DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	1	47
		HWY. 59 REALIGNMENT (CRAWFORD CO.) (S)				

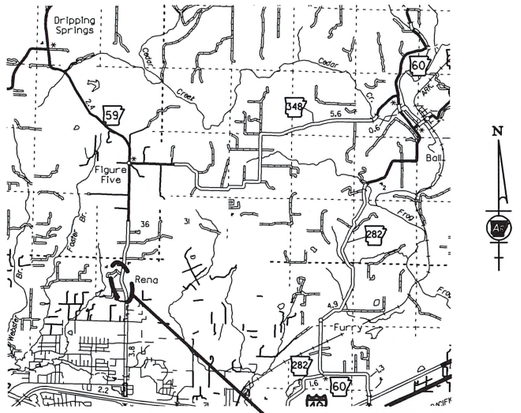
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 59 REALIGNMENT (CRAWFORD CO.) (S)

CRAWFORD COUNTY
ROUTE 59, SECTION 5

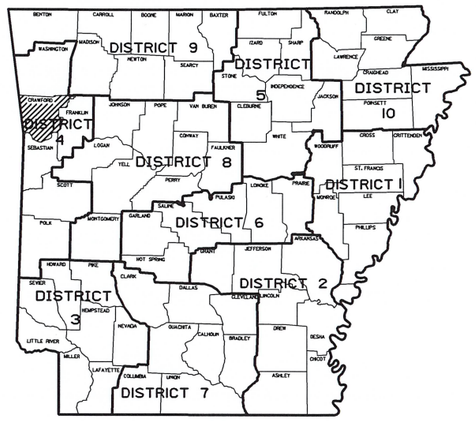
JOB 040885

FED. AID PROJ. STPF-0017(52)



PROJECT LOCATION
VICINITY MAP

NOT TO SCALE

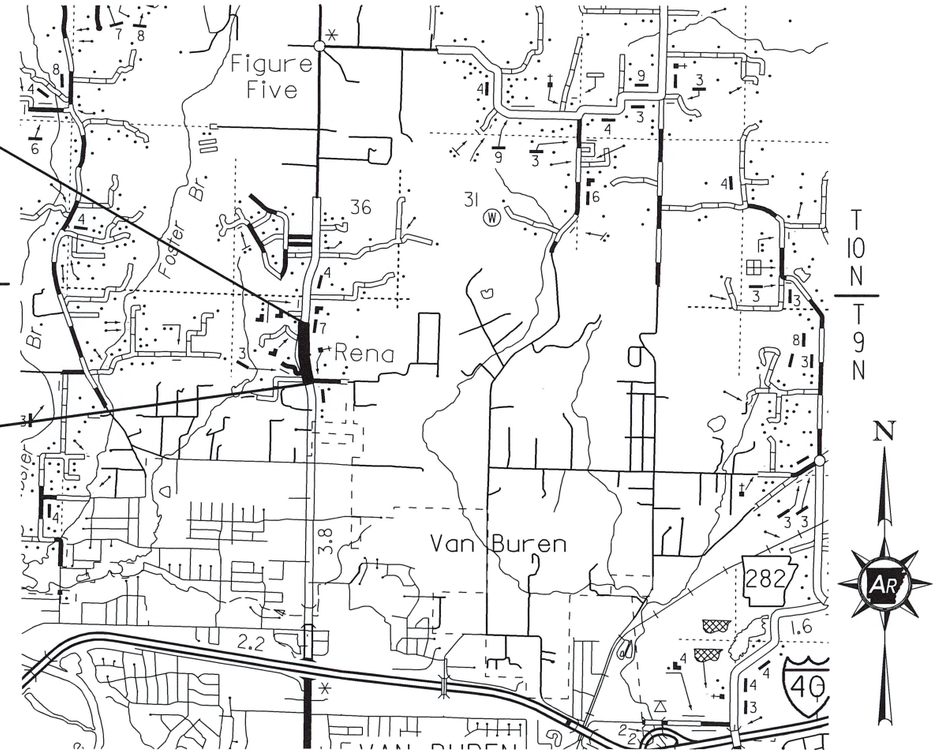


ARK. HWY. DIST. NO. 4

R32W | R31W

STA. 121+00.00
END JOB 040885

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48



R32W | R31W

DESIGN TRAFFIC DATA

DESIGN YEAR	2045
2025 ADT	8,000
2045 ADT	9,900
2045 DHV	1089
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	6%
DESIGN SPEED:	55 MPH

CERTIFICATE OF AUTHORIZATION
CRAFTON, TULL & ASSOCIATES, INC.
No. 109
ARKANSAS ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9620
4/21/2025
HUBERT BURNS

BEGINNING OF PROJECT
LAT. = N 35°29'14"
LONG. = W 94°21'21"

MID-POINT OF PROJECT
LAT. = N 35°29'24"
LONG. = W 94°21'24"

END OF PROJECT
LAT. = N 35°29'33"
LONG. = W 94°21'24"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	2,000.00	FEET	OR	0.379	MILES
NET " " ROADWAY	2,000.00	"	"	0.379	"
NET " " BRIDGES	0.00	"	"	0.000	"
NET " " PROJECT	2,000.00	"	"	0.379	"

USER: APSIBI
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\misc\r040885_title.dgn
PLOTTED: 4/21/2025 08:42
SCALE: 1:200

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	2	47
		INDEX OF SHEETS AND STANDARD DRAWINGS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
07-10-2025
JEROME PAUL DAVIS

INDEX OF SHEETS

SHEET NO.		TITLE
1		TITLE SHEET
2		INDEX OF SHEETS AND STANDARD DRAWINGS
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES
4	5	TYPICAL SECTIONS OF IMPROVEMENT
6	7A	SPECIAL DETAILS
8	13	TEMPORARY EROSION CONTROL DETAILS
14	18	MAINTENANCE OF TRAFFIC DETAILS
19		PERMANENT PAVEMENT MARKING DETAILS
20	23	QUANTITIES
24		SUMMARY OF QUANTITIES AND REVISIONS
25	26	SURVEY CONTROL DETAILS
27	30	PLAN AND PROFILE SHEETS
31	47	CROSS SECTIONS

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

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
MB-1	MAILBOX DETAILS	11-18-04
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-22-25
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
WF-3	CHAIN LINK FENCE	11-17-10

USER: lm5327
DESIGN FILE: G:\23I02300_040885\TRANSP\dgn\misc\r040885 index.dgn
PLOTTED: 7/10/2025 13:39 SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	3	47
		GOVERNING SPEC. AND GENERAL NOTES				

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__	SUPPLEMENT - 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
102-3_____	PREQUALIFICATION OF BIDDERS
103-2_____	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
105-4_____	MAINTENANCE DURING CONSTRUCTION
107-2_____	RESTRAINING CONDITIONS
108-1_____	LIQUIDATED DAMAGES
108-2_____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____	UNCLASSIFIED EXCAVATION
303-1_____	AGGREGATE BASE COURSE
306-1_____	QUALITY CONTROL AND ACCEPTANCE
400-1_____	TACK COATS
400-4_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
400-7_____	TRACKLESS TACK
404-3_____	DESIGN OF ASPHALT MIXTURES
409-2_____	ASPHALT LABORATORY FACILITY
410-1_____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4_____	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
416-1_____	RECYCLED ASPHALT PAVEMENT
505-1_____	PORTLAND CEMENT CONCRETE DRIVEWAY
600-2_____	INCIDENTAL CONSTRUCTION
603-1_____	LANE CLOSURE NOTIFICATION
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1_____	CONCRETE DITCH PAVING
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
637-1_____	MAILBOXES
802-5_____	CONCRETE FOR STRUCTURES
JOB 040885__	BIDDING REQUIREMENTS AND CONDITIONS
JOB 040885__	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 040885__	CARGO PREFERENCE ACT REQUIREMENTS
JOB 040885__	CAVE DISCOVERY
JOB 040885__	COLD MILLING – COUNTY PROPERTY
JOB 040885__	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 040885__	DESIGN OF ASPHALT MIXTURES - AGGREGATES
JOB 040885__	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 040885__	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 040885__	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 040885__	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 040885__	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 040885__	MANDATORY ELECTRONIC CONTRACT
JOB 040885__	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 040885__	OBLITERATION OF EXISTING ROADWAY
JOB 040885__	OFF-SITE RESTRAINING CONDITIONS FOR AMERICAN BURYING BEETLE
JOB 040885__	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 040885__	PARTNERING REQUIREMENTS
JOB 040885__	PLASTIC PIPE
JOB 040885__	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 040885__	PRICE ADJUSTMENT FOR FUEL
JOB 040885__	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 040885__	RESTRAINING CONDITIONS
JOB 040885__	SHORING FOR CULVERTS
JOB 040885__	SOIL STABILIZATION
JOB 040885__	SPECIAL CLEARING REQUIREMENTS
JOB 040885__	STORM WATER POLLUTION PREVENTION PLAN
JOB 040885__	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040885__	UTILITY ADJUSTMENTS
JOB 040885__	VALUE ENGINEERING
JOB 040885__	WARM MIX ASPHALT
JOB 040885__	WATER POLLUTION CONTROL

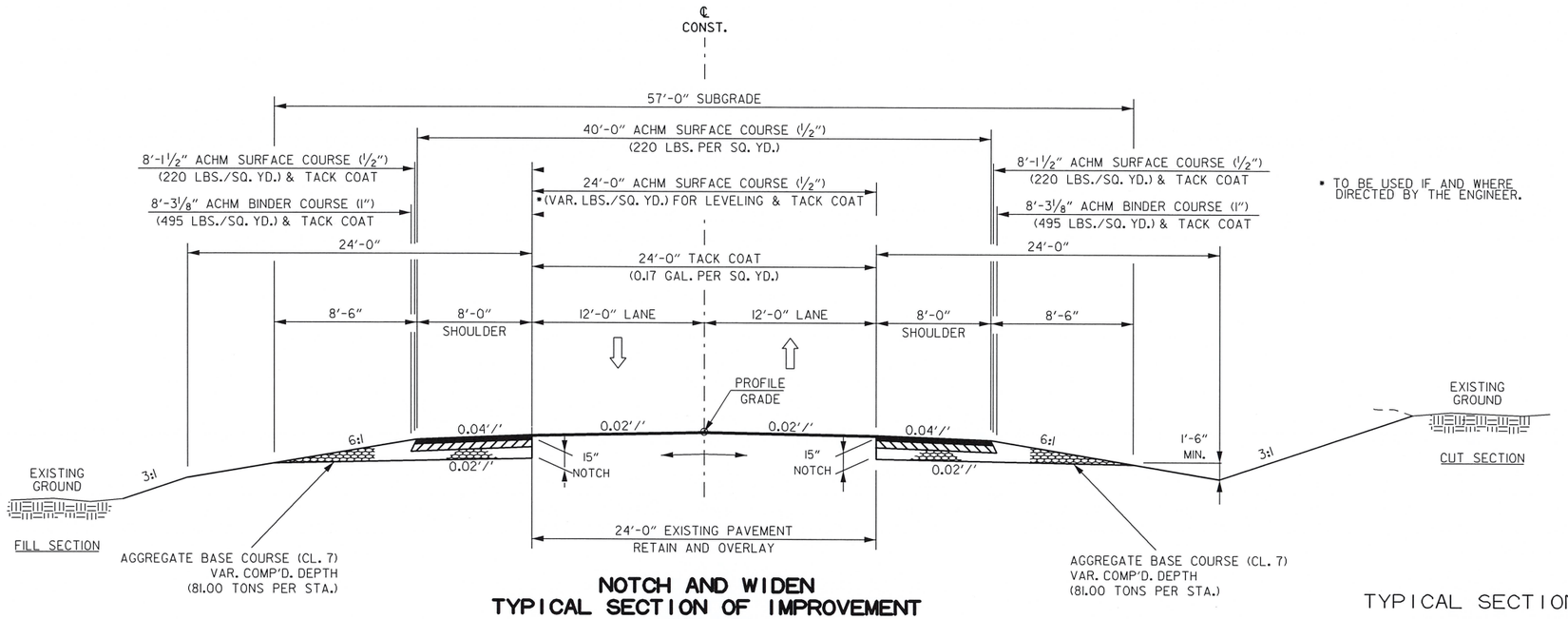
GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.
11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
07-10-2025

USER: CTAUSER
DESIGN FILE: G:\23\02300_040885\TRANSP\dgn\misc\r040885 index.dgn
PLOTTED: 7/10/2025 3:41:02 PM SCALE: 2.0000 ' / In.

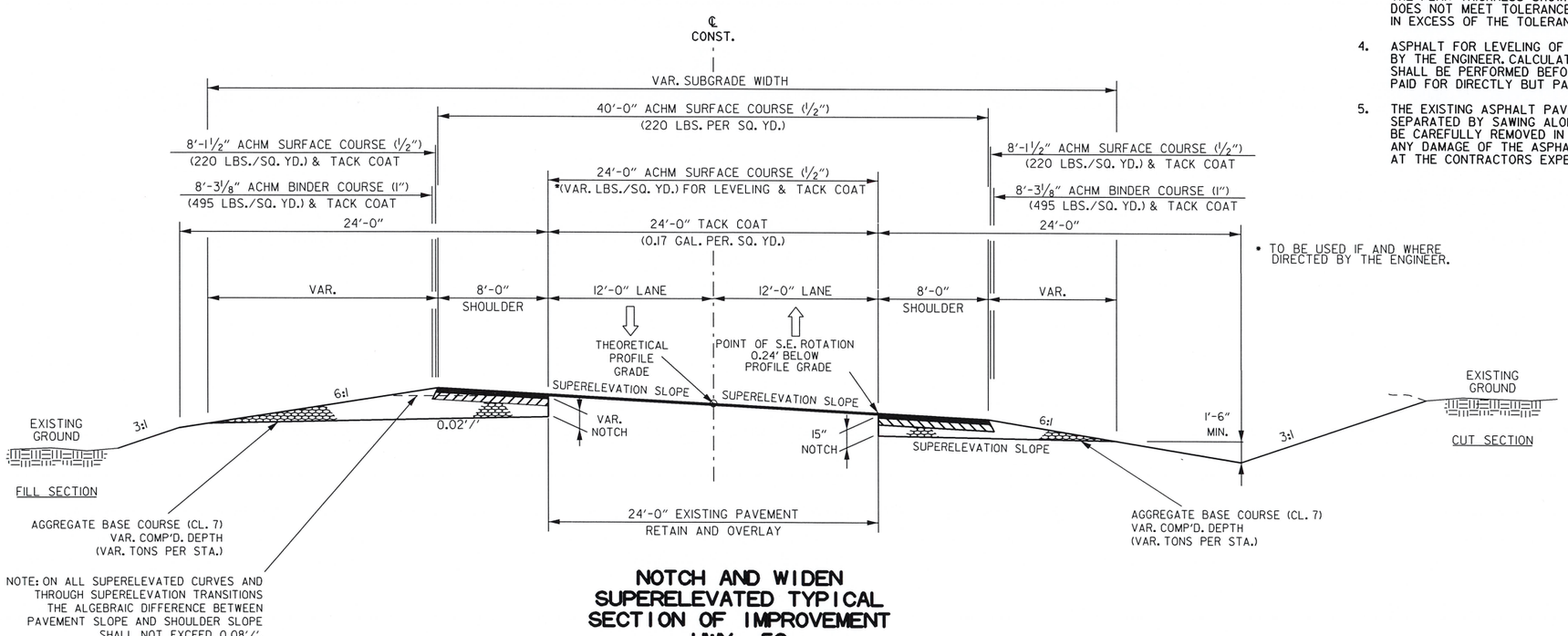
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	4	47
		TYPICAL SECTIONS OF IMPROVEMENT				



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTCH AND WIDEN TYPICAL SECTION OF IMPROVEMENT HWY. 59

STA. 101+00.00 TO STA. 103+46.71



* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

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

NOTCH AND WIDEN SUPERELEVATED TYPICAL SECTION OF IMPROVEMENT HWY. 59

STA. 117+53.20 TO STA. 121+00.00

TYPICAL SECTION NOTES:

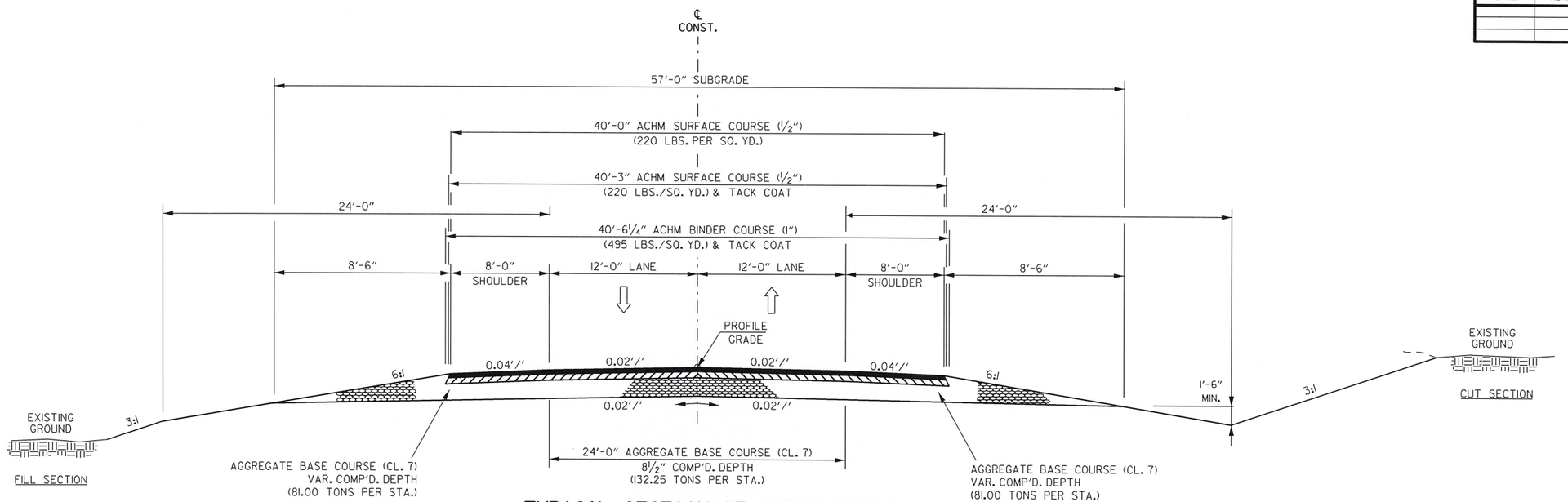
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.
3. THE THICKNESS 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.
4. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING, CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.
5. 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 CONTRACTORS EXPENSE.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
3-3-2025
JEROME PAUL DAVIS

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	5	47
		TYPICAL SECTIONS OF IMPROVEMENT				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

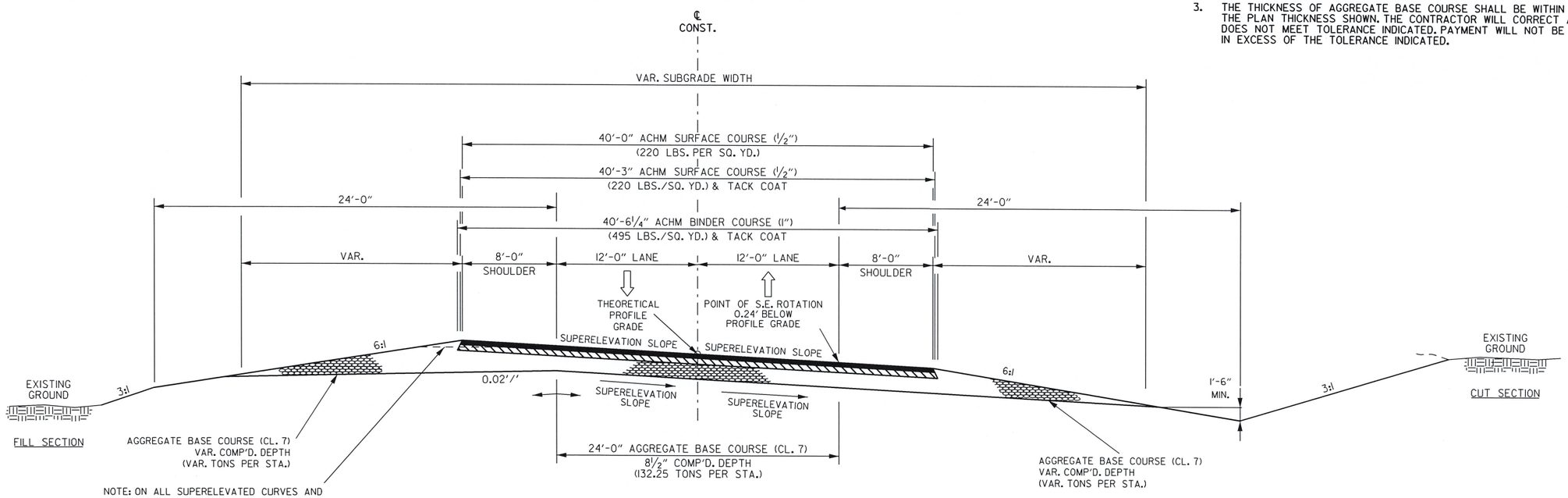


TYPICAL SECTION OF IMPROVEMENT HWY. 59

STA. 103+46.71 TO STA. 111+16.53

TYPICAL SECTION NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.
3. 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.



SUPERELEVATED TYPICAL SECTION OF IMPROVEMENT HWY. 59

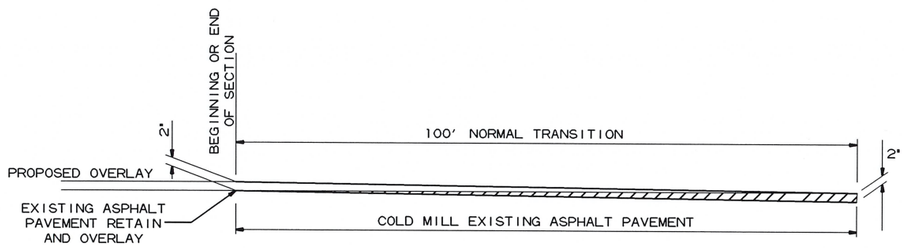
STA. 111+16.53 TO STA. 117+53.20

TYPICAL SECTIONS OF IMPROVEMENT

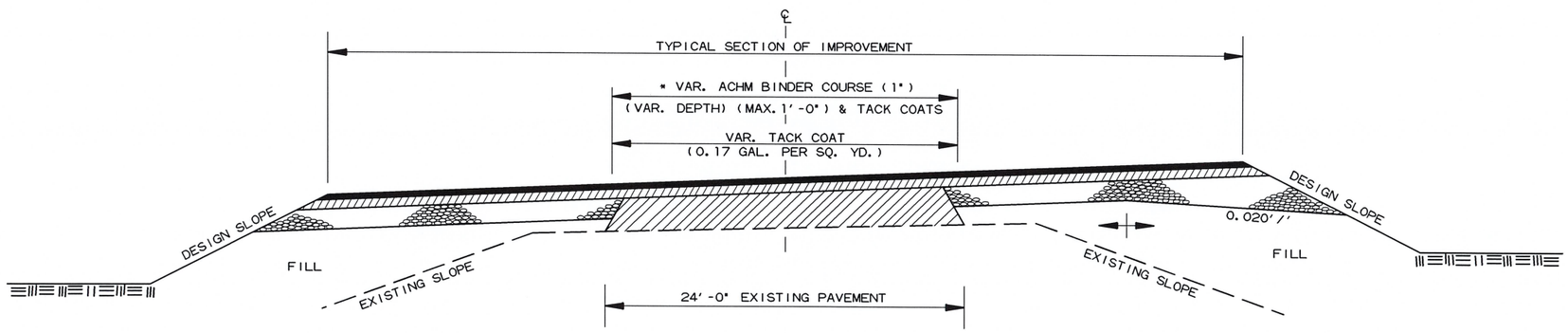
USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\typical\r040885_typical.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:10

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	6	47
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



DETAIL FOR TRANSITIONS



* 8 ½" 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.

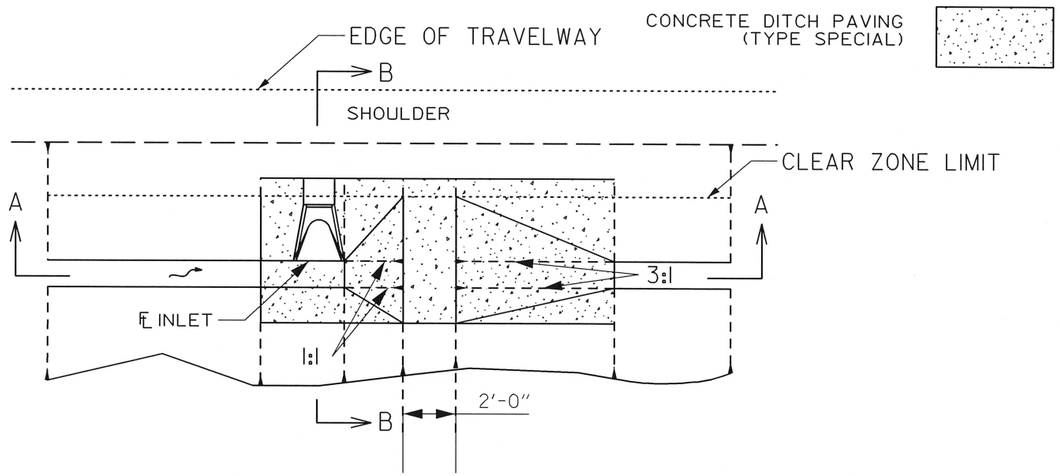
(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS.

SPECIAL DETAILS

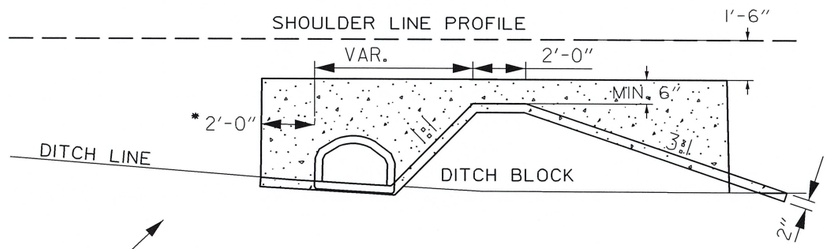
USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\special_details\r040885 SpecialDetails.dgn
PLOTTED: 3/3/2025 15:13 SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	7	47
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



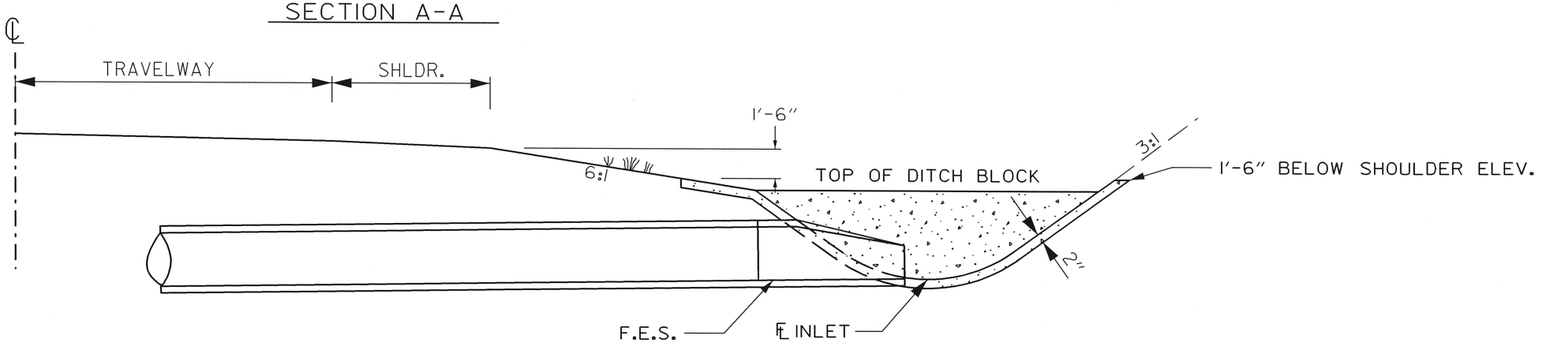
PLAN VIEW



* FROM FIRST UPSTREAM STRUCTURE IF MULTIPLE PIPES

CROSS ROAD STRUCTURE SEE PLANS FOR SIZE

SECTION A-A



SECTION B-B

DITCH BLOCK IN ROADWAY DITCH AT CROSS CULVERT LOCATIONS

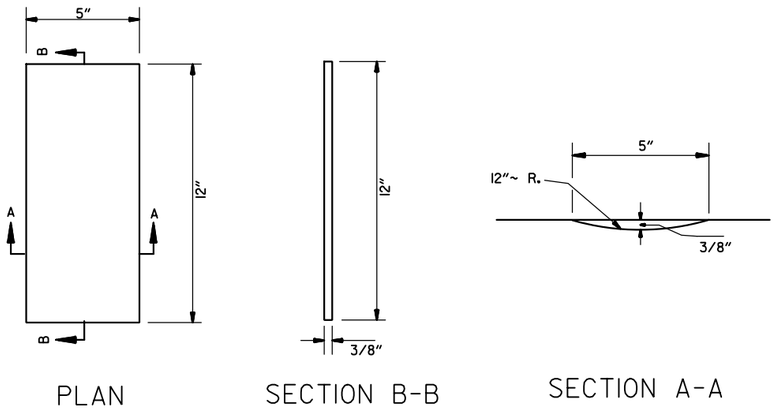
NOTE: CONSTRUCTION OF DITCH BLOCK IS SUBSIDIARY TO CONCRETE PAVED DITCH (TYPE SPECIAL).

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\special_details\r040885 SpecialDetails.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1=2

SPECIAL DETAILS

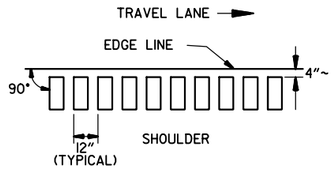
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	7A	47
		SPECIAL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
07-10-2025

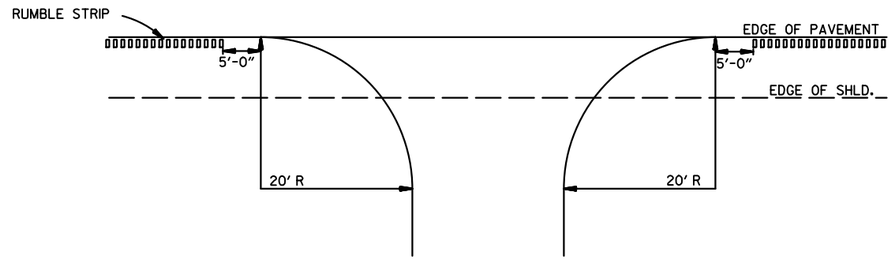


PLAN SECTION B-B SECTION A-A

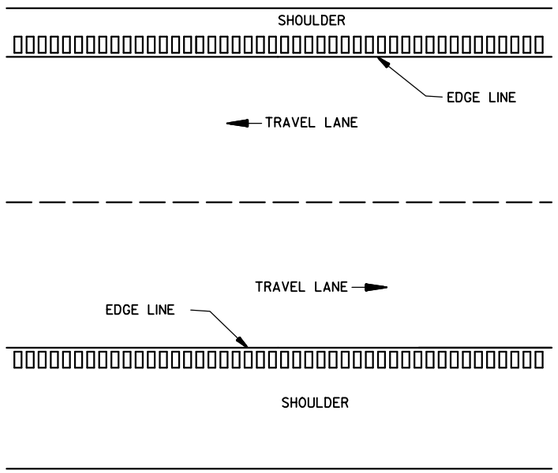
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES:

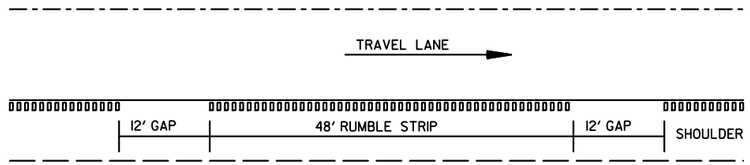
1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.

3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.

4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.

5. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.

DETAIL FOR GAP PATTERN RUMBLE STRIP

SPECIAL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\special_details\r040885 SpecialDetails.dgn
PLOTTED: 7/10/2025 13:32
SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	8	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
△ = 90°00'00"

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

100

105

110

W. NORTHBROOK DR.

P.O.B. 10+00.00

N 100°00'00" E

PROP. R/W

EXIST. R/W

EXISTING HWY. 59

℄ HWY. 59
N8°30'36"W

N8°30'36"W

P.C. 13+41.53

N81°29'24"E

P.C. 10+49.50

P.I. 10+96.22

T.C.L.

P.T. 11+42.48

N84°33'48"E

P.O.E. 12+00.00

℄ E. NORTHBROOK DR.

STA. 11+48.03
END CONSTRUCTION
℄ E. NORTHBROOK DR.

SILT FENCE = 468 LIN. FT.

SILT FENCE = 130 LIN. FT.

SILT FENCE = 88 LIN. FT.

SILT FENCE = 335 LIN. FT.

4'
12'
12'
4'

REVISIONS

DATE	REVISION

LEGEND

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

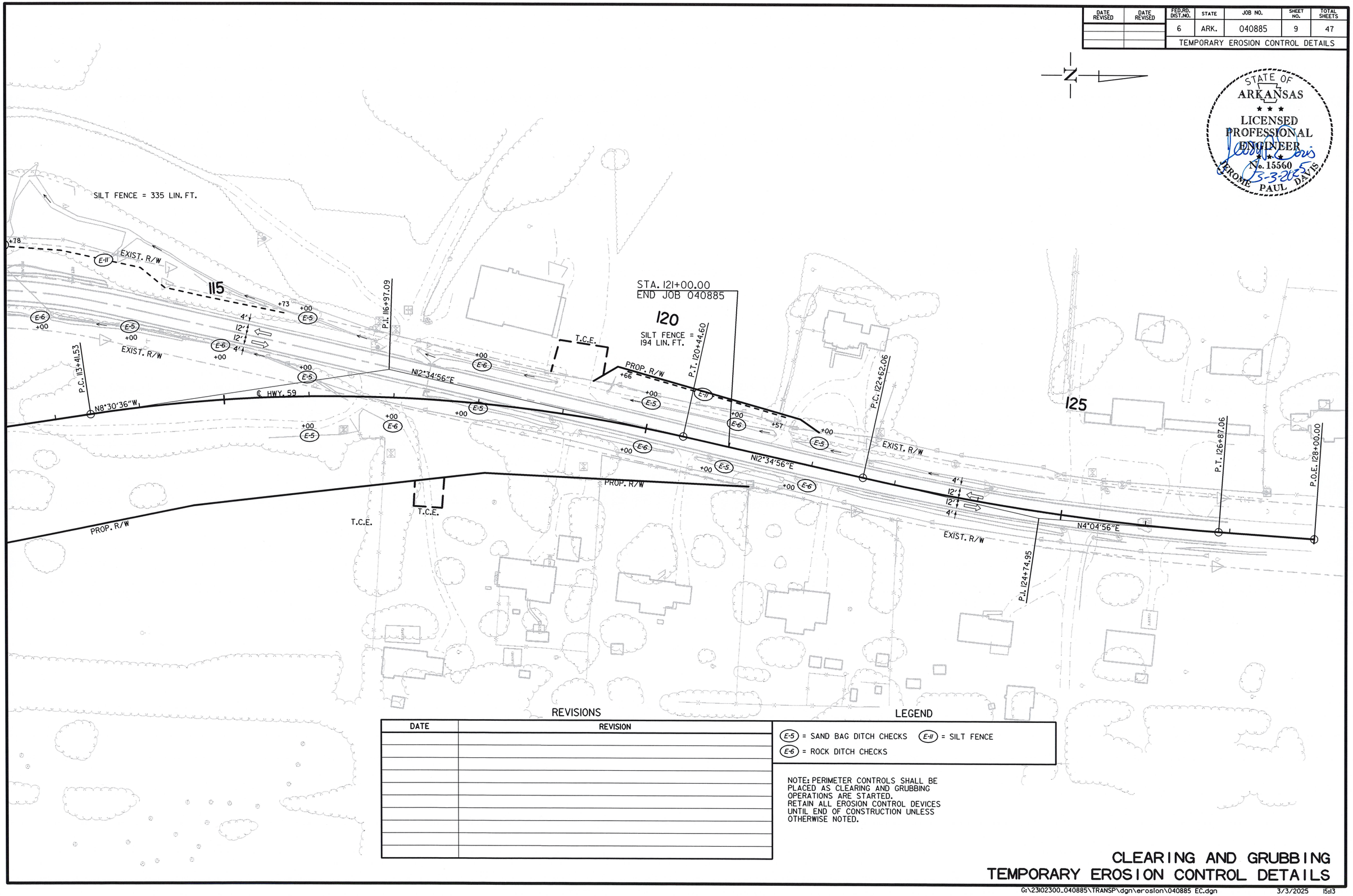
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. RETAIN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn SCALE: 1:100
PLOTTED: 3/3/2025 15:13

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	9	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-25



REVISIONS

DATE	REVISION

LEGEND

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

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

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23I02300_040885\TRANSP\dgn\erosion\040885 EC.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

G:\23I02300_040885\TRANSP\dgn\erosion\040885 EC.dgn 3/3/2025 15:13

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	10	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
△ = 90°00'00"

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

100

105

110

W. NORTHBROOK DR.

P.O.B. 10+00.00

P.O.B. 100+00.00

PROP. R/W

EXIST. R/W

EXISTING HWY. 59

4'
12'
12'
4'

℄ HWY. 59
N8°30'36"W

N81°29'24"E

P.C. 10+49.50

P.I. 10+96.22

P.T. 11+42.48

P.O.E. 12+00.00

T.C.E.

16'

CONST. LIMITS

E-14 = 263 CU. YDS.

E-14 = 199 CU. YDS.

P.C. 113+41.53

SLOPE PIPE DRAIN = 50 LIN. FT.

SLOPE PIPE DRAIN = 65 LIN. FT.

DIVERSON DITCH = 850 LIN. FT.

STA. 11+48.03
END CONSTRUCTION
℄ E. NORTHBROOK DR.

℄ E. NORTHBROOK DR. S84°33'48"E

REVISIONS

DATE	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- (E-14) XXXX CU. FT. = SEDIMENT BASIN

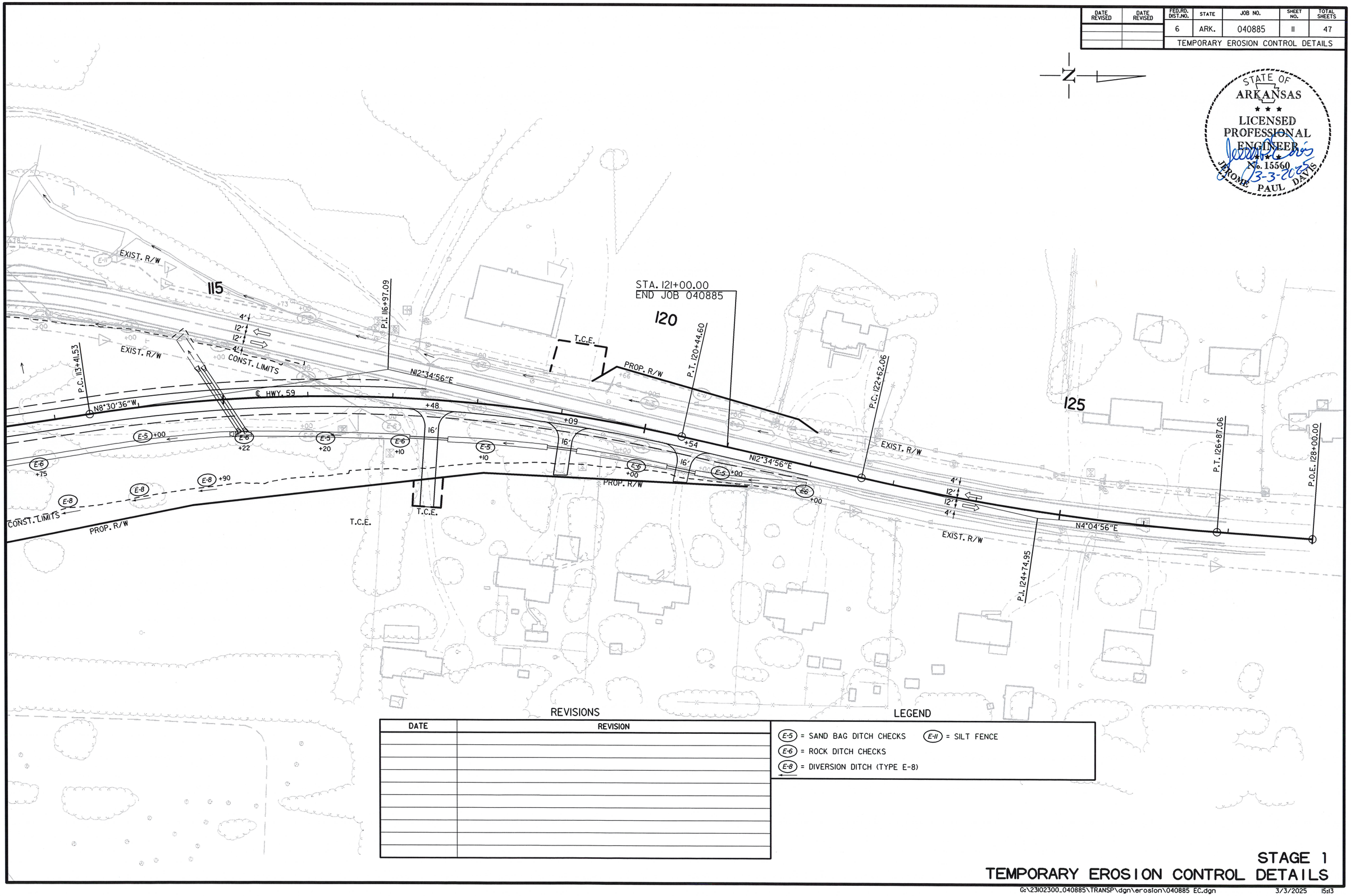
STAGE 1
TEMPORARY EROSION CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn
PLOTTED: 3/3/2025 15:13 SCALE: 1:100

G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn 3/3/2025 15:13

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	11	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



REVISIONS

DATE	REVISION

LEGEND

E-5 = SAND BAG DITCH CHECKS
E-11 = SILT FENCE
E-6 = ROCK DITCH CHECKS
E-8 = DIVERSION DITCH (TYPE E-8)

STAGE 1
TEMPORARY EROSION CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn 3/3/2025 15:13

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	12	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
△ = 90°00'00"

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

P.O.B. 10+00.00

W. NORTHBROOK DR.

PROP. R/W
CONST. LIMITS
EXIST. R/W
P.O.B. 100+00.00
℄ HWY. 59
N8°30'36"W
P.C. 113+41.53
N81°29'24"E
P.C. 10+49.50
P.I. 10+96.22
P.T. 11+42.48
S84°33'48"E
P.O.E. 12+00.00
℄ E. NORTHBROOK DR.

STA. 11+48.03
END CONSTRUCTION
℄ E. NORTHBROOK DR.

100 105 110

REVISIONS

DATE	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- E-14 = SEDIMENT BASIN, XXXX CU. FT.

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn
PLOTTED: 3/4/2025 08:30
SCALE: 1:100

G:\23102300_040885\TRANSP\dgn\erosion\040885 EC.dgn 3/4/2025 08:30

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	13	47
		TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

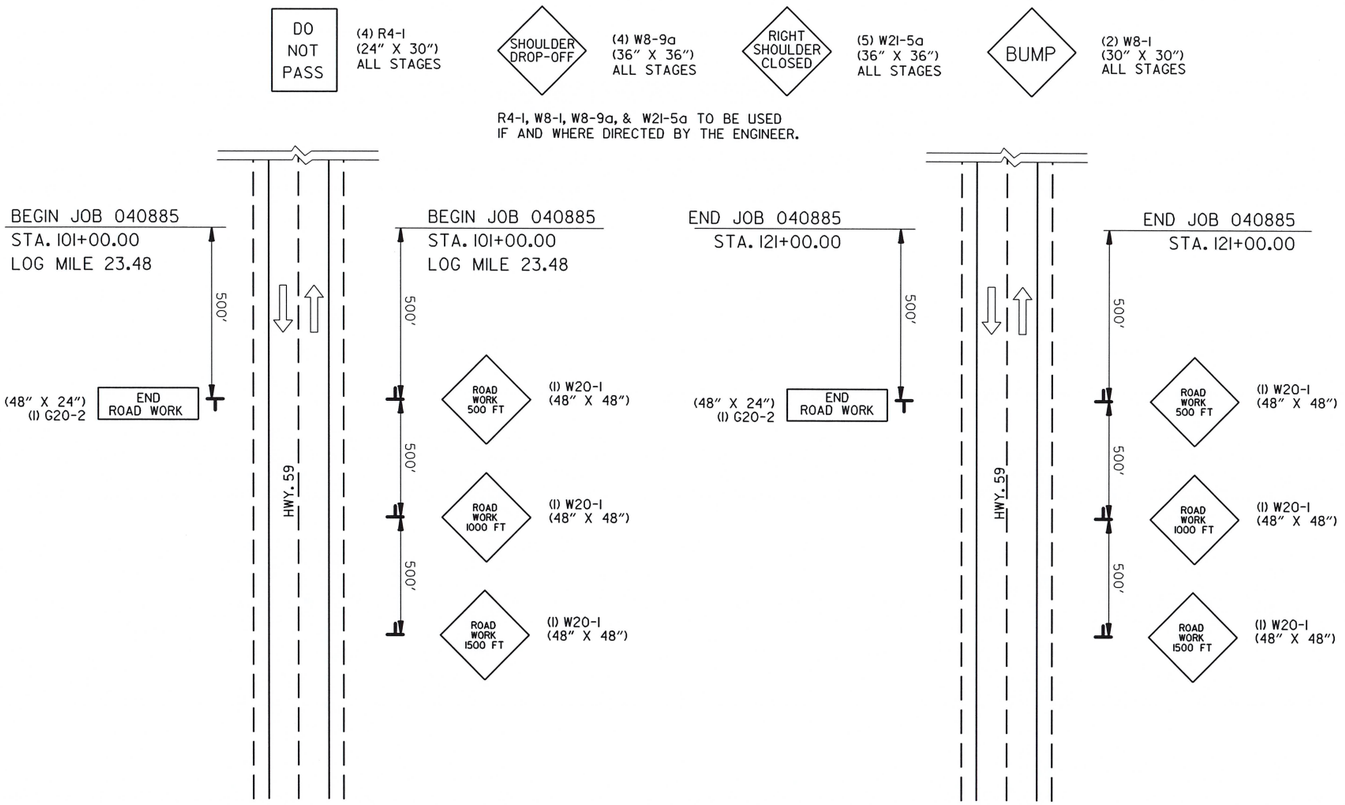
STA. 121+00.00
END JOB 040885

115 120 125

EXIST. R/W
EXIST. R/W
CONST. LIMITS
P.C. 113+41.53
N8°30'36"W
℄ HWY. 59
8'
12'
12'
8'
+09
+13
P.I. 116+97.09
16'
N12°34'56"E
30'
T.C.E.
PROP. R/W
P.T. 120+44.60
CONST. LIMITS
16'
+65
N12°34'56"E
P.C. 122+62.06
EXIST. R/W
4'
12'
12'
4'
N4°04'56"E
EXIST. R/W
P.I. 124+74.95
P.T. 126+87.06
P.O.E. 128+00.00
PROP. R/W
CONST. LIMITS
PROP. R/W
T.C.E.
T.C.E.

E-5 +00, E-5 +22, E-5 +20, E-6 +10, E-5 +10, E-5 +00, E-6 +75, E-8, E-8 +90, E-8, E-11, +00, +73, +00, +00, +00, +00, +00, +00, +00, +00, +68, +00, +00, +00, +00, +00, +00, +00, +00

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	14	47
		MAINTENANCE OF TRAFFIC DETAILS				



STAGE 1:

1) INSTALL ADVANCE WARNING SIGNS.

2) INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

3) CONSTRUCT NEW ROADWAY, APPROACHES, & STORM DRAINAGE AS SHOWN ON STAGE 1 PLANS.

STAGE 2:

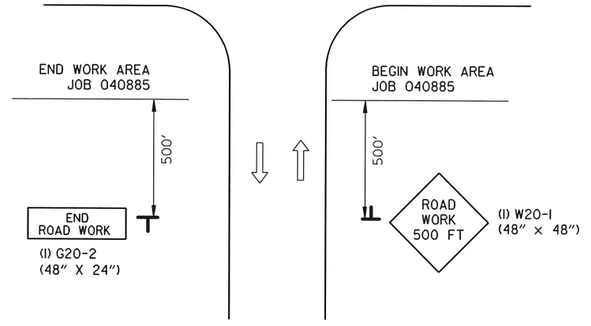
1) MAINTAIN ADVANCE WARNING SIGNS.

2) INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

3) SHIFT TRAFFIC TO NEW ROADWAY.

4) CONSTRUCT REMAINDER OF NEW ROADWAY, APPROACHES, & STORM DRAINAGE AS SHOWN ON STAGE 2 PLANS.

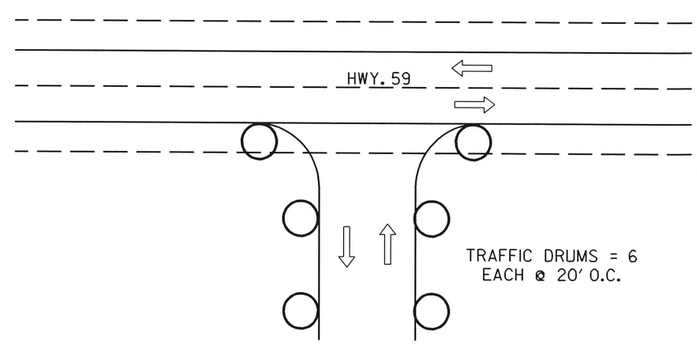
5) INSTALL FINAL LIFT OF ASPHALT AND PERMANENT PAVEMENT MARKINGS.



SIDE ROADS ALL STAGES

103+66 RT. - E. NORTHBROOK DR.
103+66 LT. - W. NORTHBROOK DR.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



TYPICAL PLACEMENT OF TRAFFIC DRUMS AT DRIVEWAY DETAIL

ADVANCE WARNING SIGNS MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	15	47
		MAINTENANCE OF TRAFFIC DETAILS				

⊢ VERTICAL PANEL
⊢⊣ BARRICADE
o TRAFFIC DRUM

(A) = WHITE CONSTRUCTION PAVEMENT MARKINGS.
(B) = DBL. YELLOW CONSTRUCTION PAVEMENT MARKINGS

STAGE I:

1) INSTALL ADVANCE WARNING SIGNS.

2) INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

3) CONSTRUCT NEW ROADWAY, APPROACHES, & STORM DRAINAGE AS SHOWN ON STAGE I PLANS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
Δ = 90°00'00"

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

100

105

110

W. NORTHBROOK DR.

P.O.B. 10+00.00

PROP. R/W

EXIST. R/W

110' TRANSITION TAPER

+90

P.O.B. 10+00.00

+00

EXIST. R/W

CONST. LIMITS

PROP. R/W

100' TRANSITION TAPER

+00

+00

VERTICAL PANELS 45' SPACING O.C. (TYP.)

TRAFFIC DRUMS 20' SPACING O.C. (TYP.)

TRAFFIC DRUMS 20' SPACING O.C. (TYP.)

STA. 11+48.03
END CONSTRUCTION
℄ E. NORTHBROOK DR.

℄ E. NORTHBROOK DR.

PROP. R/W

EXISTING HWY. 59

4'
11'
11'

℄ HWY. 59
N8°30'36"W

P.C. 10+49.50

N81°29'24"W
60'

P.I. 10+96.22

16'

+00

T.C.E.

P.T. 11+42.48

S84°33'48"E

P.O.E. 12+00.00

TRAFFIC DRUMS 45' SPACING O.C. (TYP.)

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

(2) 16' BARR. TYP. III RT.

EXIST. R/W

CONST. LIMITS

4'
11'
11'

P.C. 13+41.53

16'

+60

N8°30'36"W

CONST. LIMITS

PROP. R/W

NOTES:
1) TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

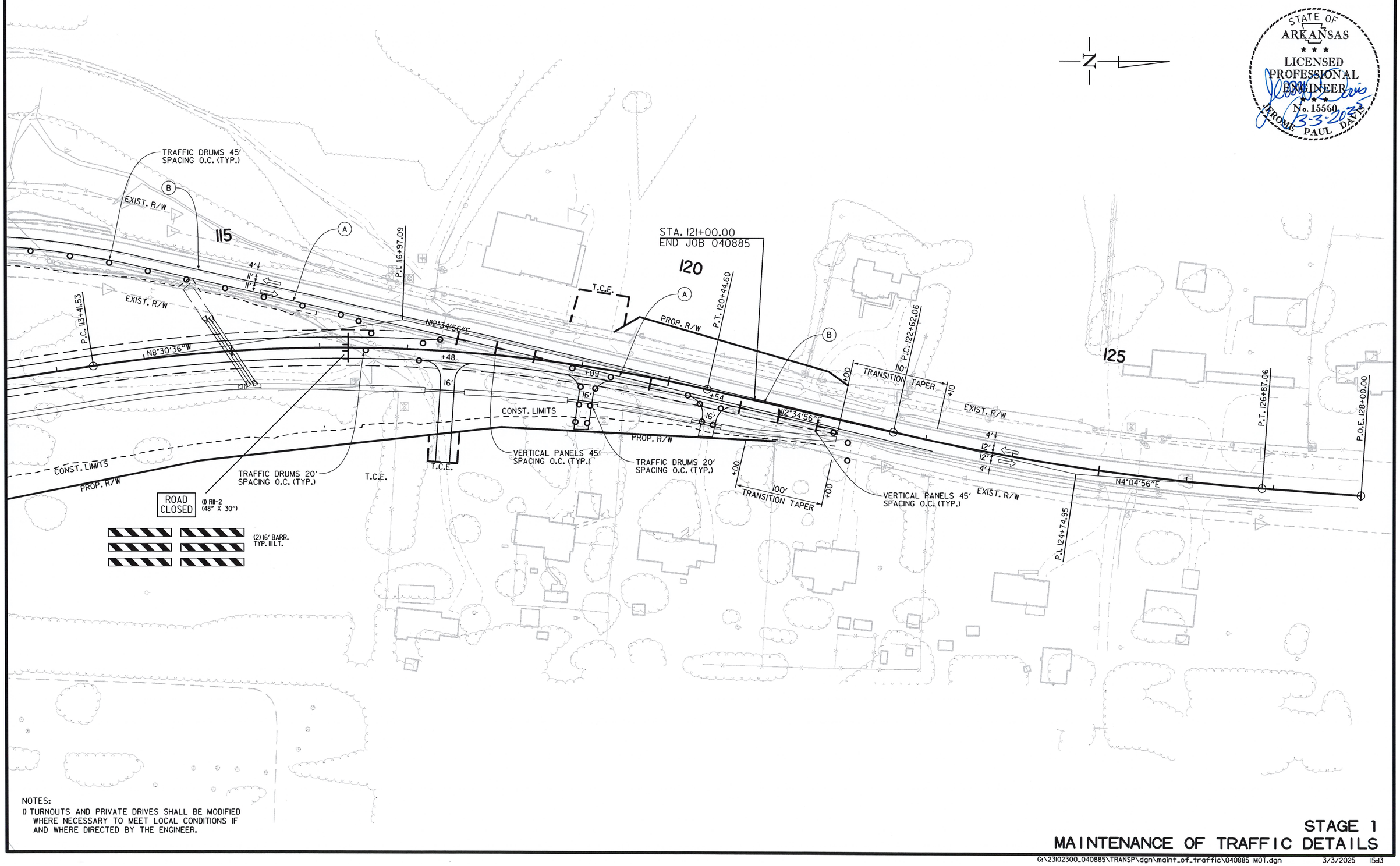
G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn 3/3/2025 15:13

VERTICAL PANEL
BARRICADE
TRAFFIC DRUM

(A) = WHITE CONSTRUCTION PAVEMENT MARKINGS.
(B) = DBL. YELLOW CONSTRUCTION PAVEMENT MARKINGS

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	16	47
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



NOTES:
1) TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn 3/3/2025 15:13

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	17	47
		MAINTENANCE OF TRAFFIC DETAILS				

⊢ VERTICAL PANEL
⊥ BARRICADE
o TRAFFIC DRUM
▨ OBLITERATE

Ⓐ = WHITE CONSTRUCTION PAVEMENT MARKINGS.
Ⓑ = DBL. YELLOW CONSTRUCTION PAVEMENT MARKINGS

STAGE 2:

1) MAINTAIN ADVANCE WARNING SIGNS.

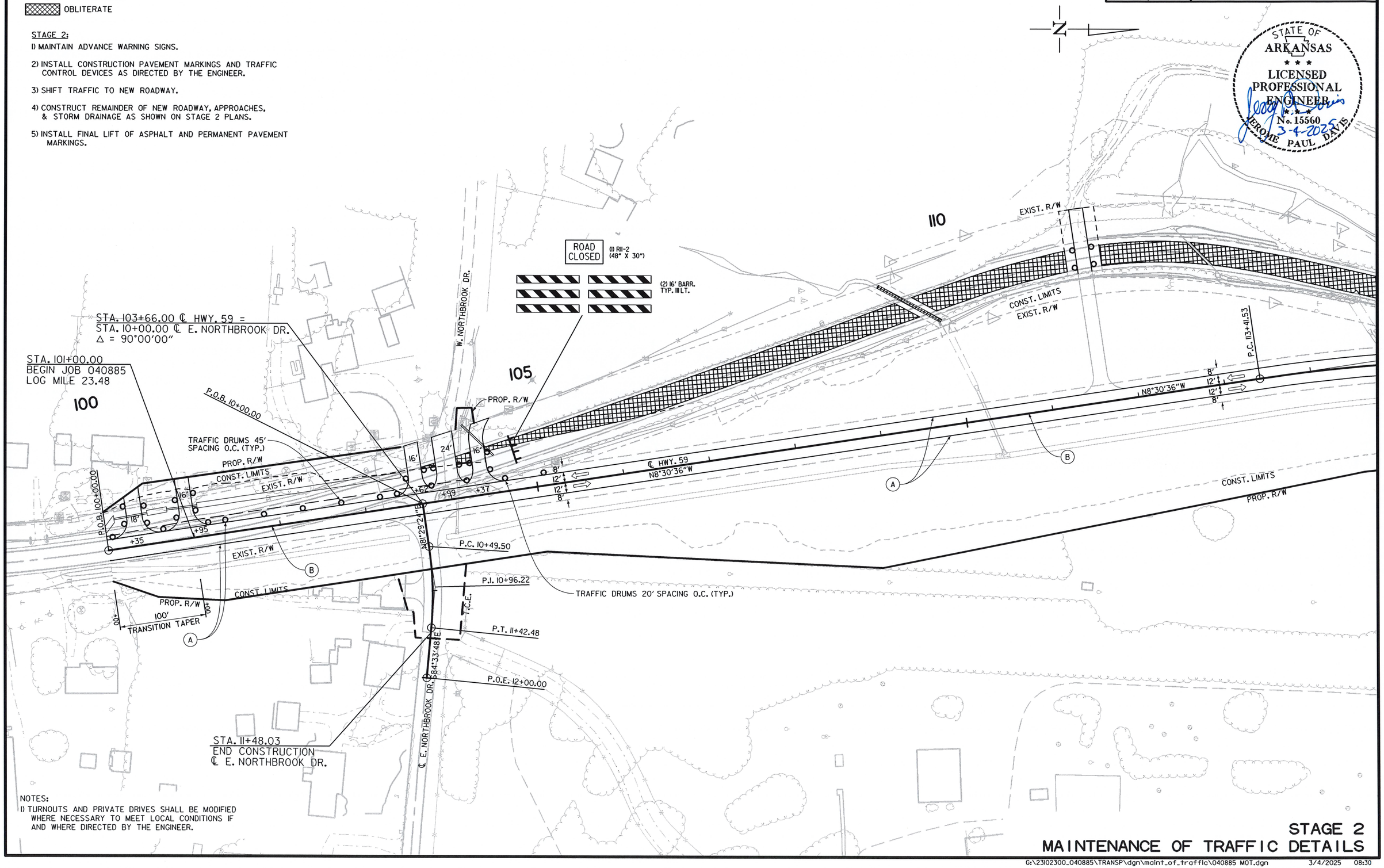
2) INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

3) SHIFT TRAFFIC TO NEW ROADWAY.

4) CONSTRUCT REMAINDER OF NEW ROADWAY, APPROACHES, & STORM DRAINAGE AS SHOWN ON STAGE 2 PLANS.

5) INSTALL FINAL LIFT OF ASPHALT AND PERMANENT PAVEMENT MARKINGS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025



NOTES:
1) TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn
PLOTTED: 3/4/2025 08:30
SCALE: 1:100

G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn 3/4/2025 08:30

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	18	47
		MAINTENANCE OF TRAFFIC DETAILS				

VERTICAL PANEL
BARRICADE
TRAFFIC DRUM
OBLITERATE

(A) = WHITE CONSTRUCTION PAVEMENT MARKINGS.
(B) = DBL. YELLOW CONSTRUCTION PAVEMENT MARKINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

115
120
125

EXIST. R/W
CONST. LIMITS
P.I. 116+97.09
P.C. 113+41.53
N8°30'36"W
8'
12'
12'
8'
16'
N12°34'56"E
+09
+13
30'
T.C.E.
PROP. R/W
P.T. 120+44.60
STA. 121+00.00
END JOB 040885
TRAFFIC DRUMS 45' SPACING O.C. (TYP.)
P.C. 122+62.06
+65
N12°34'56"E
EXIST. R/W
4'
12'
12'
4'
N4°04'56"E
P.T. 126+87.06
P.O.E. 128+00.00
P.I. 124+74.95
100' TRANSITION TAPER
+00
+00
TRAFFIC DRUMS 20' SPACING O.C. (TYP.)
CONST. LIMITS
PROP. R/W
T.C.E.
T.C.E.
TRAFFIC DRUMS 20' SPACING O.C. (TYP.)
ROAD CLOSED
(1) R11-2 (48" X 30")
(2) 16' BARR. TYP. III RT.

NOTES:
1) TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS IF AND WHERE DIRECTED BY THE ENGINEER.

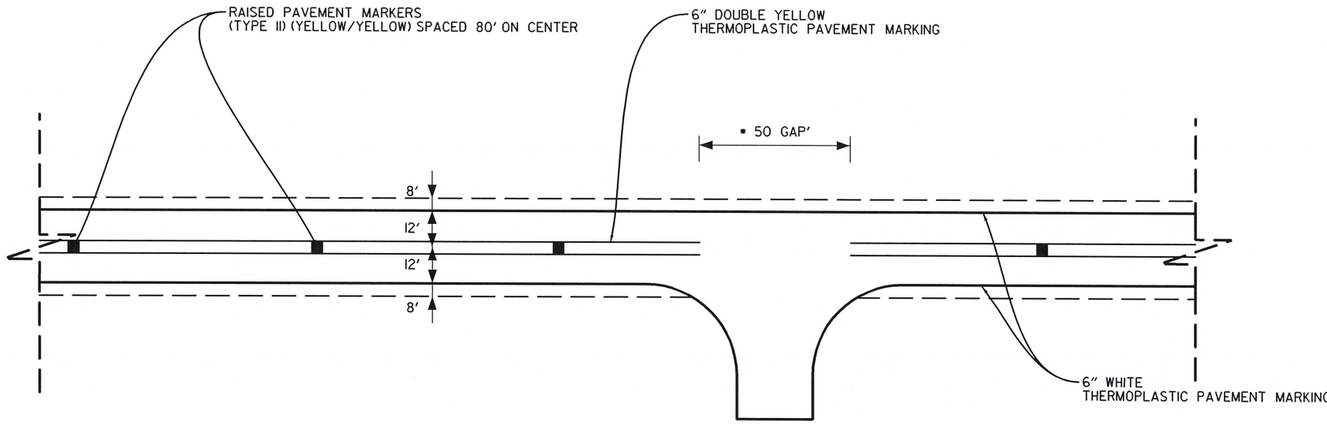
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

G:\23102300_040885\TRANSP\dgn\maint_of_traffic\040885 MOT.dgn 3/3/2025 15:13

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	19	47
		PERMANENT PAVEMENT MARKING DETAIL				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025



• TURNOUT LOCATIONS ONLY

TYPICAL 2-LANE PERMANENT PAVEMENT MARKING LAYOUT

• 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.

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\misc\r040885 PPM.dgn
PLOTTED: 3/3/2025 15:13
SCALE: 1:100

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	20	47
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	THERMOPLASTIC PAVEMENT MARKING 6" WHITE	THERMOPLASTIC PAVEMENT MARKING 6" YELLOW
	LIN. FT. - EACH			LIN. FT.		LIN. FT.	EACH	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	9900			9900					
CONSTRUCTION PAVEMENT MARKINGS	9900	8800			18700				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		3330	8800			12130			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			28				28		
THERMOPLASTIC PAVEMENT MARKING WHITE (6")			4350					4350	
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")			4350						4350
TOTALS:				**9900**	**18700**	**12130**	**28**	**4350**	**4350**

NOTE: THIS IS A HIGH 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.

BENCH MARKS

STATION	LOCATION	BENCH MARKS EACH
114+98	HWY. 59 DBL. 36" X 23" X 80' R.C. ARCH PIPE CULVERT	1
TOTAL:		**1**

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

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS EACH
100+35	18" X 24' C.M.P. - LT.	1
100+95	18" X 20' C.M.P. - LT.	1
104+07	24" X 76' R.C.P. - LT.	1
109+55	30" X 83' C.M.P. - LT.	1
116+55	18" X 20' C.M.P. - RT.	1
117+40	24" X 33' R.C.P. - LT.	1
119+09	18" X 24' R.C.P.- RT.	1
119+13	18" X 58' C.P.P. - LT.	1
120+54	18" X 26' R.C.P.- RT.	1
121+65	18" X 20' C.M.P. - LT.	1
TOTALS:		**10**

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

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED NO.	TOTAL SIGNS REQUIRED SQ. FT.	VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III) RIGHT	BARRICADES (TYPE III) LEFT
			LIN. FT. - EACH					EACH		LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	32.0				
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	32.0				
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0				
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	32.0				
G20-2	END ROAD WORK	48"x24"	4	4	4	4	32.0				
R11-2	ROAD CLOSED	48"x30"	2	2	2	2	20.0				
R4-1	DO NOT PASS	24"x30"	4	4	4	4	20.0				
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	5	5	5	5	45.0				
W8-1	BUMP	30"x30"	2	2	2	2	12.5				
W8-9a	SHOULDER DROP-OFF	36"X36"	4	4	4	4	36.0				
	VERTICAL PANELS		15		15			15			
	TRAFFIC DRUMS		59	55	59				59		
	TYPE III BARRICADE-RT. (16')		2	2	2					32	
	TYPE III BARRICADE-LT. (16')		2	2	2						32
TOTALS:							**325.5**	**15**	**59**	**32**	**32**

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE LIN. FT.
116+48	116+91	HWY. 59 RT.	106
119+53	121+32	HWY. 59 RT.	185
TOTALS:			**291**

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CONCRETE DRIVEWAYS	WALKS	SIGN FOUNDATIONS	GUARDRAIL	BUILDINGS	STORM CELLAR	SIGNS
			SQ. YD.	SQ. YD.	EACH	LIN. FT.	EACH	EACH	EACH
102+19	103+40	HWY. 59 RT.					2		
103+00		HWY. 59 RT.			1				1
110+80	111+20	HWY. 59 RT.					1		
110+92	111+90	HWY. 59 LT.					2		
110+85	111+97	HWY. 59 LT.		165					
112+10	114+68	HWY. 59 LT.				275			
112+25		HWY. 59 RT.						1	
118+85	119+37	HWY. 59 LT.	277						
TOTALS:			**277**	**165**	**1**	**275**	**5**	**1**	**1**

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.

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn
PLOTTED: 3/4/2025 08:30
SCALE: ii2

QUANTITIES

G:\23102300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn 3/4/2025 08:30

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	21	47
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL										
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	PIPE FOR SLOPE DRAINS SLOPE DRAIN (E-12)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING									418	48	1216					80
ENTIRE	PROJECT	STAGE 1	5.68	11.36	5.68	579.4	5.68	4.74	4.74	96.7	220	30		789	109	462		482
ENTIRE	PROJECT	STAGE 2	3.15	6.30	3.15	321.3	3.15	3.15	3.15	64.3	44	12					462	6
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			2.21	4.42	2.21	80.3	2.21	1.97	1.97	40.2	176	30	304	197	27	116	116	142
TOTALS:			**11.04**	**22.08**	**11.04**	**981.0**	**11.04**	**9.86**	**9.86**	**201.2**	**858**	**120**	**1520**	**986**	**136**	**578**	**578**	**710**

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.

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE	100
		DIRECTED BY THE ENGINEER	
TOTAL:			**100**

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

4" PIPE UNDERDRAIN

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

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
101+00	121+00	HWY. 59	20	20
TOTALS:			**20**	**20**

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
ENTIRE	PROJECT	STAGE 1-MAIN LANES	108897	1277
ENTIRE	PROJECT	STAGE 2-MAIN LANES	1007	271
ENTIRE	PROJECT	E. NORTHBROOK DR.	675	5
ENTIRE	PROJECT	APPROACHES	470	675
ENTIRE	PROJECT	TEMPORARY APPROACHES	15	75
ENTIRE	PROJECT	PAVEMENT OBLITERATION	924	
		CHANNEL CHANGE	25	
TOTALS:			**112013**	**2303**

PRESPLITTING

STATION	STATION	LOCATION	PRESPLITTING
			SQ. YD.
107+16	115+18	HWY. 59 RT.	2098
TOTAL:			**2098**

DUMPED RIPRAP AND FILTER BLANKET

	STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
			CU. YD.	SQ. YD.
	104+07	OUTLET OF PIPE CULVERT	5	10
	109+55	OUTLET OF PIPE CULVERT	20	40
*		TO BE USED IF AND WHERE	5	10
		DIRECTED BY THE ENGINEER		
	TOTALS:		**30**	**60**

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

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
		EACH
ENTIRE PROJECT	4	4
TOTALS:	**4**	**4**

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn
PLOTTED: 3/4/2025 08:30 SCALE: 1:2
G:\23102300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn 3/4/2025 08:30

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	22	47
		QUANTITIES				

FENCING

STATION	STATION	LOCATION	* 4' CHAIN LINK FENCE	* 16'-0" GATES
			LIN. FT.	EACH
116+75	116+90	HWY. 59 RT.	18	
119+56	121+32	HWY. 59 RT.	175	1
TOTALS:			193	1

* DENOTES ALTERNATE BID ITEM.

SOIL LOG

STATION	LOCATION	DEPTH	ROCK TYPE
		FEET	
110+00	HWY. 59 - 60' RT.	12.9	SANDSTONE
110+00	HWY. 59 - 60' RT.	24.9	SANDSTONE
110+00	HWY. 59 - 60' RT.	43.7	SHALE
112+00	HWY. 59 - 60' RT.	7.2	SANDSTONE
113+00	HWY. 59 - 60' RT.	1.3	SANDSTONE
113+00	HWY. 59 - 60' RT.	22	SANDSTONE

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.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
100+00	122+00	HWY. 59	3410
TOTAL:			3410

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
104+45.00	107+10.00	HWY. 59 LT.	265.00	235.56
121+00.00	121+47.00	HWY. 59 LT.	47.00	41.78
TOTAL:				277.34

NOTE: AVERAGE WIDTH = 8'-0"

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	CONC. DITCH PAVING (TYPE SPECIAL)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.		SQ. YD.	M. GAL.
100+00.00	100+11.00	HWY. 59 LT.	11.00	6.00	7.33		4.89	0.06
100+00.00	103+45.00	HWY. 59 RT.	345.00	6.00	230.00		153.33	1.93
100+50.00	100+73.00	HWY. 59 LT.	23.00	6.00	15.33		10.22	0.13
101+08.00	103+45.00	HWY. 59 LT.	237.00	6.00	158.00		105.33	1.33
103+88.00	116+37.00	HWY. 59 RT.	1249.00	6.00	832.67		555.11	6.99
110+27.00	110+43.00	HWY. 59 RT. SPECIAL	16.00			10.67	7.11	0.09
115+05.00	115+32.00	HWY. 59 RT. SPECIAL	27.00			18.00	12.00	0.15
116+83.00	117+22.00	HWY. 59 RT.	39.00	6.00	26.00		17.33	0.22
117+68.00	118+89.00	HWY. 59 RT.	121.00	6.00	80.67		53.78	0.68
119+24.00	120+35.00	HWY. 59 RT.	111.00	6.00	74.00		49.33	0.62
120+69.00	122+00.00	HWY. 59 RT.	131.00	6.00	87.33		58.22	0.73
TOTALS:					1511.33	28.67	1026.65	12.93

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

TOPSOIL FURNISHED AND PLACED

STATION	STATION	LOCATION	TOPSOIL FURNISHED AND PLACED
			CU. YDS.
104+45	111+40	HWY. 59 LT.	398
111+80	115+97	HWY. 59 LT.	288
TOTAL:			686

PLACE TOPSOIL AT A UNIFORM THICKNESS OF 6 INCHES OR AS DIRECTED BY THE ENGINEER.

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 24"	(CLASS IV) 30"	(CLASS V) 36"X23"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 24"	30"	36"X23"	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			EACH			SQ.YD.	M.GAL.	
104+07	24" X 112' R.C. PIPE CULVERT 10° LT. FWD. SKEW W/ FES LT. & RT.	112			2			16	0.20	FES-1, FES-2, PCC-1
110+27	30" X 72' R.C. PIPE CULVERT 15° RT. FWD. SKEW W/ FES LT. & RT.		72			2		26	0.33	FES-1, FES-2, PCC-1
114+98	DBL. 36" X 23" X 80' R.C. ARCH PIPE CULVERT 30° RT. FWD. SKEW W/ FES LT. & RT.			160			4	36	0.45	FES-1, FES-2, PCC-1
TOTALS:		112	72	160	2	2	4	78	0.98	

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.

SELECTED PIPE BEDDING

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

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE	100
DIRECTED BY THE ENGINEER	
TOTAL:	100

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	50	100
DIRECTED BY THE ENGINEER		
TOTALS:	50	100

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+00.00	101+00.00	MAIN LANES	24.00	266.67
121+00.00	122+00.00	MAIN LANES	24.00	266.67
TOTAL:				533.34

NOTE: COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE LOCATIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

QUANTITIES

USER: lm5327
DESIGN FILE: G:\23I02300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn
PLOTTED: 3/4/2025 08:30
SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	23	47
		QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-4-2025

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	PORTLAND CEMENT CONCRETE DRIVEWAY	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
								18"	22"X14"	
			FEET	SQ. YD.	SQ. YD.	TON	TON	LIN. FT.		
100+35	LT	HWY. 59	18		35.62	3.92	46.29	40		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
100+95	LT	HWY. 59	16		24.73	2.72	45.24	36		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
103+62	LT	HWY. 59	16		24.73	2.72	45.07			
103+66	RT	HWY. 59	20		318.86	35.07	130.20			
103+99	LT	HWY. 59	24		35.40	3.89	75.21			
104+37	LT	HWY. 59	16		24.73	2.72	59.73	50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
111+60	LT	HWY. 59	16		24.73	2.72	188.71	40		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
116+63	RT	HWY. 59	16		24.73	2.72	111.09			
117+09	LT	HWY. 59	16		99.50	10.95	40.63			
117+48	RT	HWY. 59	16		24.73	2.72	97.06			
119+09	RT	HWY. 59	16		24.73	2.72	46.56			
119+13	LT	HWY. 59	30	283.80						
120+54	RT	HWY. 59	16		24.73	2.72	28.91			
121+65	LT	HWY. 59	16		34.81	3.83	31.46		20	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
* ENTIRE PROJECT TEMPORARY DRIVES					30.00	3.30	12.25			
TOTALS:				**283.80**	**752.03**	**82.72**	**958.41**	**166**	**20**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.0% MIN. AGGR.....6.0% ASPHALT BINDER

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

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.

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
						TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON														
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
100+00.00	101+00.00	TRANSITION	100.00						24.00	266.67	45.33	45.33	12.17	135.22	495.00	33.47	12.17	135.22	220.00	14.87	35.63	395.89	220.00	43.55	58.42
101+00.00	103+46.71	HWY. 59 NOTCH AND WIDEN	246.71	VAR.	562.50	56.56	1550.44	77.52				77.52	28.28	775.22	495.00	191.87	28.28	775.22	220.00	85.27	40.00	1096.49	220.00	120.61	205.88
103+46.71	117+53.20	HWY. 59 FULL DEPTH	1406.49	294.25	4138.60	80.77	12622.47	631.12				631.12	40.52	6332.33	495.00	1567.25	40.25	6290.14	220.00	691.92	40.00	6251.07	220.00	687.62	1379.54
117+53.20	121+00.00	HWY. 59 NOTCH AND WIDEN	346.80	VAR.	790.70	53.12	2046.89	102.34				102.34	26.56	1023.45	495.00	253.30	26.56	1023.45	220.00	112.58	40.00	1541.33	220.00	169.55	282.13
121+00.00	122+00.00	TRANSITION	100.00						24.00	266.67	45.33	45.33	12.15	135.00	495.00	33.41	12.15	135.00	220.00	14.85	35.65	396.11	220.00	43.57	58.42
ADDITIONAL FOR LEVELING																									
101+00.00	103+94.34	HWY. 59 NOTCH AND WIDEN	294.34			8.37	273.74	13.69				13.69									8.37	273.74	220.00	30.11	30.11
117+11.54	119+00.00	HWY. 59 NOTCH AND WIDEN	188.46			14.59	305.51	15.28				15.28					14.59	305.51	220.00	33.61	14.59	305.51	220.00	33.61	67.22
119+00.00	120+00.00	HWY. 59 NOTCH AND WIDEN	100.00			24.00	266.67	13.33				13.33					24.00	266.67	220.00	29.33	24.00	266.67	220.00	29.33	58.66
120+00.00	121+00.00	HWY. 59 NOTCH AND WIDEN	100.00			20.88	232.00	11.60	20.88	232.00	39.44	51.04									20.45	227.22	220.00	24.99	24.99
ADDITIONAL FOR RAISING THE GRADE																									
103+25.00	103+94.34	HWY. 59 NOTCH AND WIDEN	69.34			5.00	38.52	1.93	5.00	38.52	6.55	8.48	5.00	38.52	220.00	4.24									
117+11.54	120+00.00	HWY. 59 NOTCH AND WIDEN	288.46			VAR.	320.51	16.03	VAR.	320.51	54.49	70.52	VAR.	320.51	440.00	70.51									
ADDITIONAL FOR SUPERELEVATION																									
111+16.53	114+16.53	HWY. 59 SUPER TRANSITION	300.00	73.00	219.00																				
114+16.53	117+80.00	HWY. 59 MAX SUPER	363.47	145.75	529.76																				
117+80.00	120+80.00	HWY. 59 SUPER TRANSITION	300.00	73.00	219.00																				
120+80.00	122+00.00	HWY. 59 SUPER TRANSITION	120.00	15.70	18.84																				
TOTALS:					**6478.40**		**17656.75**	**882.84**		**1124.37**	**191.14**	**1073.98**		**9401.27**		**2154.05**		**8931.21**		**982.43**		**10754.03**		**1182.94**	**2165.37**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.0% MIN. AGGR.....6.0% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
	07/15/2025	6	ARK.	040885	24	47
		SUMMARY OF QUANTITIES AND REVISIONS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
07-15-2025
JEROME PAUL DAVIS

SUMMARY OF QUANTITIES (1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	20	STATION
201	GRUBBING	20	STATION
202	REMOVAL AND DISPOSAL OF FENCE	291	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	277	SQ. YD.
202	REMOVAL AND DISPOSAL OF WALKS	165	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	10	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	275	LIN. FT.
202	REMOVAL AND DISPOSAL OF BUILDINGS	5	EACH
202	REMOVAL AND DISPOSAL OF STORM CELLAR	1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	1	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION	112013	CU. YD.
210	PRESPLITTING	2098	SQ. YD.
SP & 210	COMPACTED EMBANKMENT	2303	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	7437	TON
SS & 401	TACK COAT	1174	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	2059	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	95	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	2113	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	135	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	533	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	50	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
SP, SS, & 505	PORTLAND CEMENT CONCRETE DRIVEWAY	283.8	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	326	SQ. FT.
SS & 604	BARRICADES	64	LIN. FT.
SS & 604	TRAFFIC DRUMS	59	EACH
604	CONSTRUCTION PAVEMENT MARKINGS	18700	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	12130	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	9900	LIN. FT.
SS & 604	VERTICAL PANELS	15	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	1511	SQ. YD.
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE SPECIAL)	29	SQ. YD.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	112	LIN. FT.
SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	72	LIN. FT.
SS & 606	36" X 23" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	160	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	166	LIN. FT.
SS & 606	22" X 14" SIDE DRAIN	20	LIN. FT.
SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
SS & 606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
SS & 606	36" X 23" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS	4	EACH
SS & 606	SELECTED PIPE BEDDING	50	CU. YD.
SS & 611	4" PIPE UNDERDRAINS	1000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	4	EACH
* SS & 619	4' STEEL CHAIN LINK FENCE (ALTERNATE NO. 1)	193	LIN. FT.
* SS & 619	4' ALUMINUM CHAIN LINK FENCE (ALTERNATE NO. 2)	193	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	1	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	EACH

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES (2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
620	LIME	22	TON
620	SEEDING	11.04	ACRE
SS & 620	MULCH COVER	20.90	ACRE
620	WATER	1196.1	M. GAL.
621	TEMPORARY SEEDING	9.86	ACRE
621	SILT FENCE	1520	LIN. FT.
621	SAND BAG DITCH CHECKS	858	BAG
621	DIVERSION DITCH	986	LIN. FT.
621	SEDIMENT BASIN	578	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	578	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	710	CU. YD.
621	PIPE FOR SLOPE DRAINS	136	LIN. FT.
621	ROCK DITCH CHECKS	120	CU. YD.
623	SECOND SEEDING APPLICATION	11.04	ACRE
624	SOLID SODDING	1105	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	277	SQ. YD.
628	TOPSOIL FURNISHED AND PLACED	686	CU. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	4	EACH
SS & 637	MAILBOX SUPPORTS (SINGLE)	4	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	3410	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	4350	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	4350	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	28	EACH
SS & 816	FILTER BLANKET	60	SQ. YD.
SS & 816	DUMPED RIPRAP	30	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
7/15/2025	REVISED THE PLAN SHEET TO INCLUDE A NOTE FOR THE RESTRAINING CONDITION. CORRECTED THE RESTRAINING CONDITIONS SPECIAL PROVISIONS TO INCLUDE THE CORRECT EXHIBITS AND VERBIAGE.	24, 27, & 29

USER: lm5327
DESIGN FILE: G:\23\02300_040885\TRANSP\dgn\quantities\r040885 Quantities.dgn
PLOTTED: 7/16/2025 10:27
SCALE: 1:2

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	25	47
		SURVEY CONTROL DETAILS				

APPROXIMATE MIDPOINT:
LAT: N 35°29'23"
LON: W 94°21'23"

SURVEY CONTROL COORDINATES

Project Name: s040885
Date: 3/1/2023
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	426746.5991	611050.0242	0.000	CTL	*ARDOT STD. MON. STAMPED PN: 1
2	427315.1241	611115.6652	589.332	CTL	*ARDOT STD. MON. STAMPED PN: 2
3	428121.2893	611145.6564	627.444	CTL	*ARDOT STD. MON. STAMPED PN: 3
4	428626.6513	611054.4770	661.527	CTL	*ARDOT STD. MON. STAMPED PN: 4
5	429432.6899	610746.1118	705.048	CTL	*ARDOT STD. MON. STAMPED PN: 5
6	429959.4976	610830.8684	733.223	CTL	*ARDOT STD. MON. STAMPED PN: 6
7	430683.5489	610993.1565	759.177	CTL	*ARDOT STD. MON. STAMPED PN: 7
8	431163.6867	611037.8222	759.825	CTL	*ARDOT STD. MON. STAMPED PN: 8
9	431857.9368	611184.6059	739.204	CTL	*ARDOT STD. MON. STAMPED PN: 9
100	425148.6620	611041.4334	611.014	GPS	*ARDOT GPS #170038
101	426137.0429	611001.5958	563.362	GPS	*ARDOT GPS #170038A
102	433870.4622	610816.2696	775.601	GPS	*ARDOT GPS #170039
103	435255.6064	611510.1596	769.283	GPS	*ARDOT GPS #170039A
900	426743.6017	611043.0548	559.040	TBM	*2X2 CHISELED SQUARE ON S END CO
901	431765.0371	611143.6493	736.689	TBM	*2X2 CHISELED SQUARE ON HW
902	433161.5818	611387.1456	743.623	TBM	*2X2 CHISELED SQUARE ON SE CRNR
903	418890.6269	610734.0268	509.340	TBM	*ALUMINUM BM CAP
904	421216.4610	610845.0570	490.600	TBM	*ALUMINUM BM CAP
905	424100.0791	610991.9485	566.680	TBM	*2X2 CHISELED SQUARE ON HEADWALL

*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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999917311472 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 s040885gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 170038 - 170038A & 170039 - 170039A
CONVERGENCE ANGLE: 01-22'17.94" LEFT AT AT N 35-29'23.95" LON W 94-21'25.90"
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

Alignment Name: CL Const. Hwy. 59				
8000	P.O.B.	100+00.00	428294.2844	611107.7849
8001	P.C.	113+41.53	429621.0407	610909.2638
8003	P.T.	120+44.60	430319.7091	610934.1030
8004	P.C.	122+62.06	430531.9449	610981.4741
8006	P.T.	126+87.06	430952.0732	611043.0056
8007	P.O.E.	128+00.00	431064.7291	611051.0457

Alignment Name: CL Const. E. Northbrook Dr.				
8008	P.O.B.	10+00.00	428656.2548	611053.6237
8009	P.C.	10+49.50	428663.5800	611102.5798
8011	P.T.	11+42.48	428666.0672	611195.2943
8012	P.O.E.	12+00.00	428660.6176	611252.5546

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\survey_ctl\r040885_sc_hwy-59.dgn
PLOTTED: 3/3/2025 15:14 SCALE: 1:100

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	26	47
		SURVEY CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

100

P.O.B. 100+00.00

8000

SURVEY BASELINE N 10°13'39" W
513.52'

PN:3
PD:ARDOT STD. MON. STAMPED PN:3

SURVEY BASELINE N 02°07'50" E
806.72'

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
△ = 90°00'00"

105

PN:4
PD:ARDOT STD. MON. STAMPED PN:4

P.O.B. 10+00.00

8008

N81°29'24"E
49.50'

8009

P.C. 10+49.50

P.I. 10+96.22

S84°33'48"E
46.72'

N81°29'24"E
46.72'

8011

S84°33'48"E
57.52'

P.T. 11+42.48

STA. 11+48.03
END CONSTRUCTION
℄ E. NORTHBROOK DR.

8012

P.O.E. 12+00.00

C.L. E. NORTHBROOK DR.
PI = 10+96.22
△ = 13°56'48" RT.
D = 15°00'00"
T = 46.72'
L = 92.98'
PC = 10+49.50
PT = 11+42.48
NO SUPER

N8°30'36"W
1341.53'

℄ HWY. 59

SURVEY BASELINE N 20°56'07" W
863.01'

110

PN:5
PD:ARDOT STD. MON. STAMPED PN:5

SURVEY BASELINE N 09°08'23" E
533.58'

P.C. 113+41.53

8001

C.L. HWY. 59
PI = 116+97.09
△ = 21°05'32" RT.
D = 3°00'00"
T = 355.56'
L = 703.07'
PC = 113+41.53
PT = 120+44.60
e = 0.068'/'
Ls = 300'

115

P.C. 113+41.53

SURVEY BASELINE N 09°08'23" E
533.58'

P.I. 116+97.09

PN:6
PD:ARDOT STD. MON. STAMPED PN:6

N08°30'36"W
355.56'

℄ HWY. 59

N12°34'56"E
355.56'

8001

C.L. HWY. 59
PI = 116+97.09
△ = 21°05'32" RT.
D = 3°00'00"
T = 355.56'
L = 703.07'
PC = 113+41.53
PT = 120+44.60
e = 0.068'/'
Ls = 300'

120

SURVEY BASELINE N 12°38'00" E
742.02'

8003

P.T. 120+44.60

STA. 121+00.00
END JOB 040885

P.C. 122+62.06

N12°34'56"E
217.46'

8004

125

PN:7
PD:ARDOT STD. MON. STAMPED PN:7

N12°34'56"E
425.00'

P.I. 124+74.95

N4°04'56"E
425.00'

SURVEY BASELINE N 05°18'53" E
482.21'

8006

P.T. 126+87.06

N4°04'56"E
112.94'

8007

P.O.E. 128+00.00

C.L. HWY. 59 EXIST.
PI = 124+74.95
△ = 08°30'00" RT.
D = 2°00'00"
T = 212.89'
L = 425.00'
PC = 122+62.06
PT = 126+87.06
e = 0.048'/'
Ls = 300'

SURVEY CONTROL DETAILS

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\survey_ctl\r040885_sc_hwy-59.dgn
PLOTTED: 3/3/2025 15:14
SCALE: 1:100

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
	07/15/2025	6	ARK.	040885	27	47
		PLAN AND PROFILE SHEETS				

STA. 100+35 IN PLACE
18" X 24' CMP
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 100+95 IN PLACE
18" X 20' CMP
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 36' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 103+62 CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

STA. 103+99 CONSTRUCT
APPROACH ON LT. = 10 CU. YDS.

STA. 104+07 IN PLACE
24" X 76' R.C.
PIPE CULVERT W/ HDWL. RT.
REMOVE AND CONSTRUCT
24" X 112' R.C. PIPE CULVERT
10° LT. FWD. SKEW
(CLASS III (TYPE 3 BEDDING)
W/ FES LT. & RT.
Q50 = 20 CFS, D.A. = 10.6 AC.
DUMPED RIPRAP = 5 CU. YDS.

STA. 104+37 INSTALL
18" X 50' PIPE CULVERT
LT. SIDE DRAIN
SKEWED TO CROSSROAD OUTLET
CONSTRUCT APPROACH = 10 CU. YDS.

STA. 109+55 IN PLACE
30" X 83' CMP
PIPE CULVERT 140' LT. CROSS DRAIN
RETAIN

STA. 110+27 CONSTRUCT
30" X 72' R.C. PIPE CULVERT
15° RT. FWD. SKEW
(CLASS IV) (TYPE 3 BEDDING)
W/ FES LT. AND RT.
Q50 = 21 CFS, D.A. = 8.2 AC.
CHANNEL CHANGE = 15 CU. YDS.

STA. 111+60 INSTALL
18" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 260 CU. YDS.

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
100+00	100+11	HWY. 59 LT.	B	6'-0"	7
100+00	103+45	HWY. 59 RT.	B	6'-0"	230
100+50	100+73	HWY. 59 LT.	B	6'-0"	16
101+08	103+45	HWY. 59 LT.	B	6'-0"	158
103+88	116+37	HWY. 59 RT.	B	6'-0"	833
110+27	110+43	HWY. 59 RT.	SPECIAL		11

OBLITERATE PAVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
07-15-2025

STA. 103+66.00 ℄ HWY. 59 =
STA. 10+00.00 ℄ E. NORTHBROOK DR.
△ = 90°00'00"

STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48

100

105

110

P.O.B. 10+00.00

P.O.B. 100+00.00

W. NORTHBROOK DR.

EXISTING HWY. 59

PROP. R/W

CONST. LIMITS

EXIST. R/W

℄ HWY. 59
N8°30'36"W

RESTRAINING CONDITIONS AREA BOUNDARY

4'-0" SHLD.
12'
12'
8'-0" SHLD.

GRADE TO DRAIN

100' TRANSITION

P.C. 10+49.50

P.I. 10+96.22

P.T. 11+42.48

P.O.E. 12+00.00

T.C.E.

S84°33'48"E

CONCRETE DITCH PAVING (TYPE SPECIAL)

C.L. E. NORTHBROOK DR.
PI = 10+96.22
△ = 13°56'48" RT.
D = 15°00'00"
T = 46.72'
L = 92.98'
PC = 10+49.50
PT = 11+42.48
NO SUPER

STA. 11+00 CONSTRUCT
APPROACH ON RT. = 5 CU. YDS.

STA. 103+66 CONSTRUCT
APPROACH ON RT. = 675 CU. YDS. EXC.
5 CU. YDS. EMB.

E. NORTHBROOK DR.

HWY. 59

USER: im5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\p&p\040885_PL_01.dgn
PLOTTED: 7/15/2025 16:13
SCALE: 1"=100'

G:\23102300_040885\TRANSP\dgn\p&p\040885_PL_01.dgn 7/15/2025 16:13

REFER TO SURVEY CONTROL DETAILS SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL DATA

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	28	47
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

E. NORTHBROOK DR.

EXIST. GROUND
PROFILE GRADE
PVI 10+20.00 ELEV. 663.95
PVI 10+40.00 ELEV. 663.51
PVI 10+60.00 ELEV. 665.11
PVI 10+30.00 ELEV. 663.35
PVI 10+50.00 ELEV. 664.
PVI 11+27.83 ELEV. 674.61 PVI 11+48.03 ELEV. 676.04
PVI 11+87.83 ELEV. 675.55
-4.00%
14.00%
9.80%
5.20%
0.60%
4.80%
9.40%

EXIST. GROUND
PROFILE GRADE
5.36%
3.54% RT. DI. GR.
2.88% LT. DI. GR.
7.31% RT. DI. GR.
3.57% RT. DI. GR.
110+27
FL IN = 694.93
FL OUT = 693.84
+39.00 RT. DI. 695.00
+00.00 RT. DI. 690.68
+10 LT. DI. 671.12
+00.00 RT. DI. 661.23
+45 LT. DI. 663.30
+00.00 RT. DI. 668.54
104+07
FL IN = 661.23
FL OUT = 656.91
PVT 104+00.00 ELEV. 666.38
PVI 103+00.00 ELEV. 661.00
PVC 102+00.00 ELEV. 653.94
100' TRANSITION
STA. 101+00.00
BEGIN JOB 040885
LOG MILE 23.48
PVI 101+00.00 ELEV. 646.87
PVI 100+00.00 ELEV. 639.48
7.06%
7.39%
200' V.C.
K = 119.05
e=-0.42'

STA. 100+00.00 MATCH EXISTING SUPER (APPROX. .022'/')
STA. 101+00.00 END SUPERELEVATION

STA. 111+16.53 BEGIN SUPERELEVATION
STA. 114+16.53 MAX. SUPERELEVATION (0.068'/')
STA. 117+80.00 MAX. SUPERELEVATION (0.068'/')
STA. 120+80.00 END SUPERELEVATION

HWY. 59

690 685 680 675 670 665 660 655 650
10+00 11+00 12+00
725 720 715 710 705 700 695 690 685 680 675 670 665 660 655 650 645 640 635
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

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\p&p\040885_PR_01.dgn
PLOTTED: 3/3/2025 15:14
SCALE: 1:100
MODEL: PROPOSED DESIGN

G:\23102300_040885\TRANSP\dgn\p&p\040885_PR_01.dgn 3/3/2025 15:14

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
	07/15/2025	6	ARK.	040885	29	47
		PLAN AND PROFILE SHEETS				

STA. 113+00 IN PLACE
30" X 76' R.C.
PIPE CULVERT LT. CROSS DRAIN
RETAIN

STA. 114+98 CONSTRUCT
DBL. 36" X 23" X 80' R.C. ARCH PIPE CULVERT
30° RT. FWD. SKEW
(CLASS V) (TYPE 3 BEDDING)
W/ FES LT. & RT.
Q50 = 47 CFS, D.A. = 19.3 AC.
CHANNEL CHANGE = 10 CU. YDS.

STA. 117+28 IN PLACE
12" X 32' CPP
PIPE CULVERT LT. SIDE DRAIN
RETAIN

STA. 117+09 IN PLACE
18" X 48' CMP
PIPE CULVERT LT. SIDE DRAIN
RETAIN
CONSTRUCT APPROACH = 40 CU. YDS.

STA. 117+40 IN PLACE
24" X 33' RCP
PIPE CULVERT LT. CROSS DRAIN
REMOVE

STA. 119+13 IN PLACE
18" X 58' CPP
PIPE CULVERT LT. SIDE DRAIN
REMOVE
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 121+65 IN PLACE
18" X 20' CMP
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
22" X 14" X 34' ARCH PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
Jerome P. Davis
07-15-2025

RESTRAINING CONDITIONS AREA BOUNDARY

OBLITERATE PAVEMENT

RESTRAINING CONDITIONS AREA BOUNDARY

EXIST. R/W
EXISTING HWY. 59
EXIST. R/W
CONST. LIMITS
PROP. R/W

115
120
125

P.I. 116+97.09
P.C. 113+41.53
P.T. 120+44.60
P.C. 122+62.06
P.T. 126+87.06
P.I. 124+74.95

N8°30'36"W
℄ HWY. 59
N12°34'56"E
N4°04'56"E

8'-0" SHLD.
4'-0" SHLD.
12'
16'
30'
CONCRETE DITCH PAVING (TYPE SPECIAL)
GRADE TO DRAIN
100' TRANSITION
T.C.E.

+09 +48 +13 +09 +54 +65 +00 +75 +00 +60 +80 +85 +55 +40 +30 +66 +30 +14.94 +54.64 +32.42 +00 +52.32

85' 55' 65' 40' 50' 40' 80' 43.52' 47.26' 95.44' 89.37' 80' 68.18' 40' 120'

STA. 121+00.00
END JOB 040885

C.L. HWY. 59
PI = 116+97.09
Δ = 21°05'32" RT.
D = 3°00'00"
T = 355.56'
L = 703.07'
PC = 113+41.53
PT = 120+44.60
e = 0.068'/'
Ls = 300'

C.L. HWY. 59 EXIST.
PI = 124+74.95
Δ = 08°30'00" LT.
D = 2°00'00"
T = 212.89'
L = 425.00'
PC = 122+62.06
PT = 126+87.06
e = 0.048'/'
Ls = 192'

STA. 116+55 IN PLACE
18" X 20' CMP
PIPE CULVERT RT. SIDE DRAIN
REMOVE

STA. 117+48 INSTALL
24" X 46' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 185 CU. YDS. EXC.
65 CU. YDS. EMB.

STA. 119+09 IN PLACE
18" X 24' RCP
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
24" X 36' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS. EXC.
35 CU. YDS. EMB.

STA. 120+54 IN PLACE
18" X 26' RCP
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
29" X 18" X 34' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

FENCE

STA.	STA.	SIDE	TYPE	LIN. FT.	16' GATE
116+75	116+90	RT.	4' CHAIN LINK	18	
119+56	121+32	RT.	4' CHAIN LINK	175	1

CONCRETE DITCH PAVING

STA.	STA.	SIDE	TYPE	"W"	SQ. YDS.
115+05	115+32	HWY. 59 RT.	SPECIAL		18
115+32	117+22	HWY. 59 RT.	B	6'-0"	124
117+68	118+89	HWY. 59 RT.	B	6'-0"	81
119+24	120+35	HWY. 59 RT.	B	6'-0"	74
120+69	122+00	HWY. 59 RT.	B	6'-0"	87

HWY. 59

USER: lm5327
DESIGN FILE: G:\23\02300_040885\TRANSP\dgn\p&p\040885_PL_02.dgn
PLOTTED: 7/16/2025 10:28
SCALE: 1:100

G:\23\02300_040885\TRANSP\dgn\p&p\040885_PL_02.dgn 7/16/2025 10:28

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	30	47
		PLAN AND PROFILE SHEETS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15560
JEROME PAUL DAVIS
3-3-2025

765
760
755
750
745
740
735
730
725
720
715
710
705
700
695
690

100' TRANSITION

STA. 121+00.00
END JOB 040885

PVI 121+00.00
ELEV. 748.51

PVT 117+50.00
ELEV. 736.25

PVC 114+50.00
ELEV. 722.92

PVI 116+00.00
ELEV. 731.00

EXIST. GROUND

PROFILE GRADE

5.42% RT. DT. GR.
2.59% LT. DT. GR.
3.50%
4.00% RT. DT. GR.
4.68% RT. DT. GR.
3.89% RT. DT. GR.
3.48% RT. DT. GR.
0.00% RT. DT. GR.
5.38%
3.54% RT. DT. GR.
3.57% RT. DT. GR.

+24.00 RT. DT.
737.80

+68.00 RT. DT.
743.80

+00.00 RT.
745.28

+00.00 LT. DT.
745.03

+80 LT. DT.
747.11

+49.00 RT. DT.
728.80

+68.00 RT. DT.
730.50

+16.00 RT. DT.
721.56

+23.00 RT. DT.
721.36

+39.00 RT. DT.
695.00

114+98
FL IN = 721.56
FL OUT = 721.20

300' V.C.
K = 159.57
e=-0.71'

110+27
FL IN = 694.93
FL OUT = 693.84

REFER TO SURVEY CONTROL DETAILS SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA

STA. 111+16.53 BEGIN SUPERELEVATION
STA. 114+16.53 MAX. SUPERELEVATION (0.068'/')
STA. 117+80.00 MAX. SUPERELEVATION (0.068'/')
STA. 120+80.00 END SUPERELEVATION

STA. 120+80.00 BEGIN SUPERELEVATION
STA. 122+00.00 MATCH EXISTING SUPER (APPROX. 0.030'/')

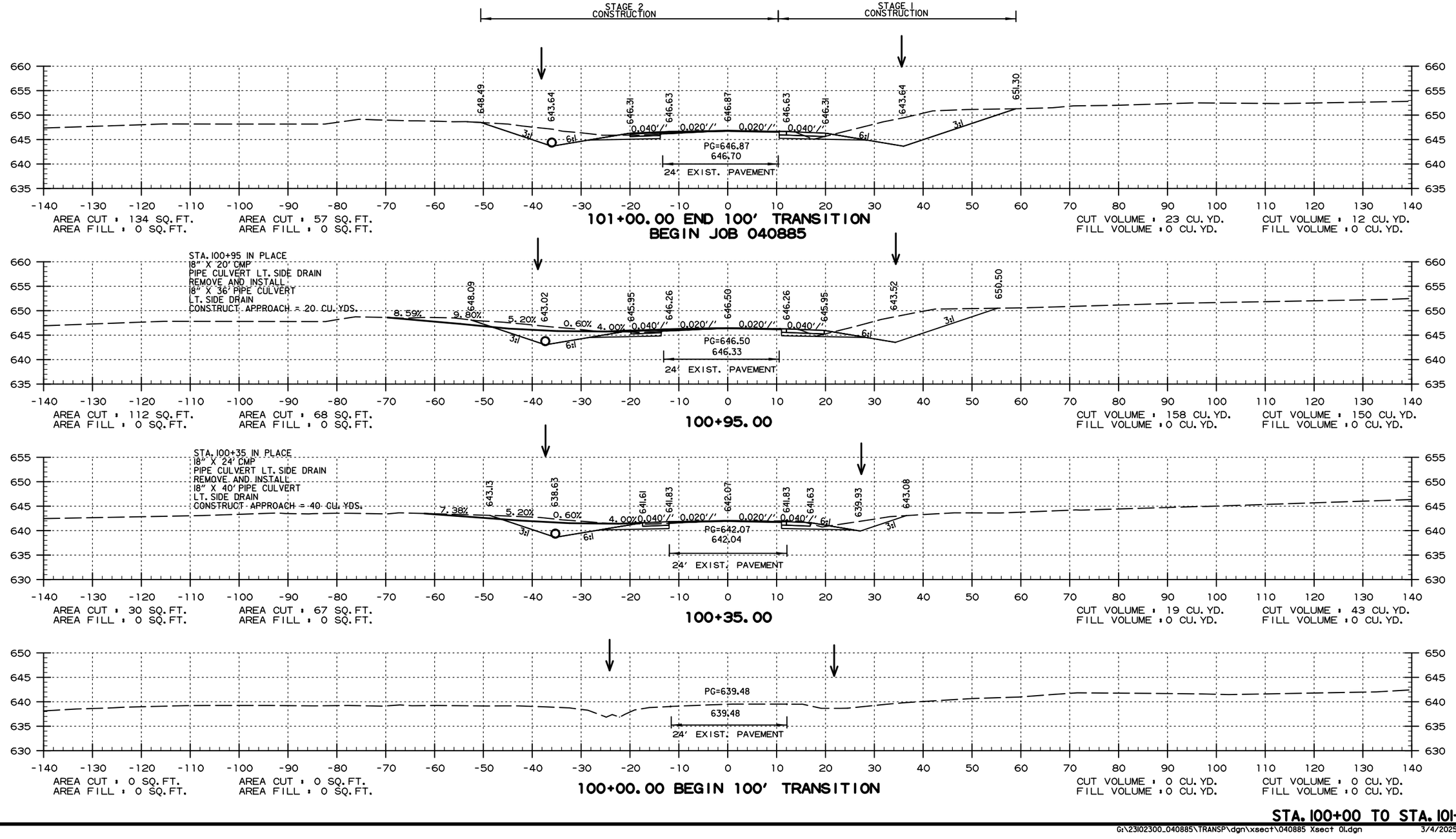
HWY. 59

109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\p&p\040885_PR_02.dgn
PLOTTED: 3/3/2025 15:14
SCALE: 1:100
MODEL: PROPOSED DESIGN

G:\23102300_040885\TRANSP\dgn\p&p\040885_PR_02.dgn 3/3/2025 15:14

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	31	47
		CROSS SECTIONS				

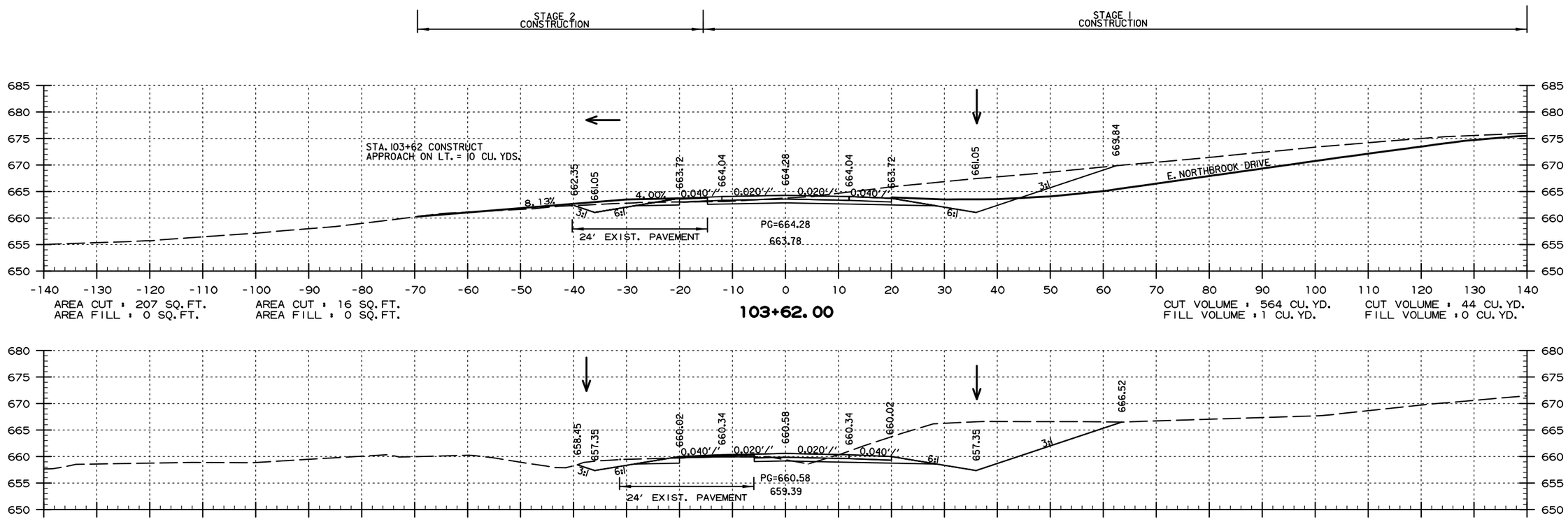


STA. 100+00 TO STA. 101+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: h:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	32	47
		CROSS SECTIONS				

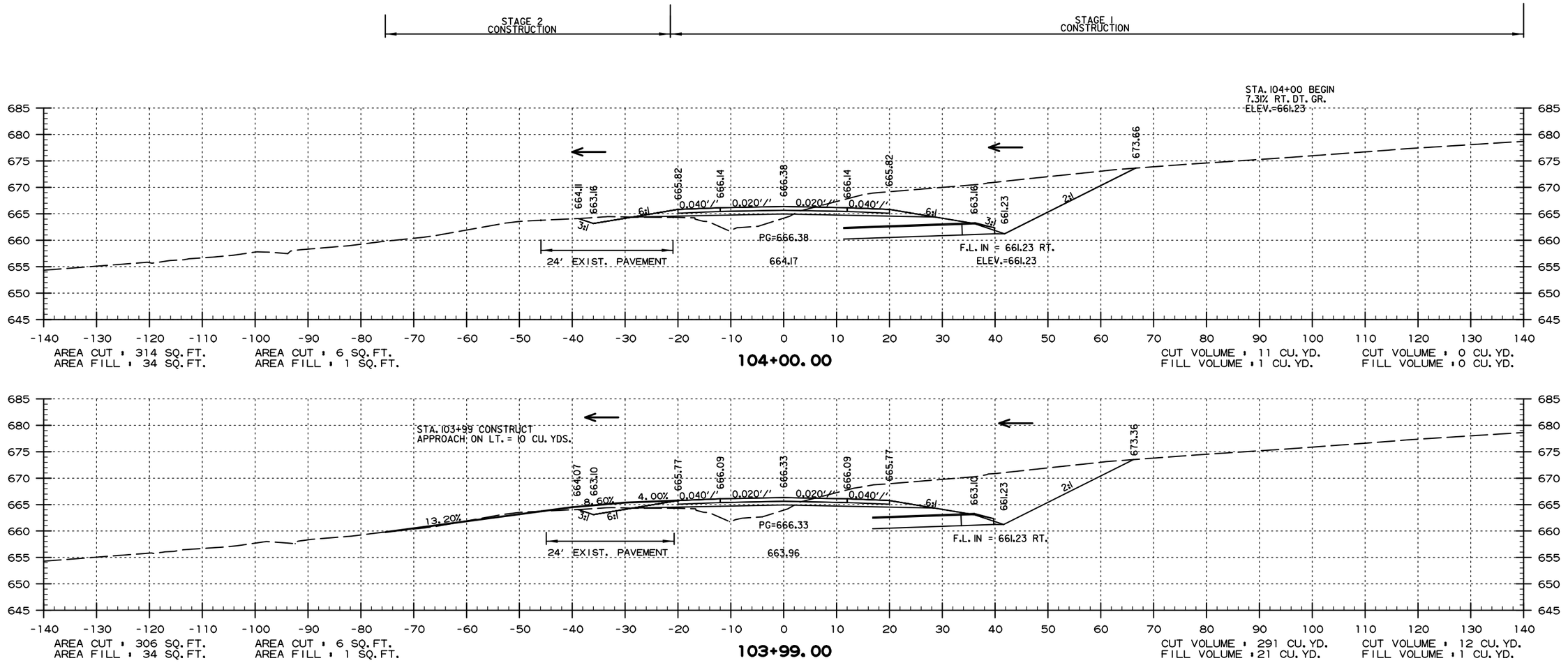


STA. 102+00 TO STA. 103+62

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn SCALE: 1:20
PLOTTED: 3/4/2025 08:31

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	33	47
		CROSS SECTIONS				

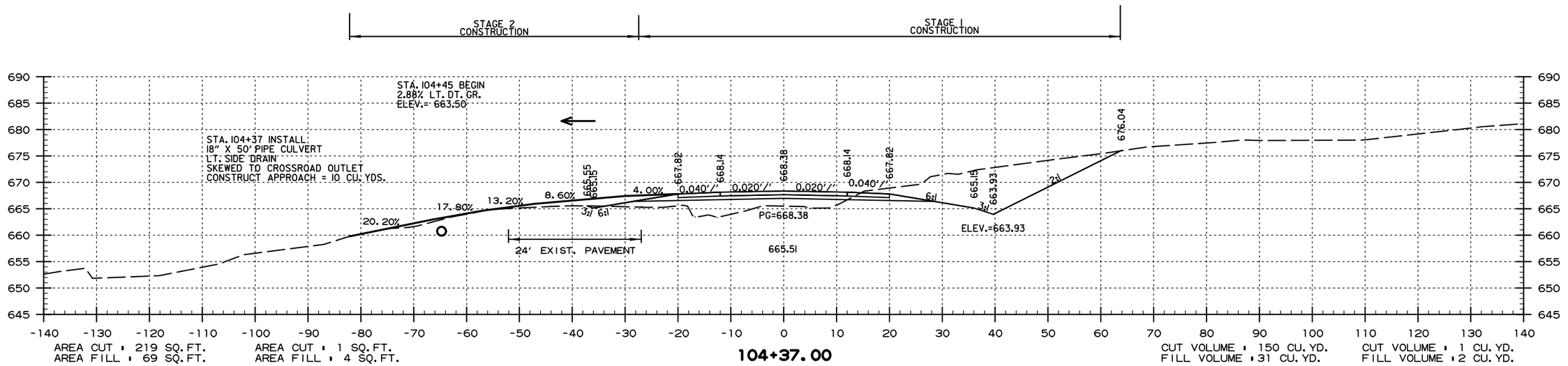


STA. 103+66 TO STA. 104+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	34	47
		CROSS SECTIONS				

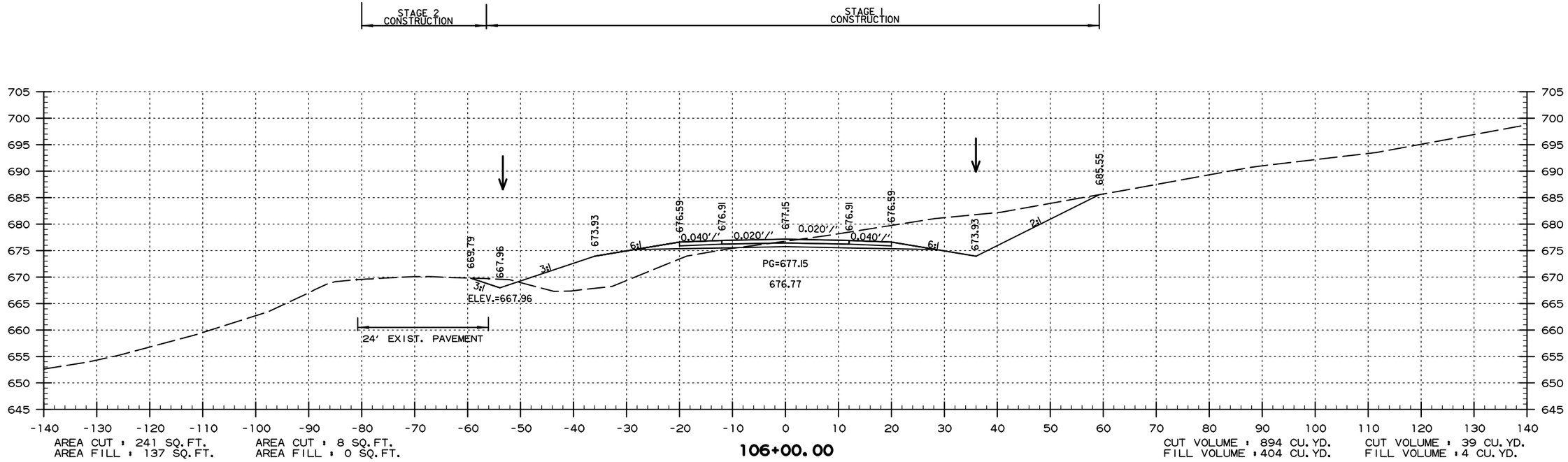


STA. 104+07 TO STA. 104+37

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: h20

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	35	47
		CROSS SECTIONS				

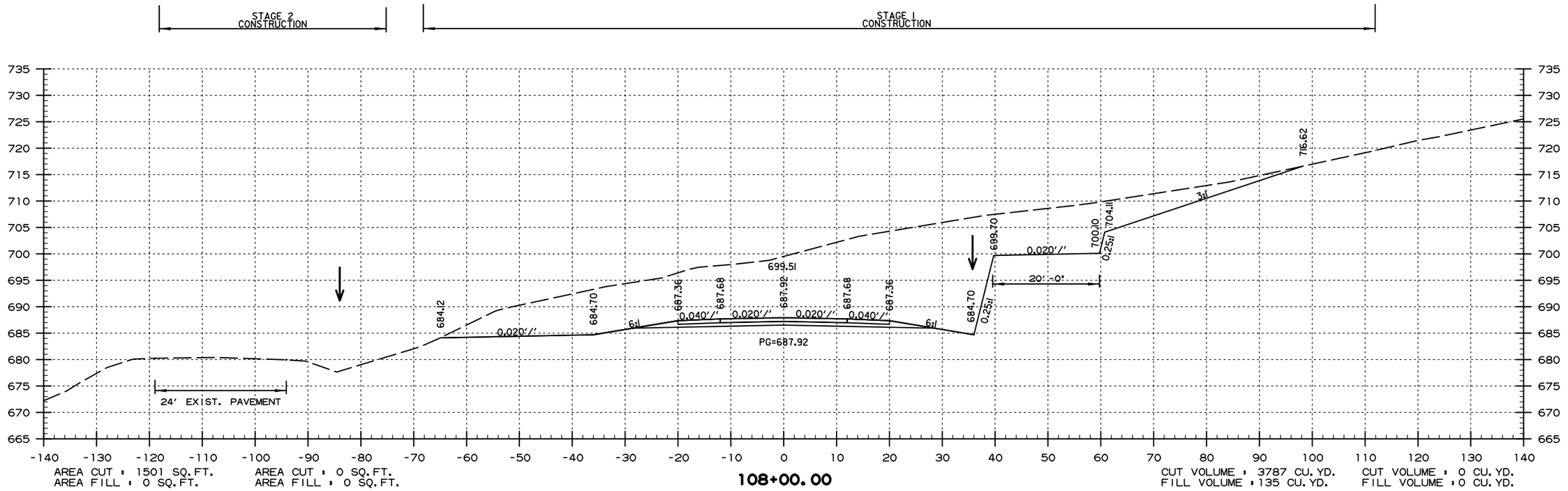


STA. 105+00 TO STA. 106+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	36	47
		CROSS SECTIONS				

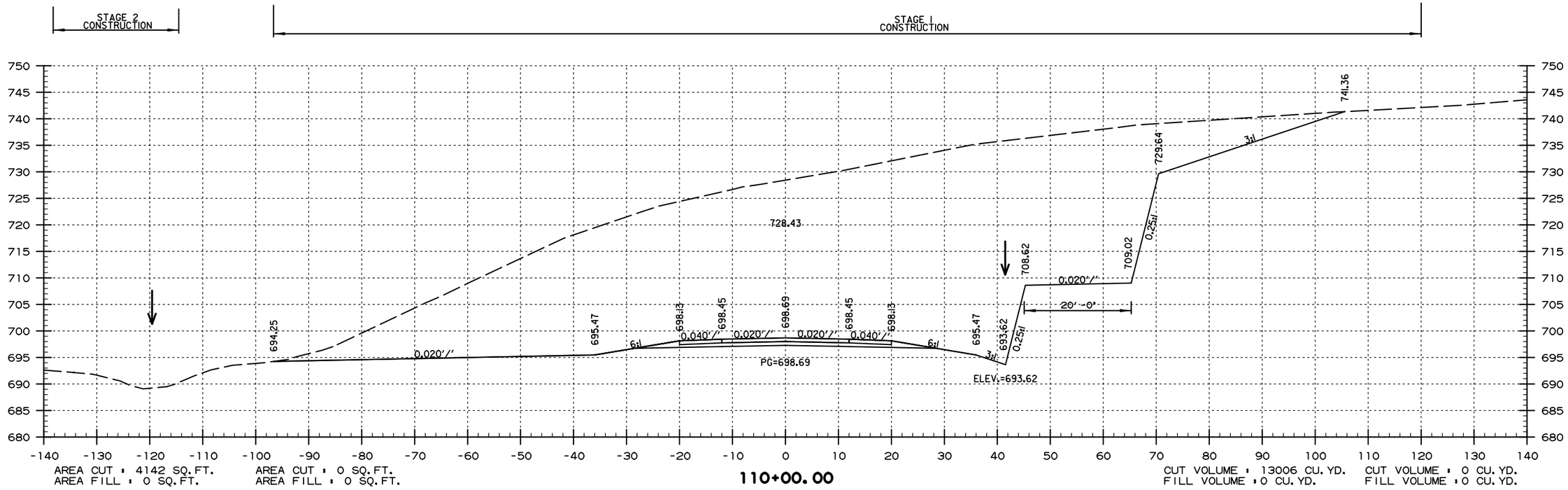


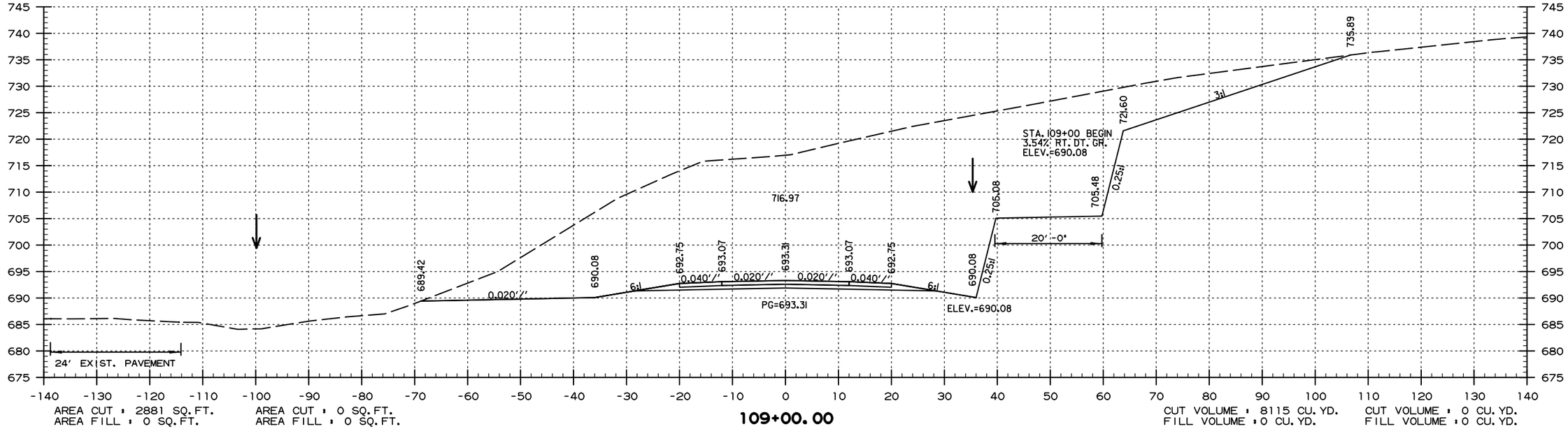
STA. 107+00 TO STA. 108+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn SCALE: 1:20
PLOTTED: 3/4/2025 08:31

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	37	47
		CROSS SECTIONS				



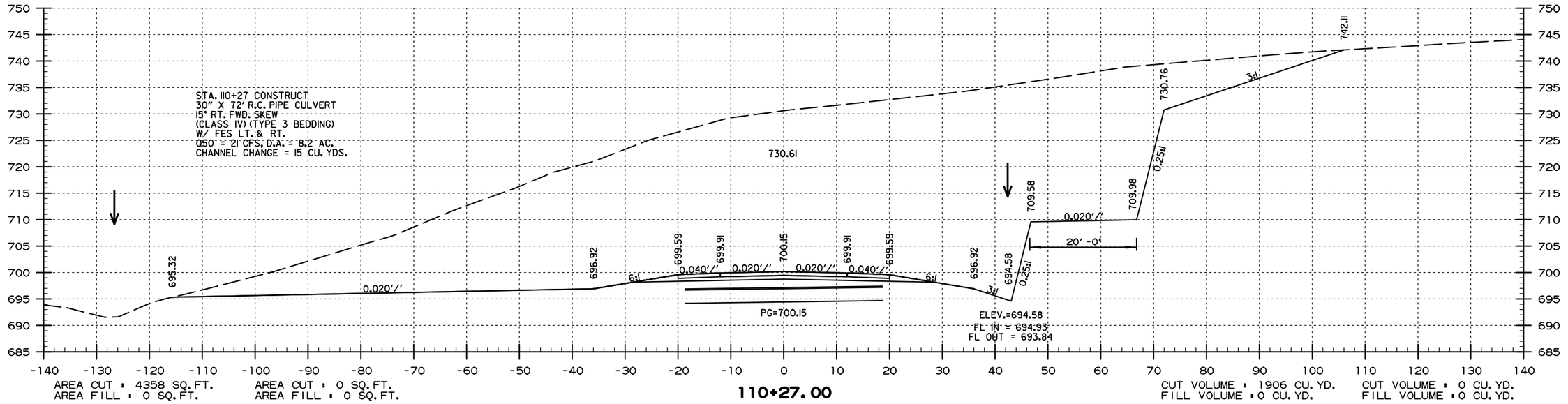


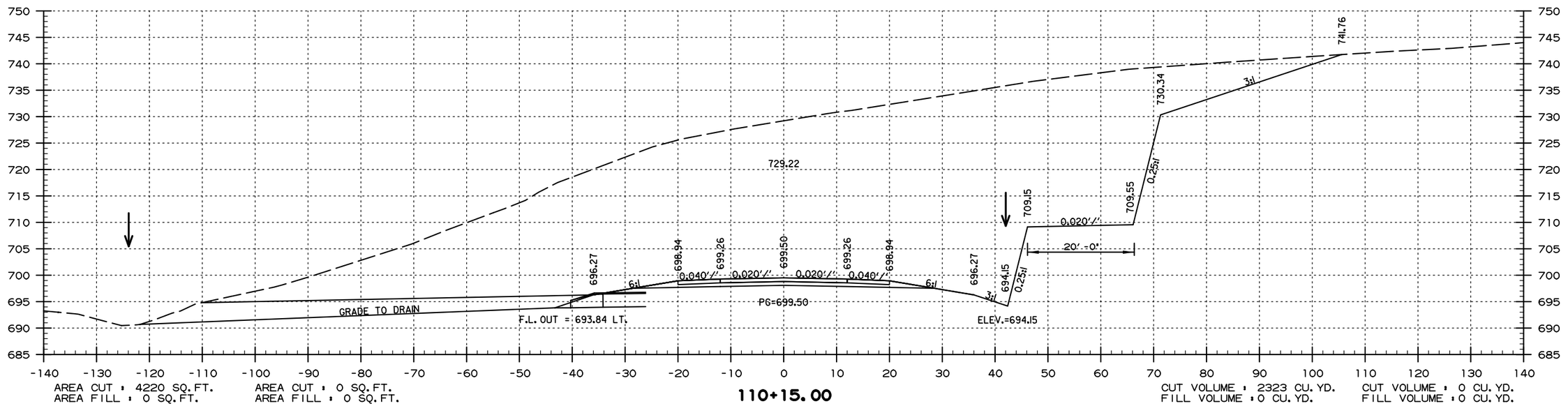
STA. 109+00 TO STA. 110+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn SCALE: 1:20
PLOTTED: 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	38	47
		CROSS SECTIONS				

STAGE I
CONSTRUCTION



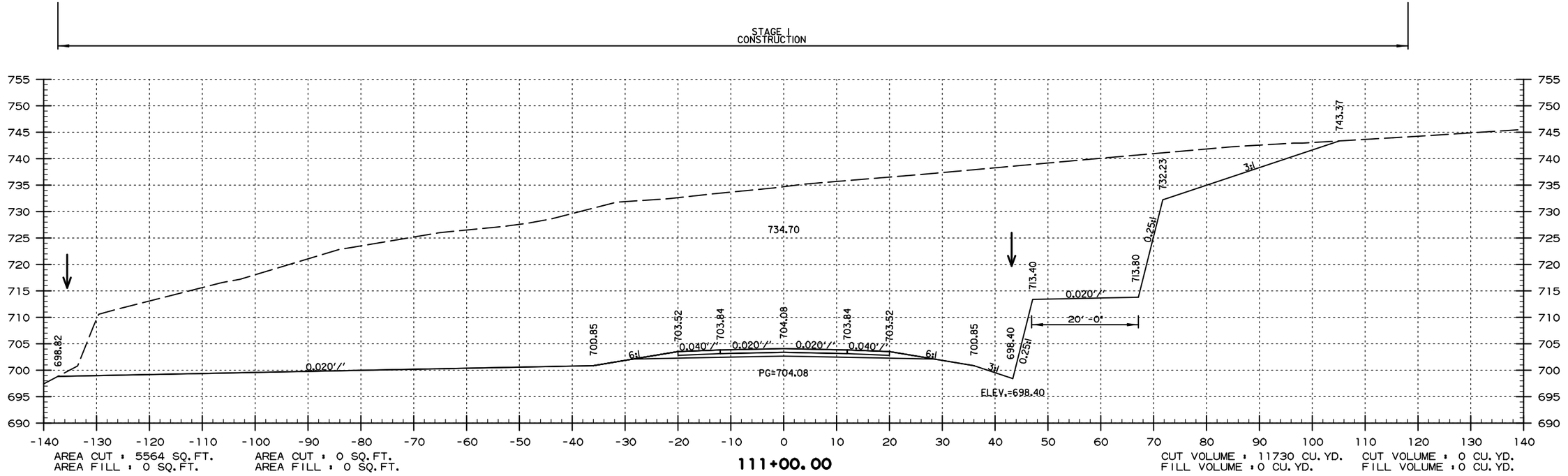


STA. 110+15 TO STA. 110+27

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: H:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

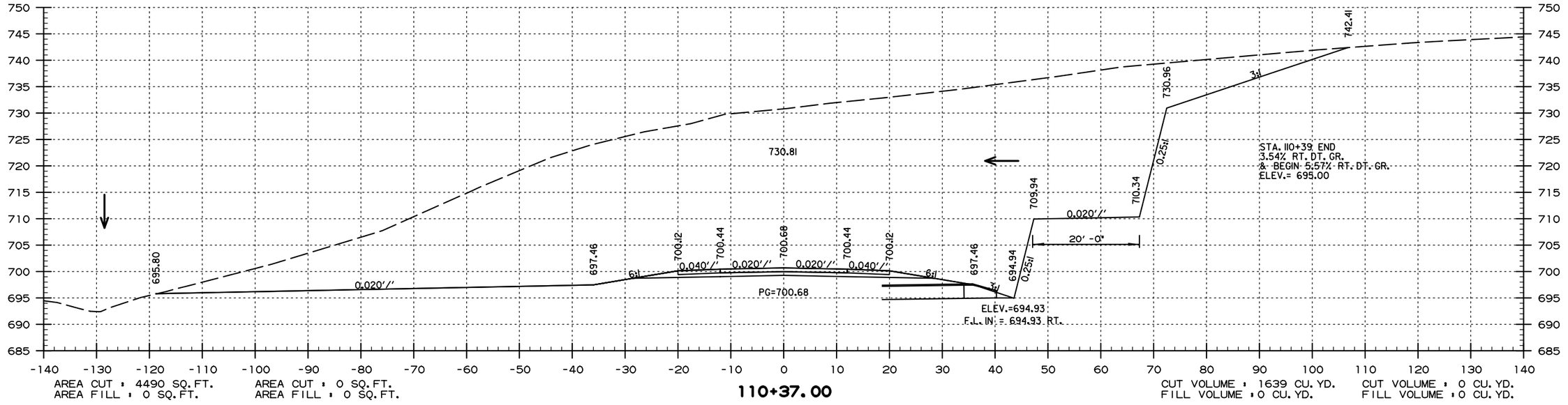
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	39	47
		CROSS SECTIONS				



AREA CUT = 5564 SQ.FT. AREA FILL = 0 SQ.FT.
AREA CUT = 0 SQ.FT. AREA FILL = 0 SQ.FT.

111+00.00

CUT VOLUME = 11730 CU.YD. FILL VOLUME = 0 CU.YD.
CUT VOLUME = 0 CU.YD. FILL VOLUME = 0 CU.YD.



AREA CUT = 4490 SQ.FT. AREA FILL = 0 SQ.FT.
AREA CUT = 0 SQ.FT. AREA FILL = 0 SQ.FT.

110+37.00

CUT VOLUME = 1639 CU.YD. FILL VOLUME = 0 CU.YD.
CUT VOLUME = 0 CU.YD. FILL VOLUME = 0 CU.YD.

STA. 110+37 TO STA. 111+00

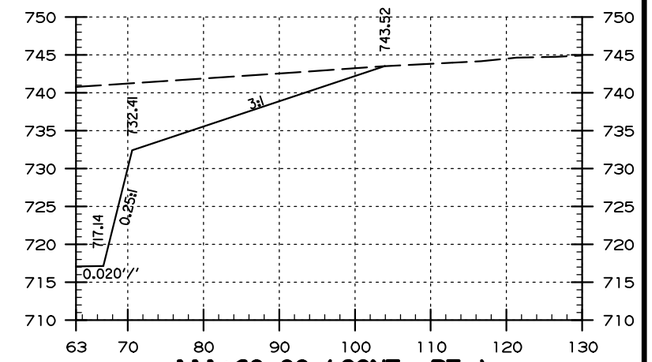
USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

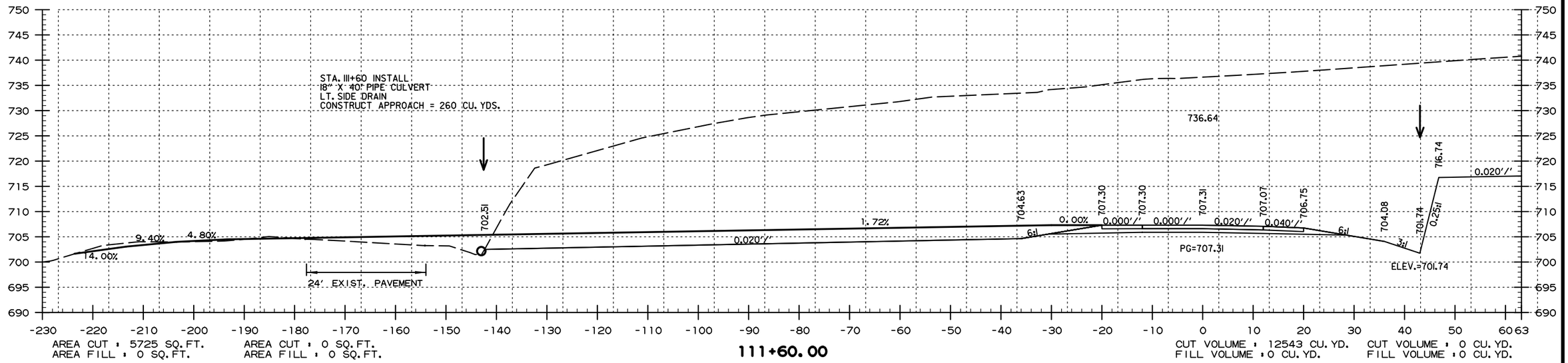
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	40	47
		CROSS SECTIONS				

STAGE 2 CONSTRUCTION

STAGE 1 CONSTRUCTION



111+60.00 (CONT. RT.)



AREA CUT : 5725 SQ.FT.
AREA FILL : 0 SQ.FT.

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

111+60.00

CUT VOLUME : 12543 CU.YD.
FILL VOLUME : 0 CU.YD.

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

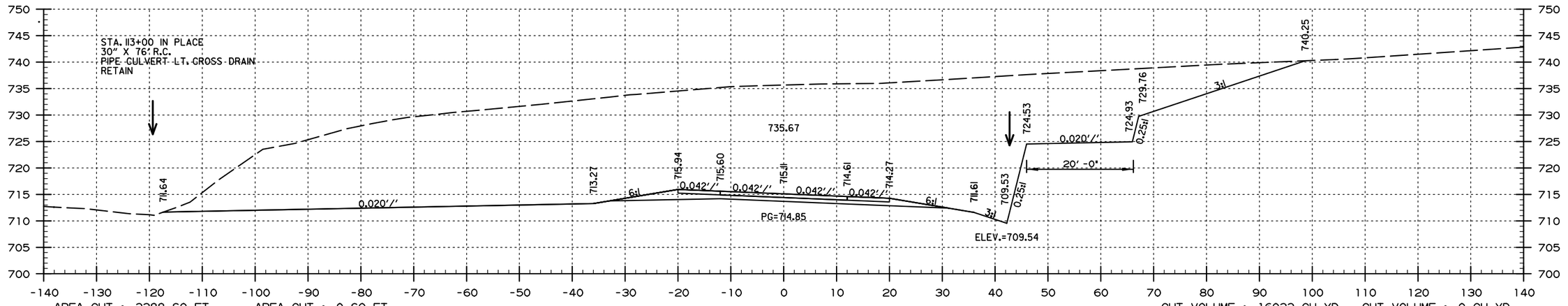
STA. 111+60 TO STA. 111+60

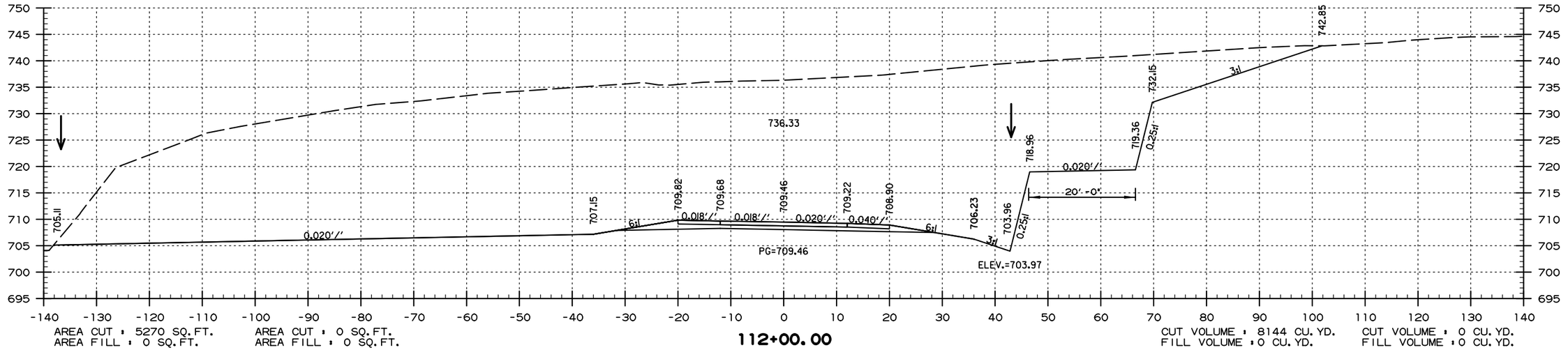
G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: h20

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	41	47
		CROSS SECTIONS				

STAGE I
CONSTRUCTION

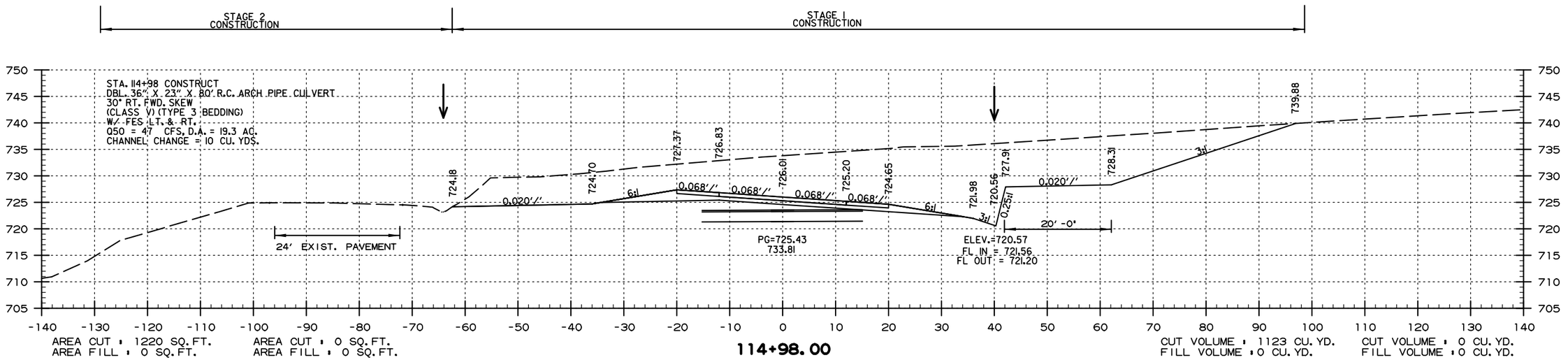


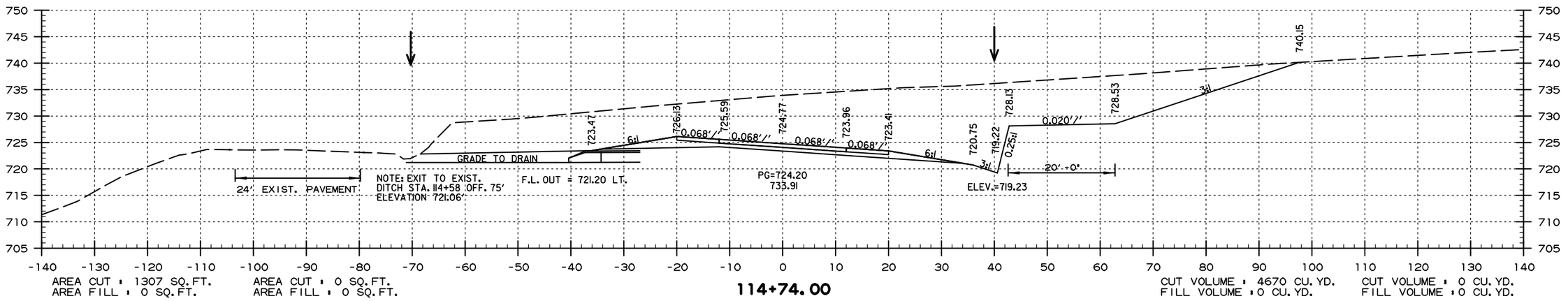


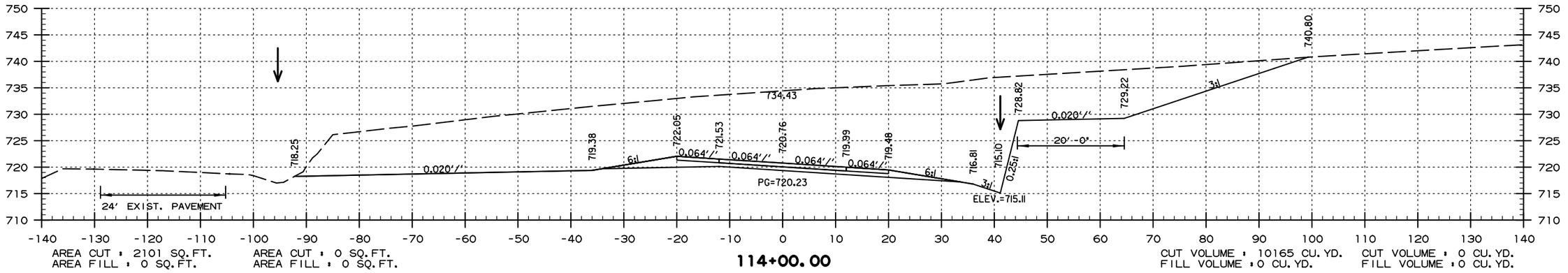
STA. 112+00 TO STA. 113+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn SCALE: 1:20
PLOTTED: 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	42	47
		CROSS SECTIONS				





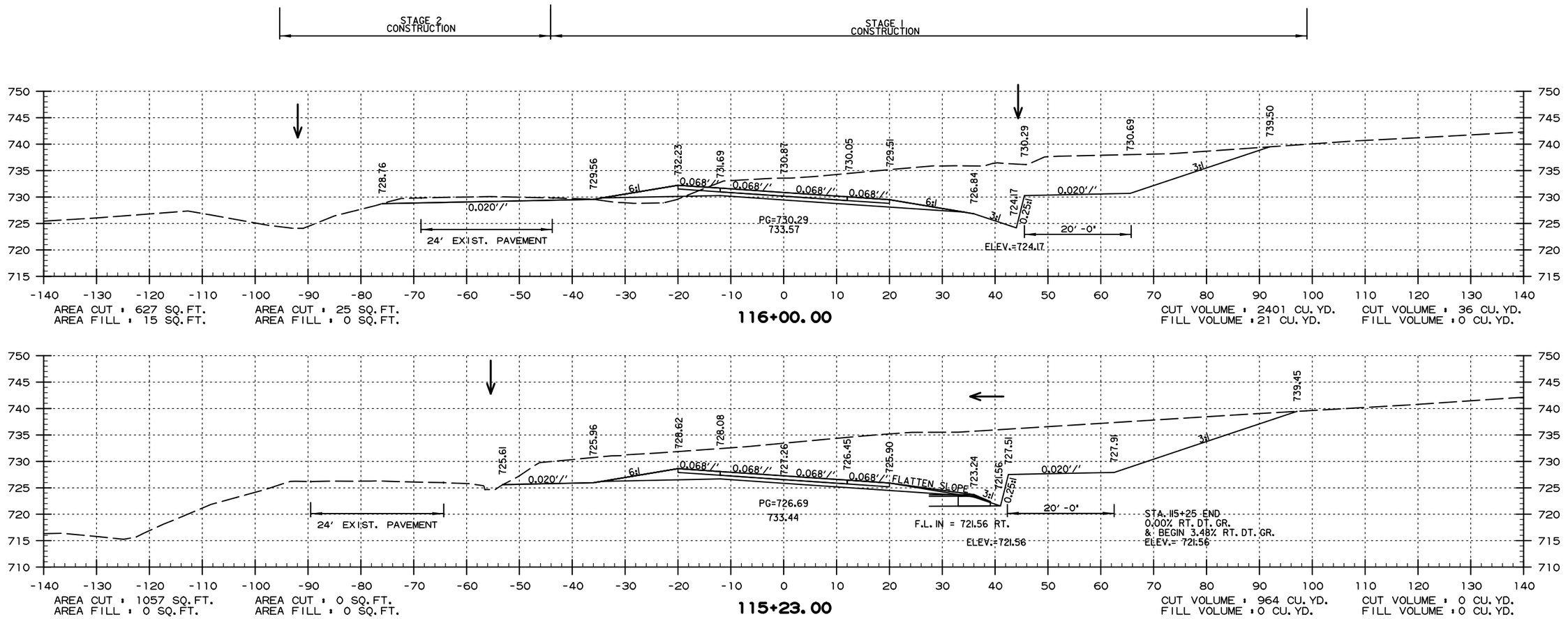


STA. 114+00 TO STA. 114+98

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

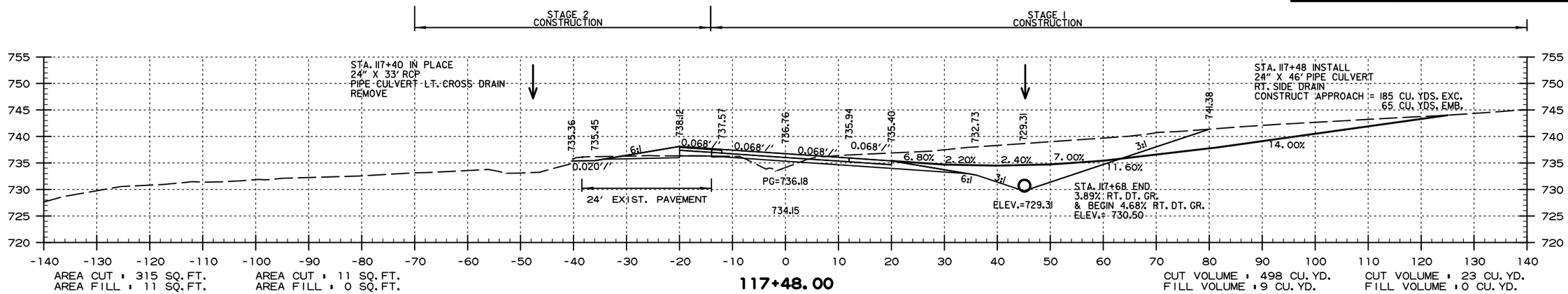
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	43	47
		CROSS SECTIONS				



STA. 115+00 TO STA. 116+00

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	44	47
		CROSS SECTIONS				

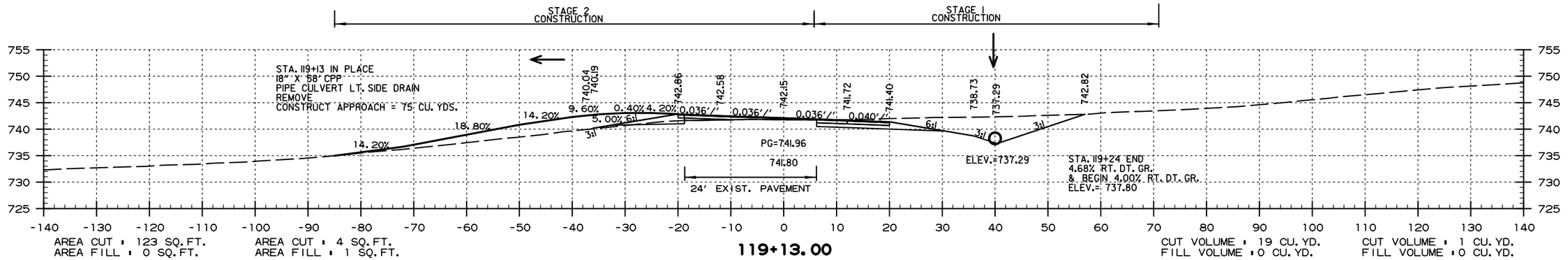


STA. 116+63 TO STA. 117+48

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	45	47
		CROSS SECTIONS				

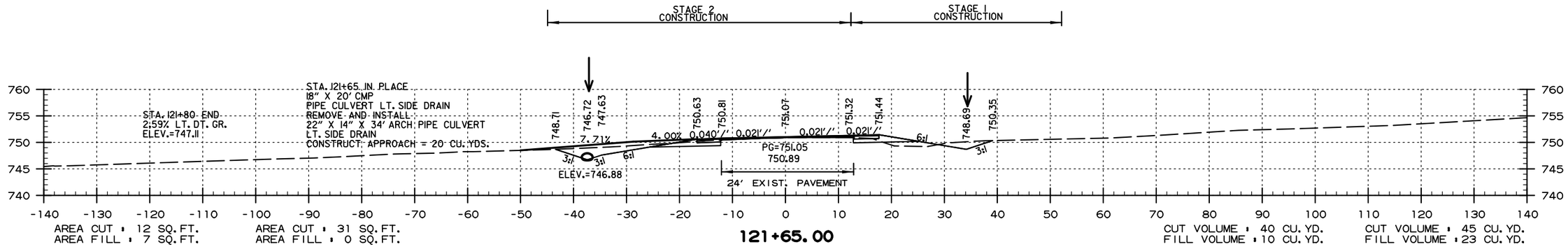


USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

STA. 118+00 TO STA. 119+13

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	46	47
		CROSS SECTIONS				



STA. 120+00 TO STA. 121+65

USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn SCALE: 1:20
PLOTTED: 3/4/2025 08:31

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31

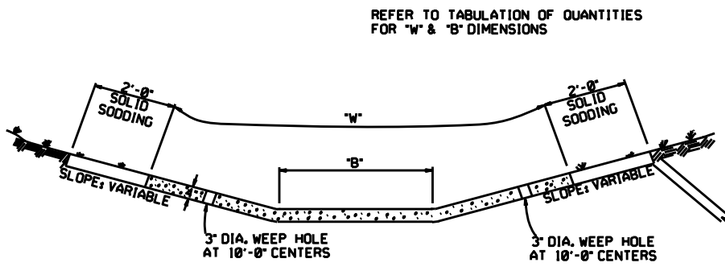
DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	040885	47	47
		CROSS SECTIONS				

122+00.00 END 100' TRANSITION

STA. 122+00 TO STA. 122+00

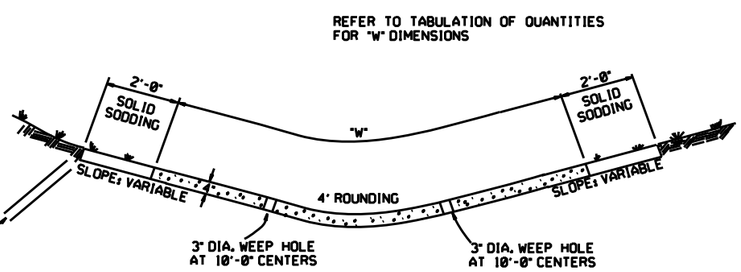
USER: lm5327
DESIGN FILE: G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn
PLOTTED: 3/4/2025 08:31
SCALE: 1:20

G:\23102300_040885\TRANSP\dgn\xsect\040885 Xsect 01.dgn 3/4/2025 08:31



TYPE A

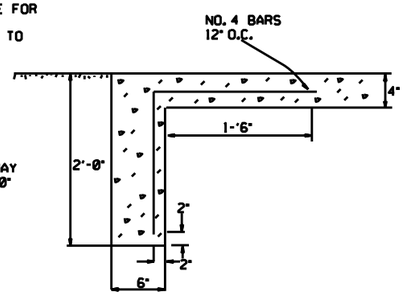
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



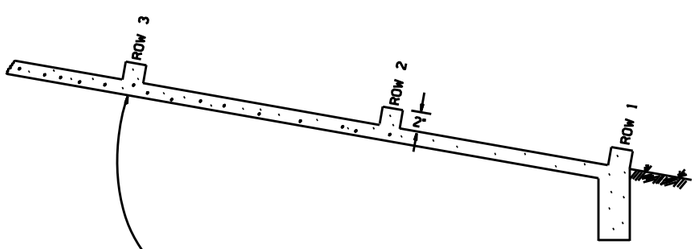
TYPE B

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

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

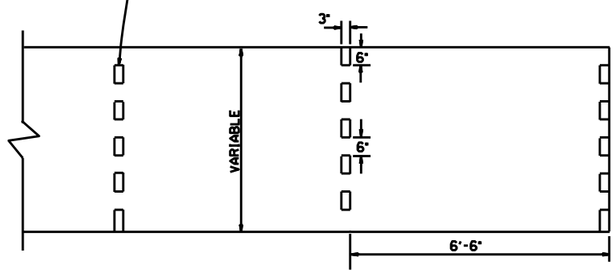


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

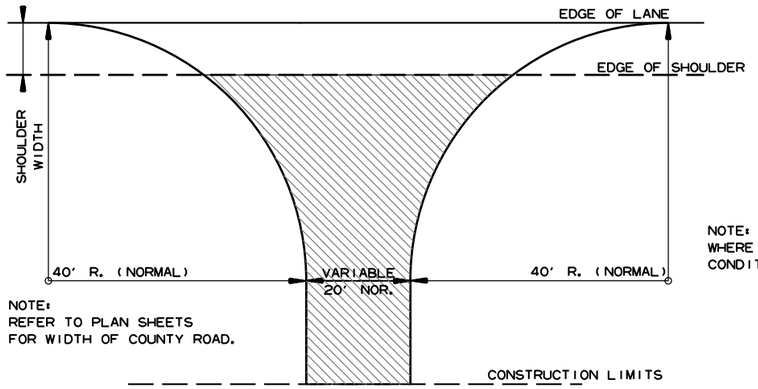
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45° INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

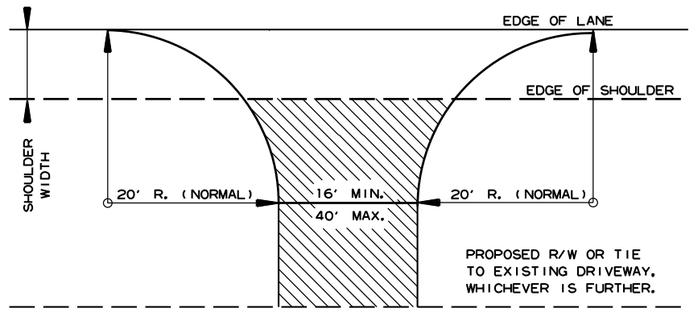


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH, UNLESS OTHERWISE
SPECIFIED IN PLANS.

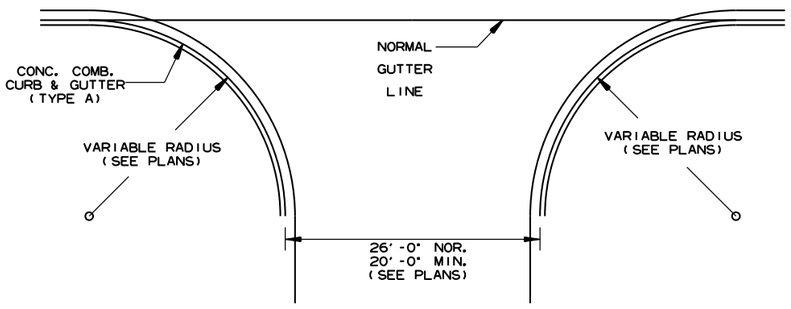
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



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

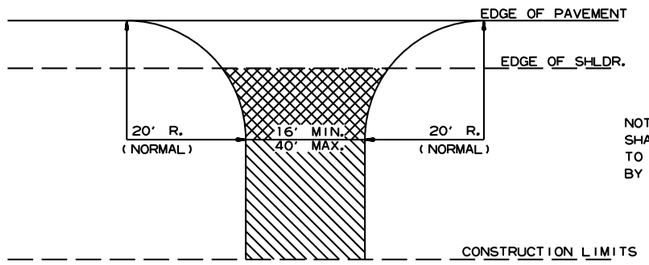
ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



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

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



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

ASPHALT CONCRETE HOT MIX SURFACE
COURSE (220 LBS. PER SQ. YD.)
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR
6" CONCRETE IF CONCRETE DRIVE EXIST.

AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

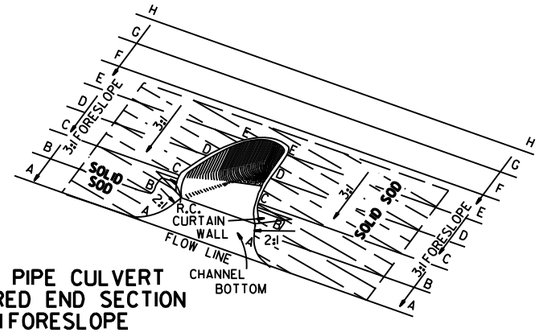
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

DATE REV	DATE FILMED	DESCRIPTION
5-19-22		ISSUED

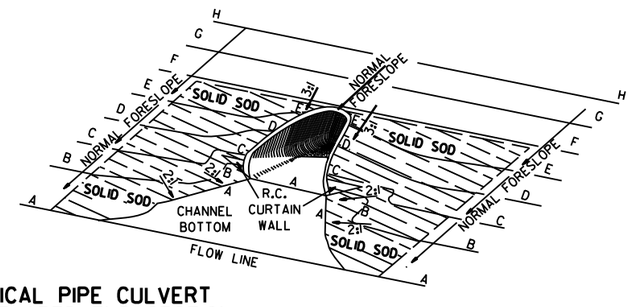
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

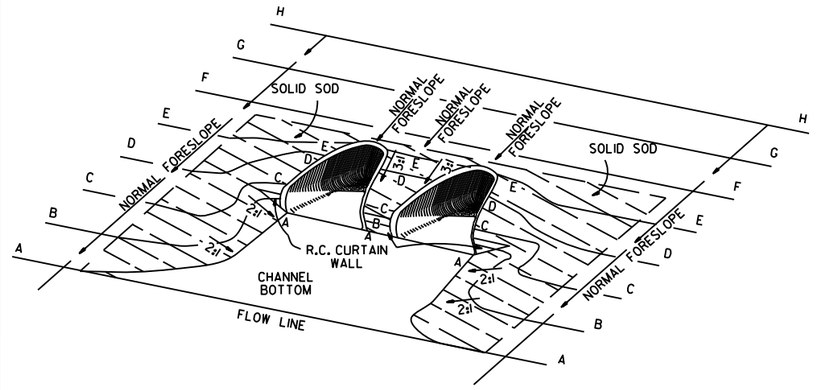
STANDARD DRAWING DR-2



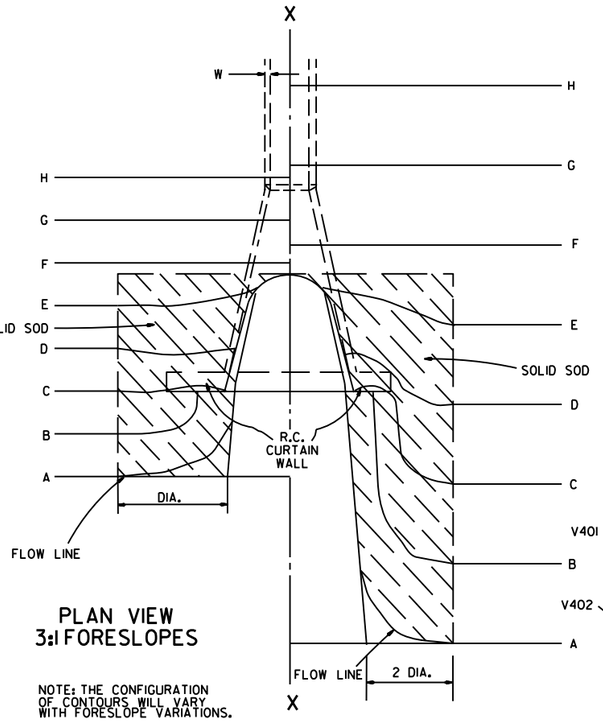
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



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

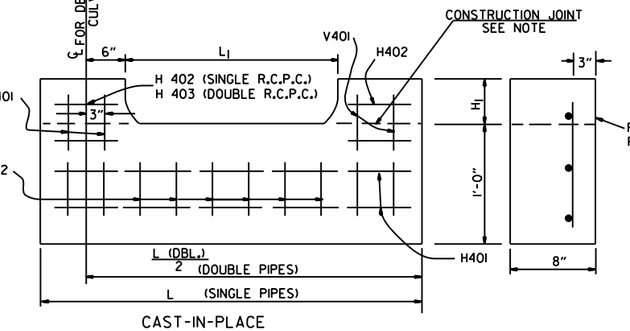
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

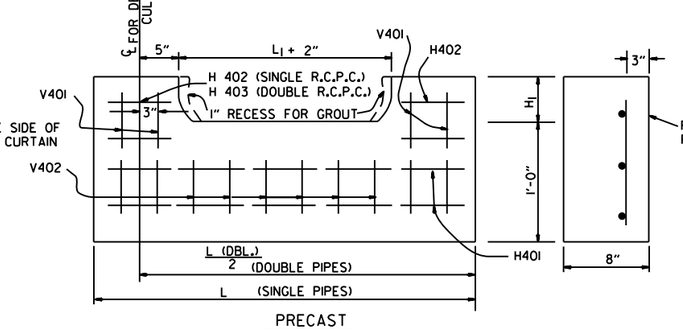
PIPE DIA.	H_1	L_1	L	L (DBL.) / 2	SINGLE R.C.P.C. CONC.	SINGLE R.C.P.C. REINF. STEEL	DOUBLE R.C.P.C. CONC.	DOUBLE R.C.P.C. REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45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

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



CAST-IN-PLACE

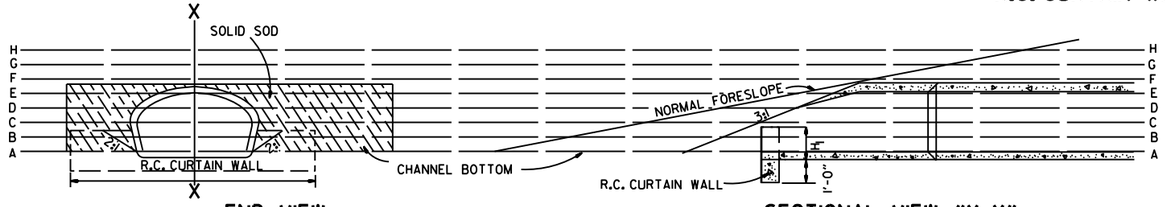
NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



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



END VIEW

SECTIONAL VIEW "X-X"

REINFORCING STEEL SCHEDULE

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

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

SOLID SODDING

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

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

GENERAL NOTES

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

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

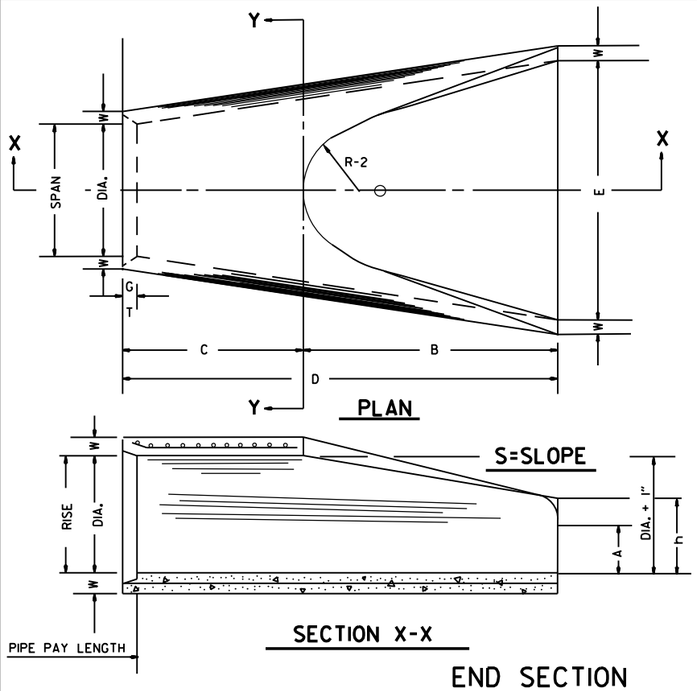
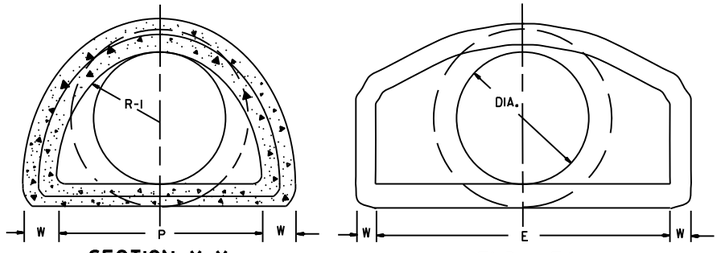


TABLE OF DIMENSIONS

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

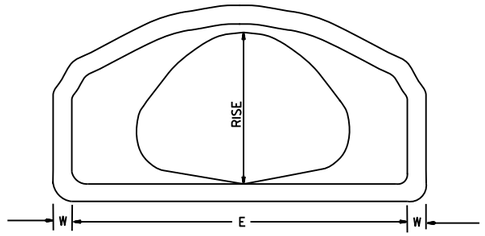


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

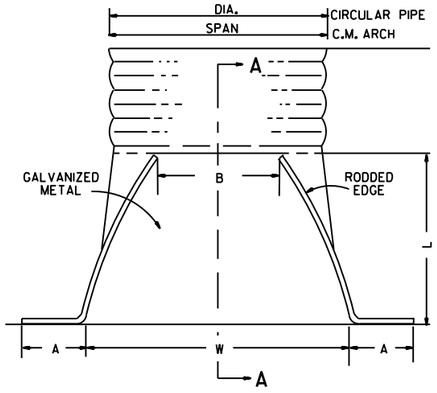
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 11/16"	20"	3"	2½:1
36	43¾	44	26⅜	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54 5/16"	22"	3½"	2½:1
42	51⅛	51	31 5/16	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/16"	24"	5"	2¼:1

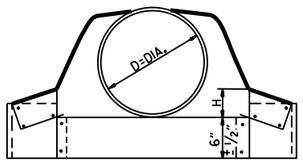
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



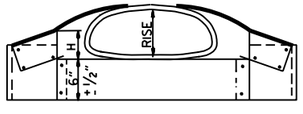
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

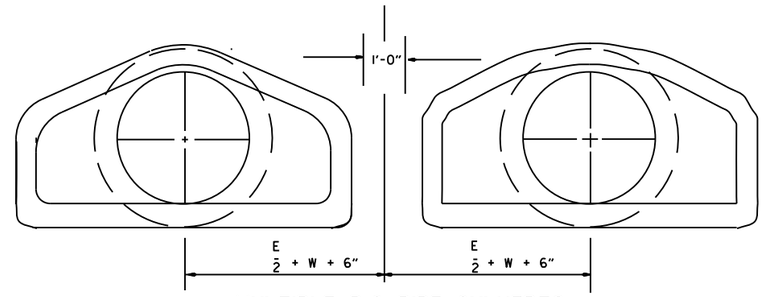
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12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

C.M. ARCH PIPE

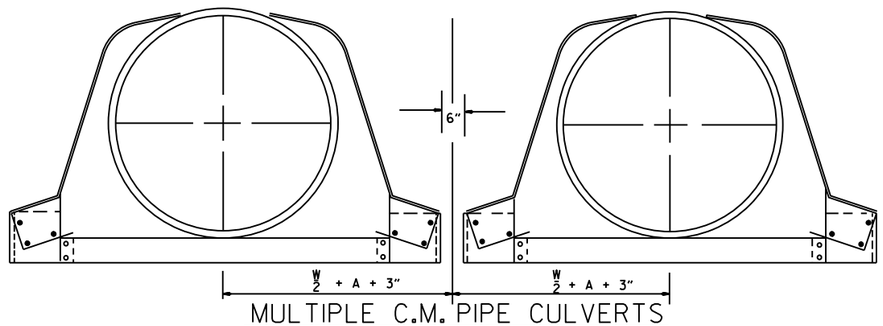
EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12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

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



MULTIPLE R.C. PIPE CULVERTS



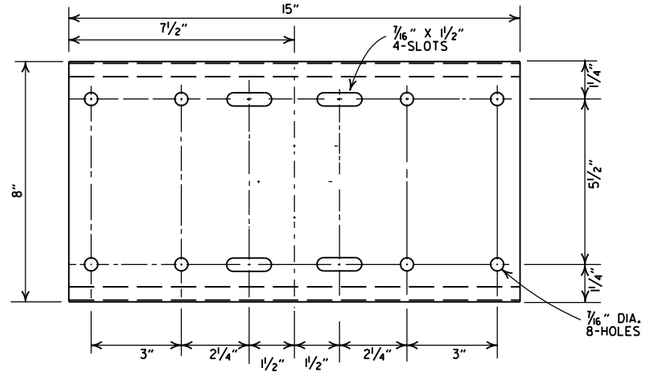
MULTIPLE C.M. PIPE CULVERTS

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

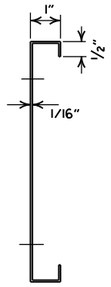
ARKANSAS STATE HIGHWAY COMMISSION

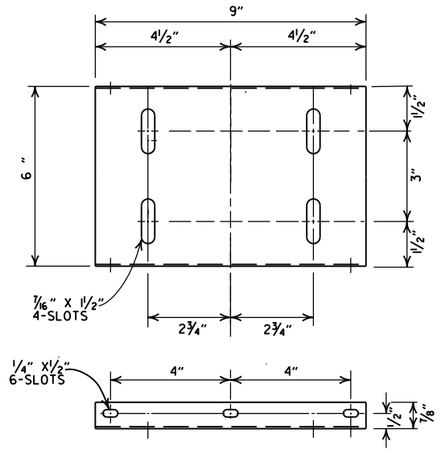
FLARED END SECTION

STANDARD DRAWING FES-2

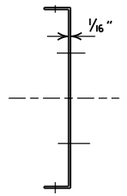


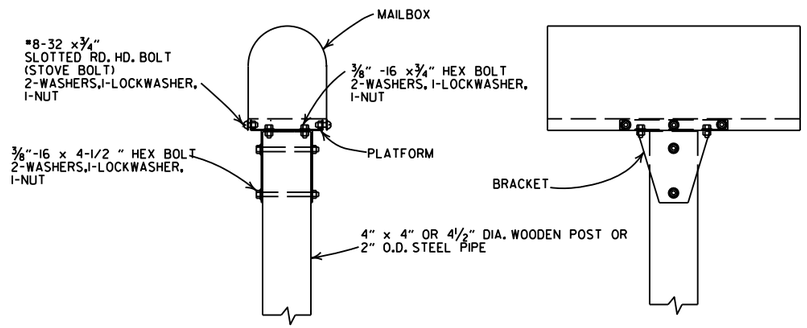
SHELF



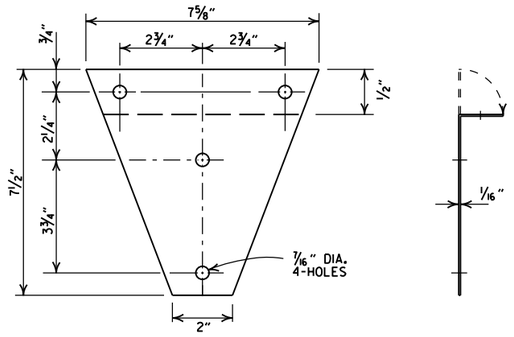


PLATFORM





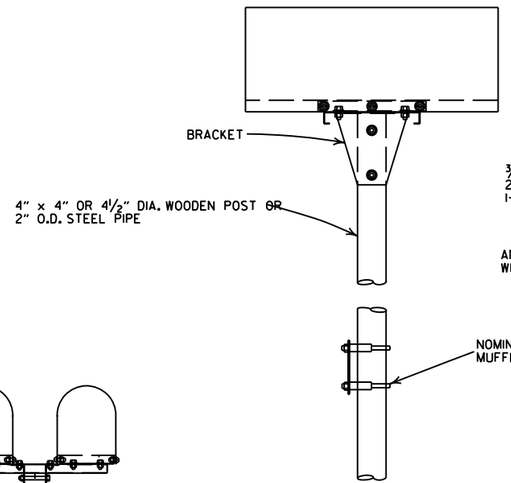
SINGLE INSTALLATION



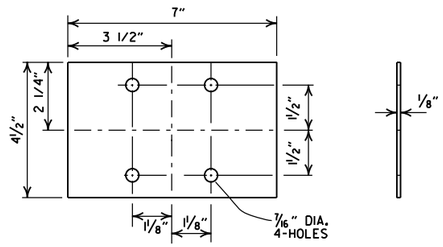
BRACKET

GENERAL NOTES

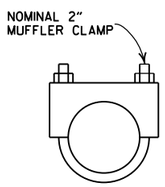
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



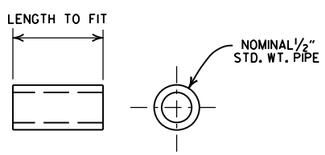
DOUBLE INSTALLATION



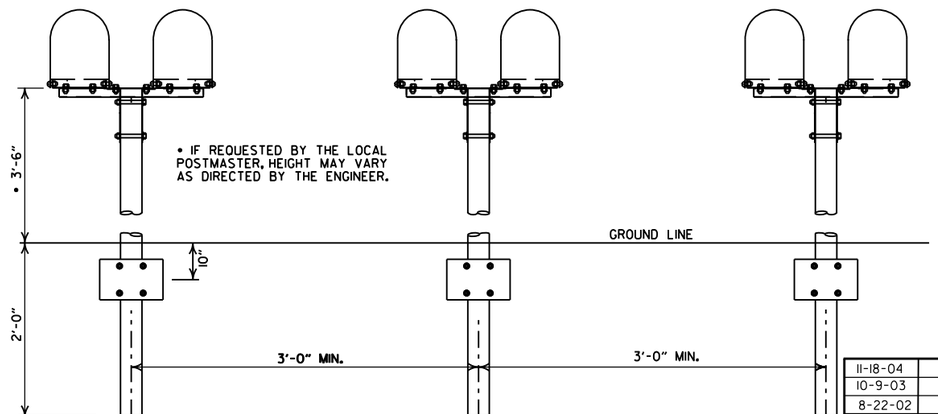
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅜	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

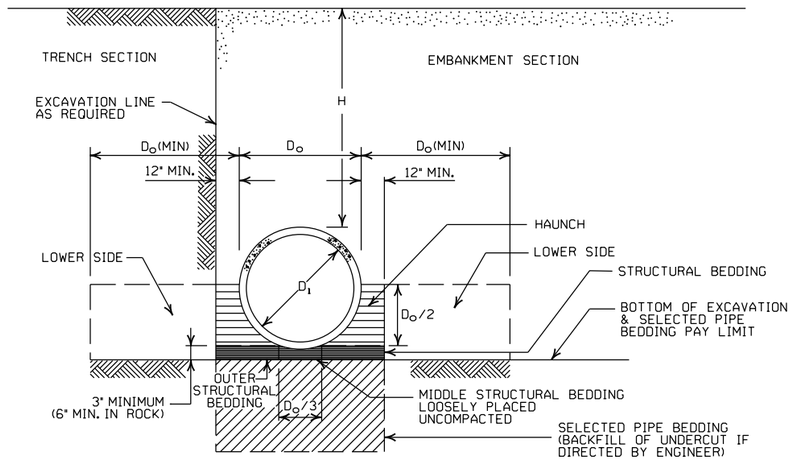
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

CORRUGATED METAL PIPE ARCHES

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

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

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

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

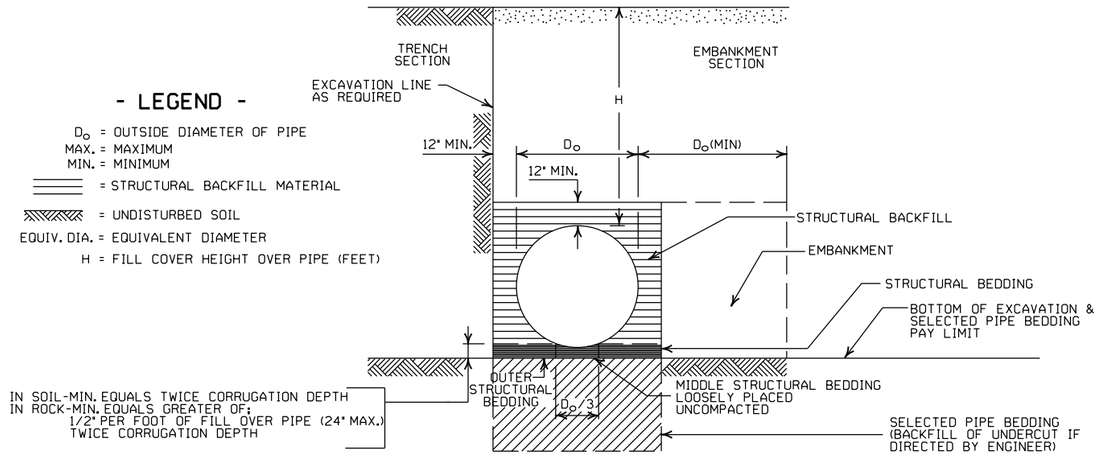
③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

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

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

② WHERE THE STANDARD 2 2/3"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.

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

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

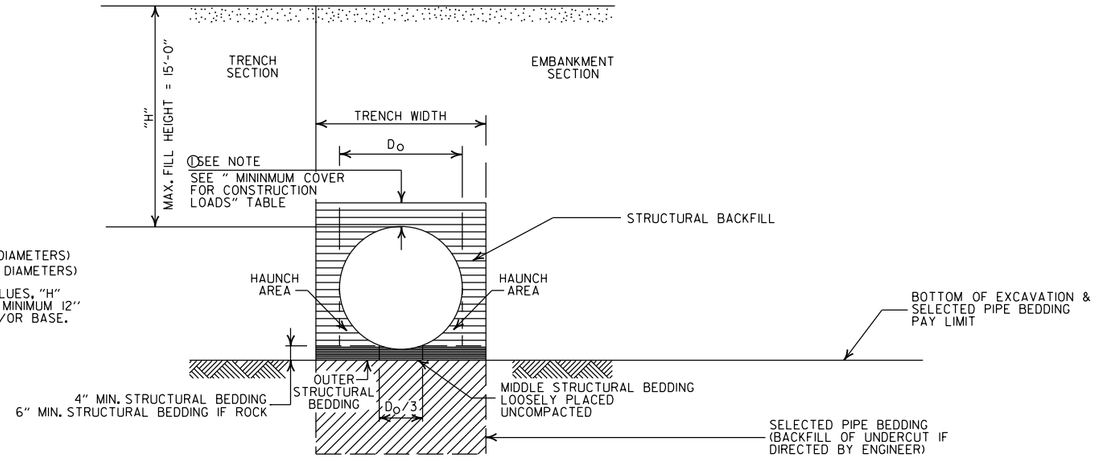
PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

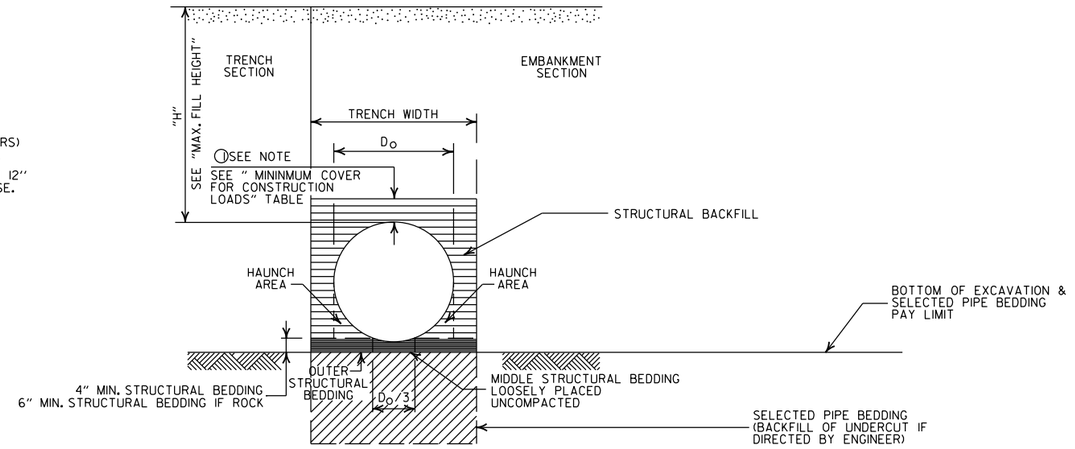
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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 POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

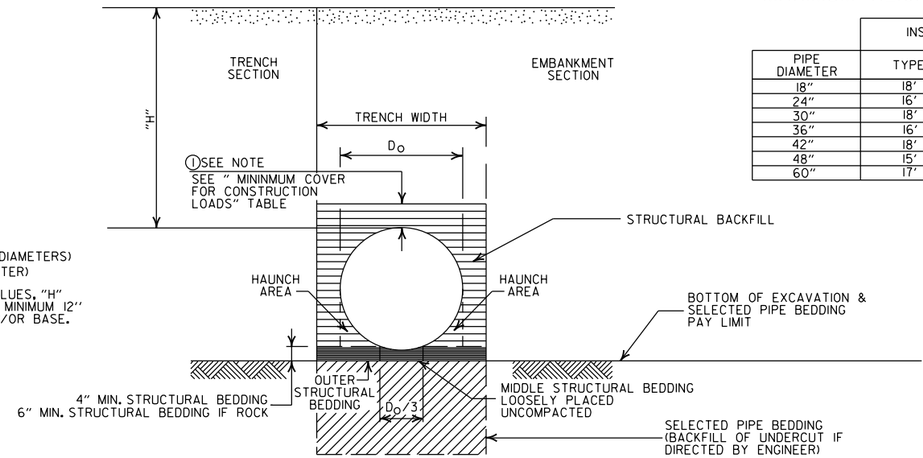
MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

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



MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

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.

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. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S, INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. 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."
6. 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 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."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

H = FILL HEIGHT (FT.)
D_O = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

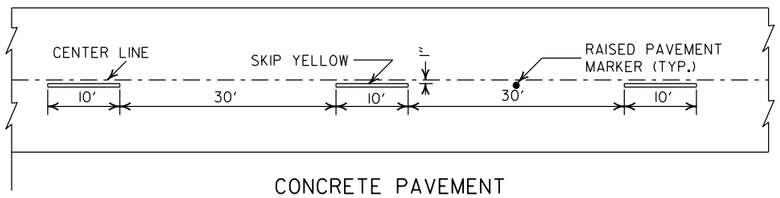
= UNDISTURBED SOIL

DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

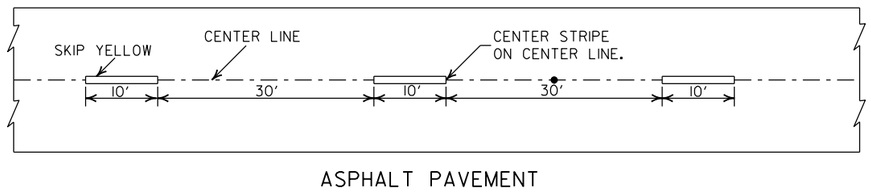
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(POLYPROPYLENE)

STANDARD DRAWING PCP-3

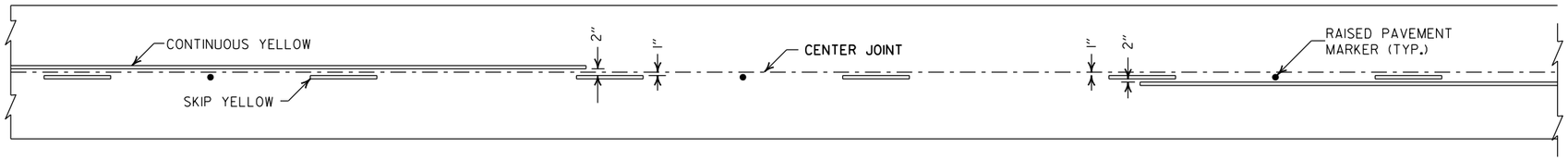


CONCRETE PAVEMENT

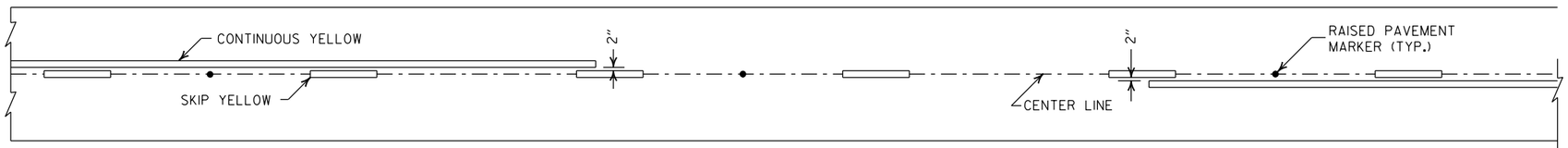


ASPHALT PAVEMENT

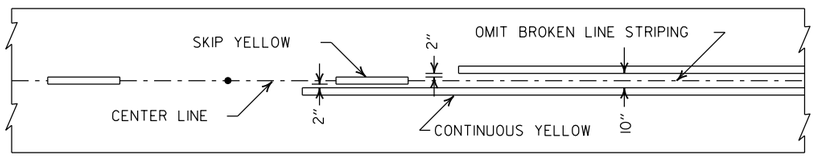
BROKEN LINE STRIPING



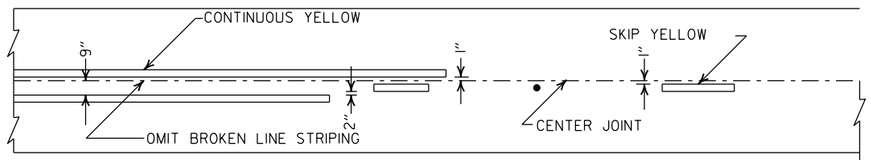
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

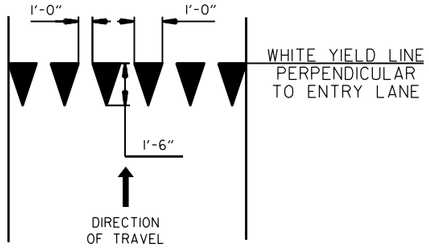


ASPHALT PAVEMENT

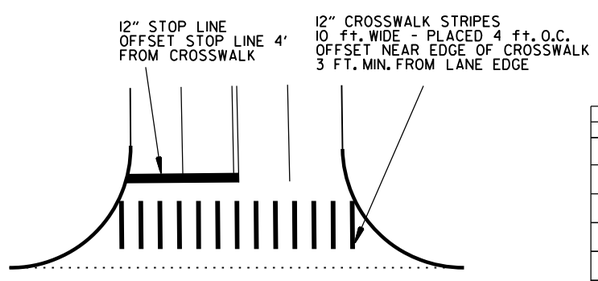


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

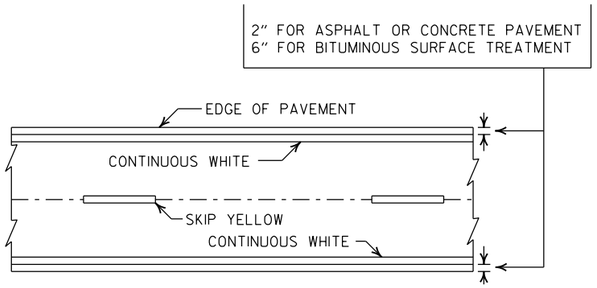


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

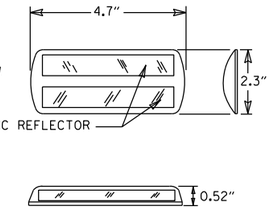
NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

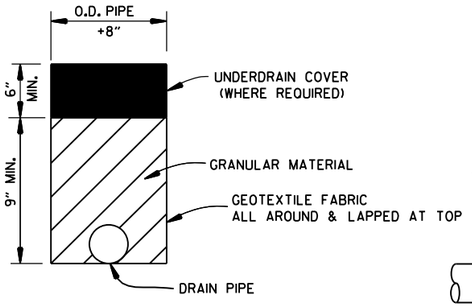
PAVEMENT MARKING DETAILS

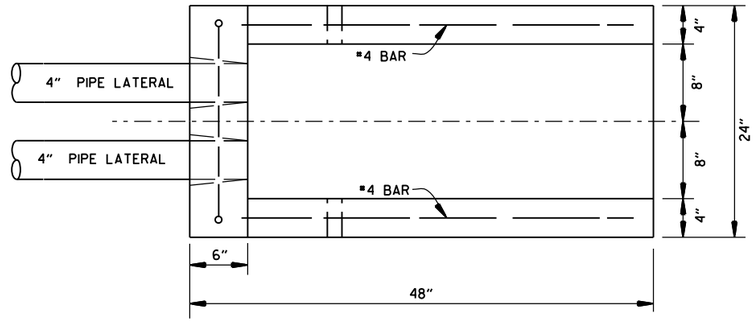
STANDARD DRAWING PM-1

NOTE:

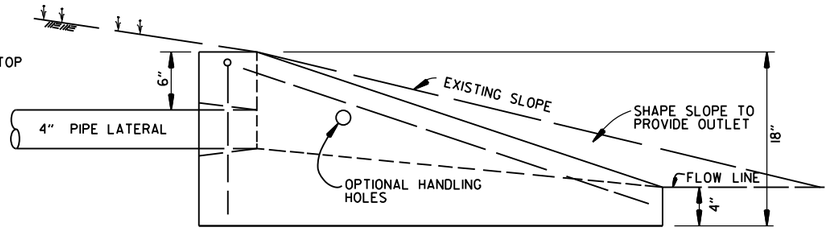
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

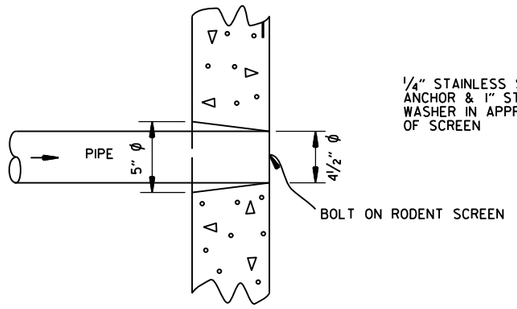




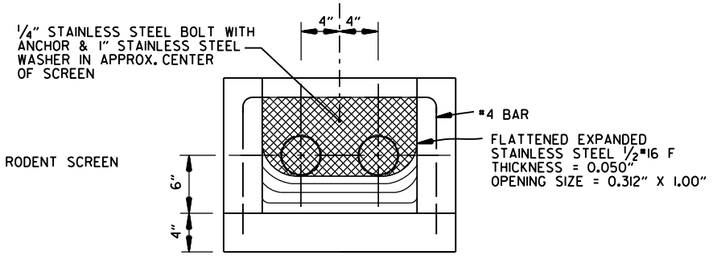
PLAN VIEW



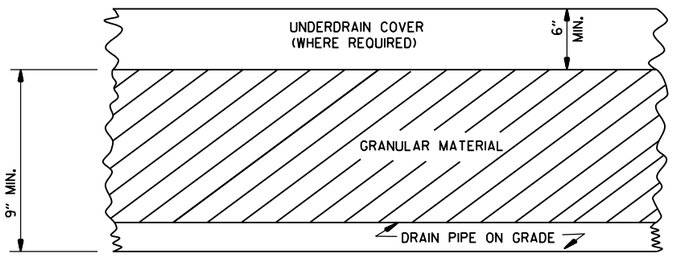
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE

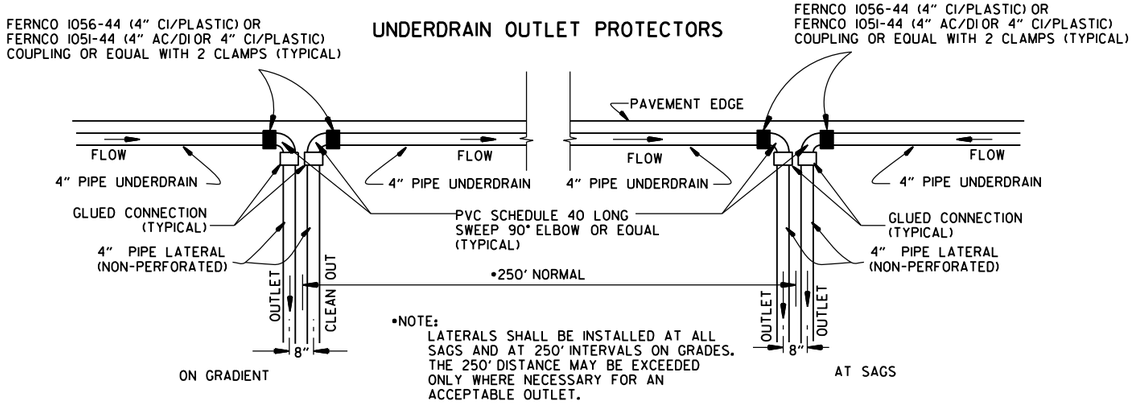


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



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			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139	300	0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187	250	0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350	D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274	350	0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254	350	0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261	300																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												

D MAX = 28° 30'

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%

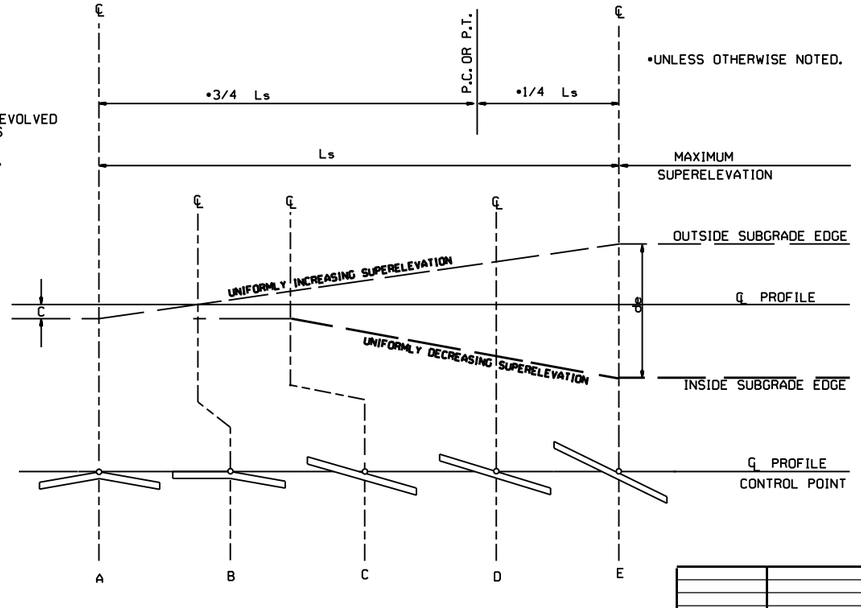
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

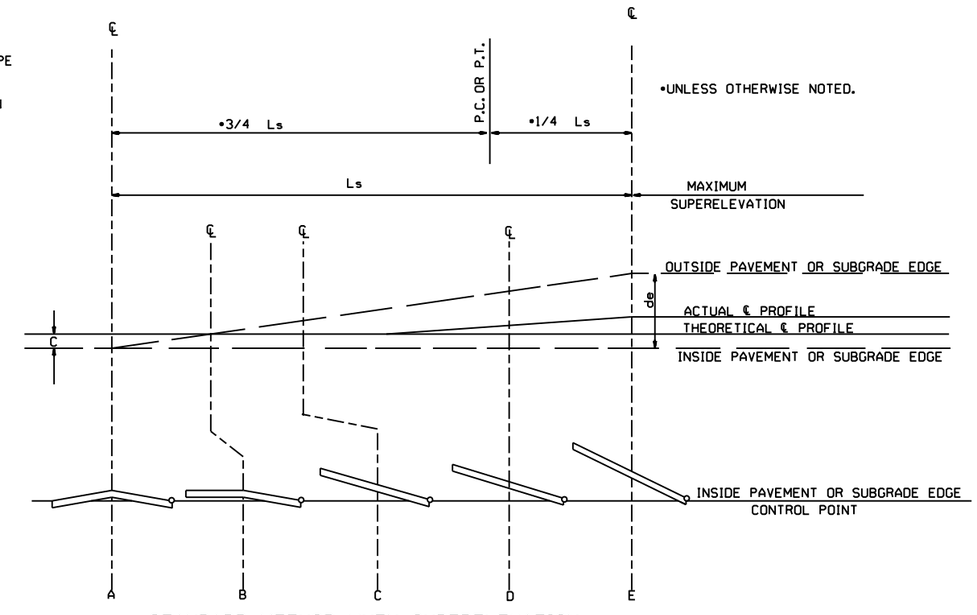
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

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 CENTER LINE



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

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

DATE	REVISION	DATE FILLMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

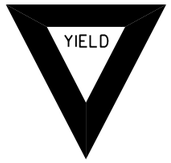
STANDARD DRAWING SE-2

R1-1



STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5



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

W3-5a



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

R4-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



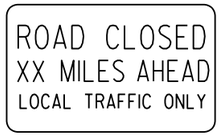
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2



48"X30"

R11-3A



60"X30"

R11-4



60"X30"

W21-5a



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

W1-1



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

W1-2



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

W1-3



STD. 48"X48"

W1-4



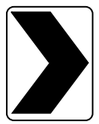
STD. 48"X48"

W1-6



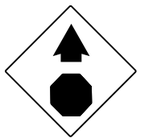
STD. 48"X24"
SPECIAL 60"X30"

W1-8



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

W3-1



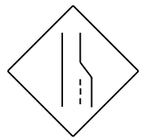
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



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

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



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

W13-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



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

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11



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

W8-9



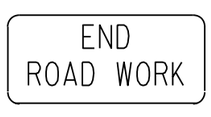
STD. 36"X36"
FWY. 48"X48"

G20-1



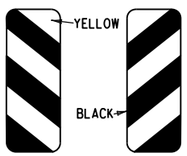
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

M4-9



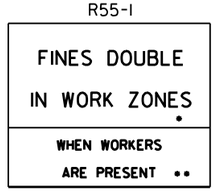
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

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

ADVANCE DISTANCES
(XXXX)

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

GENERAL NOTES:

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

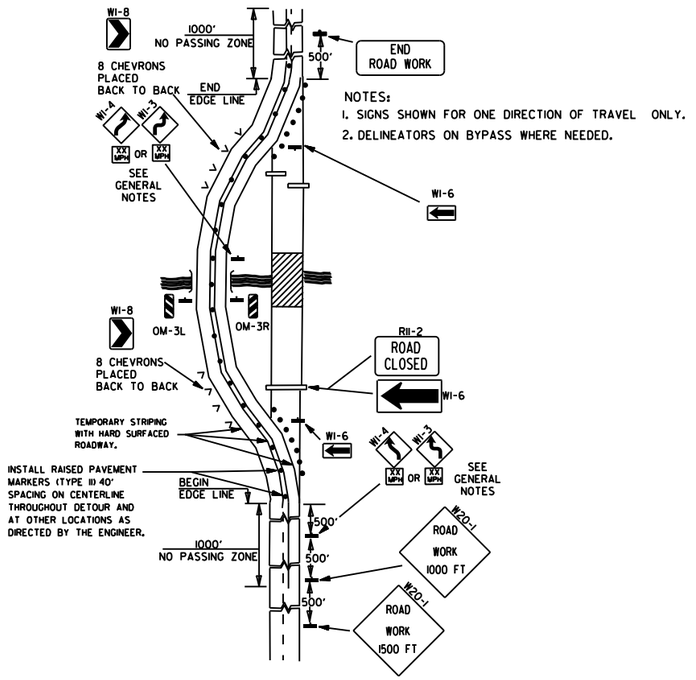
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

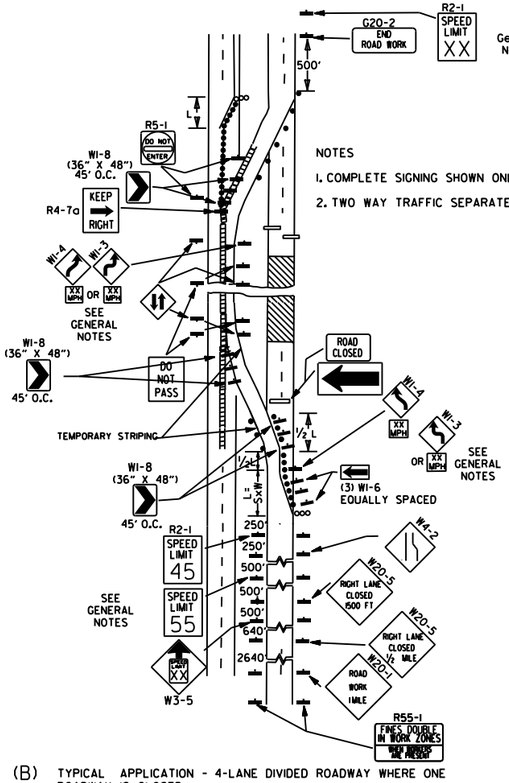
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



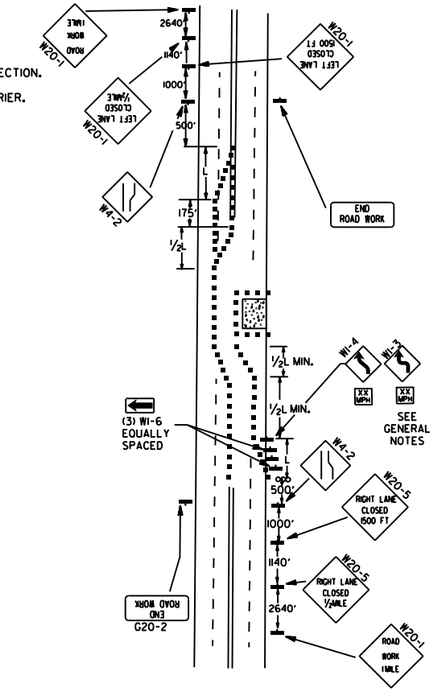
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

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



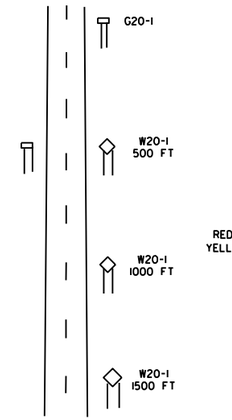
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

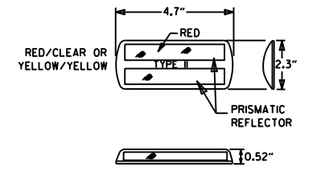
NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.



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

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





DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

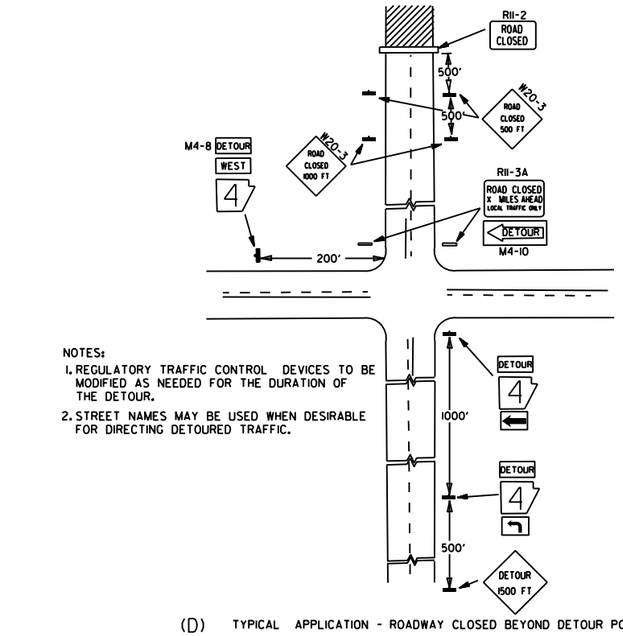
TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

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

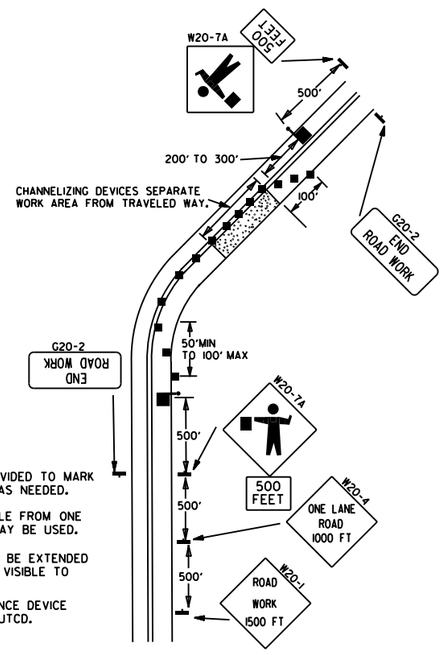
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

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



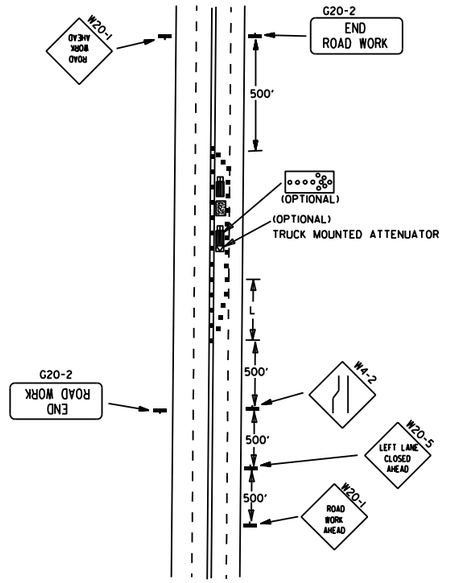
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



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

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



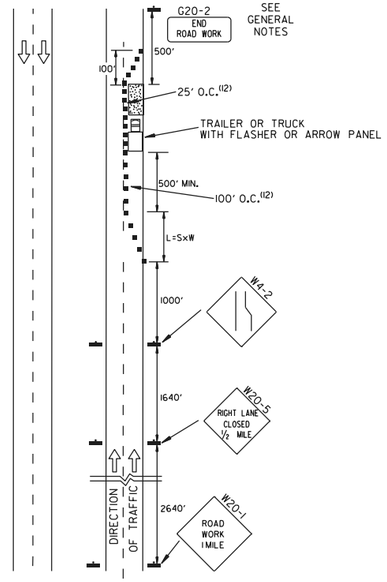
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

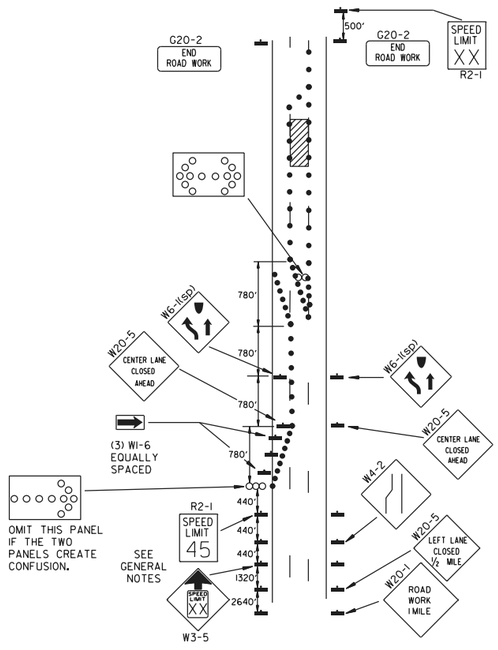
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



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

KEY:

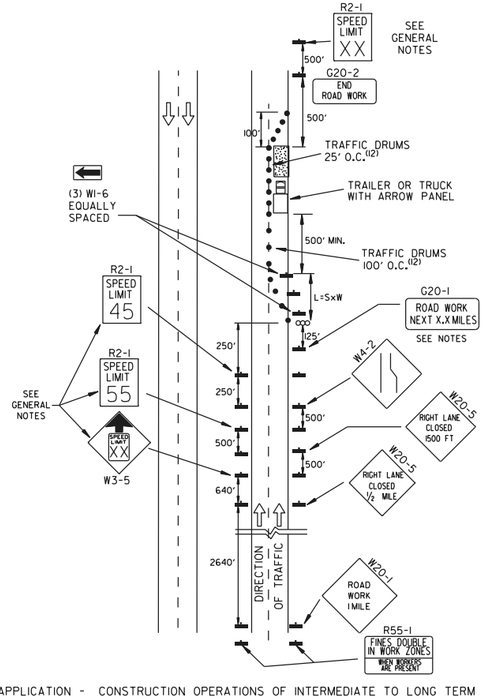
○○○ ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

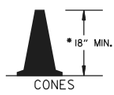
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
12. ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR TRAFFIC DRUMS, TUBULAR MARKERS MAY BE USED AT 50' O.C. IN STABILIZATION ZONES AND AT 10' O.C. DIRECTLY ADJACENT TO CONSTRUCTION OPERATIONS AND AT EXIT TAPERS. TUBULAR MARKERS SHALL BE STABILIZED WITH WEIGHTED BASES IN ACCORDANCE WITH THE M.U.T.C.D.



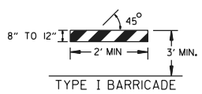
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES

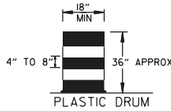


CONES

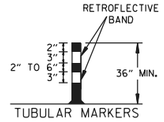
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.



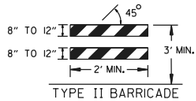
TYPE I BARRICADE



PLASTIC DRUM



TUBULAR MARKERS

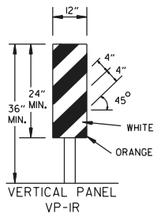


TYPE II BARRICADE

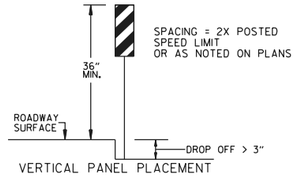


TYPE III BARRICADE

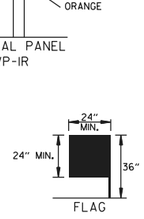
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL
VP-1R

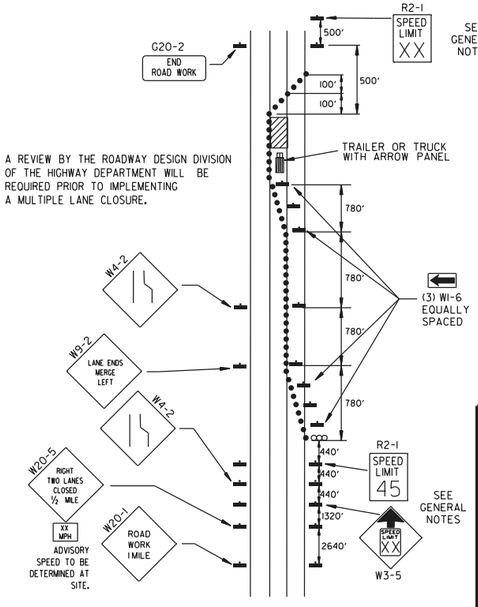


VERTICAL PANEL PLACEMENT



FLAG SHALL BE OF GOOD GRADE
RED MATERIAL

FLAG



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

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

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

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

INTERSTATE

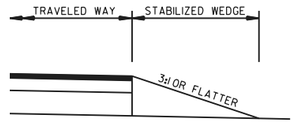
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE

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

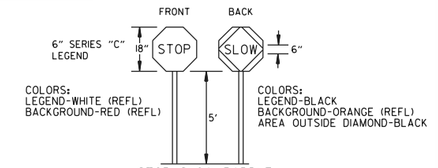
GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).



STABILIZED WEDGE

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

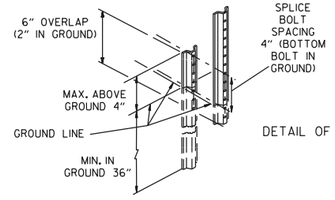


STOP SLOW PADDLE

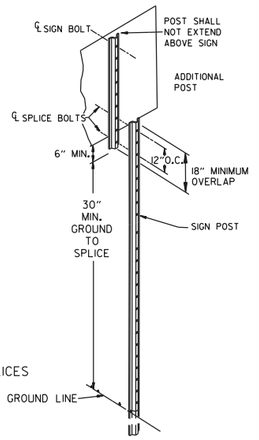
NOTES:
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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	DESCRIPTION
05-22-25	REVISED TRAFFIC CONTROL DEVICES AND NOTES. ADDED NOTE 12
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES
05-20-21	REVISED NOTE 10
02-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS
11-07-19	REVISED NOTE 9, ADDED NOTE 11

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

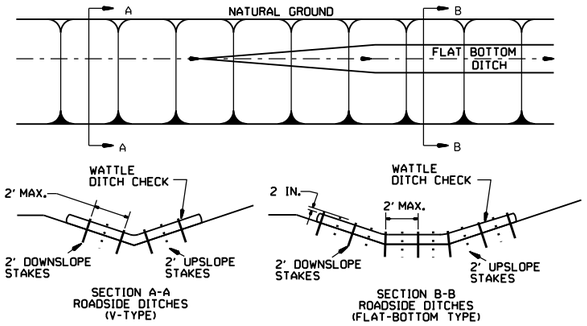
DATE EFFECTIVE
05-22-2025

STANDARD DRAWING

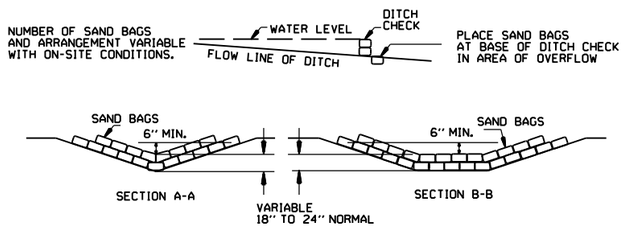
TC-3

GENERAL NOTES

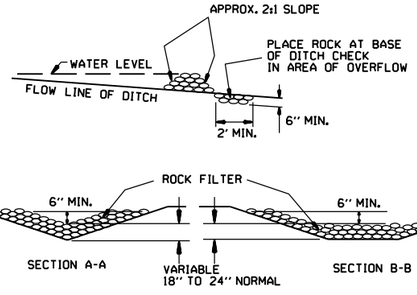
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

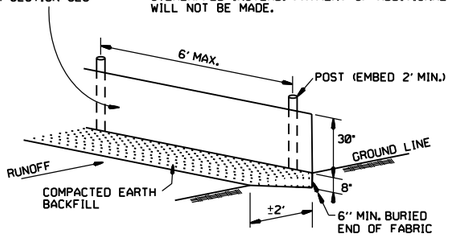


ROCK DITCH CHECK (E-6)

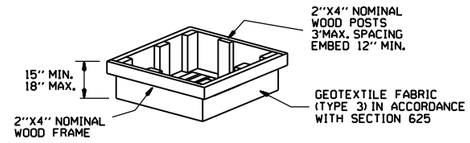
GENERAL NOTES

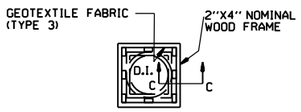
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

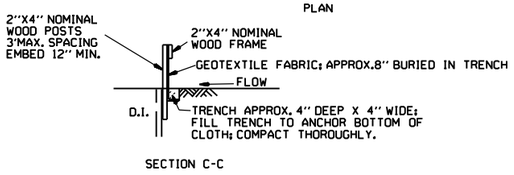
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



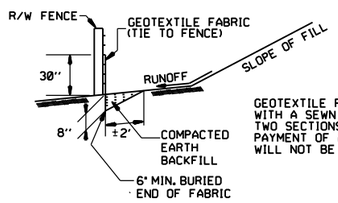
SILT FENCE (E-11)





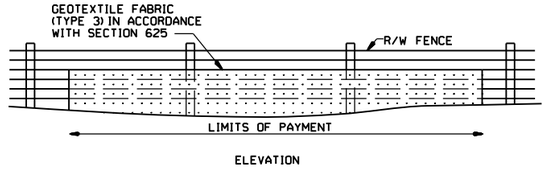


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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



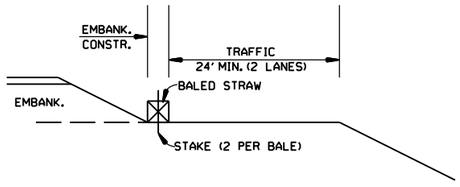
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

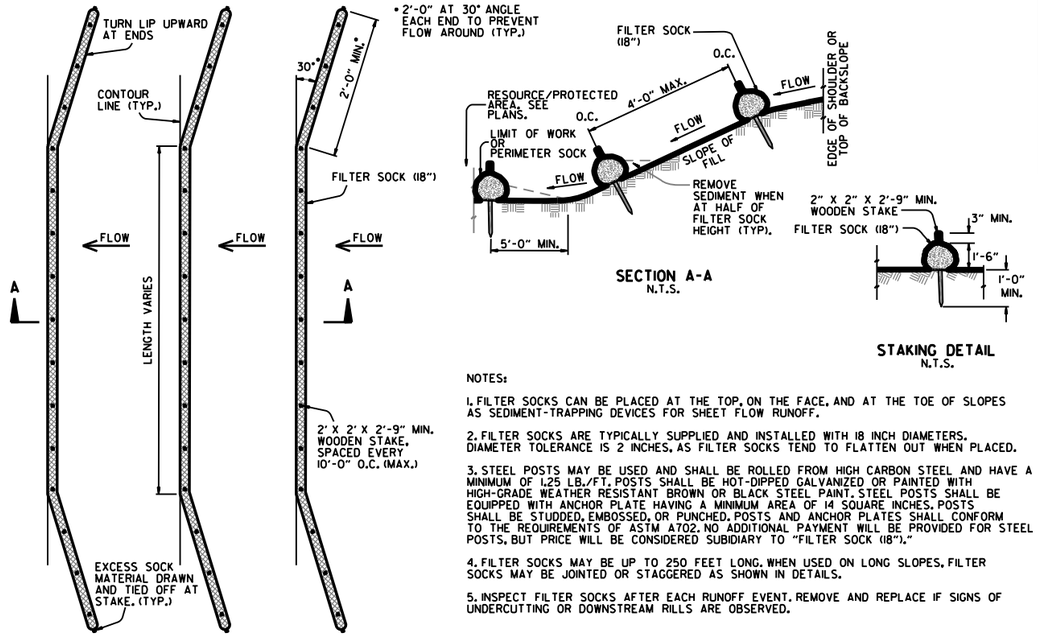
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

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



BALED STRAW FILTER BARRIER (E-2)



NOTES:

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

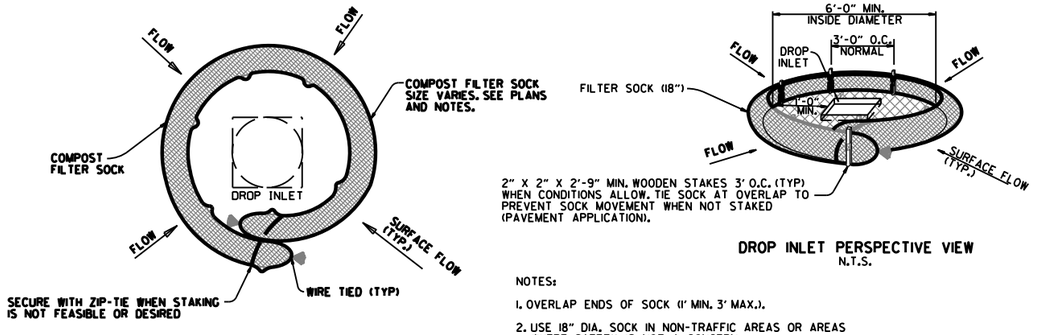
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

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

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

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

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

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

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

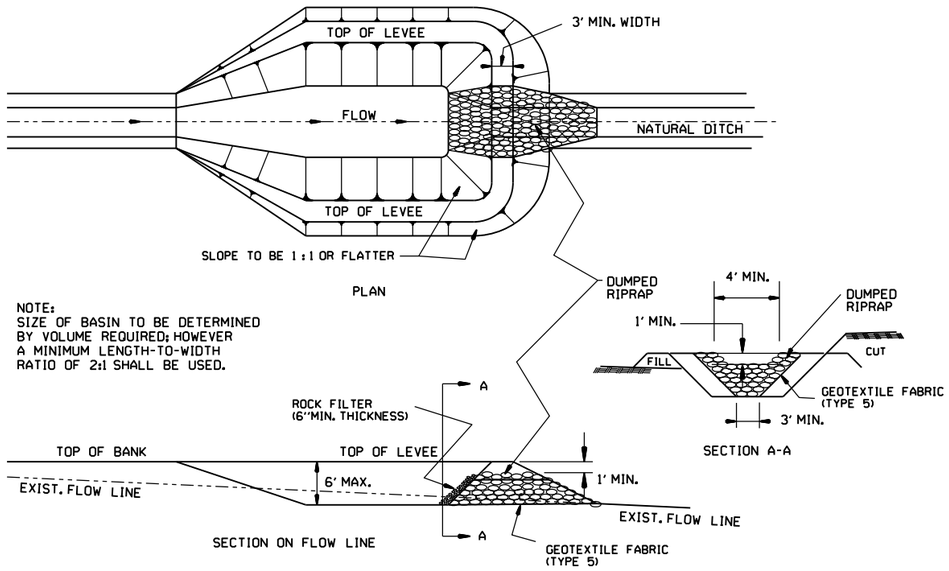
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

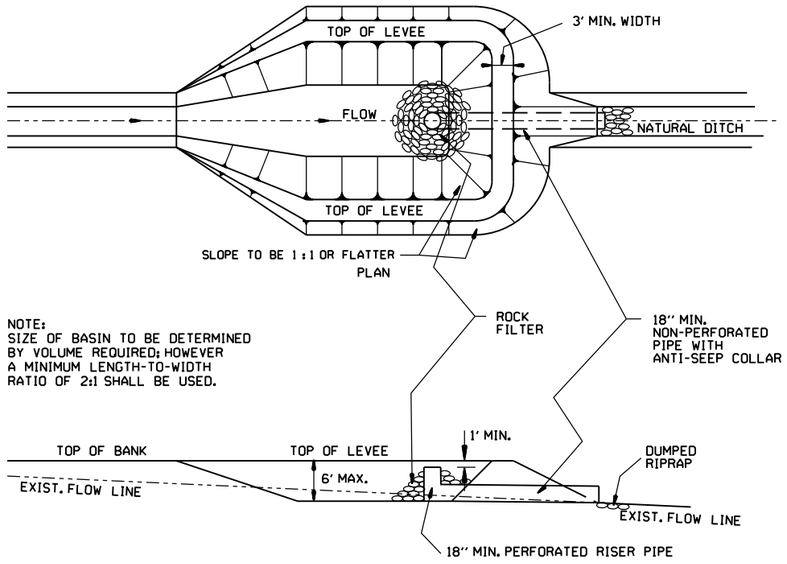
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

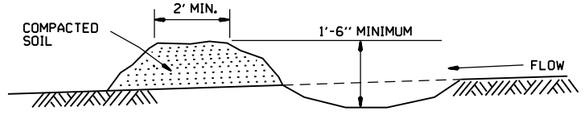
STANDARD DRAWING TEC-1



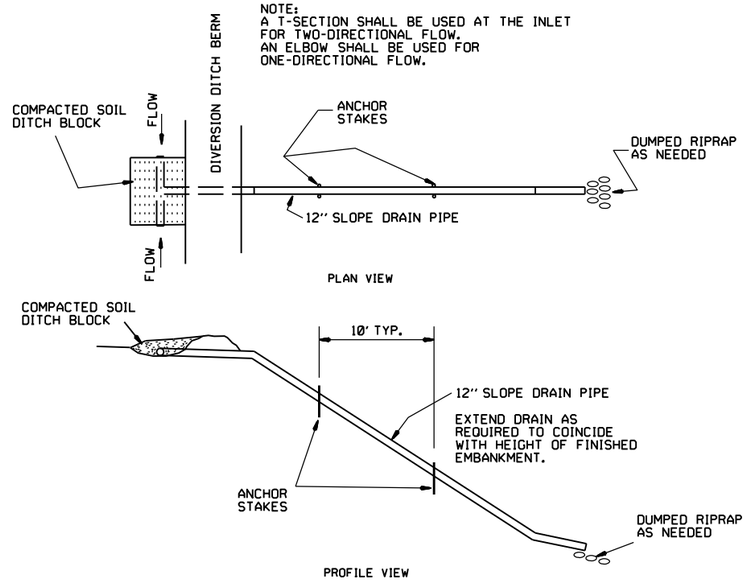
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



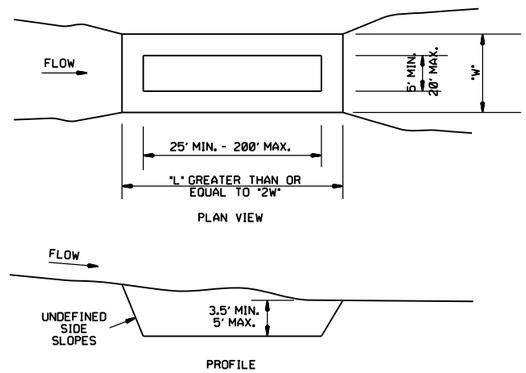
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

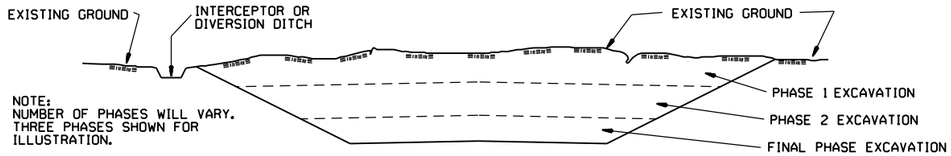
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



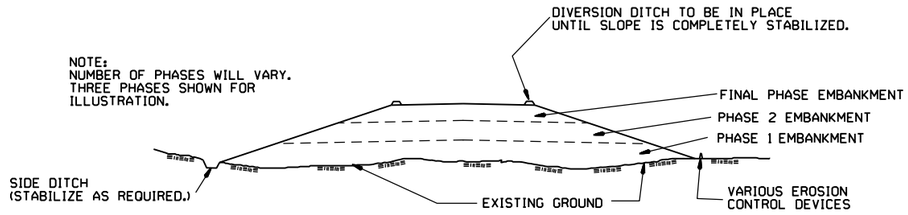
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

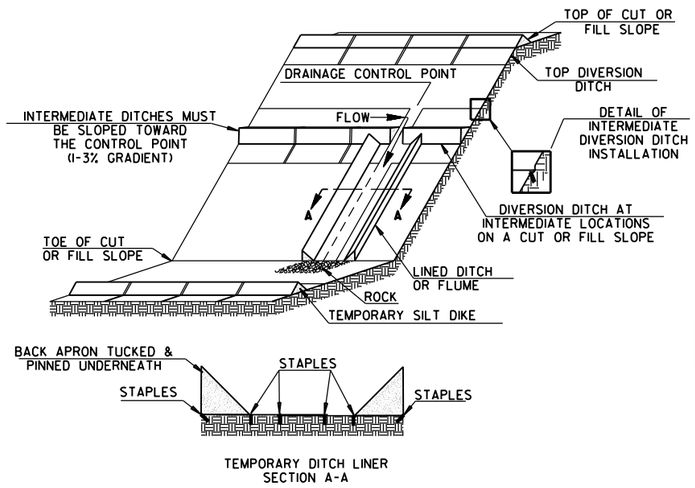
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

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

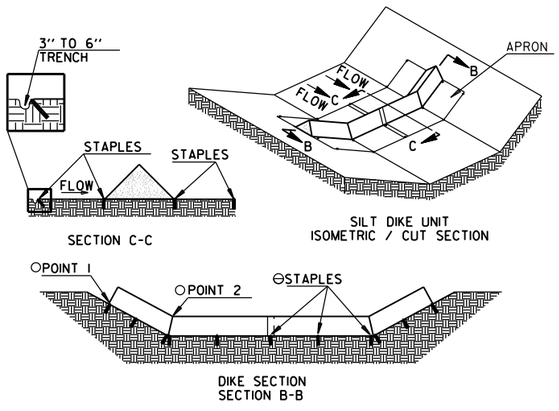
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



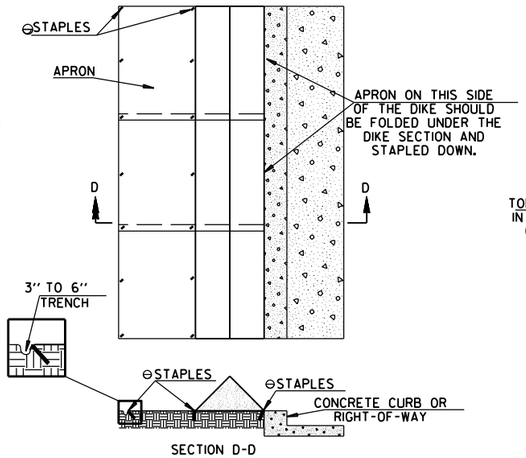
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



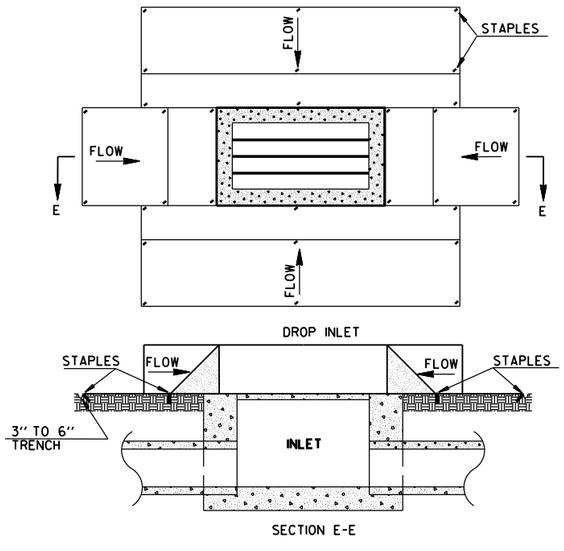
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

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

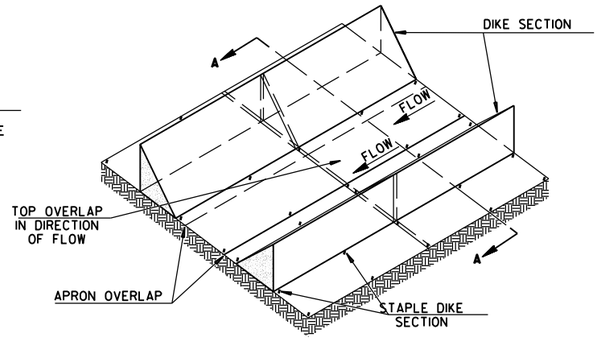
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

GENERAL NOTES

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

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

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

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

SYMBOLOGY
SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

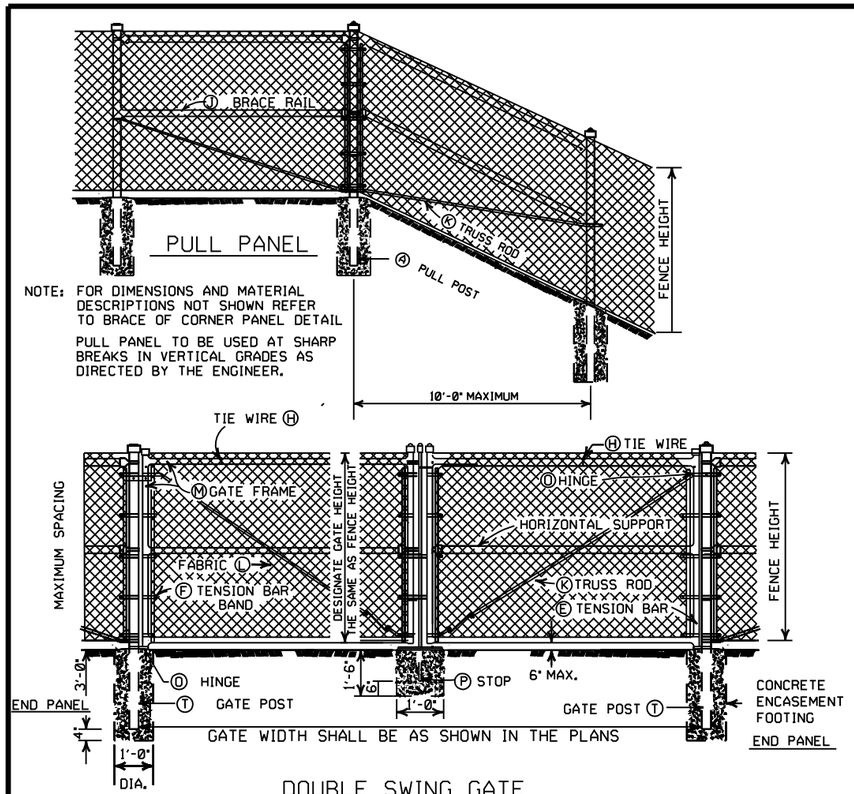
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

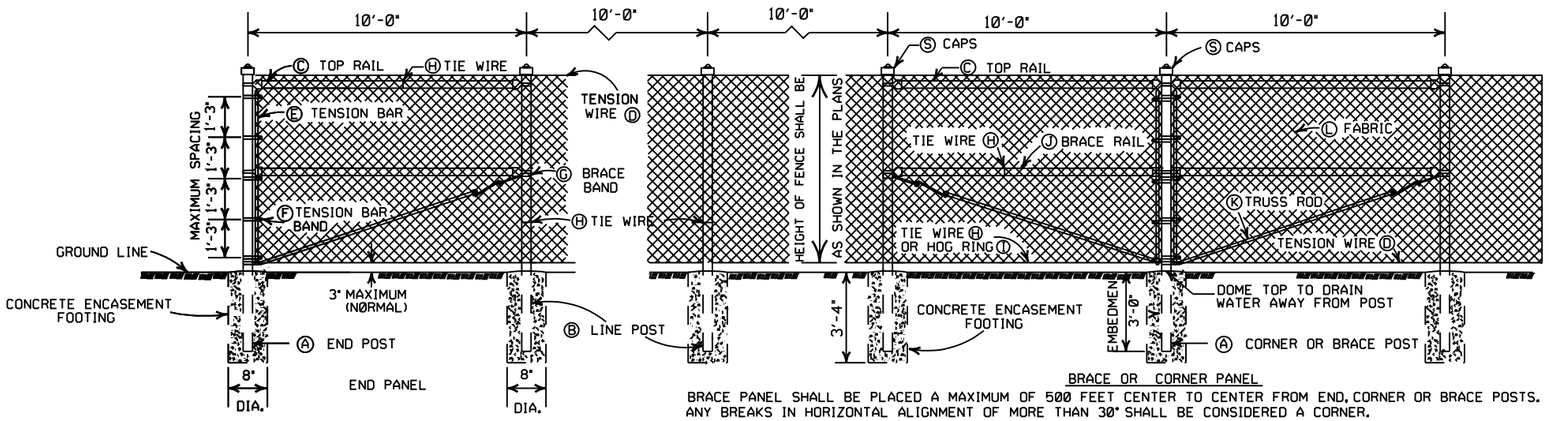
STANDARD DRAWING TEC-4



NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

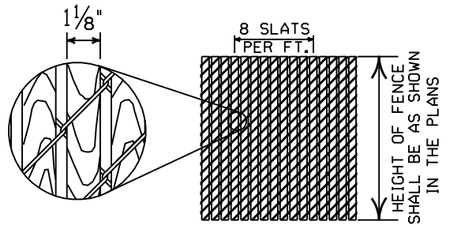
PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.

DOUBLE SWING GATE



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS (LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

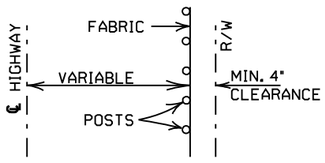
HEIGHT OF FENCE FABRIC	(A) END, PULL CORNER OR BRACE POST	(B) LINE POSTS SIZE	(B) LINE POSTS TIE SPACING	(C) TOP RAIL SIZE	(C) TOP RAIL TIE SPACING	(C) TOP RAIL MIN. LENGTH	(D) TENSION WIRE SIZE	(D) TENSION WIRE TIE SPACING	(E) TENSION BAR SIZE	(E) TENSION BAR LENGTH	(F) TENSION BAR BAND SIZE	(F) TENSION BAR BAND BOLT SIZE	(F) TENSION BAR BAND SPACING	(G) BRACE BAND SIZE	(G) BRACE BAND BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H) TIE WIRE	(I) HOG RING	(J) BRACE RAIL SIZE	(J) BRACE RAIL TIE SPACING	(K) TRUSS ROD	(L) FABRIC SIZE	(L) FABRIC MESH	(L) FABRIC SELVAGE	(M) GATE FRAME SIZE	(M) GATE FRAME TIE SPACING	(N) HORIZONTAL SUPPORT SIZE	(N) HORIZONTAL SUPPORT TIE SPACING	(O) HINGE TYPE 180° SWING	(T) GATE POST GATE WIDTH 12' AND LESS	(T) GATE POST GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK-ING AND/OR TWIST-ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	GRADE 2 O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

STANDARD DRAWING WF-3