

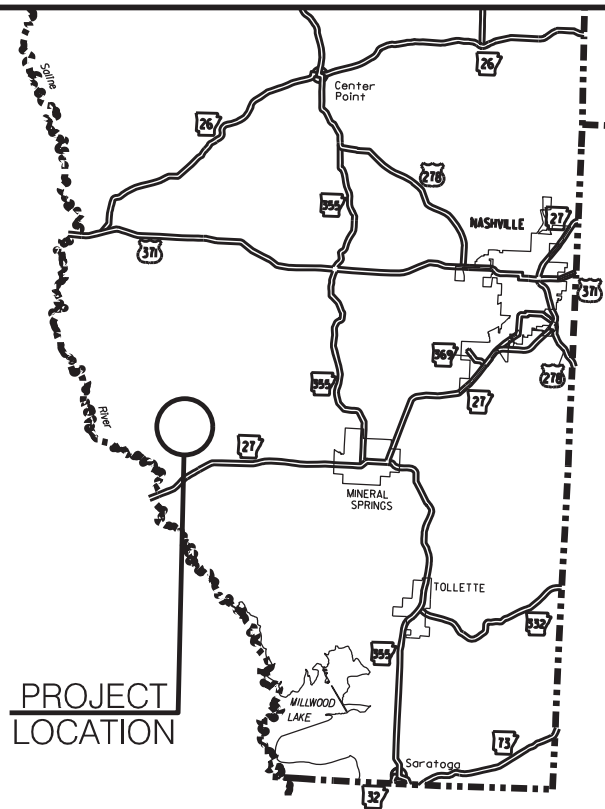
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						BR3107	1	30

4 TITLE SHEET

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

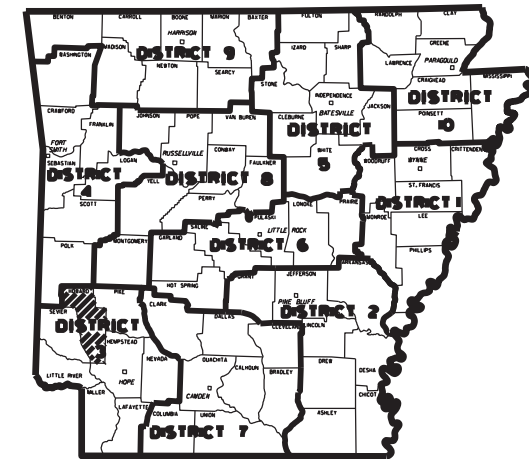
BLUE BAYOU STR. & APPRS. (S)
CO. RD. 1 (CORNBIDGE RD.)
HOWARD COUNTY
JOB BR3107
FED. AID PROJECT - STPB-0031(38)

NOT TO SCALE



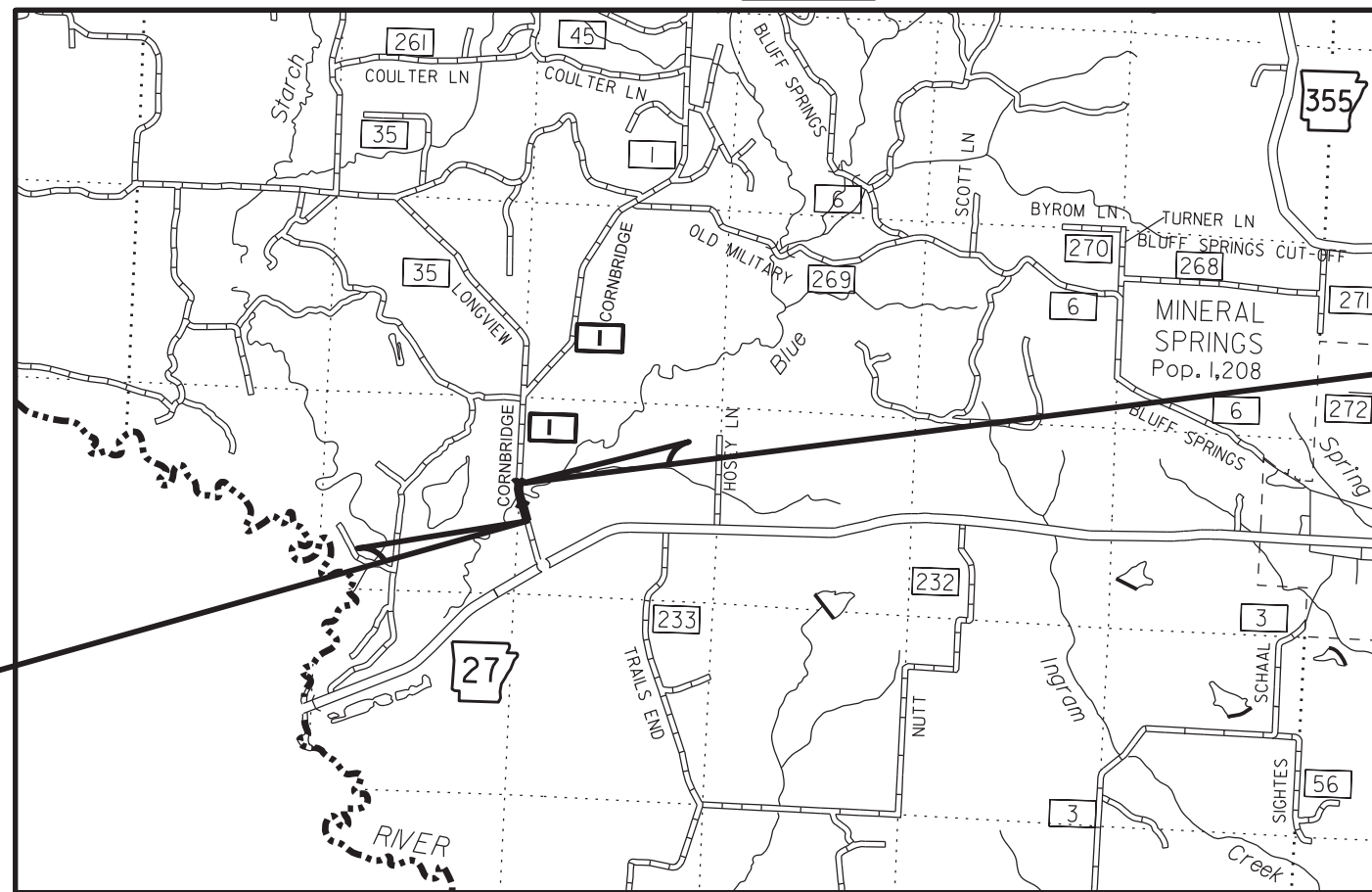
PROJECT LOCATION

VICINITY MAP



ARKANSAS HIGHWAY DISTRICT 3

- 1 STRUCTURES OVER 20'-0" SPAN
STA. 102+75 CONSTRUCT
QUINTUPLE 12' X 12' X 54'
R.C. BOX CULVERT
SPAN = 64' - 6"
D.A. = 27.2 SQ. MI.
Q25 = 5330 CFS



STATION 100+00.00
BEGIN JOB BR3107

DESIGN YEAR.....2040
2020 ADT.....2000
2040 ADT.....2500
2040 DHV.....375
DIRECTIONAL DISTRIBUTION.....0.60
TRUCKS.....3%
DESIGN SPEED.....45 MPH

STATION 104+30.00
END JOB BR3107

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N 33° 52' 28.7"	N 33° 52' 31.1"	N 33° 52' 33.3"
LONG.	W 94° 00' 8.2"	W 94° 00' 9.2"	W 94° 00' 10.0"

LENGTH OF PROJECT CALCULATED ALONG CL CONSTRUCTION			
GROSS LENGTH OF PROJECT	430.00	FEET OR	0.081 MILES
NET " " ROADWAY	365.5	" "	0.069 "
NET " " BRIDGES	64.5	" "	0.012 "
NET " " PROJECT	430.00	" "	0.081 "

APPROVED



B. Banks Emanuel
Jun 23 2020 2:09 PM

DEPUTY DIRECTOR
AND CHIEF ENGINEER

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.	BR3107		2	30

4 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
4	GENERAL NOTES
5	TYPICAL SECTION OF IMPROVEMENT
6-12	SPECIAL DETAILS
13	TEMPORARY EROSIONS CONTROL DETAILS
14	RIGHT OF WAY
15-18	QUANTITIES
19	SUMMARY OF QUANTITIES AND REVISIONS
20-21	SURVEY CONTROL DETAILS
22	PLAN AND PROFILE SHEET
23-30	CROSS SECTION SHEETS



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ROADWAY DESIGN STANDARDS

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
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	07-25-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	02-27-20
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

DATE REVISED	DATE PLUMED	DATE REVISED	DATE PLUMED	FED. PROJ. NO.	STATE	FED. PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-09-2020				6	ARK.			
07-30-2020								
				JOB NO.	BR3107		3	30

4 GOVERNING SPECIFICATIONS

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOKS OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT- WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
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
404-3	DESIGN OF ASPHALT MIXTURES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
604-1	RETROFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
620-1	MULCH COVER
723-1	GENERAL REQUIREMENTS FOR SIGNS
729-1	CHANNEL POST SIGN SUPPORT
800-1	STRUCTURES
804-2	REINFORCING STEEL FOR STRUCTURES
JOB BR3107	BIDDING REQUIREMENTS AND CONDITIONS
JOB BR3107	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BR3107	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BR3107	CARGO PREFERENCE ACT REQUIREMENTS
JOB BR3107	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB BR3107	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB BR3107	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB BR3107	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BR3107	MAINTENANCE OF TRAFFIC
JOB BR3107	MANDATORY ELECTRONIC CONTRACT
JOB BR3107	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB BR3107	NESTING SITES OF MIGRATORY BIRDS
JOB BR3107	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB BR3107	RECYCLED ASPHALT SHINGLES
JOB BR3107	SHORING FOR CULVERTS
JOB BR3107	STORMWATER POLLUTION PREVENTION PLAN
JOB BR3107	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BR3107	UTILITY ADJUSTMENTS
JOB BR3107	WARM MIX ASPHALT



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DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-30-2020				6	ARR.			
						JOB NO.	BR3107	4 30

4

GENERAL NOTES

GENERAL NOTES



Bryan Freeling

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1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN IN PLANS
2. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATION.
5. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS.
6. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION OF NEW BOX CULVERT AND IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION.
9. EXISTING BRIDGE NO. 21810 SHALL BE REMOVED IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, PRIOR TO CONSTRUCTION OF THE RC BOX CULVERT. THE 51' STEEL SPAN AND CORRUGATED DECK SHALL BE SALVAGED AND SHALL REMAIN THE PROPERTY OF THE COUNTY. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY TO DETERMINE THE LOCATION OF THE ADJACENT PROPERTY OWNER WHERE THE SPAN WILL BE STORED. ALL REMAINING MATERIAL FROM THE EXISTING BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
10. THE CONTRACTOR SHALL MAINTAIN MAILBOXES WITHIN THE PROJECT LIMITS SUCH THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. THE CONTRACTOR SHALL REMOVE AND RESTORE TO THE PROPER HEIGHT THE EXISTING MAILBOX POSTS AND MAILBOXES AS DIRECTED BY THE ENGINEER. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT NO COST TO THE DEPARTMENT. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICES BID FOR OTHER ITEMS OF THE CONTRACT.
11. EDGE LINES SHALL NOT BE PLACED UNTIL AFTER ALL MATERIAL HAS BEEN PLACED OR PULLED UP AGAINST THE EDGE OF PAVEMENT.
12. THE EXISTING ASPHALT PAVMENT 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 PAVMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
13. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THE 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.
14. THIS PROJECT IS PROTECTED UNDER A SECTION 404 NATIONWIDE 14 PERMIT FOR LINEAR TRANSPORTATION PROJECTS. THE GENERAL NOTES SHOULD ALERT THE CONTRACTOR THAT A SECTION 404 NATIONWIDE PERMIT IS INVOLVED. ALL COMPLIANCE MEASURES REQUIRED FOR A SECTION 404 NATIONWIDE 14 PERMIT ARE INCLUDED IN THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

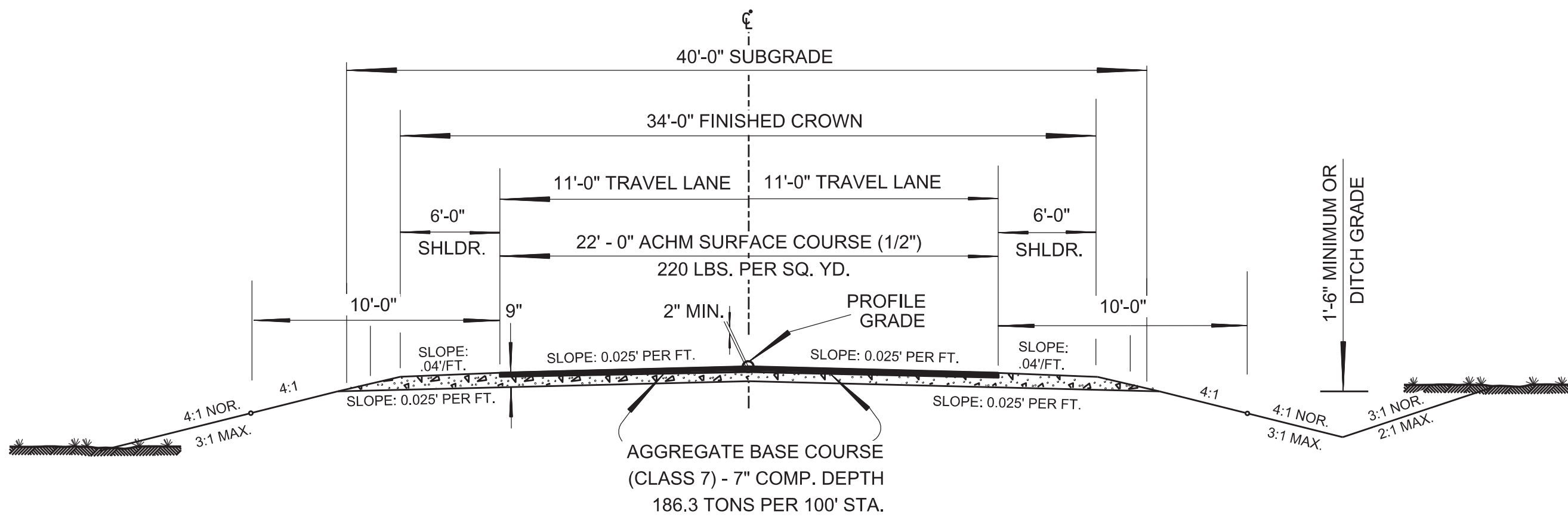
GENERAL NOTES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. PROJ. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107	5	30	

4 TYPICAL SECTION OF IMPROVEMENT



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TYPICAL SECTION OF IMPROVEMENT - NORMAL CROWN
MAIN LANE STATIONS 100+00.00 - 104+30.00

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

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

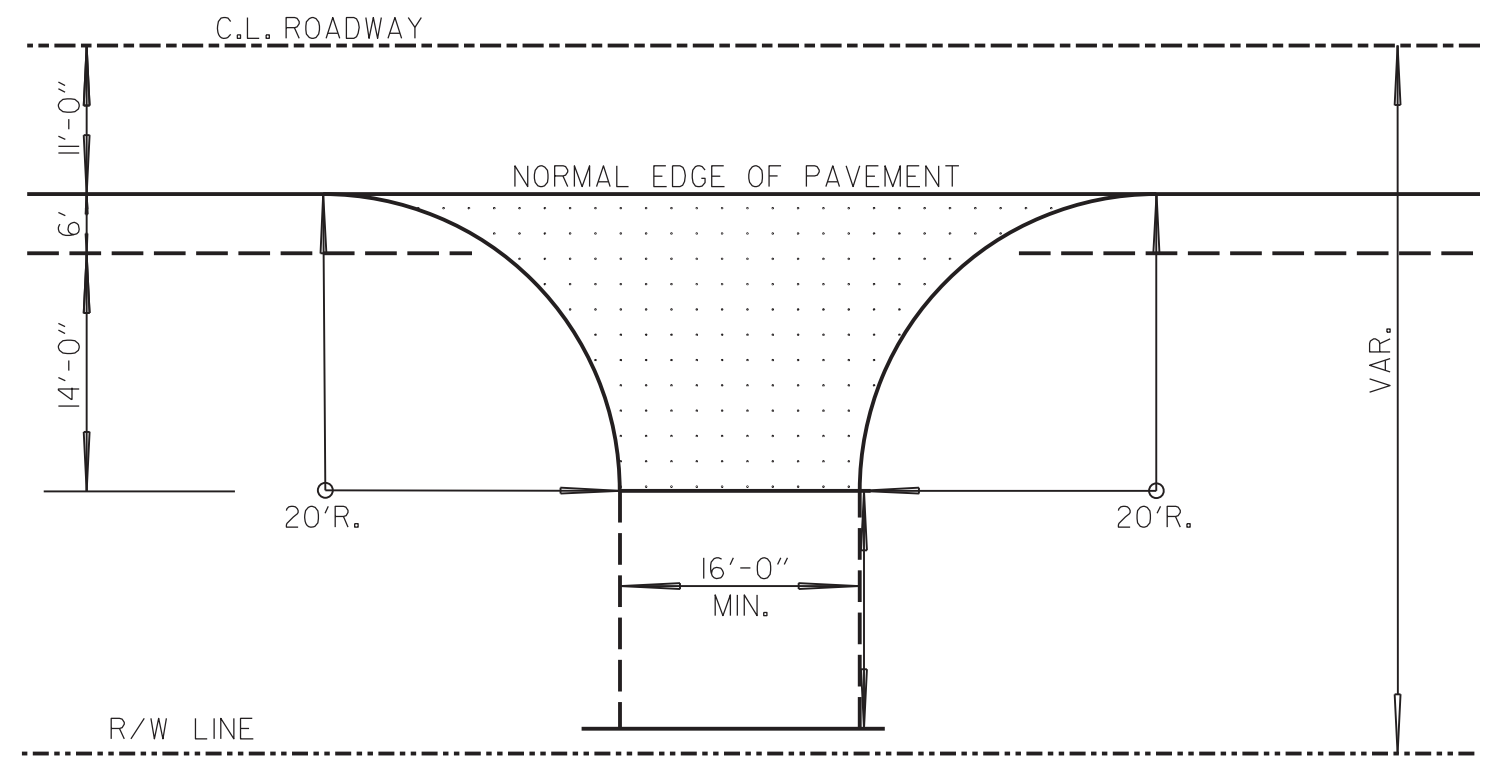
DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2/05/2016				6	ARK.			
				JOB NO.	BR2605	6	30	

4 SPECIAL DETAILS



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DETAIL OF SURFACING
FOR FIELD ENTRANCE

ADD'L. SURFACING AREA = 63.5 SQ. YDS.

NOTE: THE ABOVE DETAILS MAY BE MODIFIED TO MEET
 LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

MID-SECTION

R.C. BOX SECTION		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVERALL WIDTH		OVERALL HEIGHT		SECTION LENGTH (FT.)		TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINF. STEEL		BOTTOM SLAB DISTRIBUTION REINF. STEEL		SIDE WALL DISTRIBUTION REINF. STEEL		INTERIOR WALL DISTRIBUTION REINF. STEEL						
D	S	H	T	B	C	W	OW	OH	SL	LENGTH = OW - 4" + BENDS				LENGTH = OW - 4" + BENDS				LENGTH = OH - 4"		LENGTH = OH - 4"		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL												
SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D					
A	2	12	12	14	14	11	8	64'-6"	14'-4"	54	4	64'-2"	8	65'-0"	8	64'-2"	15	43	4	64'-2"	4	65'-11"	4	64'-2"	10	64	8	8.5	152	14'-0"	4	12	432	14'-0"	4	8	189	4	8	189	4	10	30	4	12	96

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
409.00	55003

INLET SLOPE SECTION(S)

R.C. BOX SECTION		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		TOP SLAB THK.		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVERALL WIDTH		OVERALL HEIGHT		SECTION LENGTH (FT.)		TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINF. STEEL		BOTTOM SLAB DISTRIBUTION REINF. STEEL		SIDE WALL DISTRIBUTION REINF. STEEL		INTERIOR WALL DISTRIBUTION REINF. STEEL		
D	S	H	T	B	C	W	OW	OH	SL	LENGTH = OW - 4" + BENDS				LENGTH = OW - 4" + BENDS				LENGTH = OH - 4"		LENGTH = OH - 4"		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL		LENGTH = SL						
SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D	SIZE	L	SIZE	L	SPACING	NO. REQ'D	
HDWL DEPTH		ADDITIONAL REINF. FOR HDWL				"h" HDWL BARS				SIZE		Y		LENGTH		NO. REQ'D																										
3"		86				4				1'-0"		2'-0"		66																												

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
0.60	174

INLET SKEWED END SECTION

SKEW (DEGREE)		SLOPE		DESIGN FILL DEPTH (FT.)		CLEAR SPAN (FT.)		CLEAR HEIGHT (FT.)		SECTION LENGTH		TOP SLAB THK.		HDWL DEPTH		BOTTOM SLAB THK.		SIDE WALL THK.		INTERIOR WALL THK.		OVERALL WIDTH		OVERALL HEIGHT		TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINFORCING STEEL		BOTTOM SLAB DISTRIBUTION REINFORCING STEEL		SIDE WALL DISTRIBUTION REINFORCING STEEL		INTERIOR WALL DISTRIBUTION REINFORCING STEEL																			
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH	SIZE	SPACING	LENGTH																			
"k1" HDWL BARS												"k2" HDWL BARS												"h" HDWL BARS																																							
SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		NO. REQ'D		SIZE		LENGTH		Y		NO. REQ'D																																													

CLASS "S" CONCRETE (includes HDWL)	REINFORCING STEEL (GR. 60) (includes HDWL)
CU. YDS.	LBS.

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

INLET WINGWALL TABLE

OVER ALL WIDTH		CLEAR HEIGHT		FOOTING THK.		WING WALL THK.		BOX SKEW (DEG.)		SLOPE		HDWL LENGTH		HEEL		WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END		WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)		REINFORCING STEEL (Includes apron and laps required)	
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.											
64'-6"	12'-0"	1'-1"	1'-0"	0	3:1	62'-8"	2'-0"	12'-10"	4'-0"	30	30	3'-6"	6'-6"	6'-6"	3'-5 1/2"	3'-5 1/2"	30'-6"	30'-6"	33'-10 3/8"	33'-10 3/8"	36.58	2822											

MID-SECTION BAR LAP TABLE

# of Long. Laps Req'd.	SL = Section Length
0	< 40.0 ft
1	>40.0 ft - 78.0 ft
2	>78.0 ft - 116.0 ft
3	>116.0 ft - 154.0 ft
4	>154.0 ft - 192.0 ft
5	>192.0 ft - 230.0 ft
6	>230.0 ft - 268.0 ft
7	>268.0 ft - 306.0 ft
8	>306.0 ft - 344.0 ft

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

Bar Pin Dia. Table	
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	6"

TABULAR DATA BY: WAC DATE: 11/6/2019
CHECKED BY: NAC DATE: 11/19/19



This drawing to be used in conjunction with SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", "GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE", SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", "DETAILS OF MULTI-BARREL R.C. BOX CULVERT", SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", "DETAILS OF WINGWALLS", and STANDARD DRAWING RCB-2.
For additional information and outlet sections, see Sheet 2 of 2.

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 102+75
SPECIAL DETAILS



Summary table with columns: DATE REVISED, DATE FILMED, DATE REVISED, DATE FILMED, FED. ROAD DIST. NO., STATE, FED. AD PROJ. NO., SHEET NO., TOTAL SHEETS. Values include 6 ARK., BR3107, 8, 30.



TABULAR DATA BY: WAC DATE: 11/6/2019
CHECKED BY: MAC DATE: 11/11/19

OUTLET WINGWALL TABLE

Main table for Outlet Wingwall Table with columns for Overall Width, Clear Height, Footing Thk., Wing Wall Thk., Box Skew, Slope, HDWL Length, Heel, Wall Height, Wingwall Angle, Footing Width at Wall End, Width of Wing Footings, Footing Dimension, Length of Wingwalls, Length of Footing Heel, Class 'S' Concrete, Reinforcing Steel. Includes sub-tables for Wing A and Wing B with bar sizes, spacings, and lengths.

Min. Bar Lap Length table with columns: Bar Size, Min. Bar Lap Length. Values: #4 1'-9", #5 2'-2", #6 2'-7", #7 3'-6", #8 4'-7".

Bar Pin Dia. Table with columns: Bar Pin Dia., Table. Values: #4 3", #5 3 3/4", #6 4 1/2", #7 5 1/4", #8 6".

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

OUTLET SKEWED END SECTION

Table for Outlet Skewed End Section with columns for Skew, Slope, Design Fill Depth, Clear Span, Clear Height, Section Length, Top Slab Thk., HDWL Depth, Bottom Slab Thk., Side Wall Thk., Interior Wall Thk., Overall Width, Overall Height, Top Slab Reinforcing Steel, Bottom Slab Reinforcing Steel, Side Wall Reinforcing Steel, Interior Wall Reinforcing Steel, Top Slab Distribution Reinforcing Steel, Bottom Slab Distribution Reinforcing Steel, Side Wall Distribution Reinforcing Steel, Interior Wall Distribution Reinforcing Steel, Class 'S' Concrete, Reinforcing Steel.

OUTLET SLOPE SECTION(S)

Table for Outlet Slope Section(s) with columns for R.C. Box Section, Design Fill Depth, Clear Span, Clear Height, Top Slab Thk., Bottom Slab Thk., Side Wall Thk., Interior Wall Thk., Overall Width, Overall Height, Section Length, Top Slab Reinforcing Steel, Bottom Slab Reinforcing Steel, Side Wall Reinforcing Steel, Interior Wall Reinforcing Steel, Top Slab Distribution Reinforcing Steel, Bottom Slab Distribution Reinforcing Steel, Side Wall Distribution Reinforcing Steel, Interior Wall Distribution Reinforcing Steel, Class 'S' Concrete, Reinforcing Steel.

Summary table with columns: CLASS 'S' CONCRETE, REINFORCING STEEL (GR. 60), CU. YDS., LBS., TOTAL. Values: 0.60, 174.

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.

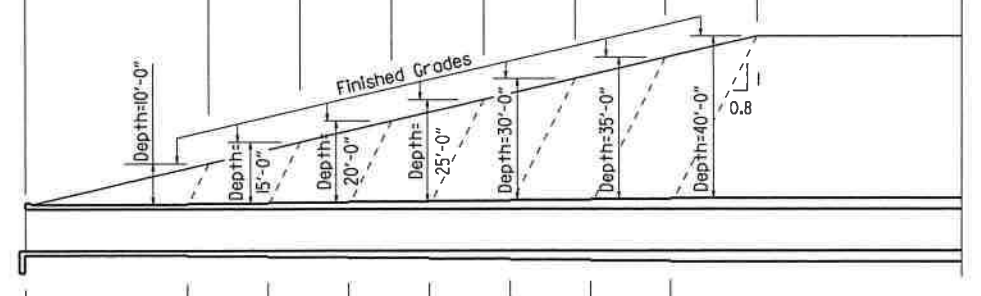


2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

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

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

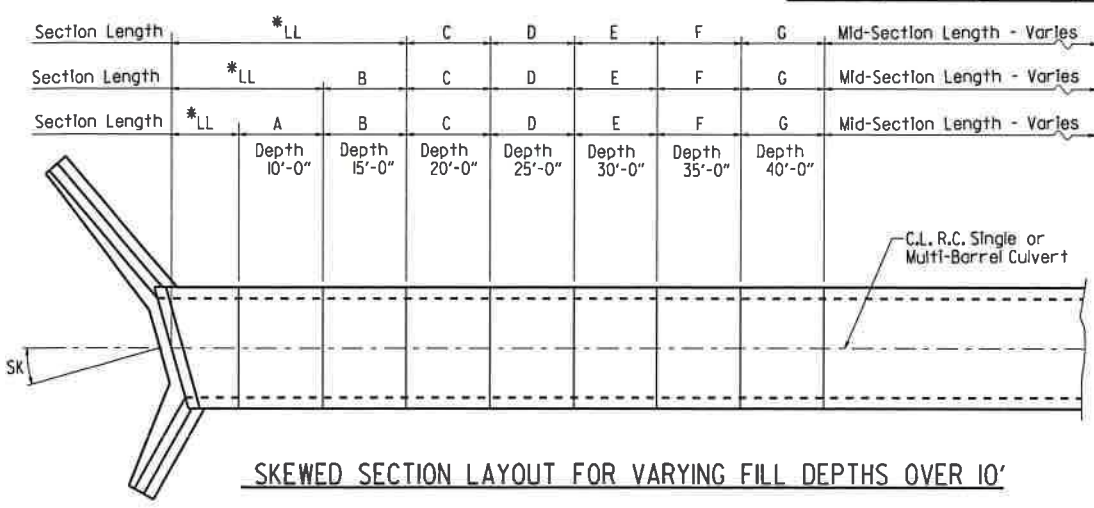
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		9	30
				JOB NO.	BR3107		SPECIAL DETAILS	



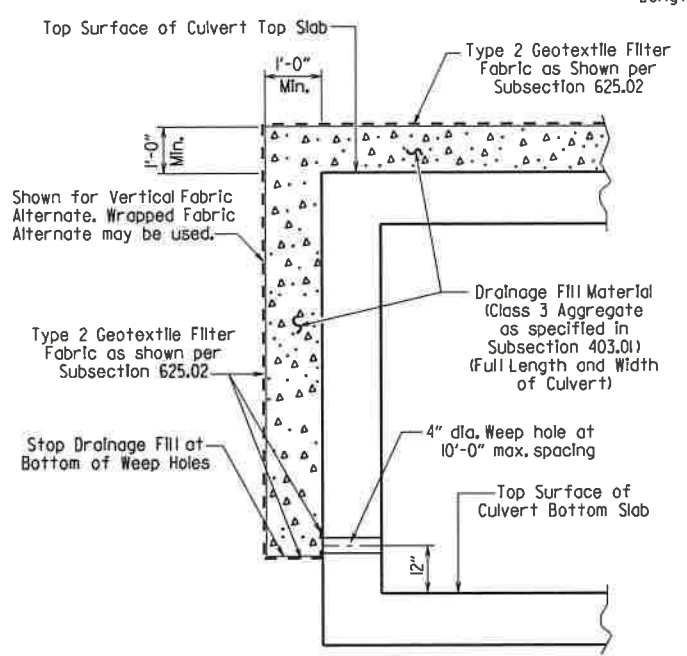
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"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

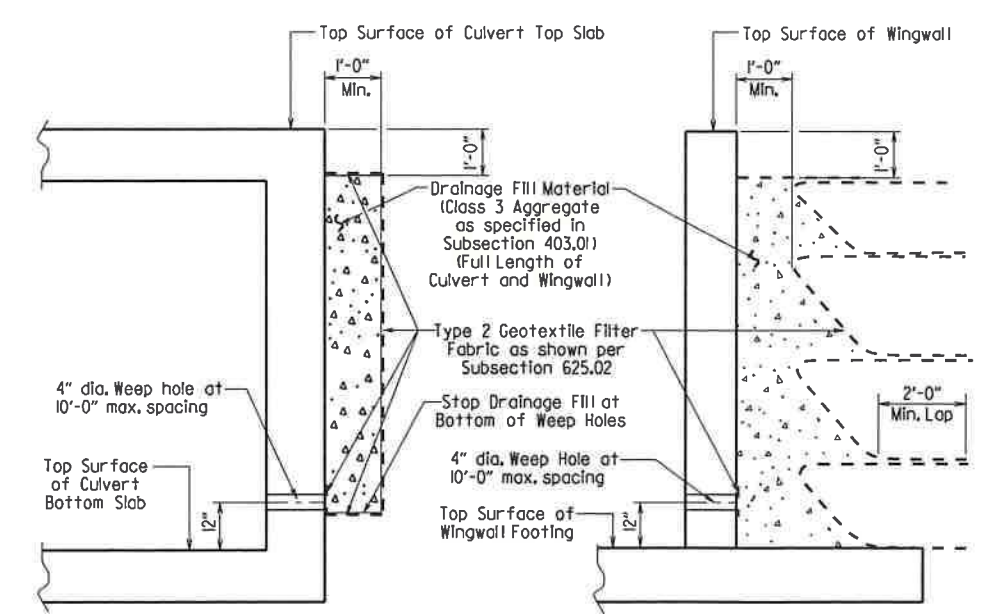


SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



VERTICAL FABRIC ALTERNATE

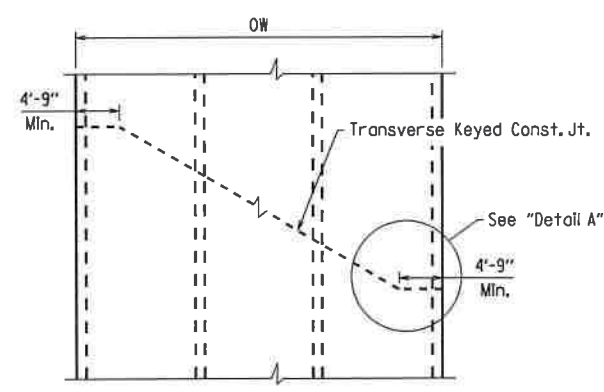
(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

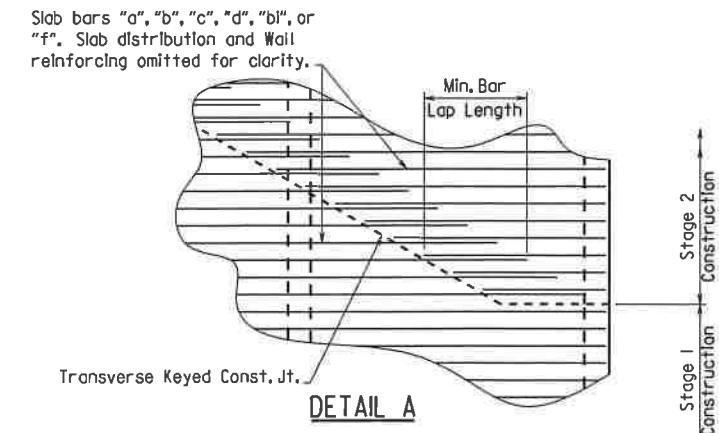
WINGWALL & CULVERT DRAINAGE DETAIL

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



SKewed TRANSVERSE JOINT DETAIL

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



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

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

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

LIVE LOADING: HL-93

All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 1/4" 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 fine 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



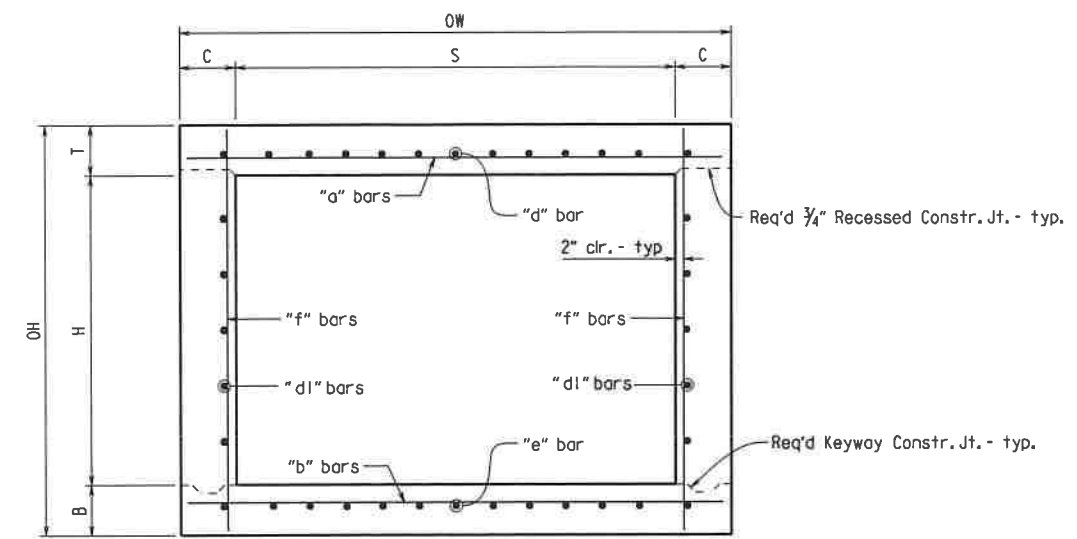
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. BR3107							10	30

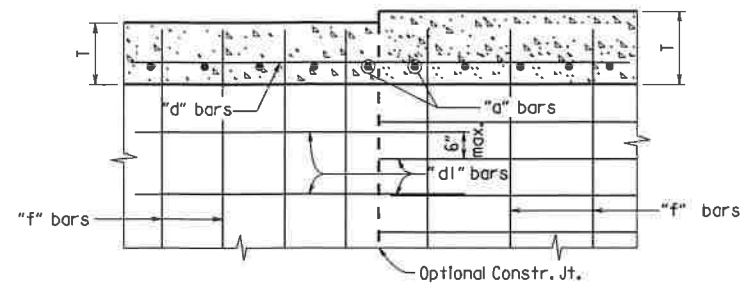
1 SPECIAL DETAILS



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

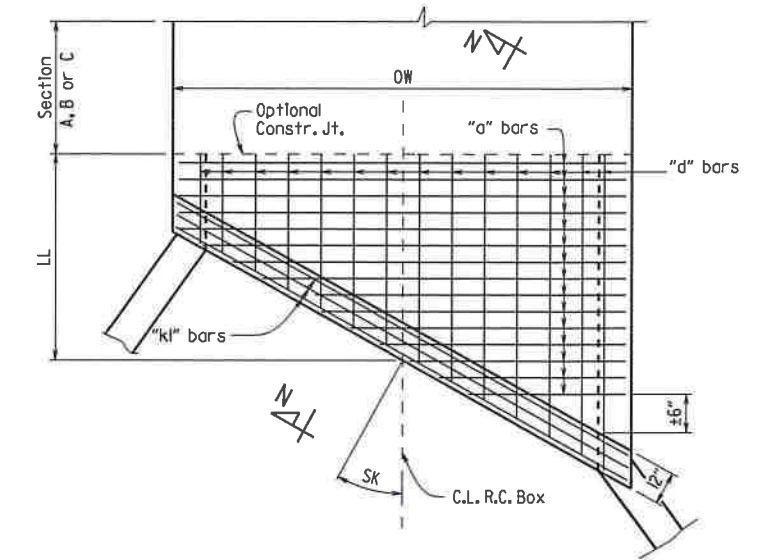


TYPICAL SECTION M-M

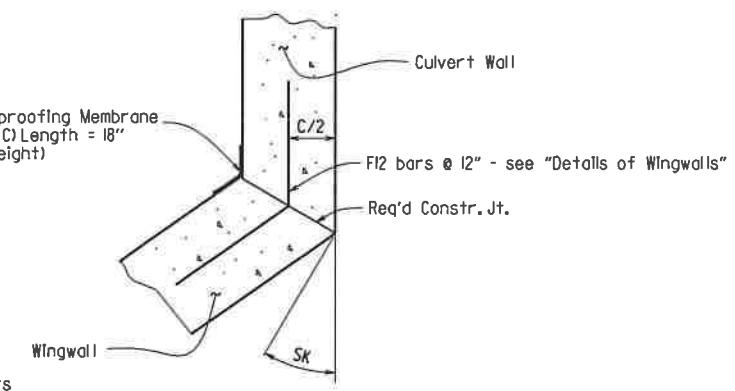


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

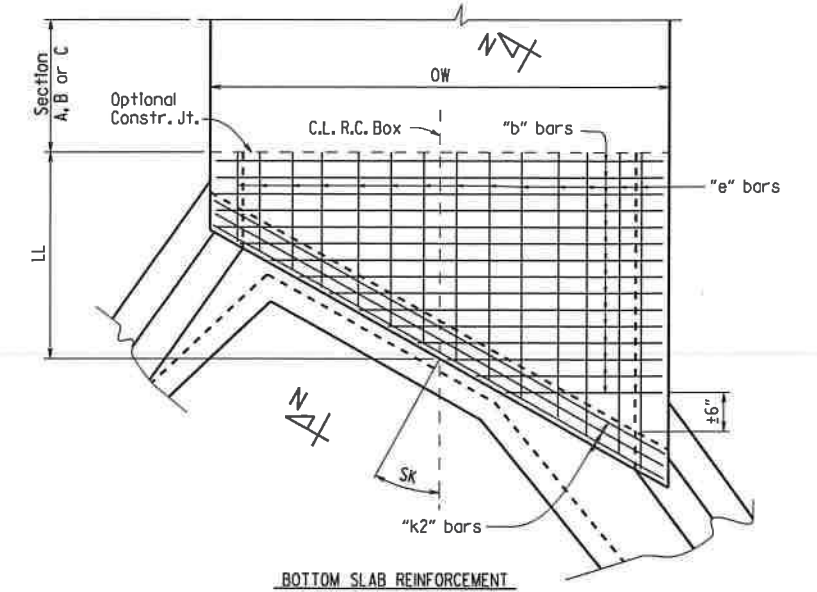
Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.



TOP SLAB REINFORCEMENT



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

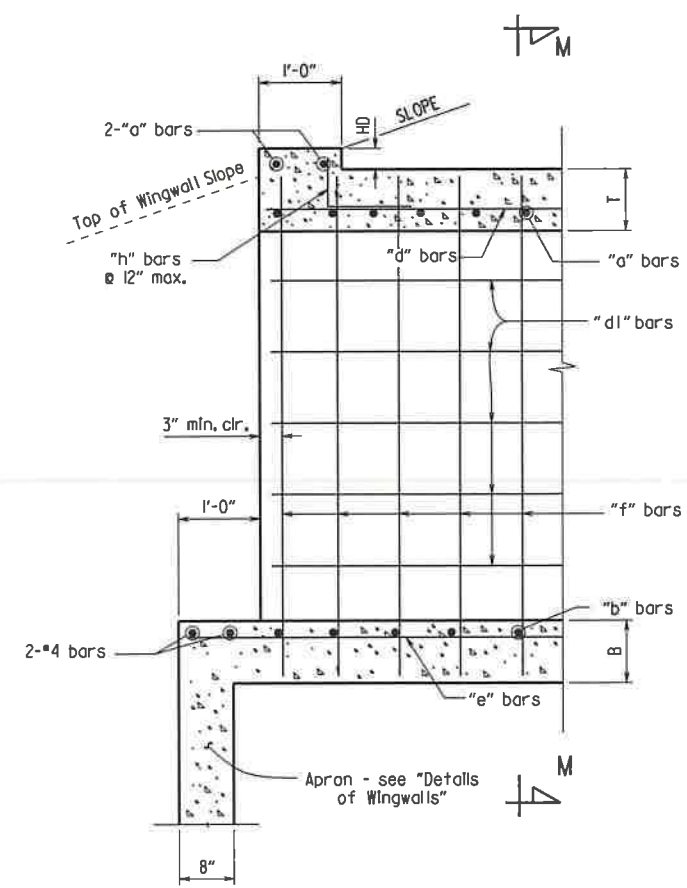
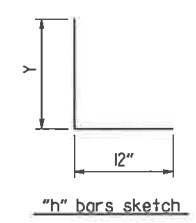


BOTTOM SLAB REINFORCEMENT

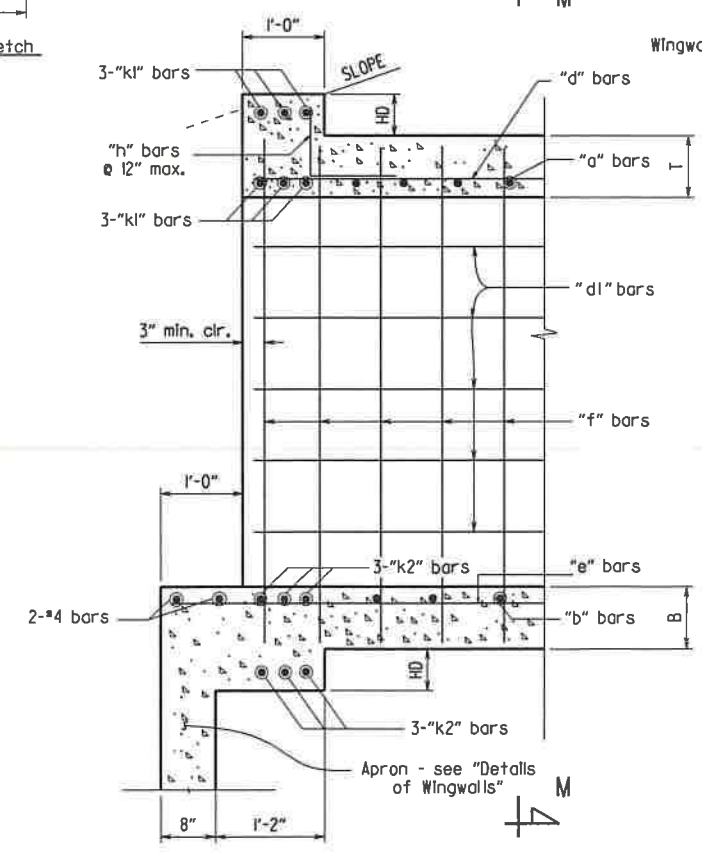
SKewed END SECTION DETAILS

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

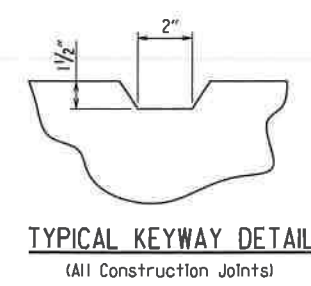
SPECIAL DETAILS



PART LONGITUDINAL SECTION
(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N
(Skewed Ends)



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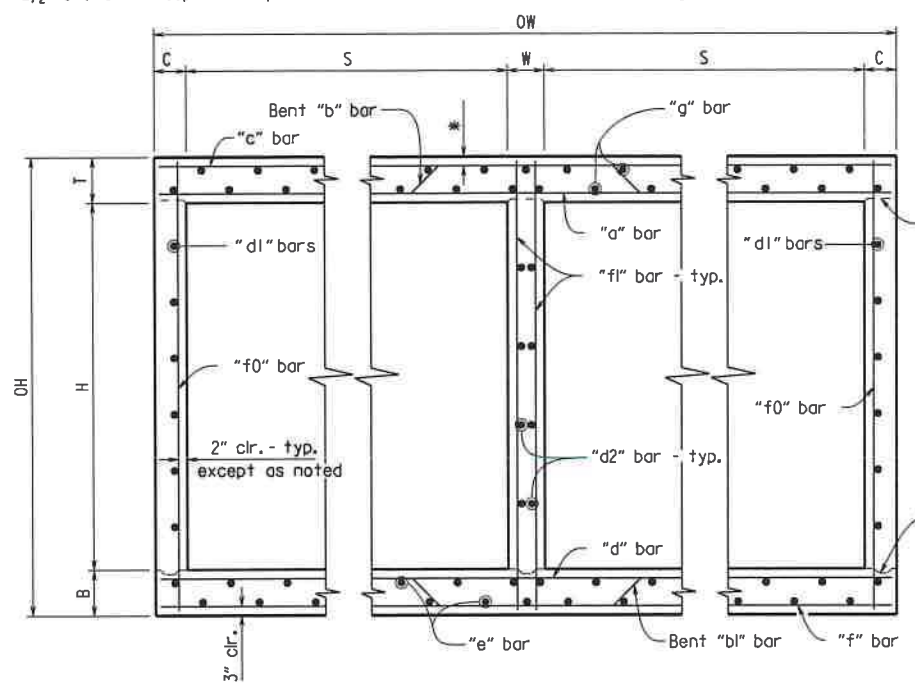
DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. BR3107							11	30

SPECIAL DETAILS



*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.

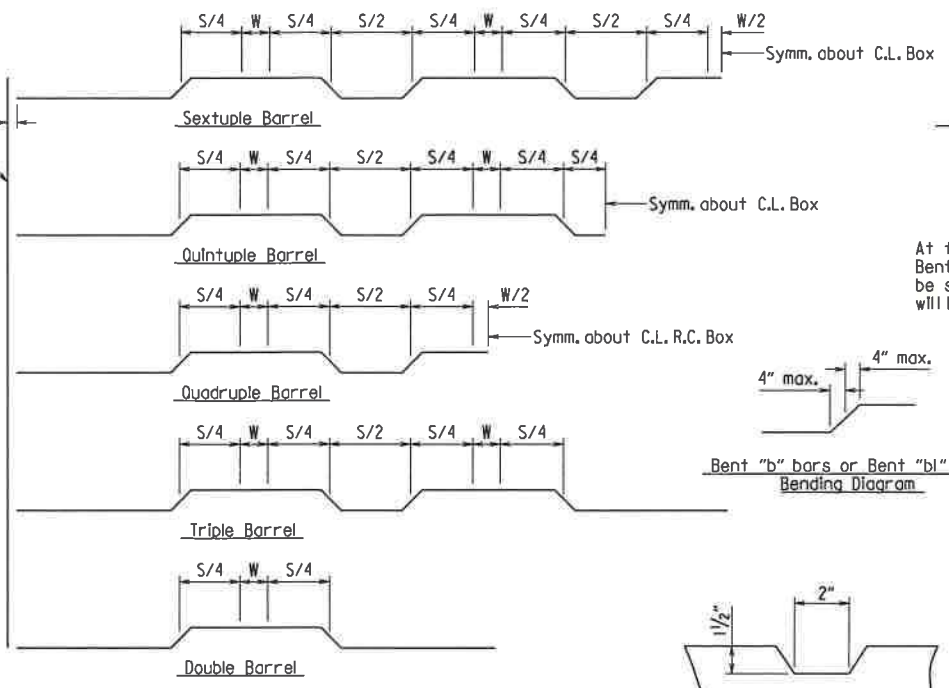
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



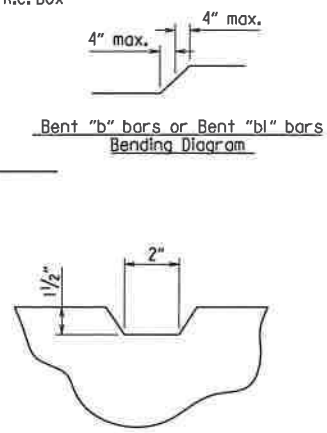
TYPICAL SECTION M-M

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

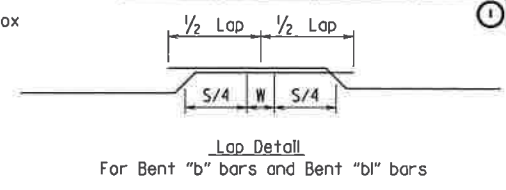
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



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

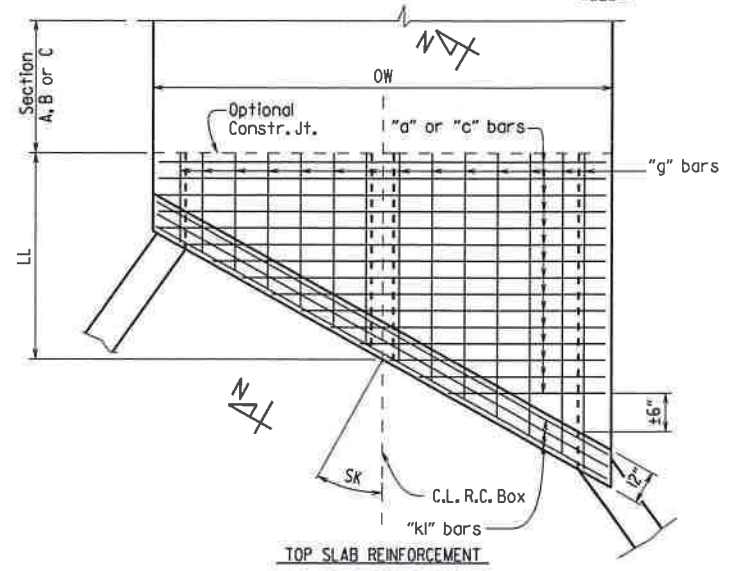


TYPICAL KEYWAY DETAIL
(All Construction Joints)

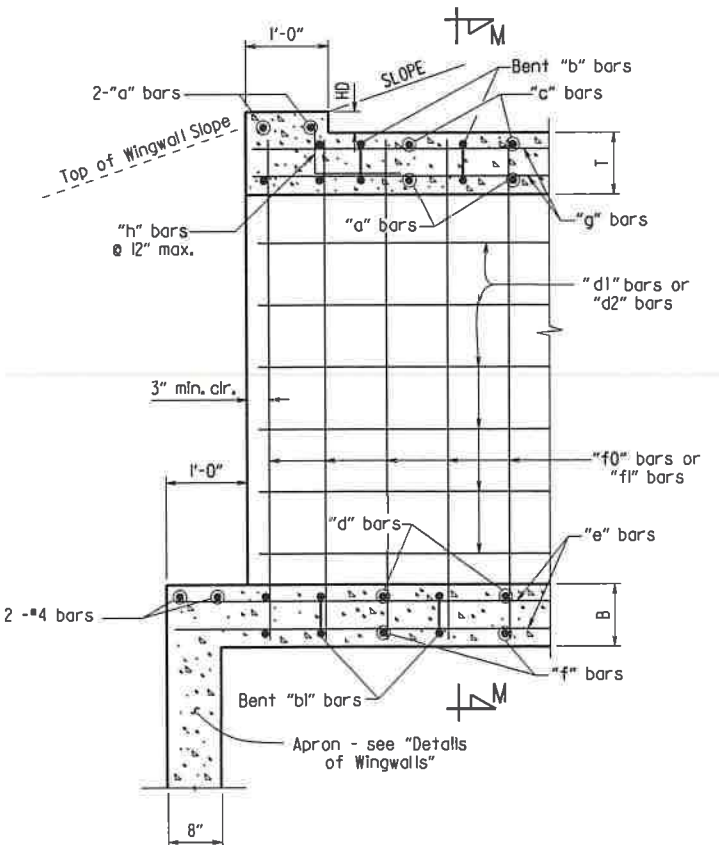


Lap Detail
For Bent "b" bars and Bent "bl" bars

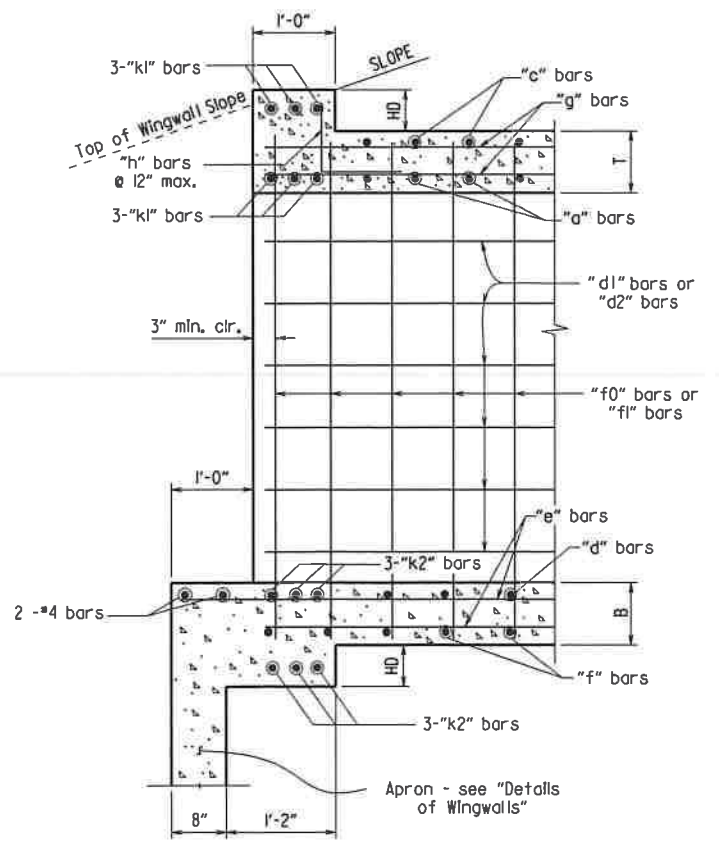
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



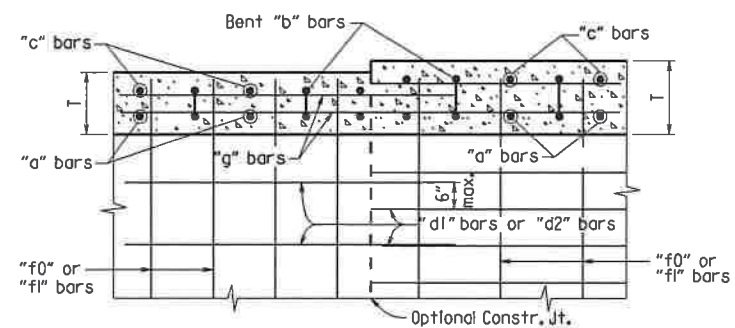
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

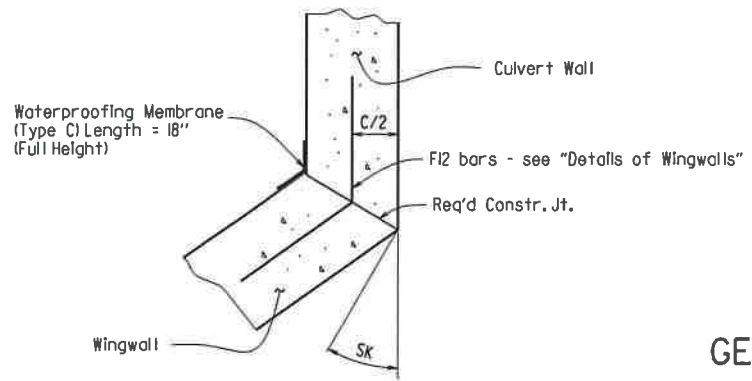


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

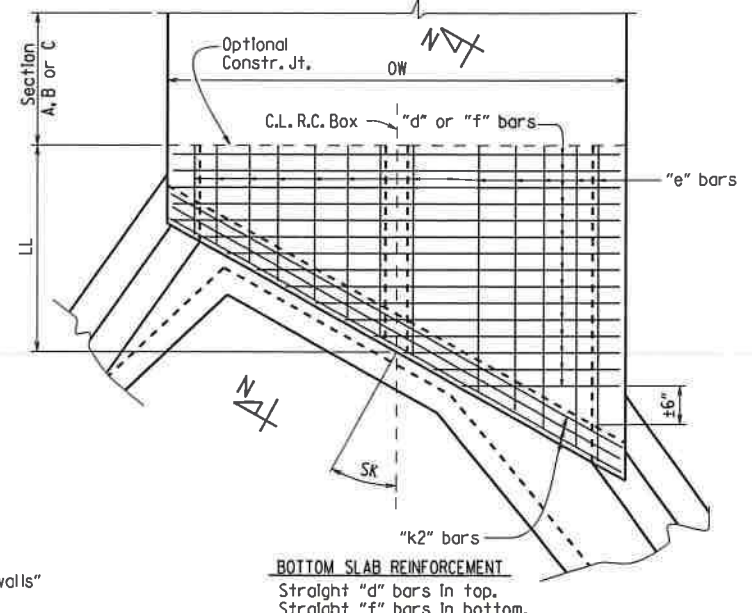


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

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



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



BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

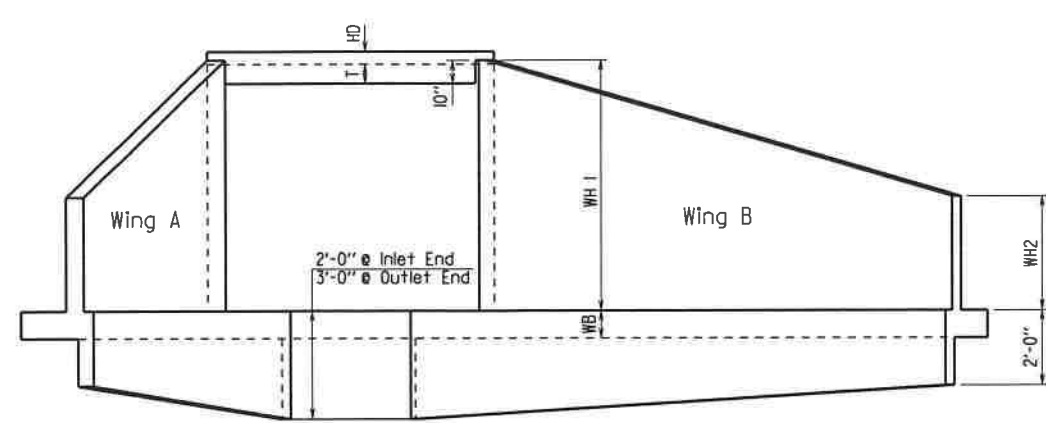
SKewed END SECTION DETAILS

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

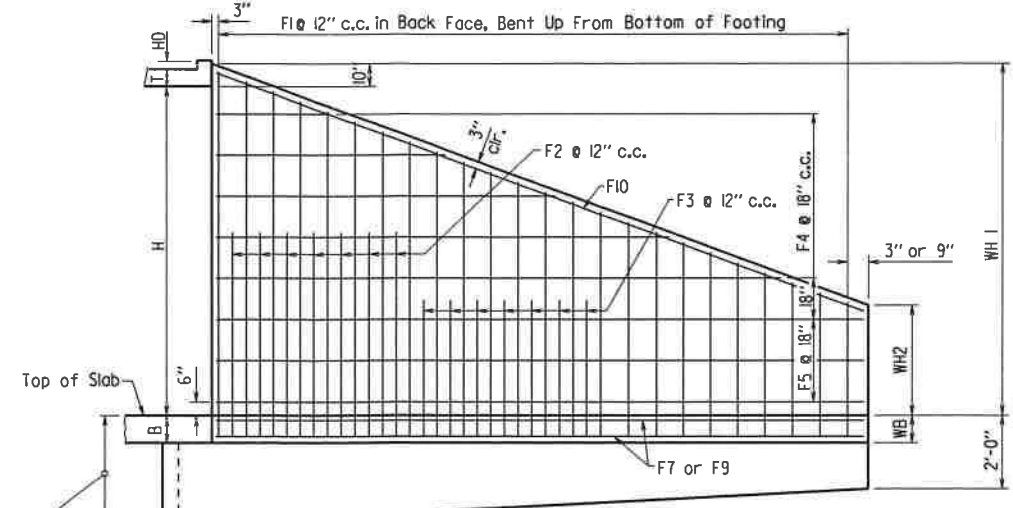
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107		12	30

1 SPECIAL DETAILS

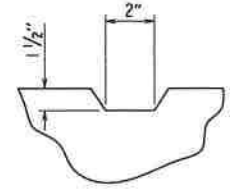


END ELEVATION
Flared Wingwalls Shown

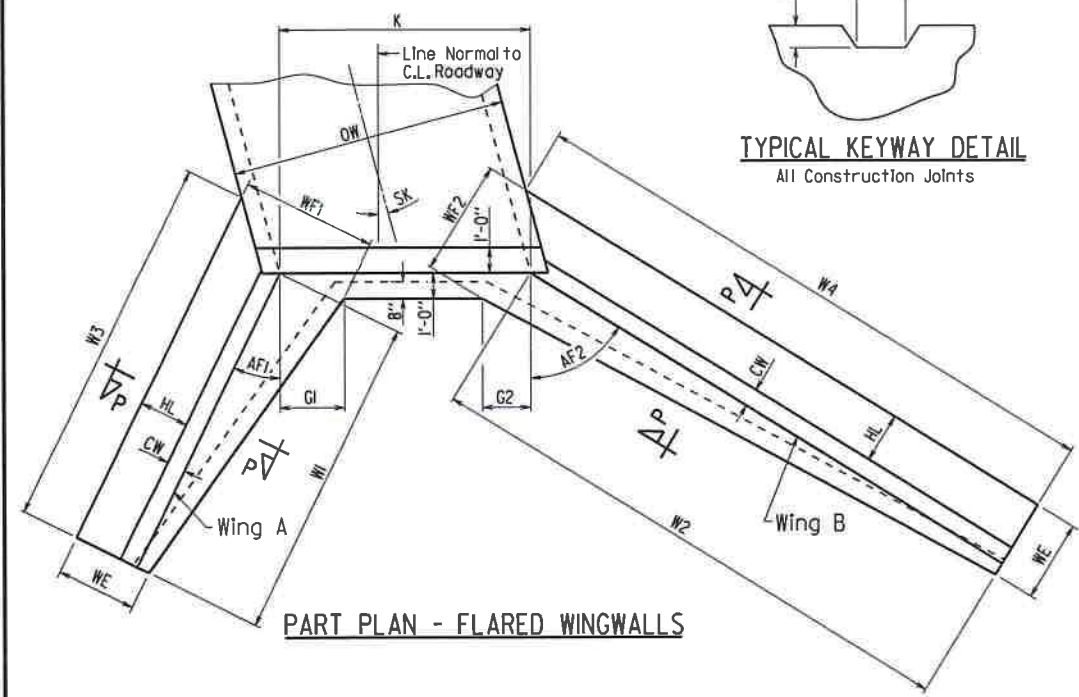


WINGWALL ELEVATION
Showing Back Face Reinforcement

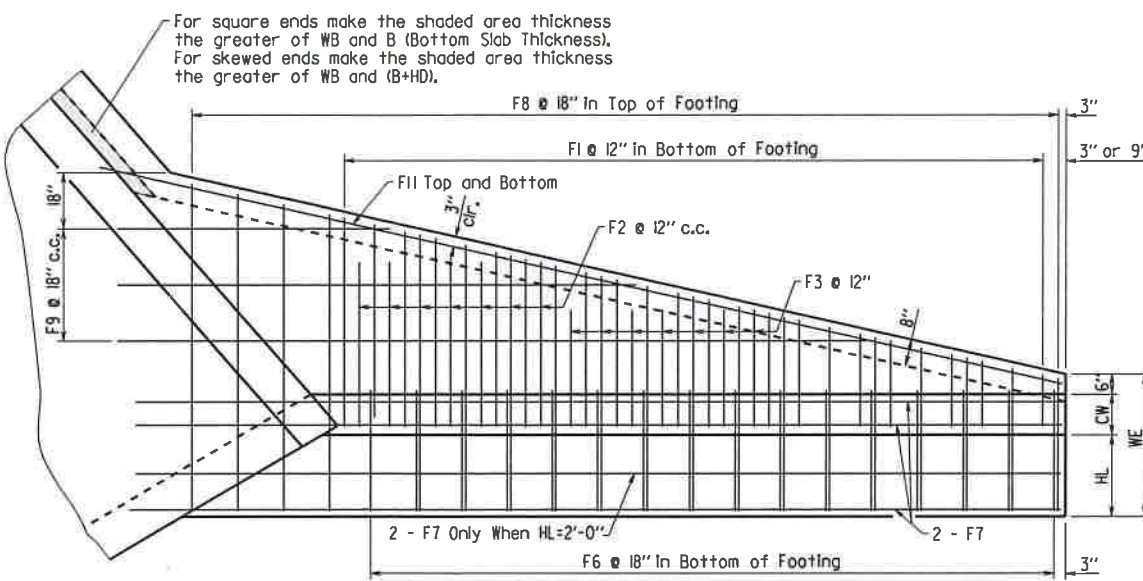
Note: See "Wingwall Section P-P" for additional details and reinforcing.



TYPICAL KEYWAY DETAIL
All Construction Joints

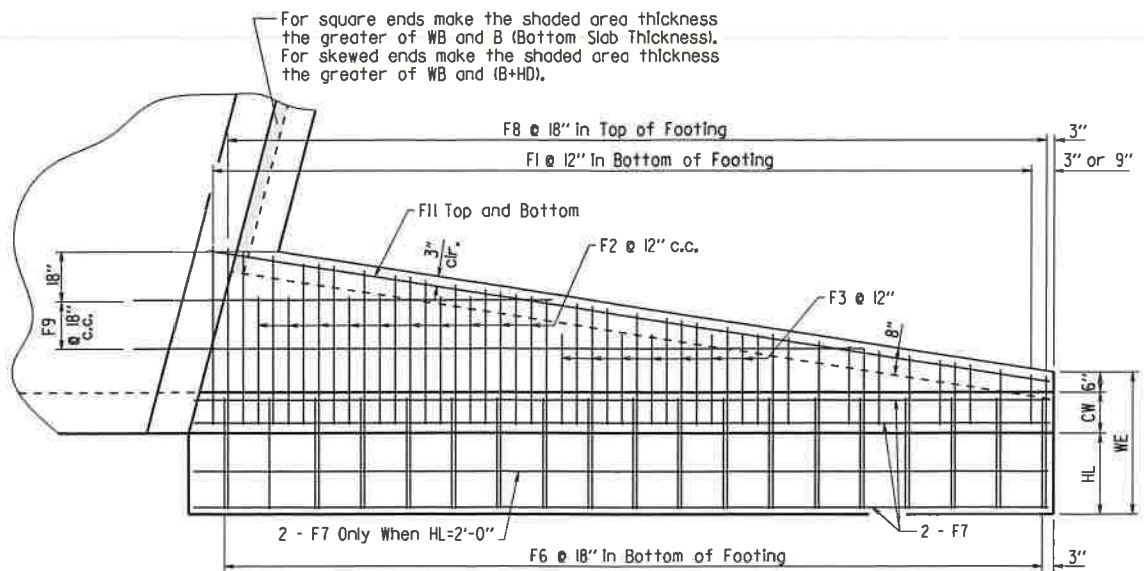


PART PLAN - FLARED WINGWALLS

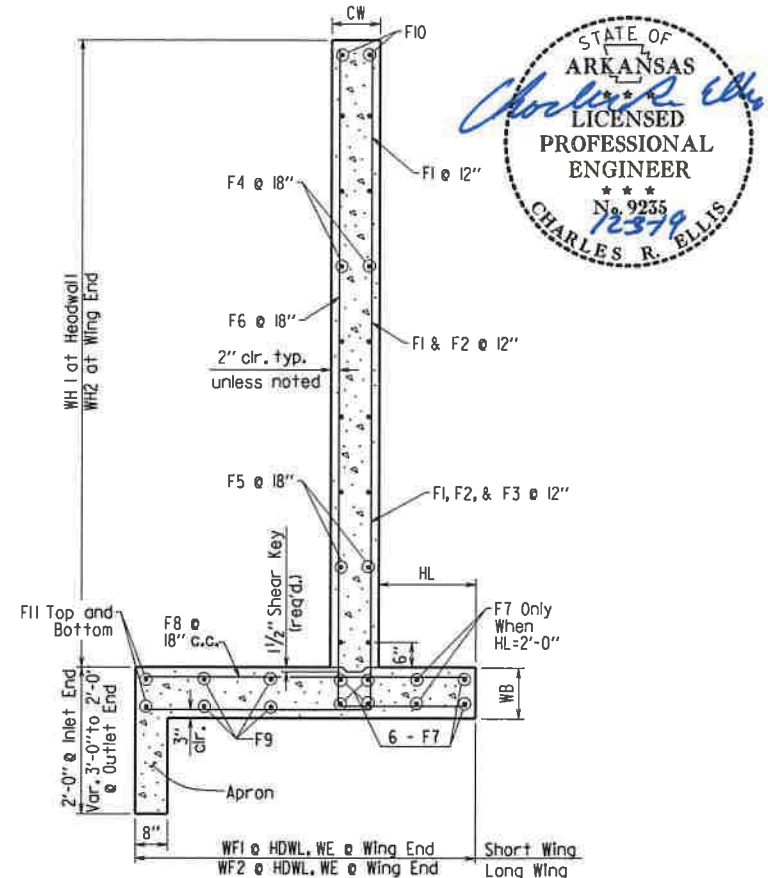


PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

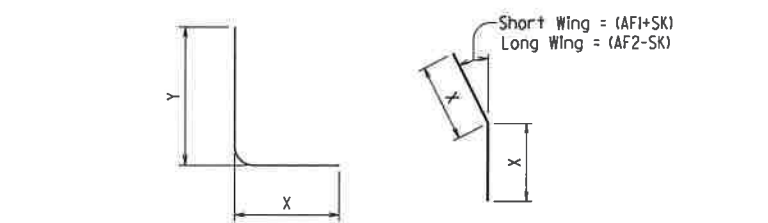
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HD).



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

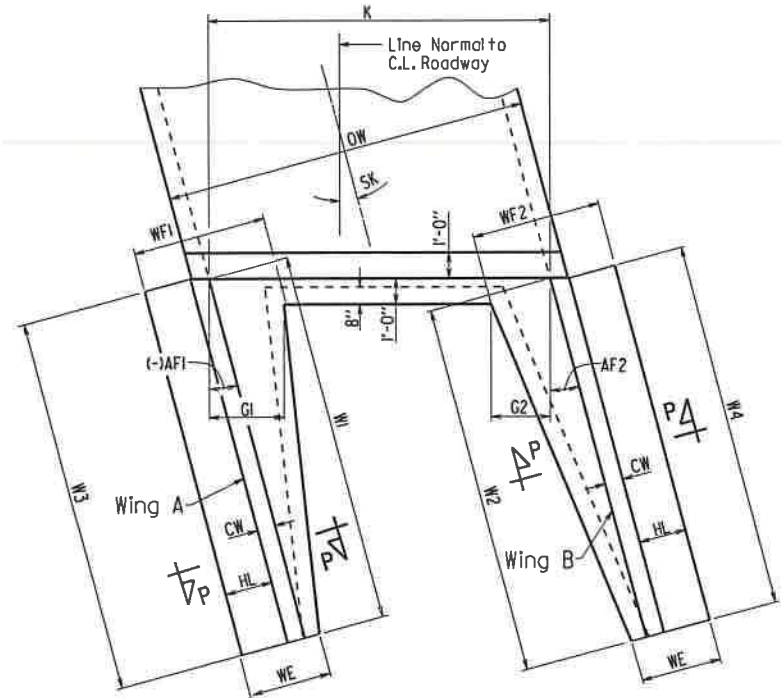


WINGWALL SECTION P-P

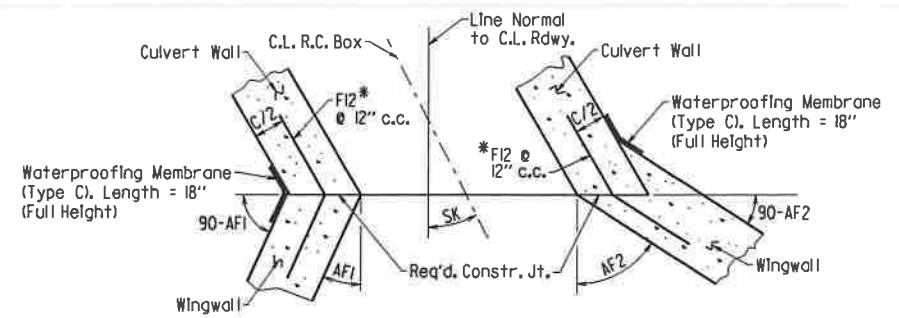


FL, F2, F3, & F6 BARS ***F12 BAR**

*F12 is a straight bar for parallel wingwalls



PART PLAN - PARALLEL WINGWALLS



CONSTRUCTION JOINTS
Flared Wingwalls Shown

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

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. BR3107							13	30

4 TEMPORARY EROSION CONTROL



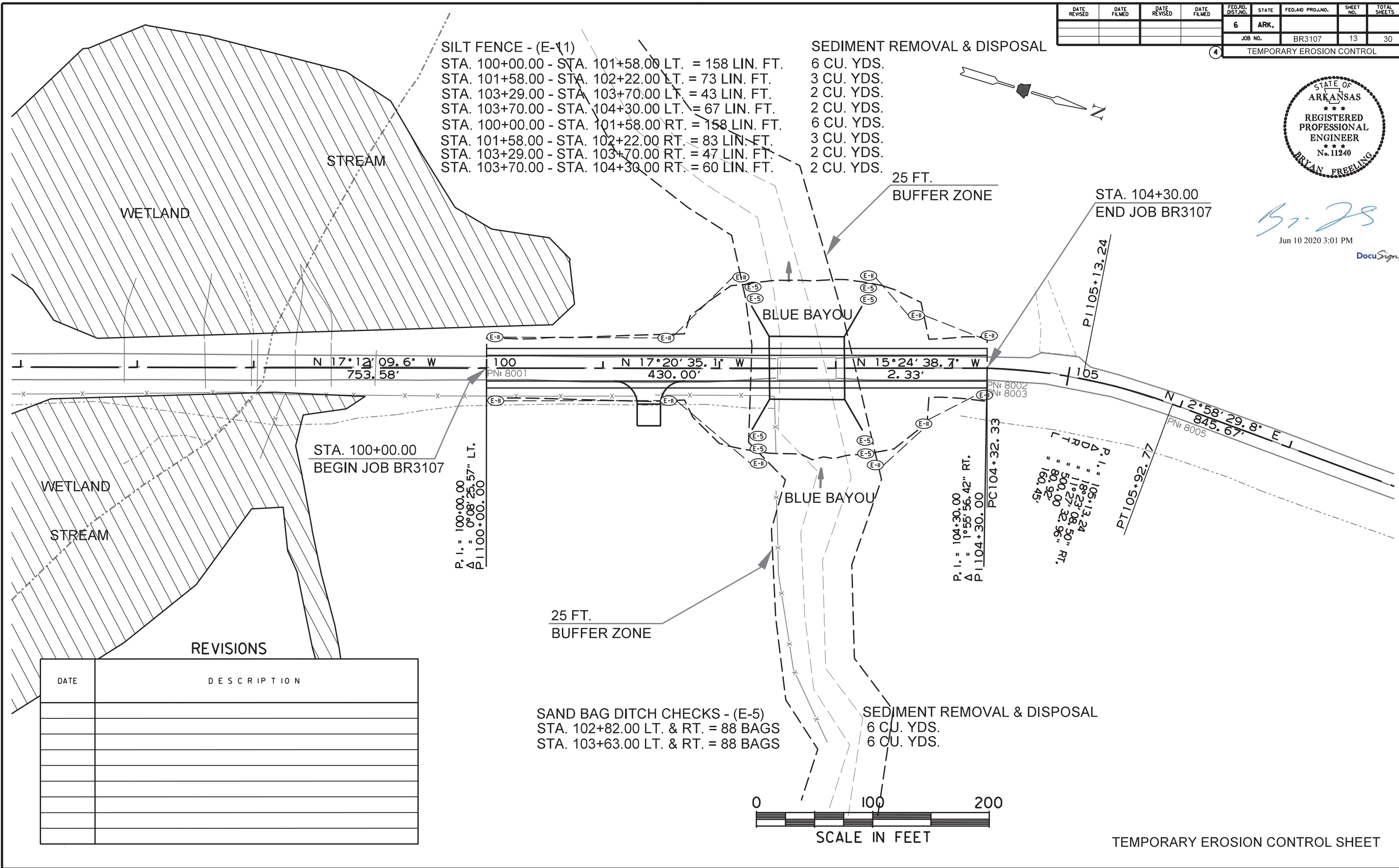
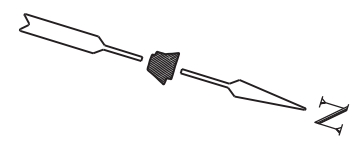
B. Freeling
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SILT FENCE - (E-11)

- STA. 100+00.00 - STA. 101+58.00 LT. = 158 LIN. FT.
- STA. 101+58.00 - STA. 102+22.00 LT. = 73 LIN. FT.
- STA. 103+29.00 - STA. 103+70.00 LT. = 43 LIN. FT.
- STA. 103+70.00 - STA. 104+30.00 LT. = 67 LIN. FT.
- STA. 100+00.00 - STA. 101+58.00 RT. = 158 LIN. FT.
- STA. 101+58.00 - STA. 102+22.00 RT. = 83 LIN. FT.
- STA. 103+29.00 - STA. 103+70.00 RT. = 47 LIN. FT.
- STA. 103+70.00 - STA. 104+30.00 RT. = 60 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL

- 6 CU. YDS.
- 3 CU. YDS.
- 2 CU. YDS.
- 2 CU. YDS.
- 6 CU. YDS.
- 3 CU. YDS.
- 2 CU. YDS.
- 2 CU. YDS.



STA. 100+00.00
 BEGIN JOB BR3107
 P.I. = 100+00.00
 Δ = 0°08'25.57" LT.
 P1100+00.00

P.I. = 104+30.00
 Δ = 1°55'56.42" RT.
 P1104+30.00

P.I. = 105+13.24
 Δ = 1°23'08.50" RT.
 P1105+13.24
 P.I. = 105+13.24
 Δ = 1°23'08.50" RT.
 P1105+13.24

REVISIONS

DATE	DESCRIPTION

SAND BAG DITCH CHECKS - (E-5)
 STA. 102+82.00 LT. & RT. = 88 BAGS
 STA. 103+63.00 LT. & RT. = 88 BAGS

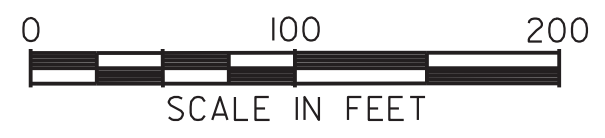
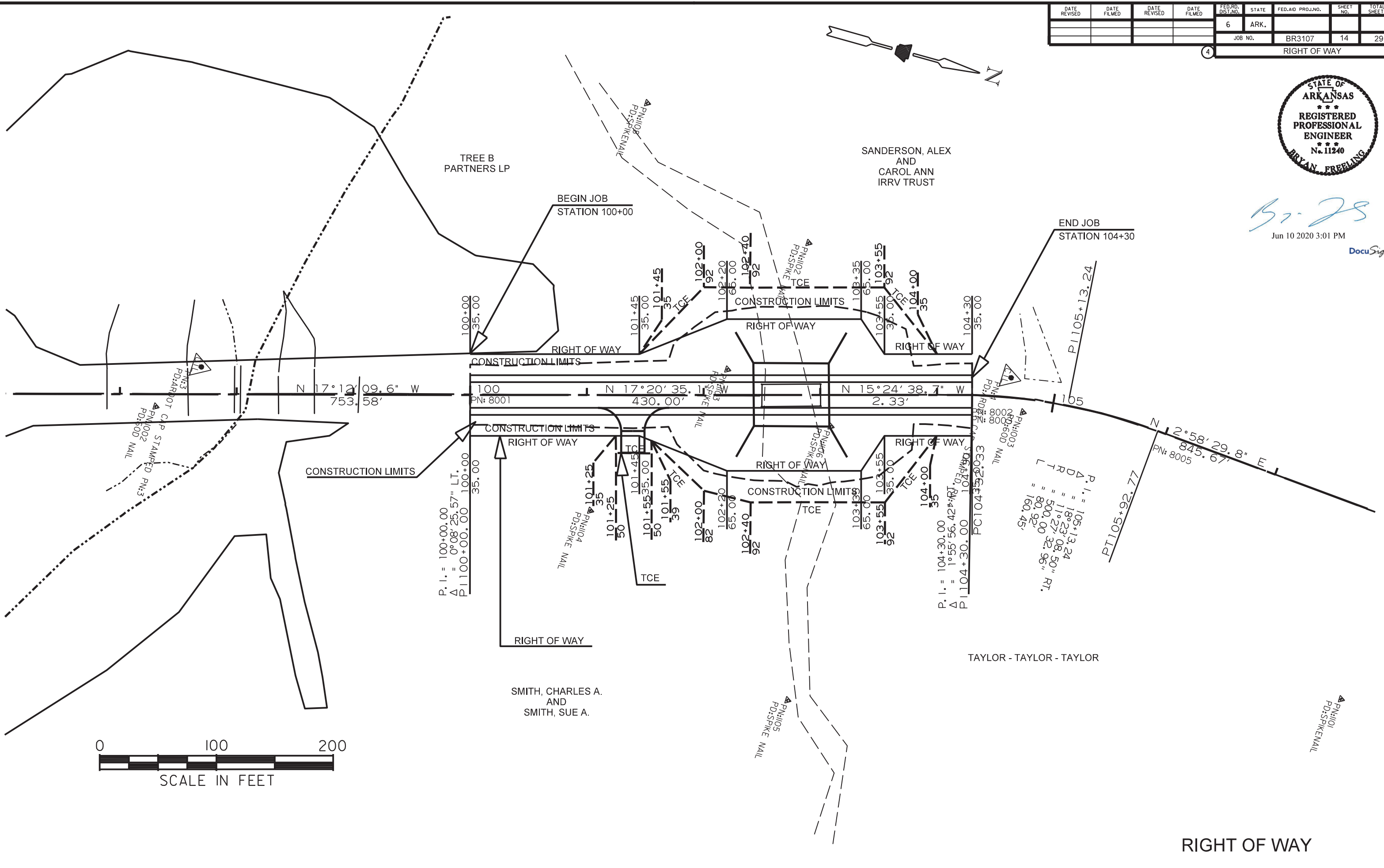
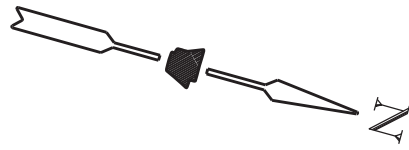
SEDIMENT REMOVAL & DISPOSAL
 6 CU. YDS.
 6 CU. YDS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		14	29
				JOB NO.		BR3107		

4 RIGHT OF WAY



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RIGHT OF WAY

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.	BR3107	15	30	

FENCE

STATION	STATION	SIDE	WIRE FENCE (TYPE D-1)
			5 STRAND BARBED WIRE LIN. FT.
100+00	101+30	RT.	130
101+44	102+47	RT.	103
102+47	102+47	RT.	41
TOTAL:			274

GATE

STATION	STATION	SIDE	14' STEEL GATE	ALTERNATE
			EACH	14' ALUMINUM GATE EACH
101+30	101+44	RT.	1	1
TOTAL:			1	1

4 QUANTITIES



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Jun 10 2020 3:02 PM

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EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	CU. YD.
100+00.00	104+30.00	MAIN LANES	3866.0	628.0
101+29.00	101+45.00	FIELD ENTRANCE RT.		26.1
TOTALS:			3866	654

NOTE: EARTHWORK TO BE PAID FOR AS PLAN QUANTITY.

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
100+00	104+30	5	5
TOTALS:		5	5

REMOVAL AND DISPOSAL ITEM

STATION	STATION	DESCRIPTION	REMOVAL AND DISPOSAL OF 5 STRAND BARBED WIRE FENCE	REMOVAL AND DISPOSAL OF GATE	REMOVAL AND DISPOSAL OF SIGNS
			LINT. FT.	EACH	EACH
100+00	101+30	FENCE ON RT.	130		
101+44	102+47	FENCE ON RT.	103		
101+30	101+43	GATE ON RT.		1	
102+20	102+20	SIGN ON RT. AND LT.			2
102+50	102+50	SIGN ON RT.			1
102+47	102+47	FENCE ON RT.	41		
103+09	103+09	SIGN ON LT.			1
103+18	103+18	SIGN ON RT. AND LT.			2
TOTAL:			274	1	6

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107	16	30	

4 QUANTITIES

BASE AND SURFACING

STATION	STATION	LOCATION / DESCRIPTION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)	ACHM SURFACE COURSE (1/2")*		
			LIN. FT.	TON	WIDTH	SQ. YD.	TON
100+00.00	104+30.00	MAIN LANE	430	801.1	22.0	1051.1	115.6
101+28.00	101+44.00	FIELD ENTRANCE ON RT.		39.9		63.5	7.0
TOTALS:				841.0			122.6
USE:				841			123



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BASIS OF ESTIMATE:

AGGREGATE BASE COURSE (CLASS 7) _____ 186.3 TON PER STATION
 ACHM SURFACE COURSE (1/2") _____ 220 POUND PER SQ. YD.

*Nmax=115

VOLUME CONTROL:

ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") _____ 5.2%
 MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") _____ 94.8%

REFLECTORIZED PAINT PAVEMENT MARKING

LOCATION	YELLOW	WHITE	STANDARD DRAWING NUMBER
	4" CONTINUOUS	4" CONTINUOUS	
	LIN. FT.	LIN. FT.	
100+00 - 104+30	860	860	PM-1
TOTALS:	860	860	

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

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NO.		SUPPORT ASSEMBLY	STANDARD DRAWING NUMBER
		OM-3L	OM-3R	TYPE C	
		SQ. FT.		EACH	
102+14.00	RT.		3.00	1	SHS-1, SHS-2
102+14.00	LT.	3.00		1	SHS-1, SHS-2
103+35.00	LT.		3.00	1	SHS-1, SHS-2
103+35.00	RT.	3.00		1	SHS-1, SHS-2
TOTALS:		6.00	6.00	4	

NOTES: ALL STANDARD SIGN BLANKS TO BE 0.080" THICK. REFER TO STANDARD DRAWING SHS-2 FOR CHANNEL POST SPLICING DETAILS.

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107	17	30	

EROSION CONTROL

STATION	STATION	DESCRIPTION	LIME	SEEDING	MULCH COVER	WATER
			TONS	ACRE		M. GALLON
100+00	104+30	MAIN LANE	2.0	1.0	1.00	102.0
TOTALS:			2.0	1.0	1.00	102.0

BASIS OF ESTIMATE:

LIME _____ 2 TONS PER ACRE SEEDING

WATER _____ 102.0 M. GALLON PER ACRE SEEDING

(4) QUANTITIES



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DUMPED RIPRAP

STATION	STATION	LOCATION	*DUMPED RIPRAP	*FILTER BLANKET
			CU. YD.	SQ. YD.
102+14	102+41	BOX CULVERT END ON RT. & LT.	159	318
103+08	103+35	BOX CULVERT END ON RT. & LT.	159	318
TOTALS:			318	636

*QUANTITIES ESTIMATED TO BE USED IF AND WHEN DIRECTED BY ENGINEER.

TEMPORARY EROSION CONTROL

LOCATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	SILT FENCE (E-11)	SEDIMENT REMOVAL & DISPOSAL
	ACRE	ACRE	M. GAL.	BAG	LIN. FT.	CU. YD.
ENTIRE PROJECT AS SHOWN ON THE TEMPORARY EROSION CONTROL DETAILS				176	689	38
ENTIRE PROJECT	1.00	1.00	20.4			
TOTALS:	1.00	1.00	20.4	176	689	38

BASIS OF ESTIMATE:

WATER FOR TEMPORARY SEEDING _____ 20.4 M. GALLON PER ACRE TEMPORARY SEEDING

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

NOTE: QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	BR3107
								18
								30

4 QUANTITIES

TRAFFIC CONTROL DEVICES

LOCATION	W20-3 1500 FT.		W20-3 1000 FT.		W20-3 500 FT.		R11-2 (ROAD CLOSED)		*BARRICADES (TYPE III)	*TRAFFIC DRUMS
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	LIN. FT.	EACH
BEGINNING OF SECTION	1	16.00	1	16.00	1	16.00	2	20.00	24.00	5
END OF SECTION	1	16.00	1	16.00	1	16.00	2	20.00	24.00	5
TOTALS:	2	32.00	2	32.00	2	32.00	4	40.00	48.00	10

NOTE: REFER TO STANDARD DRAWINGS TC-1, TC-2, AND TC-3.

*QUANTITIES ESTIMATED TO BE USED IF AND WHEN DIRECTED BY ENGINEER.



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STRUCTURES OVER 20' - 0"

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE ROADWAY	REINFORCING STEEL - ROADWAY (GRADE 60)	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	UNCLASSIFIED EXCAVATION FOR STRUCTURES ROADWAY	SOLID SODDING	WATER
					CU. YD.	LB.	LUMP SUM	CU. YD.	SQ. YD.	M. GAL.
102+75.00	QUINT. 12' X 12' X 54' R.C. BOX CULVERT	64.50	14.33	54.0	409.00	55003		121.21	591	7.45
	SPAN 64' - 6"									
	WINGWALLS			30.5	76.51	5992		14.36		
102+75.00	BRIDGE # 21810 IS A 20 FT. WIDE 51 FT. LONG BRIDGE THAT CONSISTS OF A BITUMINOUS FILLED CORRUGATED STEEL ORTHOTROPIC DECK SUPPORTED BY CONCRETE/STEEL FOUNDATION						1.00			
TOTALS:		64.50	14.33		485.51	60995	1.00	135.57	591	7.45
USE:					485.51	60995	1.00	136	591	7.5

BASIS OF ESTIMATE:

WATER: _____ 12.6 GALLONS PER SQUARE YARD

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

NOTE: THE PROPOSED BOX CULVERT HAS BEEN DESIGNED TO CONVEY A Q25 FLOOD EVENT WITH LESS THAN 1' INCREASE IN BACKWATER. IN THE FUTURE, IF THE ROADWAY GRADE, WITHIN THE FLOOD PLAN, IS RAISED ABOVE ELEVATION 291.2 FT., ADDITIONAL WATER OPENING MAY BE REQUIRED.

QUANTITIES

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
201	CLEARING	5	STATION
201	GRUBBING	5	STATION
202	REMOVAL AND DISPOSAL OF WIRE FENCE	274	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	1	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	6	EACH
SS & 210	UNCLASSIFIED EXCAVATION	3866	CU. YD.
210	COMPACTED EMBANKMENT	654	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	841	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	117	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	6	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	136	SQ. FT.
SS & 604	BARRICADES	48	LIN. FT.
SS & 604	TRAFFIC DRUMS	10	EACH
619	WIRE FENCE (TYPE D-1)	274	LIN. FT.
619	14' STEEL GATES (ALTERNATE 1)	1	EACH
619	14' ALUMINUM GATES (ALTERNATE 2)	1	EACH
620	LIME	2	TON
620	SEEDING	1.00	ACRE
SS & 620	MULCH COVER	2.00	ACRE
620	WATER	129.9	M. GAL.
621	TEMPORARY SEEDING	1.00	ACRE
621	SILT FENCE	689	LIN. FT.
621	SAND BAG DITCH CHECKS	176	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	38.0	CU. YD.
624	SOLID SODDING	591	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	860	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	860	LIN. FT.
SS & 726	STANDARD SIGN	12.00	SQ. FT.
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE C)	4	EACH
816	FILTER BLANKET	636	SQ. YD.
816	DUMPED RIPRAP	318	CU. YD.
STRUCTURES OVER 20'-0" SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	136	CU. YD.
SS & 802	CLASS S CONCRETE - ROADWAY	485.51	CU. YD.
SS & 804	REINFORCING STEEL - ROADWAY (GRADE 60)	60995	POUND

*DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
07/09/2020	SPECIAL PROVISION - ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT WAS ADDED	3 & 19
07/30/2020	SPECIAL PROVISION - MAINTENANCE OF TRAFFIC WAS ADDED, ITEM NUMBER FOR MAINTENANCE OF TRAFFIC WAS UPDATED, GENERAL NOTE NUMBER 8 WAS UPDATED, REMOVED SOLID SODDING DECIMAL PLACES, REMOVED ADDITIONAL FURNISHING FIELD OFFICE ITEM, AND LABELED ALTERNATES FOR ITEM 619.	3, 4, & 19

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. PROJ. NO.	STATE	FED. PROJ. NO.	SHEET NO.	TOTAL SHEETS
07-09-2020				6	ARK.			
07-30-2020								
				JOB NO.	BR3107		19	30

4 SUMMARY OF QUANTITIES AND REVISION BOX



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107		20	30

4

SURVEY CONTROL DETAILS



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SURVEY CONTROL COORDINATES

Project Name: sBR3107

Date: 5/31/2018

Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE: VT AND HZ CONTROL BASED ON STATIC GPS
 PN:1 AND PN:6 CONSTRAINING ELEVATION AT ARHP PROJECTED TO GROUND.

Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature Description
1	1756585.4953	705152.2526	313.624	CTL ARDOT CAP STAMPED PN:1
2	1757266.5303	704938.7684	303.296	CTL ARDOT CAP STAMPED PN:2
3	1757806.6210	704735.2648	289.299	CTL ARDOT CAP STAMPED PN:3
4	1758471.6163	704537.3622	289.752	CTL ARDOT CAP STAMPED PN:4
5	1759063.8823	704581.2191	288.956	CTL ARDOT CAP STAMPED PN:5
6	1759709.1535	704614.7242	289.365	CTL ARDOT CAP STAMPED PN:6

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped

*(standard markings common to all caps), or as indicated

(other markings indicated in the point description of the individual point).

ALL DISTANCES ARE GROUND.

USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.

A PROJECT CAF OF 0.999912196 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.

THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.

GRID DISTANCE = GROUND DISTANCE X CAF.

GRID COORDINATES ARE STORED UNDER FILE NAME sBR3107gi.CTL

HORIZONTAL DATUM: NAD 83 (2011)

VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE

AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL

IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.

REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:

ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE

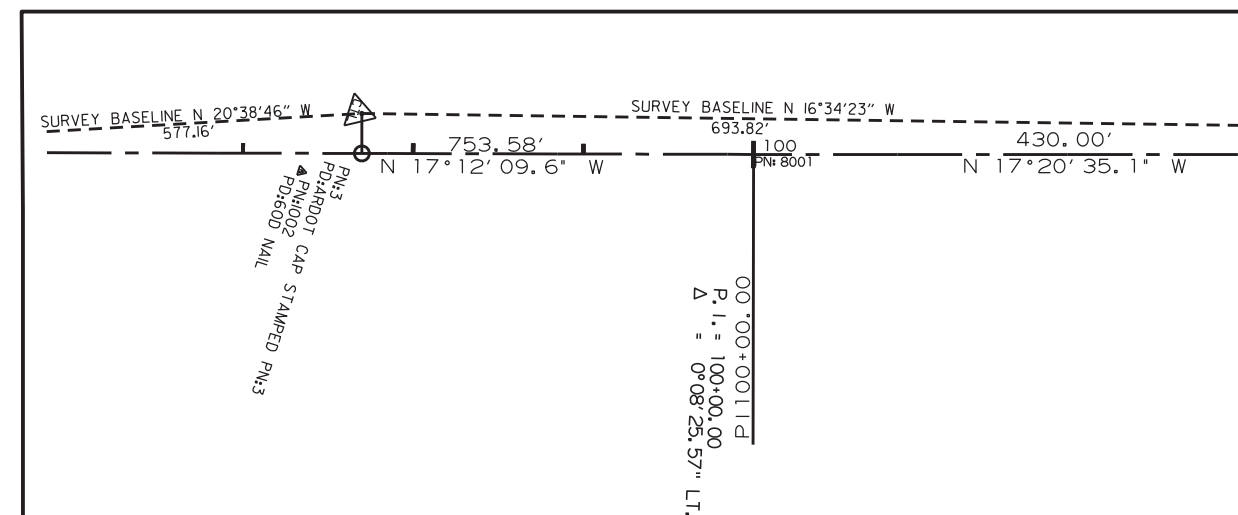
DETERMINED FROM GPS CONTROL POINTS: STATIC GPS PN:1 AND PN:6

CONVERGENCE ANGLE: 01-07-15 LEFT AT PN:6 LT:N 33-52-26 LG:W 94-00-07

GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

COORDINATE CONSTRUCTION CENTERLINE

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	92+46.42	1757313.6074	704912.4687
8001	PI	100+00.00	1758033.4801	704689.5943
8002	PI	104+30.00	1758443.9310	704561.4144
8003	PC	104+32.33	1758446.1730	704560.7964
8005	PT	105+92.77	1758604.9911	704543.4930
8006	POE	114+38.44	1759449.5193	704587.3825



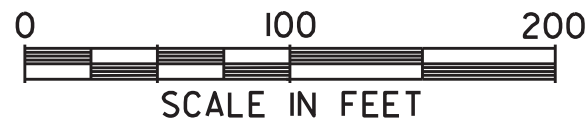
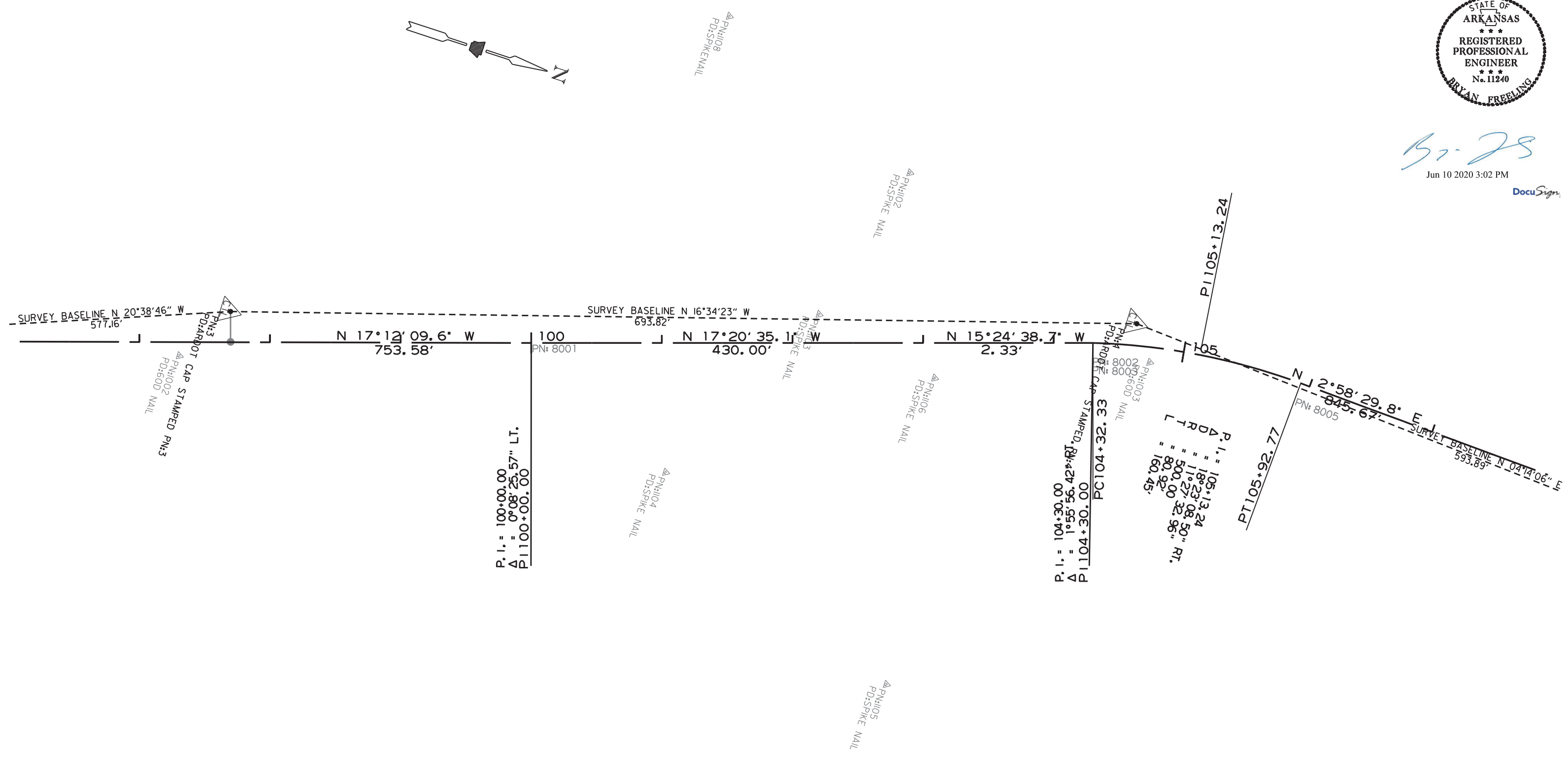
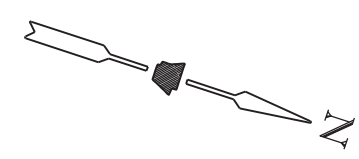
PN: 3 - PD: ArDOT CAP STAMPED PN:3
 ELEVATION 289.299'
 23.4' LT. OF STATION 97+69.82

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.	BR3107	21	30	

4 SURVEY CONTROL DETAILS



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REMOVAL AND DISPOSAL OF SIGNS
 STATION 102+20 SIGN ON RT. & LT. = 2 EACH
 STATION 102+50 SIGN ON RT. = 1 EACH
 STATION 103+09 SIGN ON LT. = 1 EACH
 STATION 103+18 SIGN ON RT. & LT. = 2 EACH

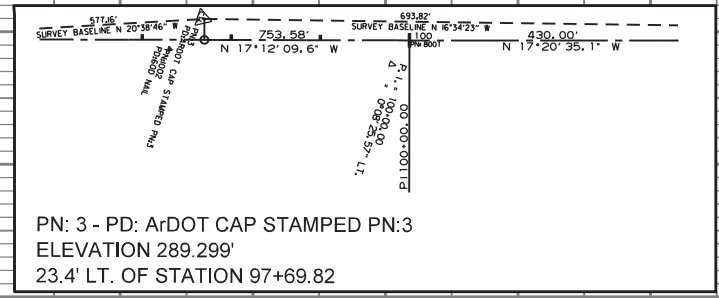
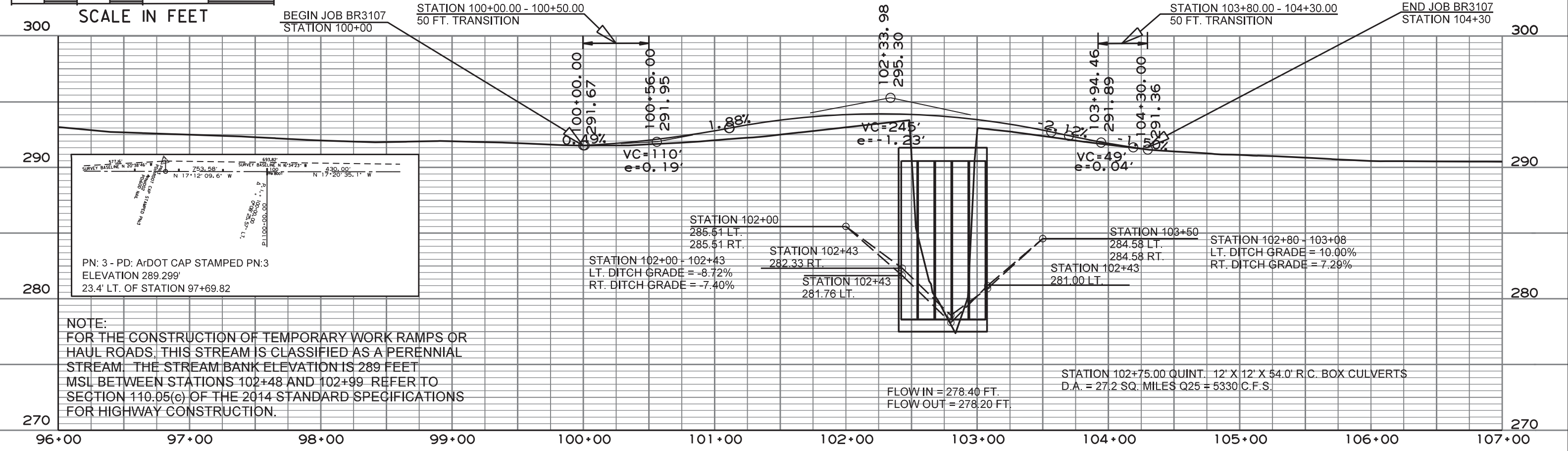
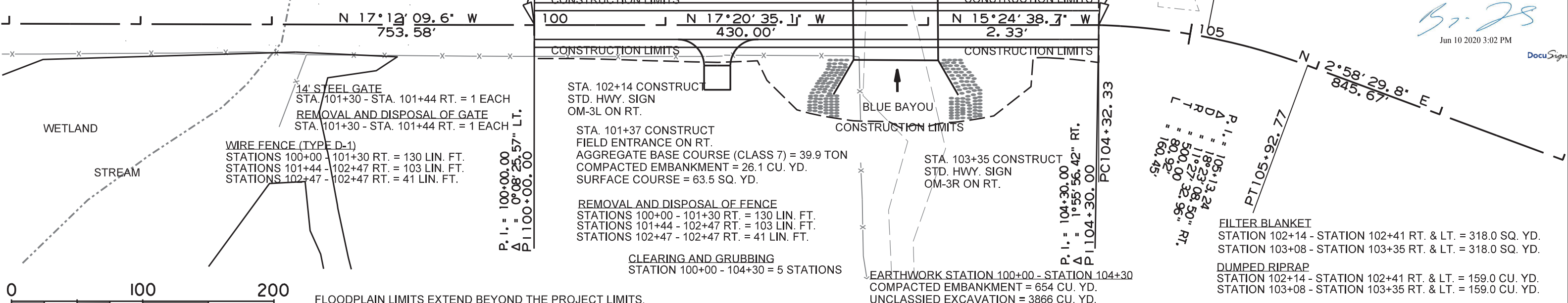
TEMPORARY CONTROL DEVICES
 (W20 - 3) 1500 FT. - BEGINNING AND END OF SECTION = 32.00 SQ. FT.
 (W20 - 3) 1000 FT. - BEGINNING AND END OF SECTION = 32.00 SQ. FT.
 (W20 - 3) 500 FT. - BEGINNING AND END OF SECTION = 32.00 SQ. FT.
 (RT - 2) ROAD CLOSED - BEGINNING AND END OF SECTION = 40.00 SQ. FT.
 (BARRICADES TYPE III) BEGINNING AND END OF SECTION = 48 LIN. FT.
 TRAFFIC DRUMS BEGINNING AND END OF SECTION = 10 EACH

REMOVAL AND DISPOSAL OF EXISTING STRUCTURE
 BRIDGE #21810 IS A 20 FT. WIDE 51 FT. LONG BRIDGE THAT CONSISTS OF A BITUMINOUS FILLED CORRUGATED STEEL ORTHOTROPIC DECK SUPPORTED BY CONCRETE AND STEEL FOUNDATION.
 REMOVE EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM.
 REPLACE EXISTING STRUCTURE WITH A QUINT 12' X 12' X 54.0' SPAN 64' - 6" R.C. BOX CULVERT STA. 102+75.00.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		22	30
				JOB NO.	BR3107			



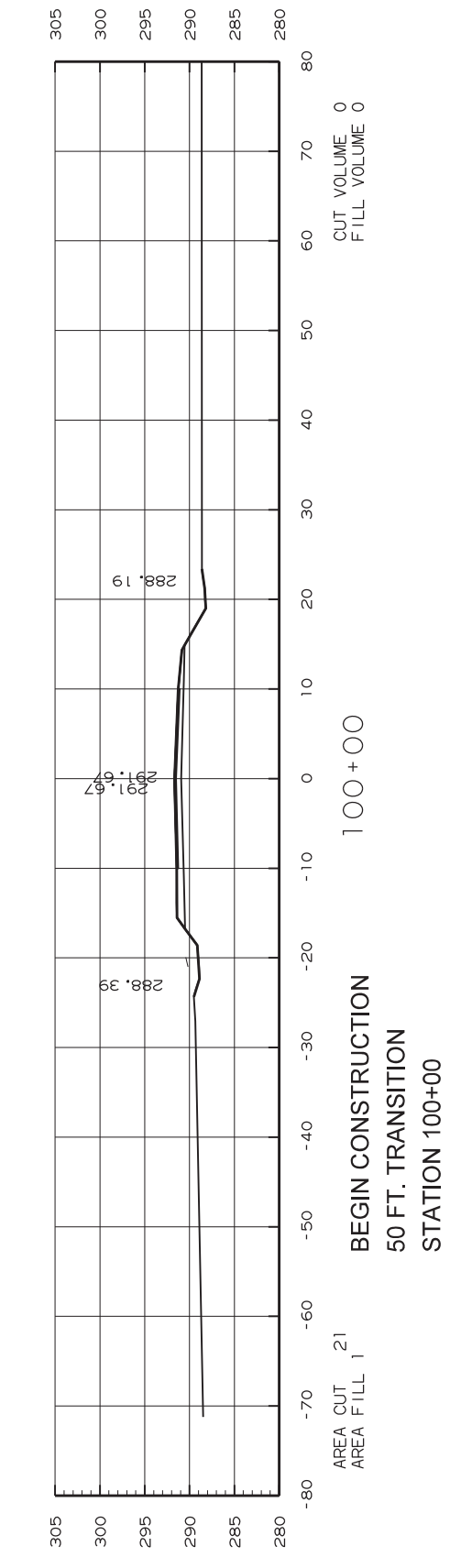
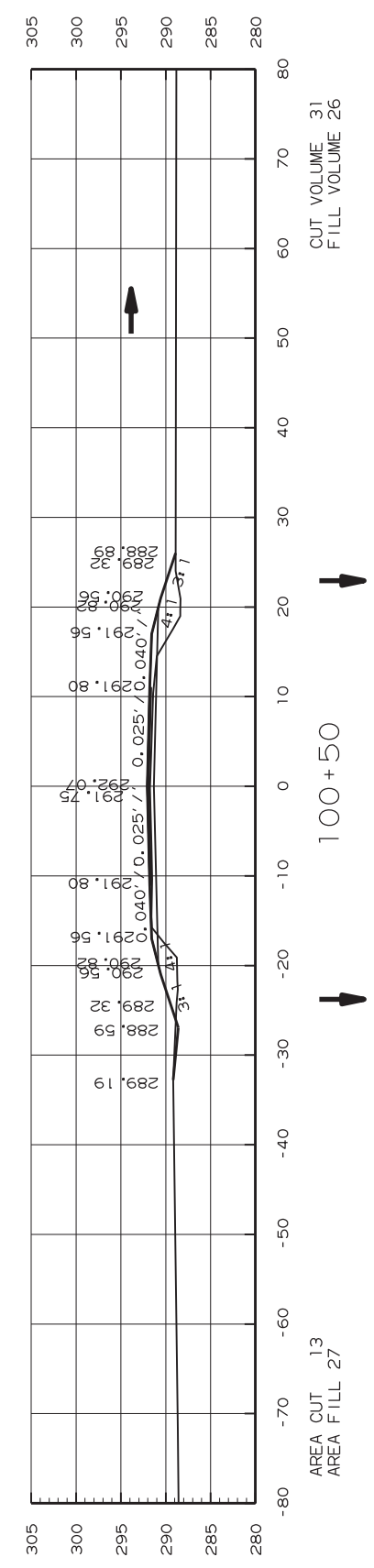
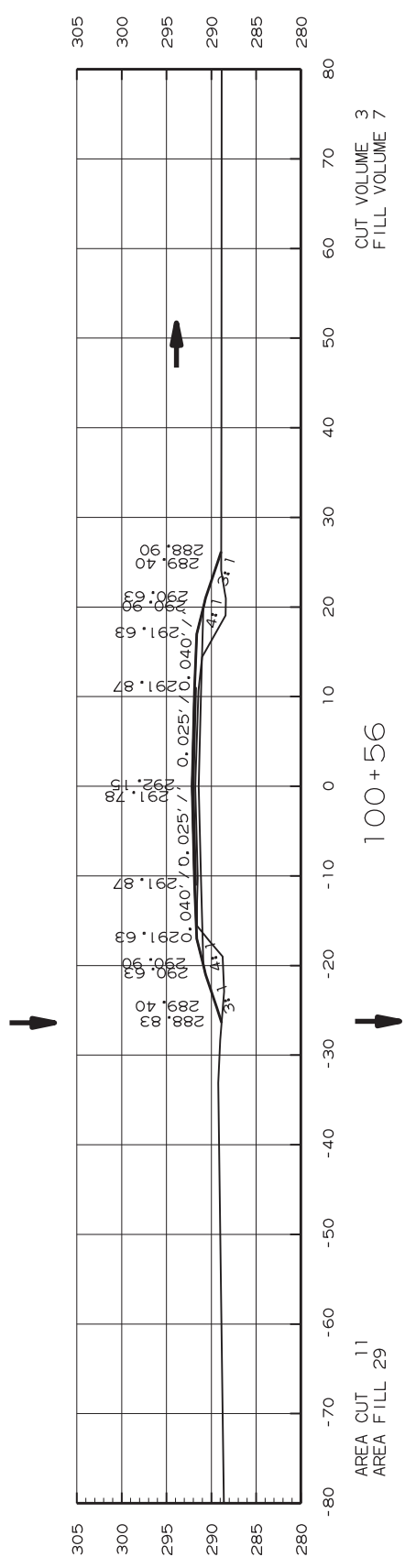
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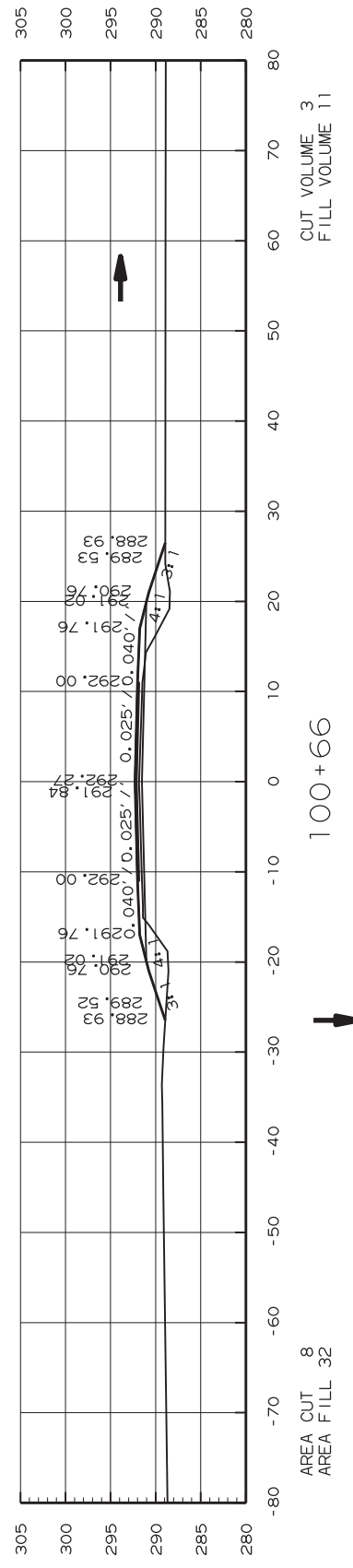
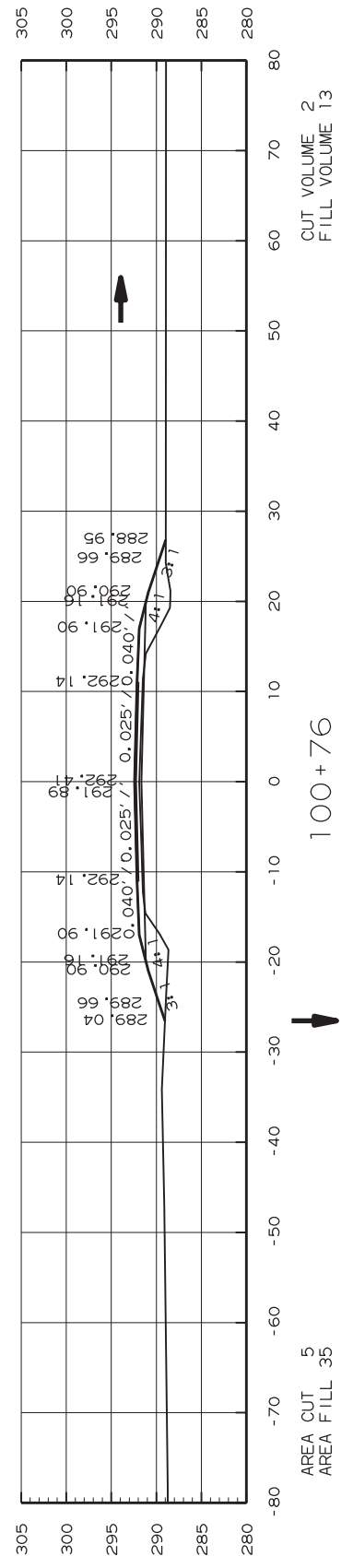
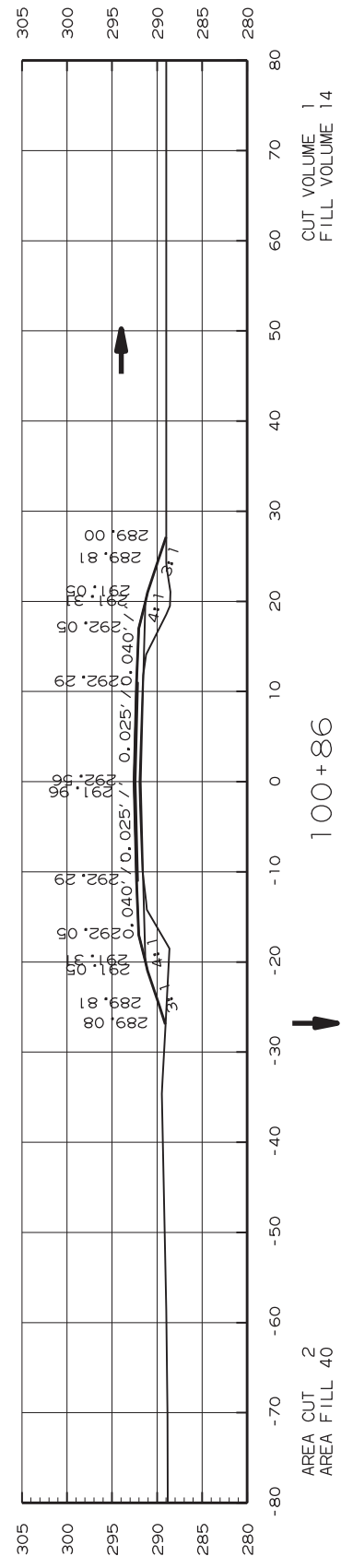
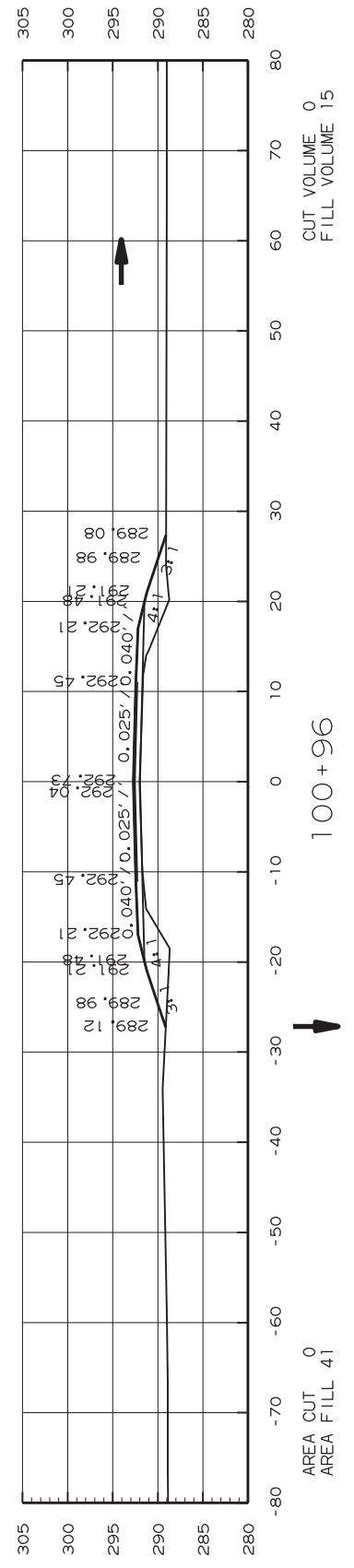
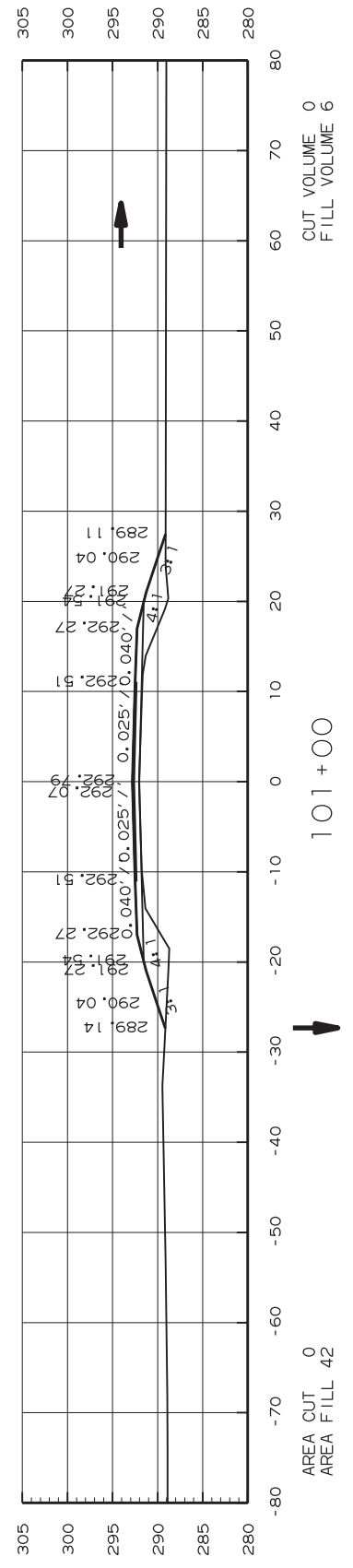
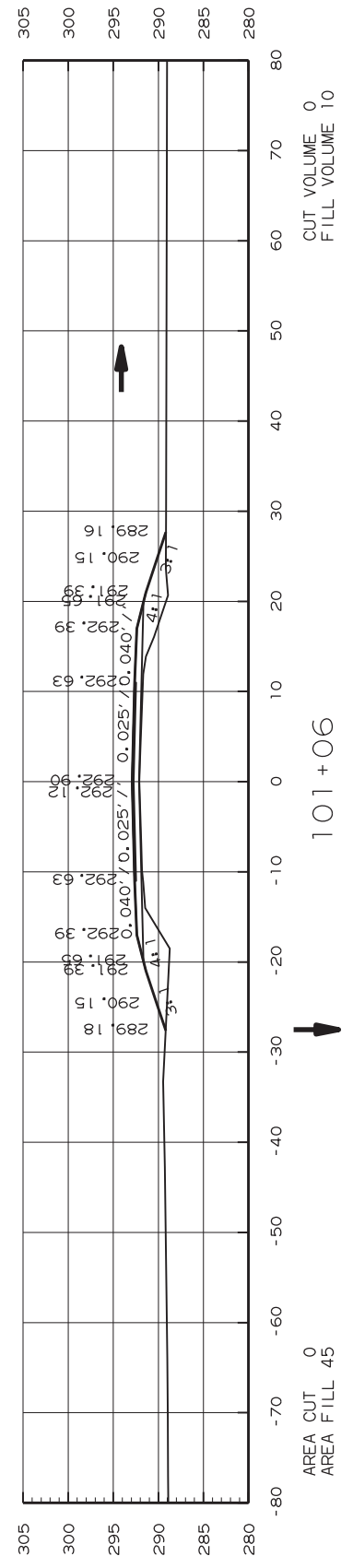
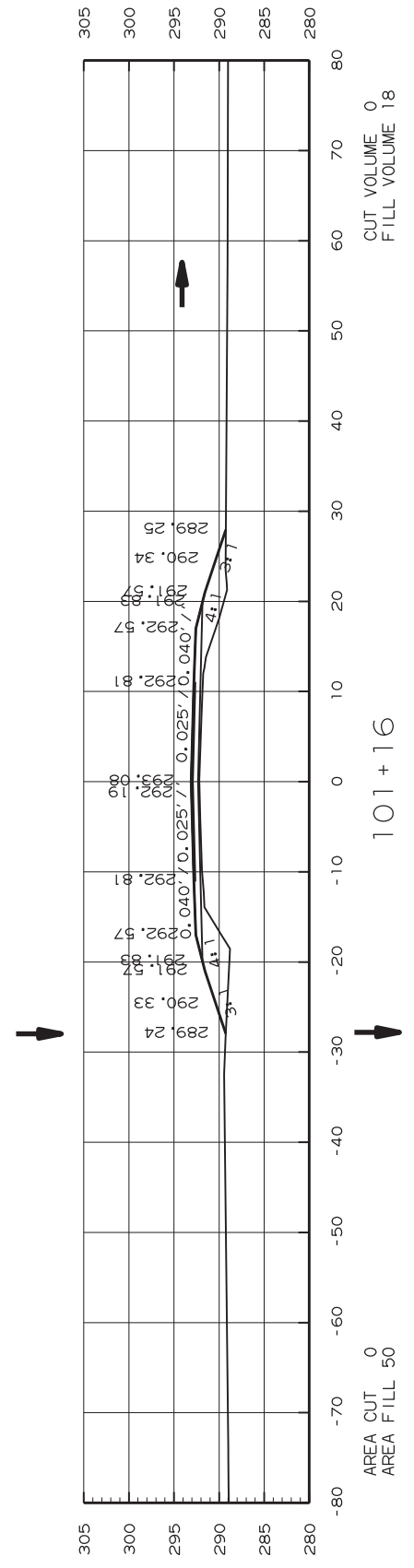


NOTE:
 FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATION IS 289 FEET MSL BETWEEN STATIONS 102+48 AND 102+99 REFER TO SECTION 110.05(c) OF THE 2014 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		23	30
				JOB NO.		BR3107	23	30

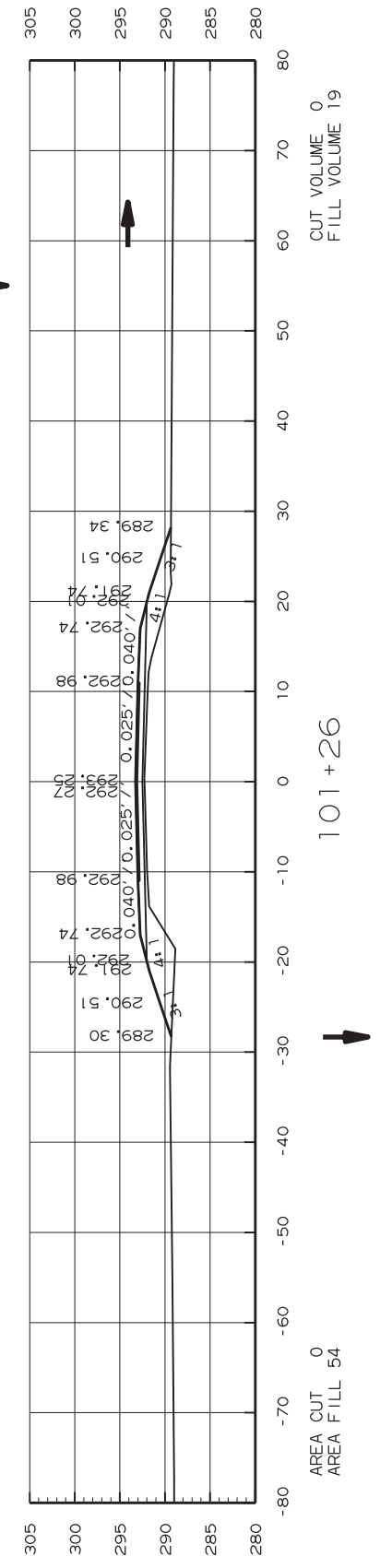
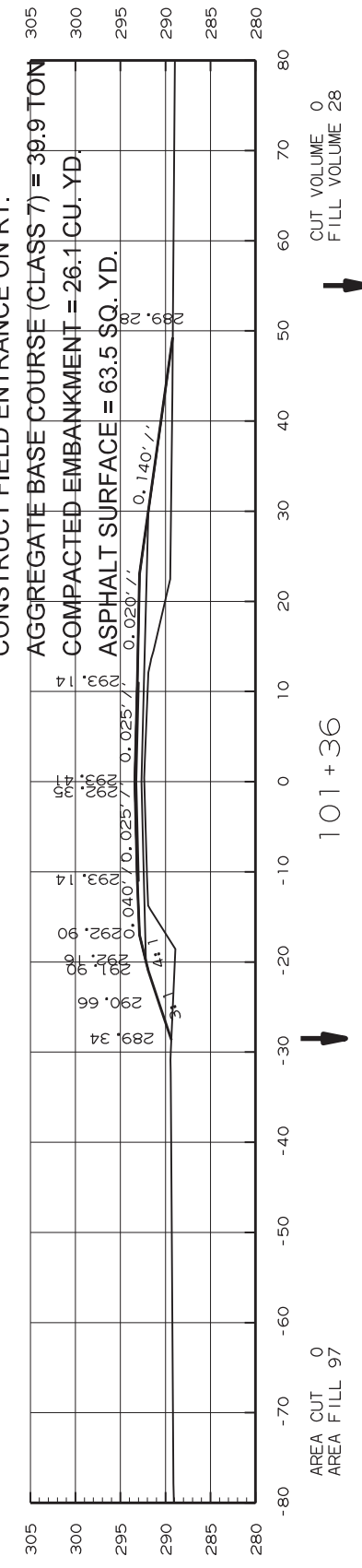
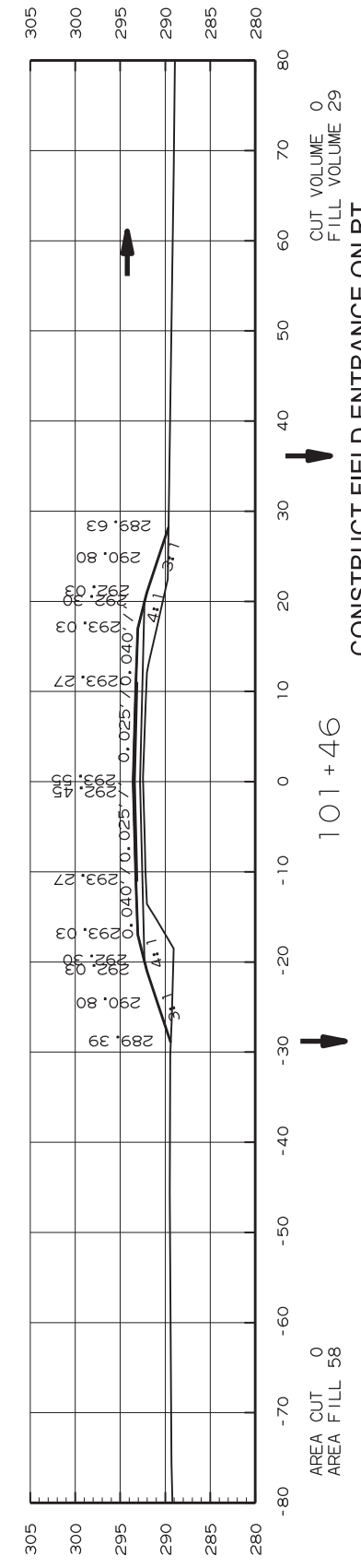
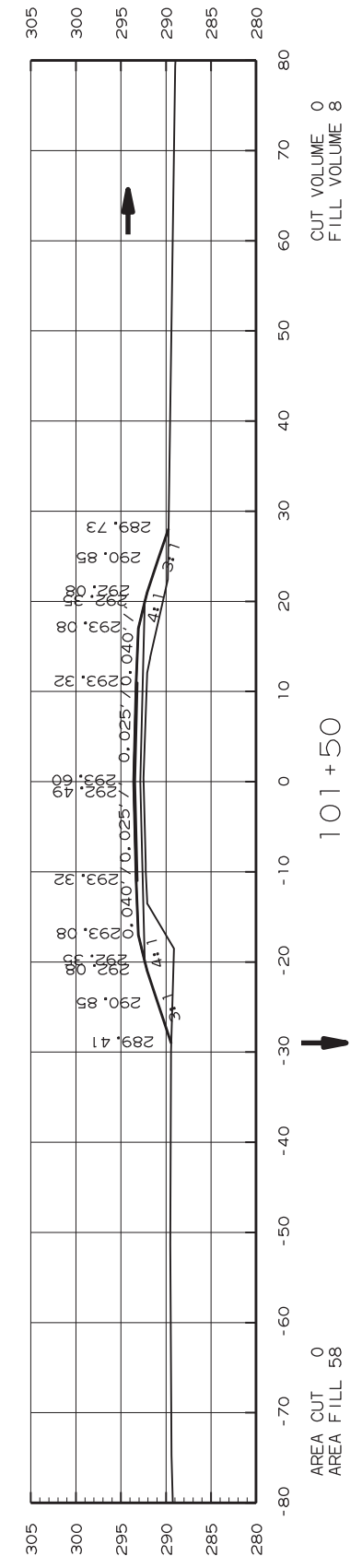
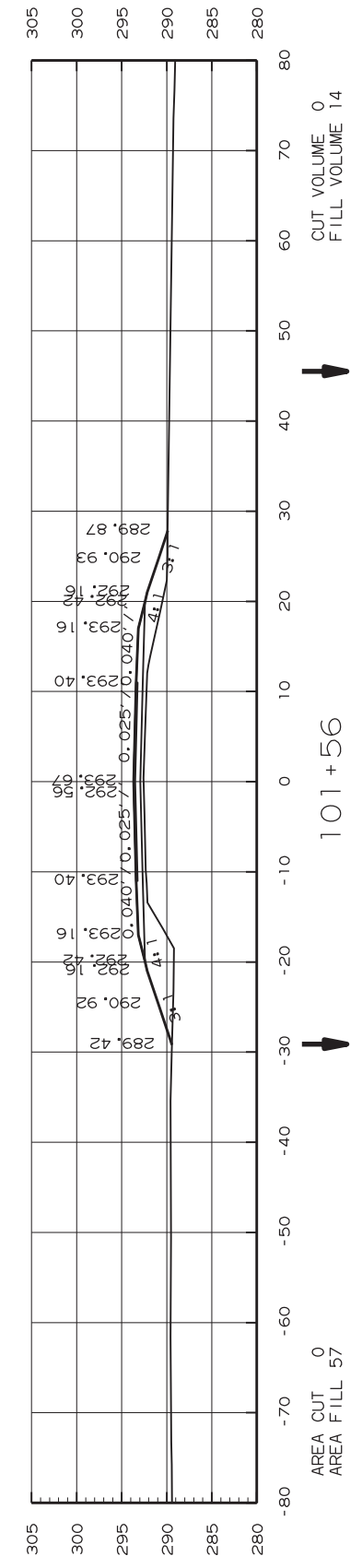
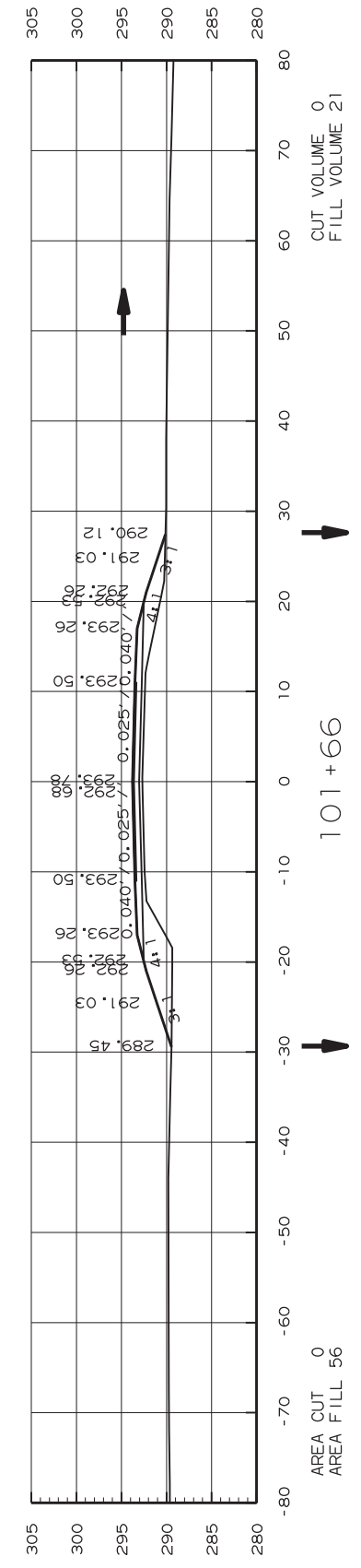
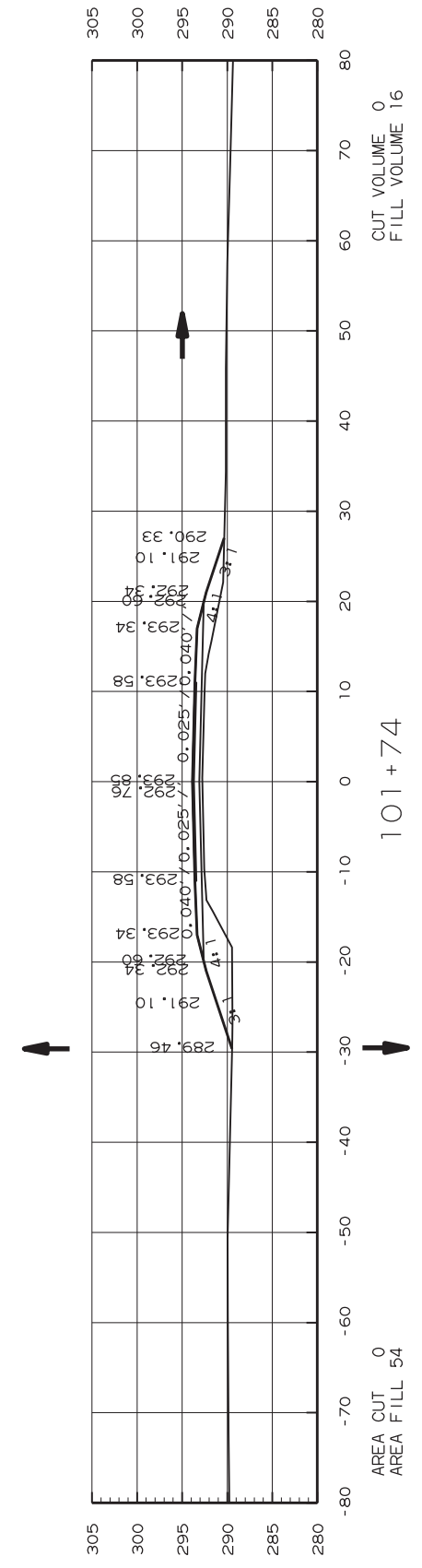
4 CROSS SECTIONS





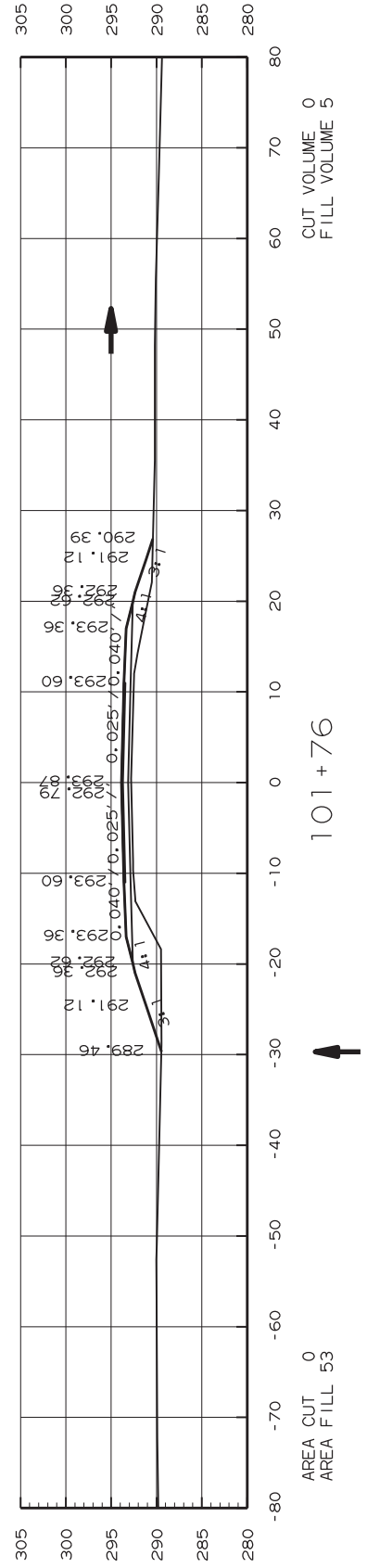
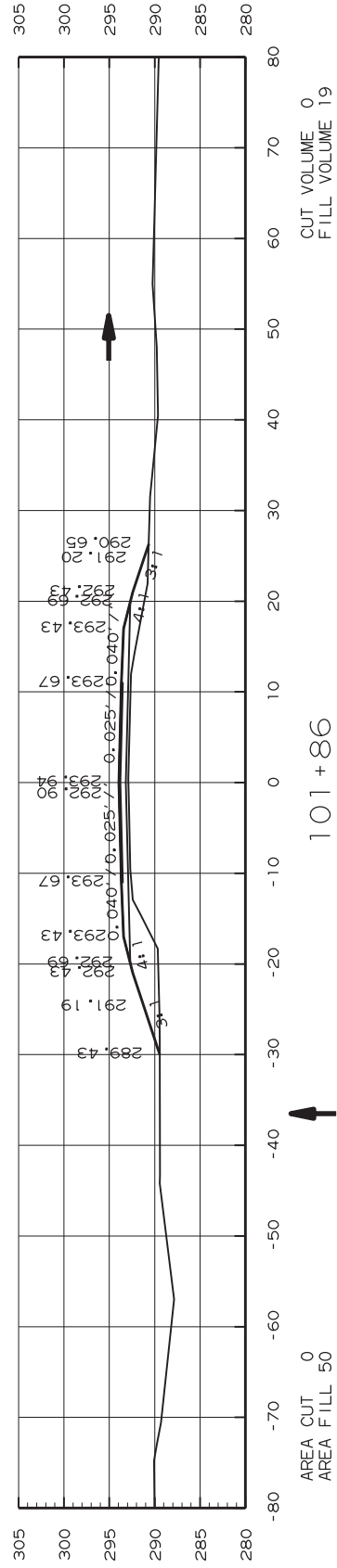
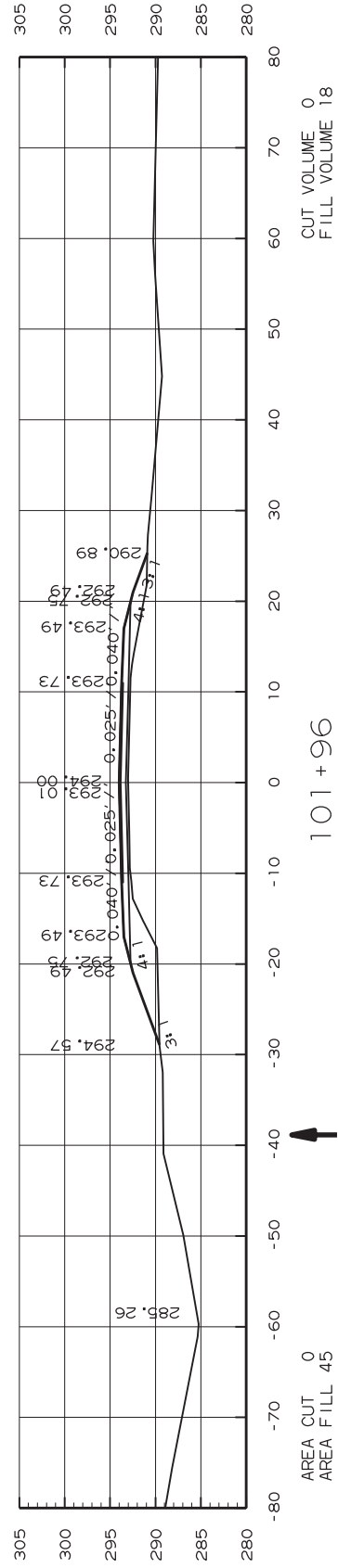
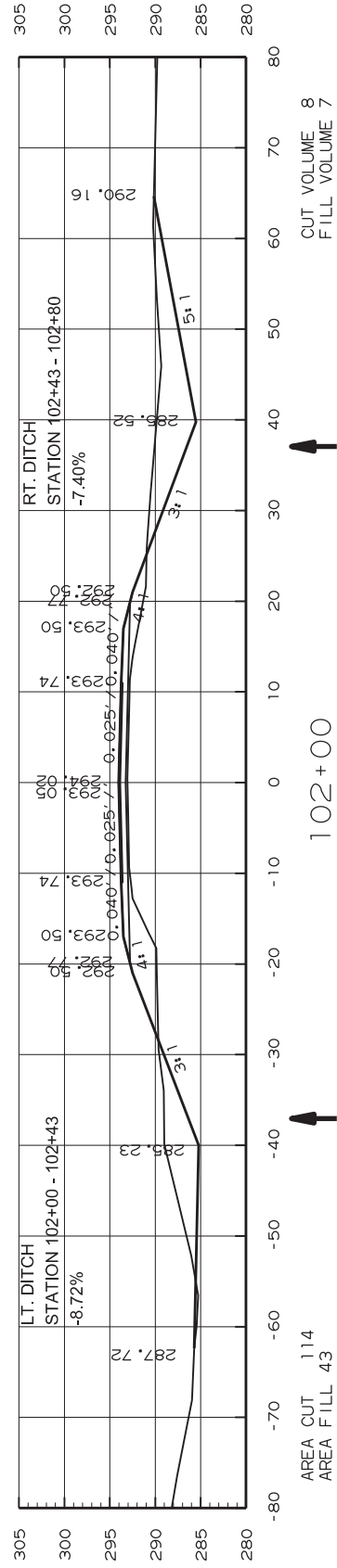
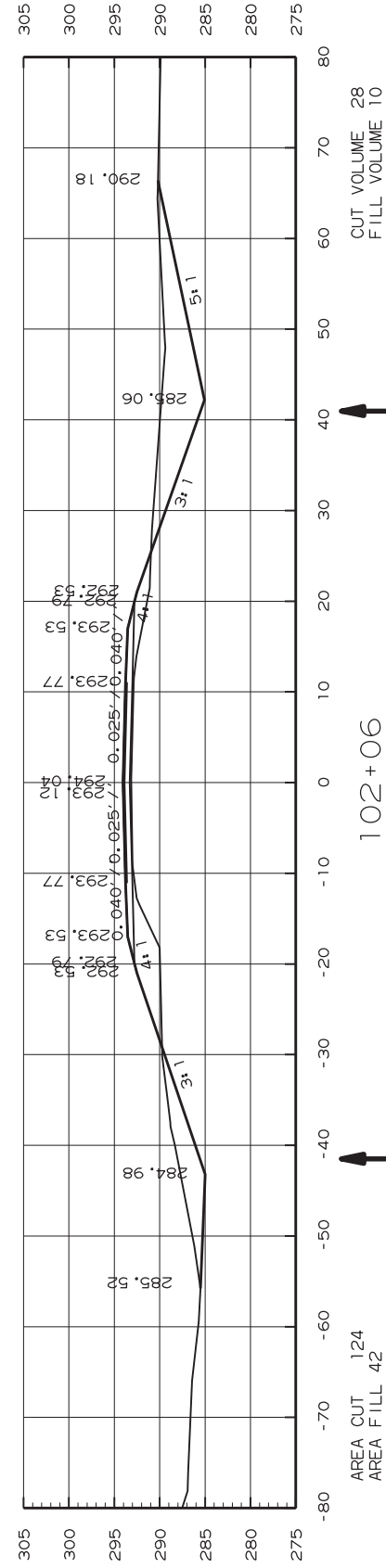
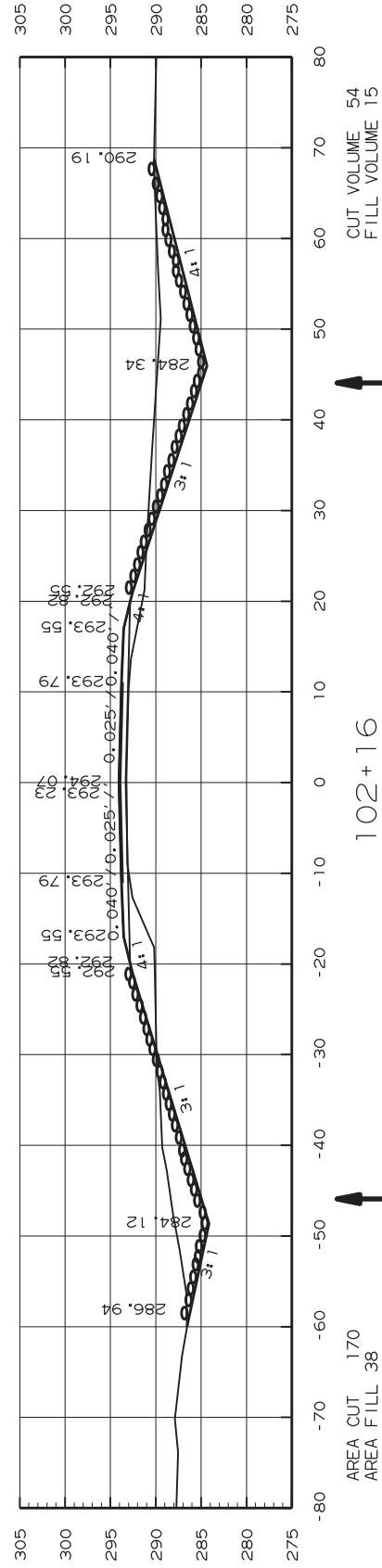
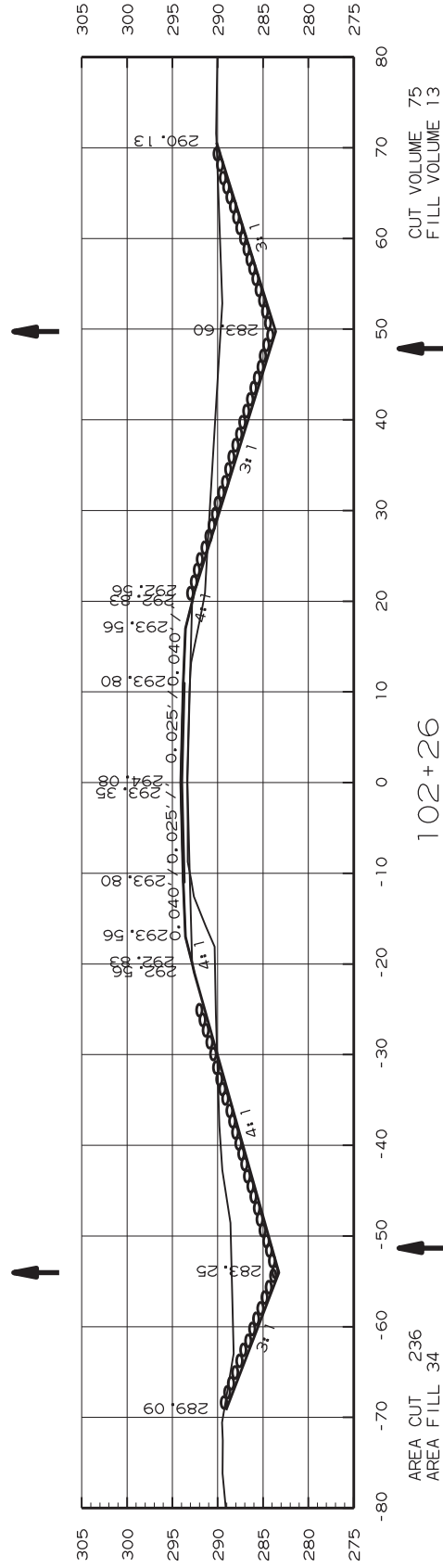
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		25	30
				JOB NO.		BR3107	25	30

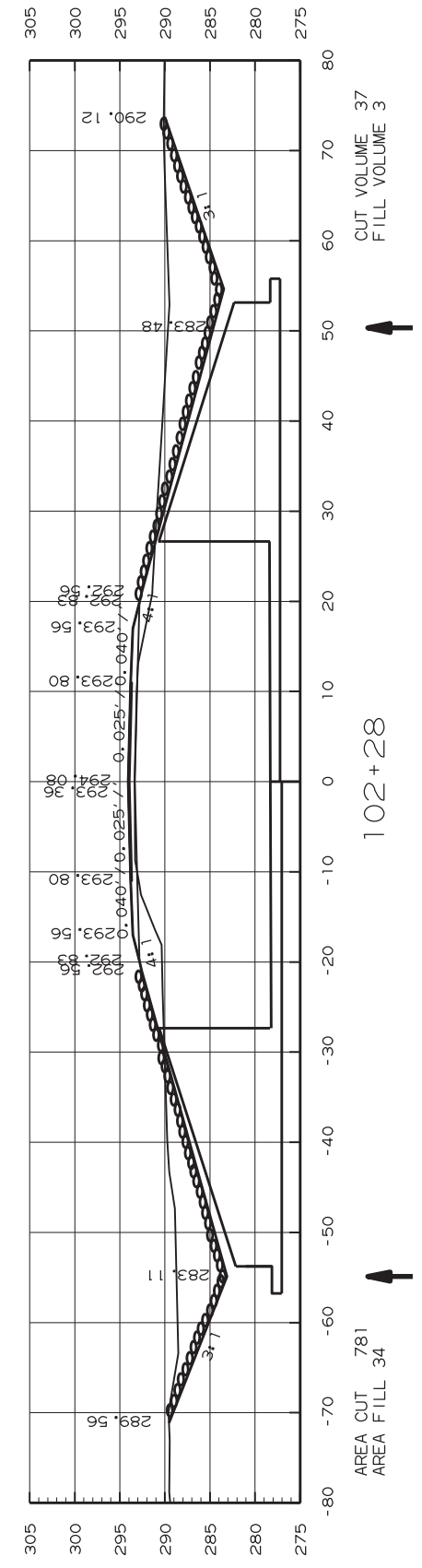
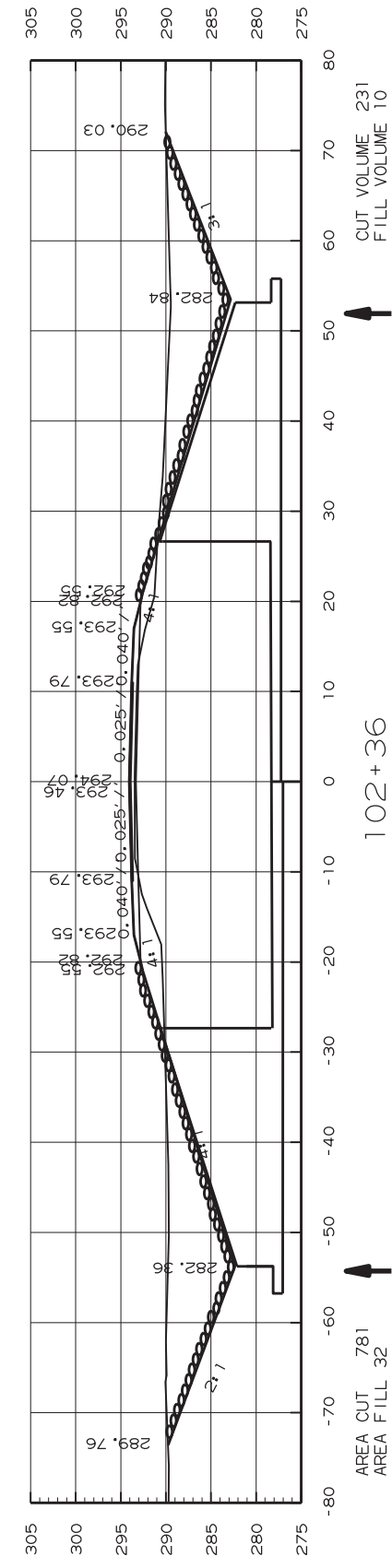
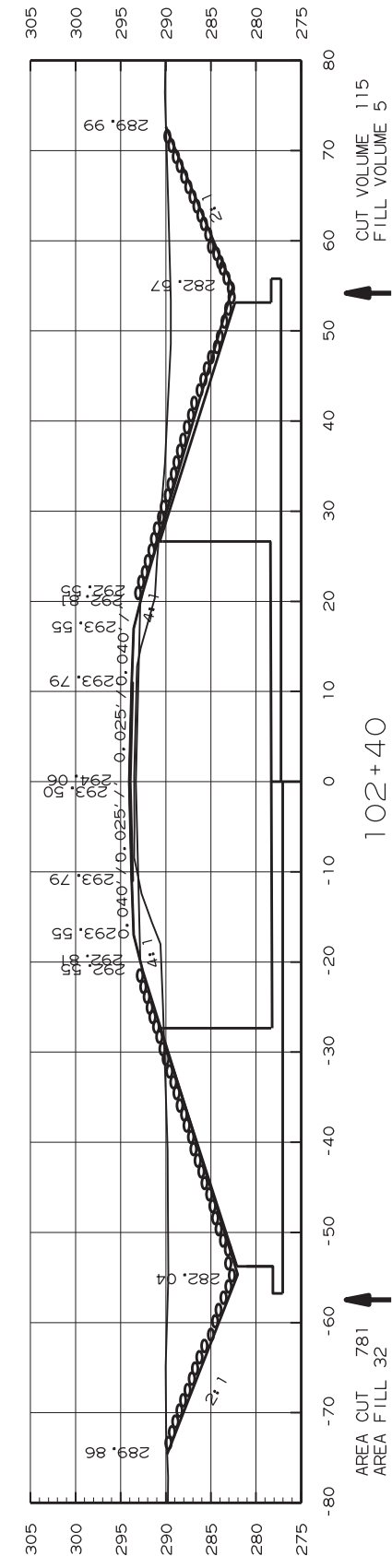
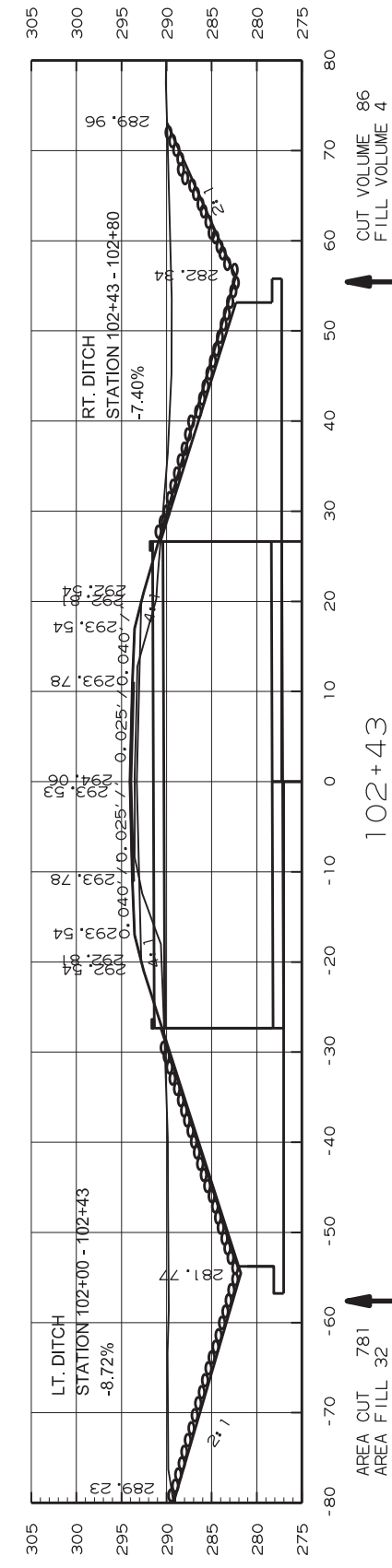
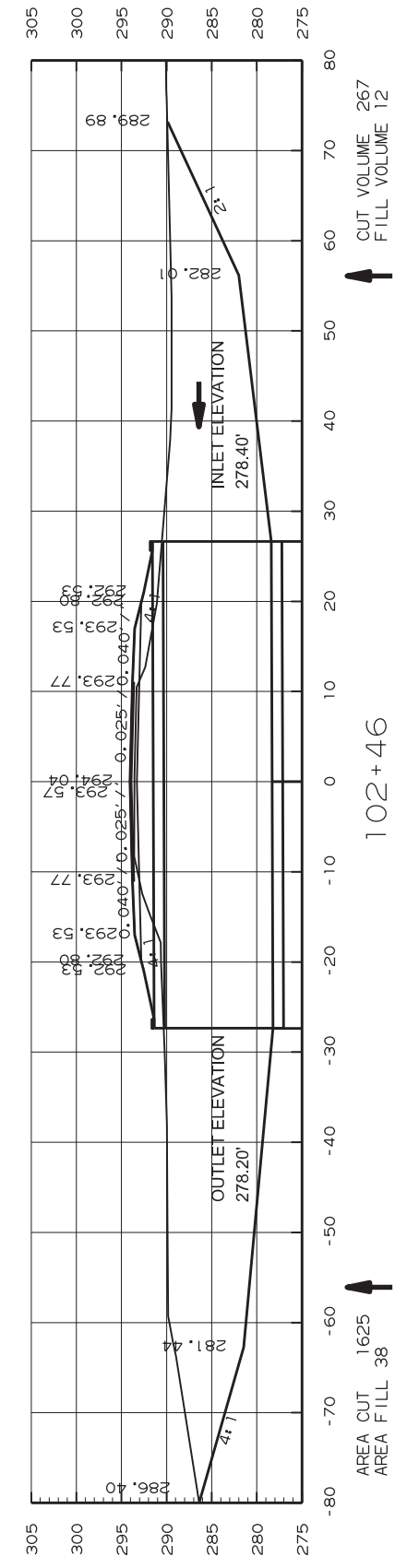
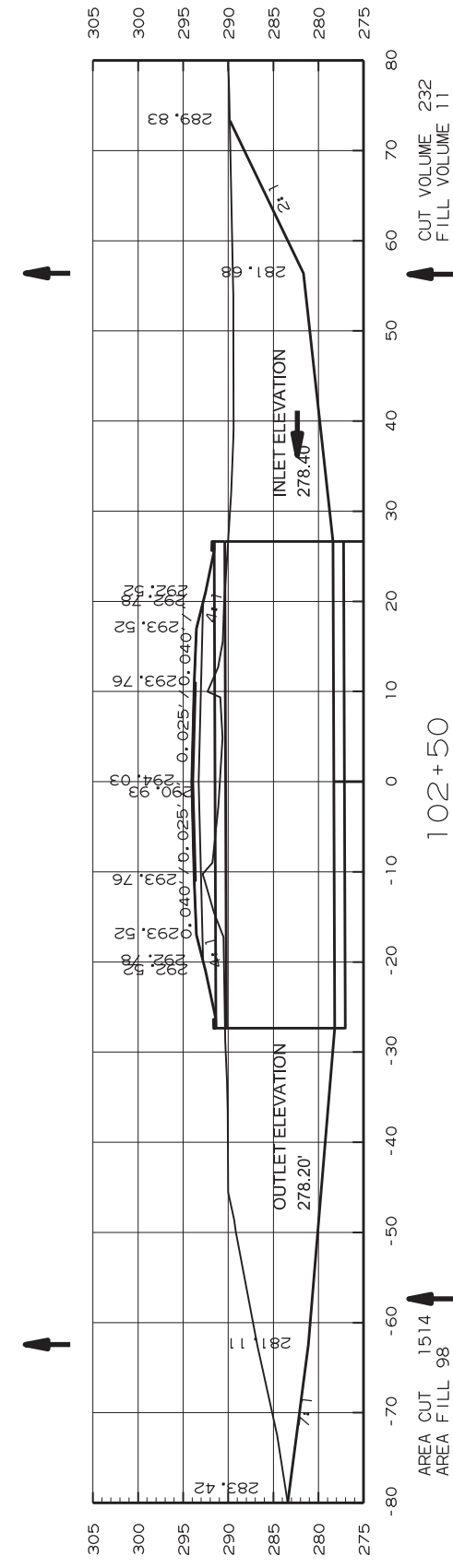
4 CROSS SECTIONS

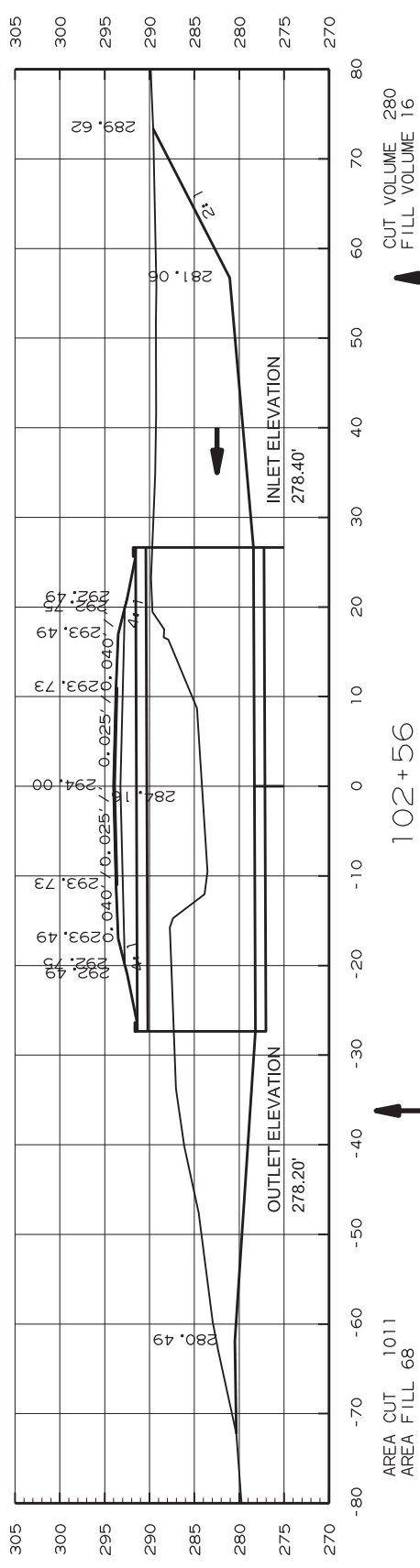
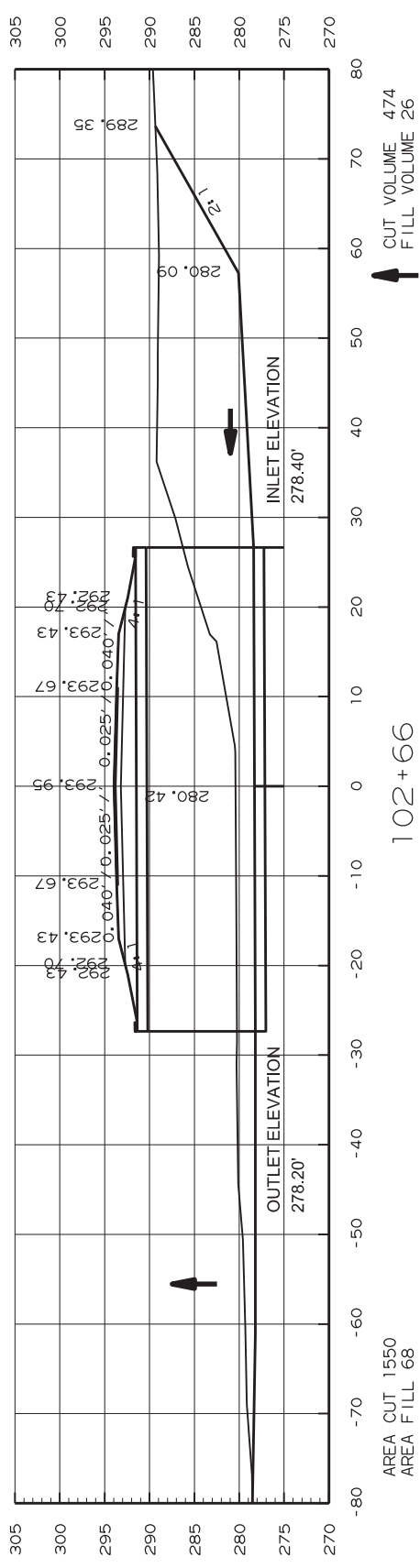
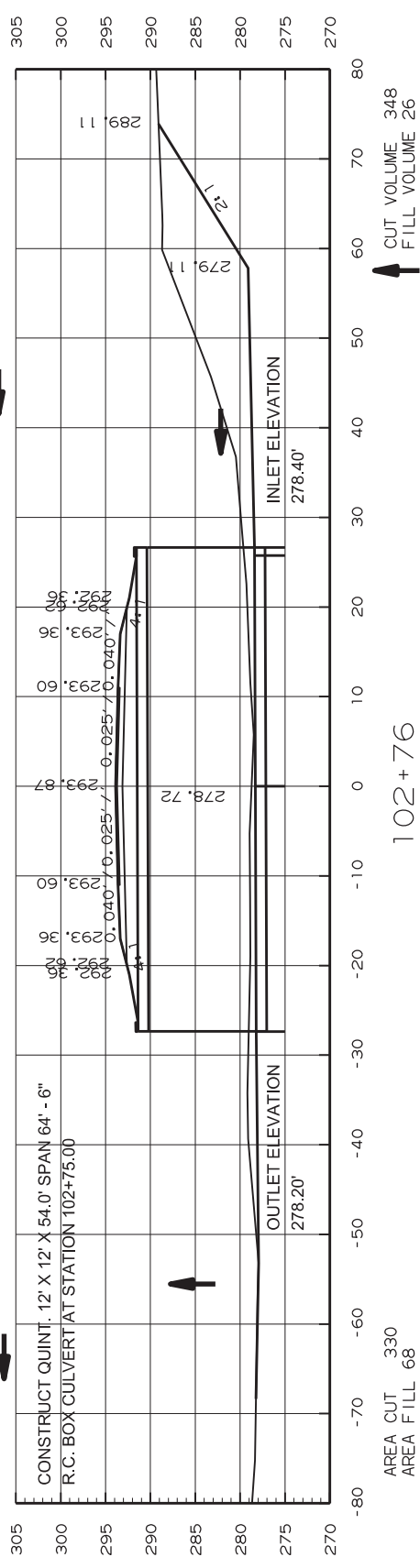
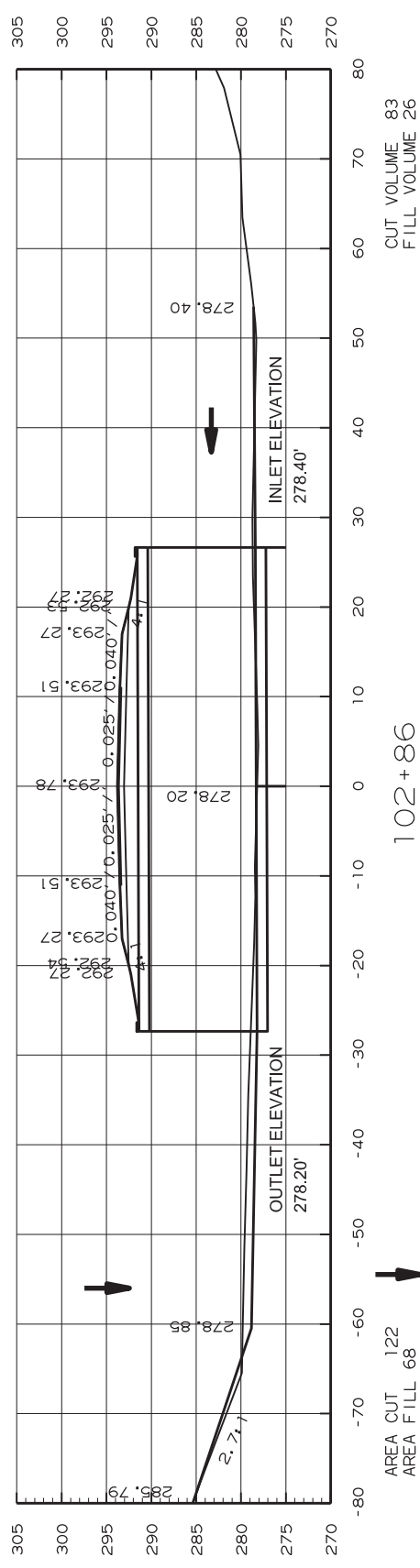
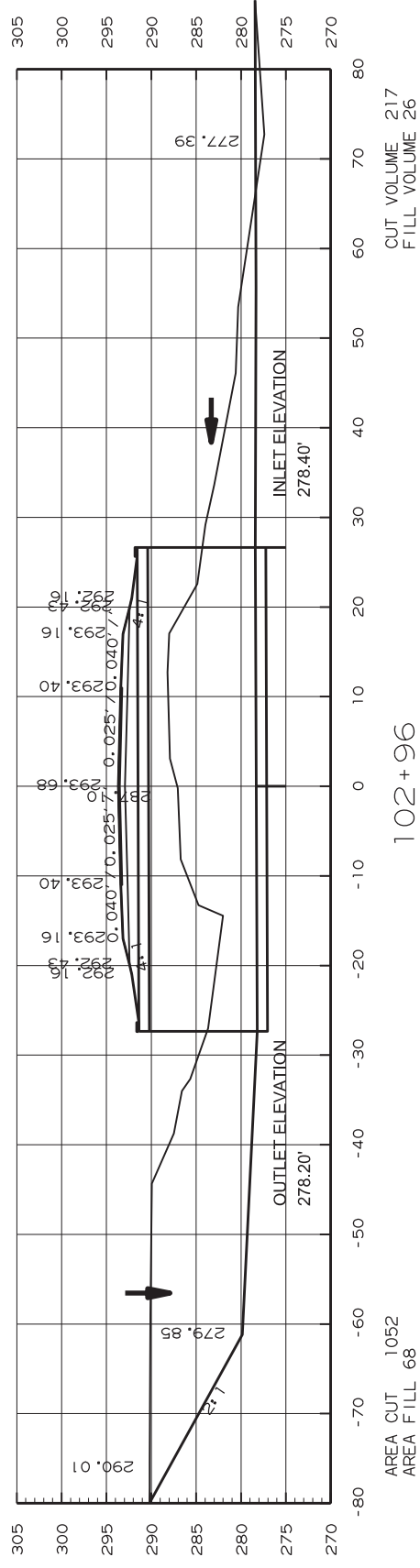
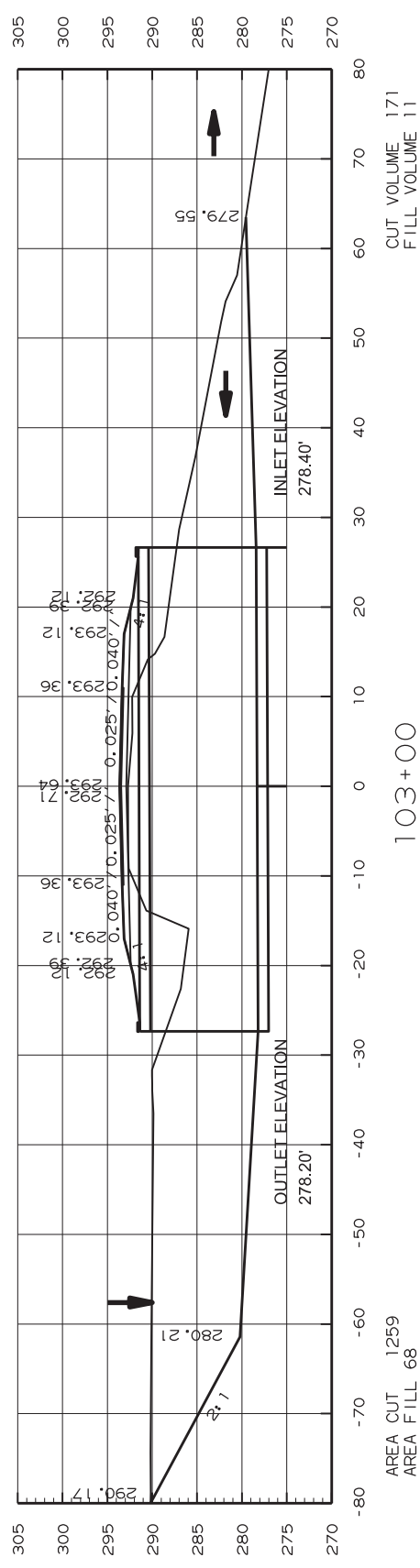


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		26	30
				JOB NO.		BR3107	26	30

4 CROSS SECTIONS

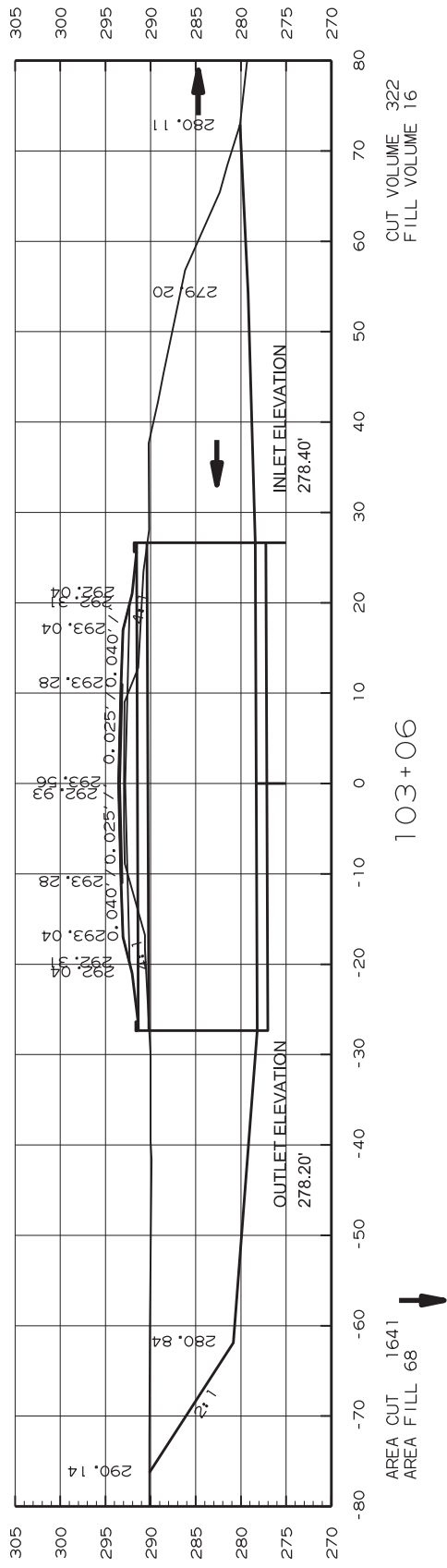
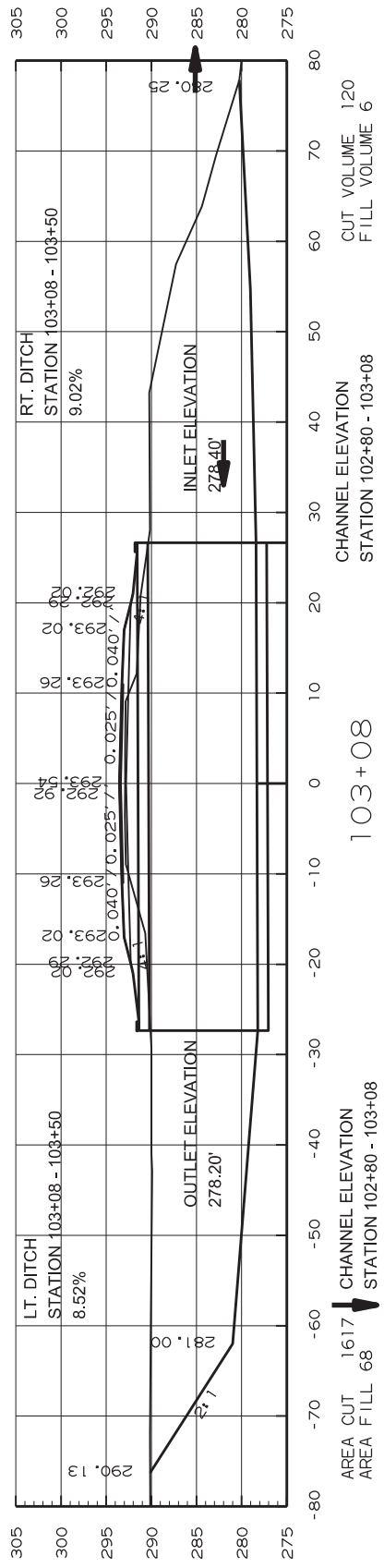
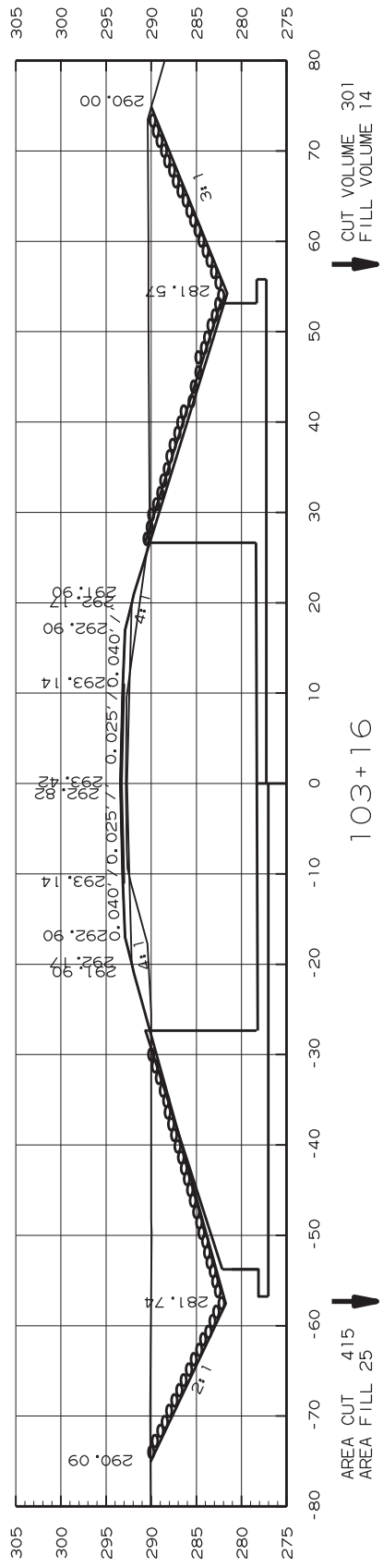
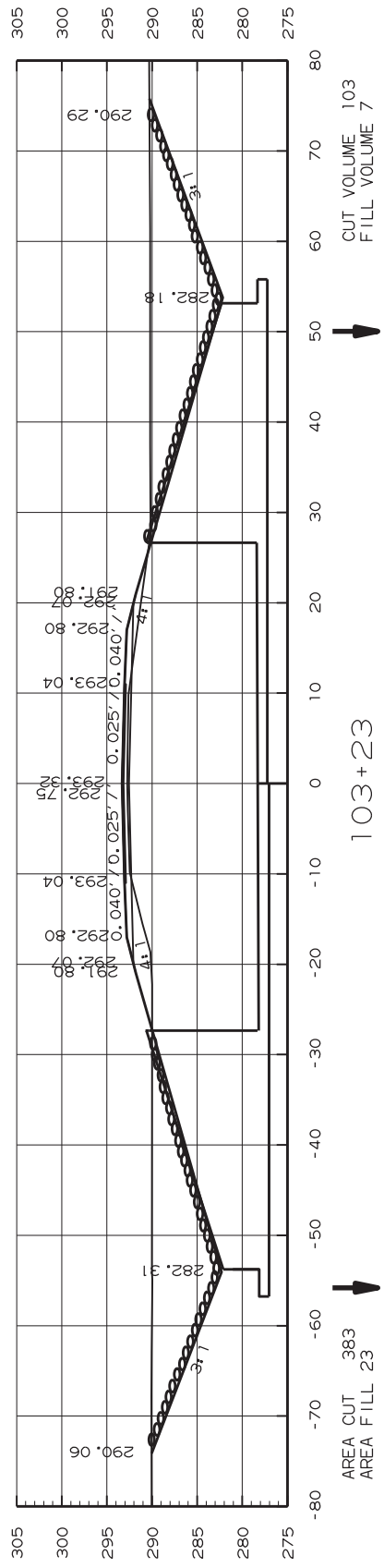
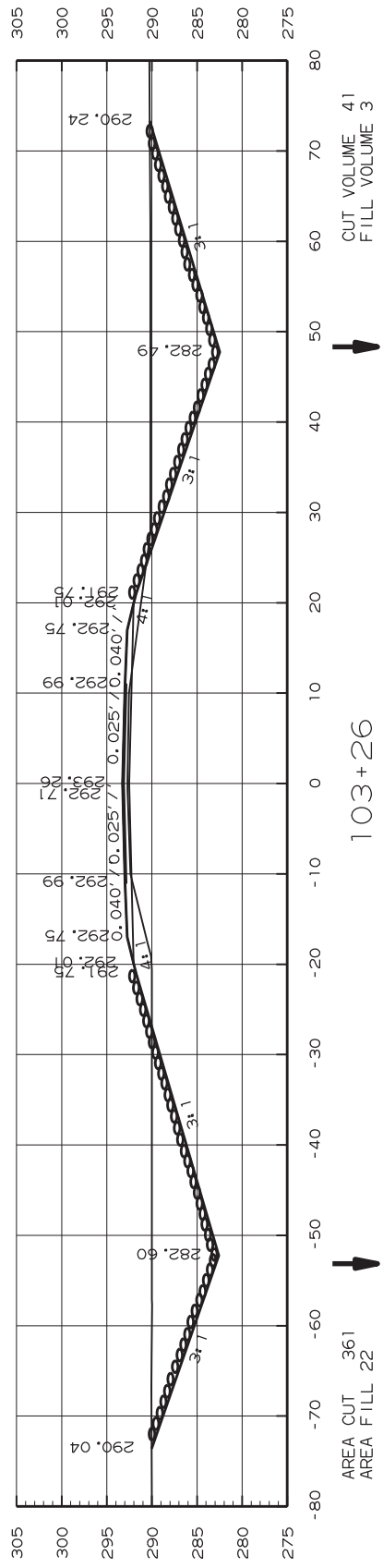
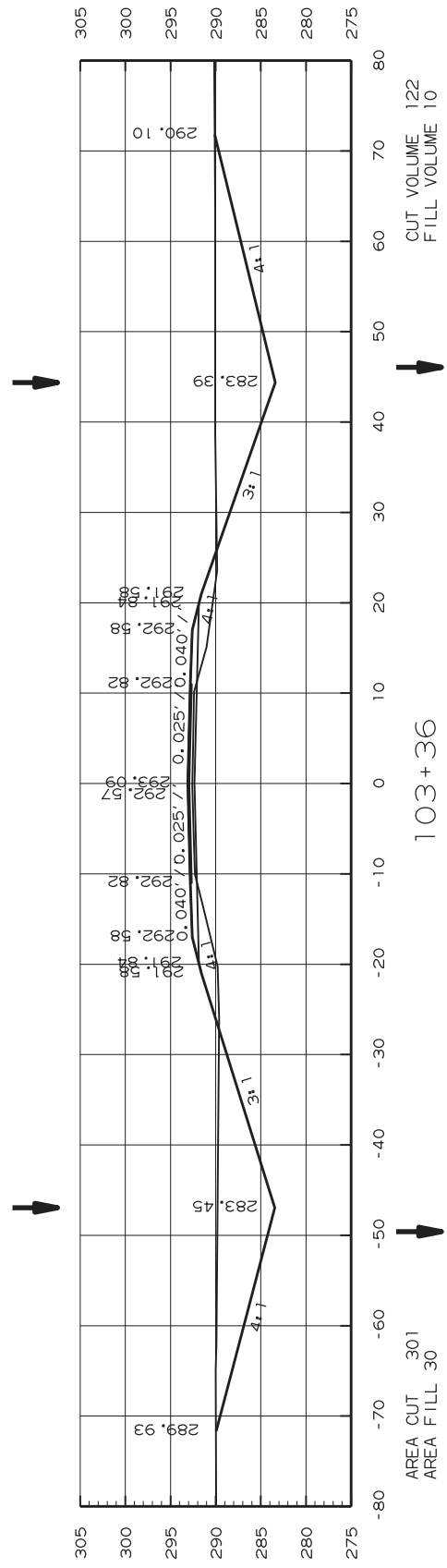




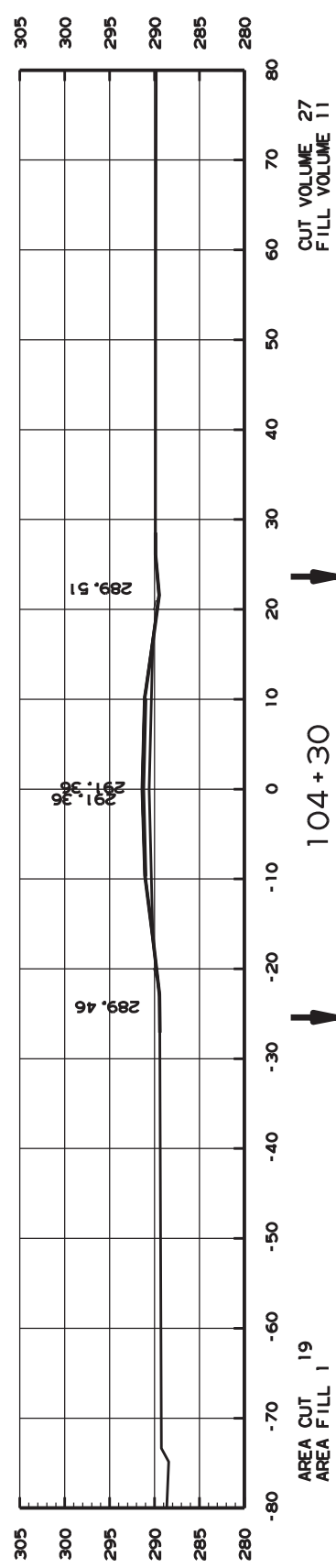


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				JOB NO.		BR3107	29	30

4 CROSS SECTIONS



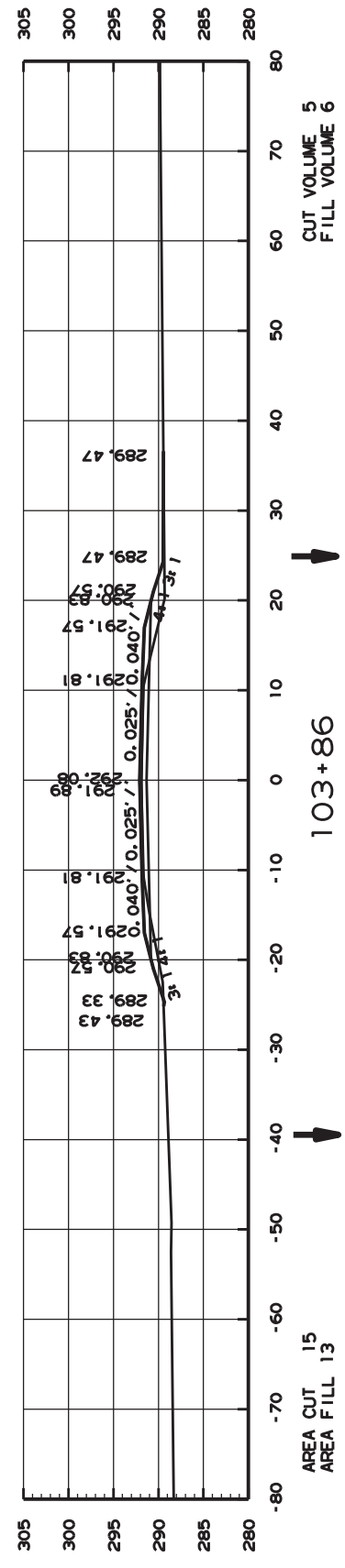
END CONSTRUCTION
50 FT. TRANSITION
STATION 104+30



AREA CUT 19
AREA FILL 1

104+30

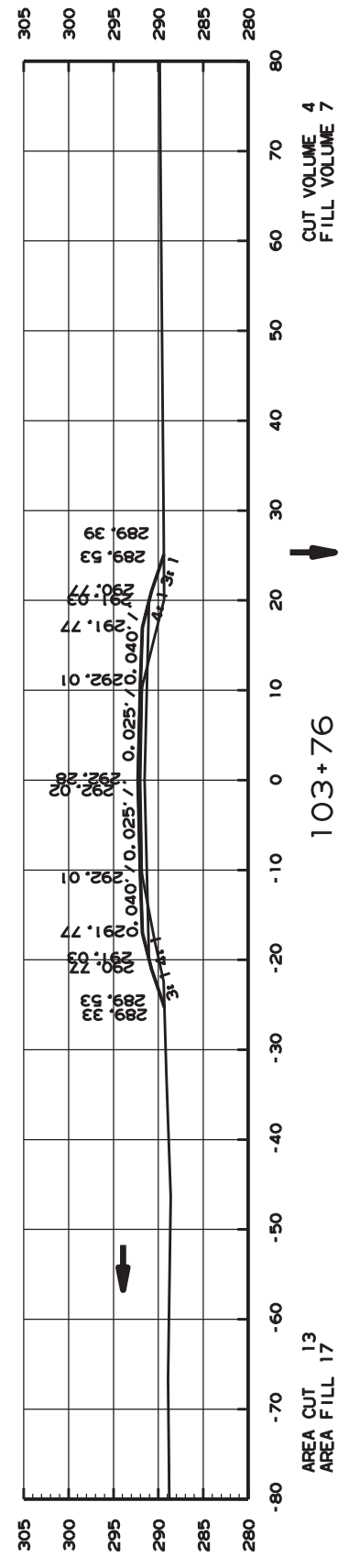
CUT VOLUME 27
FILL VOLUME 11



AREA CUT 15
AREA FILL 13

103+86

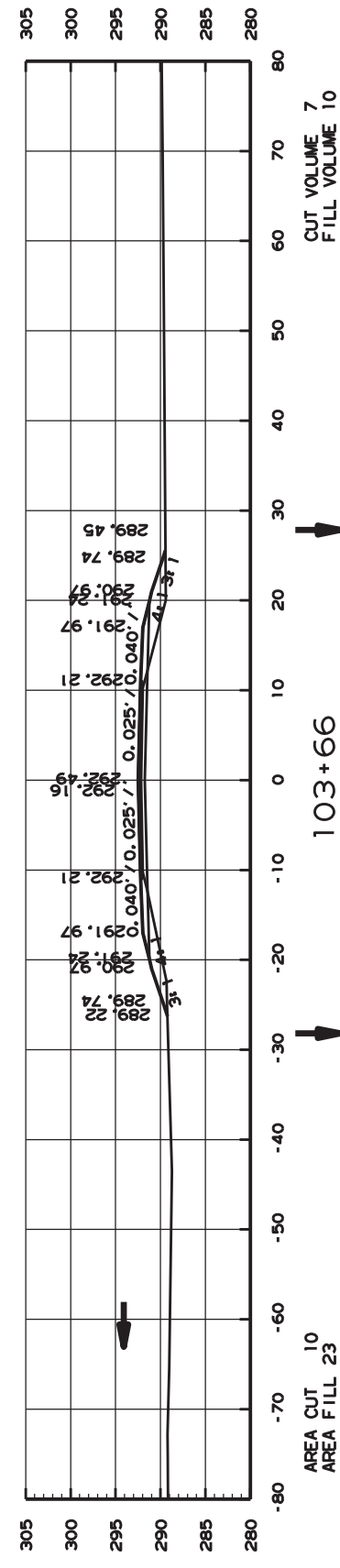
CUT VOLUME 5
FILL VOLUME 6



AREA CUT 13
AREA FILL 17

103+76

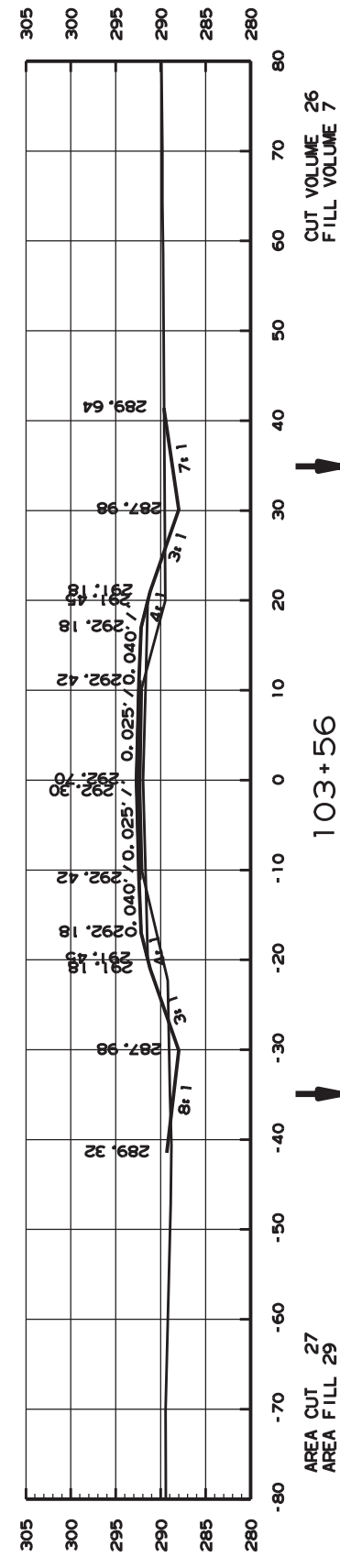
CUT VOLUME 4
FILL VOLUME 7



AREA CUT 10
AREA FILL 23

103+66

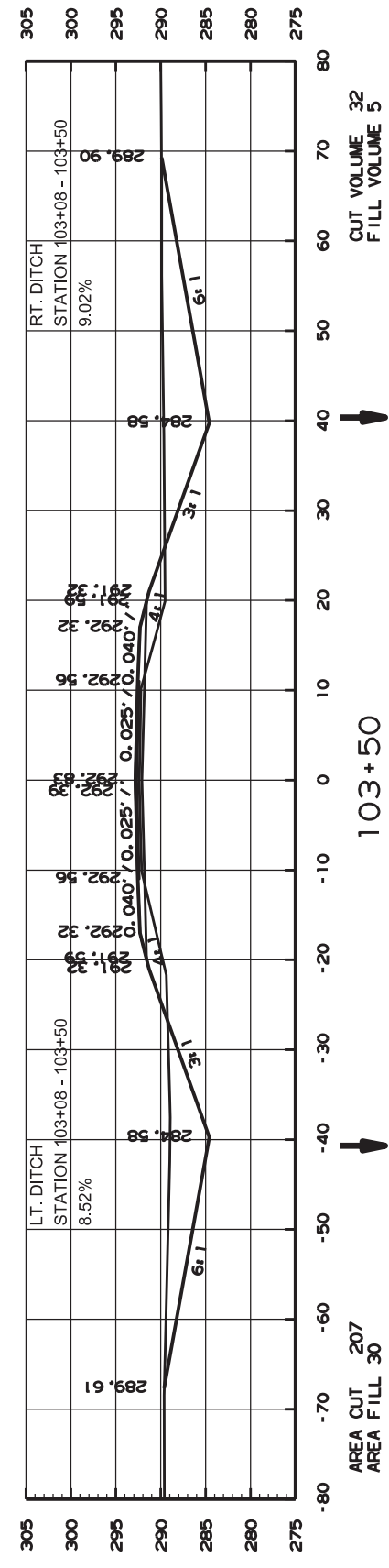
CUT VOLUME 7
FILL VOLUME 10



AREA CUT 27
AREA FILL 29

103+56

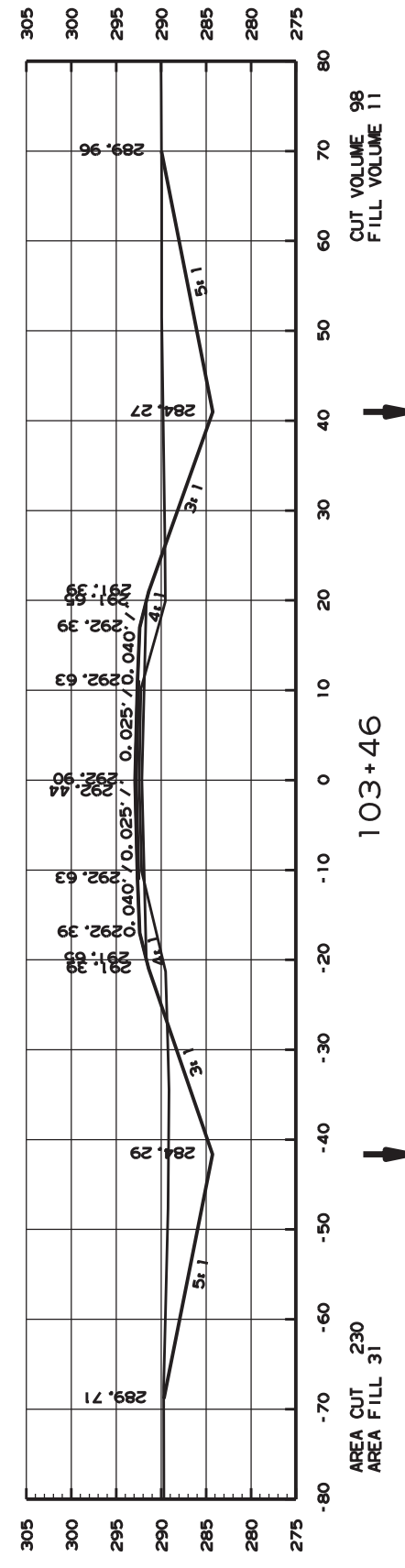
CUT VOLUME 26
FILL VOLUME 7



AREA CUT 207
AREA FILL 30

103+50

CUT VOLUME 32
FILL VOLUME 5



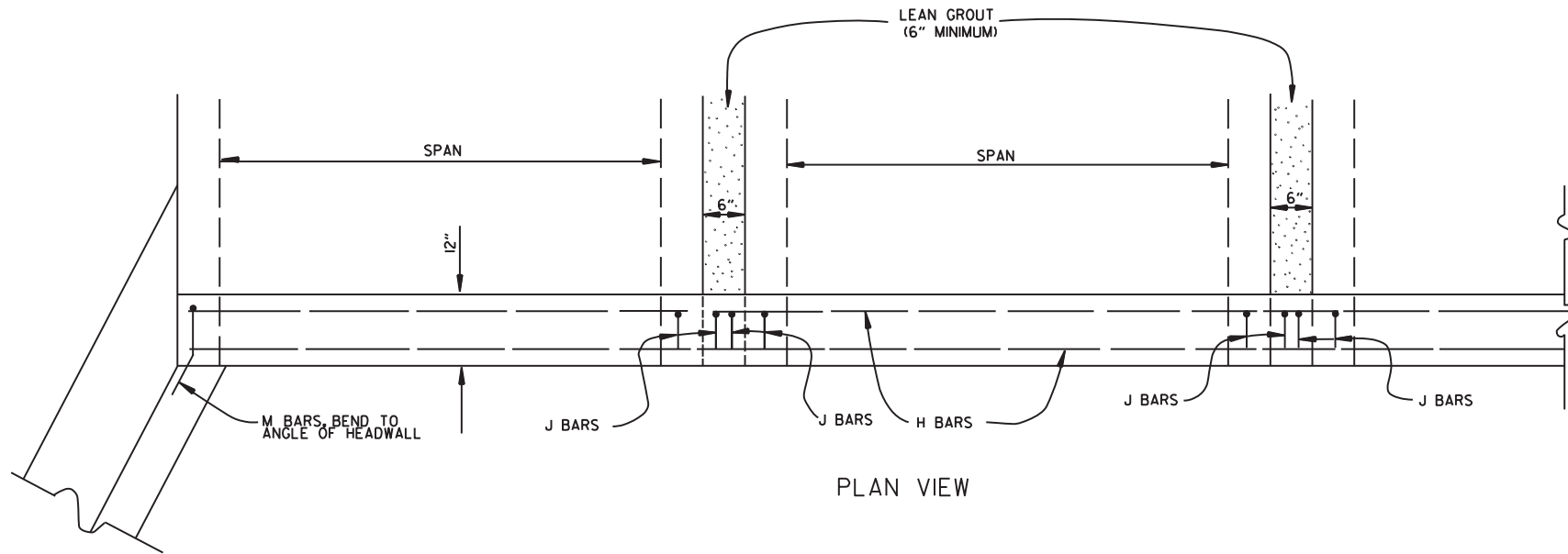
AREA CUT 230
AREA FILL 31

103+46

CUT VOLUME 98
FILL VOLUME 11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. PROJ. NO.	STATE	FED. PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	BR3107		30	30

4 CROSS SECTIONS



BAR LIST

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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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

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

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

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

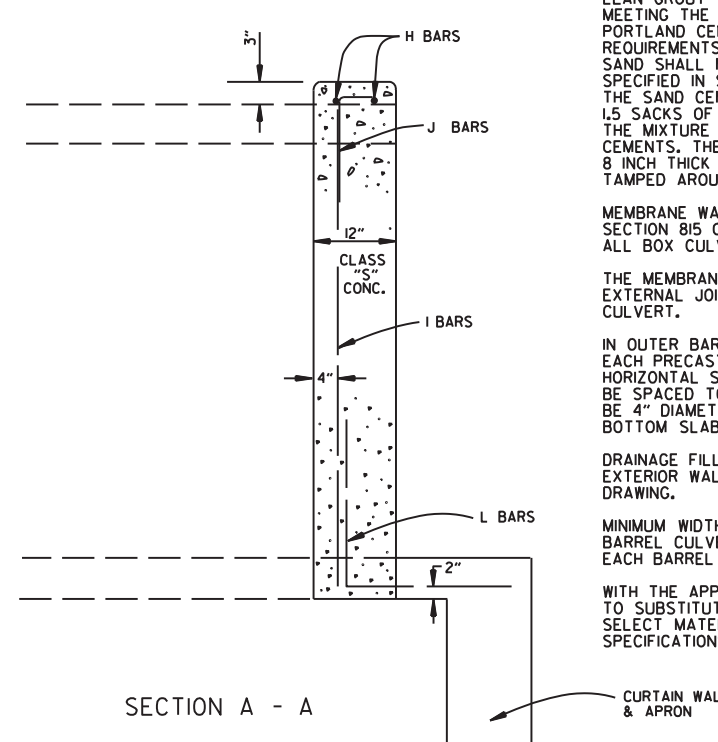
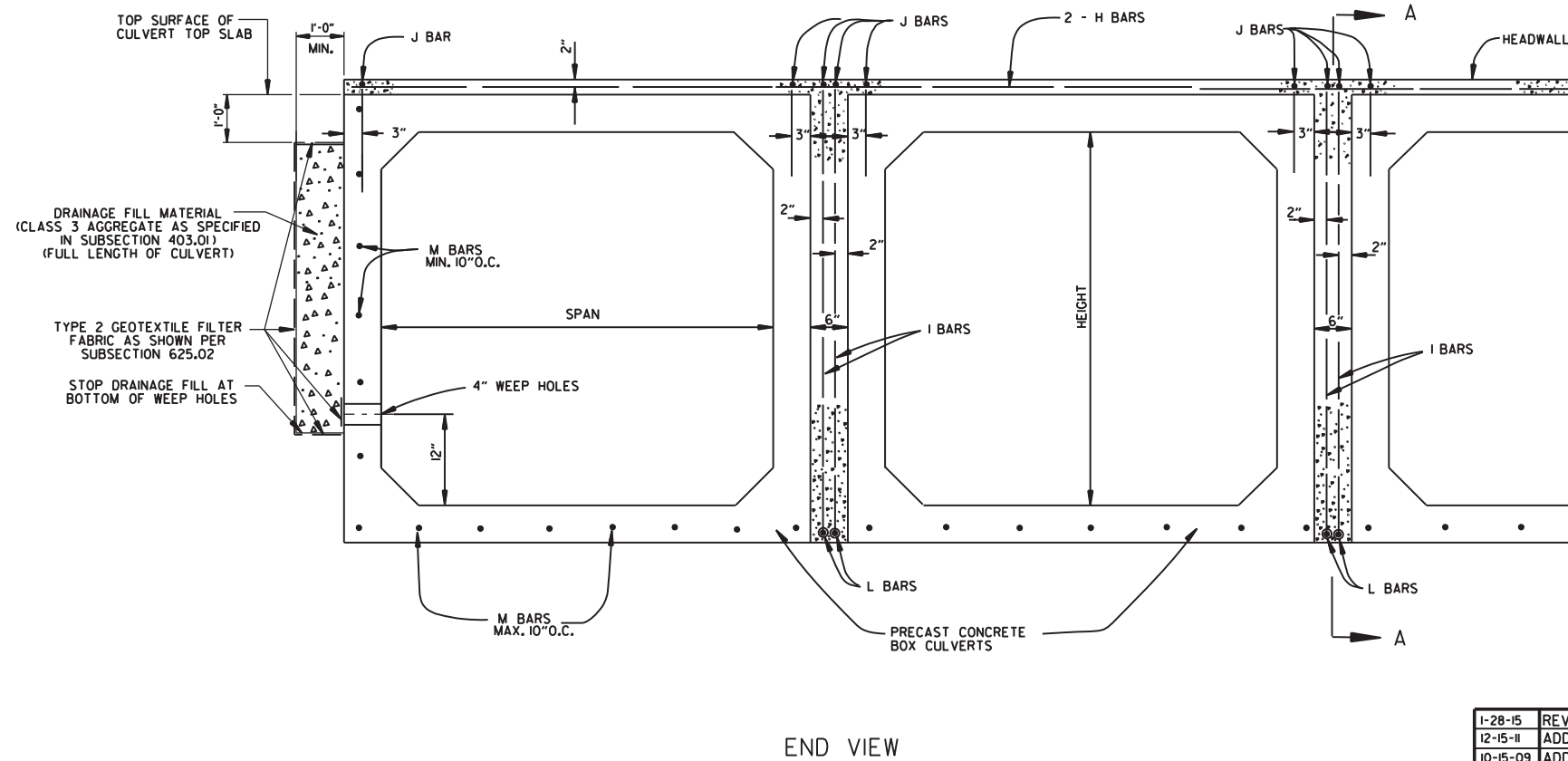
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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

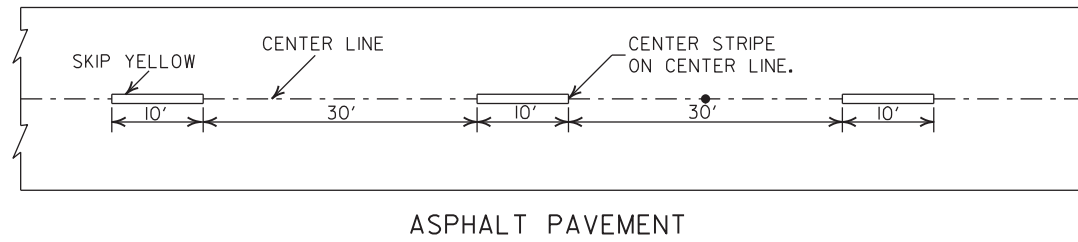
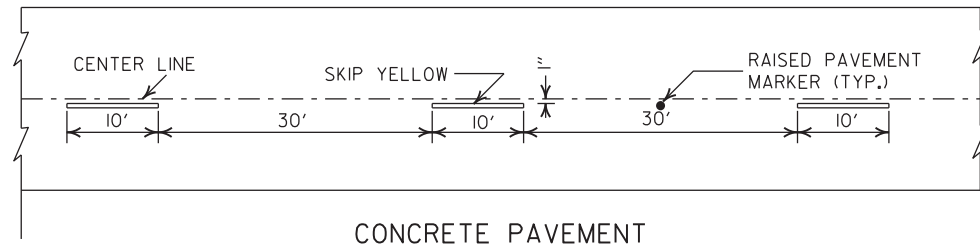


1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLs FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE 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

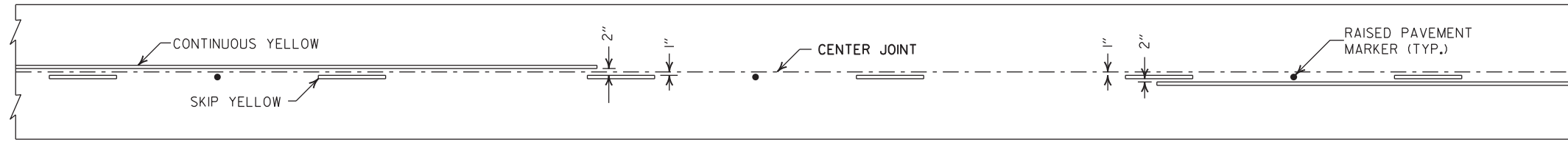
STANDARD DRAWING PBC-1



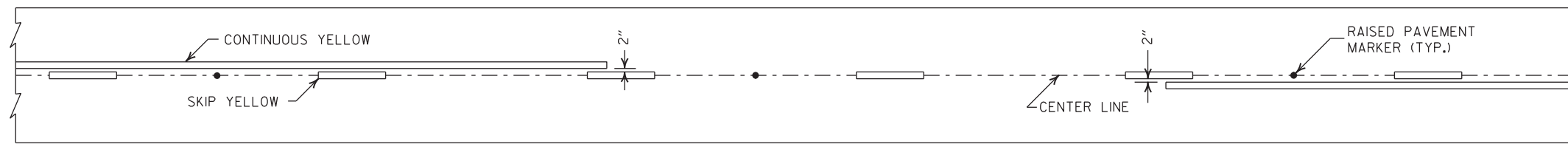
CONCRETE PAVEMENT

ASPHALT PAVEMENT

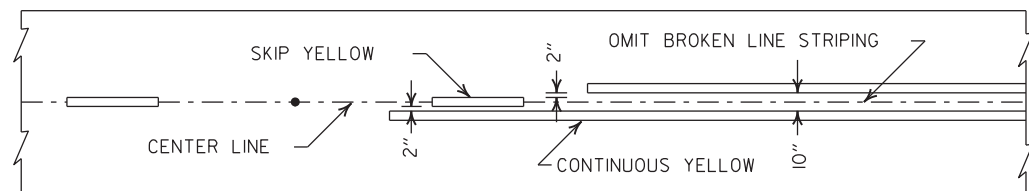
BROKEN LINE STRIPING



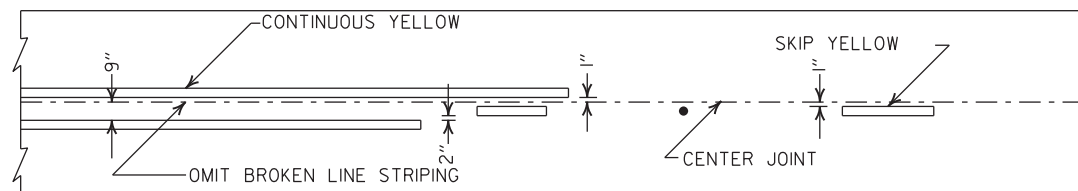
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

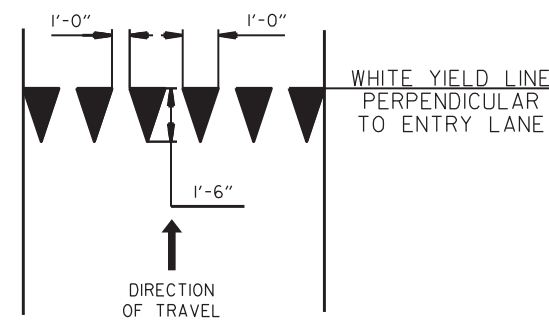


ASPHALT PAVEMENT

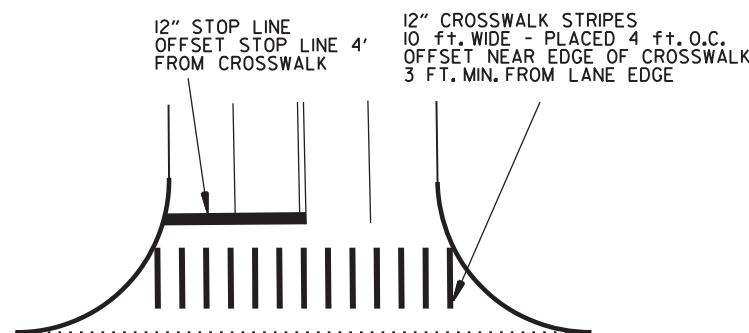


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



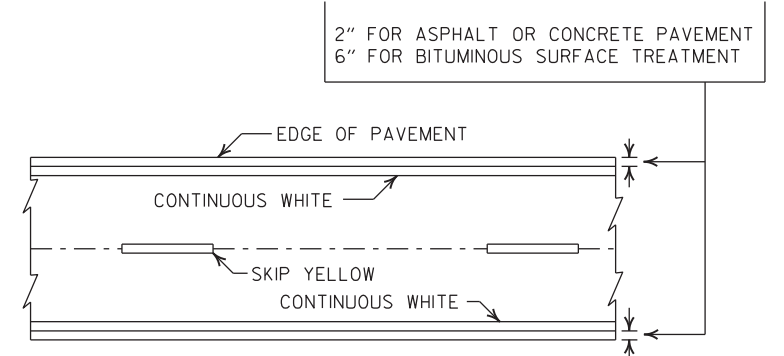
YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

NOTES:

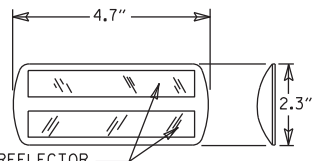
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



PRISMATIC REFLECTOR

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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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

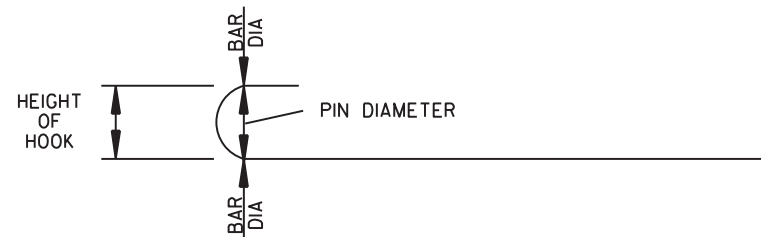
PAVEMENT MARKING DETAILS

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

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



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

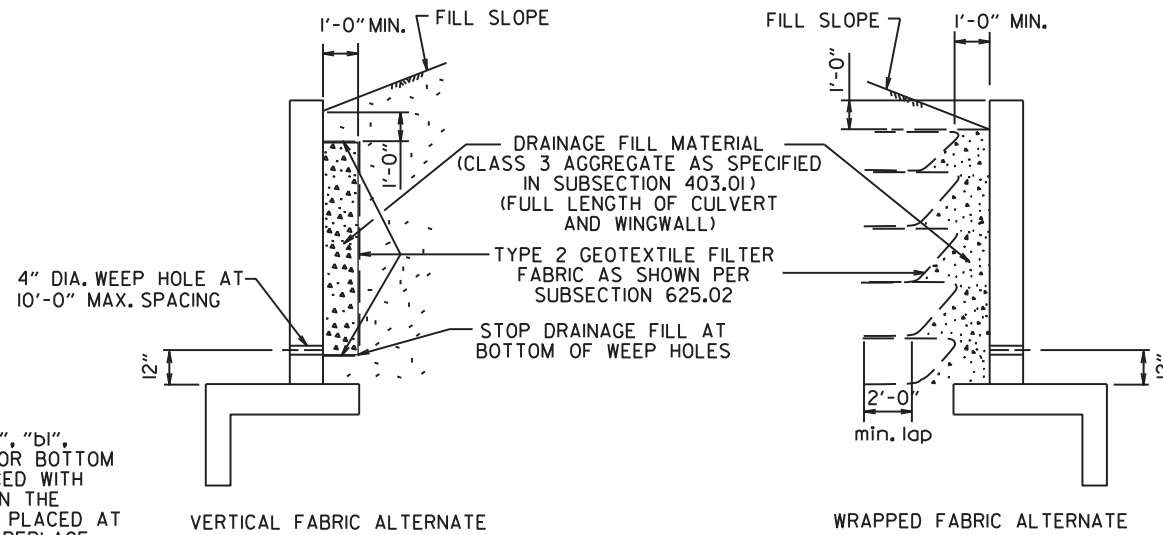
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

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

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

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

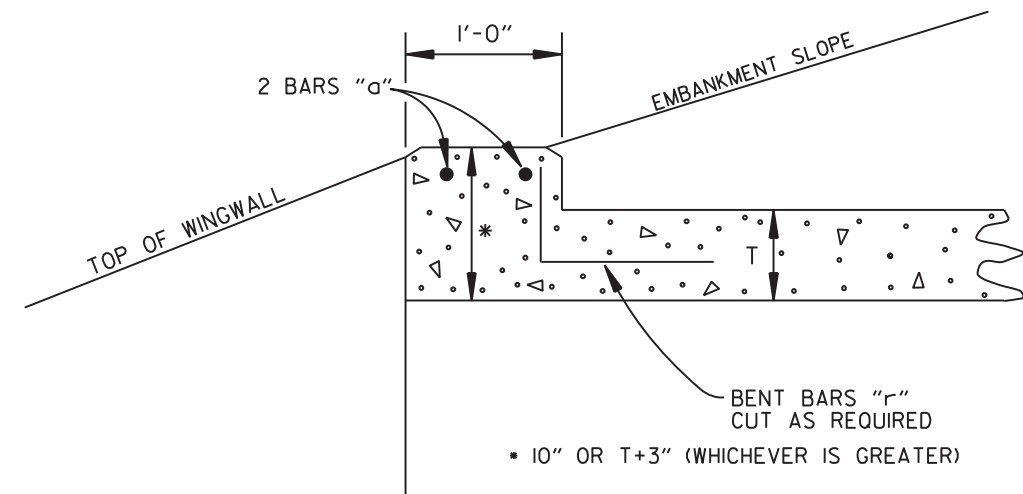
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

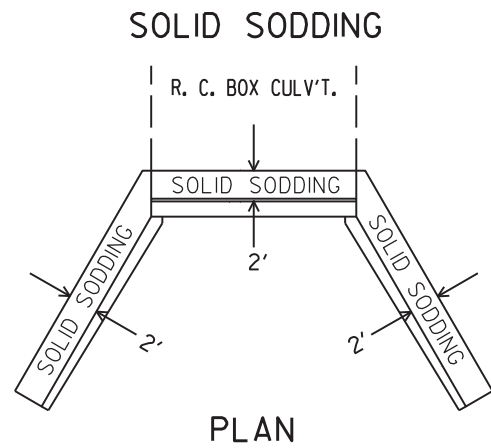
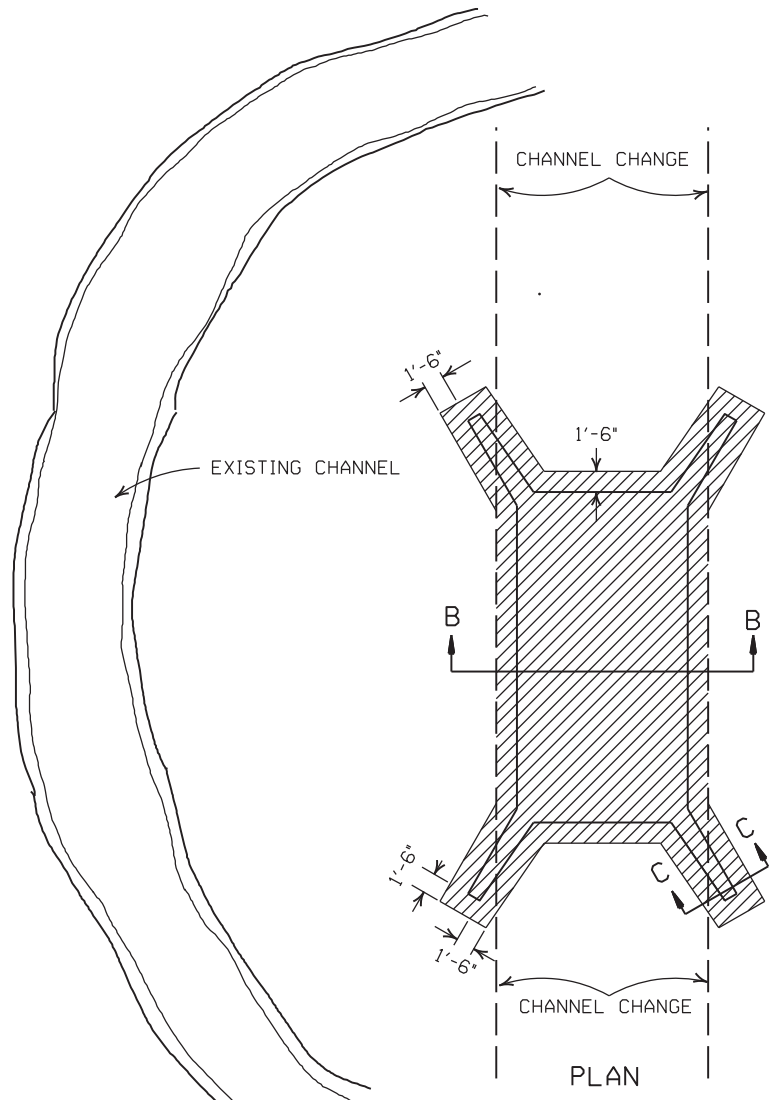
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

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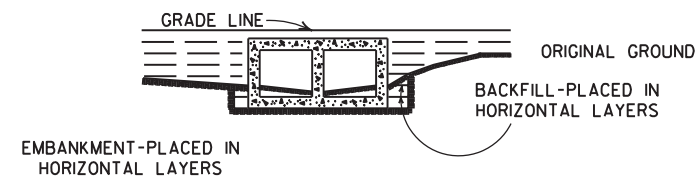
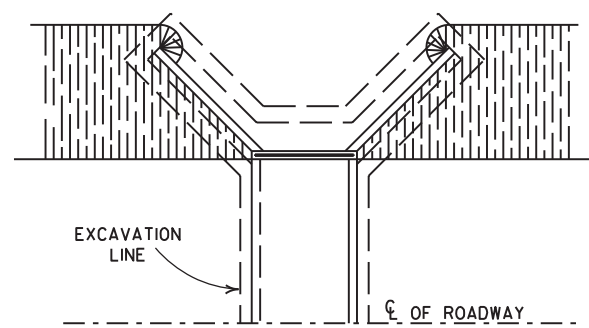
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

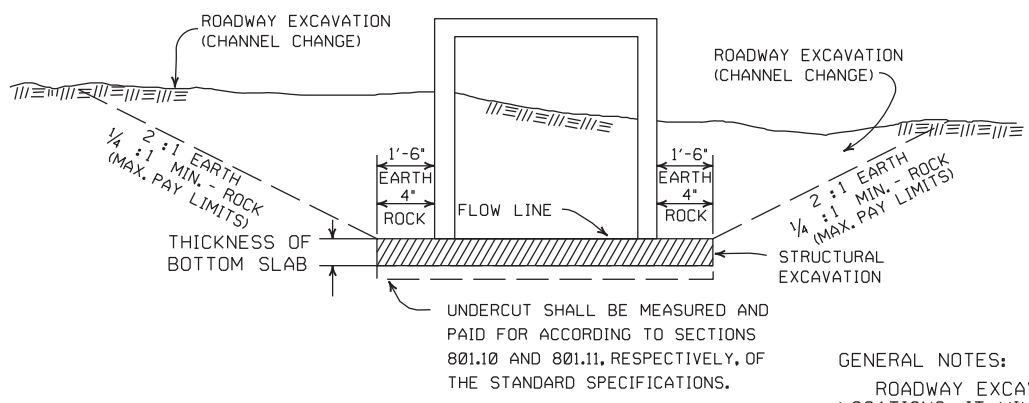
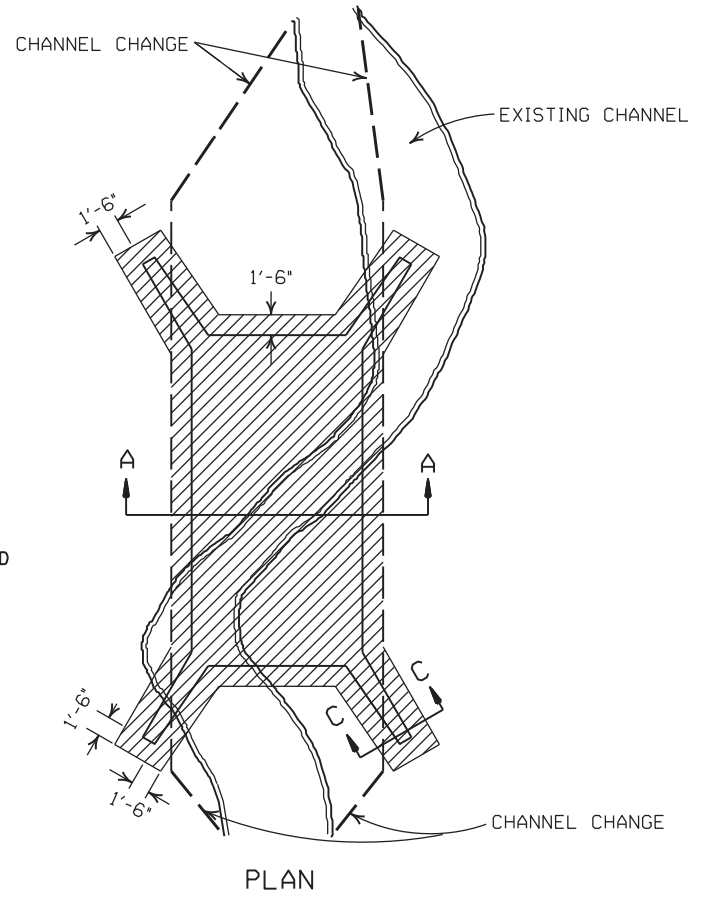


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

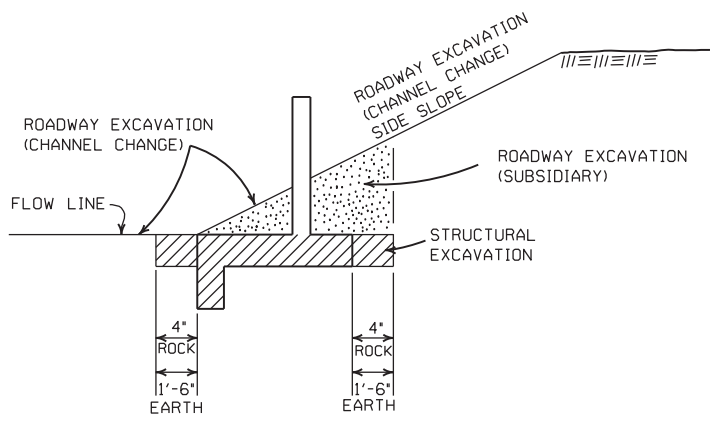
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



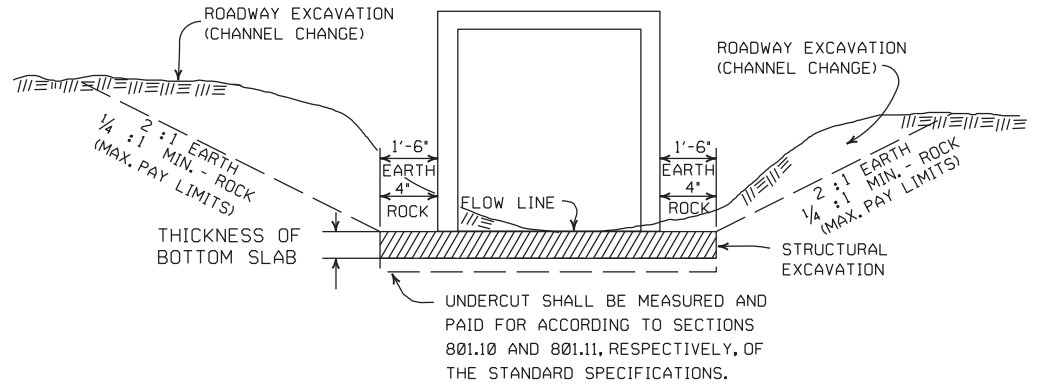
LONGITUDINAL SECTION
BACKFILL DETAILS FOR BOX CULVERT



SECTION B-B
DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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










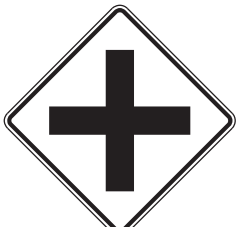

















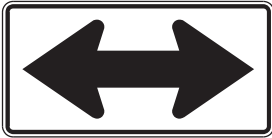


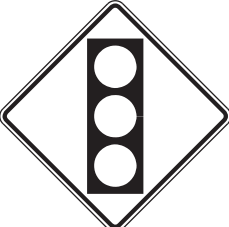



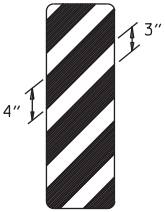
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

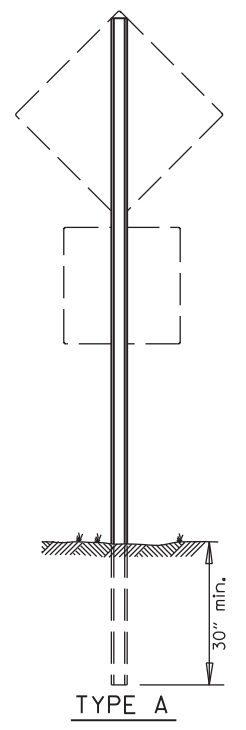
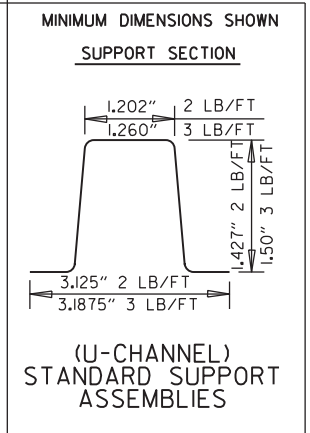
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

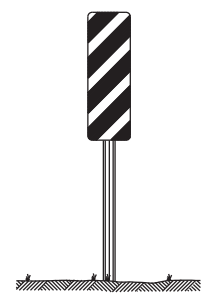
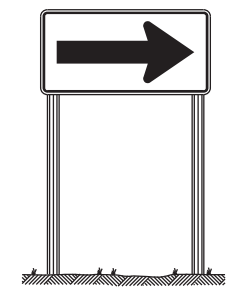
**EXCAVATION PAY LIMITS,
BACKFILL, & SOLID SODDING
FOR BOX CULVERTS**

STANDARD DRAWING RCB-2

 RI-1 30"x30"	 WI-3 30"x30" (LT. OR RT.)	 WI-8 18"x24"	 W2-5 30"x30"	 W3-1 36"x36"	 W5-1 36"x36"	 M6-3 21"x15"
 RI-2 36"x36"x36"	 WI-4 30"x30" (LT. OR RT.)	 W2-1 30"x30"	 SI-1 36"x36"	 W3-2 36"x36"	 County Route Marker MI-6 24"x24"	 M6-4 21"x15"
 R2-1 24"x30"	 WI-5 30"x30" (LT. OR RT.)	 W2-2 30"x30"	 W5-2 36"x36"	 W8-3 36"x36"	NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.	 RI-3P 18"x6"
 WI-1 30"x30" (LT. OR RT.)	 WI-6 48"x24"	 W2-3 30"x30" (LT. OR RT.)	 W5-3 36"x36"	 WI3-IP 18"x18"	NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.	 M6-6 21"x15"
 WI-2 30"x30" (LT. OR RT.)	 WI-7 48"x24"	 W2-4 30"x30"	 W10-1 36" DIAMETER	 W3-3 36"x36"	 M6-2 21"x15"	 S4-3P 24"x8"
					 S4-2P 24"x10"	 OM-3 12"x36" (LT. OR RT.)



NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



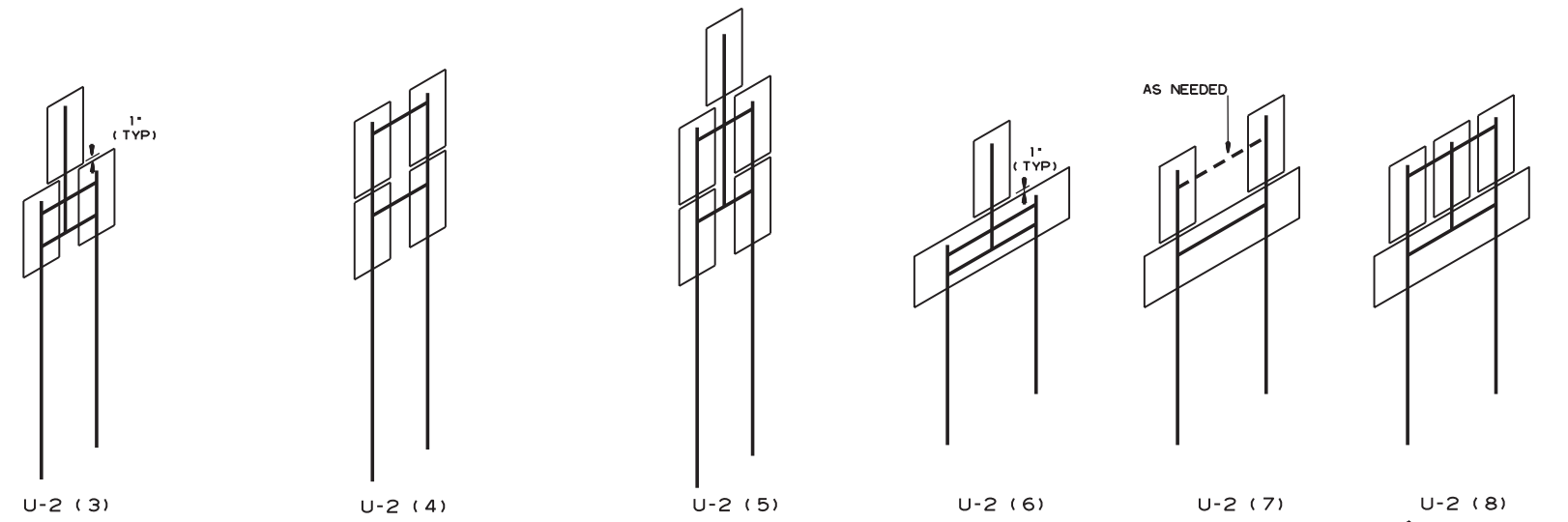
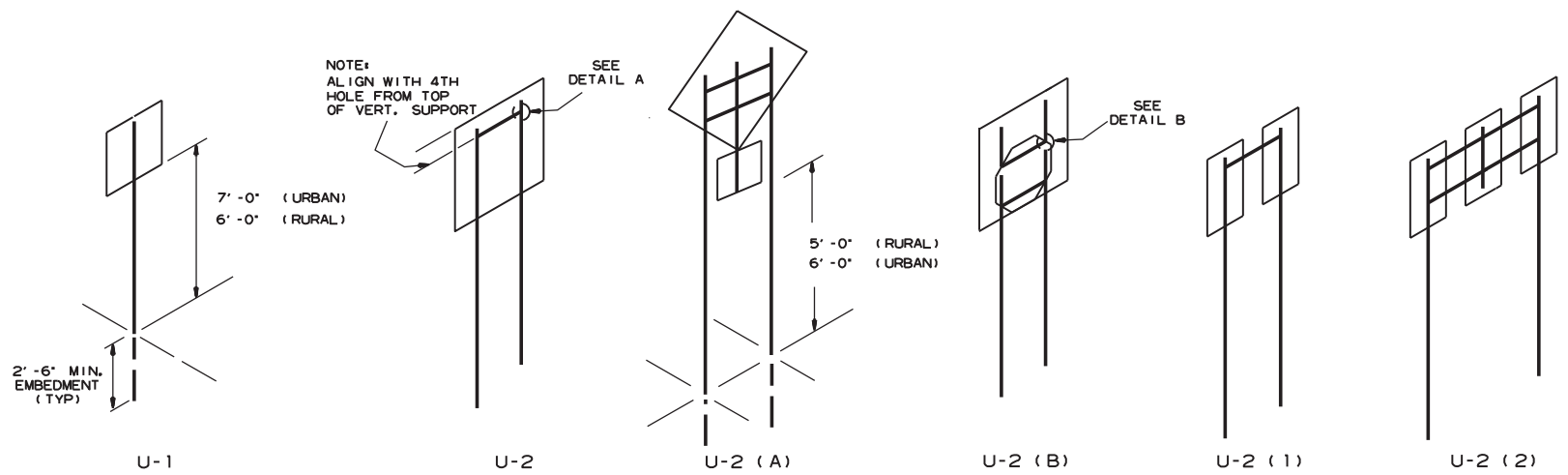
MINIMUM WEIGHT
TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

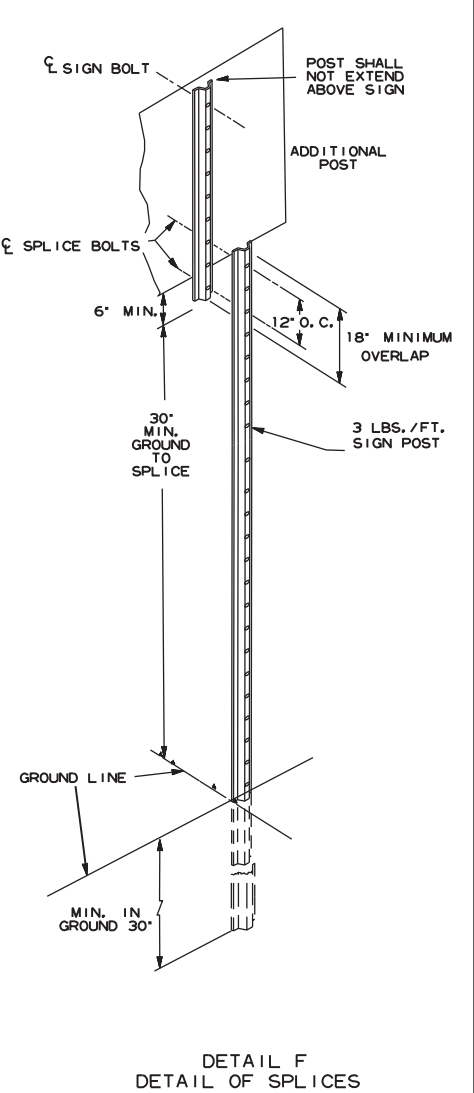
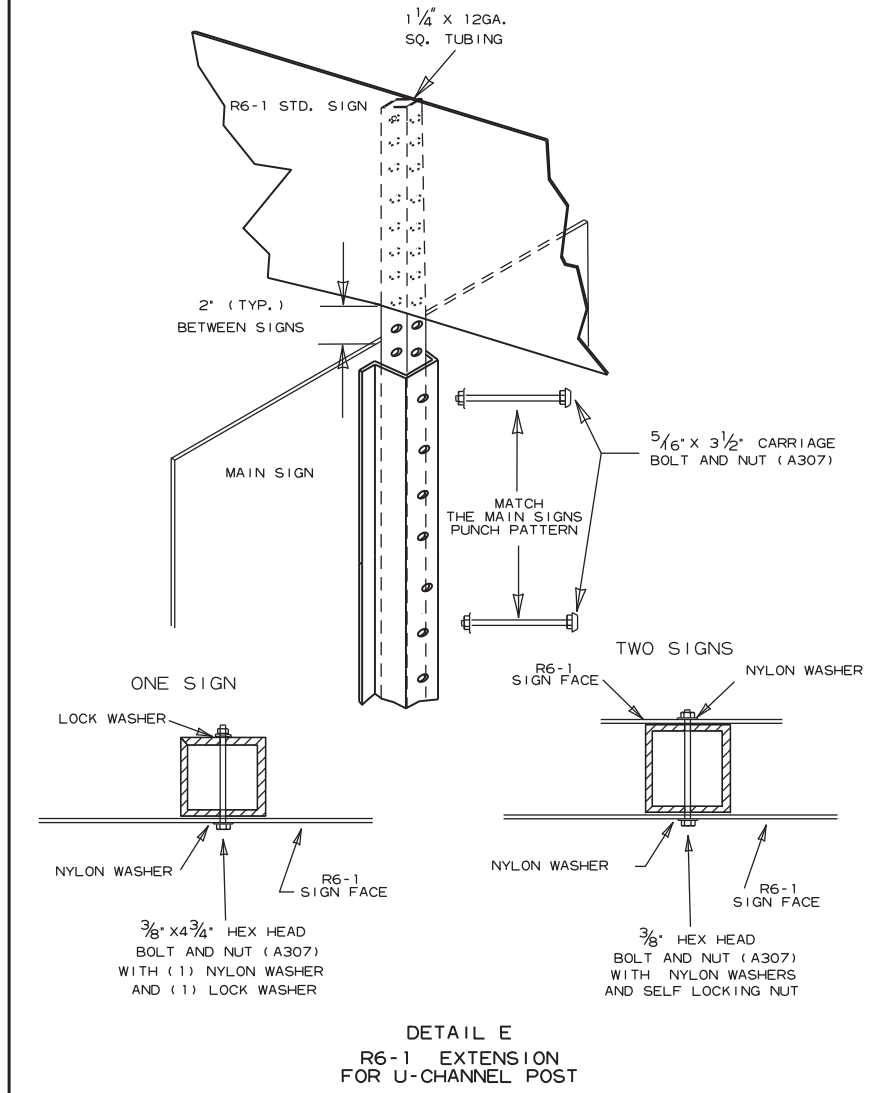
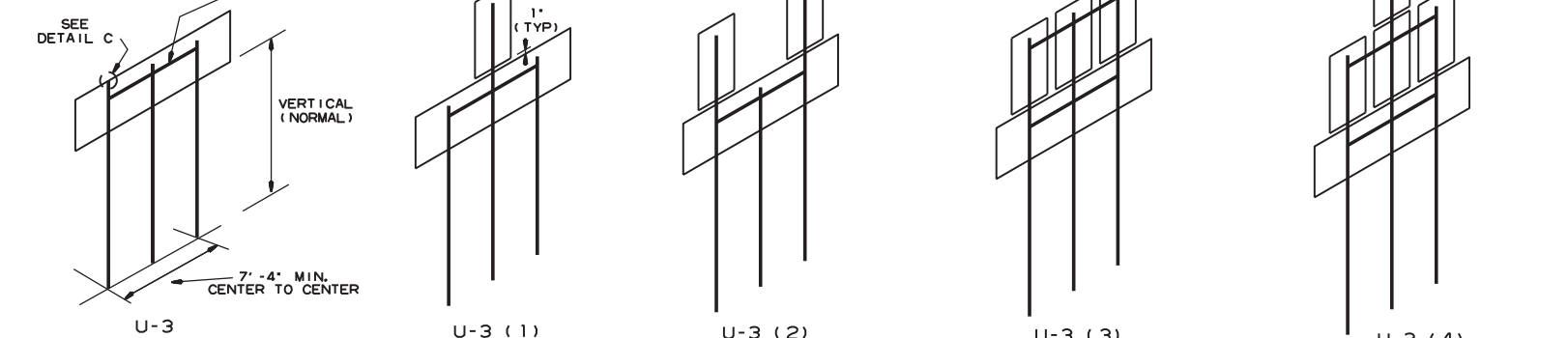
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED WI-4-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2"-3"; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72
DATE	REVISION	DATE FILMED

SUPPORT ASSEMBLIES

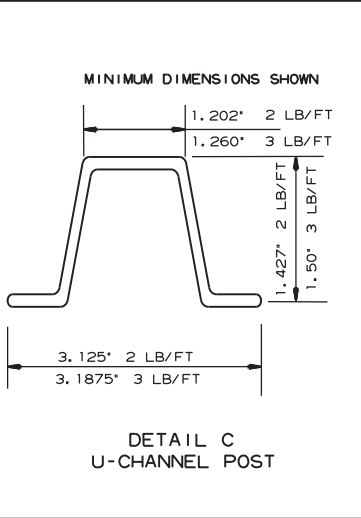
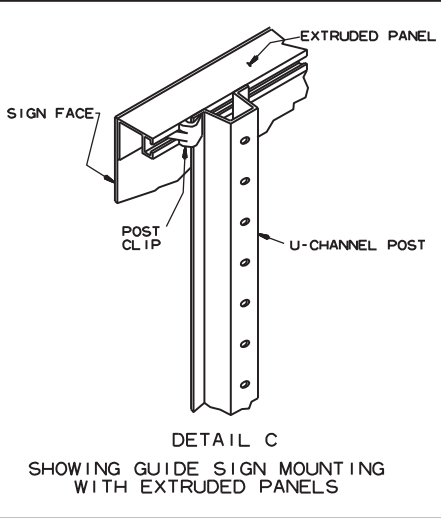
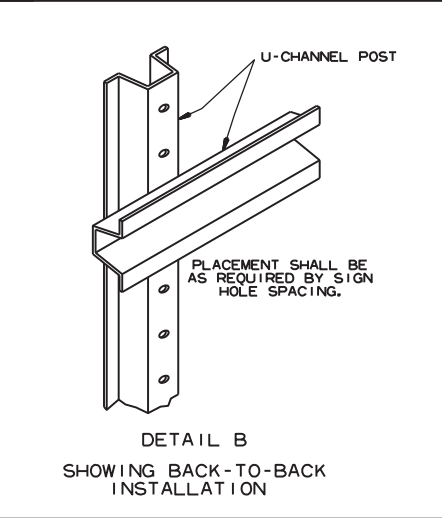
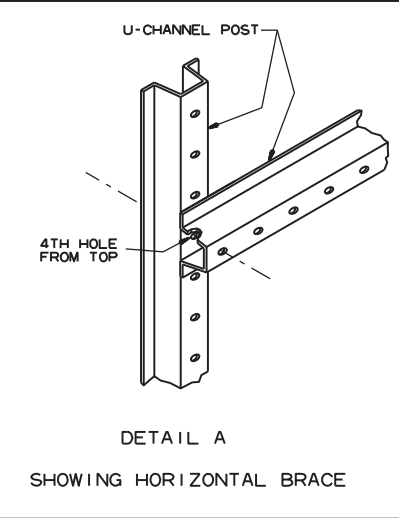
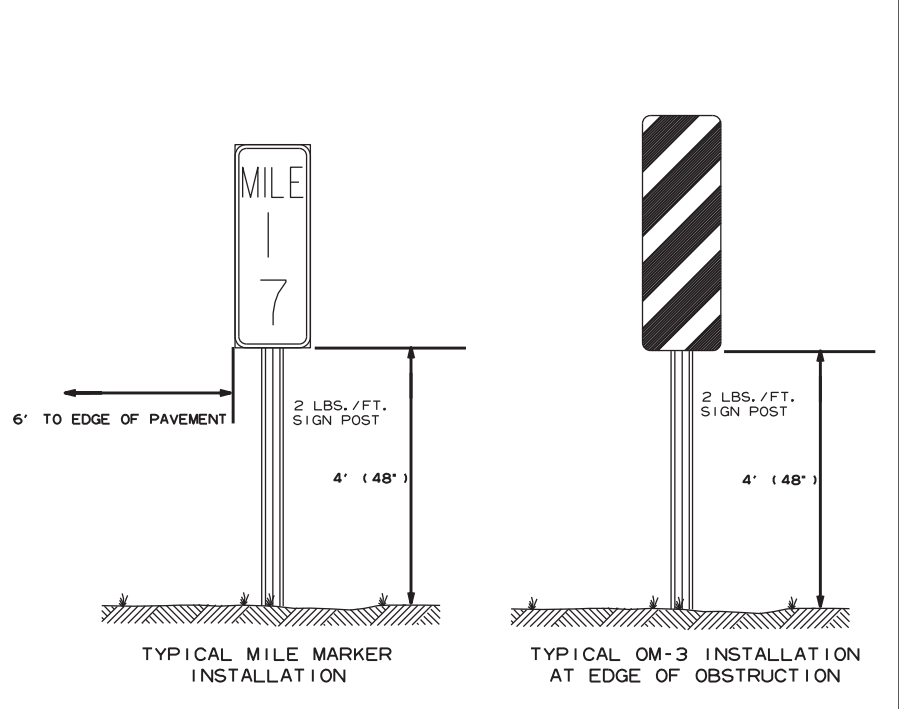
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES
STANDARD DRAWING SHS-1



HORIZONTAL BRACE
(FOR ALL MULTIPLE POST ASSEM.
WITH FLAT SHEET SIGNS)


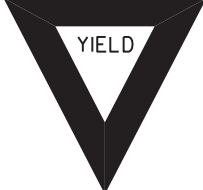







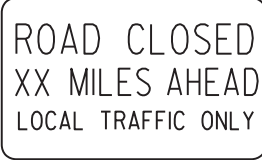










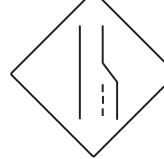



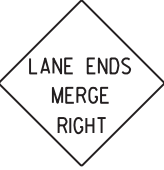













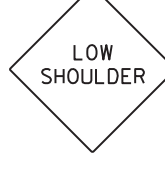

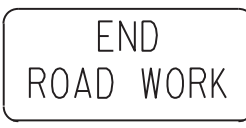
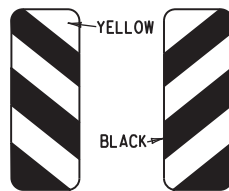


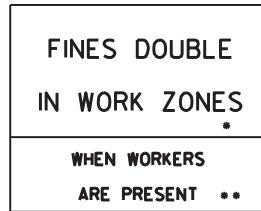


NOTES:
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.
SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.
ALL SIGN POSTS SHALL BE PLUMB.
THE POST FOR *TYPE U* SUPPORTS SHALL BE HOT DIP GALVANIZED.



7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION
U-CHANNEL POST ASSEMBLIES
STANDARD DRAWING SHS-2

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>W21-5a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

ADVANCE DISTANCES (XXXX)

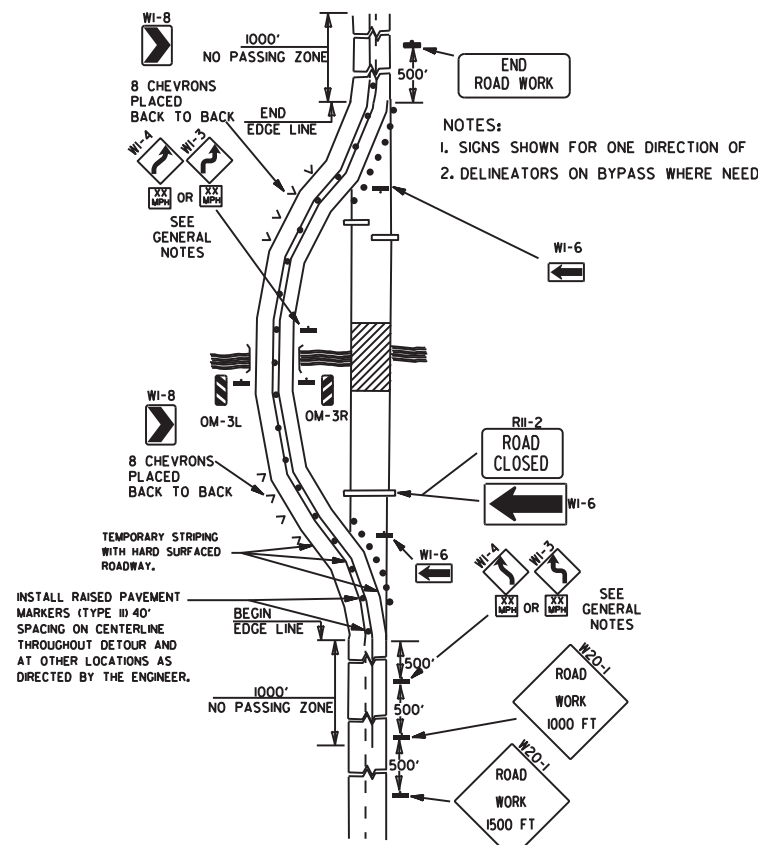
500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

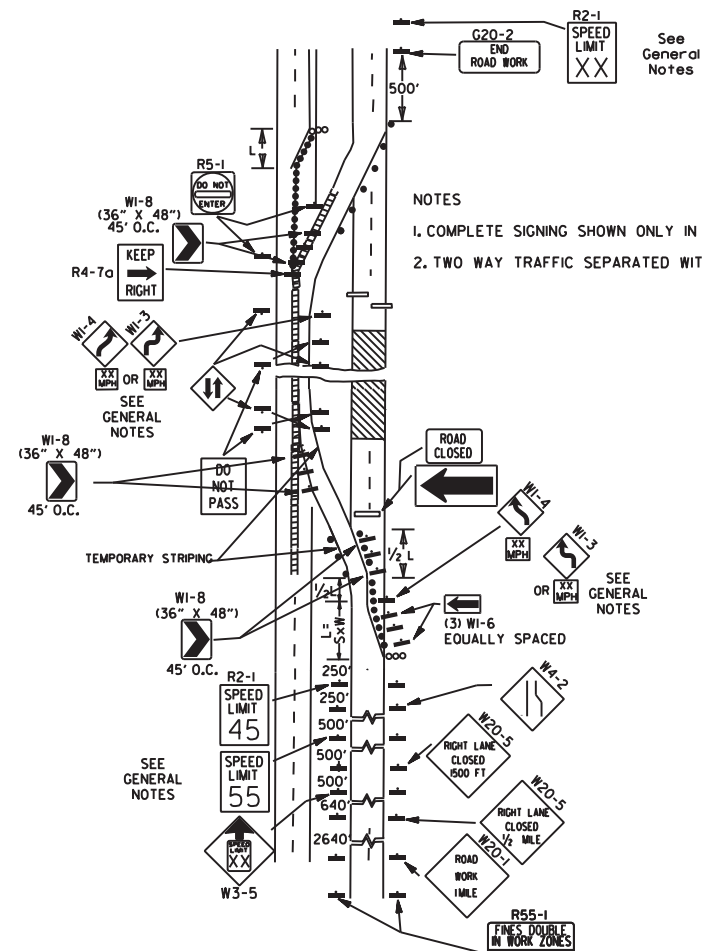
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START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

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

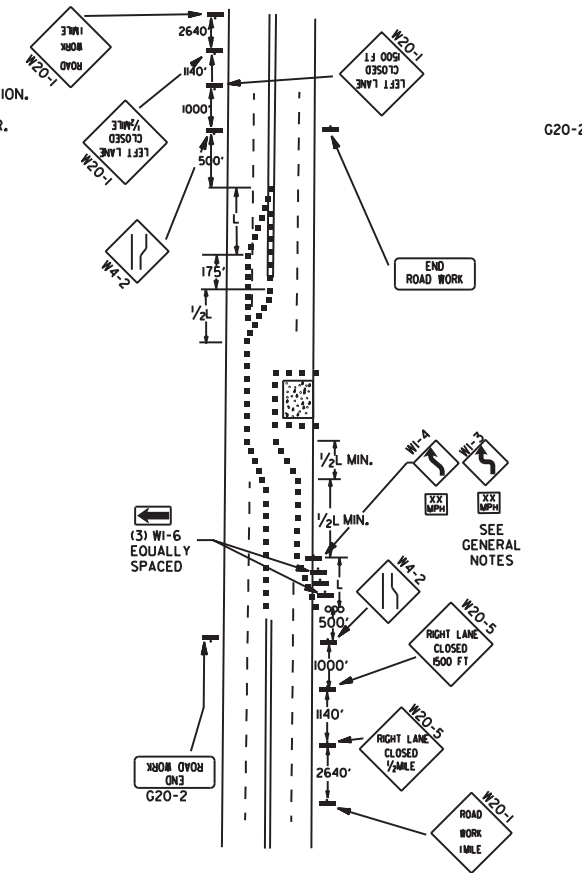
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	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



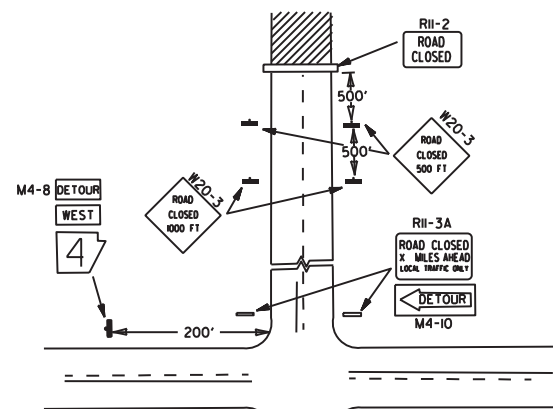
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



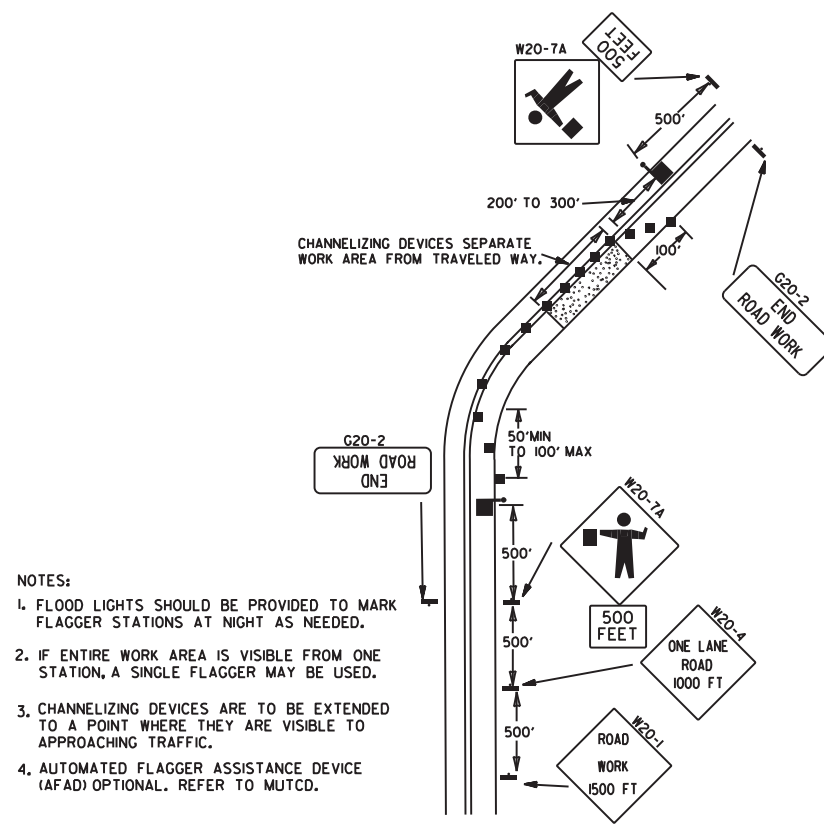
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



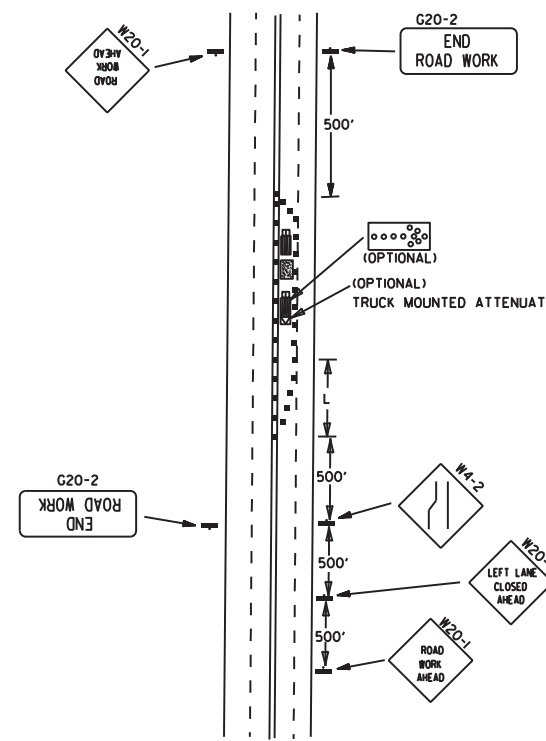
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

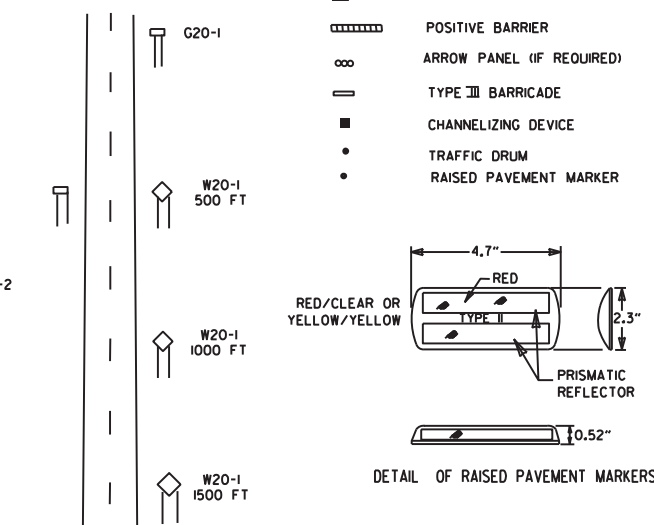


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

$L = S \cdot W$ FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

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

W = WIDTH OF OFFSET.

GENERAL NOTES:

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

DATE	REVISION	FILMED
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	

TRAFFIC CONTROL DEVICES

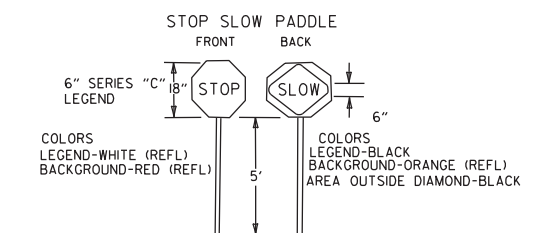
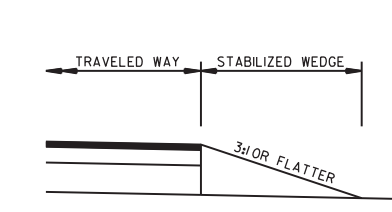
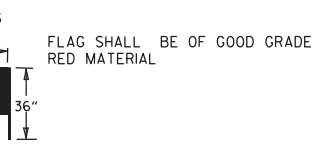
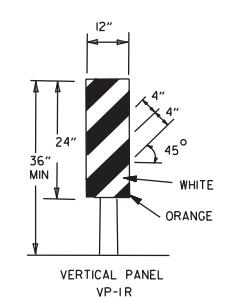
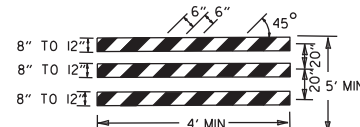
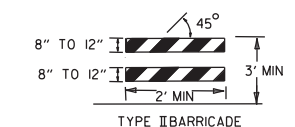
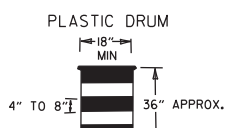
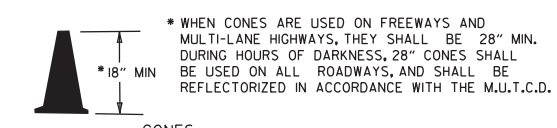
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 2"	CENTERLINE	W8-11 AND LANE STRIPING	W8-11 AND LANE STRIPING
> 2"	CENTERLINE	STANDARD LANE CLOSURE	STANDARD LANE CLOSURE
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS	W8-9, EDGE LINE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

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

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

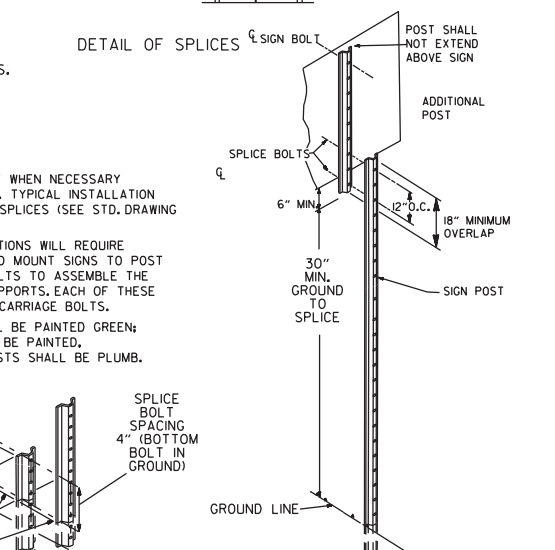
- GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
 2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
 3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
 4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
 5. W21-5, W21-5g, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.

CHANNELIZING DEVICES



STABILIZED WEDGE

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



NOTES:

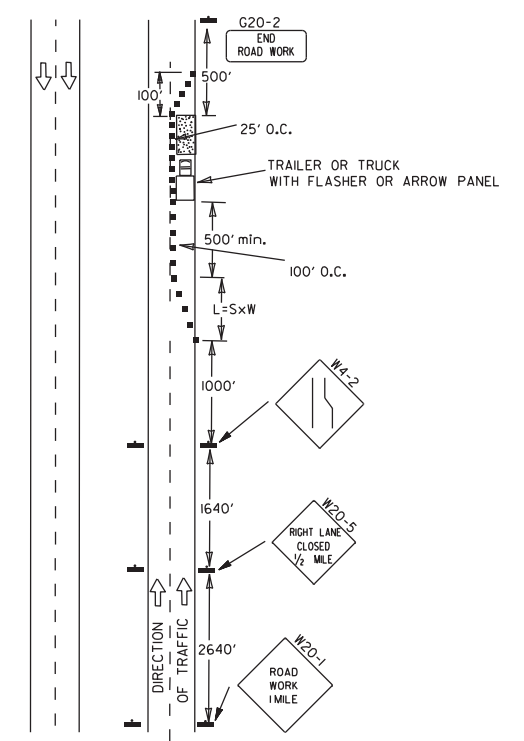
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.

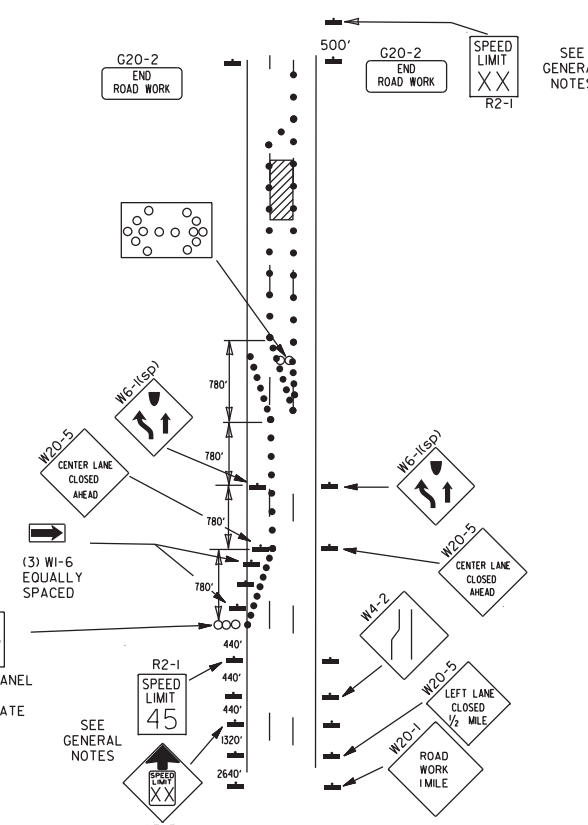
SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
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 (SPI) 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



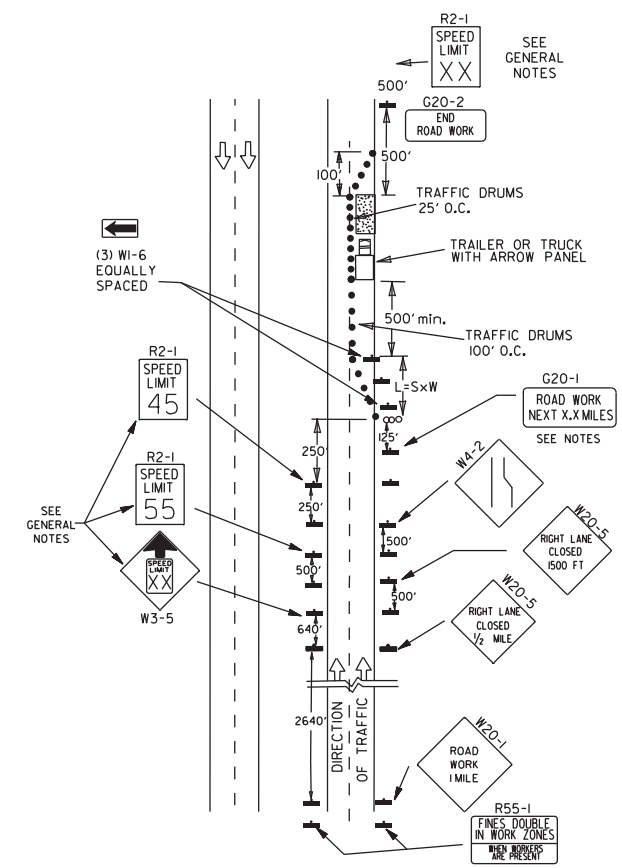
(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



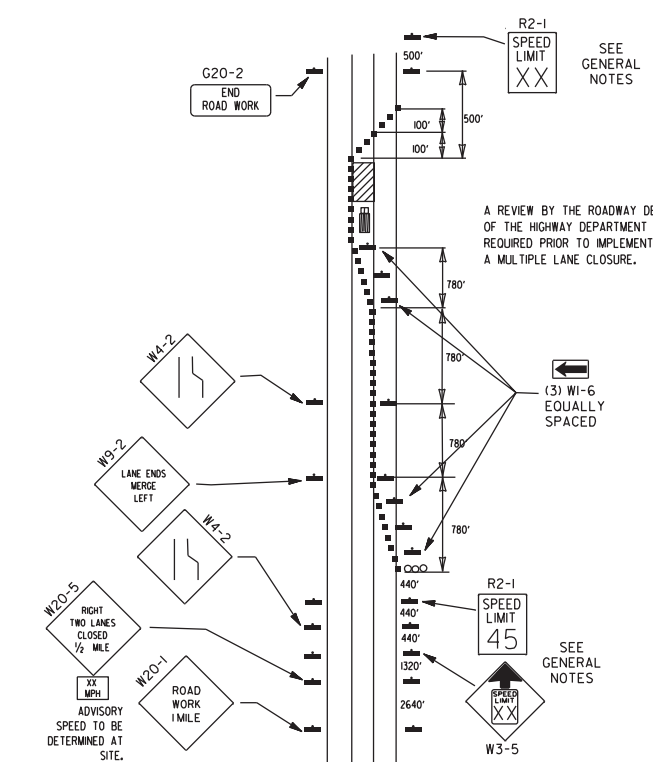
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

- KEY:
- ○ ○ ○ ARROW PANEL (IF REQUIRED)
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
- GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERRECTED 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.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



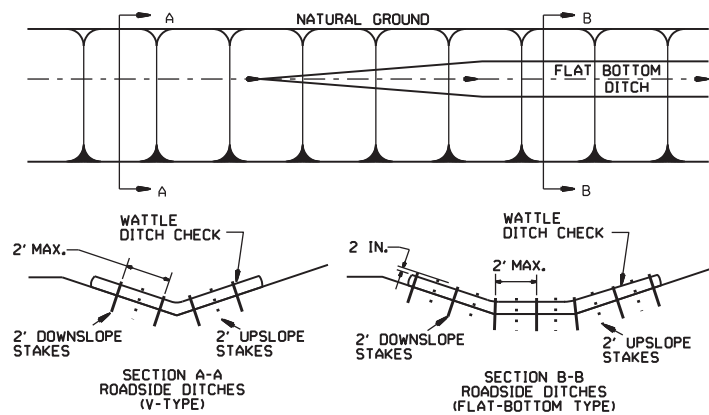
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

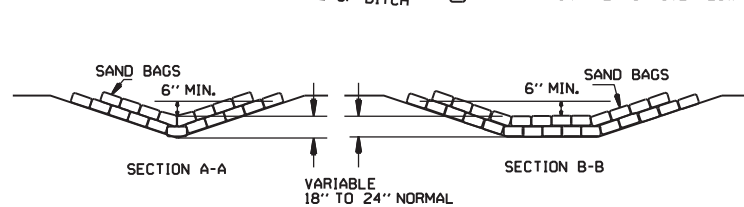
GENERAL NOTES

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

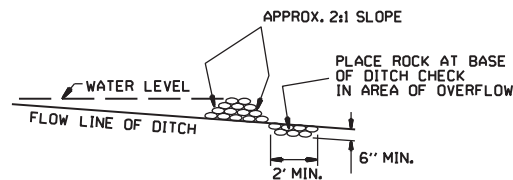


WATTLE DITCH CHECK (E-1)

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

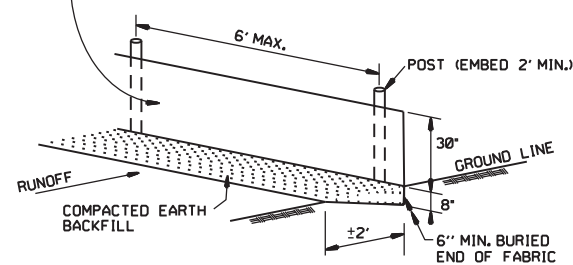


SAND BAG DITCH CHECK (E-5)

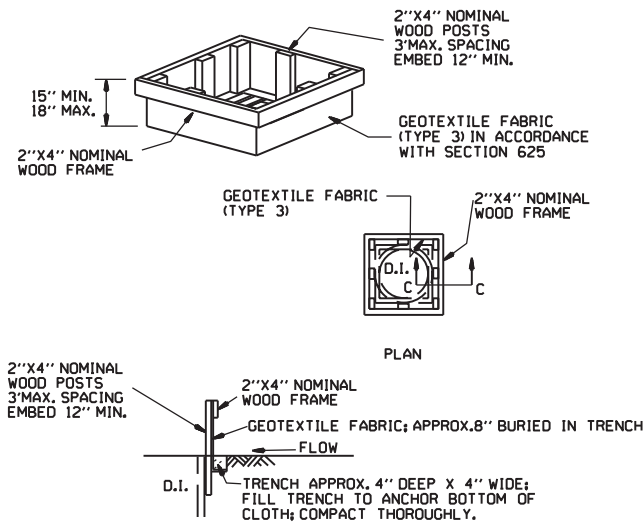


ROCK DITCH CHECK (E-6)

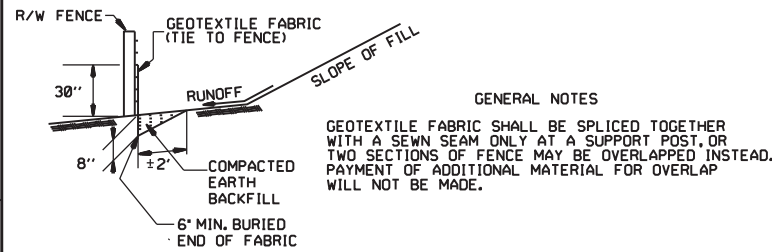
GENERAL NOTES
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625
 GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

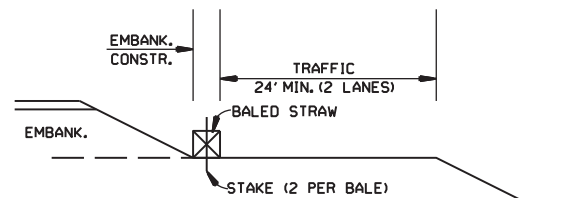


DROP INLET SILTS FENCE (E-7)

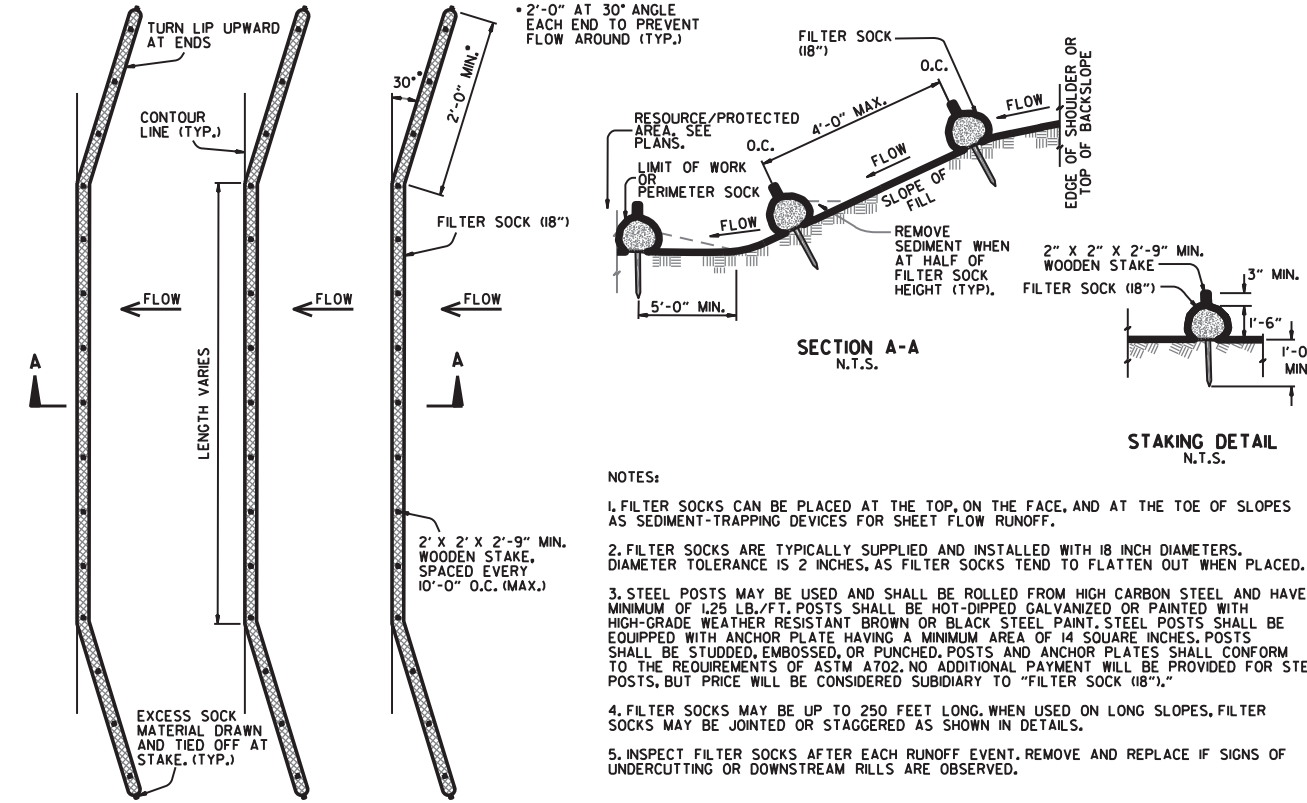


SILT FENCE ON R/W FENCE (E-4)

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

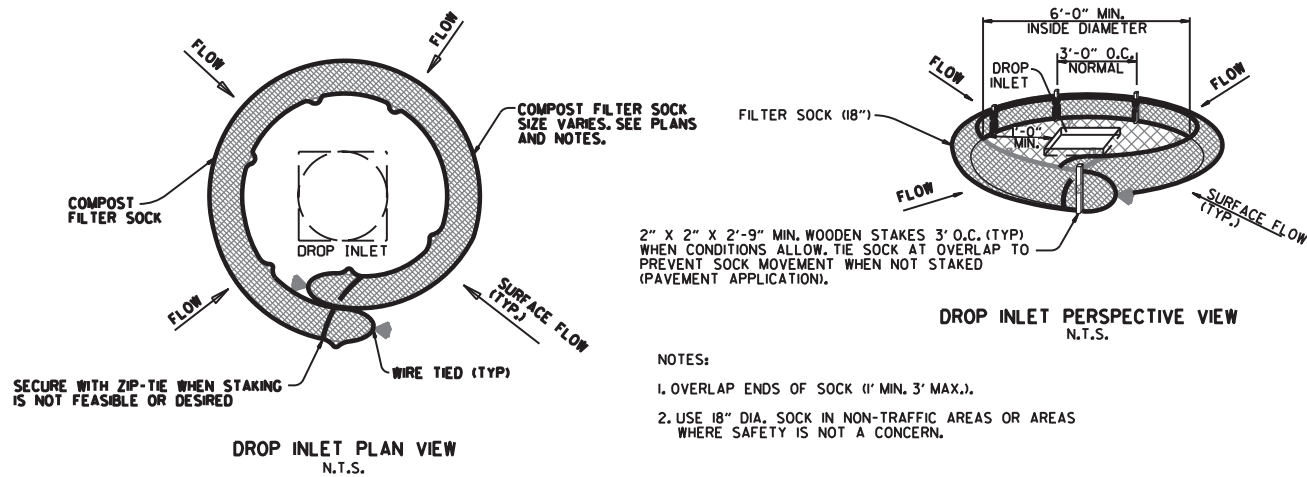


BALED STRAW FILTER BARRIER (E-2)



FILTER SOCK ALONG SLOPE (E-3)

NOTES:
 1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
 2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
 3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 125 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18\"/>

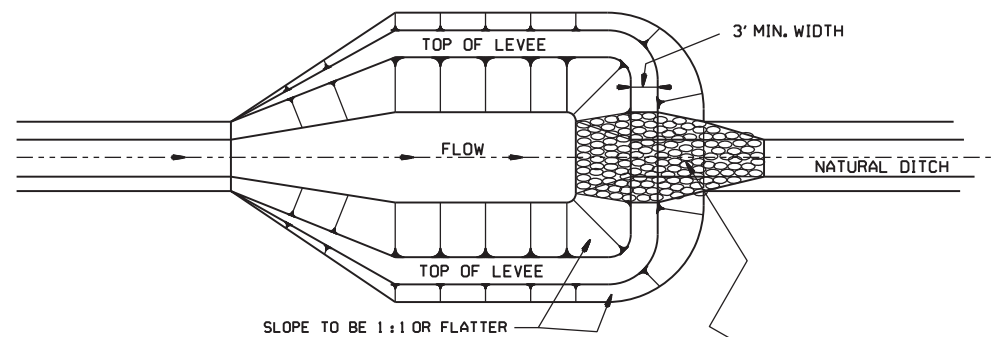


COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

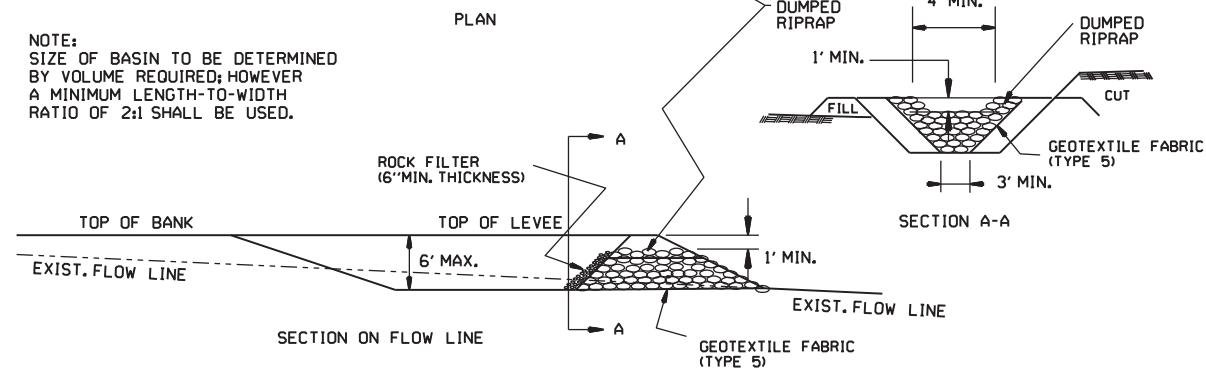
NOTES:
 1. OVERLAP ENDS OF SOCK (1' MIN, 3' MAX.).
 2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

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

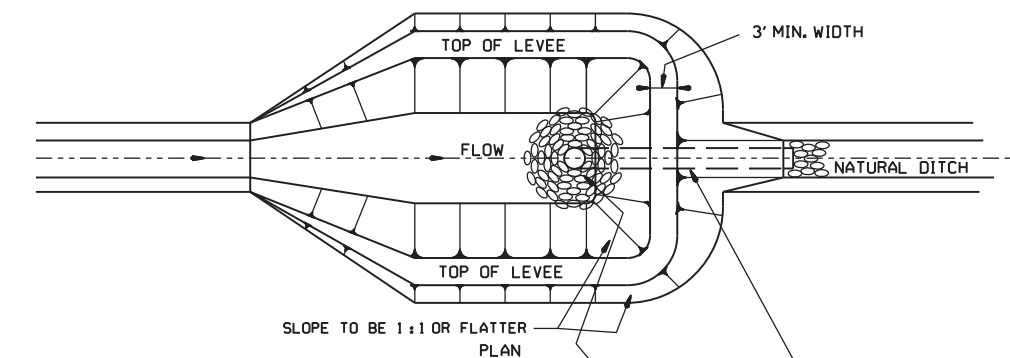
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1



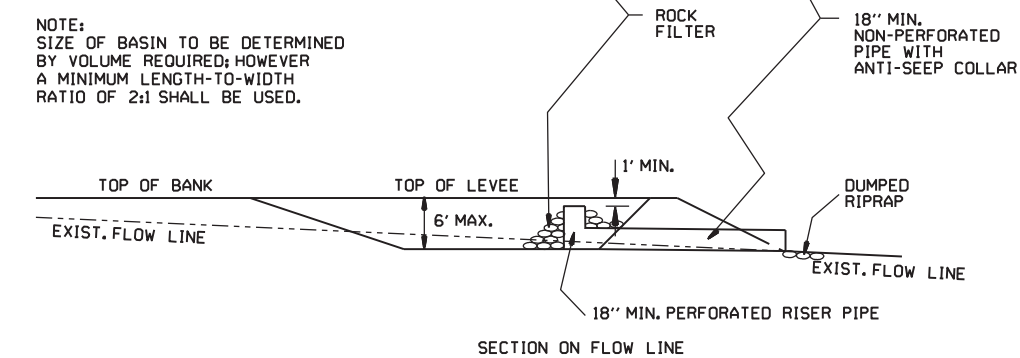
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



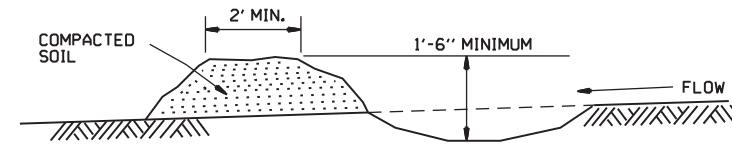
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



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

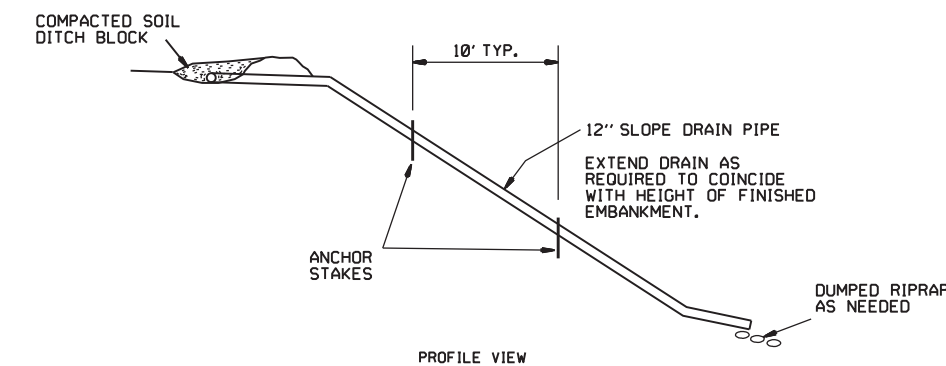
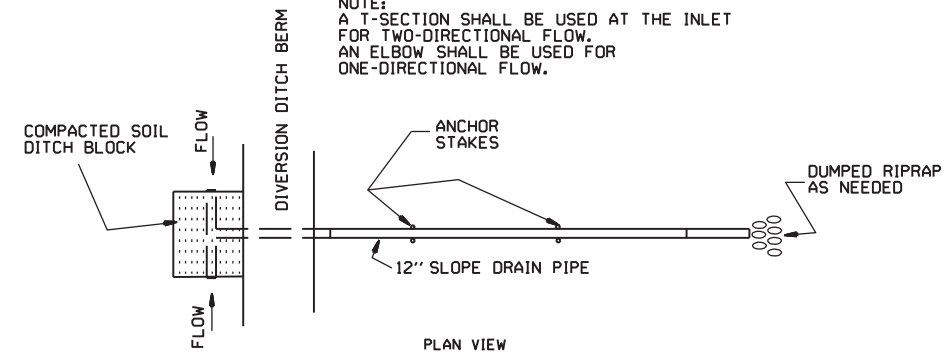


SEDIMENT BASIN WITH PIPE OUTLET (E-10)

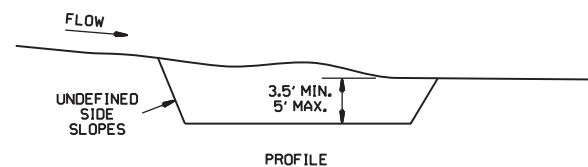
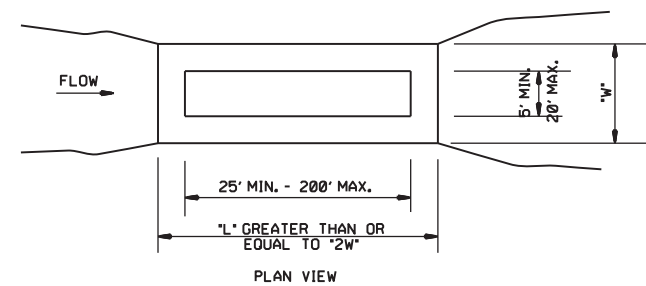


DIVERSION DITCH (E-8)

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



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

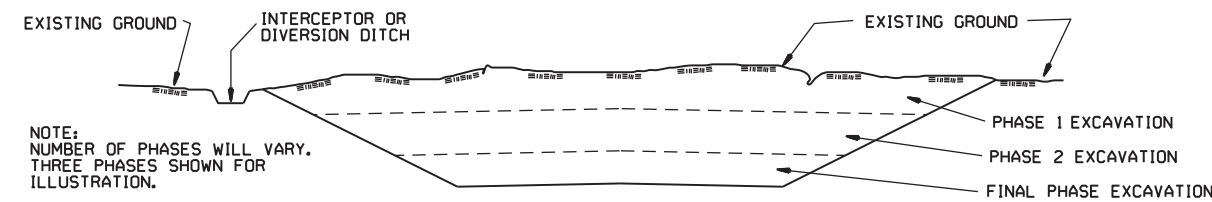
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED
		STANDARD DRAWING TEC-2	

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



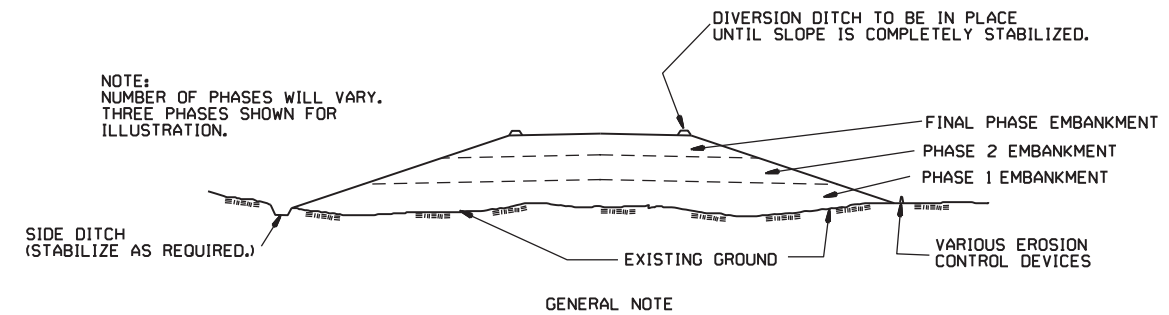
GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEED, 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



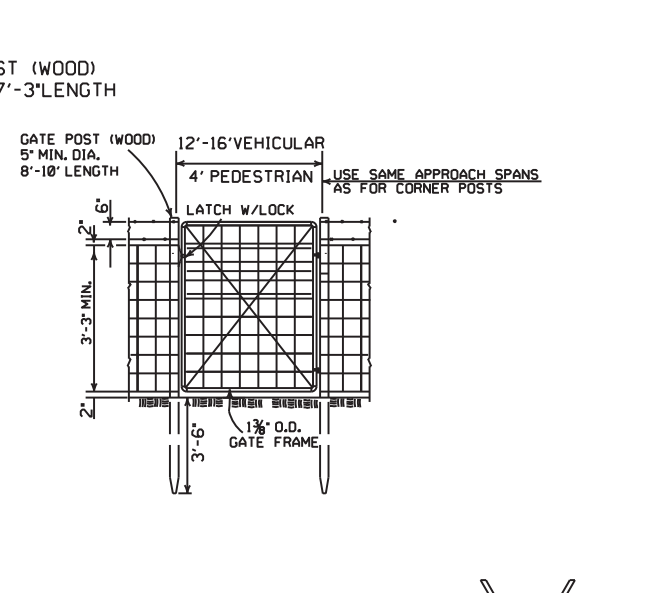
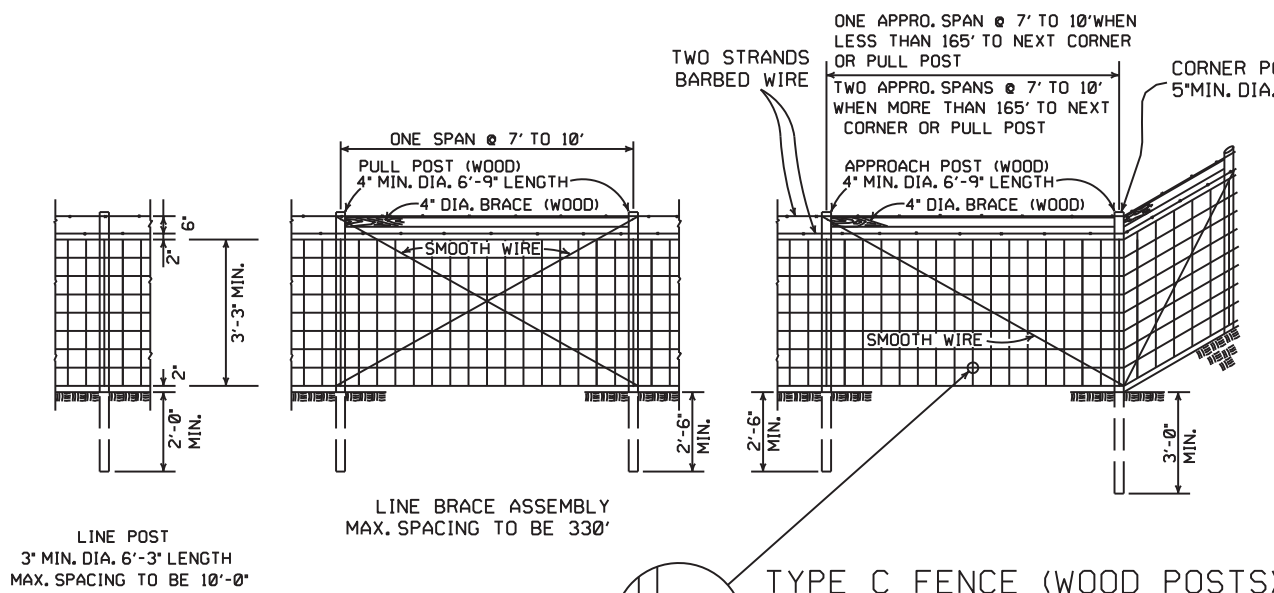
GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEED, 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
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	STANDARD DRAWING TEC-3

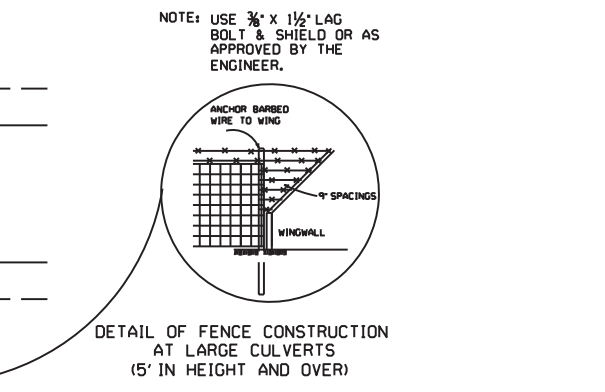
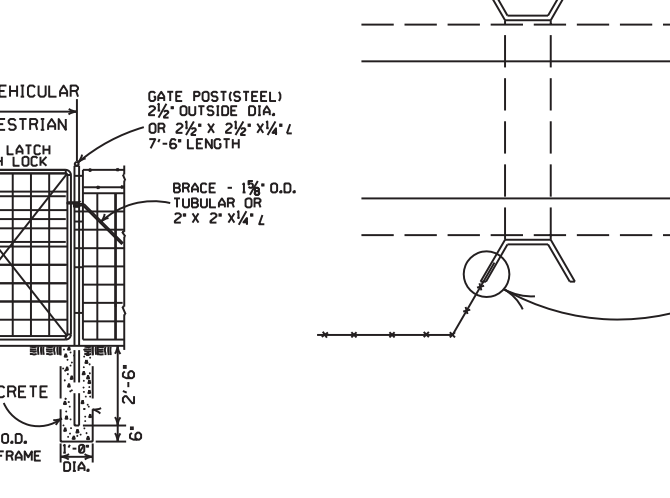
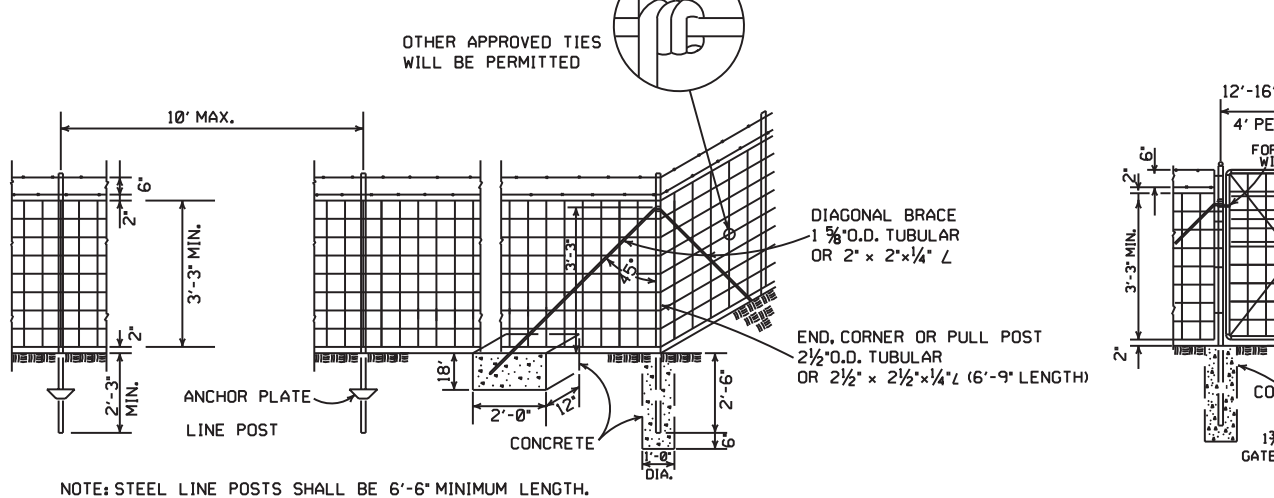


GENERAL NOTES:
 STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
 AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS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

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

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

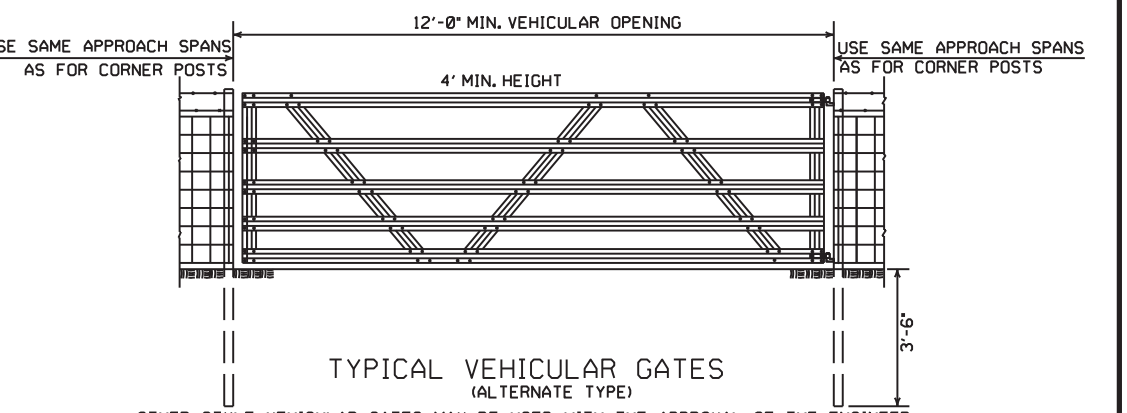
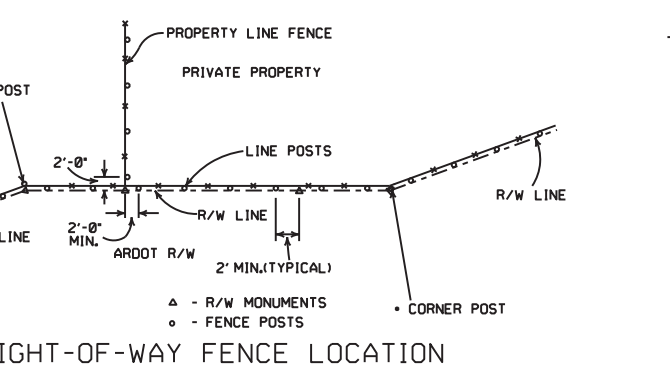
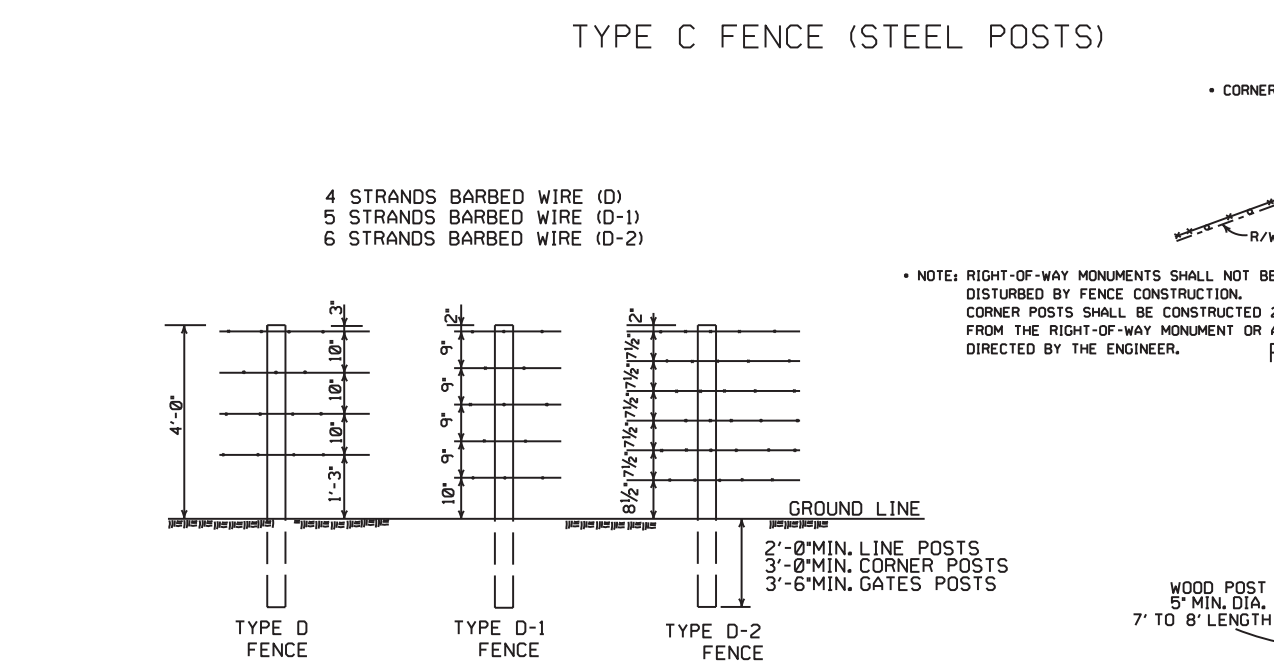
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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



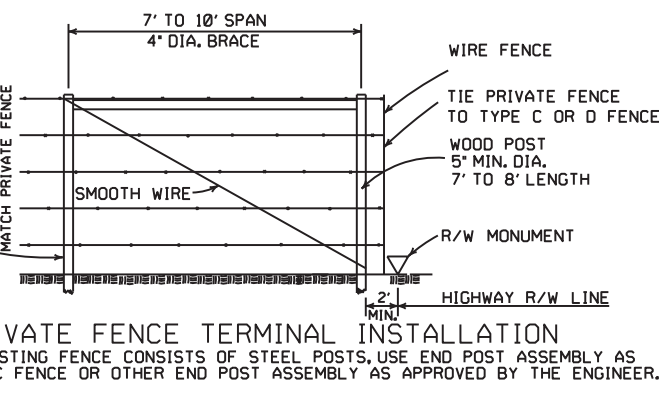
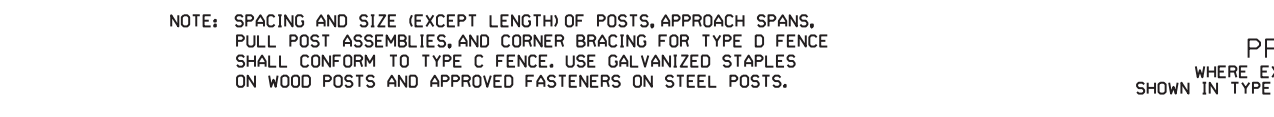
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

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

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



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



DATE	REVISION	FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

**WIRE FENCE
TYPE C AND D**

STANDARD DRAWING WF-4