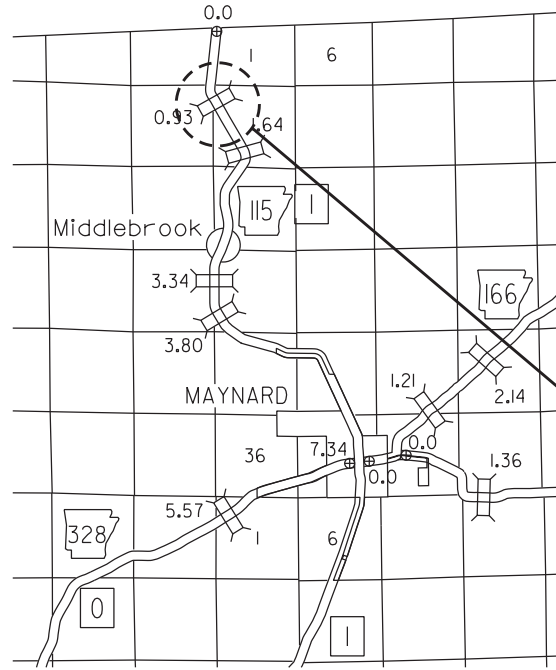


Arkansas - Missouri State Line



VICINITY MAP

PROJECT LOCATION

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

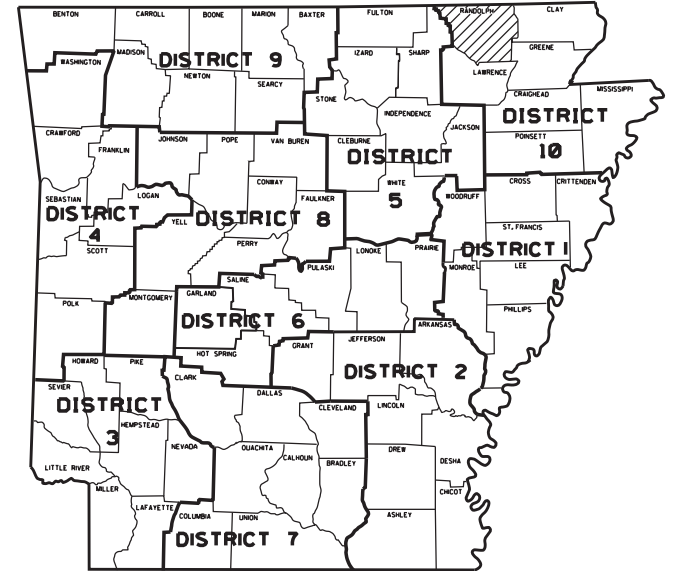
SPENCER CREEK STR. & APPRS. (S)

RANDOLPH COUNTY
ROUTE 115 SECTION 1

JOB 101010
FED. AID PROJ. NHPP-0061(21)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	1	43

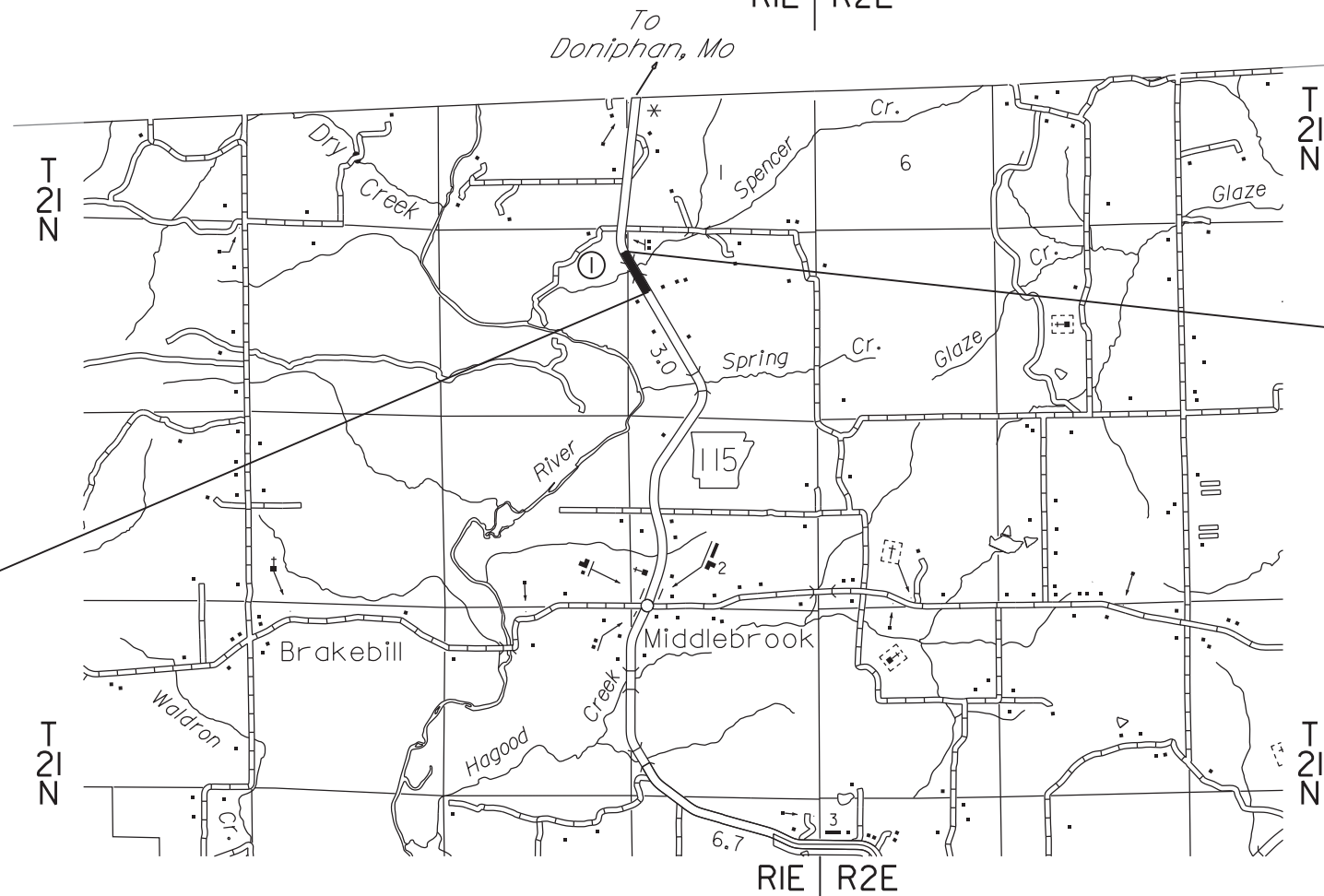
SPENCER CREEK STR. & APPRS. (S)



ARK. HWY. DIST. NO. 10

NOT TO SCALE
RIE | R2E

- ① STRUCTURES OVER 20'-0" SPAN
STA. 112+53 CONSTRUCT
TRIPLE 11'X9'X72' R.C. BOX CULVERT
(10° RT. FWD. SKEW)
WITH 3:1 WINGS LT. AND RT.
Q25= 2150 CFS D.A. = 3.11 SQ. MI.
SPAN= 36'-2"



STA. 115+00.00
END JOB 101010
L.M. 0.90

DESIGN TRAFFIC DATA

DESIGN YEAR	2042
2022 ADT	800
2042 ADT	900
2042 DHV	.99
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	4%
DESIGN SPEED	55 MPH

STA. 109+00.00
BEGIN JOB 101010
L.M. 1.01

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 36°29' 03"	N 36°29' 05"	N 36°29' 08"
LONGITUDE	W 90°55' 32"	W 90°55' 34"	W 90°55' 36"
STATION	109+00.00	112+00.00	115+00.00

PROJECT LENGTH CALCULATED ALONG C.L. CONSTRUCTION

GROSS LENGTH OF PROJECT	600.00	FEET OR	0.114	MILES
NET ROADWAY	563.83		0.107	
NET BRIDGES	36.17		0.007	
NET PROJECT	600.00		0.114	



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Date: 2022.05.16 11:55:00 -05'00'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	2	43

② INDEX OF SHEETS AND STANDARD DRAWINGS



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 - 14	SPECIAL DETAILS
15 - 18	TEMPORARY EROSION CONTROL DETAILS
19 - 23	MAINTENANCE OF TRAFFIC DETAILS
24	PERMANENT PAVEMENT MARKING DETAILS
25 - 28	QUANTITIES
29	SUMMARY OF QUANTITIES AND REVISIONS
30 - 32	SURVEY CONTROL DETAILS
33 - 34	PLAN AND PROFILE SHEETS
35 - 43	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
DR-2	DETAILS FOR DRIVEWAYS & STREET TURNOUTS	05-19-22
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FLL 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
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
SI-1	DETAILS OF SPECIAL ITEMS	10-25-18
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	08-12-21
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
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	3	43

2 GOVERNING SPECIFICATIONS AND GENERAL NOTES

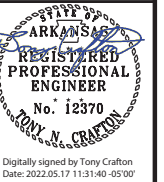
GOVERNING SPECIFICATIONS

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 TIME TABLES
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
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
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
501-2	CEMENT
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)
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
800-1	STRUCTURES
802-4	CEMENT
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 101010	BIDDING REQUIREMENTS AND CONDITIONS
JOB 101010	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 101010	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101010	CARGO PREFERENCE ACT REQUIREMENTS
JOB 101010	CAVE DISCOVERY
JOB 101010	COLD MILLING - COUNTY PROPERTY
JOB 101010	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101010	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 101010	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 101010	FLEXIBLE BEGINNING OF WORK
JOB 101010	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 101010	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101010	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 101010	MANDATORY ELECTRONIC CONTRACT
JOB 101010	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101010	NESTING SITES OF MIGRATORY BIRDS
JOB 101010	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 101010	PLASTIC PIPE
JOB 101010	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 101010	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101010	SHORING FOR CULVERTS
JOB 101010	SOIL STABILIZATION
JOB 101010	SPECIAL CLEARING PUP SEASON REQUIREMENTS
JOB 101010	STORM WATER POLLUTION PREVENTION PLAN
JOB 101010	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 101010	UTILITY ADJUSTMENTS
JOB 101010	VEGETATED BUFFER ZONE
JOB 101010	WARM MIX ASPHALT
JOB 101010	WATER POLLUTION CONTROL

GENERAL NOTES

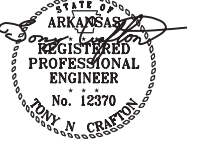
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- 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.
- 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.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- 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.
- THIS PROJECT IS PERMITTED UNDER A SECTION 404 NATIONWIDE 14 PERMIT FOR LINEAR TRANSPORTATION. REFER TO SECTION 404 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.



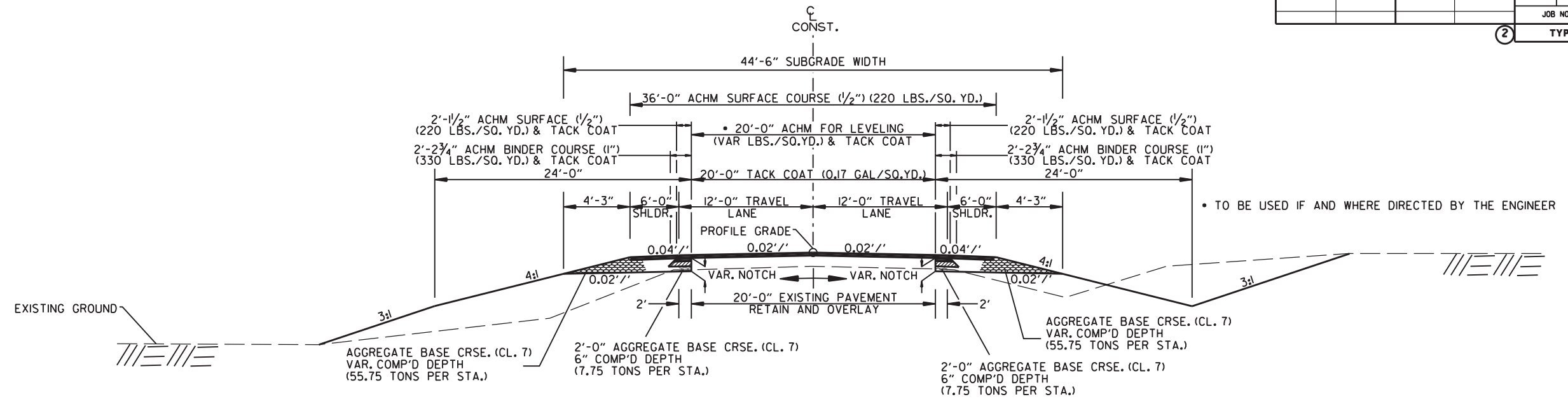
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							4	43

2 TYPICAL SECTIONS OF IMPROVEMENT



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Date: 2020.12.17 07:23:41 -0600



HWY. 115 TWO LANE NOTCH AND WIDEN OPEN SHOULDER

STA. 109+00.00 - STA. 110+20.00
STA. 112+96.00 - STA. 115+00.00

NOTES:

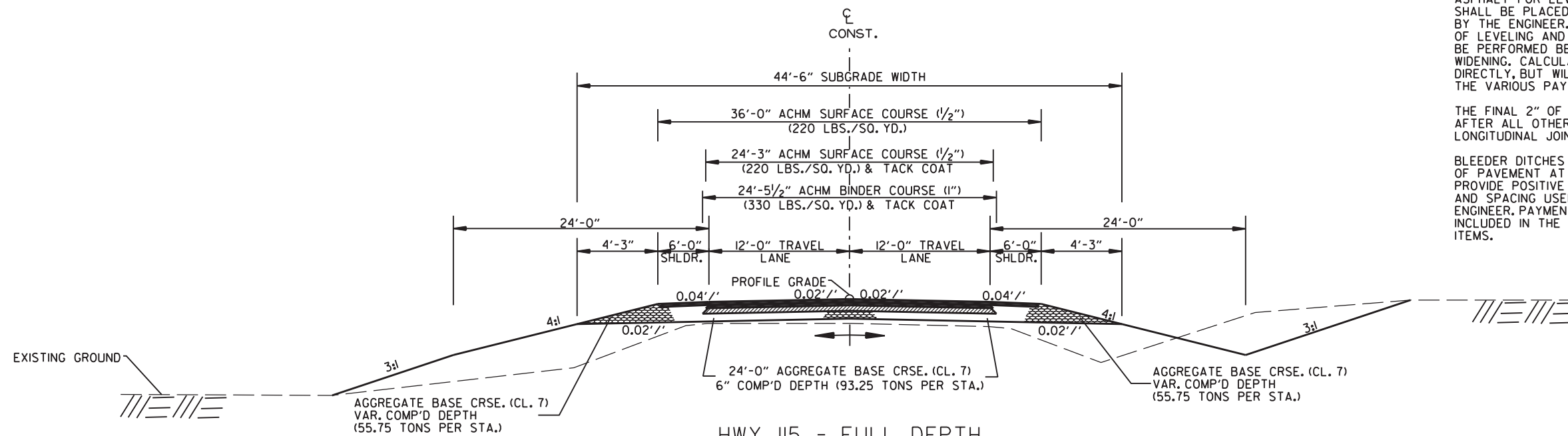
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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 WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

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



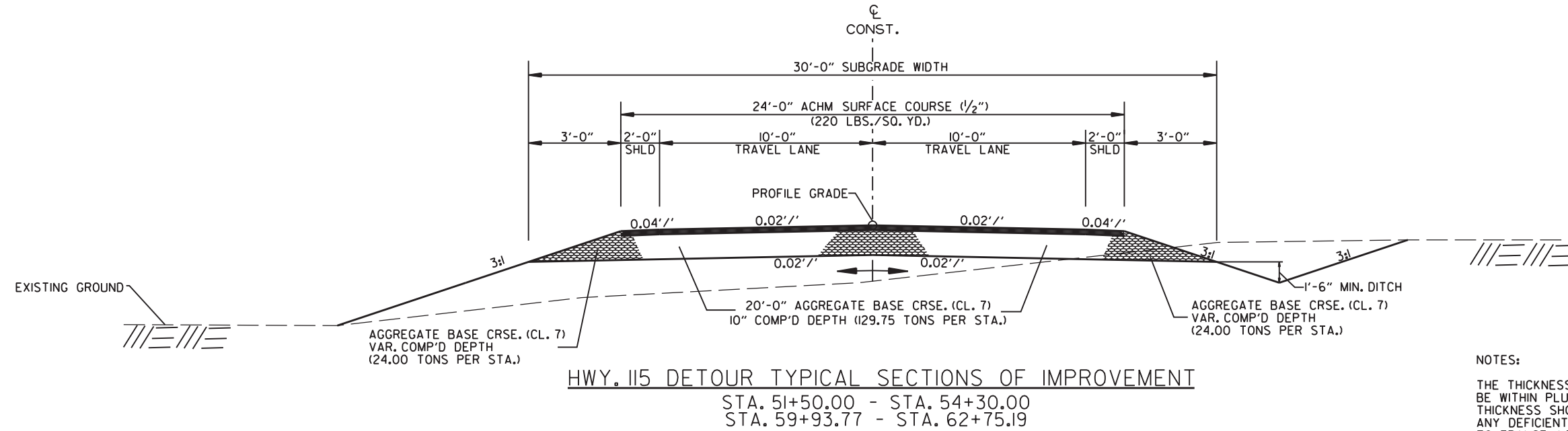
HWY. 115 - FULL DEPTH
STA. 110+20.00 - STA. 112+96.00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	5	43	

② TYPICAL SECTIONS OF IMPROVEMENT

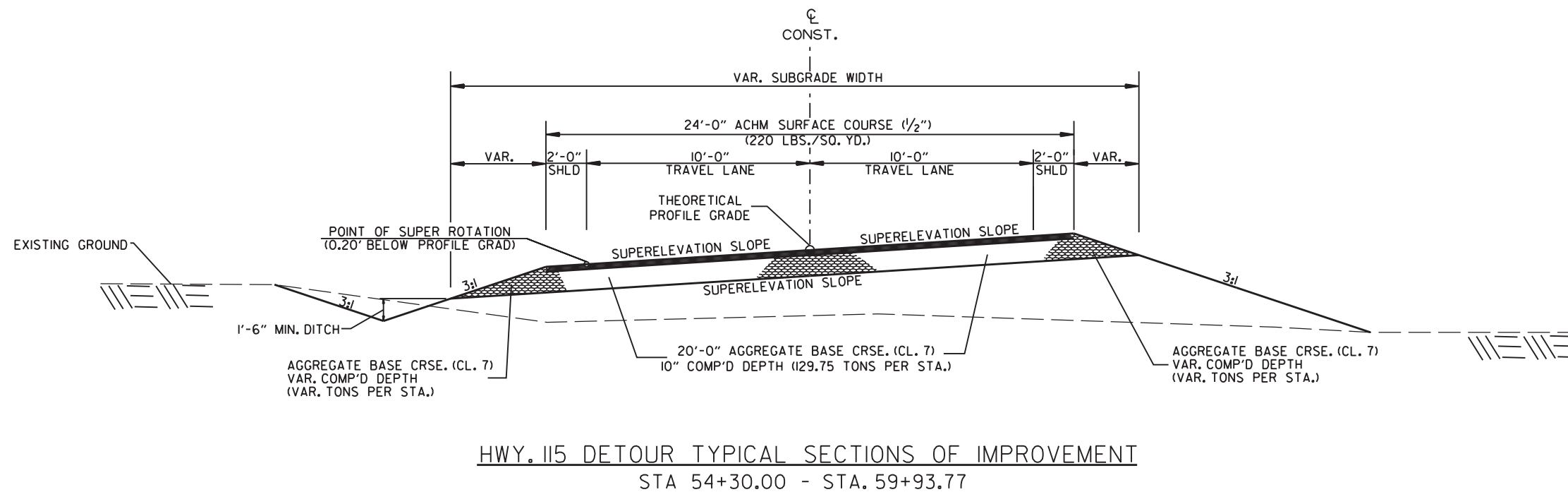


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Date: 2021.04.22 16:04:30 -0500



NOTES:
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.

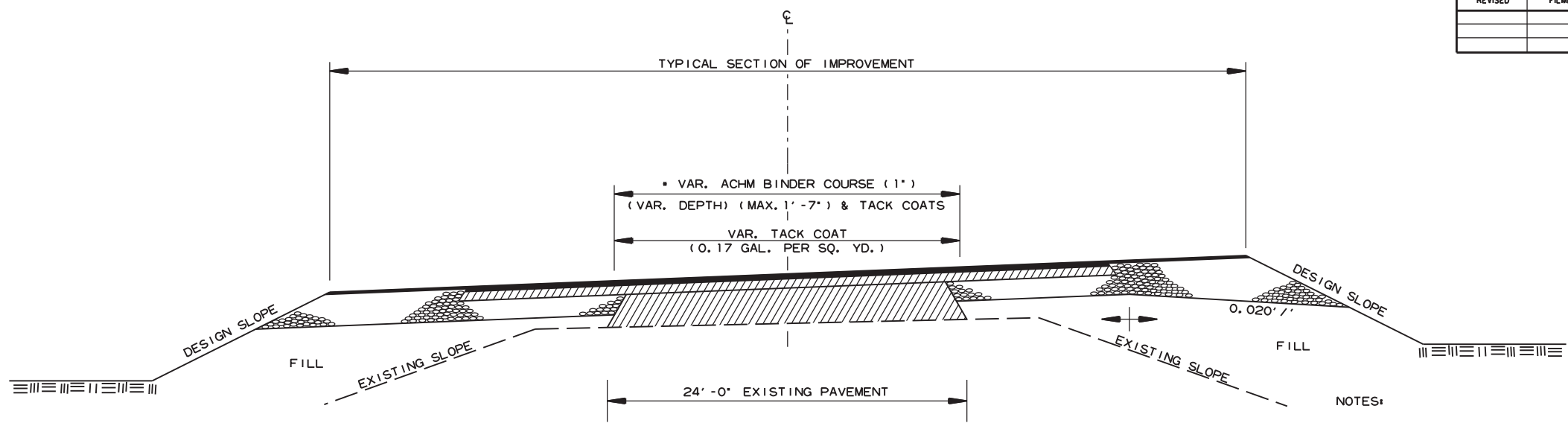
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.



TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							101010	6	43

2 SPECIAL DETAILS

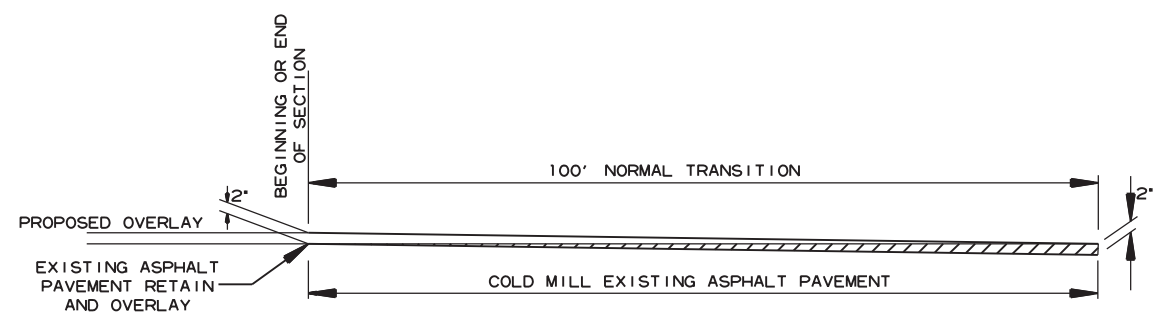


7" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

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.

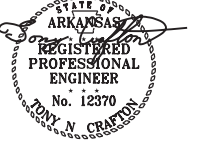


DETAIL FOR TRANSITIONS

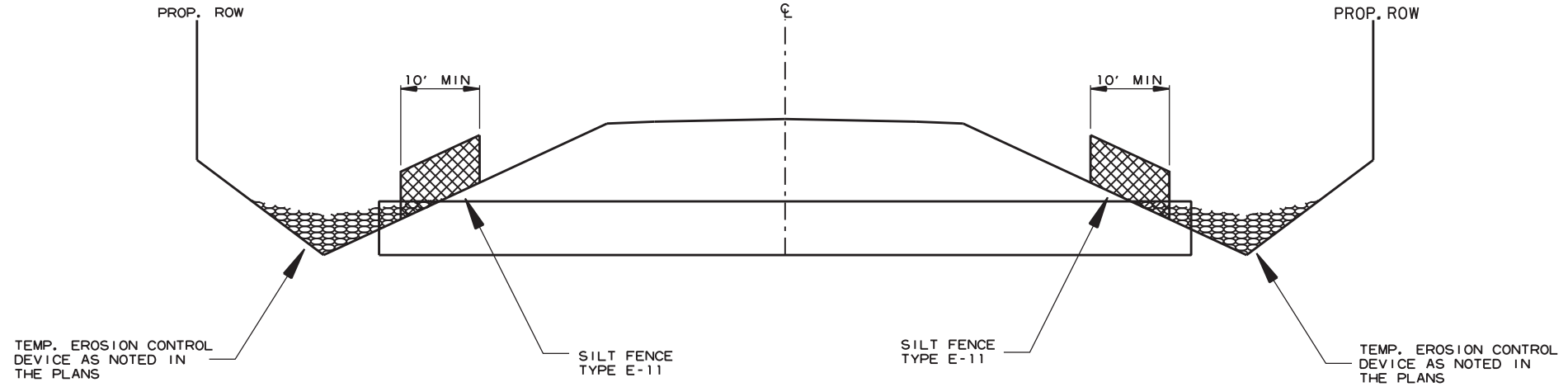
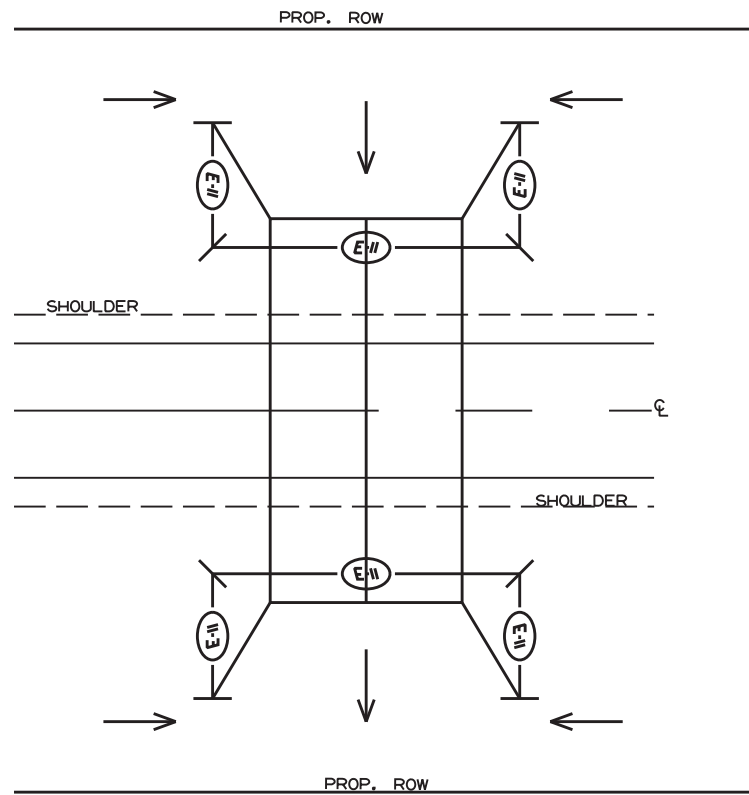
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				6	ARK.			
				JOB NO.	101010	7	43	

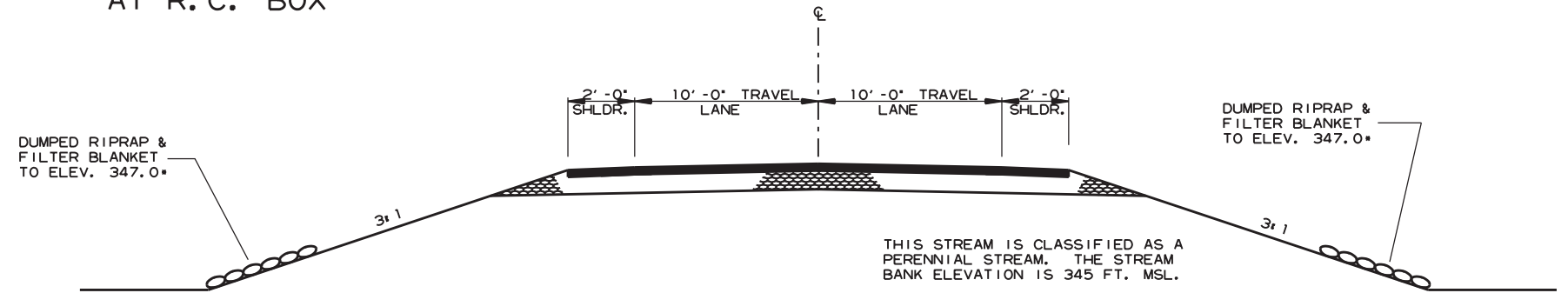
2 SPECIAL DETAILS



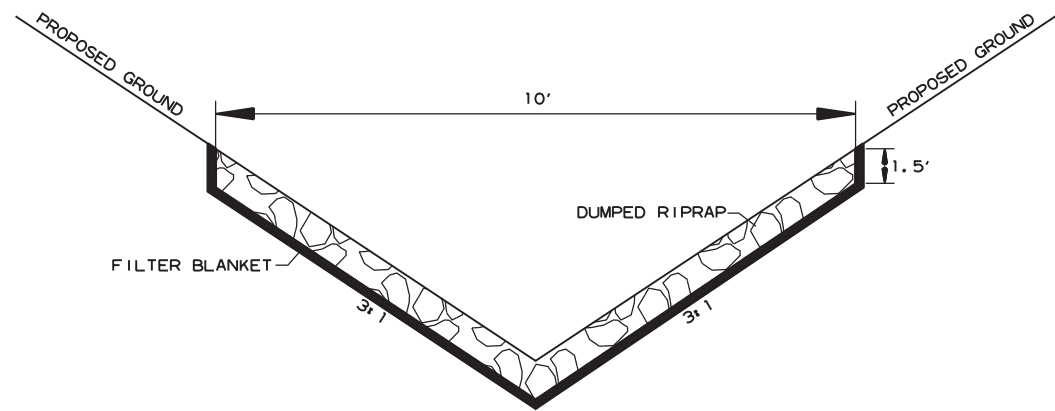
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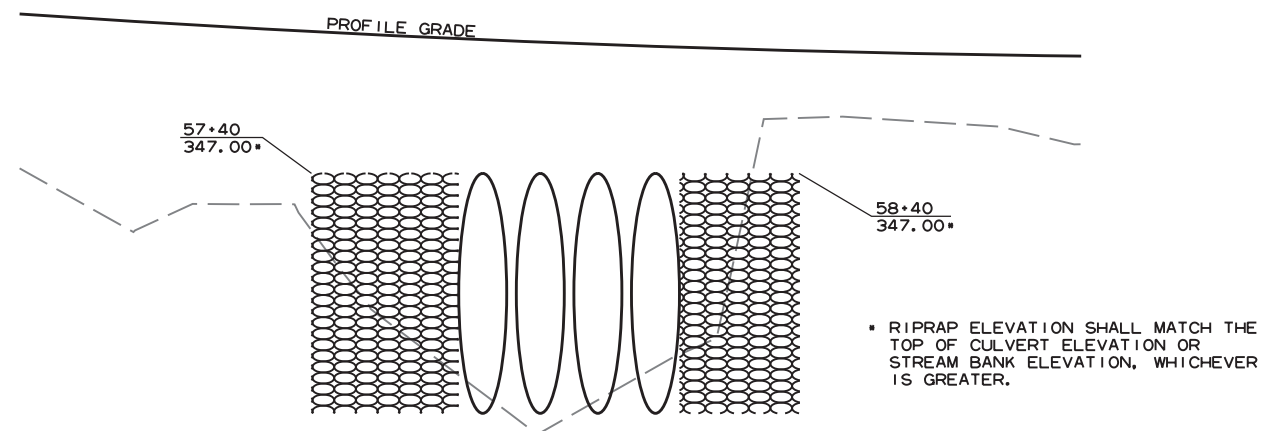
DETAIL OF SILT FENCE AT R.C. BOX



TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD
STA. 57+40.00 - STA. 58+40.00



TYPICAL DUMPED RIPRAP FOR DITCH LINING

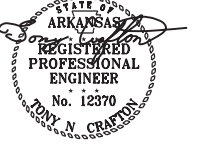


DETAIL OF DUMPED RIPRAP & FILTER BLANKET

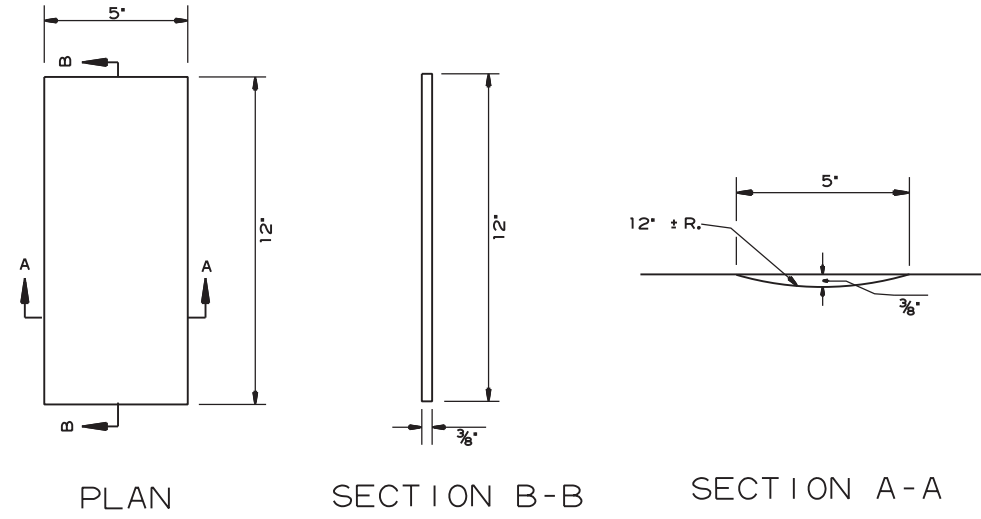
SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	8	43

2 SPECIAL DETAILS

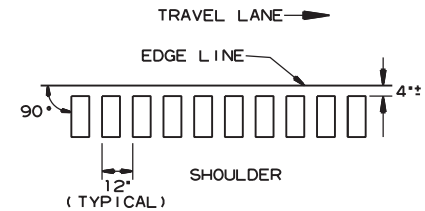


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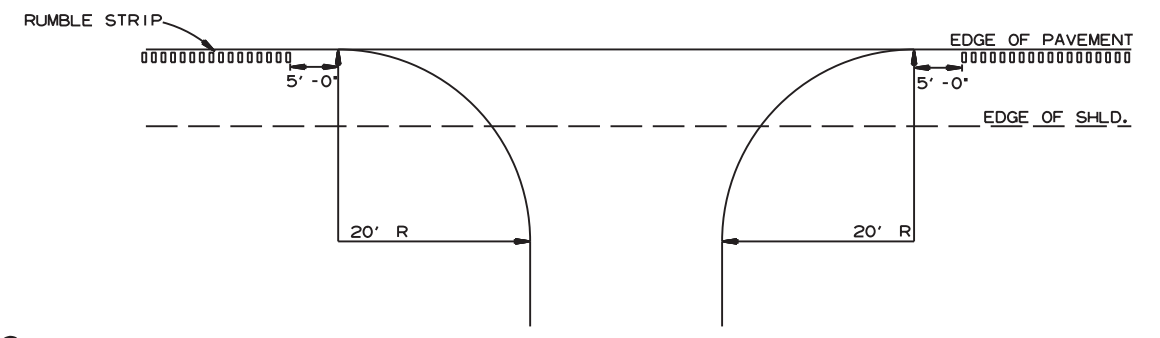


PLAN SECTION B-B SECTION A-A

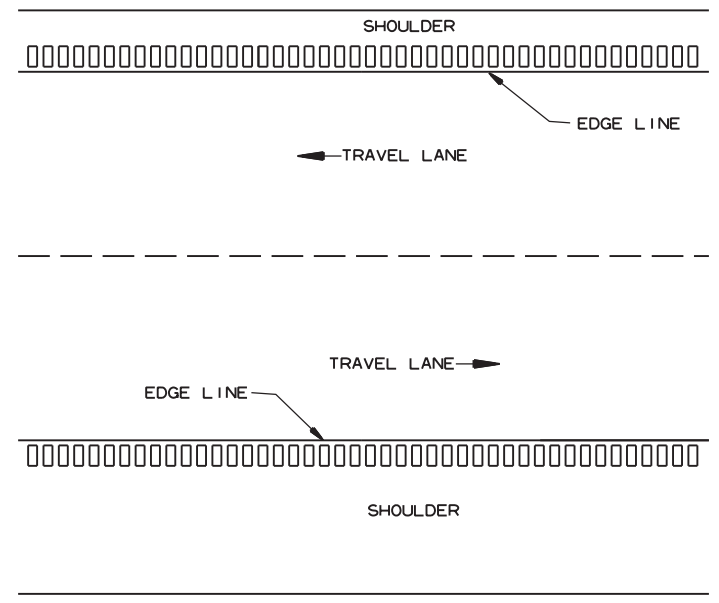
DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER



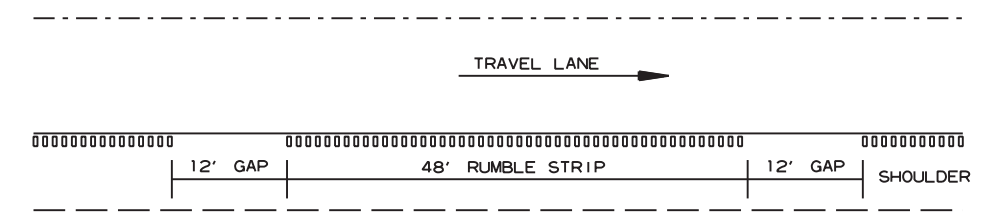
DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS



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

MID-SECTION

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, SECTION LENGTH, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL, CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60).

Table with columns: CLASS 'S' CONCRETE (CU. YDS.), REINFORCING STEEL (GR. 60) (LBS.).

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 112+53
SPECIAL DETAILS

Data shown for Mid-Section, Slope Sections, and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

Table with columns: Design Fill Depth, Range of Actual Fill Depth.

INLET SLOPE SECTIONS(S)

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, SECTION LENGTH, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL, CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60).

Table with columns: CLASS 'S' CONCRETE (CU. YDS.), REINFORCING STEEL (GR. 60) (LBS.).

INLET SKEWED END SECTION

Table with columns for SK, SL, D, S, H, LL, T, HD, B, C, W, OW, OH, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL, CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60).

Table with columns: CLASS 'S' CONCRETE (CU. YDS.), REINFORCING STEEL (GR. 60) (LBS.).

Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 60)."

INLET WINGWALL TABLE

Table with columns for OVER ALL WIDTH, CLEAR HEIGHT, FOOTING THK., WING WALL THK., BOX SKEW (DEG.), SLOPE, HDWL LENGTH, HEEL, WALL HEIGHT, WINGWALL ANGLE, WIDTH OF WING FOOTINGS AT HDWL, FOOTING DIMENSION PARALLEL WITH HDWL, LENGTH OF WINGWALLS, LENGTH OF FOOTING HEEL, CLASS 'S' CONCRETE, REINFORCING STEEL.

MID-SECTION BAR LAP TABLE

Table with columns: # of Long. Laps Req'd., SL = Section Length.

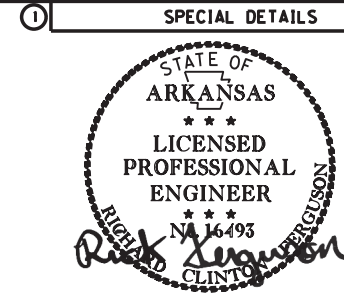
Table with columns: Min. Bar Lap Length, #, Length.

Table with columns: Bar Pin Dia. Table, #, Dia.

This drawing to be used in conjunction with SHEET 1 OF 4, 'GENERAL DETAILS OF R.C. BOX CULVERT', 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE', SHEET 3 OF 4, 'GENERAL DETAILS OF R.C. BOX CULVERT', 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT', SHEET 4 OF 4, 'GENERAL DETAILS OF R.C. BOX CULVERT', 'DETAILS OF WINGWALLS', and STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

Table with columns: DATE REVISED, DATE FILMED, FED. ROAD DIST. NO., STATE, FED. AID PROJ. NO., SHEET NO., TOTAL SHEETS.



12/04/2020

2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

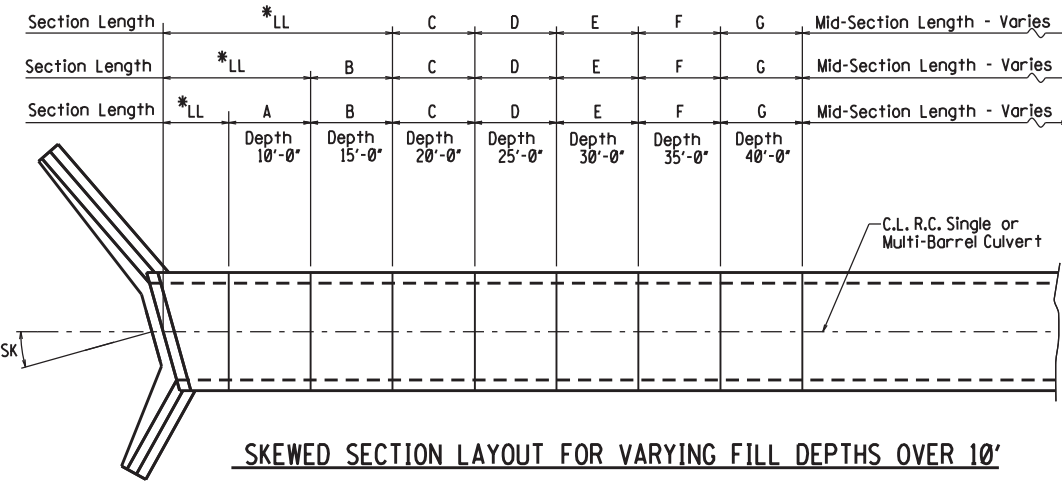
*LL = Skewed End Section Length - See "Skewed End Section Details"
Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	43
				JOB NO.	101010			

SPECIAL DETAILS



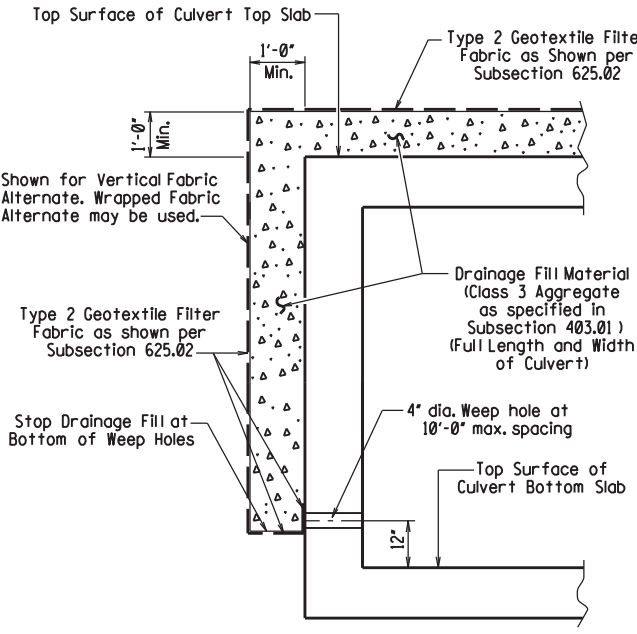
12/04/2020



LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

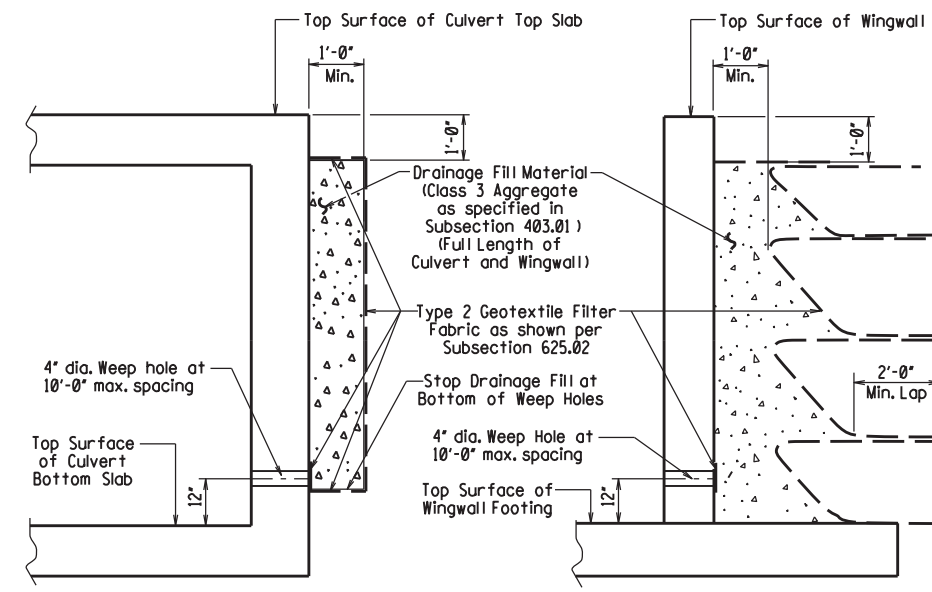
Lengths for Non-Skewed Boxes

Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	G=16'-0"	Mid-Section Length - Varies



CULVERT DRAINAGE DETAIL FOR ROCK FILL

This detail shall be used when rock fill is specified for embankment construction.

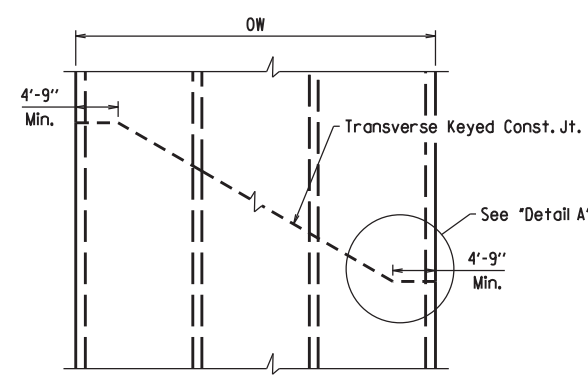


VERTICAL FABRIC ALTERNATE and WRAPPED FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall) (Shown for Wingwall, Similar for Culvert)

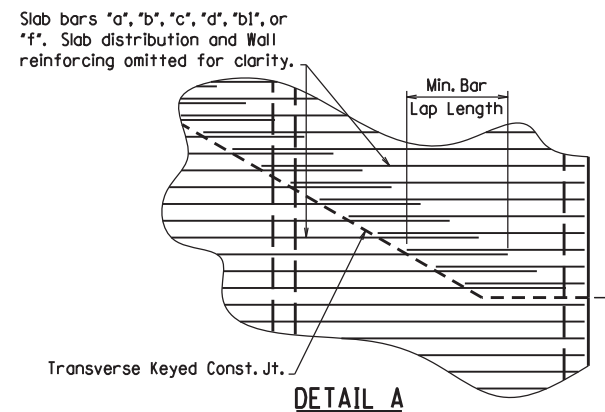
For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

WINGWALL & CULVERT DRAINAGE DETAIL



SKEWED TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths. Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 3/8" chamfers.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall conform to the requirements of Section 815. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.

Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.

Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. All longitudinal construction joints shall be submitted to the Engineer for approval.

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.

When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class 5 Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

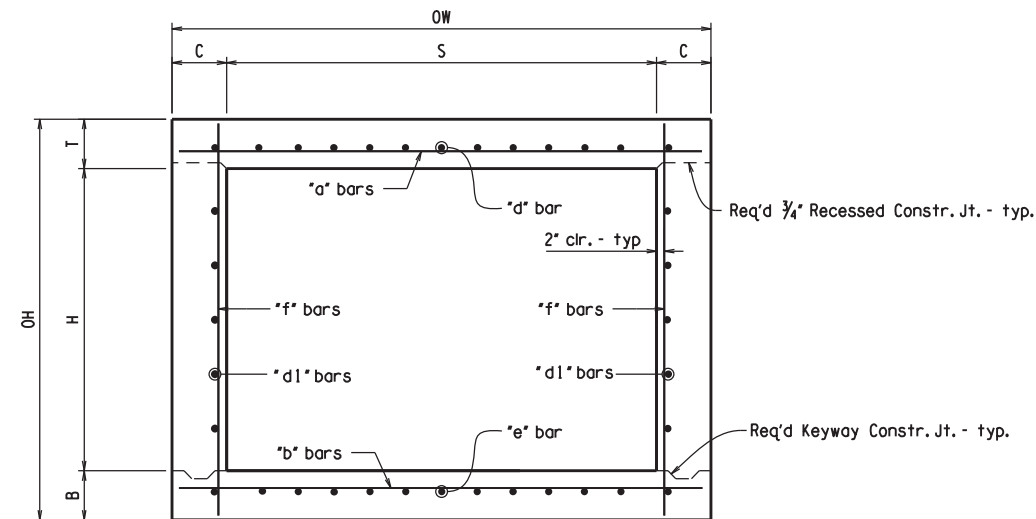
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE
SPECIAL DETAILS

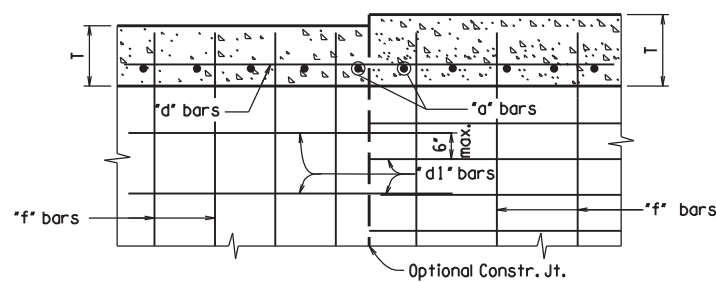


V. I. I. FILENAME

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.

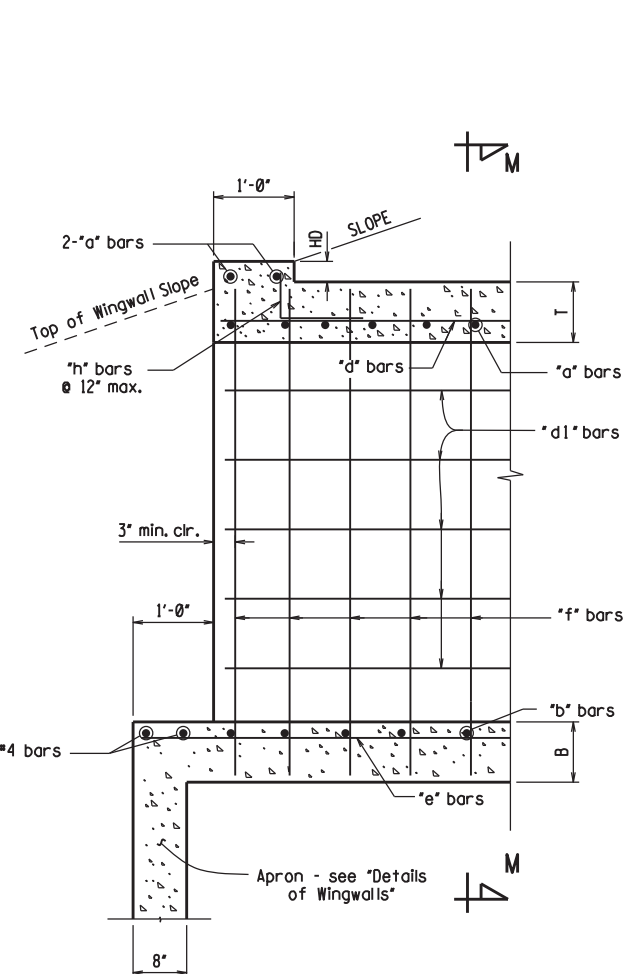


TYPICAL SECTION M-M



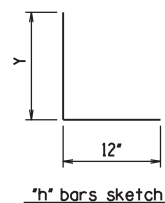
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

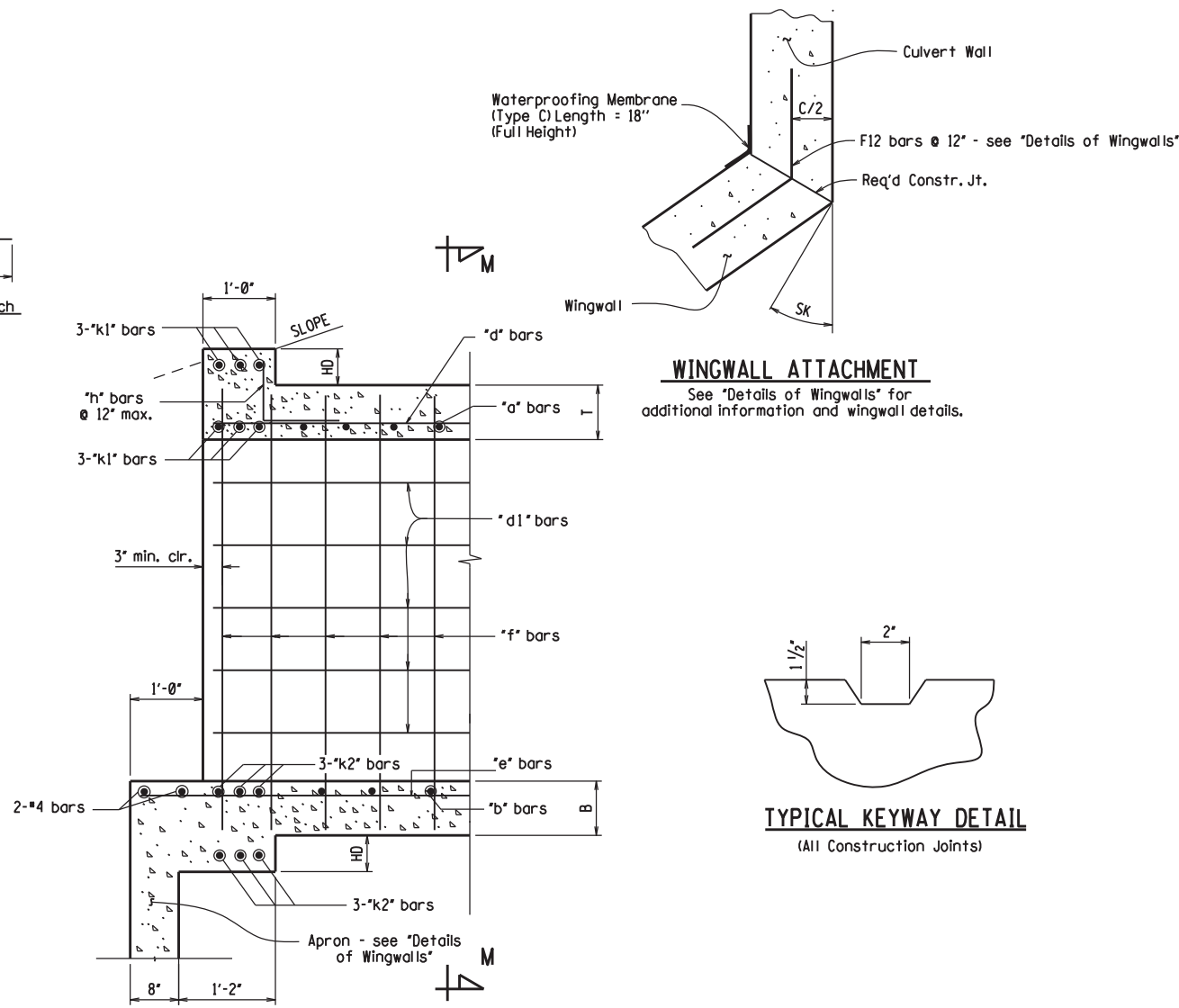


PART LONGITUDINAL SECTION

(Non-Skewed Ends)

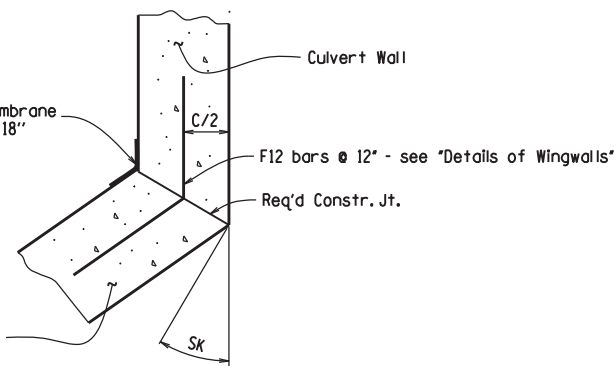


"h" bars sketch



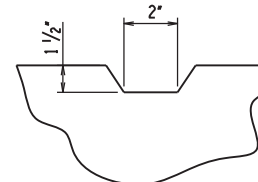
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.



TYPICAL KEYWAY DETAIL

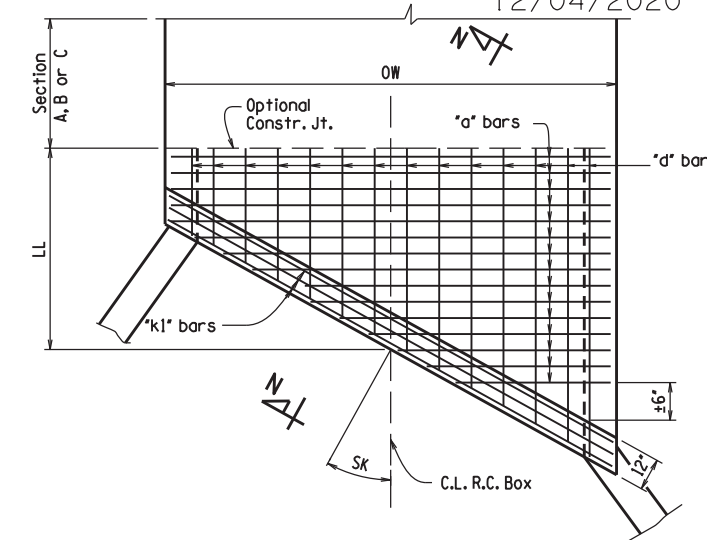
(All Construction Joints)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101010	12	43

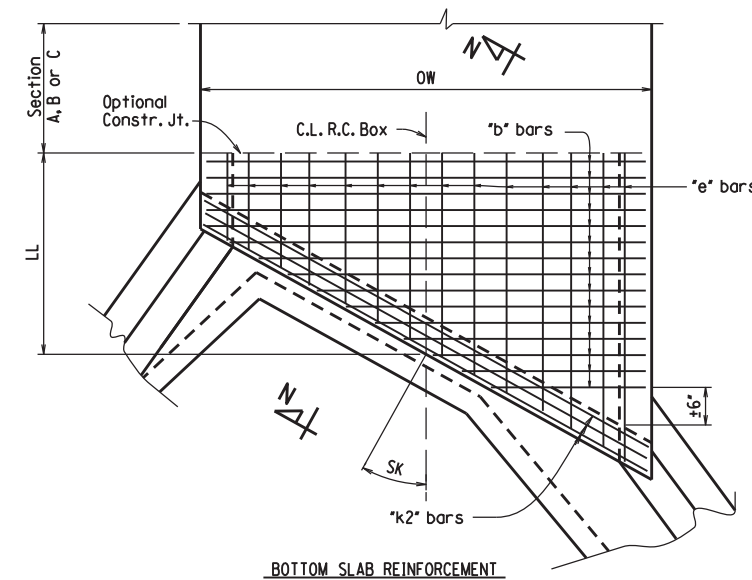
1 SPECIAL DETAILS



12/04/2020



TOP SLAB REINFORCEMENT



BOTTOM SLAB REINFORCEMENT

SKewed END SECTION DETAILS

SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT

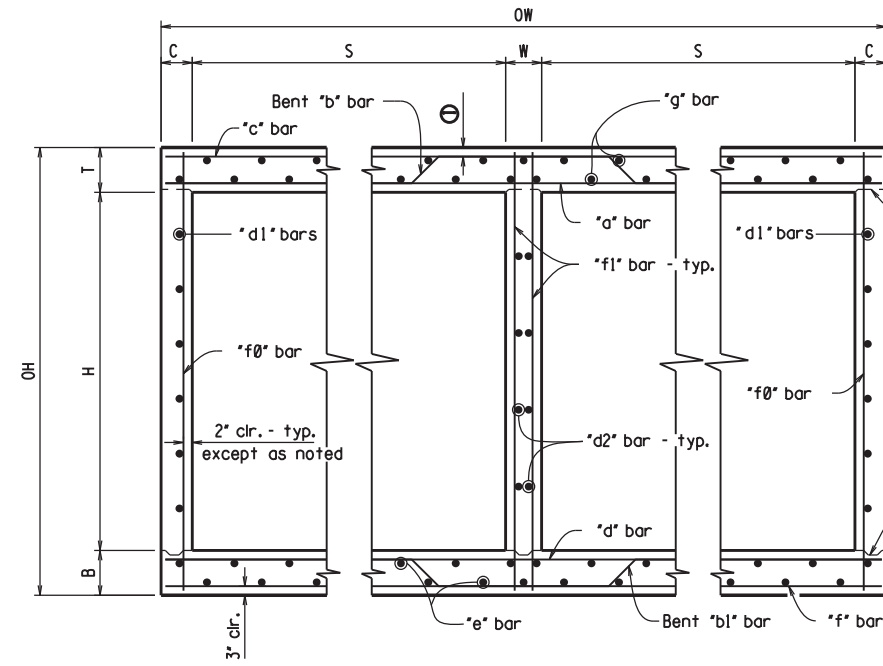
SPECIAL DETAILS



DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		13	43
				JOB NO.	101010			

① 2" clr. for fill depth (D) greater than 2 ft.
 2 1/2" clr. for fill depth (D) equal to or less than 2 ft.

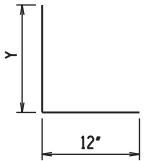
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



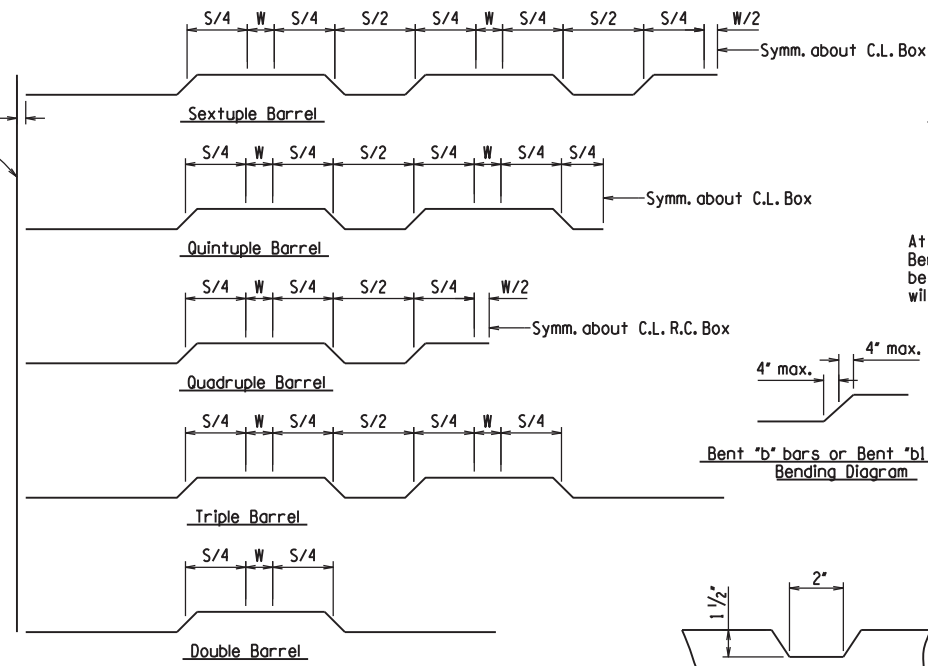
TYPICAL SECTION M-M

Top Slab
 Straight "c" bars shall alternate with Bent "b" bars in top.
 Straight "a" bars shall alternate with Bent "b" bars in bottom.

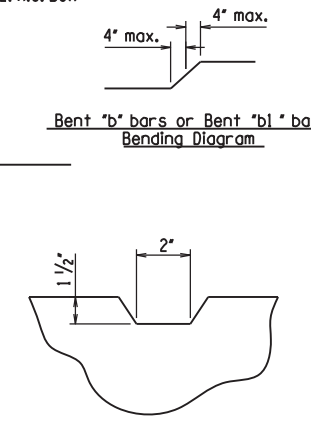
Bottom Slab
 Straight "d" bars shall alternate with Bent "bl" bars in top.
 Straight "f" bars shall alternate with Bent "bl" bars in bottom.



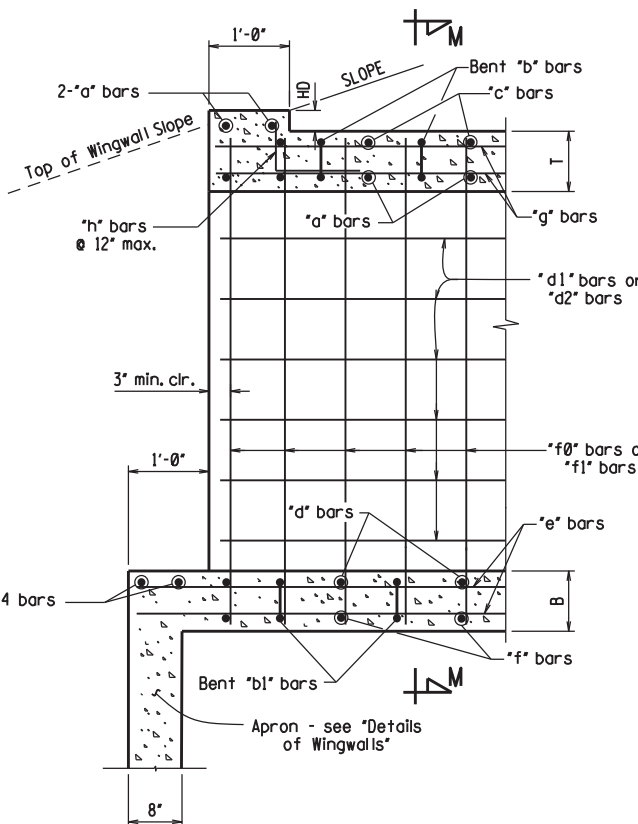
"h" bars sketch



Bent "b" bars or Bent "bl" bars sketch

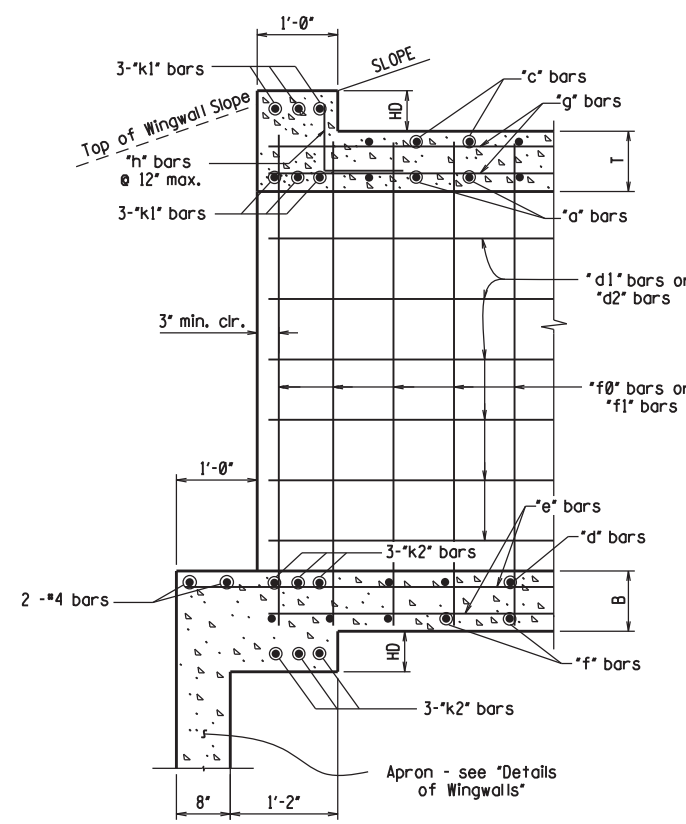


TYPICAL KEYWAY DETAIL
 (All Construction Joints)



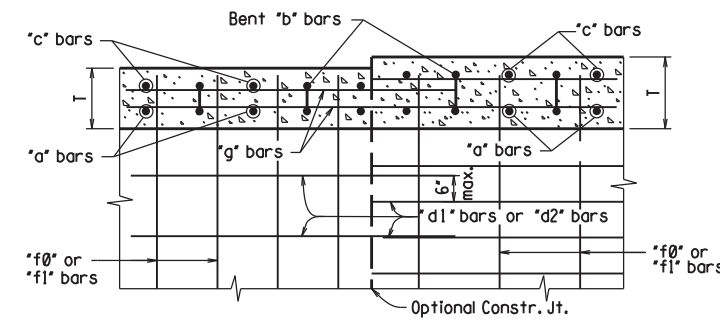
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



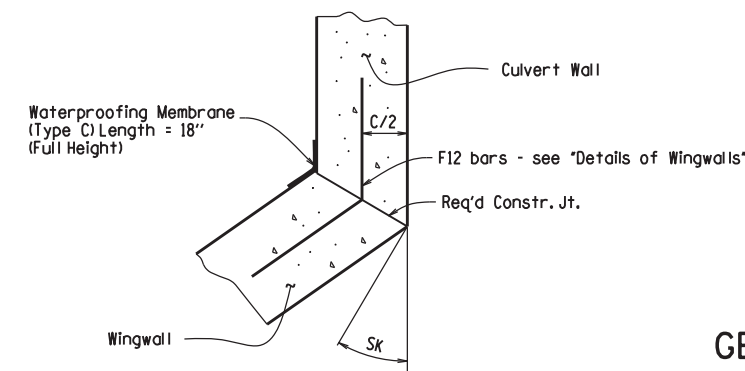
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



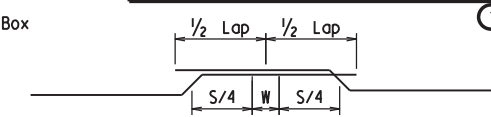
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



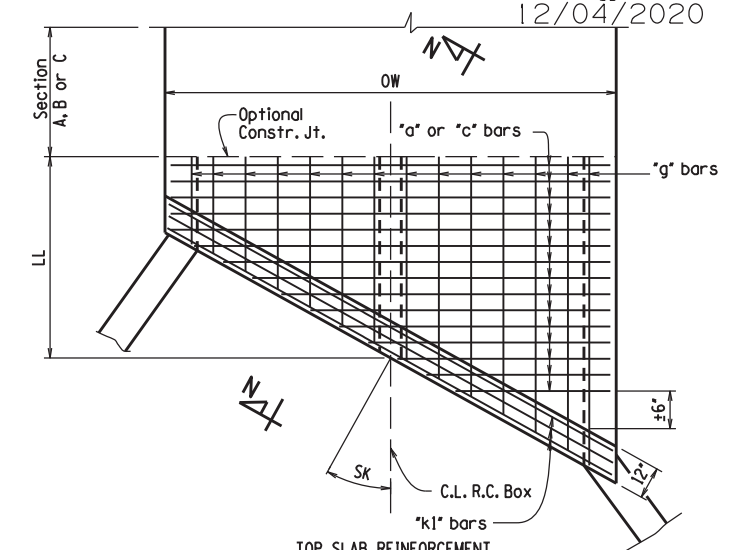
WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.



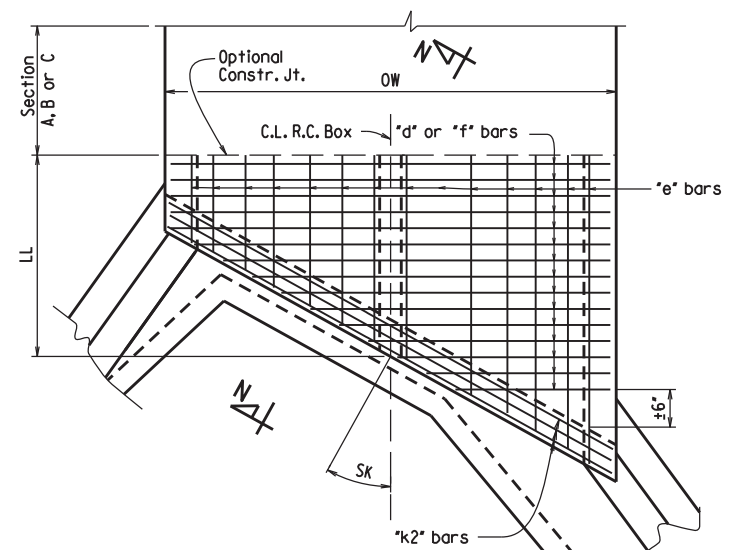
Lap Detail
 For Bent "b" bars and Bent "bl" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



TOP SLAB REINFORCEMENT

Straight "c" bars in top.
 Straight "a" bars in bottom.

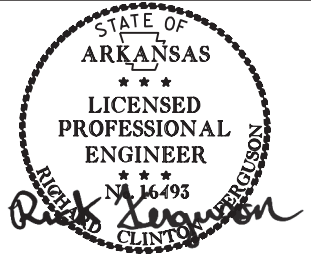


BOTTOM SLAB REINFORCEMENT

Straight "d" bars in top.
 Straight "f" bars in bottom.

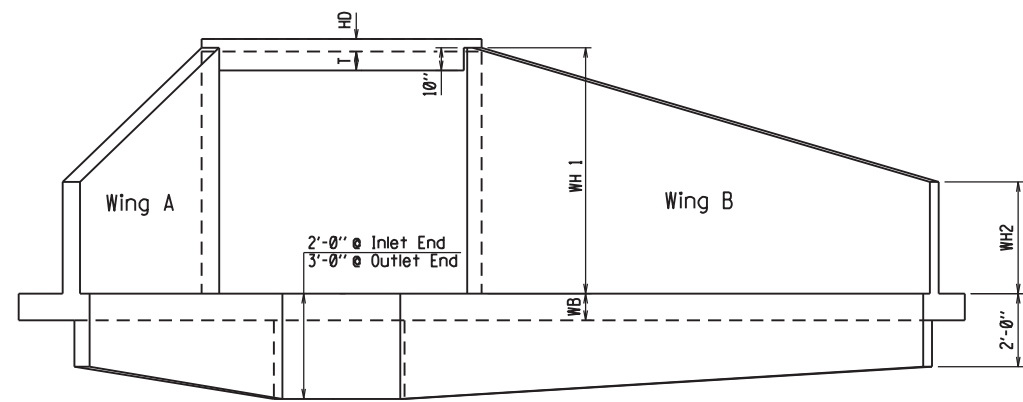
SKewed END SECTION DETAILS

SHEET 3 OF 4
 GENERAL DETAILS OF R.C. BOX CULVERT
 DETAILS OF MULTI-BARREL
 R.C. BOX CULVERT
 SPECIAL DETAILS

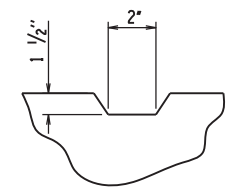


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		14	43
				JOB NO.	101010		14	43

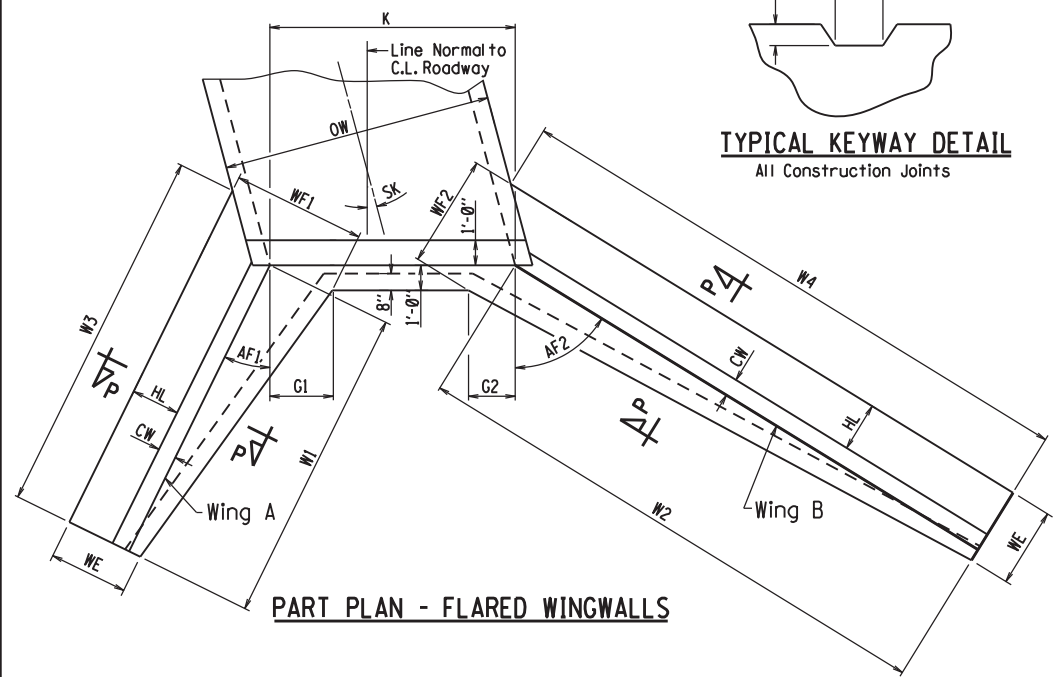
SPECIAL DETAILS



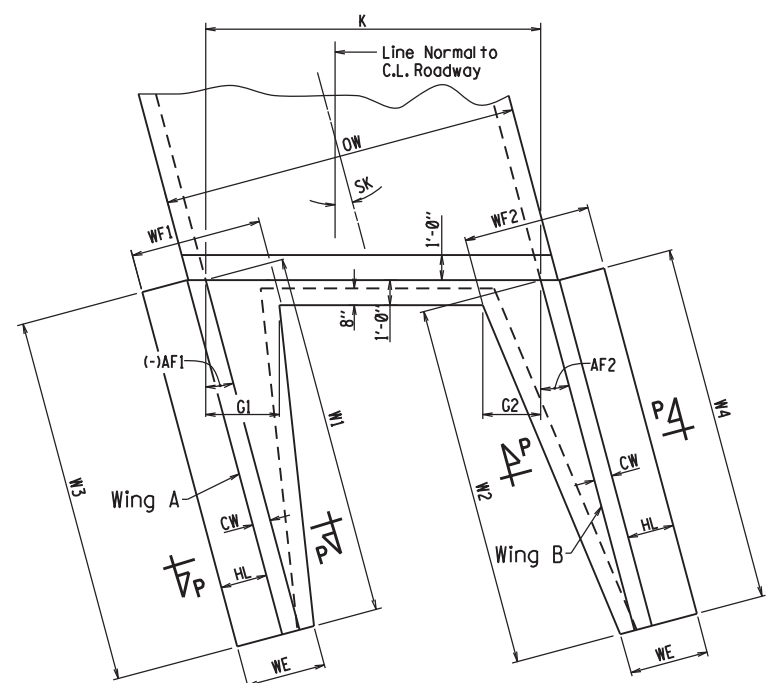
END ELEVATION
Flared Wingwalls Shown



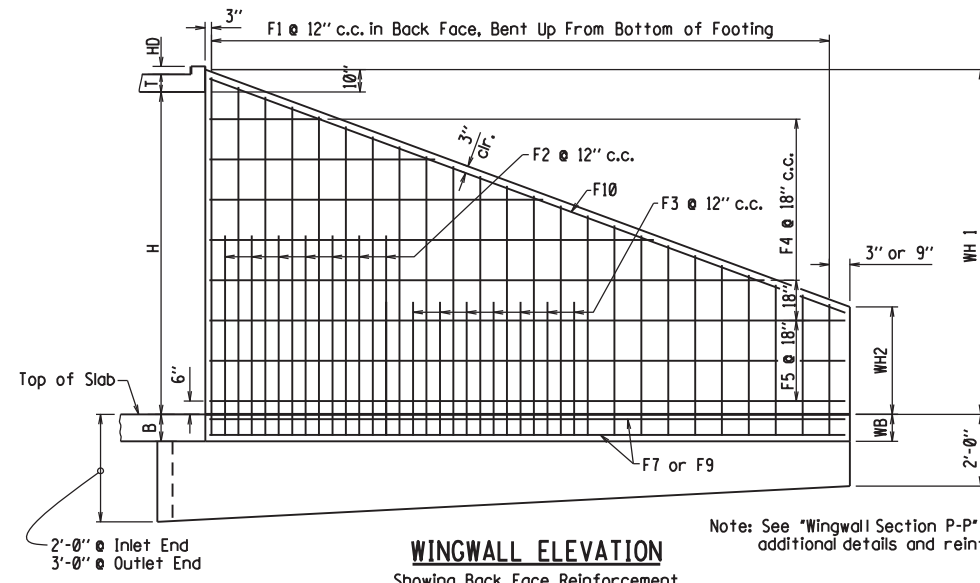
TYPICAL KEYWAY DETAIL
All Construction Joints



PART PLAN - FLARED WINGWALLS

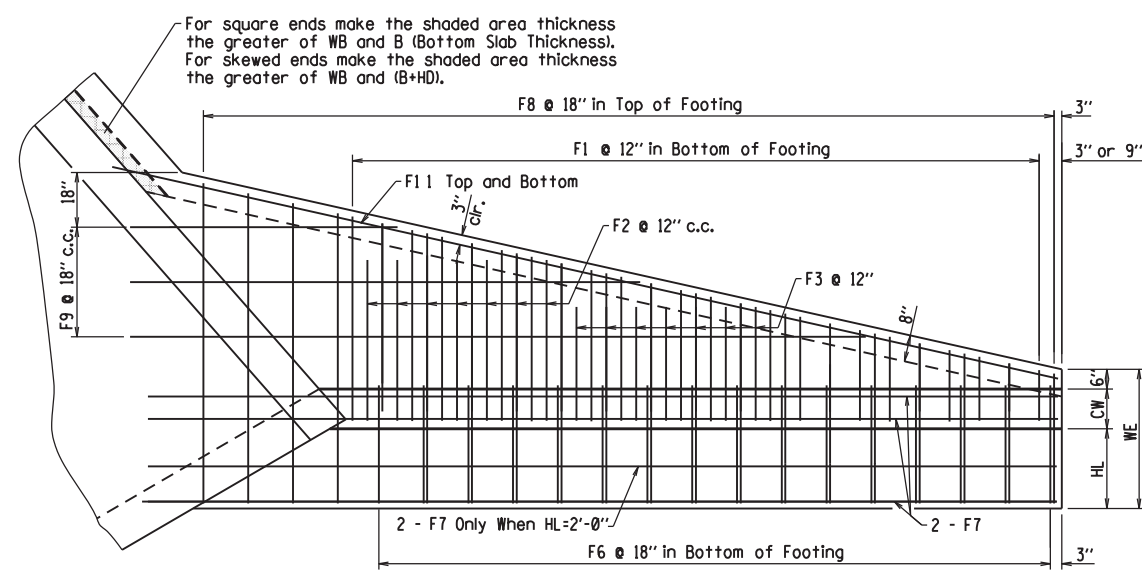


PART PLAN - PARALLEL WINGWALLS



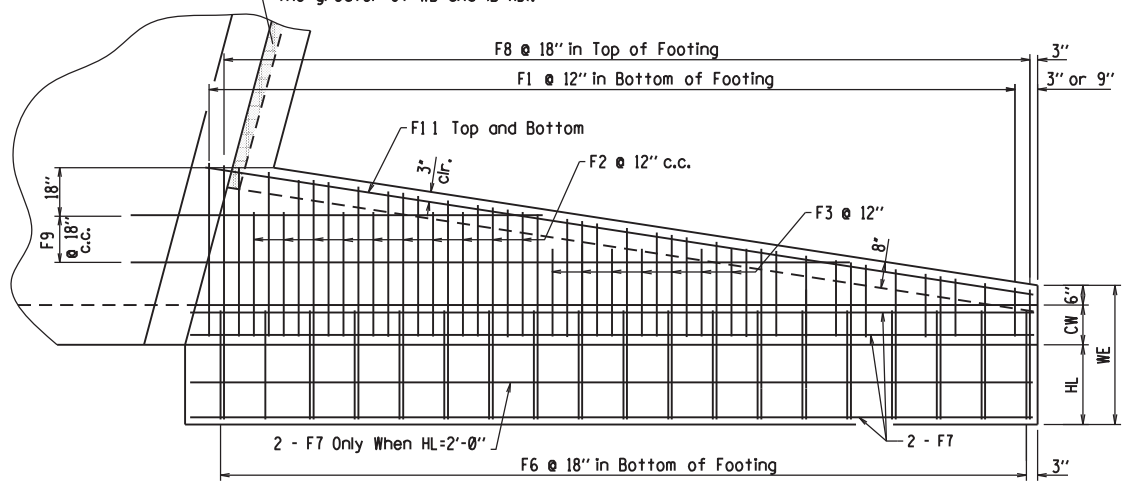
WINGWALL ELEVATION
Showing Back Face Reinforcement

Note: See "Wingwall Section P-P" for additional details and reinforcing.

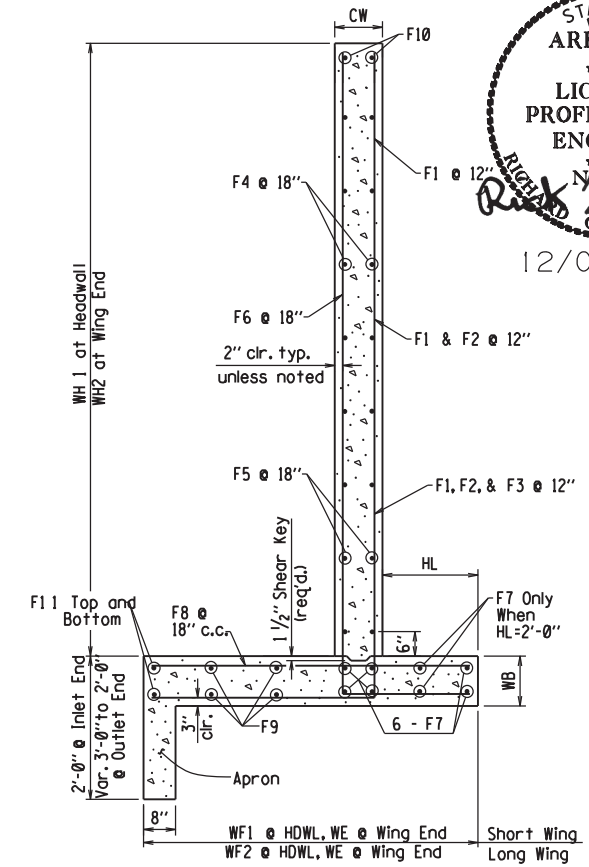


PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

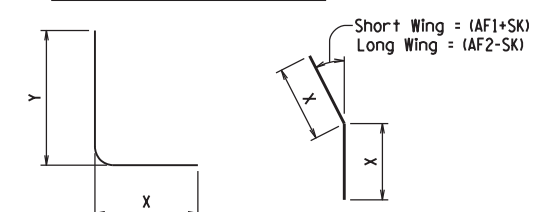
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HD).



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

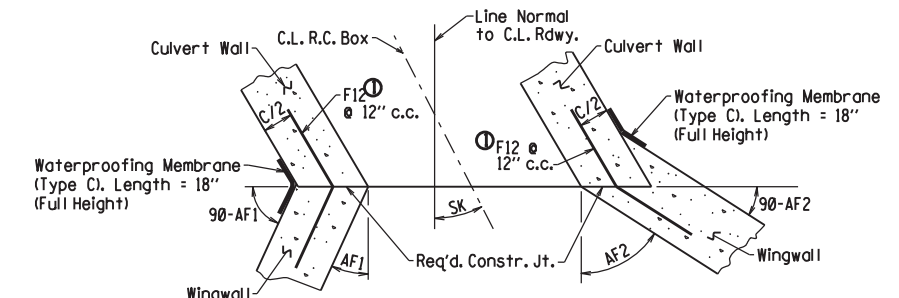


WINGWALL SECTION P-P



F1, F2, F3, & F6 BARS **F12 BAR**

F12 is a straight bar for parallel wingwalls



CONSTRUCTION JOINTS
Flared Wingwalls Shown

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS



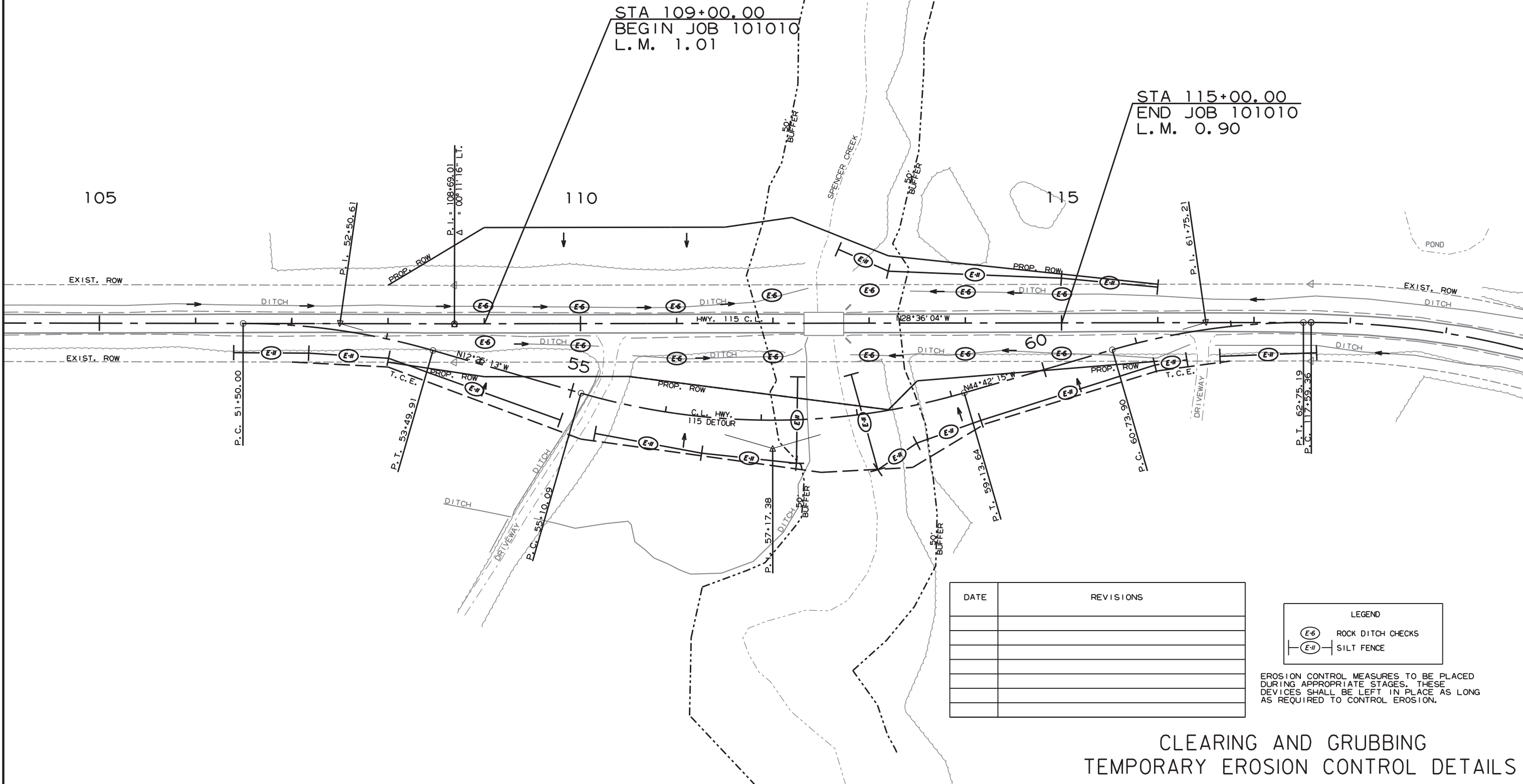
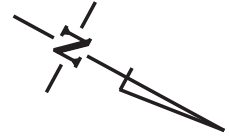
HWY. 115		
SILT FENCE		
STA. 106+40 TO 109+79	RT.	351
STA. 110+15 TO 112+26	RT.	302
STA. 112+68 TO 116+00	LT.	338
STA. 112+87 TO 116+30	RT.	446
STA. 116+64 TO 117+65	RT.	101
ROCK DITCH CHECKS		
STA. 109+00 TO 115+00	LT.	7
STA. 109+00 TO 115+00	RT.	7
TEMPORARY SEEDING & MULCH COVER		
STA. 108+48 TO 112+33	LT.	0.17
STA. 109+12 TO 110+19	RT.	0.03
STA. 110+51 TO 112+13	RT.	0.15
STA. 112+87 TO 113+21	RT.	0.03
STA. 113+41 TO 114+66	RT.	0.05

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							15	43

2 TEMPORARY EROSION CONTROL DETAILS



Digitally signed by Tony Crafton
Date: 2021.04.22 16:08:40 -0500



DATE	REVISIONS

LEGEND	
(E-6)	ROCK DITCH CHECKS
(E-W)	SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

CLEARING AND GRUBBING TEMPORARY EROSION CONTROL DETAILS

HWY. 115 DETOUR

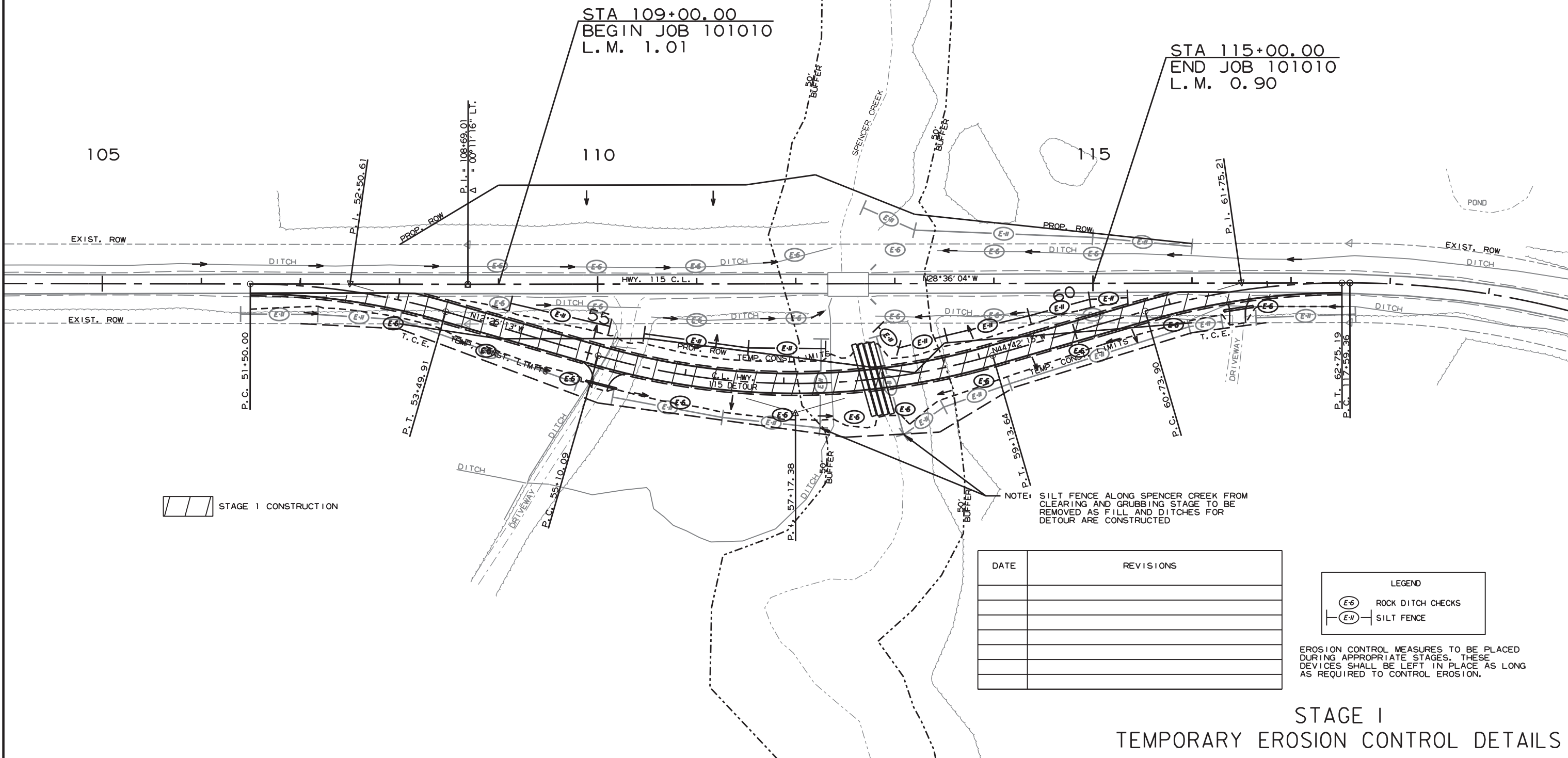
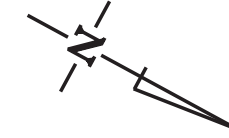
SILT FENCE	(E-11)	LIN. FT.
STA. 54+11 TO 55+14	LT.	103
STA. 55+50 TO 57+44	LT.	185
STA. 58+02 TO 60+61	LT.	267
ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 53+00 TO 62+00	RT.	11
TEMPORARY SEEDING & MULCH COVER		ACRE
STA. 51+50 TO 55+14	RT.	0.08
STA. 53+35 TO 55+27	LT.	0.03
STA. 55+26 TO 61+58	RT.	0.26
STA. 55+35 TO 60+90	LT.	0.11
STA. 61+73 TO 62+75	RT.	0.02

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 101010	16	43

2 TEMPORARY EROSION CONTROL DETAILS



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Date: 2021.04.22 16:07:26 -0500



STAGE 1 CONSTRUCTION

DATE	REVISIONS

LEGEND	
	ROCK DITCH CHECKS
	SILT FENCE

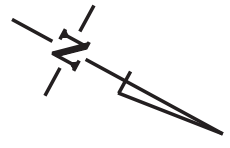
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STAGE I
TEMPORARY EROSION CONTROL DETAILS

HWY. 115		
SILT FENCE	(E-4)	LINE, FT.
STA. 112+00 TO 112+82	LT.	118
STA. 112+24 TO 113+08	RT.	115
ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 109+00 TO 115+00	LT.	7
STA. 109+00 TO 115+00	RT.	5
TEMPORARY SEEDING & MULCH COVER		ACRE
STA. 108+00 TO 116+00	LT.	0.90
STA. 108+27 TO 110+22	RT.	0.08
STA. 110+37 TO 115+75	RT.	0.39

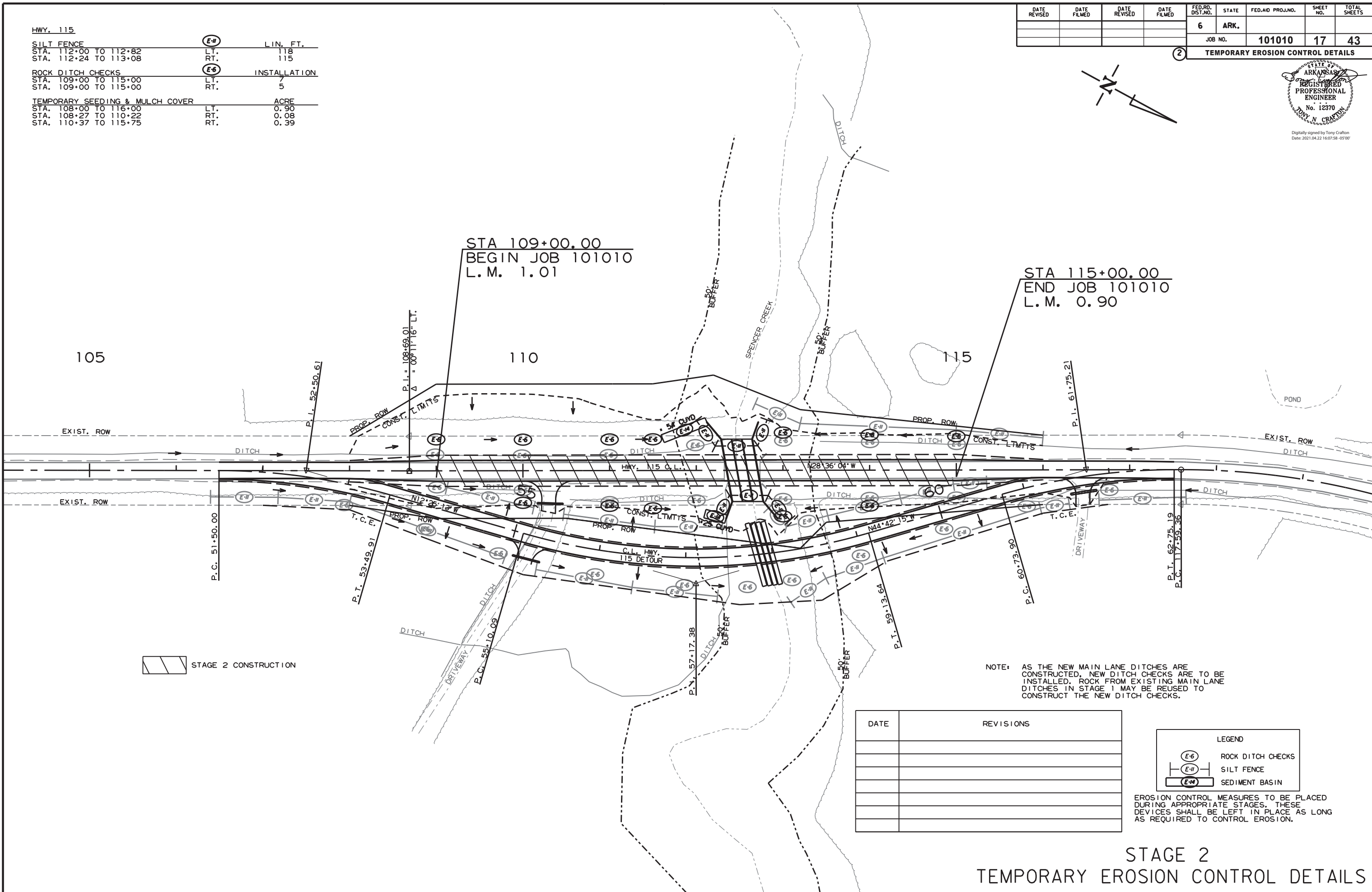
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		17	43
				JOB NO.		101010	17	43

2 TEMPORARY EROSION CONTROL DETAILS



STA 109+00.00
BEGIN JOB 101010
L.M. 1.01

STA 115+00.00
END JOB 101010
L.M. 0.90



STAGE 2 CONSTRUCTION

NOTE: AS THE NEW MAIN LANE DITCHES ARE CONSTRUCTED, NEW DITCH CHECKS ARE TO BE INSTALLED. ROCK FROM EXISTING MAIN LANE DITCHES IN STAGE 1 MAY BE REUSED TO CONSTRUCT THE NEW DITCH CHECKS.

DATE	REVISIONS

LEGEND	
	ROCK DITCH CHECKS
	SILT FENCE
	SEDIMENT BASIN

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STAGE 2 TEMPORARY EROSION CONTROL DETAILS

HWY. 115		
SEEDING AND MULCH COVER	LT.	ACRE
STA. 108+00 TO 116+00	RT.	0.80
STA. 108+66 TO 110+22	RT.	0.05
STA. 110+37 TO 115+58	RT.	0.32

HWY. 115 DETOUR		
SILT FENCE	LT. TO RT.	LIN. FT.
STA. 57+37 TO 57+41	RT. TO LT.	89
STA. 58+05 TO 58+18	RT. TO LT.	95

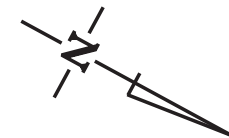
SEEDING AND MULCH COVER		
STA.	LT. & RT.	ACRE
STA. 51+50 TO 61+58	RT.	1.15
STA. 61+75 TO 62+75	RT.	0.03

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		18	43
JOB NO. 101010							18	43

2 TEMPORARY EROSION CONTROL DETAILS

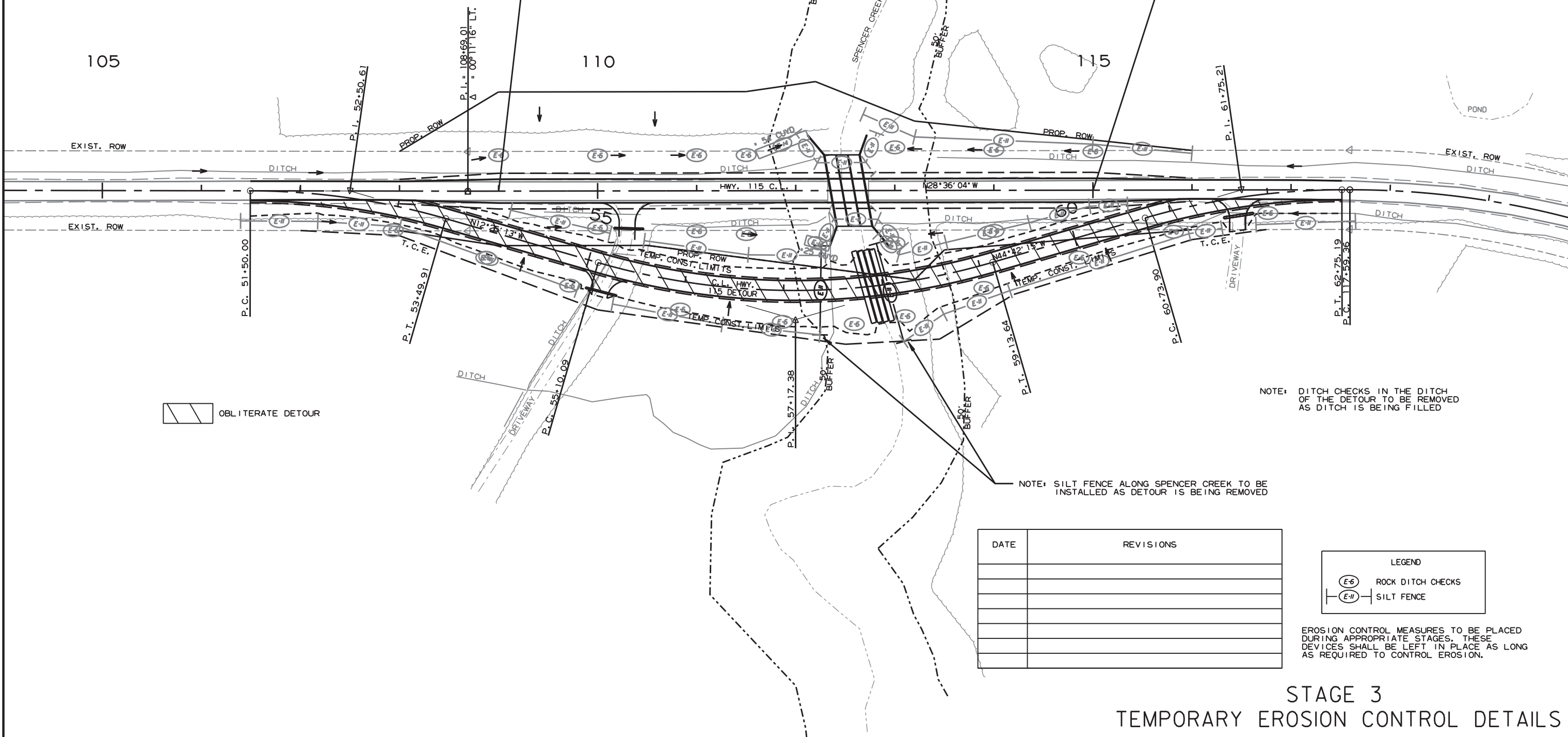


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Date: 2020.12.17 07:29:09 -06'00'



STA 109+00.00
BEGIN JOB 101010
L.M. 1.01

STA 115+00.00
END JOB 101010
L.M. 0.90



OBLITERATE DETOUR

NOTE: DITCH CHECKS IN THE DITCH OF THE DETOUR TO BE REMOVED AS DITCH IS BEING FILLED

NOTE: SILT FENCE ALONG SPENCER CREEK TO BE INSTALLED AS DETOUR IS BEING REMOVED

DATE	REVISIONS

LEGEND	
	ROCK DITCH CHECKS
	SILT FENCE

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

NOTCH AND WIDEN FOR DETOUR ON RIGHT USING BARRELS SPACED 50' O.C., AND CONSTRUCT DETOUR.

STAGE 2 CONSTRUCTION SEQUENCE:

MAINTAIN ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

APPLY CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC TO DETOUR AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

NOTCH AND WIDEN TO CONSTRUCT R.C. BOX CULVERTS AND ROADWAY.

STAGE 3 CONSTRUCTION SEQUENCE:

MAINTAIN ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE BEGINNING AND END OF JOB AS SHOWN ON THE ADVANCE WARNING DETAIL.

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

SHIFT TRAFFIC TO MAINLANES AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

OBLITERATE DETOUR AND CONSTRUCT SHOULDERS AND SLOPE AT DETOUR CONNECTIONS.

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

MAINTENANCE OF TRAFFIC - STAGE 1 QUANTITIES:

SIGNS = 201.5 SQ. FT.
 TRAFFIC DRUMS = 22 EACH
 VERTICAL PANELS = 8 EACH
 BARRICADES (TYPE III) = 64 LIN. FT.
 CONSTRUCTION PAVEMENT MARKINGS = 0 LIN. FT.

MAINTENANCE OF TRAFFIC - STAGE 2 QUANTITIES:

SIGNS = 262.5 SQ. FT.
 TRAFFIC DRUMS = 44 EACH
 BARRICADES (TYPE III) = 48 LIN. FT.
 CONSTRUCTION PAVEMENT MARKINGS = 4500 LIN. FT.

MAINTENANCE OF TRAFFIC - STAGE 3 QUANTITIES:

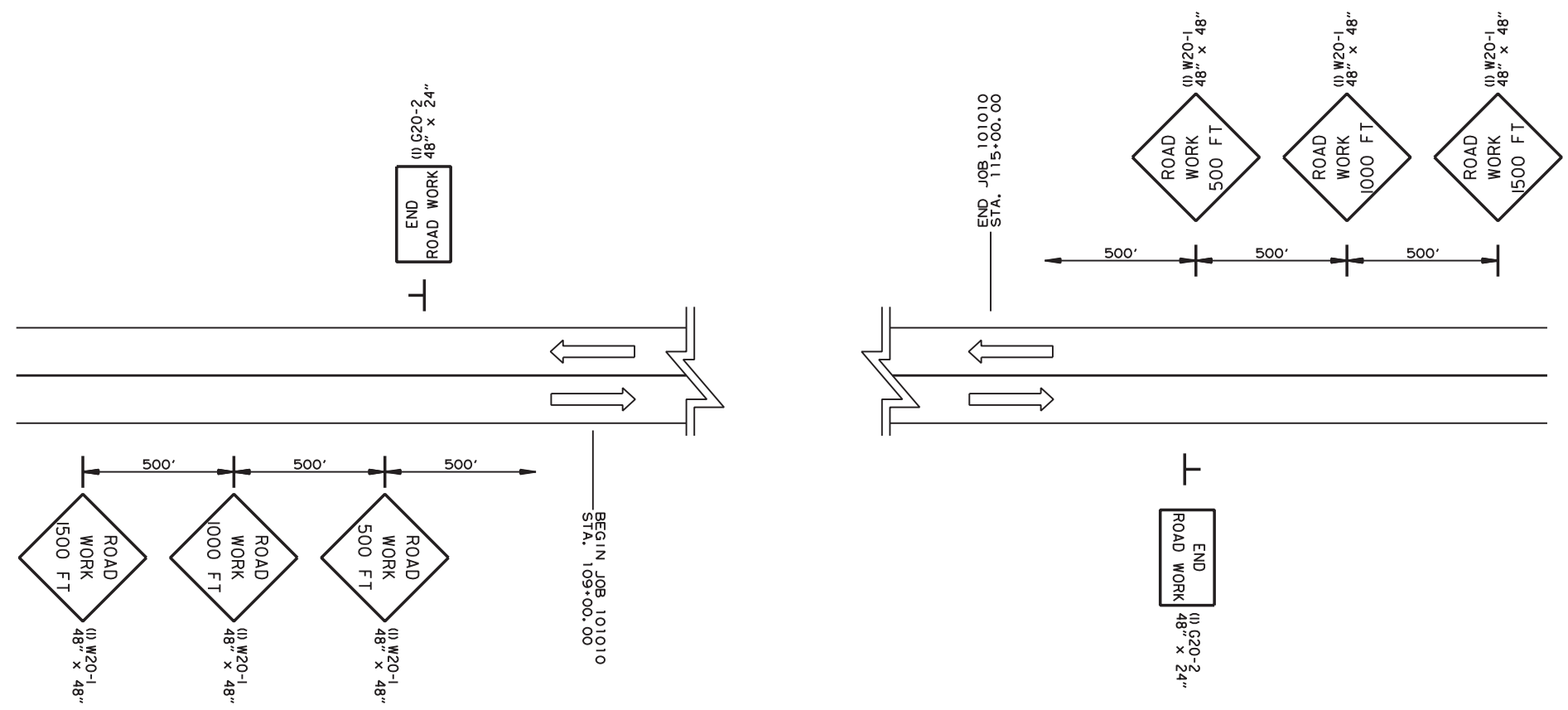
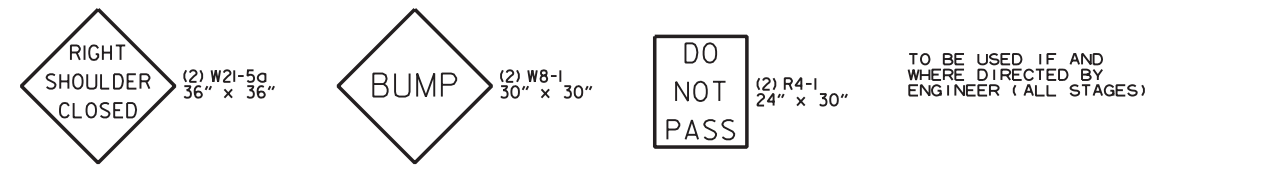
SIGNS = 201.5 SQ. FT.
 TRAFFIC DRUMS = 30 EACH
 BARRICADES (TYPE III) = 64 LIN. FT.
 CONSTRUCTION PAVEMENT MARKINGS = 4800 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							19	43

② MAINTENANCE OF TRAFFIC DETAILS



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 Date: 2021.04.22 16:06:38 -05'00'



ADVANCE WARNING SIGNS (ALL STAGES)

ADVANCE WARNING SIGNS
 MAINTENANCE OF TRAFFIC DETAILS

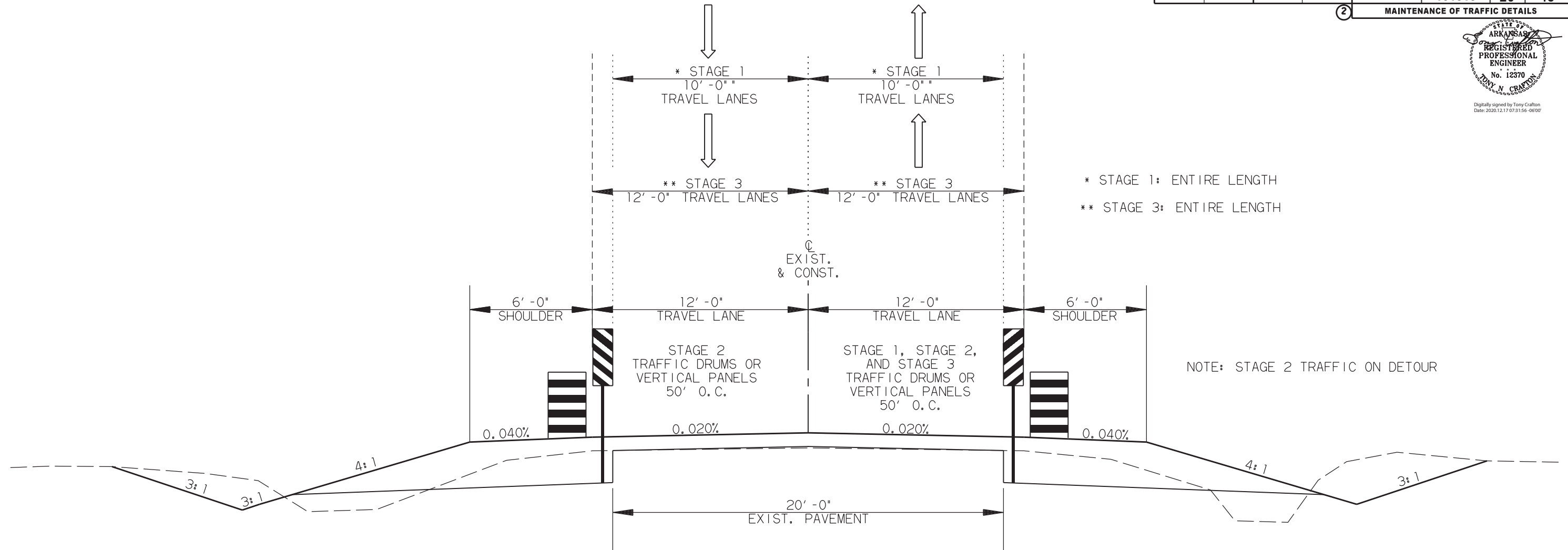
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	20	43	

② MAINTENANCE OF TRAFFIC DETAILS

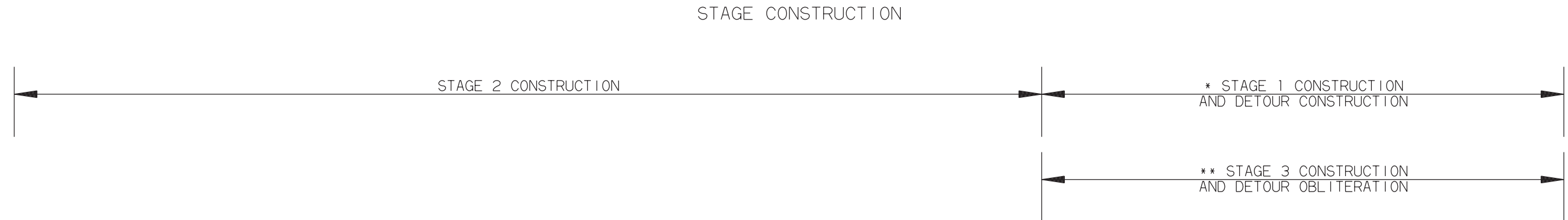


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Date: 2020.12.17 07:31:56 -0500

* STAGE 1: ENTIRE LENGTH
** STAGE 3: ENTIRE LENGTH



NOTE: STAGE 2 TRAFFIC ON DETOUR



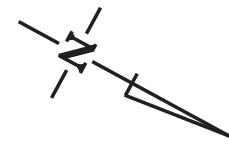
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							21	43

② MAINTENANCE OF TRAFFIC DETAILS

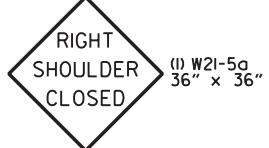
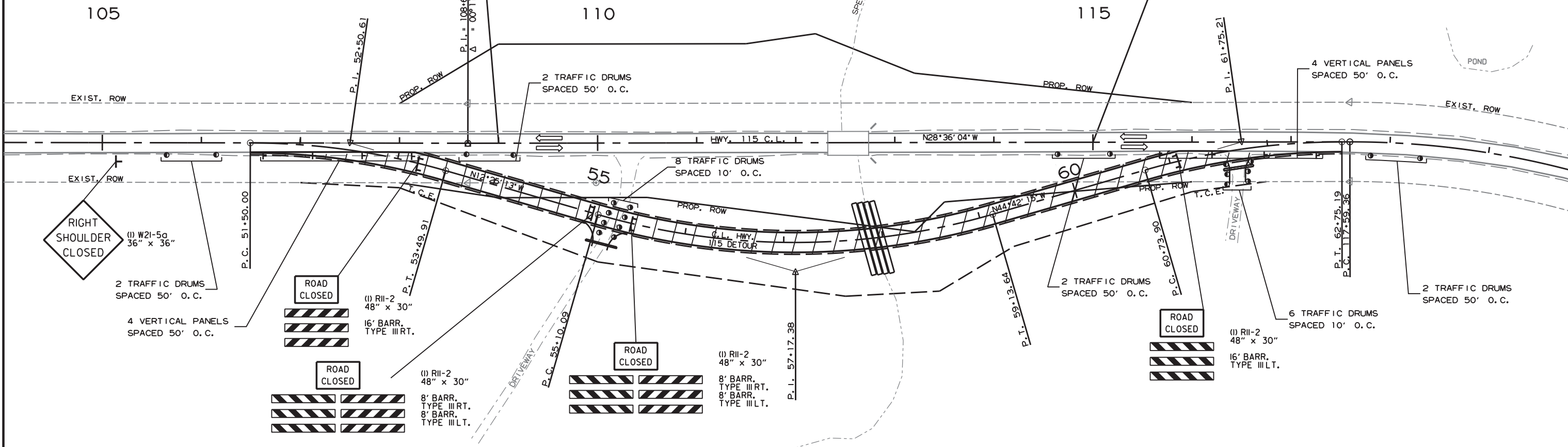


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Date: 2020.12.17 07:32:19 -0600



STA 109+00.00
BEGIN JOB 101010
L.M. 1.01

STA 115+00.00
END JOB 101010
L.M. 0.90



(1) W21-5d
36" x 36"

2 TRAFFIC DRUMS
SPACED 50' O.C.

4 VERTICAL PANELS
SPACED 50' O.C.

ROAD
CLOSED

(1) R11-2
48" x 30"

16' BARR.
TYPE III RT.

ROAD
CLOSED

(1) R11-2
48" x 30"

8' BARR.
TYPE III RT.
8' BARR.
TYPE III LT.

ROAD
CLOSED

(1) R11-2
48" x 30"

8' BARR.
TYPE III RT.
8' BARR.
TYPE III LT.

ROAD
CLOSED

(1) R11-2
48" x 30"

16' BARR.
TYPE III LT.

6 TRAFFIC DRUMS
SPACED 10' O.C.

2 TRAFFIC DRUMS
SPACED 50' O.C.



STAGE I
MAINTENANCE OF TRAFFIC DETAILS

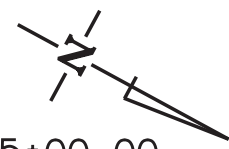
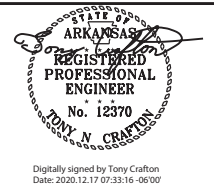
REMOVAL OF PERMANENT PAVEMENT MARKINGS	LOCATION	LIN. FT.
STA. 106+49 TO 107+70	C.L.	121
STA. 106+49 TO 108+16	RT.	167
STA. 116+31 TO 117+51	C.L.	120
STA. 115+86 TO 117+51	RT.	165

RAISED PAVEMENT MARKERS (TYPE 11) (40' O.C.)	COLOR	LOCATION	EACH
STA. 51+50 TO 62+75	YELLOW/YELLOW	C.L.	28

CONSTRUCTION PAVEMENT MARKINGS	COLOR	LOCATION	LIN. FT.
STA. 51+50 TO 62+75	WHITE	LT.	1125
STA. 51+50 TO 62+75	WHITE	RT.	1125
STA. 51+50 TO 62+75	YELLOW	C.L.	2250

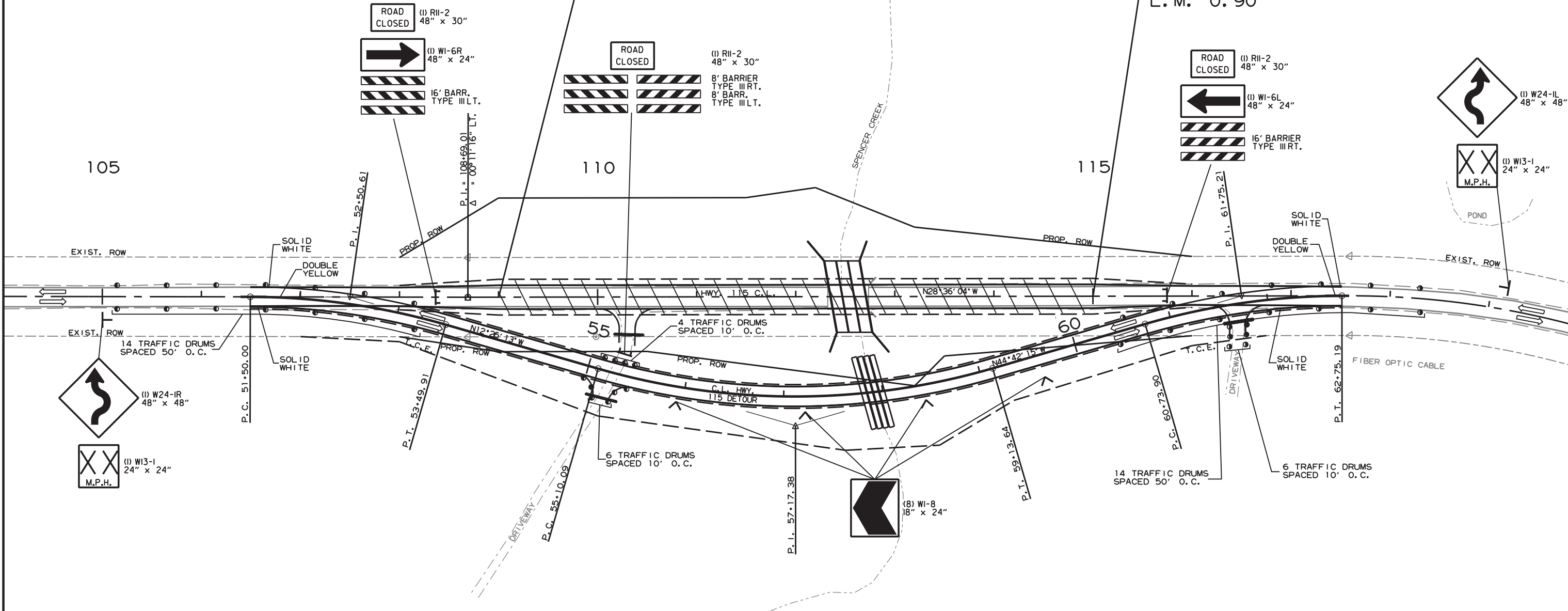
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							22	43

MAINTENANCE OF TRAFFIC DETAILS



STA 109+00.00
BEGIN JOB 101010
L.M. 1.01

STA 115+00.00
END JOB 101010
L.M. 0.90



STAGE 2 CONSTRUCTION

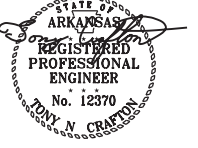
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

CONSTRUCTION PAVEMENT MARKINGS	COLOR	LOCATION	LIN. FT.
STA. 106+00 TO 118+00	WHITE	LT.	1200
STA. 106+00 TO 118+00	WHITE	RT.	1200
STA. 106+00 TO 118+00	YELLOW	C.L.	2400

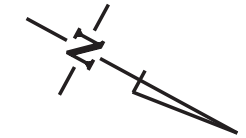
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	LOCATION	LIN. FT.
STA. 51+50 TO 52+65	C.L.	230
STA. 51+50 TO 53+17	LT.	167
STA. 61+09 TO 62+75	LT.	166
STA. 61+60 TO 62+75	C.L.	230

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							23	43

② MAINTENANCE OF TRAFFIC DETAILS

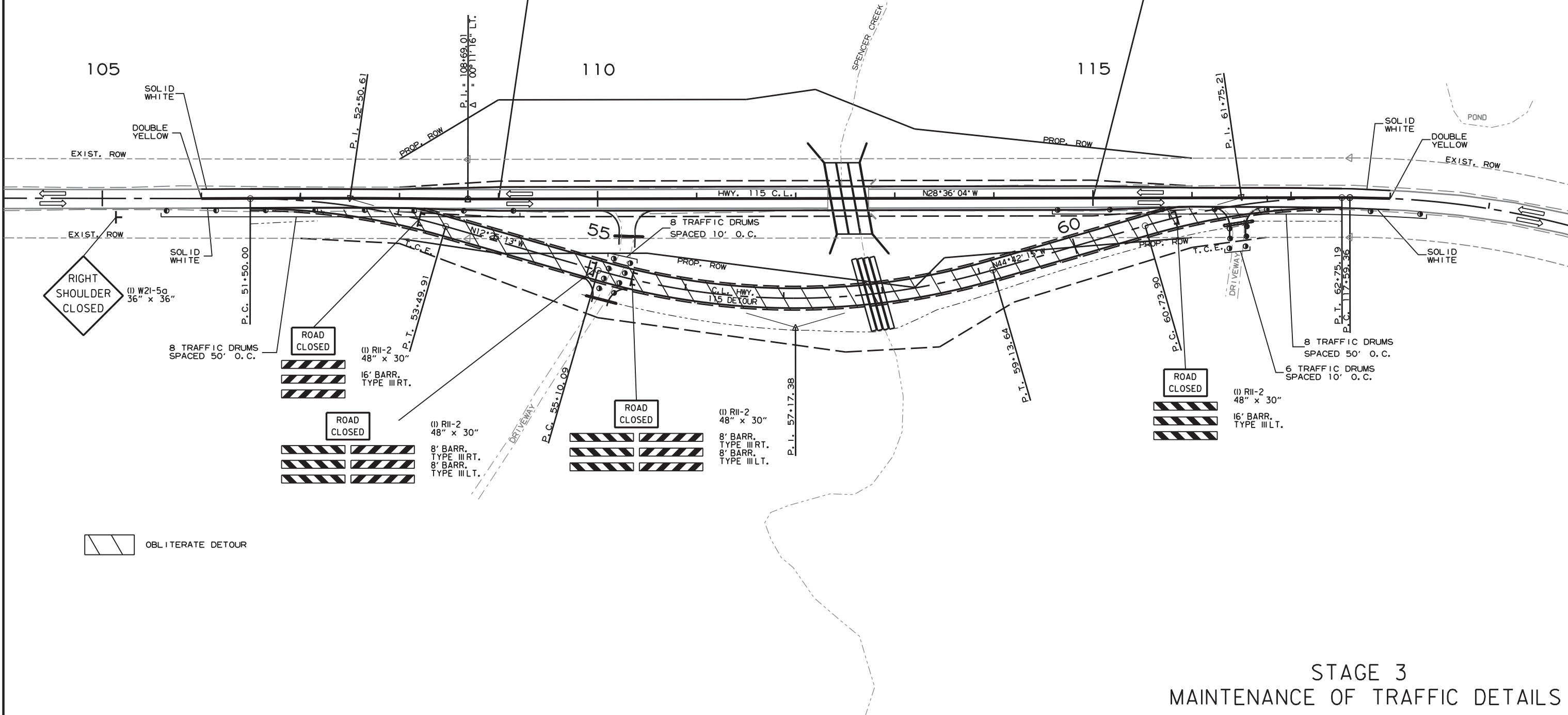


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Date: 2020.12.17 07:33:39 -06'00'



STA 109+00.00
BEGIN JOB 101010
LOG MILE 1.01

STA 115+00.00
END JOB 101010
L.M. 0.90



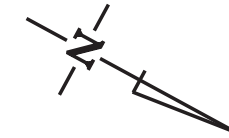
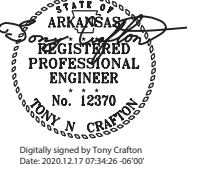
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

HWY. 115

DESCRIPTION	LOCATION	LIN. FT.
6" WHITE REFLECTORIZED PAINT PAVEMENT MARKINGS	LT.	1200
STA. 106+00 TO 118+00	RT.	1200
6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKINGS	C.L.	2400
STA. 106+00 TO 118+00		
TYPE 11 YELLOW/YELLOW RAISED PAVEMENT MARKERS (80' O.C.)	EACH	15
STA. 106+00 TO 118+00		
RUMBLE STRIPS		
STA. 109+00 TO 115+00	LT.	480
STA. 109+00 TO 115+00	RT.	414

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	24	43

PERMANENT PAVEMENT MARKING DETAILS



STA 109+00.00
 BEGIN JOB 101010
 LOG MILE 1.01

STA 115+00.00
 END JOB 101010
 L.M. 0.90

105

110

115

*6" SOLID DBL.
 YELLOW CENTERLINE

6" SOLID WHITE

STA. 118+00 END
 PAVEMENT MARKINGS

STA. 106+00 START
 PAVEMENT MARKINGS

6" SOLID WHITE

P.I. = 108+69.01
 Δ = 00+11.16' LT.

P.C. 117+59.36

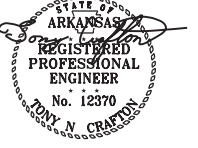
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*THE YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION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

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	25	43	

2 QUANTITIES



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Date: 2021.04.22 16:05:29 -05'00'

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)	
								NO.	SQ. FT.			RIGHT	LEFT
			LIN. FT. - EACH					EACH		LIN. FT.			
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2		2	2	32.0				
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2		2	2	32.0				
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2		2	2	32.0				
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		2			2	2	8.0				
G20-2	END ROAD WORK	48"x24"	2	2	2		2	2	16.0				
R11-2	ROAD CLOSED	48"x30"	4	3	4		4	4	40.0				
W1-6R	LARGE ARROW RT.	48"x24"		1			1	1	8.0				
W1-6L	LARGE ARROW LT.	48"x24"		1			1	1	8.0				
W1-8	CHEVRONS	18"x24"		8			8	8	24.0				
W8-1	BUMP	30"x30"	2	2	2		2	2	12.5				
R4-1	DO NOT PASS	24"x30"	2	2	2		2	2	10.0				
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	3	2	3		3	3	27.0				
W24-1R	DOUBLE REVERSE CURVE RT.	48"x48"		1			1	1	16.0				
W24-1L	DOUBLE REVERSE CURVE LT.	48"x48"		1			1	1	16.0				
	VERTICAL PANELS		8				8			8			
	TRAFFIC DRUMS		22	44	30		44				44		
	TYPE III BARRICADE-RT. (8')		2	1	2		2					16	
	TYPE III BARRICADE-LT. (8')		2	1	2		2						16
	TYPE III BARRICADE-RT. (16')		1	1	1		1					16	
	TYPE III BARRICADE-LT. (16')		1	1	1		1						16
TOTALS:								281.5	8	44	32	32	

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

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
							TYPE II (YELLOW/YELLOW)	6"	
								EACH	WHITE
LIN. FT. - EACH			LIN. FT.		LIN. FT.		LIN. FT.		
REMOVAL OF PERMANENT PAVEMENT MARKINGS	573			573					
CONSTRUCTION PAVEMENT MARKINGS	4500	4800			9300				
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS		793				793			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			15				15		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			2400					2400	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			2400						2400
TOTALS:				573	9300	793	15	2400	2400

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

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

DATE & TIME: 4/22/2021 10:26:58 AM
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							101010	26	43
QUANTITIES									



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Date: 2022.05.16 10:47:58 -0500

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
106+40	117+51	HWY. 115 LT. & RT.	12	12
TOTALS:			12	12

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
108+01	111+17	HWY. 115 LT.	351	
108+16	110+11	HWY. 115 RT.	199	
109+76	110+14	HWY. 115 RT.	79	
110+30		HWY. 115 RT.		1
110+55	112+04	HWY. 115 RT.	149	
112+91	115+55	HWY. 115 LT.	265	
113+58	116+36	HWY. 115 RT.	278	
116+46		HWY. 115 RT.		1
116+55	116+80	HWY. 115 RT.	25	
TOTALS:			1346	2

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
110+32	HWY. 115 RT.	1
116+47	HWY. 115 RT.	1
TOTAL:		2

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
ENTIRE PROJECT		STAGE 1-MAIN LANES	184	2791	
ENTIRE PROJECT		STAGE 2-MAIN LANES	4129	3190	
ENTIRE PROJECT		STAGE 3-MAIN LANES	3640	126	
ENTIRE PROJECT		APPROACHES		50	
ENTIRE PROJECT		TEMPORARY APPROACHES			
ENTIRE PROJECT		CHANNEL CHANGE	942		
ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			50
TOTALS:			8895	6157	50

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

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

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
112+32	112+74	HWY. 115 (SITE NO. 1)	1.00
TOTAL:			1.00

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
106+49.39	108+00.00	MILL & INLAY	20.00	334.69
108+00.00	109+00.00	VERTICAL TRANSITION	20.00	222.22
115+00.00	116+00.00	VERTICAL TRANSITION	20.00	222.22
116+00.00	117+51.31	MILL & INLAY	20.00	336.24
TOTAL:				1115.37

NOTE: AVERAGE MILLING DEPTH IS 1" FOR VERTICAL TRANSITIONS. AVERAGE MILLING DEPTH IS 2" FOR MILL & INLAY. STOCKPILE LOCATION: 0.36 MILES WEST OF HWY. 115 ON PARKER CHURCH ROAD.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	6	12
TOTALS:	6	12

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

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	20
TOTAL:	20

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

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
			FEET	SQ. YD.	TON	18"	24"X18"		
						LIN. FT.			
110+30	RT	HWY. 115	16	58.61	6.45	23.93	34		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
116+46	RT	HWY. 115	16	66.13	7.27	27.00		32	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
ENTIRE PROJECT TEMPORARY DRIVES						40.00			
TOTALS:				124.74	13.72	90.93	34	32	

BASIS OF ESTIMATE: ACHM SURFACE COURSE (1/2").....94.9% MIN. AGGR.....5.1% ASPHALT BINDER MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG64-22

* 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.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
112+53	HWY. 115 HEADWALL ON LT.	1
TOTAL:		1

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							101010	27	43

2 QUANTITIES



STRUCTURES

STATION	DESCRIPTION	TEMPORARY CULVERTS		CLASS S CONCRETE ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL. EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		18"	60"						
		LIN. FT.		CU. YD.	POUND	CU. YD.	SQ. YD.	M. GAL.	
55+20	DETOUR 18"X32' TEMP. CULVERT	32							PCC-1, PCP-1, PCP-2, PCP-3
57+93	DETOUR QUAD. 60"X75' TEMP. CULVERT		300						PCC-1, PCP-1, PCP-2, PCP-4
SUBTOTALS:		32	300						
STRUCTURES OVER 20' - 0" SPAN									
112+53	TRI. 11'X9'X72' RC BOX CULVERT			291.99	38378	130	37	0.47	SPECIAL DETAILS, RCB-1, RCB-2
SUBTOTALS:				291.99	38378	130	37	0.47	
TOTALS:		32	300	291.99	38378	130	37	0.47	

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

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

SELECTED PIPE BEDDING

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

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

FENCING

STATION	STATION	LOCATION	WIRE FENCE			' 16'-0" GATES EACH
			(TYPE C)	(TYPE D)	(TYPE D-1)	
			LIN. FT.			
108+01	111+17	HWY. 115 LT.			333	
108+16	110+13	HWY. 115 RT.	198			
109+76	110+13	HWY. 115 RT.	67			
110+30		HWY. 115 RT.				1
110+55	112+34	HWY. 115 RT.		183		
112+34		HWY. 115 RT.				1
112+71	115+55	HWY. 115 LT.		293		
112+74		HWY. 115 LT.				1
112+94	116+38	HWY. 115 RT.		302		
116+46		HWY. 115 RT.				1
116+54	116+80	HWY. 115 RT.		26		
TOTALS:			265	864	333	4

* DENOTES ALTERNATE BID ITEM.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL							
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	ROCK DITCH CHECKS	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
											(E-6)	(E-11)	(E-14)		
ACRE	TON	ACRE	M. GAL.	ACRE	ACRE	ACRE	M. GAL.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.			
ENTIRE PROJECT		CLEARING AND GRUBBING						0.43	0.43	8.8	42	1538			71
ENTIRE PROJECT		STAGE 1						0.50	0.50	10.2	33	555			32
ENTIRE PROJECT		STAGE 2						1.37	1.37	27.9	36	233	79	79	100
ENTIRE PROJECT		STAGE 3	2.35	4.70	2.35	239.7	2.35					184			7
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.59	1.18	0.59	60.2	0.59	0.58	0.58	11.8	28	628	50	50	73
TOTALS:			2.94	5.88	2.94	299.9	2.94	2.88	2.88	58.7	139	3138	129	129	283

BASIS OF ESTIMATE:
LIME2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
ROCK DITCH CHECKS.....3 CU. YD. / LOCATION

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

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

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN. FT.
109+00	115+00	HWY. 115 LT.	480
109+00	115+00	HWY. 115 RT.	414
TOTAL:			894

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

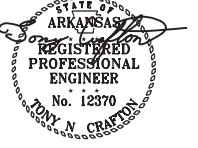
DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
57+40	HWY. 115 DETOUR LT.	41	81
57+40	HWY. 115 DETOUR RT.	61	121
111+50	HWY. 115 LT.	37	73
111+90	HWY. 115 RT.	25	50
112+72	HWY. 115 LT.	23	46
112+94	HWY. 115 RT.	22	43
TOTALS:		209	414

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	28	43	

② QUANTITIES



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Date: 2021.04.22 16:06:23 -05'00'

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	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. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	TOTAL FG 64-22 TON		
						TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON																
MAIN LANES																											
106+49.39	108+00.00	MILL & INLAY	150.61						20.00	334.69	56.90	56.90															
108+00.00	109+00.00	TRANSITION	100.00	VAR	89.75	VAR	61.11	3.06	20.00	222.22	37.78	40.84	2.23	24.78	330.00	4.09	2.13	23.67	220.00	2.60	28.00	311.11	220.00	34.22	36.82		
109+00.00	110+20.00	NOTCH AND WIDEN	120.00	127.00	152.40	28.71	382.80	19.14				19.14	4.46	59.47	330.00	9.81	4.25	56.67	220.00	6.23	36.00	480.00	220.00	52.80	59.03		
110+20.00	112+10.00	FULL DEPTH	190.00	127.00	241.30	48.71	1028.32	51.42				51.42	24.46	516.38	330.00	85.20	24.25	511.94	220.00	56.31	36.00	760.00	220.00	83.60	139.91		
112+10.00	112+96.00	FULL DEPTH	86.00	204.75	176.09	48.71	465.45	23.27				23.27	24.46	233.73	330.00	38.57	24.25	231.72	220.00	25.49	36.00	344.00	220.00	37.84	63.33		
112+96.00	115+00.00	NOTCH AND WIDEN	204.00	127.00	259.08	28.71	350.76	32.54				32.54	4.46	101.09	330.00	16.68	4.25	96.33	220.00	10.60	36.00	816.00	220.00	89.76	100.36		
115+00.00	116+00.00	TRANSITION	100.00	VAR	89.75	VAR	61.11	3.06	20.00	222.22	37.78	40.84	2.23	24.78	330.00	4.09	2.13	23.67	220.00	2.60	28.00	311.11	220.00	34.22	36.82		
116+00.00	117+51.31	MILL & INLAY	151.31						20.00	336.24	57.16	57.16															
51+50.00	53+15.50	HWY. 115 DETOUR	165.50	VAR	147.09																VAR	168.44	220.00	18.53	18.53		
53+15.50	61+11.15	HWY. 115 DETOUR	795.65	177.75	1414.27																24.00	2121.73	220.00	233.39	233.39		
61+11.15	62+75.19	HWY. 115 DETOUR	164.04	VAR	145.79																VAR	159.68	220.00	17.56	17.56		
ADDITIONAL FOR LEVELING																											
109+00.00	109+28.59	LEVELING	28.59						20.00	63.53	10.80	10.80														6.15	
109+28.59	110+20.00	LEVELING	91.41						20.00	203.13	34.53	34.53	20.00	203.13	VAR	58.12	20.00	203.13	220.00	22.34						22.34	
112+96.00	114+23.75	LEVELING	127.75						20.00	283.89	48.26	48.26	20.00	283.89	VAR	37.63	20.00	283.89	220.00	31.23						31.23	
114+23.75	115+00.00	LEVELING	76.25						20.00	169.44	28.80	28.80						20.00	169.44	VAR	16.63					16.63	
ADDITIONAL FOR METHOD OF RAISING GRADE																											
110+20.00	112+10.00	GRADE RAISE	190.00						20.00	422.22	71.78	71.78	20.00	422.22	VAR	192.88											
ADDITIONAL FOR SUPERELEVATION																											
54+25.50	57+07.37	DETOUR SUPER TRANSITION	281.87	1.25	3.52																						
57+07.37	57+11.90	DETOUR MAX SUPER	4.53	2.25	0.10																						
57+11.90	59+93.77	DETOUR SUPER TRANSITION	281.87	1.25	3.52																						
TOTALS:					2722.66		2649.55	132.49		2257.58	383.79	516.28		1869.47		447.07		1663.99		180.18		6143.00		675.73	855.91		

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.9% MIN. AGGR.....5.1% ASPHALT BINDER
 ACHM BINDER COURSE (1").....95.9% MIN. AGGR.....4.1% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	29	43

SUMMARY OF QUANTITIES

② **SUMMARY OF QUANTITIES AND REVISIONS**



ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	12	STATION
201	GRUBBING	12	STATION
202	REMOVAL AND DISPOSAL OF FENCE	1346	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	2	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	2	EACH
SS & 210	UNCLASSIFIED EXCAVATION	8895	CU. YD.
210	COMPACTED EMBANKMENT	6157	CU. YD.
SP & 210	SOIL STABILIZATION	50	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	2814	TON
SS & 401	TACK COAT	528	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	429	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	18	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	826	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	44	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	1115	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	6	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	20	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	18" TEMPORARY CULVERT	32	LIN. FT.
603	60" TEMPORARY CULVERT	300	LIN. FT.
SS & 604	SIGNS	282	SQ. FT.
SS & 604	BARRICADES	64	LIN. FT.
SS & 604	TRAFFIC DRUMS	44	EACH
604	CONSTRUCTION PAVEMENT MARKINGS	9300	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	793	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	573	LIN. FT.
SS & 604	VERTICAL PANELS	8	EACH
SP, SS, & 606	18" SIDE DRAIN	34	LIN. FT.
SS & 606	24" X 18" SIDE DRAIN	32	LIN. FT.
SS & 606	SELECTED PIPE BEDDING	50	CU. YD.
SS & 619	WIRE FENCE (TYPE C)	265	LIN. FT.
SS & 619	WIRE FENCE (TYPE D)	864	LIN. FT.
SS & 619	WIRE FENCE (TYPE D-1)	333	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	4	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	4	EACH
620	LIME	6	TON
620	SEEDING	2.94	ACRE
SS & 620	MULCH COVER	5.82	ACRE
620	WATER	359.1	M. GAL.
621	TEMPORARY SEEDING	2.88	ACRE
621	SILT FENCE	3138	LIN. FT.
621	SEDIMENT BASIN	129	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	129	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	283	CU. YD.
621	ROCK DITCH CHECKS	139	CU. YD.
623	SECOND SEEDING APPLICATION	2.94	ACRE
624	SOLID SODDING	37	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	894	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	2400	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	2400	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	15	EACH
SS & 816	FILTER BLANKET	414	SQ. YD.
SS & 816	DUMPED RIPRAP	209	CU. YD.
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	130	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	291.99	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	38378	POUND

* DENOTES ALTERNATE BID ITEMS.

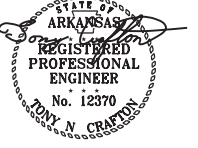
REVISIONS

DATE	REVISION	SHEET NUMBER

SUMMARY OF QUANTITIES AND REVISIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	30	43

2 SURVEY CONTROL DETAILS



Digitally signed by Tony Crafton
Date: 2020.12.17 07:35:20 -06'00'

SURVEY CONTROL COORDINATES

Project Name: s101010
 Date: 7/26/2019
 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	783322.9525	1628894.7277	425.132	CTL	STD ARDOT CAP STAMPED PN: 1
2	784125.6045	1628468.6821	370.249	CTL	STD ARDOT CAP STAMPED PN: 2
3	784882.7356	1628061.4685	351.048	CTL	STD ARDOT CAP STAMPED PN: 3
4	785650.1761	1627688.4814	372.068	CTL	STD ARDOT CAP STAMPED PN: 4
5	786766.3437	1627819.9225	432.345	CTL	STD ARDOT CAP STAMPED PN: 5
900	778367.6295	1628399.3222	413.163	TBM	SQUARE CUT CENTER WEST HEADWALL
901	782882.5750	1629185.4966	413.366	TBM	SQUARE CUT CENTER EAST HEADWALL
902	781649.2528	1629812.1601	343.269	TBM	SQUARE CUT ON NORTHWEST CORNER BRIDGE
903	784064.2021	1628505.8824	371.023	TBM	SQUARE CUT CENTER WEST HEADWALL
904	784900.6414	1628052.1939	352.116	TBM	SQUARE CUT ON SOUTHWEST CORNER BRIDGE
905	786101.2639	1627720.5530	390.329	TBM	SQUARE CUT CENTER WEST HEADWALL
906	780481.0517	1629401.8987	375.184	TBM	SQUARE CUT ON WEST HEADWALL
999	775628.4934	1628180.8901	429.010	BM	USGS DISK STAMPED S41 1934

HWY. 115 CONST.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8001	POB	100+85.94	783900.9455	1628609.1334
8002	PI	108+69.01	784589.6849	1628236.5271
8003	PC	117+59.36	785371.3938	1627810.3083
8005	PT	123+04.72	785898.6295	1627711.1653
8006	PI	124+75.74	786068.2646	1627732.9007
8007	P0E	127+89.59	786378.6756	1627779.2201

*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 1.000045353 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 s101010gi.ct1
 HORIZONTAL DATUM: NAD 83 (2011)
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
 AT A SPECIFIC POINT.

HWY. 115 DETOUR CONST.

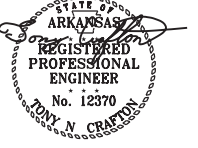
POINT NO.	TYPE	STATION	NORTHING	EASTING
8009	POB/PC	51+50.00	784396.5208	1628341.0284
8011	PT	53+49.91	784583.2683	1628271.5155
8012	PC	55+10.09	784739.6940	1628237.0653
8014	PT	59+13.64	785089.4611	1628046.6656
8015	PC	60+73.90	785203.3676	1627933.9293
8017	P0E/PT	62+75.19	785364.3254	1627814.1623

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

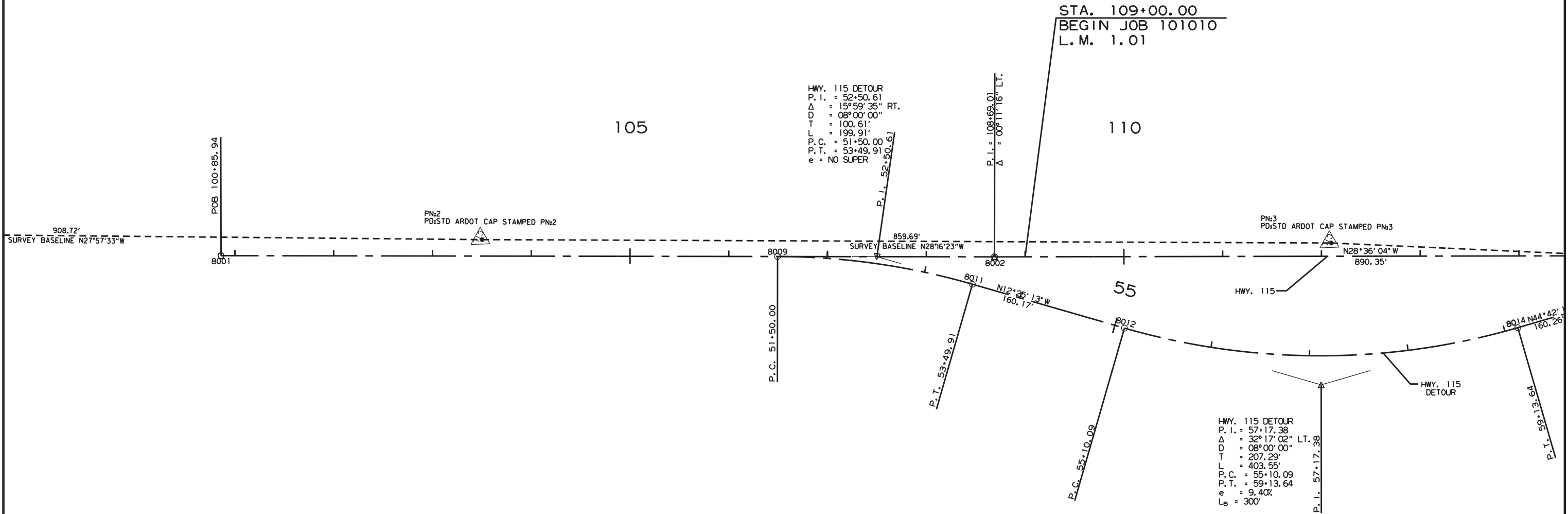
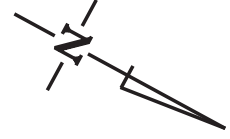
BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: HZ BASED ON STATIC GPS
 CONVERGENCE ANGLE: 00-00-06 LEFT AT LT: 36-29-06 LG: 090-55-33
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						101010	31	43

2 SURVEY CONTROL DETAILS



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Date: 2020.12.17 07:37:58 -0600

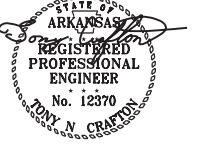


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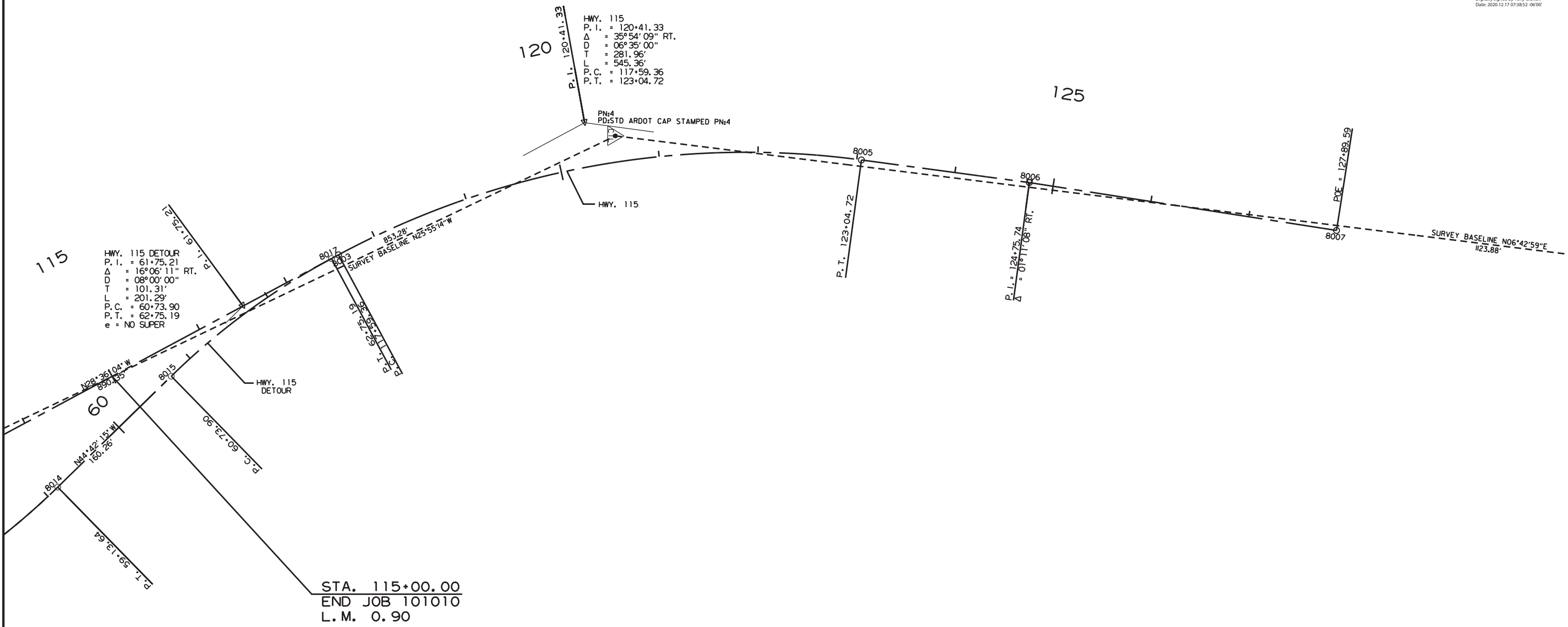
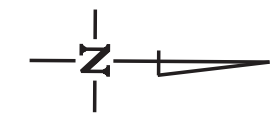
SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	32	43	

2 SURVEY CONTROL DETAILS



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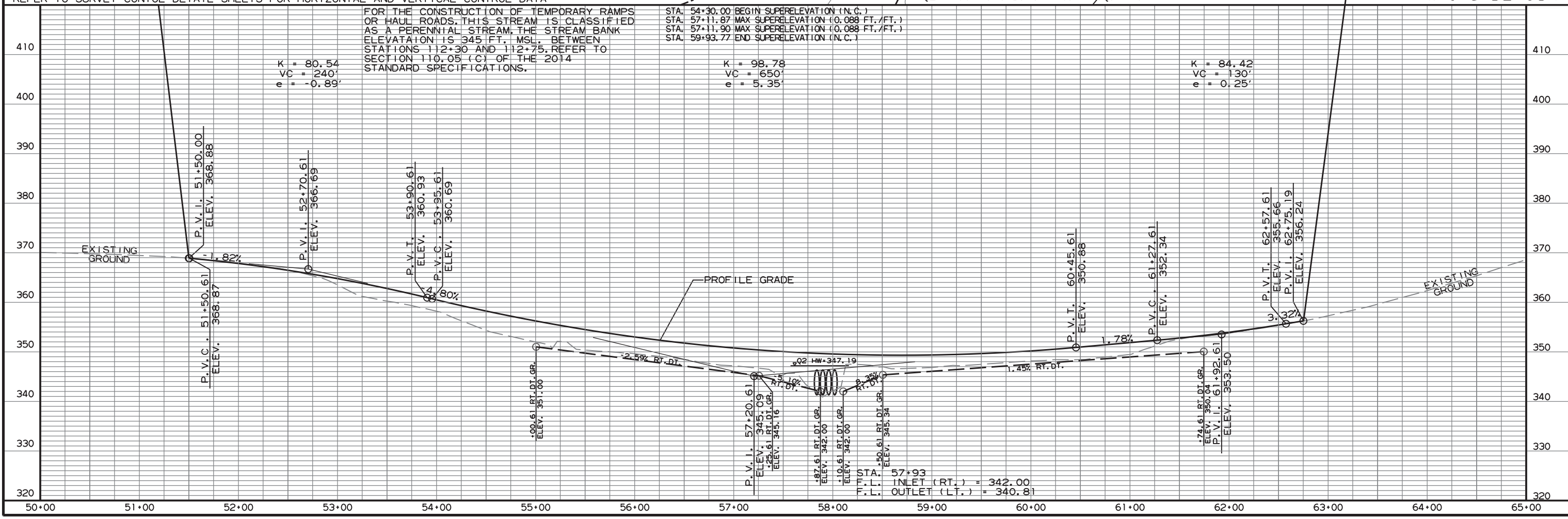
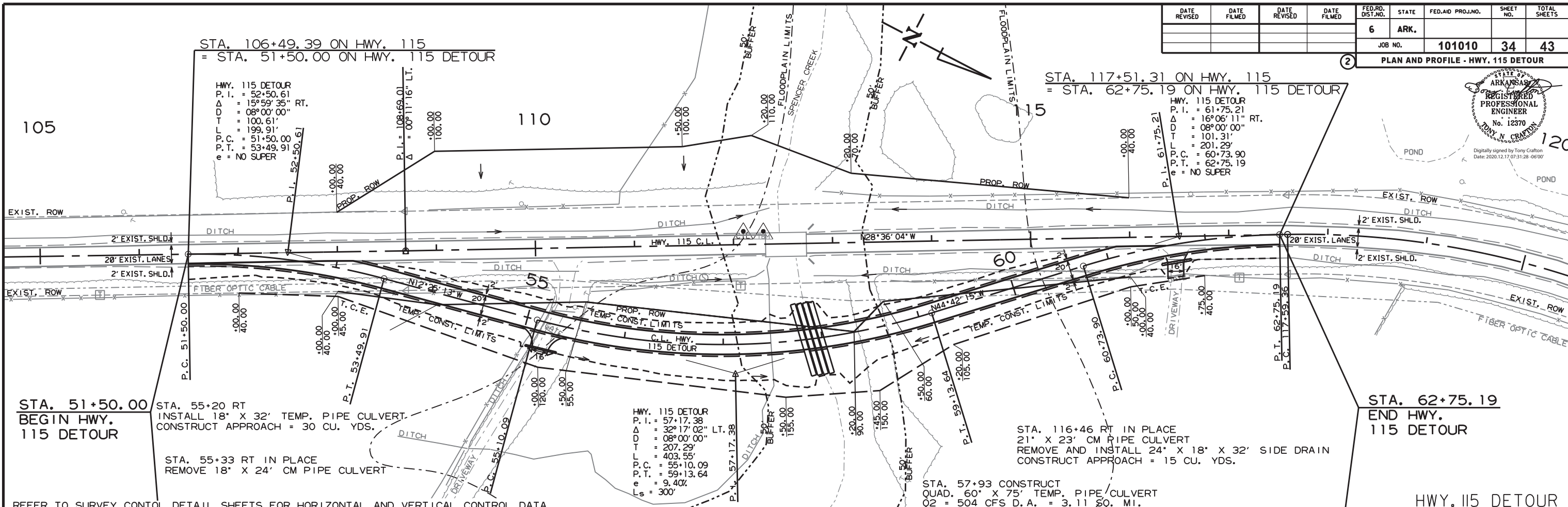


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FILE: J:\25846\25846_Survey_Sheets.dgn

SURVEY CONTROL DETAILS

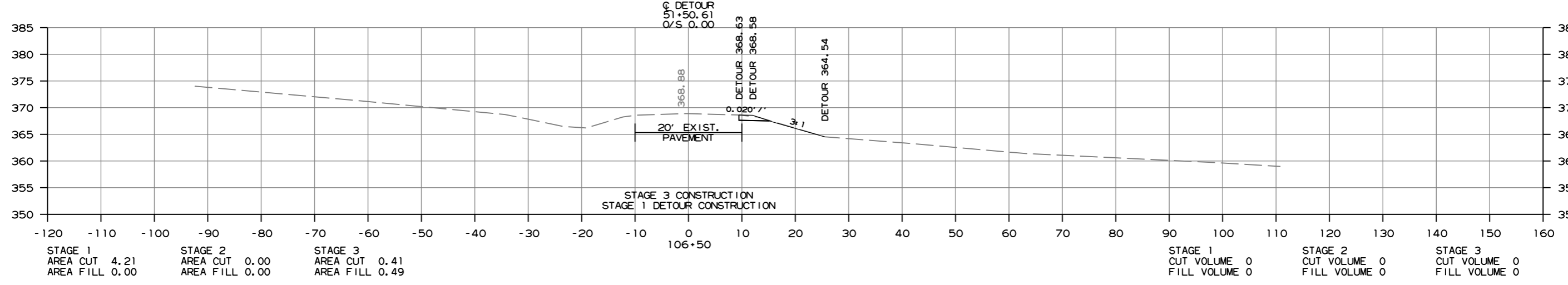
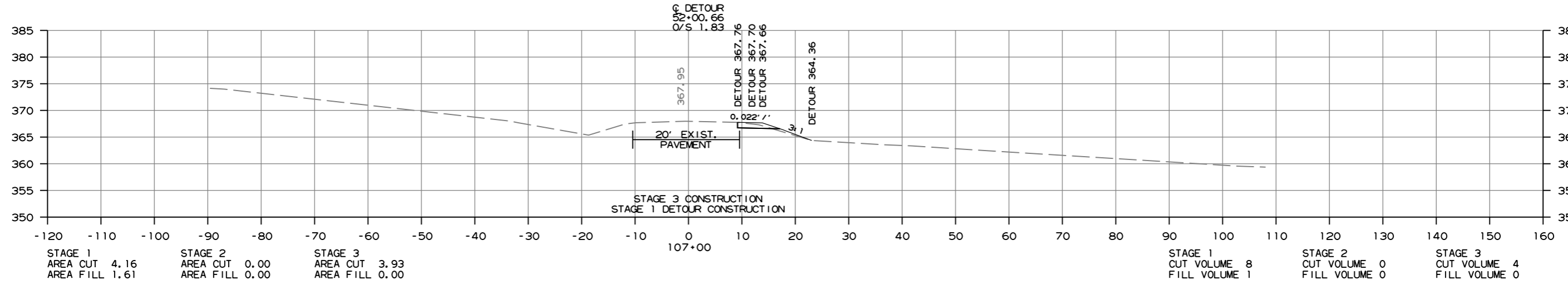
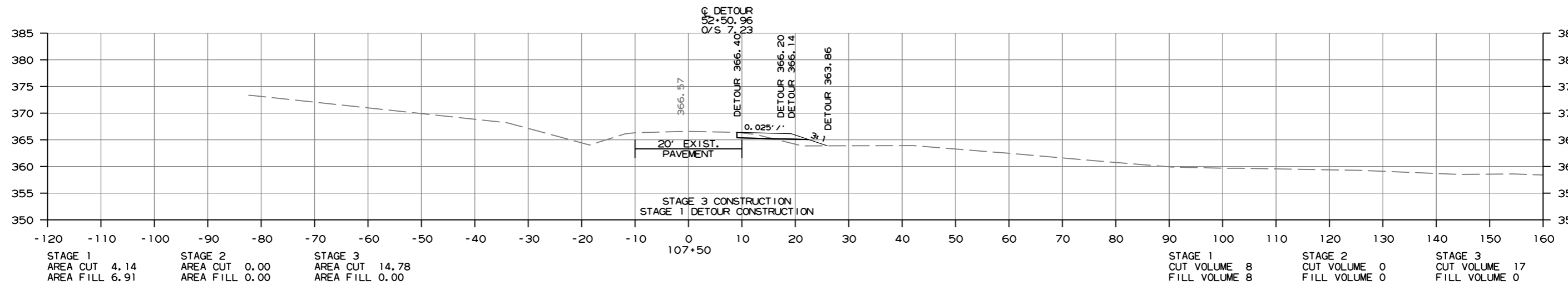
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101010	34	43	

PLAN AND PROFILE - HWY. 115 DETOUR



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							35	43

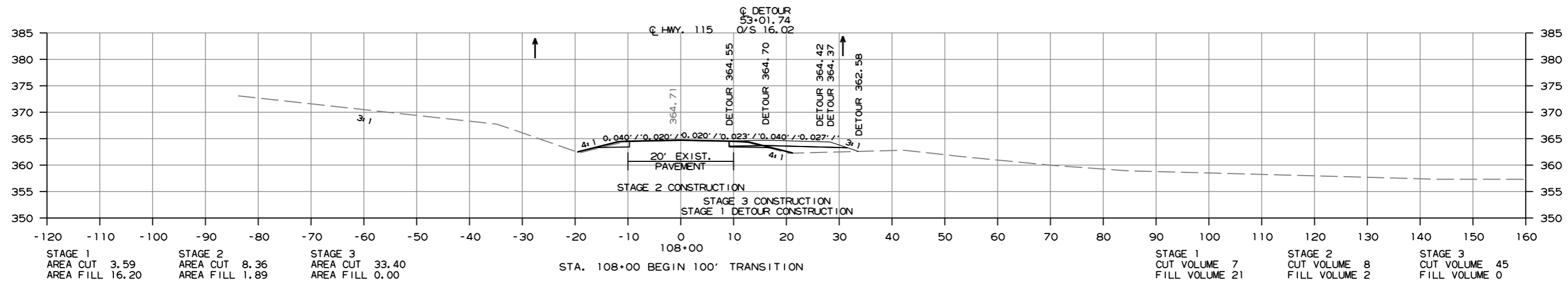
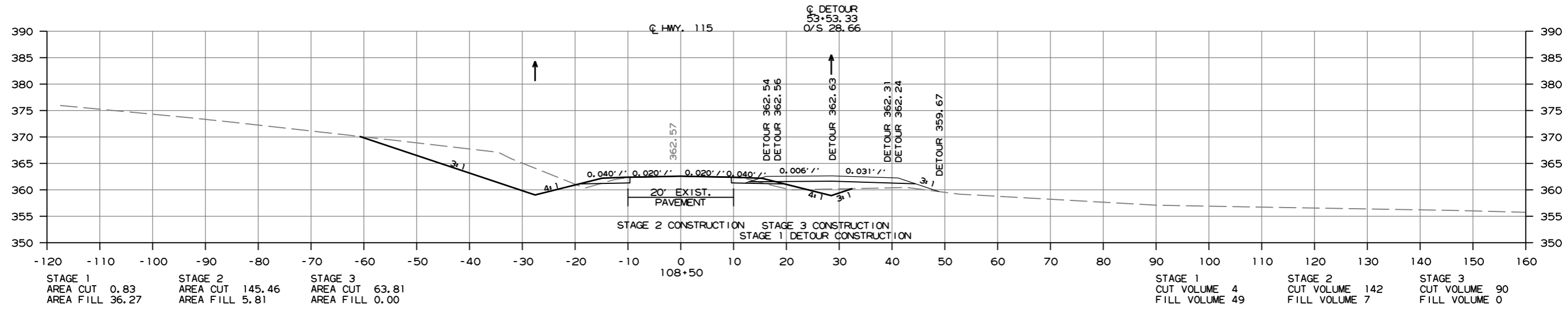
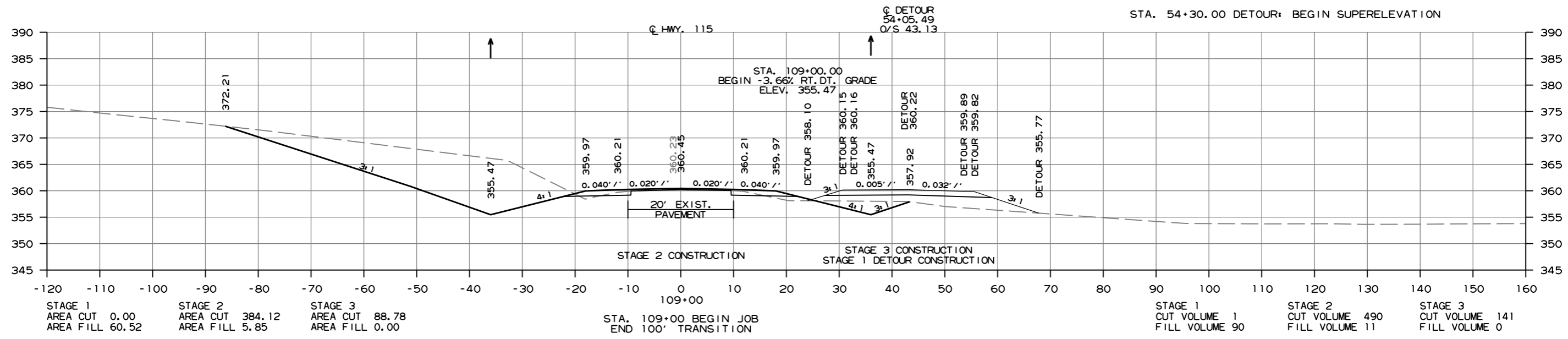
2 CROSS SECTIONS



HWY. 115
CROSS SECTION STA. 106+50 TO STA. 107+50

DATE & TIME: 12/10/2020 5:41:12 PM
FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 101010	36	43
② CROSS SECTIONS									

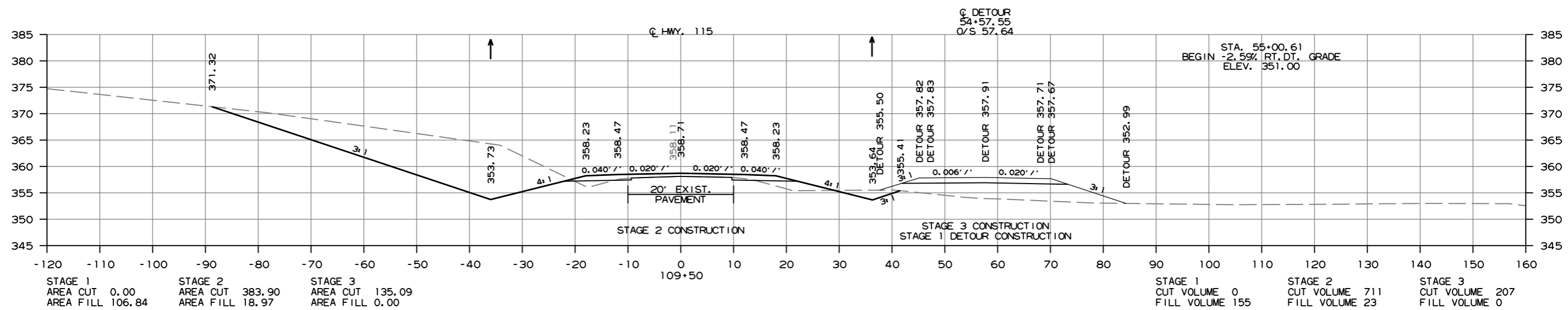
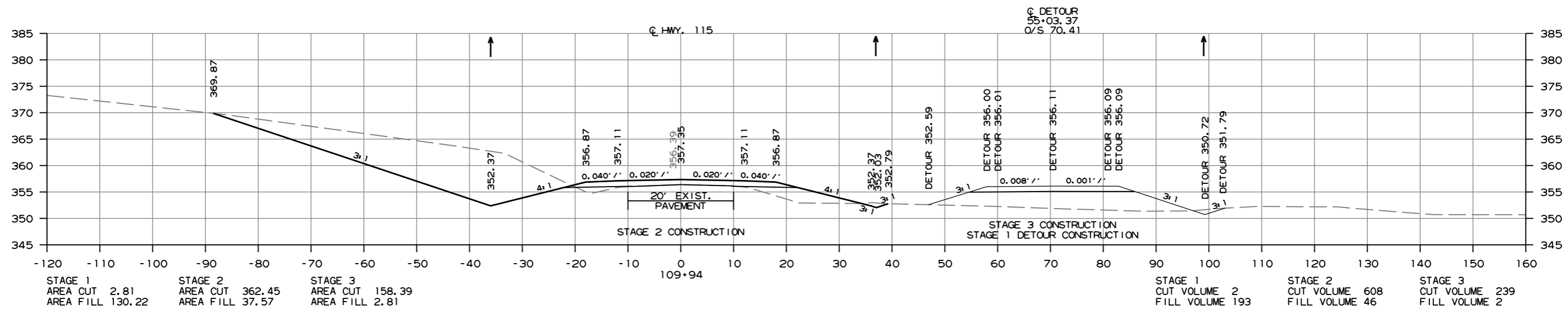
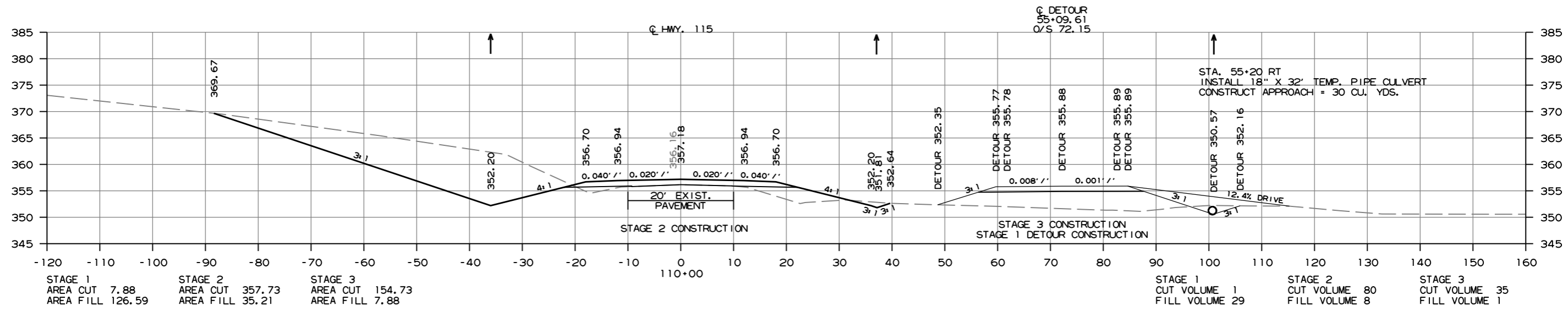


HWY. 115
CROSS SECTION STA. 108+00 TO STA. 109+00

DATE & TIME: 12/10/2020 5:41:13 PM
FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 101010	37	43

2 CROSS SECTIONS

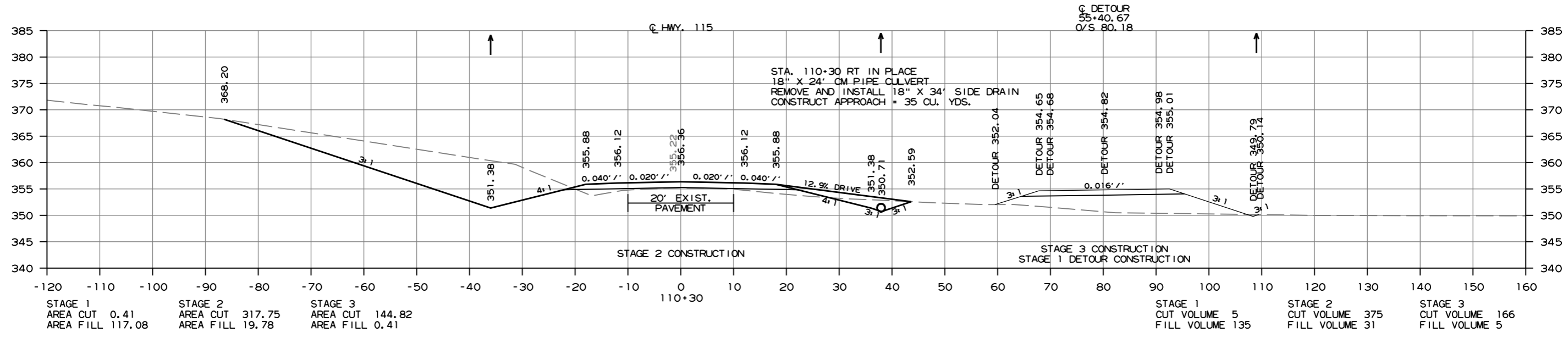
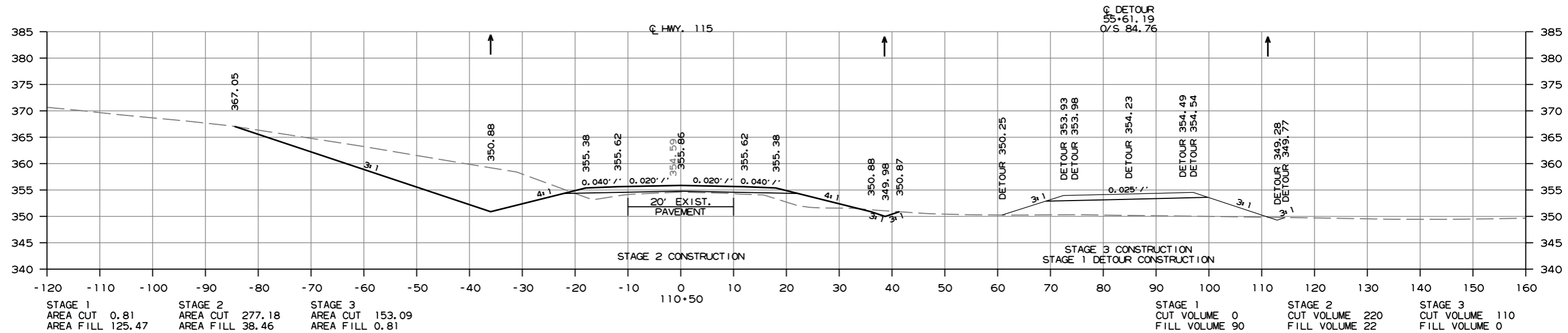


HWY. 115
CROSS SECTION STA. 109+50 TO STA. 110+00

DATE & TIME: 12/10/2020 5:41:13 PM
FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 101010	38	43

2 CROSS SECTIONS



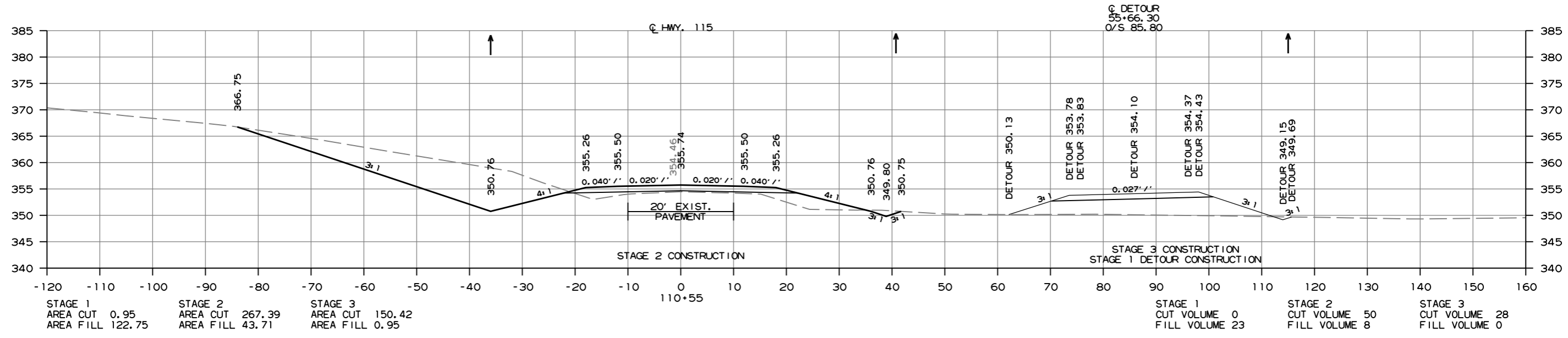
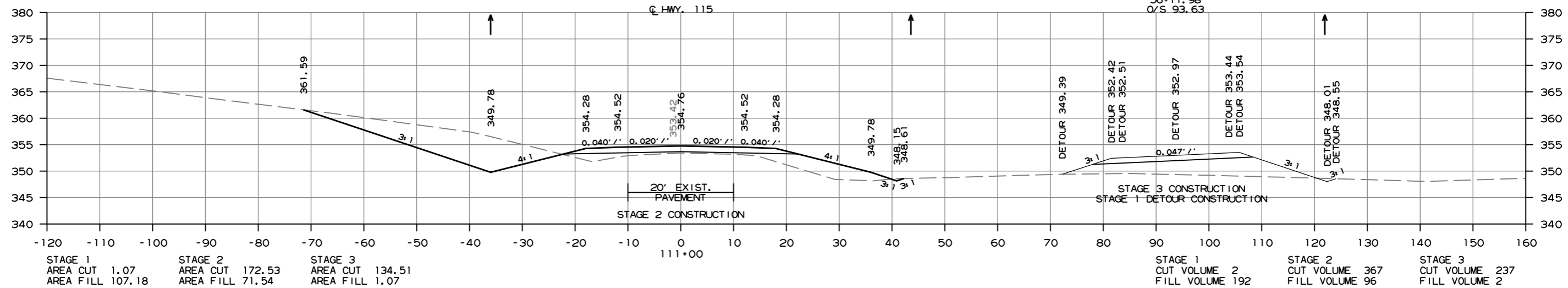
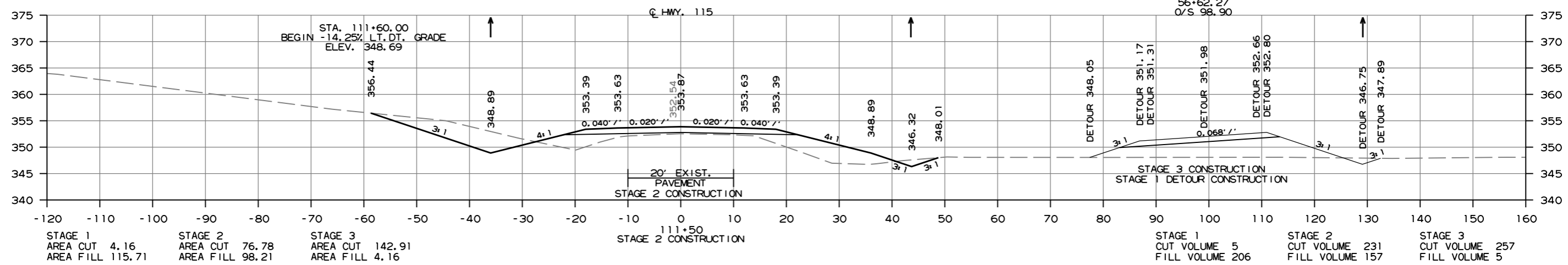
HWY. 115
CROSS SECTION STA. 110+30 TO STA. 110+50

DATE & TIME: 12/10/2020 5:41:13 PM
FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 101010	39	43

2 CROSS SECTIONS

STA. 57+11.87 DETOUR: BEGIN MAX SUPERELEVATION 0.088'/'
 STA. 57+11.90 DETOUR: END MAX SUPERELEVATION 0.088'/'

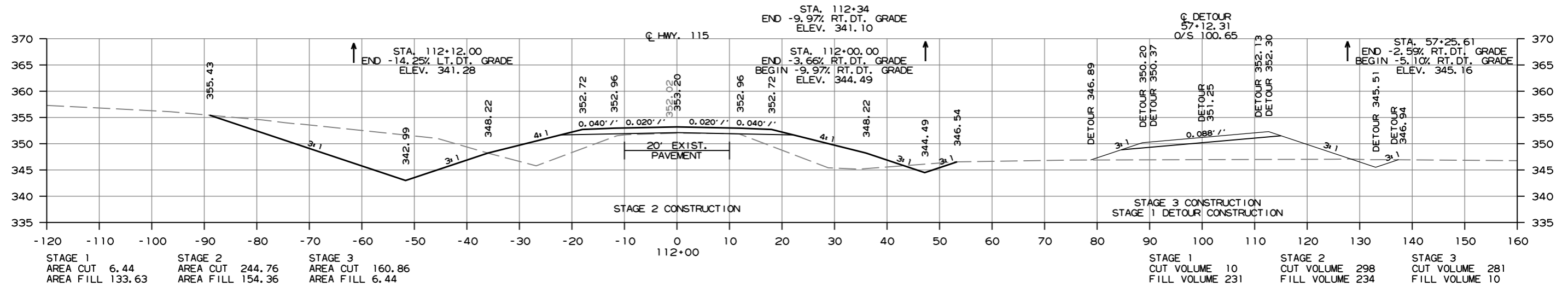
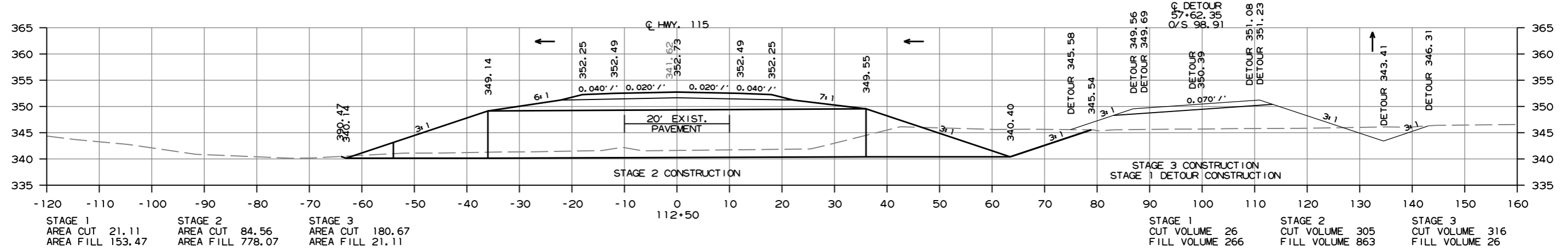
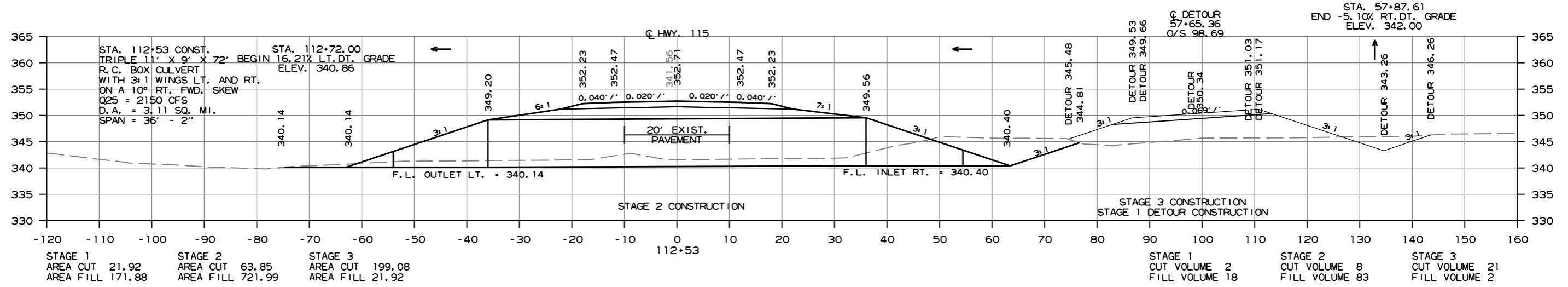


HWY. 115
 CROSS SECTION STA. 110+55 TO STA. 111+50

DATE & TIME: 12/10/2020 5:41:14 PM
 FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							40	43

2 CROSS SECTIONS

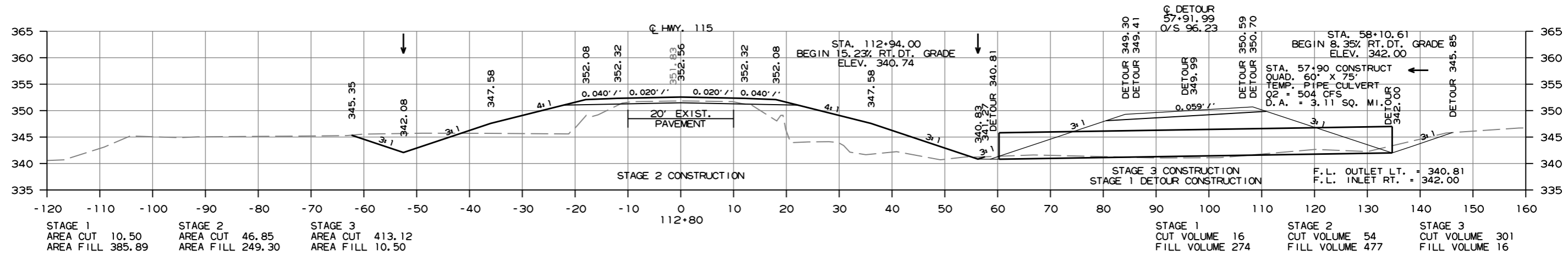
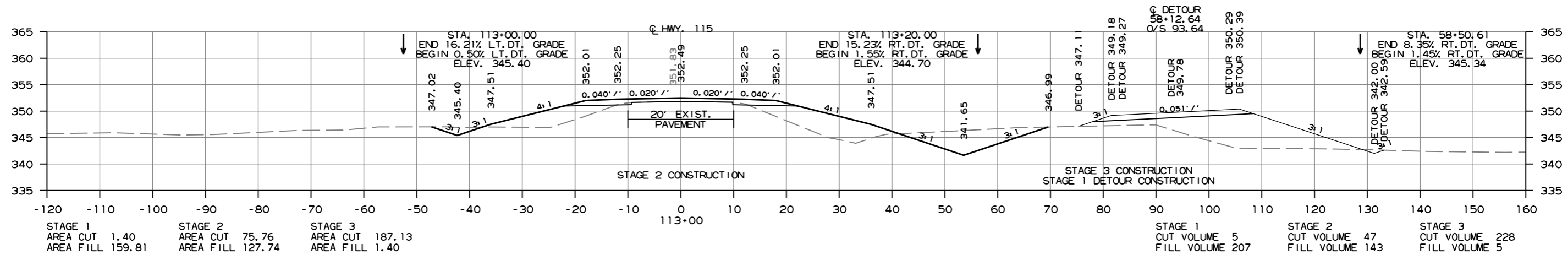
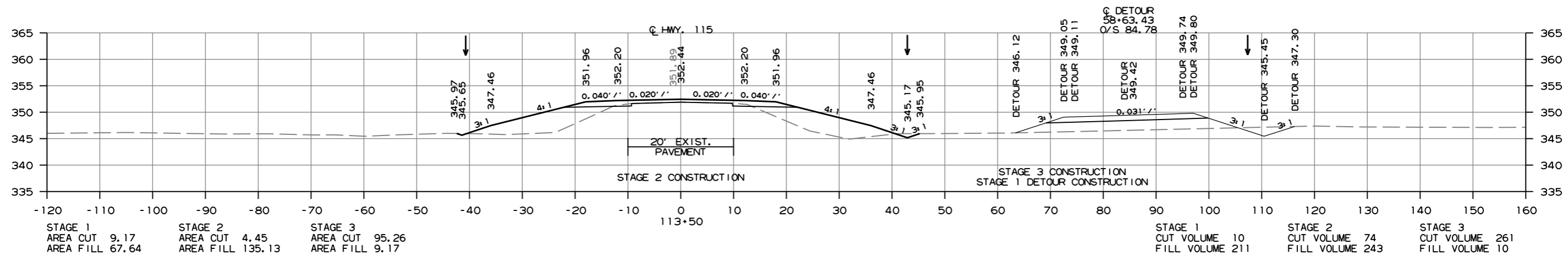


HWY. 115
 CROSS SECTION STA. 112+00 TO STA. 112+53

DATE & TIME: 12/10/2020 5:41:14 PM
 FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							41	43

2 CROSS SECTIONS

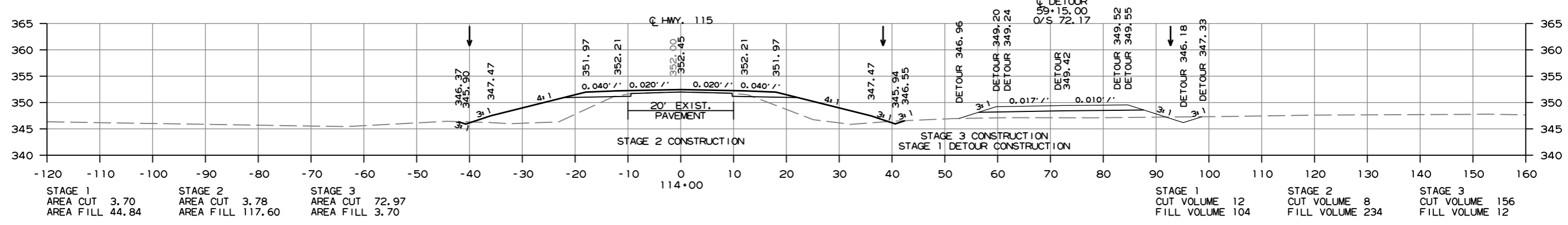
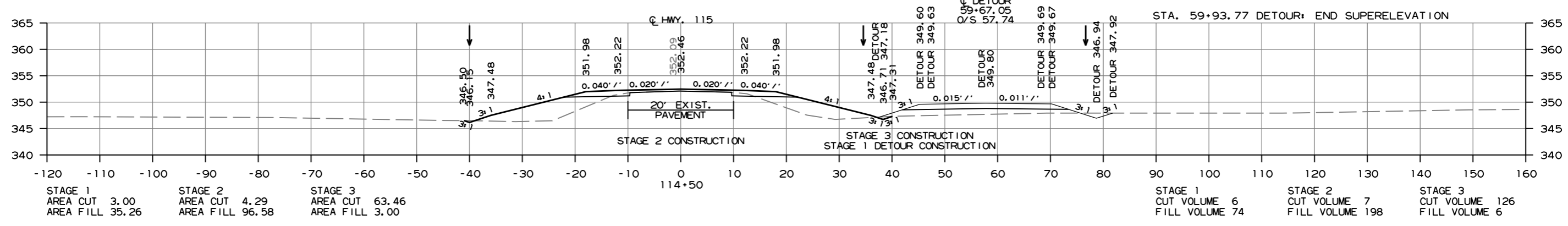
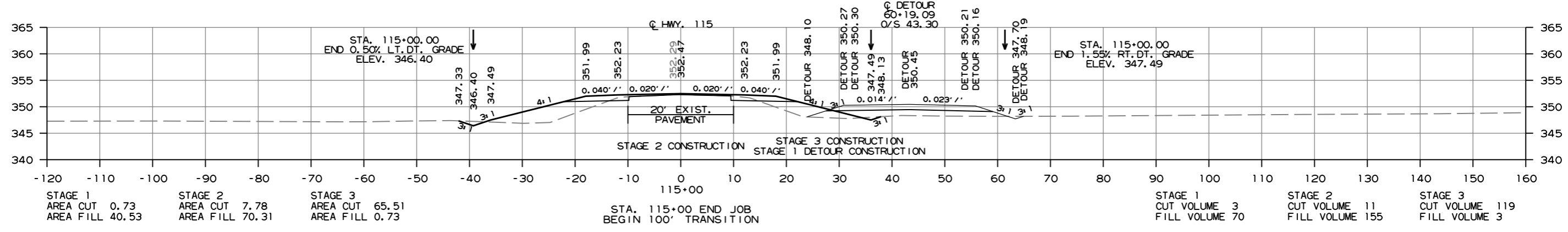
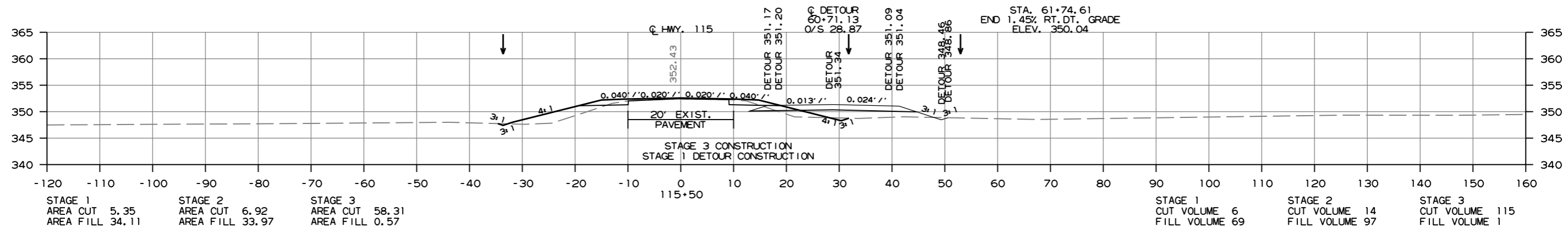


HWY. 115
CROSS SECTION STA. 112+80 TO STA. 113+50

DATE & TIME: 12/02/2020 5:41:14 PM
FILE: J:\25846\25846_Cross Sections.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 101010							42	43

2 CROSS SECTIONS

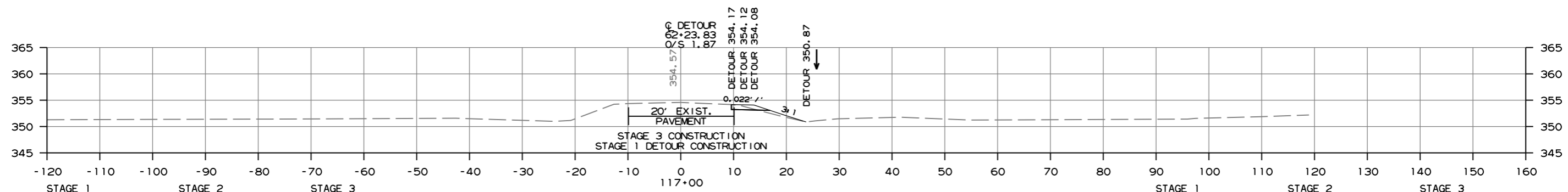


CROSS SECTION STA. 114+00 TO STA. 115+50

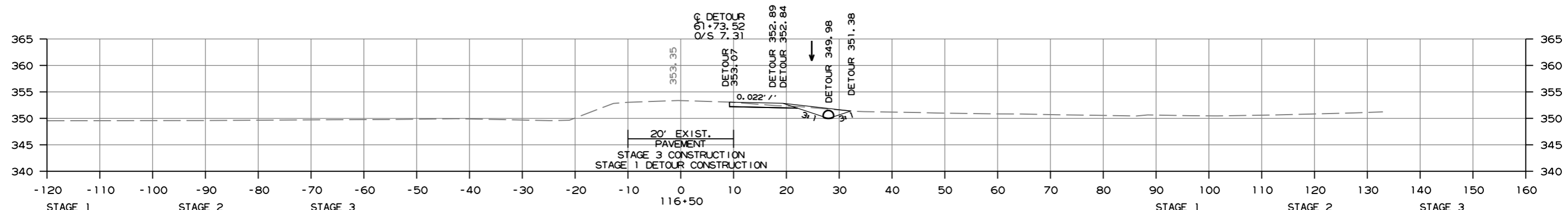
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				6	ARK.			
JOB NO. 101010							43	43

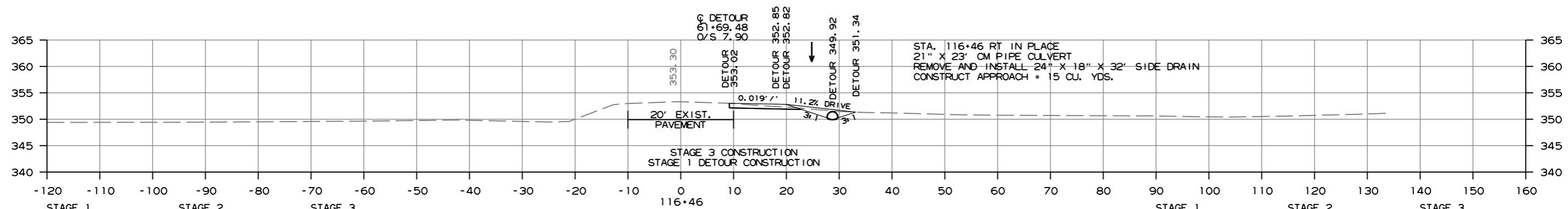
2 CROSS SECTIONS



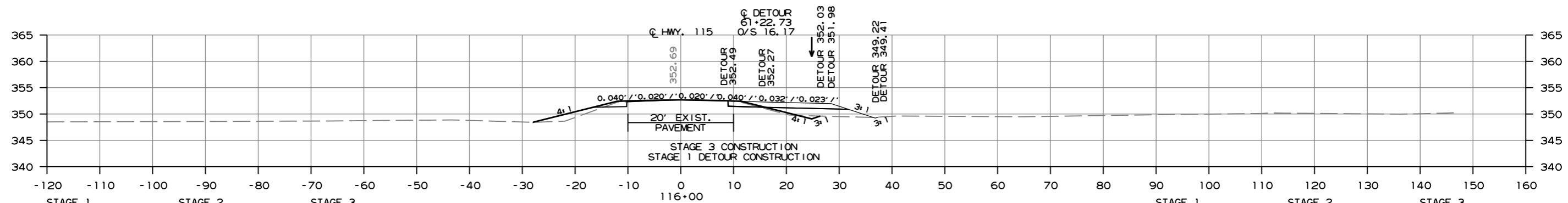
STAGE 1 AREA CUT 2.69 AREA FILL 2.64	STAGE 2 AREA CUT 0.00 AREA FILL 0.00	STAGE 3 AREA CUT 5.39 AREA FILL 0.00	117+00	STAGE 1 CUT VOLUME 18 FILL VOLUME 2	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 8 FILL VOLUME 9
--	--	--	--------	---	--	--



STAGE 1 AREA CUT 16.86 AREA FILL 0.00	STAGE 2 AREA CUT 0.00 AREA FILL 0.00	STAGE 3 AREA CUT 3.09 AREA FILL 10.09	116+50	STAGE 1 CUT VOLUME 2 FILL VOLUME 0	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 0 FILL VOLUME 1
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STAGE 1 AREA CUT 16.39 AREA FILL 0.00	STAGE 2 AREA CUT 0.00 AREA FILL 0.00	STAGE 3 AREA CUT 3.63 AREA FILL 9.11	116+46	STAGE 1 CUT VOLUME 17 FILL VOLUME 20	STAGE 2 CUT VOLUME 7 FILL VOLUME 10	STAGE 3 CUT VOLUME 38 FILL VOLUME 8
---	--	--	--------	--	---	---

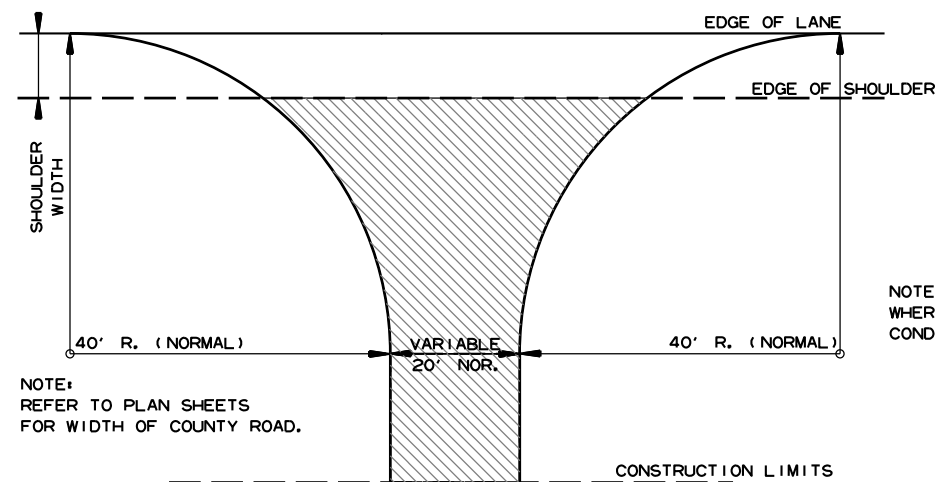


STAGE 1 AREA CUT 3.66 AREA FILL 22.99	STAGE 2 AREA CUT 7.65 AREA FILL 11.89	STAGE 3 AREA CUT 40.53 AREA FILL 0.08	116+00	STAGE 1 CUT VOLUME 8 FILL VOLUME 53	STAGE 2 CUT VOLUME 13 FILL VOLUME 42	STAGE 3 CUT VOLUME 92 FILL VOLUME 1
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STA. 116+00 END 100' TRANSITION


HWY. 115
CROSS SECTION STA. 116+00 TO STA. 117+00

DATE & TIME: 12/10/2020 5:41:15 PM
FILE: J:\25846\25846_Cross Sections.dgn

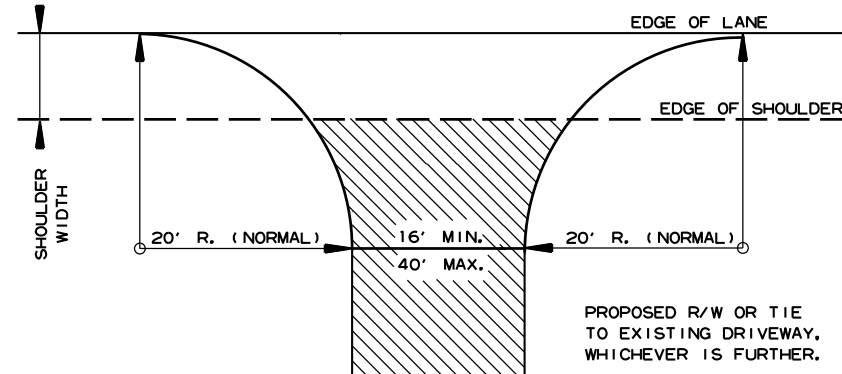


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.


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.

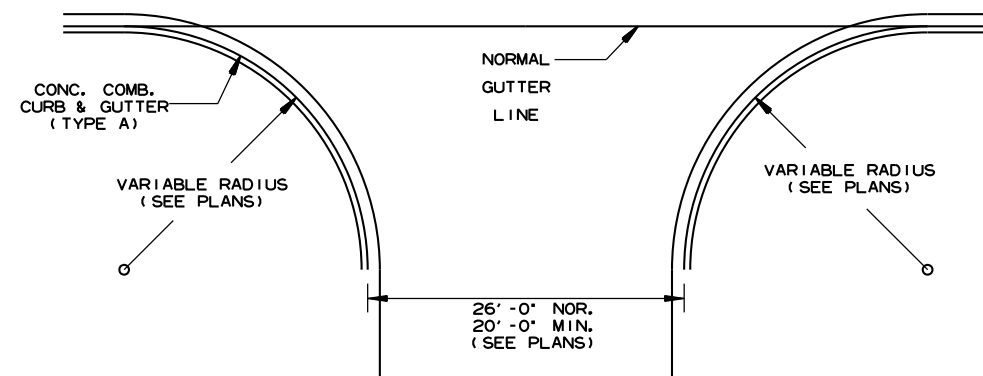
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION



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

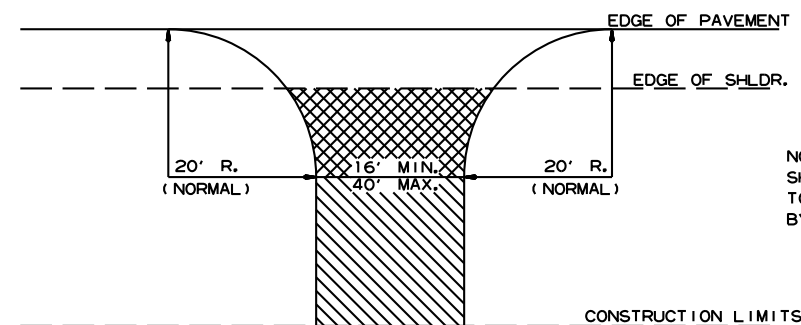
 ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT OR
GRAVEL DRIVE EXISTING; OR 6"
CONCRETE IF CONCRETE DRIVE
EXISTING.

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.

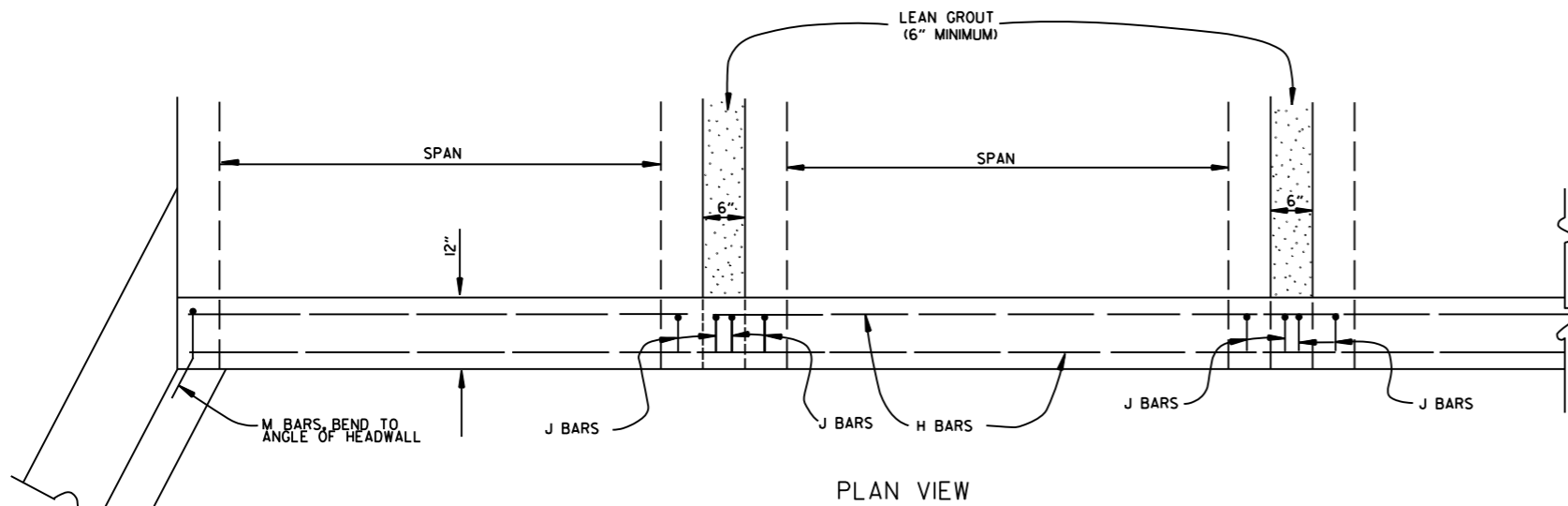
 ASPHALT CONCRETE HOT MIX SURFACE
COURSE (220 LBS. PER SQ. YD.)
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR
6" CONCRETE IF CONCRETE DRIVE EXIST.

 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



BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	

• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
 PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
 SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE. THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

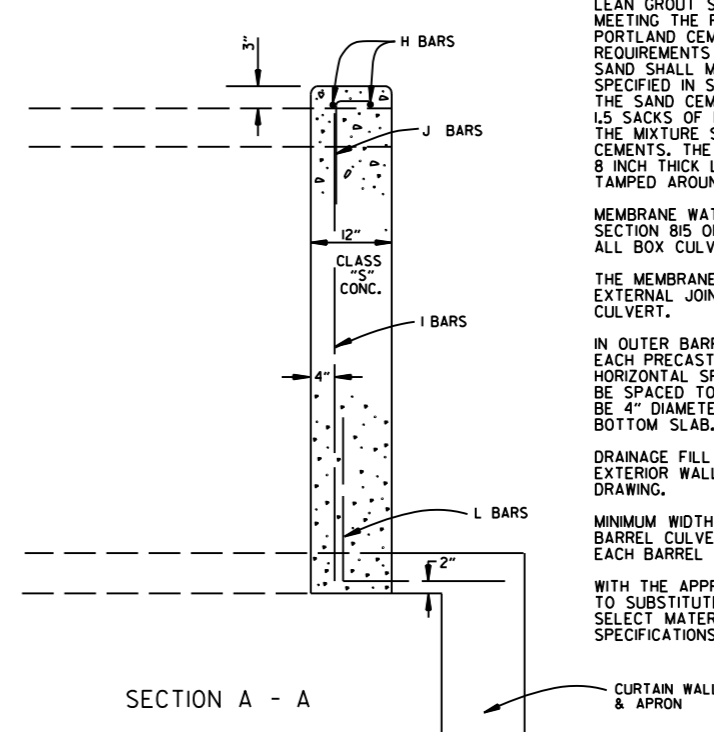
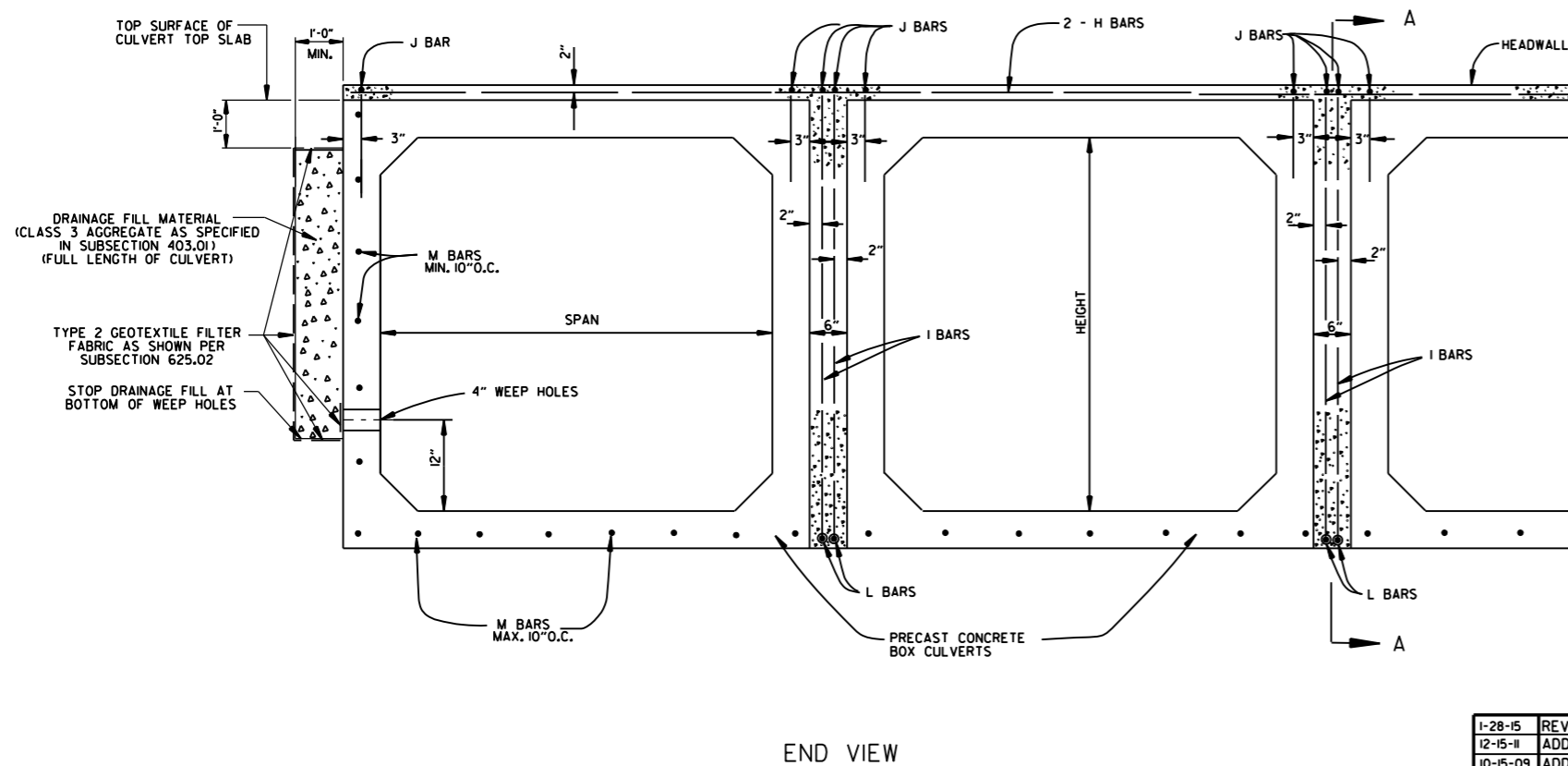
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLs FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDDOT NOMINAL	AASHTO M 206	ARDDOT 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	43¾	44	26¾	27
42	51½	51	31¾	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	87½	87
120	154	154	96¾	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.

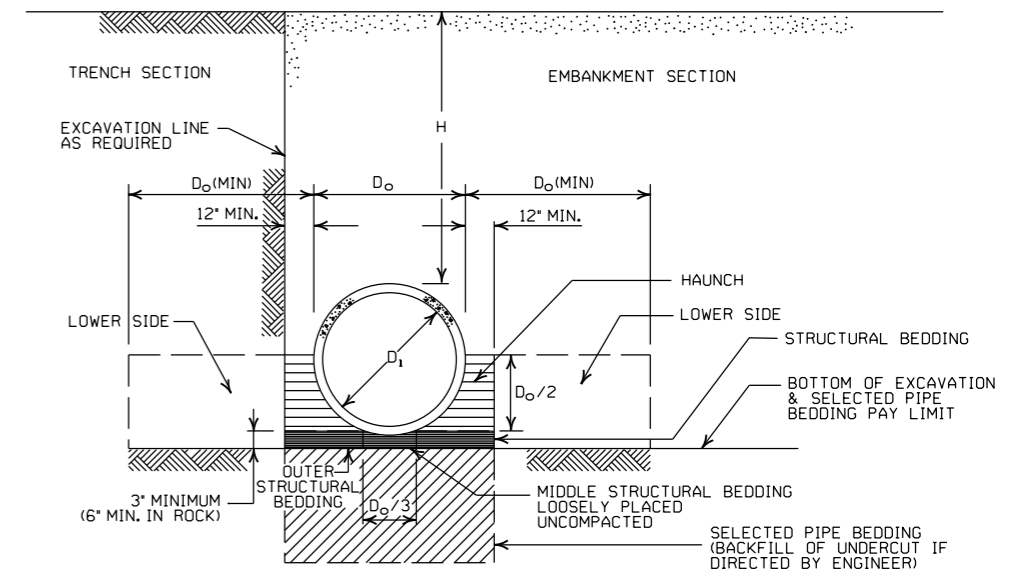
- LEGEND -

- D_i = NORMAL INSIDE DIAMETER OF PIPE
- D_o = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- [Symbol] = 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

INSTALLATION TYPE	CLASS OF PIPE			
	CLASS III	CLASS IV	CLASS V	CLASS V
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
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
TYPE 2 OR TYPE 3	FEET	
	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
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 MINIMUM 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
2 3/8 INCH BY 1/2 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	73
42	2		43	67	70	
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

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.

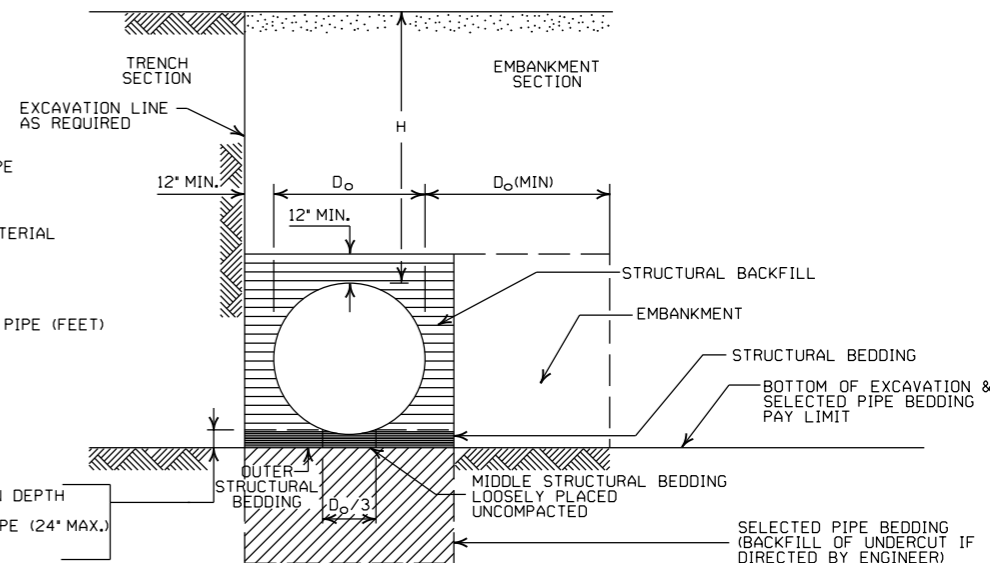
INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

- LEGEND -

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

IN SOIL-MIN. EQUALS TWICE CORRUGATION DEPTH
IN ROCK-MIN. EQUALS GREATER OF:
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)
TWICE CORRUGATION DEPTH



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. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" X 1/2" 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."

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM 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 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	34
30	2		18	31	32	
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

EQUIVALENT METAL THICKNESSES AND GAUGES

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

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED (INCHES)	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED (INCHES)	① MIN. HEIGHT OF FILL, "H" (FT.)			
				INSTALLATION			INSTALLATION			
				TYPE 1	TYPE 1		TYPE 1	TYPE 1		
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, 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	3 1/2	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	0.135	3	14		
66	77x52	8	0.168	3	15	0.164	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			

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

② WHERE THE STANDARD 2 2/3" X 1/2" 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 1/2 INCH. 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.

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"

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

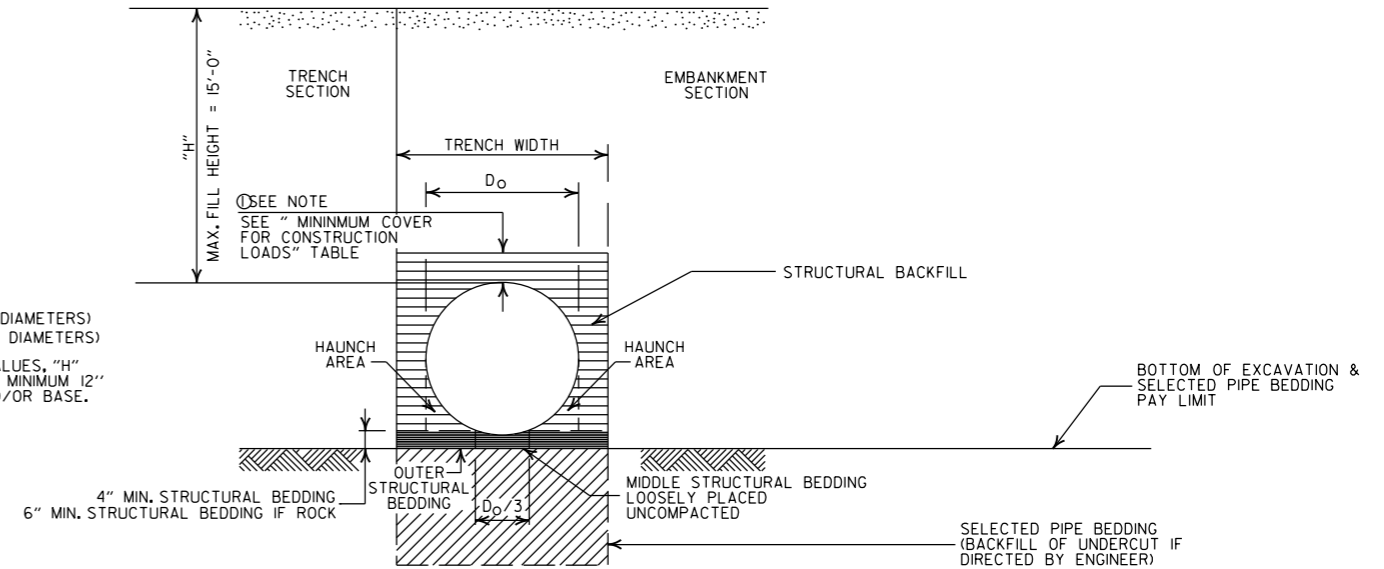
MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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 COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	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"

MINIMUM 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.

- LEGEND -

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

==== = STRUCTURAL BACKFILL MATERIAL
 ===== = UNDISTURBED SOIL

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 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. 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.

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 1 INCH. 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"

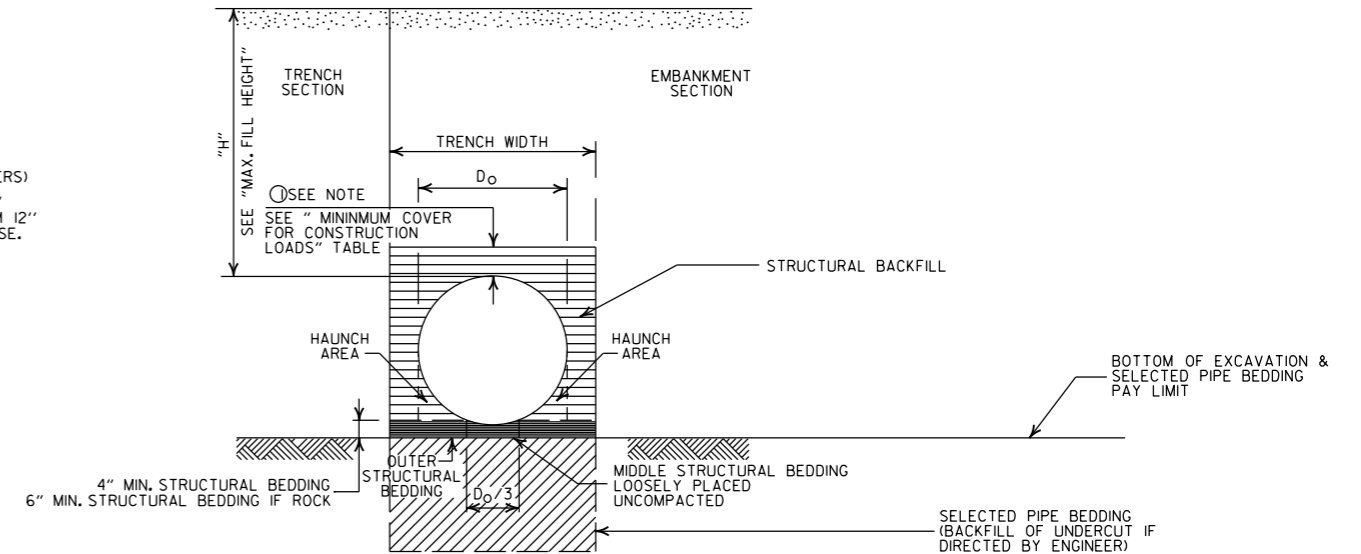
MULTIPLE INSTALLATION OF PVC PIPES

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.



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

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- 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.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

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

==== = STRUCTURAL BACKFILL MATERIAL
|||||| = UNDISTURBED SOIL

GENERAL NOTES

- PIPE SHALL CONFORM TO ASTM F949, CELL CLASS I2454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- 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.
- 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."
- 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."
- 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 CORRUGATED OR PROFILE VALLEY.
- PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- 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.

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 1 INCH. 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.

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"

① NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)
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)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

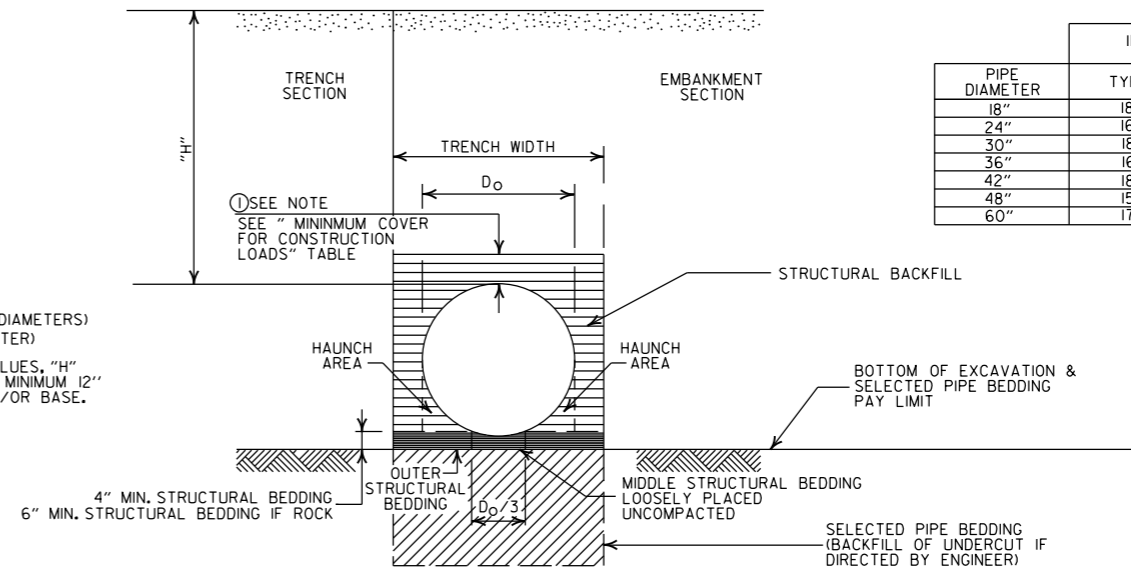
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

GENERAL NOTES

- PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
- 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.
- 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.
- 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."
- 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."
- 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.
- POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- 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.

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

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- 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.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

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

==== = STRUCTURAL BACKFILL MATERIAL
===== = UNDISTURBED SOIL

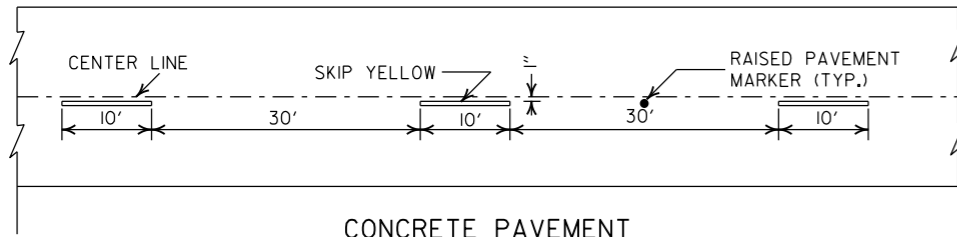
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11-07-19	ISSUED		
DATE	REVISION	DATE FILMED	

ARKANSAS STATE HIGHWAY COMMISSION

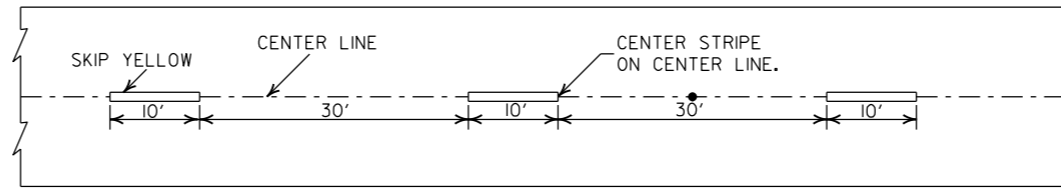
PLASTIC PIPE CULVERT
(POLYPROPYLENE)

STANDARD DRAWING PCP-3



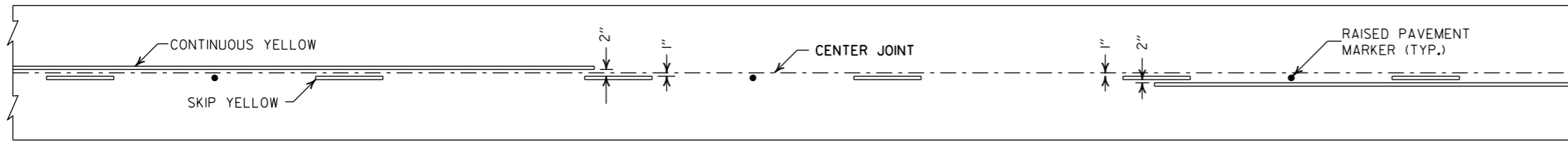


CONCRETE PAVEMENT

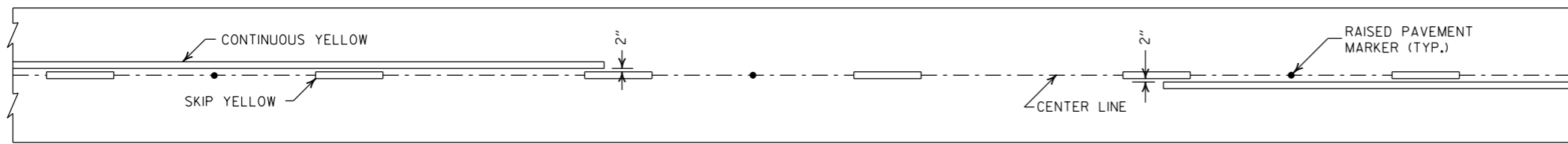


ASPHALT PAVEMENT

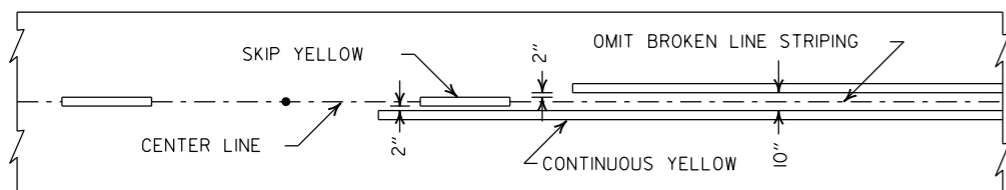
BROKEN LINE STRIPING



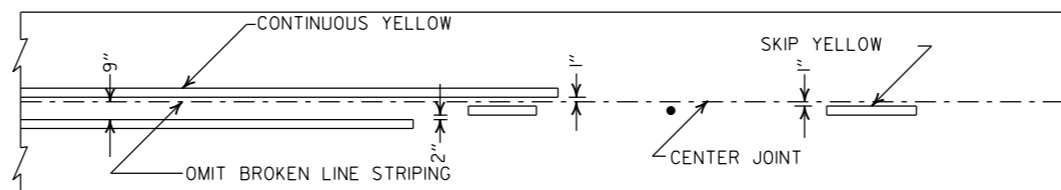
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

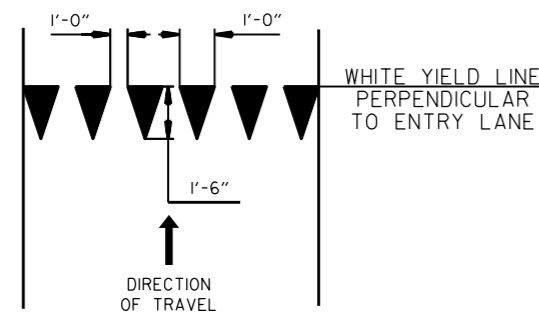


ASPHALT PAVEMENT

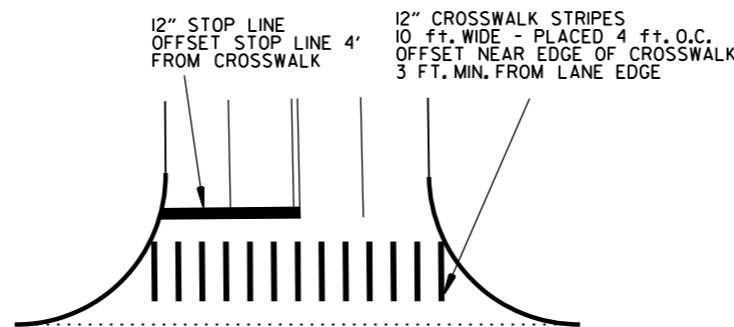


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

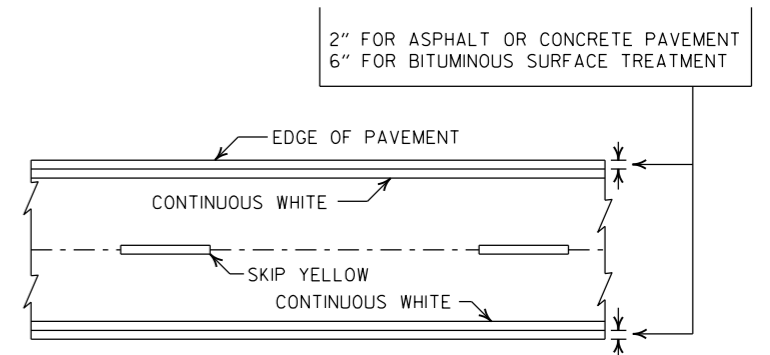


YIELD LINE DETAIL

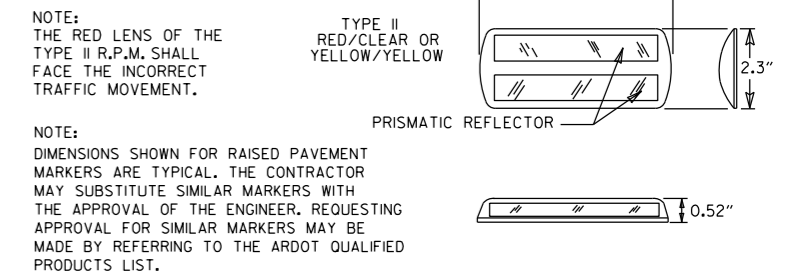


CROSSWALK AND STOP LINE DETAILS

- 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



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 DTL.	
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

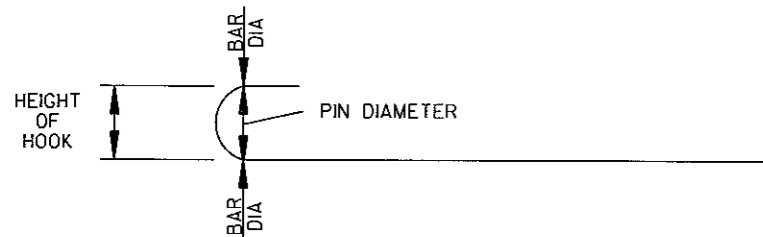
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2 1/4"	4"
4	3"	4 1/2"
5	3 3/4"	5"
6	4 1/2"	6"
7	5 1/4"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

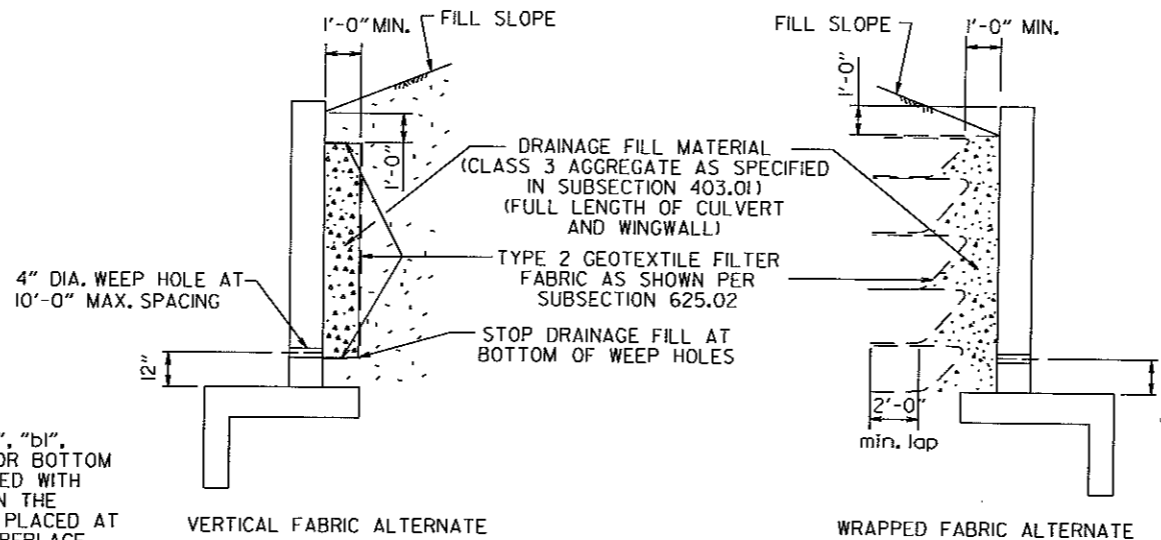
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

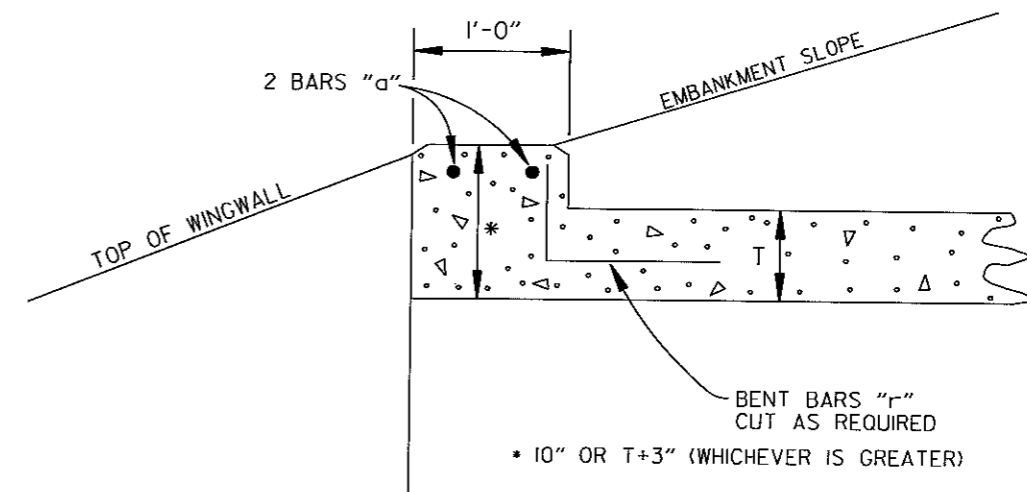
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.

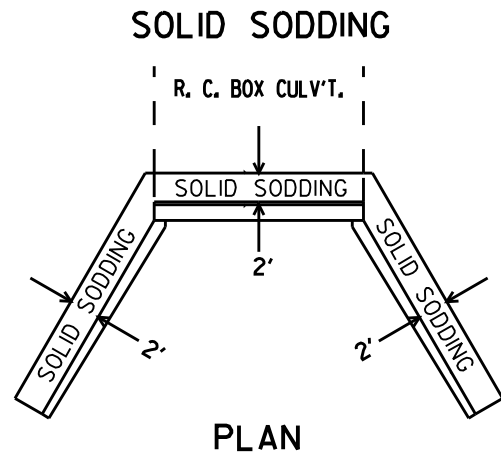
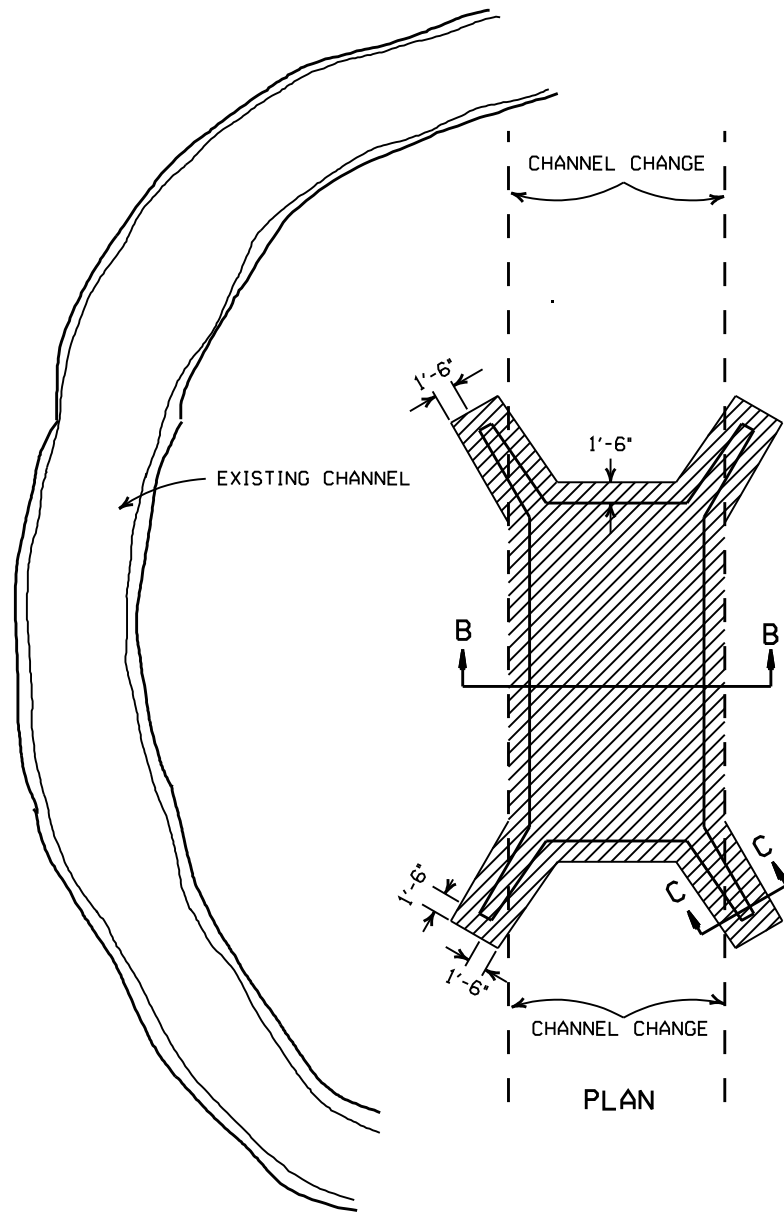


NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

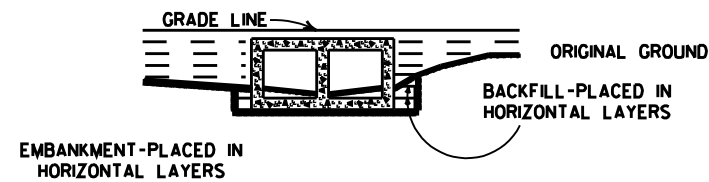
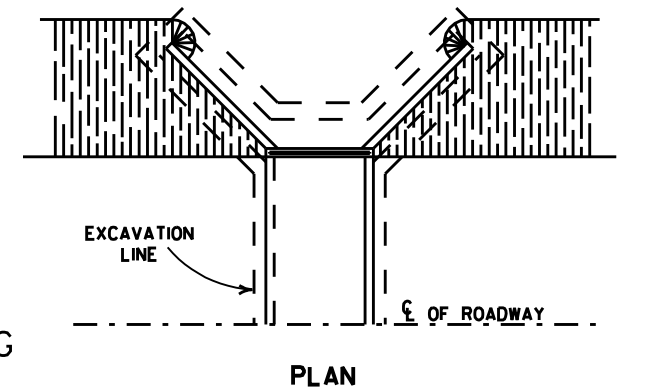
DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
 REINFORCED CONCRETE BOX
 CULVERT DETAILS
 STANDARD DRAWING RCB-1

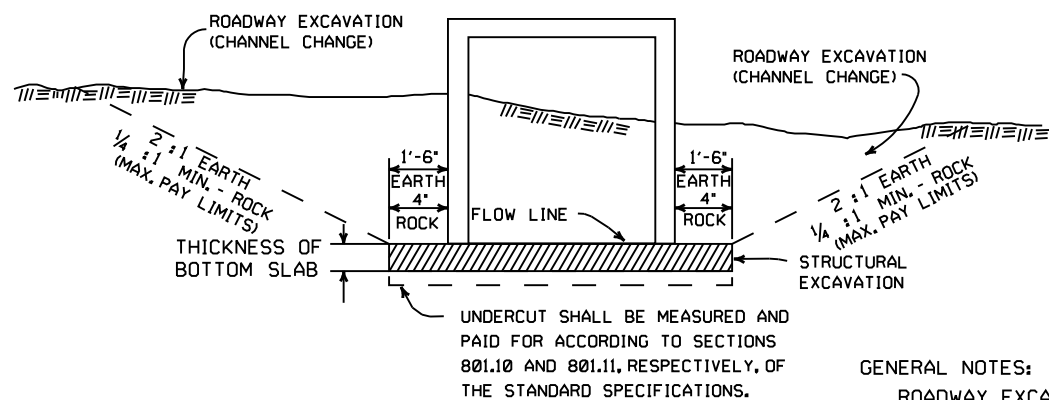
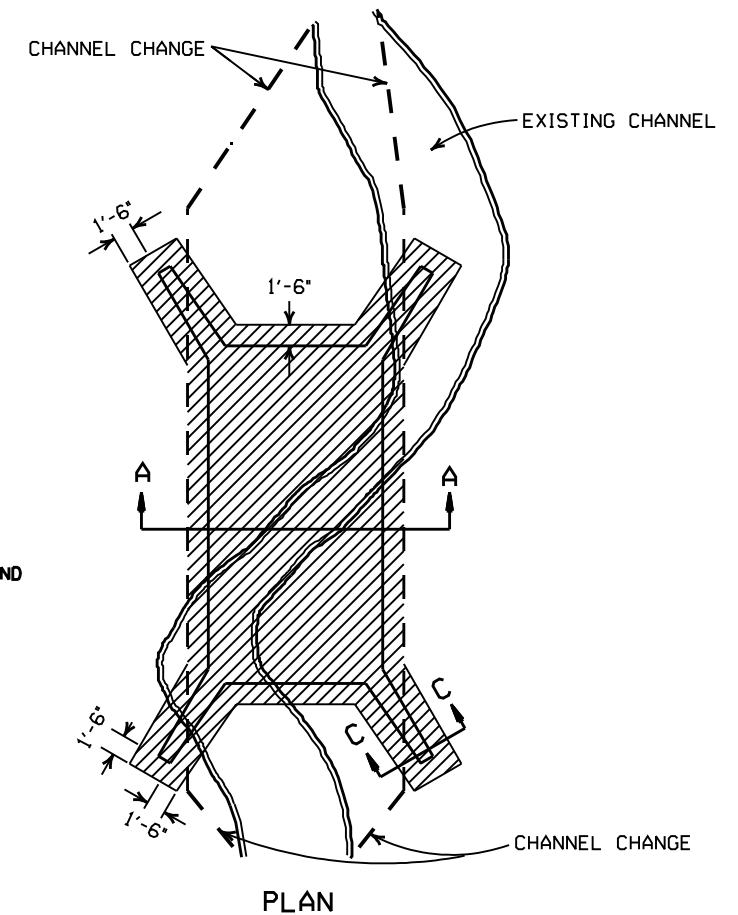


PLAN
PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

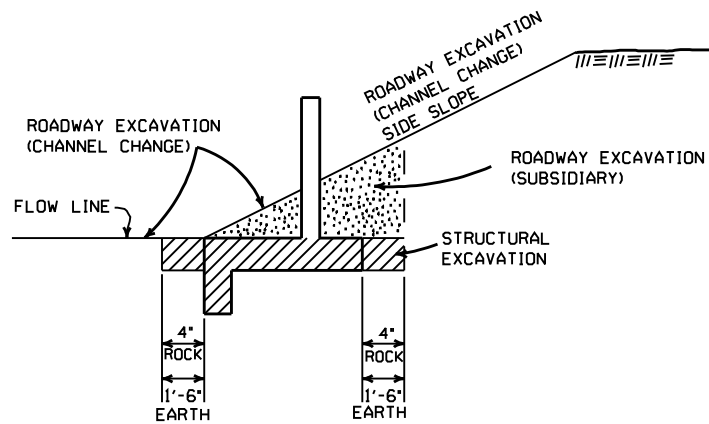
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



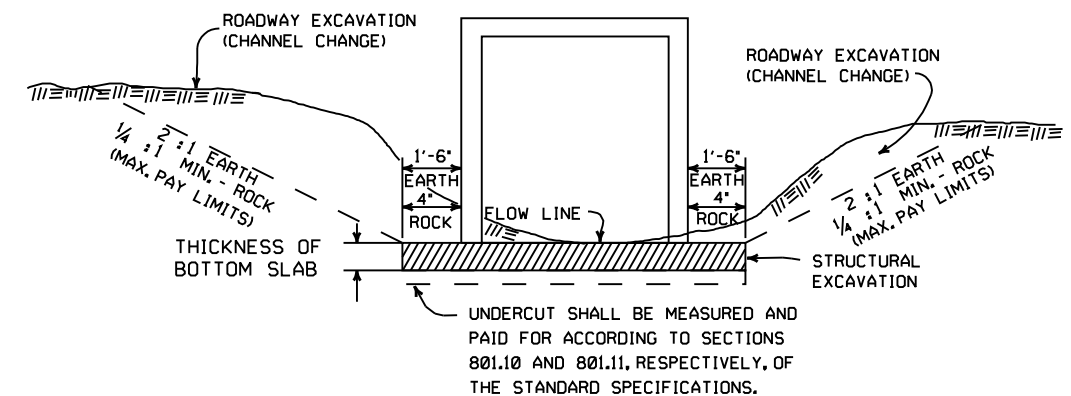
LONGITUDINAL SECTION
BACKFILL DETAILS FOR BOX CULVERT



SECTION B-B
DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

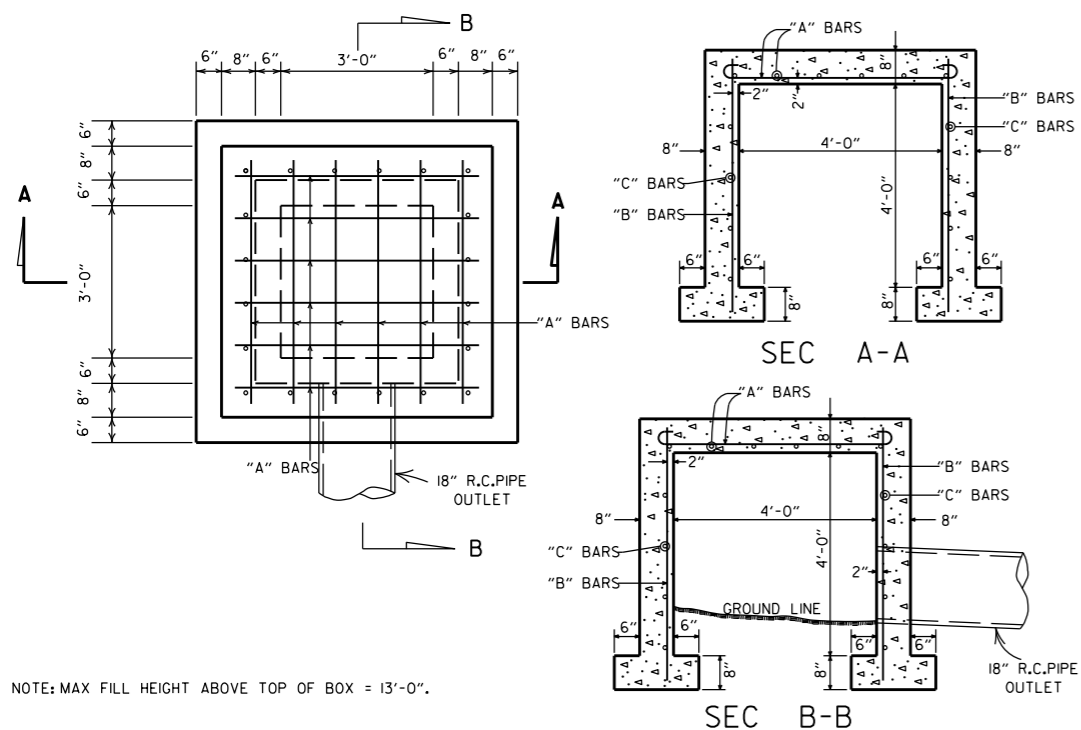
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

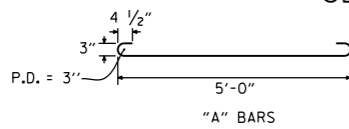
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2



NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

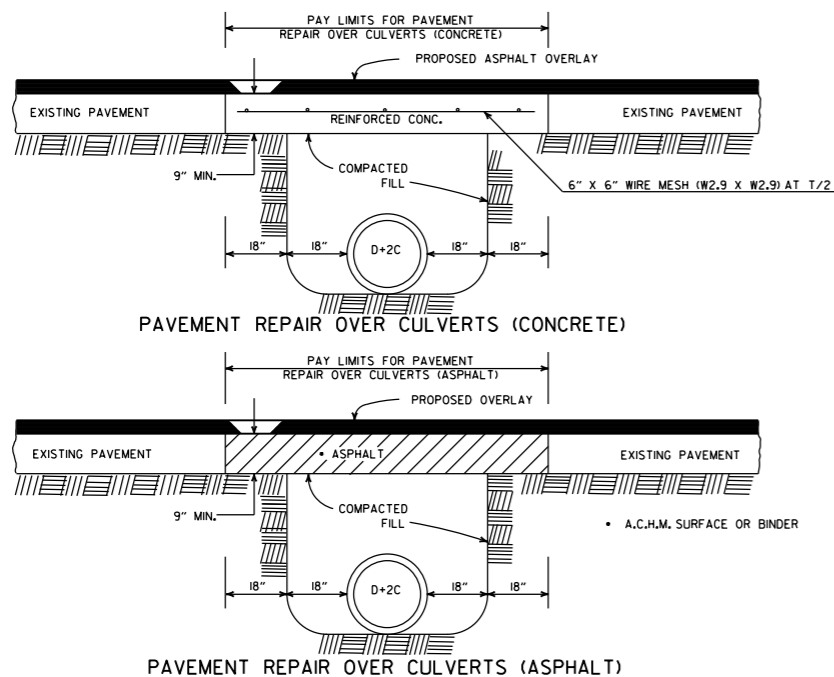
STEEL SCHEDULE			
BARS	NUMBER	LENGTH	SPACING
"A"	12	6'-0"	10"
"B"	20	5'-0"	10 1/2"
"C"	16	5'-0"	12"



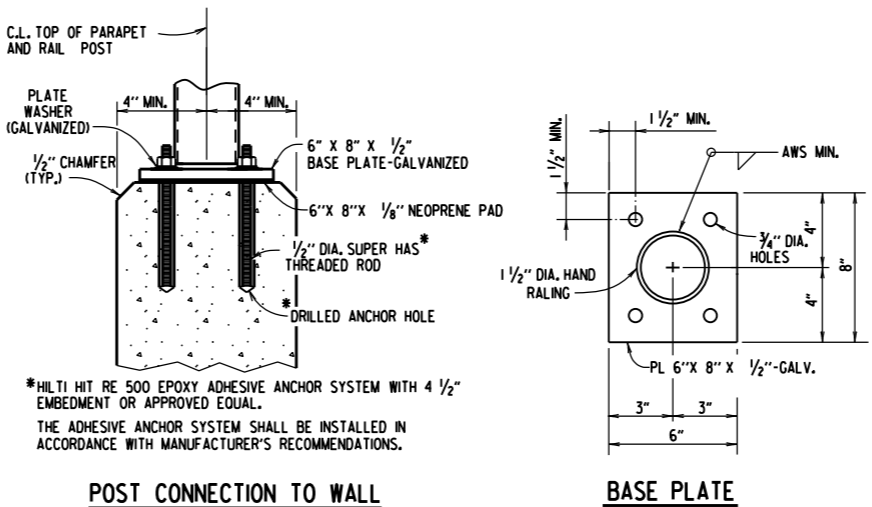
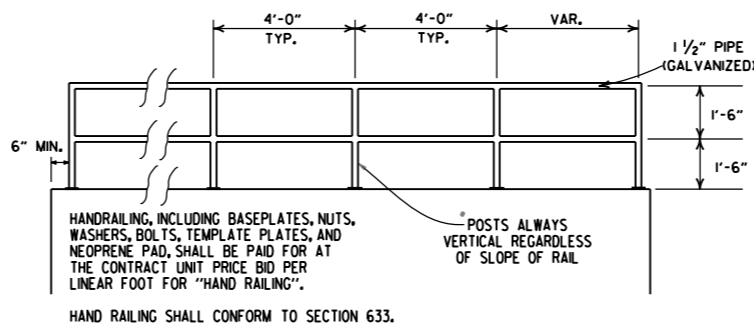
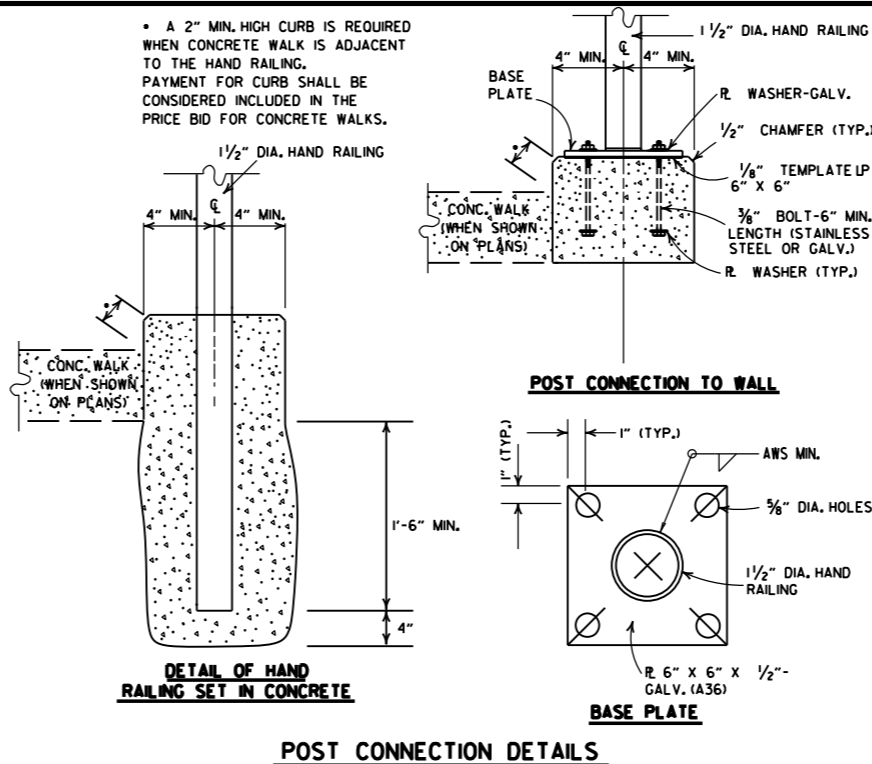
QUANTITIES
 "A" BARS CONCRETE 3.31 CU. YDS.
 REINFORCING STEEL 168 LB.

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

REINFORCED CONCRETE SPRING BOX

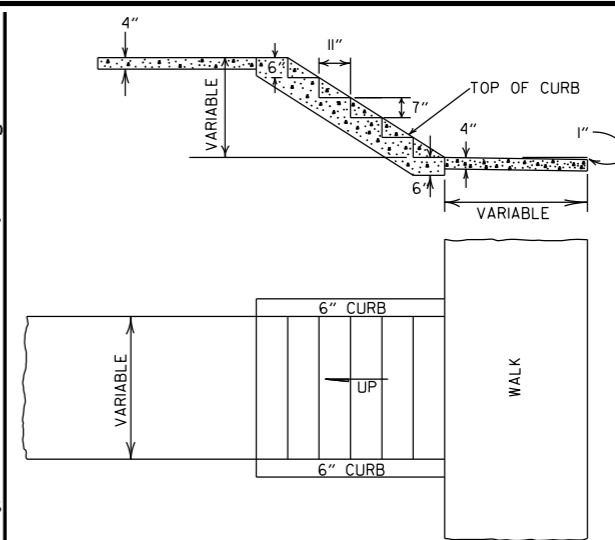


DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS



DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

HAND RAILING DETAILS



DETAILS OF CONCRETE STEPS & WALKS


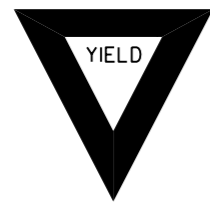







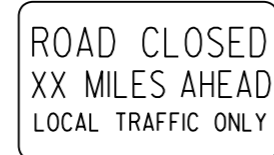
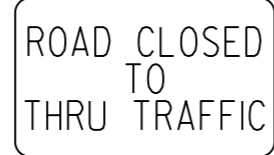

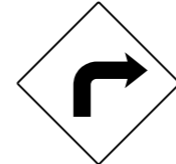

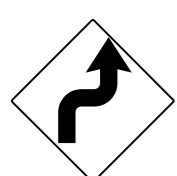

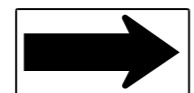

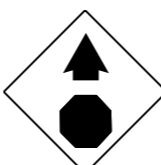

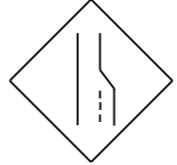

















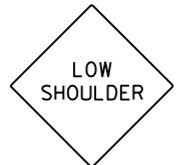
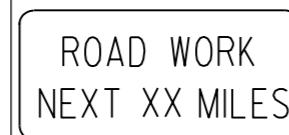
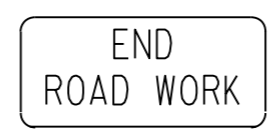
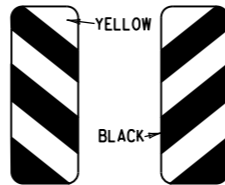


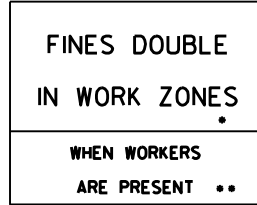
GENERAL NOTES
 1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
 2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DATE	REVISION	DATE FILMED
10-25-18	REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS	
9-12-13	REVISED REINFORCED CONCRETE SPRING BOX	
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONG. SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR	649-7-15-88
11-1-84	ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
1-4-83	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
	ELIMINATED CONG. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET & PAVEMENT REPAIR	674-4-20-79
2-2-76	12" MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>W21-5a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>18" 500 FEET 24" W16-2</p> <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>WI-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

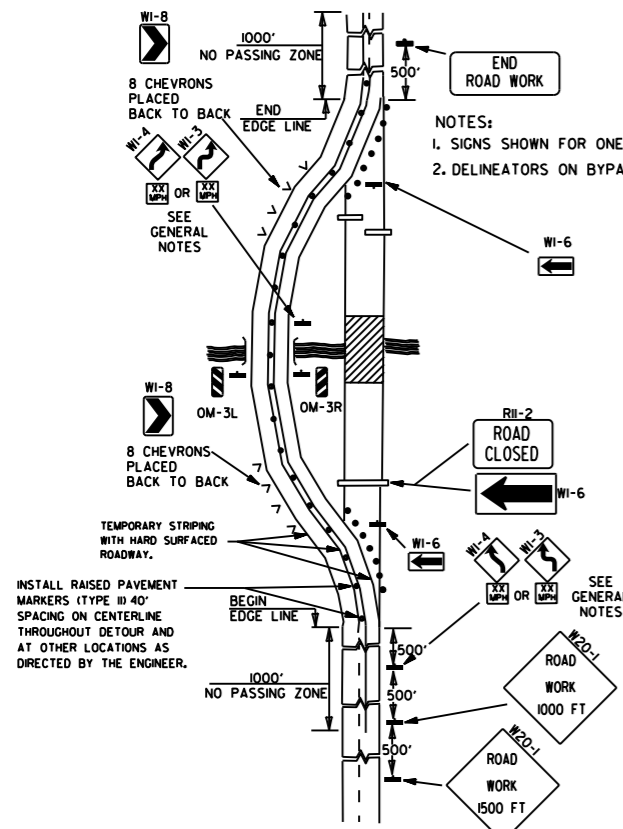
GENERAL NOTES:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- 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.

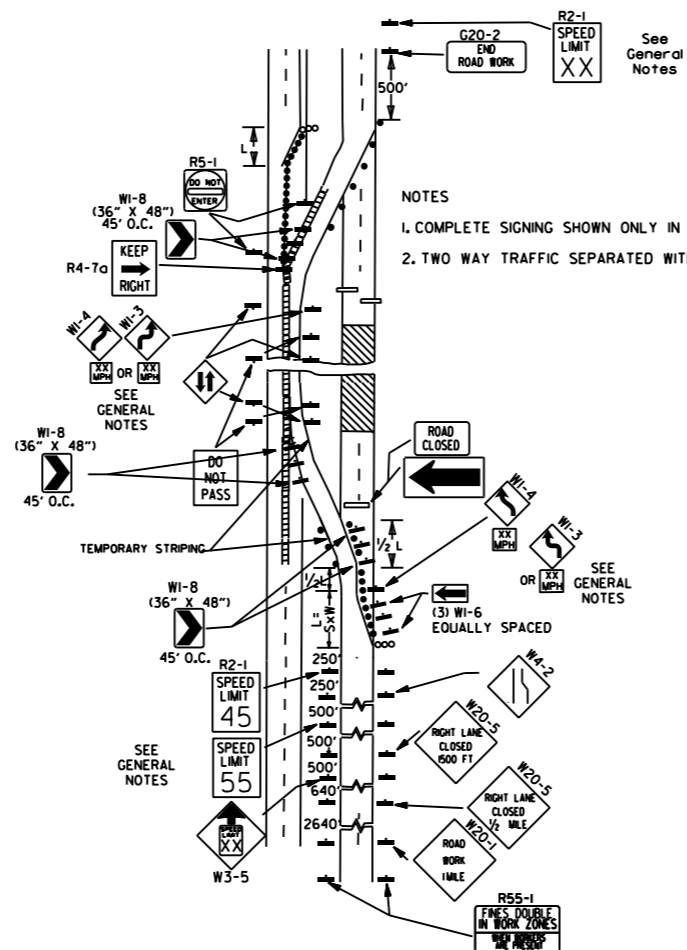
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED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

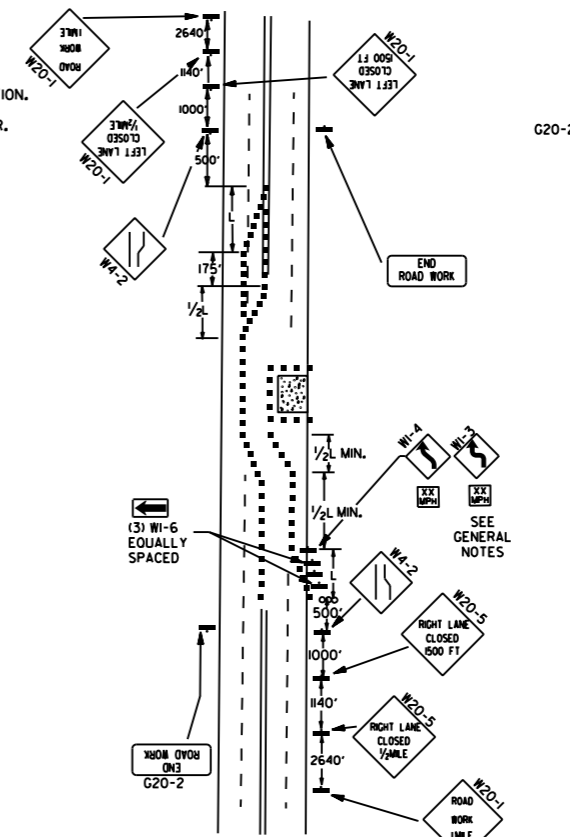
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



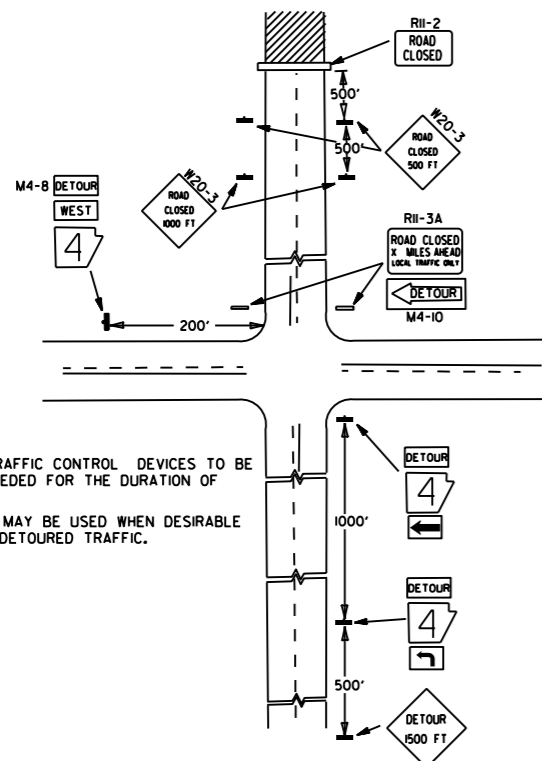
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



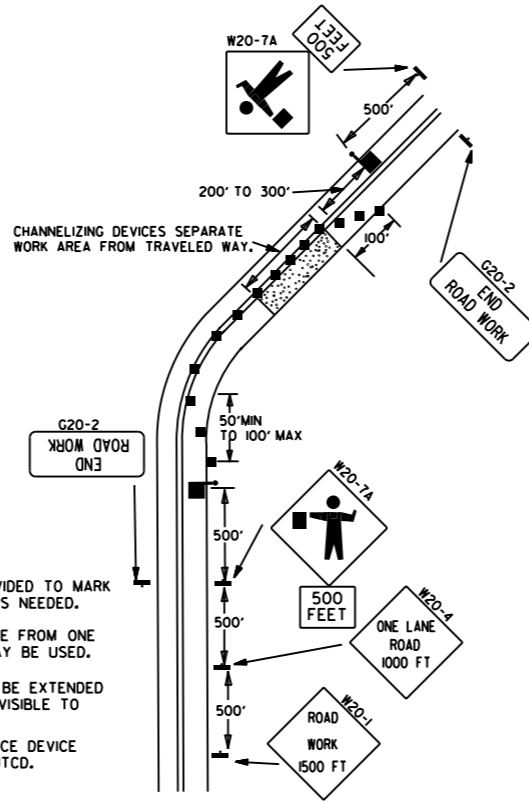
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



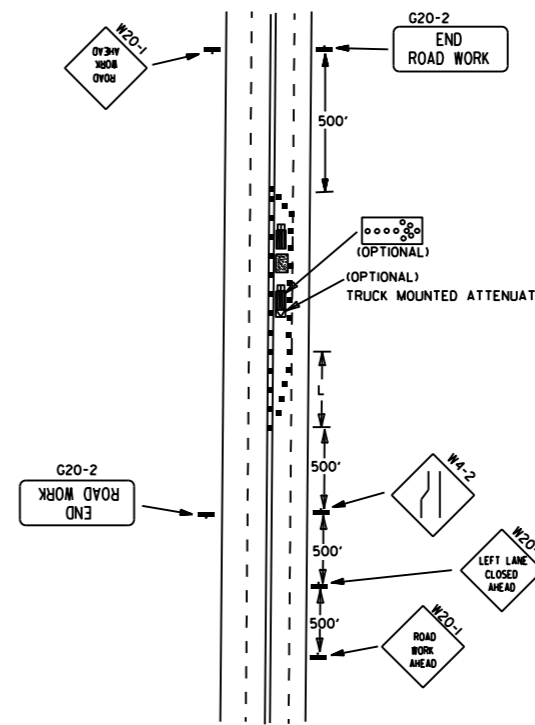
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

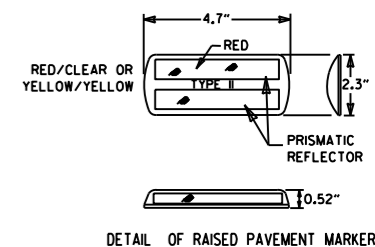


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

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



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:

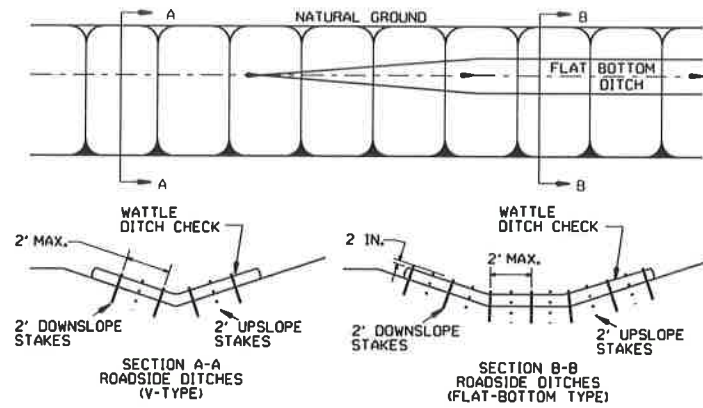
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT 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(45)MPH 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(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH 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).

DATE	REVISION	FILED
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

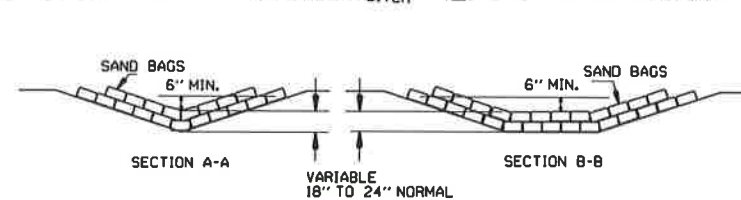
GENERAL NOTES

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

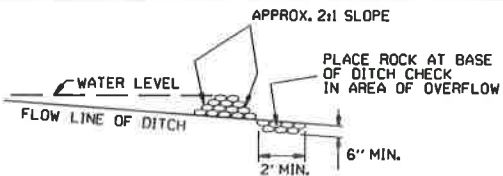


WATTLE DITCH CHECK (E-1)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.

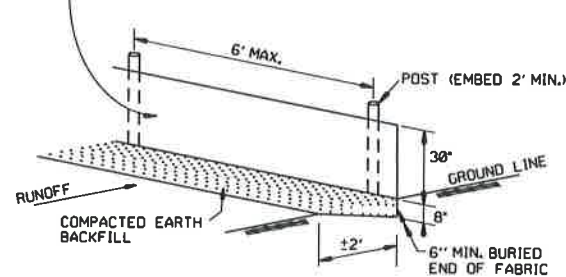


SAND BAG DITCH CHECK (E-5)

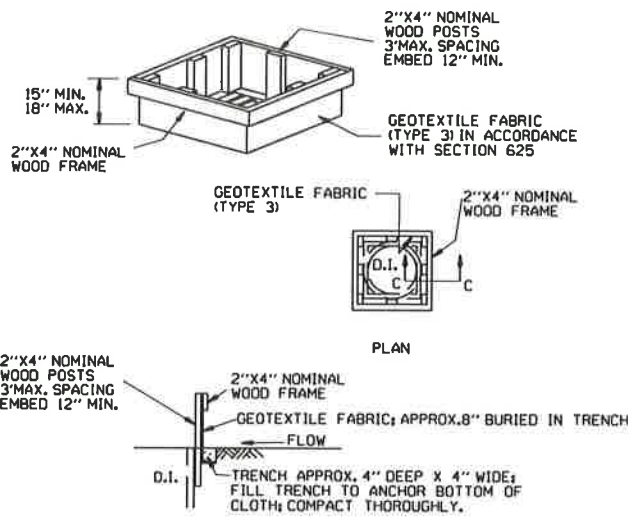


ROCK DITCH CHECK (E-6)

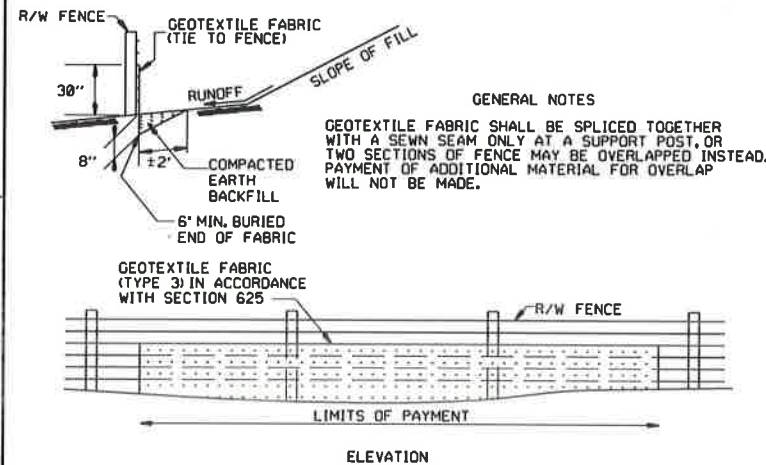
GENERAL NOTES
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625
 GEOTEXTILE FABRIC SHALL BE SPICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

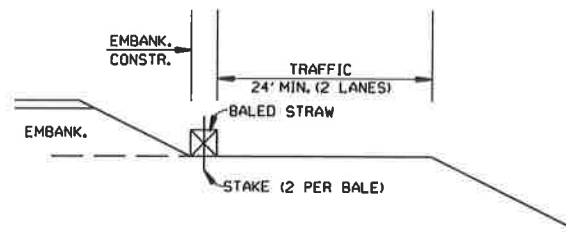


DROP INLET SILTS FENCE (E-7)

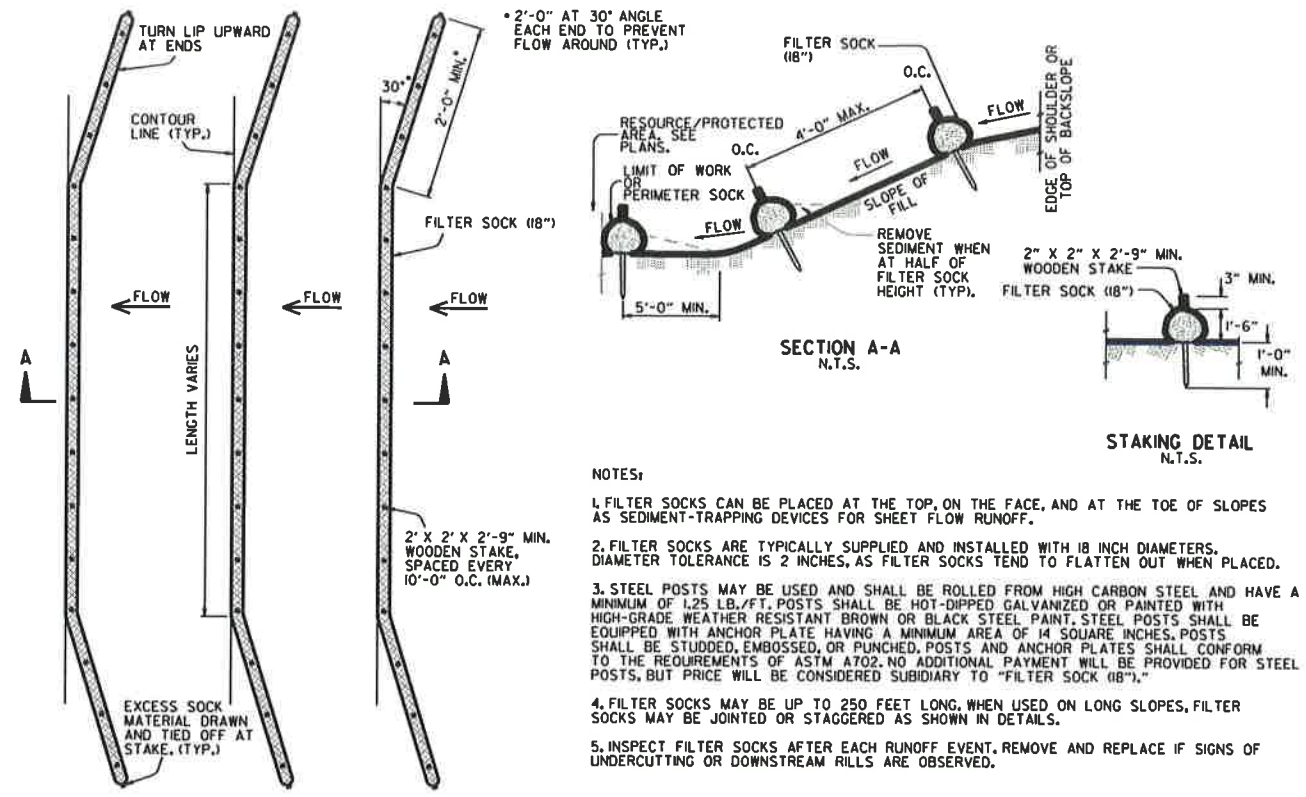


SILT FENCE ON R/W FENCE (E-4)

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.

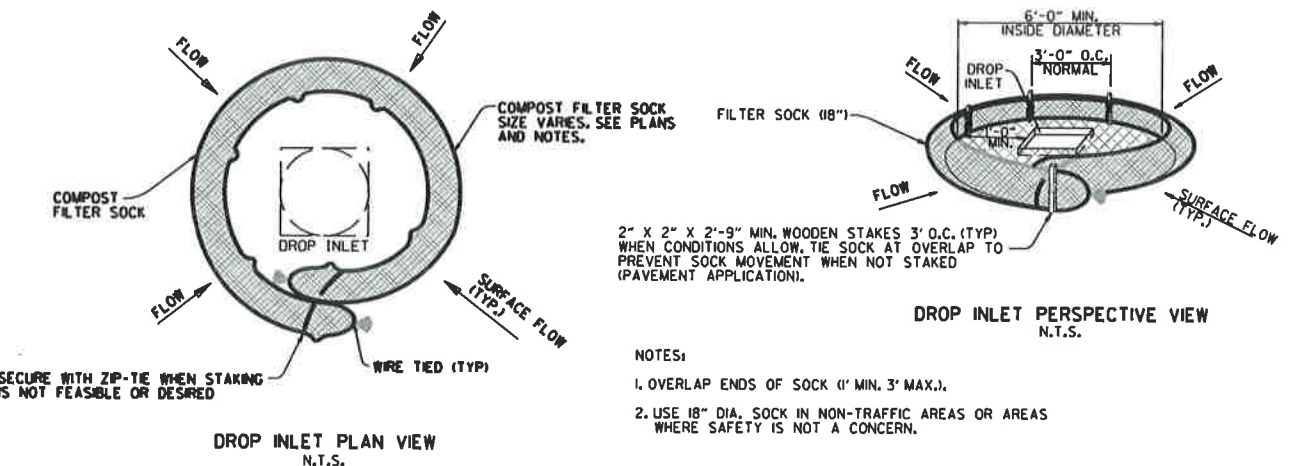


BALED STRAW FILTER BARRIER (E-2)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:
 1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
 2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
 3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18\"/>

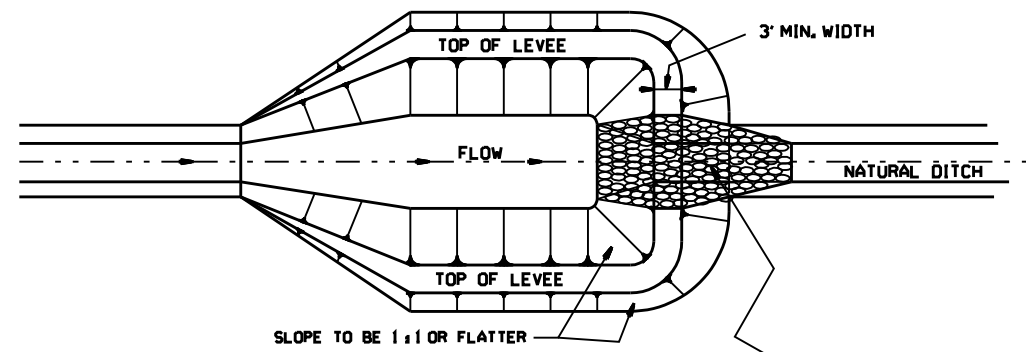


COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

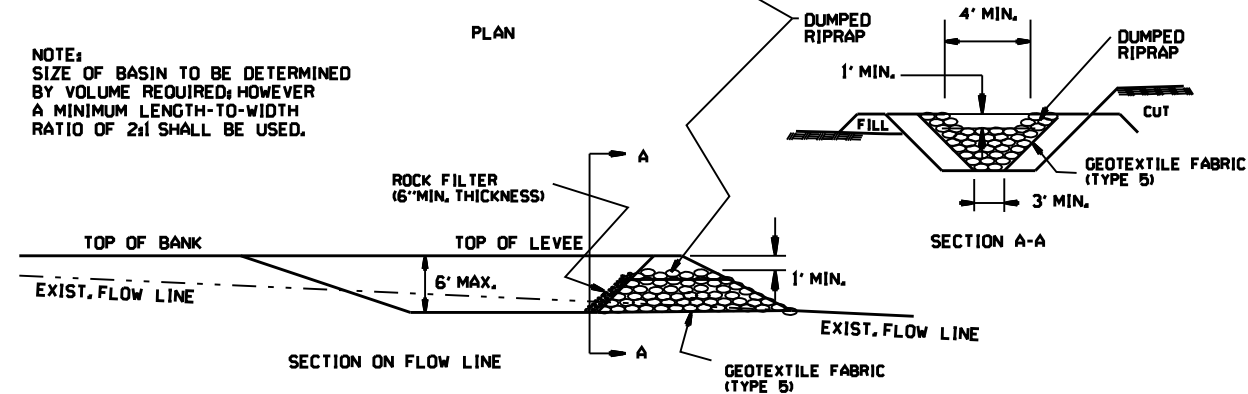
NOTES:
 1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).
 2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
1-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	7-20-95
07-20-95	REVISED SILT FENCE E-4 AND E-11	
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
DATE	REVISION	FILMED

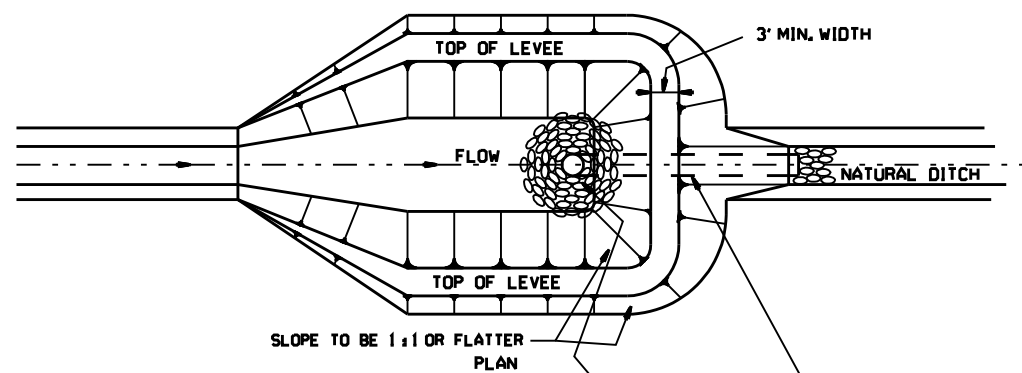
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1



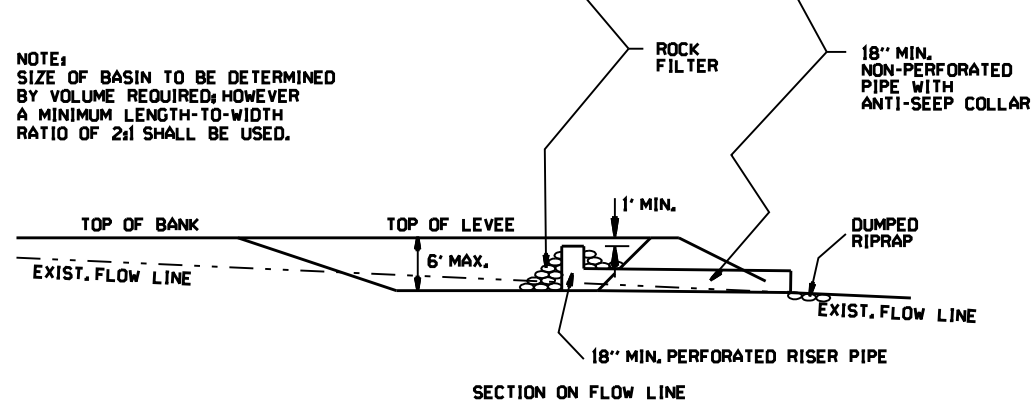
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



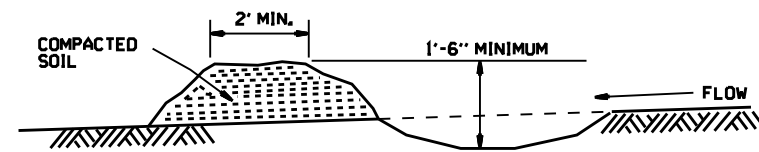
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

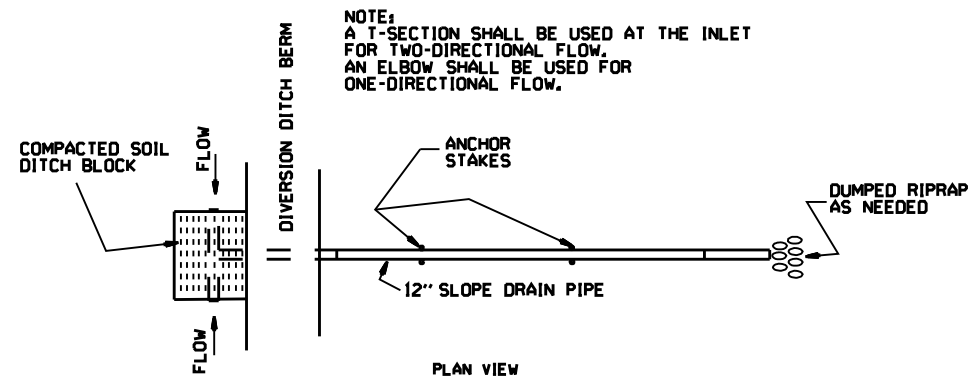


SEDIMENT BASIN WITH PIPE OUTLET (E-10)

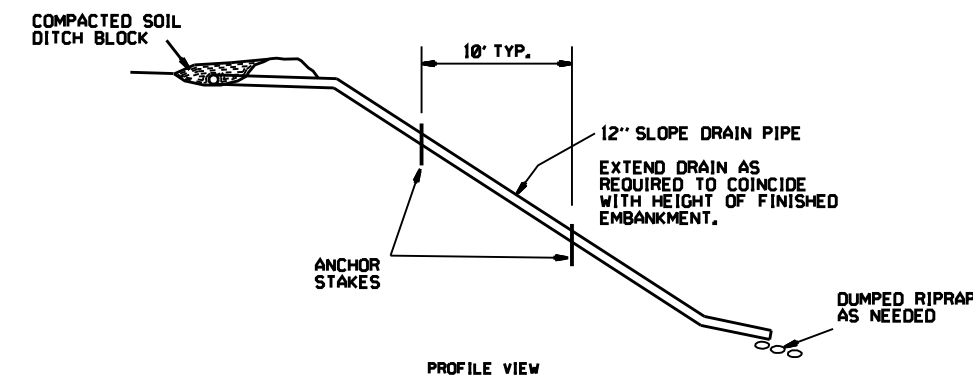


DIVERSION DITCH (E-8)

NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW.
AN ELBOW SHALL BE USED FOR
ONE-DIRECTIONAL FLOW.

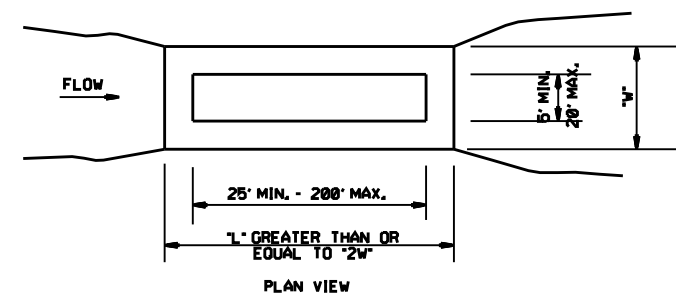


PLAN VIEW

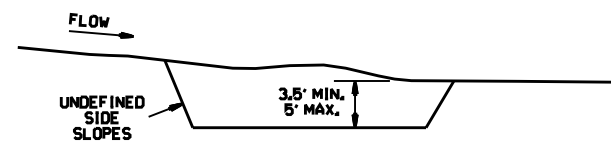


PROFILE VIEW

SLOPE DRAIN (E-12)



PLAN VIEW



PROFILE

SEDIMENT BASIN (E-14)

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

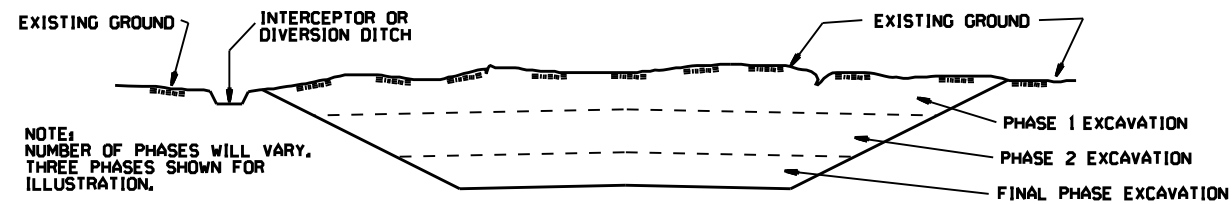
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION
 CONTROL DEVICES
 STANDARD DRAWING TEC-2

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



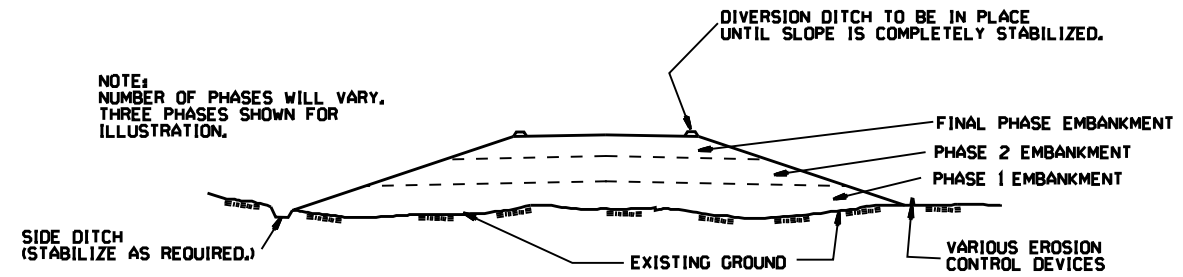
GENERAL NOTE

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



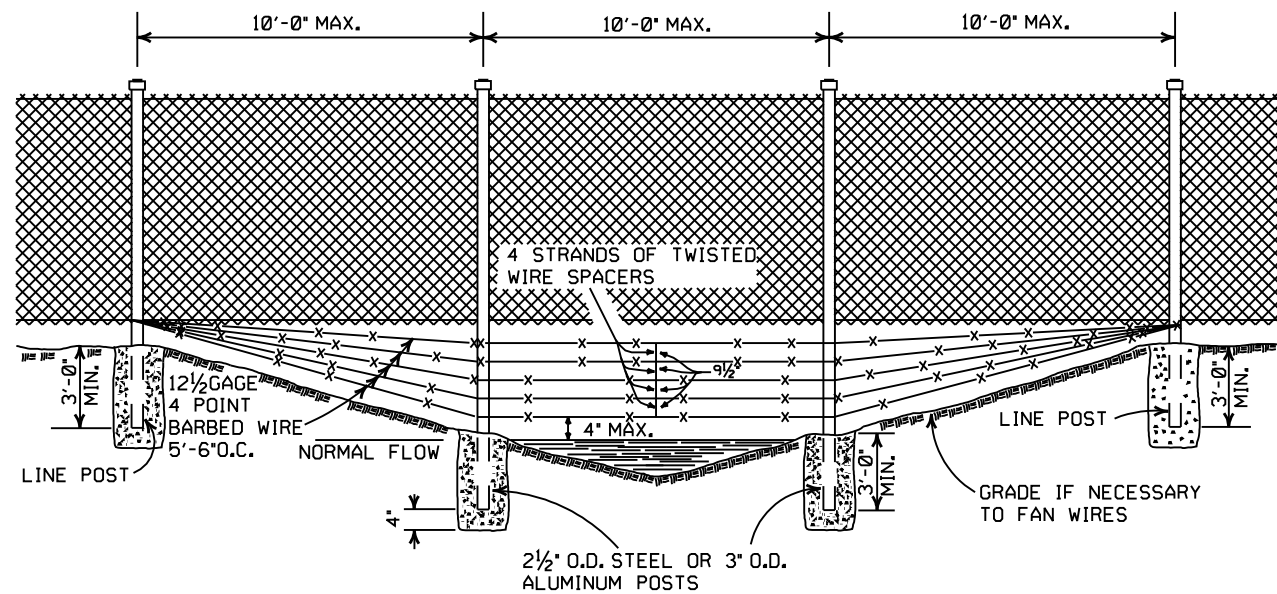
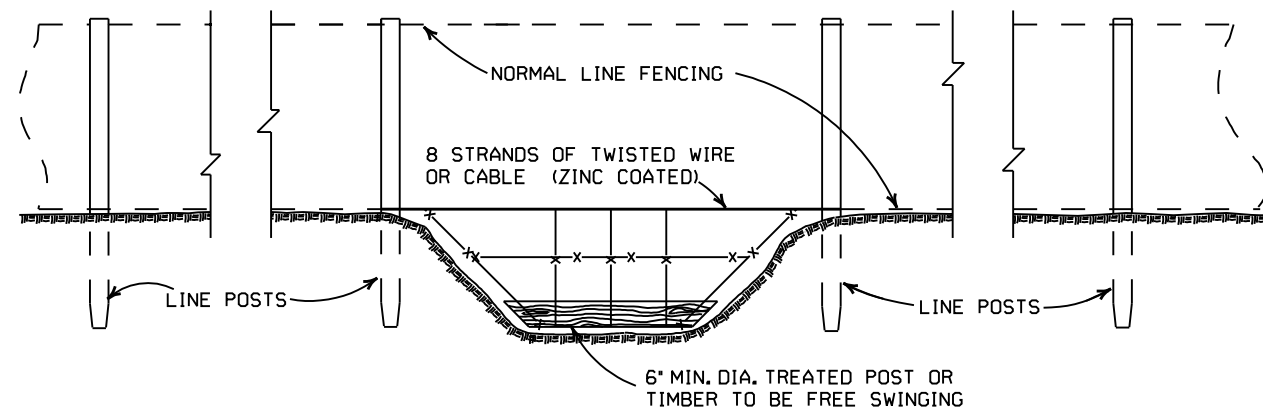
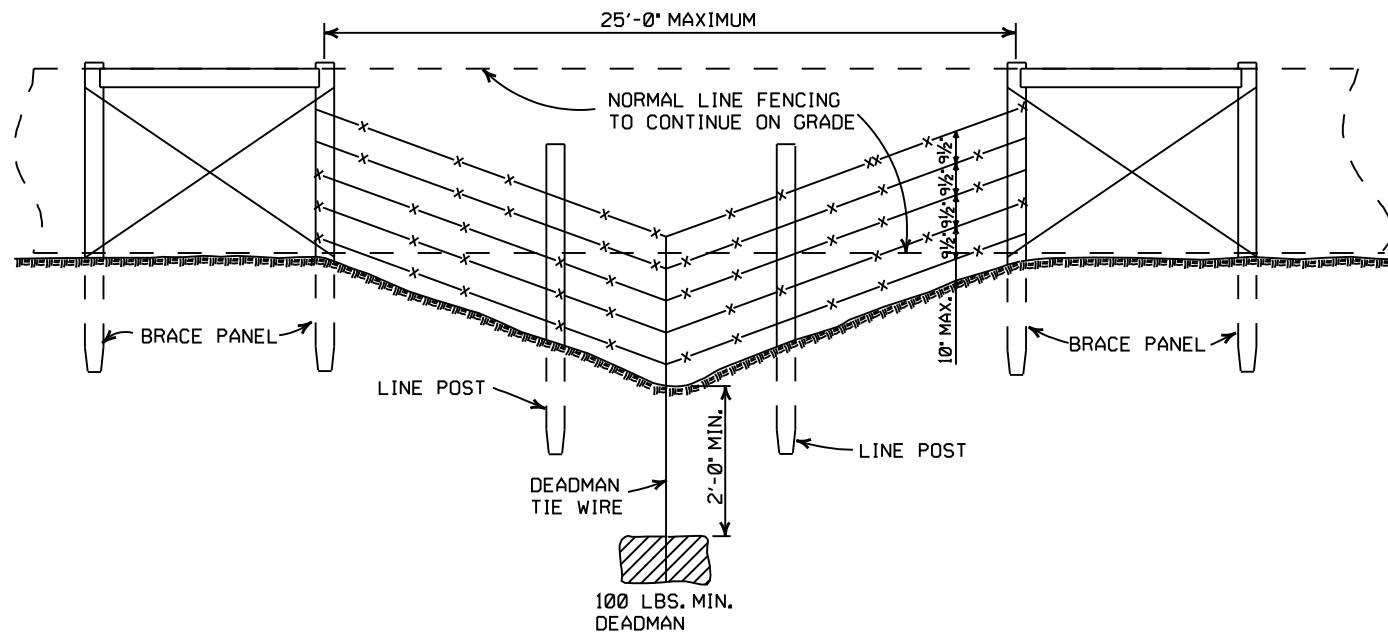
GENERAL NOTE

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.

		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
		STANDARD DRAWING TEC-3	
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	FILMED
DATE	REVISION		



GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

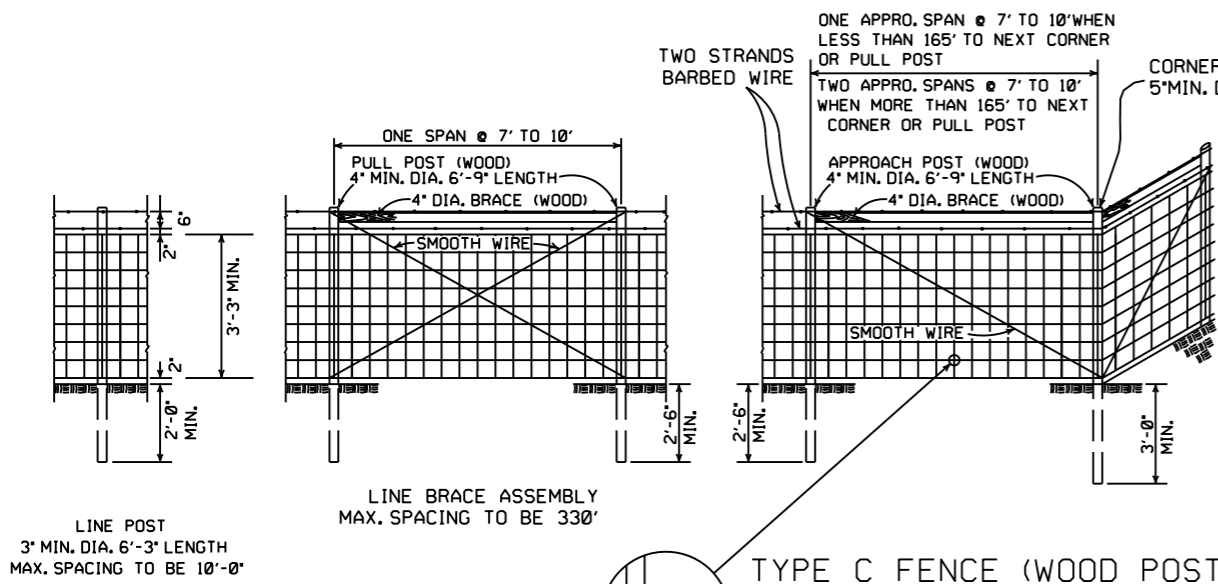
WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION
WIRE FENCE WATER GAPS
 STANDARD DRAWING WF-2

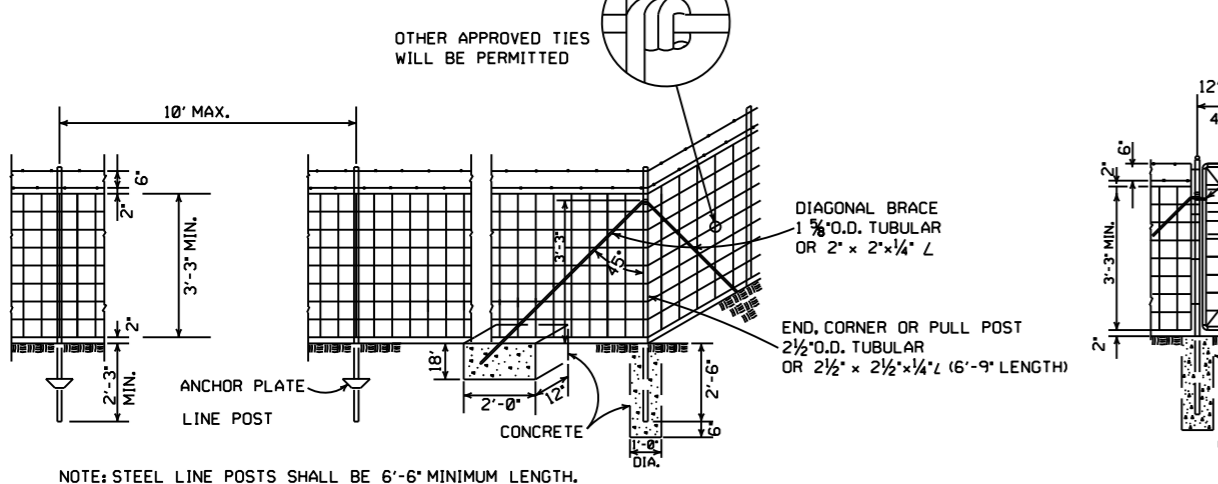


GENERAL NOTES:
 STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
 AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
 TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

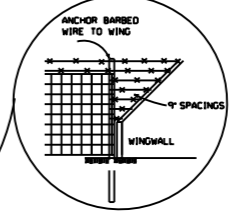
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS, WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD, WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.



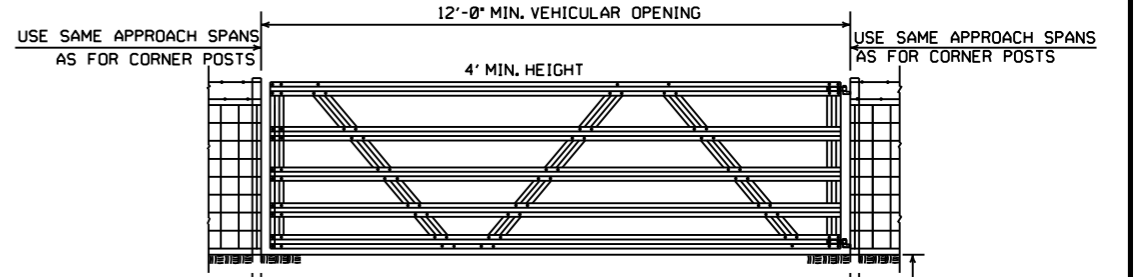
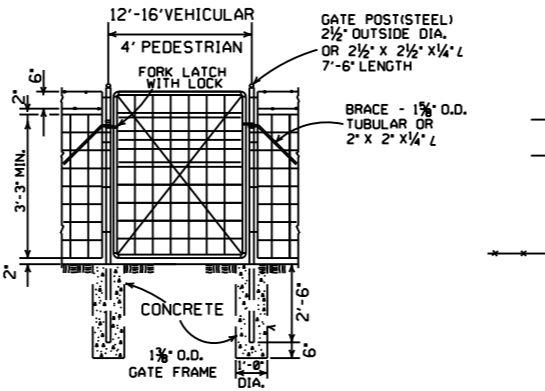
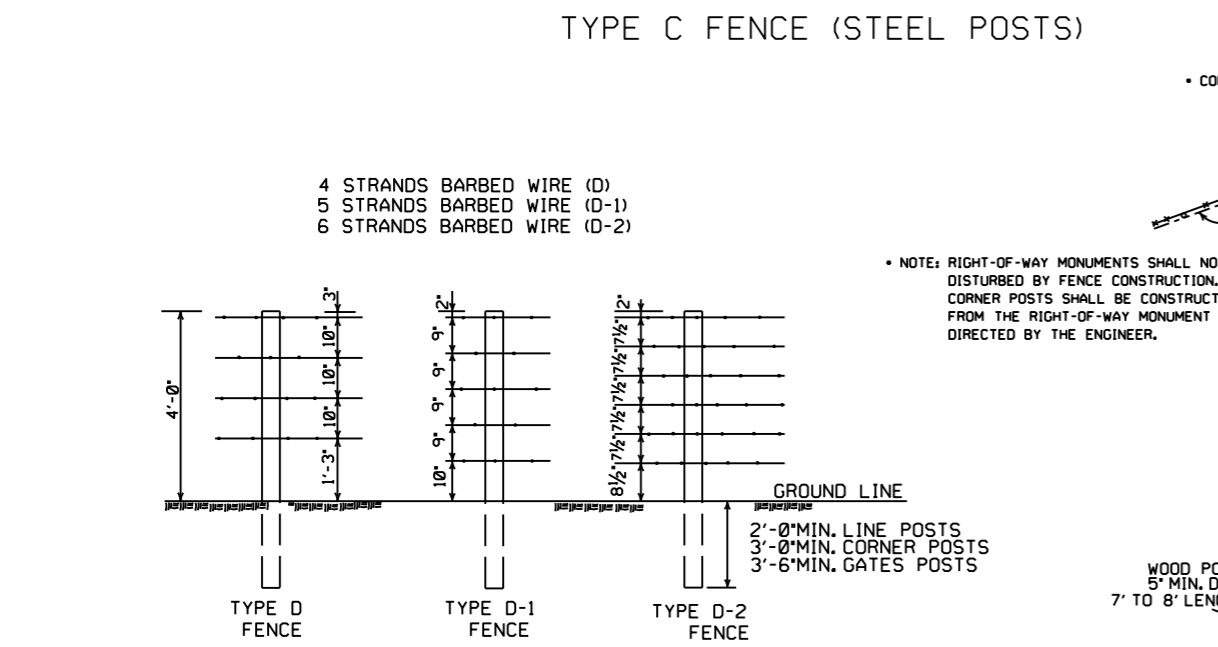
NOTE: USE 3/8\"/>



SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

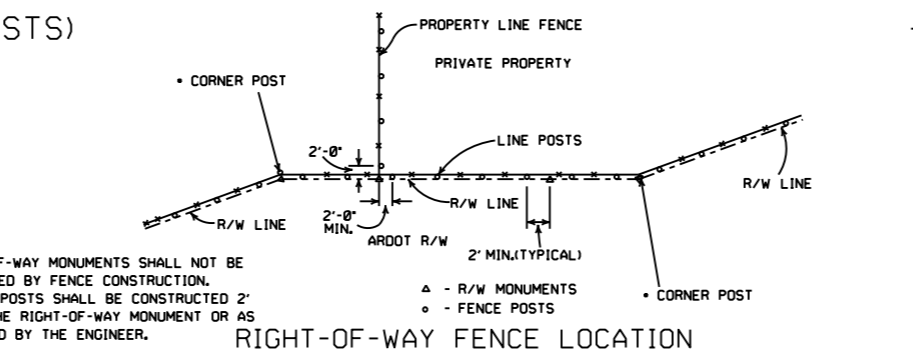
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

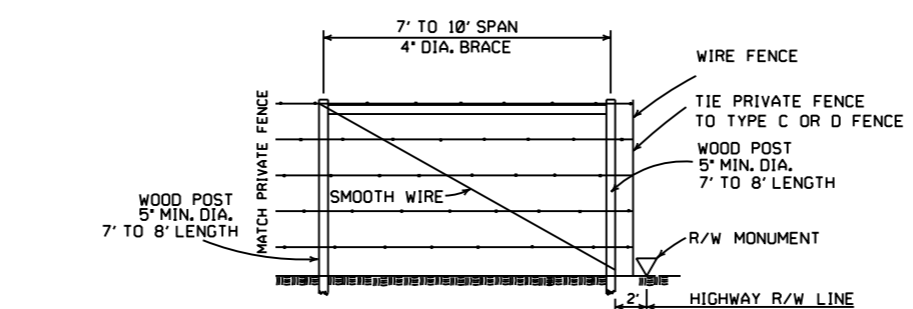


OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.



WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	540-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE

TYPE C AND D

STANDARD DRAWING WF-4