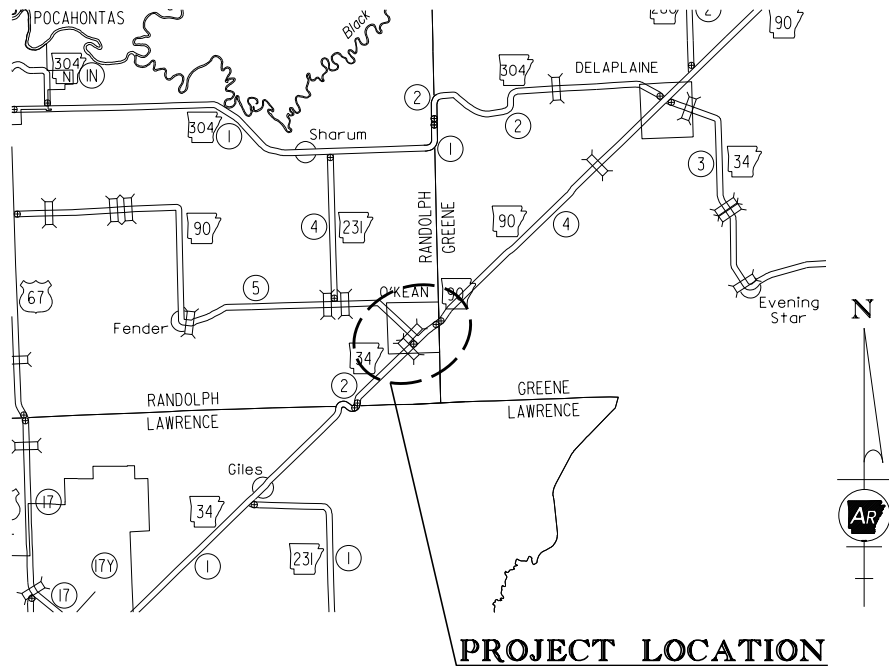


8/21/2023 12:02:25 PM  
Y:\Projects\AR001\7566\101053\Beaver Dam Ditch Str. & Apprs\Drawings\101053\_01\_CO\_01.dgn  
REVISED DATE: \*\*REDATE\*\*

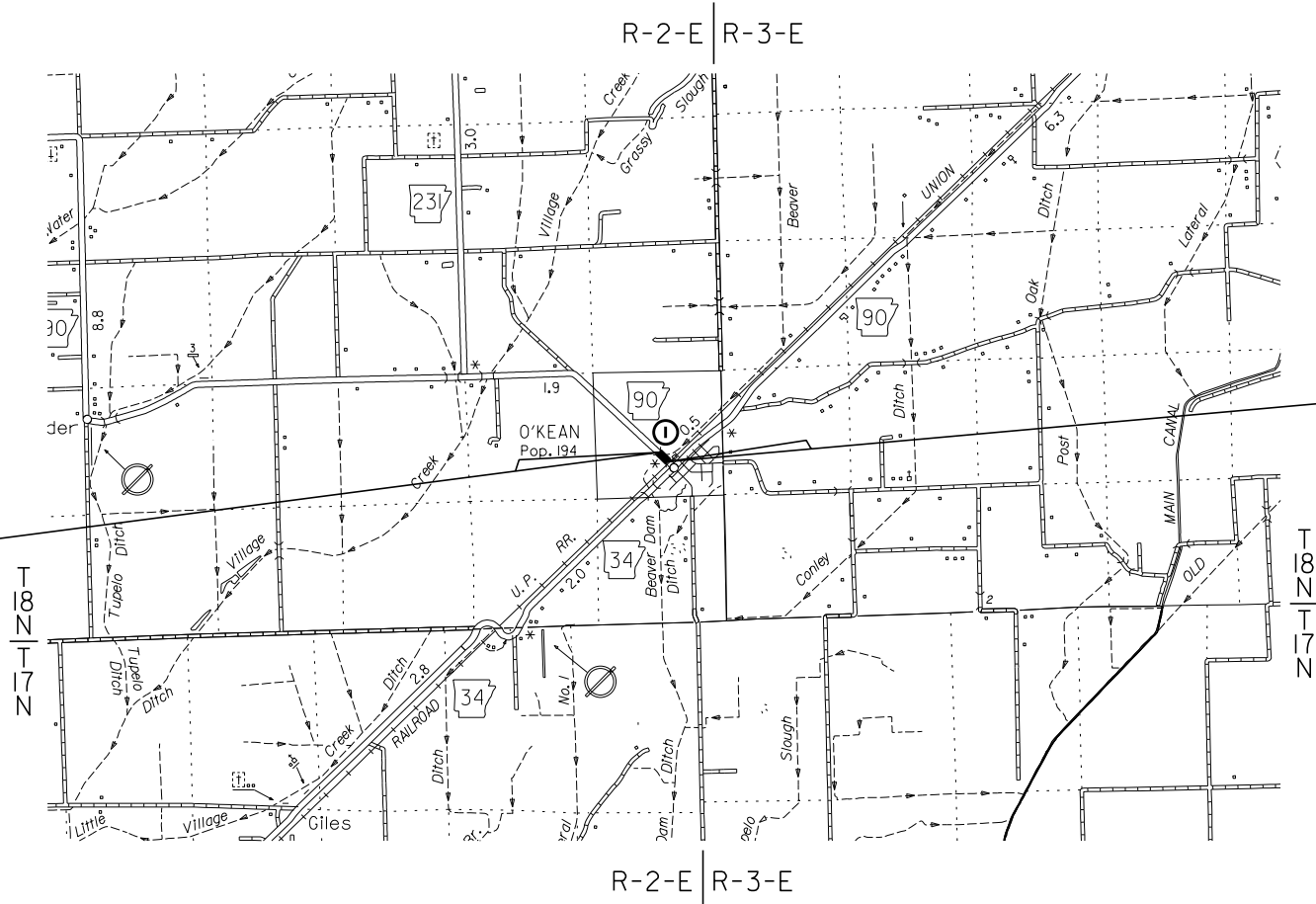


VICINITY MAP

STRUCTURES OVER 20'-0" SPAN

- ① STA. 110+57.00 CONSTRUCT  
QUINT. 12'X8'X85' R.C. BOX CULVERT  
WITH 3:1 WINGS LT. & RT.  
20° LT. FWD. SKEW  
Q25= 938 CFS D.A.= 12.9 SQ. MI.  
SPAN=67.93'

STA. 109+90.00  
BEGIN JOB 101053  
LOG MILE 0.62



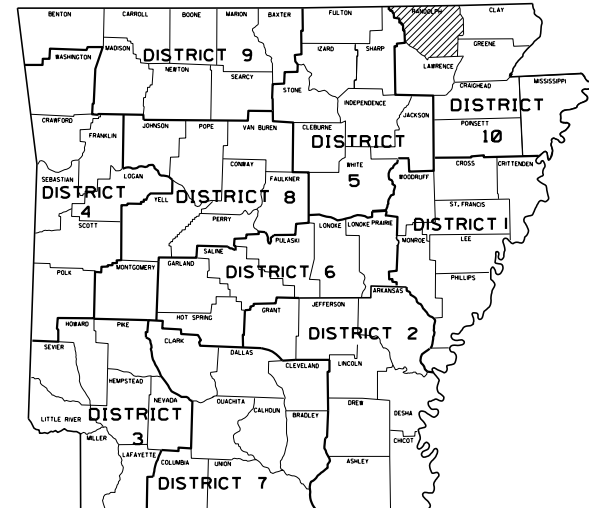
NOT TO SCALE

R-2-E R-3-E

R-2-E R-3-E

ARKANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION PLANS  
BEAVER DAM DITCH STR.  
& APPRS. (O'KEAN) (S)  
RANDOLPH COUNTY  
ROUTE 90 SECTION 5  
JOB 101053  
FED. AID PROJ. NHPP-0061(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. 101053	I	34
						② BEAVER DAM DITCH STR. & APPRS. (O'KEAN) (S)		



ARKANSAS HIGHWAY DISTRICT 10

DESIGN TRAFFIC DATA .

DESIGN YEAR-----	2043
2023 ADT-----	500
2043 ADT-----	600
2043 DHV-----	66
DIRECTIONAL DISTRIBUTION-----	0.60
TRUCKS-----	5%
DESIGN SPEED-----	45 MPH

STA. 110+25.00  
END JOB 101053



LENGTH COMPUTED ALONG C.L. HWY. 90

	BEGIN OF PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°10'09"	N 36°10'08"	N 36°10'08"
LONGITUDE	W 90°49'05"	W 90°49'04"	W 90°49'04"

	FEET	MILES
GROSS LENGTH OF PROJECT	135.00	0.026
NET LENGTH OF ROADWAY	67.07	0.013
NET LENGTH OF BRIDGES	67.93	0.013
NET LENGTH OF PROJECT	135.00	0.026

E:\mg-proj\exley\_8/21/2023\_12:02:26 PM  
WORKSPACE: ARDOT  
Y:\Projects\JARDOT\17566\101053.Beaver Dam Ditch Str & Apprs\Design\CIVIL\Drawings\101053\_02\_IND\_001.dgn  
REVISED DATE: \*\*REDATE\*\*

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.		101053	2	34

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 - 12	SPECIAL DETAILS
13 - 16	TEMPORARY EROSION CONTROL DETAILS
17 - 23	MAINTENANCE OF TRAFFIC DETAILS
24	PERMANENT PAVEMENT MARKING DETAILS
25 - 26	QUANTITIES
27	SUMMARY OF QUANTITIES AND REVISIONS
28 - 29	SURVEY CONTROL DETAILS
30 - 31	PLAN AND PROFILE SHEETS
32 - 34	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
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
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
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
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-4	WIRE FENCE TYPE C AND D	08-22-02

Scott Thornsberry 10/2/2023 2:12:01 PM  
Y:\Projects\10053\Beaver Dam Ditch S1r & Appr's\Design\Civil\Drawings\10053\_03\_ON\_001.dgn  
WORKSPACE: ARDOT  
REVISION DATE: \$\*REVIDATE\$\*

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-02-2023				6	ARK.			
						JOB NO.	101053	334

2 GOVERNING SPECIFICATIONS & GENERAL NOTES

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA ____	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273 ____	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273 ____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273 ____	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273 ____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273 ____	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273 ____	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273 ____	SUPPLEMENT - WAGE RATE DETERMINATION
100-3 ____	CONTRACTOR'S LICENSE
100-4 ____	DEPARTMENT NAME CHANGE
102-2 ____	ISSUANCE OF PROPOSALS
105-4 ____	MAINTENANCE DURING CONSTRUCTION
107-2 ____	RESTRAINING CONDITIONS
108-1 ____	LIQUIDATED DAMAGES
108-2 ____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1 ____	PROTECTION OF WATER QUALITY AND WETLANDS
210-1 ____	UNCLASSIFIED EXCAVATION
303-1 ____	AGGREGATE BASE COURSE
306-1 ____	QUALITY CONTROL AND ACCEPTANCE
400-1 ____	TACK COATS
400-4 ____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5 ____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6 ____	LIQUID ANTI-STRIP ADDITIVE
400-7 ____	TRACKLESS TACK
404-3 ____	DESIGN OF ASPHALT MIXTURES
409-2 ____	ASPHALT LABORATORY FACILITY
410-1 ____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2 ____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4 ____	EVALUATION OF ACM SUBLOT REPLACEMENT MATERIAL
416-1 ____	RECYCLED ASPHALT PAVEMENT
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)
620-1 ____	MULCH COVER
800-1 ____	STRUCTURES
802-4 ____	CEMENT
804-2 ____	REINFORCING STEEL FOR STRUCTURES
JOB 101053 ____	BIDDING REQUIREMENTS AND CONDITIONS
JOB 101053 ____	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 101053 ____	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101053 ____	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 101053 ____	CARGO PREFERENCE ACT REQUIREMENTS
JOB 101053 ____	COLD MILLING - COUNTY PROPERTY
JOB 101053 ____	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101053 ____	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
JOB 101053 ____	DESIGN AND QUALITY CONTROL ASPHALT MIXTURES
JOB 101053 ____	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 101053 ____	ESTABLISHING CONTRACT TIME-WORKING DAY CONTRACT
JOB 101053 ____	FLEXIBLE BEGINNING OF WORK
JOB 101053 ____	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 101053 ____	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101053 ____	MANDATORY ELECTRONIC CONTRACT
JOB 101053 ____	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101053 ____	NESTING SITES OF MIGRATORY BIRDS
JOB 101053 ____	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 101053 ____	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 101053 ____	PRICE ADJUSTMENT FOR FUEL
JOB 101053 ____	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101053 ____	SHORING FOR CULVERTS
JOB 101053 ____	SOIL STABILIZATION
JOB 101053 ____	STORM WATER POLLUTION PREVENTION PLAN
JOB 101053 ____	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 101053 ____	TOTAL SOLAR ECLIPSE
JOB 101053 ____	UTILITY ADJUSTMENTS
JOB 101053 ____	WARM MIX ASPHALT

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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- 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 COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

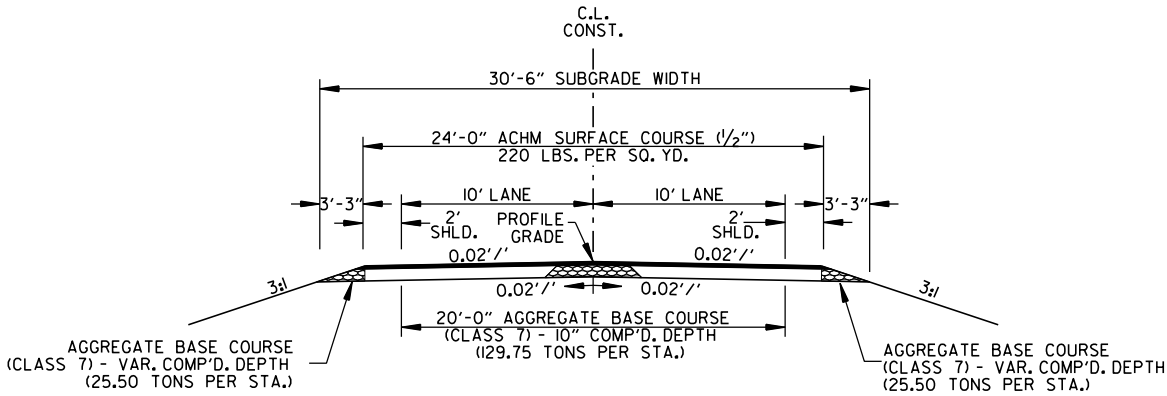
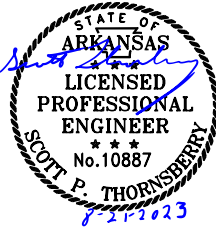






8/21/2023 12:02:28 PM  
Y:\Projects\AR001\75661\01053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\01053\_04\_TS\_001.dgn  
REVISD DATE: \*\*REVISD\*\*

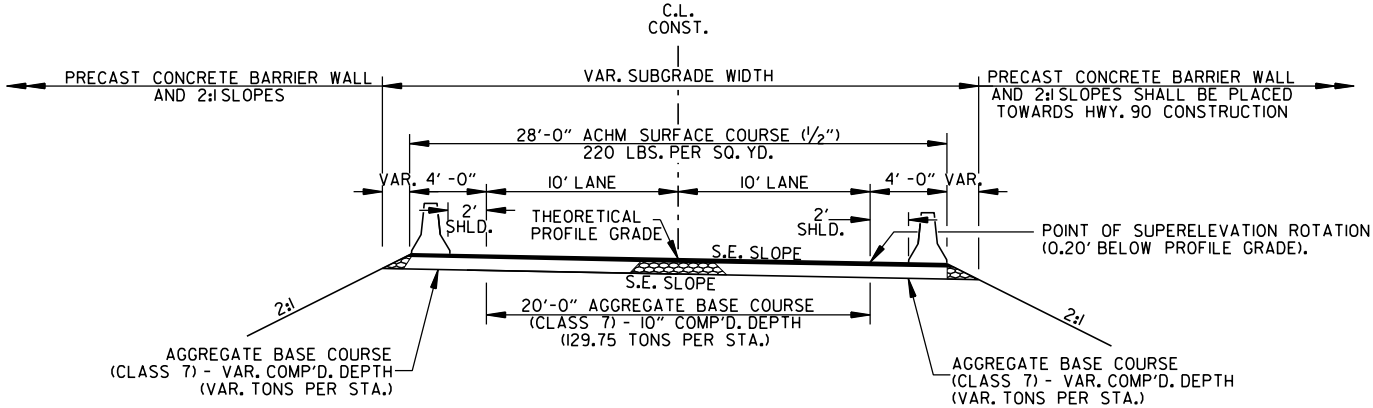
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	5	34
2 TYPICAL SECTIONS OF IMPROVEMENT								



TEMP. DETOUR - TANGENT SECTION

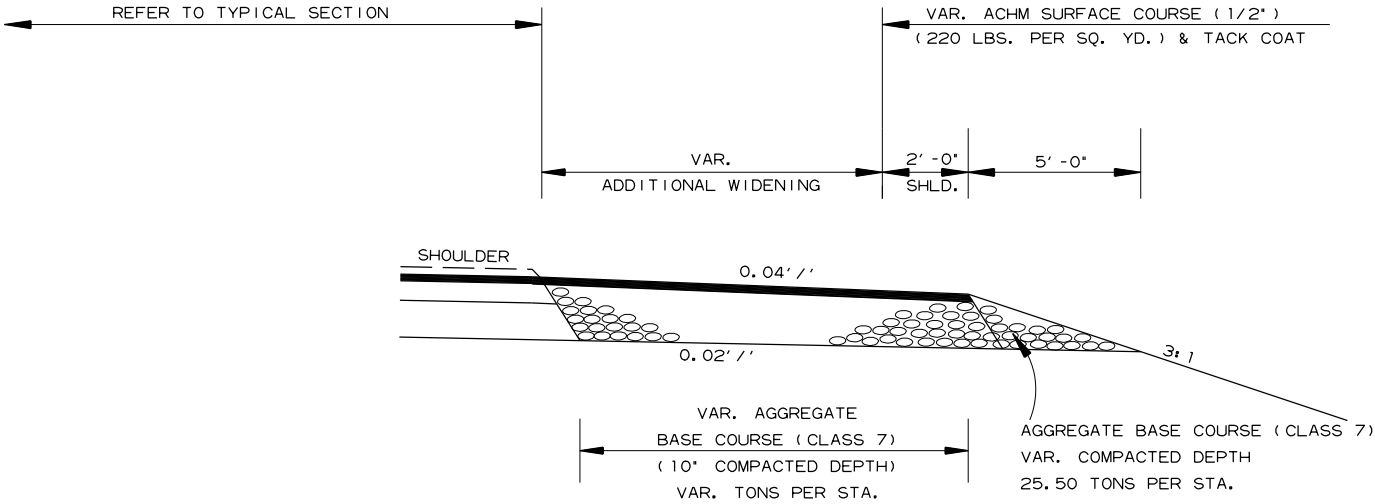
STA. 18+44.61 TO STA. 22+66.47

- NOTES:
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
  2. 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 THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
  3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT THE LANE LINES.
  4. 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.

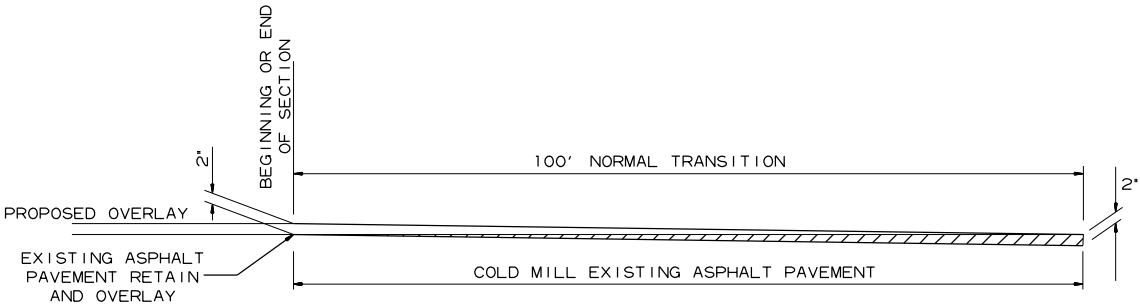


TEMP. DETOUR - SUPERELEVATED SECTION

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.		101053	6	34
2 SPECIAL DETAILS								



ADDITIONAL WIDENING  
FOR MAINTENANCE OF TRAFFIC  
STA. 18+44.61 - STA. 19+57.16  
STA. 21+61.91 - STA. 22+66.47

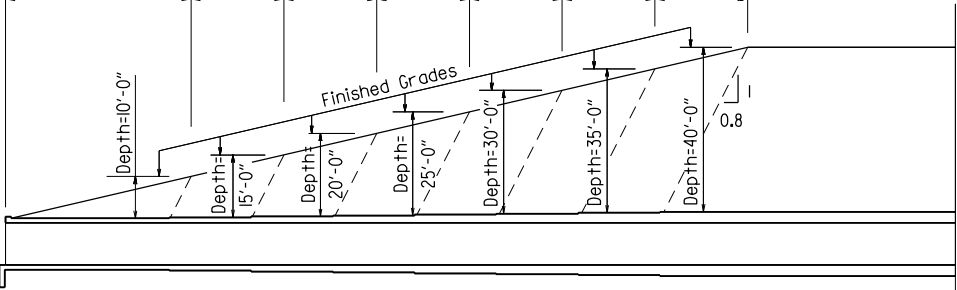


DETAIL FOR TRANSITIONS

EnnioPresley 8/22/2023 9:20:15 AM  
WORKSPACE: \\P001\76661\00051\Beaver Dam Ditch Str & Appr's\Design\Civil\Drawings\RD0053\_05\_SD\_002.dgn  
PROJECT: ARDOT 176661\00051\Beaver Dam Ditch Str & Appr's  
REVISION DATE: \$\$(REVISION)\$\$

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"

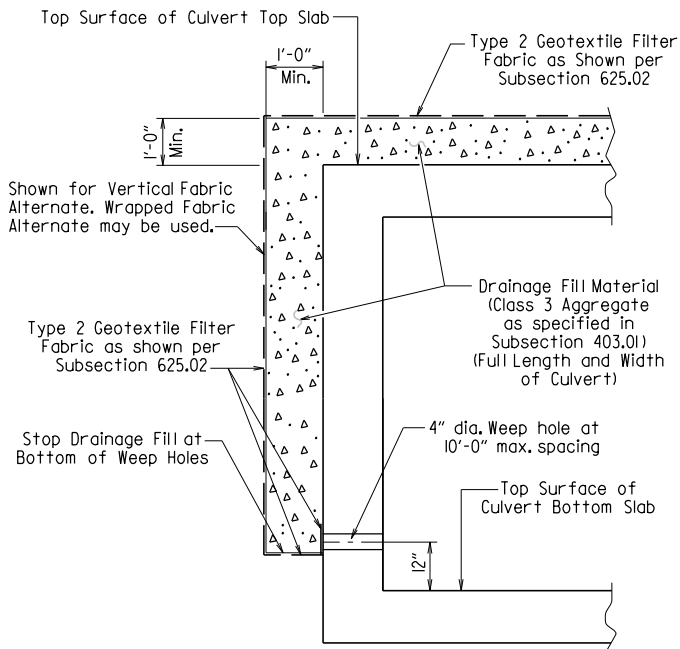
Note: For fill depths 10' and under, use Mid-Section full length of box culvert.



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

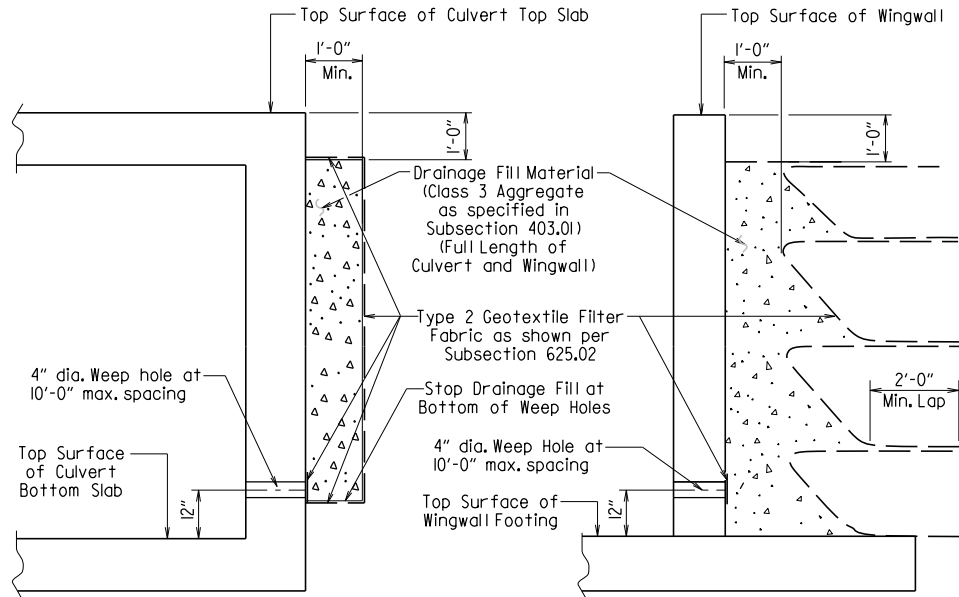
### LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes



### CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



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

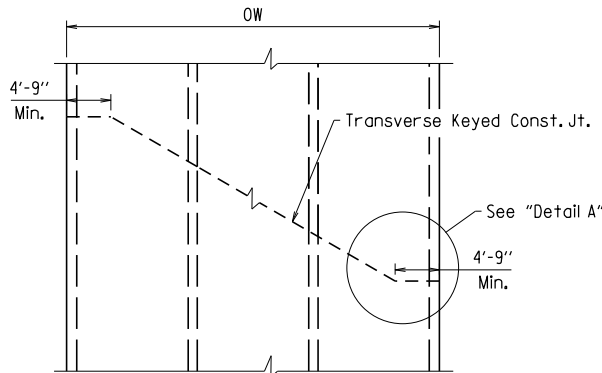
### VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

### WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

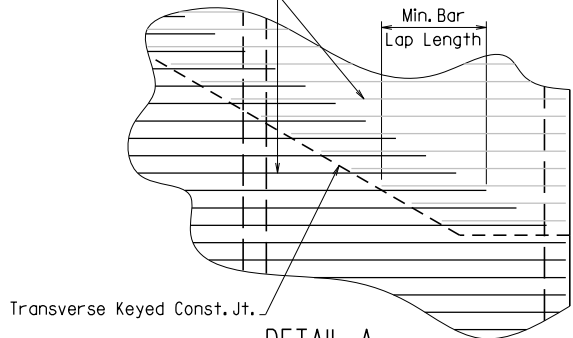
### WINGWALL & CULVERT DRAINAGE DETAIL



### 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.

Slab bars "a", "b", "c", "d", "bl", or "f". Slab distribution and Wall reinforcing omitted for clarity.

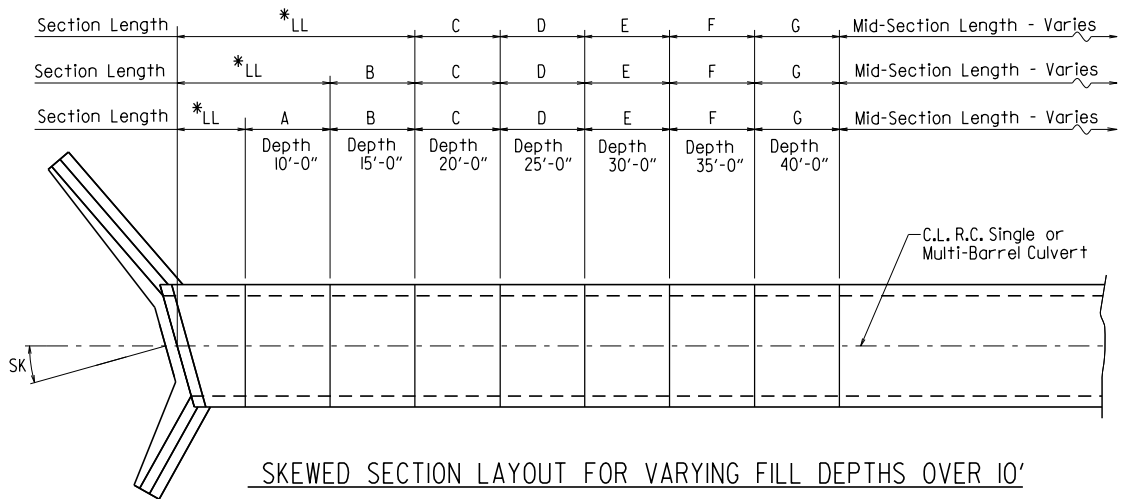


### DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

\* 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.



### SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

#### 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 5 with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 3/4" 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 5 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".

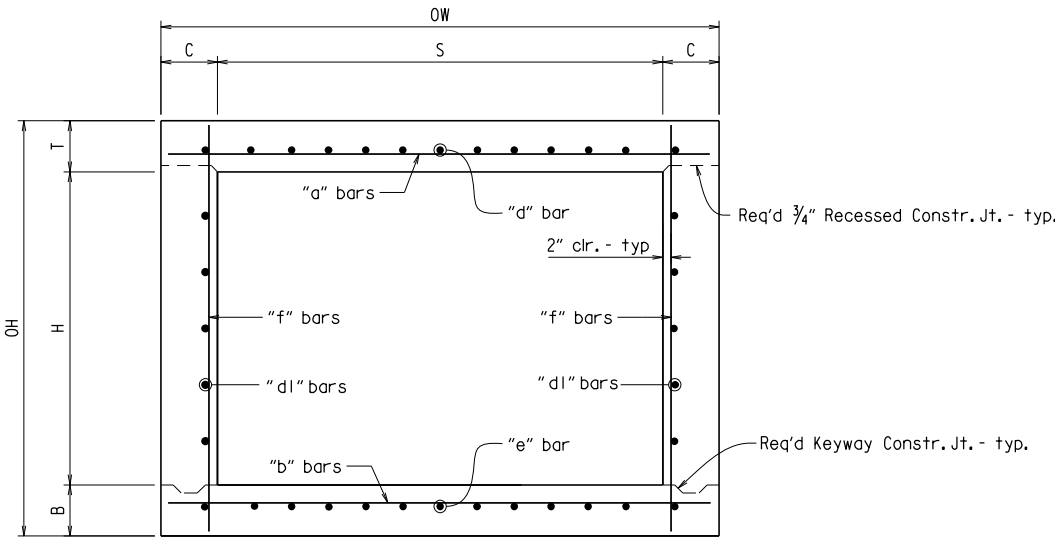
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert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

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

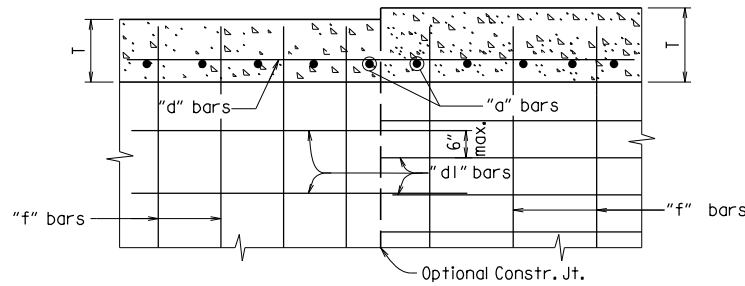


8/22/2023 9:20:16 AM  
WORKSPACE: ARDOT  
C:\Projects\ARDOT\17566\10053\Beaver Dam Ditch Str & Apron\Drawings\RD01053.05\_SD\_002.dgn  
REVISED DATE: 8/22/2023

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

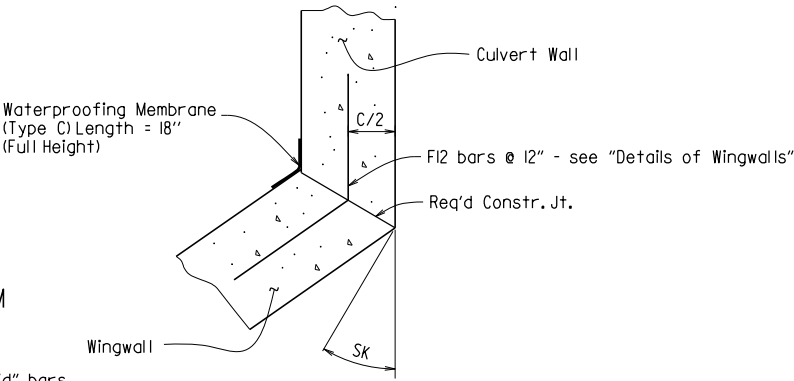


TYPICAL SECTION M-M

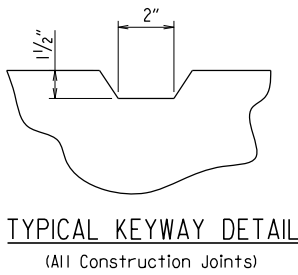


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



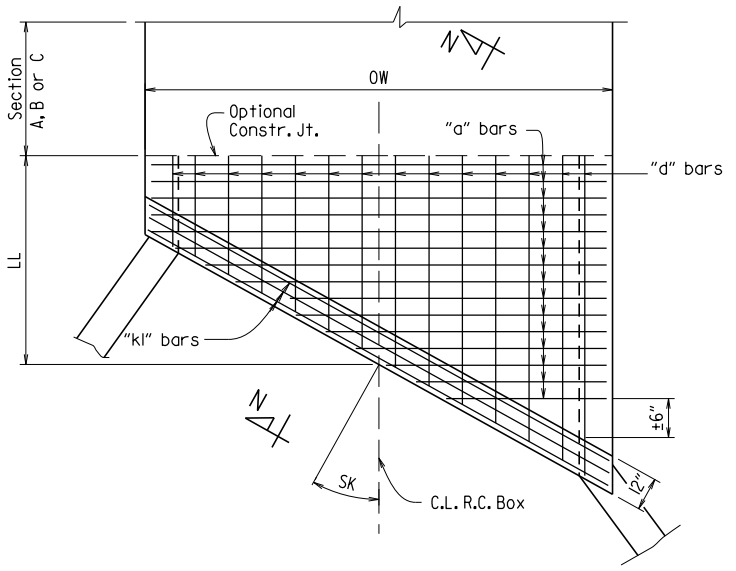
WINGWALL ATTACHMENT  
See "Details of Wingwalls" for additional information and wingwall details.



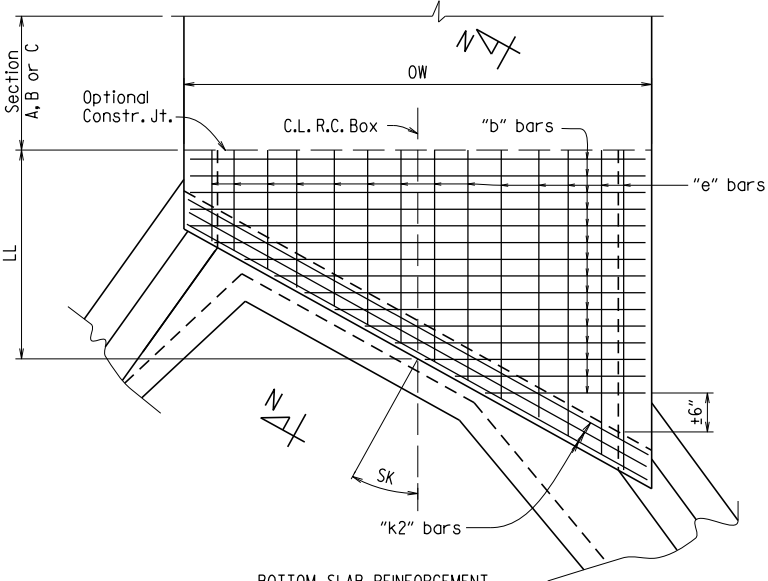
TYPICAL KEYWAY DETAIL  
(All Construction Joints)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	8	34

SPECIAL DETAILS



TOP SLAB REINFORCEMENT



BOTTOM SLAB REINFORCEMENT

SKewed END SECTION DETAILS

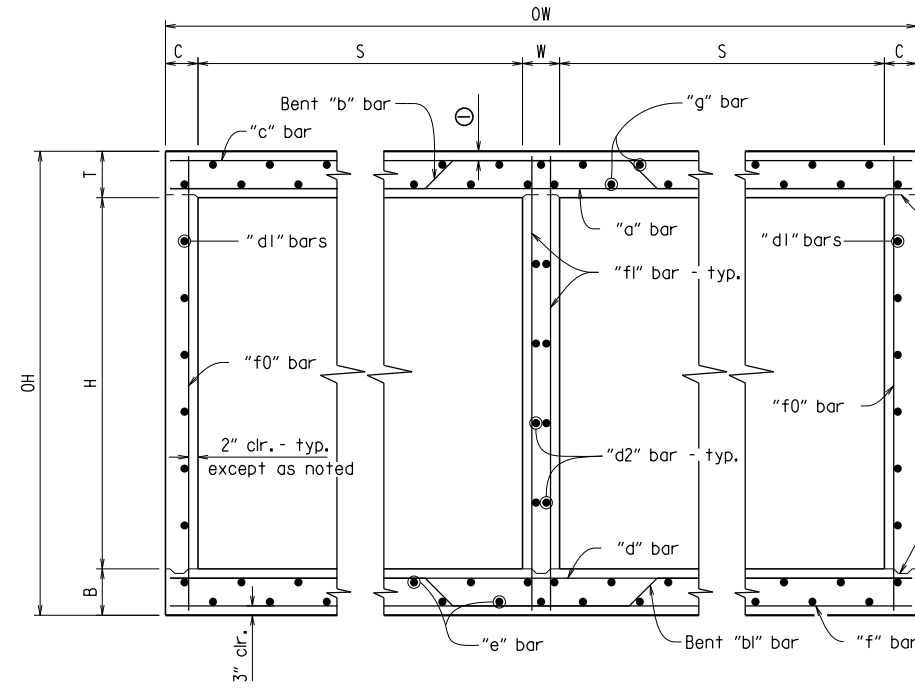
SHEET 2 OF 4  
GENERAL DETAILS OF R.C. BOX CULVERT  
DETAILS OF SINGLE BARREL  
R.C. BOX CULVERT  
SPECIAL DETAILS



EnmaPresley 8/22/2023 9:20:17 AM  
WORKSPACE: ARDOT  
PROJECTS: ARDOT  
REVISED DATE: 08/22/2023  
C:\Users\EnmaPresley\OneDrive\Documents\Projects\ARDOT\00053\Beaver Dam Ditch Str & Apron\Design\Civil\Drawings\00053\_05\_SD\_002.dgn

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.

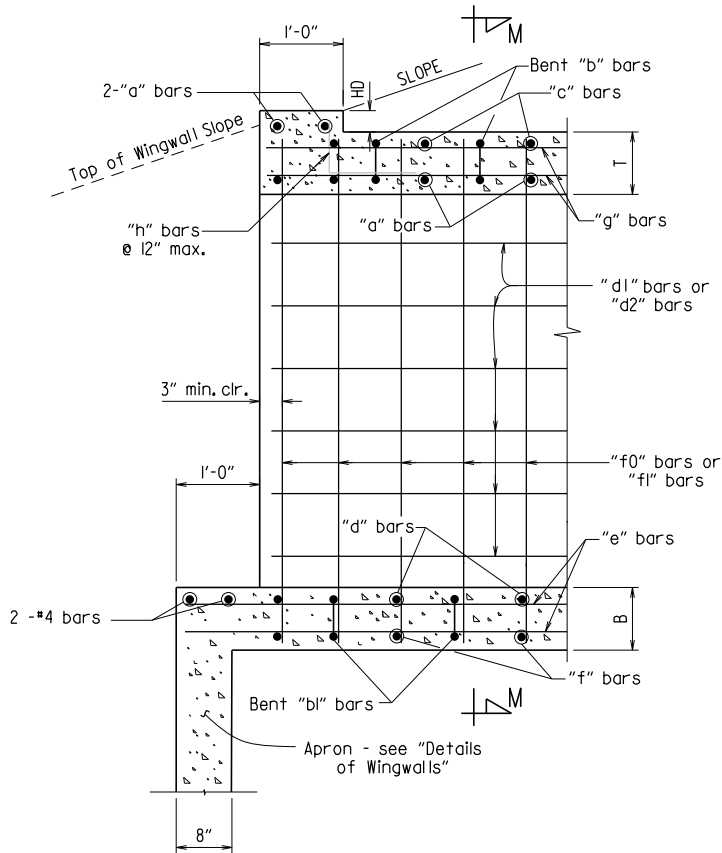
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



TYPICAL SECTION M-M

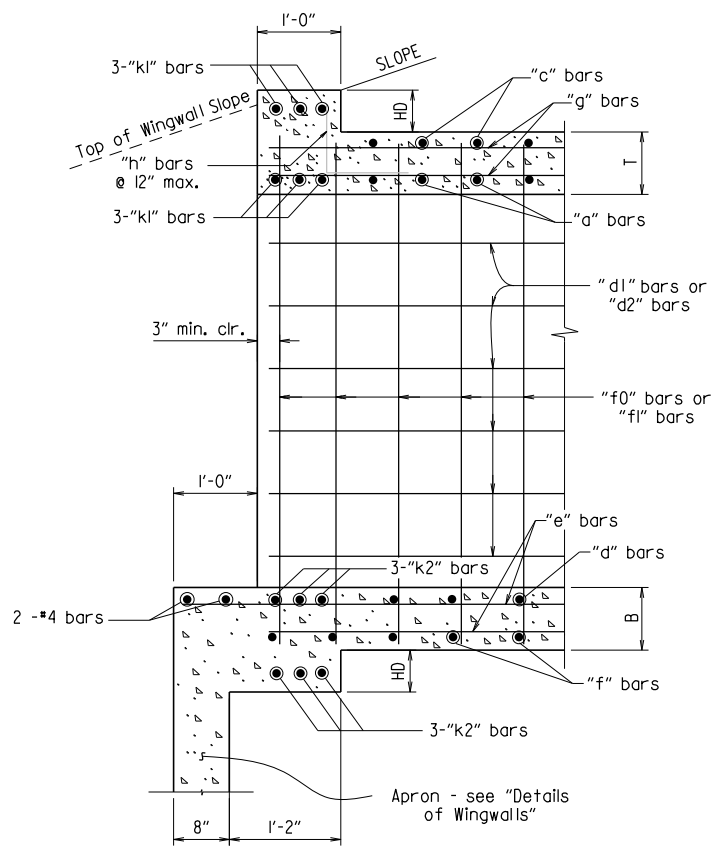
Top Slab  
Straight "c" bars shall alternate with Bent "b" bars in top.  
Straight "a" bars shall alternate with Bent "b" bars in bottom.

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



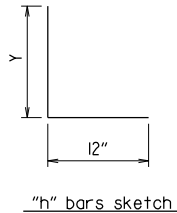
PART LONGITUDINAL SECTION

(Non-Skewed Ends)

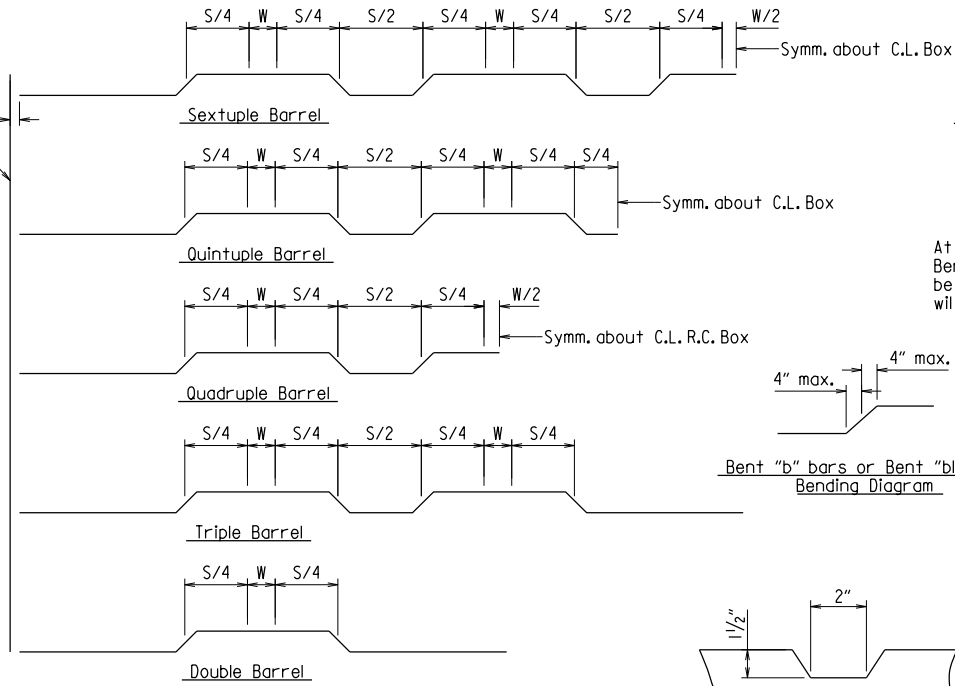


PART LONGITUDINAL SECTION N-N

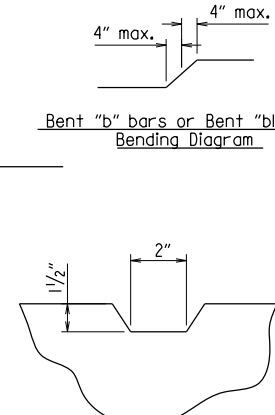
(Skewed Ends)



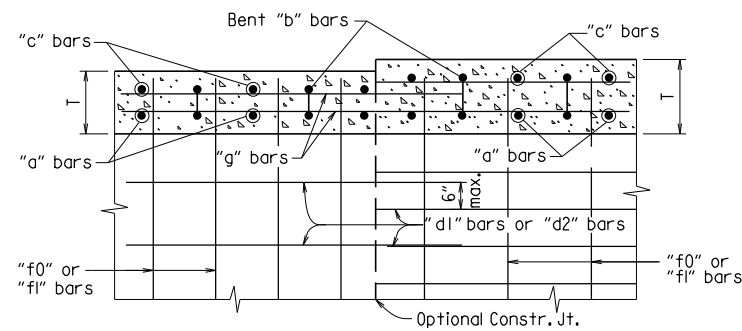
"h" bars sketch



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



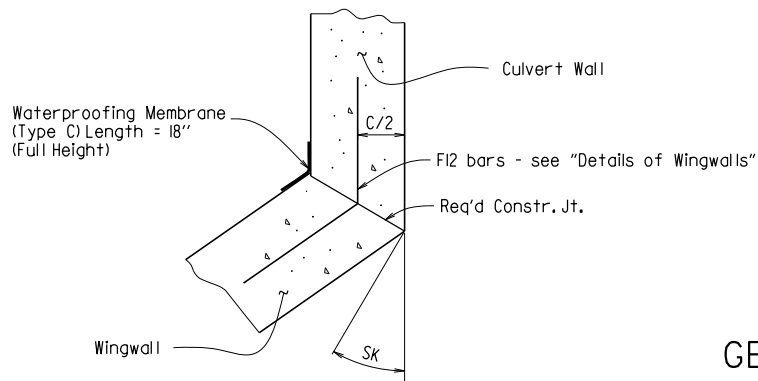
TYPICAL KEYWAY DETAIL  
(All Construction Joints)



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

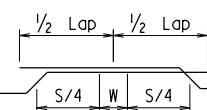


WINGWALL ATTACHMENT

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

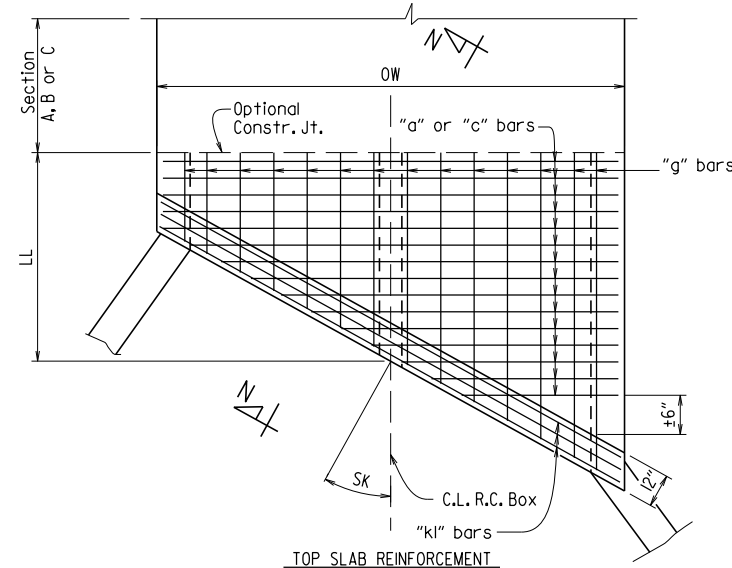
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	9	34

SPECIAL DETAILS

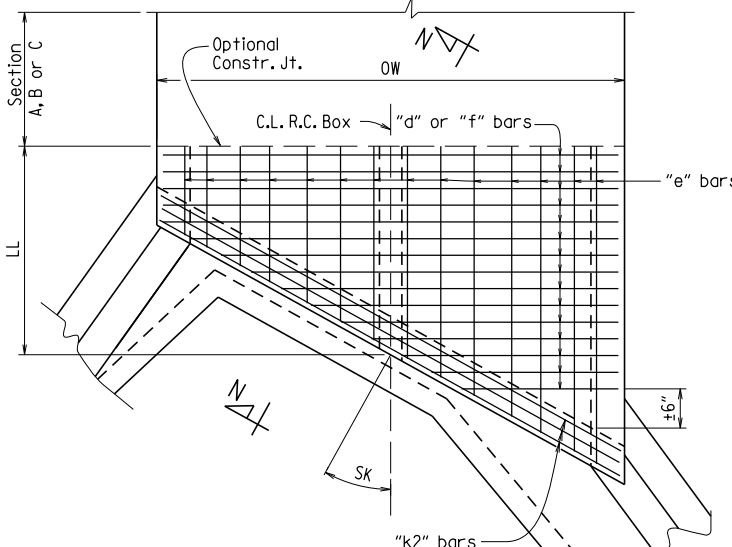


Lap Detail  
For Bent "b" bars and Bent "bl" bars

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.

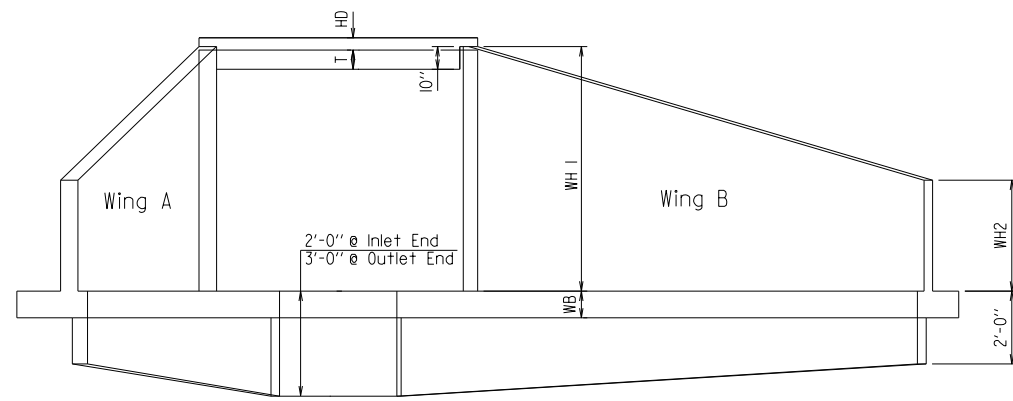
SKewed END SECTION DETAILS

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

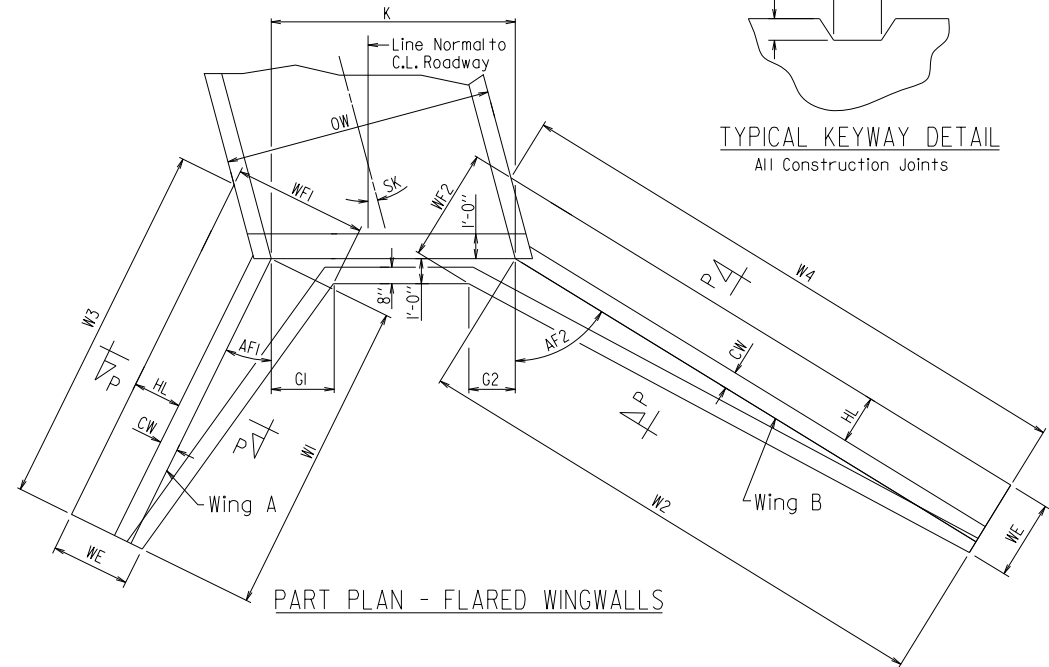




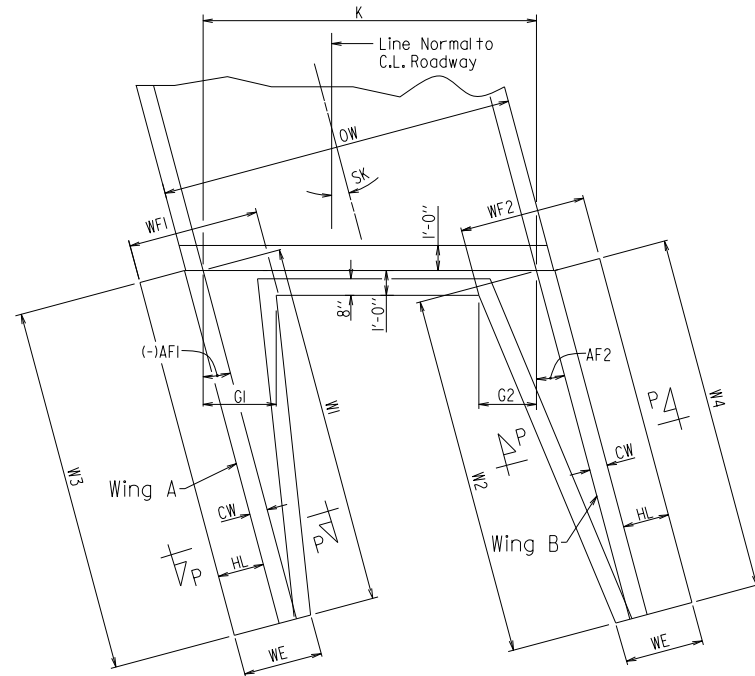
8/22/2023 9:20:17 AM  
WORKSPACE: ARDOT  
\\littorfsal1\littorfsal\Projects\ARDOT\175661\01053\Beaver Dam Ditch Str & Apprs\Design\Civil Drawings\01053.05\_SD\_002.dgn  
REVISED DATE: \$REVDATE\$



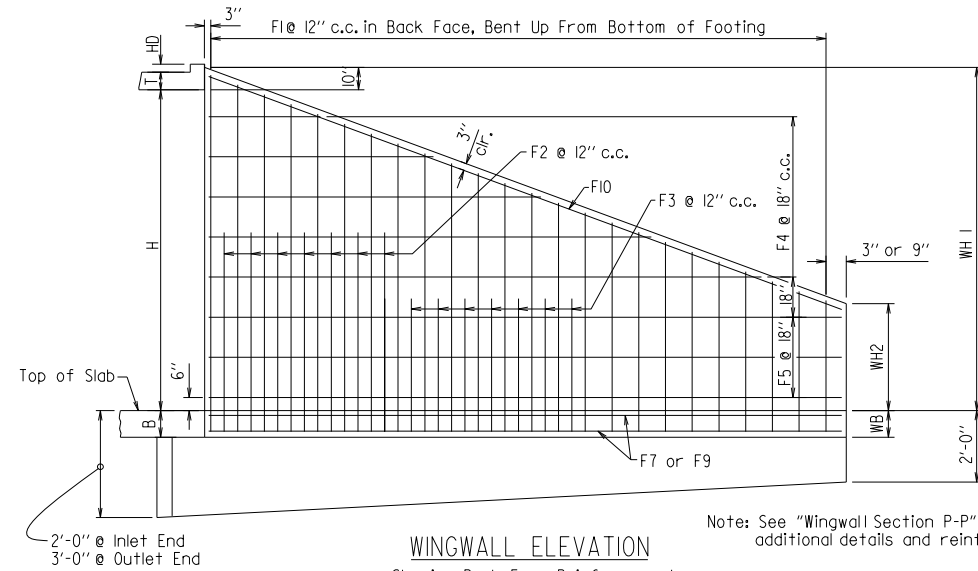
END ELEVATION  
Flared Wingwalls Shown



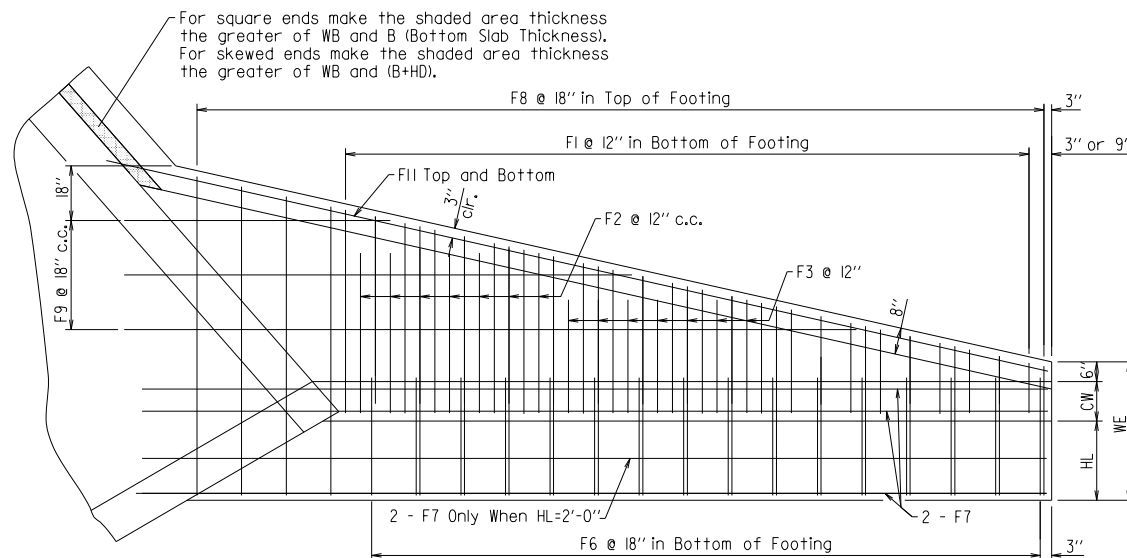
PART PLAN - FLARED WINGWALLS



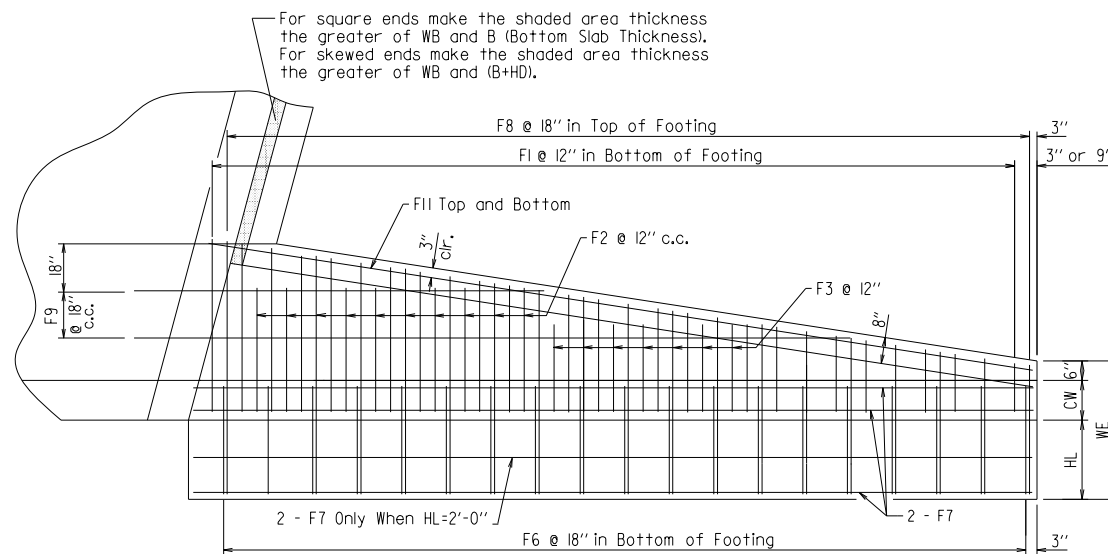
PART PLAN - PARALLEL WINGWALLS



WINGWALL ELEVATION  
Showing Back Face Reinforcement



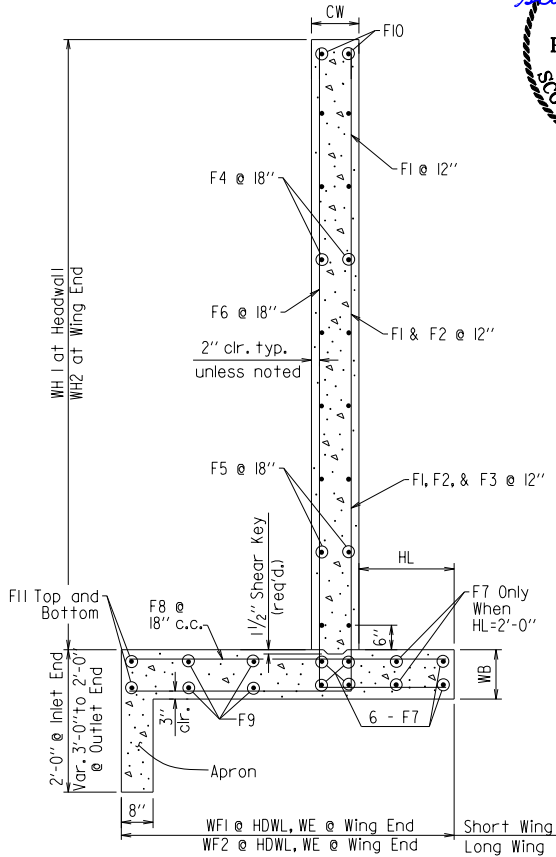
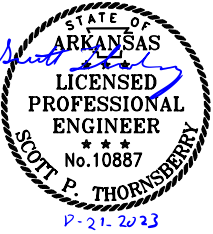
PLAN - FLARED WINGWALLS  
Showing Footing Reinforcement



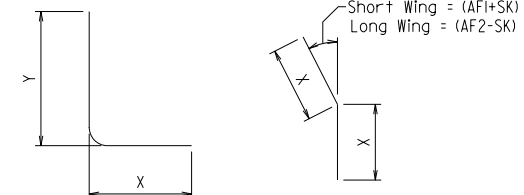
PLAN - PARALLEL WINGWALLS  
Showing Footing Reinforcement

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.		101053	10	34

2 SPECIAL DETAILS



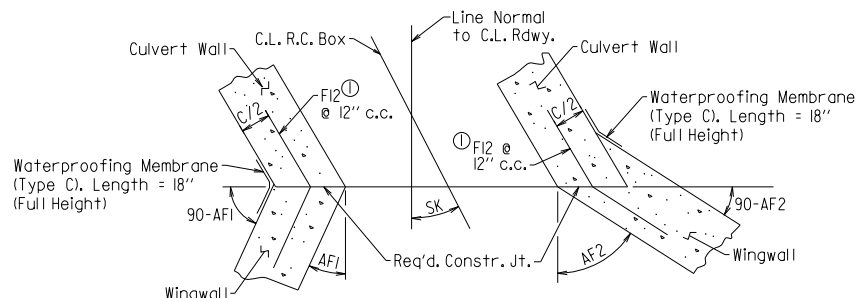
WINGWALL SECTION P-P



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



[illegible]

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

CLASS "B" CONCRETE	REINFORCING STEEL (GR. 60)
CU YDS.	LBS.
387.29	66229

SHEET 1 OF 2

DETAILS OF R.C. BOX CULVERT

QUINTUPLE BARREL BOX CULVERT

S+a. 110+57

SPECIAL DETAILS

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

## OUTLET SKEWED END SECTION

## OUTLET WINGWALL TABLE

[illegible][illegible][illegible]

Min. Bar Lap Length	
#4	1'-9"
#5	2'-2"
#6	2'-7"
#7	3'-6"
#8	4'-7"

#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 60)."

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.		101053	12	34
				SPECIAL DETAILS				



TABULAR DATA BY: SB DATE: 07/25/2023  
CHECKED BY: MHA DATE: 07/25/2023

SHEET 2 OF 2  
DETAILS OF R.C. BOX CULVERT  
QUINTUPLE BARREL BOX CULVERT  
Sta. 110+57

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

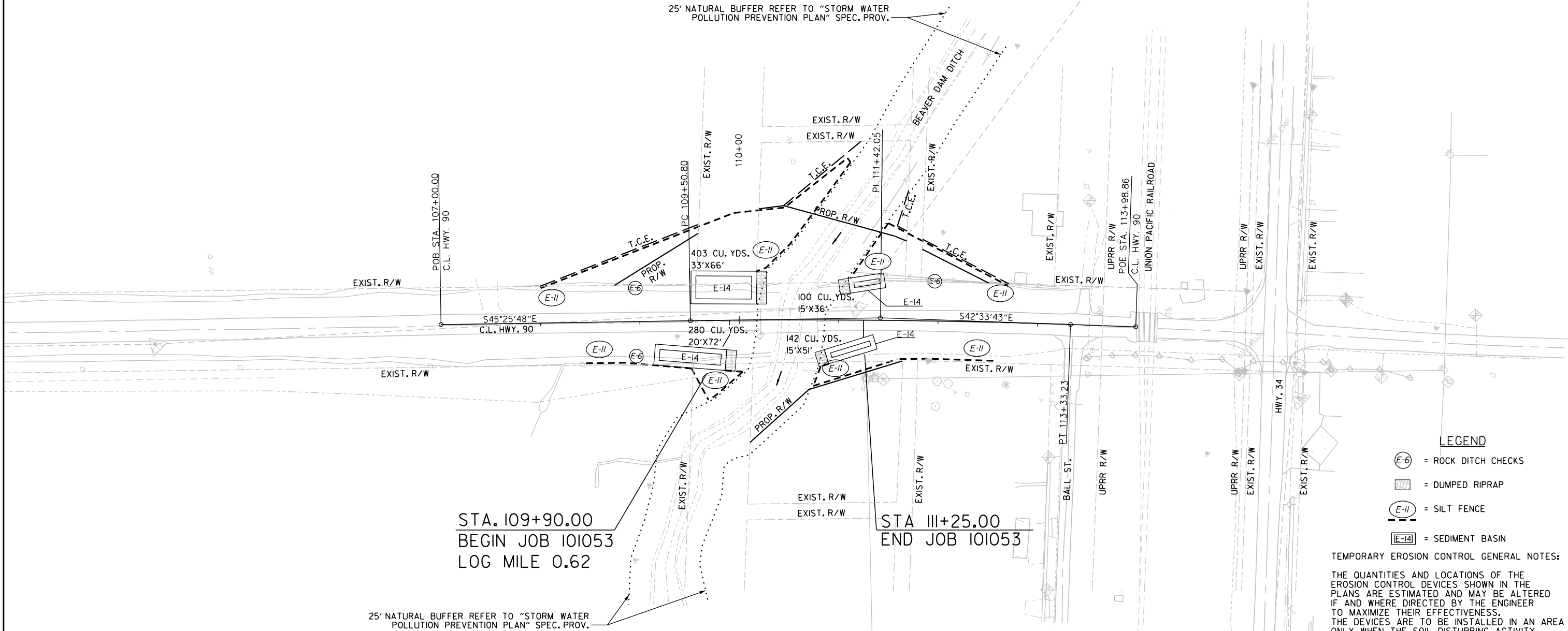
Unless otherwise noted, all dimensions are in inches.

## SPECIAL DETAILS



8/21/2023 12:02:55 PM  
WORKSPACE: ARDOT  
Y:\Projects\10053\Beaver Dam Ditch Str & Apprs\Design\Civil Drawings\10053\_05E\_ECL00.dgn  
REVISED DATE: \*\*REDATE\*\*

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.	101053	13	34	
2 TEMPORARY EROSION CONTROL DETAILS								



LEGEND

- E-6 = ROCK DITCH CHECKS
- [Hatched Box] = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-14 = SEDIMENT BASIN

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION III OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

REVISIONS

DATE OF REVISION	REVISION

DUMPED RIPRAP	SIDE	CU. YDS.
STA. 109+91	RT.	12
STA. 110+23	LT.	19
STA. 110+82	RT.	9
STA. III+05	LT.	9

SEDIMENT BASIN	[E-14]	CU. YDS.
STA. 109+85	LT.	403
STA. 109+80	RT.	280
STA. III+12	RT.	142
STA. III+28	LT.	100

ROCK DITCH CHECKS	[E-6]	INSTALLATION
STA. 108+96	LT.	1
STA. 109+35	RT.	1
STA. III+96	LT.	1

SILT FENCE	[E-11]	LIN. FT.
STA. 108+00 TO STA. III+11	LT.	493
STA. 108+44 TO STA. 110+03	RT.	206
STA. 110+74 TO STA. 112+57	RT.	215
STA. III+12 TO STA. 112+69	LT.	203

CLEARING & GRUBBING  
TEMPORARY EROSION CONTROL DETAILS



8/21/2023 12:02:56 PM  
Y:\Projects\AR001\75661\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_05E\_EC2\_001.dgn  
REVISED DATE: \*\*REDATE\*\*

DATE OF REVISION	REVISION

REVISIONS

SAND BAG DITCH CHECKS	E-5	INSTALLATION
STA. 109+88	LT.	I
STA. 110+47	LT.	I
STA. 111+43	LT.	I

NOTE: REFER TO PLAN AND PROFILE SHEET FOR DUMPED RIPRAP QUANTITY.

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

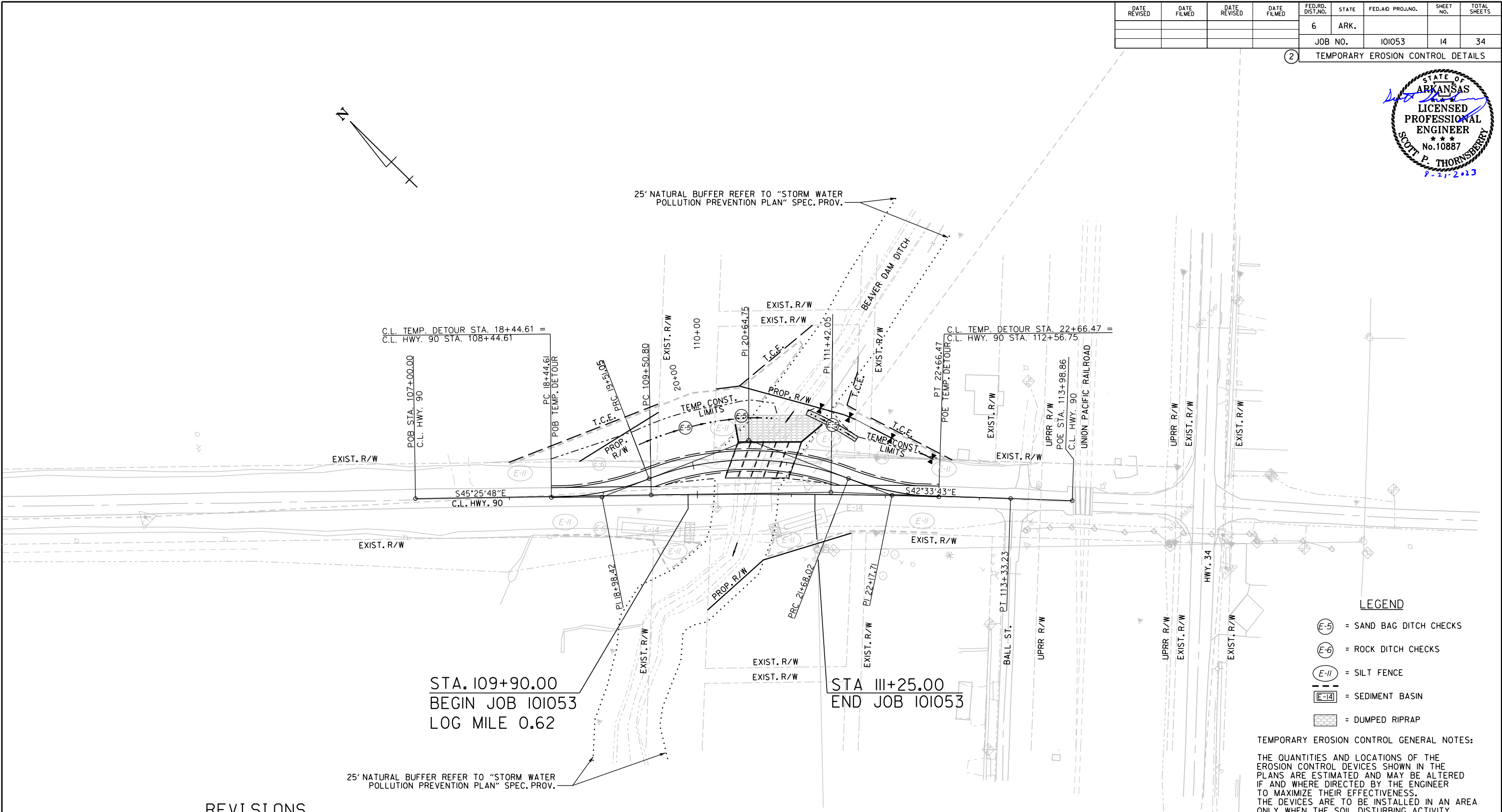
REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES INSTALLED IN CLEARING AND GRUBBING SHALL REMAIN IN PLACE THROUGHOUT STAGE 1 AND STAGE 2 OR UNTIL FINAL STABILIZATION.

STAGE 1  
TEMPORARY EROSION CONTROL DETAILS

- LEGEND
- E-5 = SAND BAG DITCH CHECKS
  - E-6 = ROCK DITCH CHECKS
  - E-11 = SILT FENCE
  - E-14 = SEDIMENT BASIN
  - DUMPED RIPRAP



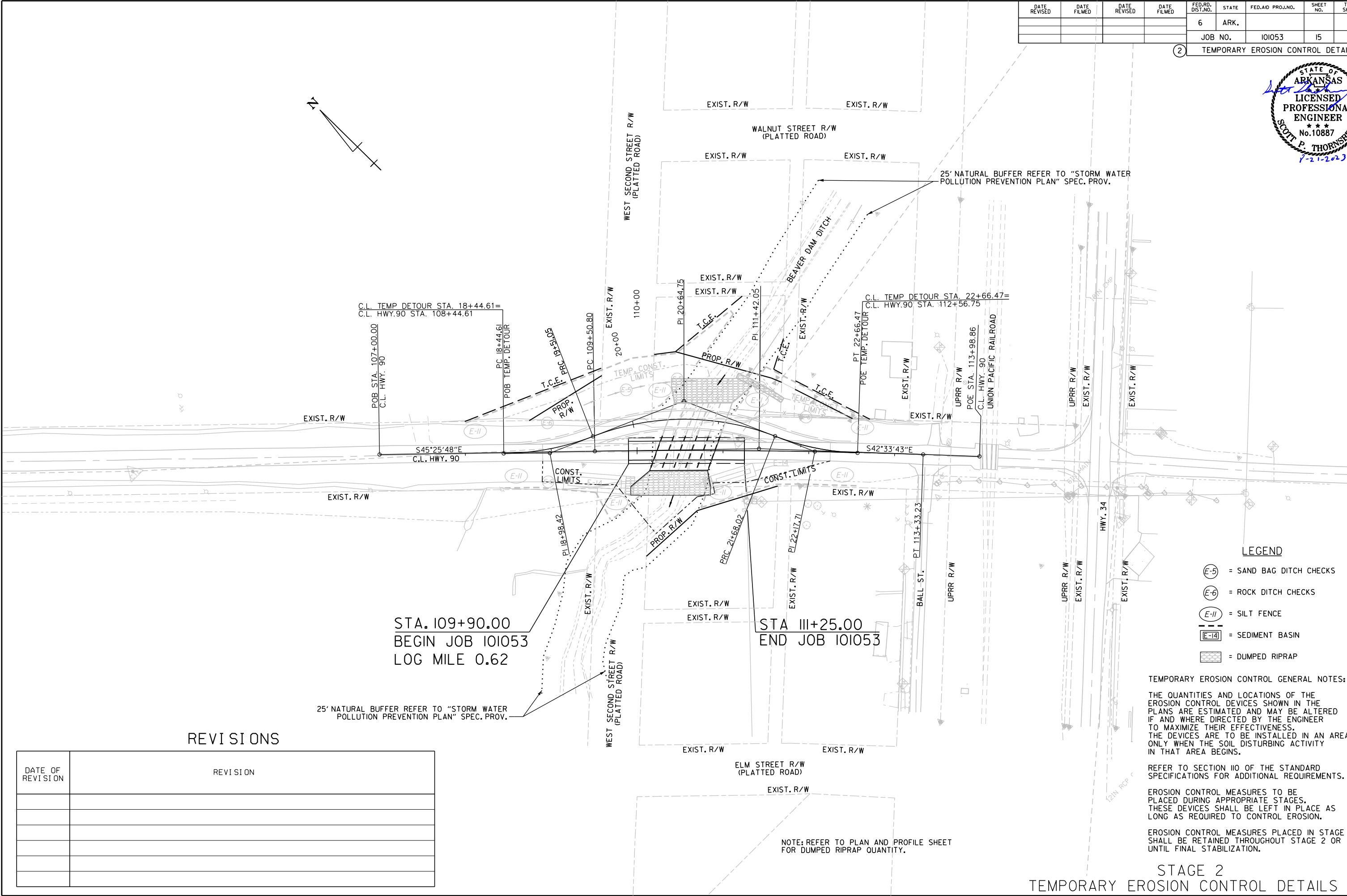
2 TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101053		14	34



Ernst, Proseley 8/21/2023 12:02:57 PM  
WORKSPACE: ARDOT  
Y:\Projects\ARDOT\17566\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_05E\_EC3\_001.dgn  
REVISED DATE: \*\*REVIDATE\*\*

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.	101053		15	34
				TEMPORARY EROSION CONTROL DETAILS				



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN
- [Pattern] = DUMPED RIPRAP

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

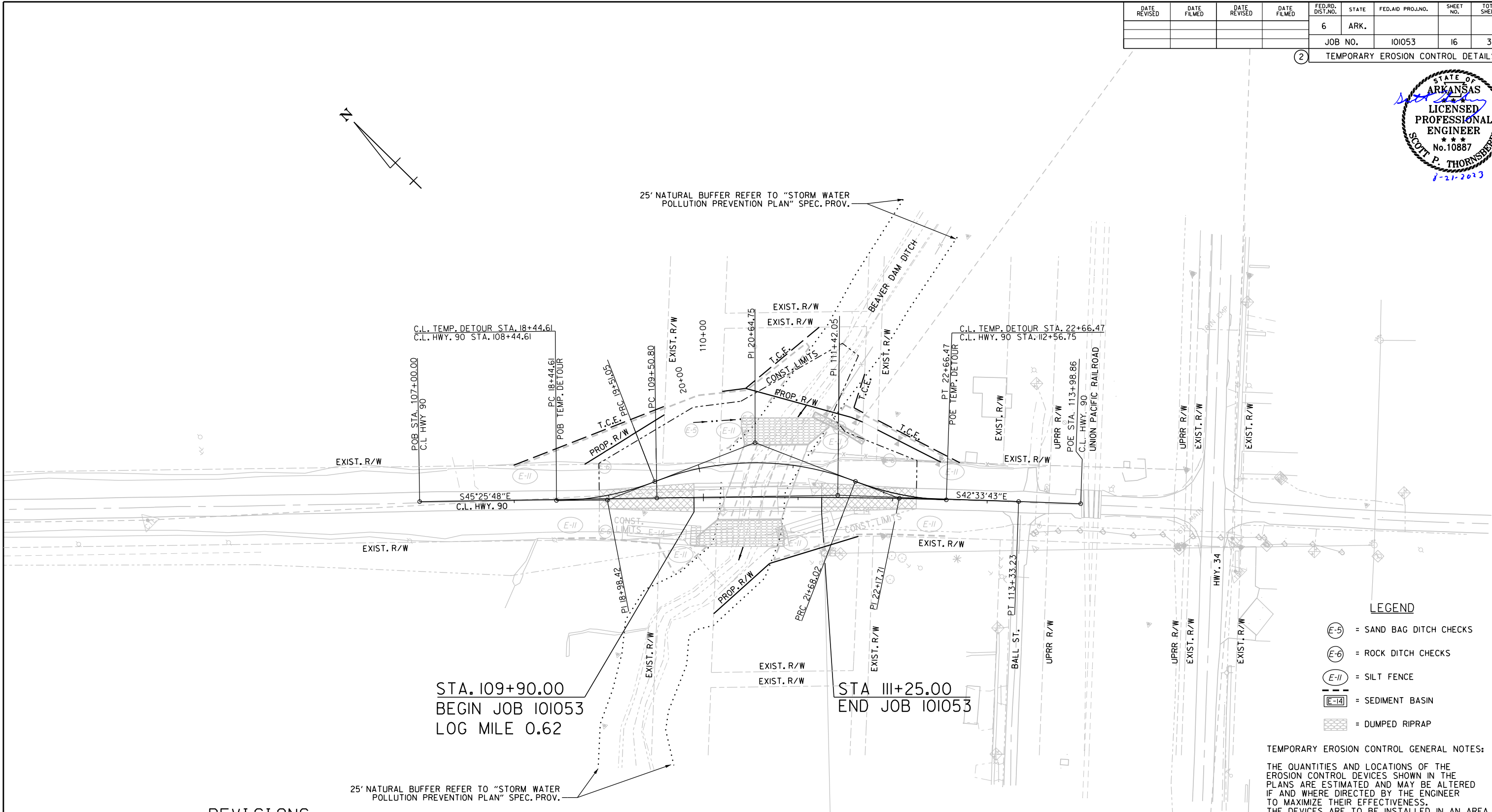
EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

STAGE 2  
TEMPORARY EROSION CONTROL DETAILS

NOTE: REFER TO PLAN AND PROFILE SHEET FOR DUMPED RIPRAP QUANTITY.

Temp Project: 8/21/2023 12:02:57 PM  
WORKSPACE: ARDOT  
Y:\Projects\ARDOT\17566\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_05E\_EC4\_001.dgn  
REVISED DATE: \*\*REVIDATE\*\*

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.	101053	16	34	
				2 TEMPORARY EROSION CONTROL DETAILS				



- LEGEND
- (E-5) = SAND BAG DITCH CHECKS
  - (E-6) = ROCK DITCH CHECKS
  - (E-11) = SILT FENCE
  - (E-14) = SEDIMENT BASIN
  - [Hatched Box] = DUMPED RIPRAP

TEMPORARY EROSION CONTROL GENERAL NOTES:

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 3 OR UNTIL FINAL STABILIZATION.

NOTE: REFER TO PLAN AND PROFILE SHEET FOR DUMPED RIPRAP QUANTITY.

REVISIONS

DATE OF REVISION	REVISION



## STAGE 1:

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTION OF BOX AND TEMPORARY DETOUR  
AS SHOWN IN THE STAGE MAINTENANCE OF TRAFFIC DETAILS.

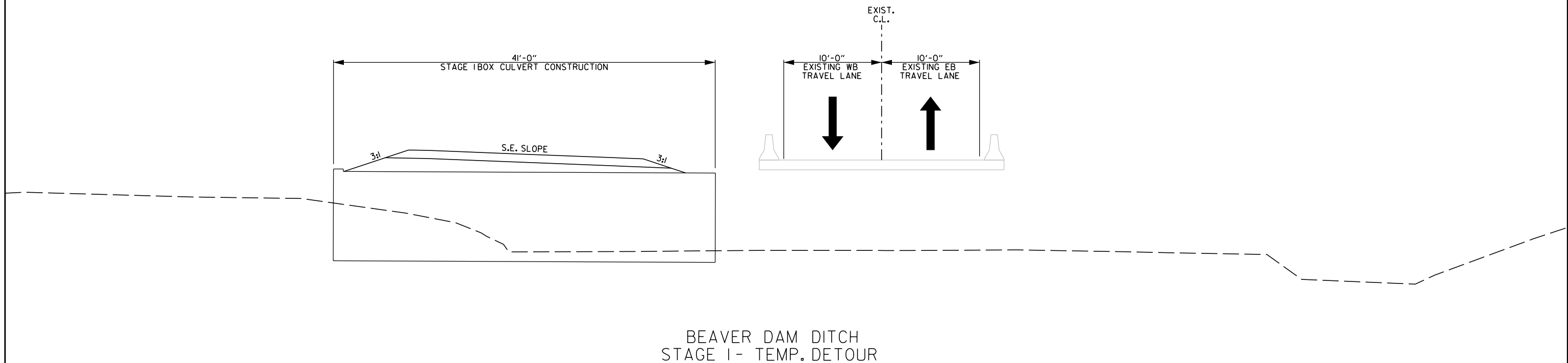
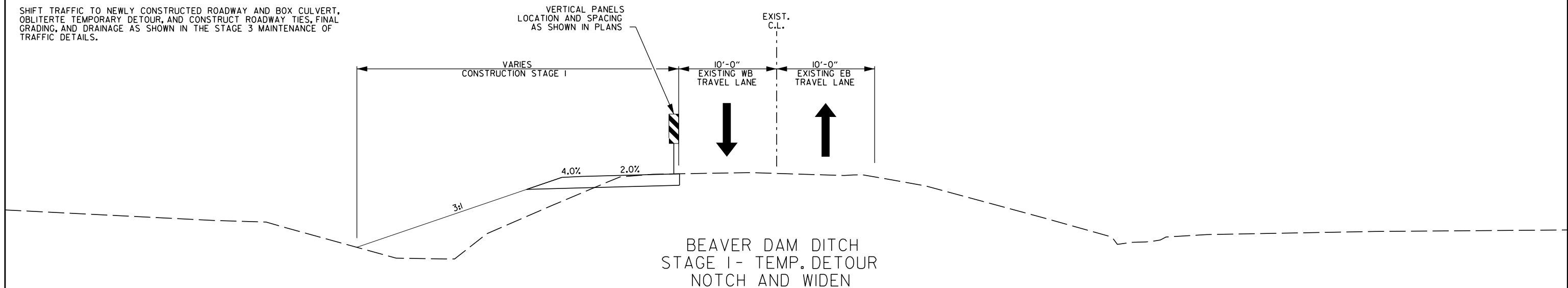
STAGE 2:

SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT  
PROPOSED ROADWAY, DRAINAGE, AND REMAINDER OF BOX CULVERT  
AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

### STAGE 3:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT, OBLITERATE TEMPORARY DETOUR, AND CONSTRUCT ROADWAY TIES, FINAL GRADING, AND DRAINAGE AS SHOWN IN THE STAGE 3 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.		101053	18	34
				MAINTENANCE OF TRAFFIC DETAILS				



STAGE I  
TYPICAL SECTION  
MAINTENANCE OF TRAFFIC DETAILS

Emma.Presley 8/21/2023 12:02:59 PM  
WORKSPACE: ARDOT  
I:\Projects\ARDOT\175661\0053.Beaver Dam Ditch Str & Apprs\Design\CIVIL\Drawings\0053.06\_MOT\_002.dgn  
REVISED DATE: \$\$\$REDATE\$\$\$

## STAGE 1:

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTION OF BOX AND TEMPORARY DETOUR  
AS SHOWN IN THE STAGE MAINTENANCE OF TRAFFIC DETAILS.

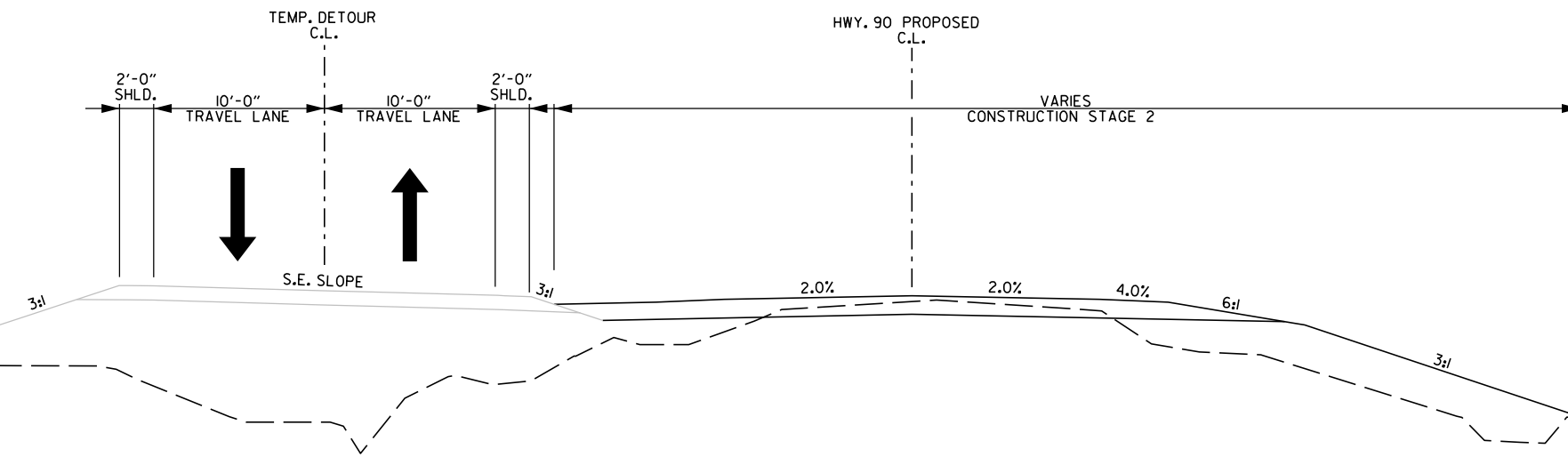
STAGE 2:

SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT  
PROPOSED ROADWAY, DRAINAGE, AND REMAINDER OF BOX CULVERT  
AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

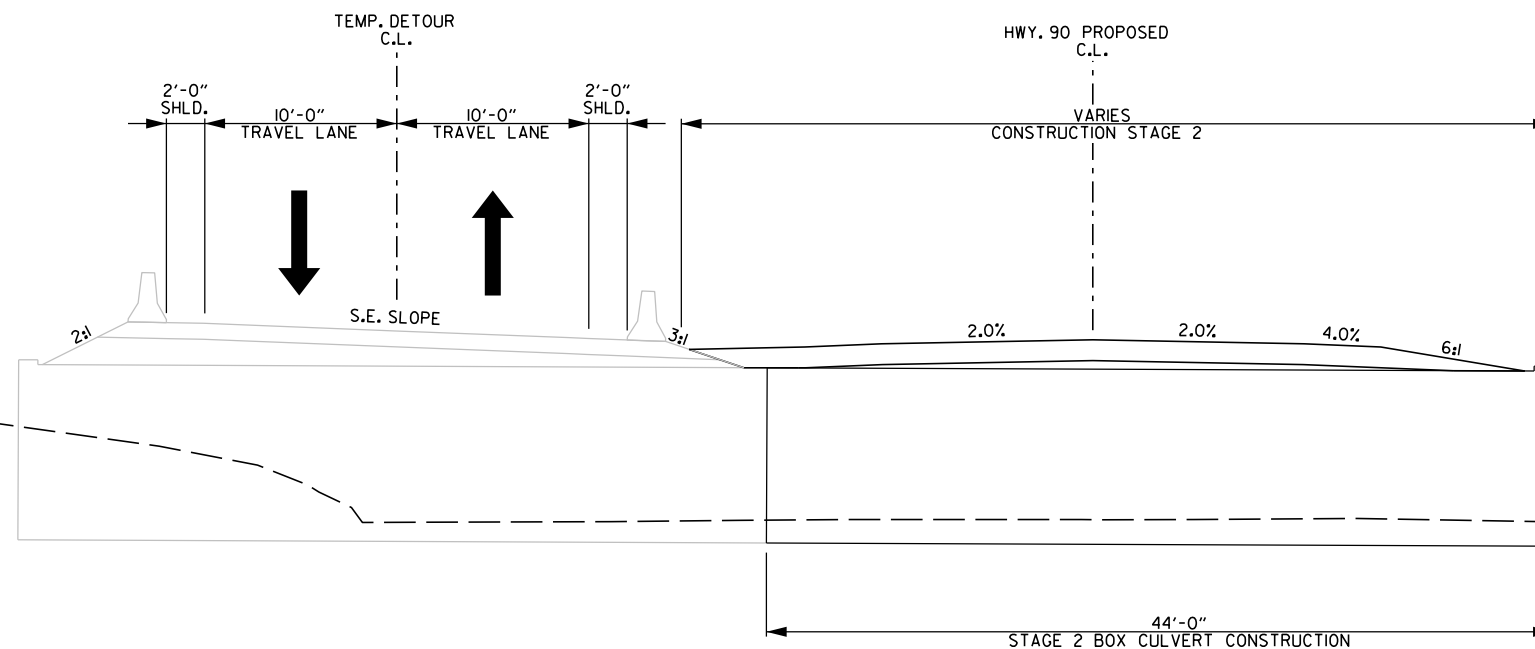
### STAGE 3:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT, OBLITERATE TEMPORARY DETOUR, AND CONSTRUCT ROADWAY TIES, FINAL GRADING, AND DRAINAGE AS SHOWN IN THE STAGE 3 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.		101053	19	34
				MAINTENANCE OF TRAFFIC DETAILS				



BEAVER DAM DITCH  
STAGE 2 - TEMP. DETOUR



BEAVER DAM DITCH  
STAGE 2 - TEMP. DETOUR

STAGE 2  
TYPICAL SECTION  
MAINTENANCE OF TRAFFIC DETAILS

Emma.Presley 8/21/2023 12:02:59 PM  
 WORKSPACE: ARDOT  
 I:\Projects\ARDOT\175661\01053.Beaver Dam Ditch Str & Apprs\Design\CIVIL\Drawings\01053.06.MOT\_003.dgn  
 REVISED DATE: \$\$REVDATE\$\$

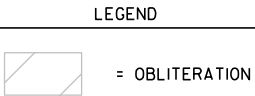


CONSTRUCTION SEQUENCE - HWY. 90

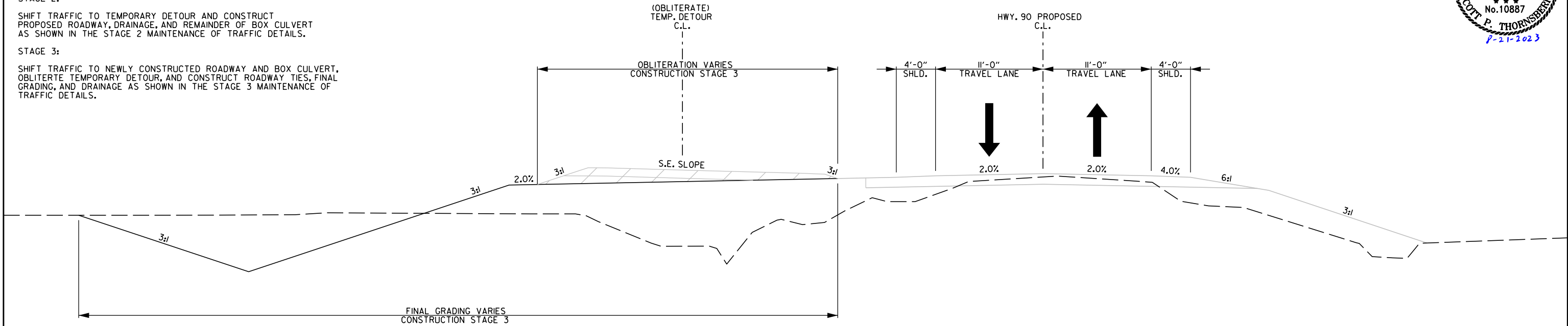
STAGE 1:  
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.  
CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.  
CONSTRUCT PORTION OF BOX AND TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:  
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PROPOSED ROADWAY, DRAINAGE, AND REMAINDER OF BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

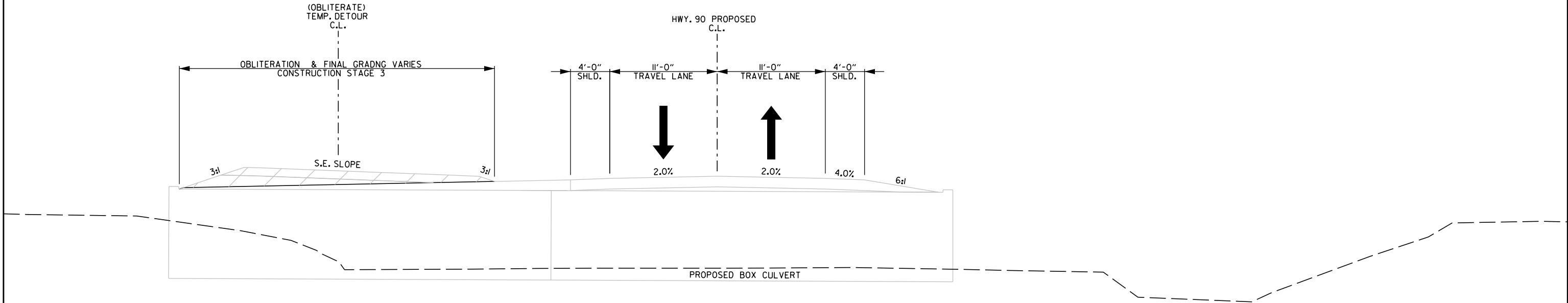
STAGE 3:  
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT, OBLITERATE TEMPORARY DETOUR, AND CONSTRUCT ROADWAY TIES, FINAL GRADING, AND DRAINAGE AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.



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.	101053	20	34	
② MAINTENANCE OF TRAFFIC DETAILS								



BEAVER DAM DITCH  
STAGE 3 - TEMP. DETOUR



BEAVER DAM DITCH  
STAGE 3 - TEMP. DETOUR

STAGE 3  
TYPICAL SECTION  
MAINTENANCE OF TRAFFIC DETAILS

8/21/2023 12:03:00 PM  
Y:\Projects\AR001\7566\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_06\_MOT\_004.dgn  
REVISED DATE: \*\*REDATE\*\*

CONSTRUCTION SEQUENCE - HWY. 90

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTION OF BOX AND TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

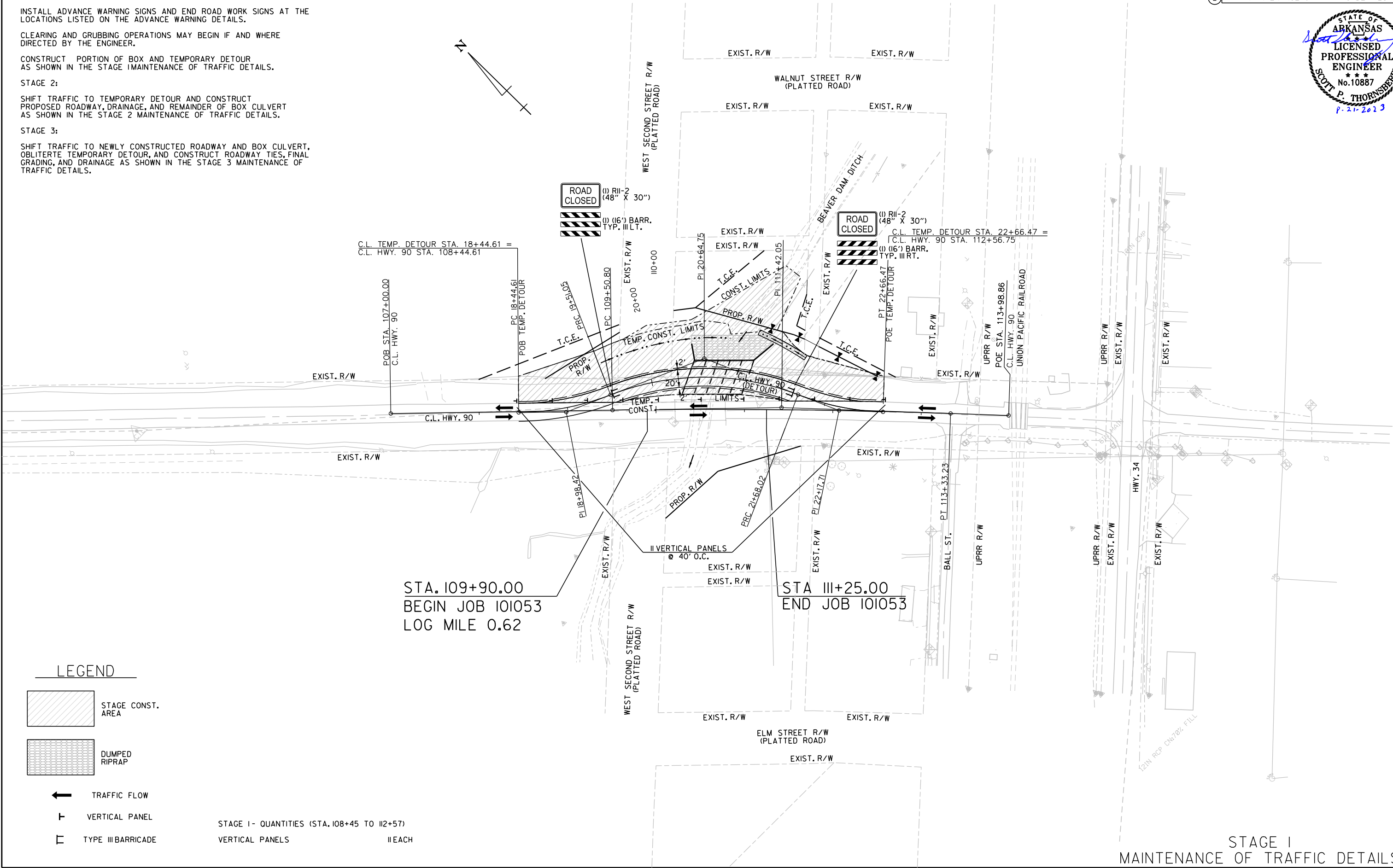
STAGE 2:

SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PROPOSED ROADWAY, DRAINAGE, AND REMAINDER OF BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT. OBLITERATE TEMPORARY DETOUR, AND CONSTRUCT ROADWAY TIES, FINAL GRADING, AND DRAINAGE AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

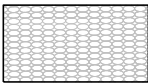
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	21	34
				MAINTENANCE OF TRAFFIC DETAILS				



LEGEND



STAGE CONST. AREA



DUMPED RIPRAP



TRAFFIC FLOW



VERTICAL PANEL



TYPE III BARRICADE

STAGE 1 - QUANTITIES (STA. 108+45 TO 112+57)

VERTICAL PANELS

11 EACH

STAGE 1  
MAINTENANCE OF TRAFFIC DETAILS



STAGE 1:

CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.

CONSTRUCT PORTION OF BOX AND TEMPORARY DETOUR  
AS SHOWN IN THE STAGE MAINTENANCE OF TRAFFIC DETAILS.

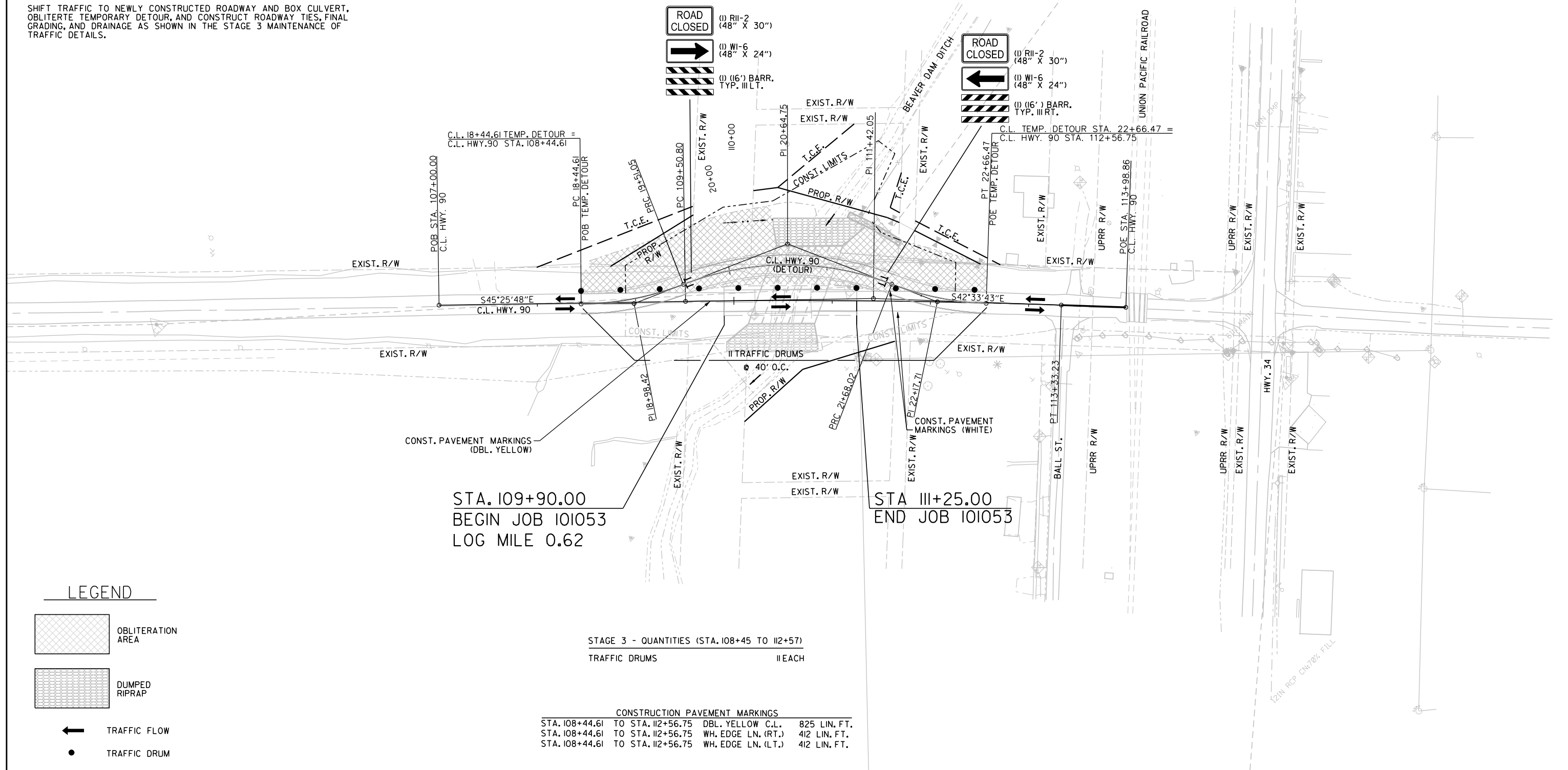
STAGE 2:

SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT  
PROPOSED ROADWAY, DRAINAGE, AND REMAINDER OF BOX CULVERT  
AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT, OBLITERATE TEMPORARY DETOUR, AND CONSTRUCT ROADWAY TIES, FINAL GRADING, AND DRAINAGE AS SHOWN IN THE STAGE 3 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.		101053	23	34
			(2)	MAINTENANCE OF TRAFFIC DETAILS				



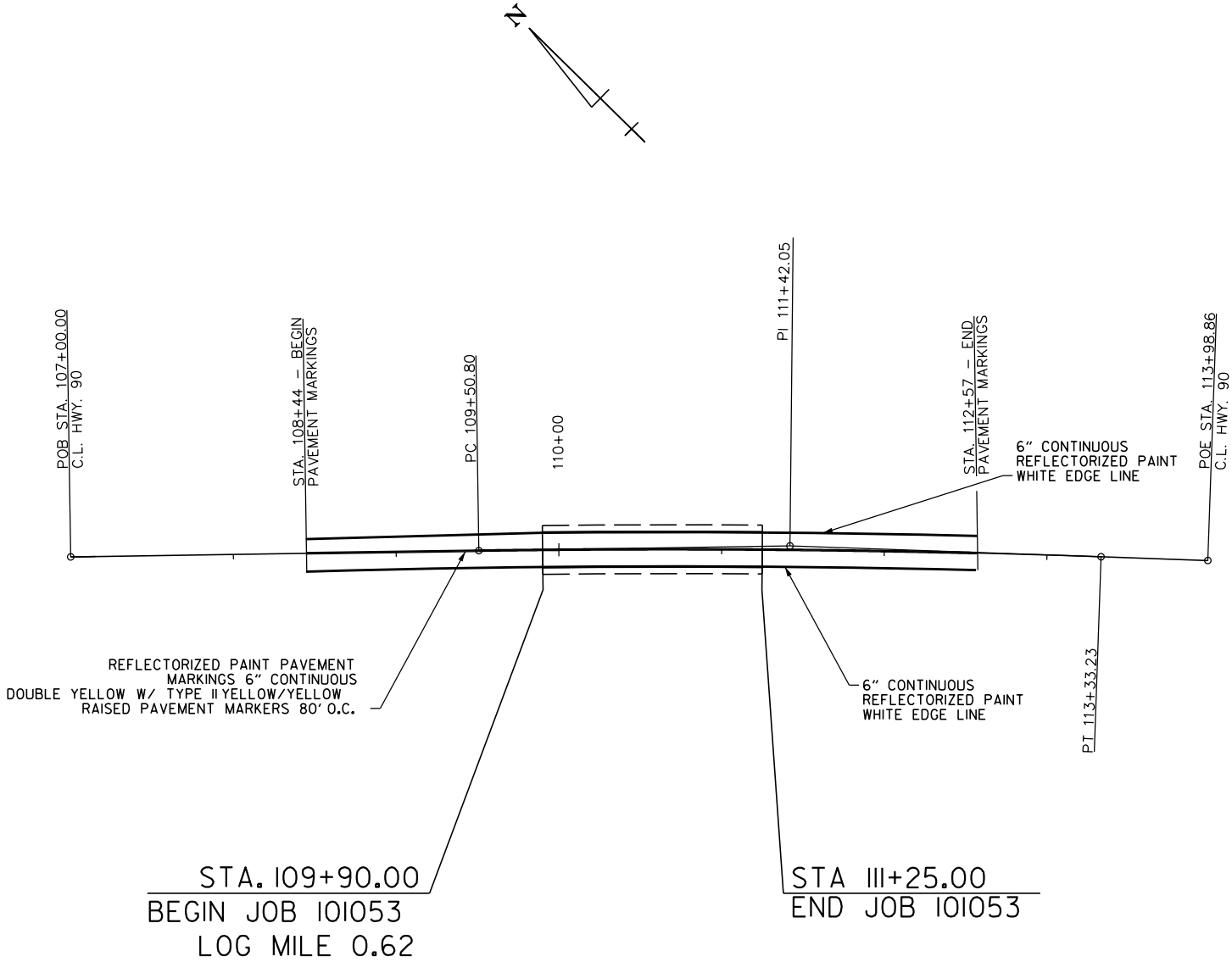
### STAGE 3 MAINTENANCE OF TRAFFIC DETAILS

Emma.Presley 8/21/2023 12:03:02 PM  
WORKSPACE: ARD01  
I:\Projects\ARD01\_17566\_10053\_Beaver Dam Ditch Str & Apprs\Design\CIVIL\Drawings\RD10053\_06\_MOT\_007.dgn  
REVISED DATE: \$\$\$REVDATE\$\$\$

E:\m\p\proj\ 8/21/2023 12:03:03 PM  
WORKSPACE: ARDOT  
Y:\Projects\ARDOT\17566\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_07.PM\_001.dgn  
REVISED DATE: \*\*REDATE\*\*

NOTES:  
1. 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 PROJECT.

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.	101053	24	34	
				PERMANENT PAVEMENT MARKING DETAILS				



PERMANENT PAVEMENT MARKING QUANTITIES  
HWY. 90 (STA. 108+45 TO STA. 112+57)

DESCRIPTION	QUANTITIES
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	825 LIN. FT.
RAISED PAVEMENT MARKER TYPE II (YELLOW/YELLOW)	5 EACH
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	825 LIN. FT.

SEE STANDARD DRAWING PM-1  
FOR ADDITIONAL INFORMATION



8/21/2023 12:03:04 PM  
Y:\Projects\AR001\7566\I01053.Beaver Dam Ditch Str & Apprs\Design\Civil Drawings\I01053.08B\_0TY\_001.dgn  
WORKSPACE: AR001  
REVISED DATE: \*\*REVE DATE\*\*

ADVANCE WARNING SIGNS AND DEVICES															
SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP.IMPACT ATTEN.BARR. (REPAIR)
							NO.	SQ. FT.			RIGHT	LEFT			
			LIN. FT. - EACH						EACH		LIN. FT.			EACH	
W20-1	ROAD WORK 1500 FT.	36"x36"	1	1	1	1	1	9.0							
W20-1	ROAD WORK 1000 FT.	36"x36"	1	1	1	1	1	9.0							
W20-1	ROAD WORK 500 FT.	36"x36"	1	1	1	1	1	9.0							
W20-1	ROAD WORK AHEAD	36"x36"	3	3	3	3	3	27.0							
G20-2	END ROAD WORK	36"x18"	2	2	2	2	2	9.0							
W1-4AR	REVERSE CURVE RT.	36"x36"		3		3	3	27.0							
W1-4AL	REVERSE CURVE LT.	36"x36"		3		3	3	27.0							
W13-1P	SPEED LIMIT (ADVISORY)	18"x18"		8		8	8	18.0							
R11-2	ROAD CLOSED	48"x30"	2	2	2	2	2	20.0							
OM-3L	OBJECT MARKER	12"x36"		2		2	2	6.0							
OM-3R	OBJECT MARKER	12"x36"		2		2	2	6.0							
W1-6	LARGE ARROW	48"x24"		4	2	4	4	32.0							
W1-8	CHEVRONS	18"x24"		16		16	16	48.0							
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0							
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	2	18.0							
W24-1R	DOUBLE REVERSE CURVE RT.	36"x36"		1		1	1	9.0							
W24-1L	DOUBLE REVERSE CURVE LT.	36"x36"		1		1	1	9.0							
M1-5	STATE ROUTE	24"x24"	2	2	2	2	2	8.0							
M3-4	CARDINAL DIRECTION AUXILIARY (WEST)	24"x12"	2	2	2	2	2	4.0							
	VERTICAL PANELS		11			11			11						
	TRAFFIC DRUMS			8	11	11				11					
	TYPE III BARRICADE-RT. (16')		1	1	1	1					16				
	TYPE III BARRICADE-LT. (16')		1	1	1	1					16				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			346		346						346			
	TEMPORARY IMPACT ATTENUATION BARRIER			2		2							2		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			2		2								2	
TOTALS:								305.0	11	11	16	16	346	2	2

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

DESCRIPTION	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
								6"	
								WHITE	YELLOW
						LIN. FT.		LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	347			347					
CONSTRUCTION PAVEMENT MARKINGS	1163	1649			2812				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	525					525			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)	11		5				16		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			825					825	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			825						825
TOTALS:				347	2812	525	16	825	825

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.

EROSION CONTROL																
STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
											(E-5) BAG	(E-6) CU.YD.	(E-11) LIN. FT.	(E-14) CU.YD.		
ENTIRE	PROJECT	CLEARING AND GRUBBING						1.22	1.22	24.9			1117	925		969
ENTIRE	PROJECT	STAGE 1						0.77	0.77	15.7	66	9				3
ENTIRE	PROJECT	STAGE 2	0.30	0.60	0.30	30.6	0.30	0.60	0.60	12.2						
ENTIRE	PROJECT	STAGE 3	0.85	1.70	0.85	86.7	0.85	1.70	1.70	34.7					925	
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.35	0.70	0.35	35.7	0.35	2.00	2.00	40.8	10	9	500			22
TOTALS:			1.50	3.00	1.50	153.0	1.50	6.29	6.29	128.3	76	18	1617	925	925	994

BASIS OF ESTIMATE:  
LIME .....2 TONS / ACRE OF SEEDING  
WATER.....102.0 M.G. / ACRE OF SEEDING  
WATER..... 20.4 M.G. / ACRE OF TEMPORARY SEEDING  
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION  
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

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.		I01053	25	34
QUANTITIES								



REMOVAL AND DISPOSAL OF ITEMS			
STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
110+22	110+80	C.L. HWY. 90	116
TOTALS:			116

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

REMOVAL AND DISPOSAL OF FENCE			
STATION	STATION	LOCATION	FENCE
			LIN. FT.
111+90	112+50	C.L. HWY. 90	302
TOTAL:			302

REMOVAL OF EXISTING BRIDGE STRUCTURE			
STATION	STATION	LOCATION	LUMP SUM
110+22	110+80	C.L. HWY. 90	1.00

BENCH MARKS		
STATION	LOCATION	BENCH MARKS
		EACH
110+57	HWY. 90	1

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

CLEARING AND GRUBBING				
STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
108+44.61	112+56.75	C.L. HWY. 90	5	5
TOTALS:			5	5

QUANTITIES

8/22/2023 9:20:40 AM  
 Y:\Projects\AR001\756610053.Beaver Dam Ditch Str & Apprs\Design\Civil Drawings\10053\_08B\_0TY\_001.dgn  
 WORKSPACE: AR001  
 Y:\Projects\AR001\756610053.Beaver Dam Ditch Str & Apprs\Design\Civil Drawings\10053\_08B\_0TY\_001.dgn  
 REVISION DATE: \*\*REVISION DATE\*\*

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.		101053	26	34
QUANTITIES								

2

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE - ROADWAY	REINF. STEEL- ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.- ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
					CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
		STRUCTURES OVER 20' - 0" SPAN								
110+57	QUINTUPLE R.C. BOX CULVERT	12	8	85	610.29	95451	256	51	0.64	PCB-1,RCB-1, RCB-2, SHEETS 7-12
TOTALS:					610.29	95451	256	51	0.64	

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



EARTHWORK				
STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
** 108+44.61	112+56.67	C.L. HWY. 90 - STAGE 1	1063	1063
** 108+90.00	112+25.00	C.L. HWY. 90 - STAGES 2 & 3	920	446
		CHANNEL CHANGE - STAGE 1	432	6
		CHANNEL CHANGE - STAGE 2 & 3	88	
TOTALS:			2503	1515

\*\* QUANTITY FOR COMPACTED EMBANKMENT HAS R.C. BOX CULVERT DEDUCTION

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

FENCING			
STATION	STATION	LOCATION	WIRE FENCE
			(TYPE D)
			LIN. FT.
111+90	112+50	C.L. HWY 90	209
TOTAL:			209

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

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

DUMPED RIPRAP AND FILTER BLANKET			
STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
109+91	RT. OF C.L. HWY. 90	12	23
110+23	LT. OF C.L. HWY. 90	19	37
110+82	RT. OF C.L. HWY. 90	9	17
111+05	LT. OF C.L. HWY. 90	9	17
110+48	RT. OF C.L. HWY. 90	131	262
110+77	LT. OF C.L. HWY. 90	127	254
111+39	LT. OF C.L. HWY. 90	20	40
TOTALS:		327	650

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

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		
LOCATION	TON	TACK COAT
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	1	2
TOTALS:	1	2

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

COLD MILLING ASPHALT PAVEMENT				
STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
108+90.00	109+90.00	HWY. 90 - TRANSITION	20.00	222.22
111+25.00	112+25.00	HWY. 90 - TRANSITION	20.00	222.22
TOTAL:				444.44

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

ACHM PATCHING OF EXISTING ROADWAY	
DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	5
TOTAL:	5

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

BASE AND SURFACING																									
STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")									
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	
			TOTAL WID. FEET			SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON	FEET														TON
MAIN LANES																									
108+90.00	109+90.00	HWY. 90 - TRANSITION	100.00	84.00	84.00				20.00	222.22	37.78	37.78									27.00	300.00	220.00	33.00	33.00
109+90.00	111+25.00	HWY. 90 - TANGENT SECTION	135.00	197.50	266.63	44.71	670.65	33.53				33.53	22.46	336.90	330.00	55.59	22.25	333.75	220.00	36.71	26.00	390.00	220.00	42.90	79.61
111+25.00	112+25.00	HWY. 90 - TRANSITION	100.00	84.00	84.00				20.00	222.22	37.78	37.78									27.00	300.00	220.00	33.00	33.00
18+44.61	19+57.16	HWY. 90 TEMP. DETOUR - TANGENT SECTION	112.55	105.75	119.02																8.46	105.80	220.00	11.64	11.64
21+61.91	22+66.47	HWY. 90 TEMP. DETOUR - TANGENT SECTION	104.56	102.25	106.91																7.91	91.90	220.00	10.11	10.11
ADDITIONAL FOR SUPERELEVATION AND BARRIER WALL WIDENING																									
19+57.16	21+61.91	HWY. 90 TEMP. DETOUR - SUPERELEVATED SECTION	204.75	213.75	437.65																28.00	637.00	220.00	70.07	70.07
TOTALS:					1098.21		670.65	33.53		444.44	75.56	109.09		336.90		55.59		333.75		36.71		1824.70		200.72	237.43

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....95.0% MIN. AGGR.....5.0% ASPHALT BINDER  
 ACHM BINDER COURSE (1").....95.9% MIN. AGGR.....4.1% ASPHALT BINDER  
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22  
 TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10-02-2022				6	ARK.			
				JOB NO.		101053	27	34
				2 SUMMARY OF QUANTITIES AND REVISIONS				



## SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	5	STATION
201	GRUBBING	5	STATION
202	REMOVAL AND DISPOSAL OF FENCE	302	LIN.FT.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	116	LIN.FT.
SP, SS, & 210	UNCLASSIFIED EXCAVATION	2503	CU.YD.
SP & 210	COMPACTED EMBANKMENT	1515	CU.YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	1098	TON
SS & 401	TACK COAT	111	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	54	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	2	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	225	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	12	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	444.44	SQ.YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	1	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	5	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	305	SQ.FT.
SS & 604	BARRICADES	32	LIN.FT.
SS & 604	TRAFFIC DRUMS	11	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	346	LIN.FT.
604	CONSTRUCTION PAVEMENT MARKINGS	2812	LIN.FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	525	LIN.FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	347	LIN.FT.
SS & 604	VERTICAL PANELS	11	EACH
SS & 619	WIRE FENCE (TYPE D)	209	LIN.FT.
620	LIME	3	TON
620	SEEDING	1.50	ACRE
SS & 620	MULCH COVER	7.79	ACRE
620	WATER	281.9	M.GAL.
621	TEMPORARY SEEDING	6.29	ACRE
621	SILT FENCE	1617	LIN.FT.
621	SAND BAG DITCH CHECKS	76	BAG
621	SEDIMENT BASIN	925	CU.YD.
621	OBLITERATION OF SEDIMENT BASIN	925	CU.YD.
621	SEDIMENT REMOVAL AND DISPOSAL	994	CU.YD.
621	ROCK DITCH CHECKS	18	CU.YD.
623	SECOND SEEDING APPLICATION	1.50	ACRE
624	SOLID SODDING	51	SQ.YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	825	LIN.FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	825	LIN.FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	16	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	2	EACH
SS & 816	FILTER BLANKET	650	SQ.YD.
SS & 816	DUMPED RIPRAP	327	CU.YD.
<b>STRUCTURES OVER 20' SPAN</b>			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	256	CU.YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	610.29	CU.YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	95451	POUND

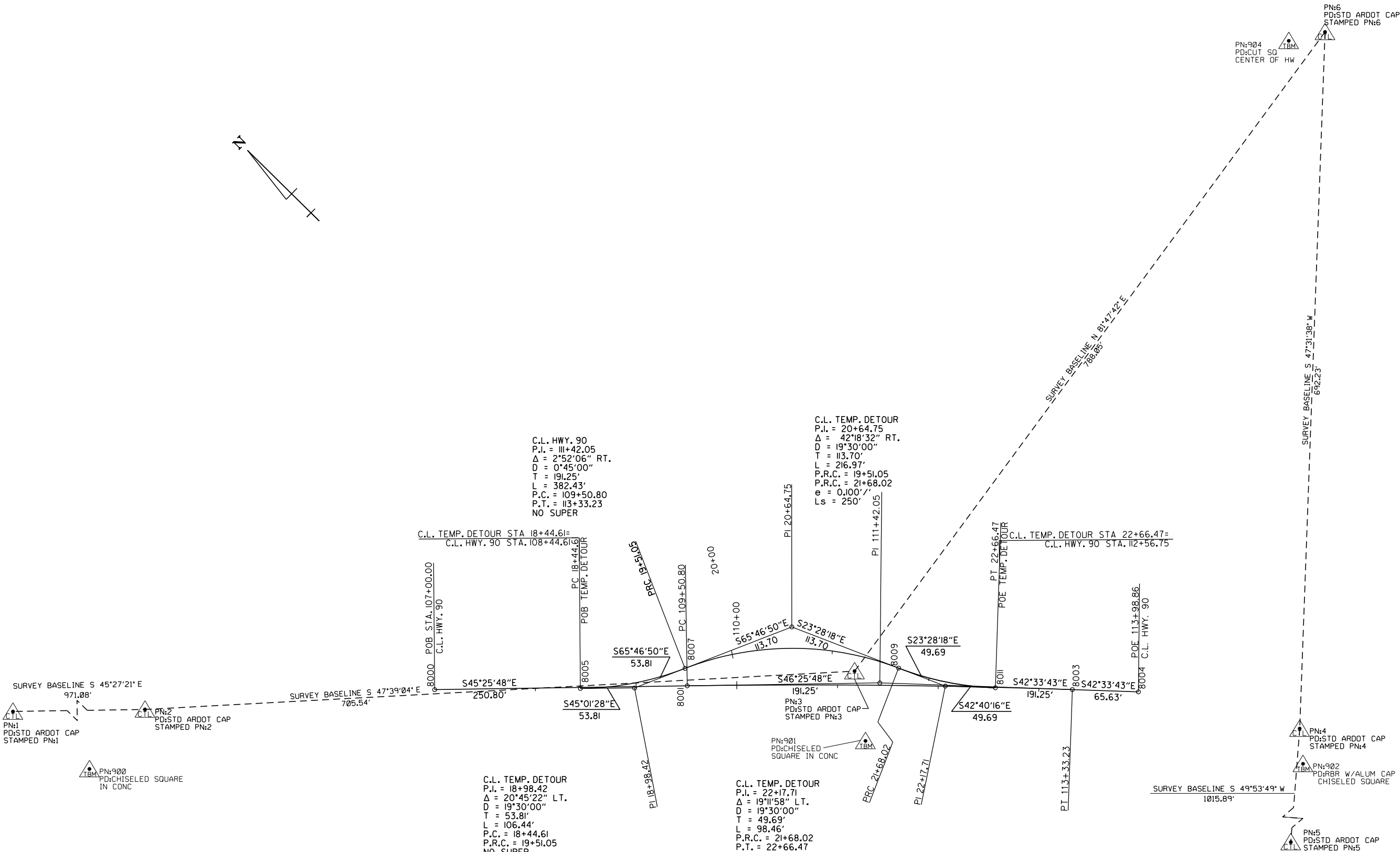
## REVISIONS

[illegible]



8/21/2023 12:03:06 PM  
WORKSPACE: ARDOT  
Y:\Projects\ARDOT\17566\101053\Beaver Dam Ditch Str & Apprs\Design\CIVIL\Drawings\101053\_IL.SC.002.dgn  
REVISED DATE: \*\*REDATE\*\*

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.		101053	29	34
2 SURVEY CONTROL DETAILS								



SURVEY CONTROL DETAILS



8/21/2023 12:03:07 PM  
WORKSPACE: ARDOT  
Y:\Projects\ARDOT\17566\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_12\_PP\_001.dgn  
REVISED DATE: \*\*REDATE\*\*

DUMPED RIPRAP					
STA.	STA.	SIDE	LENGTH	"W"	CU.YDS.
109+92.16	110+85.68	RT.	94 LIN. FT.	VARIES	130.75
110+40.26	111+32.27	LT.	92 LIN. FT.	VARIES	127.44
111+16.17	111+68.52	LT.	51 LIN. FT.	6'-0"	20.00

REMOVAL AND DISPOSAL OF FENCE  
STA. 111+90.00 TO STA. 112+50.00 LT. OF C.L. = 302 LIN. FT.

STA.	STA.	LOCATION	FENCE (TYPE D)
111+90.00	112+50.00	LT. OF C.L. HWY. 90 =	209 LIN. FT.

REMOVAL AND DISPOSAL OF GUARDRAIL  
STA. 110+22.00 TO STA. 110+80.00 LT. OF C.L. = 116 LIN. FT.

C.L. HWY. 90  
P.I. = 111+42.05  
 $\Delta = 2^{\circ}52'06''$  RT.  
 $D = 0^{\circ}45'00''$   
 $T = 191.25'$   
 $L = 382.43'$   
P.C. = 109+50.80  
P.T. = 113+33.23  
NO SUPER

## LEGEND



STA. 110+22 TO STA. 110+80  
EXISTING BRIDGE NO. M1638  
58.00' X 25.20' TIMBER AND I-BEAM SUPERSTRUCTURE (15.0', 27.0', 15.0')  
WITH SUBSTRUCTURE COMPOSED OF TIMBER PILE BENTS  
REMOVE AS EXISTING BRIDGE STRUCTURE  
(SITE NO. 1) = 1.00 LUMP SUM

STA. 110+57.00 CONSTRUCT  
QUINT, 12'X8'X85' R.C. BOX CULVERT  
WITH 31 WINGS LT. & RT.  
20' LT. FWD. SKEW  
Q25 = 938 CFS D.A. = 12.9 SQ. MI.  
SPAN = 67.93'  
CHANNEL CHANGE CUT = 520.29 CU.YDS.  
CHANNEL CHANGE FILL = 5.78 CU.YDS.

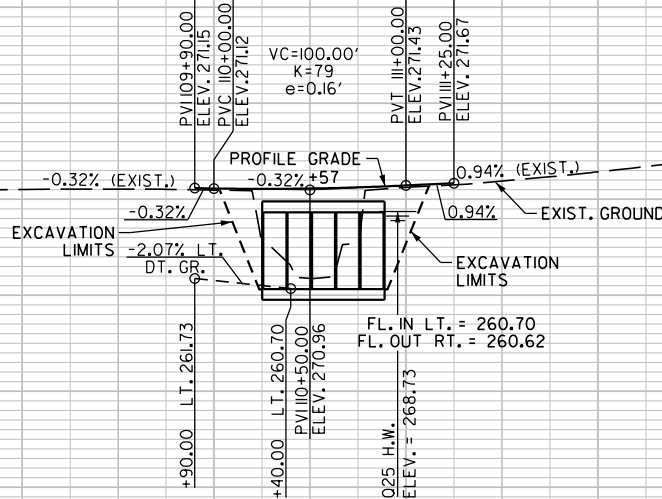
STA. 109+90.00  
BEGIN JOB 101053  
LOG MILE 0.62

STA. 111+25.00  
END JOB 101053

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

STREAM	STATION	STREAM TYPE	TOP OF CHANNEL ELEV.
BEAVER DAM DITCH	110+20 - 111+15	INTERMITTENT	264 FT. MSL

FOR THE CONSTRUCTION OF TEMPORARY RAMPS OR HAUL  
ROADS, REFER TO SECTION 110.05 (c) OF THE 2014 STANDARD  
SPECIFICATIONS



HWY. 90

HWY. 90

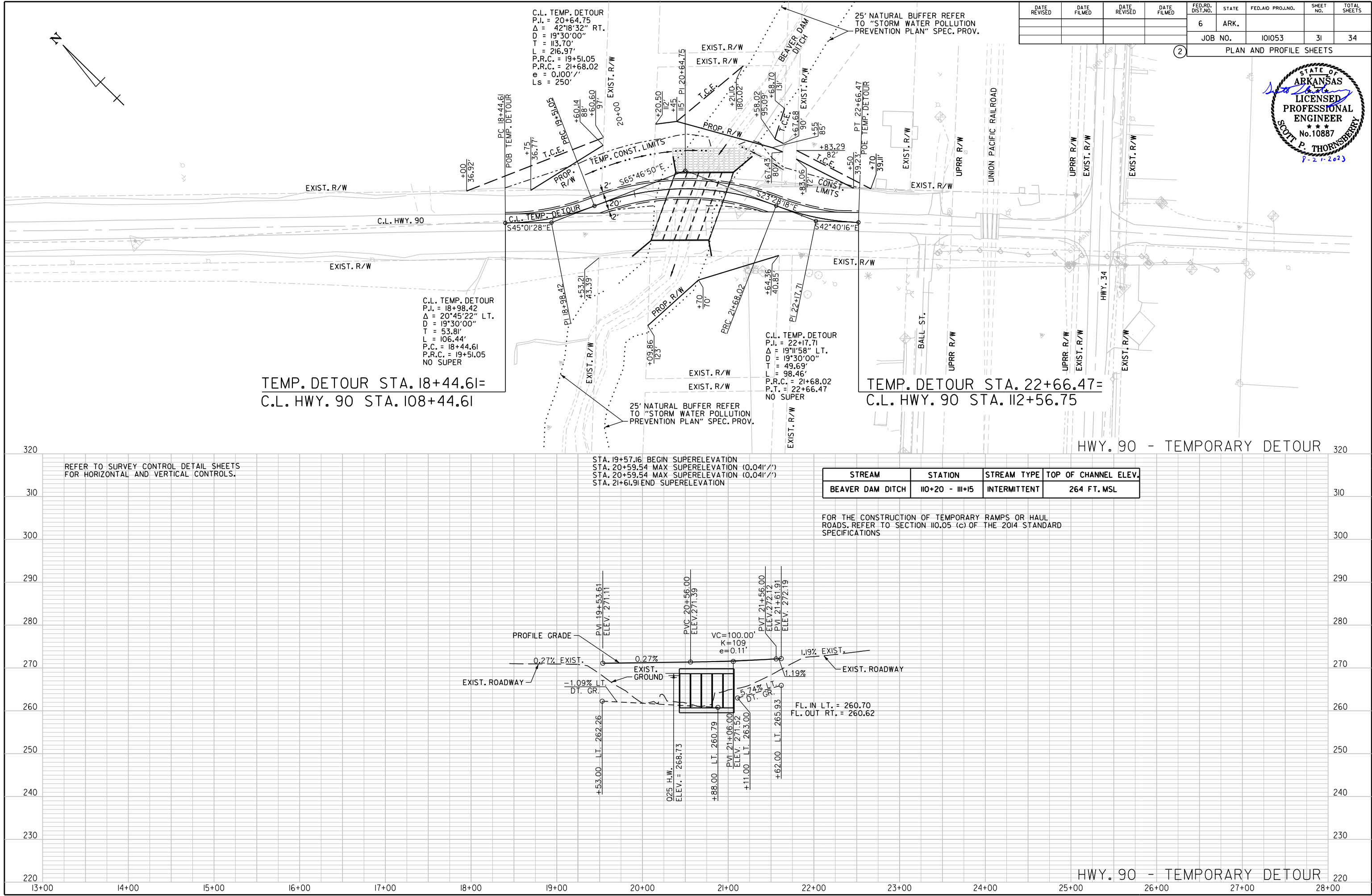
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	30	34

2

PLAN AND PROFILE SHEETS

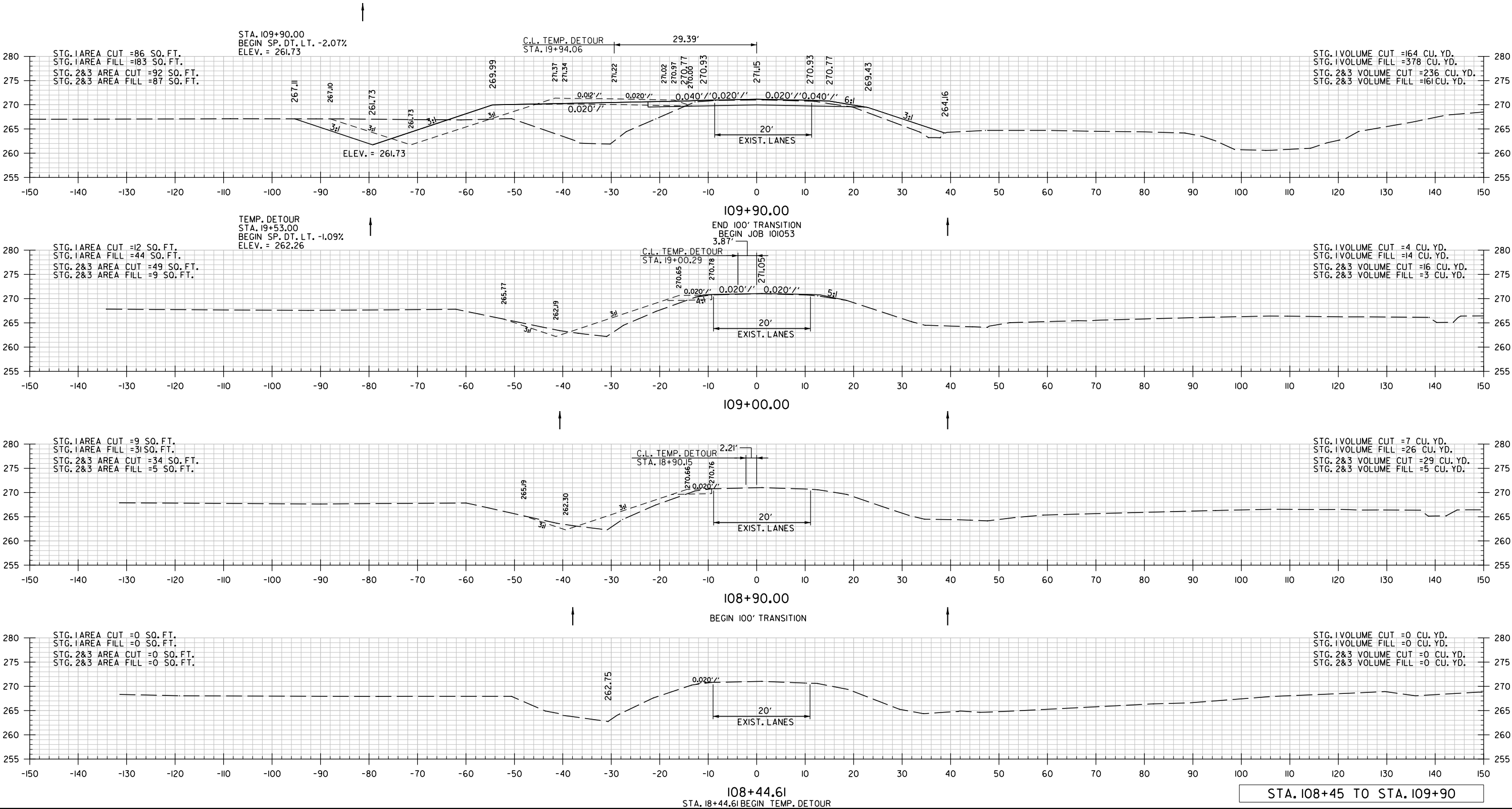


8/21/2023 12:03:08 PM  
Y:\Projects\AR001\75661\01053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\01053\_12\_PP\_002.dgn  
REVISED DATE: \*\*REDATE\*\*



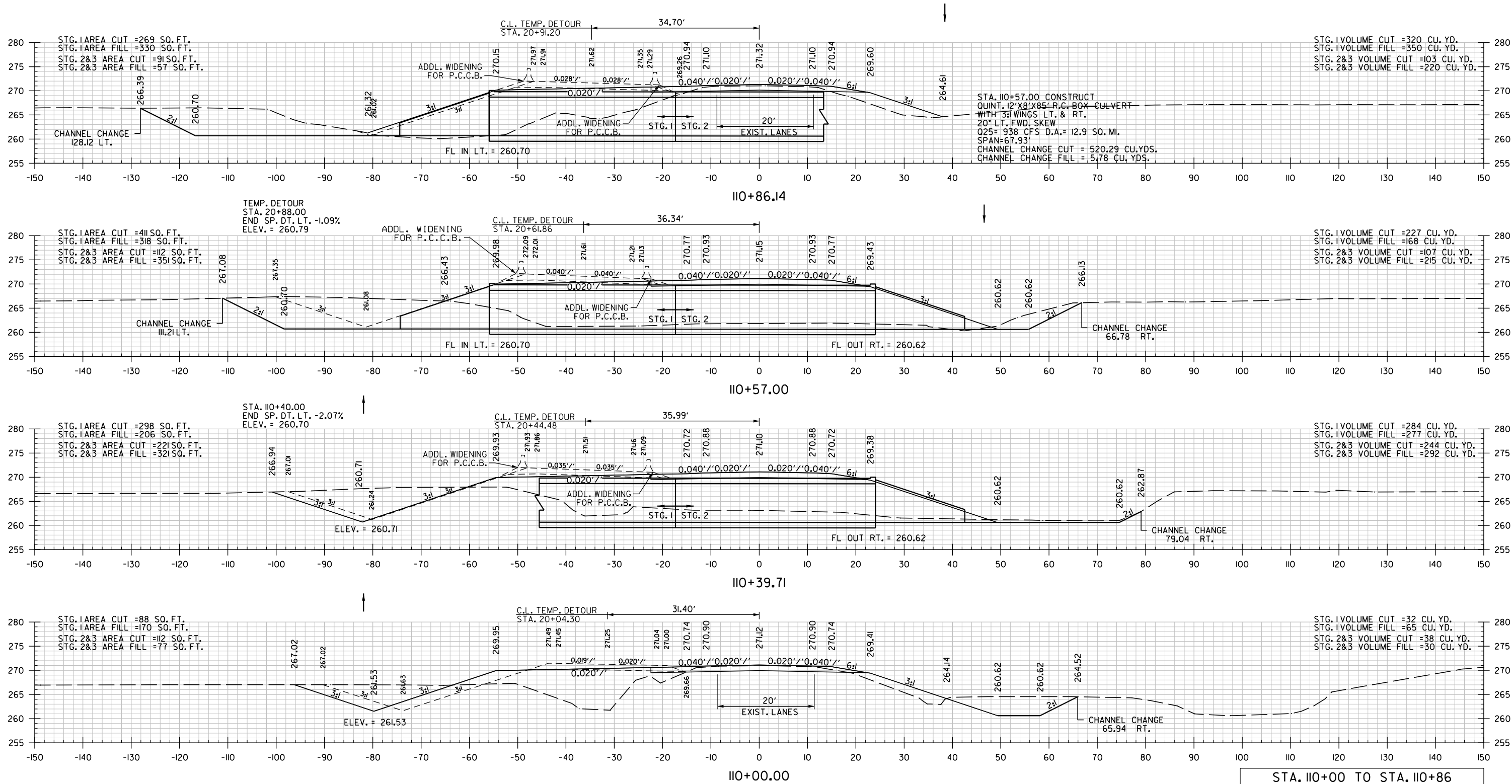
8/21/2023 12:03:08 PM  
E:\Projects\AR001\75661\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_21.CX.001.dgn  
WORKSPACE: AR001  
Y:\Projects\AR001\75661\101053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_21.CX.001.dgn  
REVISED DATE: \*\*REDATE\*\*

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.		101053	32	34
2 CROSS SECTIONS								



8/21/2023 12:03:09 PM  
WORKSPACE: ARDOT\Projects\10053\Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\10053\_21.CX.001.dgn  
REVISED DATE: \*\*REVIDATE\*\*

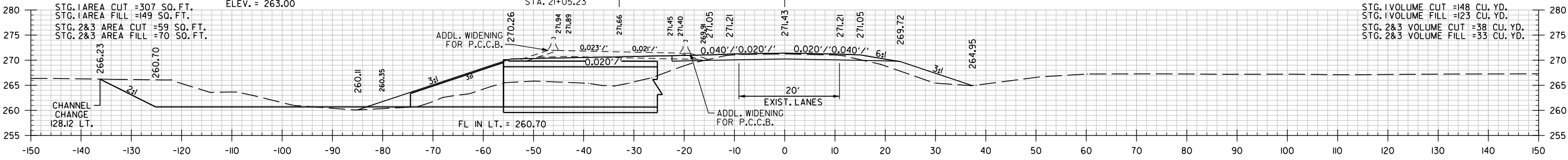
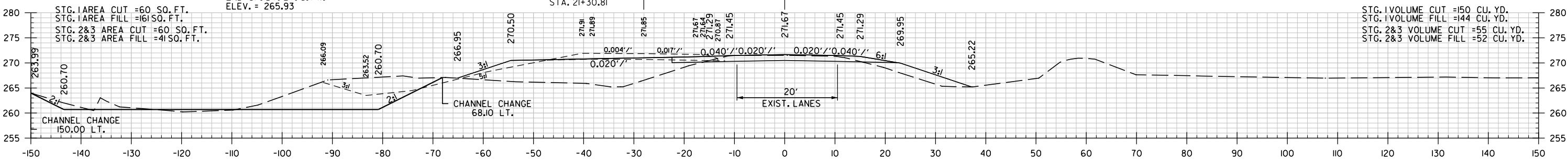
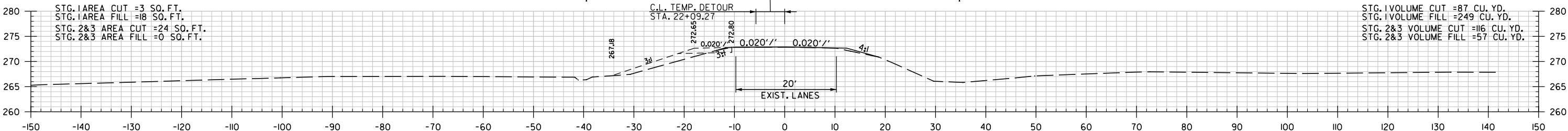
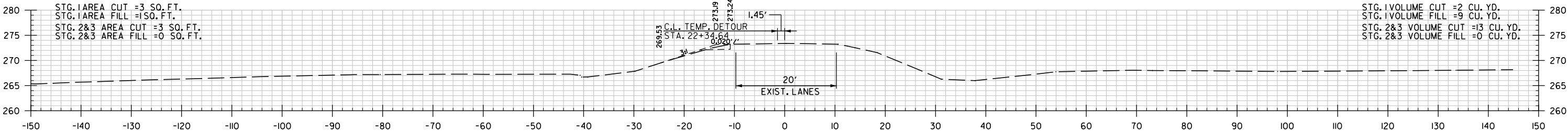
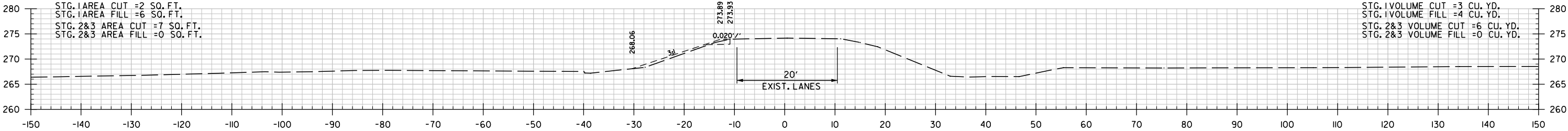
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101053	33	34
2 CROSS SECTIONS								



STA. 110+00 TO STA. 110+86

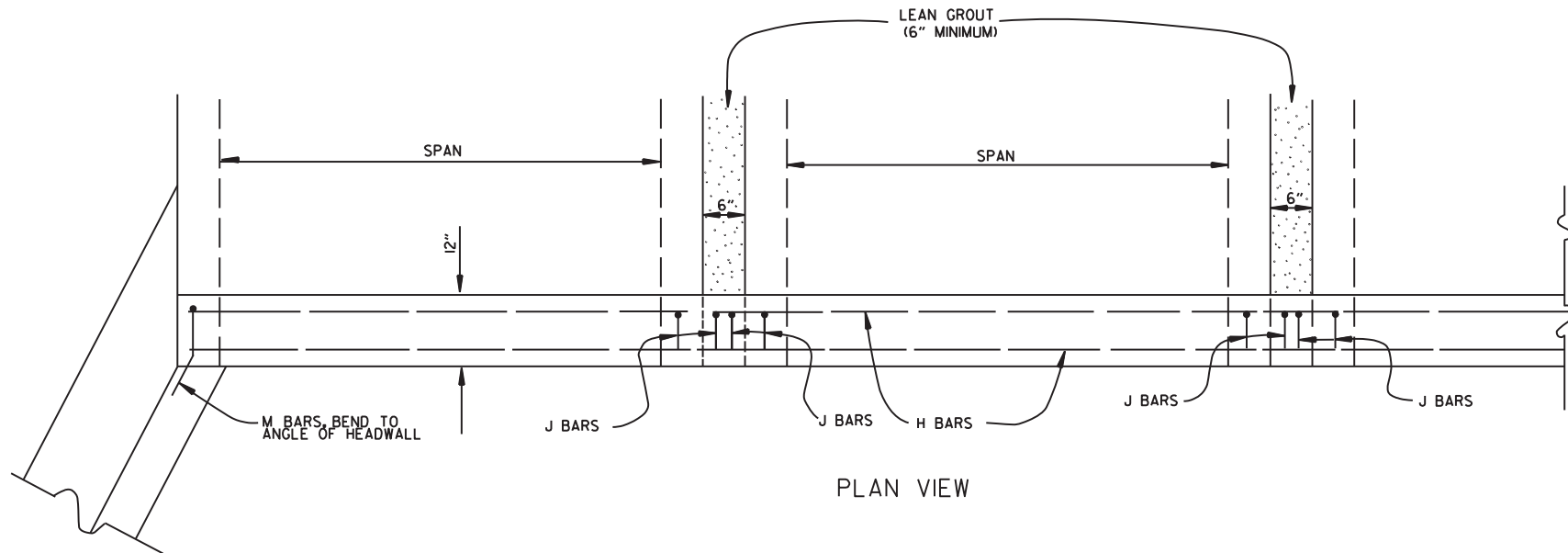
8/21/2023 12:03:09 PM  
WORKSPACE: AR001  
Y:\Projects\AR001\7566101053.Beaver Dam Ditch Str & Apprs\Design\Civil\Drawings\101053\_21.CX.001.dgn  
REVISED DATE: \*\*REDATE\*\*

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.		101053	34	34
2				CROSS SECTIONS				



STA. III+00 TO STA. I12+57





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.

WING WALLS 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.

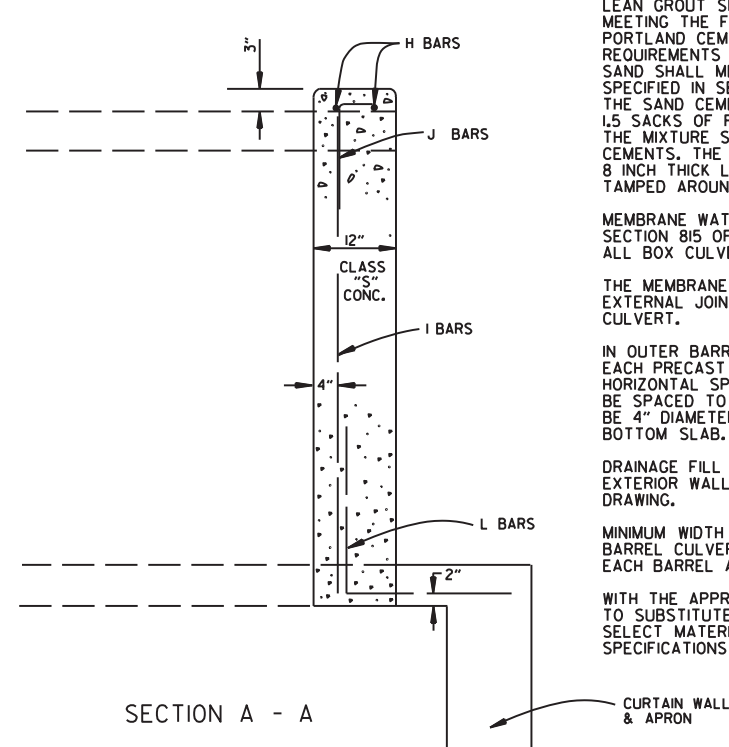
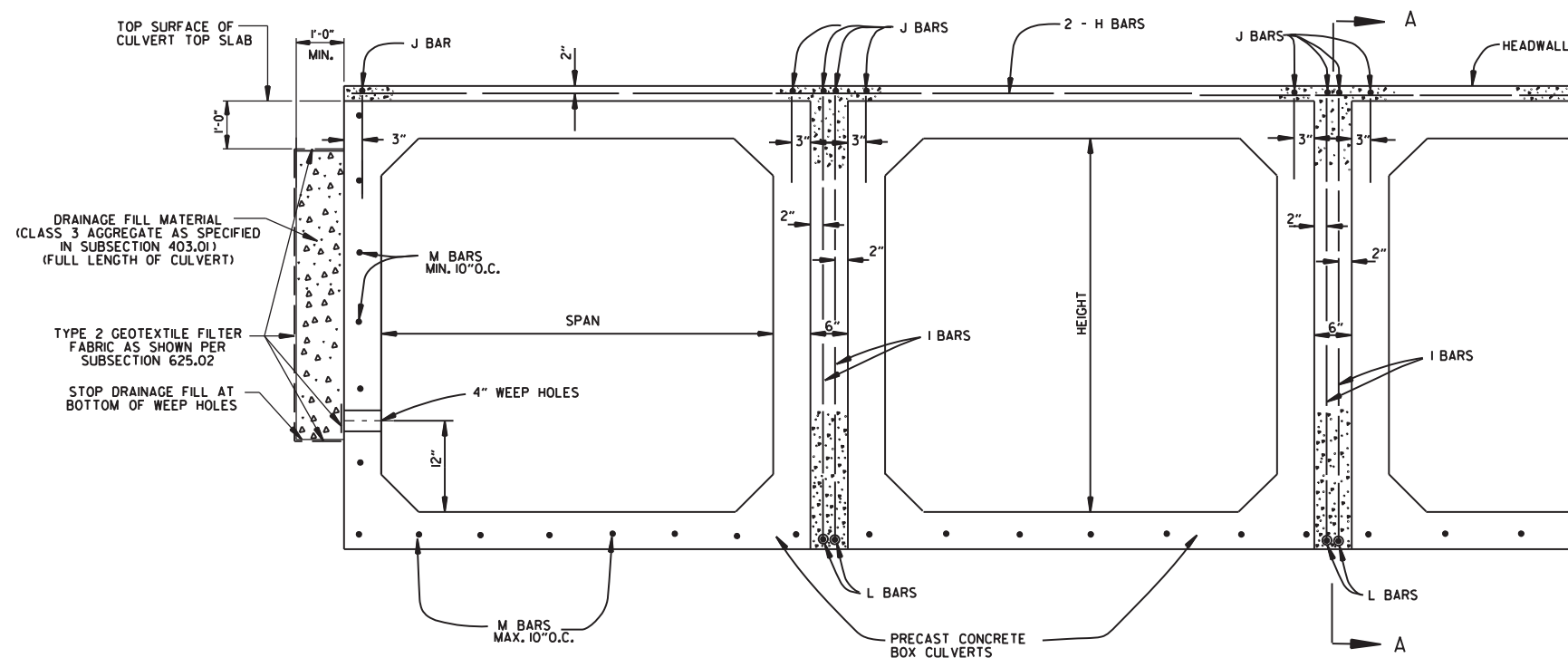
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

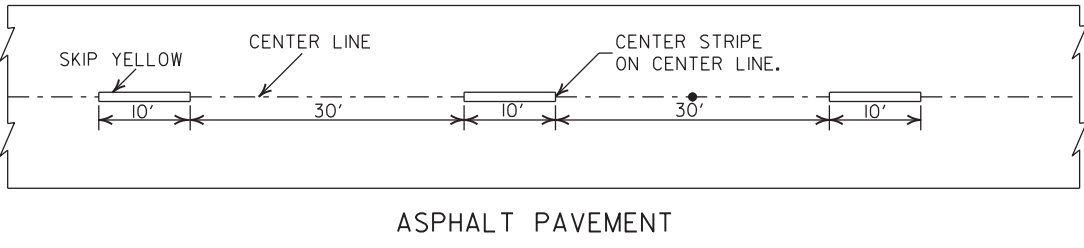
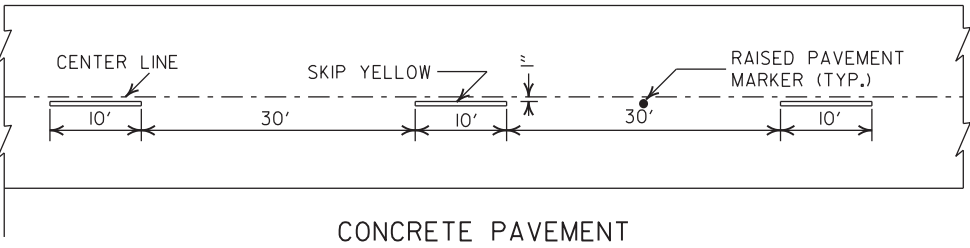


1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLs FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE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

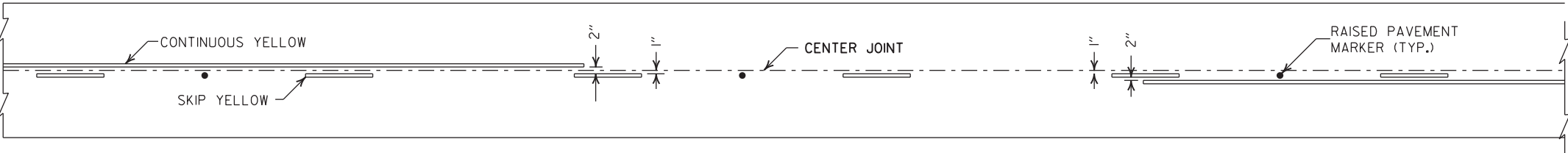
ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

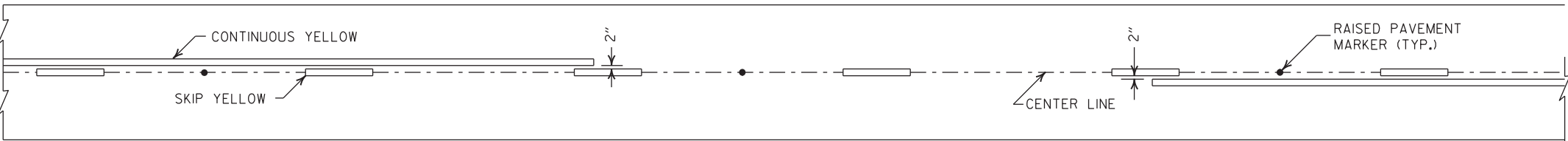
STANDARD DRAWING PBC-1



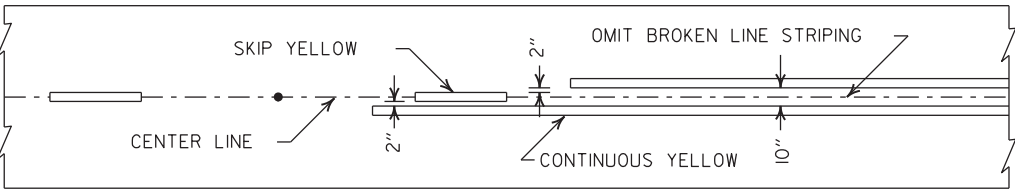
BROKEN LINE STRIPING



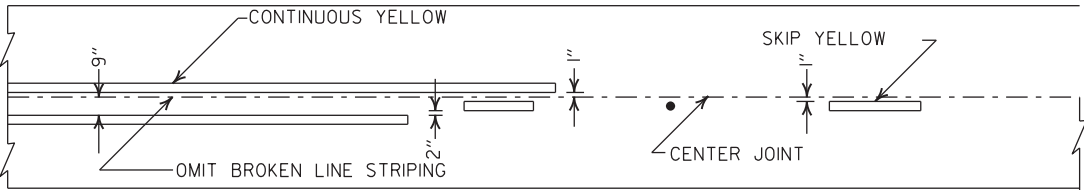
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

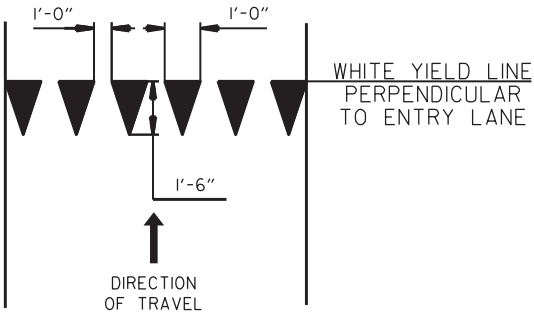


ASPHALT PAVEMENT

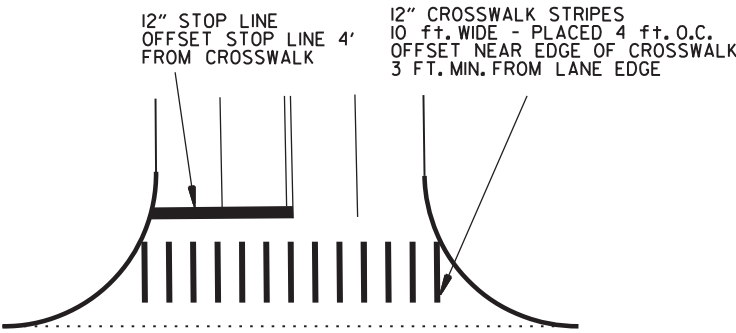


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

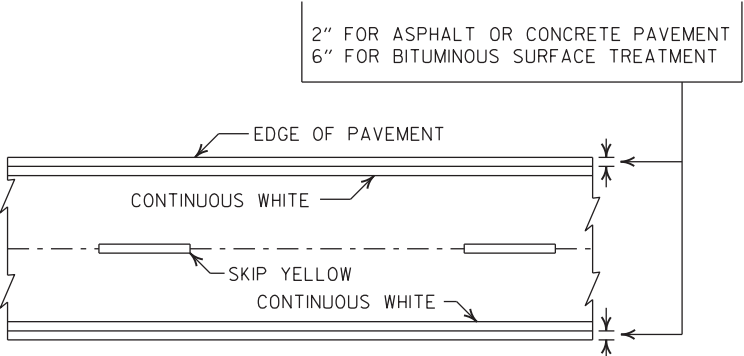


YIELD LINE DETAIL

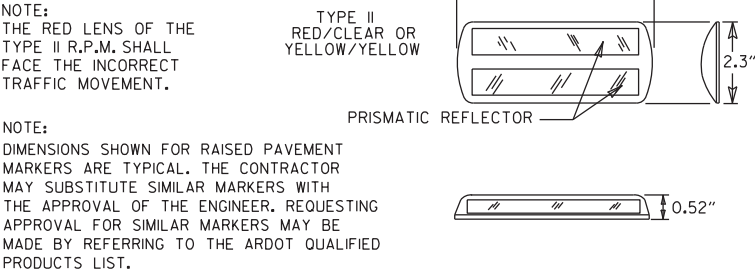


CROSSWALK AND STOP LINE DETAILS

- 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

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

ARKANSAS STATE HIGHWAY COMMISSION

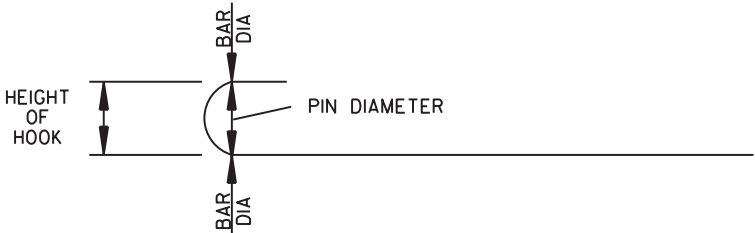
PAVEMENT MARKING DETAILS

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	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	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 2¾ 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

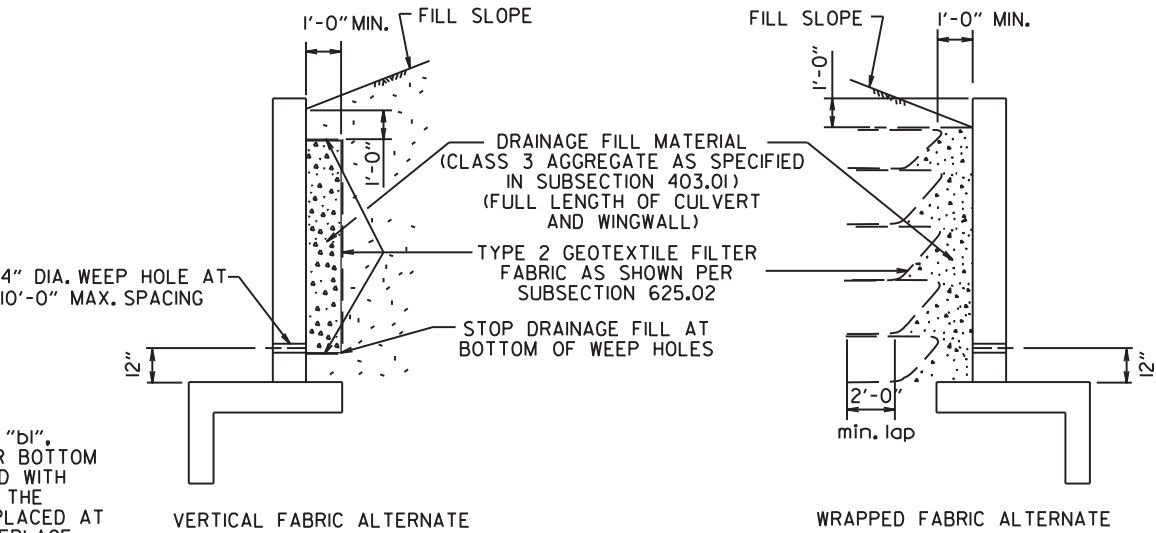
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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 31OR 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.

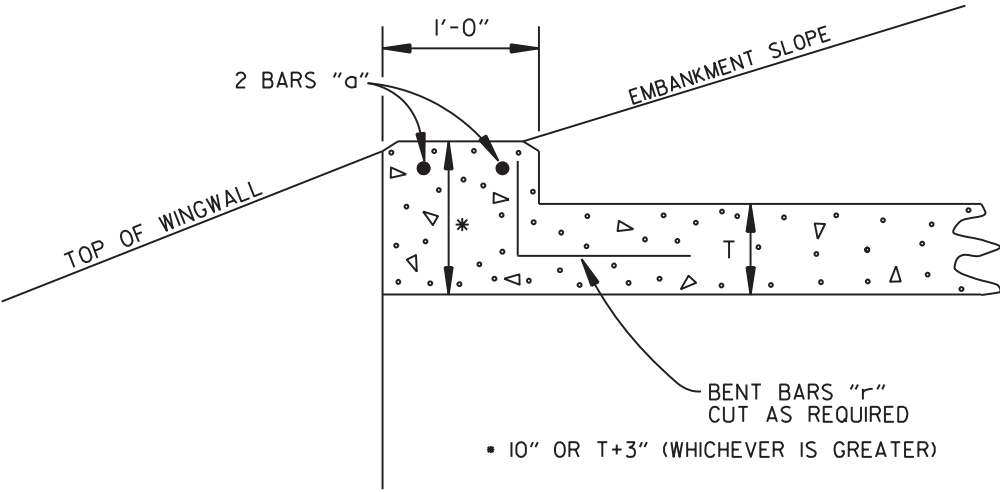
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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 CRSIMANUAL SHALL BE MINUS ZERO TO PLUS ½ 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.

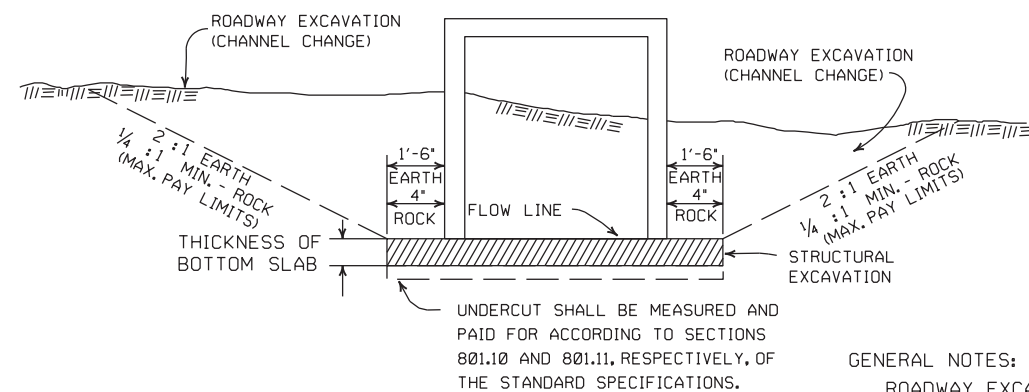
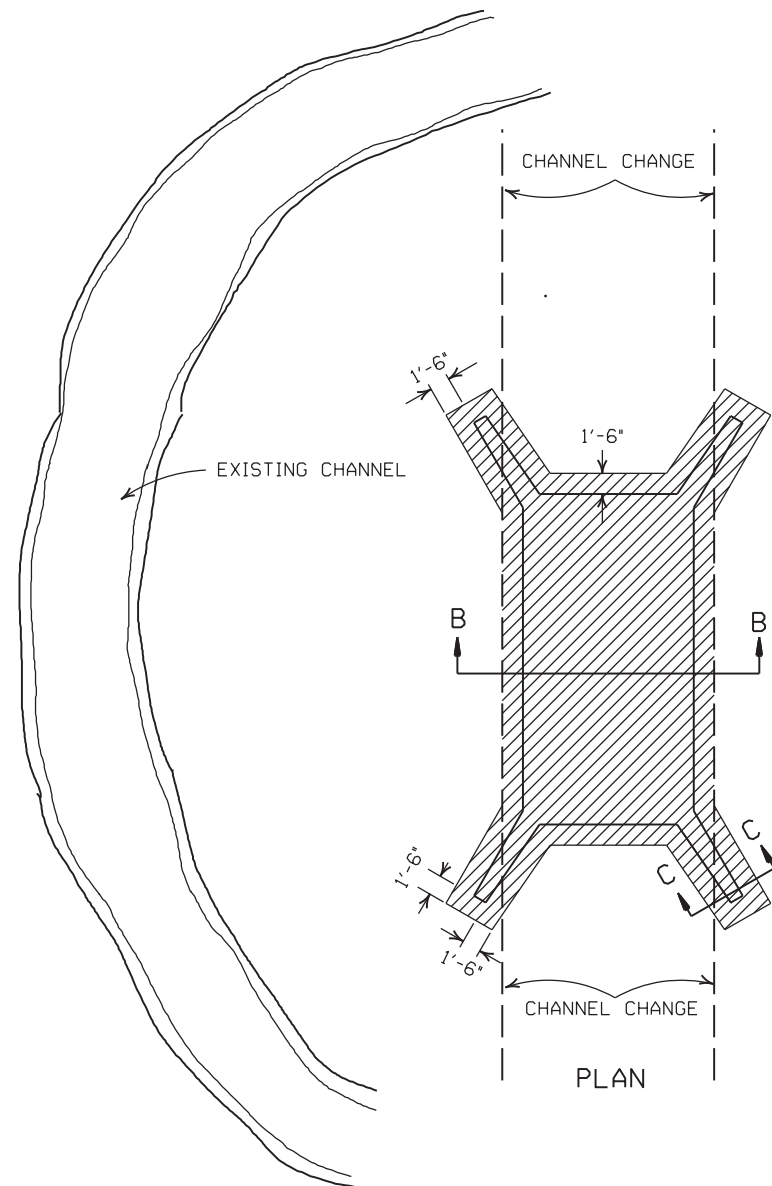
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



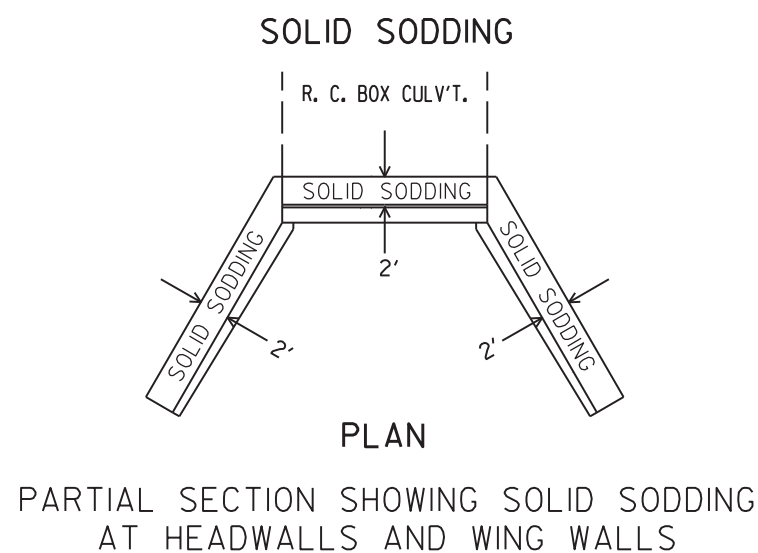
NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

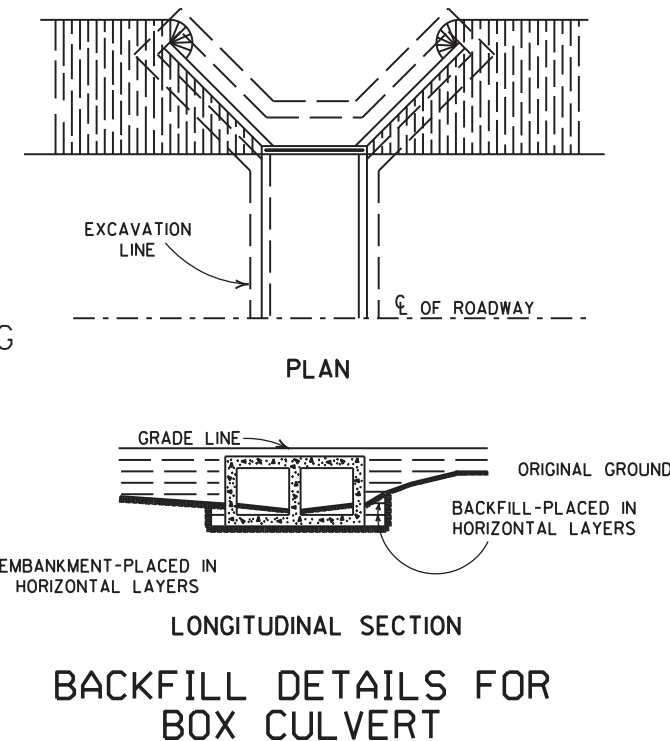
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL		ARKANSAS STATE HIGHWAY COMMISSION
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS		
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM		
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES		REINFORCED CONCRETE BOX CULVERT DETAILS
10-18-96	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		STANDARD DRAWING RCB-1
8-5-93	REVISED PIN DIAMETER TO SPECS.		
8-15-91	DRAWN AND ISSUED		
DATE	REVISION	DATE FILMED	



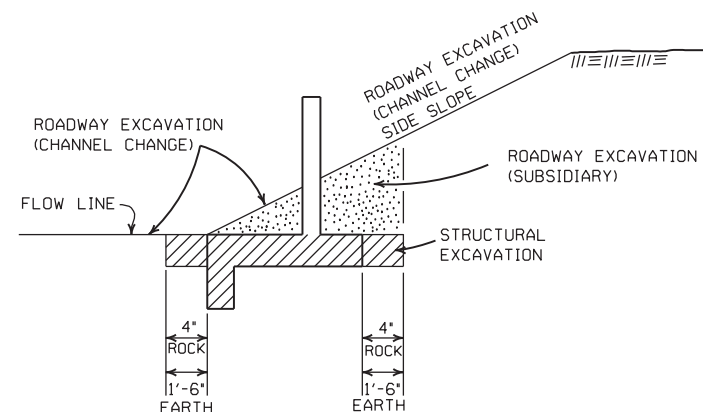
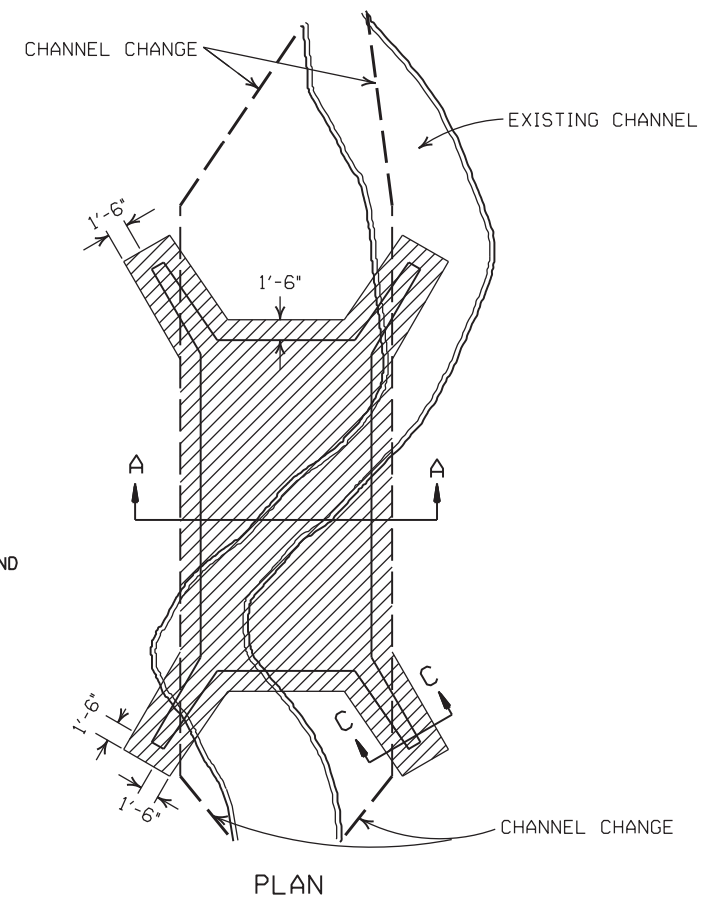
SECTION B-B  
DETAILS FOR NEW CHANNELS



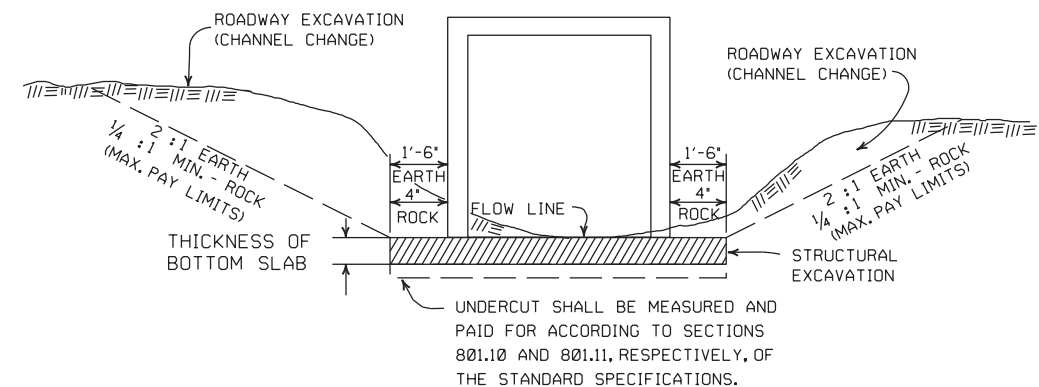
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



BACKFILL DETAILS FOR  
BOX CULVERT



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	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES	
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



SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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

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

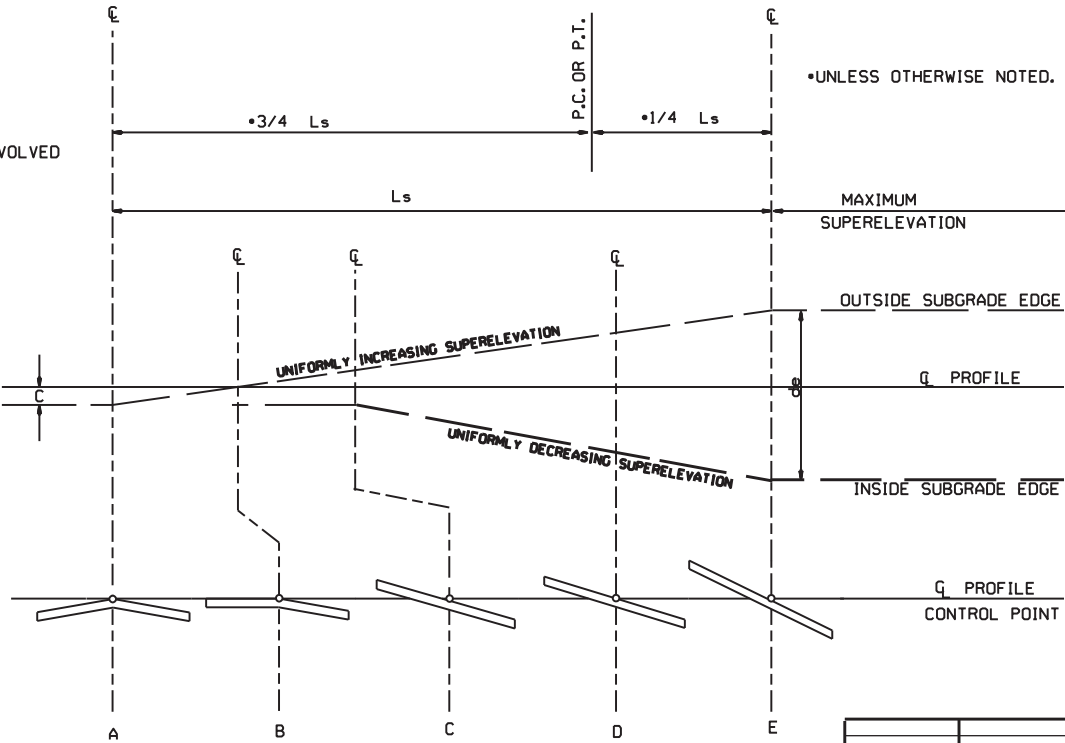
ABBREVIATIONS

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

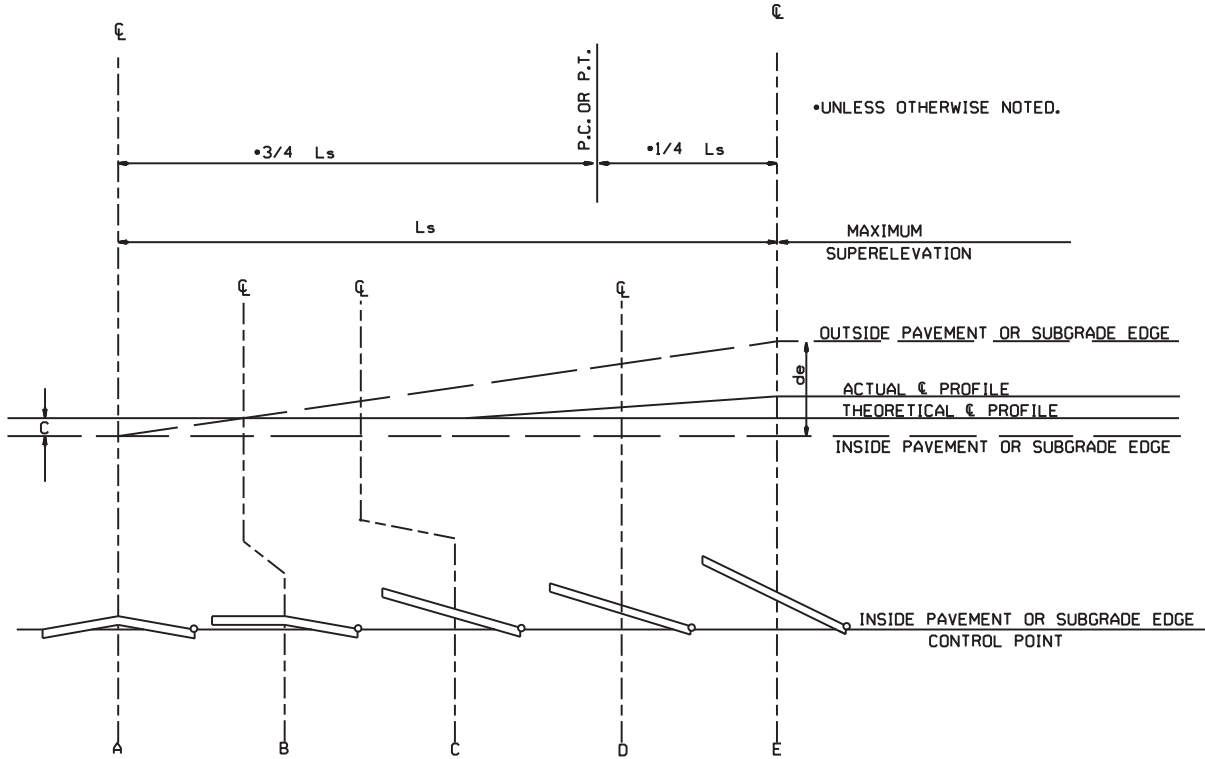
3 LANE UNDIVIDED - - - - +20%  
4 LANE UNDIVIDED - - - - +50%  
5 LANE UNDIVIDED - - - - +80%  
6 LANE UNDIVIDED - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.  
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

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




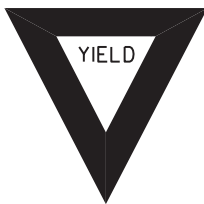



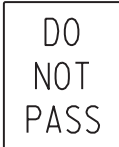



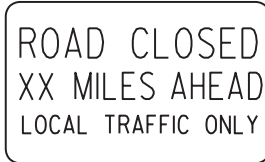










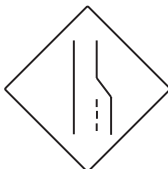













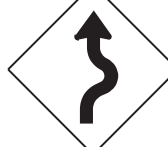



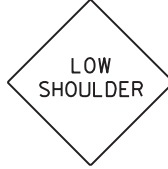

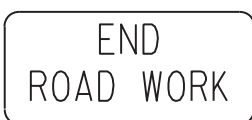
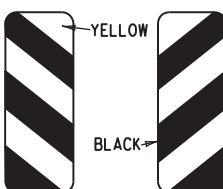


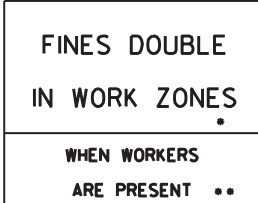
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

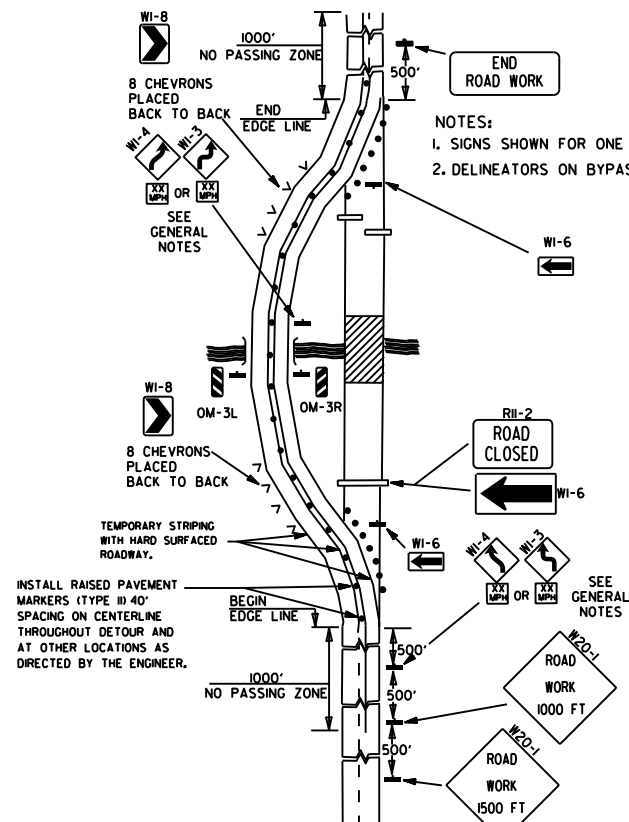
NOTE: MAINTAIN NORMAL CROWN ON



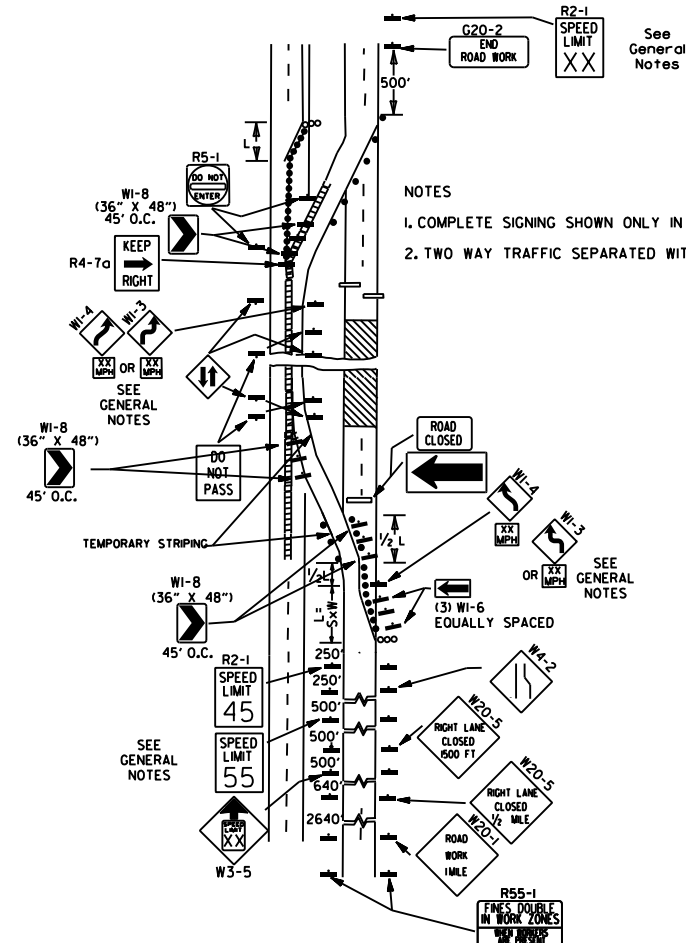
<div>RI-1</div> <div></div> <div>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</div>	<div>RI-2</div> <div></div> <div>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</div>	<div>R2-1</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>W3-5</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div>	<div>W3-5a</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div>	<div>R4-1</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>R4-2</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>ADVANCE DISTANCES (XXXX)</div> <div>500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD</div> <div>GENERAL NOTES: 1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. 2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER. 3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED. 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SO. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE. 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3. 6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE. 7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS. 8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS. 9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT. 10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1MILE 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 &amp; 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.</div>
<div>R5-1</div> <div></div> <div>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</div>	<div>R11-2</div> <div></div> <div>48"x30"</div>	<div>R11-3A</div> <div></div> <div>60"x30"</div>	<div>R11-4</div> <div></div> <div>60"x30"</div>	<div>W21-5a</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W1-1</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W1-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	
<div>W1-3</div> <div></div> <div>STD. 48"x48"</div>	<div>W1-4</div> <div></div> <div>STD. 48"x48"</div>	<div>W1-6</div> <div></div> <div>STD. 48"x24" SPECIAL 60"x30"</div>	<div>W1-8</div> <div></div> <div>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</div>	<div>W3-1</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W3-2</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W4-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	
<div>W5-1</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W6-3</div> <div></div> <div>EXPWY. 36"x36" SPECIAL 48"x48"</div>	<div>W8-7</div> <div></div> <div>EXPWY. 36"x36" FWY. 48"x48"</div>	<div>W9-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W13-1</div> <div></div> <div>STD. 24"x24"</div>	<div>W20-1</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-2</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-3</div> <div></div> <div>STD. 48"x48"</div>
<div>W20-4</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-5</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-7a</div> <div><div>18" 500 FEET 24" W16-2</div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W21-2</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div>	<div>W21-5</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div>	<div>W24-1</div> <div></div> <div>STD. 36"x36"</div>	<div>W1-4b</div> <div></div> <div>STD. 48"x48"</div>	<div>R56-1</div> <div></div> <div>STD. 18"x18"</div>
<div>W8-11</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W8-9</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>G20-1</div> <div></div> <div>60"x24"</div>	<div>G20-2</div> <div></div> <div>48"x24"</div>	<div>OM-3L OM-3R</div> <div></div> <div>12"x36"</div>	<div>M4-9</div> <div></div> <div>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</div>	<div>M4-10</div> <div></div> <div>48"x18"</div>	<div>R55-1</div> <div></div> <div>36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS</div>

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	
DATE	REVISION	FILMED

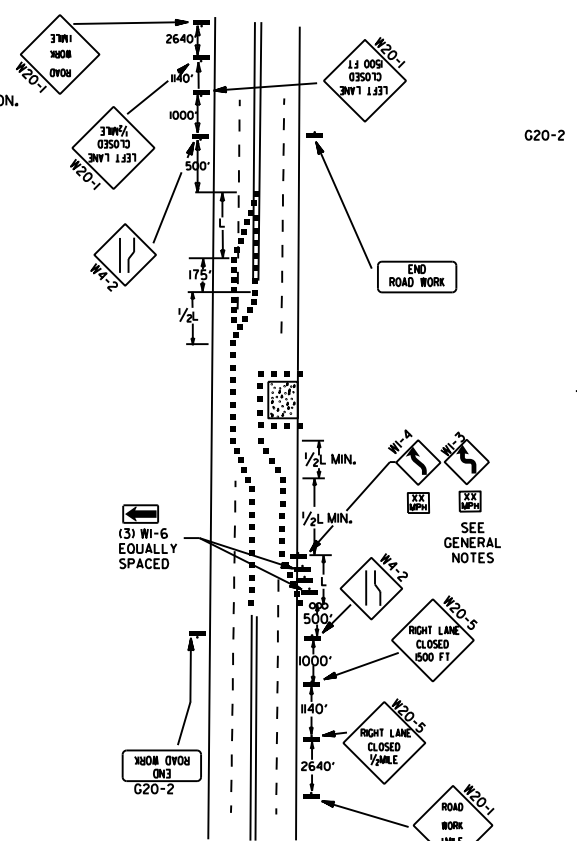
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION  
STANDARD DRAWING TC-1



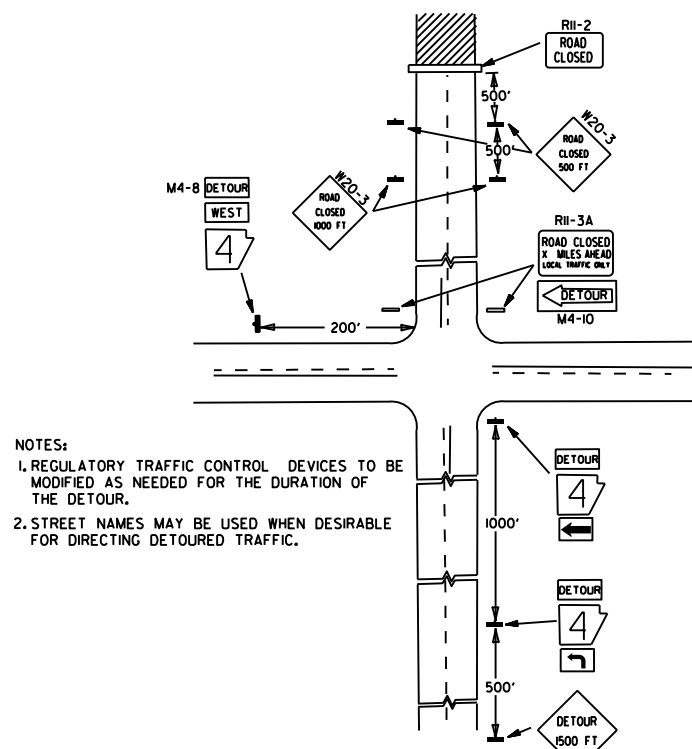
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



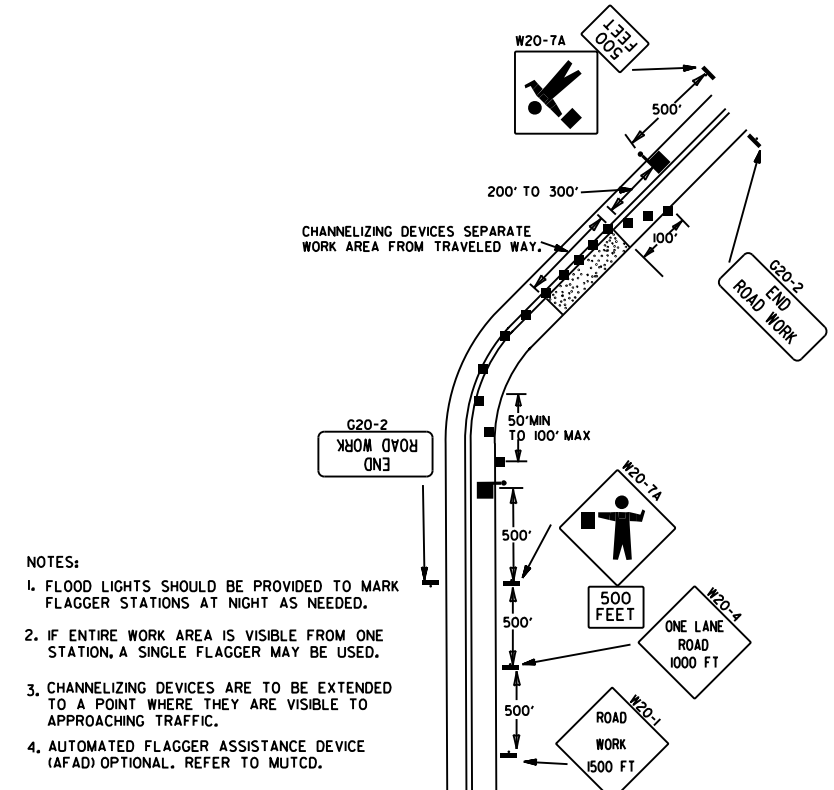
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



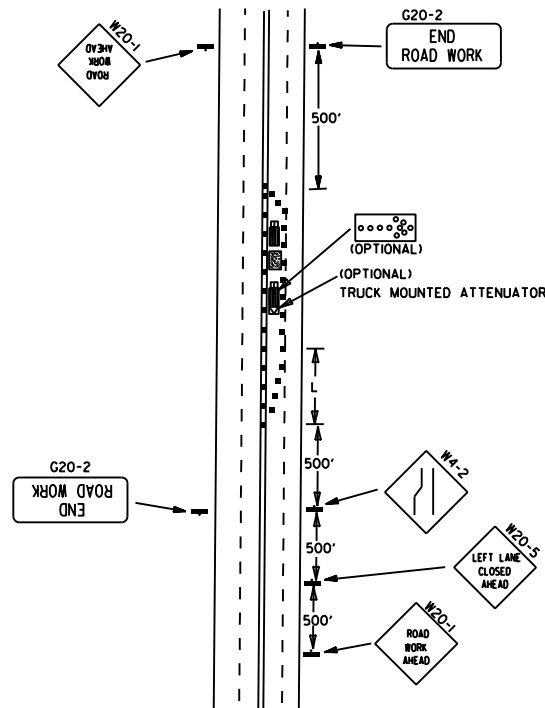
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



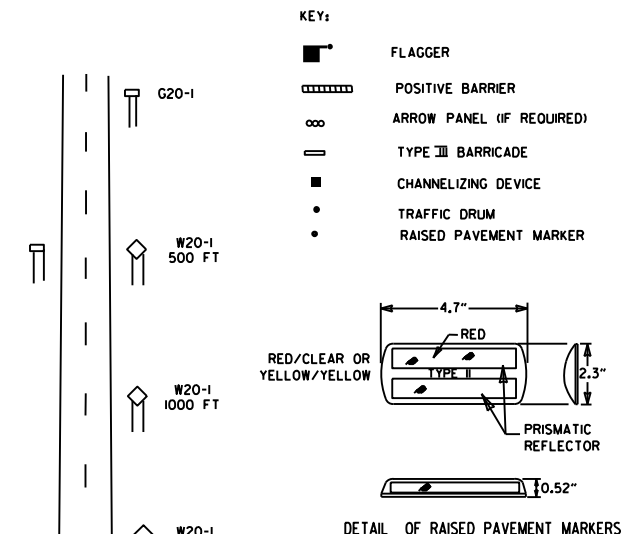
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(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.



- GENERAL NOTES:
- 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.
  - 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 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - 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 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - 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.
  - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
  - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
  - 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.
  - 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.
  - 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).

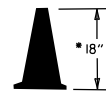
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED 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	
DATE	REVISION	FILMED

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

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

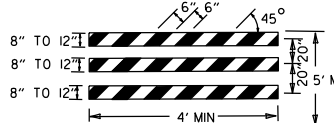
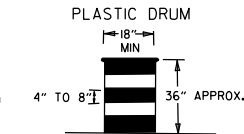
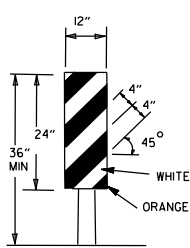
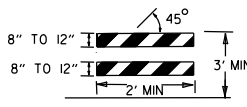
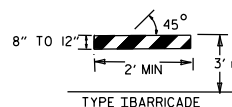
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

### CHANNELIZING DEVICES



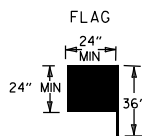
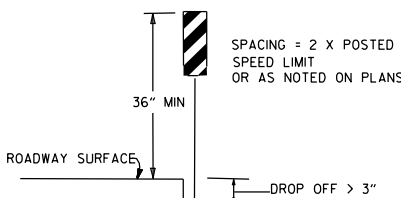
• WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

### CONES



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

### VERTICAL PANEL PLACEMENT



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

### KEY:

- ○ ○ ○ ARROW PANEL (IF REQUIRED)
- CHANNELIZING DEVICE
- TRAFFIC DRUM

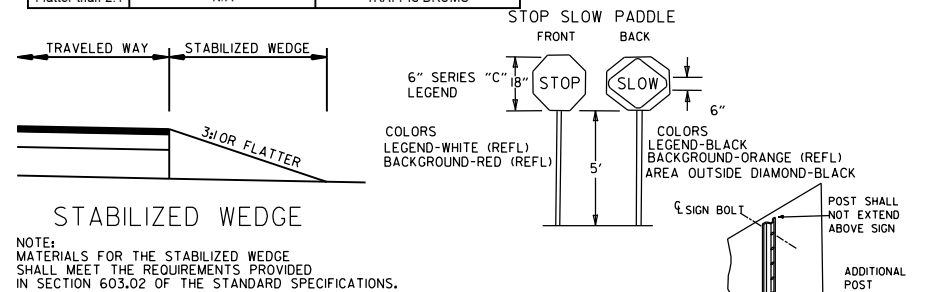
### GENERAL NOTES:

- A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
- WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(65) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- 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.
- WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
- PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
- THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1/2 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
- FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- 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.
- 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).

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

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

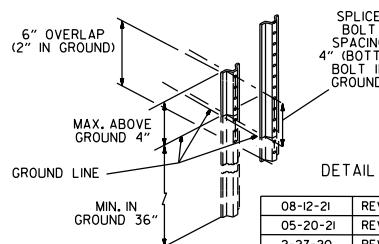
INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS



### STABILIZED WEDGE

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

NOTES:  
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)  
NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.  
SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



### DETAIL OF SPLICES

DATE	REVISION	FILED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE II	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

[illegible]

(2) #4 S-1 BARS,  
(1) OVER EACH  
LIFTING HOLE

(2) #4 S-2 BARS, (1)  
AROUND EACH PAIR  
OF STAB. SLOT HOLES

(6) #5 H-2 BARS,  
(3) PER DRAIN SLOT

TAPERED SLOTTED HOLES  
FOR STABILIZATION PINS (SEE  
BARRIER STABILIZATION DETAIL)

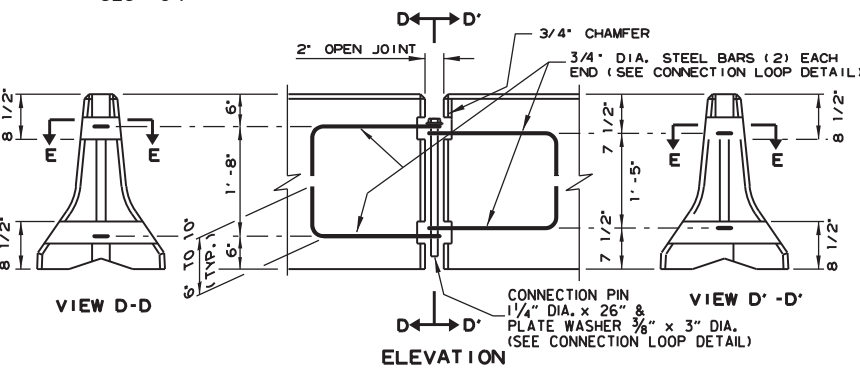
L 7 1

Technical drawing showing a cross-section of a mechanical assembly. The drawing includes dimensions and labels:

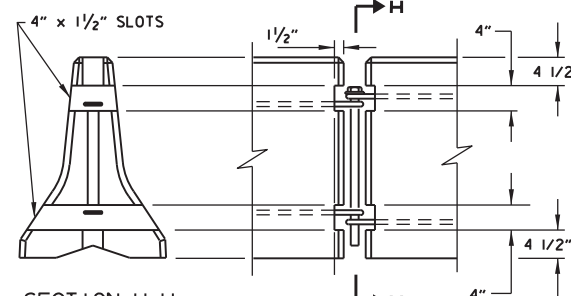
- 4" x 1 1/2" SLOTS**: Label pointing to the top section of the component.
- 1 1/2"**: Dimension indicating the width of the top section.
- 4"**: Dimension indicating the width of the middle section.
- 4 1/2"**: Dimension indicating the height of the middle section.
- 4"**: Dimension indicating the width of the bottom section.
- 4 1/2"**: Dimension indicating the height of the bottom section.
- SECTION A-A**: Label indicating the cross-section line.

SECTION H-H

### BARRIER REMOVAL SLOT DETAILS

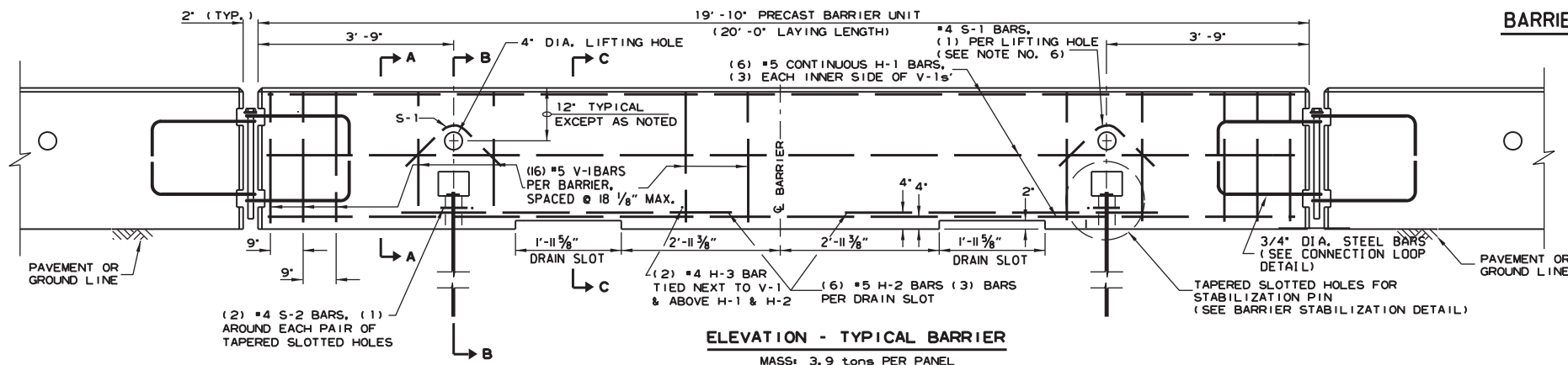


### ELEVATION



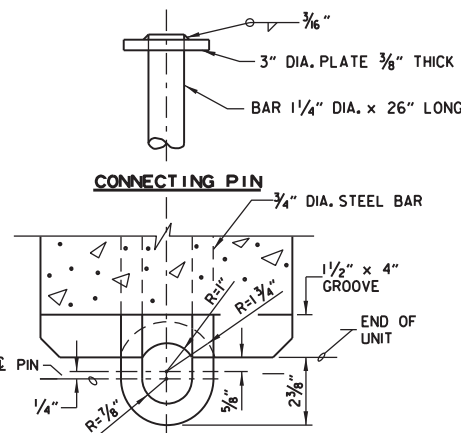
## ELEVATION

### BARRIER REMOVAL SLOT DETAILS



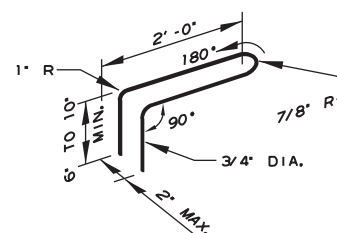
ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

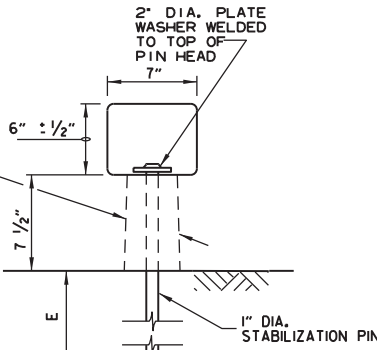
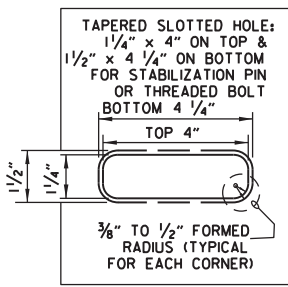


## SECTION E-E

### CONNECTION DETAILS



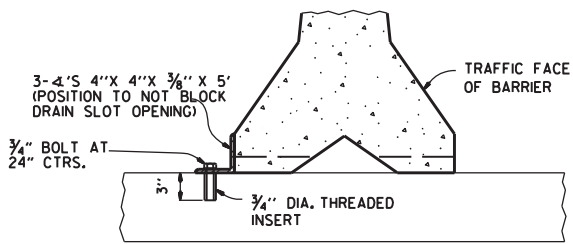
## CONNECTION LOOP



### BARRIER STABILIZATION DETAIL

ROADWAY SECTION

- (E) 4" - CONCRETE PAVEMENT  
8" - ASPHALT PAVEMENT  
12" - SHOULDER AREAS



NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

### BARRIER STABILIZATION DETAIL

BRIDGE DECKS

11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	
DATE	REVISION	FILMED

## GENERAL NOTES

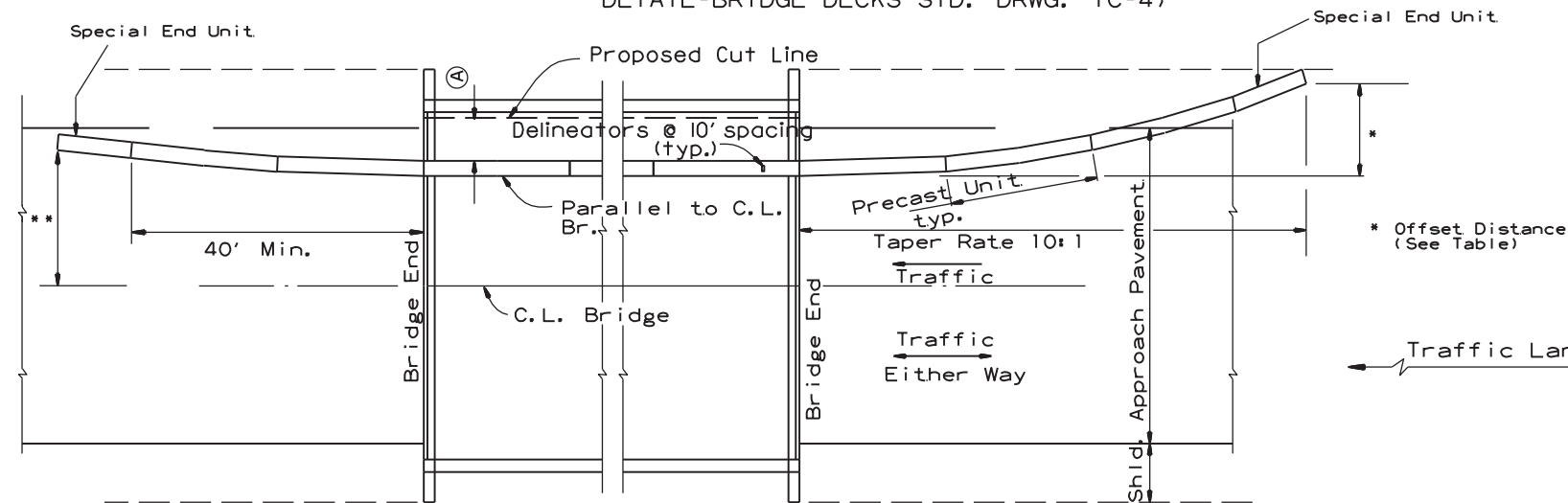
- ① THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.
- ② MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:  
CONCRETE: 2500 PSICOMPRESSIVE STRENGTH AT 28 DAYS.  
REINFORCING STEEL: AASHTO M 31OR M 53, GRADE 60  
STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE  
USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND  
STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED  
TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.  
DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING  
ON TOP OF PRECAST BARRIER.

IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS. DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

- ③ OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.
- ④ DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.
- ⑤ ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.
- ⑥ A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.



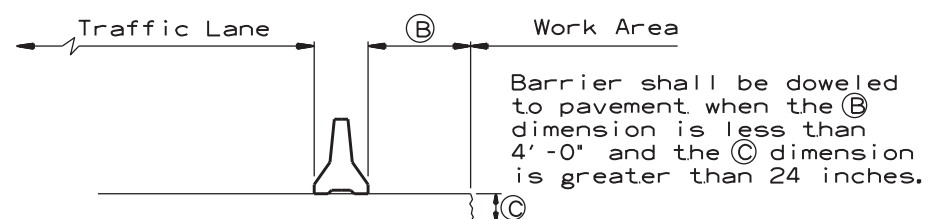
- (A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



**BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET**

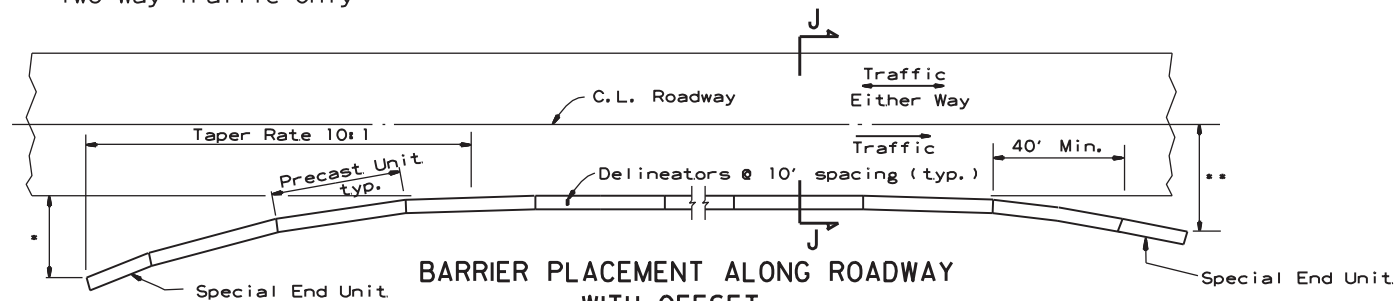
No Scale

\*\* Offset Distance for Two Way Traffic Only



**SECTION J-J**

No Scale



**BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET**

No Scale

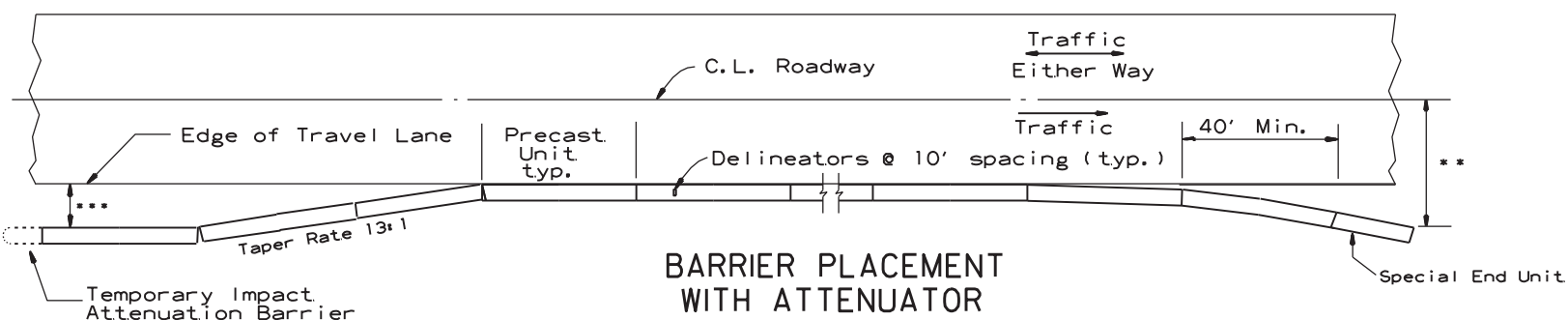
\* Offset Distance (See Table)

\*\* Offset Distance For Two Way Traffic Only

**Offset Distance Table**

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

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

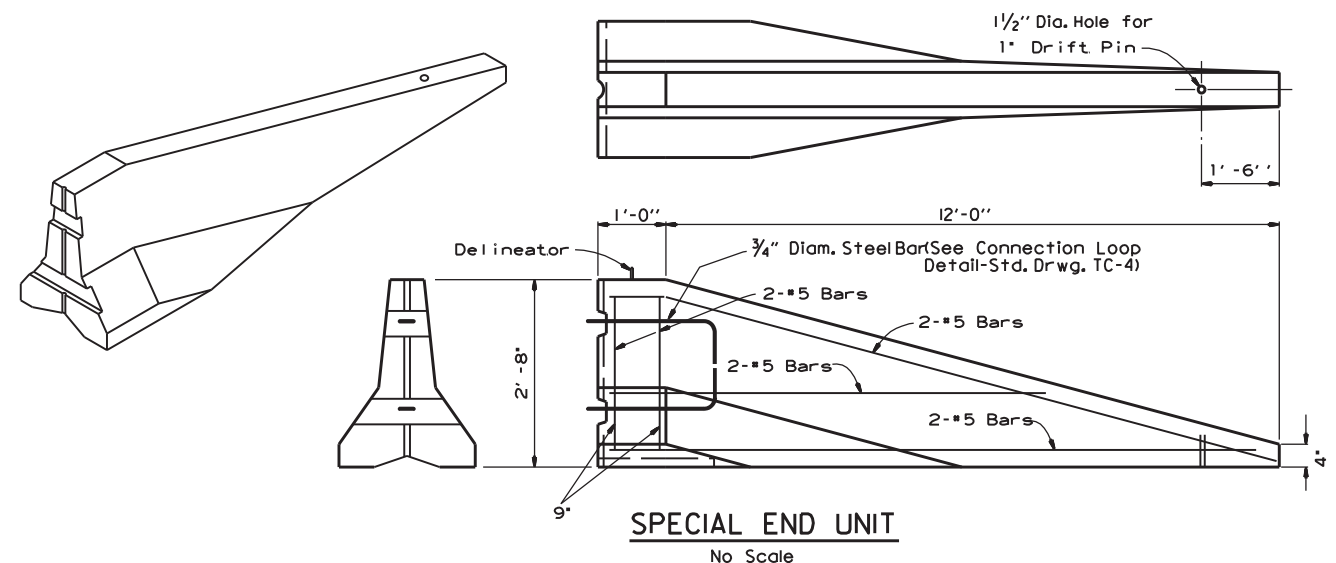


**BARRIER PLACEMENT WITH ATTENUATOR**

No Scale

\*\* Offset Distance For Two Way Traffic Only

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



**SPECIAL END UNIT**

No Scale

**General Notes**

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

ARKANSAS STATE HIGHWAY COMMISSION		
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER		
STANDARD DRAWING TC-5		
DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	



GENERAL NOTES

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

SECTION A-A  
ROADSIDE DITCHES (V-TYPE)

SECTION B-B  
ROADSIDE DITCHES (FLAT-BOTTOM TYPE)

**WATTLE DITCH CHECK (E-1)**

SECTION A-A

SECTION B-B

**SAND BAG DITCH CHECK (E-5)**

SECTION A-A

SECTION B-B

**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.

**SILTS FENCE (E-11)**

SECTION C-C

**DROP INLET SILTS FENCE (E-7)**

GENERAL NOTES

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.

**SILTS 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)**

PLAN VIEW  
N.T.S.

SECTION A-A  
N.T.S.

**FILTER SOCK ALONG SLOPE (E-3)**

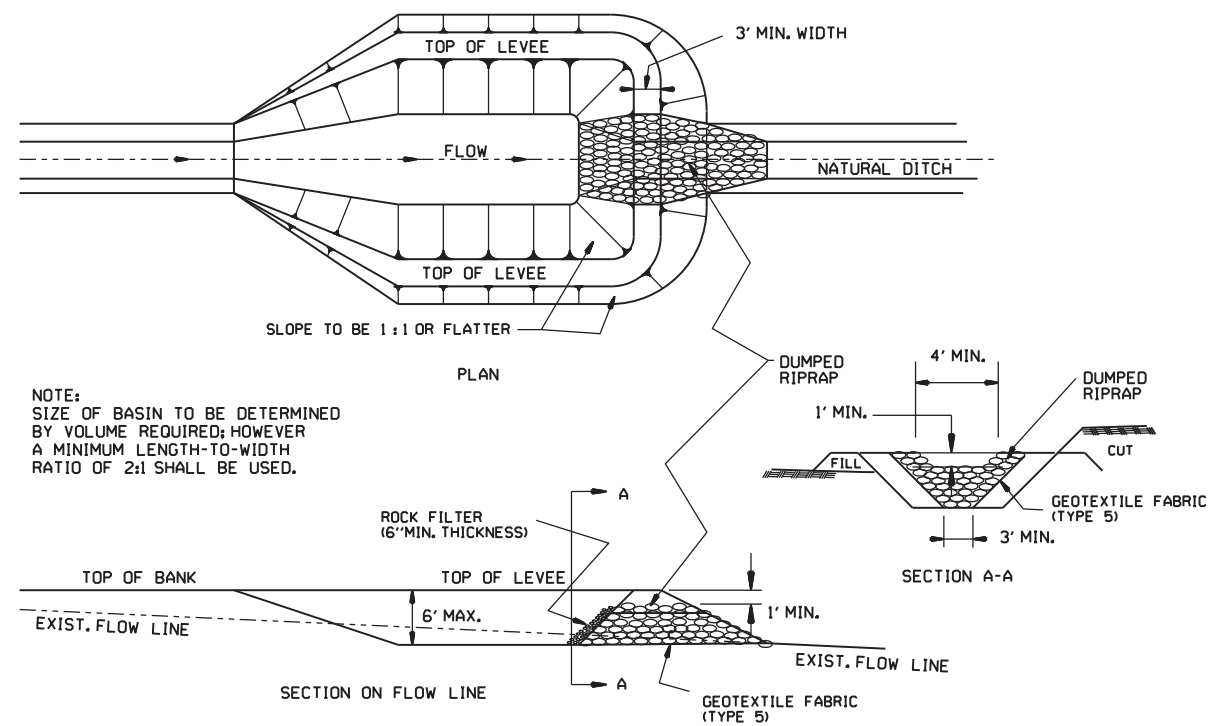
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

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

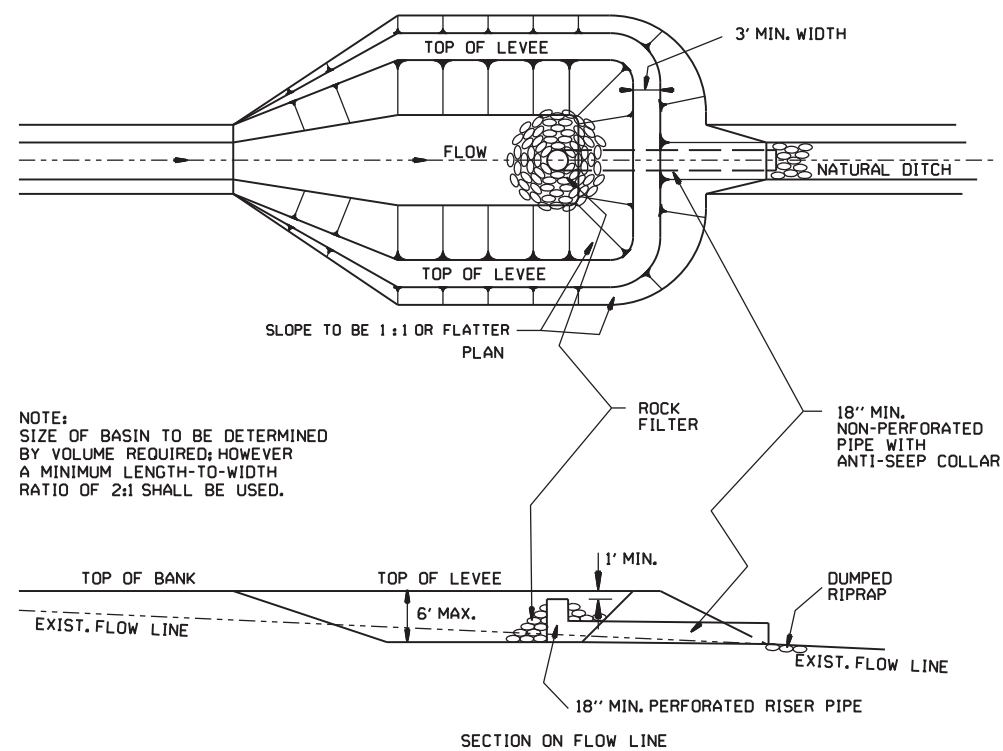
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

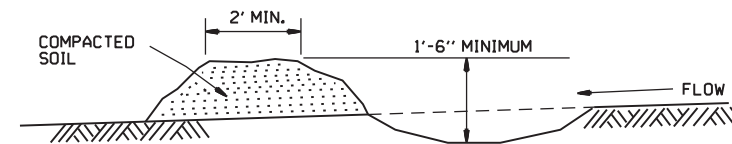
STANDARD DRAWING TEC-1



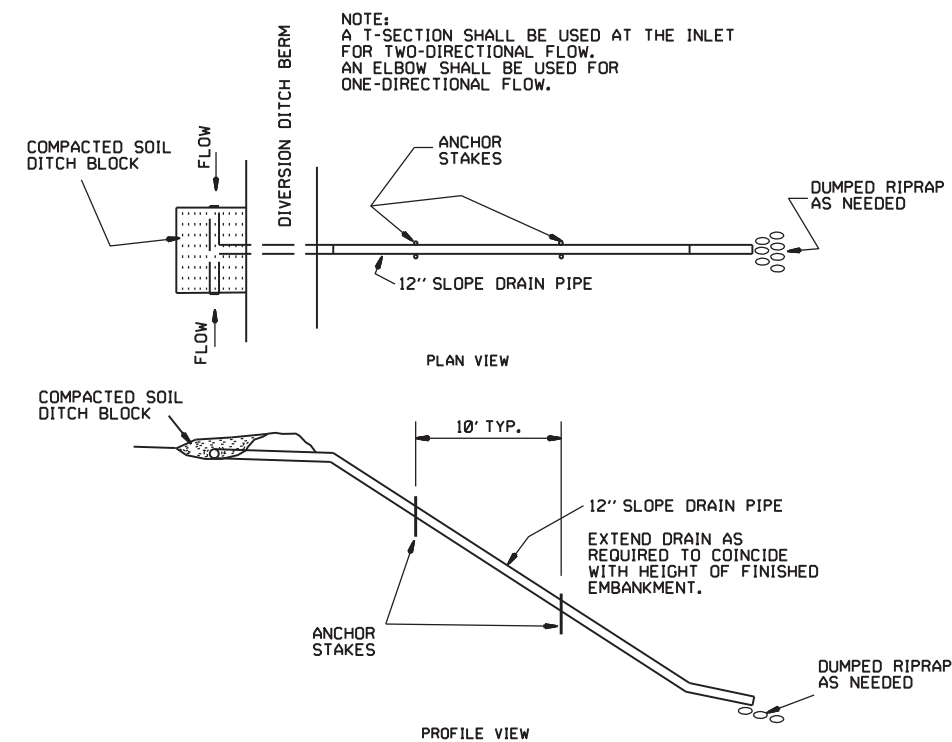
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



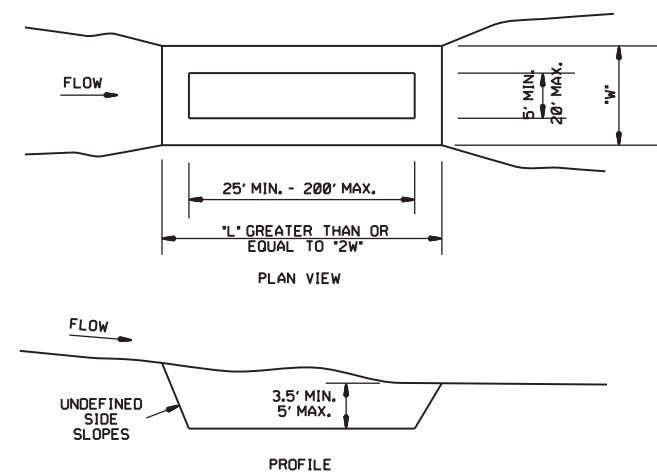
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



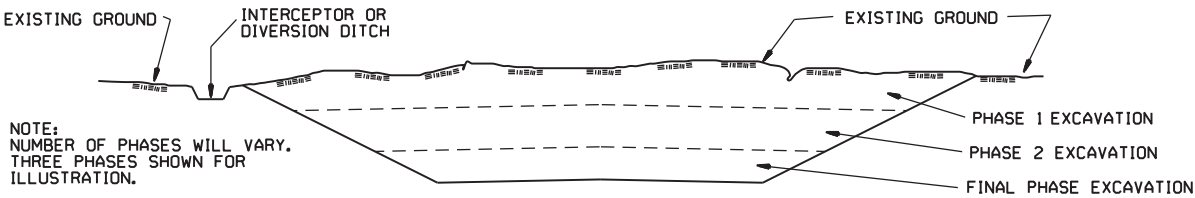
SEDIMENT BASIN (E-14)

ARKANSAS STATE HIGHWAY COMMISSION		
TEMPORARY EROSION CONTROL DEVICES		
STANDARD DRAWING TEC-2		
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	
DATE	REVISION	FILMED

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

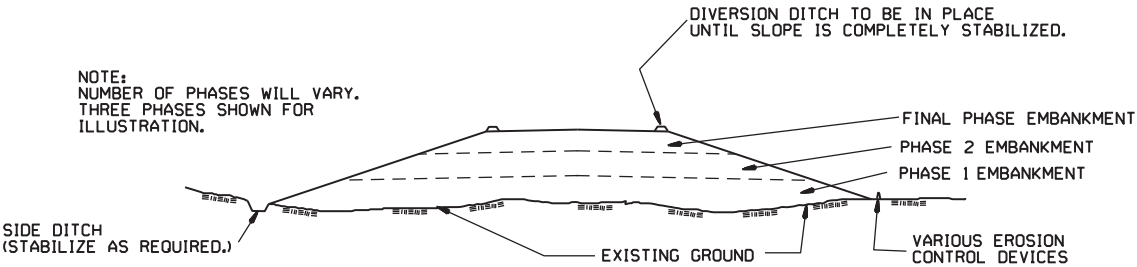


GENERAL NOTE

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

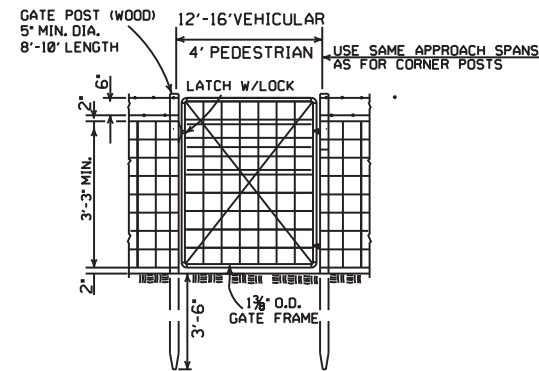


GENERAL NOTE

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.

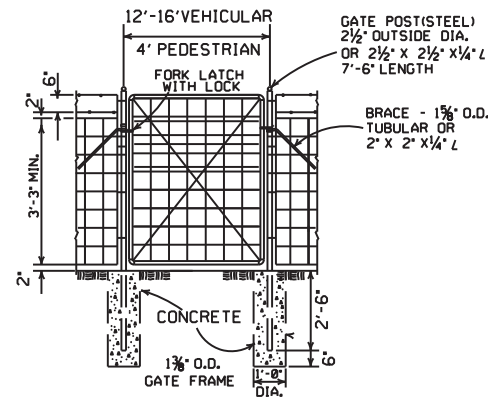
			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
			STANDARD DRAWING TEC-3
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	



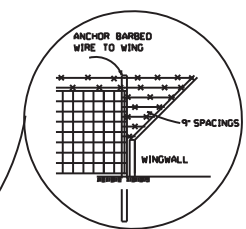
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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.



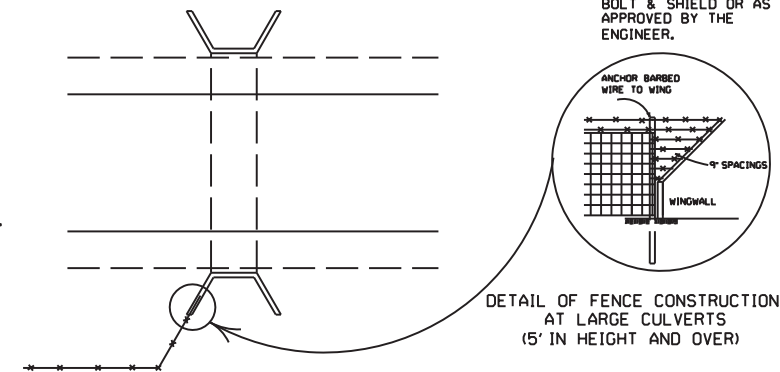
NOTE: USE  $\frac{3}{8}$ " X  $1\frac{1}{2}$ " LAG  
BOLT & SHIELD OR AS  
APPROVED BY THE  
ENGINEER.



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 WIRE  
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.



PROPERTY LINE FENCE

PRIVATE PROPERTY

\* CORNER POST

2'-0"

LINE POSTS

R/W LINE

ARDOT R/W

2' MIN. (TYPICAL)

R/W LINE

\* CORNER POST

SHALL NOT BE CONSTRUCTED 2' MONUMENT OR AS ER.

△ - R/W MONUMENTS  
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION

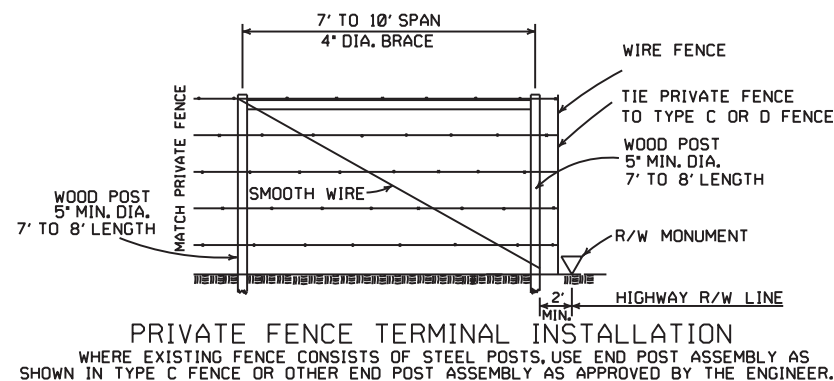


Diagram illustrating a typical vehicular gate (alternate type) with the following specifications:

- Gate width: 12'-0" MIN. VEHICULAR OPENING
- Gate height: 4' MIN. HEIGHT
- Gate structure: Reinforced concrete frame with diagonal bracing.
- Approach spans: USE SAME APPROACH SPANS AS FOR CORNER POSTS (on both sides).
- Foundation: 3'-6" deep foundation for the gate 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.

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.

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	549-10-30-87
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	FILED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE  
TYPE C AND D

STANDARD DRAWING WF-4