.	0-5	37	23	A-6(13)	GRAY
108+00	35	36	40.80	90	6	46.80	6 LT.	0-5	65	43	A-7-6(41)	GRAY
108+00	35	36	40.90	90	6	46.80	21 LT.	0-5	31	17	A-6(7)	GRAY
115+00	35	36	40.70	90	6	38.60	6 RT.	0-5	50	30	A-7-6(23)	GRAY
115+00	35	36	40.60	90	6	38.60	21 RT.	0-5	43	27	A-7-6(18)	GRAY
120+00	35	36	40.80	90	6	32.50	6 LT.	0-5	56	34	A-7-6(30)	GRAY
120+00	35	36	41.00	90	6	32.50	21 LT.	0-5	45	29	A-7-6(25)	GRAY
120+00	35	36	41.00	90	6	32.50	22 LT.	0-5	30	16	A-6(8)	GRAY

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.
Z- AUGER REFUSAL
NP - NON-PLASTIC
ND - NOT DETERMINABLE

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	TRIANGULAR SILT DIKE	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-3) LIN. FT.	(E-5) BAG	(E-6) CU.YD.	(E-7) LIN. FT.	(E-11) LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING														
ENTIRE	PROJECT	STAGE 1 - DETOUR						1.50	1.50	30.6		198		175	7600	297
ENTIRE	PROJECT	STAGE 2 - MAIN LANES						5.50	5.50	112.2		66			170	9
ENTIRE	PROJECT	STAGE 2 - I-55						3.00	3.00	61.2		66				3
ENTIRE	PROJECT	STAGE 3 - DETOUR OBLITERATION						2.70	24.00	55.1						
ENTIRE	PROJECT	PERMANENT SEEDING	7.00	14.00	7.00	714.0	7.00									
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.								2.30	2.30	46.9	100	154	30	75	1000	117
TOTALS:			7.00	14.00	7.00	714.0	7.00	15.00	36.30	306.0	100	484	30	250	8770	426

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.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
336+38.55	337+38.55	LT. SIDE OF RT. I-55 LANES	100.00	4.00	44.44	44.44	0.56
TOTALS:					44.44	44.44	0.56

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

CULVERT CLEAN OUT

LOCATION	DESCRIPTION	EACH
RAMP 1	24" x 60' R.C. PIPE CULVERT	1
RAMP 2	24" x 60' R.C. PIPE CULVERT	1
TOTAL:		2

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
103+00	TEMP. 18"x 54' PIPE CULV'T	4
TOTAL:		4

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	34	87

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

SCARIFYING CONCRETE PAVEMENT

LOCATION	AVG. WIDTH	SCARIFYING CONCRETE PAVEMENT
	FEET	SQ. YD.
RAMP 1-A	VAR.	130.78
RAMP 1-B	VAR.	154.52
RAMP 2-A	VAR.	131.27
RAMP 2-B	VAR.	205.39
RAMP 3-A	VAR.	143.90
RAMP 3-B	VAR.	120.33
RAMP 4-A	VAR.	202.49
RAMP 4-B	VAR.	128.93
TOTAL:		1217.61

NOTE: AVERAGE MILLING DEPTH 1".

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	12	24
DIRECTED BY THE ENGINEER		
TOTALS:	12	24

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	10
DIRECTED BY THE ENGINEER	
TOTAL:	10

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
103+50	110+25	HWY. 14	7	7
112+44	120+77	HWY. 14	9	9
TOTALS:			16	16

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
103 50	OUTLET OF PIPE CULVERT	12	24
108+79	OUTLET OF PIPE CULVERT	7	13
108+79	OUTLET OF PIPE CULVERT	7	13
112+97	OUTLET OF PIPE CULVERT	7	13
112+97	OUTLET OF PIPE CULVERT	7	13
117+58	OUTLET OF PIPE CULVERT	12	24
	TO BE USED IF AND WHERE	5	18
	DIRECTED BY THE ENGINEER		
TOTALS:		57	118

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
97+80.54	98+80.54	MAIN LANES	22.00	244.44
122+28.00	123+28.00	MAIN LANES	22.00	244.44
TOTAL:				488.88

NOTE: AVERAGE MILLING DEPTH 1".

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			1000	10
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			1000	4

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

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	TEMPORARY CULVERTS	SOLID SODDING	WATER	STD. DWG. NOS.
		24"	24"	18"			
		LIN. FT.	EACH	LIN. FT.	SQ.YD.	M.GAL.	
15+50.91	TEMP. 18"x 54' PIPE CULVERT - DETOUR			54			PCC-1, PCM-1
103+50	24"x 70' PIPE CULVERT - HWY. 14	58	2		16	0.20	FES-1, FES-2, PCC-1
117+58	24"x 58' PIPE CULVERT - HWY. 14	78	2		16	0.20	FES-1, FES-2, PCC-1
TOTALS:		136	4	54	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.

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	COMPACTED EMBANKMENT (SPECIAL)	* SOIL STABILIZATION
			CU. YD.			TON
ENTIRE	PROJECT	STAGE 1 - DETOUR	308	3770		
ENTIRE	PROJECT	STAGE 2 - MAIN LANES	3795	15944	12294	
ENTIRE	PROJECT	STAGE 3 - OBLITERATION OF DETOUR	9129	157		
ENTIRE	PROJECT	BRIDGE EMBANKMENT	4750			
ENTIRE	PROJECT	I-55 GUARDRAIL WIDENING	77			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE				100
		DIRECTED BY THE ENGINEER				
TOTALS:			18059	19871	12294	100

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

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

APPROACH SLABS

STATION	STATION	LOCATION	APPROACH SLABS (TYPE SPECIAL)	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)	DROP INLETS (TYPE N-1)	CONCRETE SPILLWAY (TYPE A)	12" ZINC COATED (GALVANIZED) CORR. STEEL PIPE CULVERTS (16 GAUGE)
			CU.YD.	POUND	TON	EACH		LIN. FT.
108+79.32	109+21.74	HWY - MAIN LANES	80.38	9188	42.04	2	2	156
112+54.26	112+96.68	HWY - MAIN LANES	80.38	9188	42.04	2	2	144
TOTALS:			160.76	18376	84.08	4	4	300

NOTE: USE T =13" FOR 4' SHOULDER.

WIRE ROPE SAFETY FENCE

STATION	STATION	LOCATIONS	WIRE ROPE SAFETY FENCE	WIRE ROPE SAFETY FENCE (POST REPAIR)	TEMPORARY TERMINAL ANCHOR FOR WIRE ROPE SAFETY FENCE
			LIN. FT.	EACH	EACH
334+43.55	337+38.55	LT. SIDE OF RT. I-55 LANES	295		
* ENTIRE PROJECT TO BE USED IF AND				30	1
WHERE DIRECTED BY THE ENGINEER					
TOTALS:			295	30	1

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

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QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	35	87

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
			FEET	TON / STATION	TON	AVG. WID. FEET	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	TOTAL PG 64-22 TON
MAIN LANES																						
97+80.54	98+80.54	TRANSITION	100.00																			
98+80.54	100+33.92	OVERLAY - HWY.14	153.38			22.00	374.93	0.05	18.75													
100+33.92	100+56.37	NOTCH AND WIDENING	22.45	135.25	30.36	22.00	54.88	0.05	2.74													
100+56.37	101+94.05	NOTCH AND WIDENING - SUPERELEVATION	137.68	119.75	164.87	37.36	571.52	0.05	28.58	13.23	202.39	330.00	33.39	13.13	200.86	220.00	22.09	27.00	413.04	220.00	45.43	67.52
101+94.05	104+00.00	FULL DEPTH SECTION - SUPERELEVATION	205.95	162.50	1231.30	52.71	1206.18	0.05	60.31	26.46	605.49	330.00	99.91	26.25	600.69	220.00	66.08	28.00	640.73	220.00	70.48	136.56
104+00.00	108+79.32	FULL DEPTH SECTION - SUPERELEVATION	479.32	178.00	1231.30	44.71	2381.16	0.05	119.06	22.46	1196.17	330.00	197.37	22.25	1184.99	220.00	130.35	26.00	1384.70	220.00	152.32	282.67
112+96.68	119+58.71	FULL DEPTH SECTION - SUPERELEVATION	662.03	168.00	1231.30	56.71	4171.52	0.05	208.58	28.46	2093.49	330.00	345.43	28.25	2078.04	220.00	228.58	30.00	1384.70	220.00	152.32	380.90
119+58.71	120+74.55	NOTCH AND WIDENING - SUPERELEVATION	115.84	125.25	1231.30	12.36	159.09	0.05	7.95	6.23	80.19	330.00	13.23	6.13	78.90	220.00	8.68	30.00	2206.77	220.00	242.74	251.42
120+74.55	122+28.00	OVERLAY - HWY.14	153.45			22.00	375.10	0.05	18.76									32.00	545.60	220.00	60.02	60.02
122+28.00	123+28.00	TRANSITION	100.00															22.00	244.44	220.00	26.89	26.89
RAMPS																						
		RAMP 1-A TRANSITION	50.00															VAR.	130.78	220.00	14.39	14.39
		RAMP 1-B TRANSITION	50.00															VAR.	154.52	220.00	17.00	17.00
		RAMP 2-A TRANSITION	50.00															VAR.	131.27	220.00	14.44	14.44
		RAMP 2-B TRANSITION	50.00															VAR.	205.39	220.00	22.59	22.59
		RAMP 3-A TRANSITION	50.00															VAR.	143.90	220.00	15.83	15.83
		RAMP 3-B TRANSITION	50.00															VAR.	120.33	220.00	13.24	13.24
		RAMP 4-A TRANSITION	50.00															VAR.	202.49	220.00	22.27	22.27
		RAMP 4-B TRANSITION	50.00															VAR.	128.93	220.00	14.18	14.18
ADDITIONAL FOR SUPERELEVATION																						
100+56.37	102+51.80	TRANSITION	195.43	750.00	1465.73																	
102+51.80	102+61.29	FULL SUPER	9.49	15.50	1.47																	
102+61.29	104+56.72	TRANSITION	195.43	7.75	15.15																	
104+56.72	106+62.53	TRANSITION	205.81	8.50	17.49																	
106+62.53	107+00.91	FULL SUPER	38.38	17.00	6.52																	
107+00.91	109+06.72	TRANSITION	205.81	8.50	17.49																	
112+71.21	114+22.53	TRANSITION	151.32	7.13	10.79																	
114+22.53	115+18.86	FULL SUPER	96.33	14.25	13.73																	
115+18.86	116+70.18	TRANSITION	151.32	7.13	10.79																	
116+70.18	118+25.29	TRANSITION	155.11	7.13	11.06																	
118+25.29	119+21.62	FULL SUPER	96.33	14.25	13.73																	
119+21.62	120+76.73	TRANSITION	155.11	7.13	11.06																	
ADDITIONAL FOR GUARD RAIL WIDENING																						
106+34.61	106+67.61	RT. OF HWY. 14	33.00	13.50	4.46													5.75	21.08	220.00	2.32	2.32
106+67.61	108+93.61	RT. OF HWY. 14	226.00	27.00	61.02													7.50	188.33	220.00	20.72	20.72
112+24.93	113+31.43	RT. OF HWY. 14	106.50	13.50	14.38													7.50	88.75	220.00	9.76	9.76
113+31.43	113+64.43	RT. OF HWY. 14	33.00	27.00	8.91													5.75	21.08	220.00	2.32	2.32
108+11.57	108+44.57	LT. OF HWY. 14	33.00	41.63	13.74													5.75	21.08	220.00	2.32	2.32
108+44.57	109+51.07	LT. OF HWY. 14	106.50	83.25	88.66													7.50	88.75	220.00	9.76	9.76
112+83.39	115+08.39	LT. OF HWY. 14	225.00	74.50	167.63													7.50	187.50	220.00	20.63	20.63
115+08.39	115+41.39	LT. OF HWY. 14	33.00	37.25	12.29													5.75	21.08	220.00	2.32	2.32
335+08.06	336+63.89	LT. SIDE OF RT. LANES I-55	155.83	39.25	61.16													5.50	95.23	440.00	20.95	20.95
336+63.89	337+11.89	RT. SIDE OF LT. LANES I-55	48.00	19.63	9.42													2.25	12.00	440.00	2.64	2.64
ADDITIONAL FOR METHOD OF RAISING GRADE																						
100+56.37	109+21.74	HWY.14	865.37			VAR.	VAR.	0.17	103.90	VAR.	VAR.	VAR.	247.49									
112+54.26	120+76.73	HWY.14	822.47			VAR.	VAR.	0.17	124.67	VAR.	VAR.	VAR.	289.07									
ADDITIONAL FOR LEVELING																						
97+80.54	100+56.37	HWY.14	275.83			20.00	612.96	0.17	52.01									20.00	612.96	220.00	73.33	73.33
100+56.37	101+94.05	HWY.14	137.68			20.00	305.96	0.17	52.01									20.00	305.96	220.00	33.66	33.66
119+58.71	120+76.73	HWY.14	118.02			20.00	262.27	0.17	44.49									20.00	262.27	220.00	28.35	28.35
120+76.73	123+28.00	HWY.14	251.27			20.00	558.38	0.17	44.49									20.00	558.38	220.00	28.35	28.35
DETOUR																						
13+42.64	15+25.52	HWY.14	182.88	71.63	131.00	13.15	267.21	0.05	13.36	13.15	267.21	330.00	44.09					13.00	264.16	220.00	29.06	29.06
15+25.52	18+40.56	HWY.14	315.04	143.25	451.29	26.29	920.27	0.05	46.01	26.29	920.27	330.00	151.84					26.00	910.12	220.00	100.11	100.11
18+40.56	20+52.00	HWY.14	211.44	71.63	151.45	13.15	308.94	0.05	15.45	13.15	308.94	330.00	50.98					13.00	305.41	220.00	33.60	33.60
25+81.34	27+66.64	HWY.14	185.30	67.13	124.39	12.15	250.16	0.05	12.51	12.15	250.16	330.00	41.28					12.00	247.07	220.00	27.18	27.18
27+66.64	31+40.88	HWY.14	374.24	134.25	502.42	24.29	1010.03	0.05	50.50	24.29	1010.03	330.00	166.65					24.00	997.97	220.00	109.78	109.78
31+40.88	33+17.71	HWY.14	176.83	67.13	118.71	12.15	238.72	0.05	11.94	12.15	238.72	330.00	39.39					12.00	235.77	220.00	25.93	25.93
ADDITIONAL FOR SUPERELEVATION DETOUR																						
15+08.91	16+58.00	TRANSITION	149.09		8.13																	
16+58.00	17+27.88	FULL SUPER	69.88		16.25																	
17+27.88	18+76.97	TRANSITION	149.09		8.13																	
27+69.81	29+33.91	TRANSITION	164.10		3.88																	
29+33.91	29+73.84	FULL SUPER	39.93		7.75																	
29+73.84	31+37.94	TRANSITION	164.10		3.88																	
TOTALS:					**8684.39**		**14029.28**		**1036.07**		**7173.06**		**1720.12**		**4143.48**		**455.78**		**14337.19**		**1561.24**	**2017.02**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.9% MIN. AGGR.....5.1% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

8/10/2018

R100871.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	36	87
				①		07425 - QUANTITIES - 60261		

SCHEDULE OF BRIDGE QUANTITIES-JOB NO. 100871

BRIDGE NO. / NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO. / ITEM / UNIT	205 REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.) LUMP SUM	801 UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE CU. YD.	802 CLASS S CONCRETE-BRIDGE CU. YD.	SP & 802 ③ CLASS S(AE) CONCRETE-BRIDGE CU. YD.	803 CLASS 1 PROTECTIVE SURFACE TREATMENT GAL.	804 REINFORCING STEEL - BRIDGE (GRADE 60) LB.	804 EPOXY COATED REINFORCING STEEL (GRADE 60) LB.	805 STEEL SHELL PILING (18" DIA.) LIN. FT.	805 STEEL SHELL PILING (20" DIA.) LIN. FT.	SP & 807 ② STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50) LB.	807 ① PAINTING STRUCTURAL STEEL TON	808 ELASTOMERIC BEARINGS CU. IN.	809 SILICONE JOINT SEALANT LIN. FT.	812 BRIDGE NAME PLATE (TYPE D) EACH	816 CONCRETE RIPRAP CU. YD.	SP JOB 100871 TEXTURED COATING FINISH SQ. YD.	SP JOB 100871 ARCHITECTURAL FINISH SQ. FT.
07425 HIGHWAY 14 OVER INTERSTATE 55	BENT 1			39.32		0.3	6,490	360	528		987	0.5	1,957.5			78	27	45
	BENT 2		56	91.18			13,081		896				1,696.5				95	
	BENT 3		105	142.80			27,008			1,320			1,827.0				107	
	BENT 4		57	91.18			13,081		896				1,696.5				95	
	BENT 5			39.32		0.3	6,490	360	528		987	0.5	1,957.5			93	27	45
	330'-0" CONT. COMP. W-BEAM UNIT				362.50	26.3		80,260			316,816	158.4		76	1			1,485
	SITE NO. 1 (BRIDGE NO. 03183)	1																
TOTALS FOR JOB NO. 100871			218	403.80	362.50	26.9	66,150	80,980	2,848	1,320	318,790	159.4	9,135.0	76	1	171	351	1,575

① The color of paint shall conform to Federal Std. 595B, Color Chip No. 20219, Medium Brown.

② Includes Special Provision Job No. 100871 "Direct Tension Indicators for High Strength Bolt Assemblies".

③ No deviations from the pouring sequence shown on Dwg. No. 60279 will be allowed.

THOMAS GERARD
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
8-13-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HIGHWAY 14 OVER INTERSTATE 55
HWY. 14 STR. & APPRS. (S)
MISSISSIPPI COUNTY
ROUTE 14 SEC. 16
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJF DATE: 04/09/18 FILENAME: b100871_ql.dgn
CHECKED BY: DHP DATE: 8/13/18 SCALE: No Scale
DESIGNED BY: — DATE: —

BRIDGE NO. 07425 DRAWING NO. 60261

PRINT DATE: 8/13/2018

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	16	STATION
201	GRUBBING	16	STATION
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	2834	SQ. YD.
SP & 202	REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE	235	LIN. FT.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	1300	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PIER PROTECTION	360	LIN. FT.
206	FLOWABLE SELECT MATERIAL	4	CU. YD.
210	UNCLASSIFIED EXCAVATION	18059	CU. YD.
210	COMPACTED EMBANKMENT	19871	CU. YD.
SP & 210	COMPACTED EMBANKMENT (SPECIAL)	12294	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	8768	TON
SS & 401	TACK COAT	1060	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	1648	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	72	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1914	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	103	TON
412	COLD MILLING ASPHALT PAVEMENT	489	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	12	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	10	TON
504	APPROACH SLABS	160.76	CU. YD.
SP	SCARIFYING CONCRETE PAVEMENT	1218	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	54	LIN. FT.
SS & 604	SIGNS	1049	SQ. FT.
SS & 604	BARRICADES	96	LIN. FT.
SS & 604	TRAFFIC DRUMS	107	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	2820	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	23601	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1671	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1600	LIN. FT.
604	ADVANCE WARNING ARROW PANEL	3	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	4	WEEK
SS & 604	VERTICAL PANELS	28	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	44	SQ. YD.
SP	CULVERT CLEAN OUT	2	EACH
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	136	LIN. FT.
606	12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	300	LIN. FT.
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	50	CU. YD.
609	DROP INLETS (TYPE N1)	4	EACH
611	UNDERDRAIN OUTLET PROTECTORS	4	EACH
611	4" PIPE UNDERDRAINS	1000	LIN. FT.
614	CONCRETE SPILLWAY (TYPE A)	4	EACH
617	GUARDRAIL (TYPE A)	1425	LIN. FT.
617	TERMINAL ANCHOR POSTS (TYPE 1)	4	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
617	THRIE BEAM GUARDRAIL TERMINAL	4	EACH
SP	TEMPORARY TERMINAL ANCHOR FOR WIRE ROPE SAFETY FENCE	1	EACH
SP	WIRE ROPE SAFETY FENCE	295	LIN. FT.
SP	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS	1.00	LUMP SUM
SP	WIRE ROPE SAFETY FENCE (POST REPAIR)	30	EACH
620	LIME	14	TON
620	SEEDING	7.00	ACRE
SS & 620	MULCH COVER	43.30	ACRE
620	WATER	1021.0	M. GAL.
621	TEMPORARY SEEDING	15.00	ACRE
621	SILT FENCE	8770	LIN. FT.
621	SAND BAG DITCH CHECKS	484	BAG
621	DROP INLET SILT FENCE	250	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	426	CU. YD.
621	ROCK DITCH CHECKS	30	CU. YD.
621	TRIANGULAR SILT DIKE	100	LIN. FT.
623	SECOND SEEDING APPLICATION	7.00	ACRE
624	SOLID SODDING	76	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	5195	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (8")	784	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	726	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	5195	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING (WORDS)	1	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	32	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	3	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	3	EACH
804	REINFORCING STEEL-ROADWAY (GRADE 60)	18376	POUND
816	FILTER BLANKET	118	SQ. YD.
816	DUMPED RIPRAP	57	CU. YD.
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	218	CU. YD.
802	CLASS S CONCRETE-BRIDGE	403.80	CU. YD.
SP & 802	CLASS S(AE) CONCRETE-BRIDGE	362.50	CU. YD.
SP	ARCHITECTURAL FINISH	1575	SQ. FT.
SP	TEXTURED COATING FINISH	351	SQ. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	26.9	GAL.
804	REINFORCING STEEL-BRIDGE (GRADE 60)	66150	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	80980	POUND
805	STEEL SHELL PILING (18" DIAMETER)	2848	LIN. FT.
805	STEEL SHELL PILING (20" DIAMETER)	1320	LIN. FT.
SP & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50)	318790	POUND
807	PAINTING STRUCTURAL STEEL	159.4	TON
808	ELASTOMERIC BEARINGS	9135.0	CU. IN.
809	SILICONE JOINT SEALANT	76	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
816	CONCRETE RIPRAP	171	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
8/16/2018	REVISED THE MAIN LANE ALIGNMENT ELEVATIONS IN THE CROSS SECTIONS, REVISED THE GENERAL NOTE ON BRIDGE DRAWING NUMBER 60281, REVISED THE QUANTITY FOR CLASS S CONCRETE-BRIDGE IN THE SCHEDULE OF BRIDGE QUANTITIES.	36, 37, 66, 68-73
8/21/2018	REVISED THE GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION SP.	37
9/6/2018	REVISED THE QUANTITIES FOR SEEDING, SECOND SEEDING APPLICATION, TEMPORARY SEEDING, WATER, LIME, AND MULCH COVER.	33 & 37

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11485 TIMOTHY D. SMITH 9-7-18

SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.	RI00871	37	87
8-21-18				JOB NO.				
9-6-18								

(2) SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	38	87

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
TRINITY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11435
8-10-18

SURVEY CONTROL COORDINATES

Project Name: s100871
Date: 9/22/2016
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON STATIC GPS, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	470548.5080	1871893.2632	230.004	CTL	STD AHTD MON. STAMPED PN: 1
2	470570.0020	1872472.2298	230.572	CTL	STD AHTD MON. STAMPED PN: 2
3	470586.6306	1873391.6150	251.877	CTL	STD AHTD MON. STAMPED PN: 3
4	470563.9214	1873722.2970	251.750	CTL	STD AHTD MON. STAMPED PN: 4
5	470621.9047	1874637.0549	231.015	CTL	STD AHTD MON. STAMPED PN: 5
6	470599.7245	1875257.1946	230.307	CTL	STD AHTD MON. STAMPED PN: 6
900	470558.9203	1873421.0393	253.069	TBM	

*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.
A PROJECT CAF OF 0.9999246831 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME 100871G1.CTL
HORIZONTAL DATUM: NAD 83 (1997)
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 - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: BASED ON STATIC GPS
CONVERGENCE ANGLE: 01-05-47 RIGHT AT LT: N 35-36-40 LG: W 090-06-57
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 14 MAIN LANES

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	98+80.54	470548.5293	1872384.6582
8014	PI	100+00.00	470551.8575	1872504.0772
8015	PC	100+56.37	470553.1078	1872560.4342
8017	PT	104+47.22	470588.3639	1872949.3854
8004	PC	104+66.22	470591.3645	1872968.1441
8006	PT	108+58.83	470626.6592	1873358.8570
8007	PC	112+71.21	470635.5520	1873771.1431
8009	PT	115+73.85	470626.0992	1874073.4927
8018	PC	117+66.50	470609.9215	1874265.4602
8020	PT	120+76.73	470600.6425	1874575.3997
8021	PI	121+38.25	470602.1323	1874636.9088
8013	POE	122+27.98	470604.4441	1874726.6016

I-55

POINT NO.	TYPE	STATION	NORTHING	EASTING
8053	POB	321+43.15	469502.6296	1872949.0793
8054	POE	345+06.18	471559.4335	1874112.4707

TEMPORARY APPROACHES FOR BRIDGE OVER INTERSTATE 55

POINT NO.	TYPE	STATION	NORTHING	EASTING
8022	POB	9+00.00	470540.4887	1872148.7054
8014	PI	12+55.55	470551.8575	1872504.0772
8015	PI	13+11.92	470553.1078	1872560.4342
8023	PC	13+42.64	470553.7942	1872591.1468
8025	PT	14+66.97	470545.7973	1872715.0583
8026	PC	15+50.85	470533.1591	1872797.9821
8028	PT	17+65.15	470532.8098	1873011.4798
8029	PC	19+62.42	470561.8942	1873206.5986
8031	PT	20+52.00	470569.5330	1873295.7927
8032	PC	25+81.34	470581.6512	1873824.9970
8034	PT	26+94.57	470575.3028	1873937.9308
8035	PC	28+45.04	470555.0206	1874087.0276
8037	PT	31+02.64	470566.4511	1874342.9783
8038	PC	31+73.23	470582.1643	1874411.8023
8040	PT	33+17.71	470599.9459	1874554.9379
8041	POE	37+33.28	470609.3908	1874970.4020

STAGE 3 TRAFFIC

POINT NO.	TYPE	STATION	NORTHING	EASTING
8042	POB	12+71.21	470636.5518	1873771.1215
8043	PC	13+47.07	470638.1849	1873846.9658
8045	PT	14+98.34	470633.4574	1873998.0879
8046	PC	17+20.37	470614.8122	1874219.3345
8048	PT	17+90.80	470610.6251	1874289.6361
8049	PC	20+17.54	470602.7129	1874516.2356
8051	PT	21+02.22	470602.2605	1874600.9038
8052	POE	21+38.21	470603.1320	1874636.8846

8/8/2018

R100871.DGN

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	39	87

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

STA. 98+80.54 - BEGIN
JOB 100871
LOG MILE 9.63

PN#1 PD:STD AHTD MON. STAMPED PN#1 MARIE

SURVEY BASELINE N 87°52'26" E 579.37'

BRIDGE DETOUR

N 88°10'04" E 355.55'

N 88°24'13" E 119.47'

POB 9+00.00 — 8022

POB 98+80.54 — 8000

PN#2 PD:ST60DNL

SURVEY BASELINE N 88°43'10" E 919.54'

P.C. 100+56.37
P.I. 13+11.92
Δ = 0°0'34.31" RT.

P.I. 100+00.00
P.C. 99+55.55
Δ = 0°33'41.23" RT.

P.C. 13+42.64

P.I. 14+04.96

HWY. 14
PI = 102+52.10
Δ = 07°49'01"LT.
D = 2°00'00"
T = 193.09'
L = 385.62'
PC = 100+59.00
PT = 104+44.61
e = 0.048'/'
Ls = 300'

DETOUR
PI = 14+04.96
Δ = 09°56'46"RT.
D = 8°00'00"
T = 62.32'
L = 124.33'
PC = 13+42.64
PT = 14+66.97
NO SUPER

P.T. 14+66.97

P.I. 102+52.10

P.C. 15+50.85

DETOUR
PI = 16+58.81
Δ = 17°08'37"LT.
D = 8°00'00"
T = 107.95'
L = 214.30'
PC = 15+50.85
PT = 17+65.15
e = 0.100'/'
Ls = 250'

P.I. 16+58.81

P.T. 104+47.22

P.C. 104+66.22

P.I. 106+62.83

HWY. 14
PI = 106+62.83
Δ = 07°51'08"RT.
D = 2°00'00"
T = 196.61'
L = 392.61'
PC = 104+66.22
PT = 108+58.83
e = 0.048'/'
Ls = 300'

P.T. 108+58.83

P.I. 20+07.27

P.C. 19+62.42

P.T. 20+52.00

DETOUR
PI = 20+07.27
Δ = 07°09'59"RT.
D = 8°00'00"
T = 44.85'
L = 89.58'
PC = 19+62.42
PT = 20+52.00
NO SUPER

PN#202 PD:ST60DNL

PN#205 PD:ST60DNL

PN#206 PD:ST60DNL ST 60D NL

PN#200 PD:

PN#201 PD:ST60DNL

STA. 110+87.68 CONST.
= STA. 334+40.20 I-55
Δ = 59°16'14"

PN#208 PD:ST60DNL

PN#213 PD:ST60DNL

PN#212 PD:ST60DNL

PN#209 PD:STCPS

PN#210 PD:STCPS

PN#207 PD:ST60DNL ST60D NL

PN#203 PD:ST60DNL

PN#204 PD:ST60DNL

I-55

N 29°29'38" E 2363.03'

335

POB 12+71.21

N 88°45'52" E HWY. 14 MAIN LANES 412.38'

N 88°45'59" E 75.86'

SURVEY BASELINE S 86°04'11" E 529.34'

BRIDGE DETOUR

N 88°41'18" E

PN#3 PD:STD AHTD MON. STAMPED PN#3 MARIE

PN#4 PD:STD AHTD MON. STAMPED PN#4 MARIE

P.C. 12+71.21

P.C. 25+81.34

P.C. 13+47.07

P.T. 26+94.57

P.T. 14+98.34

S 82°15'12" E 150.47'

P.T. 115+73.85

P.C. 29+45.04

S 85°10'58" E 222.03'

S 85°10'58" E 192.65'

P.I. 29+75.25

P.I. 26+38.08

P.I. 114+22.67

P.I. 14+22.78

P.C. 17+20.37

P.C. 117+66.50

P.T. 17+90.80

P.T. 31+02.64

DETOUR
PI = 26+38.08
Δ = 09°03'30"RT.
D = 8°00'00"
T = 56.73'
L = 113.23'
PC = 25+81.34
PT = 26+94.57
NO SUPER

HWY. 14
PI = 114+22.67
Δ = 06°03'10"RT.
D = 2°00'00"
T = 151.46'
L = 302.64'
PC = 112+71.21
PT = 115+73.85
e = 0.048'/'
Ls = 300'

STAGE 3 TRAFFIC
PI = 14+22.78
Δ = 06°03'02"RT.
D = 4°00'00"
T = 75.70'
L = 151.27'
PC = 13+47.07
PT = 14+98.34
MATCH EXIST.

DETOUR
PI = 29+75.25
Δ = 20°36'27"LT.
D = 8°00'00"
T = 130.20'
L = 257.59'
PC = 28+45.04
PT = 31+02.64
e = 0.100'/'
Ls = 250'

STAGE 3 TRAFFIC
PI = 17+55.59
Δ = 02°49'02"LT.
D = 4°00'00"
T = 35.22'
L = 70.43'
PC = 17+20.37
PT = 17+90.80
MATCH EXIST.

HWY. 14
PI = 119+21.79
Δ = 06°12'17"LT.
D = 2°00'00"
T = 155.27'
L = 310.23'
PC = 117+66.50
PT = 120+76.73
e = 0.048'/'
Ls = 300'

P.I. 32+45.72

P.C. 31+73.23

P.I. 119+21.76

P.T. 33+17.71

P.I. 20+59.89

DETOUR
PI = 32+45.72
Δ = 11°33'30"RT.
D = 8°00'00"
T = 72.49'
L = 144.48'
PC = 31+73.23
PT = 33+17.71
NO SUPER

STAGE 3 TRAFFIC
PI = 20+59.89
Δ = 03°23'14"LT.
D = 4°00'00"
T = 42.35'
L = 84.68'
PC = 20+17.54
PT = 21+02.22
MATCH EXIST.

P.C. 20+17.54

P.T. 120+76.73

P.T. 21+02.22

POE 21+38.21

P.I. 121+38.25

POE 122+27.98

POE 37+33.28

208 5X5 CONC

S 88°00'01" E 288.42'

N 88°36'45" E 61.53'

N 88°41'52" E 415.57'

BRIDGE DETOUR

SURVEY BASELINE S 87°52'26" E 620.54'

N 77°08'21" E 70.59'

P.I. 16+56.59

P.I. 17+86.59

P.I. 29+75.25

P.I. 31+02.64

STA. 122+28.00 - END
JOB 100871

SURVEY CONTROL DETAILS

8/10/2018

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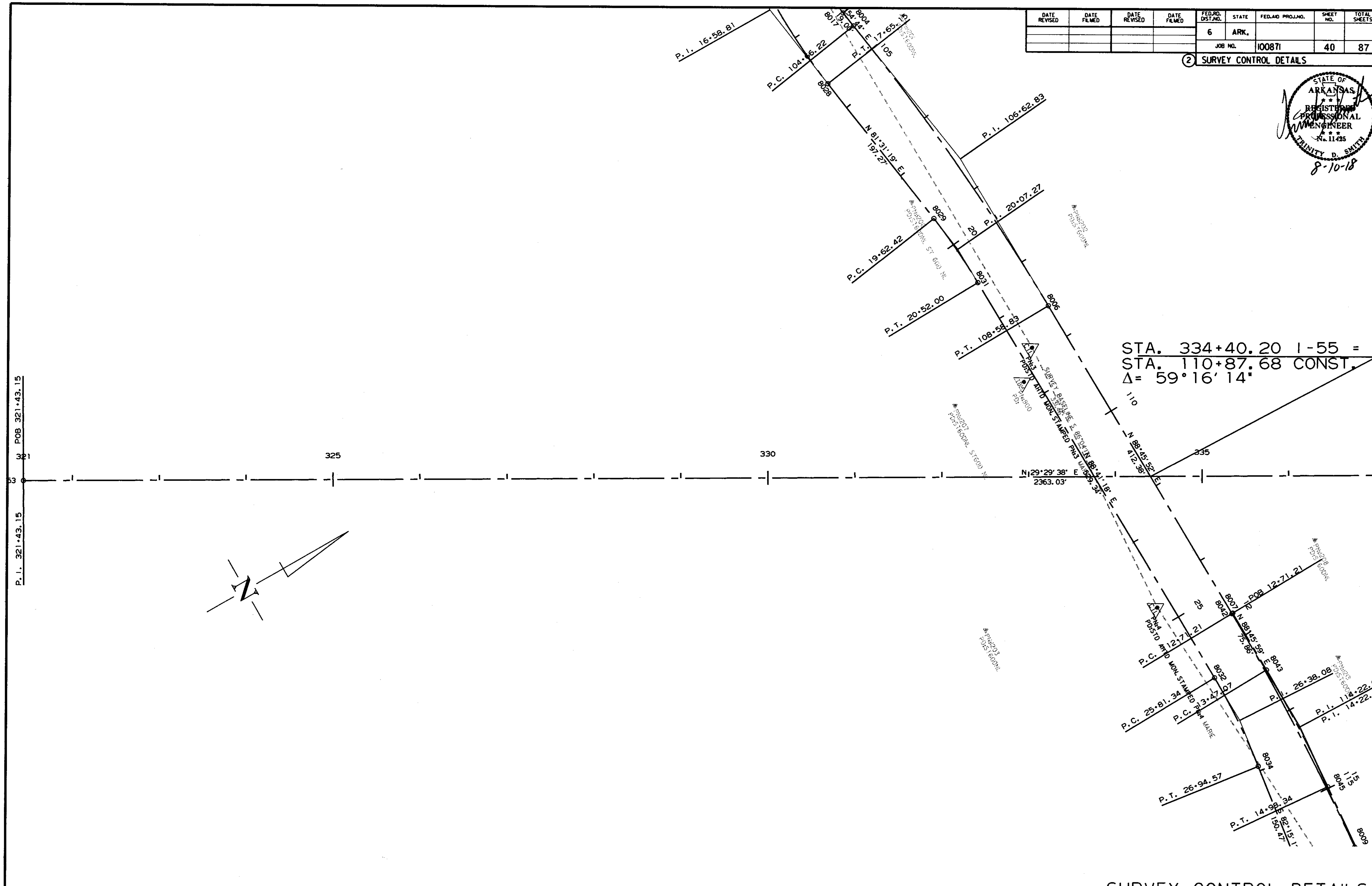
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	40	87

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11435 TRINITY D. SMITH 8-10-18



STA. 334+40.20 I-55 =
STA. 110+87.68 CONST.
Δ= 59°16′14"
P.I. 16+58.81
P.C. 104+56.22
P.T. 17+65.15
P.I. 106+62.83
N 81°31′19" E
197.27′
P.C. 19+62.42
P.I. 20+07.27
P.T. 20+52.00
P.T. 108+58.83
N 88°45′52" E
412.38′
N 29°29′38" E
2363.03′
POB 321+43.15
P.I. 321+43.15
321
325
330
335
110
105
115
20
25
POB 12+71.21
P.C. 12+71.21
P.C. 25+81.34
P.C. 13+47.07
P.I. 26+38.08
P.I. 114+22.67
P.I. 14+22.7
P.T. 26+94.57
P.T. 14+98.34
N 88°45′59" E
75.86′
150.47′
8004
8017
8028
8029
8031
8006
8007
8042
8043
8032
8034
8045
8009
SURVEY BASELINE
PDSTD AHTD MON. STAMPED PN3
PDSTD AHTD MON. STAMPED PN4

SURVEY CONTROL DETAILS

8/8/2018

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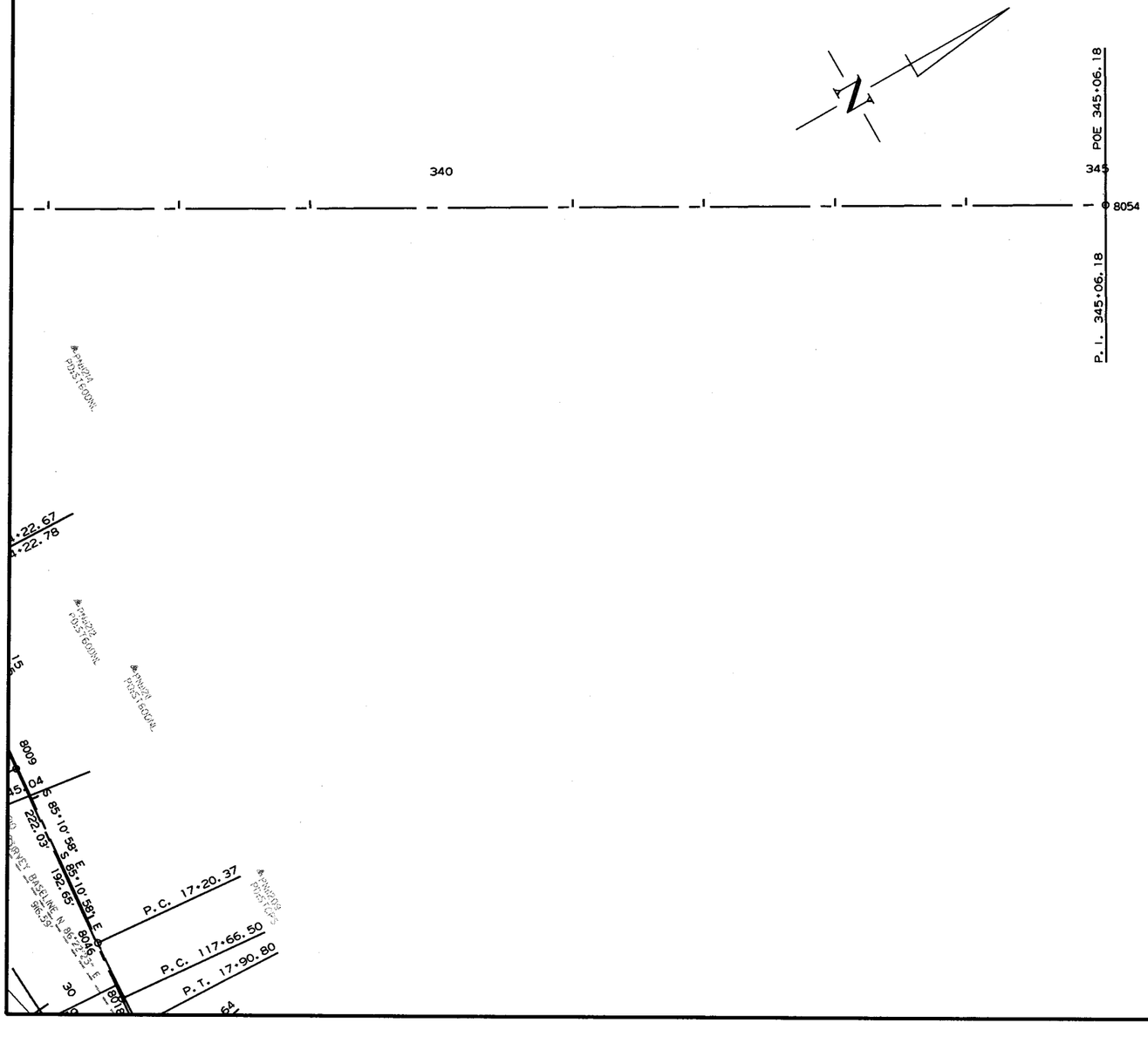
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	41	87

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18



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SURVEY CONTROL DETAILS

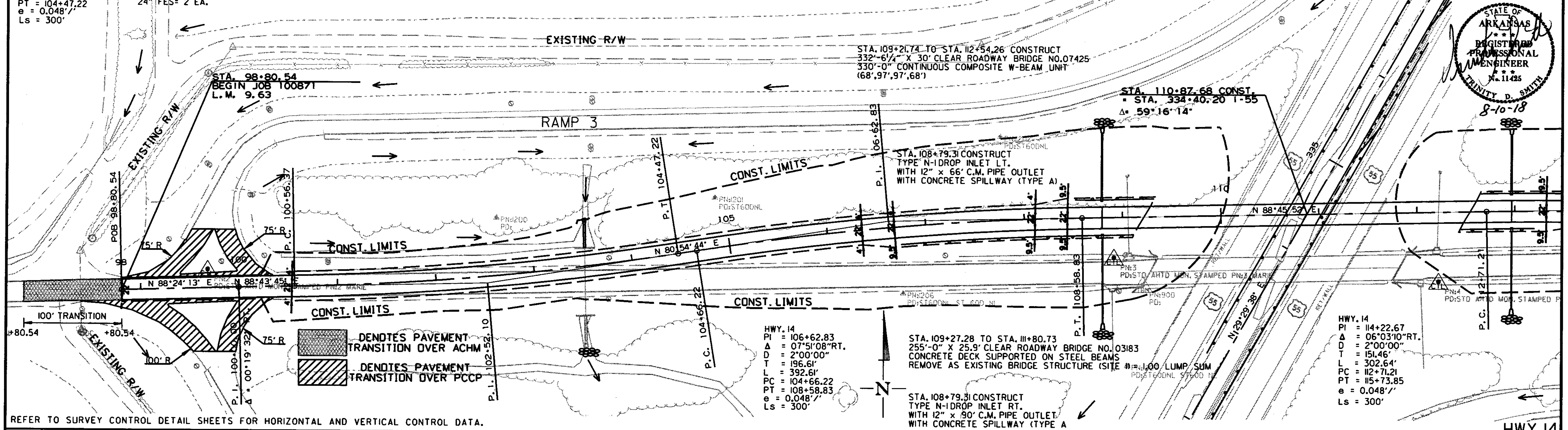
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	100871	42	87

HWY. 14
PI = 102+52.10
Δ = 07°49'01"LT.
D = 2°00'00"
T = 195.73'
L = 390.85'
PC = 100+56.37
PT = 104+47.22
e = 0.048'/'
Ls = 300'

STA. 103+50 - IN PLACE
24"x 70' PIPE CULV'T
RETAIN AND EXTEND 20' LT. & 30' RT.
TO A COMPLETED LENGTH OF 120'
CLASS III TYPE II BEDDING W/FES
D.A. = 0.01 SQ. MI., Q50 = 0.5 C.F.S.
24" R.C. PIPE= 58 LIN.FT.
24" FES= 2 EA.

STA. 109+06.05 - IN PLACE
TYPE N-1 DROP INLETS IN
RT. SHOULDER WITH
12" x 80' C.M. PIPE CULVERT ON LT.
WITH TYPE A SPILLWAY
REMOVE EXISTING DROP INLET

STA.	STA.	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 1)	GUARDRAIL TERMINAL (TYPE 2)
108+57.32	109+51.07	LT. OF C.L. HWY. 14	75 LIN. FT.	1	1	
106+74.86	108+93.61	RT. OF C.L. HWY. 14	150 LIN. FT.	1		1
112+83.39	115+01.14	LT. OF C.L. HWY. 14	150 LIN. FT.	1		1
112+24.93	113+18.68	RT. OF C.L. HWY. 14	75 LIN. FT.	1	1	



EXISTING R/W
STA. 98+80.54
BEGIN JOB 100871
L.M. 9.63
RAMP 3
CONST. LIMITS
POB 98+80.54
N 88°24'13" E
N 88°43'45" E
N 80°54'44" E
N 88°45'52" E
100' TRANSITION
75' R
100' R
P.C. 100+56.37
P.T. 104+47.22
P.I. 102+52.10
P.I. 106+62.83
P.C. 104+66.22
P.T. 108+58.83
P.C. 112+71.21
DENOTES PAVEMENT TRANSITION OVER ACHM
DENOTES PAVEMENT TRANSITION OVER PCCP
STA. 109+21.74 TO STA. 112+54.26 CONSTRUCT
332'-6¼" X 30' CLEAR ROADWAY BRIDGE NO. 07425
330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(68',97',97',68')
STA. 110+87.68 CONST.
= STA. 334+40.20 I-55
Δ= 59°16'14"
STA. 108+79.31 CONSTRUCT
TYPE N-1 DROP INLET LT.
WITH 12" x 66' C.M. PIPE OUTLET
WITH CONCRETE SPILLWAY (TYPE A)
HWY. 14
PI = 106+62.83
Δ = 07°51'08"RT.
D = 2°00'00"
T = 196.61'
L = 392.61'
PC = 104+66.22
PT = 108+58.83
e = 0.048'/'
Ls = 300'
STA. 109+27.28 TO STA. 111+80.73
255'-0" X 25.9' CLEAR ROADWAY BRIDGE NO. 03183
CONCRETE DECK SUPPORTED ON STEEL BEAMS
REMOVE AS EXISTING BRIDGE STRUCTURE (SITE 1) = 1.00 LUMP SUM
STA. 108+79.31 CONSTRUCT
TYPE N-1 DROP INLET RT.
WITH 12" x 90' C.M. PIPE OUTLET
WITH CONCRETE SPILLWAY (TYPE A
HWY. 14
PI = 114+22.67
Δ = 06°03'10"RT.
D = 2°00'00"
T = 151.46'
L = 302.64'
PC = 112+71.21
PT = 115+73.85
e = 0.048'/'
Ls = 300'
N 29°29'38" E
PD:STD AHTD MON. STAMPED PN3 MARK
PD:STD AHTD MON. STAMPED P
N
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
8-10-18

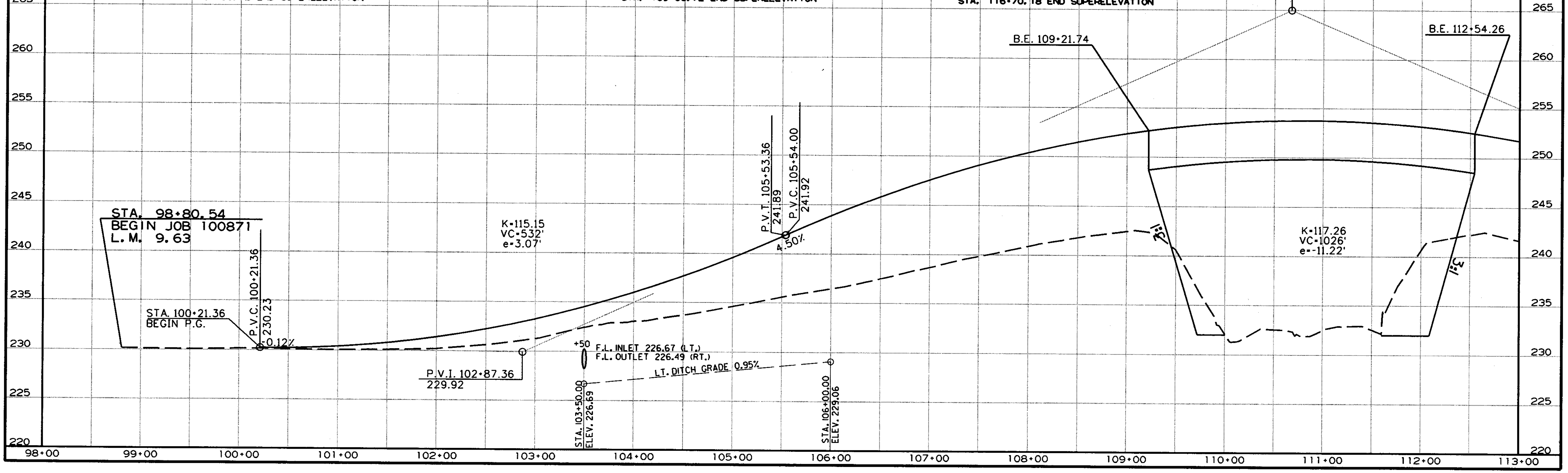
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 100+56.37 BEGIN SUPERELEVATION
STA. 102+51.80 MAX. SUPERELEVATION (0.031'/')
STA. 102+61.29 MAX. SUPERELEVATION (0.031'/')
STA. 104+56.72 END SUPERELEVATION

STA. 104+56.72 BEGIN SUPERELEVATION
STA. 106+62.53 MAX. SUPERELEVATION (0.033'/')
STA. 107+00.91 MAX. SUPERELEVATION (0.033'/')
STA. 109+06.72 END SUPERELEVATION

STA. 112+71.21 BEGIN SUPERELEVATION
STA. 114+22.53 MAX. SUPERELEVATION (0.024'/')
STA. 115+18.86 MAX. SUPERELEVATION (0.024'/')
STA. 116+70.18 END SUPERELEVATION

HWY. 14



265
260
255
250
245
240
235
230
225
220
98+00
99+00
100+00
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
109+00
110+00
111+00
112+00
113+00
STA. 98+80.54
BEGIN JOB 100871
L.M. 9.63
STA. 100+21.36
BEGIN P.G.
P.V.C. 100+21.36
230.23
-0.12%
P.V.I. 102+87.36
229.92
K=115.15
VC=532'
e=3.07'
+50
F.L. INLET 226.67 (LT.)
F.L. OUTLET 226.49 (RT.)
LT. DITCH GRADE 0.95%
STA. 103+50.00
ELEV. 226.69
STA. 106+00.00
ELEV. 229.06
P.V.T. 105+53.36
241.89
P.V.C. 105+54.00
241.92
4.50%
B.E. 109+21.74
P.V.I. 110+67.00
265.00
B.E. 112+54.26
K=117.26
VC=1026'
e=-11.22'
3:1

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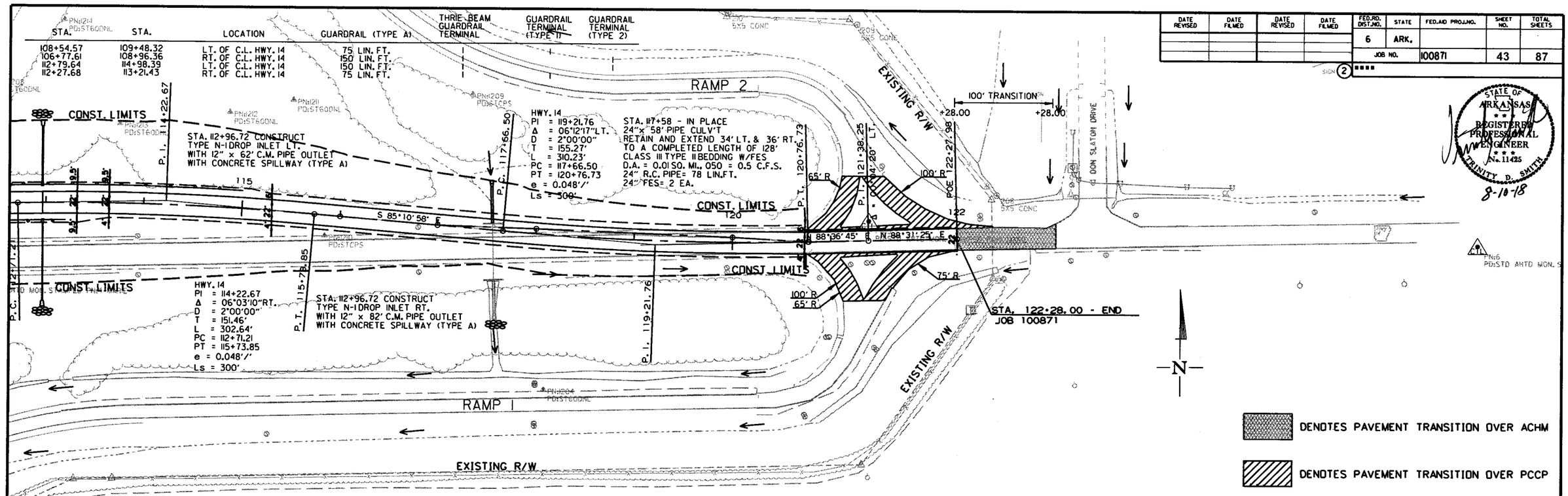
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	43	87
				SIGN (2)				

STA.	STA.	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 1)	GUARDRAIL TERMINAL (TYPE 2)
108+54.57	109+48.32	LT. OF C.L. HWY. 14	75 LIN. FT.			
106+77.61	108+96.36	RT. OF C.L. HWY. 14	150 LIN. FT.			
112+79.64	114+98.39	LT. OF C.L. HWY. 14	150 LIN. FT.			
112+27.68	113+21.43	RT. OF C.L. HWY. 14	75 LIN. FT.			



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

STATE OF ARKANSAS
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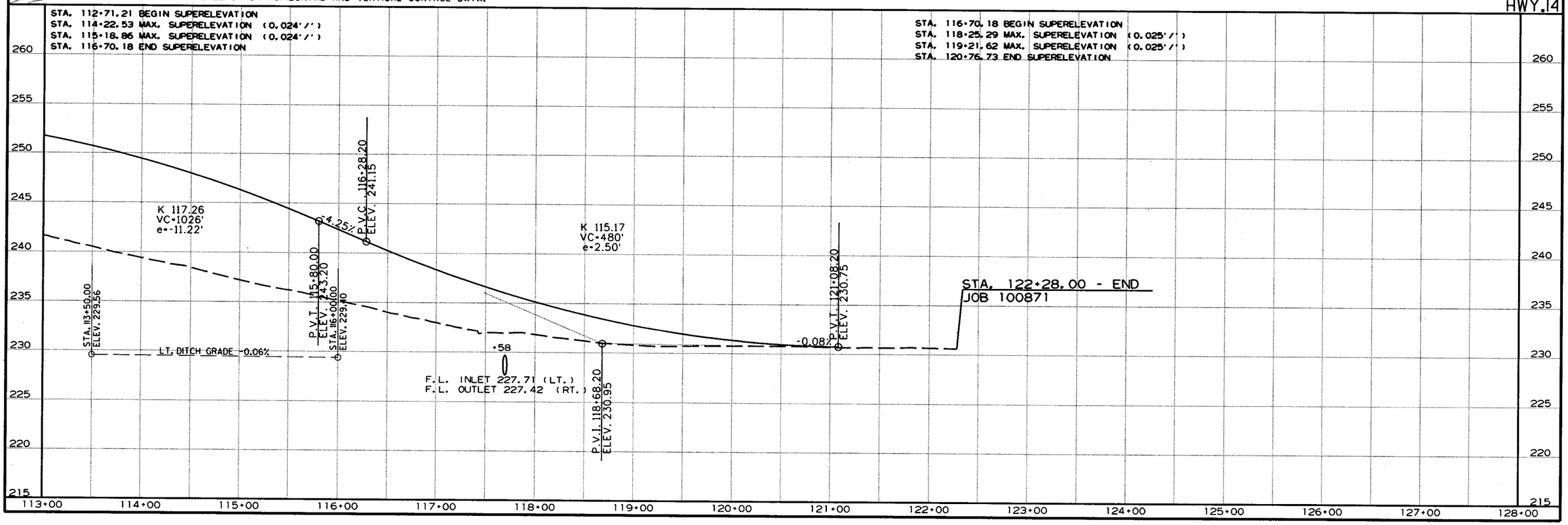
No. 11425
TRINITY D. SMITH
8-10-18

HWY.14



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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.		100871	44	87

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
8-10-18

STA. 15+50.91 - INSTALL TEMP. 18"x 54' PIPE CULV'T

RAMP 3

DETOUR
PI = 16+58.81
Δ = 17°08'37"LT.
D = 8°00'00"
T = 107.95'
L = 214.30'
PC = 15+50.85
PT = 17+65.15
e = 0.100'/'
Ls = 250'

DETOUR
PI = 14+04.96
Δ = 09°56'46"RT.
D = 8°00'00"
T = 62.32'
L = 124.33'
PC = 13+42.64
PT = 14+66.97
NO SUPER

DETOUR
PI = 20+07.27
Δ = 07°09'59"RT.
D = 8°00'00"
T = 44.85'
L = 89.58'
PC = 19+62.42
PT = 20+52.00
NO SUPER

TEMP. CONST. LIMITS

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

DETOUR

STA. 15+08.91 BEGIN SUPERELEVATION
STA. 16+58.00 MAX. SUPERELEVATION (0.060'/')
STA. 17+27.88 MAX. SUPERELEVATION (0.060'/')
STA. 18+76.97 END SUPERELEVATION

P.V.I. 12+55.55 ELEV. 230.16
P.V.C. 13+60.96 ELEV. 230.08
P.V.I. 15+60.96 ELEV. 229.93
P.V.I. 17+60.96 ELEV. 239.05
P.V.C. 19+09.46 ELEV. 245.83
P.V.I. 20+59.46 ELEV. 252.68
P.V.T. 22+09.46 ELEV. 252.66
P.V.C. 24+16.64 ELEV. 252.64

-0.08%
+09.54
4.56%
-0.01%

K 86.21
VC=400'
e=2.32'

K 65.65
VC=300'
e=-1.72'

K 63.51
VC=300'
e=-1.77'

F.L. INLET 226.69 (LT.)
F.L. OUTLET 226.44 (RT.)

8/8/2018

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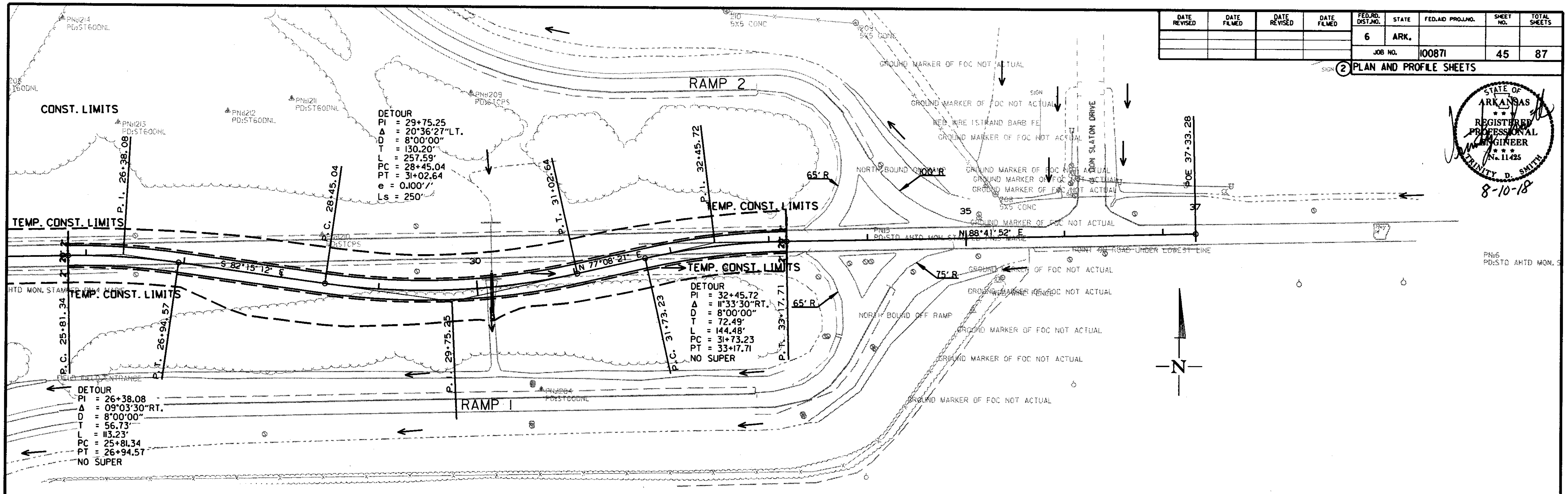
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	45	87

PLAN AND PROFILE SHEETS

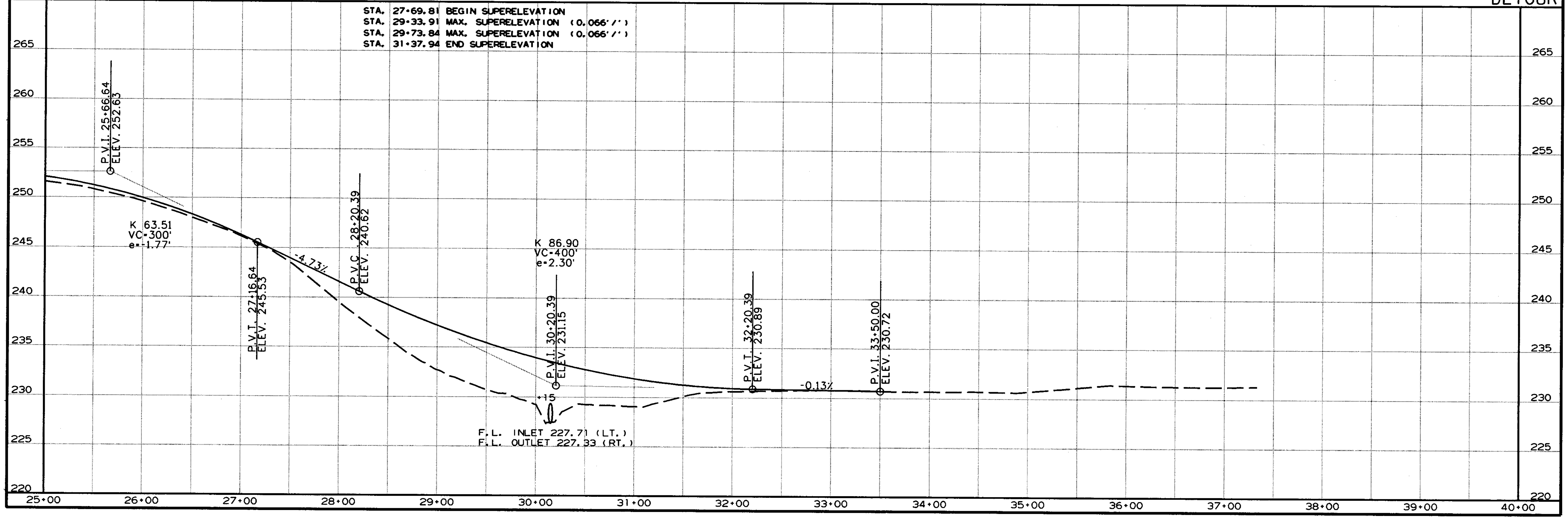
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH
8-10-18



CONST. LIMITS
TEMP. CONST. LIMITS
RAMP 2
RAMP 1
DETOUR
PI = 29+75.25
Δ = 20°36'27"LT.
D = 8°00'00"
T = 130.20'
L = 257.59'
PC = 28+45.04
PT = 31+02.64
e = 0.100'/'
Ls = 250'
DETOUR
PI = 32+45.72
Δ = 11°33'30"RT.
D = 8°00'00"
T = 72.49'
L = 144.48'
PC = 31+73.23
PT = 33+17.71
NO SUPER
DETOUR
PI = 26+38.08
Δ = 09°03'30"RT.
D = 8°00'00"
T = 56.73'
L = 113.23'
PC = 25+81.34
PT = 26+94.57
NO SUPER
P.I. 26+38.08
P.C. 28+45.04
P.T. 31+02.64
P.I. 32+45.72
P.C. 25+81.34
P.T. 26+94.57
P.I. 29+75.25
P.C. 31+73.23
P.T. 33+17.71
POE 37+33.28
S 82°15'12" E
N 77°08'21" E
N 88°41'52" E
65' R
100' R
75' R
NORTH BOUND ON RAMP
NORTH BOUND OFF RAMP
SLATON DRIVE
GROUND MARKER OF FOC NOT ACTUAL
-N-

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

DETOUR



STA. 27+69.81 BEGIN SUPERELEVATION
STA. 29+33.91 MAX. SUPERELEVATION (0.066'/')
STA. 29+73.84 MAX. SUPERELEVATION (0.066'/')
STA. 31+37.94 END SUPERELEVATION
P.V.I. 25+66.64
ELEV. 252.63
K 63.51
VC=300'
e=-1.77'
P.V.T. 27+16.64
ELEV. 245.53
-4.73%
P.V.C. 28+20.39
ELEV. 240.62
K 86.90
VC=400'
e=2.30'
P.V.I. 30+20.39
ELEV. 231.15
+15
F.L. INLET 227.71 (LT.)
F.L. OUTLET 227.33 (RT.)
P.V.T. 32+20.39
ELEV. 230.89
-0.13%
P.V.I. 33+50.00
ELEV. 230.72
265
260
255
250
245
240
235
230
225
220
25+00
26+00
27+00
28+00
29+00
30+00
31+00
32+00
33+00
34+00
35+00
36+00
37+00
38+00
39+00
40+00

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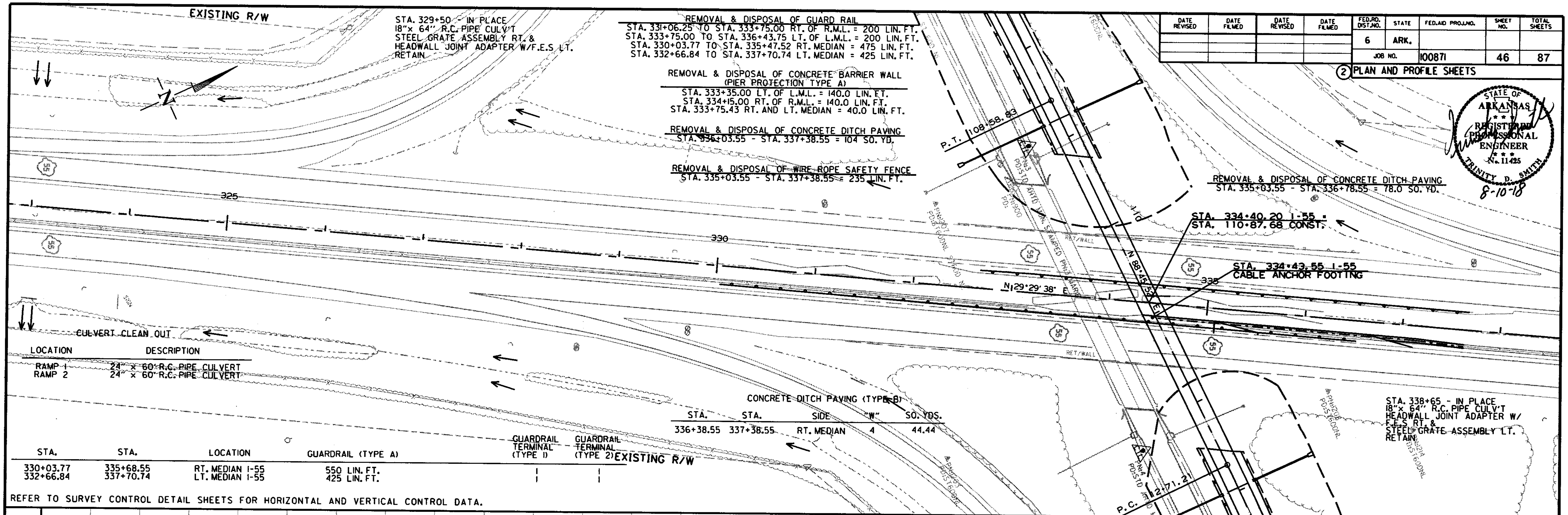
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	46	87

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425 TRINITY D. SMITH 8-10-18



REMOVAL & DISPOSAL OF GUARD RAIL
STA. 331+06.25 TO STA. 333+75.00 RT. OF R.M.L. = 200 LIN. FT.
STA. 333+75.00 TO STA. 336+43.75 LT. OF L.M.L. = 200 LIN. FT.
STA. 330+03.77 TO STA. 335+47.52 RT. MEDIAN = 475 LIN. FT.
STA. 332+66.84 TO STA. 337+70.74 LT. MEDIAN = 425 LIN. FT.

REMOVAL & DISPOSAL OF CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)
STA. 333+35.00 LT. OF L.M.L. = 140.0 LIN. FT.
STA. 334+15.00 RT. OF R.M.L. = 140.0 LIN. FT.
STA. 333+75.43 RT. AND LT. MEDIAN = 40.0 LIN. FT.

REMOVAL & DISPOSAL OF CONCRETE DITCH PAVING
STA. 336+03.55 - STA. 337+38.55 = 104 SQ. YD.

REMOVAL & DISPOSAL OF WIRE ROPE SAFETY FENCE
STA. 335+03.55 - STA. 337+38.55 = 235 LIN. FT.

REMOVAL & DISPOSAL OF CONCRETE DITCH PAVING
STA. 335+03.55 - STA. 336+78.55 = 78.0 SQ. YD.

CULVERT CLEAN OUT

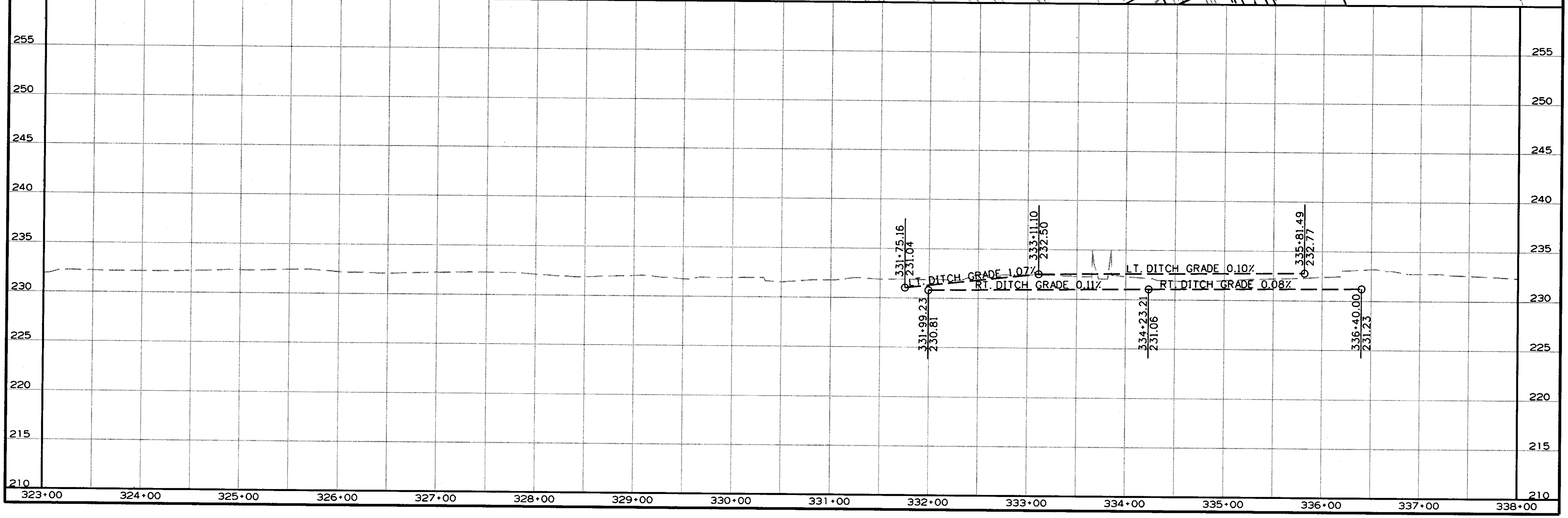
LOCATION	DESCRIPTION
RAMP 1	24" x 60" R.C. PIPE CULVERT
RAMP 2	24" x 60" R.C. PIPE CULVERT

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
336+38.55	337+38.55	RT. MEDIAN	4	44.44

STA.	STA.	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 1)	GUARDRAIL TERMINAL (TYPE 2)
330+03.77	335+68.55	RT. MEDIAN I-55	550 LIN. FT.	1	1
332+66.84	337+70.74	LT. MEDIAN I-55	425 LIN. FT.	1	1

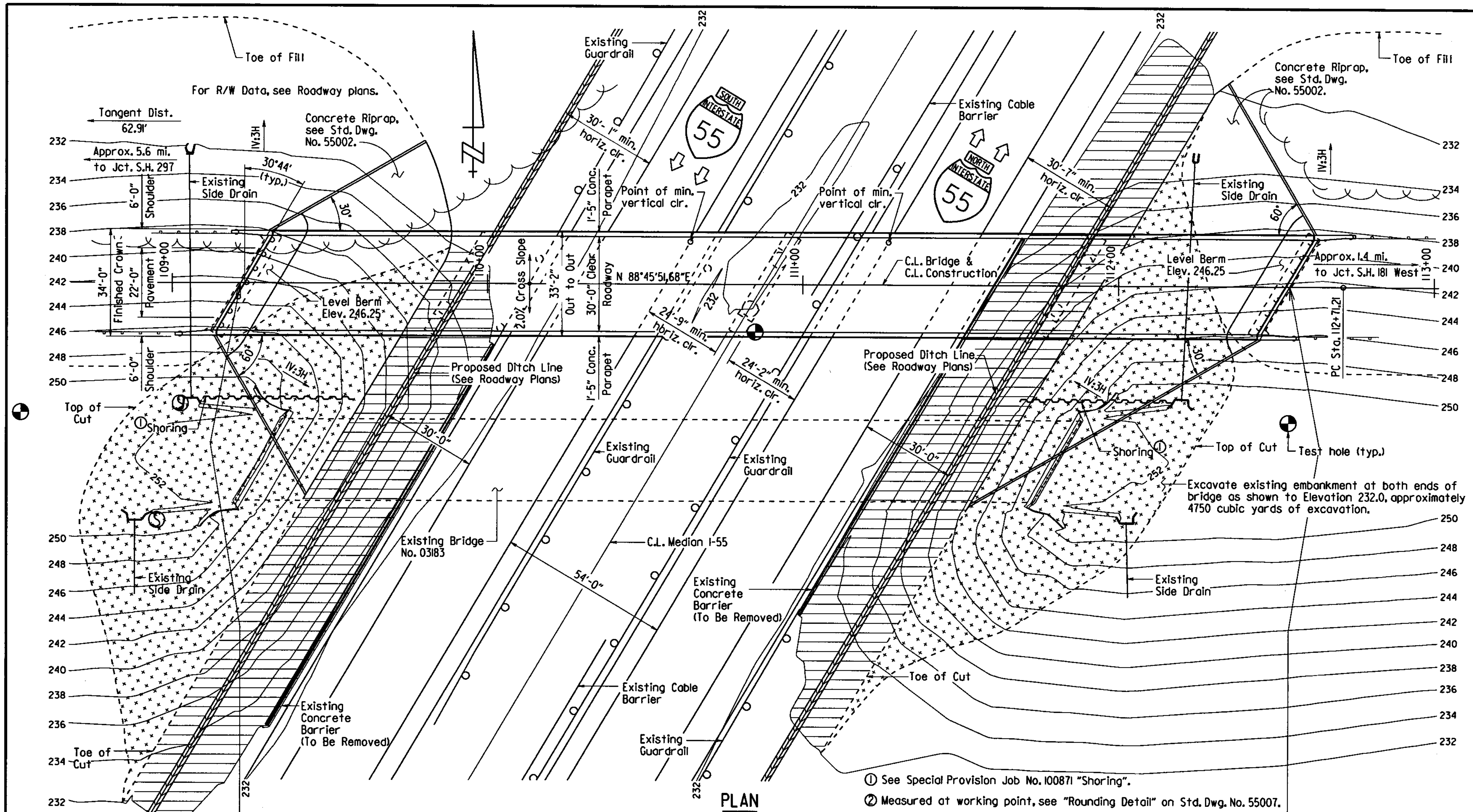
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



8/8/2018

R100871.DGN

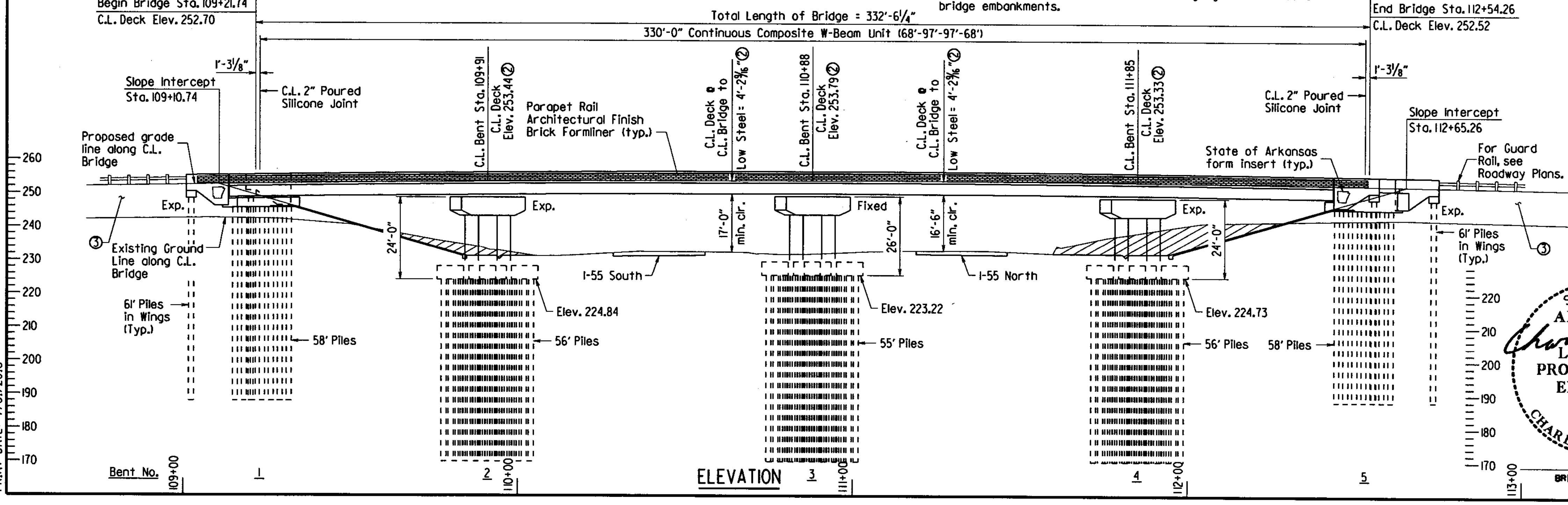
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				① 07425 - LAYOUT - 60262				



① See Special Provision Job No. 100871 "Shoring".

② Measured at working point, see "Rounding Detail" on Std. Dwg. No. 55007.

③ See Special Provision Job No. 100871 "Geosynthetic Internal Reinforced Embankment Construction" for details of geogrid reinforcement in bridge embankments.



NOTES:

State of Arkansas form inserts shall be placed on exterior faces of wingwalls at both ends of bridge in accordance with Dwg. No. 60268. A textured coating finish shall be applied to form inserts in accordance with Special Provision Job No. 100871 "Textured Coating Finish".

Use Type Special Approach Slab at both ends of bridge, see Dwg. Nos. 60281 & 60282.

C.L. Construction beyond Sta. 112+71.21 is on a 2° curve right. The longitudinal lines of the wing and approach slab shall be constructed on curves concentric with C.L. Bridge.

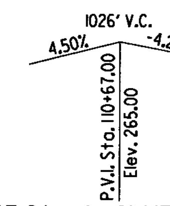
For General Notes and soil boring information, see Dwg. Nos. 60263 & 60264.

For ditch grades and existing embankment excavation details and quantities, see Roadway Plans.

PI = Sta. 114+22.67
Delta = 06°03'09.9" Rt.
D = 2°00'00"
T = 151.46'
L = 302.64'

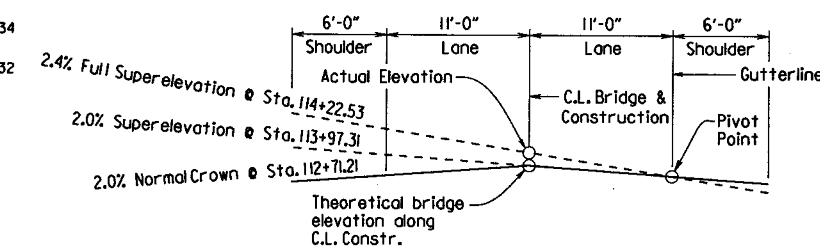
HORIZONTAL ALIGNMENT DATA

Along C.L. Construction



VERTICAL ALIGNMENT DATA

Along C.L. Construction



CROSS SLOPE TRANSITION SKETCH

Looking Ahead

Bent No.	C.L. Deck at C.L. Bent to Low Seat Cap
2	4'-7 3/16"
3	4'-6 15/16"
4	4'-7 3/16"

SHEET 1 OF 3
LAYOUT OF BRIDGE
HIGHWAY 14 OVER INTERSTATE 55
HWY. 14 STR. & APPRS. (S)
MISSISSIPPI COUNTY

ROUTE 14 SEC. 16

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9235 CHARLES R. ELLIS 7-31-18

BRIDGE ENGINEER

DRAWN BY: CGP	DATE: 11/10/17	FILENAME: bi00871_li.dgn
CHECKED BY: DHT	DATE: 7/31/18	SCALE: 1" = 20'-0"
DESIGNED BY: KWJ	DATE: 2/18	

BRIDGE NO. 07425 DRAWING NO. 60262

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - LAYOUT - 60263		

GENERAL NOTES

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

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 6th Edition (2012), with 2013 interim revisions.

LIVE LOADING: HL-93
SEISMIC ZONE: 4 S_{D1} =0.682 SITE CLASS = D

MATERIALS AND STRENGTHS:

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

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 5 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 130 tons per pile. Piling in Bents 2 thru 4 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 150 tons per pile. Piling in Bent 3 shall be 20" diameter concrete steel shell piles and shall be driven to a minimum ultimate bearing capacity of 270 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer to a tip elevation of 188.0 or lower at Bents 1 & 5 and 170.0 or lower at Bents 2 thru 4. Piling in end bents shall be driven after embankment to bottom of cap or footing is in place.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g).

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly, but shall be considered incidental to the item "Steel Shell Piling (18" Dia.)" or "Steel Shell Piling (20" Dia.)"

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B-Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 20,000 ft.-lbs. per blow will be required to obtain the ultimate bearing capacity at Bents 1,2, 4 & 5 and 45,000 ft.-lbs. per blow will be required to obtain the ultimate bearing capacity at Bent 3.

FOOTINGS: Footings at Bents 2 thru 4 shall be set a minimum of 2' below natural ground or at the elevations shown on the plans, whichever is lower. Foundations for footings shall be prepared in accordance with Subsection 801.04. Excavations shall be backfilled and compacted to the level of the existing or finished ground in accordance with Subsection 801.08.

PAINTING: All structural steel except galvanized members, machined surfaces and some surfaces in contact with concrete, and as otherwise noted shall be painted as specified in Subsection 807.75. The color shall match Federal Standard 595B, Color Chip No. 20219, Medium Brown.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class S Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the roadway face of the concrete parapet rail.

DETAIL DRAWINGS:	DRAWING NOS.
Bents 1 & 5	60265-60268
Bents 2-4	60269-60272
Concrete Filled Steel Shell Piling	60273
Elastomeric Bearings	60274
330'-0" Continuous Composite W-Beam Unit	60275-60280
Type Special Approach Slabs	60281,60282
Standard General Notes	55006
Standard Details for Steel Bridge Structures	55007
Poured Silicone Joints	55008

EXISTING BRIDGE: The existing bridge No. 03183 (log mile 9.72) is approximately 310' wide (25.9' Roadway) and 255.0' long and the superstructure consists of four simple spans with a reinforced concrete deck on steel beams. The substructure consists of reinforced concrete end bents and reinforced concrete multi-column intermediate bents on footings all supported by piling.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing bridge No. 03183 in accordance with Section 205. Existing concrete riprap and pier protection foundations shall also be removed. This work shall be considered subsidiary to the item "Removal of Existing Bridge Structure". All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

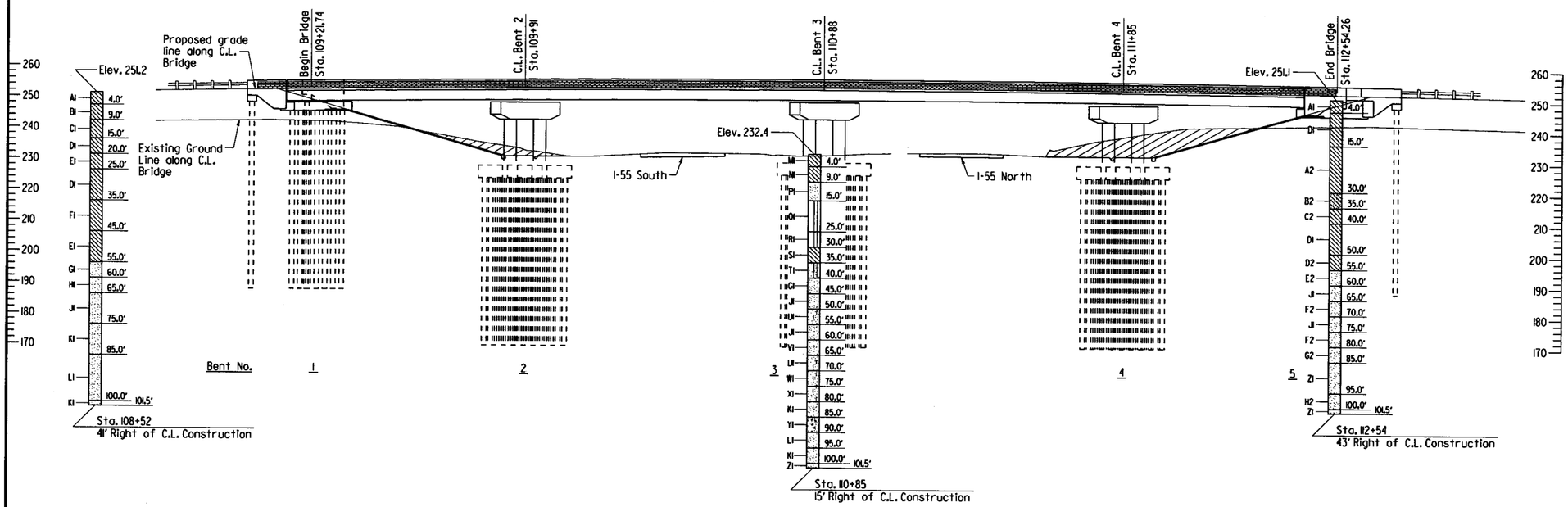
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
7-31-18
BRIDGE ENGINEER

SHEET 2 OF 3
LAYOUT OF BRIDGE
HIGHWAY 14 OVER INTERSTATE 55
HWY. 14 STR. & APPRS. (S)
MISSISSIPPI COUNTY
ROUTE 14 SEC. 16
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 11/10/17 FILENAME: b100871_ll.dgn
CHECKED BY: DHT DATE: 7/31/18 SCALE: As Noted
DESIGNED BY: KWY DATE: 2/18
BRIDGE NO. 07425 DRAWING NO. 60263

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - LAYOUT - 60264		



ELEVATION OF SOIL BORINGS

BORING LEGEND

Al-Gray Clay
Bl-Moist, Soft, Gray Clay
Cl-Moist, Medium Stiff, Gray Clay with Some Sand and Gravel
Dl-Moist, Medium Stiff, Gray Clay
El-Moist, Stiff, Gray Clay
Fl-Moist, Medium Stiff, Brown Clay
Gl-Moist, Medium Dense, Brown Sand
Hl-Moist, Dense, Brown Sand
Jl-Wet, Dense, Brown Sand
Kl-Wet, Dense, Gray Sand
Ll-Wet, Dense, Gray Sand with Some Gravel
Ml-Brown Clay
Nl-Moist, Stiff, Brown Clay
Pl-Moist, Medium Dense, Gray Sand with Some Clay
Ql-Moist, Very Loose, Gray Elastic Silt
Rl-Most, Loose, Brown Elastic Silt
Sl-Moist, Soft, Brown Fat Clay
Tl-Moist, Medium Dense, Brown Sandy Silt
Ul-Wet, Dense, Brown Sand with Silt
Vl-Wet, Medium Dense, Gray Sand with Some Gravel
Wl-Wet, Dense, Gray Sand with Silt and Some Gravel
Xl-Wet, Dense, Gray Sand with Silt and Some Gravel and Organic Matter
Yl-Wet, Medium Dense, Gray Sand with Gravel
Zl-Wet, Very Dense, Gray Sand
A2-Moist, Medium Stiff, Gray Clay with traces of organic matter
B2-Moist, Stiff, Gray Sandy Clay with Some Gravel
C2-Moist, Soft, Brown Clay
D2-Wet, Medium Stiff, Gray Clay
E2-Wet, Medium Dense, Brown Sand
F2-Wet, Very Dense, Brown Sand
G2-Wet, Medium Dense, Gray Sand
H2-Wet, Very Dense, Gray Sand with Some Gravel

"N" VALUES

Sta. 108+52 - 41' Right of C.L. Construction
4.5- 5.5, N=3
9.5- 10.5, N=6
15.5- 16.5, N=6
20.5- 21.5, N=9
25.5- 26.5, N=7
30.5- 31.5, N=8
35.5- 36.5, N=7
40.5- 41.5, N=8
45.5- 46.5, N=9
50.5- 51.5, N=11
55.5- 56.5, N=22
60.5- 61.5, N=39
65.5- 66.5, N=44
70.5- 71.5, N=44
75.5- 76.5, N=43
80.5- 81.5, N=37
85.5- 86.5, N=34
90.5- 91.5, N=39
95.5- 96.5, N=36
100.5-101.5, N=45

Sta. 110+85 - 15' Right of C.L. Construction
4.5- 5.5, N=11
9.5- 10.5, N=11
15.5- 16.5, N=3
20.5- 21.5, N=4
25.5- 26.5, N=7
30.5- 31.5, N=3
35.5- 36.5, N=16
40.5- 41.5, N=21
45.5- 46.5, N=35
50.5- 51.5, N=32
55.5- 56.5, N=45
60.5- 61.5, N=27
65.5- 66.5, N=35
70.5- 71.5, N=42
75.5- 76.5, N=38
80.5- 81.5, N=36
85.5- 86.5, N=29
90.5- 91.5, N=33
95.5- 96.5, N=40
100.5-101.5, N=58

Sta. 112+54 - 43' Right of C.L. Construction
4.5- 5.5, N=8
9.5- 10.5, N=9
15.5- 16.5, N=8
20.5- 21.5, N=8
25.5- 26.5, N=8
30.5- 31.5, N=11
35.5- 36.5, N=4
40.5- 41.5, N=7
45.5- 46.5, N=7
50.5- 51.5, N=8
55.5- 56.5, N=18
60.5- 61.5, N=49
65.5- 66.5, N=59
70.5- 71.5, N=40
75.5- 76.5, N=55
80.5- 81.5, N=28
85.5- 86.5, N=59
90.5- 91.5, N=74
95.5- 96.5, N=59
100.5-101.5, N=61

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE
HIGHWAY 14 OVER INTERSTATE 55
HWY. 14 STR. & APPRS. (S)
MISSISSIPPI COUNTY
ROUTE 14 SEC. 16
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: KWY DATE: 7/18
BRIDGE NO. 07425 DRAWING NO. 60264

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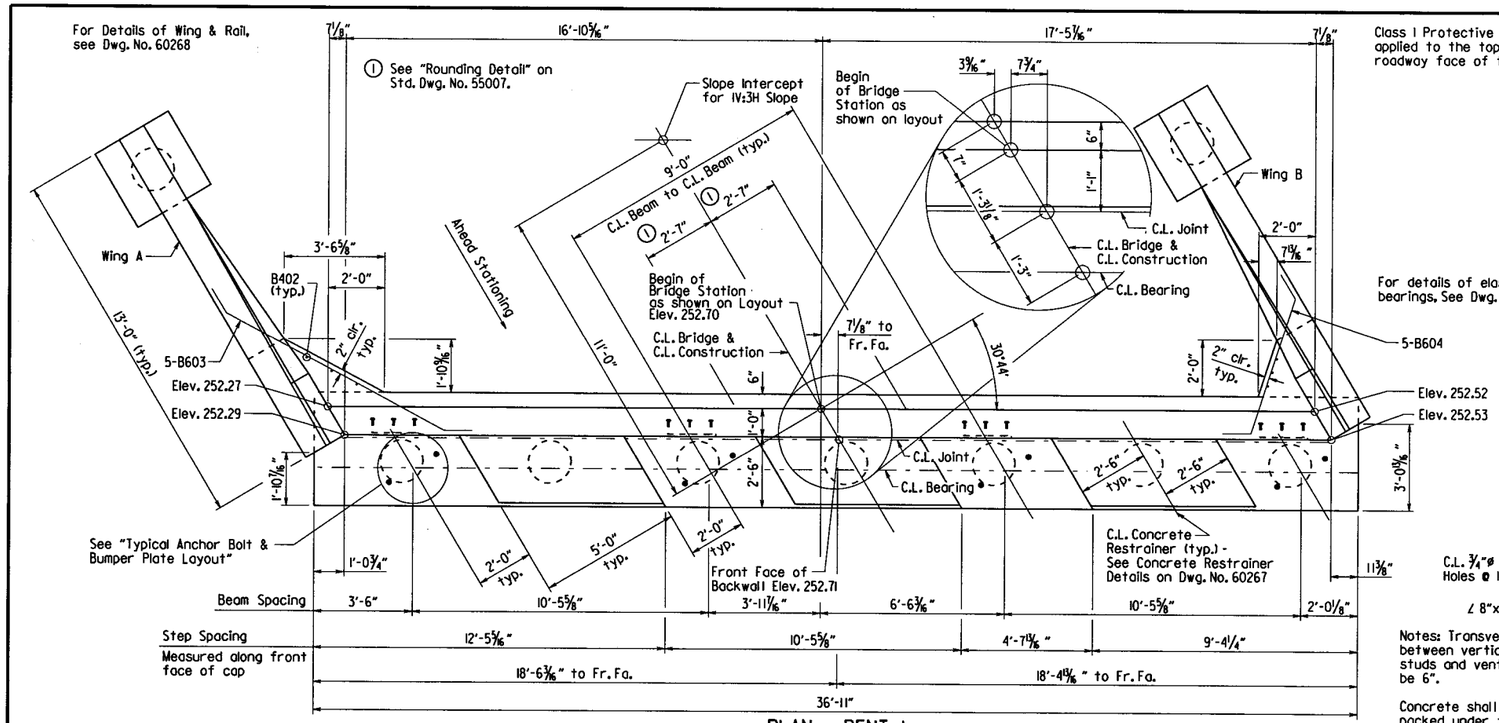
				6	ARK.			
				JOB NO.		100871		
				①	07425 - BENTS 1 & 5 - 60265			

For Details of Wing & Rail, see Dwg. No. 60268

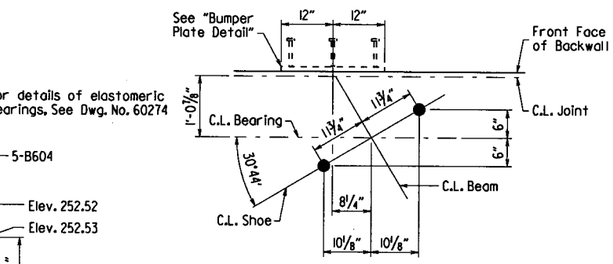
Class I Protective Surface Treatment shall be applied to the top of the backwall and to the roadway face of the concrete parapet rail.



PLAN - BENT 1

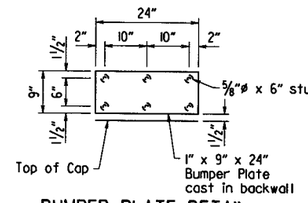
⅜" = 1'-0"

See Dwg. No. 60267 for Views B-B & C-C.



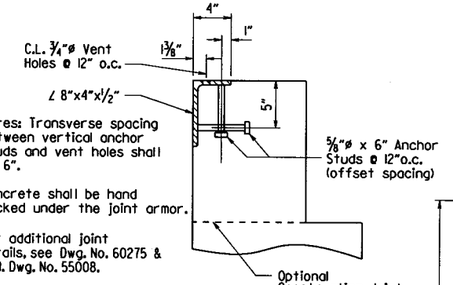
TYPICAL ANCHOR BOLT & BUMPER PLATE LAYOUT

No Scale



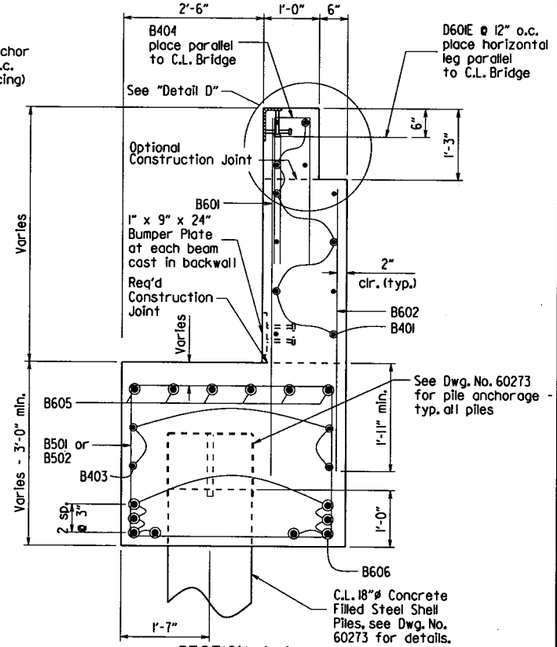
BUMPER PLATE DETAIL

No Scale



DETAIL D

No Scale



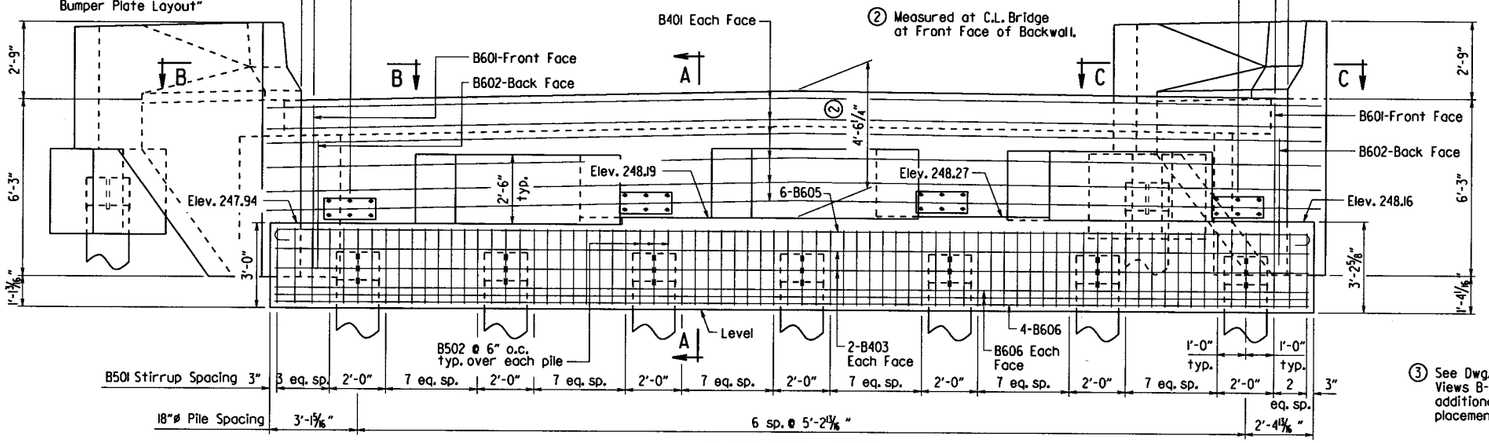
SECTION A-A

¾" = 1'-0"

③ B404 & B601 Front Face and B602 Back Face - 68 sp. @ 6" (measured along backwall)

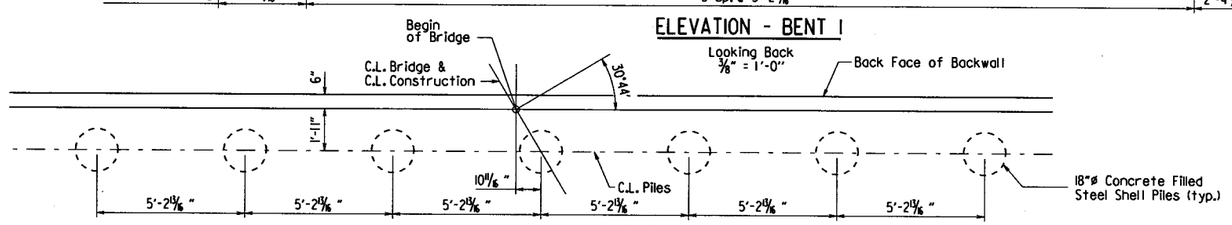
D60IE in paving bracket - 34 sp. @ 12"

Bumper Plate Spacing
See "Typical Anchor Bolt & Bumper Plate Layout"



ELEVATION - BENT 1

③ See Dwg. No. 60627 for Views B-B and C-C and additional details of placement of reinforcing.



Note: For details of piles and pile anchorage, see Dwg. No. 60273.

LAYOUT OF PILES - BENT 1

⅜" = 1'-0"

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7-31-18

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF BENTS 1 & 5
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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PRINT DATE: 7/31/2018

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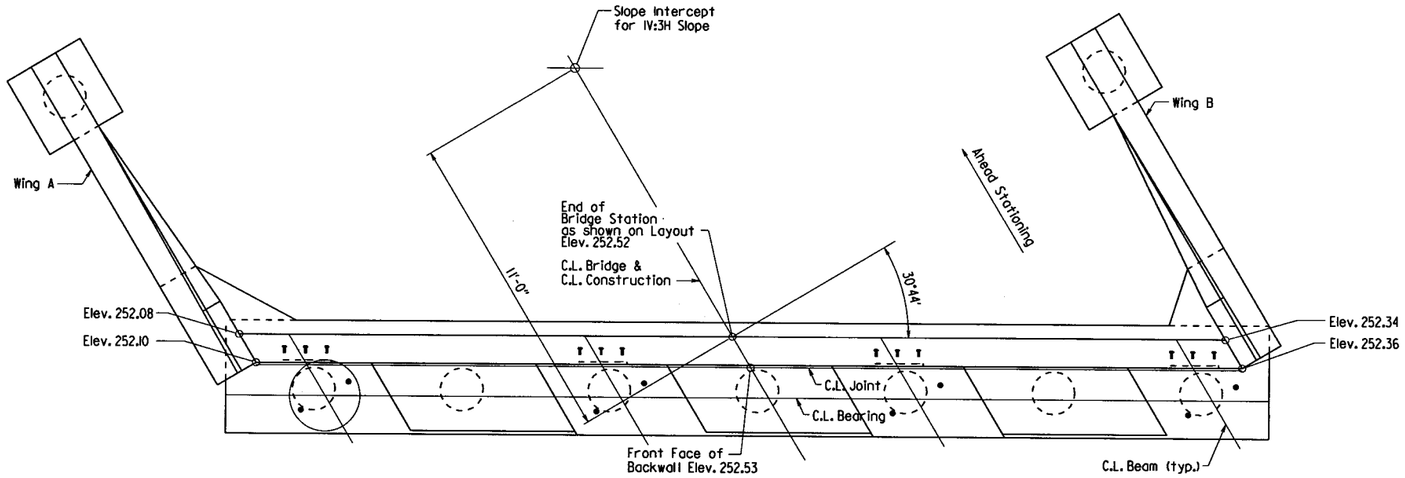
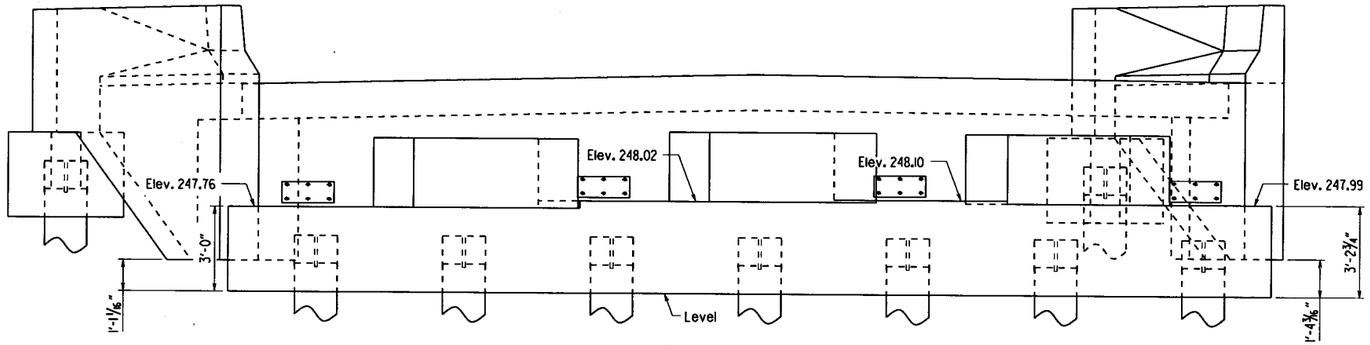
				JOB NO.		100871		
				(1)	07425 - BENTS 1 & 5 - 60266			



PLAN - BENT 5

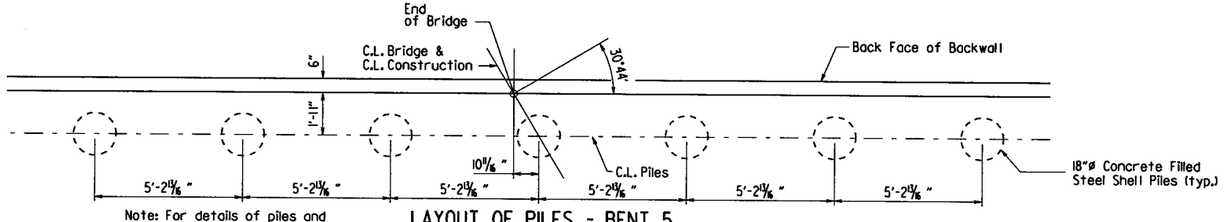
3/8" = 1'-0"

Reinforcing steel, details and dimensions shown for Bent 1, Dwg. No. 60265, are similar for Bent 5 shown on this sheet except as noted.



ELEVATION - BENT 5

Looking Ahead
3/8" = 1'-0"



Note: For details of piles and pile anchorage, see Dwg. No. 60273.

LAYOUT OF PILES - BENT 5

3/8" = 1'-0"

Notes:
For General Notes, see Std. Dwg. No. 55006.

Structural steel in end bents shall be M270, Gr. 50 and shall be paid for as "Structural steel in Beam Spans (M270, Gr. 50)".

No portion of the backwall shall be poured before beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "Expansion Device Installation" note, see Std. Dwg. No. 55008. No heavy construction equipment or backfill shall be allowed directly behind the backwall until the deck concrete for the adjacent span has been completed.

For additional information, see Layout.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF BENTS 1 & 5
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: b100871_b1.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: BAS DATE:

BRIDGE NO. 07425 DRAWING NO. 60266

PRINT DATE: 7/31/2018

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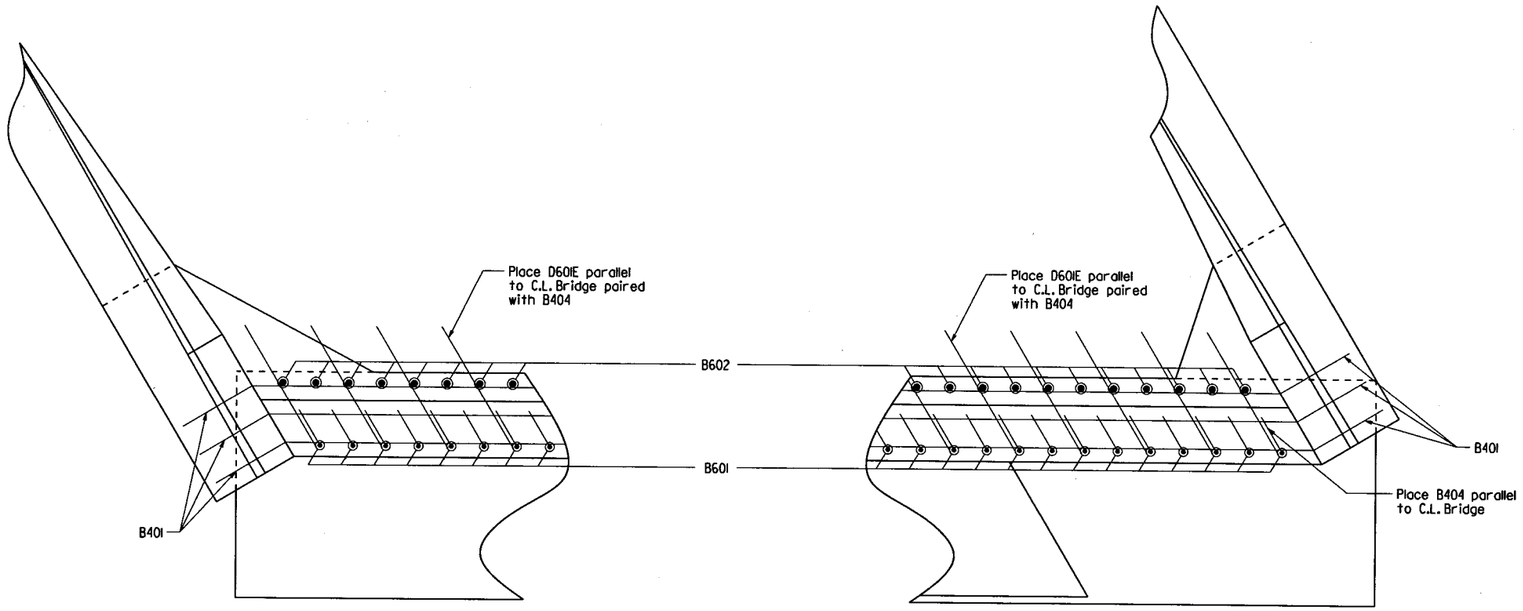
				6	ARK.			
				JOB NO.		100871		
				①		07425 - BENTS 1 & 5 - 60267		



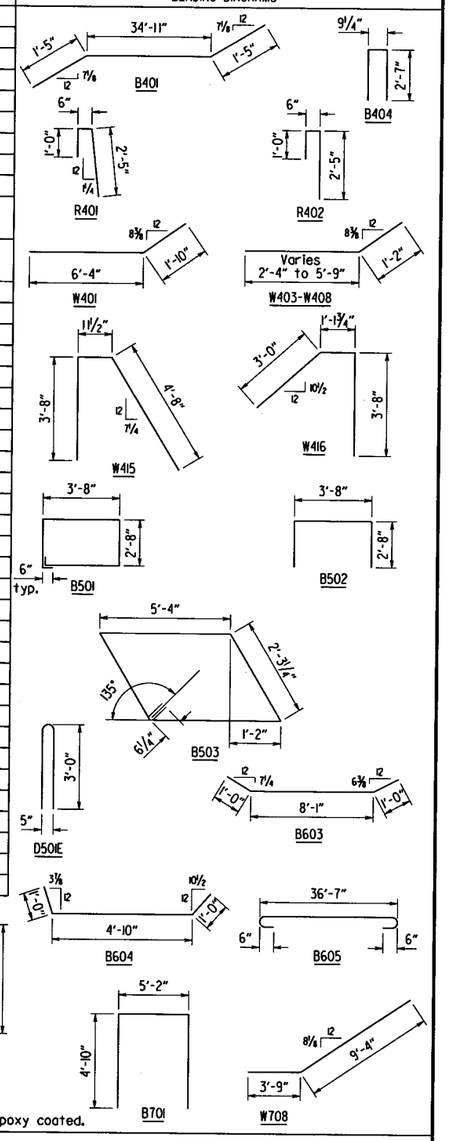
VIEW B-B
3/4" = 1'-0"

VIEW C-C
3/4" = 1'-0"

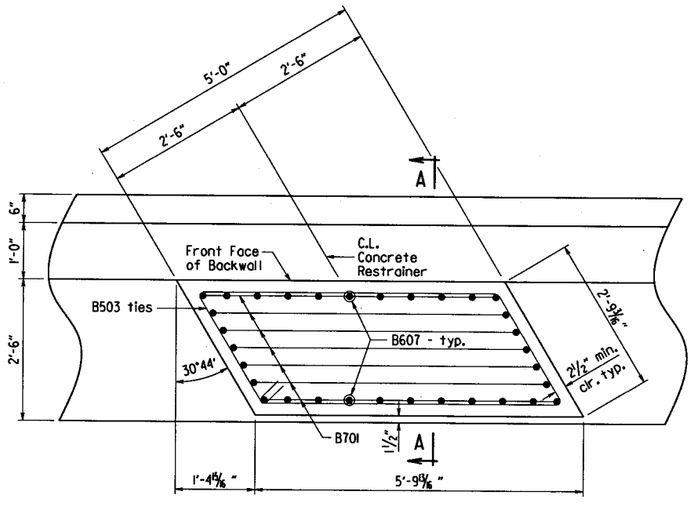
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	12	37'-9"	2"
B402	6	4'-8"	Str.
B403	4	36'-7"	Str.
B404	69	5'-10"	2"
R401	14	3'-10"	2"
R402	8	3'-9"	2"
R403	12	12'-8"	Str.
W401	10	8'-2"	2"
W402	10	8'-8"	Str.
W403-W408	2 each	Var. 3'-6" to 6'-11"	2"
W409-W414	2 each	Var. 4'-7" to 8'-1"	Str.
W415	3	9'-3"	2"
W416	3	7'-9"	2"
B501	55	13'-2"	2½"
B502	21	8'-10"	2½"
B503	21	15'-11"	3¾"
D501E	21	6'-2"	3¾"
B601	69	6'-4"	Str.
B602	69	5'-2"	Str.
B603	5	10'-1"	4½"
B604	5	6'-10"	4½"
B605	6	37'-11"	4½"
B606	8	36'-7"	Str.
B607	54	4'-3"	Str.
D601E	35	4'-3"	4½"
F601	12	2'-8"	Str.
R601	16	7'-10"	4½"
R602	6	5'-0"	Str.
B701	21	14'-6"	5¼"
W701	12	12'-8"	Str.
W702	4	9'-1"	Str.
W703	4	8'-3"	Str.
W704	4	7'-5"	Str.
W705	4	6'-7"	Str.
W706	4	5'-9"	Str.
W707	4	4'-10"	Str.
W708	4	13'-1"	5¼"

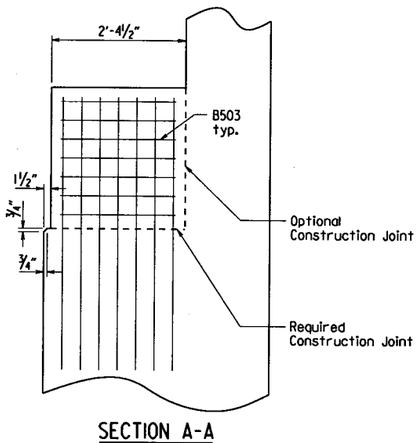
BENDING DIAGRAMS



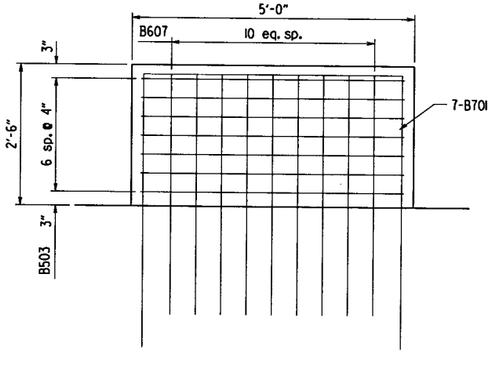
Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.



PLAN OF CONCRETE RESTRAINER
3/4" = 1'-0"



SECTION A-A
Looking along C.L. Bridge
3/4" = 1'-0"



ELEVATION OF CONCRETE RESTRAINER
3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF BENTS 1 & 5
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

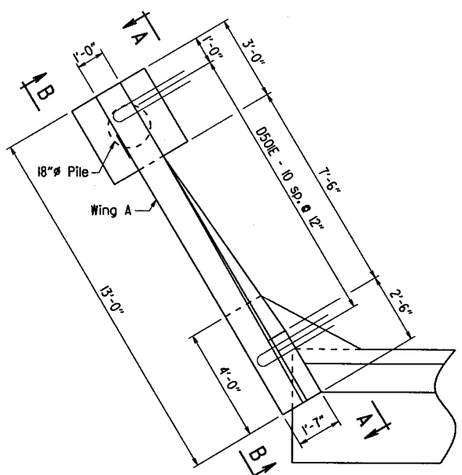
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

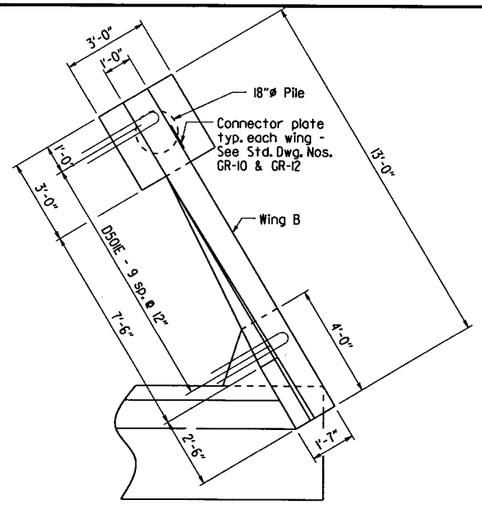
DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_bl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: BAS DATE: 1/16

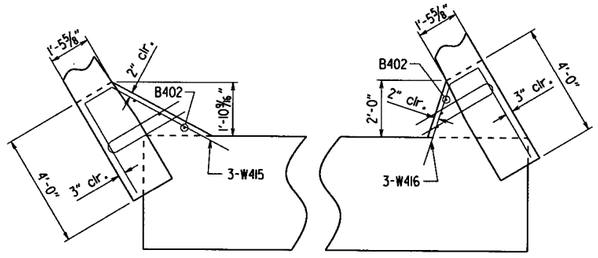
BRIDGE NO. 07425 DRAWING NO. 60267

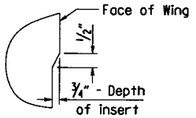
PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - BENTS 1 & 5 - 60268		



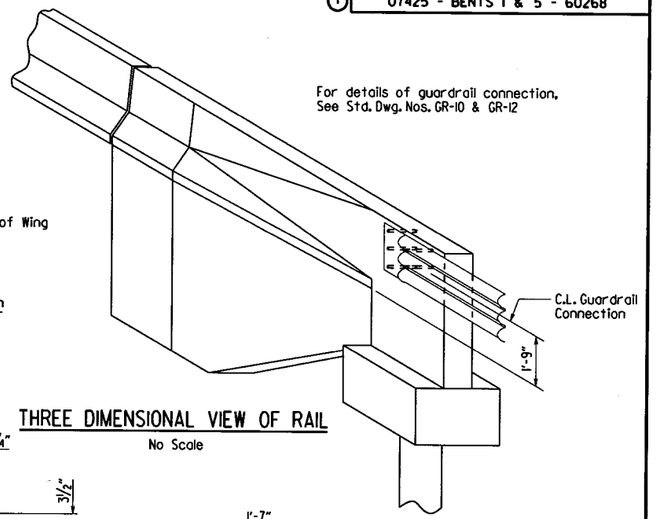






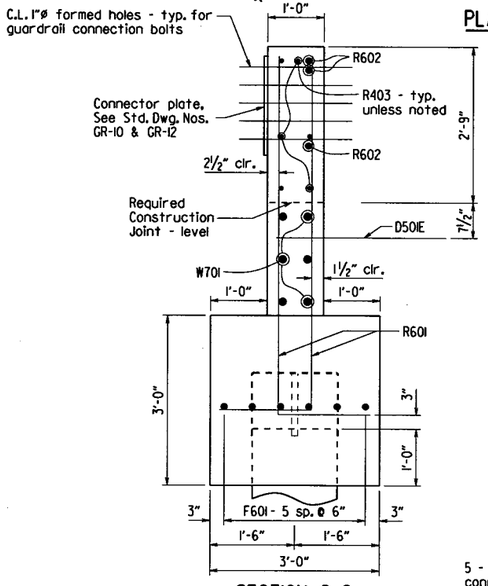
CHAMFER DETAIL

No Scale



THREE DIMENSIONAL VIEW OF RAIL

No Scale

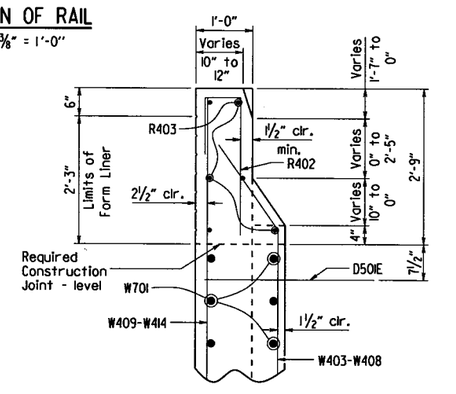


PLAN OF RAIL

⅜" = 1'-0"

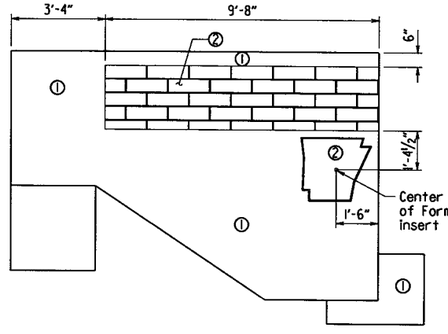
SECTION C-C

¾" = 1'-0"



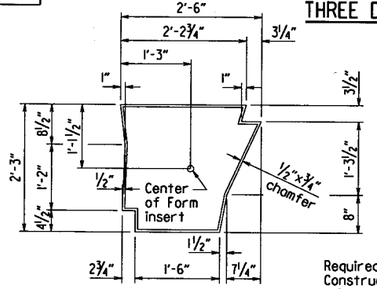
SECTION D-D

¾" = 1'-0"



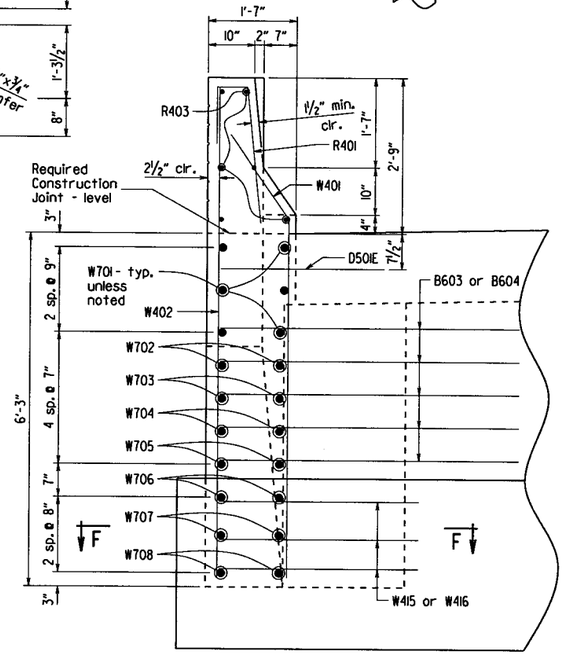
SECTION F-F

⅜" = 1'-0"



FORM INSERT DETAILS

¾" = 1'-0"



VIEW E-E

¾" = 1'-0"

WING AND PARAPET RAIL ENHANCEMENT

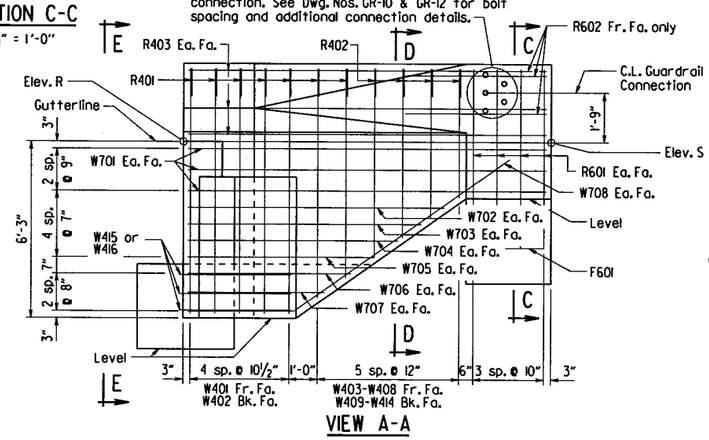
⅜" = 1'-0"

BENT	WING	R	S	T
1	A	252.29	252.10	4.06
	B	252.53	252.36	4.08
5	A	252.10	251.91	4.06
	B	252.36	252.17	4.06

Exposed portions to receive:

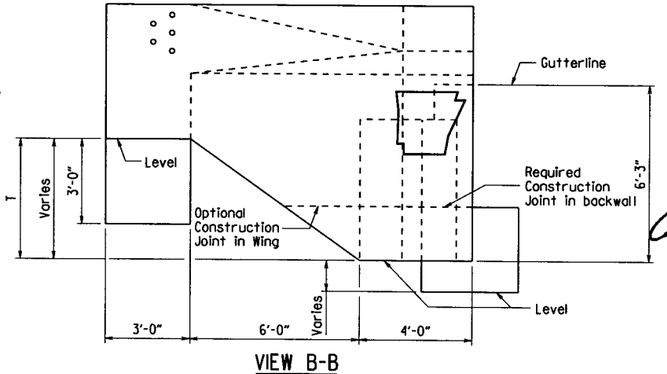
① Class 3 Textured Coating Finish (Color Chip No. 30108)

② Class 3 Textured Coating Finish (Color Chip No. 33578)



VIEW A-A

⅜" = 1'-0"



VIEW B-B

⅜" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF BENTS 1 & 5
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_bl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: ZAS DATE: 1/16

BRIDGE NO. 07425 DRAWING NO. 60268

PRINT DATE: 7/31/2018

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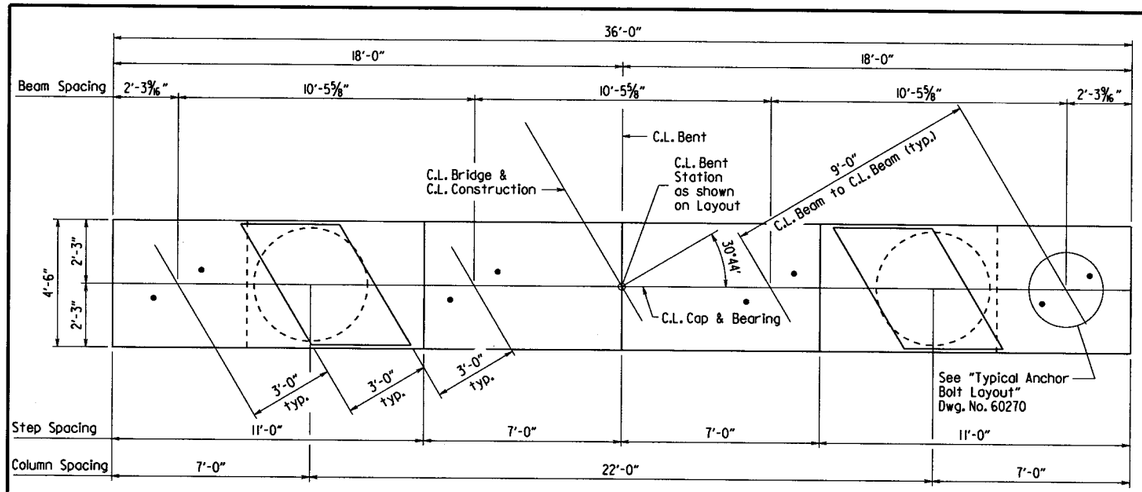
				6	ARK.			
				JOB NO.		100871		
				①		07425 - BENTS 2 & 4 - 60269		

TABLE OF VARIABLES

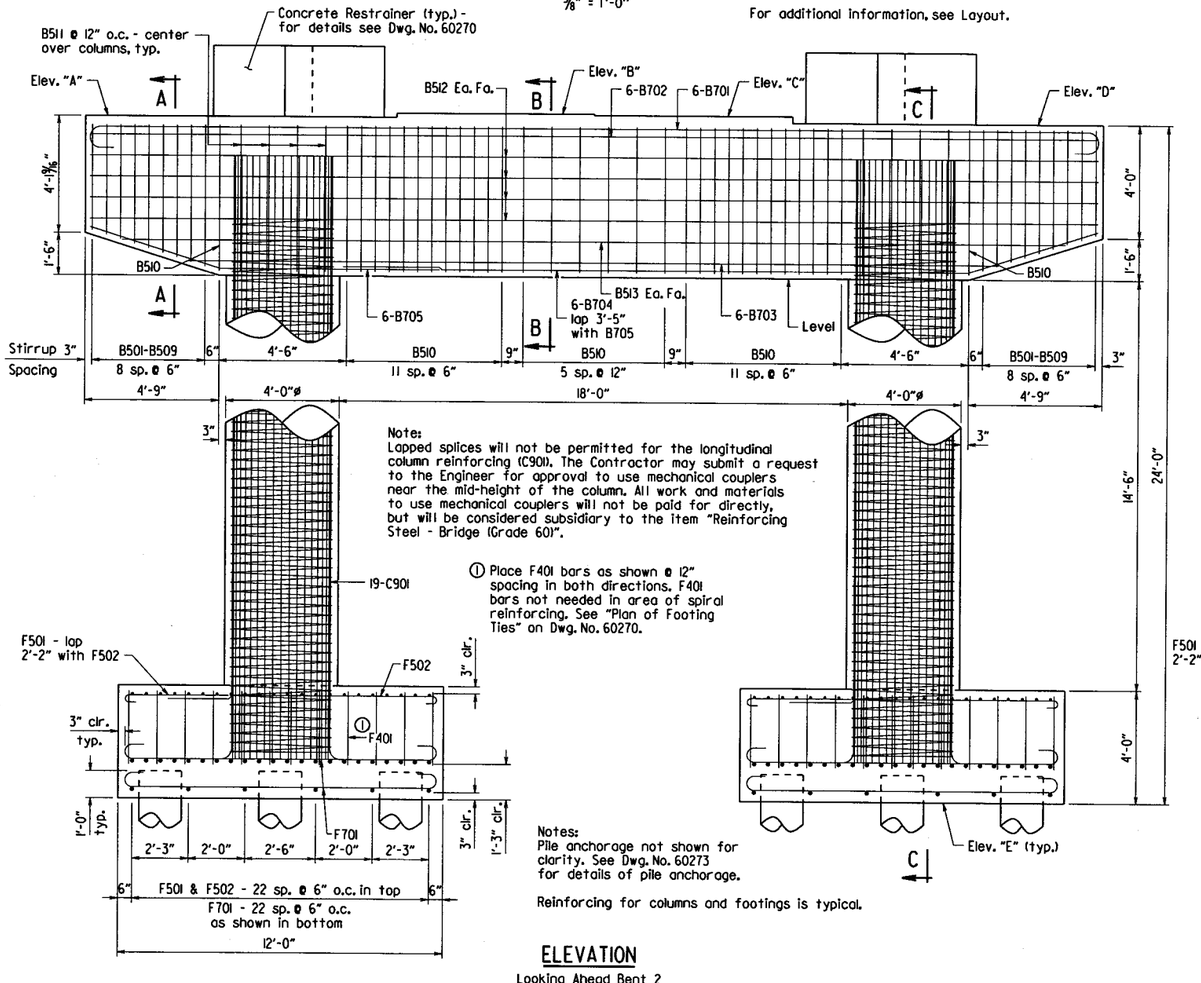
BENT	ELEV. "A"	ELEV. "B"	ELEV. "C"	ELEV. "D"	ELEV. "E"
2	248.97	249.11	249.07	248.84	224.84
4	248.87	249.00	248.96	248.73	224.73



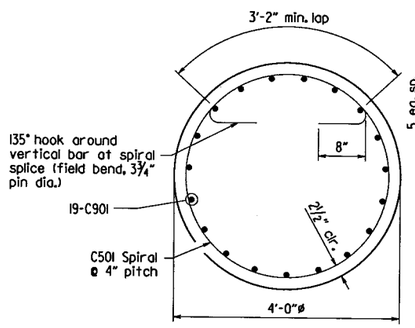
PLAN
⅜" = 1'-0"

Notes:
For General Notes, See Std. Dwg. No. 55006.

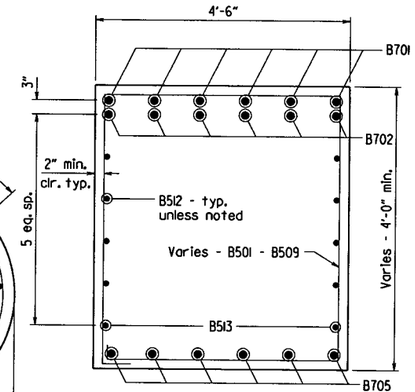
For additional information, see Layout.



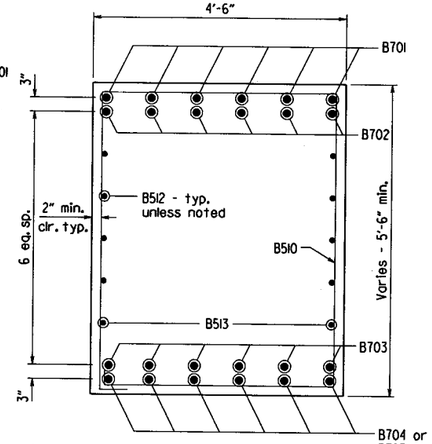
ELEVATION
Looking Ahead Bent 2
Looking Back Bent 4
⅜" = 1'-0"



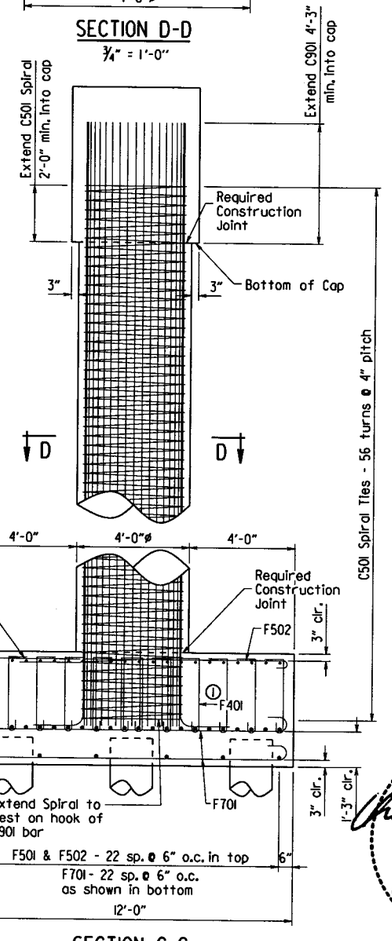
SECTION D-D
¾" = 1'-0"



SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"



SECTION C-C
⅜" = 1'-0"

NOTES FOR SPIRAL REINFORCING:

Spiral reinforcing shall be plain round or deformed steel bars meeting the requirements of AASHTO M 31 or M 322, Type A, with mill test reports (Grade 60) or shall be cold drawn wire meeting the requirements of AASHTO M 32 or M 225 (Grade 70) with a minimum diameter of 0.625".

Spiral reinforcement shall be paid for at the contract unit price bid per pound for "Reinforcing Steel-Bridge (Grade 60)". No additional payment shall be made for spacers, additional splices, or bracing needed for assembly, shipping, handling, or erecting.

The Contractor may elect to use a different number of spiral lapped splices per column. In no case shall a spiral be lapped within 4'-0" of the top or bottom of the column.

Splices in spiral reinforcement shall be lapped a minimum of 60 bar diameters.

Spiral reinforcement at lapped splices shall be terminated by a 135° hook with an 8" tail around a vertical bar. Hook may be field bent. Ends of spirals not lapped shall be terminated with 1½ turns and a 135° hook with an 8" tail around a vertical bar.

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENTS 2 & 4
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_b2.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: BAS DATE: 7/16

BRIDGE NO. 07425 DRAWING NO. 60269

PRINT DATE: 7/31/2018

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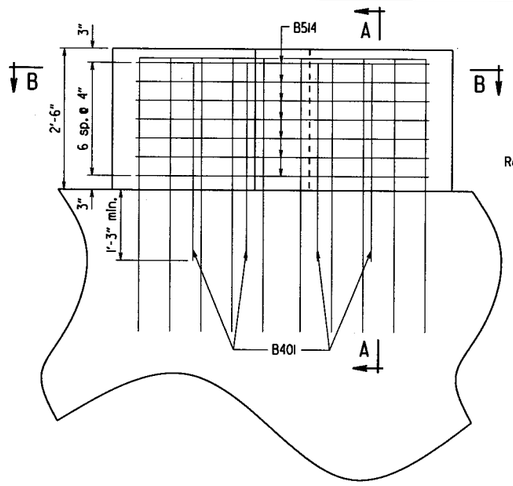
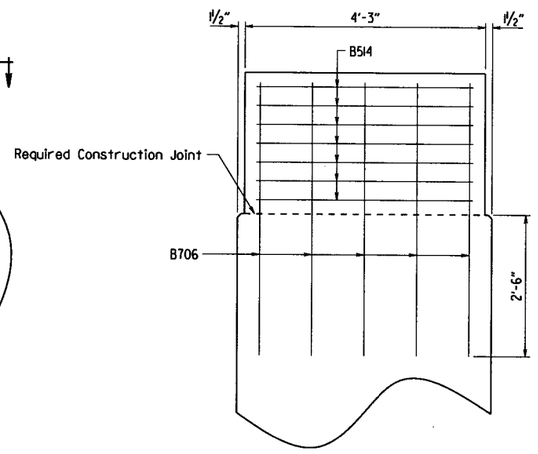
				6	ARK.			
				JOB NO.		100871		
				①		07425 - BENTS 2 & 4 - 60270		



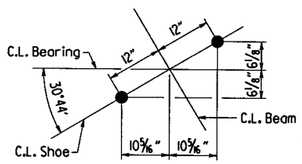
ELEVATION OF CONCRETE RESTRAINER

3/4" = 1'-0"



SECTION A-A

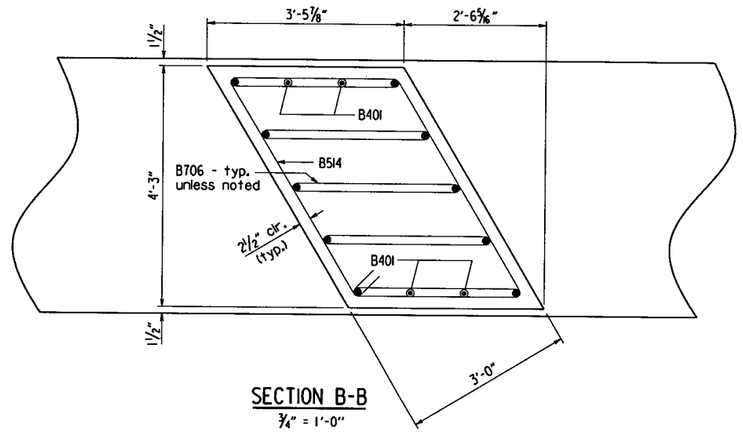
3/4" = 1'-0"



For details of elastomeric bearings, See Dwg. No. 60274

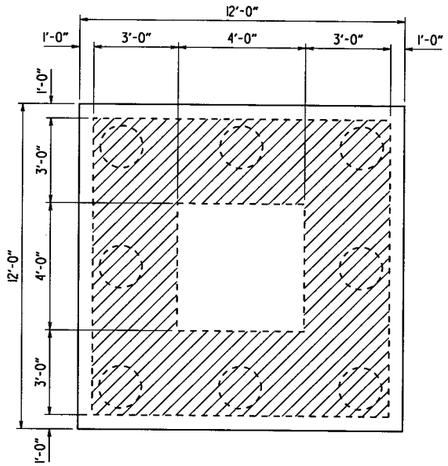
TYPICAL ANCHOR BOLT LAYOUT

No Scale



SECTION B-B

3/4" = 1'-0"



Place F401 bars within hatched area at 12" max. spacing in both directions.

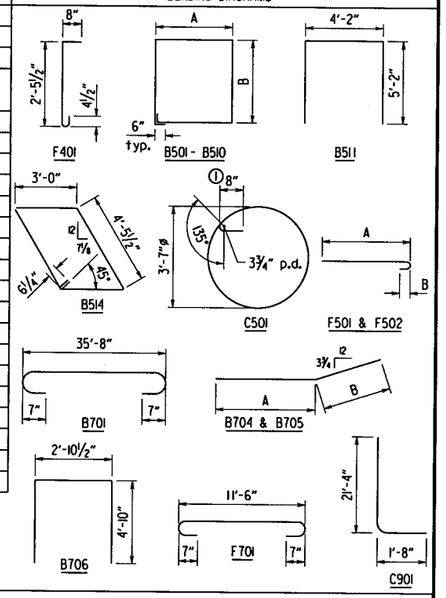
PLAN OF FOOTING TIES

No Scale

BAR LIST - PER BENT

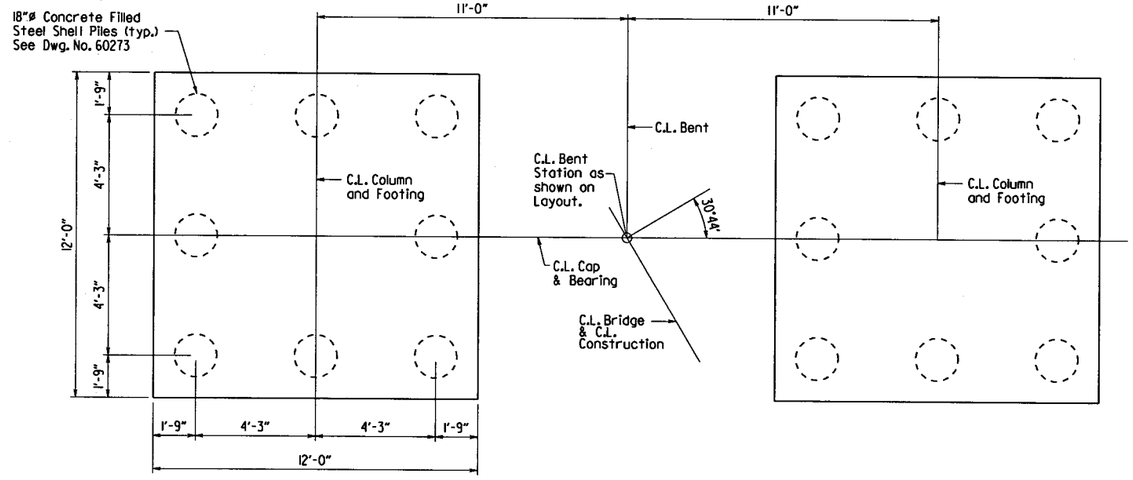
MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	8	3'-6"			Str.
F401	224	3'-7"			3"
B501 - B509	2 ea.	16'-4" - 18'-10"	4'-2"	3'-9" - 5'-0"	2½"
B510	32	19'-2"	4'-2"	5'-2"	2½"
B511	8	14'-4"			2½"
B512	8	35'-8"			Str.
B513	2	33'-5"			Str.
B514	14	15'-7"			3¾"
C501	2	657'-0"			Spiral
F501	92	4'-5"	3'-10"	5"	3¾"
F502	92	10'-6"	9'-11"	5"	3¾"
B701	6	37'-4"			5¼"
B702	6	35'-8"			Str.
B703	6	28'-8"			Str.
B704	6	26'-11"	22'-1"	4'-10"	5¼"
B705	6	12'-7"	7'-9"	4'-10"	5¼"
B706	10	12'-2"			5¼"
F701	116	13'-2"			5¼"
C901	38	22'-9"			9"

BENDING DIAGRAMS



① At the lapped splice end of the spiral, the hook may be field bent around a vertical bar.

Dimensions are out to out of bars.



NOTE: For details of piles and pile anchorage, see Dwg. No. 60273.

PLAN OF FOOTINGS BENTS 2 & 4

3/8" = 1'-0"

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENTS 2 & 4
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: b100871.b2.dgn
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BRIDGE NO. 07425 DRAWING NO. 60270

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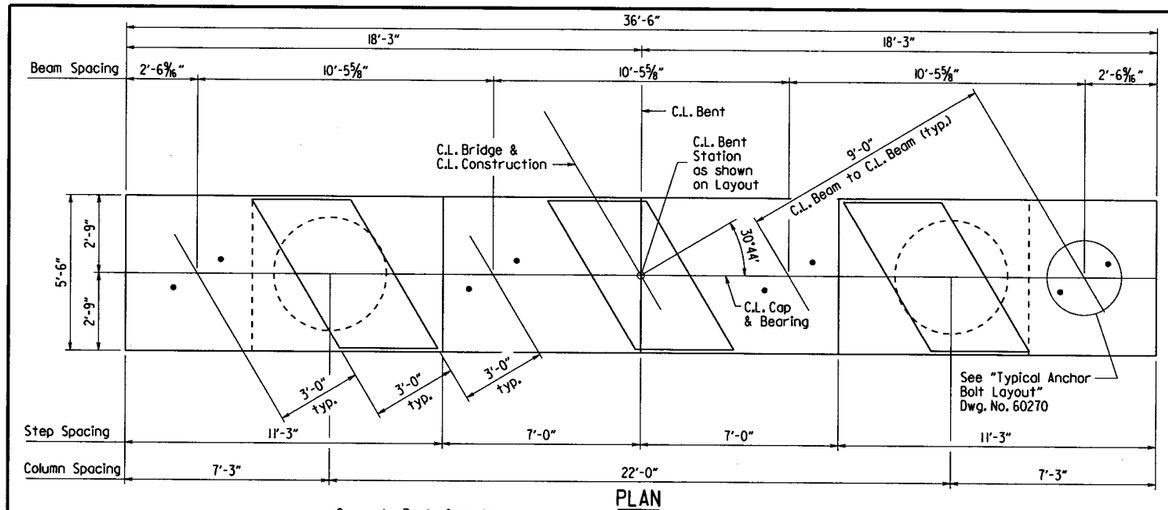
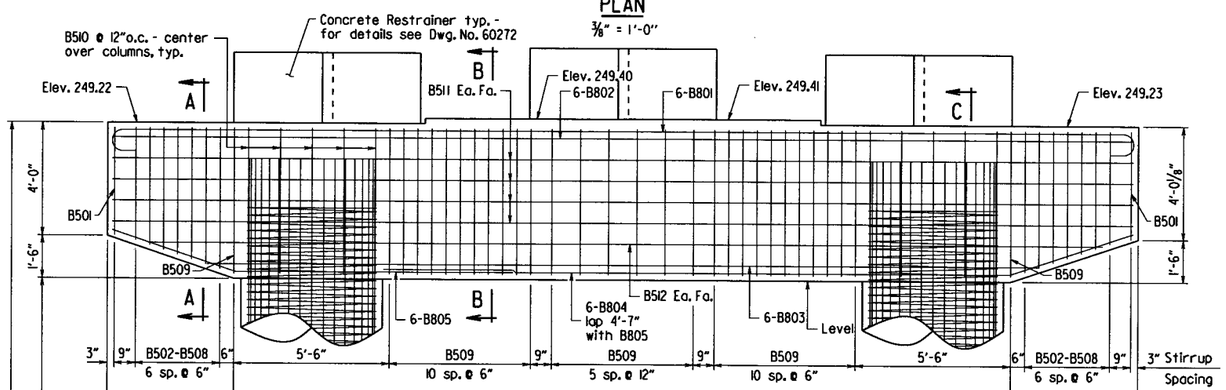
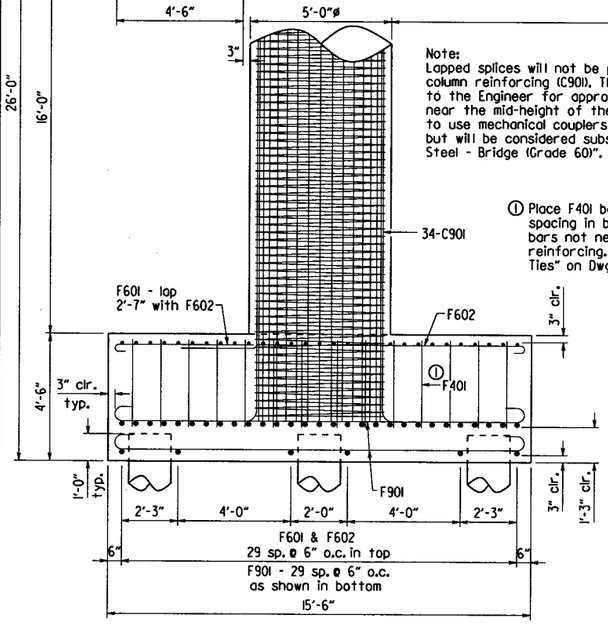
				JOB NO.		100871		
				①		07425 - BENT 3 - 60271		



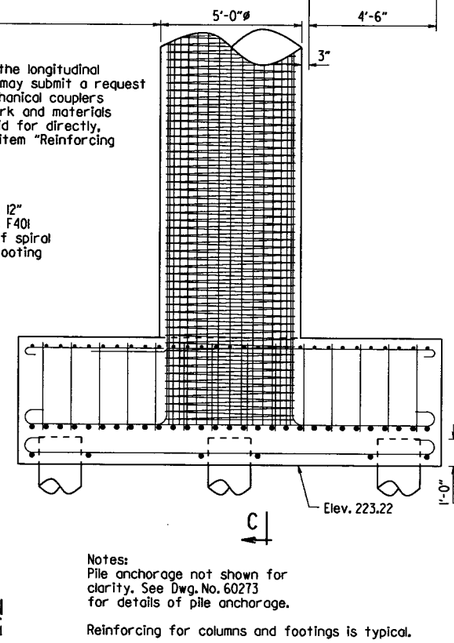
PLAN
⅜" = 1'-0"



Note:
Lapped splices will not be permitted for the longitudinal column reinforcing (C901). The Contractor may submit a request to the Engineer for approval to use mechanical couplers near the mid-height of the column. All work and materials to use mechanical couplers will not be paid for directly, but will be considered subsidiary to the item "Reinforcing Steel - Bridge (Grade 60)".



ELEVATION
Looking Ahead
⅜" = 1'-0"

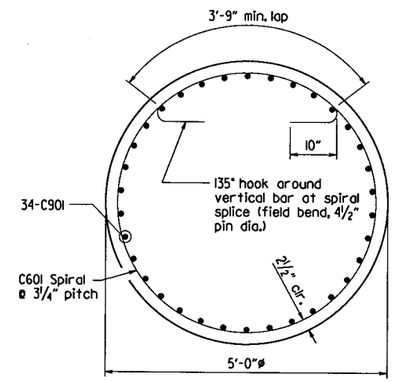


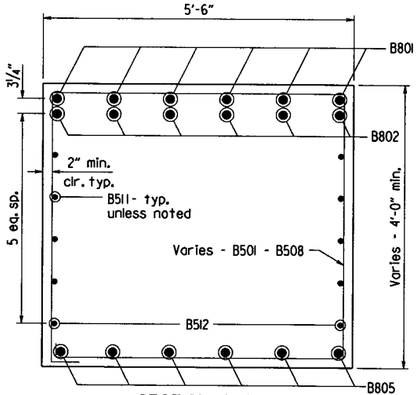
Notes:
Pile anchorage not shown for clarity. See Dwg. No. 60273 for details of pile anchorage.

Reinforcing for columns and footings is typical.

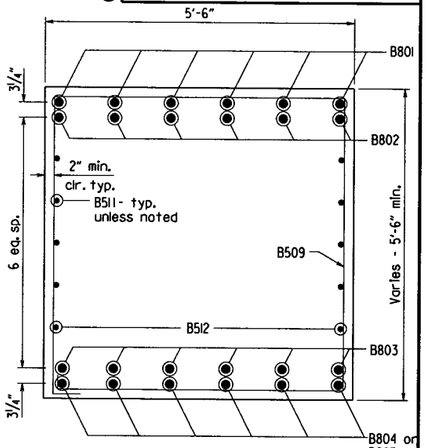
Notes:
For General Notes, See Std. Dwg. No. 55006.

For additional information, see Layout.

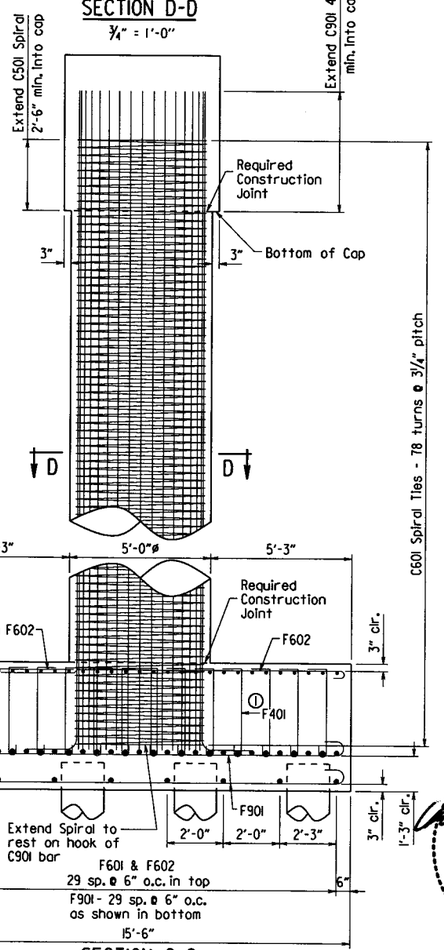




SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"



SECTION C-C
⅜" = 1'-0"

NOTES FOR SPIRAL REINFORCING:

Spiral reinforcing shall be plain round or deformed steel bars meeting the requirements of AASHTO M 31 or M 322, Type A, with mill test reports (Grade 60) or shall be cold drawn wire meeting the requirements of AASHTO M 32 or M 225 (Grade 70) with a minimum diameter of 0.625".

Spiral reinforcement shall be paid for at the contract unit price bid per pound for "Reinforcing Steel-Bridge (Grade 60)". No additional payment shall be made for spacers, additional splices, or bracing needed for assembly, shipping, handling, or erecting.

The Contractor may elect to use a different number of spiral lapped splices per column. In no case shall a spiral be lapped within 5'-0" of the top or bottom of the column.

Splices in spiral reinforcement shall be lapped a minimum of 60 bar diameters.

Spiral reinforcement at lapped splices shall be terminated by a 135° hook with an 10" tail around a vertical bar. Hook may be field bent. Ends of spirals not lapped shall be terminated with 1½ turns and a 135° hook with an 10" tail around a vertical bar.

STATE OF ARKANSAS
CHARLES R. ELLIS
No. 9235
LICENSED PROFESSIONAL ENGINEER
7-31-18
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT 3
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP	DATE: 1/10/2018	FILENAME: bl00871_b2.dgn	
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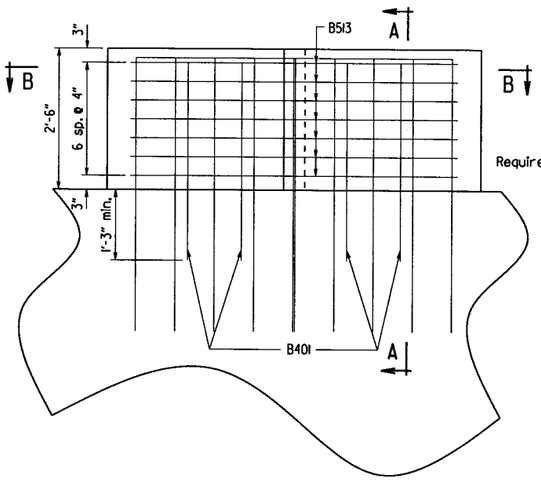
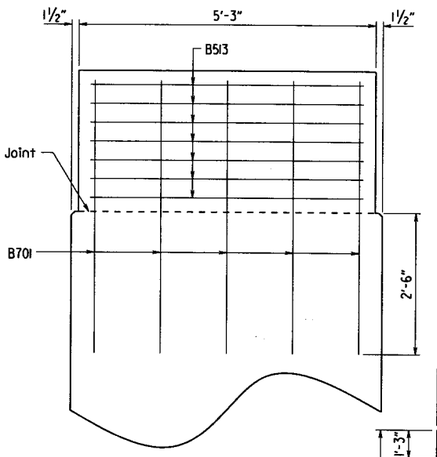
				JOB NO.		100871		
				①		07425 - BENT 3 - 60272		



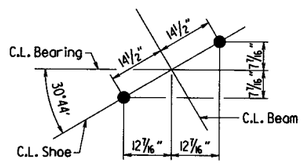
ELEVATION OF CONCRETE RESTRAINER

3/8" = 1'-0"



SECTION A-A

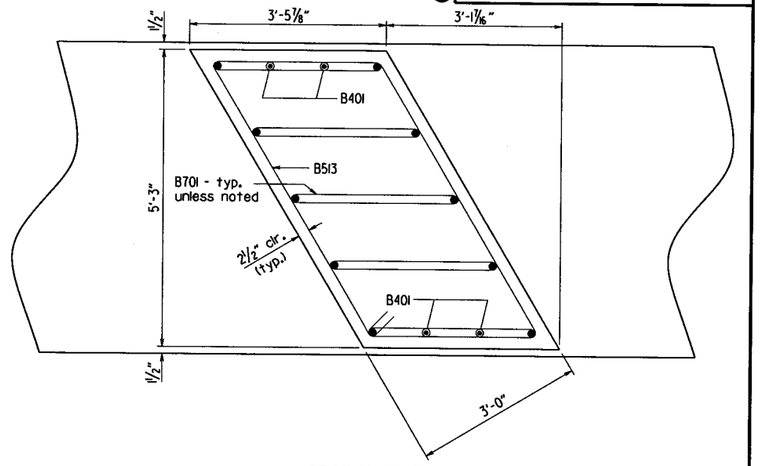
3/8" = 1'-0"



For details of elastomeric bearings, See Dwg. No. 60274

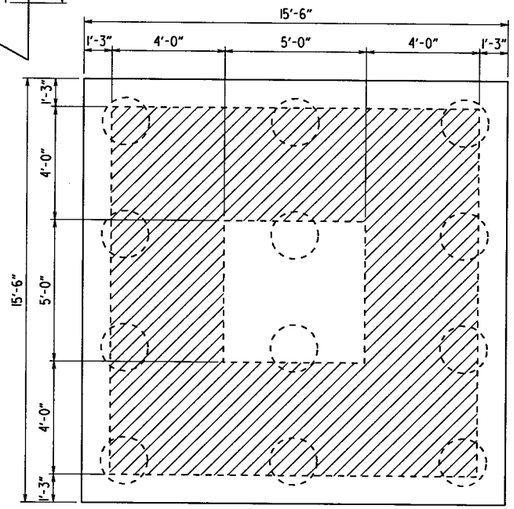
TYPICAL ANCHOR BOLT LAYOUT

No Scale



SECTION B-B

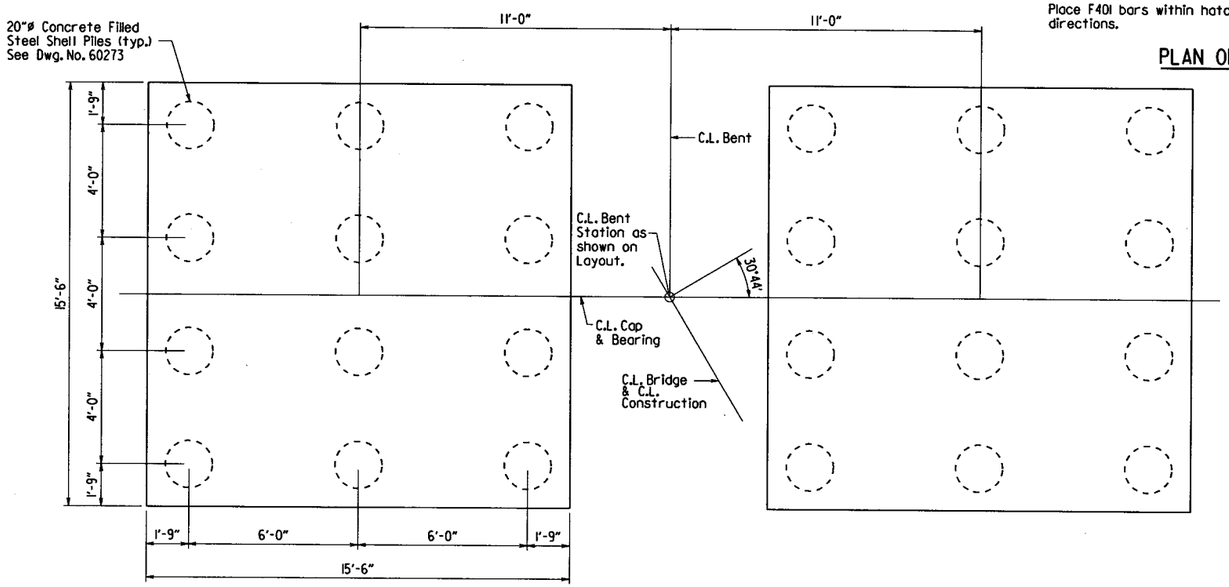
3/8" = 1'-0"



Place F401 bars within hatched area at 12" max. spacing in both directions.

PLAN OF FOOTING TIES

No Scale



NOTE: For details of piles and pile anchorage, see Dwg. No. 60273.

PLAN OF FOOTINGS BENT 3

3/8" = 1'-0"

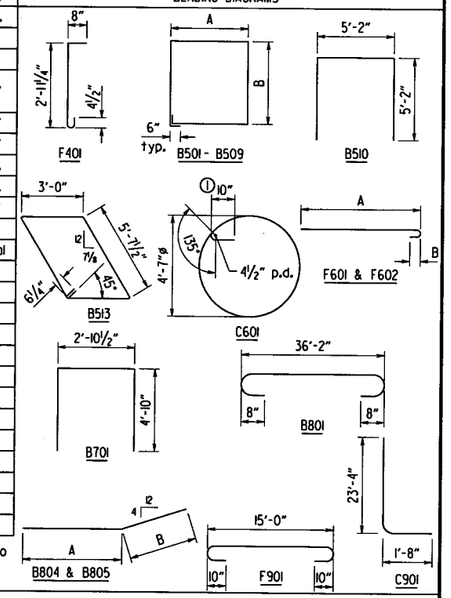
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	12	3'-6"			Str.
F401	360	4'-0"			3"
B501 - B508	2 ea.	18'-4" - 20'-10"	5'-2"	3'-9" - 5'-0"	2½"
B509	30	21'-2"	5'-2"	5'-2"	2½"
B510	10	15'-4"			2½"
B511	8	36'-2"			Str.
B512	2	33'-8"			Str.
B513	21	17'-11"			3¾"
C601	2	1153'-0"			Spiral
F601	120	5'-9"	5'-1"	6"	4½"
F602	120	13'-3"	12'-7"	6"	4½"
B701	15	12'-2"			5¼"
B801	6	38'-0"			6"
B802	6	36'-2"			Str.
B803	6	29'-3"			Str.
B804	6	26'-8"	22'-2"	4'-6"	6"
B805	6	14'-4"	9'-10"	4'-6"	6"
C901	68	24'-9"			9"
F901	148	17'-6"			9"

① At the lapped splice end of the spiral, the hook may be field bent around a vertical bar.

Dimensions are out to out of bars.

BENDING DIAGRAMS



STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
1-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 3
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

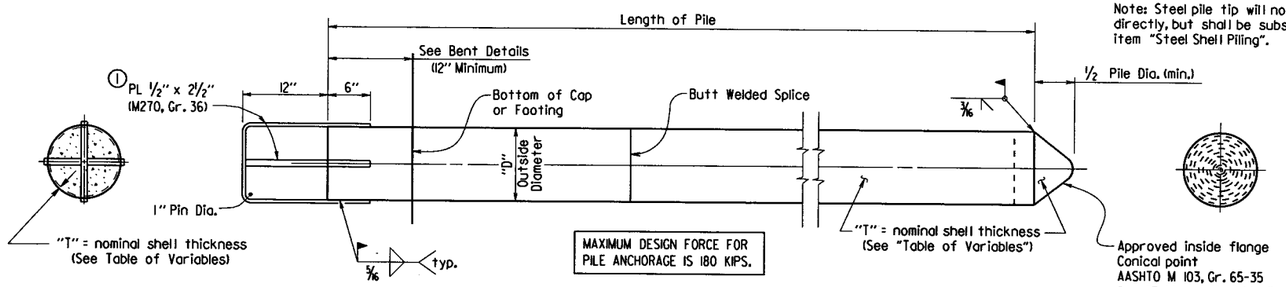
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_b2.dgn
CHECKED BY: DRP DATE: 1/31/18 SCALE: As Shown
DESIGNED BY: ERS DATE: 1/16

BRIDGE NO. 07425 DRAWING NO. 60272

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				① 07425 - STEEL SHELL PILES - 60273				

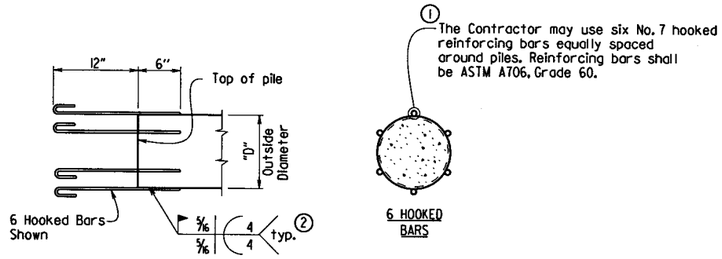


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

CONCRETE FILLED STEEL SHELL PILE

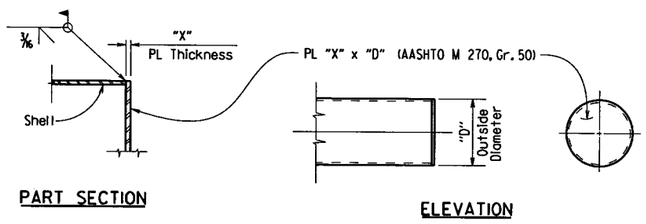
① Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

② Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

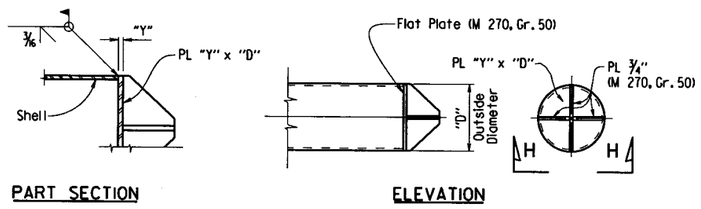


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

③ Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement. Flat tip not allowed Bents 1 & 5.

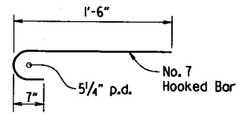


PART SECTION

ELEVATION

VIEW H-H

ALTERNATE VANED TIP DETAIL



HOOKED BAR DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

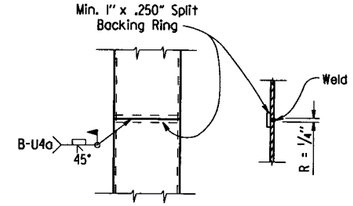
Seismic Performance Zone: 4

Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.).

Steel shell piles 50' in length or less shall be completely filled with Class S Concrete with a minimum 28-day compressive strength, f'c = 3,500 psi, and shall be poured in the dry. At the Contractor's option, pile lengths greater that 50' may be filled with sand up to 50' below the top plan elevation of the steel shell pile and the remaining 50' filled wtih Class S Concrete. Sand used for filling of steel shell piles shall be clean and free of any organic matter.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, sand, structural steel and reinforcing steel (including welding) shall not be paid for directly, but shall be considered included in the contract unit price bid for "Steel Shell Piling (18" Dia.)" or "Steel Shell Piling (20" Dia").



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

	OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	PLATE THICKNESS "X"	PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
③	18"	0.50"	2½"	1½"	6	1,114
	20"	0.50"	2½"	1¾"	6	1,241

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
7-31-18

BRIDGE ENGINEER

DETAILS OF CONCRETE FILLED STEEL SHELL PILES HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/18 FILENAME: bl00871_cl.dgn

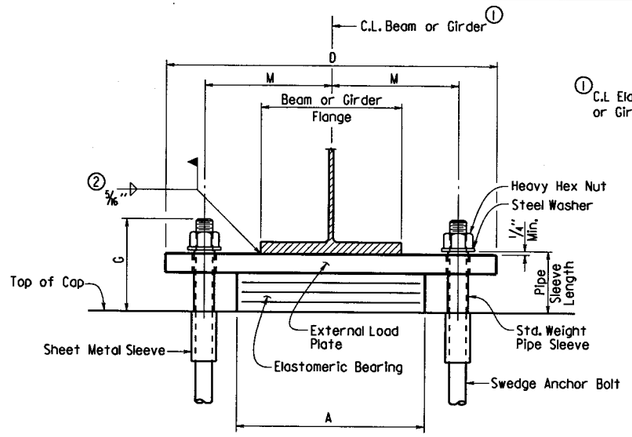
CHECKED BY: JD HP DATE: 7/3/18 SCALE: No Scale

DESIGNED BY: ZAS DATE: 7/16

BRIDGE NO. 07425 DRAWING NO. 60273

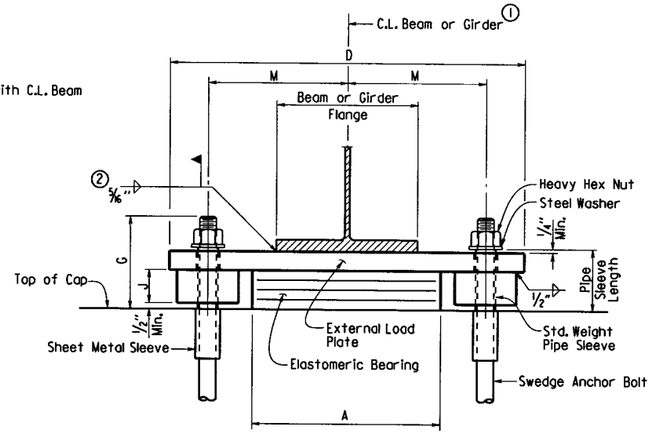
PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				① 07425 - ELASTO. BEARINGS - 60274				



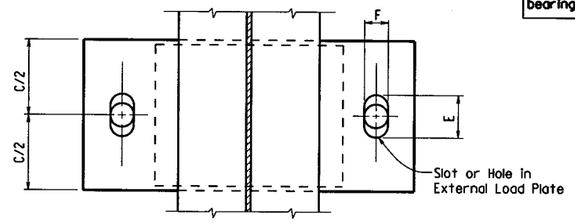
FRONT VIEW - AT BENT NOS. 1,2,4 & 5

① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.

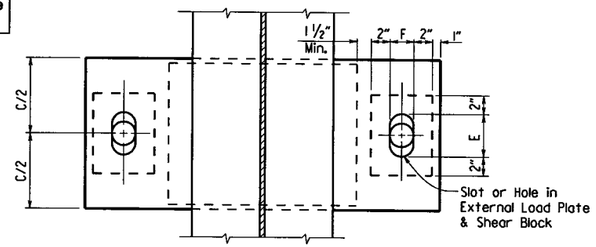


FRONT VIEW - AT BENT NO. 3

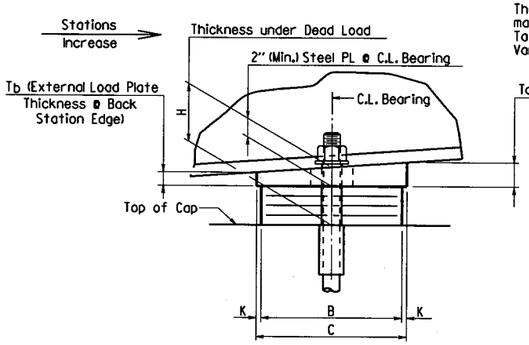
Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to Ta and Tb.



PLAN VIEW - AT BENT NOS. 1,2,4 & 5



PLAN VIEW - AT BENT NO. 3

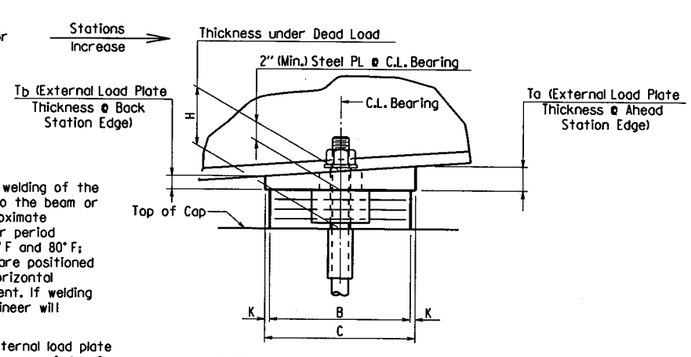


SIDE VIEW - AT BENT NOS. 1,2,4 & 5

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

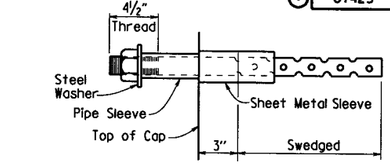
② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



SIDE VIEW - AT BENT NO. 3

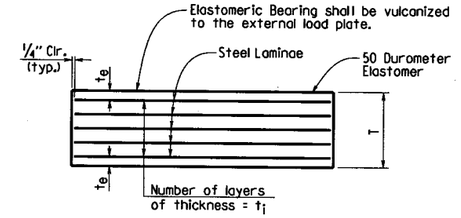
④ Shear blocks 4 inches or thicker may be fabricated from built-up plates with a 5/16" groove weld on all sides. No plate shall be less than 2" nominal thickness.



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50)".



t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50)". External load plates and shear blocks will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

③ Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD: A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	④ J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07425	1	All	Exp	4	123	9 1/4"	5 5/16"	18"	7 1/2"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	8 1/2"	30"	5 3/4"	3 1/8"	NA	1/2"	11 3/4"	2.06"	1.94"	2 1/4" x 34"	55	2 1/2" x 5 7/8"	4" x 6"	4"
	2	All	Exp	4	292	7 3/4"	3 13/16"	18"	13"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	14"	31"	5 3/8"	3 3/4"	NA	1/2"	12"	2.05"	1.95"	2 1/2" x 35"	55	3" x 4 1/8"	4" x 6"	4 1/2"
	3	All	Fix	4	322	7 3/4"	3 13/16"	18"	14"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	15"	38 3/4"	3 3/4"	3 3/4"	1 1/4"	1/2"	14 1/2"	2.00"	2.00"	2 1/2" x 35"	55	3" x 4 1/8"	4" x 6"	4 1/2"
	4	All	Exp	4	292	7 3/4"	3 13/16"	18"	13"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	14"	31"	5 3/8"	3 3/4"	NA	1/2"	12"	1.94"	2.06"	2 1/2" x 35"	55	3" x 4 1/8"	4" x 6"	4 1/2"
	5	All	Exp	4	123	9 1/4"	5 5/16"	18"	7 1/2"	5	1/2"	1/4"	6 @ 12 ga.	3 5/8"	8 1/2"	30"	5 3/4"	3 1/8"	NA	1/2"	11 3/4"	1.94"	2.06"	2 1/4" x 34"	55	2 1/2" x 5 7/8"	4" x 6"	4"

PRINT DATE: 7/31/2018

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/18 FILENAME: bl00871_el.dgn

CHECKED BY: DHP DATE: 7/31/18 SCALE: No Scale

DESIGNED BY: RJF DATE: 6/28/18

BRIDGE NO. 07425 DRAWING NO. 60274

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - 330'-0" UNIT - 60275		

Slab Reinforcing:

Longitudinal: S401E in top and bottom (place as shown)
S601E over interior supports and
S602E at end supports, see "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 60279

Transverse: S501E @ 12" o.c. in top, S402E @ 12" o.c. in bottom — Alternate
S502E @ 12" o.c. bent up over beams
S503E @ 6" in top of overhangs (bundled with #5 bars) both sides

Notes:
At the Contractor's option, in lieu of providing bars S502E, one epoxy coated #5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S502E. Bars in top and bottom shall be epoxy coated.

Class I Protective Surface Treatment shall be applied to the roadway surface and to the roadway face of the concrete parapet rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, per Subsection 804.06. Placement of slab bolsters or hi-chairs with full-length lower runners directly on removable deck forms will not be allowed.

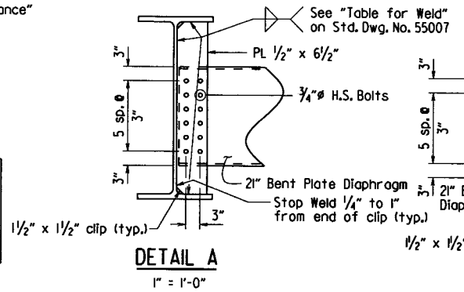
① See "Adjustment for Slab Thickness Tolerance" on Std. Dwg. No. 55007.

② Tolerance: Minus = 1/4";
Plus = to the amount of slab thickening used to meet slab thickness tolerance.
See "Adjustment for Slab Thickness Tolerance" on Std. Dwg. No. 55007.

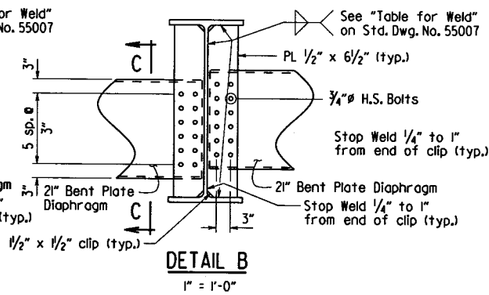
③ Working Point to gutterline.

SILICONE JOINT DATA

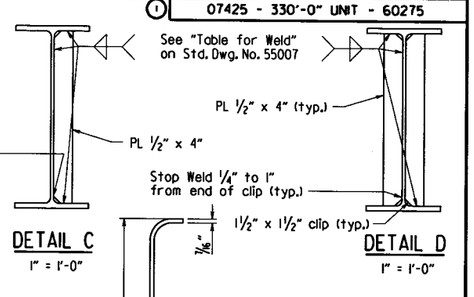
Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature Of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1 & 5	2 1/4"	2"	1 3/4"	3 1/4"	1" x 1"	5"



DETAIL A
1" = 1'-0"

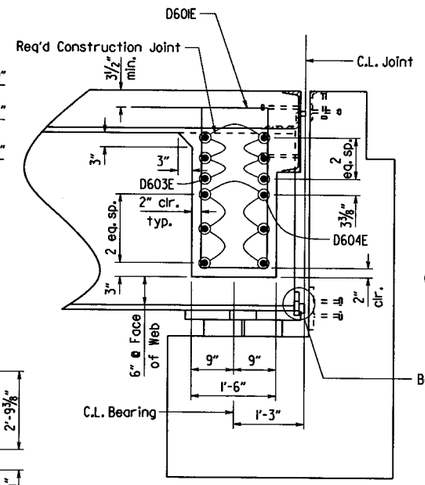


DETAIL B
1" = 1'-0"

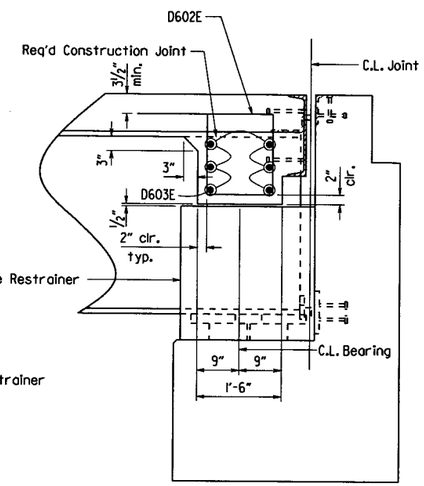


DETAIL C
1" = 1'-0"

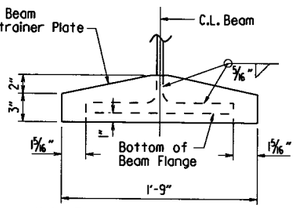
DETAIL D
1" = 1'-0"



SECTION A-A
3/4" = 1'-0"



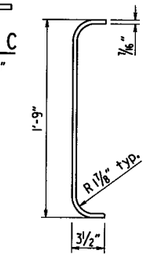
SECTION B-B
3/4" = 1'-0"



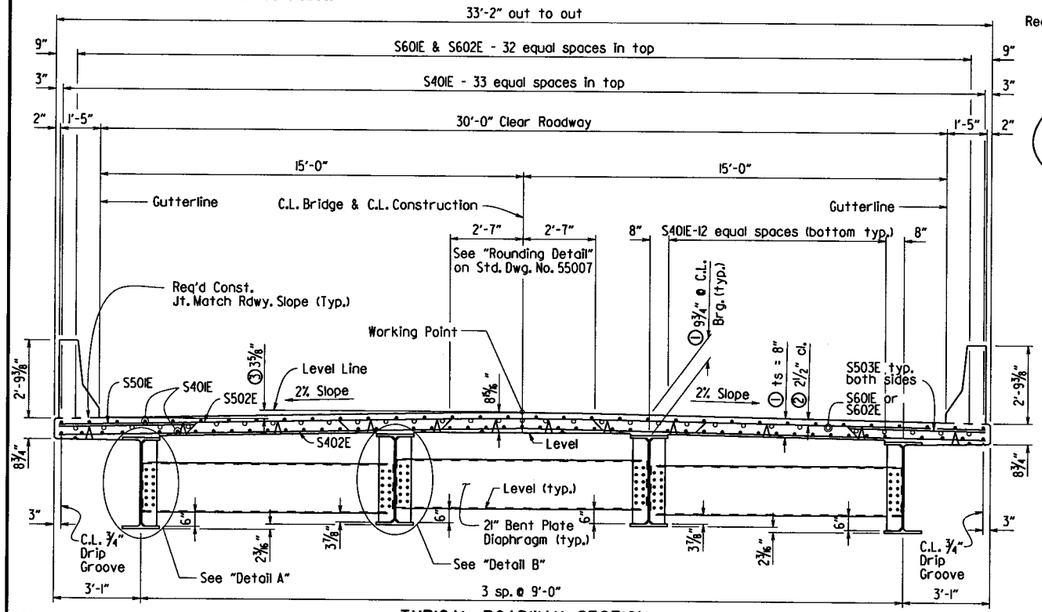
Note: Beam restrainer plate shall be centered on each beam line.

Bumper bar not shown in this view.

VIEW C-C
NO SCALE



SECTION C-C
NO SCALE

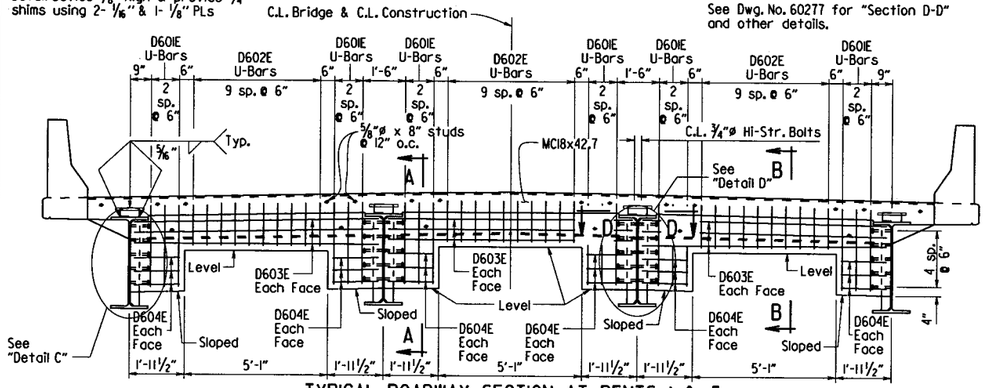


TYPICAL ROADWAY SECTION
3/8" = 1'-0"

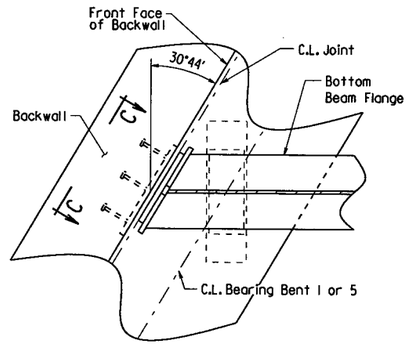
Expansion Device:
Rdwy. Channel - MC18x42.7
Conn. L's 8"x4"x 1/2"
Detail Device 1/8" high & provide 1/4" shims using 2- 1/16" & 1- 1/8" PLs

Notes:
Sections A-A & B-B are taken perpendicular to Bent Cap.

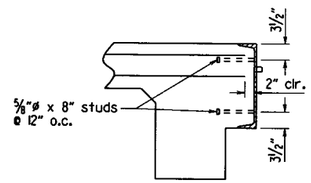
See Dwg. No. 60277 for "Section D-D" and other details.



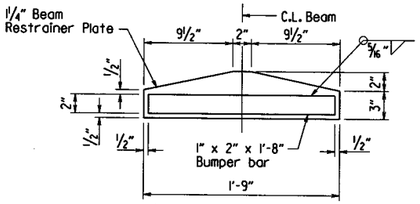
TYPICAL ROADWAY SECTION AT BENTS 1 & 5
LOOKING BACK BENT 1
LOOKING AHEAD BENT 5
3/8" = 1'-0"



PLAN OF BEAM RESTRAINER
3/4" = 1'-0"



DETAILS OF ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING
NO SCALE



Note: Hidden lines of beam are not shown in this view.

VIEW C-C
NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

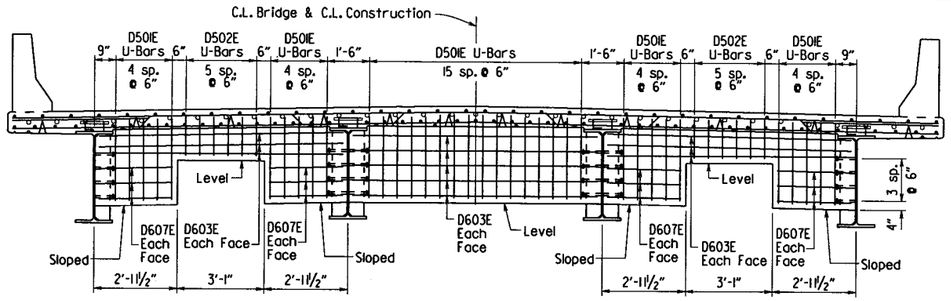
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_sl.dgn
CHECKED BY: DHT DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: KJF DATE: 6/28/18

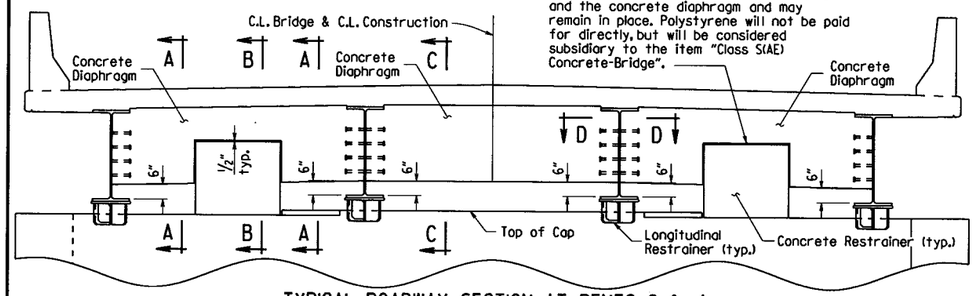
BRIDGE NO. 07425 DRAWING NO. 60275

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - 330'-0" UNIT - 60276		



TYPICAL ROADWAY SECTION AT BENTS 2 & 4

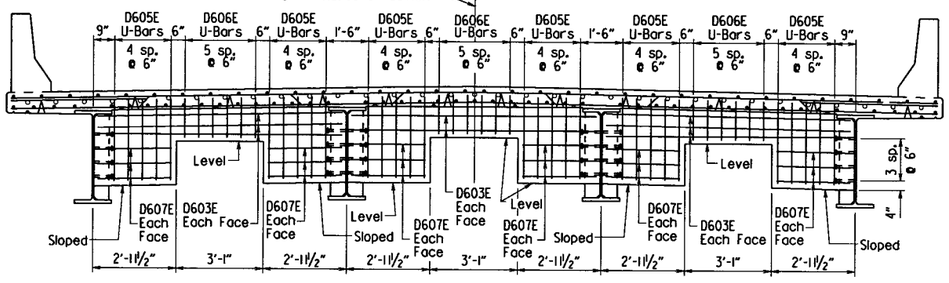


½" polystyrene shall be used as a bond breaker between the concrete restrainer and the concrete diaphragm and may remain in place. Polystyrene will not be paid for directly, but will be considered subsidiary to the item "Class S(AE) Concrete-Bridge".

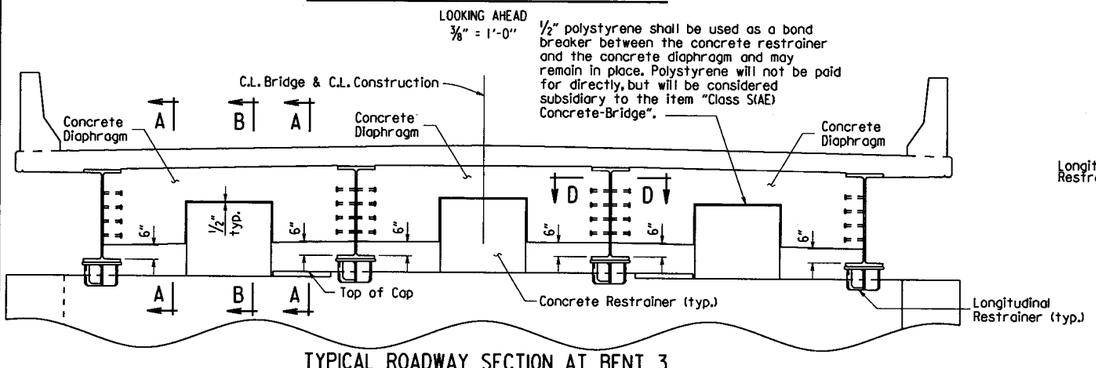
TYPICAL ROADWAY SECTION AT BENTS 2 & 4 SHOWING CONCRETE RESTRAINERS

Notes:
Sections A-A & B-B are taken perpendicular to C.L. Bent Cap.

See Dwg. No. 60277 for "Section D-D" and other details.



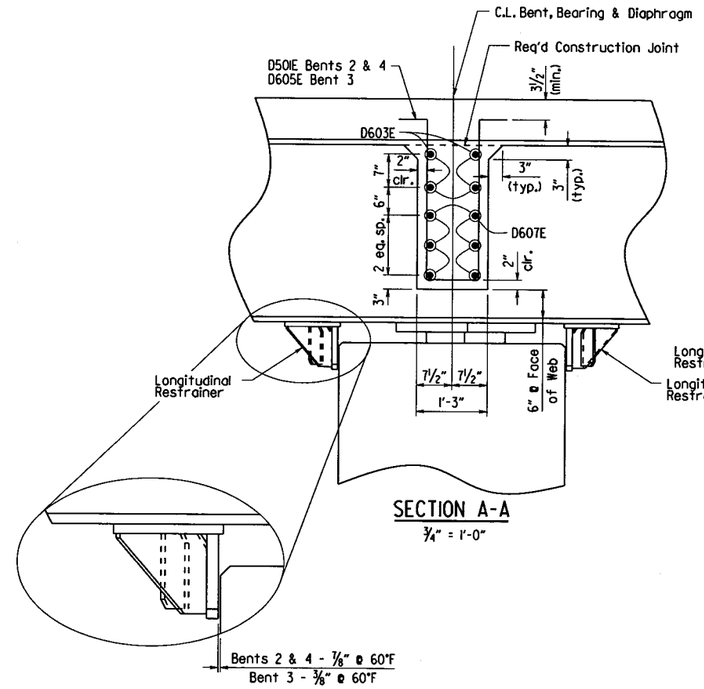
TYPICAL ROADWAY SECTION AT BENT 3



½" polystyrene shall be used as a bond breaker between the concrete restrainer and the concrete diaphragm and may remain in place. Polystyrene will not be paid for directly, but will be considered subsidiary to the item "Class S(AE) Concrete-Bridge".

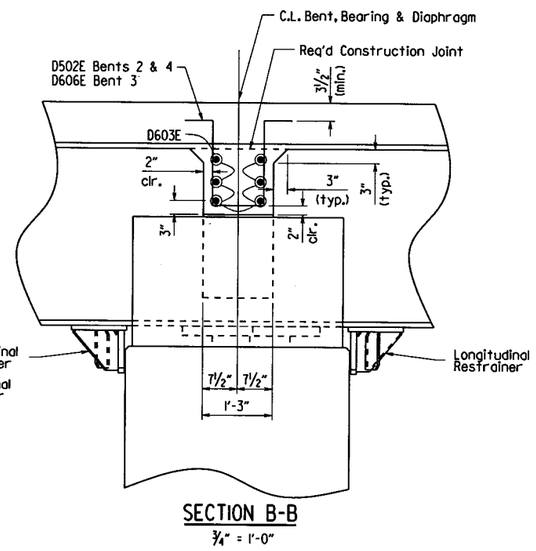
TYPICAL ROADWAY SECTION AT BENT 3 SHOWING CONCRETE RESTRAINERS

Note:
Field weld longitudinal restrainer after deck has been poured.



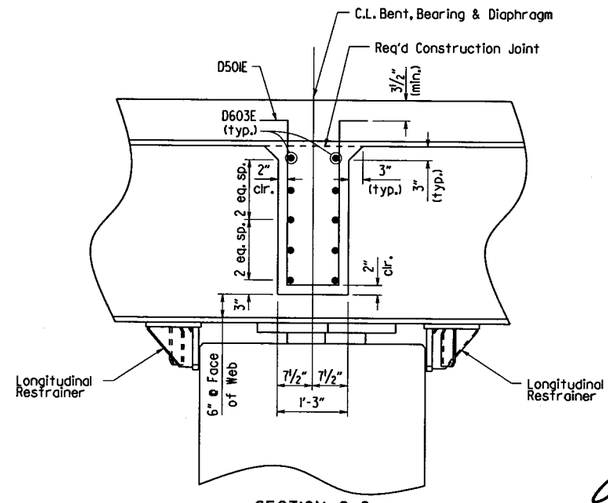
SECTION A-A

¾" = 1'-0"



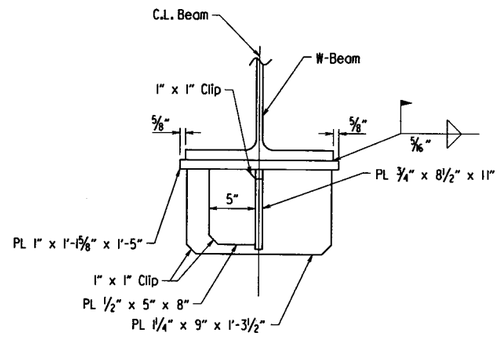
SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"



VIEW E-E

1½" = 1'-0"

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

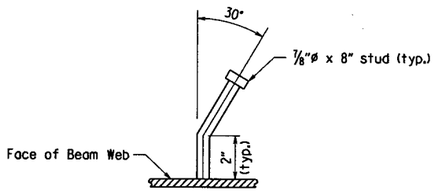
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP	DATE: 1/10/2018	FILENAME: bl00871_sl.dgn	
CHECKED BY: [illegible]	DATE: 7/31/18	SCALE: As Shown	
DESIGNED BY: KJF	DATE: 6/28/18		

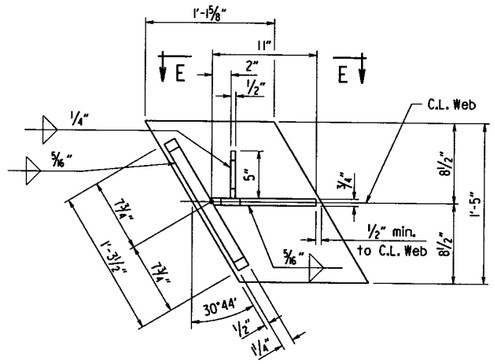
BRIDGE NO. 07425 DRAWING NO. 60276

PRINT DATE: 7/31/2018

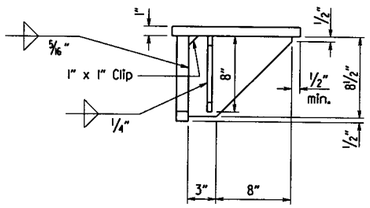
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - 330'-0" UNIT - 60277		



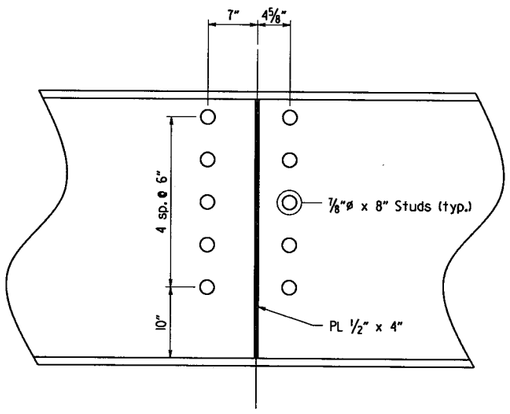
STUD DETAIL AT DIAPHRAGM
NO SCALE



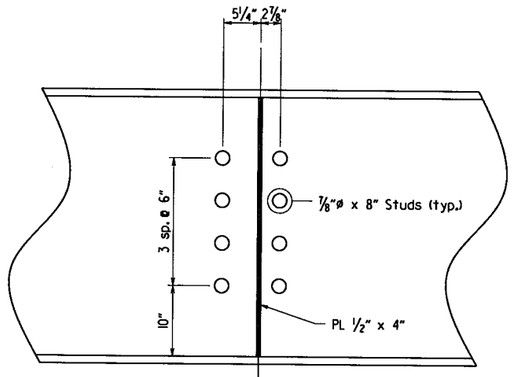
LONGITUDINAL RESTRAINER DETAILS
PLAN VIEW LOOKING UP
1½" = 1'-0"



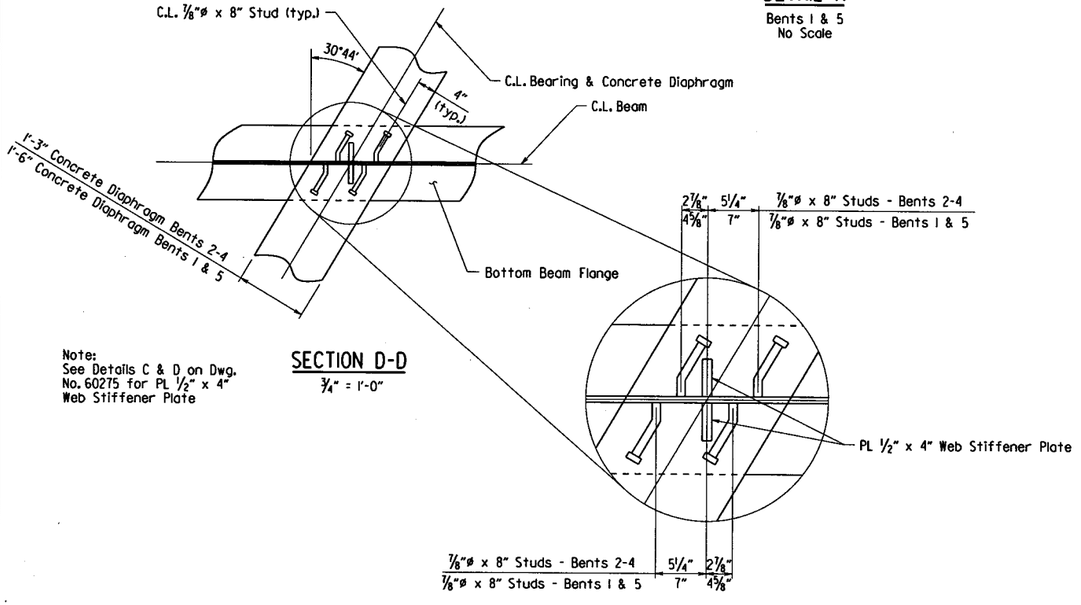
VIEW E-E
1½" = 1'-0"



DETAIL A
Bents 1 & 5
No Scale

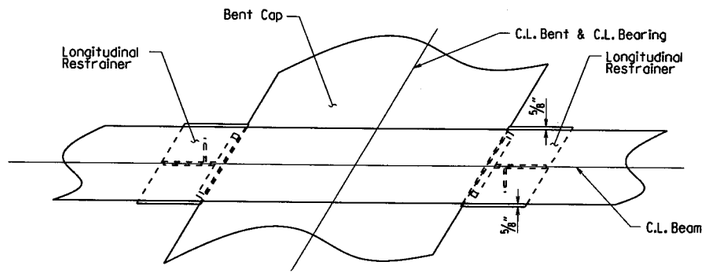


DETAIL B
Bents 2-4
No Scale



Note:
See Details C & D on Dwg.
No. 60275 for PL ½" x 4"
Web Stiffener Plate

SECTION D-D
¾" = 1'-0"



LONGITUDINAL RESTRAINER DETAILS
NO SCALE

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_sl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: KJF DATE: 6/28/18

BRIDGE NO. 07425 DRAWING NO. 60277

PRINT DATE: 7/31/2018

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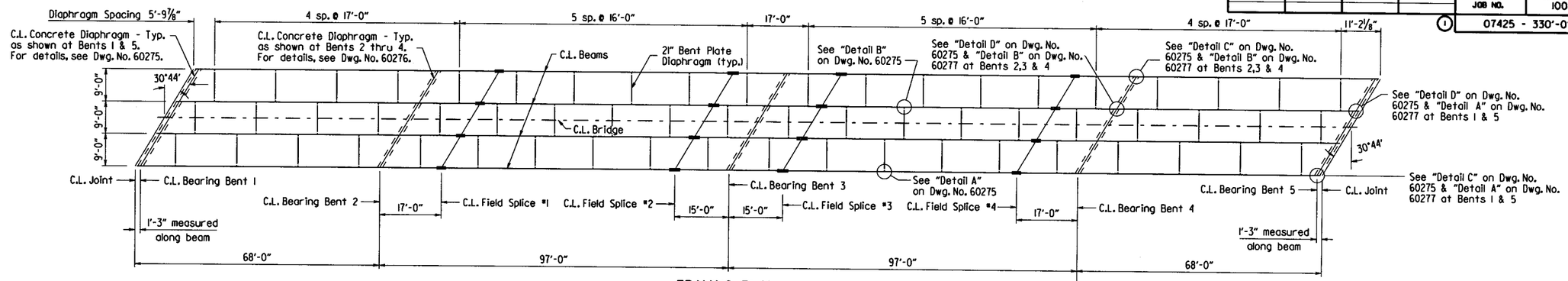
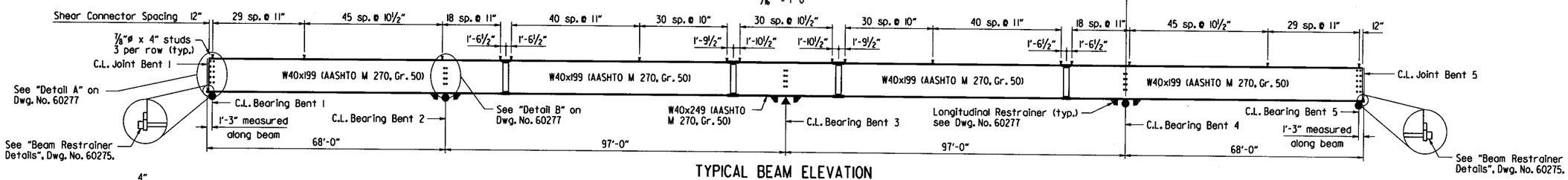
				6	ARK.			
				JOB NO.		100871		
				07425 - 330'-0" UNIT - 60278				



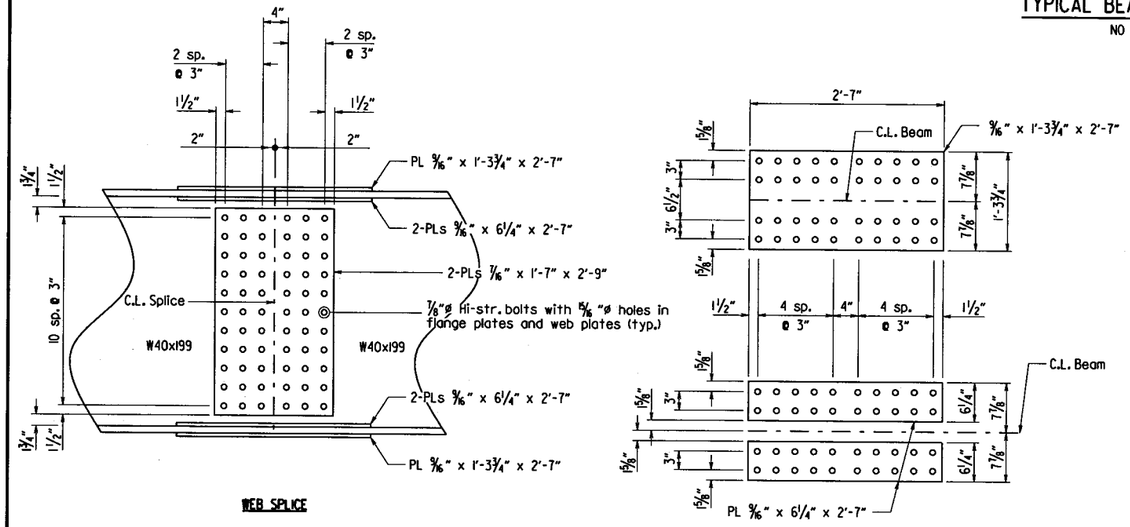
FRAMING PLAN

1/16" = 1'-0"



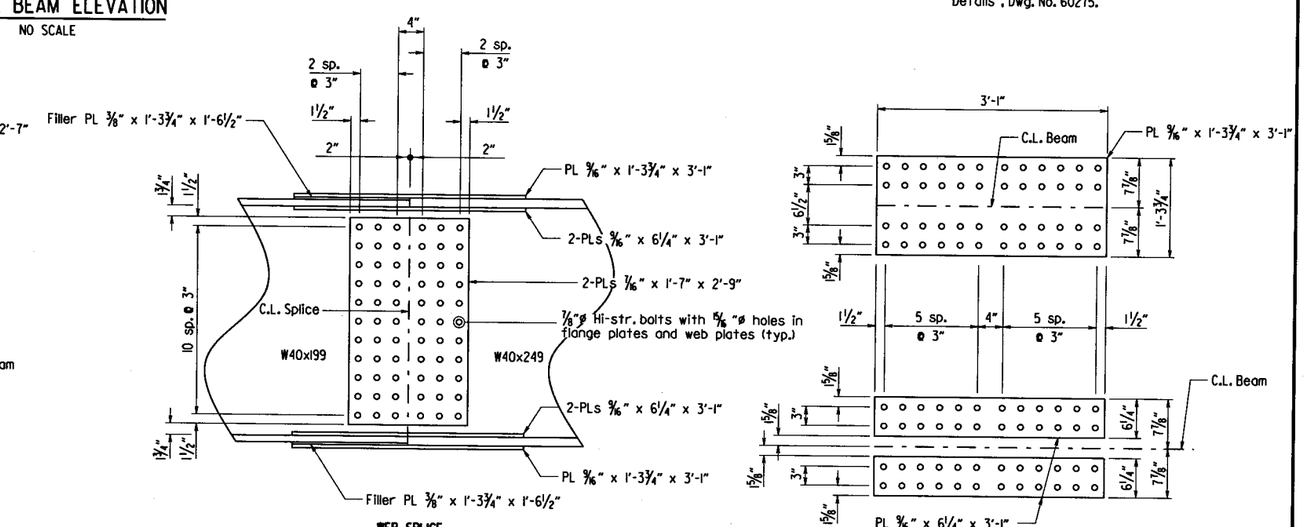
TYPICAL BEAM ELEVATION

NO SCALE



FIELD SPLICE DETAILS NOS. 1 & 4

NO SCALE



FIELD SPLICE DETAILS NOS. 2 & 3

NO SCALE

Notes:

All Structural Steel shall be AASHTO M 270, Gr. 50 unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50)."

Bolted field splices may either be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

For Standard General Notes and Details, See Std. Dwg. Nos. 55006 & 55007.

For additional information, See Layout.

STATE OF ARKANSAS
Charles R. Ellis
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS

BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

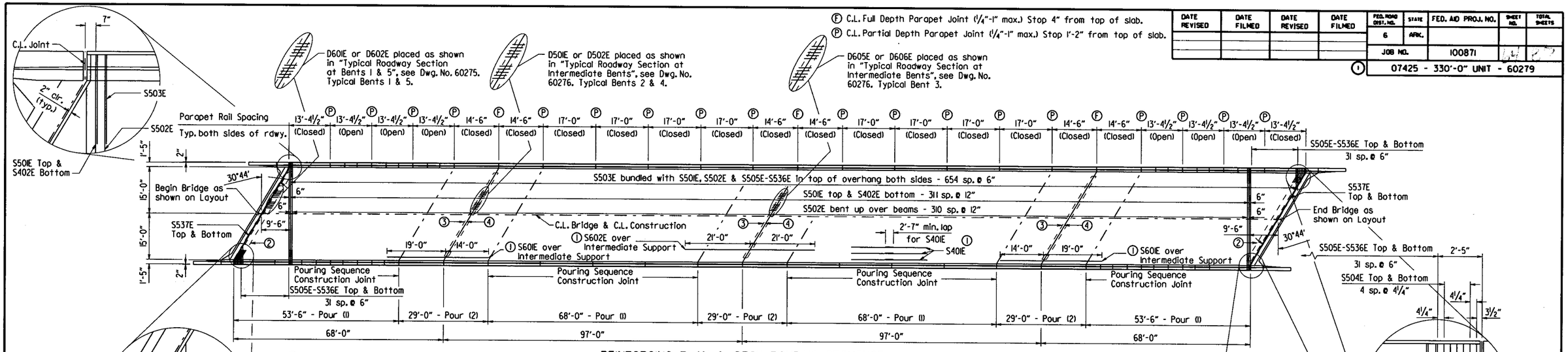
DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_sl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: KJF DATE: 6/20/18

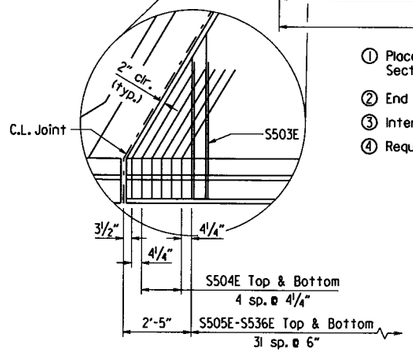
BRIDGE NO. 07425 DRAWING NO. 60278

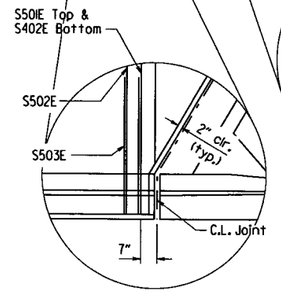
PRINT DATE: 7/31/2018

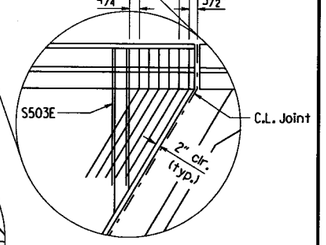
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				07425 - 330'-0" UNIT - 60279				

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









① Placed as shown in "Typical Roadway Section", see Dwg. No. 60275.
② End Bent Concrete Diaphragm
③ Intermediate Bent Concrete Diaphragm
④ Required Slab Joint

REINFORCING PLAN & DECK POURING SEQUENCE

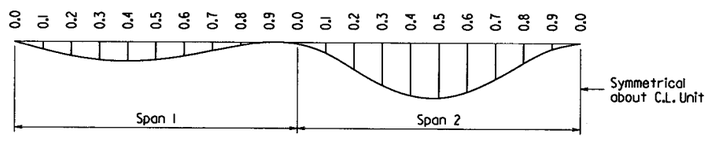
1/16" = 1'-0"

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0	0	0	0	0	0	0
	0.1	0.030	0.028	0.171	0.148	0.185	0.163
	0.2	0.055	0.052	0.311	0.270	0.337	0.297
	0.3	0.070	0.067	0.400	0.347	0.434	0.382
	0.4	0.075	0.071	0.428	0.371	0.464	0.409
	0.5	0.069	0.065	0.393	0.341	0.426	0.375
	0.6	0.054	0.051	0.307	0.267	0.332	0.294
	0.7	0.033	0.031	0.189	0.164	0.204	0.18
	0.8	0.012	0.012	0.070	0.061	0.075	0.067
	0.9	-0.002	-0.002	-0.010	-0.009	-0.011	-0.01
	0	0	0	0	0	0	0
2	0.1	0.041	0.039	0.232	0.202	0.252	0.223
	0.2	0.105	0.099	0.593	0.515	0.645	0.569
	0.3	0.166	0.157	0.937	0.813	1.019	0.899
	0.4	0.206	0.194	1.162	1.009	1.263	1.115
	0.5	0.215	0.203	1.214	1.054	1.32	1.165
	0.6	0.192	0.181	1.081	0.938	1.176	1.038
	0.7	0.142	0.134	0.797	0.692	0.868	0.776
	0.8	0.079	0.074	0.442	0.384	0.482	0.426
	0.9	0.024	0.023	0.136	0.118	0.148	0.131
	0	0	0	0	0	0	0

C.L. Unit

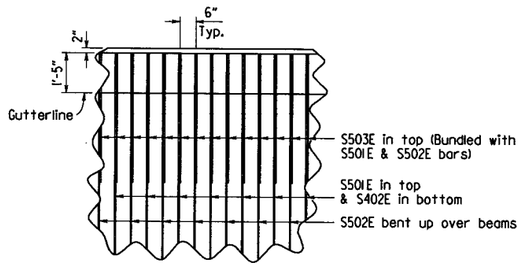
This table is symmetrical about C.L. Unit.



Camber for Dead Load Deflection plus Vertical curve +/-1/4" tolerance. Deflections shown are along C.L. Beam from a chord from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above chord. Vertical curve corrections not included.

DEAD LOAD DEFLECTION DIAGRAM

NO SCALE



REINFORCING DETAIL

NO SCALE

Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. A min. of 72 hours shall elapse between completion of slab and pouring of the parapet rail. **No deviations from the pouring sequence shown will be allowed.**

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

A minimum of 48 hours shall elapse between the end bent and intermediate bent diaphragm pours and the deck slab pours.

STATE OF ARKANSAS
CHARLES R. ELLIS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18

BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/2018 FILENAME: bl00871_sl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: KLE DATE: 6/28/18

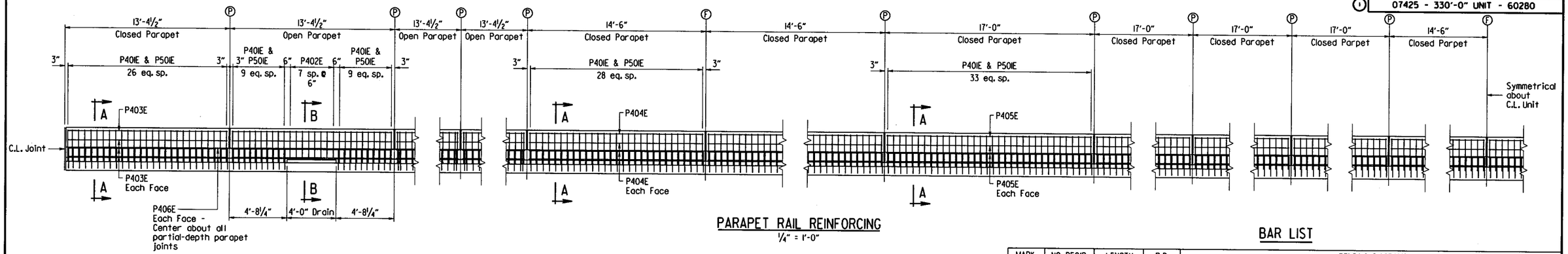
BRIDGE NO. 07425 DRAWING NO. 60279

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - 330'-0" UNIT - 60280		

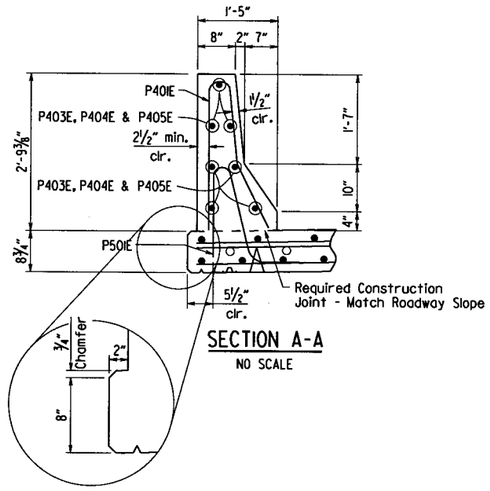
Ⓕ C.L. Full Depth Parapet Joint (1/4"-1" max.) Stop 4" from top of slab.

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



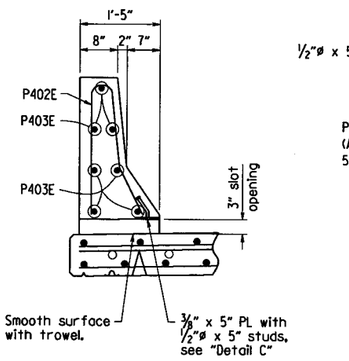
PARAPET RAIL REINFORCING

1/4" = 1'-0"



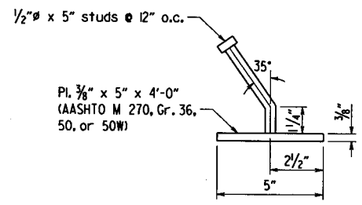
SECTION A-A

NO SCALE



SECTION B-B

NO SCALE



DETAIL C

NO SCALE

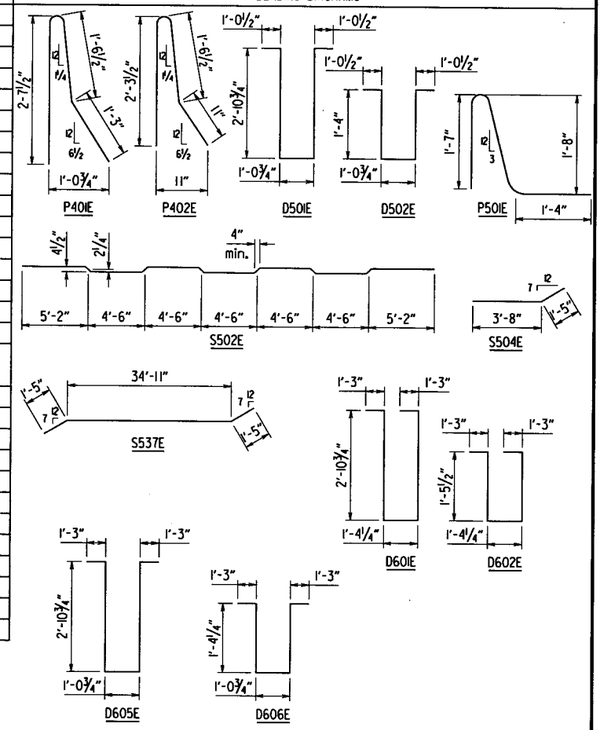
Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel in Beam Spans (M 270, Gr. 50)".

The surfaces of the ⅜" Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly but will be considered subsidiary to "Structural Steel in Beam Spans (M 270, Gr. 50)".

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
P401E	1240	5'-6"	3"
P402E	96	4'-10"	3"
P403E	112	13'-0"	Str.
P404E	84	14'-2"	Str.
P405E	112	16'-8"	Str.
P406E	144	5'-2"	Str.
S401E	729	39'-0"	Str.
S402E	312	32'-10"	Str.
D501E	72	8'-7"	2½"
D502E	24	5'-5"	2½"
P501E	1240	4'-8"	3¾"
S501E	312	32'-10"	Str.
S502E	311	33'-6"	3"
S503E	1310	4'-10"	Str.
S504E	20	5'-1"	3¾"
S505E-S536E	4 Each	Var. 5'-0" to 31'-1"	Str.
S537E	4	37'-9"	3¾"
D601E	36	9'-0"	4½"
D602E	60	6'-2"	4½"
D603E	72	8'-9"	Str.
D604E	72	1'-8"	Str.
D605E	30	8'-9"	4½"
D606E	18	5'-8"	4½"
D607E	84	2'-8"	Str.
S601E	66	33'-0"	Str.
S602E	33	42'-0"	Str.

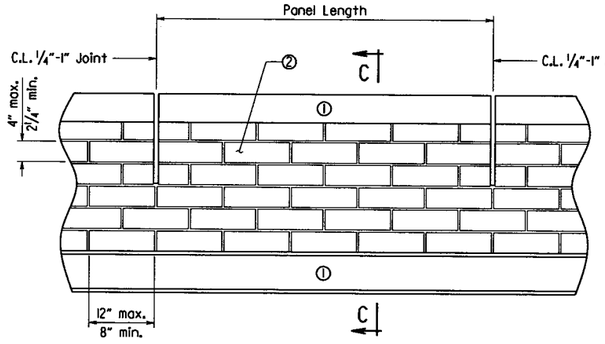
BENDING DIAGRAMS



Dimensions are out to out of bars.
Bars with an "E" suffix are to be epoxy coated.

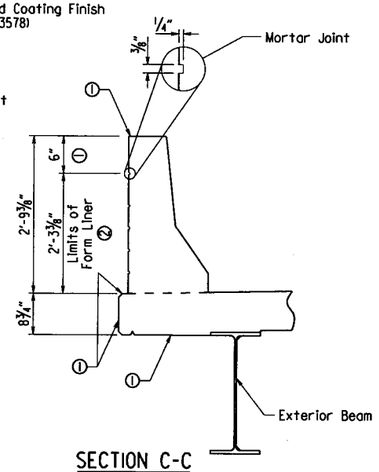
① Class 3 Textured Coating Finish (Color Chip No. 30108)

② Class 3 Textured Coating Finish (Color Chip No. 33578)



DETAILS OF PARAPET RAIL ENHANCEMENT

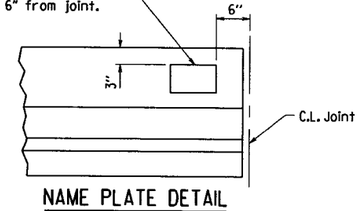
NO SCALE



SECTION C-C

NO SCALE

Place Type D Bridge Name Plate on right parapet rail at beg. of bridge approx. 6" from joint.



NAME PLATE DETAIL

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
7-31-18
CHARLES R. ELLIS
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 330'-0" CONTINUOUS COMPOSITE W-BEAM UNIT HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

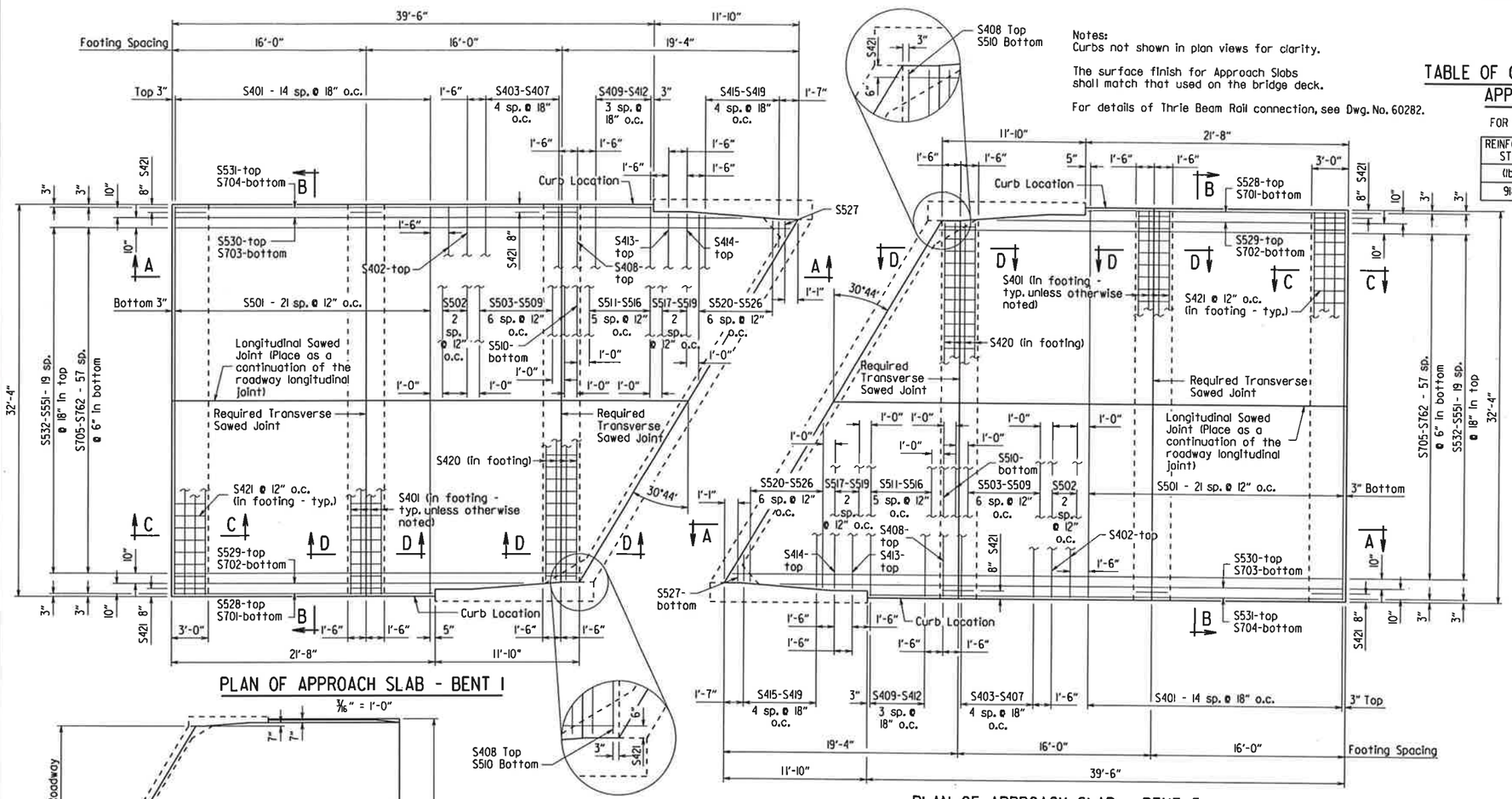
DRAWN BY: CGP DATE: 1/10/2018 FILENAME: b100871_sl.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: KJB DATE: 6/08/18

BRIDGE NO. 07425 DRAWING NO. 60280

PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	66	87

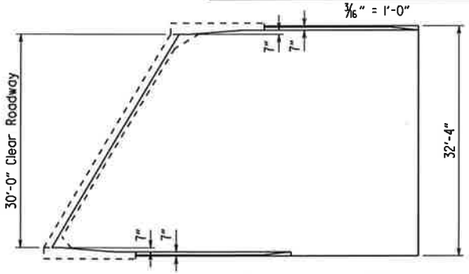
(1) 07425 - APPROACH SLABS - 60281



PLAN OF APPROACH SLAB - BENT 1

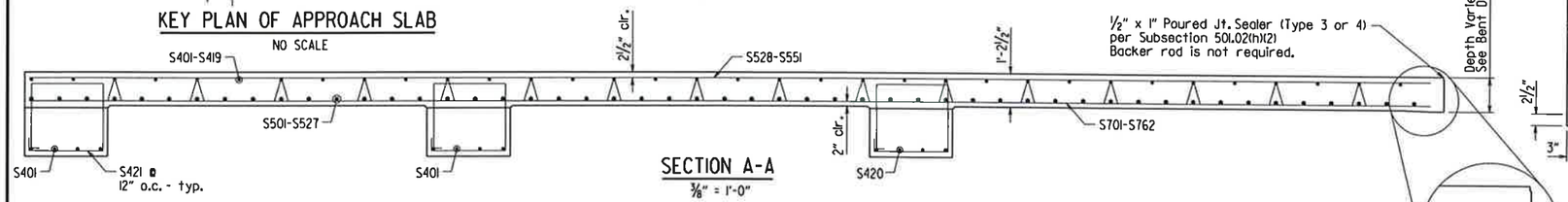
PLAN OF APPROACH SLAB - BENT 5

3/16" = 1'-0"



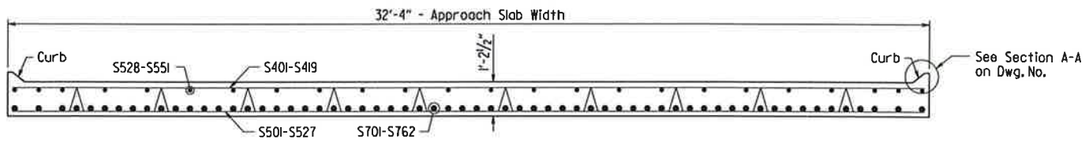
KEY PLAN OF APPROACH SLAB

NO SCALE



SECTION A-A

⅜" = 1'-0"



SECTION B-B

⅜" = 1'-0"

General Notes:

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

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

Approach Slabs will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR ONE APPROACH SLAB

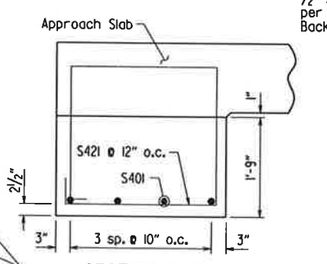
FOR INFORMATION ONLY

REINFORCING STEEL (lbs.)	CONCRETE (cu. yds.)
9188	80.38

BAR LIST (ONE SLAB)

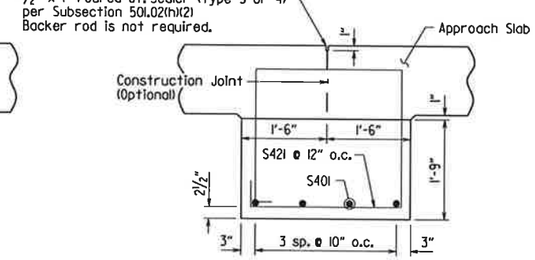
MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401	23	32'-0"	Str.	
S402	2	31'-5"	Str.	
S403-S407	1 ea.	31'-4"-30'-11"	Str.	
S408	1	30'-10"	Str.	
S409-S412	1 ea.	21'-0"-28'-7"	Str.	
S413	1	17'-11"	Str.	
S414	1	15'-4"	Str.	
S415-S419	1 ea.	2'-2"-12'-9"	Str.	
S420	4	30'-10"	Str.	
S421	95	10'-4"	2"	2'-7", 4½" typ., 2'-5", S421
S501	22	32'-0"	Str.	
S502	3	31'-5"	Str.	
S503-S509	1 ea.	30'-11"-31'-4"	Str.	
S510	2	30'-10"	Str.	
S511-S516	1 ea.	21'-0"-29'-5"	Str.	
S517-S519	1 ea.	15'-4"-18'-9"	Str.	
S520-S526	1 ea.	3'-1"-13'-8"	Str.	
S527	1	1'-4"	Str.	
S528	1	21'-4"	Str.	
S529	1	28'-9"	Str.	
S530	1	46'-7"	Str.	
S531	1	39'-2"	Str.	
S532-S551	1 ea.	33'-7"-50'-6"	Str.	
S701	1	21'-4"	Str.	
S702	1	28'-9"	Str.	
S703	1	46'-7"	Str.	
S704	1	39'-2"	Str.	
S705-S762	1 ea.	33'-7"-50'-6"	Str.	

Dimensions are out to out of bars.



SECTION C-C

¾" = 1'-0"



SECTION D-D

¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
8-13-18

BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF

TYPE SPECIAL APPROACH SLABS

HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CGP DATE: 1/10/18 FILENAME: bl00871_as.dgn

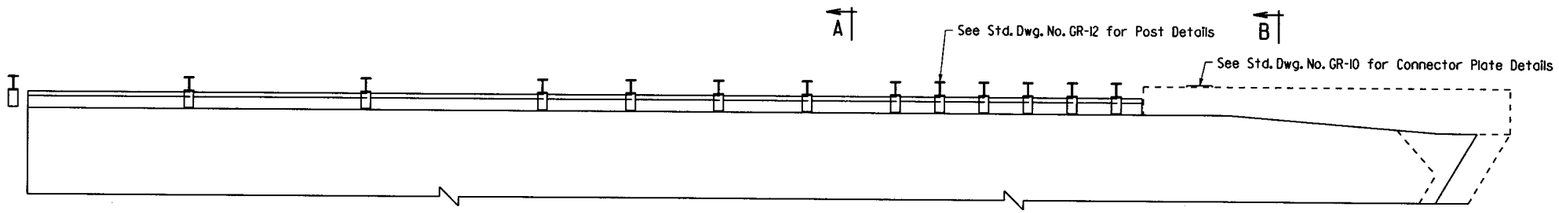
CHECKED BY: DHP DATE: 8/13/18 SCALE: As Shown

DESIGNED BY: — DATE:

BRIDGE NO. 07425 DRAWING NO. 60281

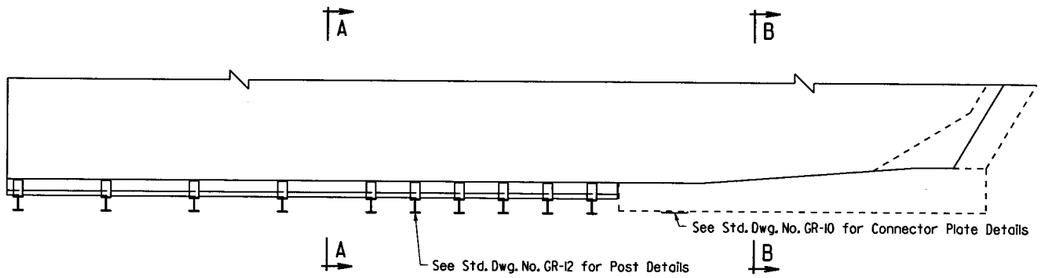
PRINT DATE: 8/10/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871		
				①		07425 - APPROACH SLABS - 60282		



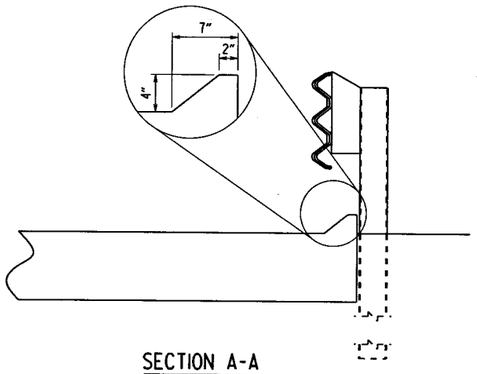
PLAN OF THRIE BEAM RAIL CONNECTION AT BRIDGE ENDS

3/8" = 1'-0"



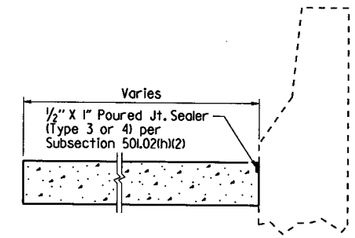
PLAN OF THRIE BEAM RAIL CONNECTION AT BRIDGE ENDS

3/8" = 1'-0"



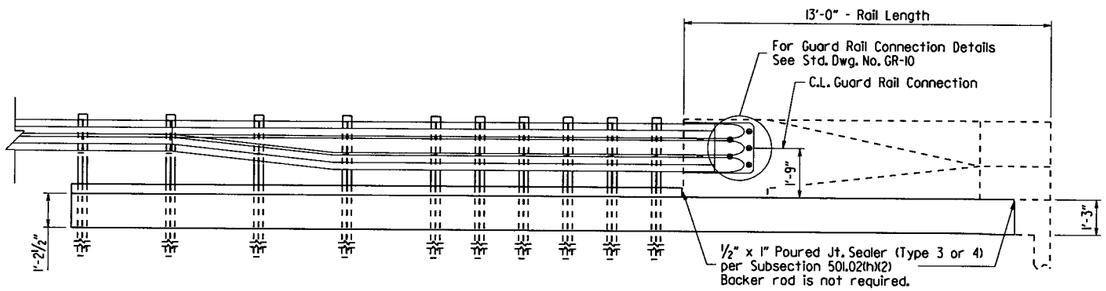
SECTION A-A

No Scale



SECTION B-B

No Scale



ELEVATION OF THRIE BEAM RAIL CONNECTION AT BRIDGE ENDS

3/8" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
7-31-18

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF
TYPE SPECIAL APPROACH SLABS
HIGHWAY 14 OVER INTERSTATE 55

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

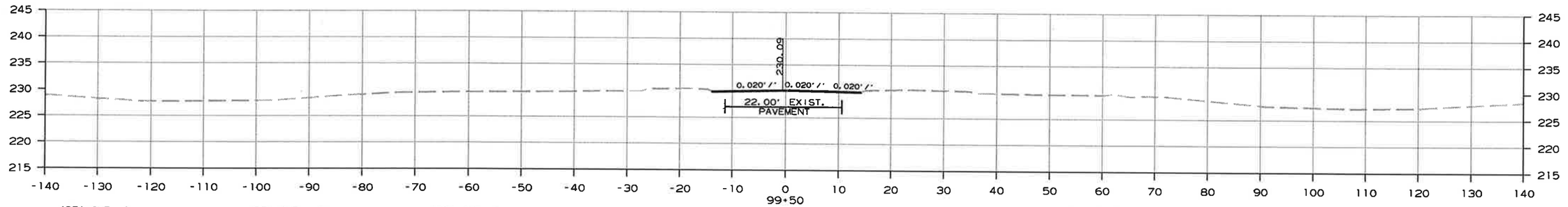
DRAWN BY: CGP DATE: 1/10/18 FILENAME: bl00871_as.dgn
CHECKED BY: DHP DATE: 7/31/18 SCALE: As Shown
DESIGNED BY: SFC DATE:

BRIDGE NO. 07425 DRAWING NO. 60282

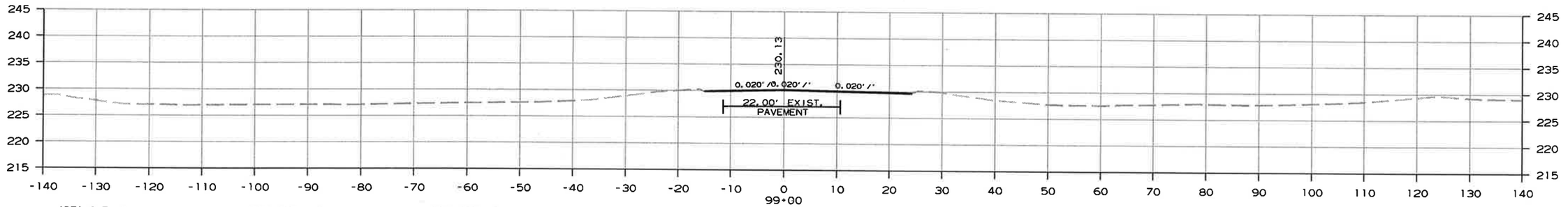
PRINT DATE: 7/31/2018

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	68	87
				(2)	CROSS SECTIONS			

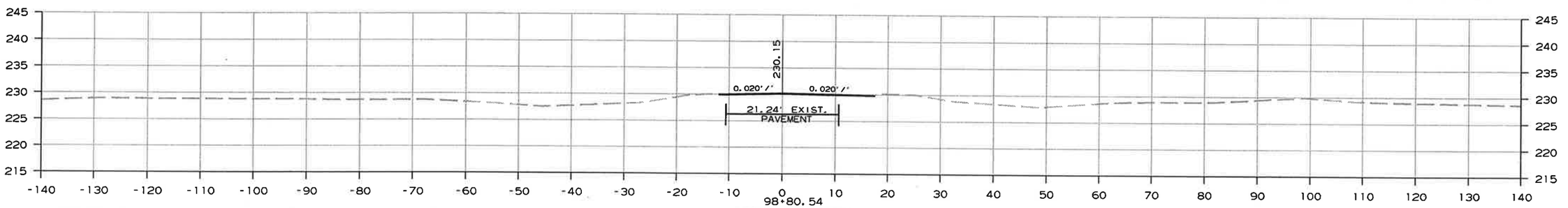
AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0



AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0



AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | AREA CUT 0 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0 | CUT VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 98+81 TO STA. 99+50

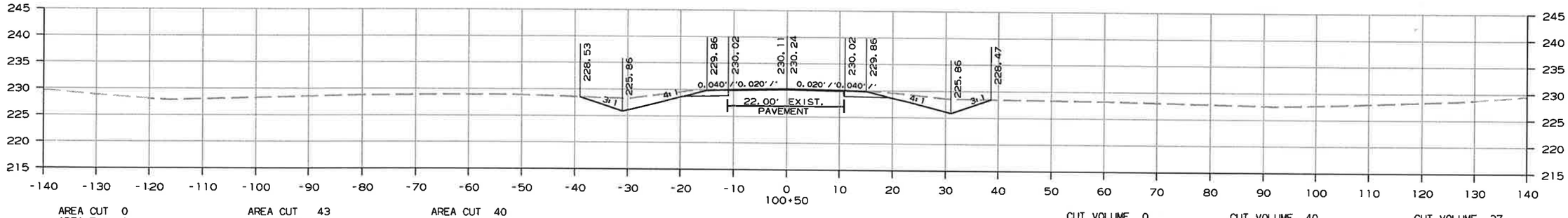
8/14/2018

R100871.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED./RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	69	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



AREA CUT 0
AREA FILL 0

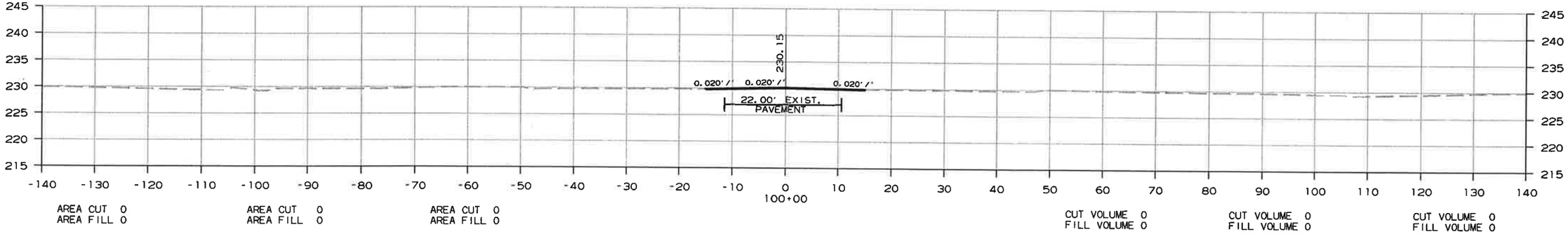
AREA CUT 43
AREA FILL 0

AREA CUT 40
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 40
FILL VOLUME 37

CUT VOLUME 37
FILL VOLUME 0



AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 100+00 TO STA. 100+50

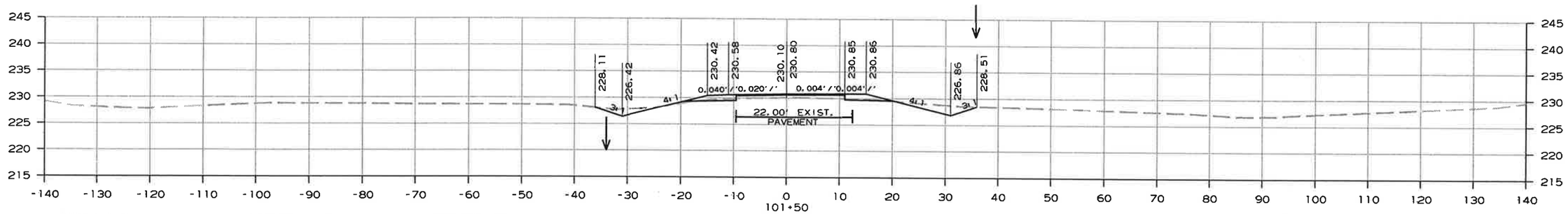
8/14/2018

R100871.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	70	87

(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)



AREA CUT 0
AREA FILL 0

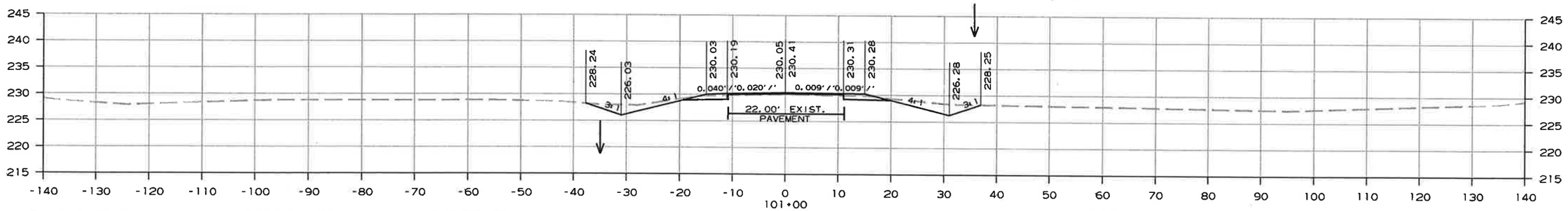
AREA CUT 11
AREA FILL 1

AREA CUT 17
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 33
FILL VOLUME 2

CUT VOLUME 41
FILL VOLUME 1



AREA CUT 0
AREA FILL 0

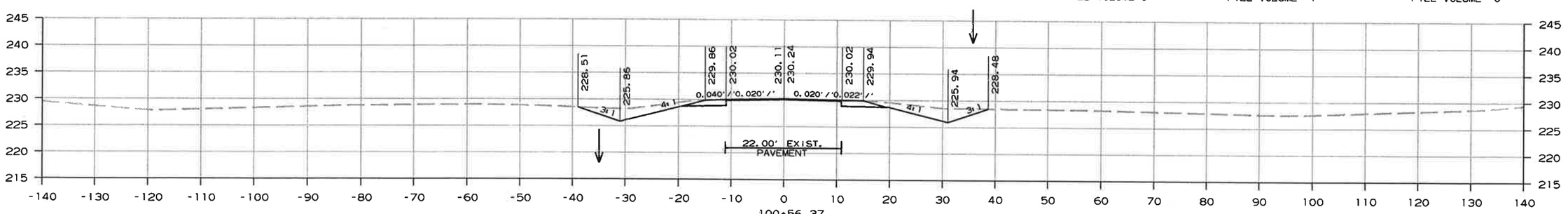
AREA CUT 25
AREA FILL 0

AREA CUT 27
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 50
FILL VOLUME 1

CUT VOLUME 55
FILL VOLUME 0



AREA CUT 0
AREA FILL 0

AREA CUT 37
AREA FILL 0

AREA CUT 41
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 10
FILL VOLUME 5

CUT VOLUME 10
FILL VOLUME 0

CROSS SECTION STA. 100+56 TO STA. 101+50

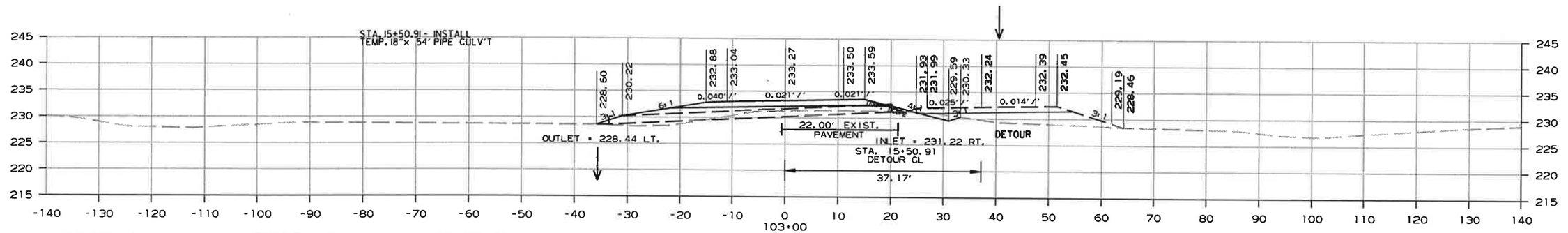
8/14/2018

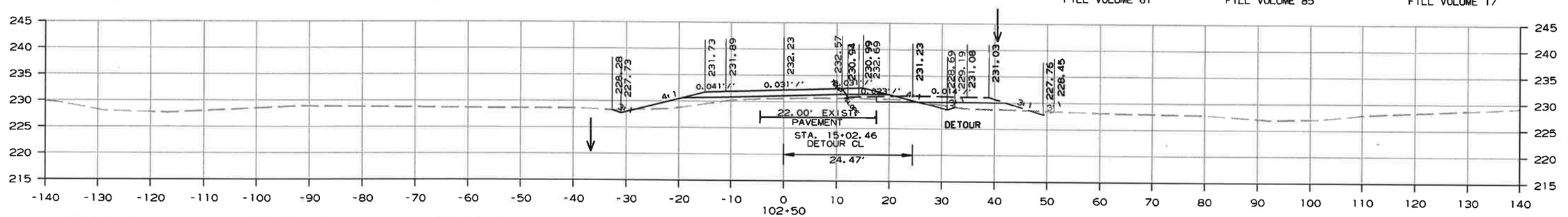
R100871.DGN

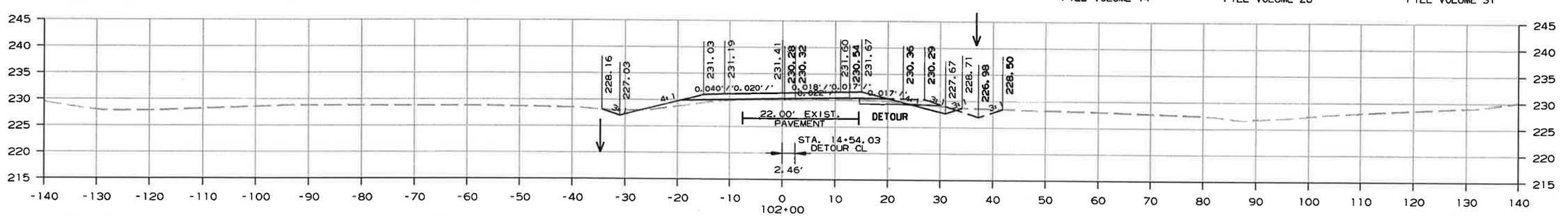
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	71	87

(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)
AREA CUT 1 AREA FILL 50	AREA CUT 0 AREA FILL 70	AREA CUT 71 AREA FILL 5	CUT VOLUME 9 FILL VOLUME 61	CUT VOLUME 1 FILL VOLUME 85	CUT VOLUME 84 FILL VOLUME 17
AREA CUT 9 AREA FILL 15	AREA CUT 1 AREA FILL 22	AREA CUT 20 AREA FILL 14	CUT VOLUME 27 FILL VOLUME 14	CUT VOLUME 5 FILL VOLUME 28	CUT VOLUME 19 FILL VOLUME 31
AREA CUT 21 AREA FILL 0	AREA CUT 4 AREA FILL 8	AREA CUT 1 AREA FILL 20	CUT VOLUME 19 FILL VOLUME 0	CUT VOLUME 14 FILL VOLUME 8	CUT VOLUME 17 FILL VOLUME 20







CROSS SECTION STA. 102+00 TO STA. 103+00

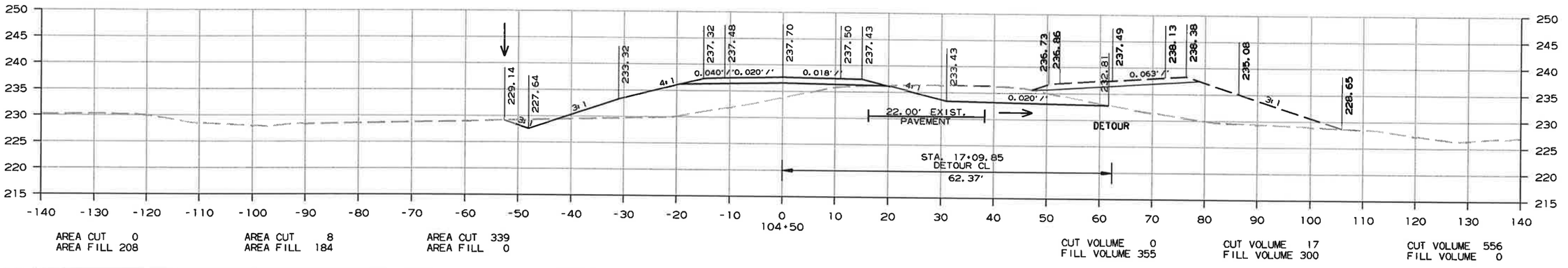
8/14/2018

R100871.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	72	87

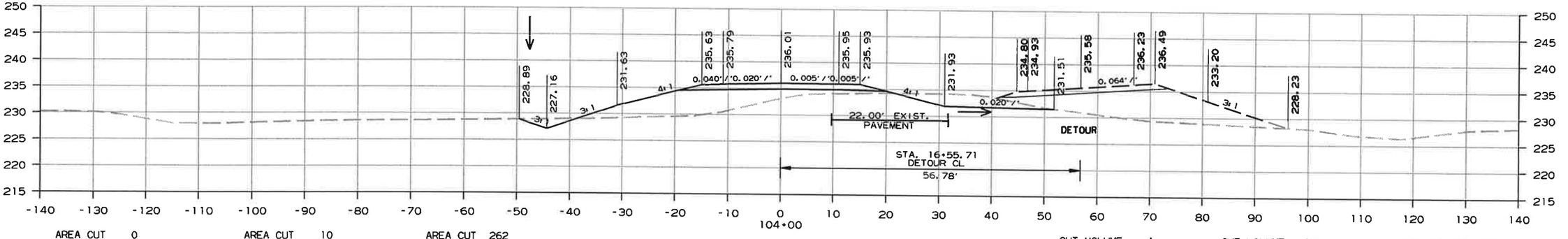
(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)



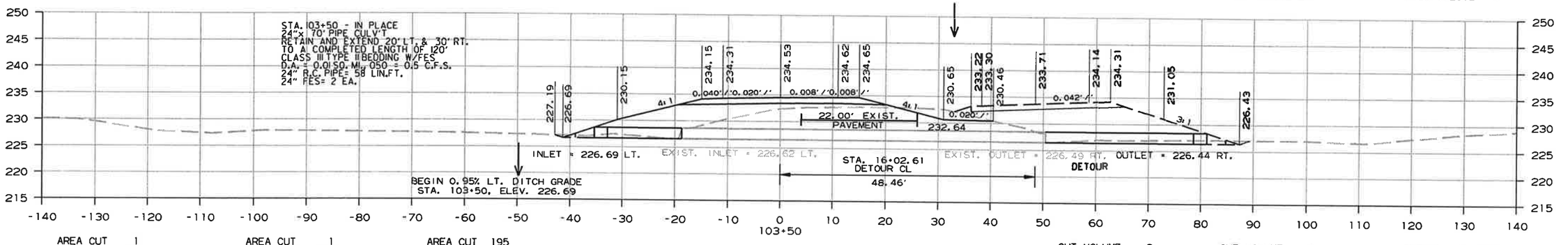
AREA CUT 0 / AREA FILL 208 — AREA CUT 8 / AREA FILL 184 — AREA CUT 339 / AREA FILL 0

CUT VOLUME 0 / FILL VOLUME 355 — CUT VOLUME 17 / FILL VOLUME 300 — CUT VOLUME 556 / FILL VOLUME 0



AREA CUT 0 / AREA FILL 175 — AREA CUT 10 / AREA FILL 140 — AREA CUT 262 / AREA FILL 0

CUT VOLUME 1 / FILL VOLUME 332 — CUT VOLUME 10 / FILL VOLUME 247 — CUT VOLUME 423 / FILL VOLUME 1



AREA CUT 1 / AREA FILL 184 — AREA CUT 1 / AREA FILL 127 — AREA CUT 195 / AREA FILL 1

CUT VOLUME 2 / FILL VOLUME 217 — CUT VOLUME 1 / FILL VOLUME 182 — CUT VOLUME 246 / FILL VOLUME 5

CROSS SECTION STA. 103+50 TO STA. 104+50

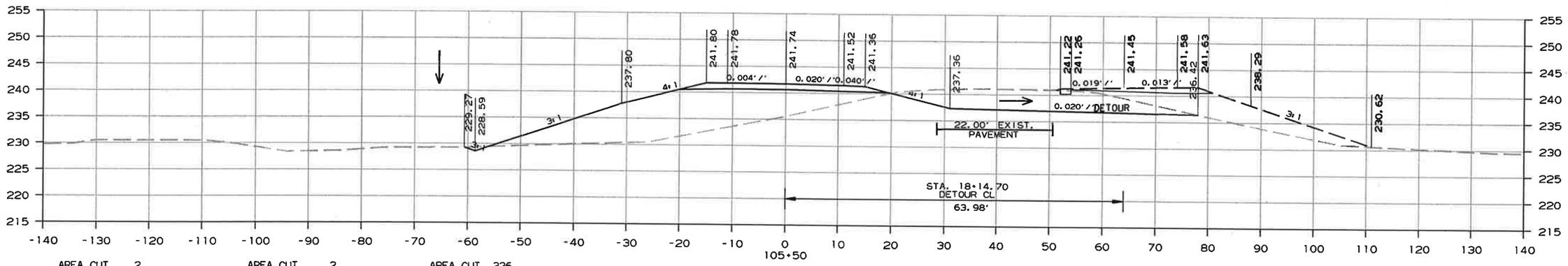
8/14/2018

R100871.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
8-16-18				6	ARK.			
				JOB NO.		100871	73	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



CROSS SECTION STA. 105+00 TO STA. 105+50

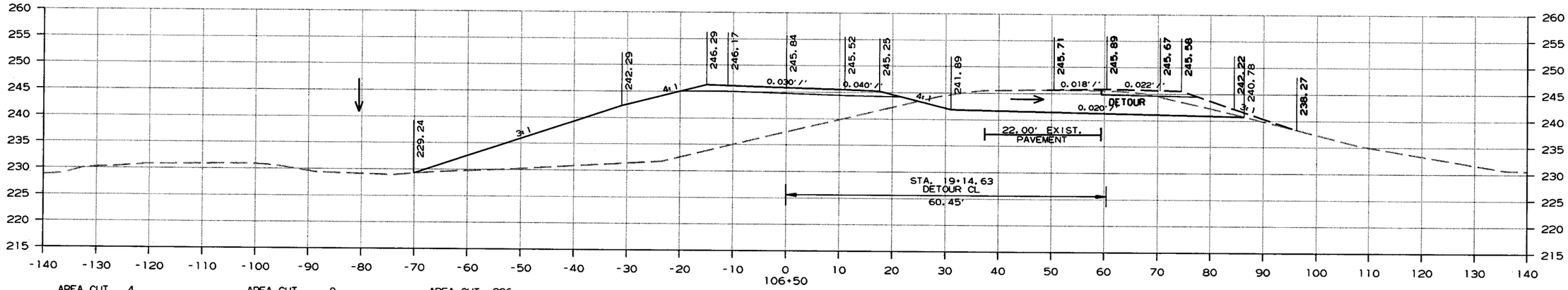
8/14/2018

R100871.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.		100871	74	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



AREA CUT 4
AREA FILL 12

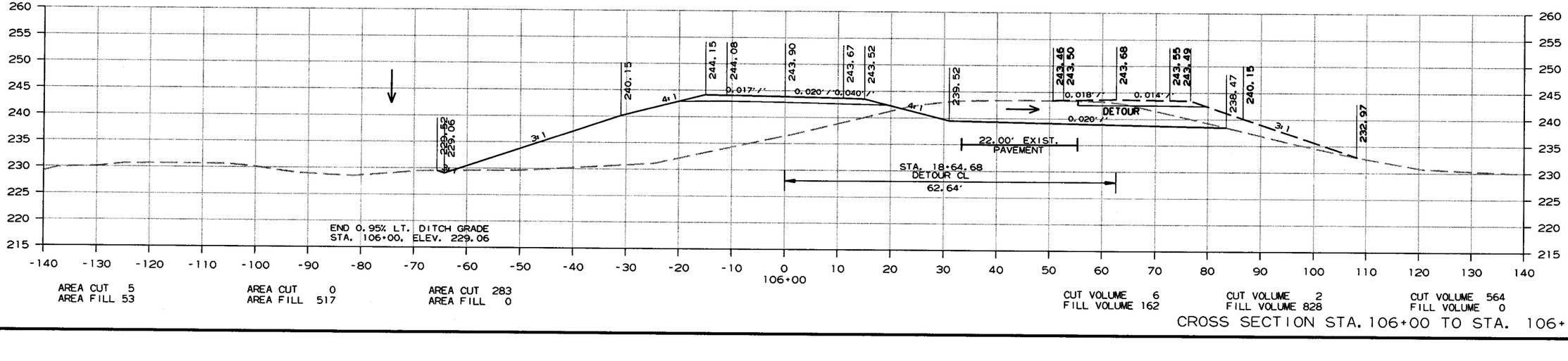
AREA CUT 0
AREA FILL 642

AREA CUT 226
AREA FILL 0

CUT VOLUME 8
FILL VOLUME 60

CUT VOLUME 0
FILL VOLUME 1073

CUT VOLUME 471
FILL VOLUME 0



AREA CUT 5
AREA FILL 53

AREA CUT 0
AREA FILL 517

AREA CUT 283
AREA FILL 0

CUT VOLUME 6
FILL VOLUME 162

CUT VOLUME 2
FILL VOLUME 828

CUT VOLUME 564
FILL VOLUME 0

CROSS SECTION STA. 106+00 TO STA. 106+50

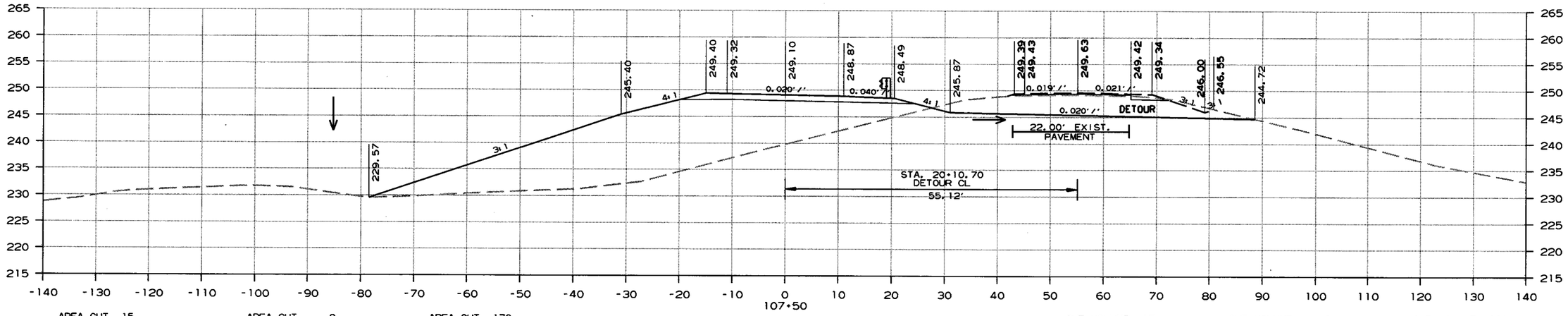
8/8/2018

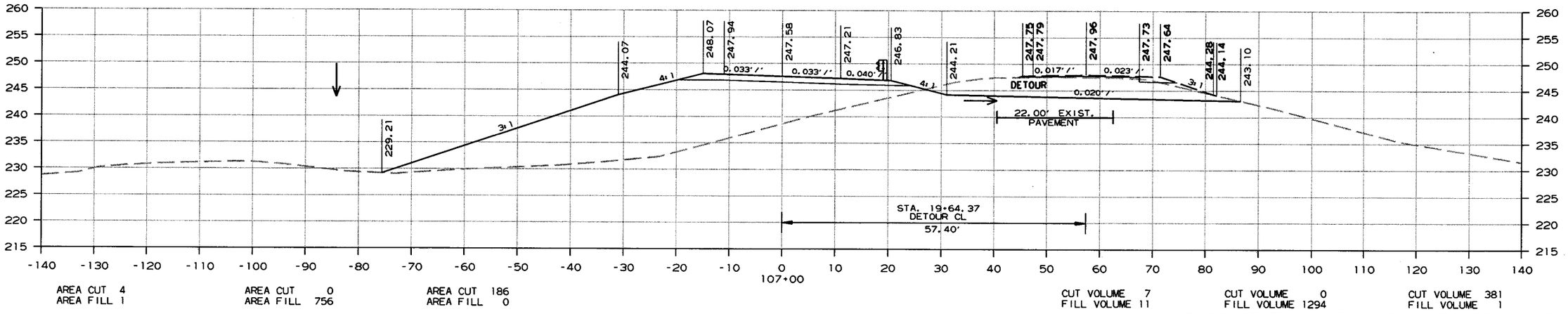
R100871.DGN

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.		100871	75	87

(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)





CROSS SECTION STA. 107+00 TO STA. 107+50

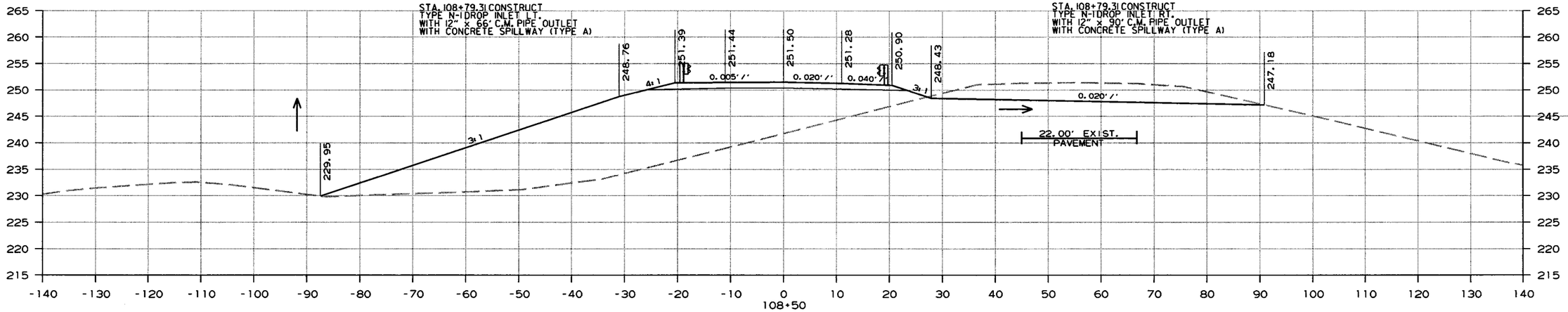
8/8/2018

R100871.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.		100871	76	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



AREA CUT 0
AREA FILL 0

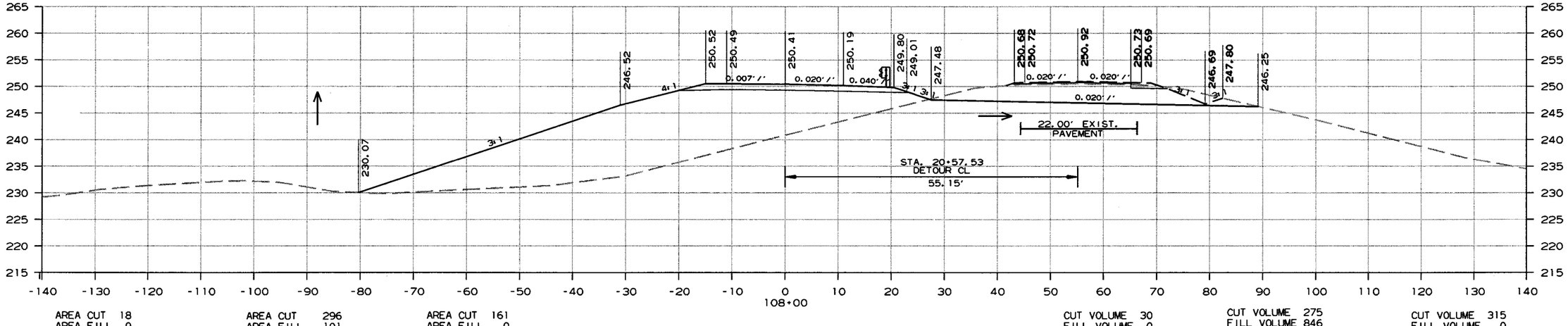
AREA CUT 335
AREA FILL 112
AREA FILL 1200 (SPECIAL)

AREA CUT 169
AREA FILL 0

CUT VOLUME 16
FILL VOLUME 0

CUT VOLUME 585
FILL VOLUME 197
FILL VOLUME 2086 (SPECIAL)

CUT VOLUME 306
FILL VOLUME 0



AREA CUT 18
AREA FILL 0

AREA CUT 296
AREA FILL 101
AREA FILL 1053 (SPECIAL)

AREA CUT 161
AREA FILL 0

CUT VOLUME 30
FILL VOLUME 0

CUT VOLUME 275
FILL VOLUME 846
FILL VOLUME 975 (SPECIAL)

CUT VOLUME 315
FILL VOLUME 0

CROSS SECTION STA. 108+00 TO STA. 108+50

8/8/2018

R100871.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	78	87

(2) CROSS SECTIONS

AREA (STAGE 1)

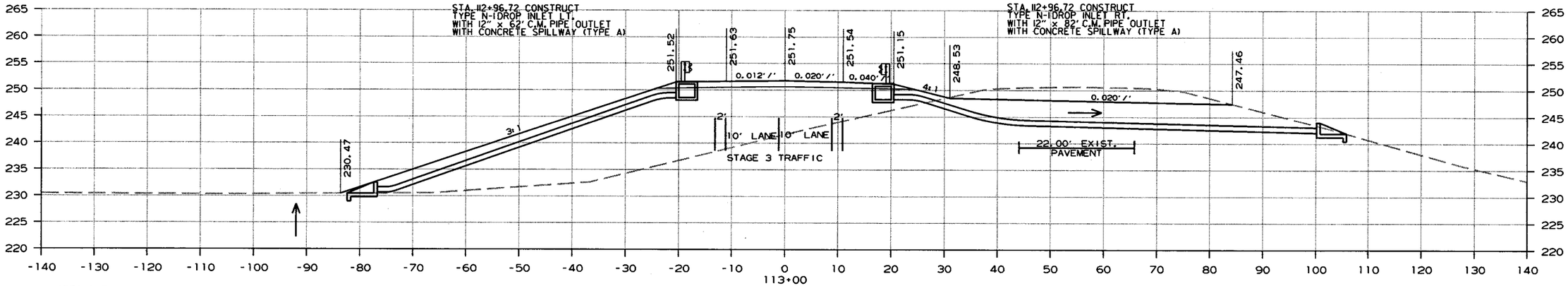
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



AREA CUT 0
AREA FILL 0

AREA CUT 374
AREA FILL 112
AREA FILL 1196 (SPECIAL)

AREA CUT 108
AREA FILL 0

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 317
FILL VOLUME 95
FILL VOLUME 1013 (SPECIAL)

CUT VOLUME 91
FILL VOLUME 0

112+54.26
BRIDGE END

111+94.26
TOE OF SLOPE

8/8/2018

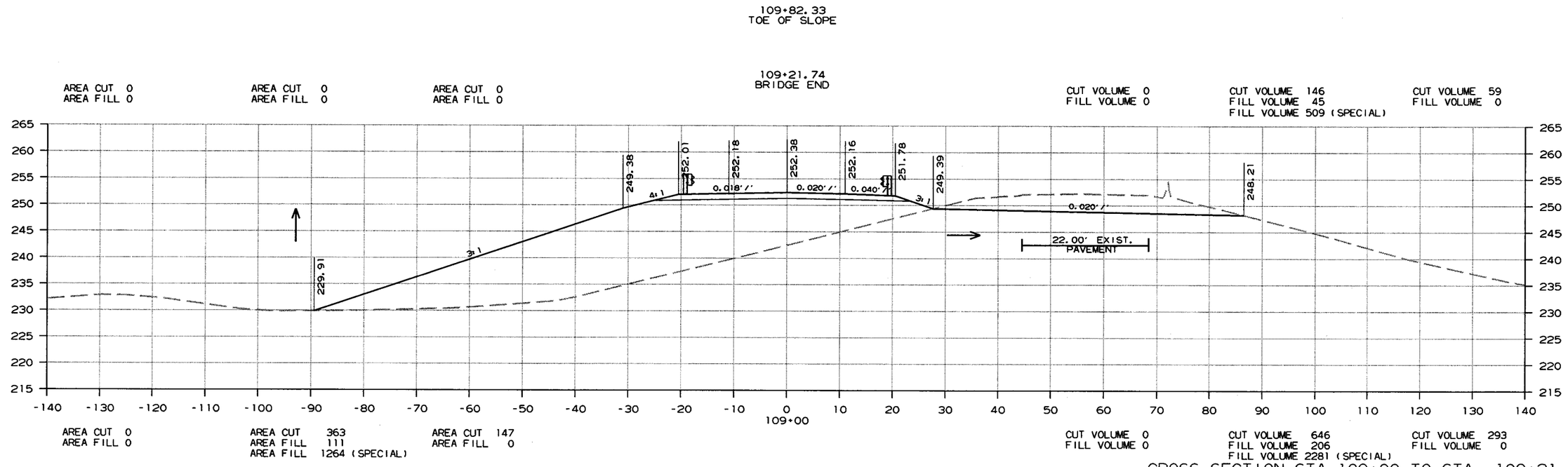
R100871.DGN

CROSS SECTION STA. 112+54.26 TO STA. 113+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	77	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



CROSS SECTION STA. 109+00 TO STA. 109+21.74

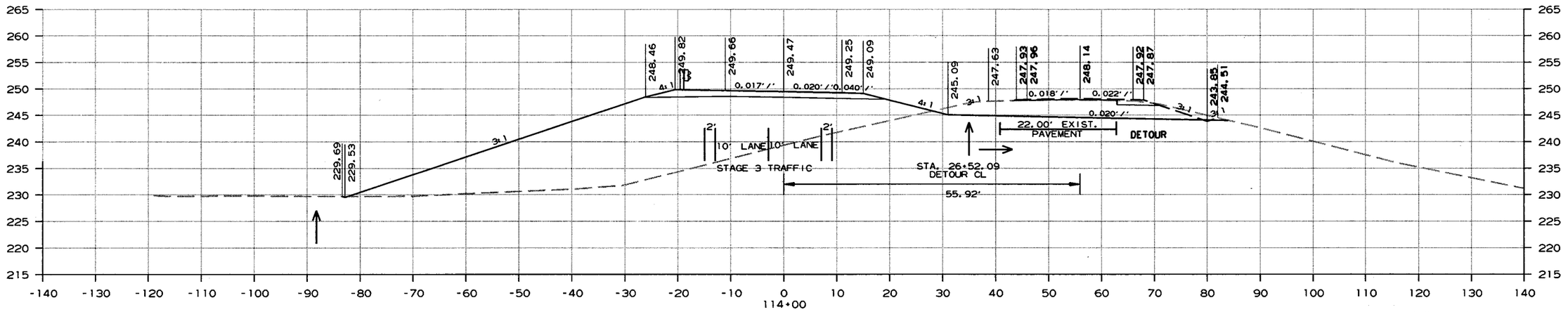
8/8/2018

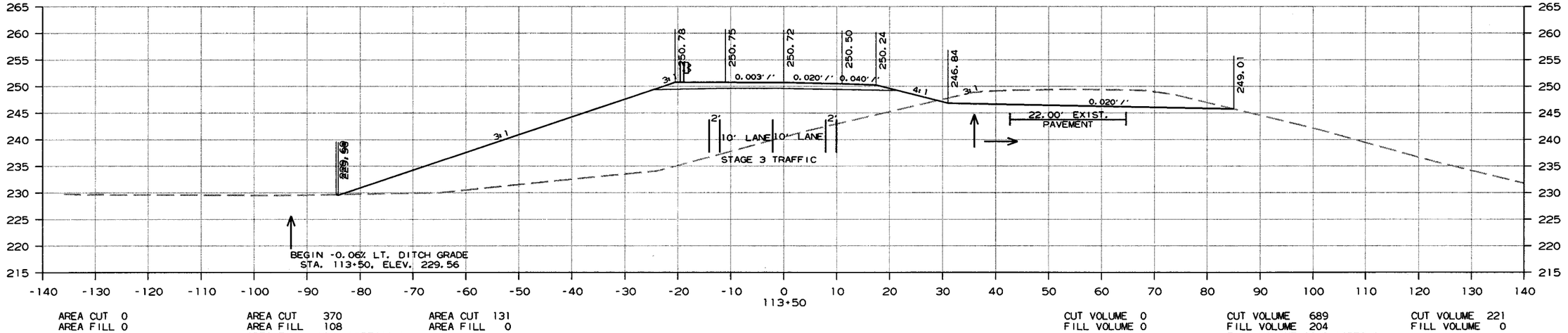
R100871.DGN

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.		100871	79	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)





CROSS SECTION STA. 113+50 TO STA. 114+00

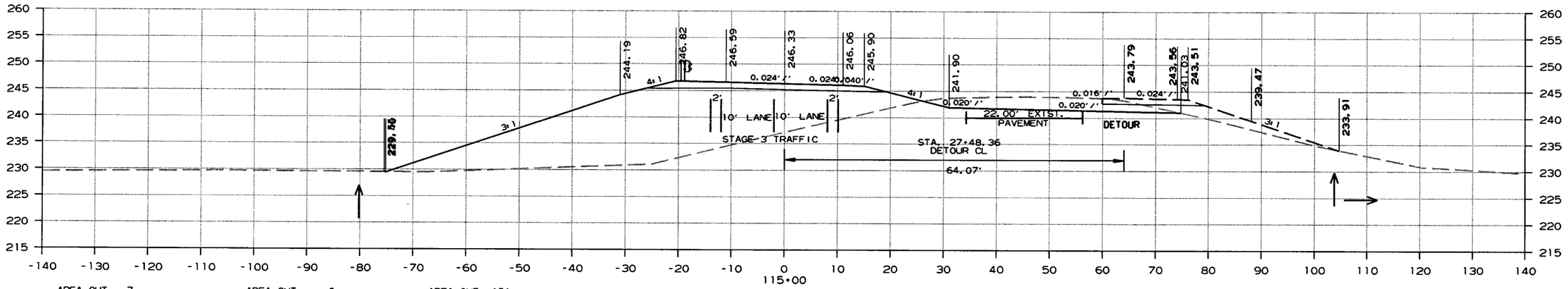
8/8/2018

R100871.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.		100871	80	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



AREA CUT 7
AREA FILL 46

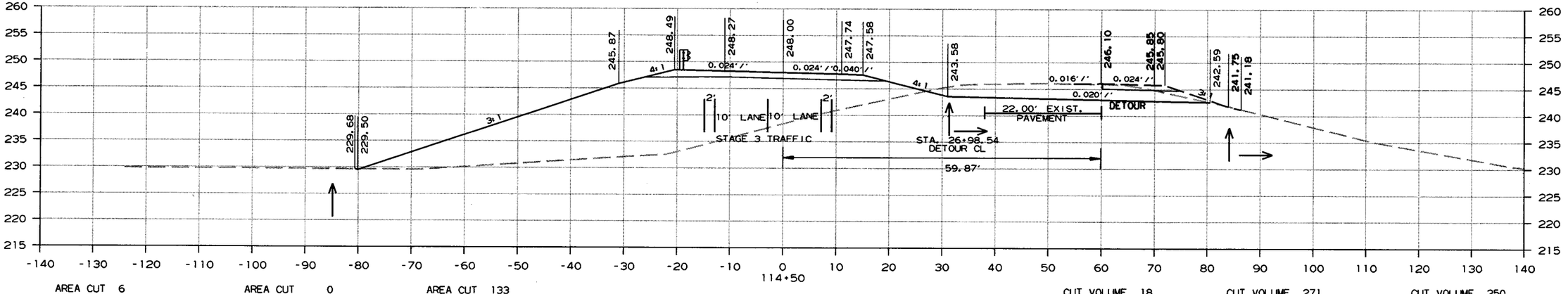
AREA CUT 0
AREA FILL 783

AREA CUT 151
AREA FILL 0

CUT VOLUME 12
FILL VOLUME 48

CUT VOLUME 0
FILL VOLUME 1525

CUT VOLUME 263
FILL VOLUME 0



AREA CUT 6
AREA FILL 6

AREA CUT 0
AREA FILL 864

AREA CUT 133
AREA FILL 0

CUT VOLUME 18
FILL VOLUME 6

CUT VOLUME 271
FILL VOLUME 899

CUT VOLUME 250
FILL VOLUME 1

CROSS SECTION STA. 114+50 TO STA. 115+00

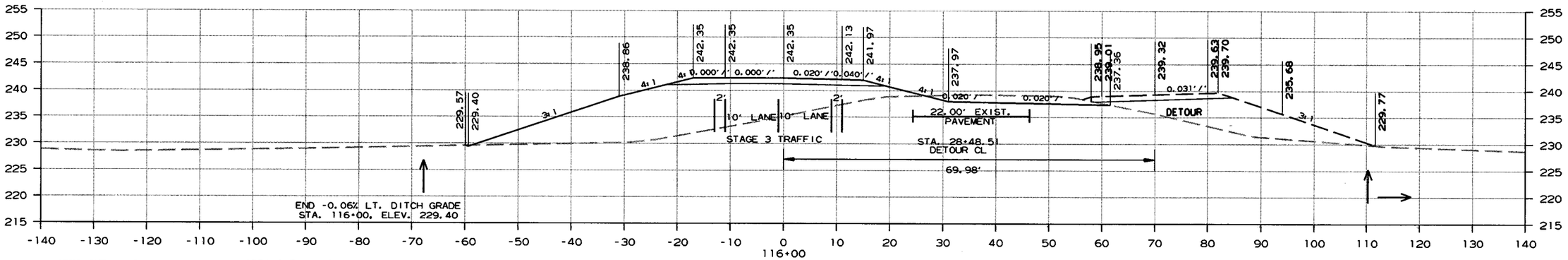
8/8/2018

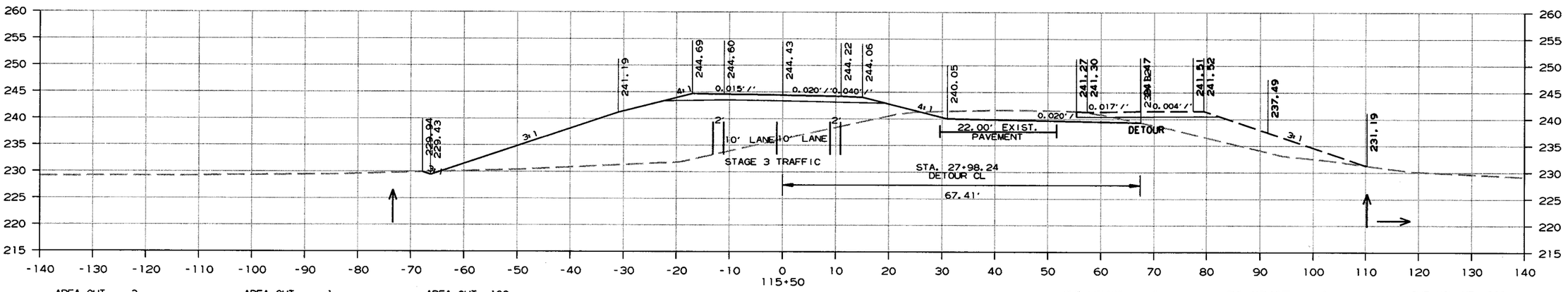
R100871.DGN

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.		100871	81	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)





CROSS SECTION STA. 115+50 TO STA. 116+00

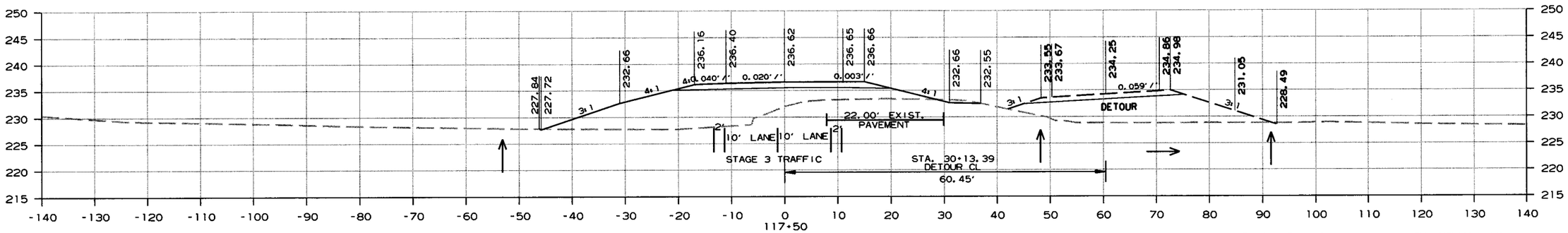
8/8/2018

R100871.DGN

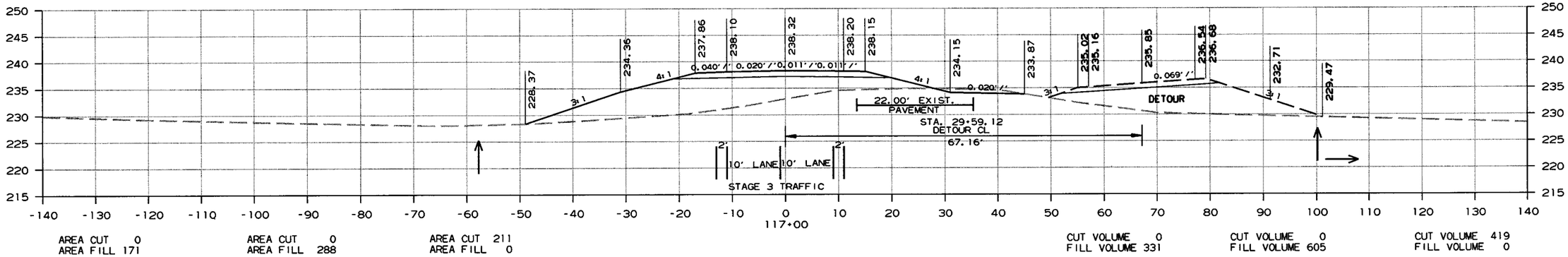
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	82	87

(2) CROSS SECTIONS

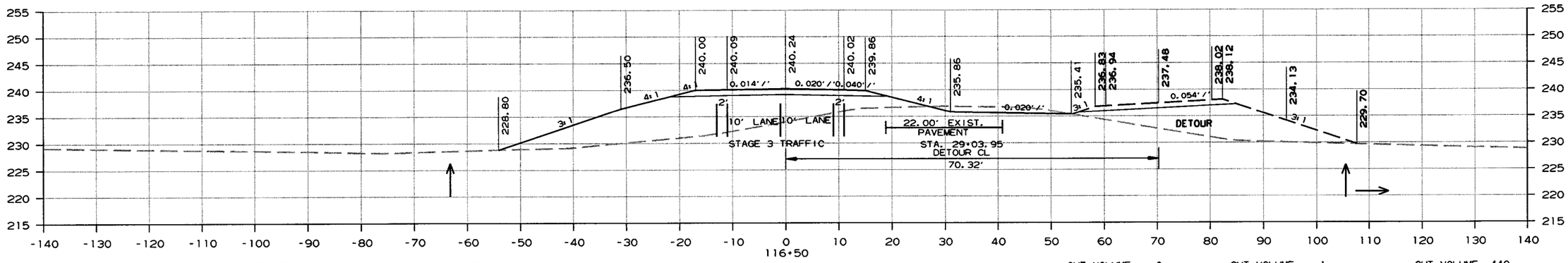
AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)



AREA CUT 0 AREA FILL 168 | AREA CUT 0 AREA FILL 288 | AREA CUT 201 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 313 | CUT VOLUME 0 FILL VOLUME 533 | CUT VOLUME 381 FILL VOLUME 0



AREA CUT 0 AREA FILL 171 | AREA CUT 0 AREA FILL 288 | AREA CUT 211 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 331 | CUT VOLUME 0 FILL VOLUME 605 | CUT VOLUME 419 FILL VOLUME 0



AREA CUT 0 AREA FILL 187 | AREA CUT 0 AREA FILL 365 | AREA CUT 242 AREA FILL 0 | CUT VOLUME 0 FILL VOLUME 333 | CUT VOLUME 1 FILL VOLUME 772 | CUT VOLUME 448 FILL VOLUME 0

CROSS SECTION STA. 116+50 TO STA. 117+50

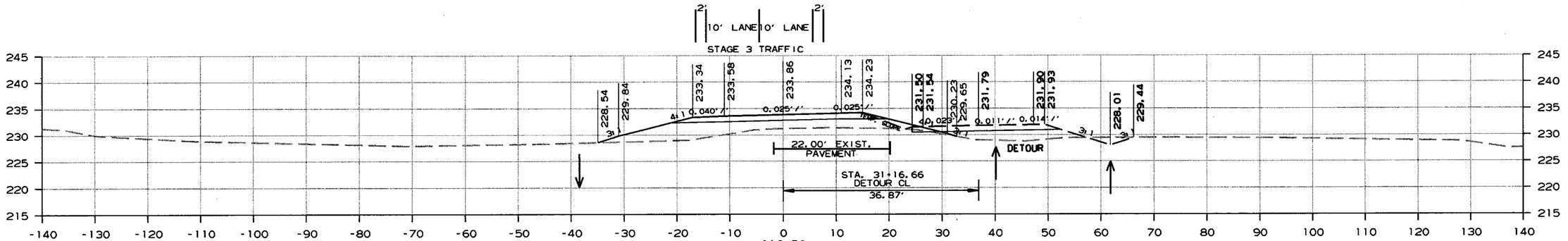
8/8/2018

R100871.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.		100871	83	87

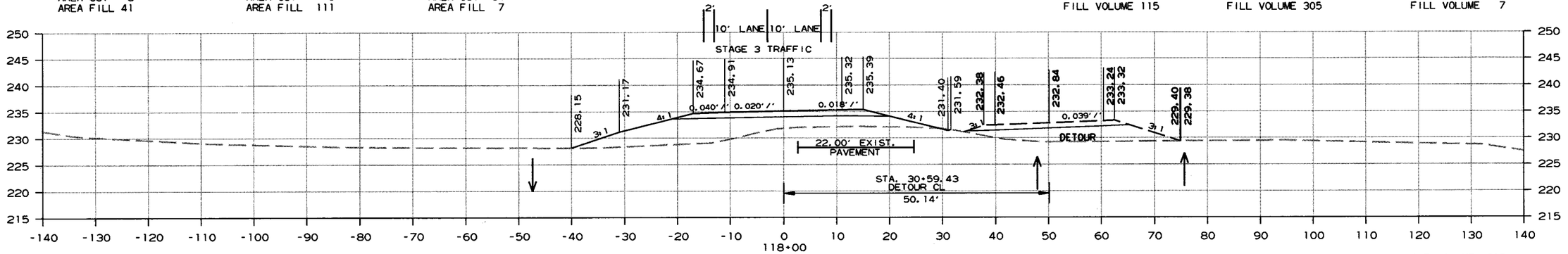
(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)



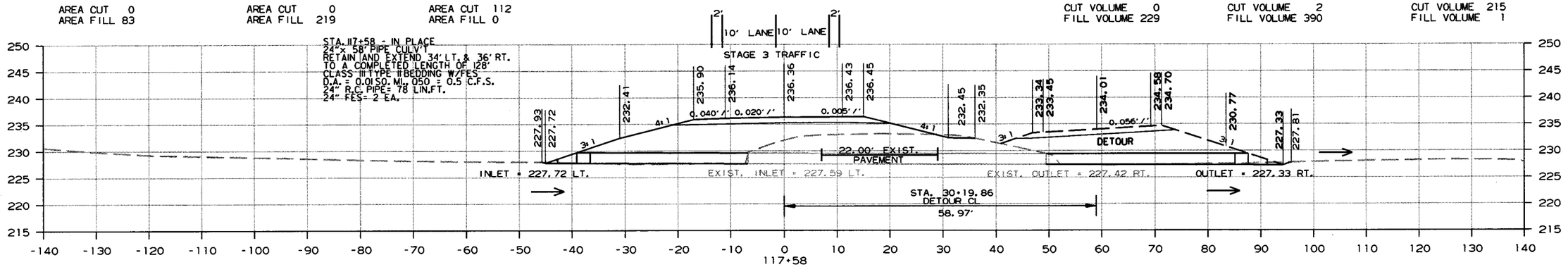
AREA CUT 8 AREA FILL 41 | AREA CUT 0 AREA FILL 111 | AREA CUT 64 AREA FILL 7

CUT VOLUME 8 FILL VOLUME 115 | CUT VOLUME 0 FILL VOLUME 305 | CUT VOLUME 163 FILL VOLUME 7



AREA CUT 0 AREA FILL 83 | AREA CUT 0 AREA FILL 219 | AREA CUT 112 AREA FILL 0

CUT VOLUME 0 FILL VOLUME 229 | CUT VOLUME 2 FILL VOLUME 390 | CUT VOLUME 215 FILL VOLUME 1



AREA CUT 1 AREA FILL 211 | AREA CUT 3 AREA FILL 283 | AREA CUT 164 AREA FILL 1

CUT VOLUME 0 FILL VOLUME 56 | CUT VOLUME 0 FILL VOLUME 85 | CUT VOLUME 54 FILL VOLUME 0

CROSS SECTION STA. 117+58 TO STA. 118+50

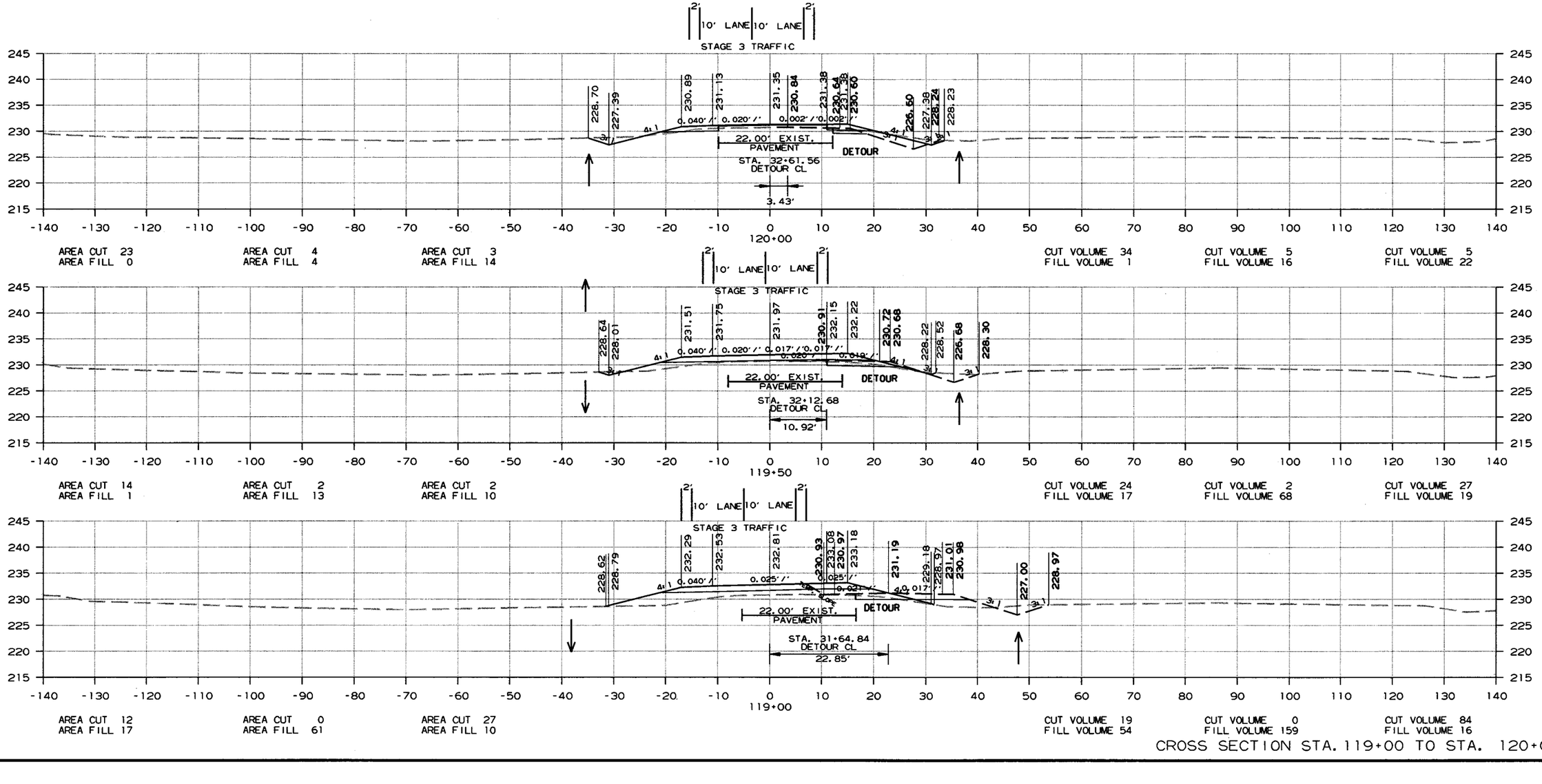
8/8/2018

R100871.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.		100871	84	87

(2) CROSS SECTIONS

AREA (STAGE 1)	AREA (STAGE 2)	AREA (STAGE 3)	VOLUME (STAGE 1)	VOLUME (STAGE 2)	VOLUME (STAGE 3)



CROSS SECTION STA. 119+00 TO STA. 120+00

8/8/2018

R100871.DGN

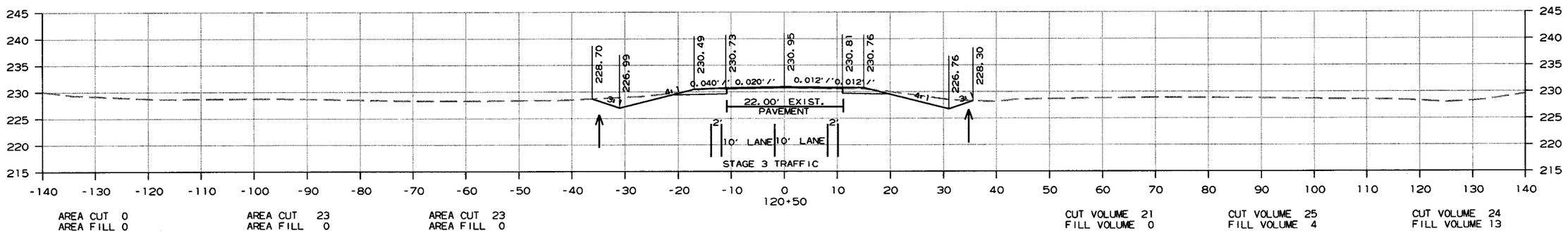
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100871	85	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)

AREA CUT 0 | AREA CUT 0 | AREA CUT 0
AREA FILL 0 | AREA FILL 0 | AREA FILL 0

CUT VOLUME 0 | CUT VOLUME 11 | CUT VOLUME 11
FILL VOLUME 0 | FILL VOLUME 0 | FILL VOLUME 0



AREA CUT 0 | AREA CUT 23 | AREA CUT 23
AREA FILL 0 | AREA FILL 0 | AREA FILL 0

CUT VOLUME 21 | CUT VOLUME 25 | CUT VOLUME 24
FILL VOLUME 0 | FILL VOLUME 4 | FILL VOLUME 13

CROSS SECTION STA. 120+50 TO STA. 120+76.73

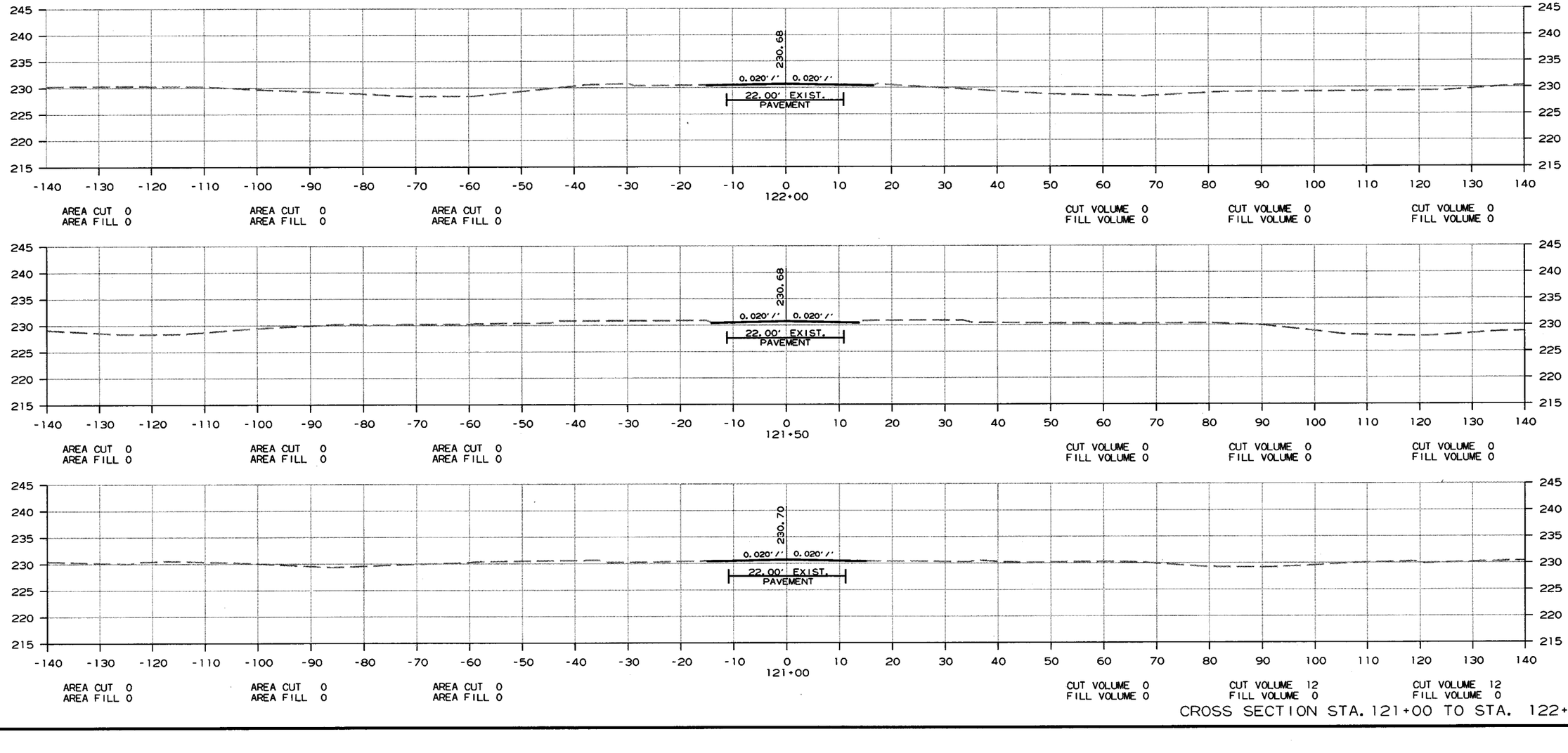
8/8/2018

R100871.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.		100871	86	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)



CROSS SECTION STA. 121+00 TO STA. 122+00

8/8/2018

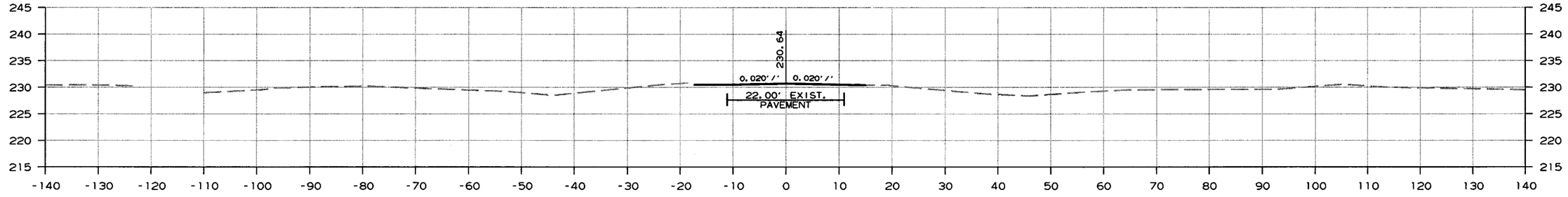
R100871.DGN

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.		100871	87	87

(2) CROSS SECTIONS

AREA (STAGE 1) | AREA (STAGE 2) | AREA (STAGE 3) | VOLUME (STAGE 1) | VOLUME (STAGE 2) | VOLUME (STAGE 3)

123+28.00
END 100' TRANSITION



AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0

122+28.00
END JOB 100871
BEGIN 100' TRANSITION

CUT VOLUME 0
FILL VOLUME 0

CUT VOLUME 0
FILL VOLUME 0

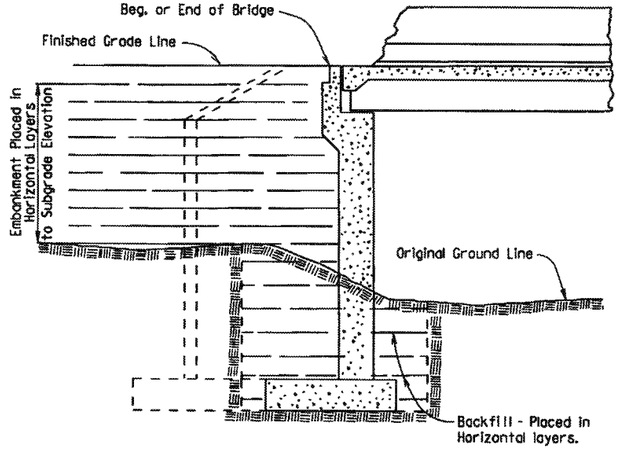
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 122+28 TO STA. 122+28

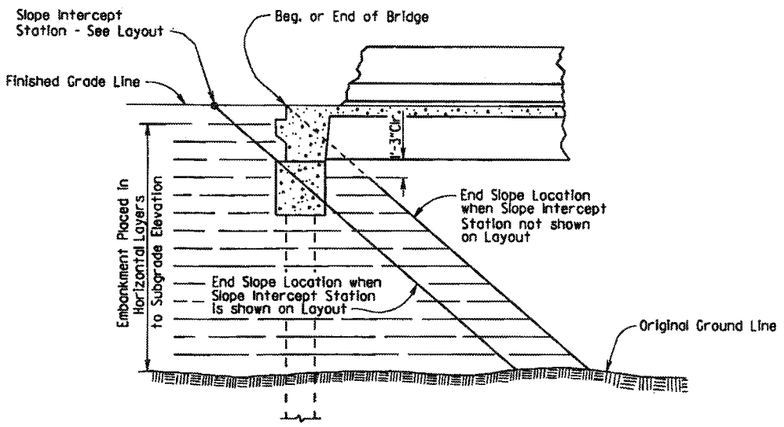
8/8/2018

R100871.DGN

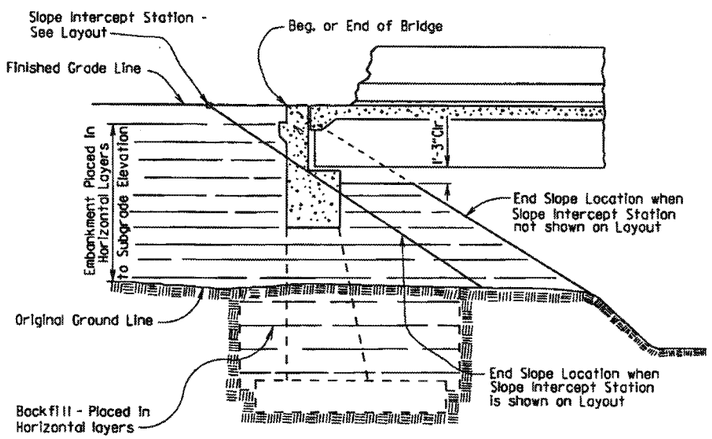
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	EMBANKMENT & BACKFILL		55000	



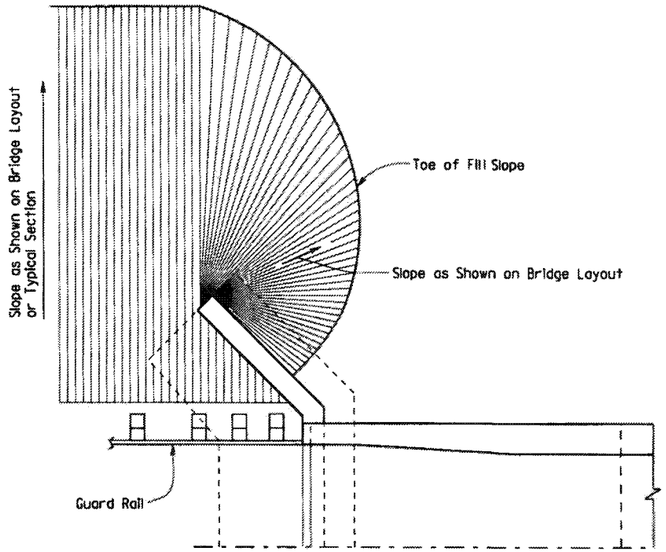
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



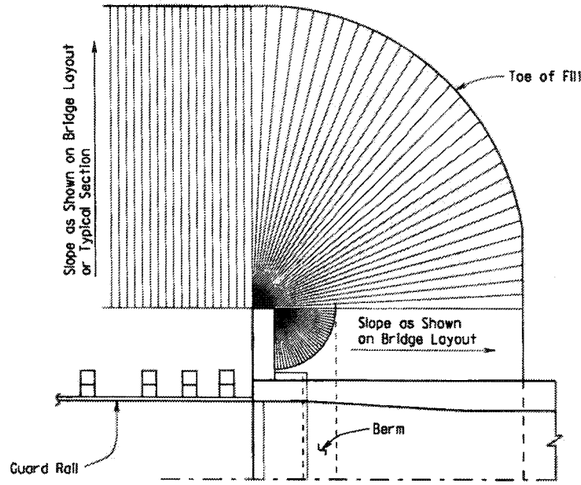
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



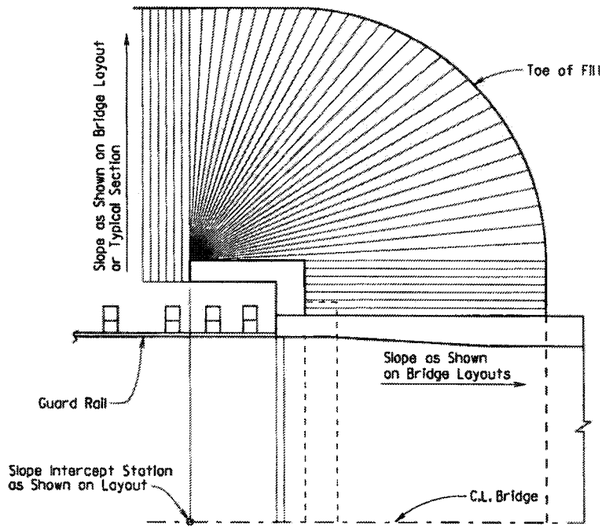
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



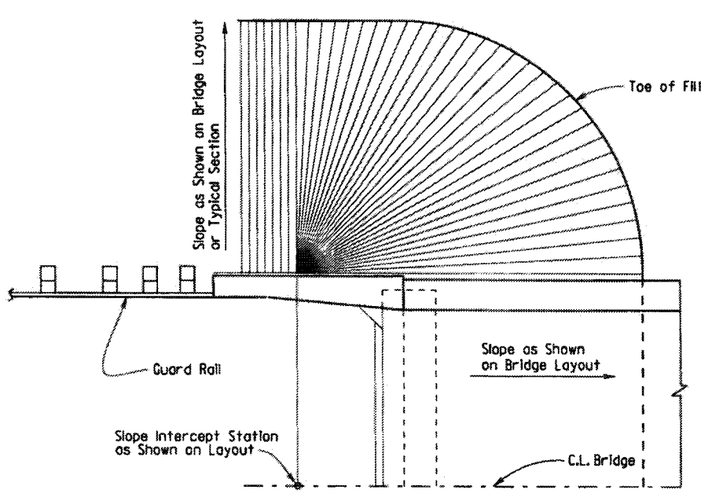
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

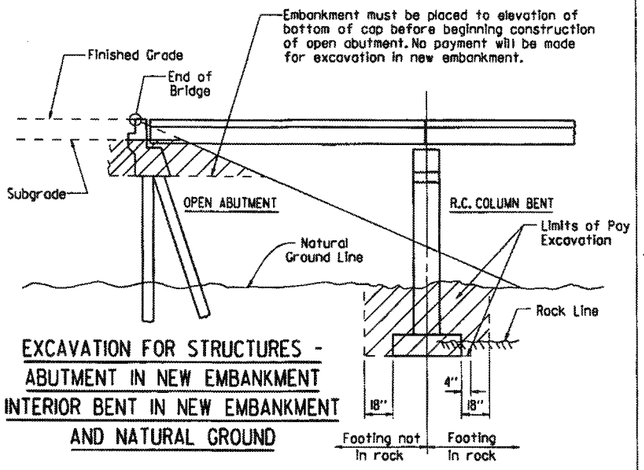
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

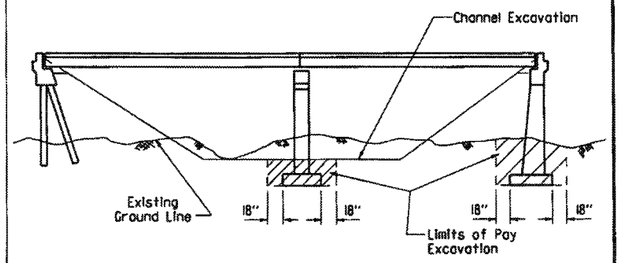
DRAWING NO. 55000

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

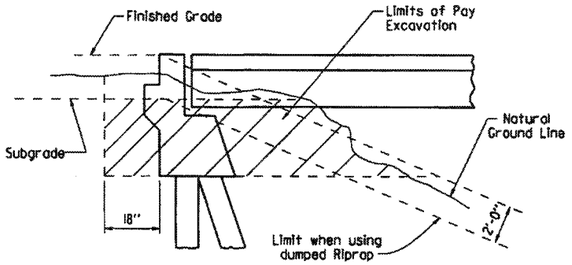
(1) RIPRAP & EXCAV. 55001



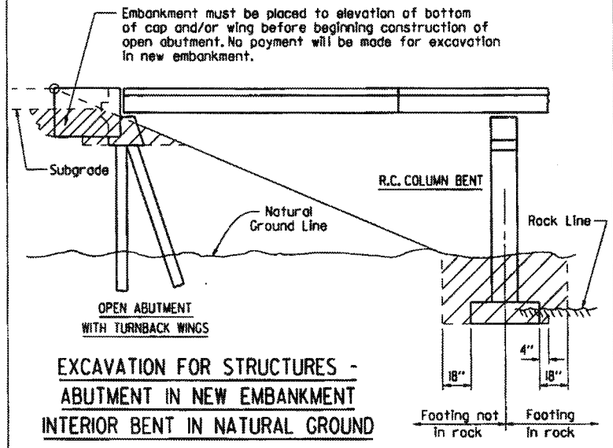
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



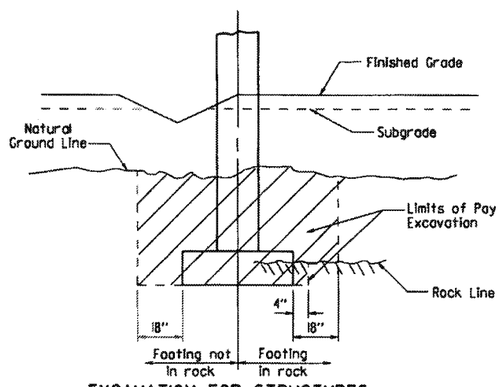
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



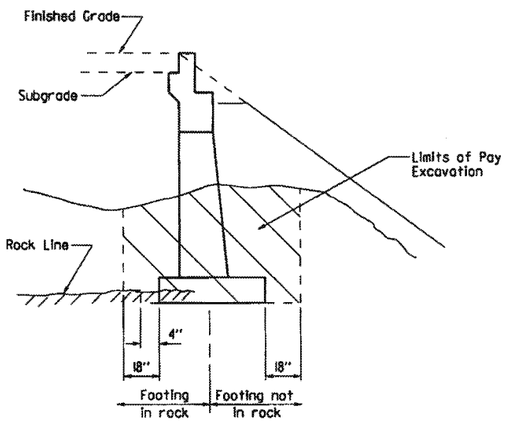
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



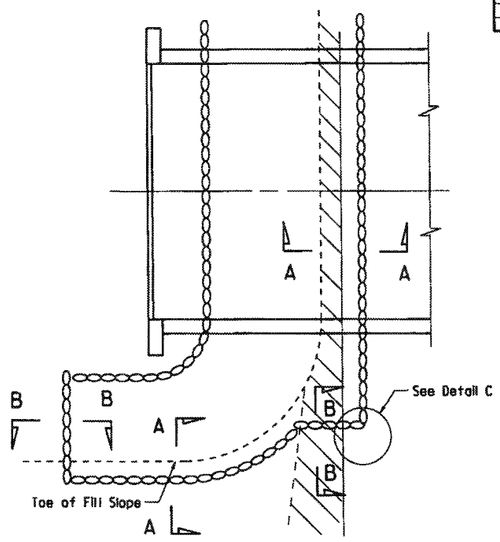
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



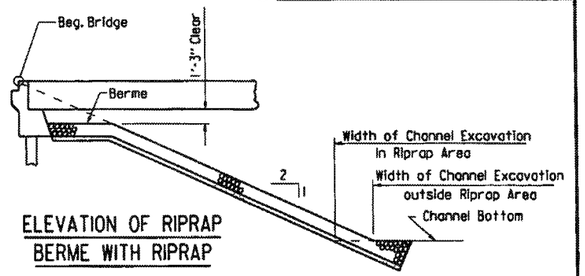
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



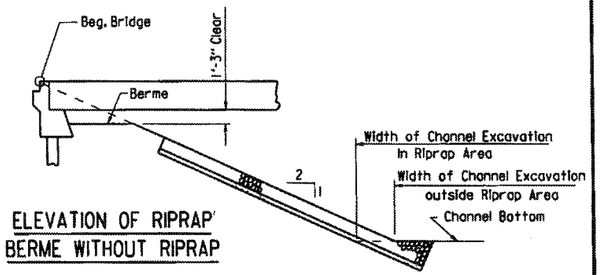
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



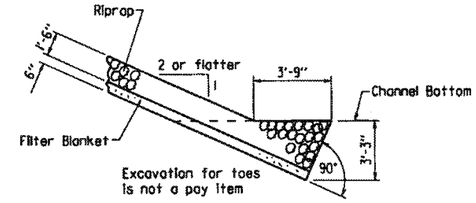
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP

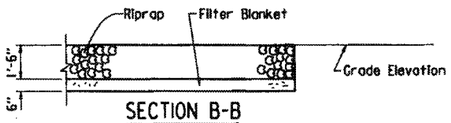


ELEVATION OF RIPRAP BERME WITHOUT RIPRAP

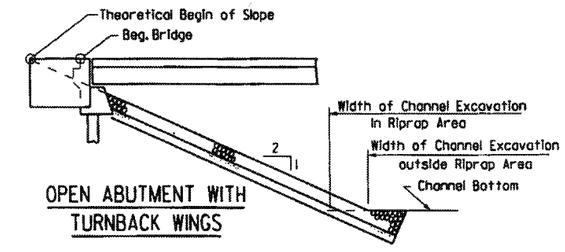


SECTION A-A

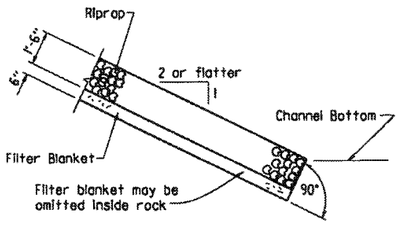
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



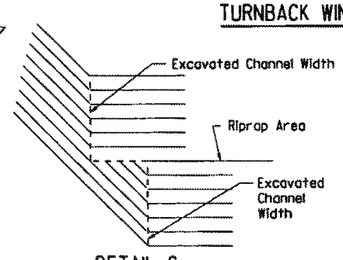
SECTION A-A

(Toe Excavation in Rock)

Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(a) may be used.

Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



DETAIL C

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

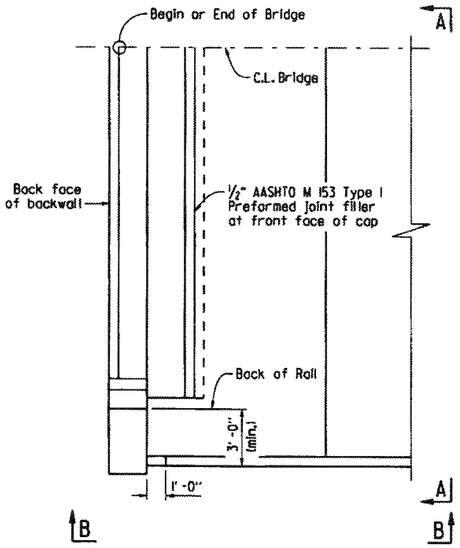
DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55001.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:			

DRAWING NO. 55001

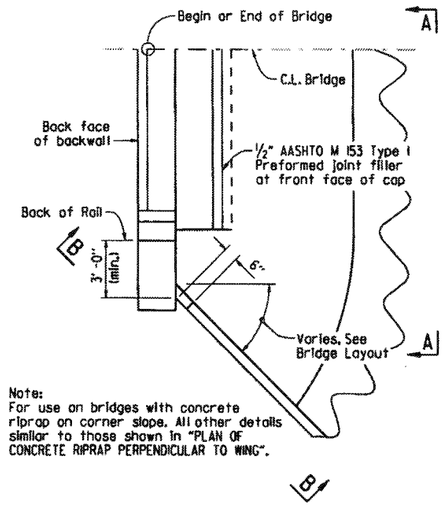
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

① CONCRETE RIPRAP 55002

Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



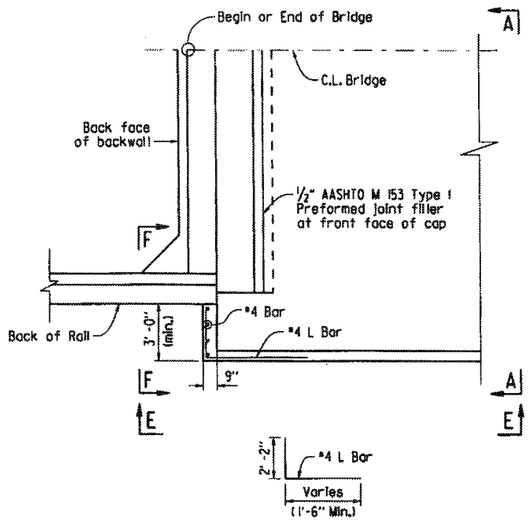
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO WING
¼" = 1'-0"



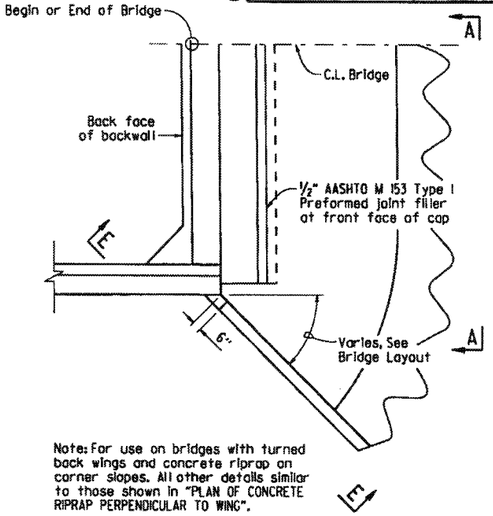
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE TO WING
¼" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



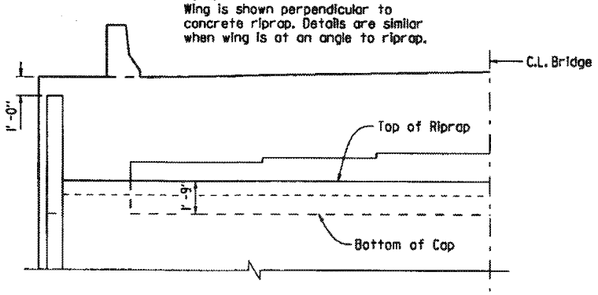
PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO TURNED BACK WING
¼" = 1'-0"



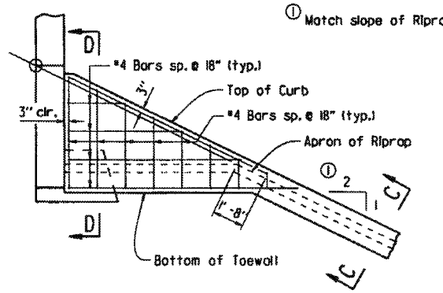
Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE FROM TURNED BACK WING
¼" = 1'-0"

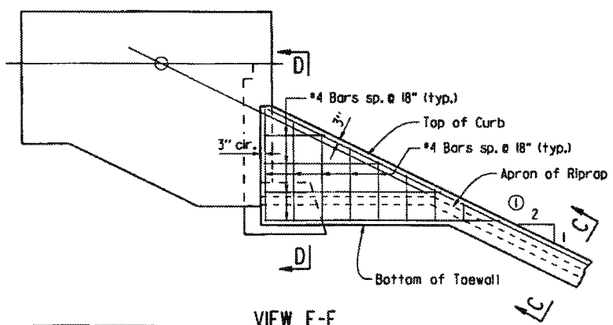
Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.



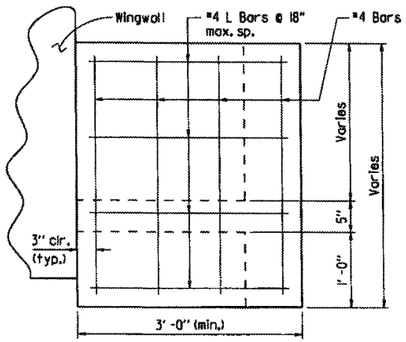
VIEW A-A
¼" = 1'-0"



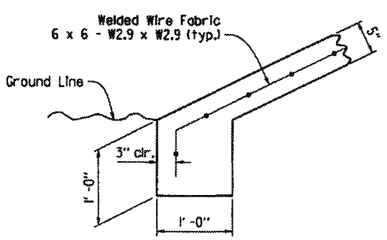
VIEW B-B
¼" = 1'-0"



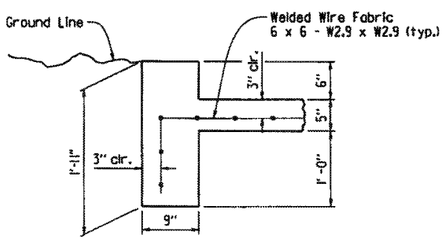
VIEW E-E
¼" = 1'-0"



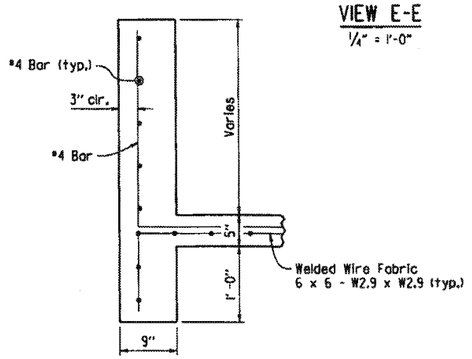
VIEW F-F
1" = 1'-0"



TOE OF CONCRETE RIPRAP
1" = 1'-0"



SECTION C-C
1" = 1'-0"



SECTION D-D
1" = 1'-0"

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, f'c = 2,400 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

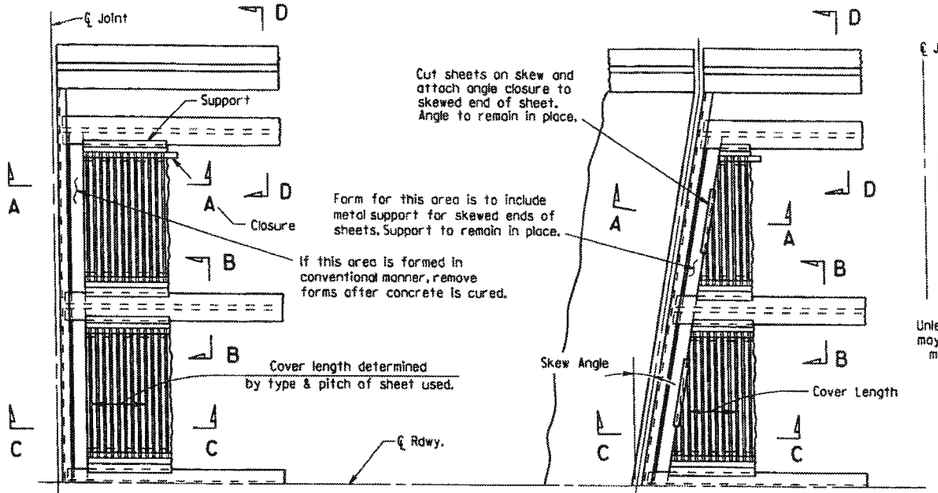
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 2/21/2014 FILENAME: b55002.dgn
CHECKED BY: BEF DATE: 2/21/2014 SCALE: AS SHOWN
DESIGNED BY: Std. DATE: ---

DRAWING NO. 55002

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				BRIDGE DECK FORMS		55005		

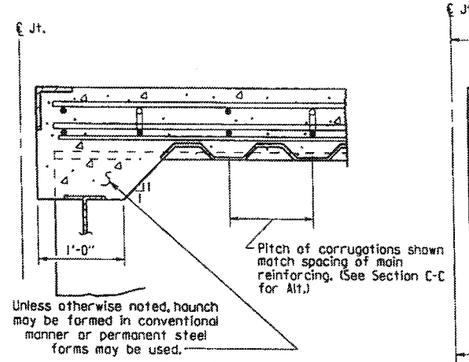


PART PLAN - SQUARE SPAN

⅜" = 1'-0"

PART PLAN - SKEWED SPAN

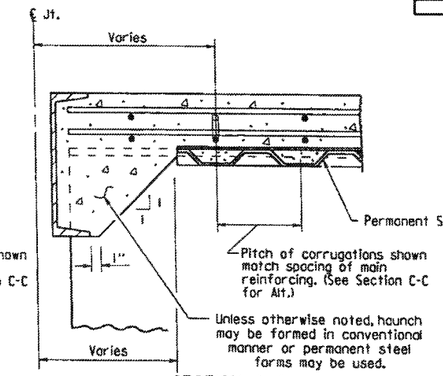
⅜" = 1'-0"



SECTION A-A

N.T.S.

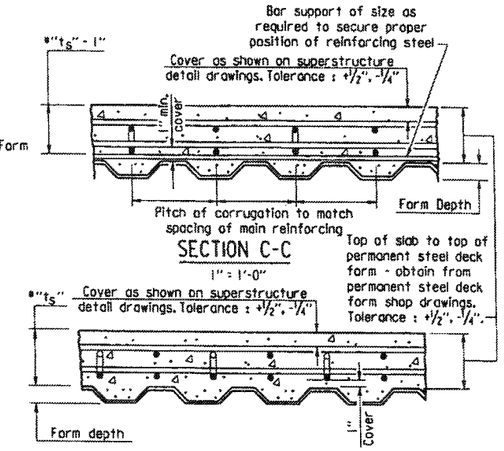
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



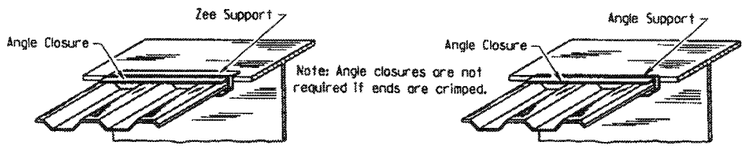
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

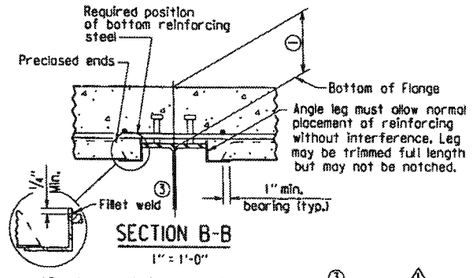
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

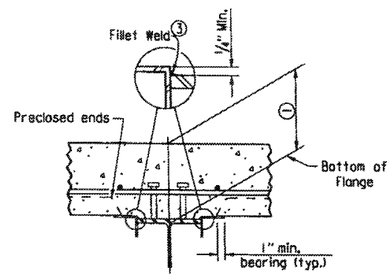


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

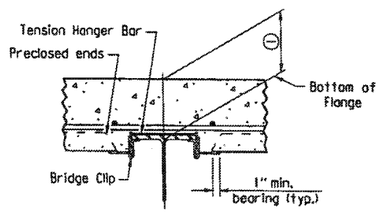
③ ⚠ Minimum weld: ⅛" x 1" @ 18". More weld may be required; maximum length per weld = 1½" (typ.)



SECTION B-B

1" = 1'-0"

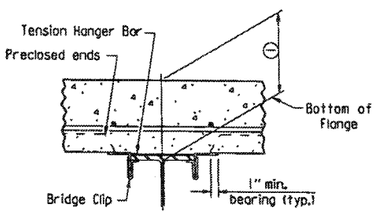
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

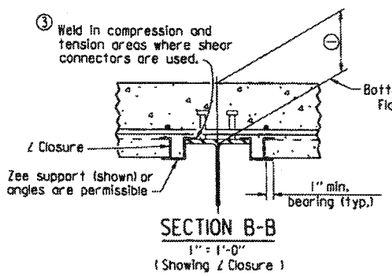
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

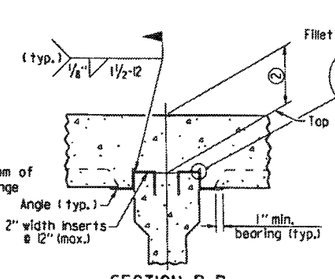
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

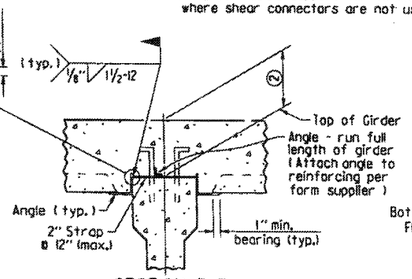


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

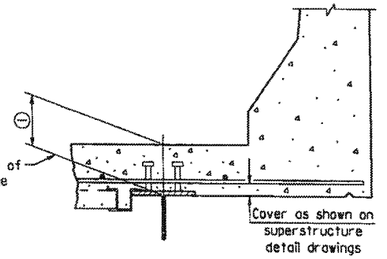


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1¾" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠ Revised weld dimension by KWY, Ck'd. by BEF, 3/24/16.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55005.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NONE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55005

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

1 GENERAL NOTES 55006

GENERAL NOTES

These GENERAL NOTES are applicable unless otherwise shown in the Plan Details, Special Provisions, or Supplemental Specifications.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Specifications.

DESIGN SPECIFICATIONS: See Bridge Layout(s).

SUPERSTRUCTURE NOTES:

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. HPS70W)	Fy = 70,000 psi

See Plan Details for Grade(s) of Structural Steel required.

CONCRETE:

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Use of a longitudinal screed is not permitted on any span of a bridge deck with horizontal curvature.

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class S Tined Bridge Roadway Surface Finish. Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class S Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam or girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings, median barrier, and sidewalks.

REINFORCING STEEL:

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

STRUCTURAL STEEL (COMMON TO W-BEAMS AND PLATE GIRDERS):

Structural steel shall be AASHTO M 270 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

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

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 15/16" ø open holes. Holes for ¾" ø high-strength bolts may be 15/16" ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam or girder webs and on the bottom of the beam or girder flanges.

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

When painting is required, all structural steel except galvanized steel and steel completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall be as specified in the plans.

STRUCTURAL STEEL (W-BEAMS):

All beams and field splice plates, and all diaphragms and connection plates attached to horizontally curved beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. ___)".

All beams in continuous units and simple spans with field splices shall be blocked in their true position in the shop in groups as specified in Subsection 807.54(b)(2) with the webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All beams in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Bent plate diaphragms for horizontally curved beams shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight beams may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved beams.

Unless otherwise noted, diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

STRUCTURAL STEEL (PLATE GIRDERS):

All references to cross-frames shall include "X" or "K" types.

All girder web and flange plates, all field splice plates, and all diaphragms, cross-frames and connection plates attached to horizontally curved girders are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

All girders in continuous units and simple spans with field splices shall be assembled in the shop as specified in Subsection 807.54(b)(2) and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All girders in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment will be made for shop welded splices.

All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Q.C. testing shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

Bent plate diaphragms for horizontally curved girders shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight girders may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved girders.

Unless otherwise noted, cross-frames and diaphragms shall be installed as girders are erected. All bolts in cross-frames, diaphragms, and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

SUBSTRUCTURE NOTES:

CONCRETE:

Unless otherwise noted, concrete in caps, columns and footings (except seal footings) shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. Seal Concrete for footings shall have a minimum 28 day compressive strength f'c = 2,100 psi.

Concrete in drilled shafts shall be Class "S" as modified by Job SP "Drilled Shaft Foundations".

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

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

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

STRUCTURAL STEEL:

Structural steel in end bents shall be AASHTO M 270 with grade and payment as specified in the plans.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

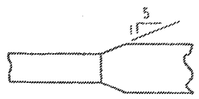
DRAWN BY:	A.M.S.	DATE:	9-2-2015	FILENAME:	b55006.dgn
CHECKED BY:	B.E.F.	DATE:	9-2-2015	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:			

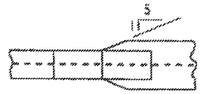
DRAWING NO. 55006

PRINT DATE: 9/21/2015

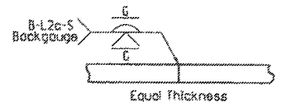
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

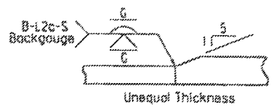
① STEEL BRIDGE STRUCTURES 55007



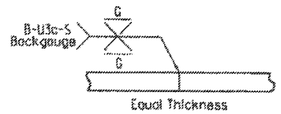


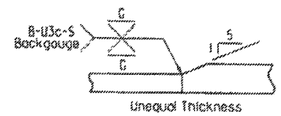
FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS





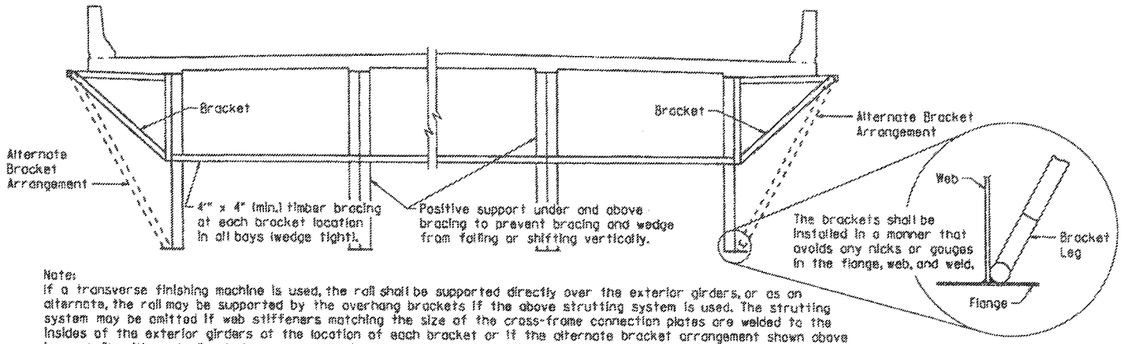
(Use when Base Metal Thickness is Equal to or Less than 2")





(Use when Base Metal Thickness is Greater than 2")

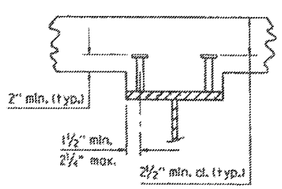
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



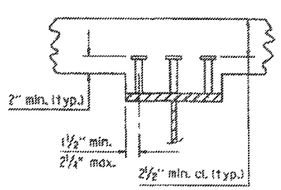
Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the cross-frame connection plates are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on the plans. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (____)".

SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



2 STUDS PER ROW



3 STUDS PER ROW

Stud Shear Connectors shall be automatically and welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

SHEAR CONNECTOR DETAIL

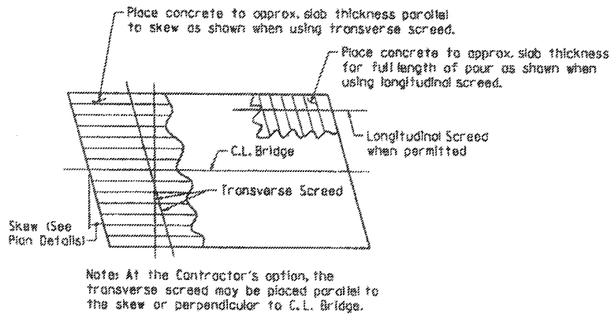
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and across the top of the sidwalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL

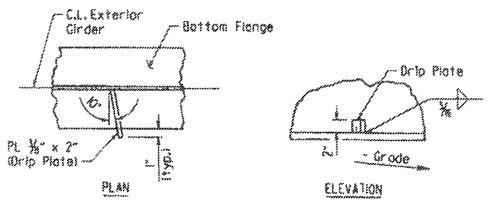
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



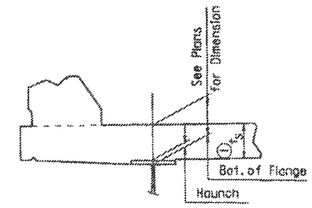
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

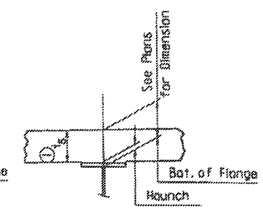
BOTTOM FLANGE DRIP PLATE

(USE WHEN WEB DEPTHS ARE 54" OR GREATER AND UNIT OR SPAN IS NOT IN LEVEL GRADE)

t_s = slab thickness. See "Typical Roadway Section" in the plans.



EXTERIOR BEAM OR GIRDER



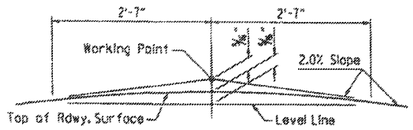
INTERIOR BEAM OR GIRDER

① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾" unless otherwise noted in the plans. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN

WELD TABLE

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	⅝"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

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

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

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

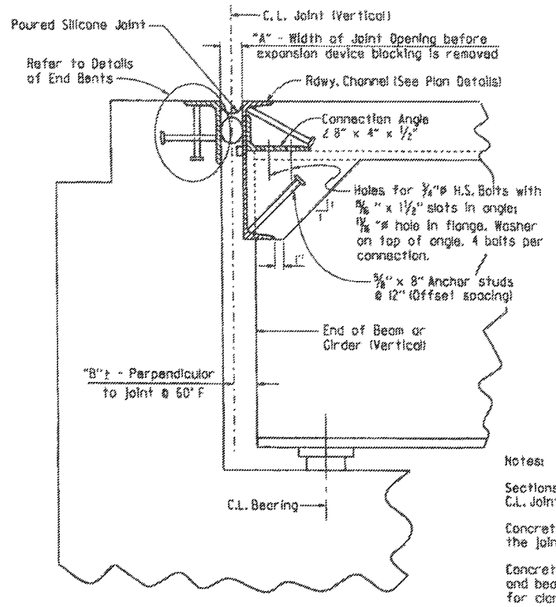
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55007.dgn
CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: ---

DRAWING NO. 55007

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROAD DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	POURED SILICONE JOINT			55008



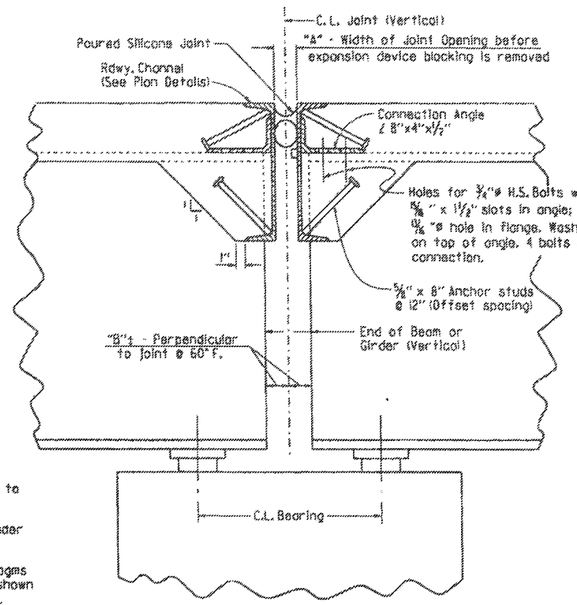
SECTION THRU JOINT AT END BENT

Notes:

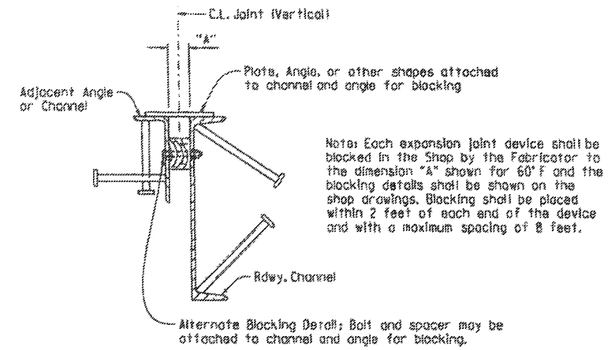
Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



SECTION THRU JOINT AT INTERMEDIATE BENT



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

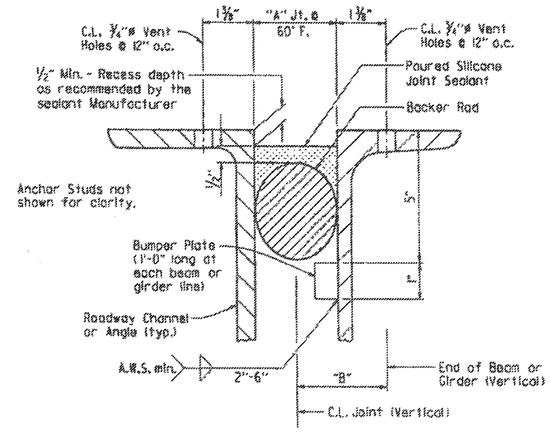
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.



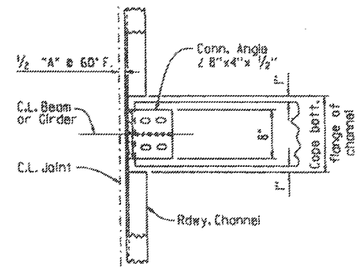
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

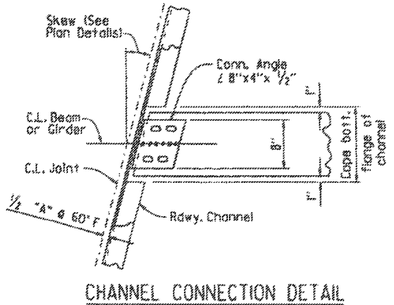
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



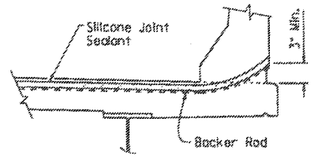
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

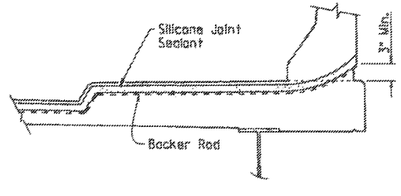


CHANNEL CONNECTION DETAIL

BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK

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

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

CHECKED BY: A.W.S. DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: —

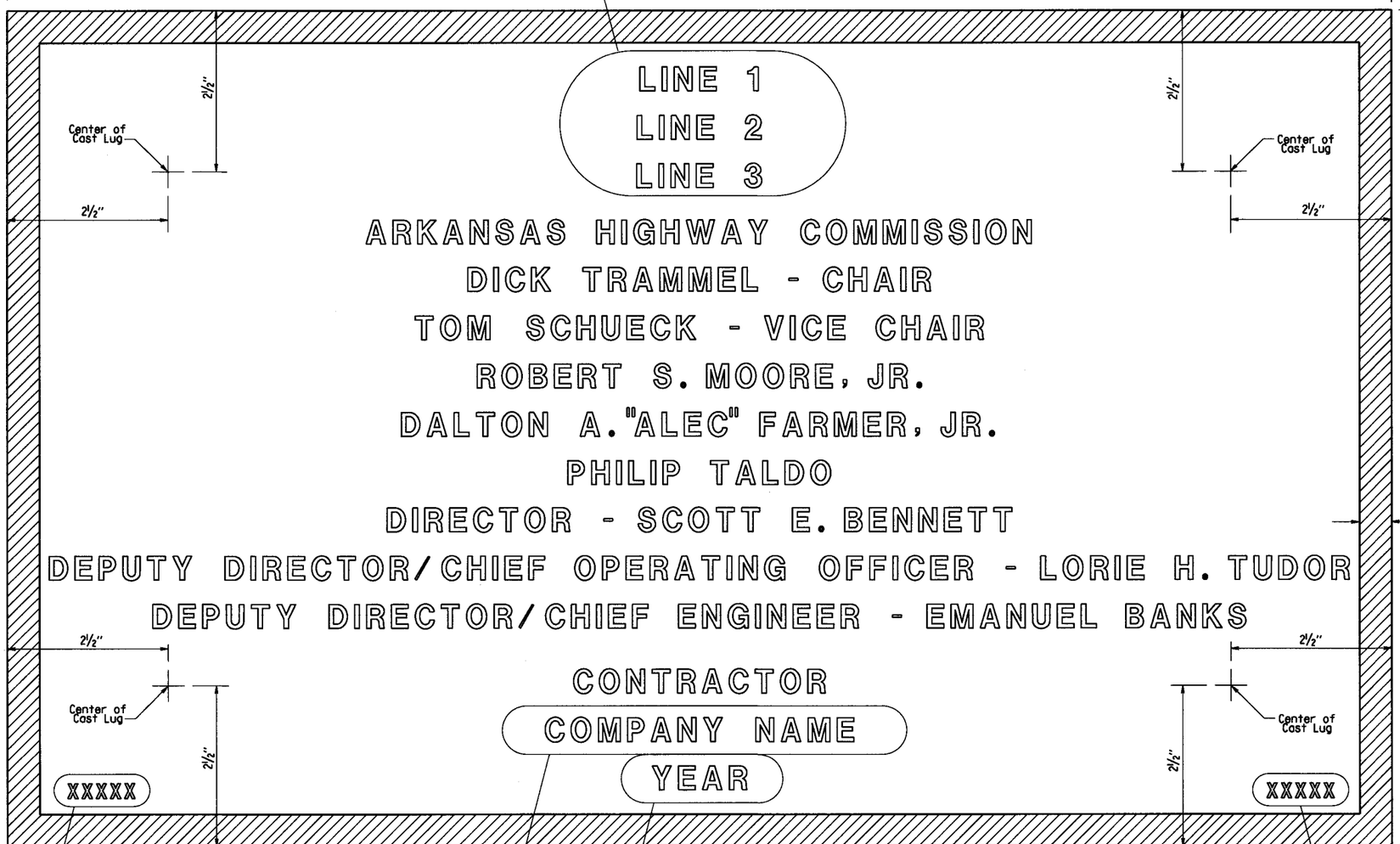
DRAWING NO. 55008

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14				6	ARK.			
1-14-15				JOB NO.				
1-17-17								

① TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



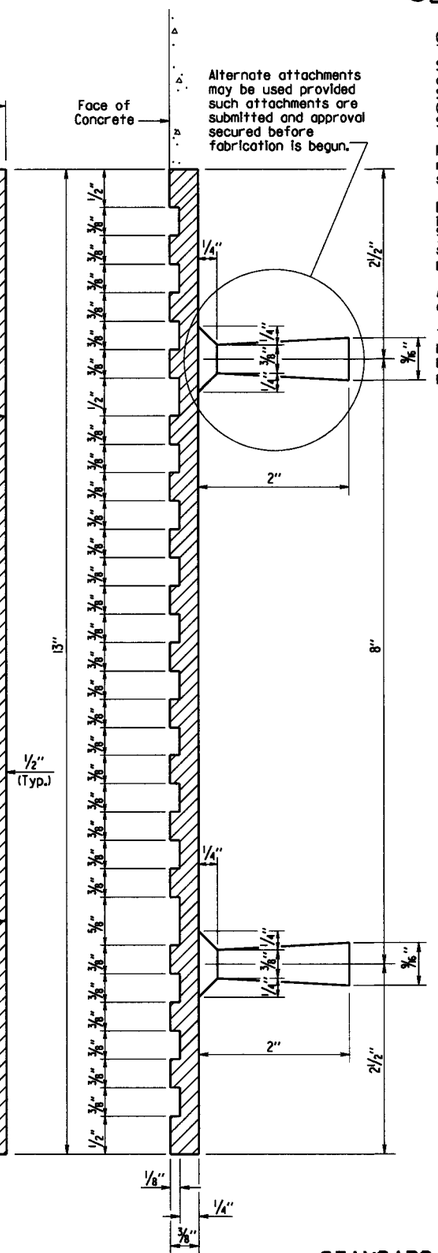
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : A1234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 5/8" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

③ Added New Commissioner
1-17-17 KDH Checked By: CRE

② Revised Chair and Vice Chair
Added New Commissioner
1-14-15 KDH Checked By: CRE

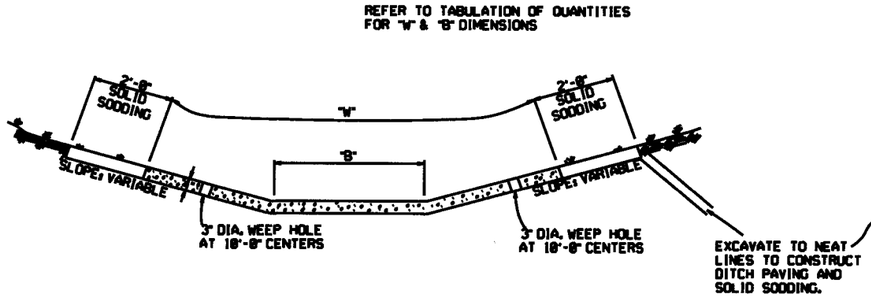
① Revised Deputy Director/
Chief Engineer
Added Deputy Director/
Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE

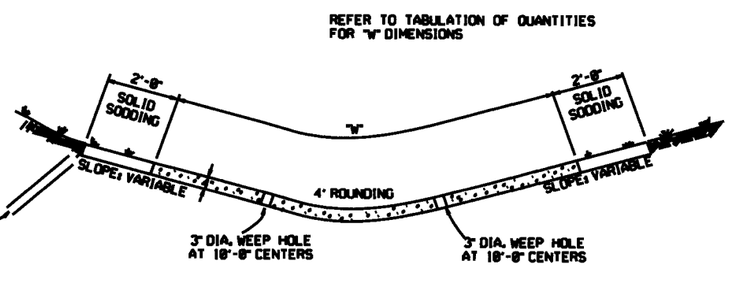
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

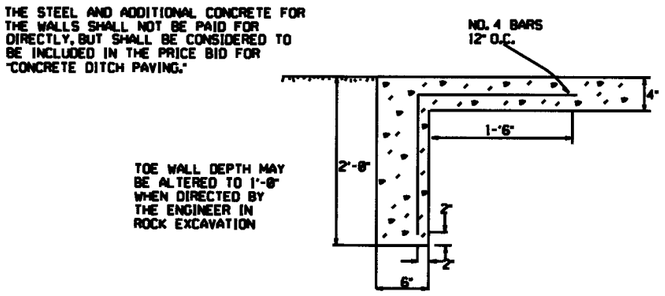
DRAWING NO. 55010



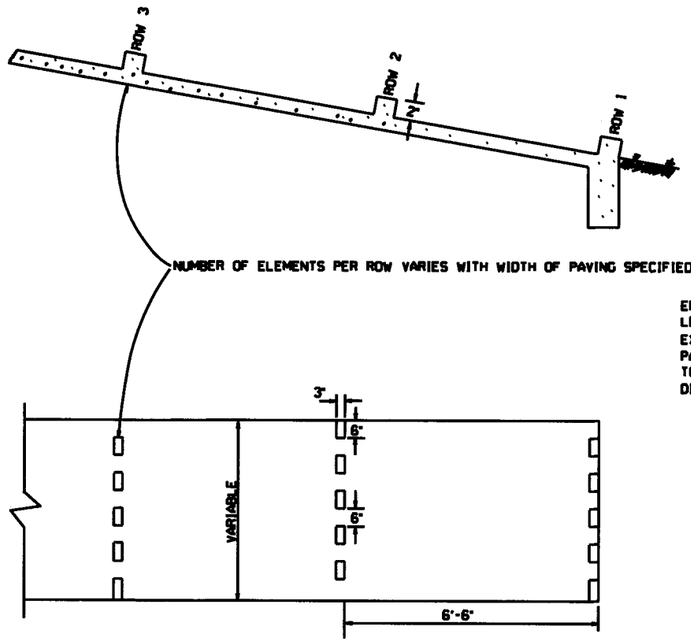
TYPE A



TYPE B



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



ENERGY DISSIPATORS
(NO SCALE)

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

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

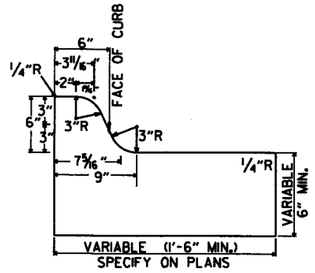
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	663-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-5-87	MODIFIED NOTE ON ENERGY DISS.	542-1-5-87
11-22-85	ADDED NOTE TO ENERGY DISS.	526-12-1-85
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

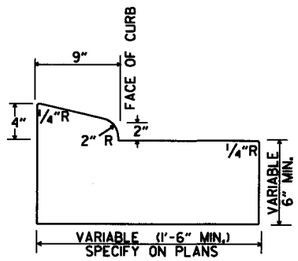
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

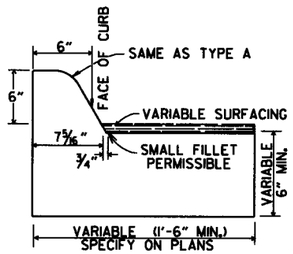
STANDARD DRAWING CDP-1



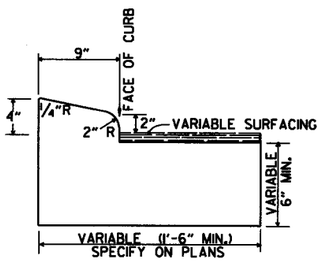
TYPE A



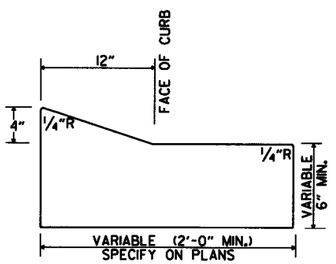
TYPE B-1



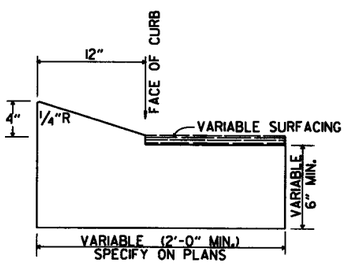
TYPE C



TYPE B-2

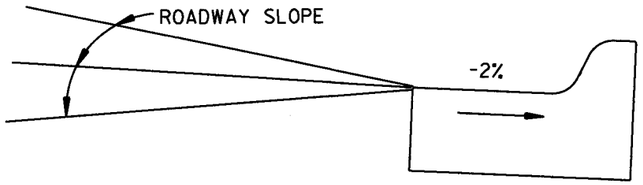


TYPE E-1



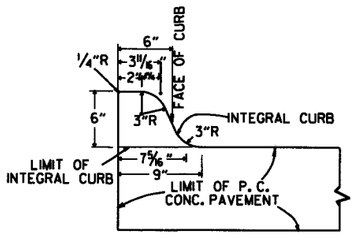
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

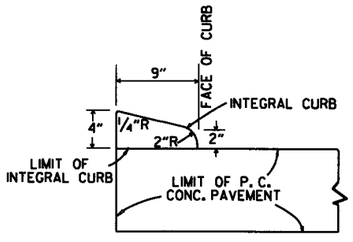


DETAIL OF GUTTER SLOPE

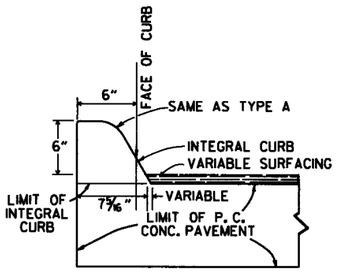
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

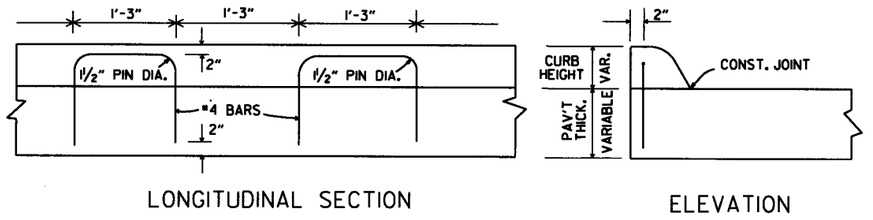


TYPE B

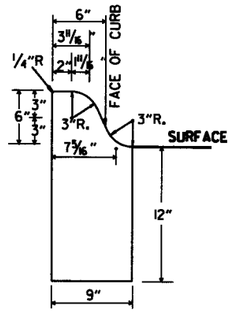


TYPE C

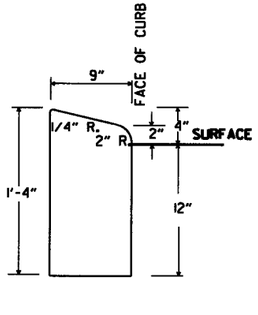
INTEGRAL CURB



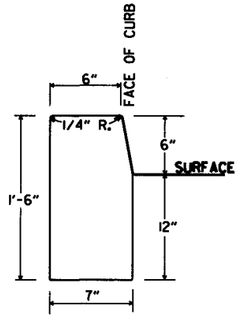
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



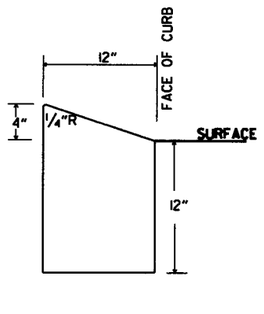
TYPE A



TYPE B

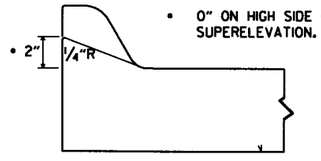


TYPE D



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.

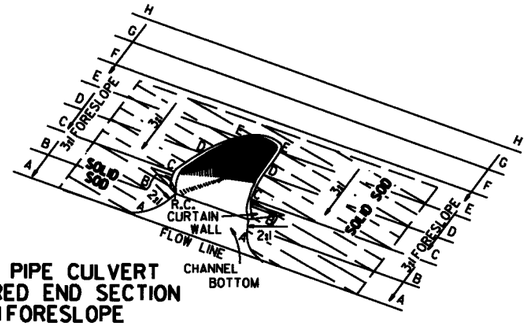
DETAILS OF MODIFIED CURB

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
8-30-89	VARIBLE DEPTH TYPE A & B 1	8-30-89
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	52-10-2-72

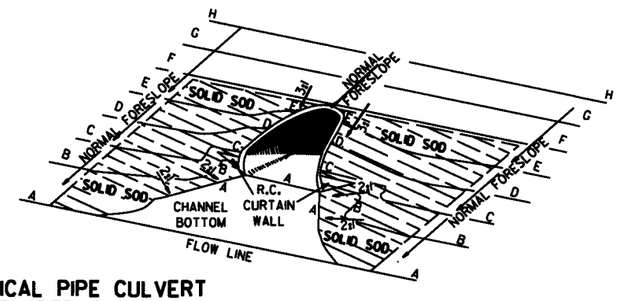
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

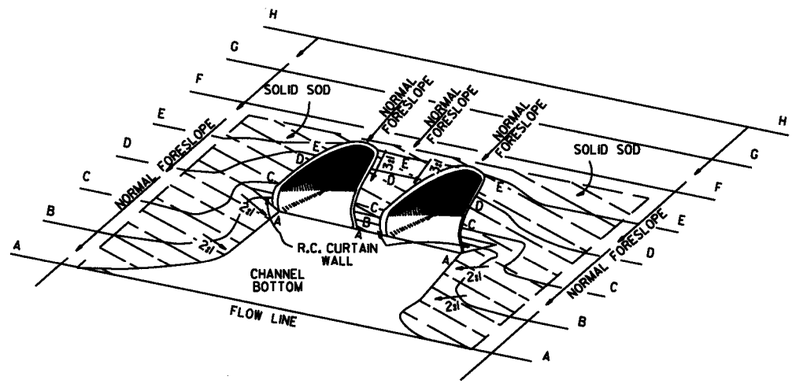
STANDARD DRAWING CG-1



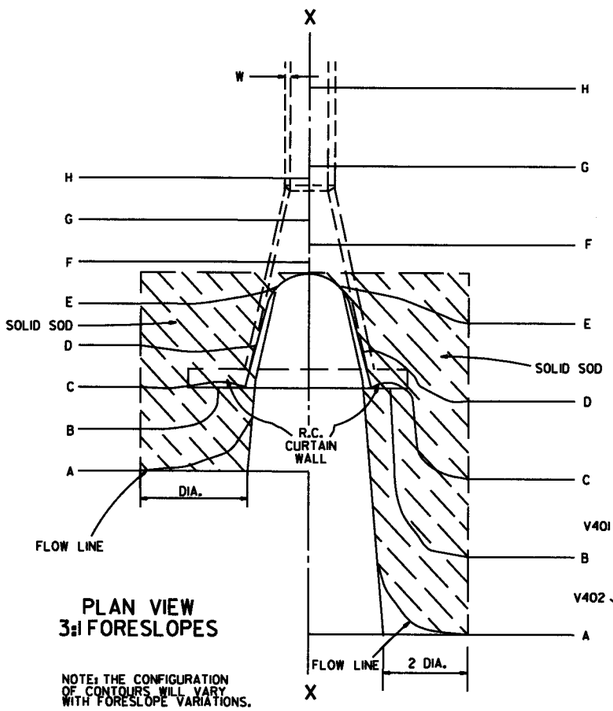
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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



PLAN VIEW
3:1 FORESLOPES

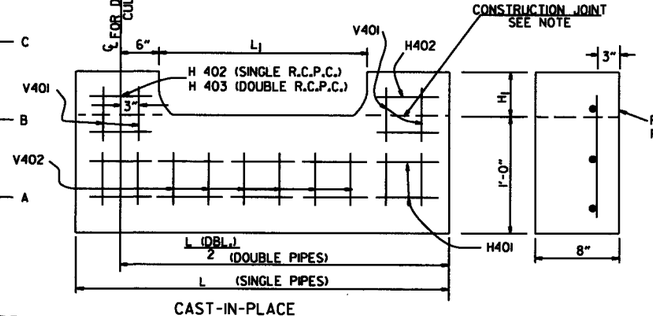
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

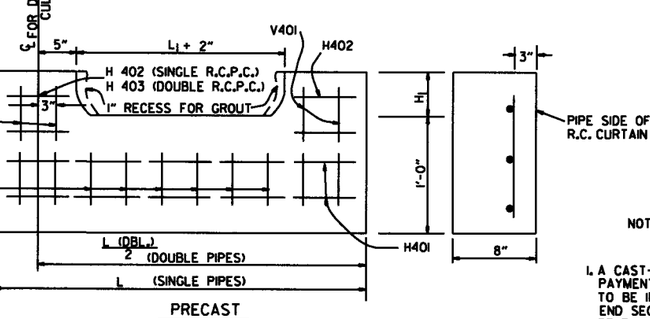
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0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

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



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

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

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

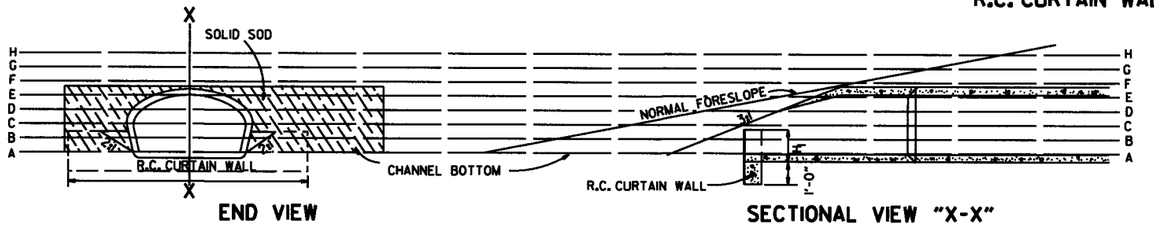
SOLID SODDING

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

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

GENERAL NOTES

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



END VIEW

SECTIONAL VIEW "X-X"

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

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

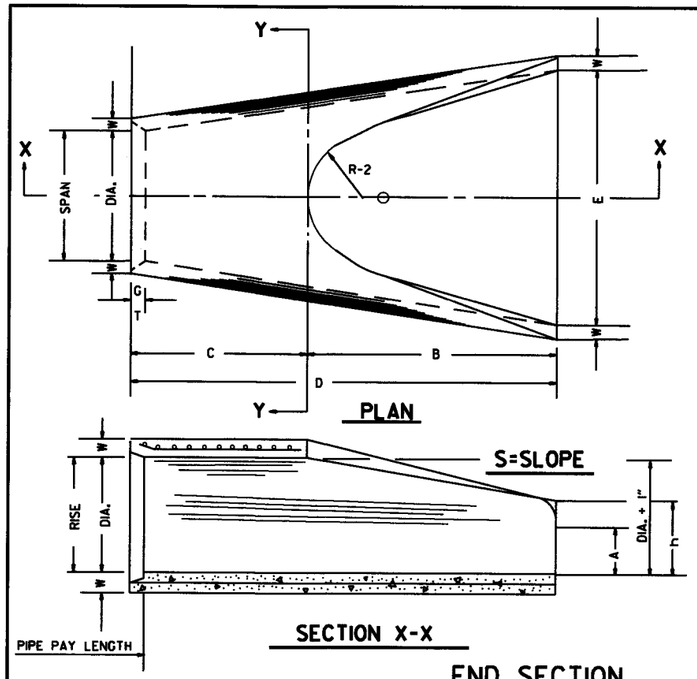
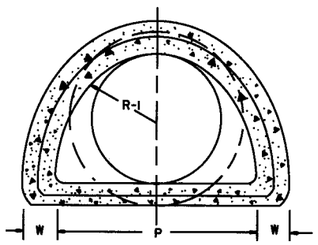
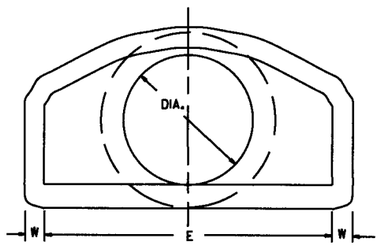


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3sl	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3sl	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3sl	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¼"	8'-1¾"	6'-0"	3sl	37"	47⅝"	24⅛"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3sl	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3sl	49"	56½"	28½"	22"	3½"	6550	2'-5"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3sl	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3sl	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3sl	73"	77⅝"	38⅝"	24"	5"	13250	4'-6"



SECTION Y-Y



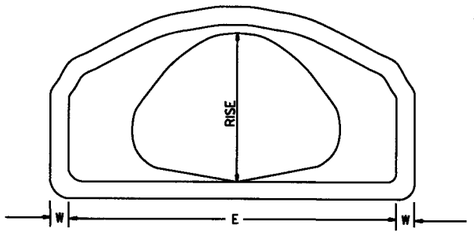
END VIEW

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

ARCH PIPE

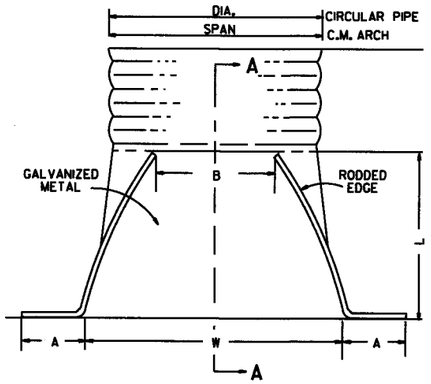
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½sl
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½sl
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½sl
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½sl
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅝"	20"	3"	2½sl
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½sl
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½sl
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½sl
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2¼sl
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2¼sl

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

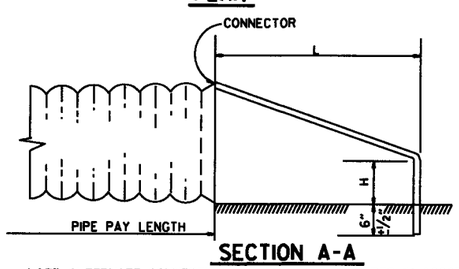


END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

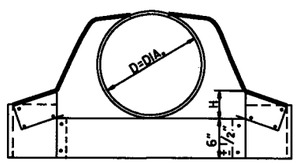


PLAN

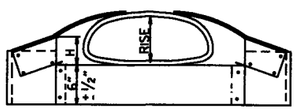


SECTION A-A

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



CIRCULAR PIPE



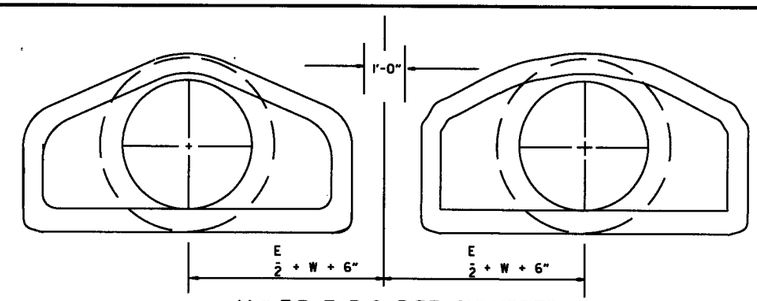
C.M. ARCH PIPE

CIRCULAR PIPE

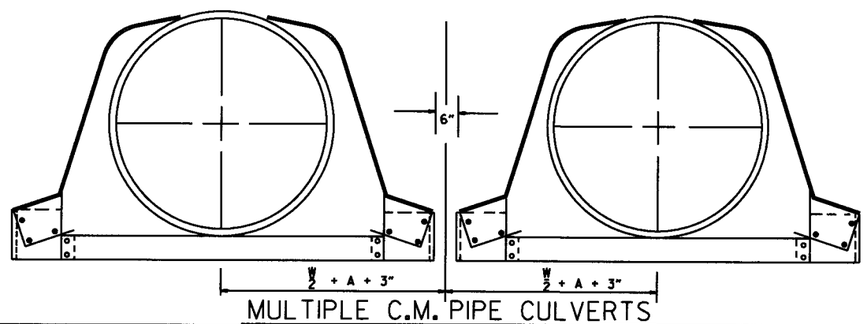
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½sl
15	16	7	8	6	26	30	2½sl
18	16	8	10	6	31	36	2½sl
21	16	9	12	6	36	42	2½sl
24	16	10	13	6	41	48	2½sl
30	14	12	16	8	51	60	2½sl
36	14	14	19	9	60	72	2½sl
42	12	16	22	11	69	84	2½sl
48	12	18	27	12	78	90	2½sl
54	12	18	30	12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

C.M. ARCH PIPE

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



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

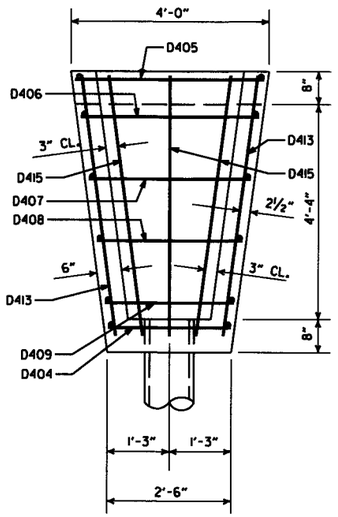
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

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

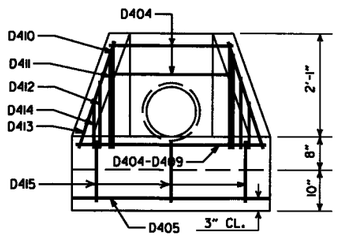
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

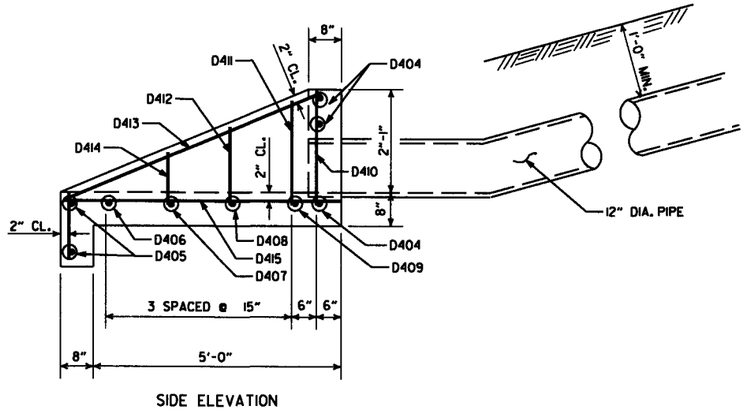
STANDARD DRAWING FES-2



PLAN



FRONT ELEVATION

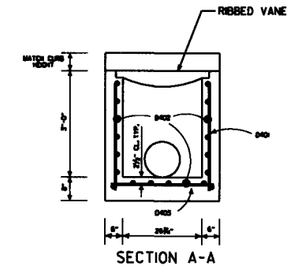


SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

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"	

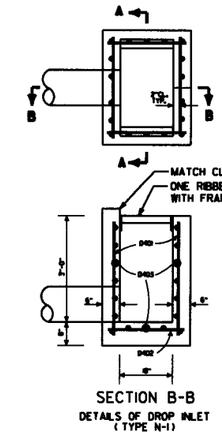


SECTION A-A

BAR LIST (DROP INLET)

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

ALL BARS #4 @ 6" SPACING



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

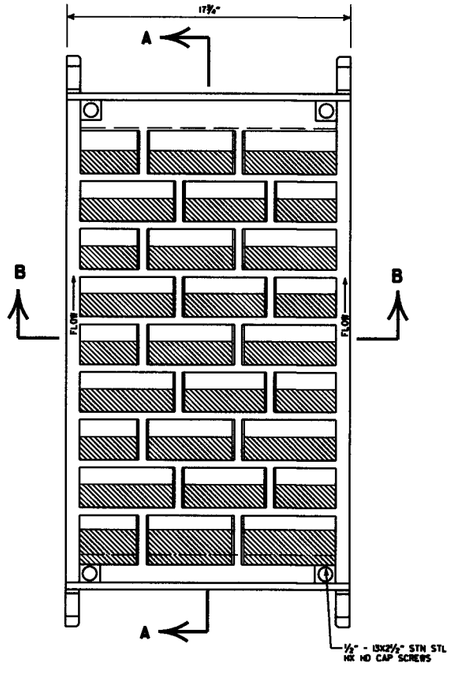
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

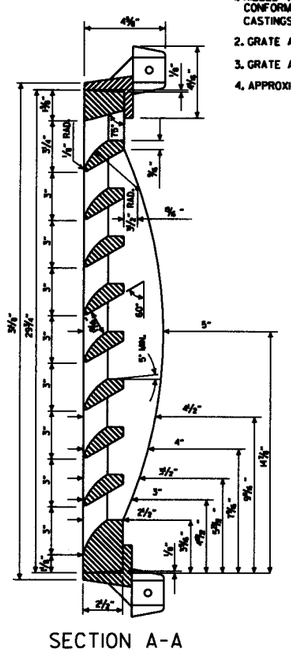
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

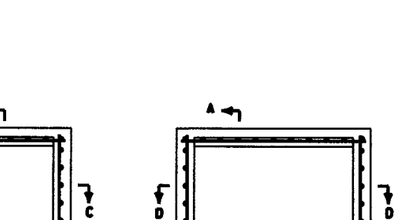
GENERAL NOTES (GRATE & FRAME)

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.

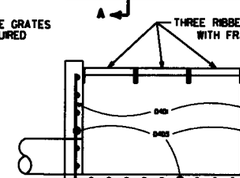




SECTION A-A



SECTION B-B



SECTION THRU FRAME

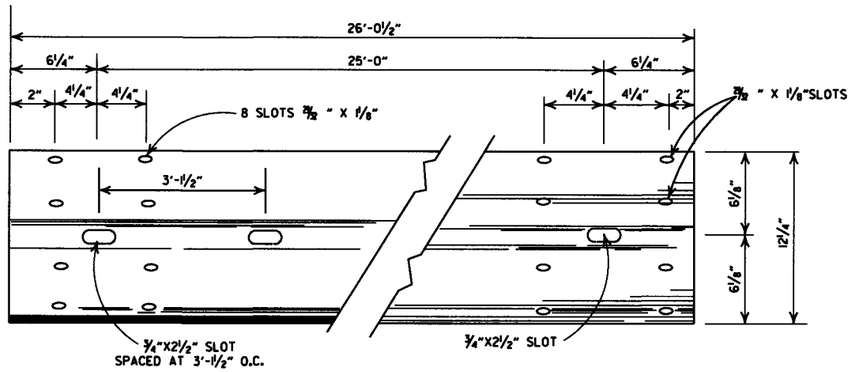
DETAILS OF RIBBED VANE GRATE AND FRAME

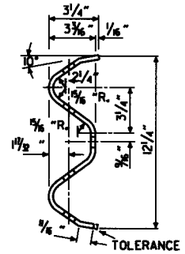
DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98		REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1, REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

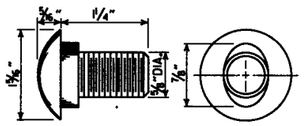
STANDARD DRAWING FPC-9N



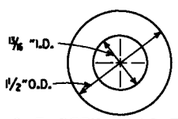


DETAILS OF W-BEAM GUARD RAIL

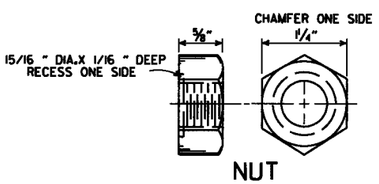
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



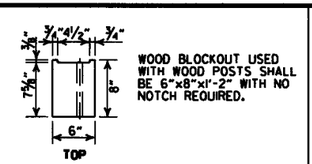
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



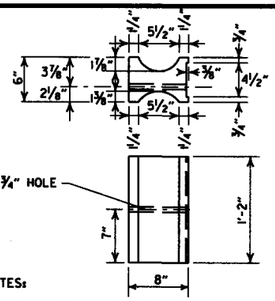
CUT STEEL WASHER



NUT

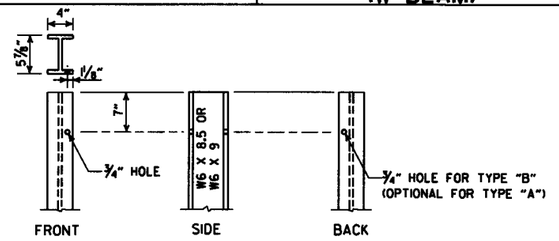


WOOD BLOCKOUT (W-BEAM)

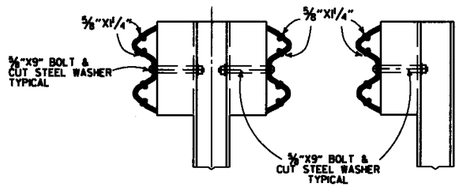


NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

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

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

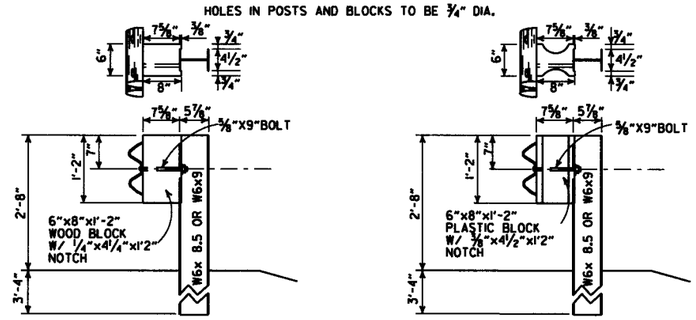
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

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

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

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

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



WOOD BLOCKOUT CONNECTIONS PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.

POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS PLASTIC BLOCKOUT CONNECTIONS

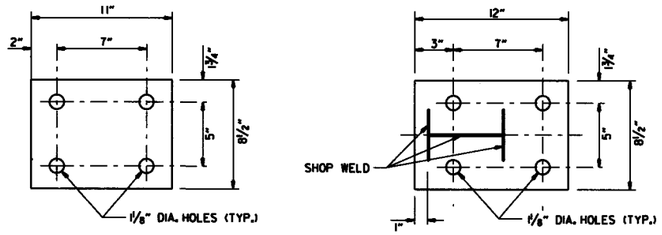
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

11-16-17	REVISED GENERAL NOTES AND RAISED GUARD RAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

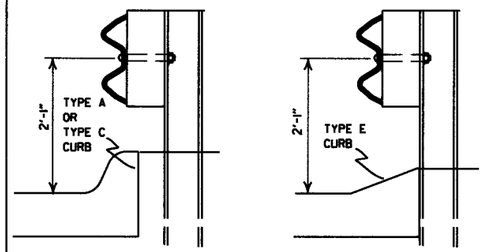
STANDARD DRAWING GR-8



WASHER PLATE

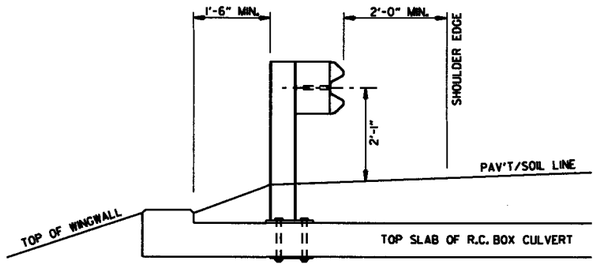
BASE PLATE

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

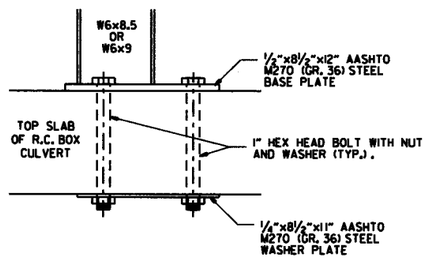


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

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

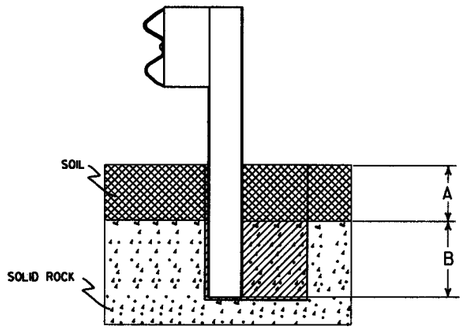


SECTION A-A

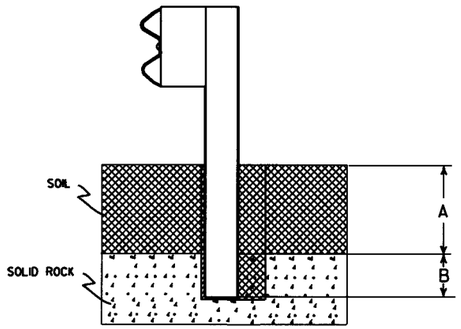


DETAIL OF CONNECTION

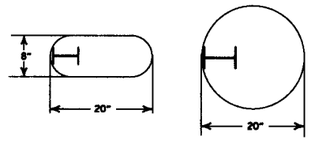
Case 1

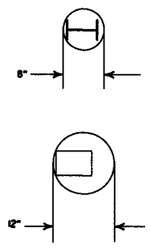


Case 2

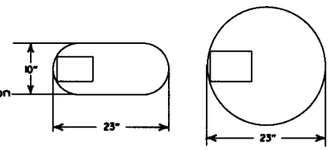


Plan View Steel Posts
Either hole configuration acceptable





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".

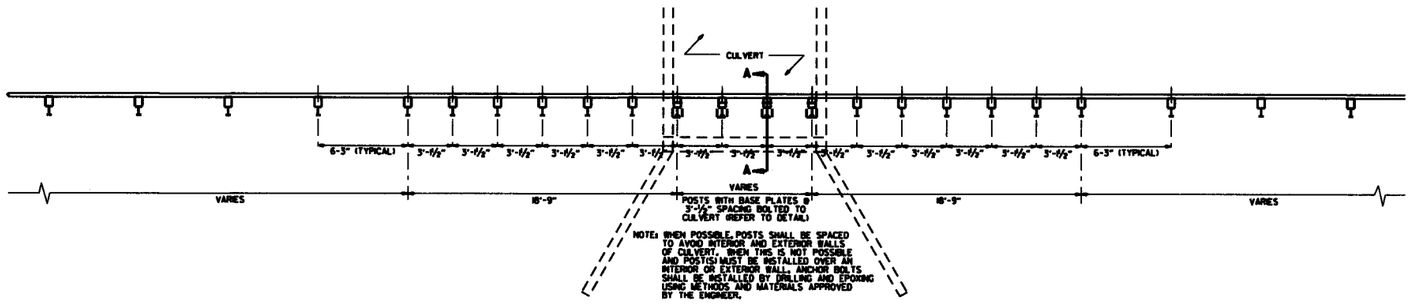
Zone A:
Backfill according to Section 617.03(a).

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

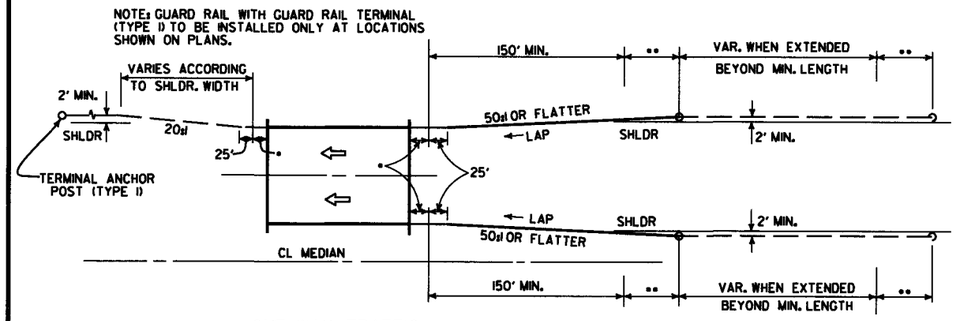
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

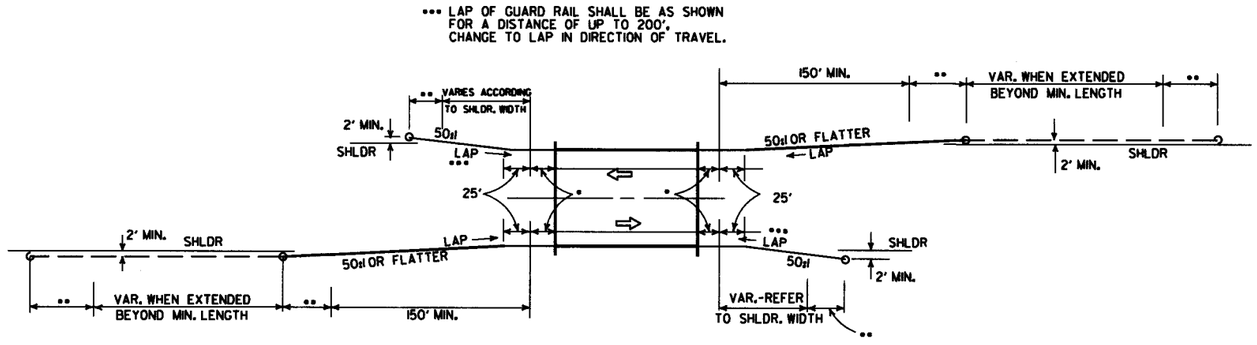
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8A

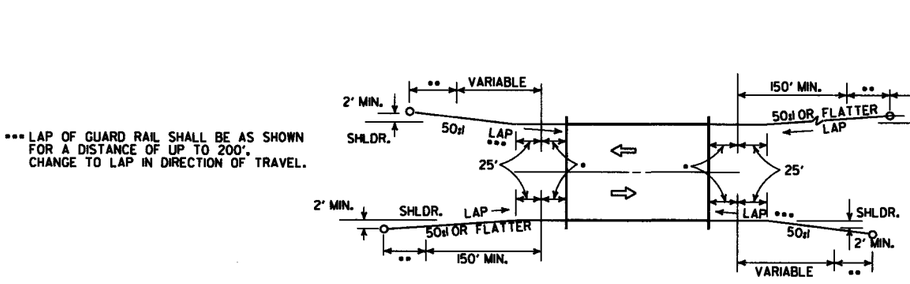


ONE-WAY TRAFFIC

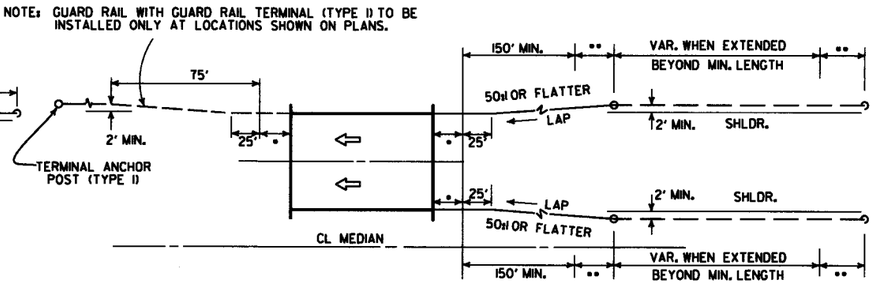


TWO-WAY TRAFFIC

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



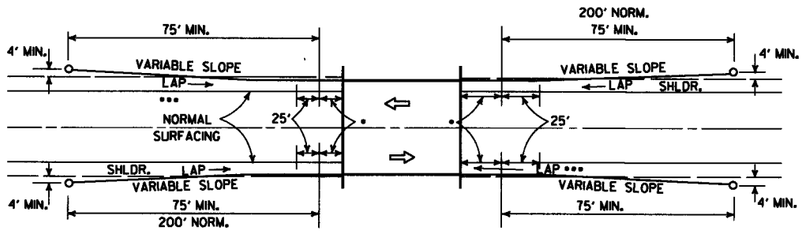
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

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

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



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

LEGEND

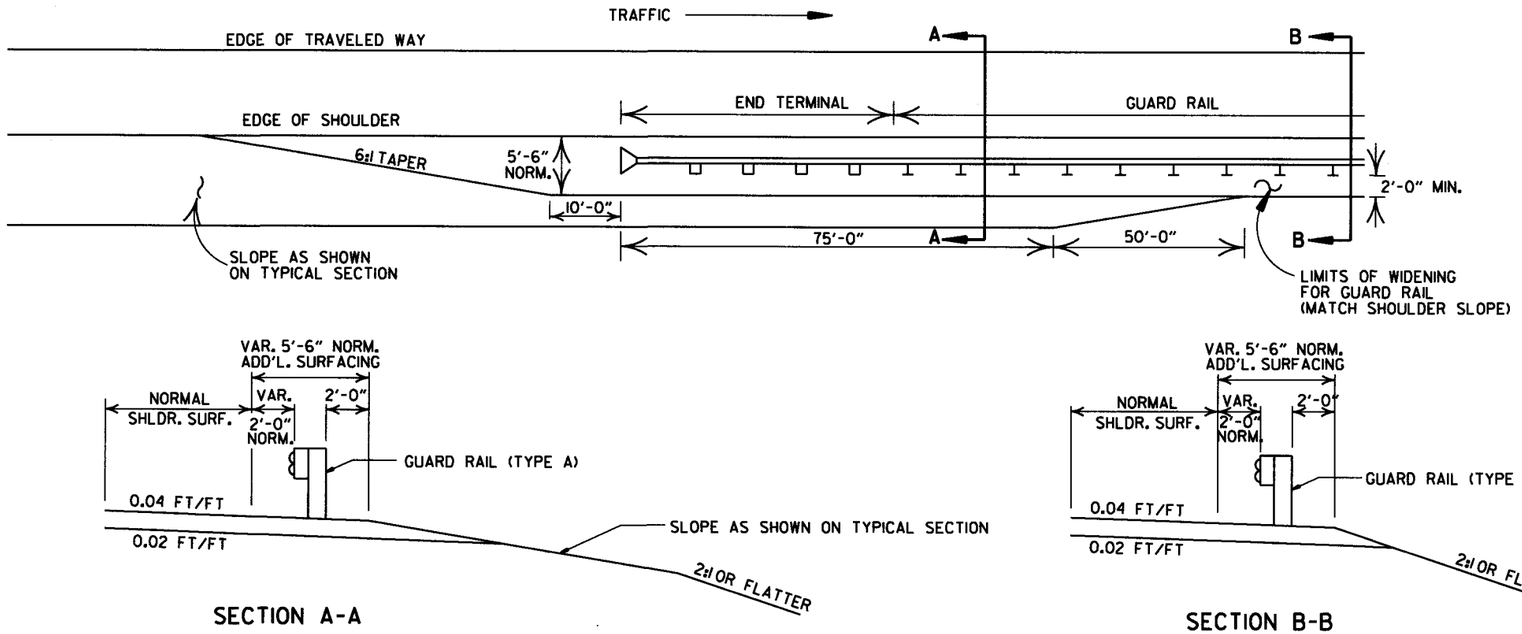
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9

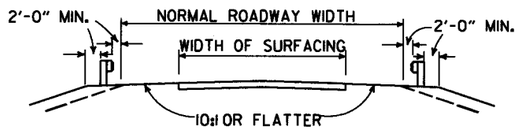


SECTION A-A

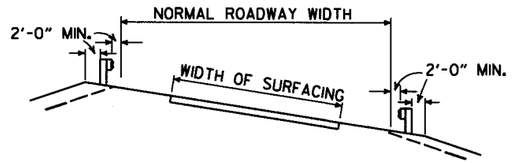
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

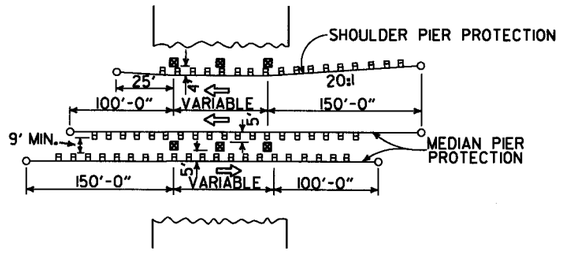


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



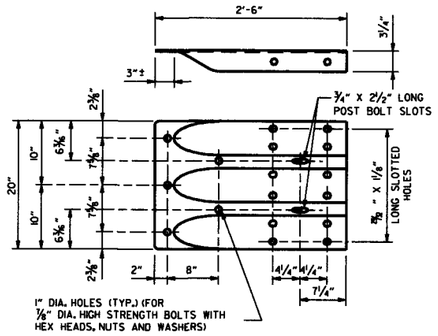
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

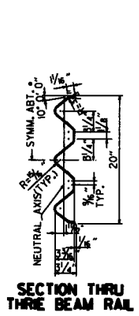
ARKANSAS STATE HIGHWAY COMMISSION

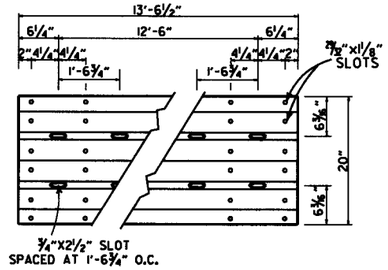
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

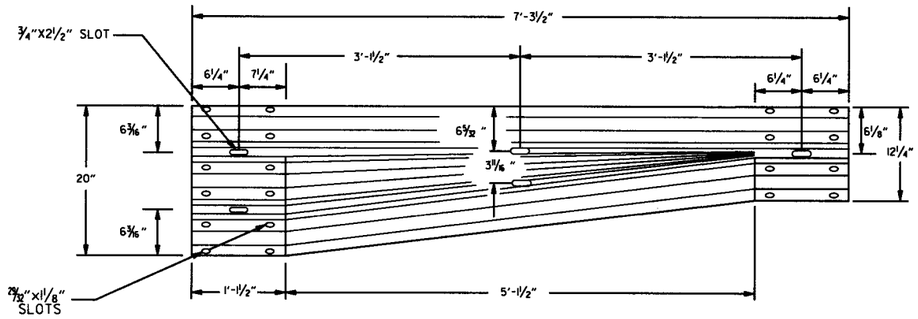


SPECIAL END SHOE

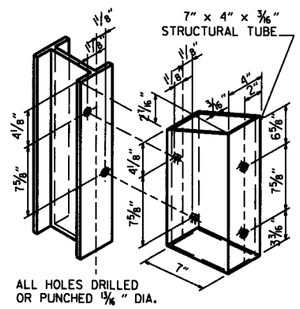




THRIE BEAM RAIL

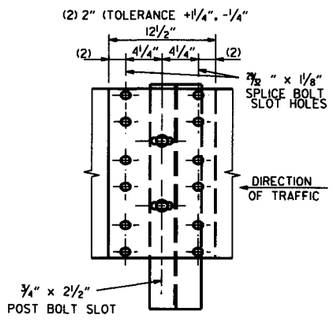


TRANSITION SECTION

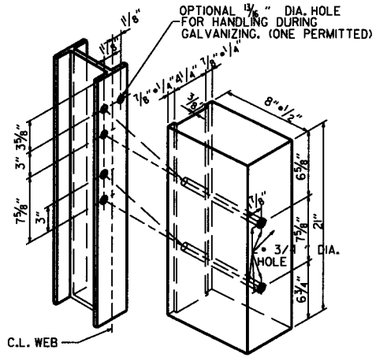


ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



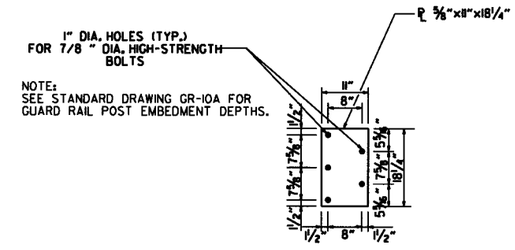
THRIE BEAM RAIL SPLICE AT POST



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

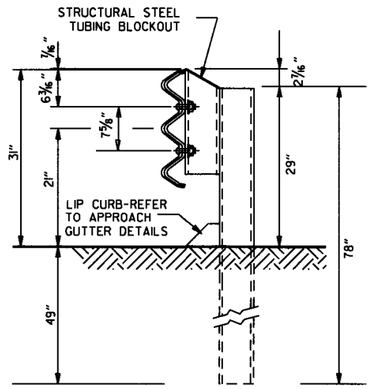
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

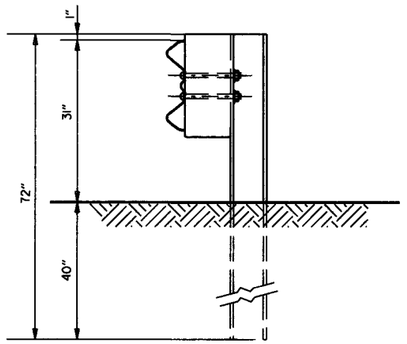
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

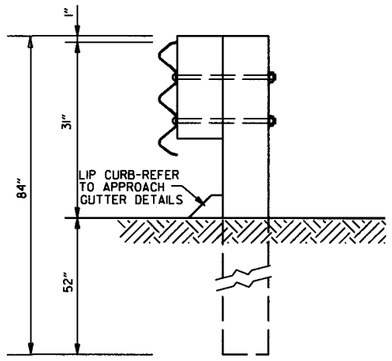
STANDARD DRAWING GR-10



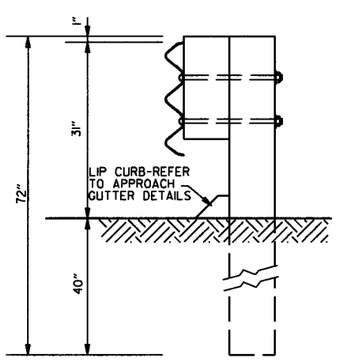
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



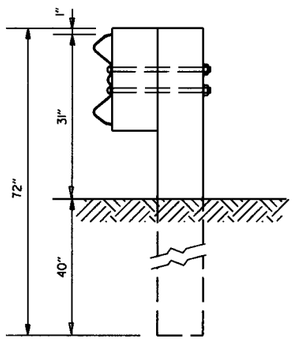
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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



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



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

GENERAL NOTES:

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

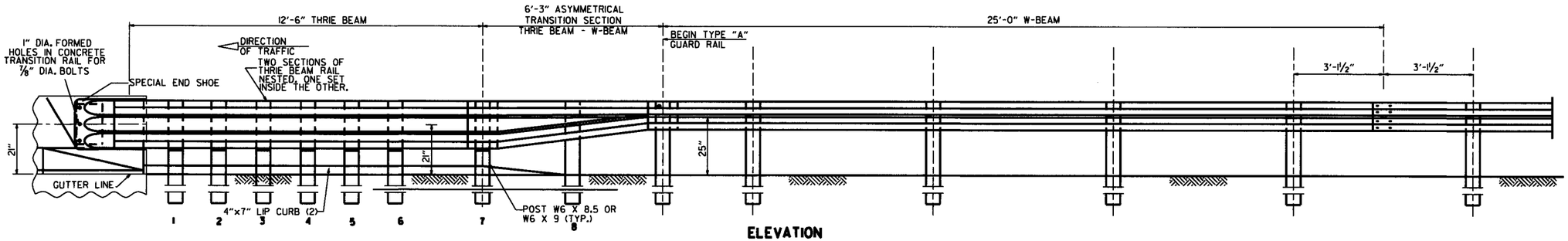
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

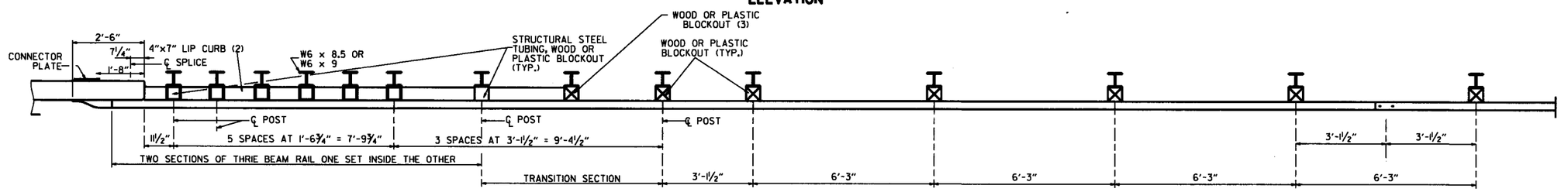
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

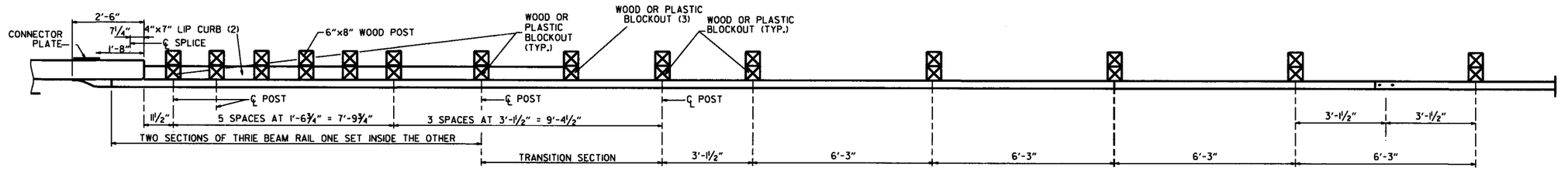
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

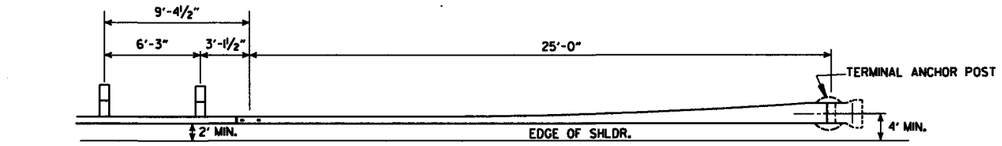
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

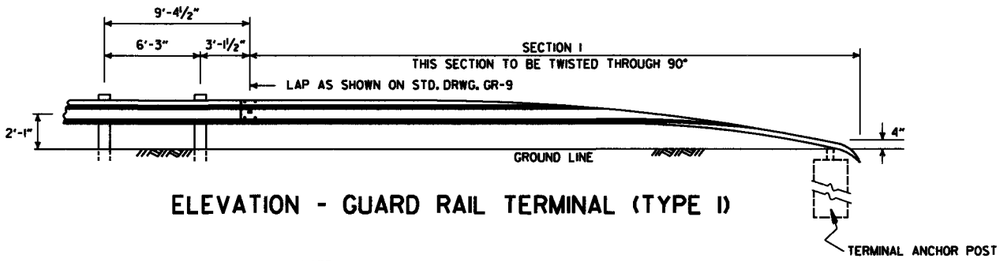
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

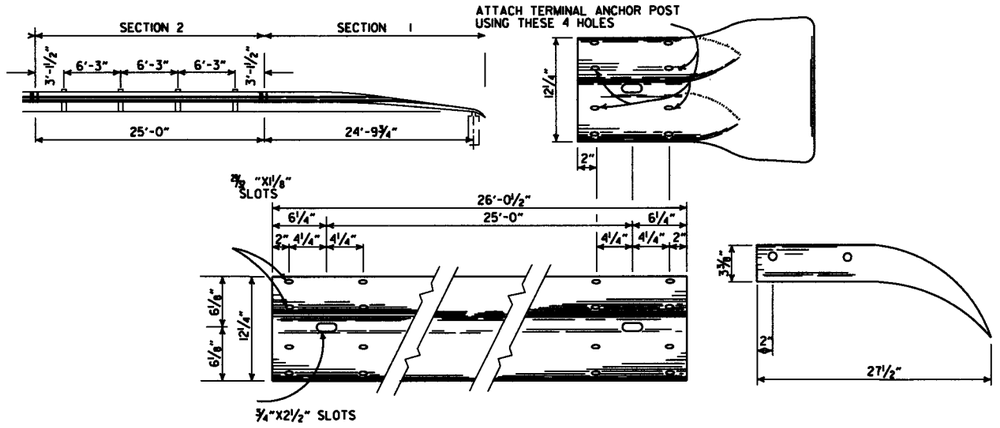


PLAN - GUARD RAIL TERMINAL (TYPE I)



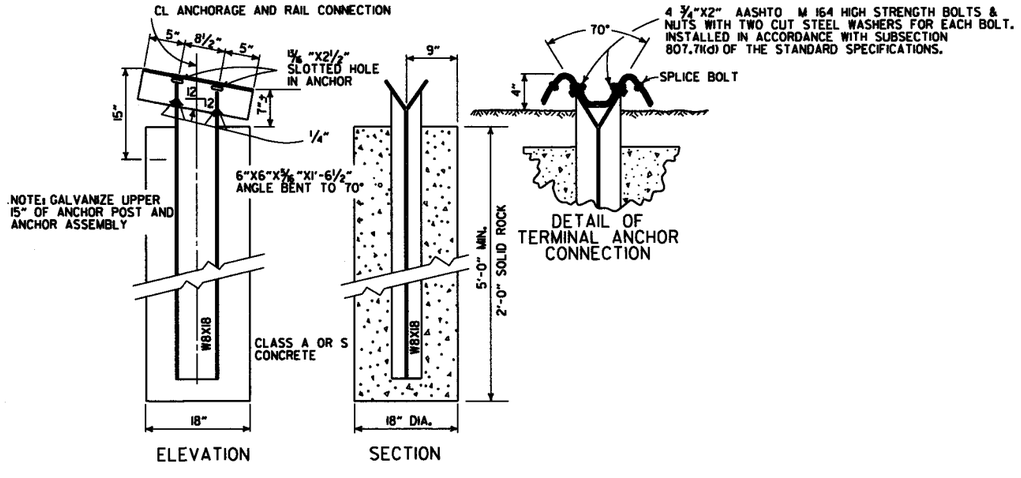
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION



NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

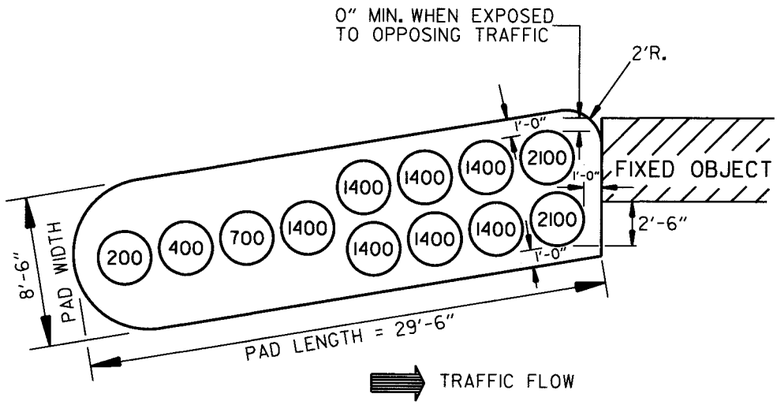
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT AND LOCATION OF POSTS	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
06-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-03-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-01-92	DRAWN & ISSUED	10-1-92

ARKANSAS STATE HIGHWAY COMMISSION

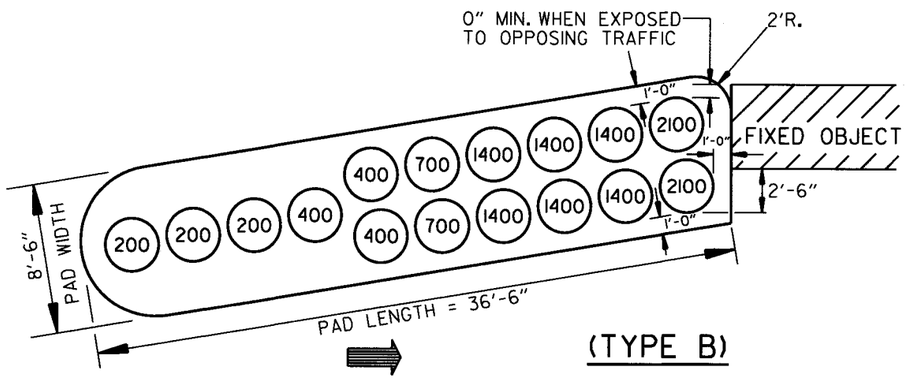
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1



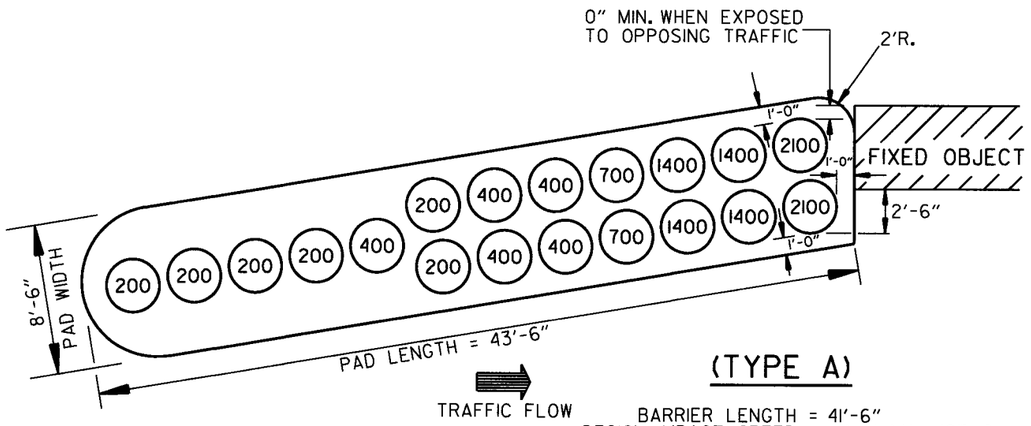
(TYPE C)

BARRIER LENGTH = 27'-6"
DESIGN IMPACT SPEED = 50 M.P.H.= 73.3 fps



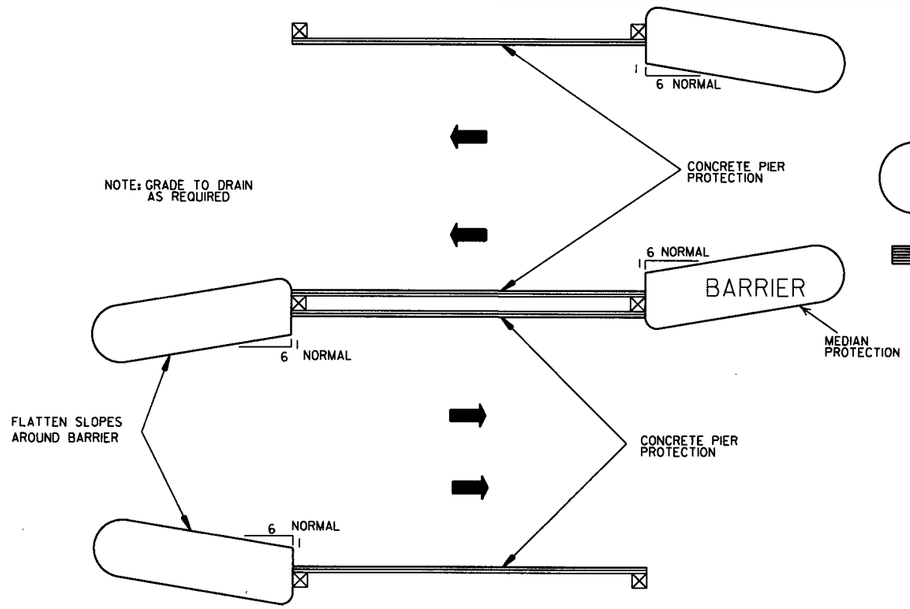
(TYPE B)

BARRIER LENGTH = 34'-6"
DESIGN IMPACT SPEED = 60 M.P.H.= 88 fps

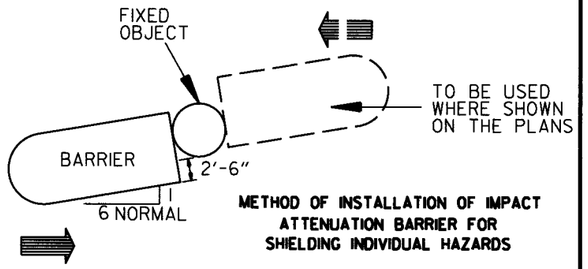


(TYPE A)

BARRIER LENGTH = 41'-6"
DESIGN IMPACT SPEED = 70 M.P.H.= 103 fps



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR PIER PROTECTION



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR SHIELDING INDIVIDUAL HAZARDS

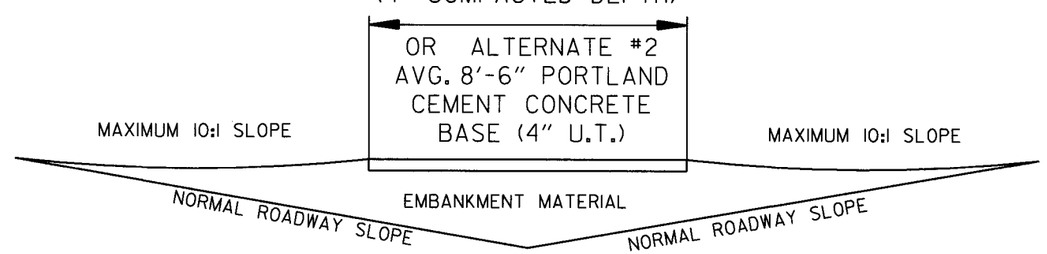
APPROXIMATE QUANTITIES PER PAD

TYPE	ALTERNATE #1		ALTERNATE #2
	AGGR. BASE COURSE	A.C.H.M. SURFACE COURSE	P.C.CONC. BASE (4"U.T.)
	TONS	TONS	SQ.YDS.
A	9.7	4.6	41.6
B	8.1	3.8	34.9
C	6.6	3.1	28.3

NOTE: APPROXIMATE QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR IMPACT ATTENUATION BARRIER.

GENERAL NOTES

1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



DETAIL OF BARRIER PAD

NOTE: BARRIER PAD TO BE SKEWED TOWARD ONCOMING TRAFFIC A MAXIMUM OF 6:1 WITH 6:1 BEING NORMAL

DATE	REVISION	DATE FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-29-07	REVISED TY. A & TY. C ARRAYS	
11-19-98	REVISED FIXED OBJECT	
11-18-98	REV. NOTES & TYPE A MOD. WTS.	
10-18-96	REDRAWN	
7-15-88	CONFORMED TO 1988 SPECS	
7-29-87	REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

IMPACT ATTENUATION BARRIER

STANDARD DRAWING IB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

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

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

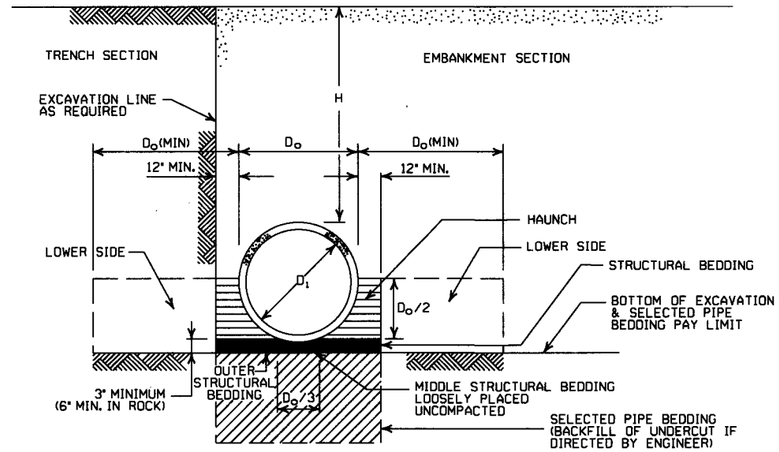
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
		2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
		② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM				
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

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

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

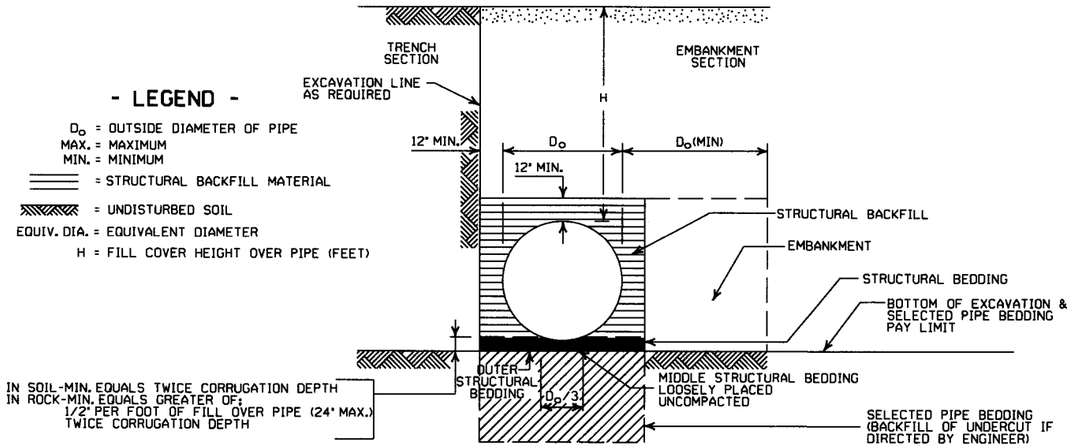
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H"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

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

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

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

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

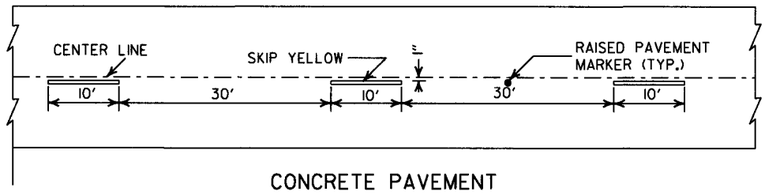
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

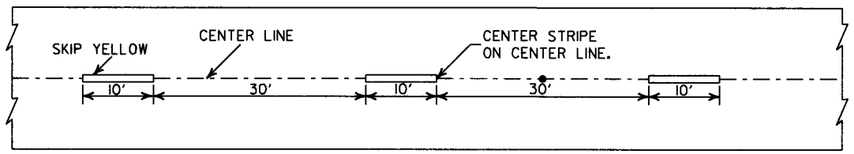
METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

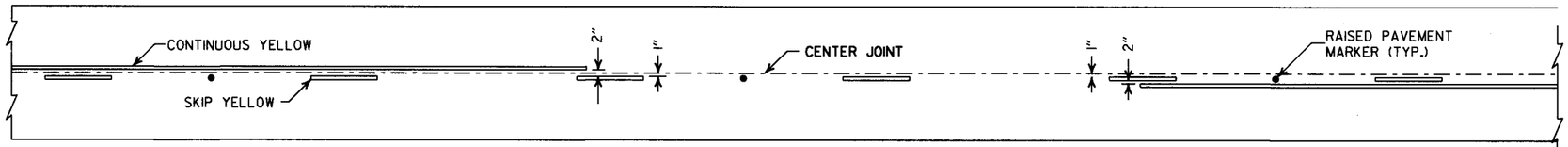


CONCRETE PAVEMENT

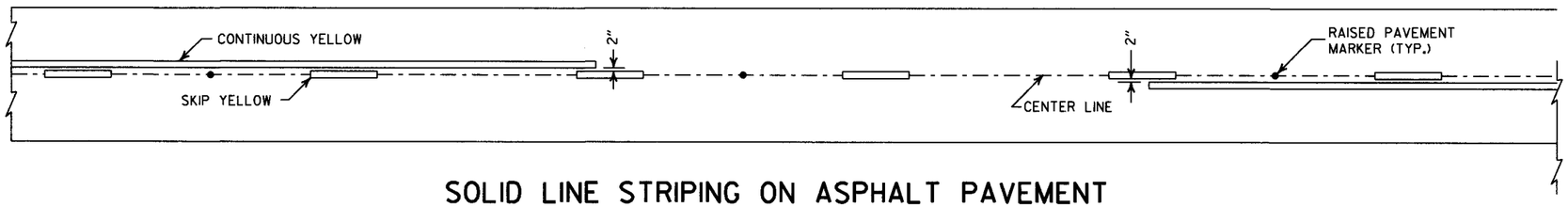


ASPHALT PAVEMENT

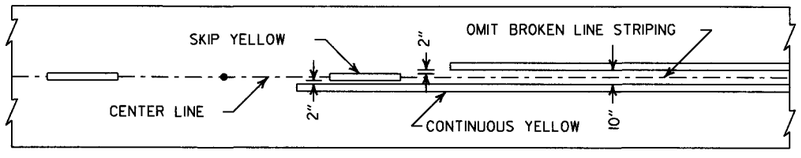
BROKEN LINE STRIPING



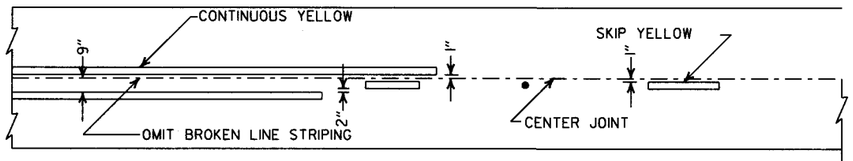
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

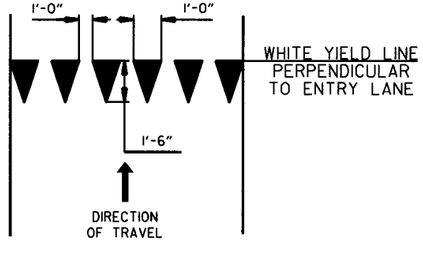


ASPHALT PAVEMENT

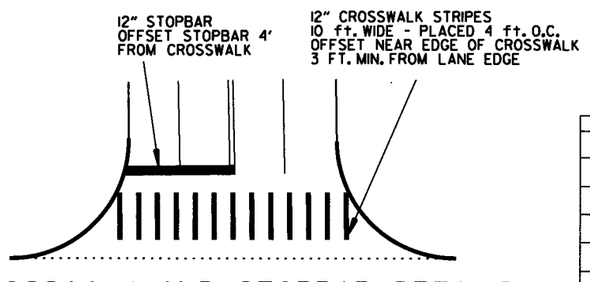


CONCRETE PAVEMENT

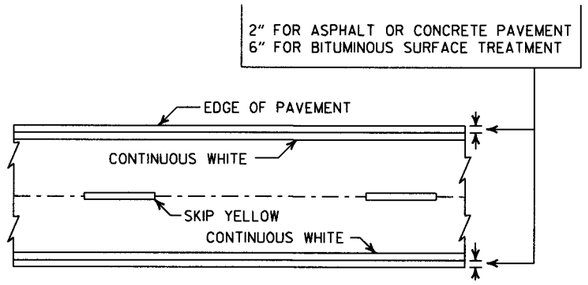
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



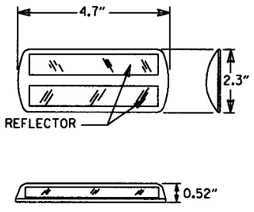
CROSSWALK AND STOPBAR DETAILS



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

ARKANSAS STATE HIGHWAY COMMISSION

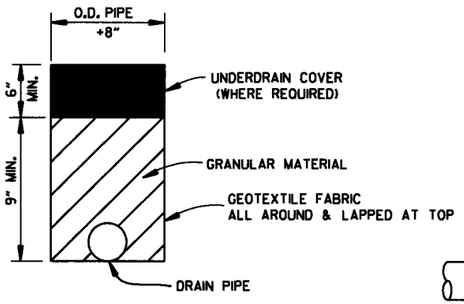
PAVEMENT MARKING DETAILS

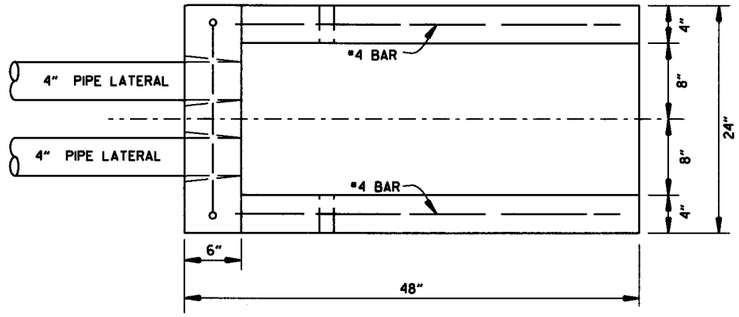
STANDARD DRAWING PM-1

NOTE:

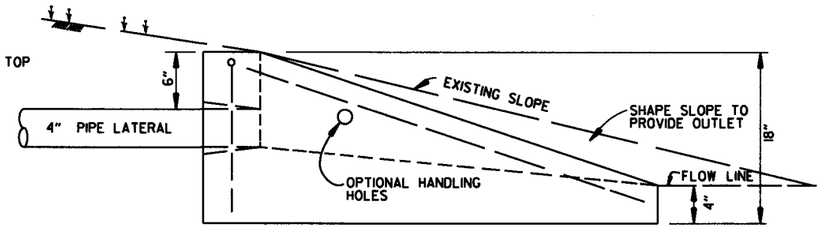
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

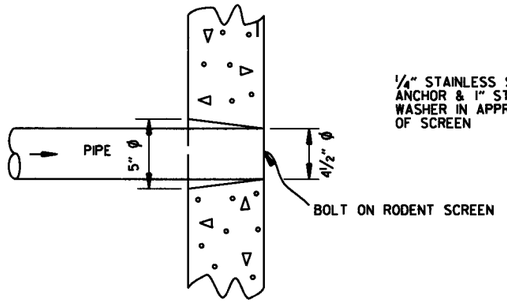




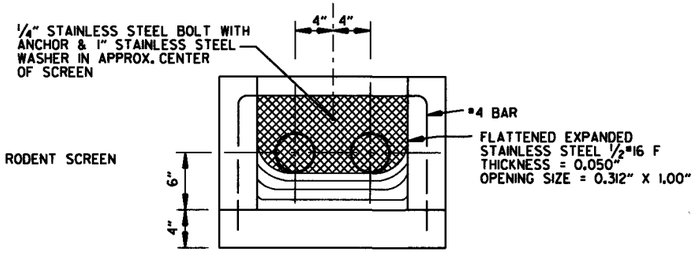
PLAN VIEW



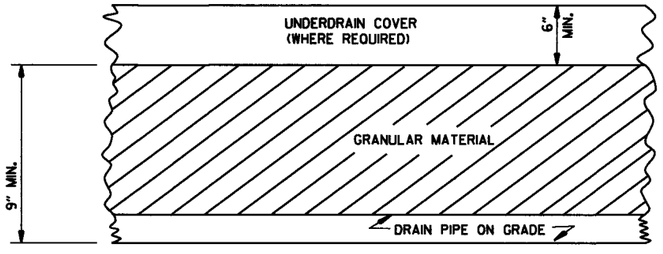
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

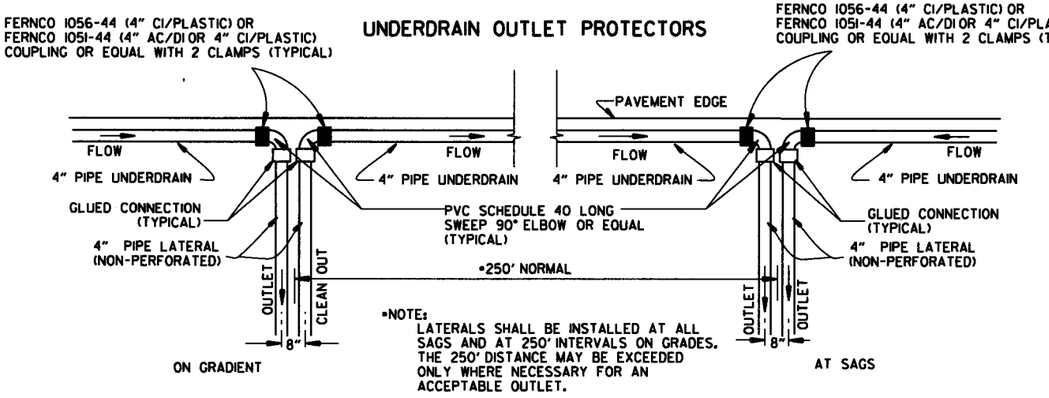


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



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

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

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

NOTES FOR PIPE UNDERDRAINS

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

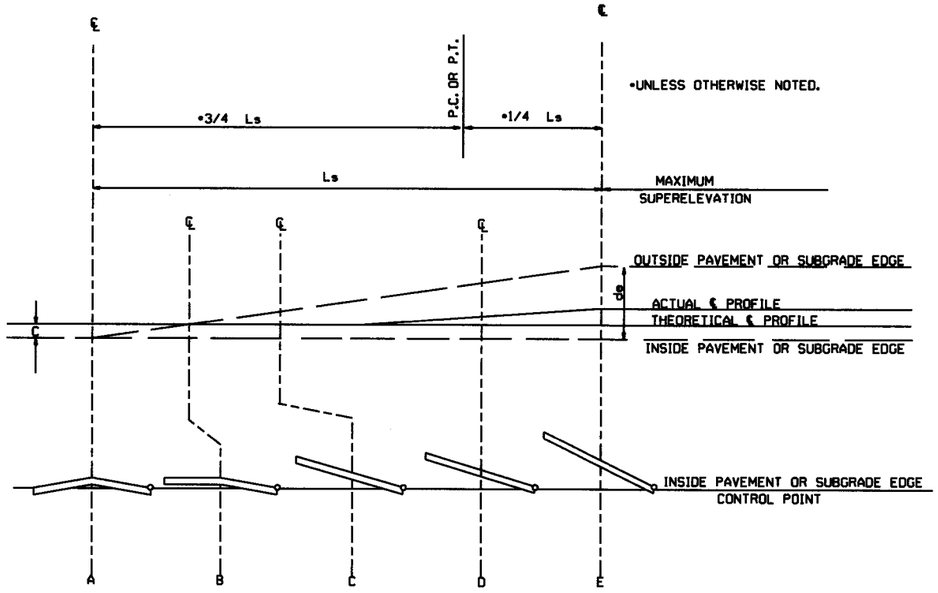
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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.			R.C.			R.C.			0.022			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.026			0.030			0.037		
1° 15'	N.C.			R.C.			0.026			0.032			0.037			0.046		
1° 30'	N.C.			0.021			0.031			0.037			0.043			0.054		
1° 45'	N.C.			0.025	175		0.036	200		0.043	225		0.049	250		0.062	275	
2° 00'	R.C.			0.028			0.040			0.048			0.055			0.070		300
2° 15'	R.C.			0.031			0.045			0.053			0.061			0.078	300	
2° 30'	0.021			0.034			0.049			0.058			0.067			0.085	315	350
2° 45'	0.023			0.037			0.053			0.063			0.072			0.091	335	
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.096	350	
3° 15'	0.027	150	200	0.043		200	0.061		250	0.072	245	300	0.082	275	300	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			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	350	0.095	315				
5° 00'	0.040			0.061			0.083	250		0.091	295		0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.094	300							
6° 00'	0.046			0.070	190		0.092	270		0.096	305							
6° 30'	0.050			0.074	200		0.095	280	300	0.100	315							
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220	250	0.100	290										
8° 30'	0.061			0.087	225													
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190																
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

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

ABBREVIATIONS

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



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

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

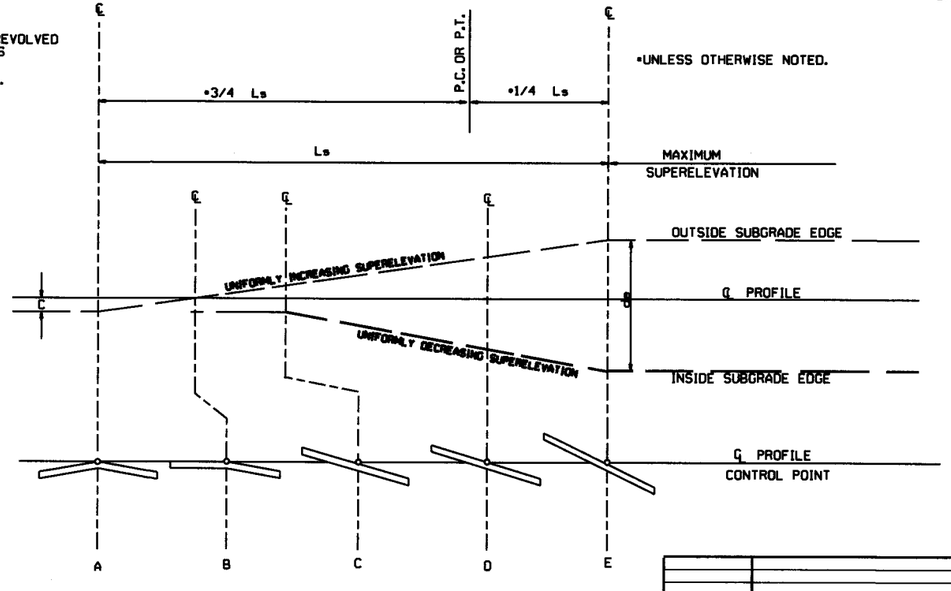
GENERAL NOTES

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

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

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

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

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

ARKANSAS STATE HIGHWAY COMMISSION

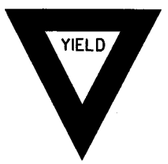
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1

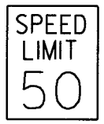
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

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

W3-5a

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

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

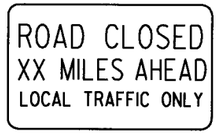
R5-1

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

RII-2

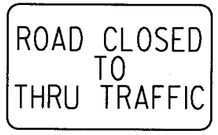
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W21-5a

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

WI-1

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

WI-2

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

WI-3

STD. 48"X48"

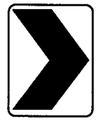
WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8



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

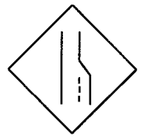
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

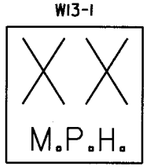
W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

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

WI3-1



STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

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

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

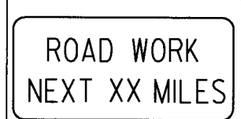
W8-11

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

W8-9

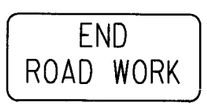
STD. 36"X36"
FWY. 48"X48"

G20-1



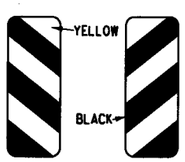
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

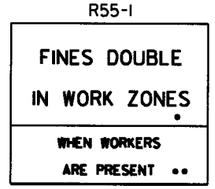
M4-9

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

M4-10

48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

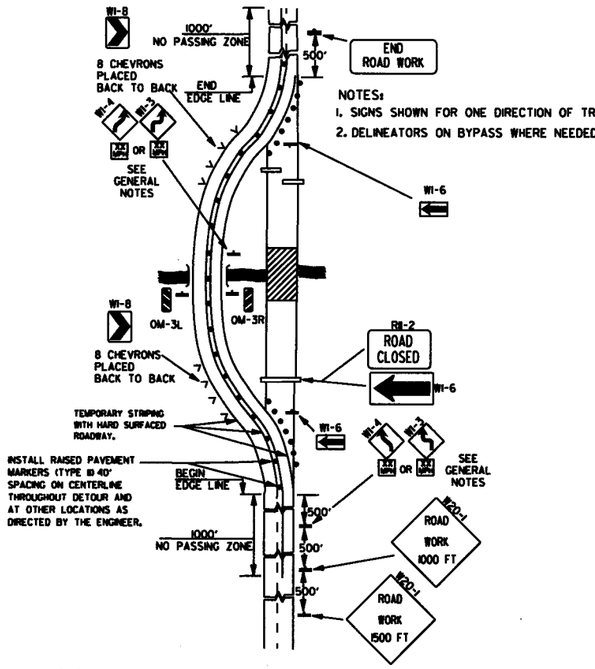
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

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

ARKANSAS STATE HIGHWAY COMMISSION

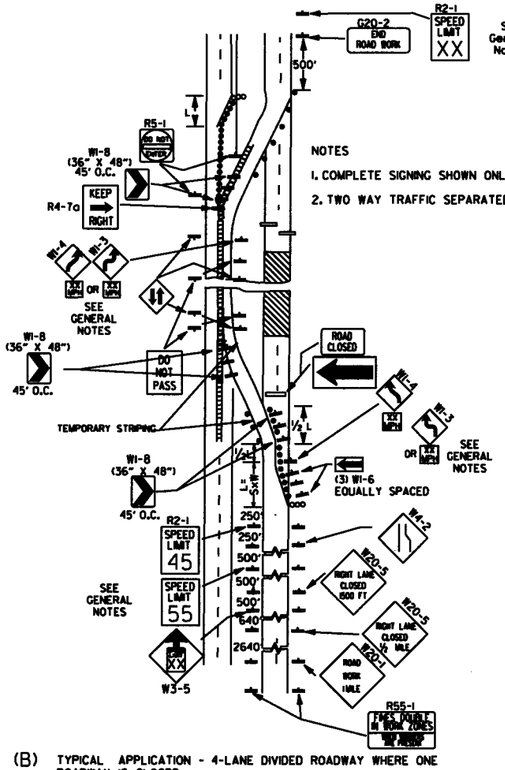
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



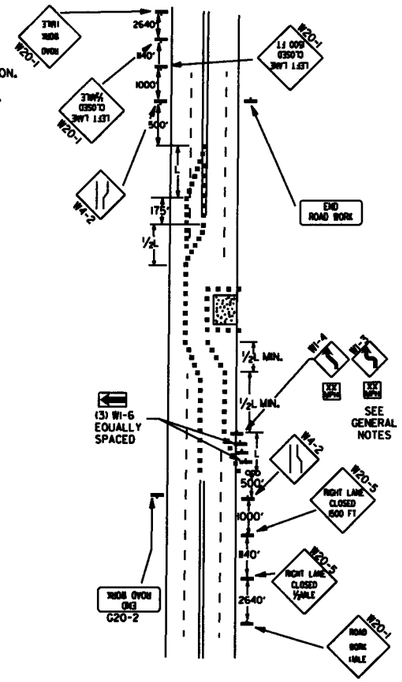
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

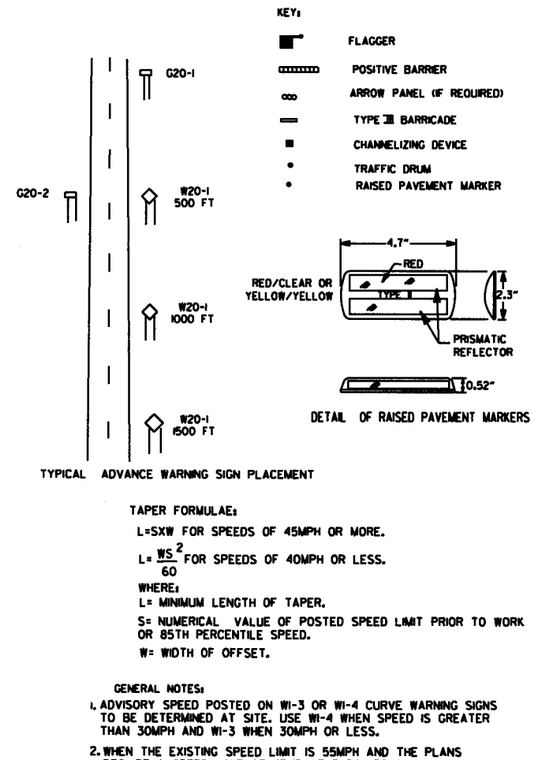


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

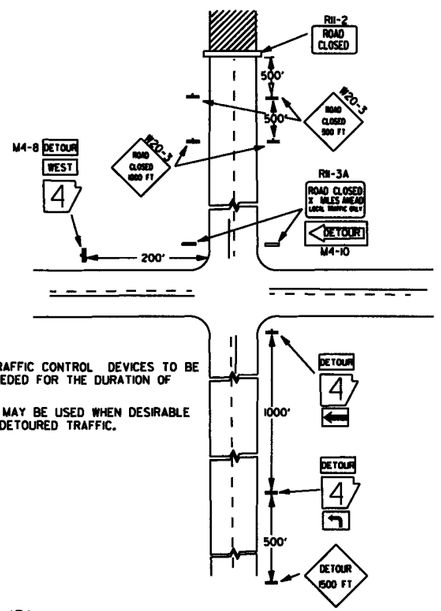
TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

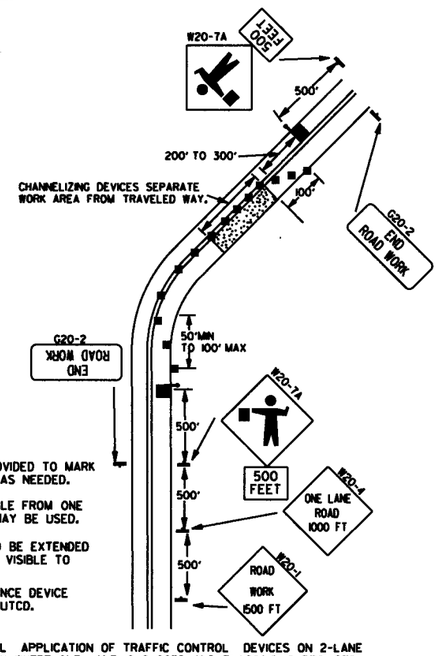
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

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



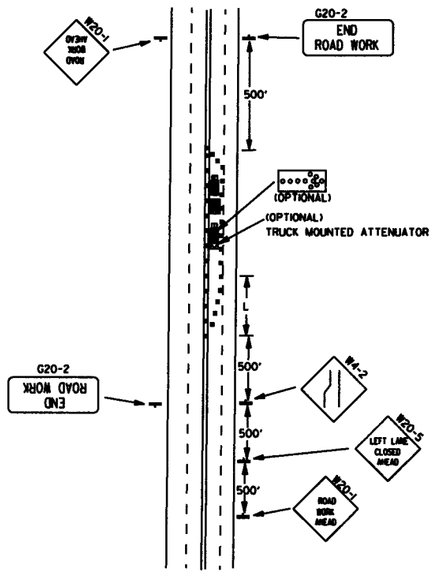
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(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.



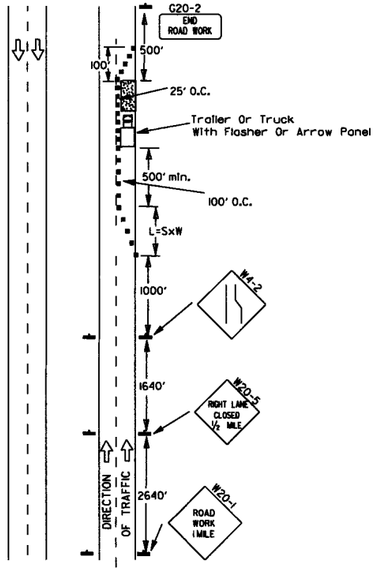
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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	
3-1-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

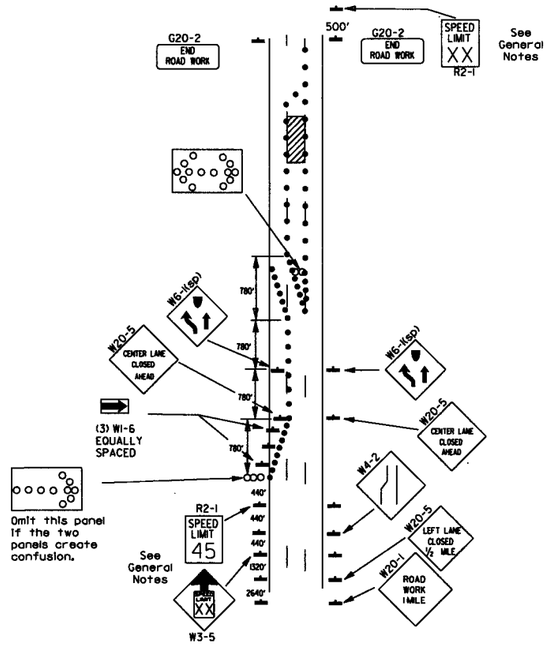
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

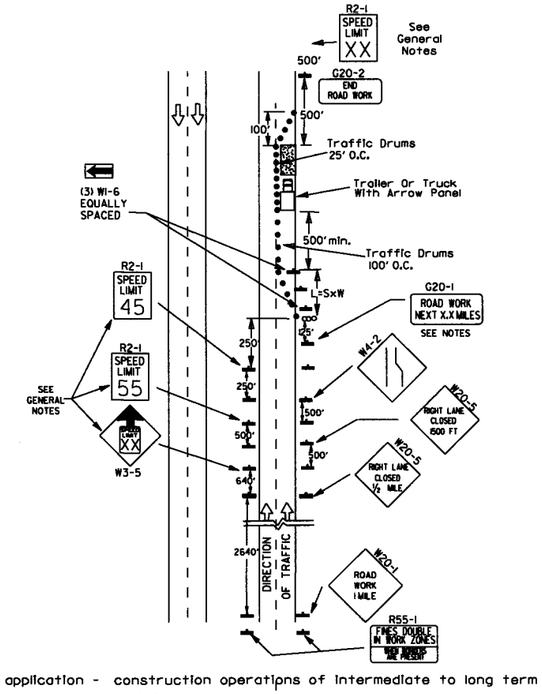
STANDARD DRAWING TC-2



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



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



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

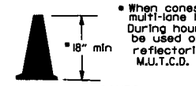
KEY:

- ooo Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

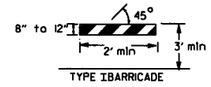
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional 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



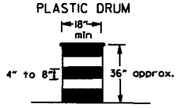
- When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

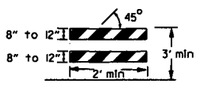
CONES



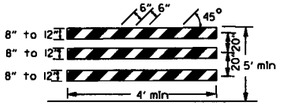
TYPE I BARRICADE

PLASTIC DRUM



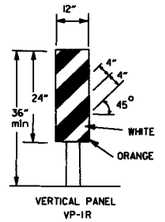


TYPE II BARRICADE



TYPE III BARRICADE

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



VERTICAL PANEL
VP-1R

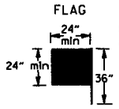
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

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

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

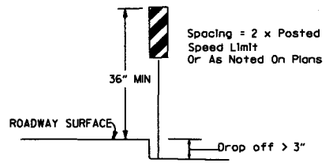
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

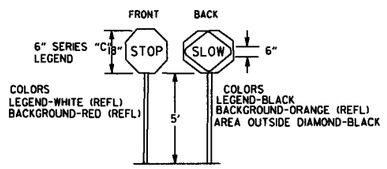


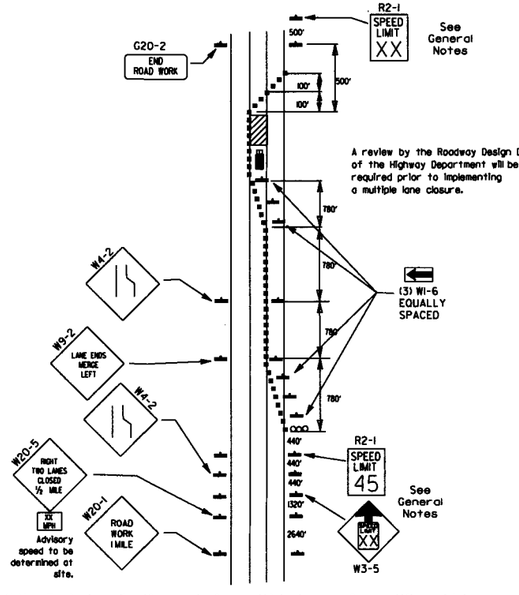
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



STOP SLOW PADDLE





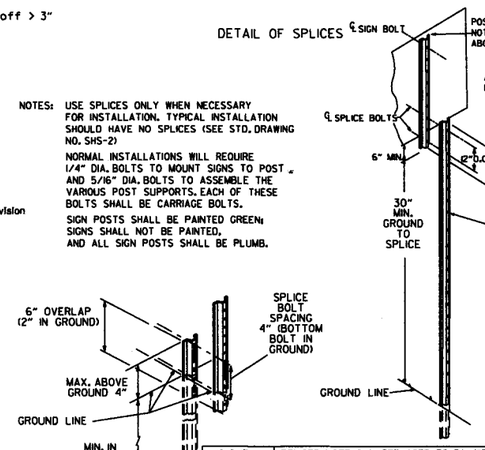
(D) Typical application - closing multiple lanes of a multilane highway.

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.

DETAIL OF SPLICES



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

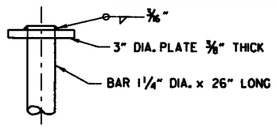
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

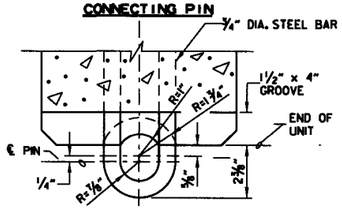
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

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

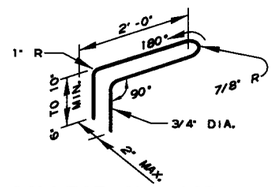


CONNECTING PIN

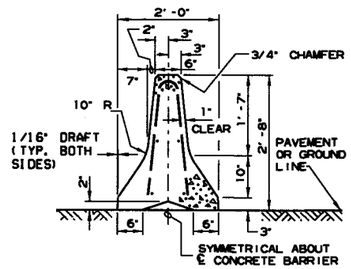


SECTION E-E

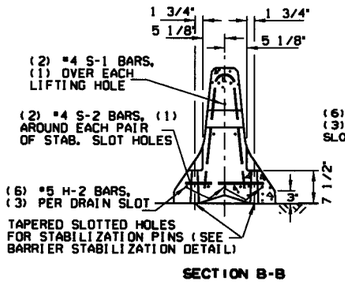
CONNECTION DETAILS



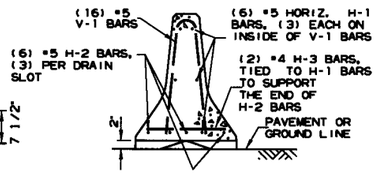
CONNECTION LOOP



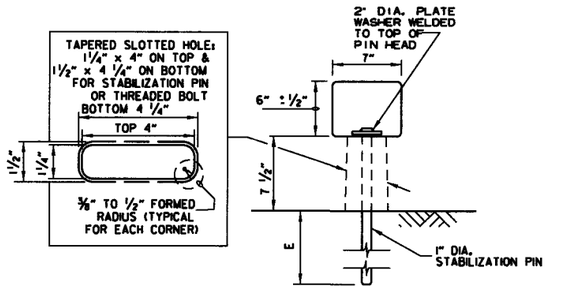
SECTION A-A



SECTION B-B



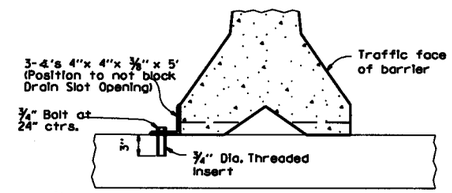
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

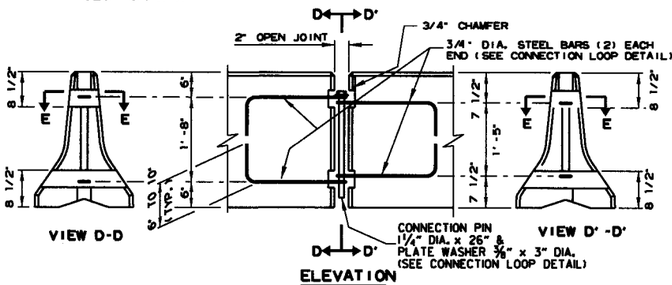
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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

BARRIER STABILIZATION DETAIL

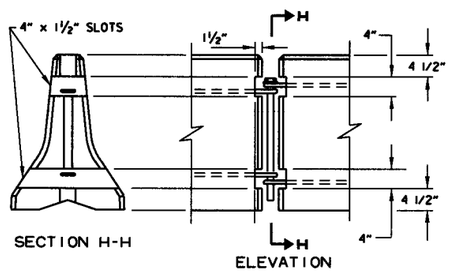
BRIDGE DECKS



VIEW D-D

VIEW D'-D'

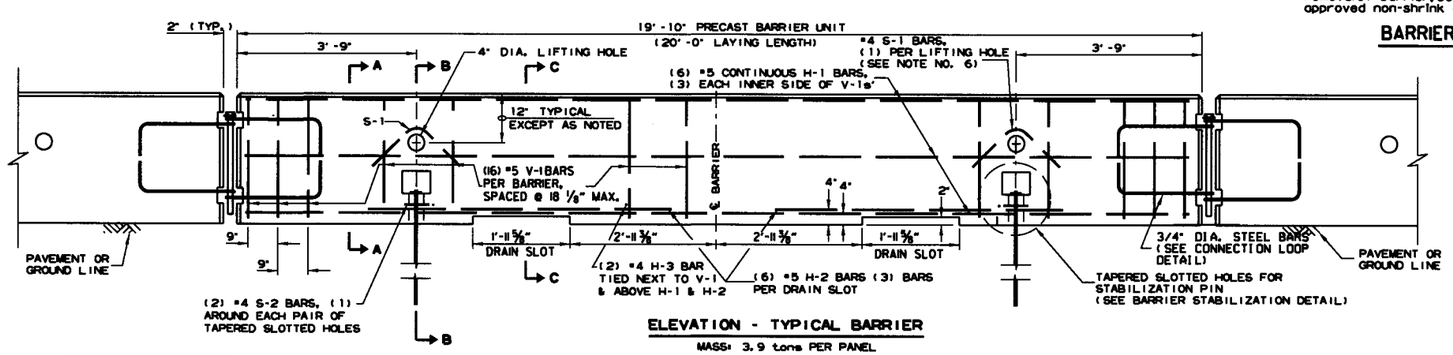
ELEVATION



SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
2. Materials shall meet the following minimum requirements:
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

   In applications where barrier 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.

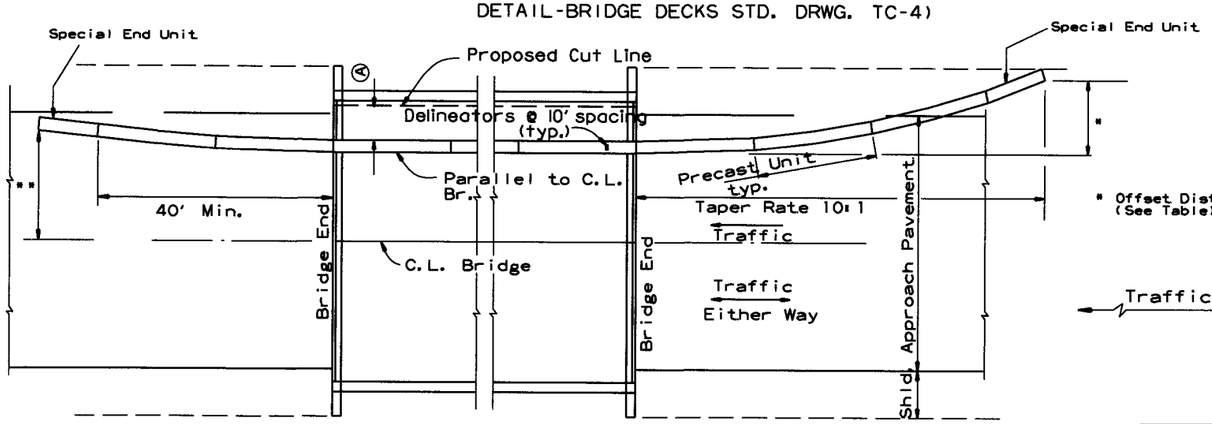
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

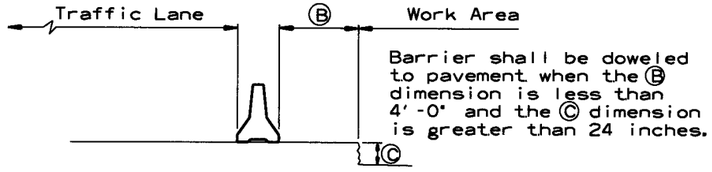


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

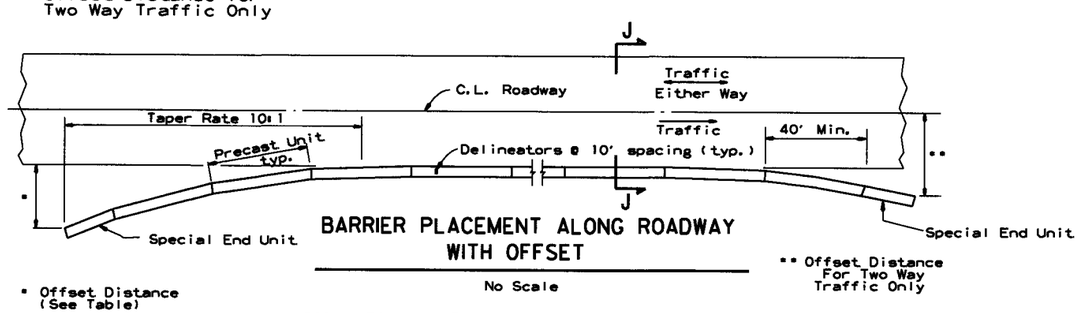
* Offset Distance (See Table)



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

SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

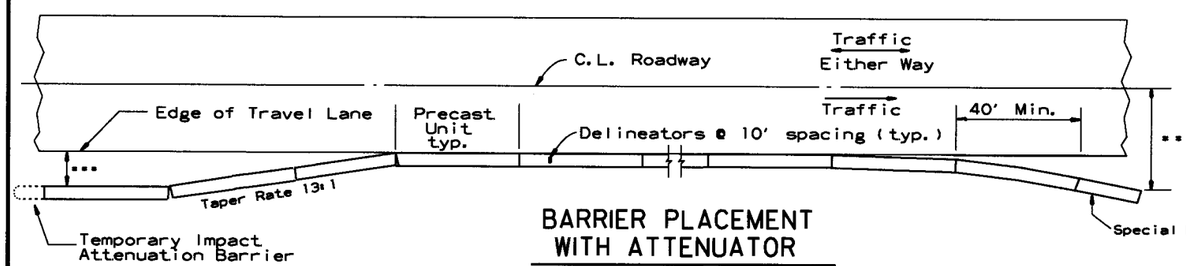
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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

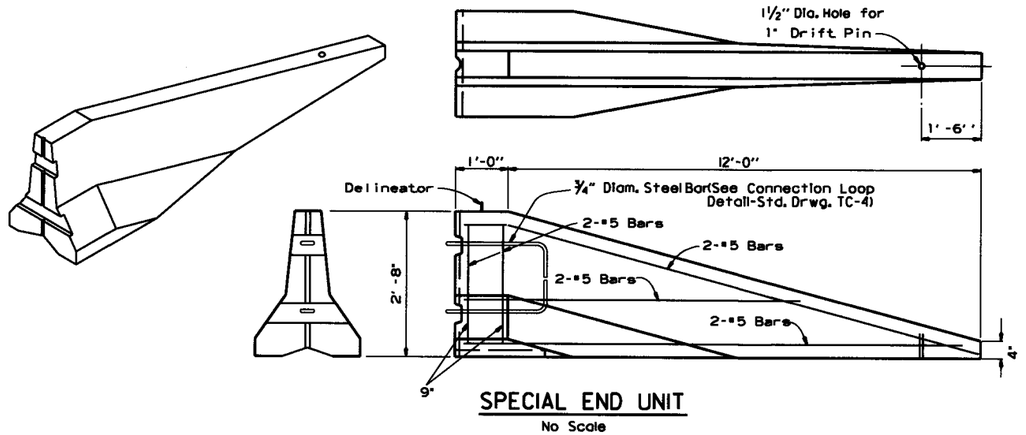


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only



SPECIAL END UNIT

No Scale

General Notes

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

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

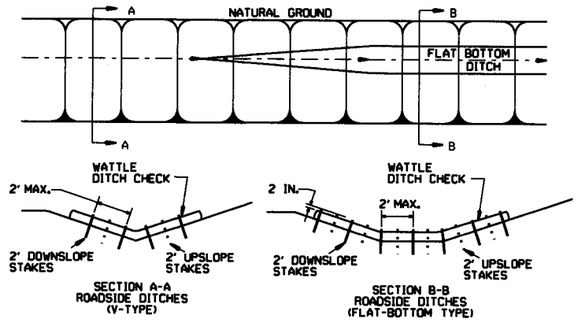
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

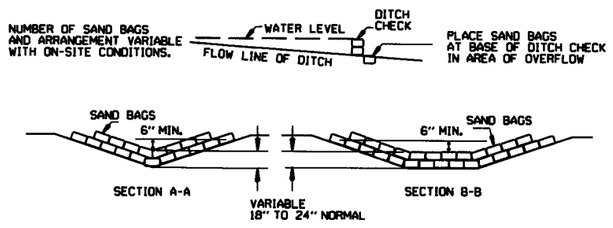
STANDARD DRAWING TC-5

GENERAL NOTES

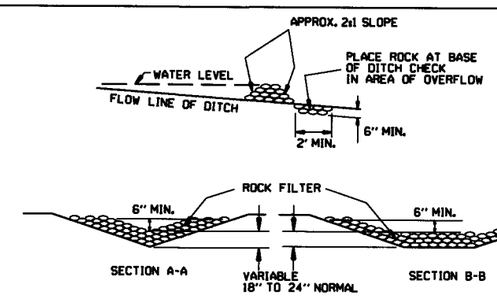
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

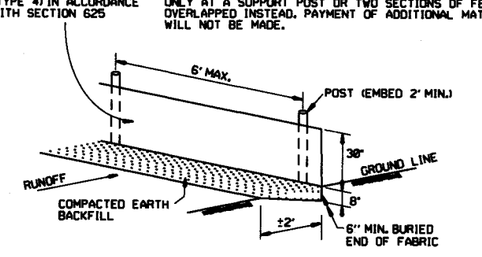


ROCK DITCH CHECK (E-6)

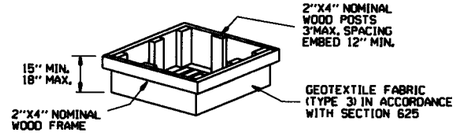
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

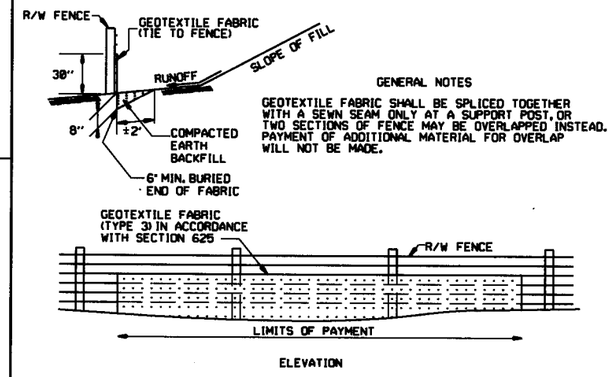
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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

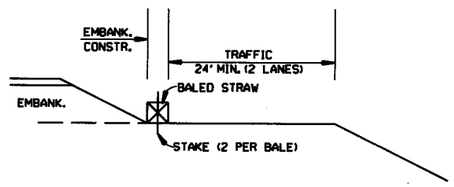
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

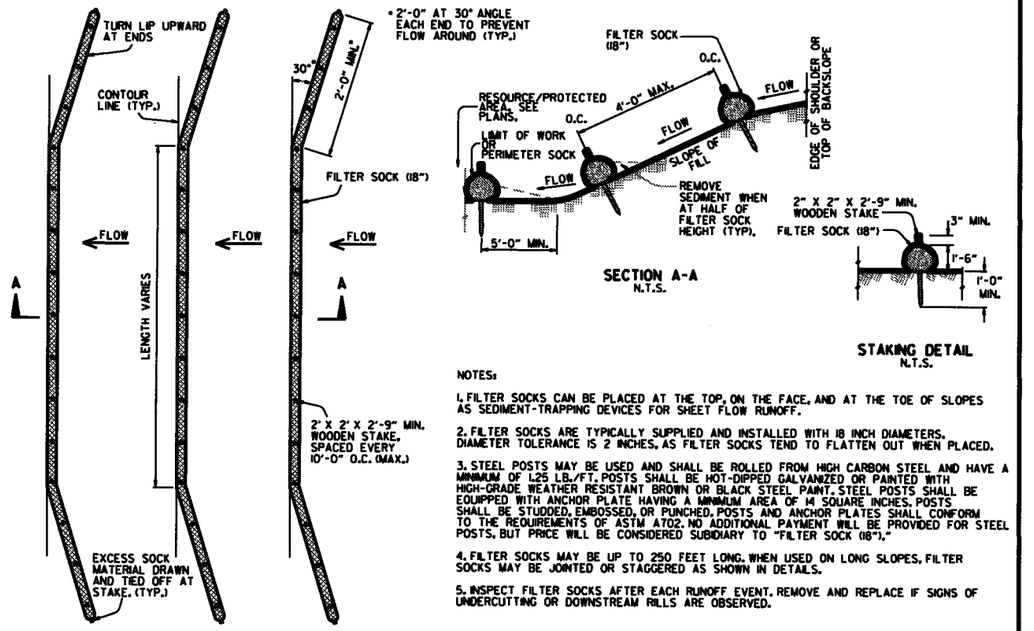
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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



BALED STRAW FILTER BARRIER (E-2)



NOTES:

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

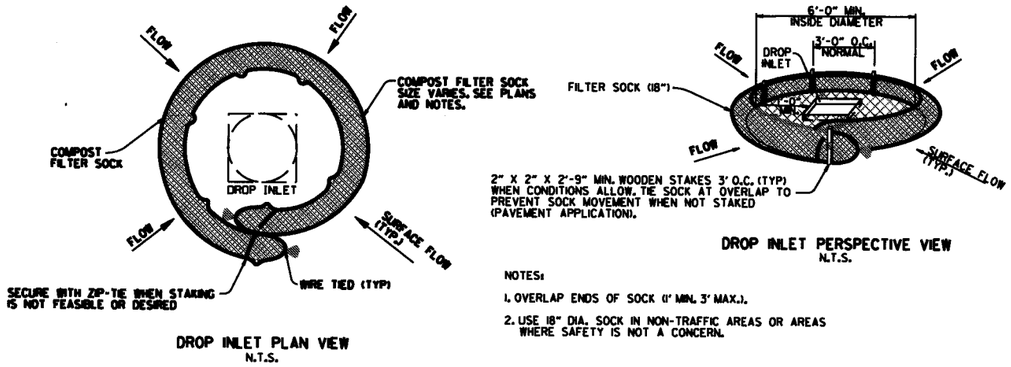
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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

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

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

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

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

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

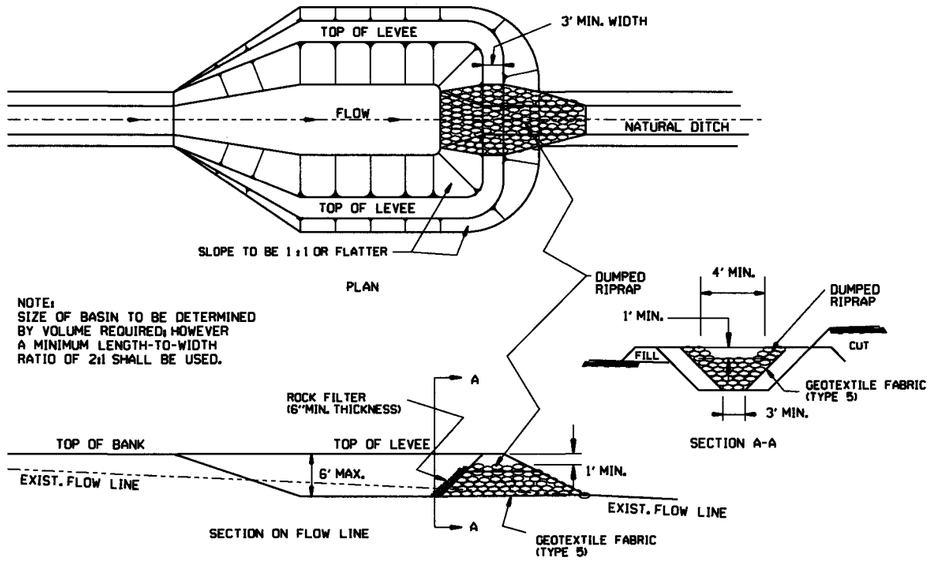
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 15" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 8; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

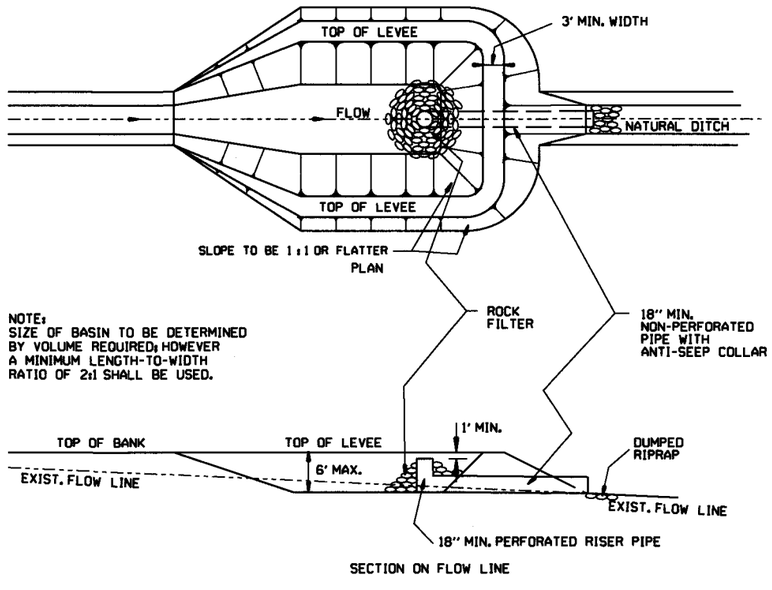
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

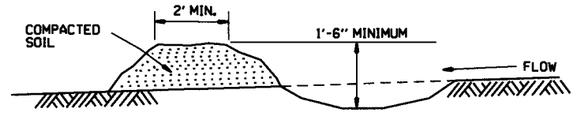
STANDARD DRAWING TEC-1



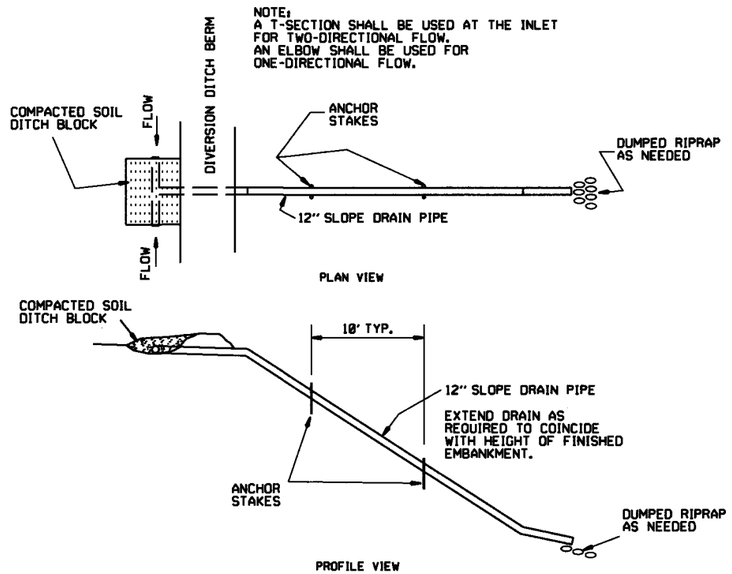
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



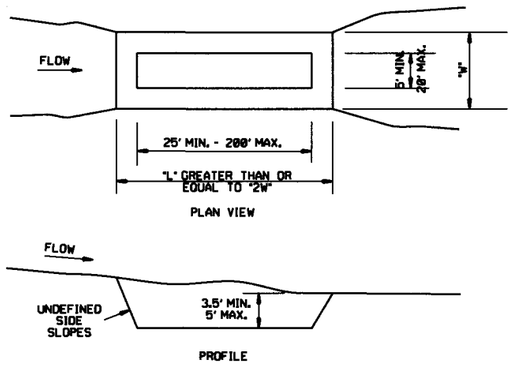
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

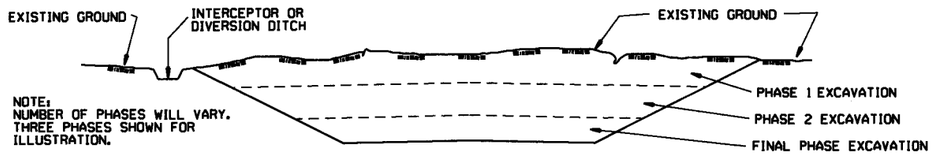
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



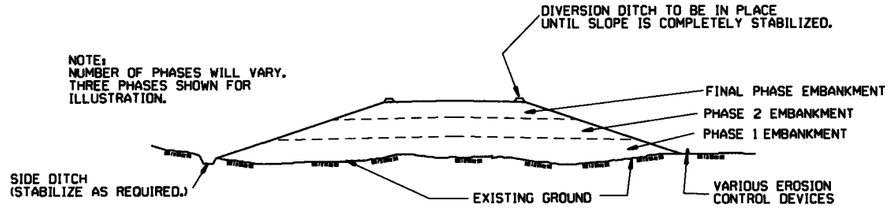
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

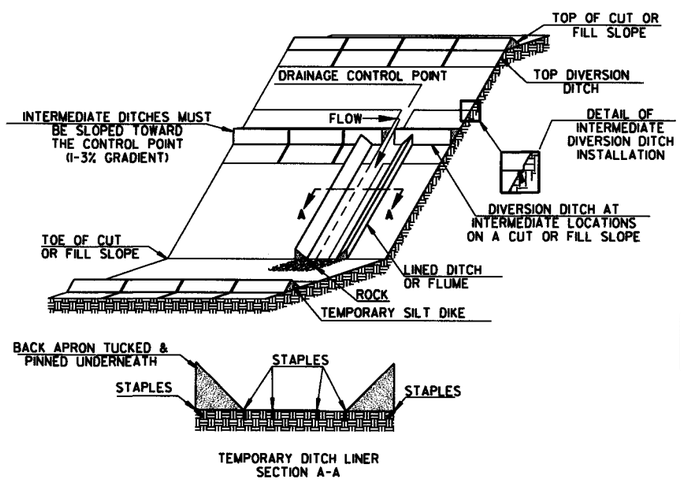
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

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

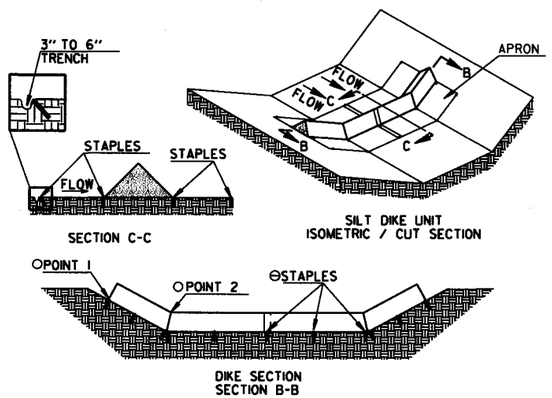
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



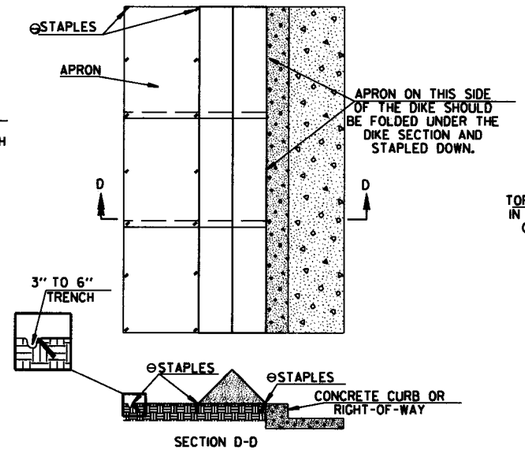
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



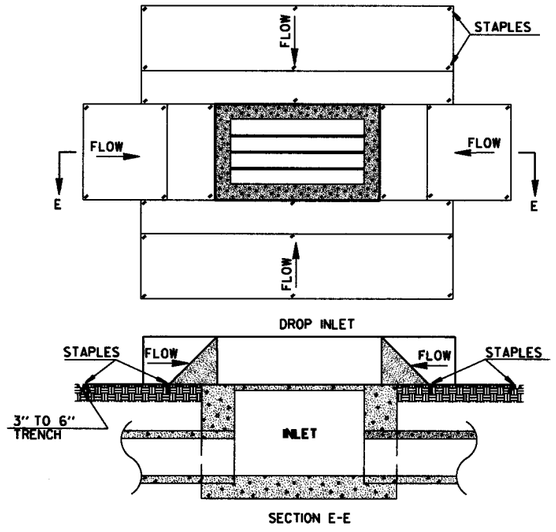
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

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

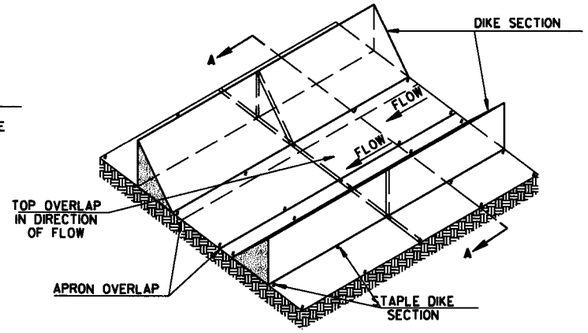
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

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

GENERAL NOTES

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4