

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 110575	1	56
						② BEE BAYOU STR. & APPRS. (S)		

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

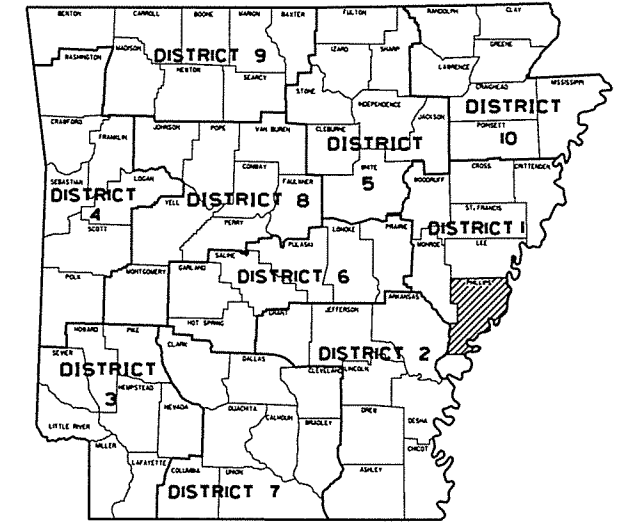
BEE BAYOU
STR. & APPRS. (S)

PHILLIPS COUNTY
ROUTE 44 SECTION 3

JOB 110575

FED. AID PROJ. BRN-STPR-0054(I9)

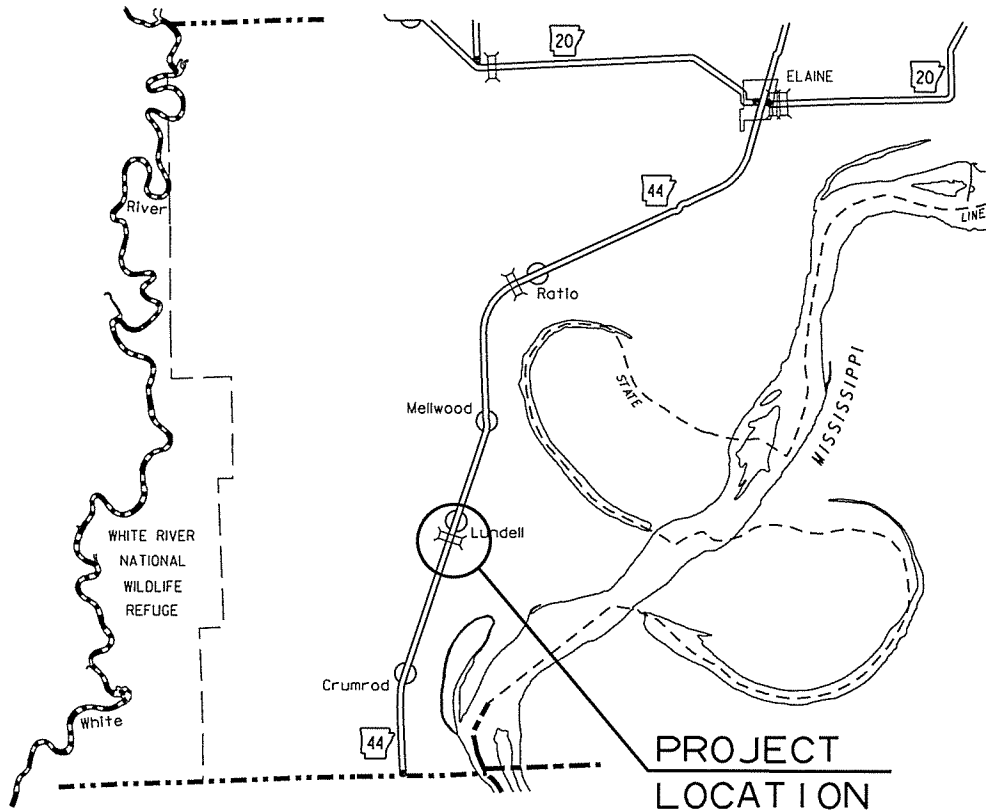
NOT TO SCALE



ARK. HWY. DIST. NO. 1

• DESIGN TRAFFIC DATA •

DESIGN YEAR	-----	2035
2015 ADT	-----	400
2035 ADT	-----	500
2035 DHV	-----	55
DIRECTIONAL DISTRIBUTION	-----	0.60
TRUCKS	-----	24%
DESIGN SPEED	-----	55 MPH



VICINITY MAP

STRUCTURES OVER 20' -0" SPAN

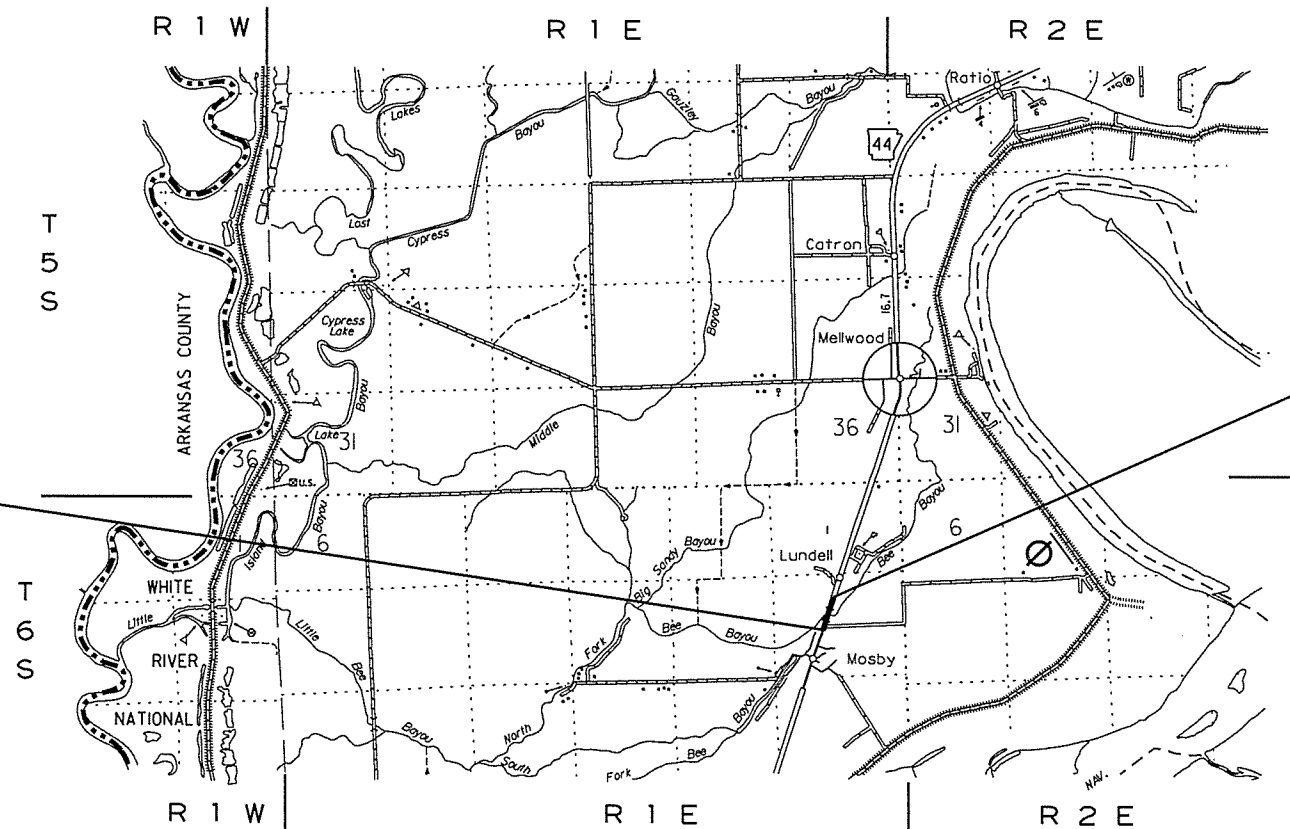
- ① STA. 107+65 CONSTRUCT
QUAD. 11' X 11' X 70' R.C. BOX CULVERT
30° RT. FWD. SKEW
W/ 3:1 WINGS LT. & RT.
CHANNEL CHANGE 1200 CU. YDS.
SPAN LENGTH = 55.04'
D. A. = 5.2 SQ. MI., Q25= 1040 C.F.S.

STA. 101+00.00
BEGIN JOB 110575
LOG MILE 4.69

BEGINNING OF PROJECT
LAT. = N 34°11' 04"
LONG. = W 90°57' 57"

MID-POINT OF PROJECT
LAT. = N 34°11' 10"
LONG. = W 90°57' 55"

ENDING OF PROJECT
LAT. = N 34°11' 18"
LONG. = W 90°57' 51"



STA. 114+00.00
END JOB 110575

GROSS LENGTH OF PROJECT	1300.00	FEET	OR	0.246	MILES
NET " " ROADWAY	1244.96	"	"	0.236	"
NET " " BRIDGE	55.04	"	"	0.10	"
NET " " PROJECT	1300.00	"	"	0.246	"



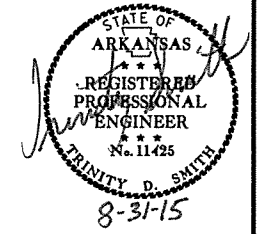
APPROVED



3-5-15
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. 110575	2	56

② 110575



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47 - 56	CROSS SECTIONS		

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

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
108-1	LIQUIDATED DAMAGES
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
620-1	MULCH COVER
JOB 110575	BIDDING REQUIREMENTS AND CONDITIONS
JOB 110575	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 110575	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 110575	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 110575	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 110575	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 110575	MANDATORY ELECTRONIC CONTRACT
JOB 110575	NESTING SITES OF MIGRATORY BIRDS
JOB 110575	PLASTIC PIPE
JOB 110575	SHORING FOR CULVERTS
JOB 110575	SOIL STABILIZATION
JOB 110575	STORM WATER POLLUTION PREVENTION PLAN
JOB 110575	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 110575	UTILITY ADJUSTMENTS
JOB 110575	WARM MIX ASPHALT

GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

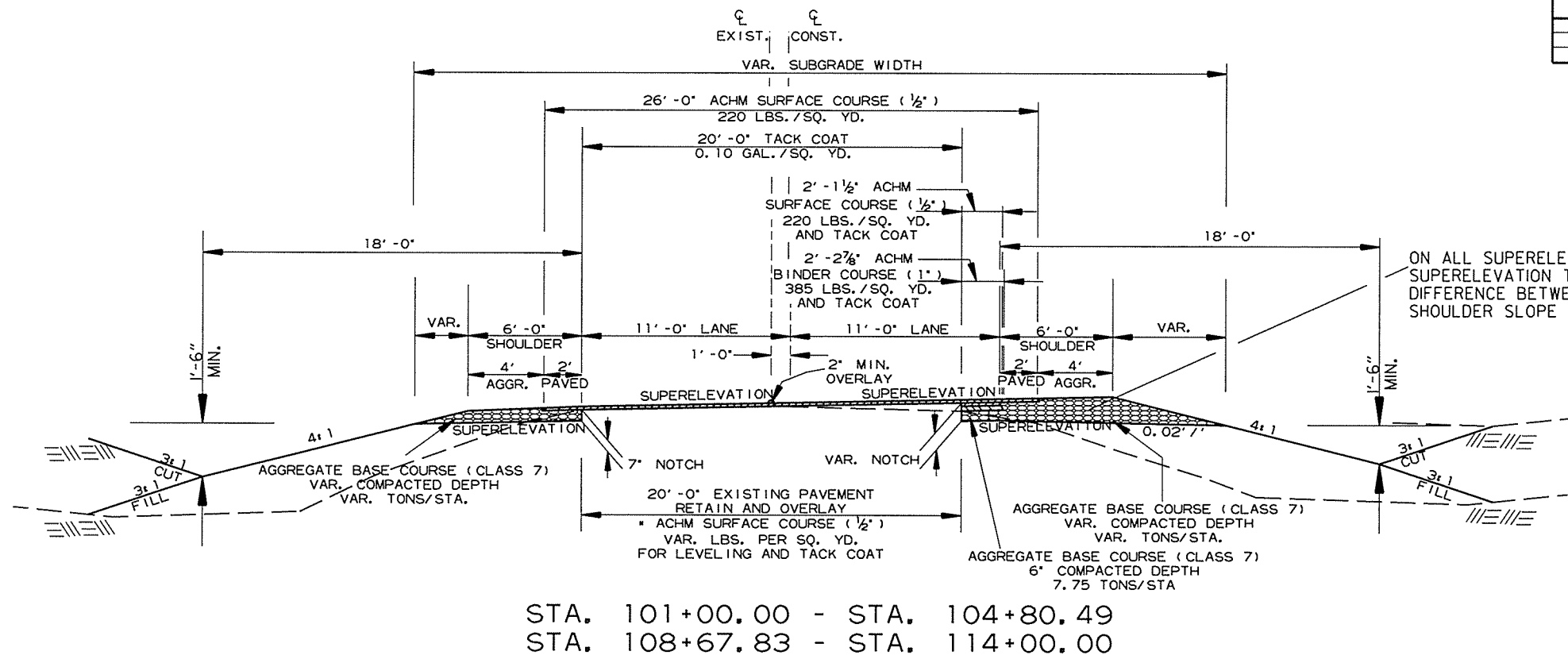
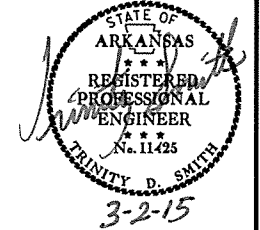
INDEX OF SHEETS, GOVERNING SPECIFICATIONS, & GENERAL NOTES

2/26/2015

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		3	56
				JOB NO.	110575			

2 TYPICAL SECTIONS OF IMPROVEMENT

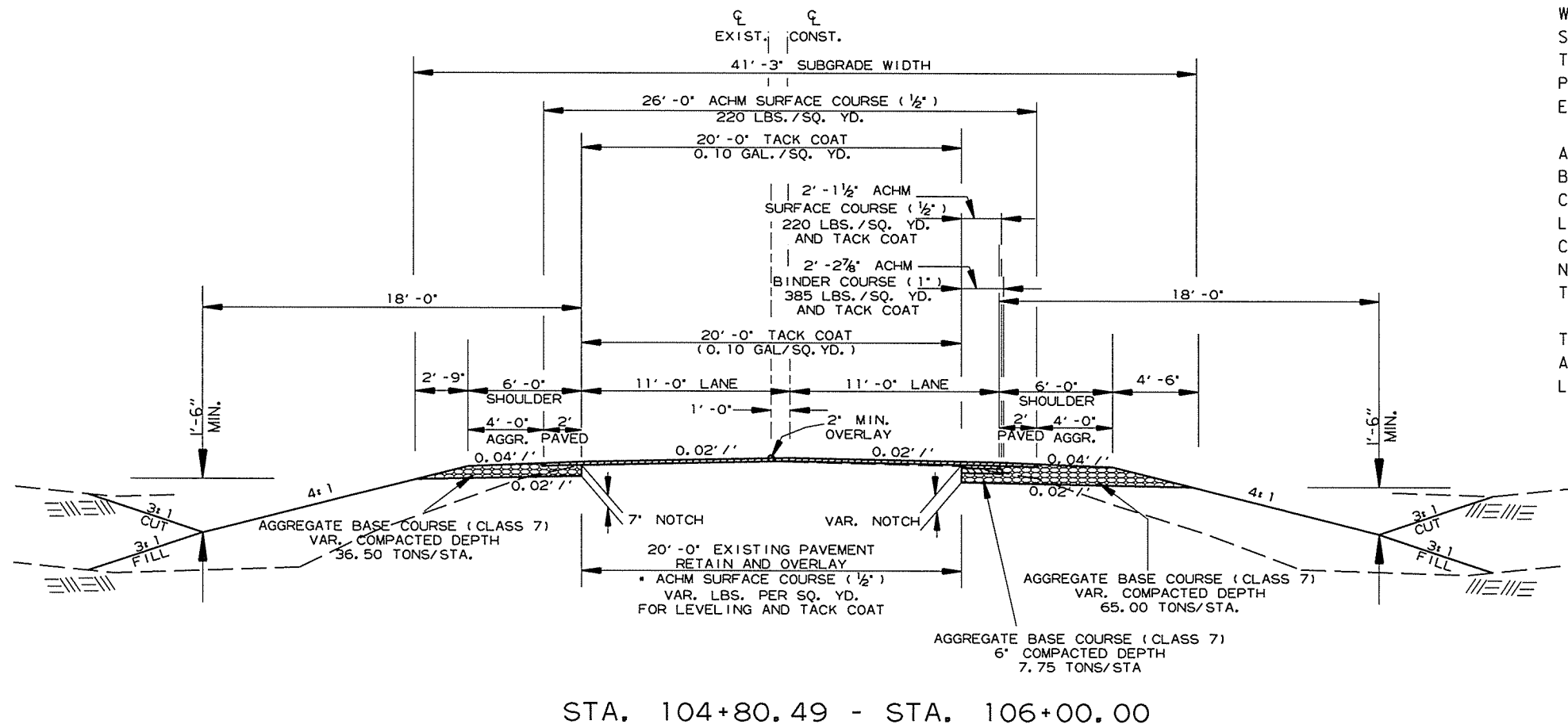


NOTES:
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS PAY ITEMS.

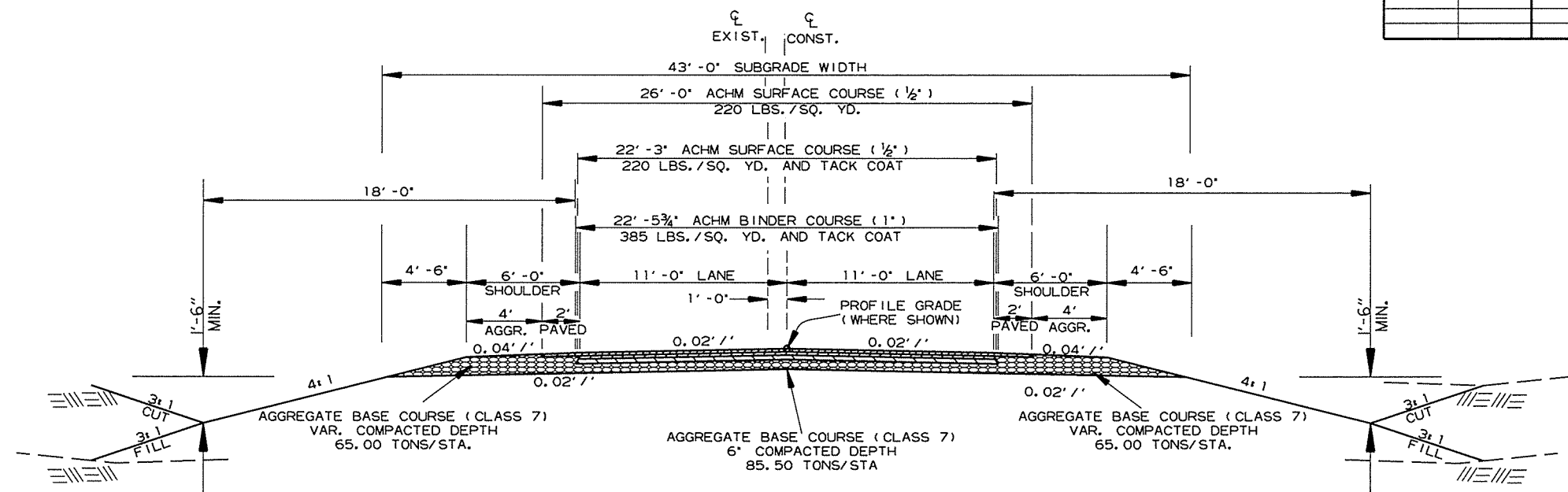
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.



TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO. 110575				

2 TYPICAL SECTIONS OF IMPROVEMENT

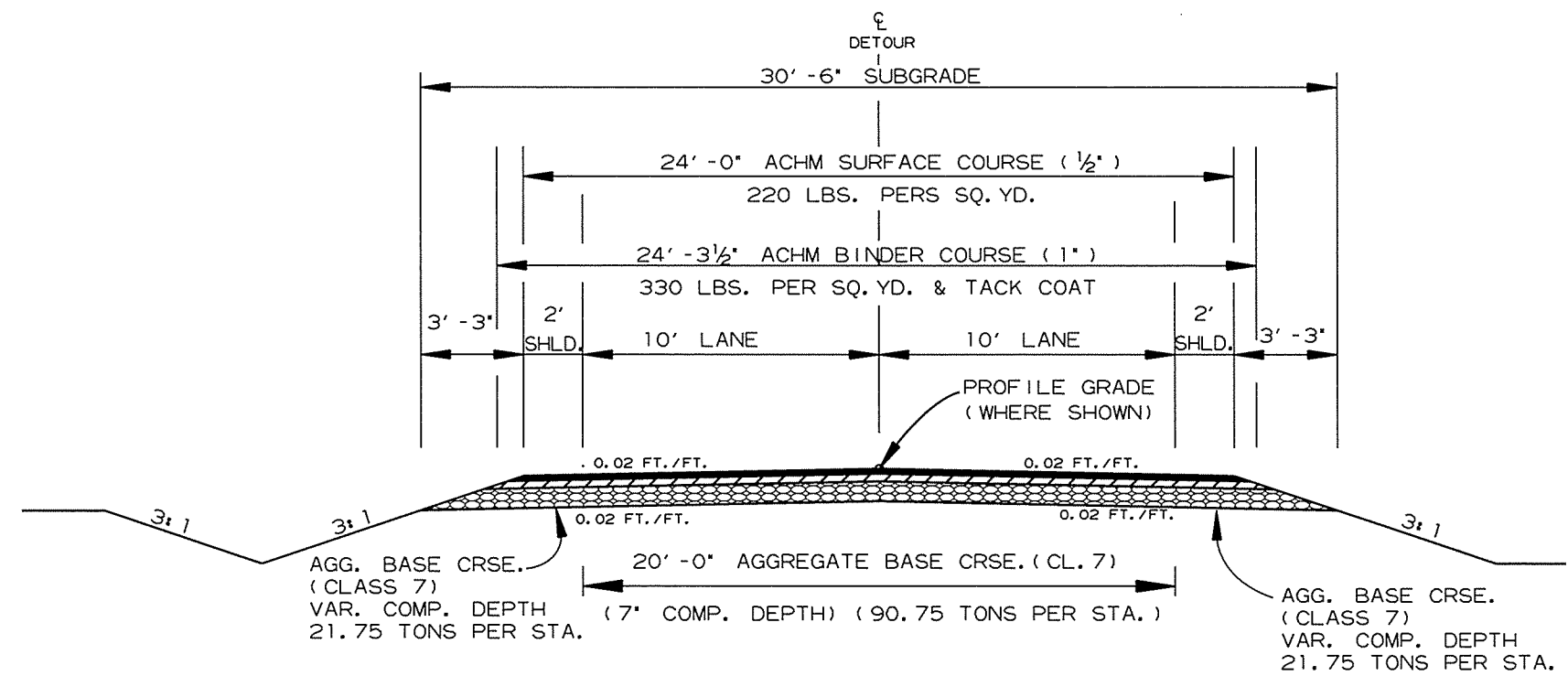


STA. 106+00.00 - STA. 108+67.83

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

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

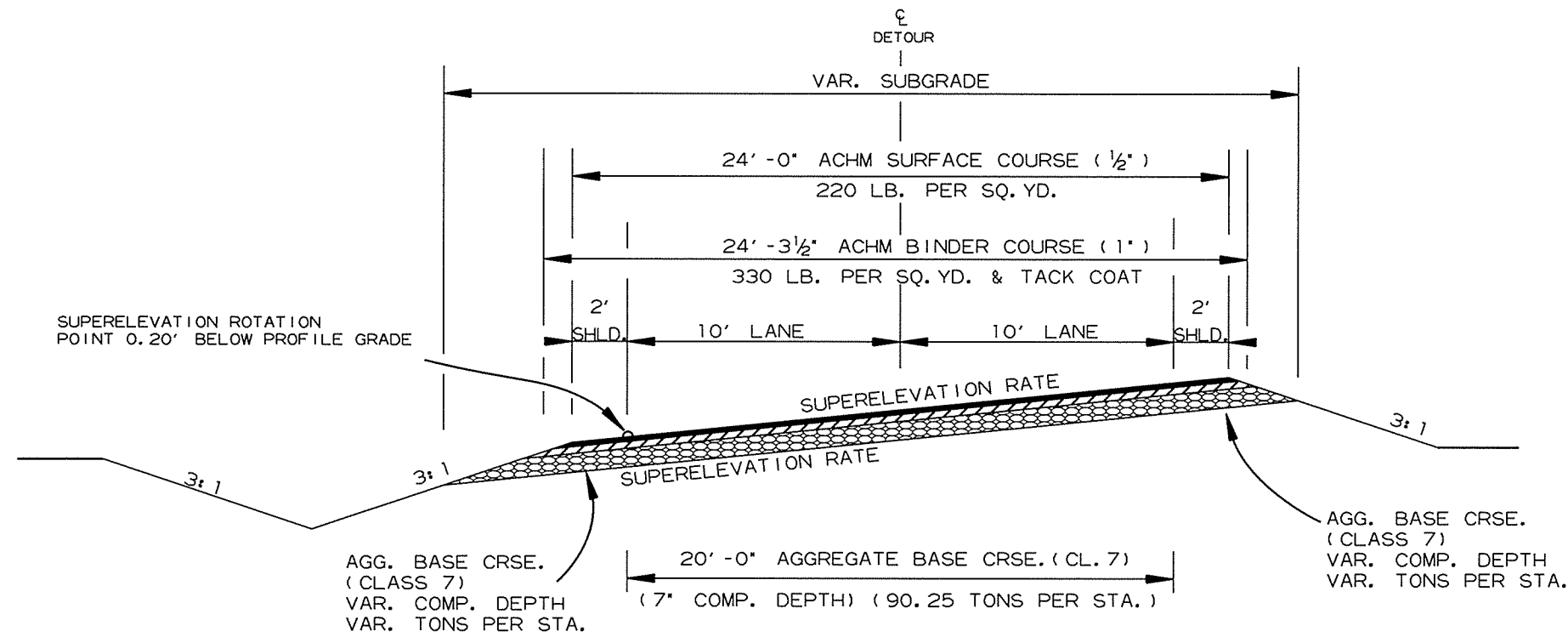
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.



TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD NORMAL CROWN

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② TYPICAL SECTIONS OF IMPROVEMENT



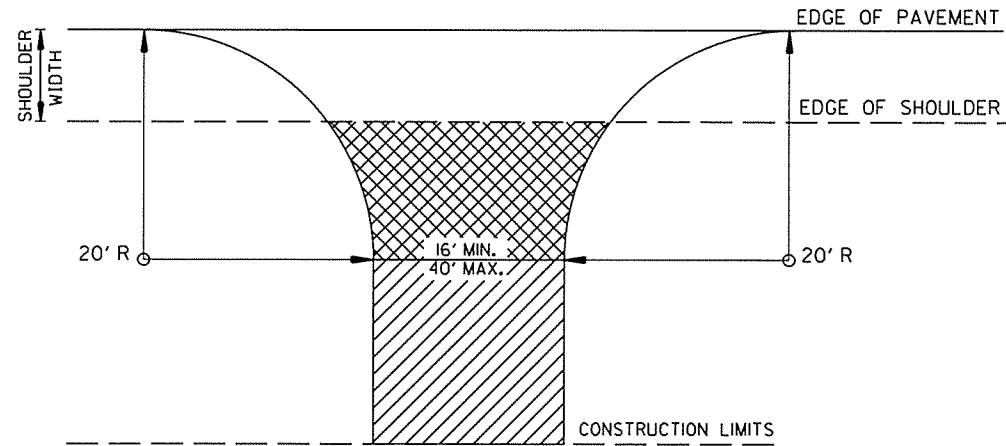
NOTES:
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD SUPERELEVATION

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				JOB NO.	110575			

② SPECIAL DETAILS

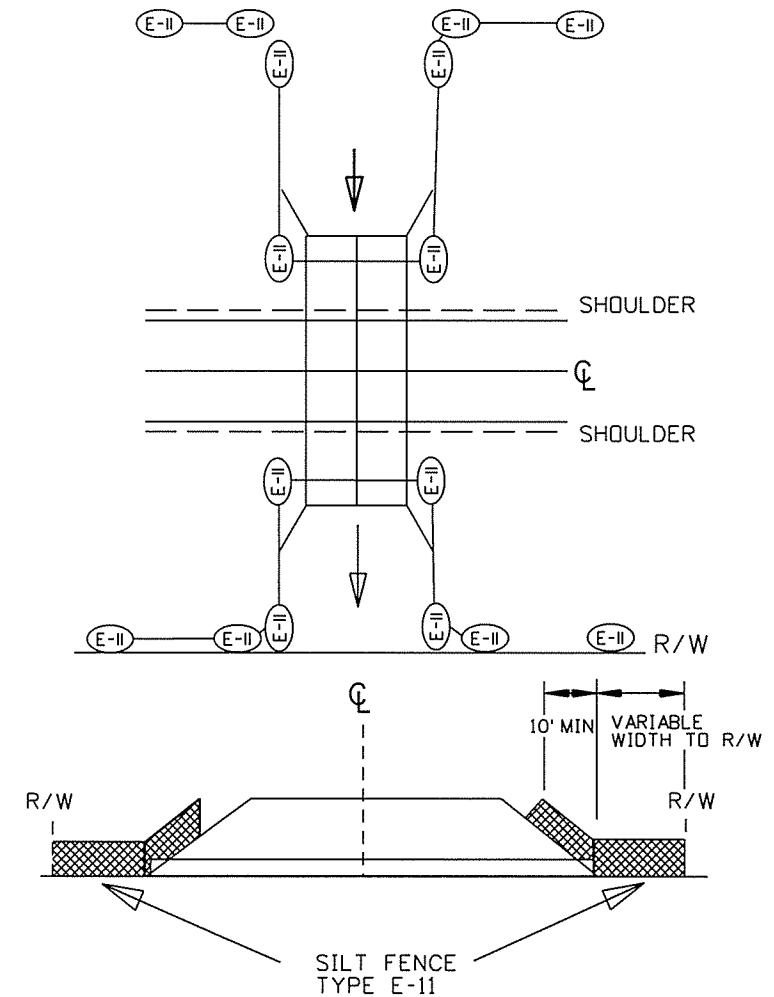


A.C.H.M. SURFACE COURSE (1/2") (220 LBS./SQ. YD.) & AGGREGATE BASE COURSE (CLASS 7) (7" COMPACTED DEPTH)

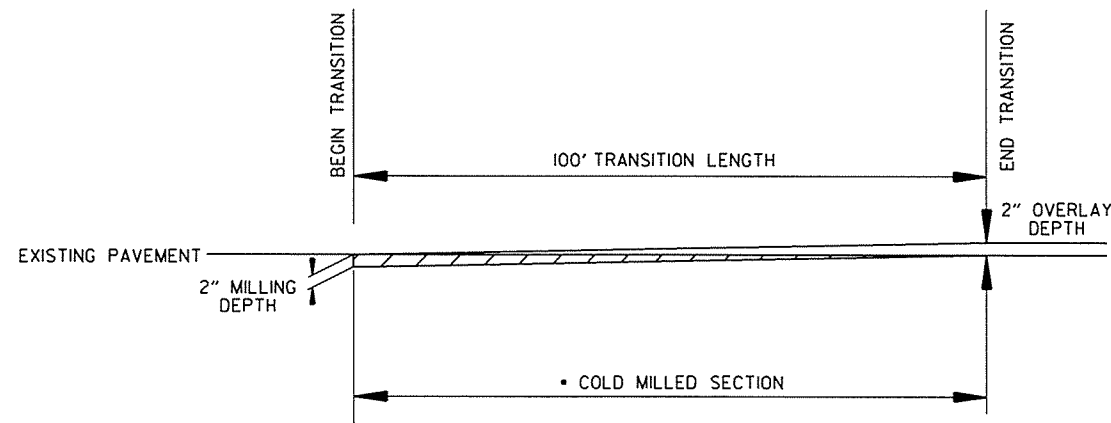
AGGREGATE BASE COURSE (CLASS 7) 9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY

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

DETAIL FOR DRIVEWAY TURNOUTS



DETAIL OF SILT FENCE AT R.C. BOX



DETAIL SHOWING TAPER TO EXISTING PAVEMENT

• TO BE USED AS DIRECTED BY THE ENGINEER

2/25/2015

R110575.DGN

MID-SECTION

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, SECTION LENGTH, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINF. STEEL, BOTTOM SLAB DISTRIBUTION REINF. STEEL, SIDE WALL DISTRIBUTION REINF. STEEL, INTERIOR WALL DISTRIBUTION REINF. STEEL.

INLET SLOPE SECTION(S)

Table with columns for R.C. BOX SECTION, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, TOP SLAB THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, SECTION LENGTH, 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.

INLET SKEWED END SECTION

Table with columns for SKEW (DEGREE), SLOPE, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, SECTION LENGTH, TOP SLAB THK., HDWL THK., BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL 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.

INLET WINGWALL TABLE

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

MID-SECTION BAR LAP TABLE

Table with columns for # of Long. Laps Req'd., SL = Section Length, REINFORCING STEEL QTY. PER WING (LBS).

Table with columns for Mn. Bar Lap Length, #, length.

Table with columns for Bar Pn Dia. Table, #, length.

TABULAR DATA BY: TMG DATE: 1/27/2015 CHECKED BY: JAC DATE: 1/29/2015



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 WING WALLS", and STANDARD DRAWING RCB-2. For additional information and outlet sections, see Sheet 2 of 2.

Table with columns for CLASS "S" CONCRETE, REINFORCING STEEL, CU. YDS., LBS.

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

Bar Lap - Add one long lap for each Slope Section, and one additional long lap for Slope Sections greater than 40'-0" in length.

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

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

Table with columns for CLASS "S" CONCRETE, REINFORCING STEEL, ADTL. REINF. PER LONG LAP LOCATION (S), ADTL. REINF. FOR TRANS. LAP, ADDITIONAL CONCRETE FOR HDWL, TOTAL ADTL. REINF. FOR HDWL.

Table with columns for CLASS "S" CONCRETE, REINFORCING STEEL, ADTL. REINF. PER LONG LAP LOCATION (S), ADTL. REINF. FOR TRANS. LAP.

SHEET 1 OF 2 DETAILS OF R.C. BOX CULVERT QUADRUPLE BARREL BOX CULVERT Sta. 107+43

SPECIAL DETAILS

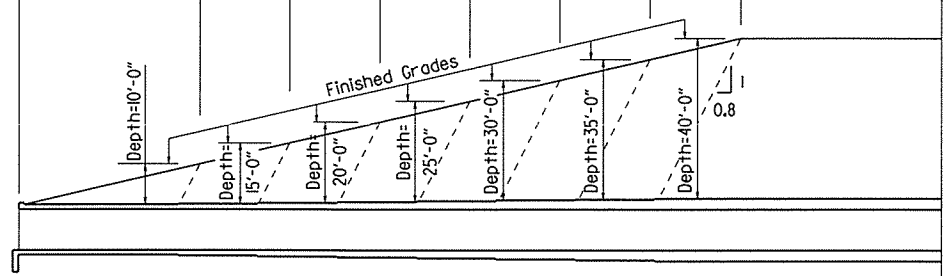


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				6	ARK.		9	56
				JOB NO.	I10575		SPECIAL DETAILS	

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"

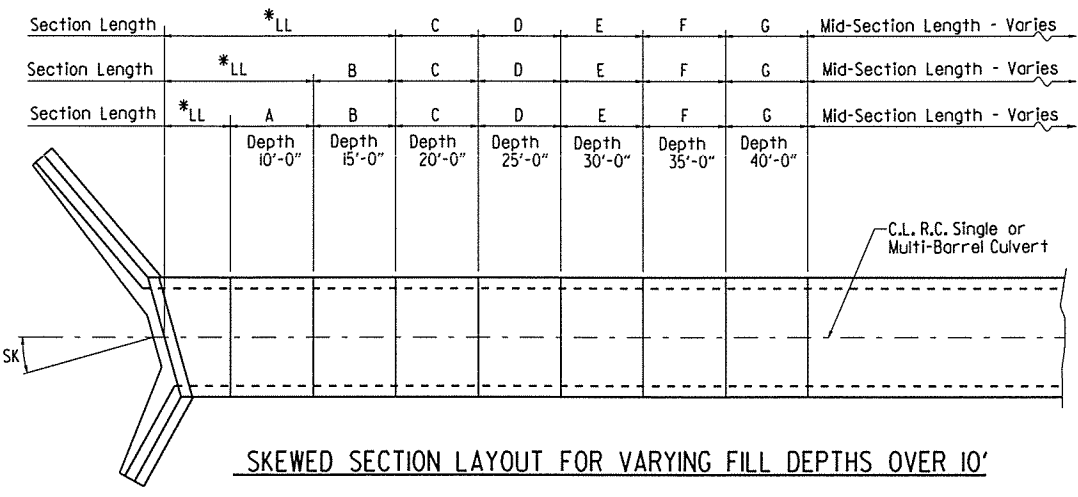
Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

* 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.

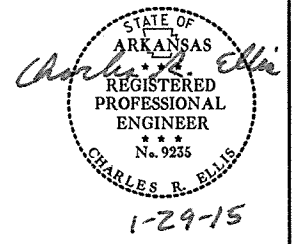


Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"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



GENERAL NOTES:

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

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

LIVE LOADING: HL-93

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

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

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

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

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

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

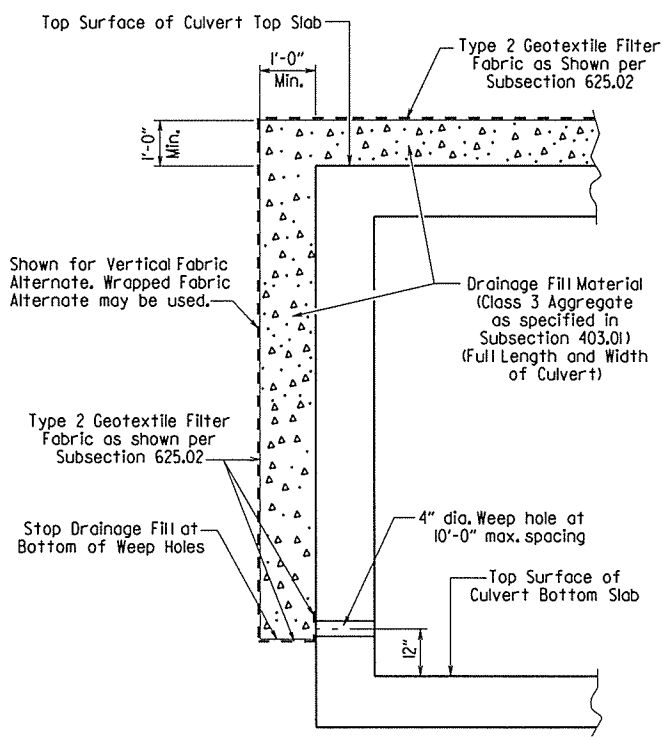
Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

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

Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class 5 Concrete.

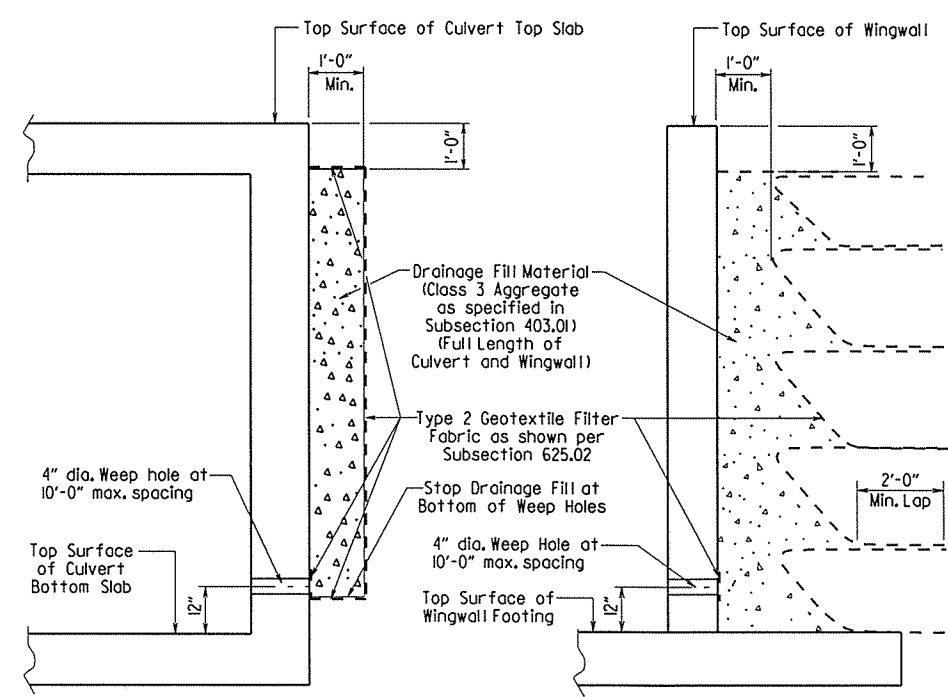
When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing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

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



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)

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

WINGWALL & CULVERT DRAINAGE DETAIL

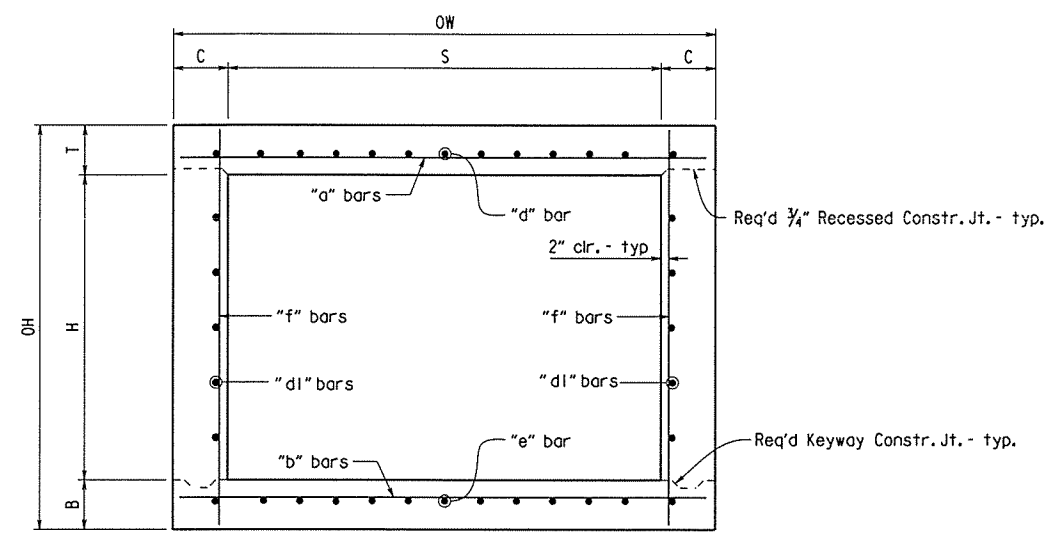


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110575	10	56

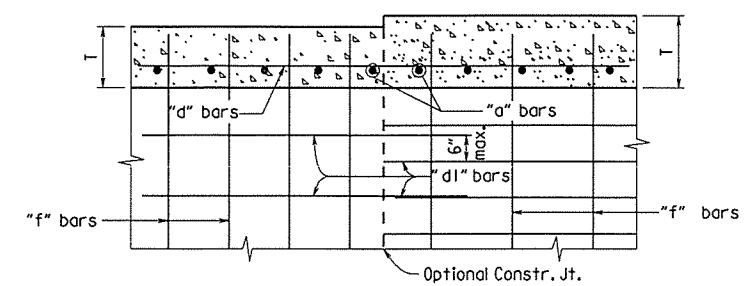
① SPECIAL DETAILS



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

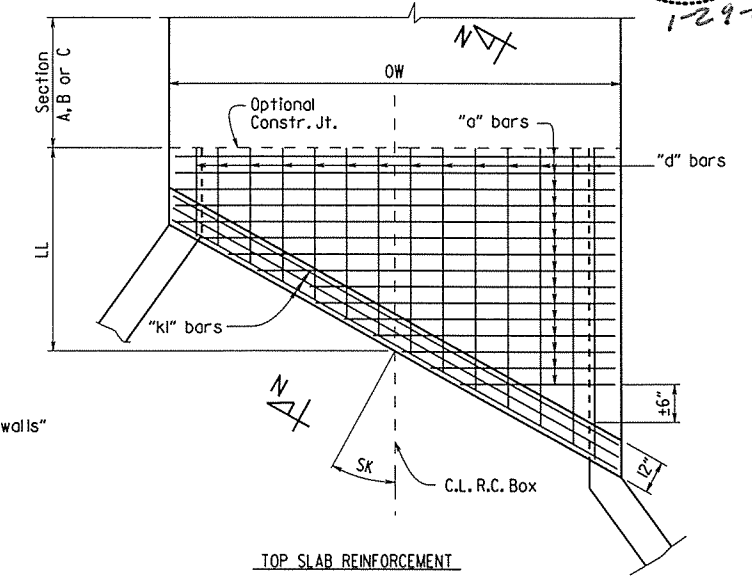


TYPICAL SECTION M-M

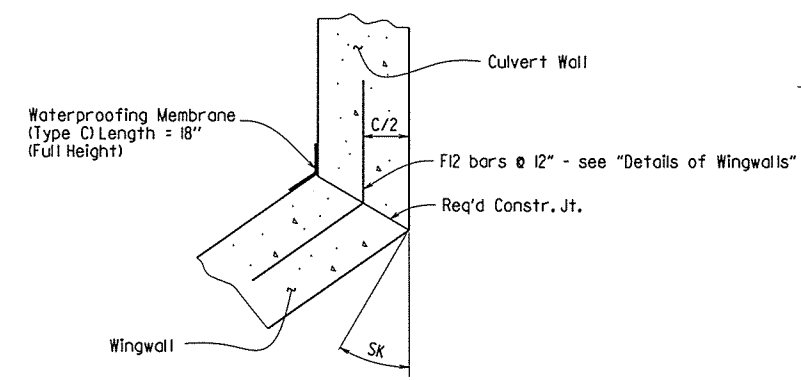


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

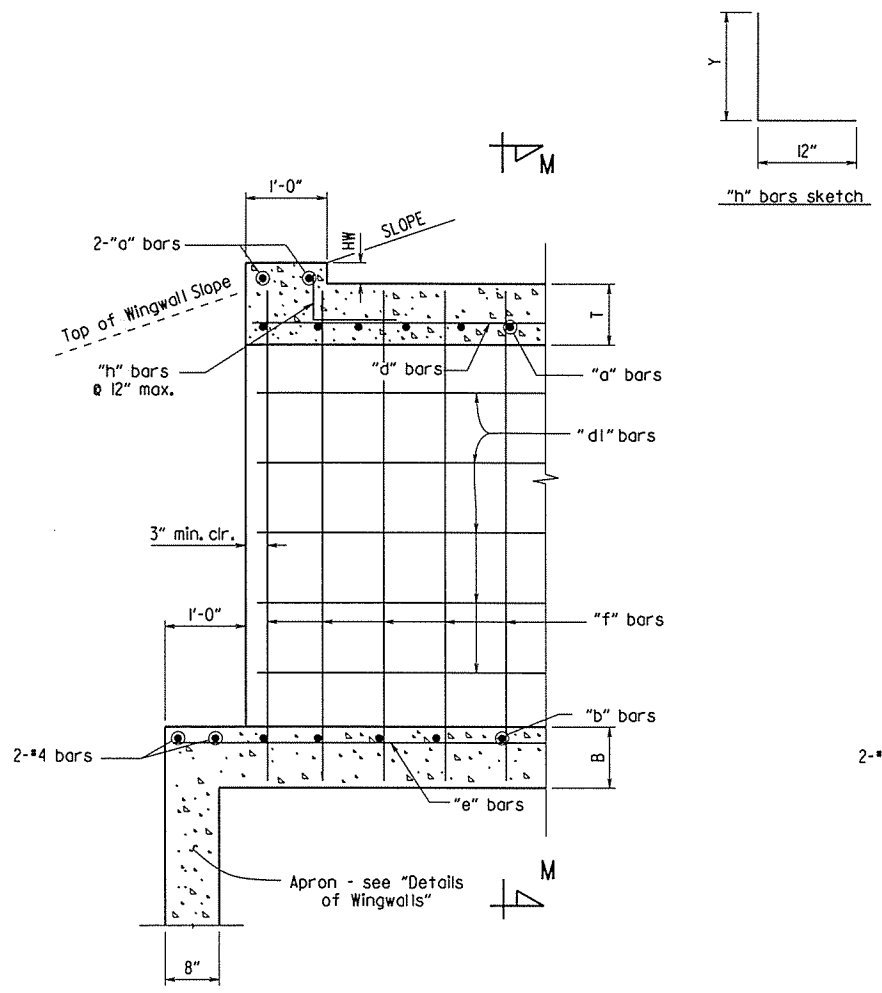


TOP SLAB REINFORCEMENT

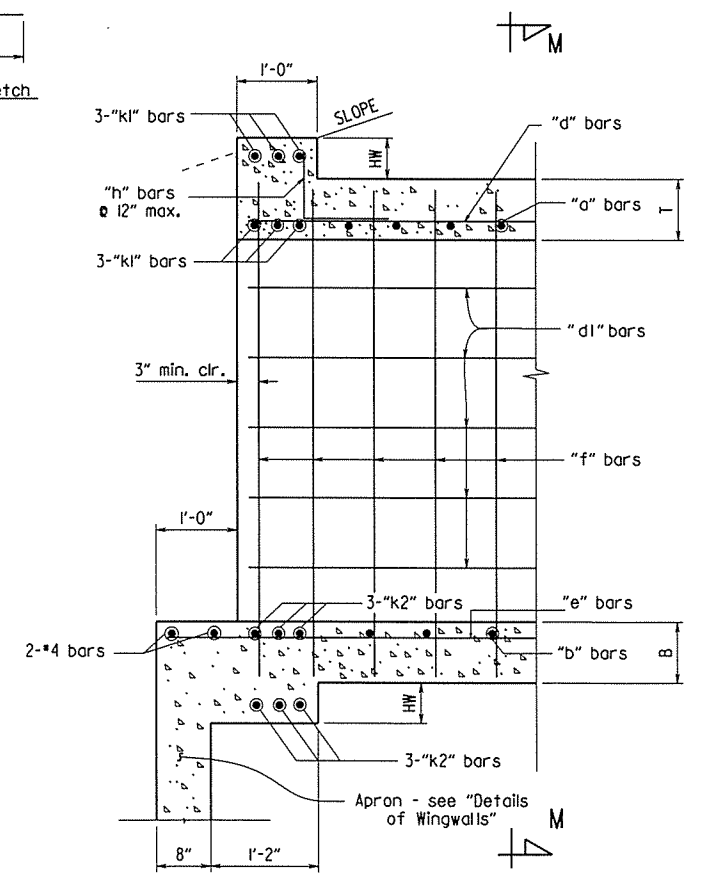


WINGWALL ATTACHMENT

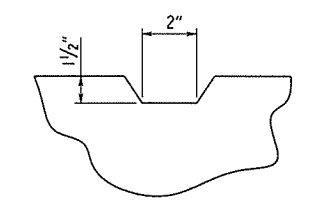
See "Details of Wingwalls" for additional information and wingwall details.



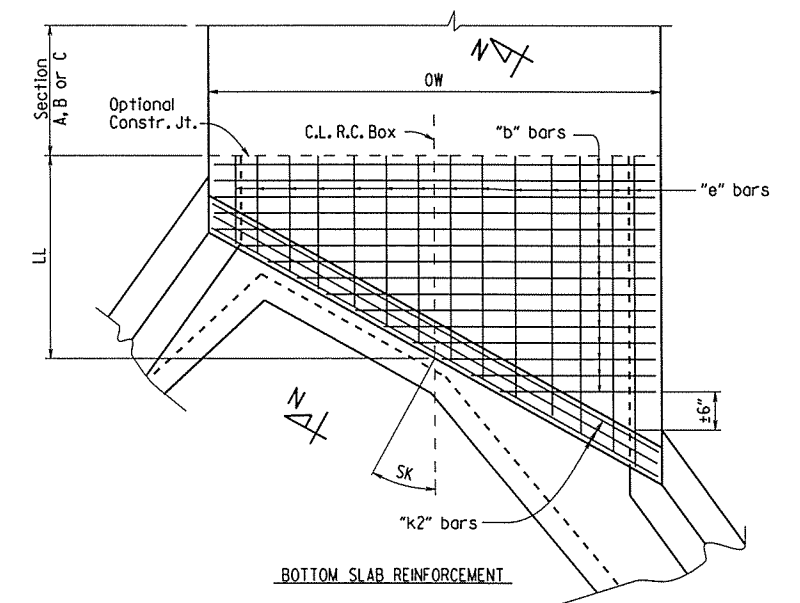
PART LONGITUDINAL SECTION (Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N (Skewed Ends)



TYPICAL KEYWAY DETAIL (All Construction Joints)



BOTTOM SLAB REINFORCEMENT

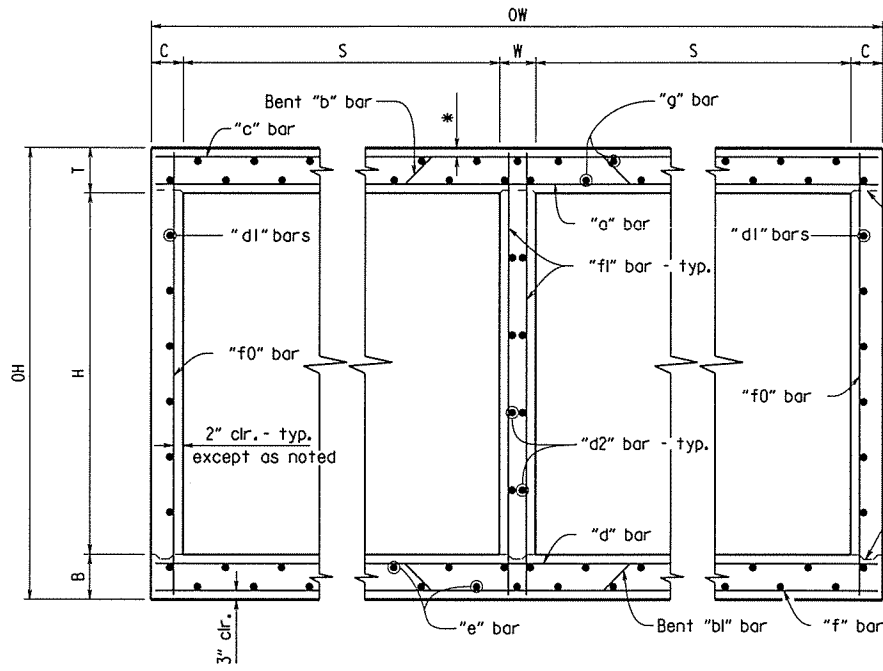
SKewed END SECTION DETAILS

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

bl10575_culvert.dgn

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

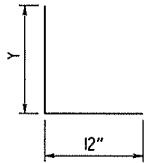
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



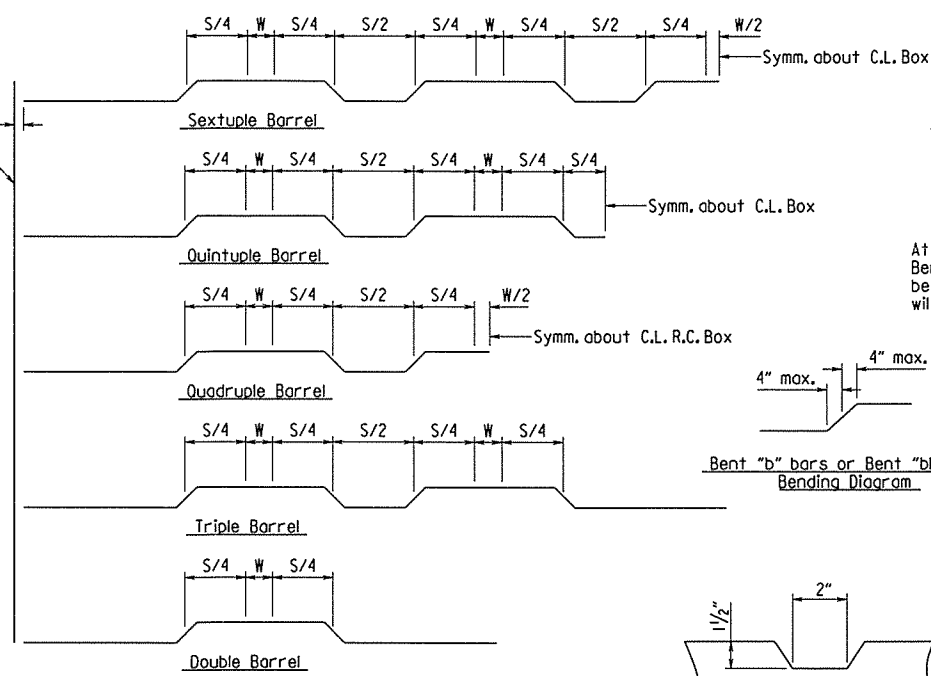
TYPICAL SECTION M-M

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

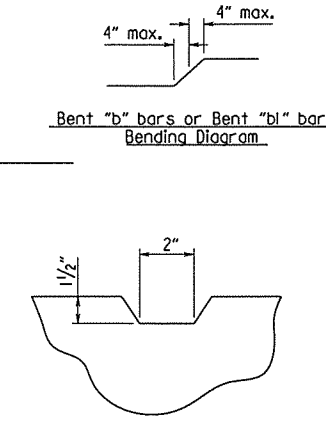
Bottom Slab
 Straight "d" bars shall alternate with Bent "bl" bars in top.
 Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch

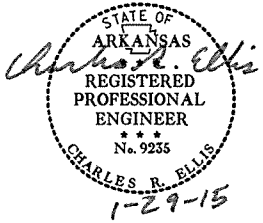


Bent "b" bars or Bent "bl" bars sketch

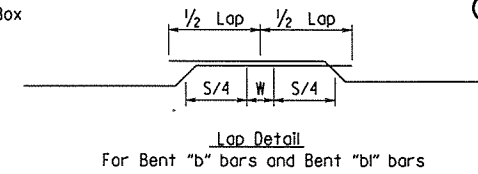


TYPICAL KEYWAY DETAIL
 (All Construction Joints)

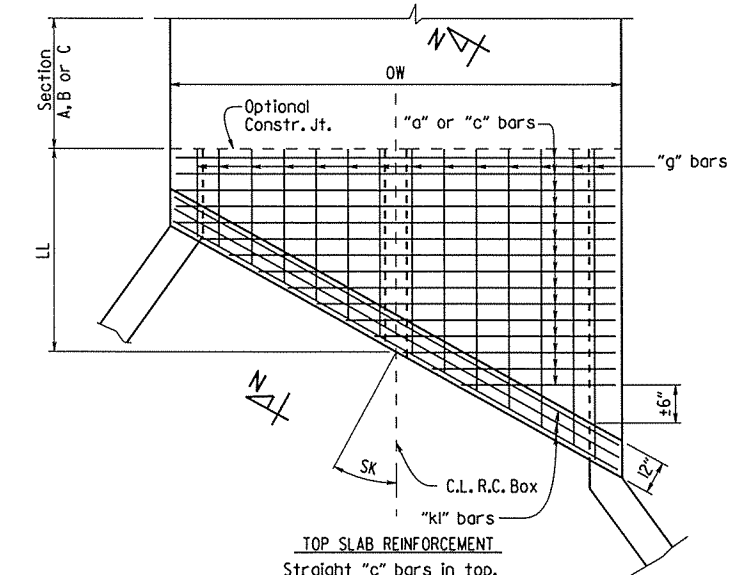
DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110575	11	56



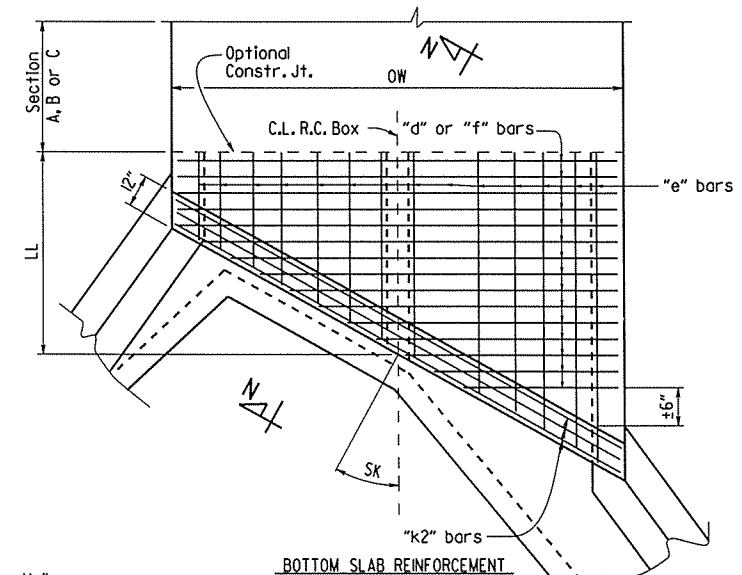
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



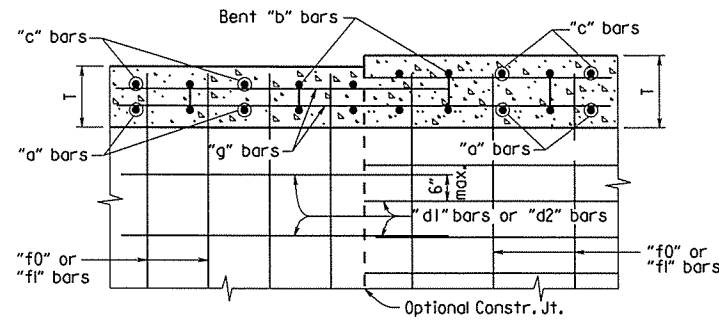
Lap Detail
 For Bent "b" bars and Bent "bl" bars



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



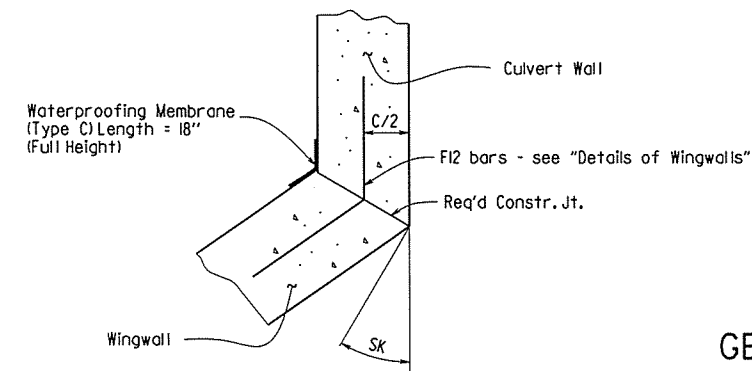
BOTTOM SLAB REINFORCEMENT
 Straight "d" bars in top.
 Straight "f" bars in bottom.



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

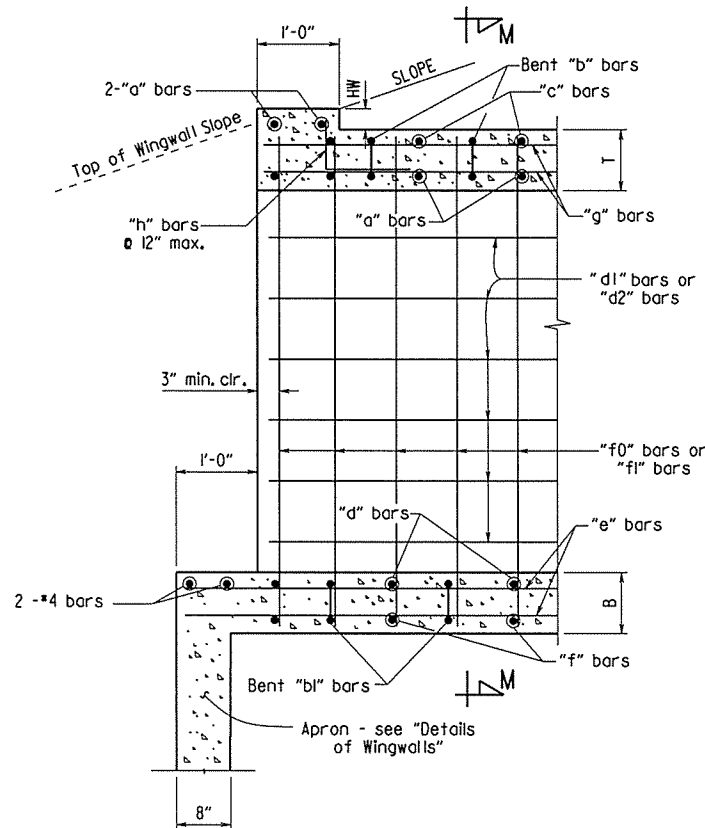
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



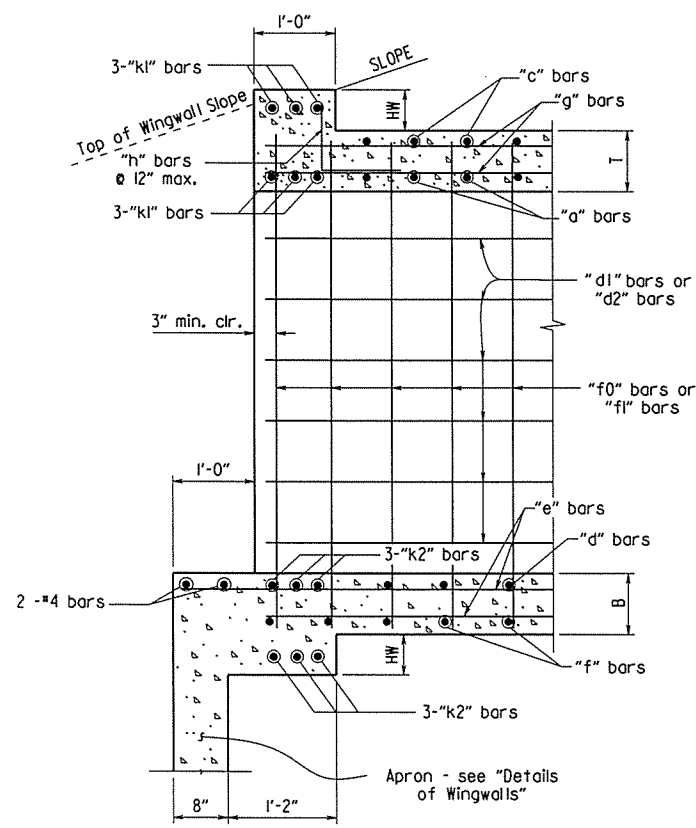
WINGWALL ATTACHMENT

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



PART LONGITUDINAL SECTION

(Non-Skewed Ends)



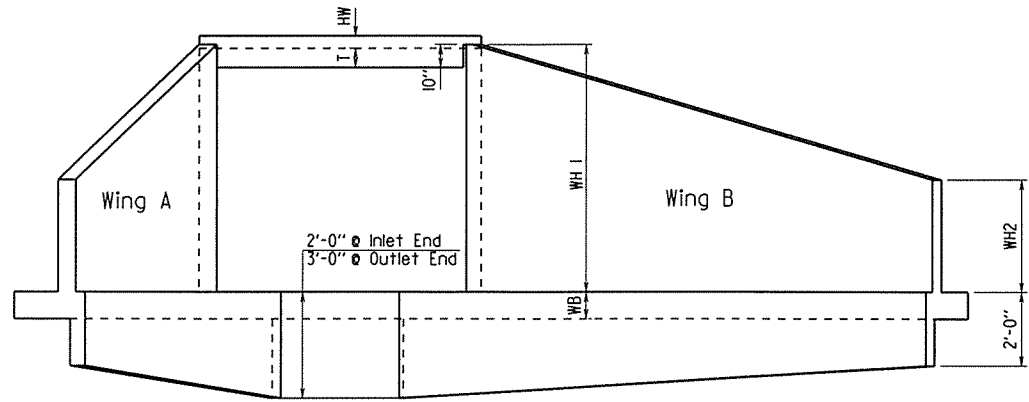
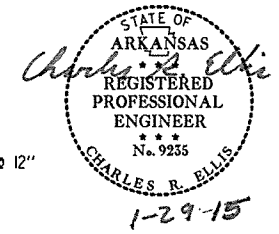
PART LONGITUDINAL SECTION N-N

(Skewed Ends)

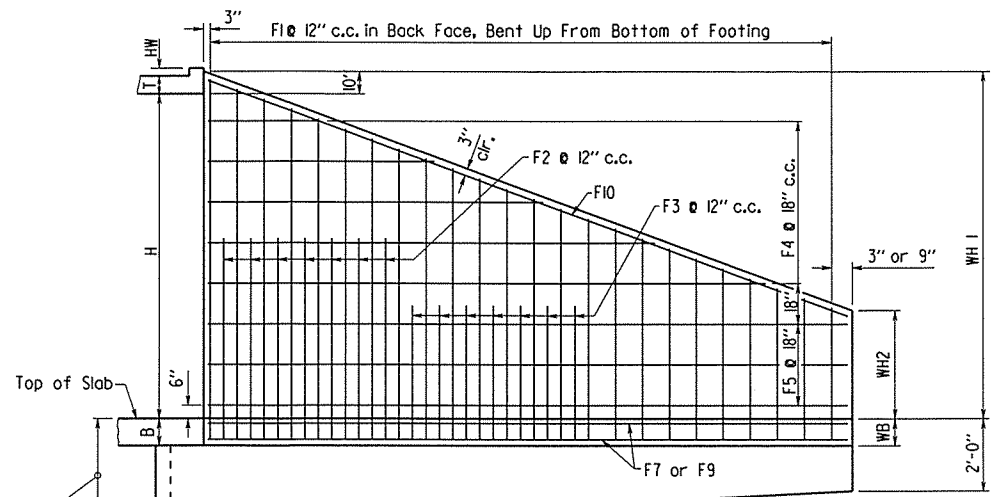
SHEET 3 OF 4
 GENERAL DETAILS OF R.C. BOX CULVERT
 DETAILS OF MULTI-BARREL
 R.C. BOX CULVERT
 SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	110575		12	56

1 SPECIAL DETAILS

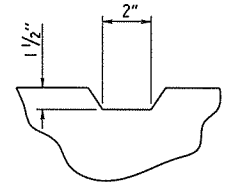


END ELEVATION
Flared Wingwalls Shown



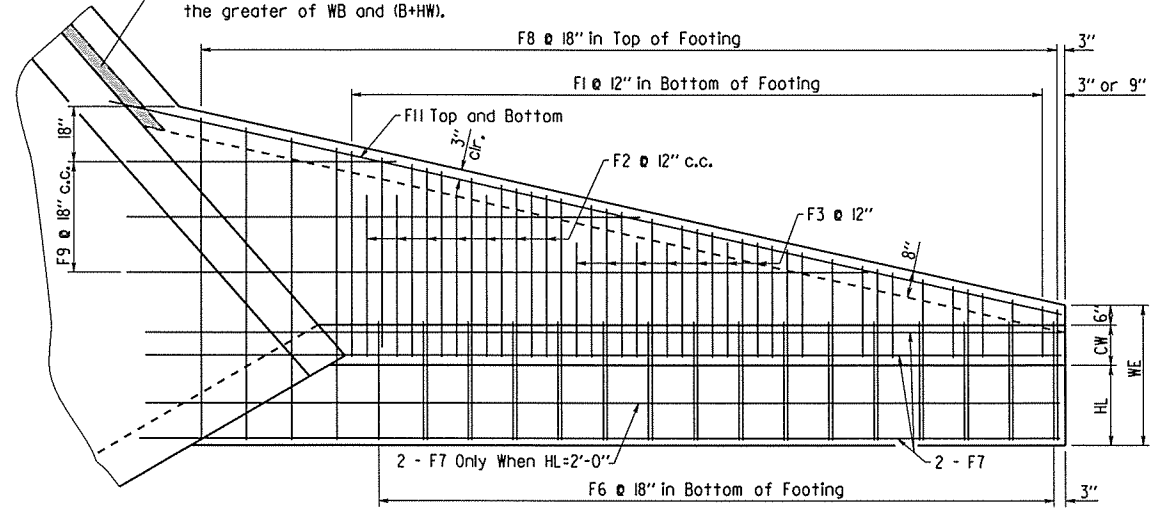
WINGWALL ELEVATION
Showing Back Face Reinforcement

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



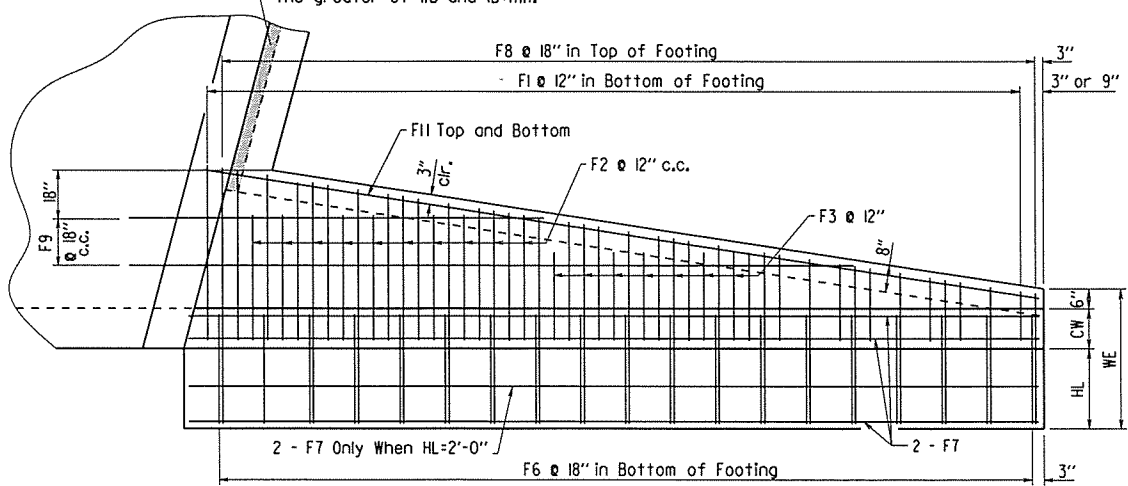
TYPICAL KEYWAY DETAIL
All Construction Joints

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+HW).

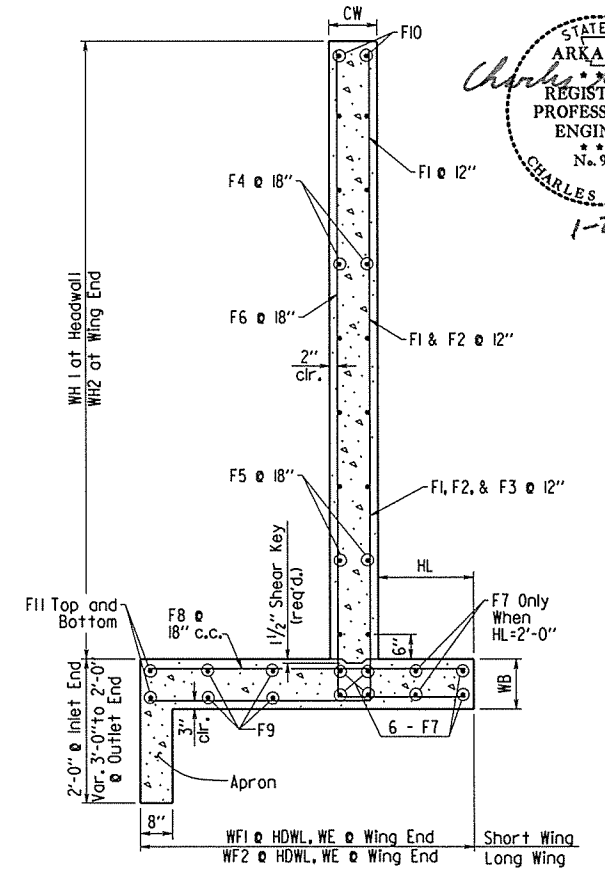


PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

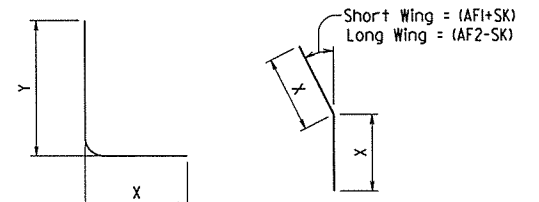
For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness).
For skewed ends make the shaded area thickness the greater of WB and (B+HW).



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

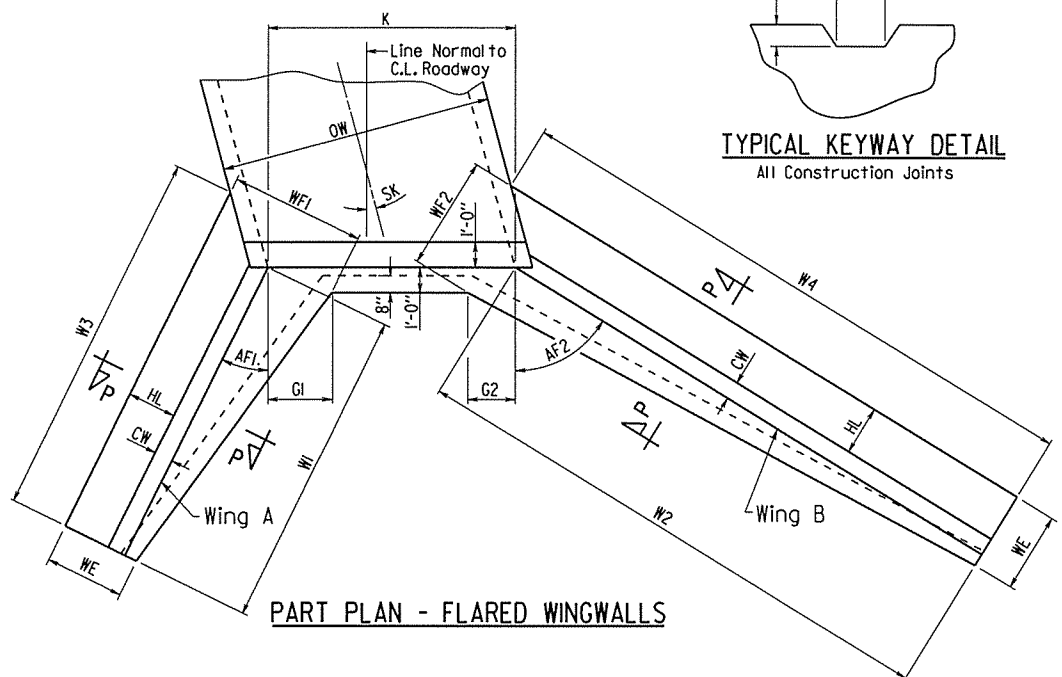


WINGWALL SECTION P-P

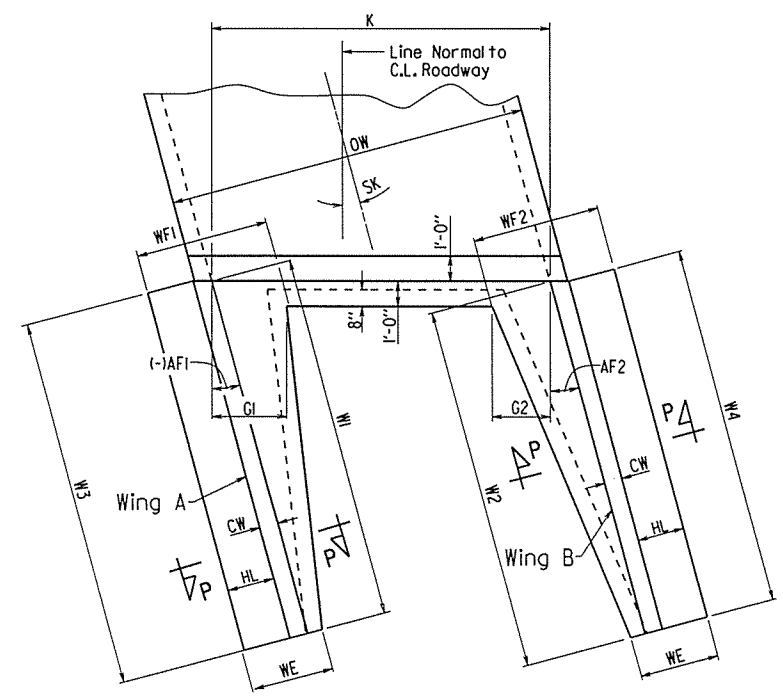


FI, F2, F3, & F6 BARS ***FI2 BAR**

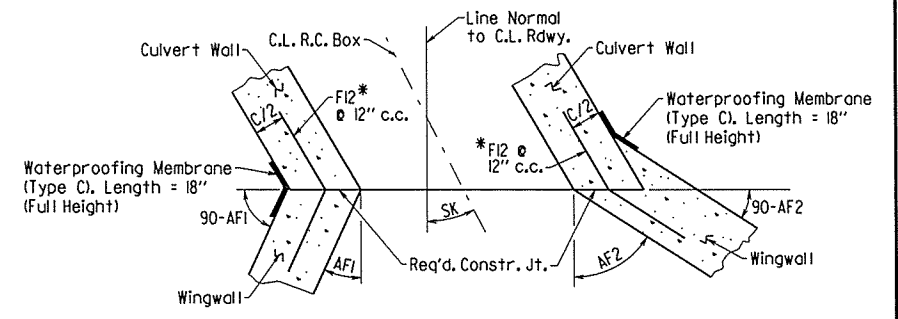
*F12 is a straight bar for parallel wingwalls



PART PLAN - FLARED WINGWALLS



PART PLAN - PARALLEL WINGWALLS



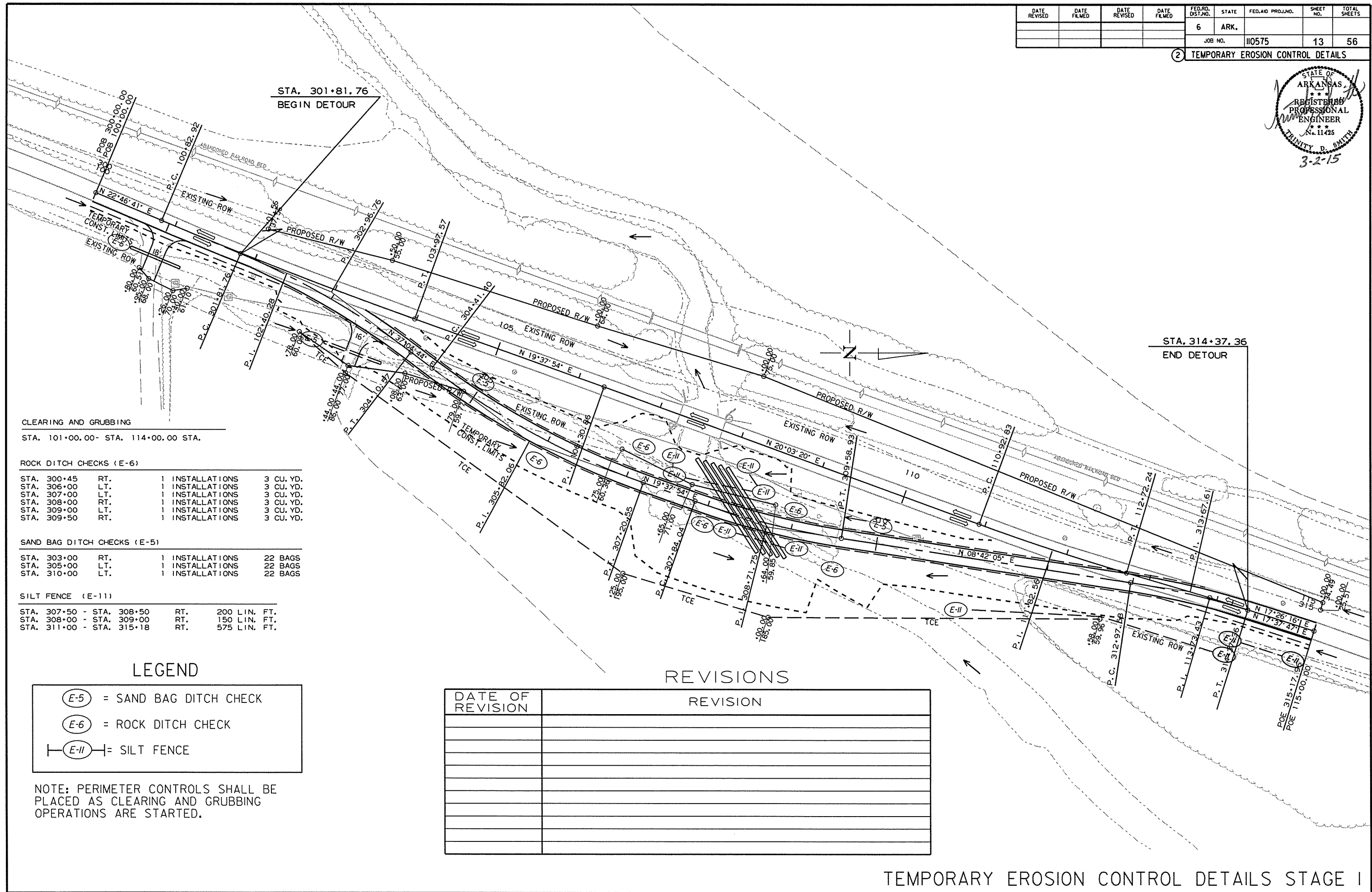
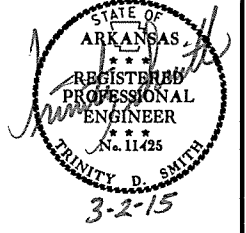
CONSTRUCTION JOINTS
Flared Wingwalls Shown

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

b10575_culvert.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		13	56

② TEMPORARY EROSION CONTROL DETAILS



CLEARING AND GRUBBING
STA. 101+00.00 - STA. 114+00.00 STA.

ROCK DITCH CHECKS (E-6)

STA. 300+45	RT.	1	INSTALLATIONS	3	CU. YD.
STA. 306+00	LT.	1	INSTALLATIONS	3	CU. YD.
STA. 307+00	LT.	1	INSTALLATIONS	3	CU. YD.
STA. 308+00	RT.	1	INSTALLATIONS	3	CU. YD.
STA. 309+00	LT.	1	INSTALLATIONS	3	CU. YD.
STA. 309+50	RT.	1	INSTALLATIONS	3	CU. YD.

SAND BAG DITCH CHECKS (E-5)

STA. 303+00	RT.	1	INSTALLATIONS	22	BAGS
STA. 305+00	LT.	1	INSTALLATIONS	22	BAGS
STA. 310+00	LT.	1	INSTALLATIONS	22	BAGS

SILT FENCE (E-11)

STA. 307+50 - STA. 308+50	RT.	200	LIN. FT.
STA. 308+00 - STA. 309+00	RT.	150	LIN. FT.
STA. 311+00 - STA. 315+18	RT.	575	LIN. FT.

LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

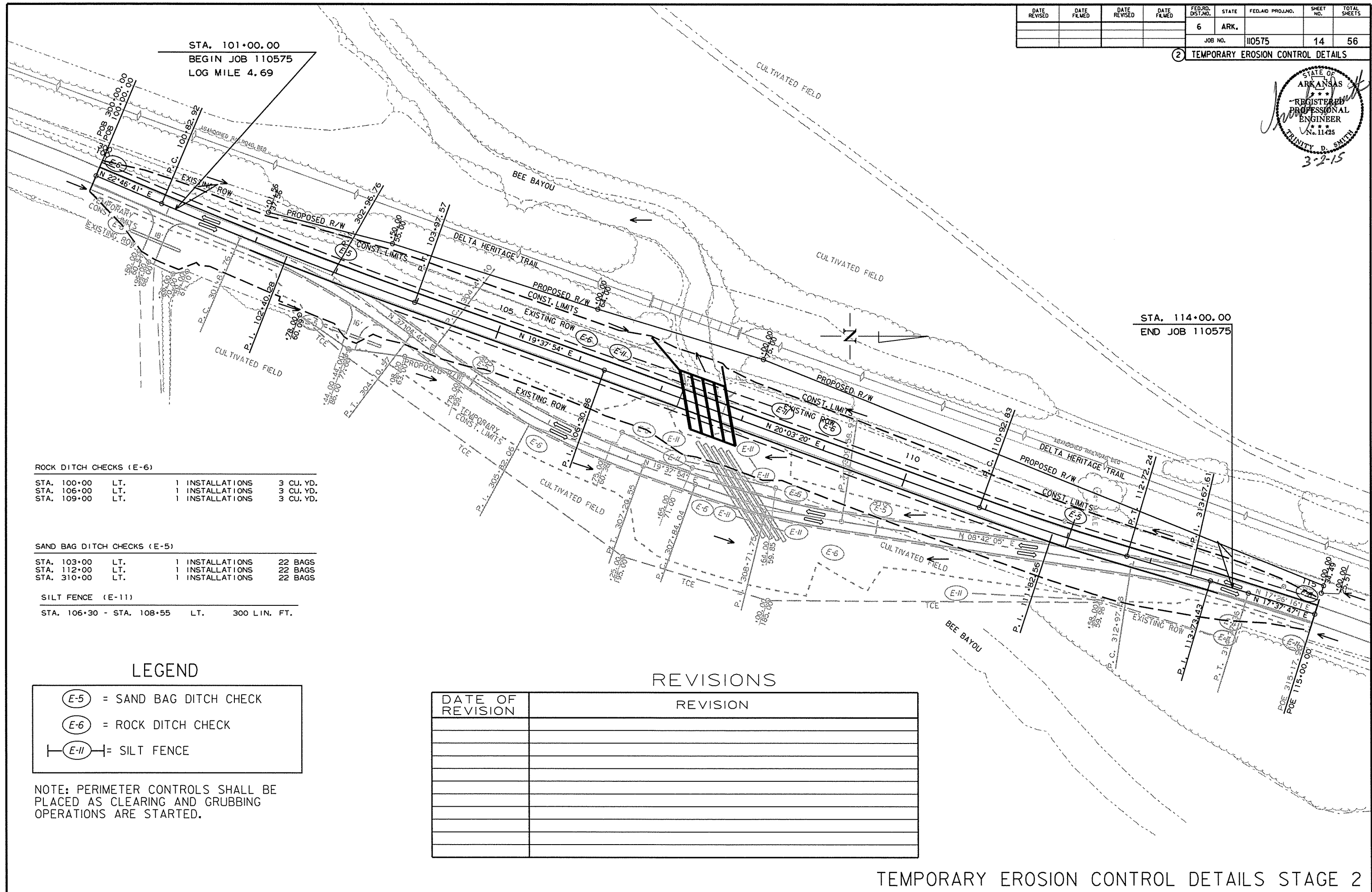
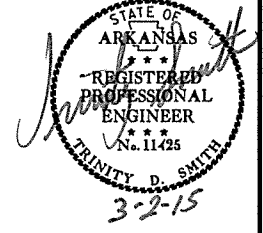
REVISIONS

DATE OF REVISION	REVISION

2/25/2015
R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		14	56

② TEMPORARY EROSION CONTROL DETAILS



STA. 101+00.00
BEGIN JOB 110575
LOG MILE 4.69

STA. 114+00.00
END JOB 110575

ROCK DITCH CHECKS (E-6)

STA. 100+00	LT.	1 INSTALLATIONS	3 CU. YD.
STA. 106+00	LT.	1 INSTALLATIONS	3 CU. YD.
STA. 109+00	LT.	1 INSTALLATIONS	3 CU. YD.

SAND BAG DITCH CHECKS (E-5)

STA. 103+00	LT.	1 INSTALLATIONS	22 BAGS
STA. 112+00	LT.	1 INSTALLATIONS	22 BAGS
STA. 310+00	LT.	1 INSTALLATIONS	22 BAGS

SILT FENCE (E-11)

STA. 106+30 - STA. 108+55	LT.	300 LIN. FT.
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LEGEND

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

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

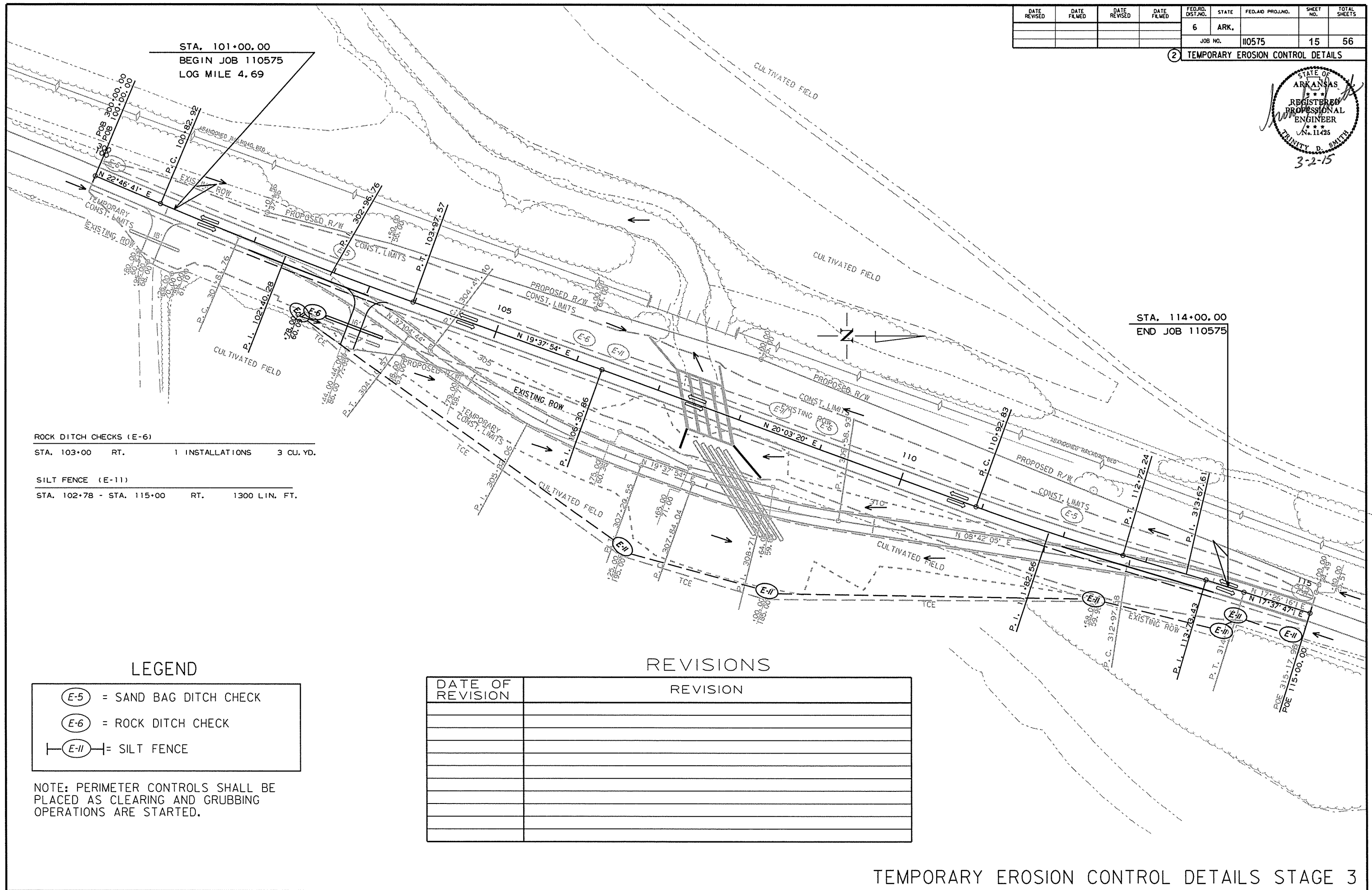
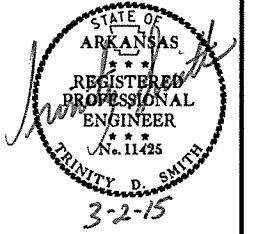
REVISIONS

DATE OF REVISION	REVISION

2/25/2015
R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		15	56

2 TEMPORARY EROSION CONTROL DETAILS



ROCK DITCH CHECKS (E-6)			
STA. 103+00	RT.	1 INSTALLATIONS	3 CU. YD.
SILT FENCE (E-11)			
STA. 102+78 - STA. 115+00	RT.	1300 LIN. FT.	

LEGEND

	= SAND BAG DITCH CHECK
	= ROCK DITCH CHECK
	= SILT FENCE

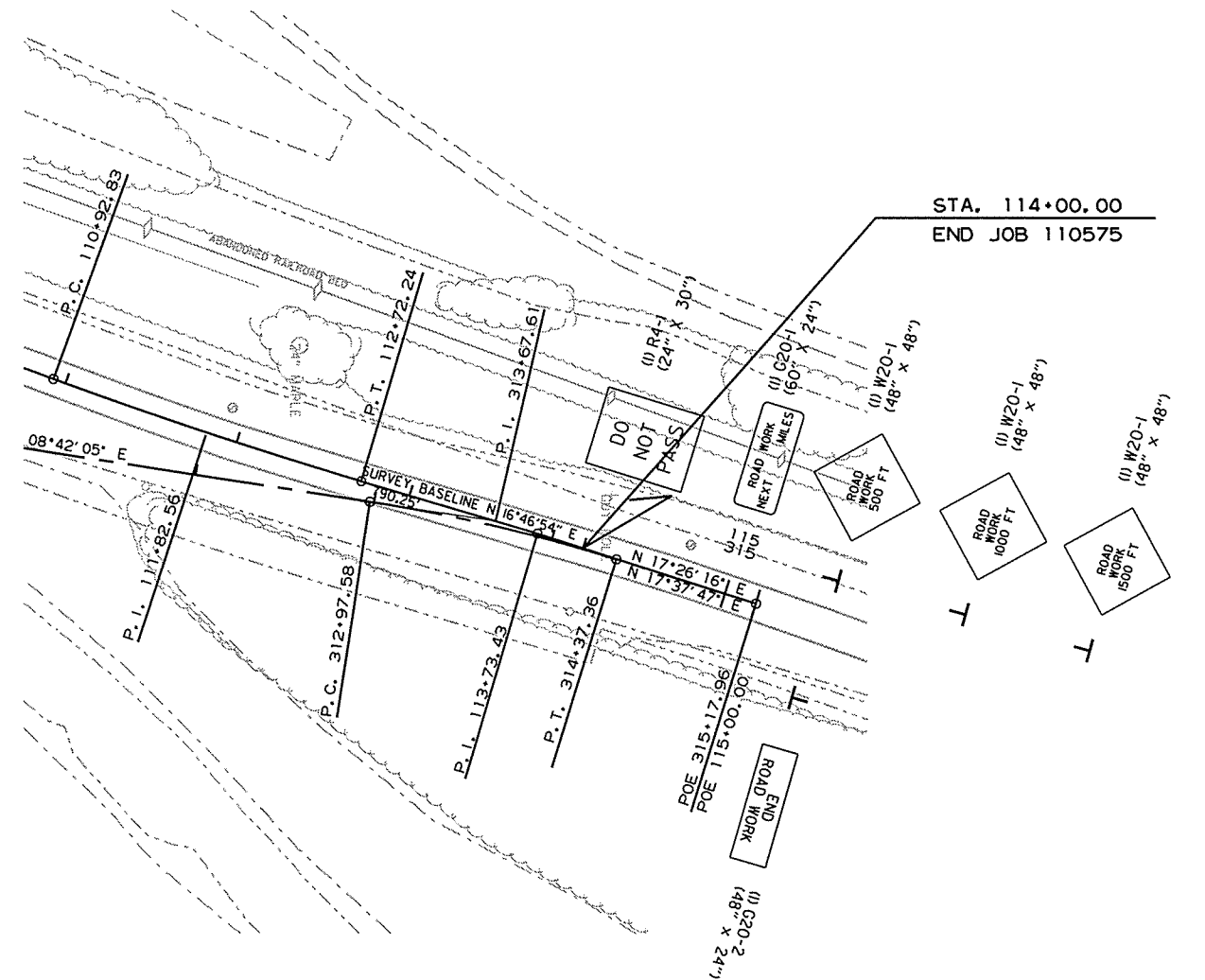
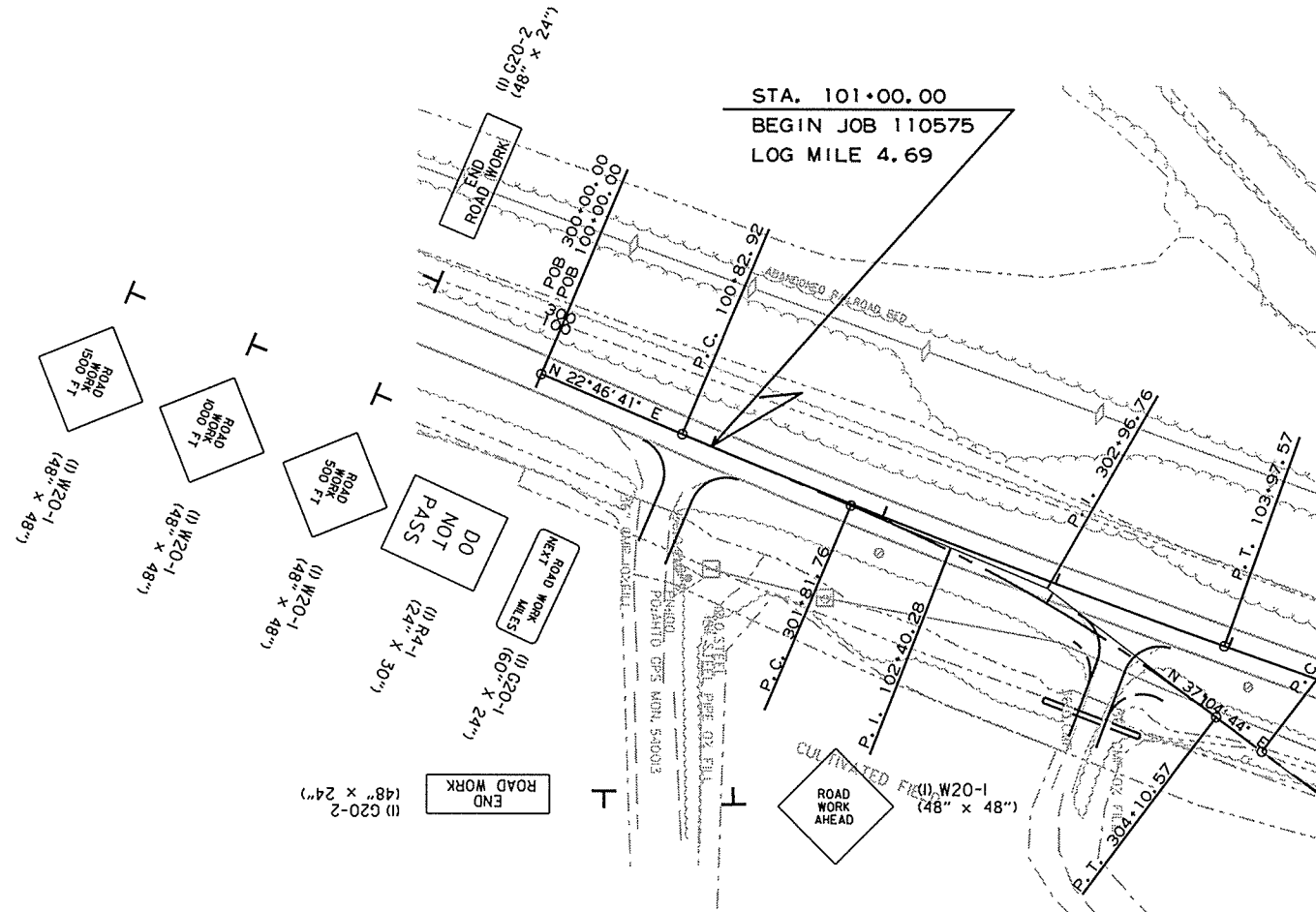
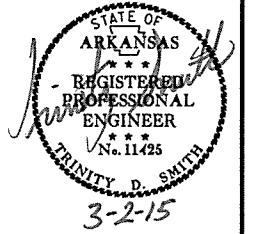
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

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.	110575		16	56

② MAINTENANCE OF TRAFFIC DETAILS



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

IF AND WHERE DIRECTED BY THE ENGINEER

SEQUENCING:

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

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT BARRELS AND OUTLET WINGWALLS OF R.C. BOX CULVERT. UTILIZE TRAFFIC DRUMS AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS. NOTCH AND WIDEN EXISTING PAVEMENT AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED ROADWAY.

STAGE 3: SHIFT TRAFFIC BACK TO MAIN LANES. OBLITERATE DETOUR. CONSTRUCT INLET WINGWALLS OF R.C. BOX CULVERT. INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

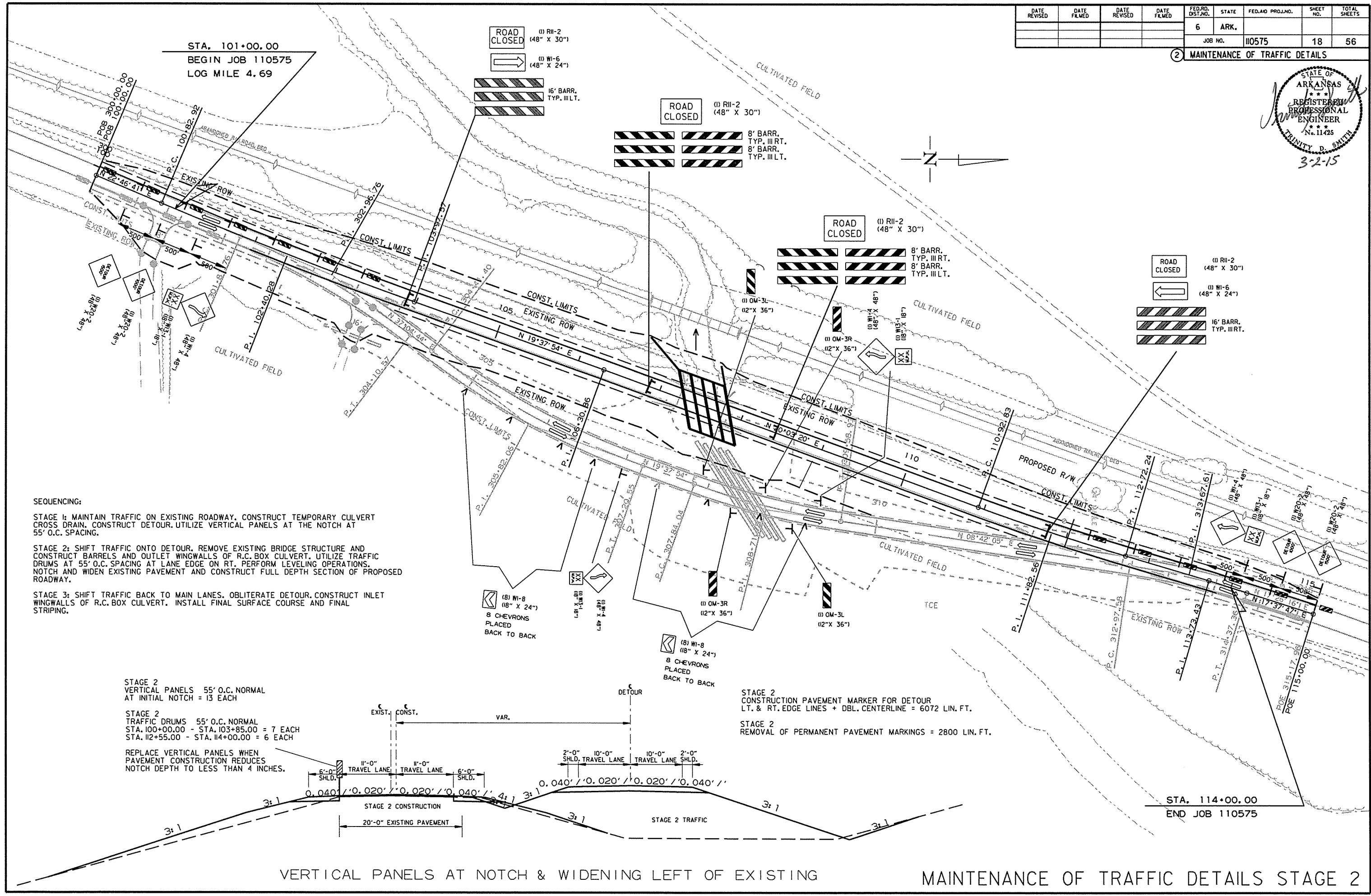
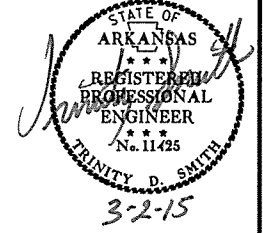
MAINTENANCE OF TRAFFIC DETAILS ADVANCE WARNING SIGNS

2/25/2015

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		18	56

2 MAINTENANCE OF TRAFFIC DETAILS



SEQUENCING:

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

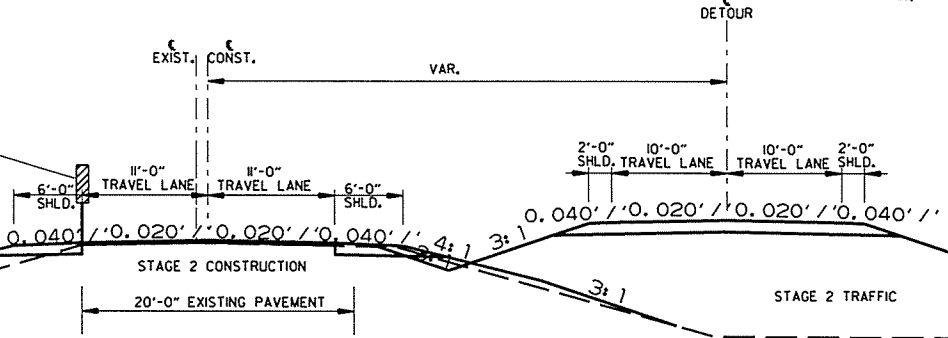
STAGE 2: SHIFT TRAFFIC ONTO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT BARRELS AND OUTLET WINGWALLS OF R.C. BOX CULVERT. UTILIZE TRAFFIC DRUMS AT 55' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS. NOTCH AND WIDEN EXISTING PAVEMENT AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED ROADWAY.

STAGE 3: SHIFT TRAFFIC BACK TO MAIN LANES. OBLITERATE DETOUR. CONSTRUCT INLET WINGWALLS OF R.C. BOX CULVERT. INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STAGE 2
VERTICAL PANELS 55' O.C. NORMAL
AT INITIAL NOTCH = 13 EACH

STAGE 2
TRAFFIC DRUMS 55' O.C. NORMAL
STA. 100+00.00 - STA. 103+85.00 = 7 EACH
STA. 112+55.00 - STA. 114+00.00 = 6 EACH

REPLACE VERTICAL PANELS WHEN
PAVEMENT CONSTRUCTION REDUCES
NOTCH DEPTH TO LESS THAN 4 INCHES.



STAGE 2
CONSTRUCTION PAVEMENT MARKER FOR DETOUR
LT. & RT. EDGE LINES + DBL. CENTERLINE = 6072 LIN. FT.

STAGE 2
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 2800 LIN. FT.

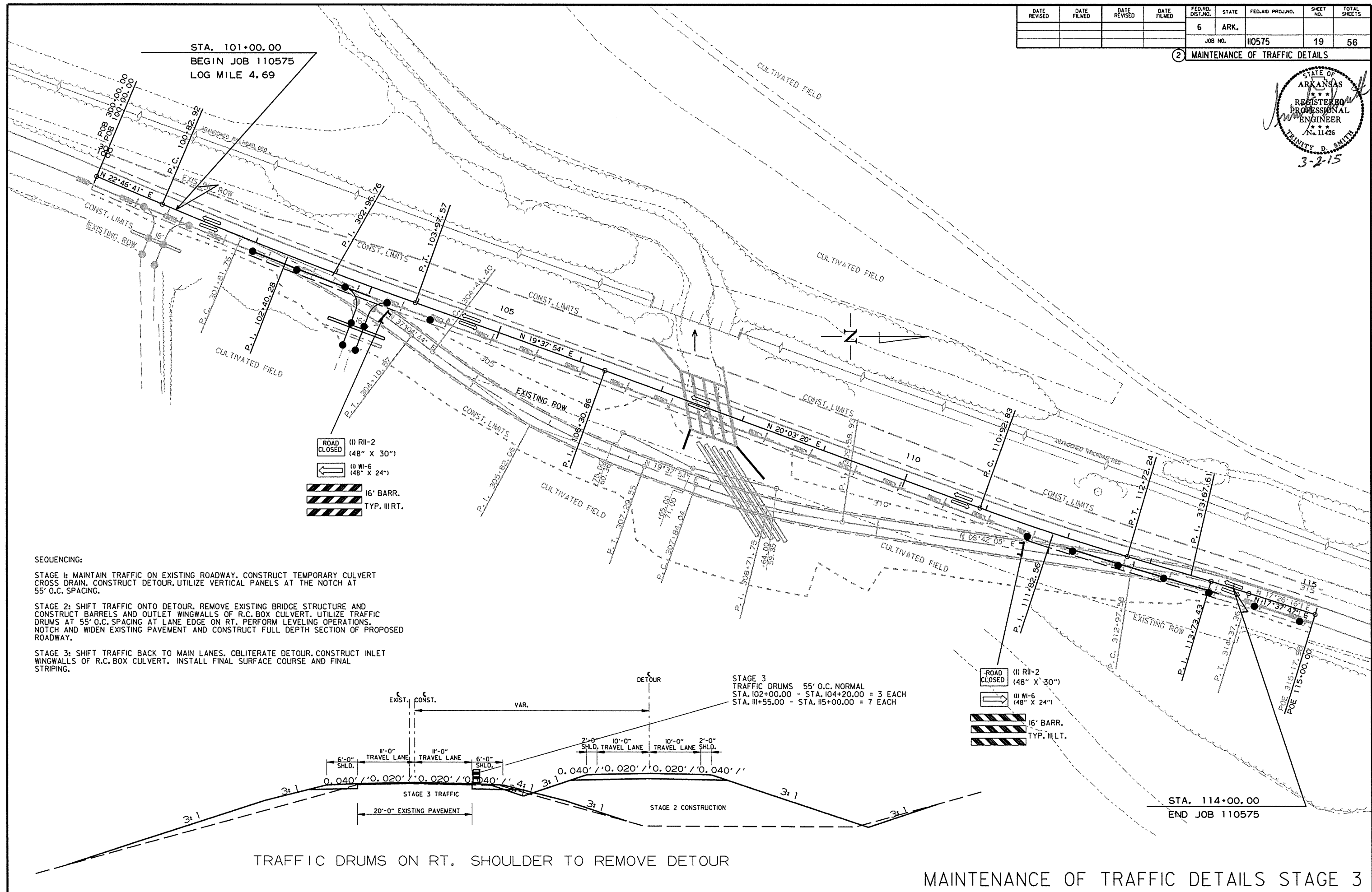
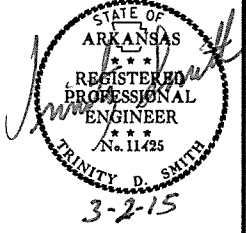
2/25/2015
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VERTICAL PANELS AT NOTCH & WIDENING LEFT OF EXISTING

MAINTENANCE OF TRAFFIC DETAILS STAGE 2

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.	110575		19	56

② MAINTENANCE OF TRAFFIC DETAILS



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-
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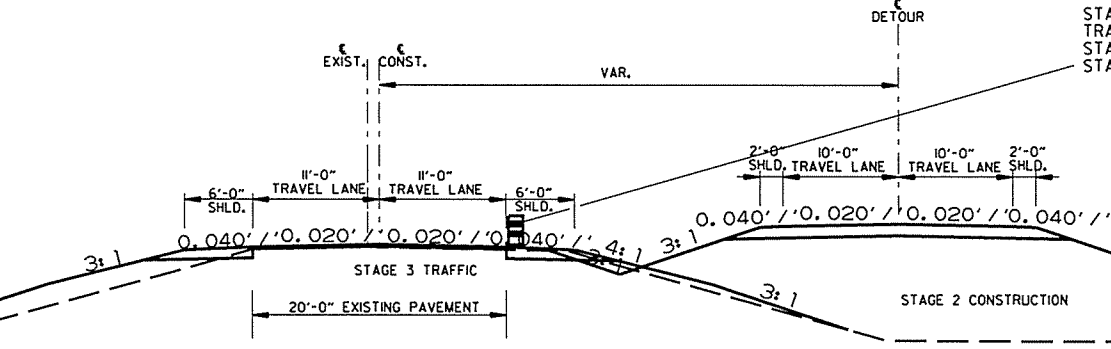
SEQUENCING:

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

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT BARRELS AND OUTLET WINGWALLS OF R.C. BOX CULVERT. UTILIZE TRAFFIC DRUMS AT 55' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS. NOTCH AND WIDEN EXISTING PAVEMENT AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED ROADWAY.

STAGE 3: SHIFT TRAFFIC BACK TO MAIN LANES. OBLITERATE DETOUR. CONSTRUCT INLET WINGWALLS OF R.C. BOX CULVERT. INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STAGE 3
TRAFFIC DRUMS 55' O.C. NORMAL
STA. 102+00.00 - STA. 104+20.00 = 3 EACH
STA. 111+55.00 - STA. 115+00.00 = 7 EACH



TRAFFIC DRUMS ON RT. SHOULDER TO REMOVE DETOUR

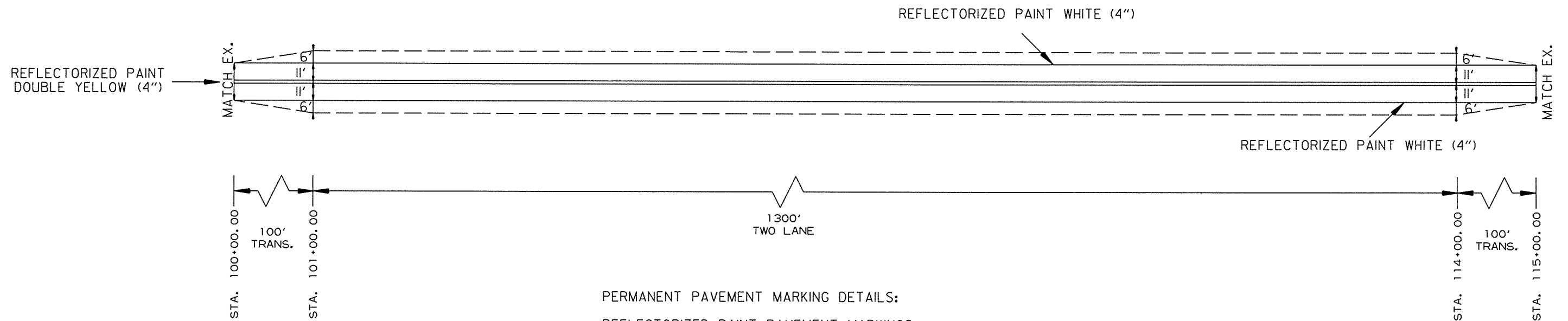
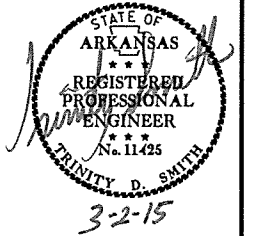
MAINTENANCE OF TRAFFIC DETAILS STAGE 3

2/25/2015

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	110575		20	56

② MAINTENANCE OF TRAFFIC DETAILS



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

SEQUENCING:

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

STAGE 2: SHIFT TRAFFIC ONTO DETOUR. REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT BARRELS AND OUTLET WINGWALLS OF R.C. BOX CULVERT. UTILIZE TRAFFIC DRUMS AT 55' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS. NOTCH AND WIDEN EXISTING PAVEMENT AND CONSTRUCT FULL DEPTH SECTION OF PROPOSED ROADWAY.

STAGE 3: SHIFT TRAFFIC BACK TO MAIN LANES. OBLITERATE DETOUR. CONSTRUCT INLET WINGWALLS OF R.C. BOX CULVERT. INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		21	56
				JOB NO.		110575		

2 QUANTITIES



ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		
							NO.	SQ. FT.			EACH	RIGHT	LEFT
												LIN. FT.	
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0					
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0					
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0					
W20-1	ROAD WORK AHEAD	48"x48"	1	1	1	1	1	16.0					
W20-1	DETOUR 1500 FT.	48"x48"		2		2	2	32.0					
W20-1	DETOUR 1000 FT.	48"x48"		2		2	2	32.0					
G20-2	END ROAD WORK	48"x24"	3	3	3	3	3	24.0					
G20-1	ROAD WORK NEXT xx MILES	60"x24"	2	2	2	2	2	20.0					
W1-4AR	REVERSE CURVE RT.	48"x48"		2		2	2	32.0					
W1-4AL	REVERSE CURVE LT.	48"x48"		2		2	2	32.0					
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		4		4	4	16.0					
R11-2	ROAD CLOSED	48"x30"	2	4	2	4	4	40.0					
OM-3L	OBJECT MARKER	12"x36"		2		2	2	6.0					
OM-3R	OBJECT MARKER	12"x36"		2		2	2	6.0					
W1-6	LARGE ARROW	48"x24"	2	2	2	2	2	16.0					
W1-8	CHEVRONS	18"x24"		16		16	16	48.0					
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0					
RSP-1	SHOULDER CLOSED	48"x30"	2	2	2	2	2	20.0					
	VERTICAL PANELS		17	13		17			17				
	TRAFFIC DRUMS		29	13	16	29				29			
	TYPE III BARRICADE-RT. (8')			2		2					16		
	TYPE III BARRICADE-LT. (8')			2		2						16	
	TYPE III BARRICADE-RT. (16')		1	1	1	1					16		
	TYPE III BARRICADE-LT. (16')		1	1	1	1						16	
TOTALS:								446.0	17	29	32	32	

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REFLECTORIZED PAINT PAVEMENT MARKING	
						4"	
						WHITE	YELLOW
	LIN. FT. - EACH			LIN. FT.		LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS		2800		2800			
CONSTRUCTION PAVEMENT MARKINGS	5200	6072			11272		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")			3000			3000	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")			3000				3000
TOTALS:				2800	11272	3000	3000

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

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

2/26/2015 R110575.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-30-15				6	ARK.			
				JOB NO.		110575	22	56

2 QUANTITIES



BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	AVG. WID. FEET	SQ. YD.	GALLONS / SQ. YD.	GALLON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON	TOTAL PG 64-22 TON
MAIN LANES																						
100+00.00	101+00.00	TRANSITION	100.00	85.92	85.92	21.00	233.33	0.03	7.00	1.12	12.44	385.00	2.39	1.07	11.89	220.00	1.31	23.00	255.56	220.00	28.11	29.42
101+00.00	106+00.00	NOTCH AND WIDENING	500.00	137.75	688.75	4.37	242.78	0.03	7.28	2.24	124.44	385.00	23.95	2.13	118.33	220.00	13.02	26.00	1444.44	220.00	158.89	171.91
106+00.00	108+67.83	FULL DEPTH	267.83	215.50	577.17	44.73	1331.12	0.03	39.93	22.49	669.28	385.00	128.84	22.25	662.14	220.00	72.84	26.00	773.73	220.00	85.11	157.95
108+72.30	114+00.00	NOTCH AND WIDENING	527.70	137.75	726.91	4.37	256.23	0.03	7.69	2.24	131.34	385.00	25.28	2.13	124.89	220.00	13.74	26.00	1524.47	220.00	167.69	181.43
114+00.00	115+00.00	TRANSITION	100.00	85.92	85.92	21.00	233.33	0.03	7.00	1.12	12.44	385.00	2.39	1.07	11.89	220.00	1.31	23.00	255.56	220.00	28.11	29.42
301+81.76	303+39.43	DETOUR - TRANSITION	157.67	67.13	105.84	12.15	212.85	0.03	6.39	12.15	212.85	330.00	35.12					12.00	210.23	220.00	23.13	23.13
303+39.43	312+23.39	DETOUR - FULL DEPTH	883.96	134.25	1186.72	24.29	2385.71	0.03	71.57	24.29	2385.71	330.00	393.64					24.00	2357.23	220.00	259.30	259.30
312+23.39	314+37.36	DETOUR - TRANSITION	213.97	67.13	143.64	12.15	288.86	0.03	8.67	12.15	288.86	330.00	47.66					12.00	285.29	220.00	31.38	31.38
ADDITIONAL FOR LEVELING																						
101+00.00	114+00.00	HWY. 44	1300.00			VAR.	VAR.	0.10	288.89									VAR.	VAR.	VAR.	388.08	388.08
ADDITIONAL FOR SUPERELEVATION																						
100+00.00	102+40.25	TRANSITION	240.25	11.86	28.49																	
102+40.25	104+80.49	TRANSITION	240.24	11.86	28.49																	
108+67.83	111+67.83	TRANSITION	300.00	20.94	62.82																	
111+67.83	111+97.24	MAX SUPER SUPERELEVATION	29.41	41.87	12.31																	
111+97.24	114+97.24	TRANSITION	300.00	20.94	62.82																	
304+11.00	305+80.98	TRANSITION SUPERELEVATION DETOUR	169.98	3.18	5.41																	
305+80.98	307+50.96	TRANSITION SUPERELEVATION DETOUR	169.98	3.18	5.41																	
307+50.96	308+71.49	TRANSITION SUPERELEVATION DETOUR	120.53	2.22	2.68																	
308+71.49	309+92.02	TRANSITION SUPERELEVATION DETOUR	120.53	2.22	2.68																	
TOTALS:					3811.98		5184.21		444.42		3837.36		659.27		929.14		102.22		7106.51		1169.80	1272.02

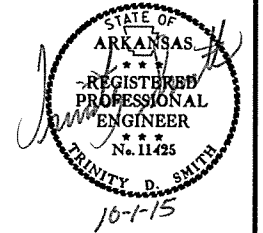
BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
 ACHM BINDER COURSE (1").....95.7% MIN. AGGR.....4.3% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

2/26/2015
 R110575.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-30-15				6	ARK.			
							JOB NO. 110575	23 56

2 QUANTITIES



REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	GUARDRAIL
			LIN. FT.
106+94.01	107+24.01	RT. SIDE OF MAIN LANES	30
106+94.01	107+24.01	LT. SIDE OF MAIN LANES	30
107+76.61	108+06.61	RT. SIDE OF MAIN LANES	30
107+76.61	108+06.61	LT. SIDE OF MAIN LANES	30
TOTAL:			120

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	STATION
100+00	115+00	MAIN LANES	15	15
TOTALS:			15	15

4" PIPE UNDERDRAIN

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

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

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
100+93	36" x 30' PIPE CULVERT RT. SIDE DRAIN	1
103+44	36" x 30' PIPE CULVERT RT. SIDE DRAIN	1
TOTAL:		2

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
100+00	101+00	MAIN LANES	20	222.22
114+00	115+00	MAIN LANES	20	222.22
TOTAL:				444.44

NOTE: AVERAGE MILLING DEPTH 1".

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

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

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

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
107+24	107+77	26' x 52' CLEAR ROADWAY BRIDGE NO. 03052 CONSISTING OF CONCRETE DECK ON CONCRETE PILES WITH CAST IN PLACE SUBSTRUCTURE	1.00

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
* ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	25
TOTAL:	25

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.	CU. YD.	TON
* ENTIRE PROJECT		STAGE 1 - DETOUR	1568	14191	
* ENTIRE PROJECT		STAGE 2 - MAIN LANES	459	5130	
* ENTIRE PROJECT		STAGE 3 - OBLITERATION OF DETOUR	14645	1769	
* ENTIRE PROJECT		APPROACHES		530	
* ENTIRE PROJECT		TEMPORARY APPROACHES		245	
* ENTIRE PROJECT		UNDERCUT	6156	6156	
107+65		CHANNEL CHANGE	1200		
* ENTIRE PROJECT		TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			100
TOTALS:			24028	28021	100

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

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

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	TEMPORARY CULVERT	SIDE DRAIN	STANDARD DRAWINGS
			FEET	SQ. YD.	TON				
			36"	36"	LIN. FT.				
100+93	RT	HWY. 44	18	117.60	12.94	48.02		52	PCC-1, PCM-1, PCP-1, PCP-2
103+44	RT	HWY. 44	16	122.90	13.52	50.18		56	PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT - TEMPORARY DRIVES							32.10	56	PCC-1, PCM-1, PCP-1, PCP-2
TOTALS:				240.50	26.46	130.30	56	108	

BASIS OF ESTIMATE:
 ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

** FOR INFORMATION ONLY

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

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
104+00	34	11	7.60	90	57	55.70	5' RT	0-5	20	10	A-4 (2)	BR/GR
104+00	34	11	7.60	90	57	55.60	15' RT	0-5	30	17	A-6 (11)	BR/GR
104+00	34	11	7.60	90	57	55.60	15' RT	0-5	36	17	A-6 (12)	BR/GR
111+00	34	11	14.50	90	57	53.00	15' LT	0-5	27	15	A-6 (5)	BROWN

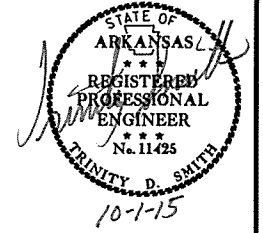
SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING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

2/26/2015

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-30-15				6	ARK.			
				JOB NO.		110575	24	56

② QUANTITIES



EROSION CONTROL

STATION	PROJECT	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20")	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-1) LIN. FT.	(E-5) BAG	(E-6) CU. YD.	(E-11) LIN. FT.	(E-14) CU. YD.	CU. YD.	CU. YD.
ENTIRE	PROJECT	STAGE 1	2.95	5.90	2.95	300.9	2.95	3.46	3.46	70.6		66	18	925		43	
ENTIRE	PROJECT	STAGE 2	1.34	2.68	1.34	136.7	1.34	1.57	1.57	32.0		44	12	1300		54	
ENTIRE	PROJECT	STAGE 3	3.21	6.42	3.21	327.4	3.21	3.46	3.46	70.6			3	300		12	
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.											225	66	18	1220	1070	1070	1149
TOTALS:			7.50	15.00	7.50	765.0	7.50	8.49	8.49	173.2	225	176	51	3745	1070	1070	1258

BASIS OF ESTIMATE:
LIME2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

STRUCTURES

STATION	DESCRIPTION	TEMPORARY CULVERTS	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		48" LIN. FT.									
308+19	QUINT. 48' x 128' TEMPORARY PIPE CULVERT	640									PCC-1, PCM-1, PCP-1, PCP-2
SUBTOTALS:		640									
STRUCTURES OVER 20' - 0" SPAN											
107+65	QUAD. 11' x 11' x 70' R.C. BOX CULVERT ON 30° RT. FWD. SKEW		11	11	70	451.83	54392	197	59	0.74	RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:						451.83	54392	197	59	0.74	
TOTALS:		640				451.83	54392	197	59	0.74	

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

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
107+65	R.C. BOX CULVERT HEADWALL RT.	1
TOTAL:		1

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

SELECTED PIPE BEDDING

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

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

2/26/2015 R110575.DGN

SURVEY CONTROL COORDINATES

Project Name: s110575
 Date: 5/16/2013
 Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL,
 540013 - COE MON 9100S12 PROJECTED TO GROUND.
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1865403.3418	1624841.7580	160.582	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:1
2	1866285.8381	1625161.1569	160.134	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:2
3	1867008.5877	1625409.6060	159.358	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:3
4	1867242.5709	1625520.8099	158.893	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:4
5	1867999.1641	1625748.9767	161.330	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:5
6	1868749.3292	1626017.4005	161.192	CTL	5/8" Rebar with 2" Aluminum Cap stamped pn:6
100	1866448.7194	1625289.4015	159.937	GPS	AHTD CAP GPS MON. 540013
101	1868676.2429	1625939.3199	163.303	GPS	CORPS OF ENGINEERS MON., 9100S12
900	1860149.0380	1628331.9436	166.029	TBM	2" ALUM CAP2' 5/8" RBR 10FT. N FLD RD 15FT NE FE POST
901	1862569.6609	1626764.8204	157.287	TBM	2" ALUM CAP2' 5/8" RBR, 10FT. N FLD RD
902	1864209.4646	1625419.2003	157.565	TBM	2" ALUM CAP2' 5/8" RBR, 10FT. S FLD RD
903	1865344.3170	1624825.6911	160.724	TBM	2" ALUM CAP2' 5/8" RBR 19FT. E CL44 53FT. SW PP
990	1860650.7319	1629394.7863	186.130	BM	NGS BM K 305
991	1859318.5962	1627643.6645	184.843	BM	NGS BM N 221

*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 0.9999138764 HAS BEEN USED TO COMPUTE THE ABOVE LISTED GROUND COORDINATES.
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GROUND COORDINATES ARE PROJECTED FROM AR. STATE PLANE GRID COORDINATES BY SCALING ALL X, Y
 COORDINATE VALUES WITH THE INVERSE (1/X) OF THE COMBINED AJUSTMENT FACTOR (CAF) ABOUT X=0, Y=0.

GRID COORDINATES ARE STORED UNDER FILE NAME. s110575gi.ctl
 HORIZONTAL DATUM: NAD 83 (1997)
 VERTICAL DATUM: NAVD 88 ELEVATIONS FOR POINTS 1-6, 100-101, AND 900-903 & 990-991 WERE ESTABLISHED BY 3-WIRE LEVEL TECHNIQUES
 FROM NGS BENCH MARKS.

POSITIONAL ACCURACY:

HORIZONTAL-GPS(POINTS 100-101): 1.0 CM 10 PPM, PRIMARY CONTROL(POINTS 1-6): 2.0 CM 20 PPM
 VERTICAL-POSITIONAL ACCURACY IS THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT

BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: 540013 - COE MON 9100S12
 CONVERGENCE ANGLE: 00 34 45 RIGHT AT PN:3
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

LT: 34-11-10.3 LG: 090-57-54.7

GRID NORTHING: 1866847.7942 GRID EASTING: 1625269.6199

GROUND NORTHING: 1867008.5877 GROUND EASTING: 1625409.6060

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.	110575		26	56

2 SURVEY CONTROL DETAILS



POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	1866368.7685	1625179.6221
8001	PC	100+82.92	1866445.2252	1625211.7272
8003	PT	103+97.57	1866738.5275	1625325.5204
8004	PI	106+30.86	1866958.2611	1625403.9009
8005	PC	110+92.83	1867392.2116	1625562.3233
8007	PT	112+72.24	1867562.5624	1625618.5344
8008	PI	113+73.43	1867659.6010	1625647.2184
8009	POE	115+00.00	1867780.2276	1625685.5520

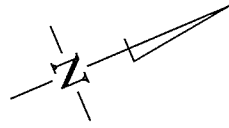
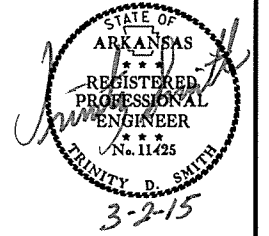
POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	300+00.00	1866368.7685	1625179.6221
8010	PC	301+81.76	1866536.3495	1625249.9913
8012	PT	304+10.57	1866734.1357	1625363.8544
8013	PC	304+41.40	1866758.7304	1625382.4410
8015	PT	307+20.55	1867003.4449	1625514.5110
8016	PC	307+84.04	1867063.2423	1625535.8411
8018	PT	309+58.93	1867232.5529	1625578.5779
8019	PC	312+97.58	1867567.3078	1625629.8104
8021	PT	314+37.36	1867703.3401	1625661.3899
8022	POE	315+17.96	1867780.2310	1625685.5419

2/25/2015

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						110575	27	56

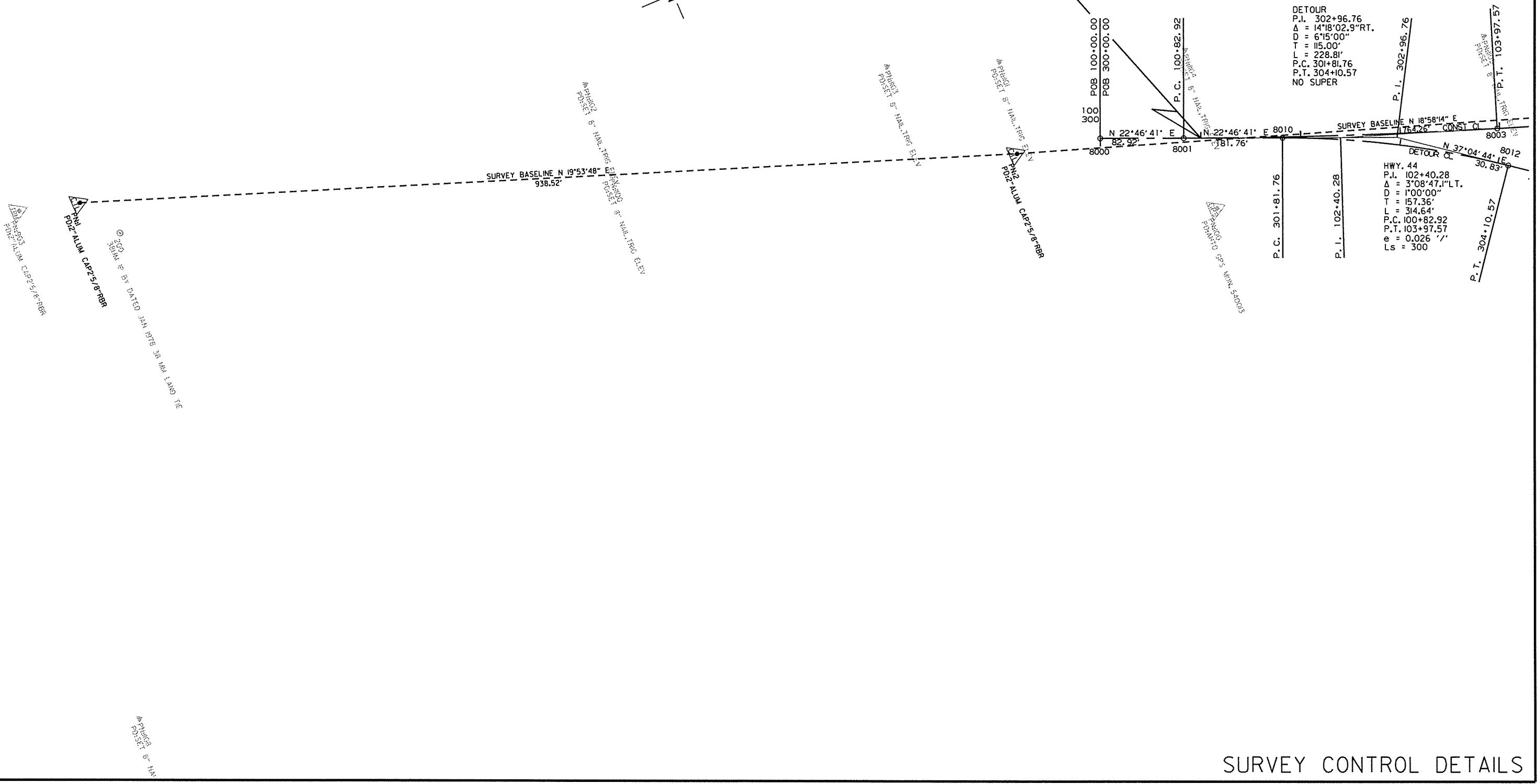
2 SURVEY CONTROL DETAILS



STA. 101+00.00
 BEGIN JOB 110575
 LOG MILE 4.69

DETOUR
 P.I. 302+96.76
 $\Delta = 14'18''02.9''$ RT.
 $D = 6'15''00''$
 $T = 115.00'$
 $L = 228.81'$
 P.C. 301+81.76
 P.T. 304+10.57
 NO SUPER

HWY. 44
 P.I. 102+40.28
 $\Delta = 3'08''47.1''$ LT.
 $D = 1'00''00''$
 $T = 157.36'$
 $L = 314.64'$
 P.C. 100+82.92
 P.T. 103+97.57
 $e = 0.026'$
 $L_s = 300$



HWY. 44
 P.I. 102+40.28
 $\Delta = 3'08''47.1''$ LT.
 $D = 1'00''00''$
 $T = 157.36'$
 $L = 314.64'$
 P.C. 100+82.92
 P.T. 103+97.57
 $e = 0.026''$
 $L_s = 300'$

STA. 106+00 TO STA. 108+50
 SPECIAL FLOOD HAZARD AREA

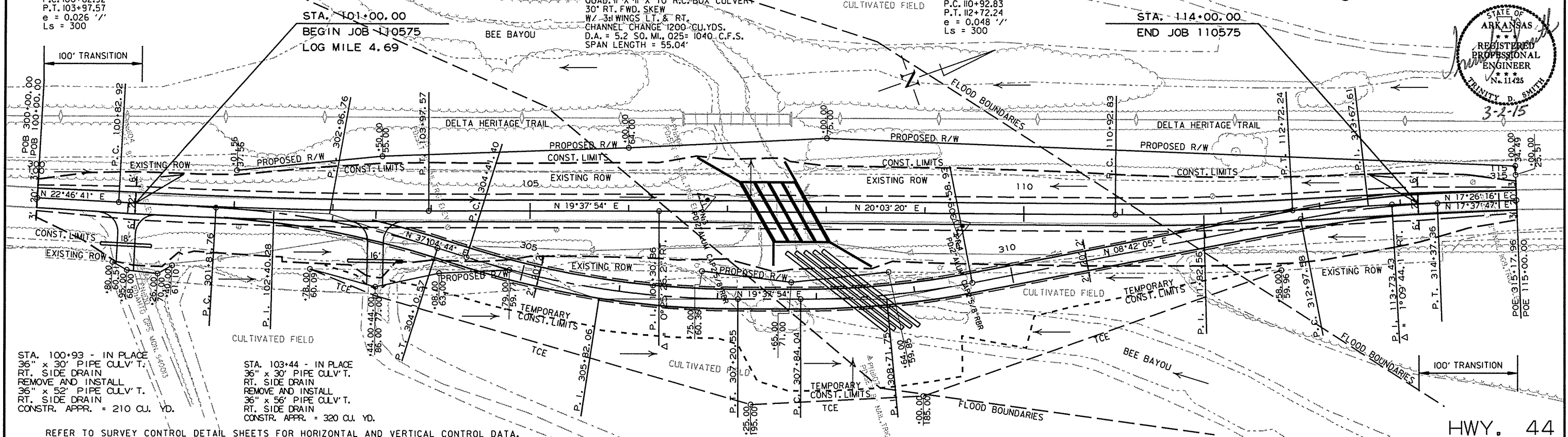
ST. 107+24.01 TO ST. 107+76.62 IN PLACE
 26'-00" X 52' CLEAR ROADWAY BRIDGE NO. 03052
 CONSISTING OF CONCRETE DECK ON CONCRETE PILES
 WITH CAST IN PLACE SUBSTRUCTURE
 REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM
 STA. 107+65 CONSTRUCT
 QUAD: 11" X 11" X 70" RC-BOX CULVERT
 30' RT. FWD. SKEW
 W/ 3:1 WINGS LT. & RT.
 CHANNEL CHANGE 1200 CU.YDS.
 D.A. = 5.2 SQ. MI., Q25 = 1040 C.F.S.
 SPAN LENGTH = 55.04'

HWY. 44
 P.I. 111+82.56
 $\Delta = 3'35''17.9''$ LT.
 $D = 2'00''00''$
 $T = 89.74'$
 $L = 179.41'$
 P.C. 110+92.83
 P.T. 112+72.24
 $e = 0.048''$
 $L_s = 300'$

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.	110575		29	56

2 PLAN AND PROFILE SHEETS - STA. 100+00 - STA. 115+00

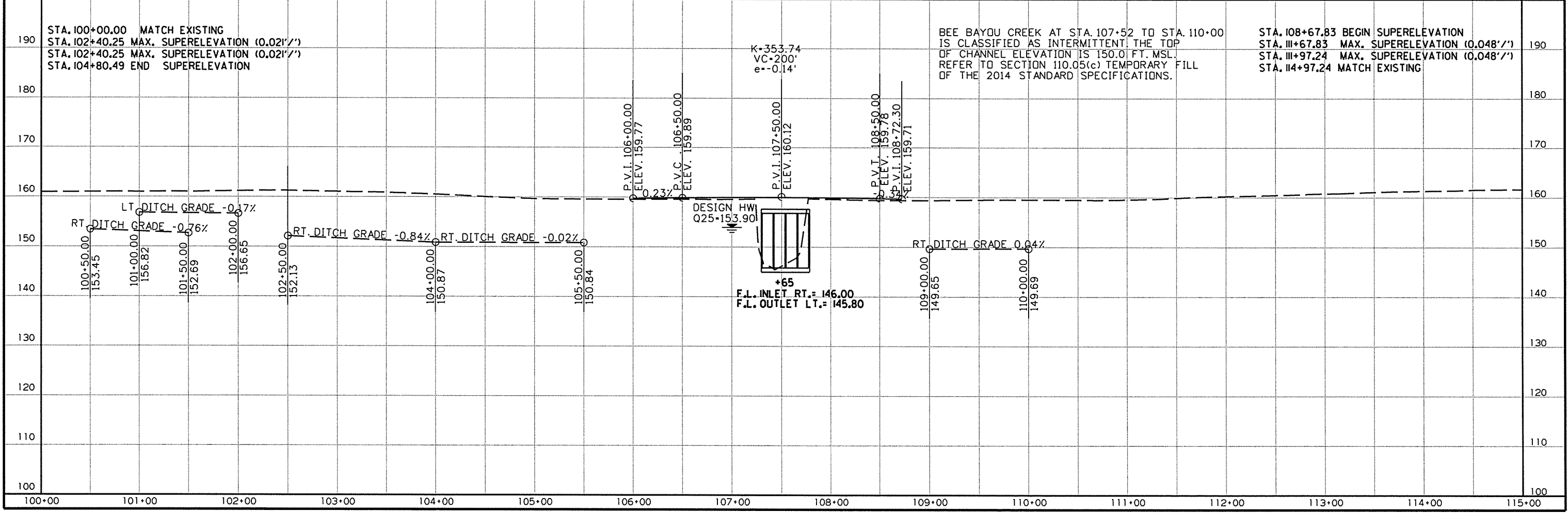
STATE OF ARKANSAS
 REGISTERED PROFESSIONAL ENGINEER
 No. 11425
 TRINITY D. SMITH
 3-2-15



STA. 100+93 - IN PLACE
 36" x 30' PIPE CULV. T.
 RT. SIDE DRAIN
 REMOVE AND INSTALL
 36" x 52' PIPE CULV. T.
 RT. SIDE DRAIN
 CONSTR. APPR. = 210 CU. YD.

STA. 103+44 - IN PLACE
 36" x 30' PIPE CULV. T.
 RT. SIDE DRAIN
 REMOVE AND INSTALL
 36" x 56' PIPE CULV. T.
 RT. SIDE DRAIN
 CONSTR. APPR. = 320 CU. YD.

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



BEE BAYOU CREEK AT STA. 107+52 TO STA. 110+00
 IS CLASSIFIED AS INTERMITTENT. THE TOP
 OF CHANNEL ELEVATION IS 150.0 FT. MSL.
 REFER TO SECTION 110.05(c) TEMPORARY FILL
 OF THE 2014 STANDARD SPECIFICATIONS.

STA. 108+67.83 BEGIN SUPERELEVATION
 STA. 111+67.83 MAX. SUPERELEVATION (0.048'/'')
 STA. 111+97.24 MAX. SUPERELEVATION (0.048'/'')
 STA. 114+97.24 MATCH EXISTING

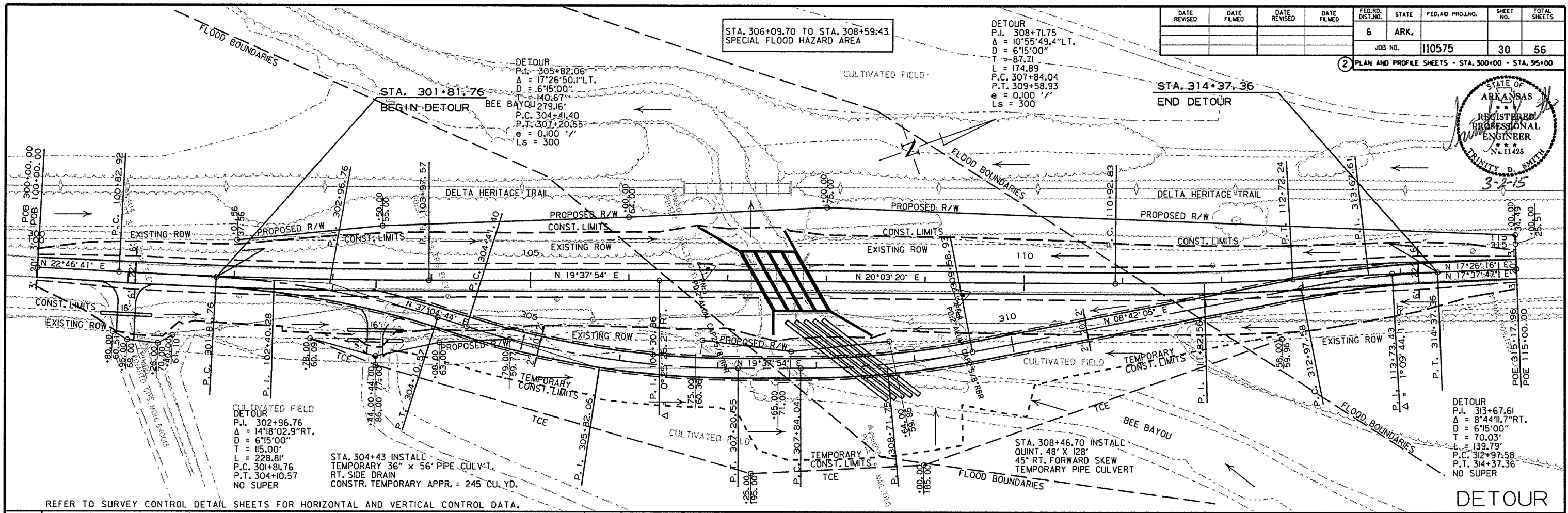
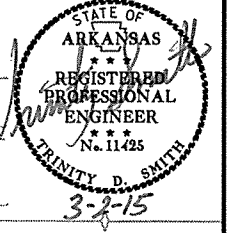
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STA. 306+09.70 TO STA. 308+59.43.
SPECIAL FLOOD HAZARD AREA

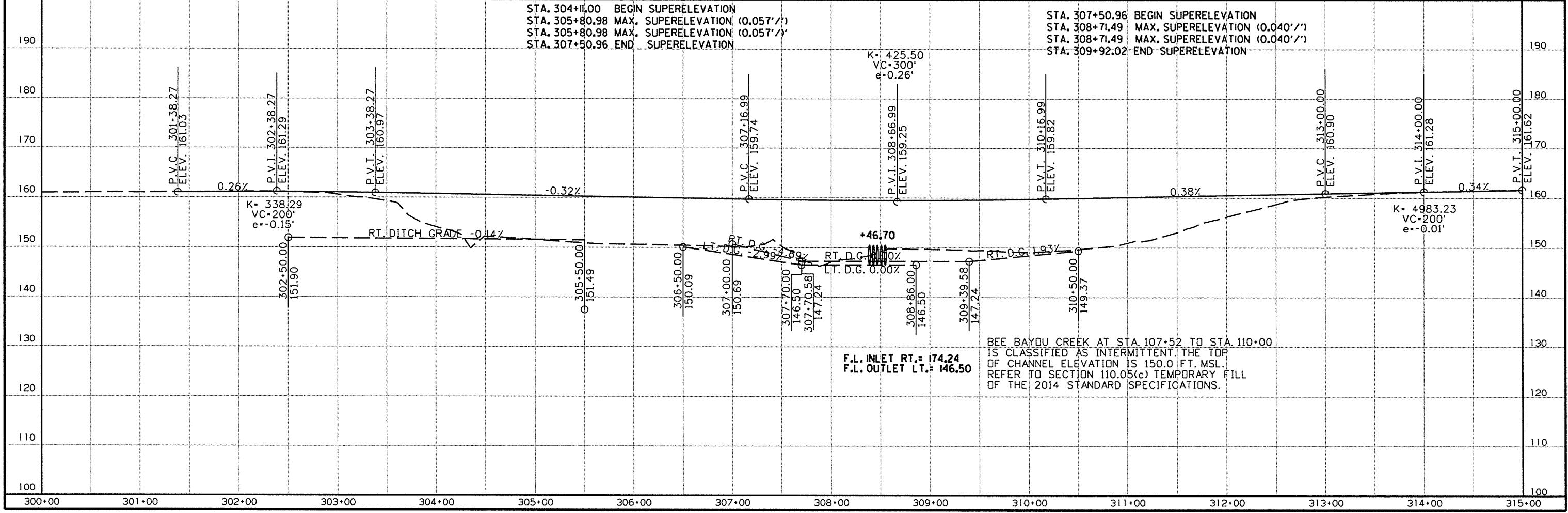
DETOUR
P.I. 308+71.75
Δ = 10°55'49.4"LT.
D = 6'15"00"
T = 87.71
L = 174.89
P.C. 307+84.04
P.T. 309+58.93
e = 0.00
Ls = 300

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		30	56
JOB NO. 110575							30	56

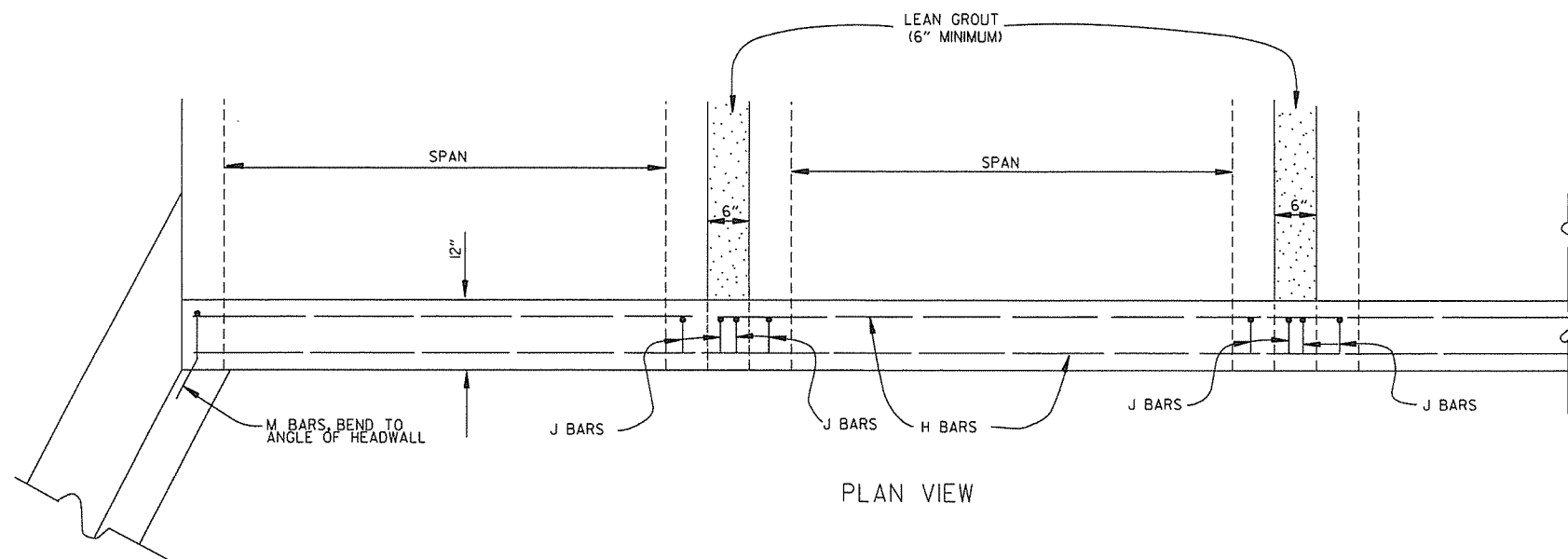
2 PLAN AND PROFILE SHEETS - STA. 300+00 - STA. 305+00



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



R110575.DGN 2/26/2015



BAR LIST

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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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

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

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

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

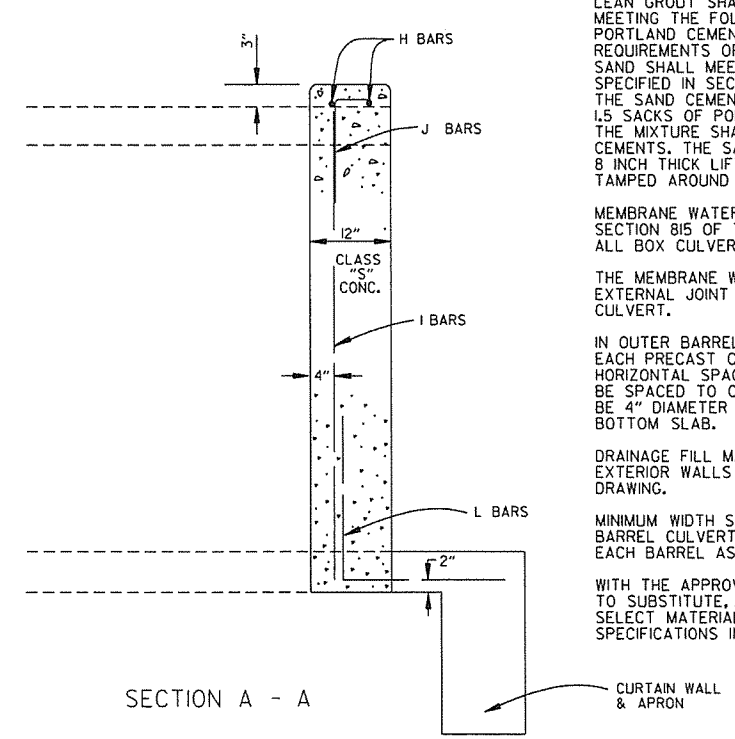
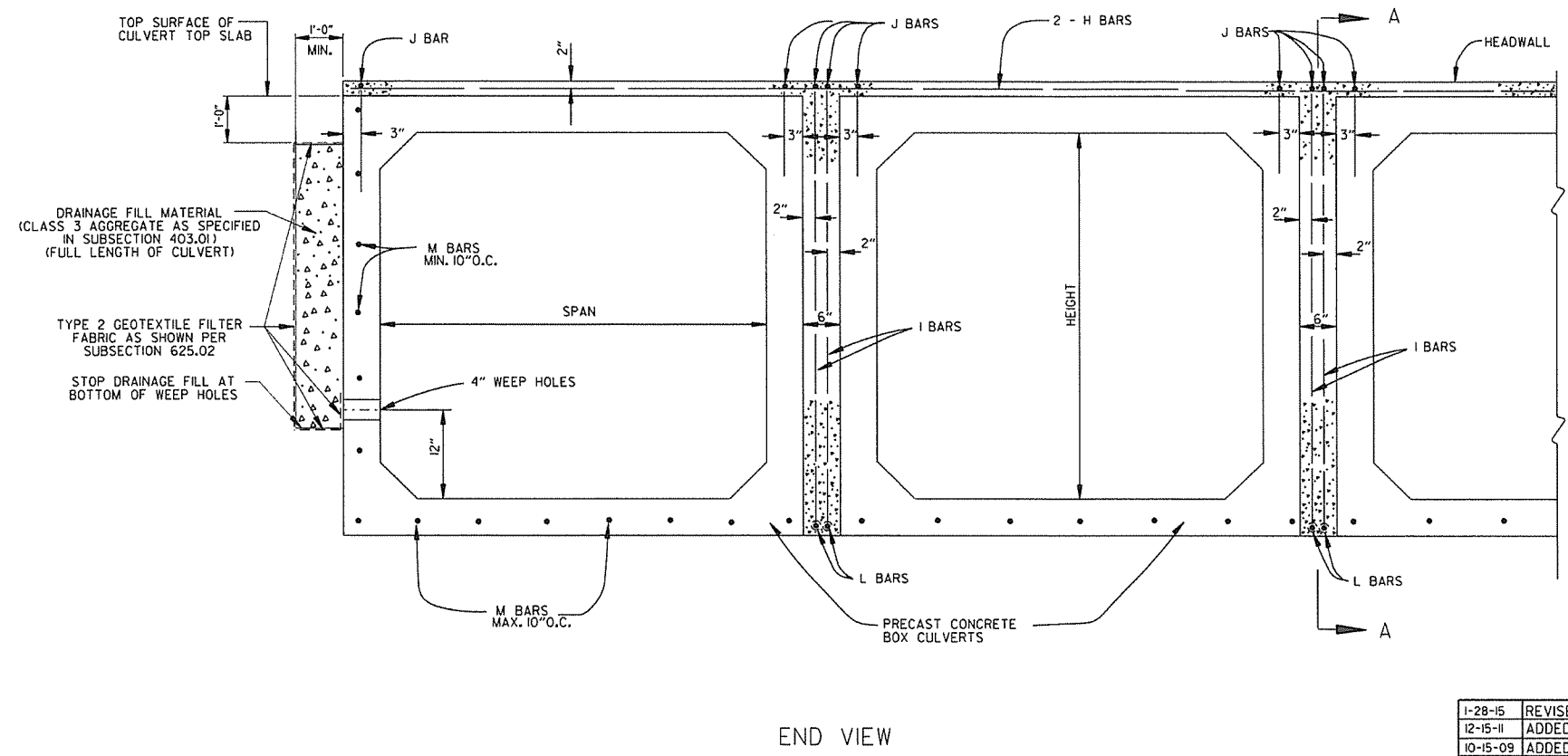
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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



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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43¾	44	26¾	27
42	51⅞	51	31⅞	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅞	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

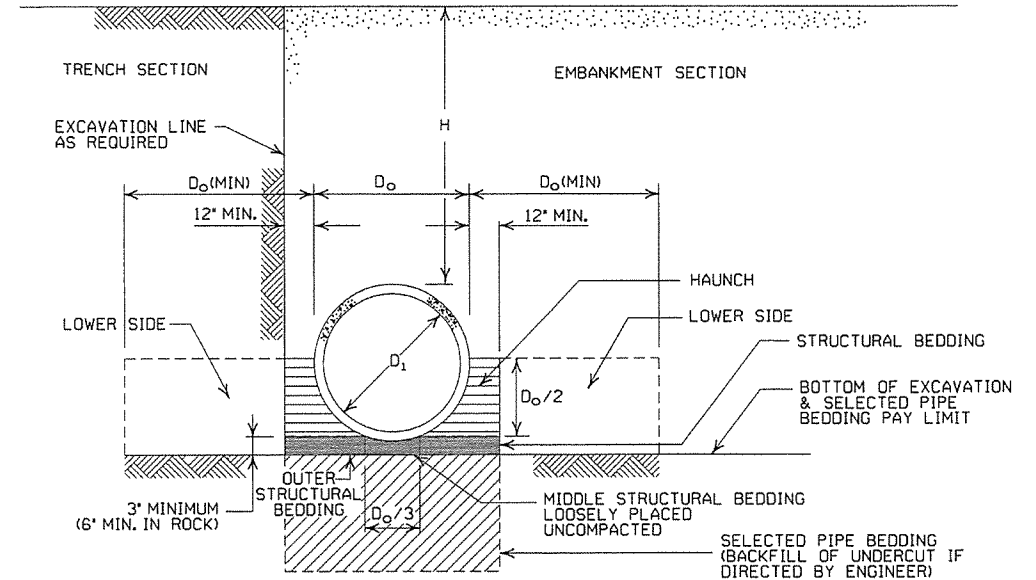
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

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

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

- * SM-3 WILL NOT BE ALLOWED.
- ** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE			
	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CONSTRUCTION SEQUENCE

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

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

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45	52		
18	2	30	30	39		
24	2	22	22	31	41	34
30	2		18	26	27	28
36	2.5		15	43	43	44
42	2			40	41	43
48	2			35	37	38
54	2			33	34	34
60	2				31	31
66	2					29
72	2					

CORRUGATED METAL PIPE ARCHES

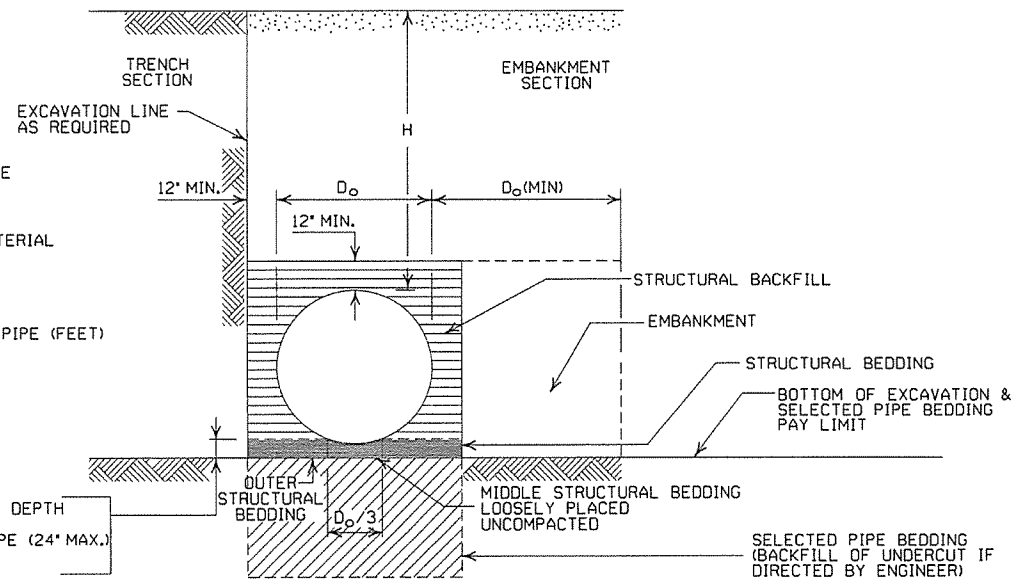
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL		ALUMINUM	
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)
			INSTALLATION TYPE 1	INSTALLATION TYPE 1	INSTALLATION TYPE 1	INSTALLATION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

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

② WHERE THE STANDARD 2 2/3" x 1/2" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" x 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" x 1" OR 5" x 1" CORRUGATION.

GENERAL NOTES

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

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

**METAL PIPE CULVERT
FILL HEIGHTS & BEDDING**

STANDARD DRAWING PCM-1

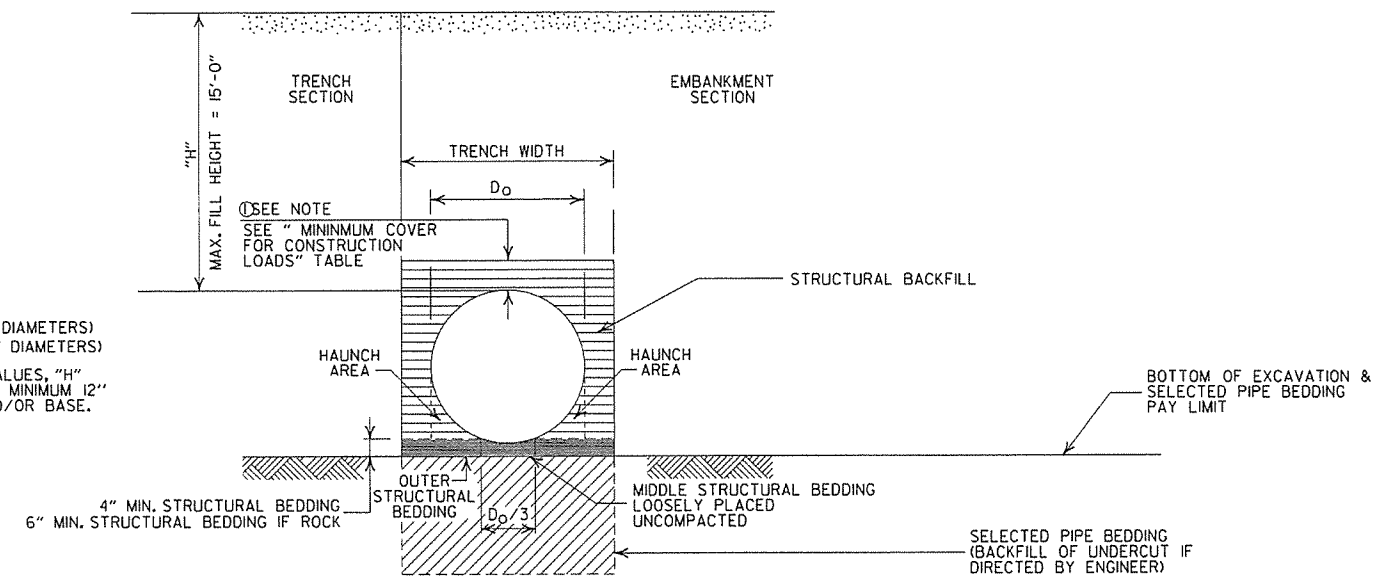
INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
 - SM3 WILL NOT BE ALLOWED.
 - STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.
- STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

- STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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

CONSTRUCTION SEQUENCE

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

- PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
- WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
- WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
- FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
- HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

- H = FILL HEIGHT (FT.)
- D_o = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- ===== = STRUCTURAL BACKFILL MATERIAL
- ||||||| = UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL. SM3 WILL NOT BE ALLOWED.
- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

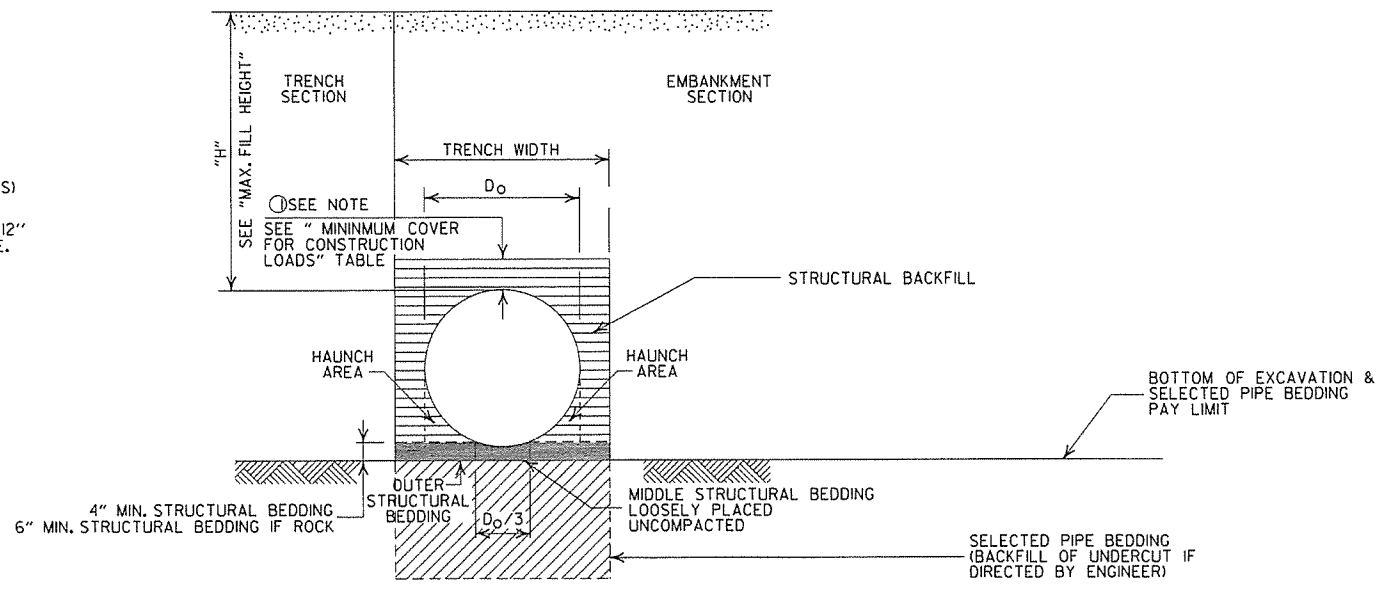
MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18,0-50,0 (KIPS)	50,0-75,0 (KIPS)	75,0-110,0 (KIPS)	110,0-175,0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

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

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

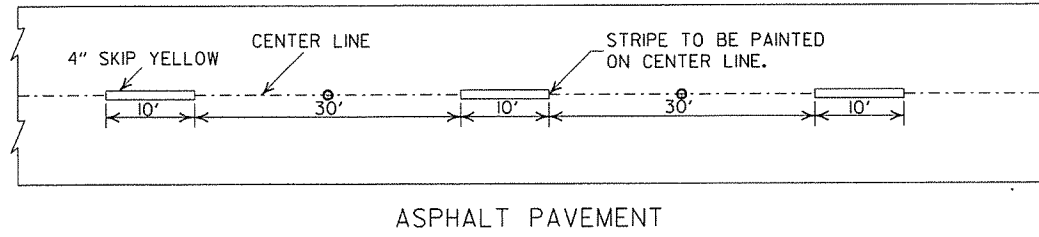
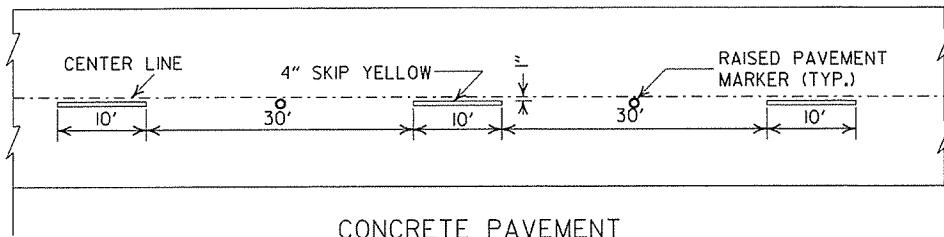
H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

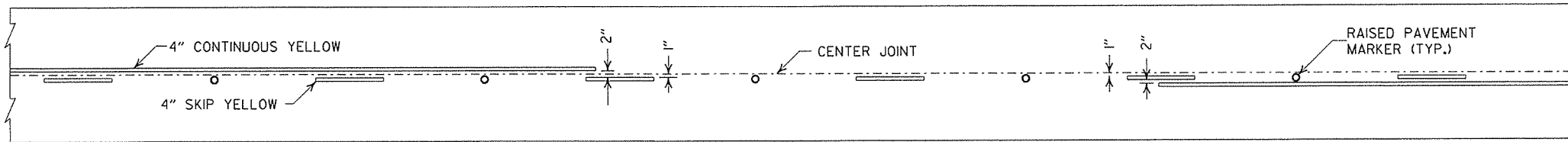
ARKANSAS STATE HIGHWAY COMMISSION		
PLASTIC PIPE CULVERT (PVC F949)		
STANDARD DRAWING PCP-2		
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED



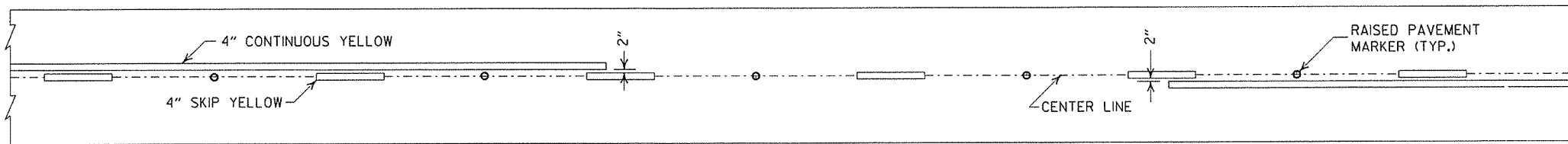
CONCRETE PAVEMENT

ASPHALT PAVEMENT

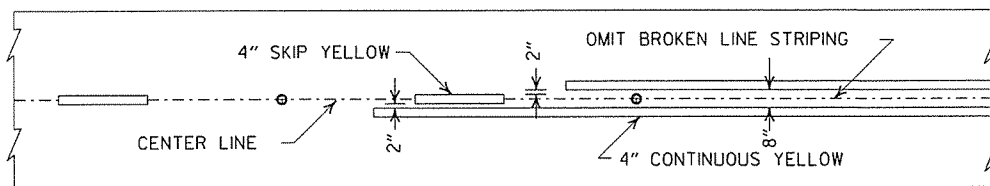
BROKEN LINE STRIPING



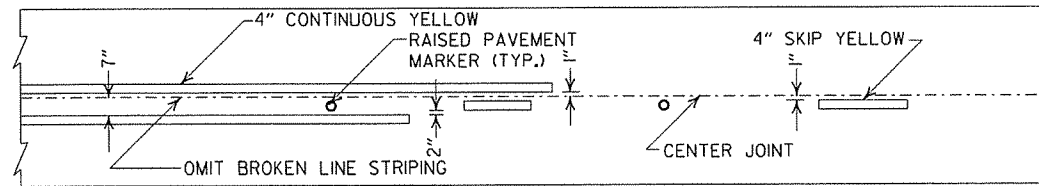
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT



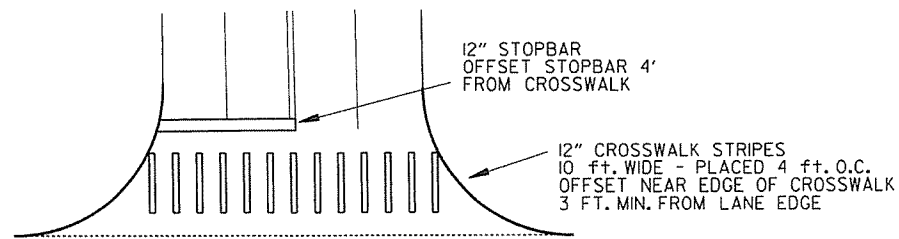
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

GENERAL NOTES:
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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

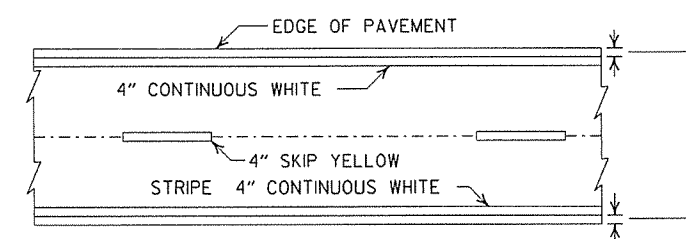


CROSSWALK AND STOPBAR DETAILS

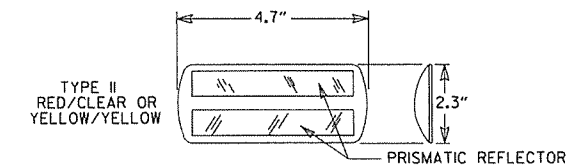
NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

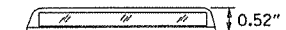
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

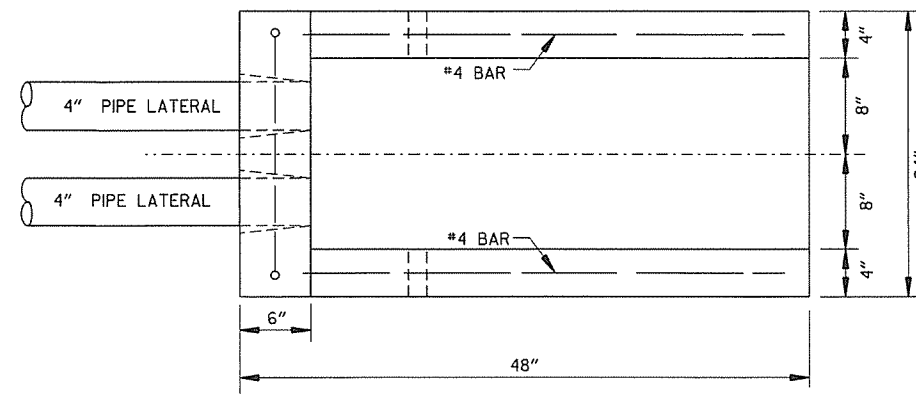
DATE	REVISION	FILMED
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4;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

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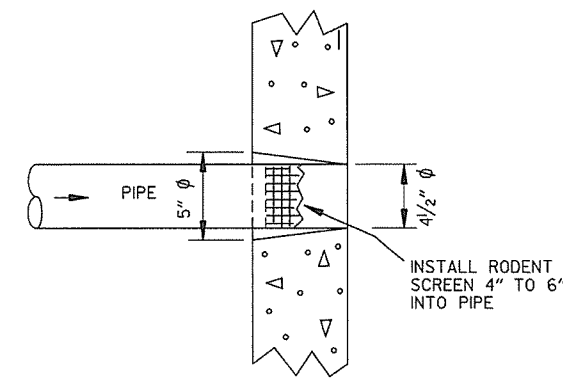
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

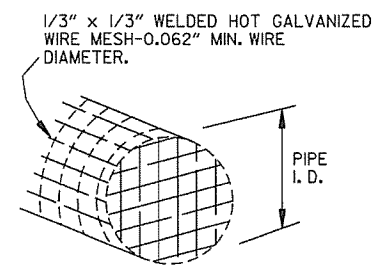
NOTE:
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



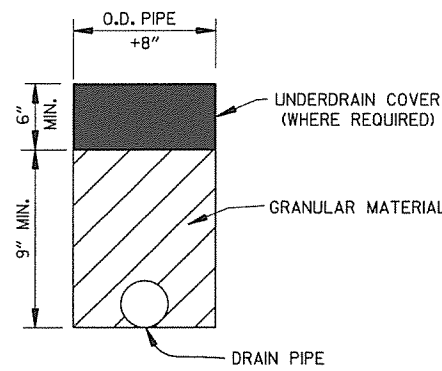
PLAN VIEW



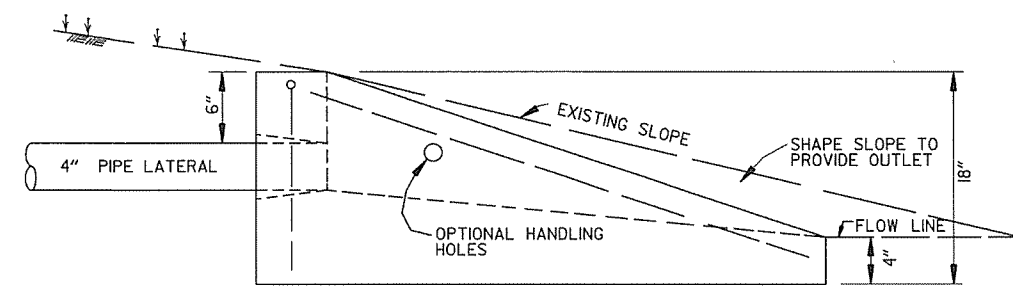
DETAIL OF HOLE FOR 4" PIPE



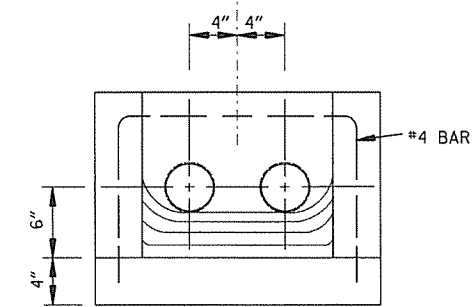
DETAIL OF RODENT SCREEN



DETAILS OF PIPE UNDERDRAIN

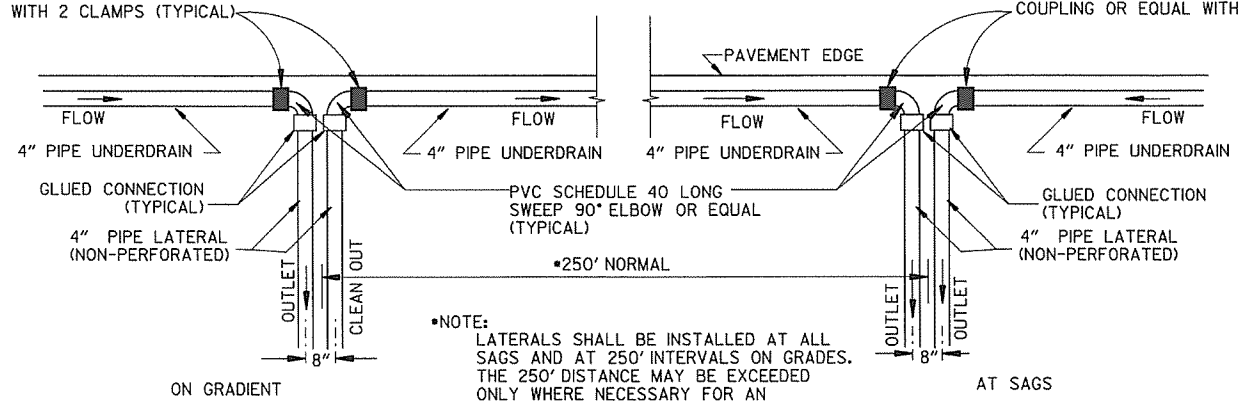


SIDE VIEW



FRONT VIEW

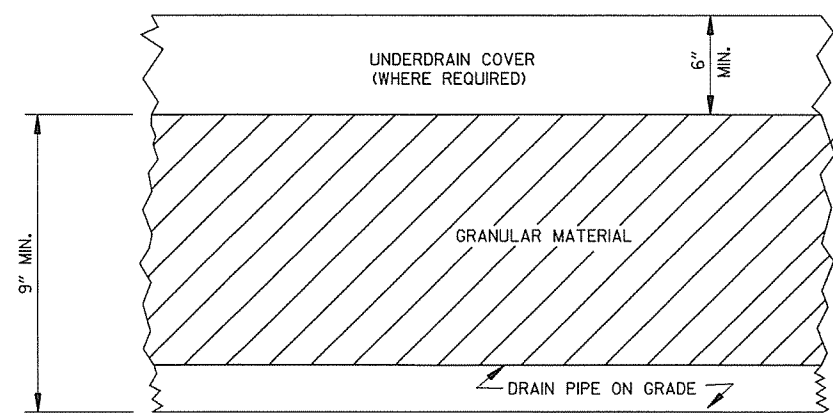
UNDERDRAIN OUTLET PROTECTORS



NOTE:
 LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.



DATE	REVISION	DATE FILMED
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5 1/2" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11-3-94	REVISED FOR DUAL LATERALS	11-3-94
10-1-92	SUBSTITUTED GEOTEXTILE	10-1-92
8-15-91	ADDED POLYETHYLENE PIPE	8-15-91
11-8-90	DELETED ALTERNATE NOTE	11-8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

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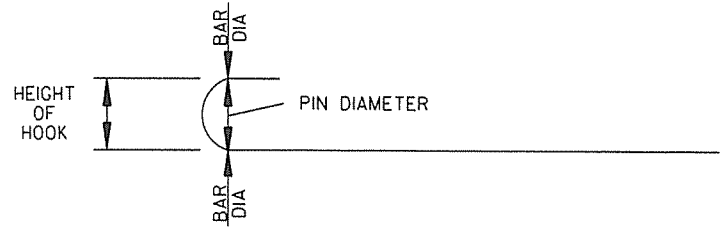
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-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

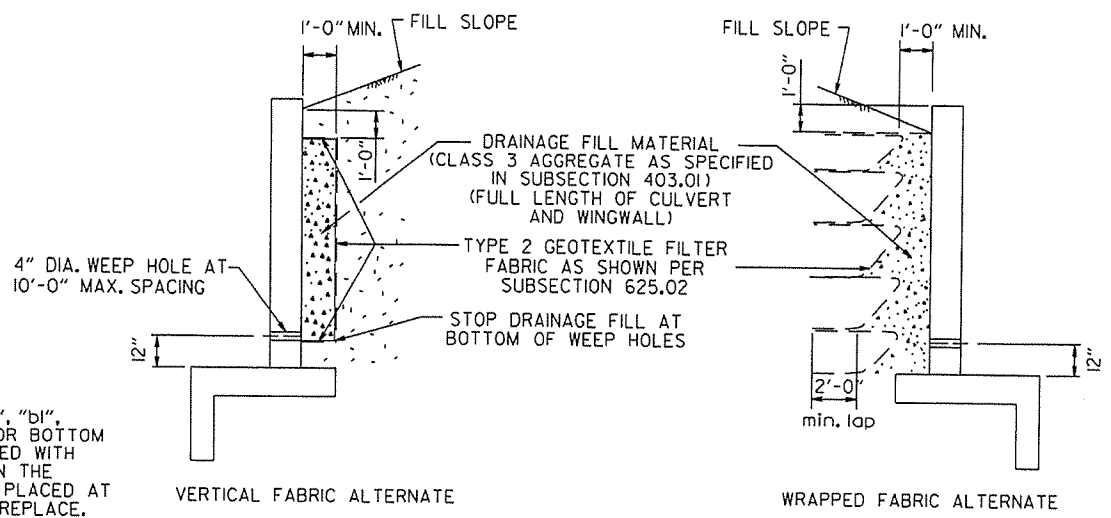
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

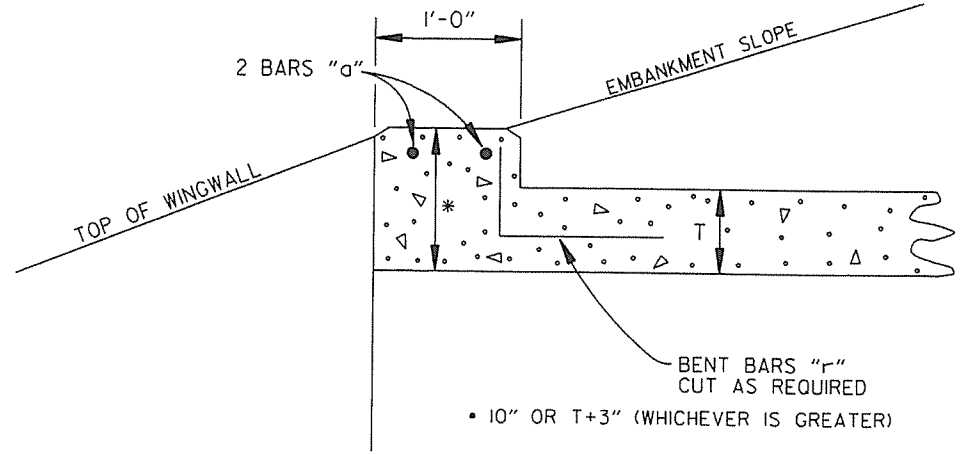
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

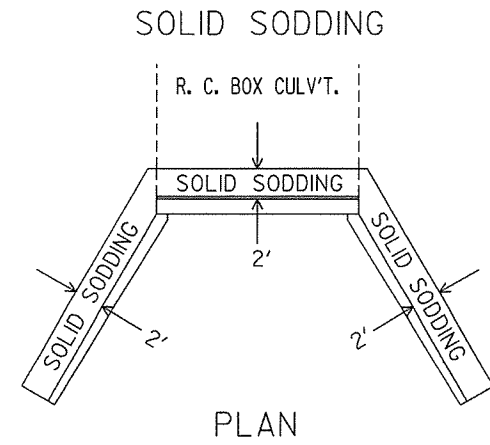
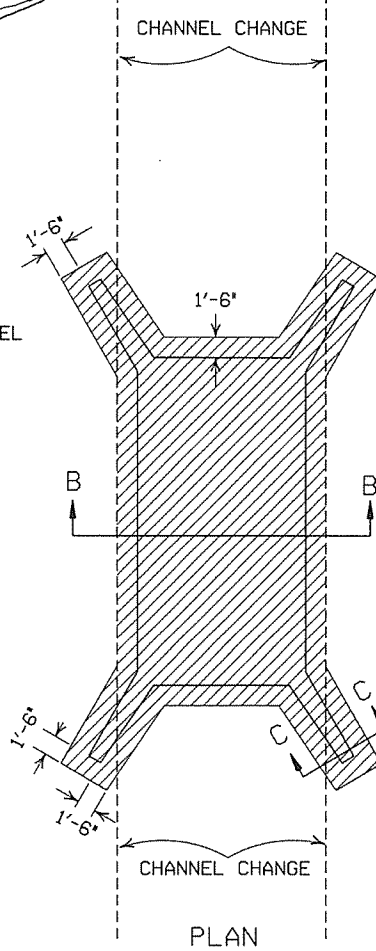
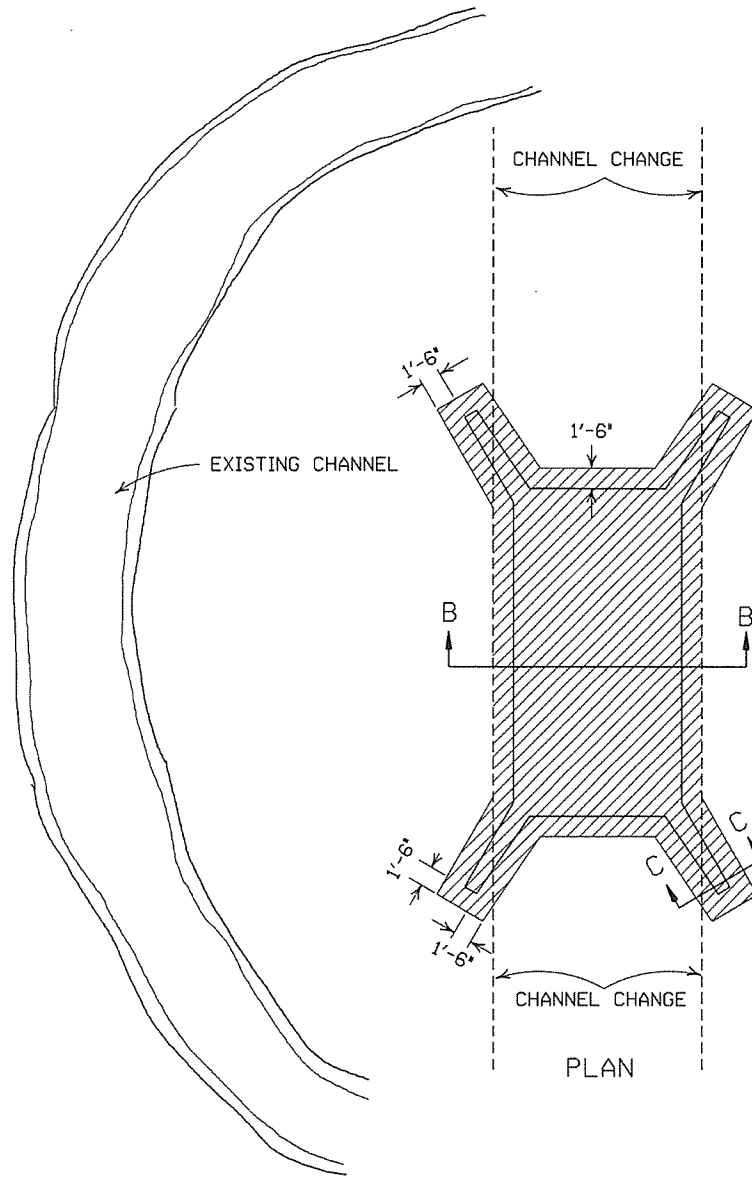
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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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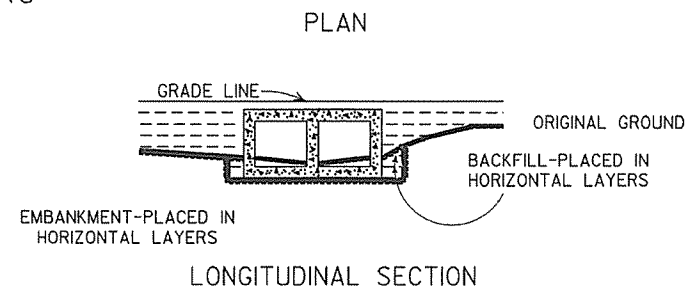
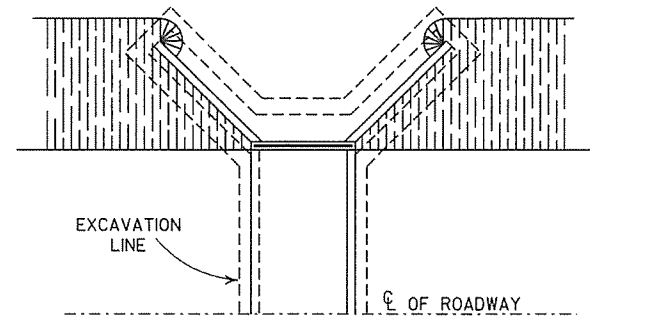
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

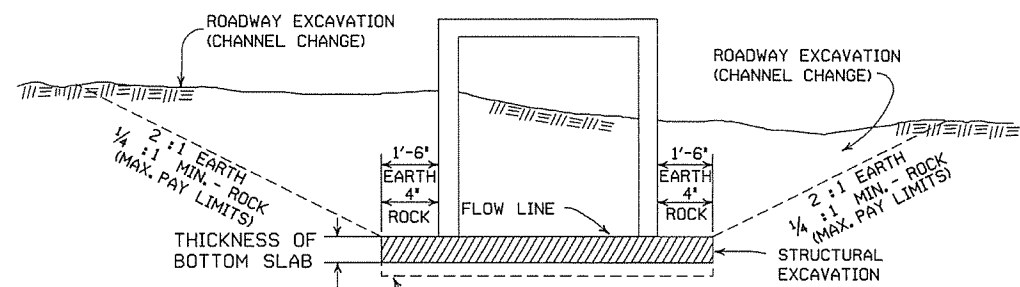
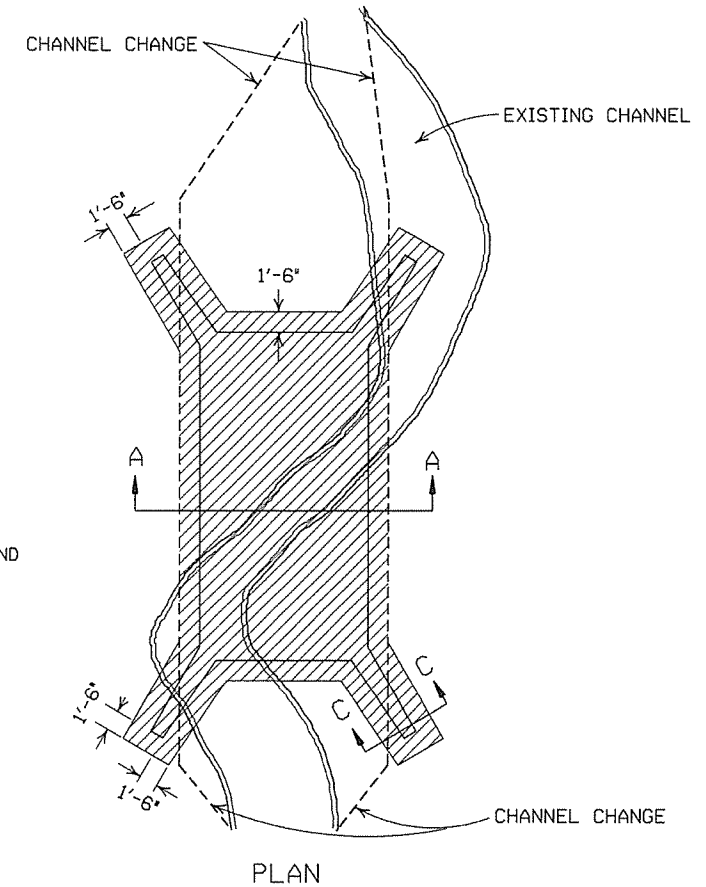


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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



BACKFILL DETAILS FOR BOX CULVERT



SECTION B-B
DETAILS FOR NEW CHANNELS

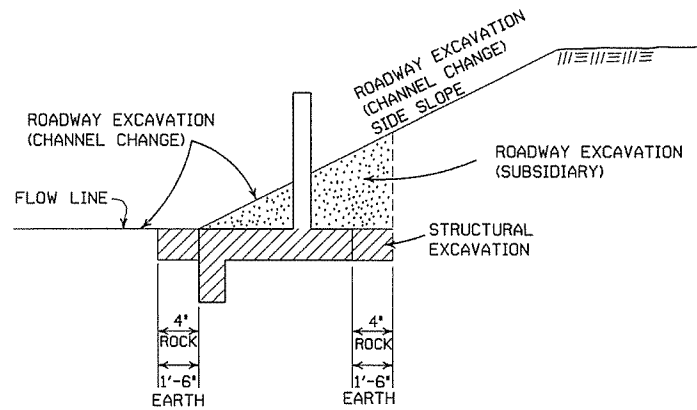
UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.

GENERAL NOTES:

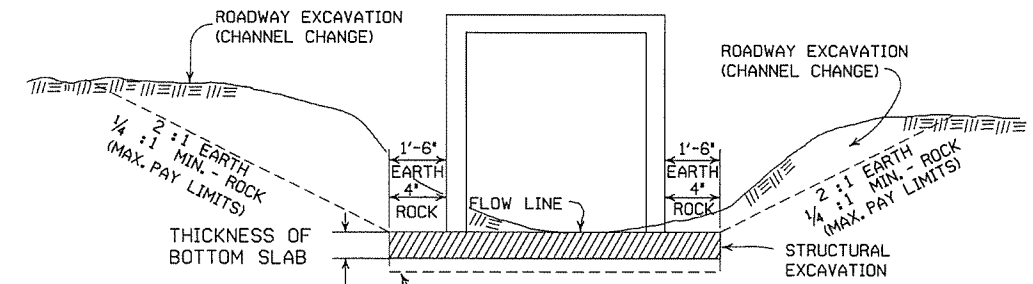
ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED 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.



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.

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

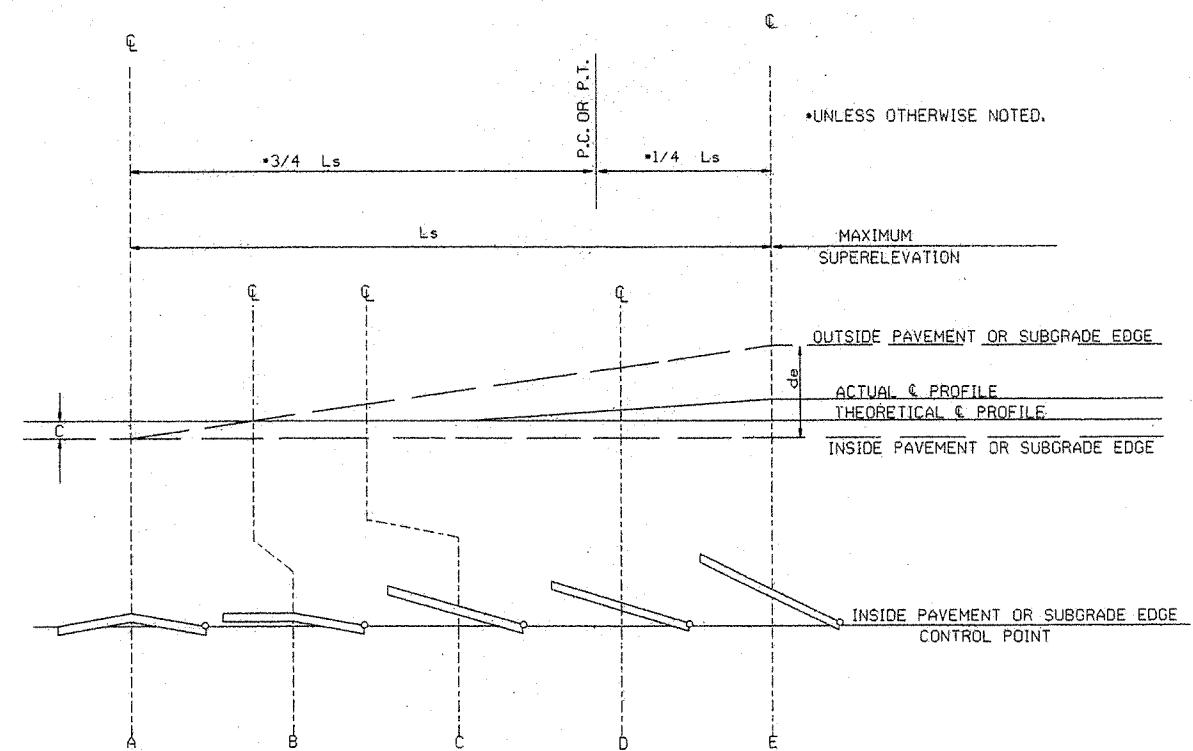
ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 15'	R.C.		R.C.		R.C.		R.C.		R.C.		R.C.	
2° 30'	0.021		0.031		0.041		0.051		0.061		0.071	
2° 45'	0.023		0.037		0.049		0.063		0.077		0.091	
3° 00'	0.025	150	0.040	200	0.057	230	0.072	245	0.087	260	0.100	350
3° 15'	0.027		0.043		0.061		0.076		0.092		0.108	
3° 30'	0.029		0.049		0.069		0.086		0.104		0.122	
3° 45'	0.031		0.051		0.072		0.090		0.109		0.128	
4° 00'	0.033		0.056		0.078		0.098		0.118		0.138	
4° 15'	0.037		0.061		0.083		0.103		0.123		0.143	
4° 30'	0.040		0.066		0.088		0.108		0.128		0.148	
4° 45'	0.043		0.070		0.092		0.112		0.132		0.152	
5° 00'	0.046		0.074		0.096		0.116		0.136		0.156	
5° 15'	0.050		0.078		0.100		0.120		0.140		0.160	
5° 30'	0.053		0.081		0.103		0.123		0.143		0.163	
5° 45'	0.056		0.084		0.106		0.126		0.146		0.166	
6° 00'	0.059		0.087		0.109		0.129		0.149		0.169	
6° 15'	0.063		0.091		0.113		0.133		0.153		0.173	
6° 30'	0.066		0.094		0.116		0.136		0.156		0.176	
6° 45'	0.069		0.097		0.119		0.139		0.159		0.179	
7° 00'	0.072		0.100		0.122		0.142		0.162		0.182	
7° 15'	0.075		0.103		0.125		0.145		0.165		0.185	
7° 30'	0.078		0.106		0.128		0.148		0.168		0.188	
7° 45'	0.081		0.109		0.131		0.151		0.171		0.191	
8° 00'	0.084		0.112		0.134		0.154		0.174		0.194	
8° 15'	0.087		0.115		0.137		0.157		0.177		0.197	
8° 30'	0.090		0.118		0.140		0.160		0.180		0.200	
8° 45'	0.093		0.121		0.143		0.163		0.183		0.203	
9° 00'	0.096		0.124		0.146		0.166		0.186		0.206	
9° 15'	0.099		0.127		0.149		0.169		0.189		0.209	
9° 30'	0.100		0.130		0.152		0.172		0.192		0.212	
10° 00'	0.100	160	0.130	200	0.152	230	0.172	245	0.192	260	0.212	350
11° 00'	0.100	170	0.130	210	0.152	240	0.172	255	0.192	270	0.212	400
12° 00'	0.100	175	0.130	215	0.152	245	0.172	260	0.192	275	0.212	
13° 00'	0.100	180	0.130	220	0.152	250	0.172	265	0.192	280	0.212	
14° 00'	0.100	190	0.130	230	0.152	260	0.172	270	0.192	285	0.212	
15° 00'	0.100	195	0.130	235	0.152	265	0.172	275	0.192	290	0.212	
16° 00'	0.100	200	0.130	240	0.152	270	0.172	280	0.192	295	0.212	
17° 00'	0.100	205	0.130	245	0.152	275	0.172	285	0.192	300	0.212	
18° 00'	0.100	210	0.130	250	0.152	280	0.172	290	0.192	305	0.212	
19° 00'	0.100	215	0.130	255	0.152	285	0.172	295	0.192	310	0.212	
20° 00'	0.100	220	0.130	260	0.152	290	0.172	300	0.192	315	0.212	
21° 00'	0.100	225	0.130	265	0.152	295	0.172	305	0.192	320	0.212	
22° 00'	0.100	230	0.130	270	0.152	300	0.172	310	0.192	325	0.212	
23° 00'	0.100	235	0.130	275	0.152	305	0.172	315	0.192	330	0.212	
24° 00'	0.100	240	0.130	280	0.152	310	0.172	320	0.192	335	0.212	



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

ABBREVIATIONS

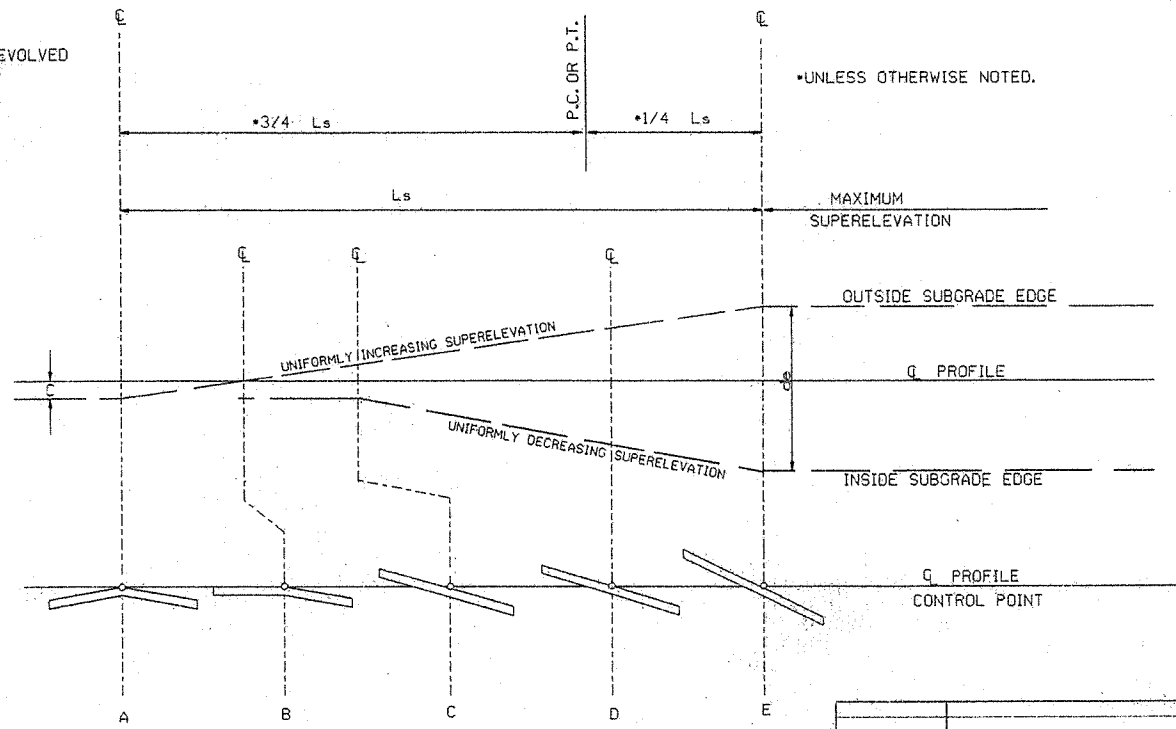
- NC - NORMAL CROWN
- RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
- e - RATE OF SUPERELEVATION (FT. PER FT.)
- Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
- L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
- d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)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

GENERAL NOTES

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

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE


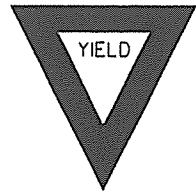
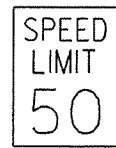
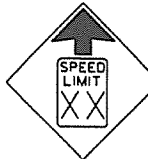

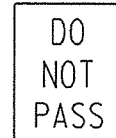



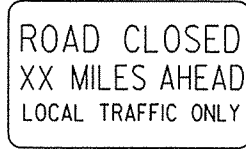
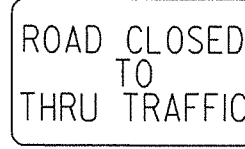
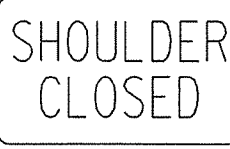
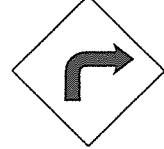

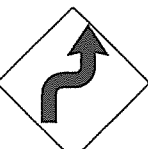

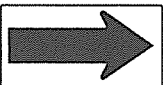
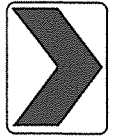
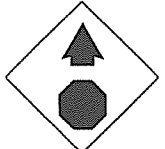
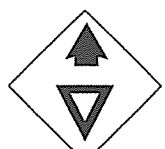
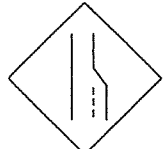

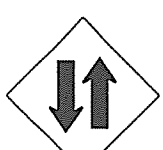







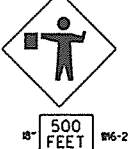





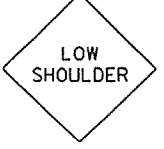
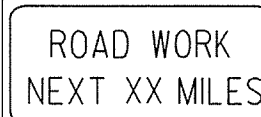
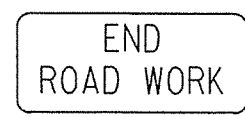
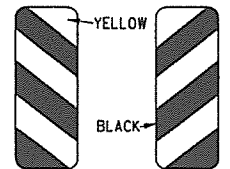


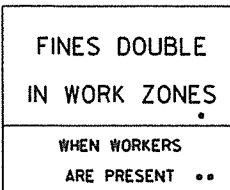
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILLED

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-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>RSP-1</p>  <p>48"x30"</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>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>500 FEET W6-2 24"</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>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)

41

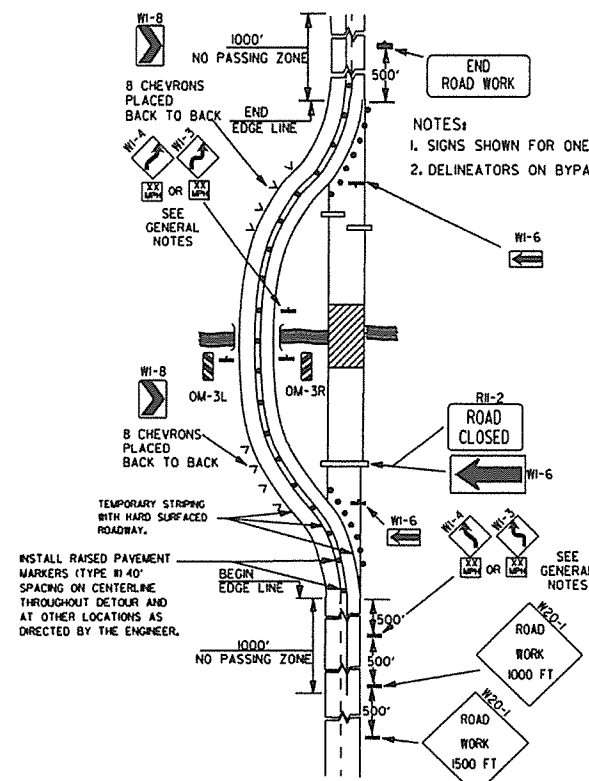
500 FT 1/2 MILE
1000 FT 3/4 MILE
1500 FT 1 MILE AHEAD

GENERAL NOTES:

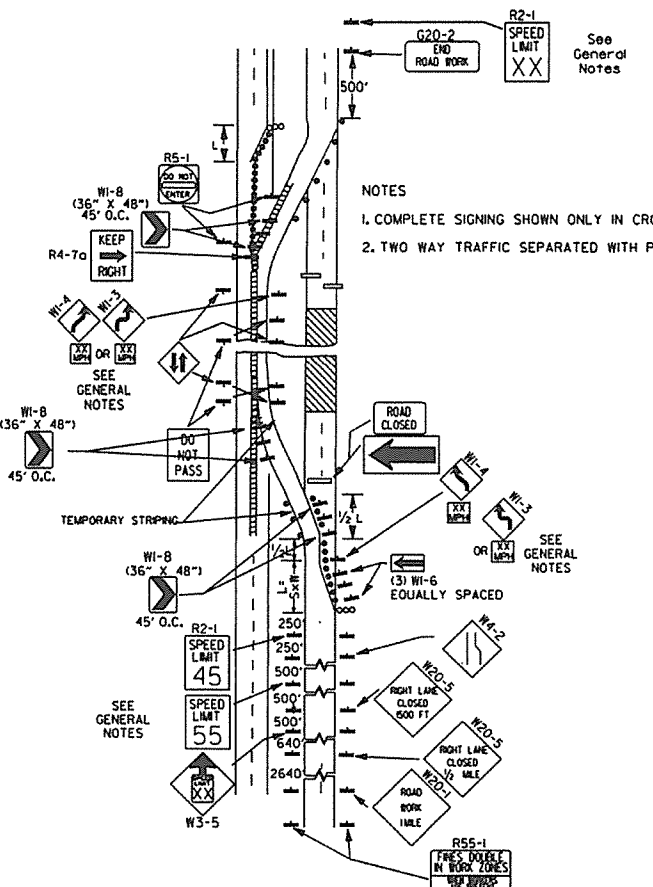
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
 - TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
 - SIGN POSTS USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
 - SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
 - POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
 - ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
 - FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
 - MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT, HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
 - R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-4	REVISED W24-1	
1-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
1-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
1-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
1-18-98	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	
8-15-93	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

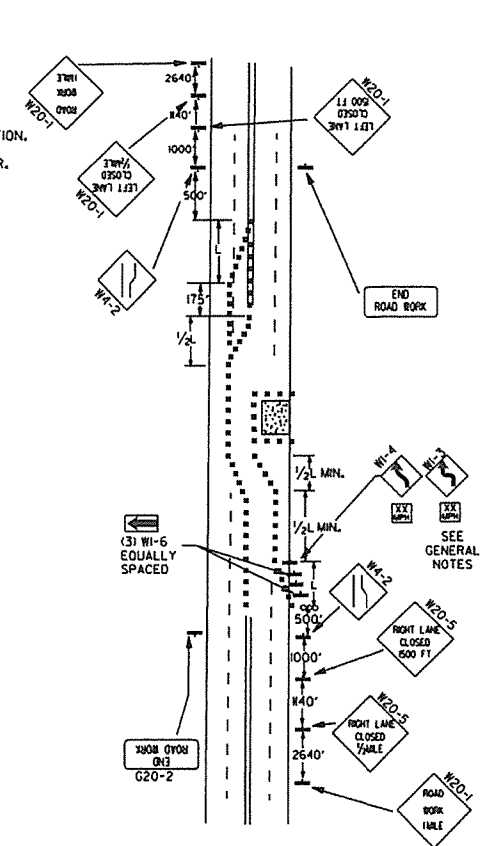
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



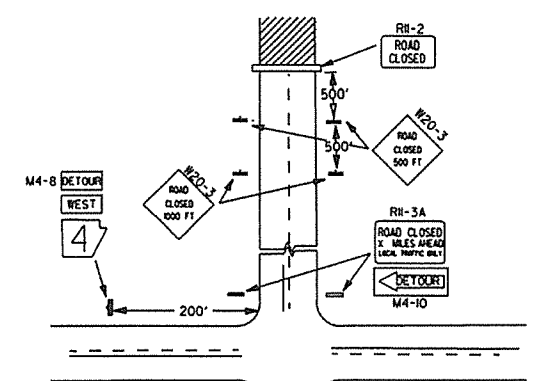
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



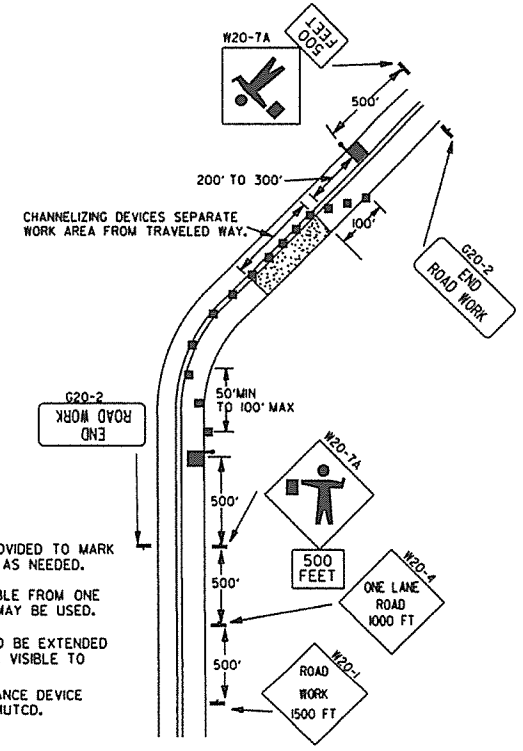
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



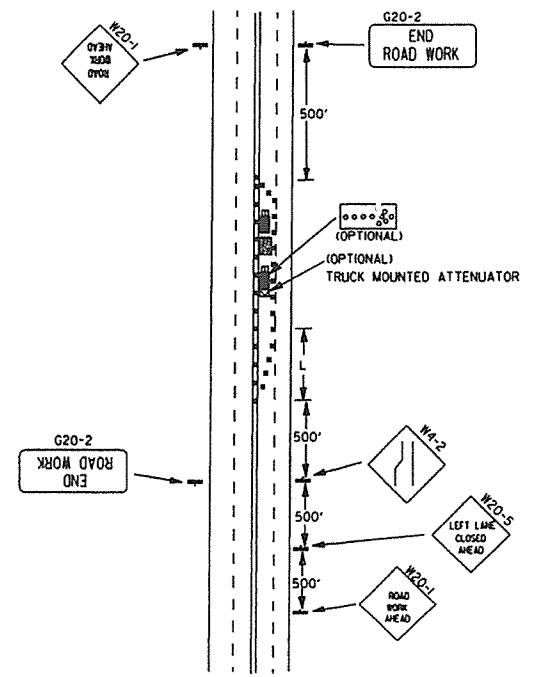
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

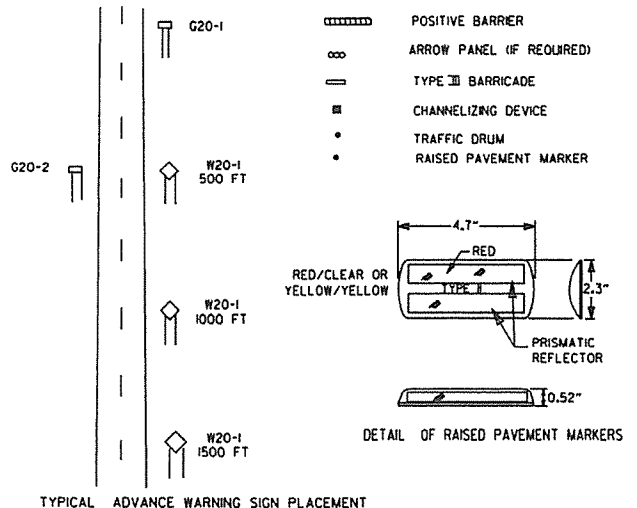


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

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



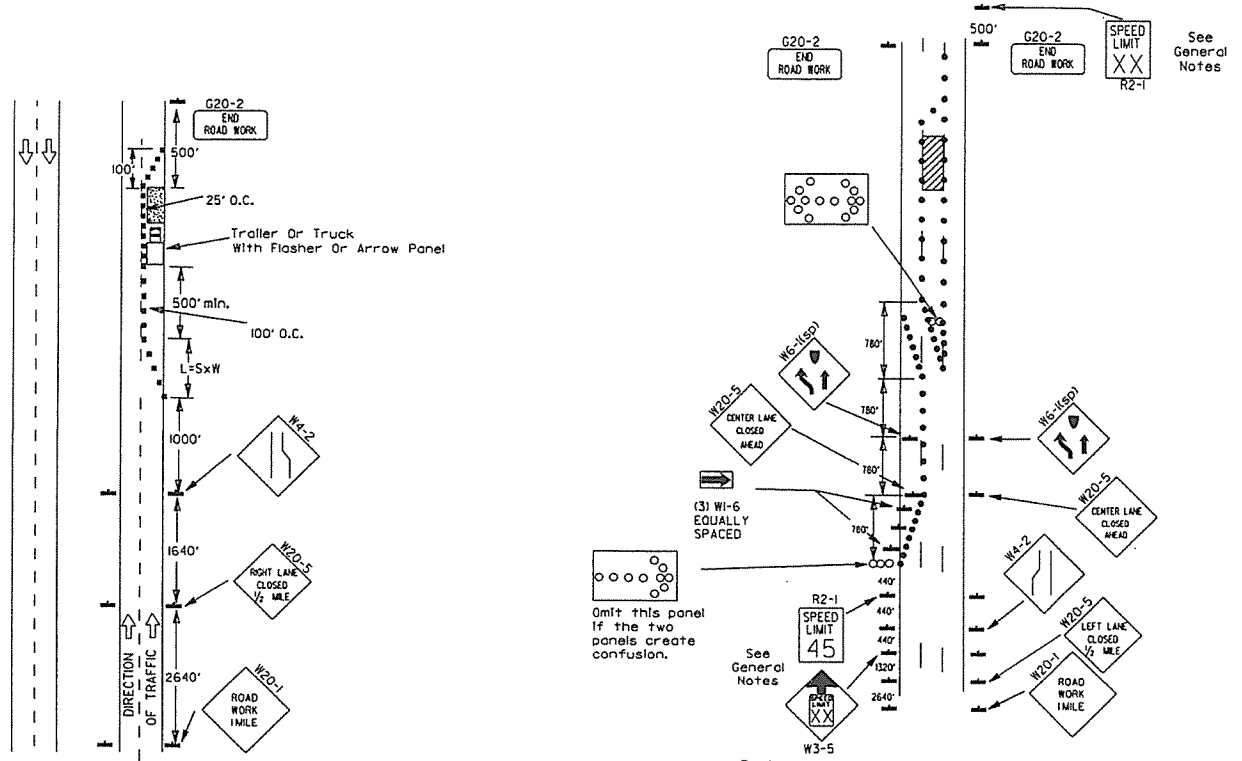
TAPER FORMULAE:
 $L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
- ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
 - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(65) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
 - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 - TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
 - DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

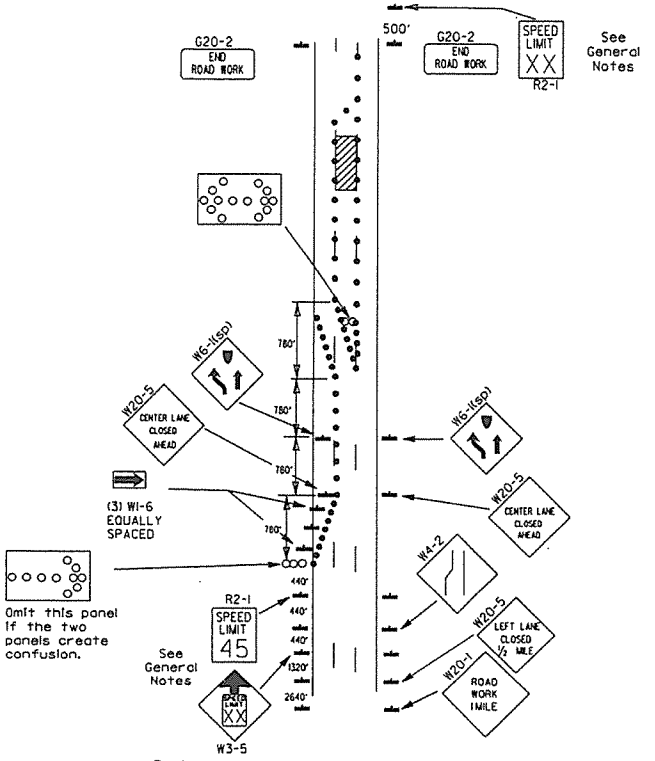
DATE	REVISION	FILED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-1-10	ADDED (AFAD)	
1-20-08	REVISED SIGN DESIGNATIONS	
1-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95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

ARKANSAS STATE HIGHWAY COMMISSION
 STANDARD TRAFFIC CONTROLS
 FOR HIGHWAY CONSTRUCTION
 STANDARD DRAWING TC-2

Channelizing devices



(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.

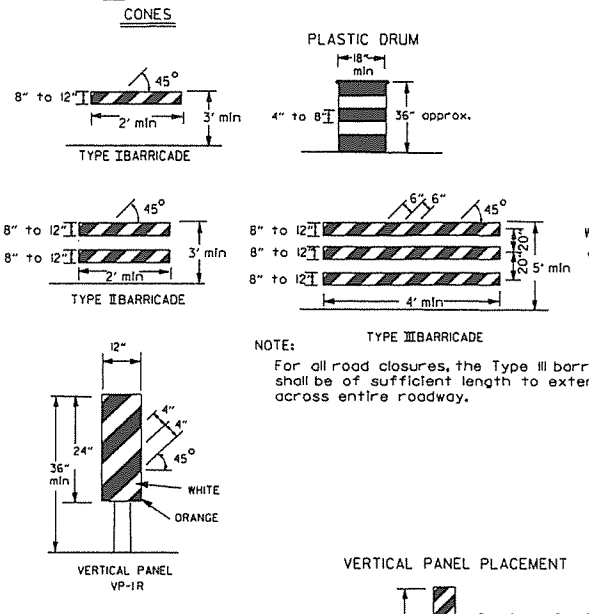
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

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) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(65) shall be omitted. Additional R2-1(55) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
10. Trawler 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 trawler. 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.

(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

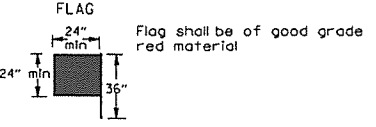
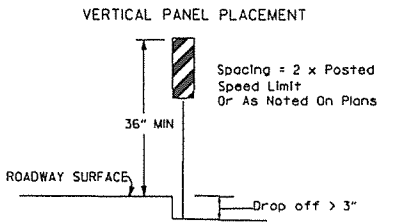


NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

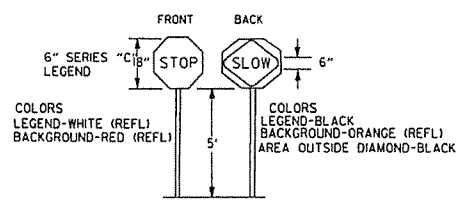
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-II
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-I and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

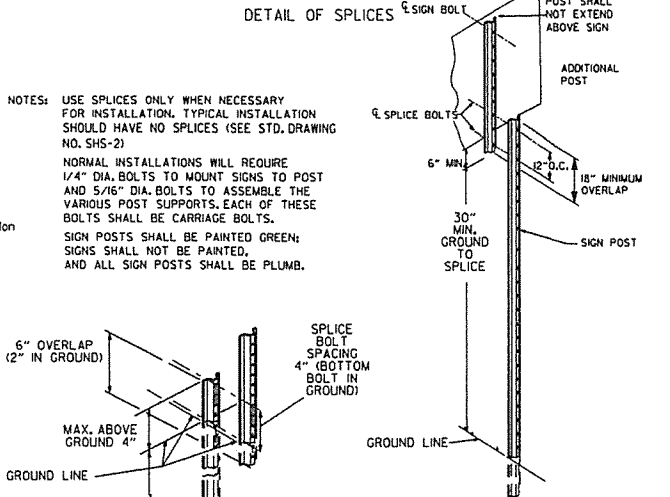
* When shown on the plans concrete barrier will be used. When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



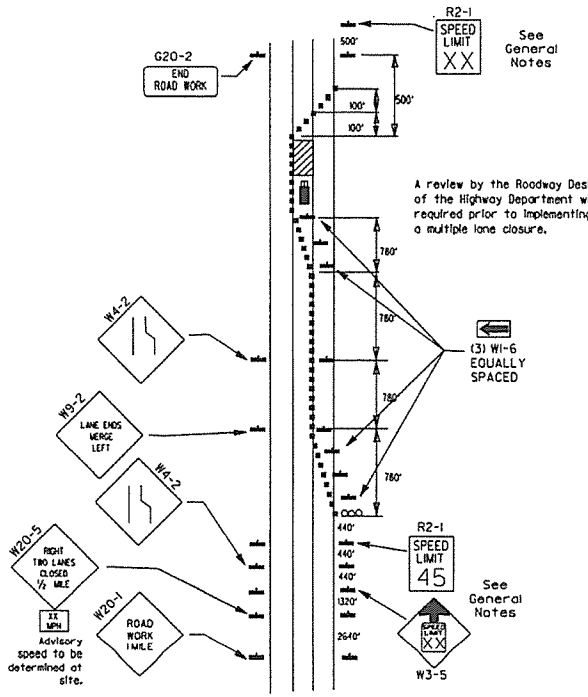
STOP SLOW PADDLE



DETAIL OF SPLICES



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.

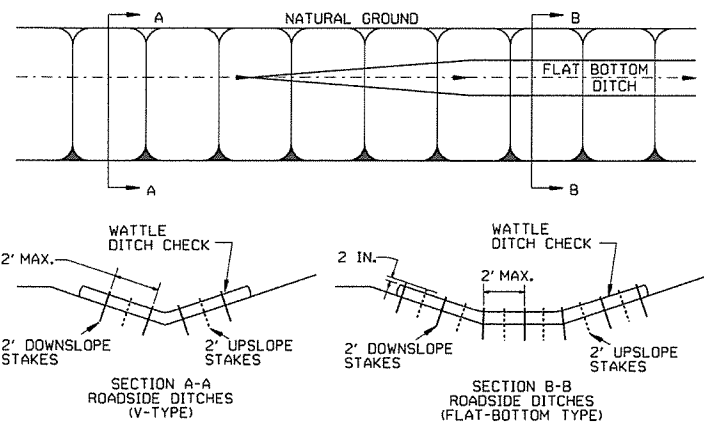


(D) Typical application - closing multiple lanes of a multilane highway.

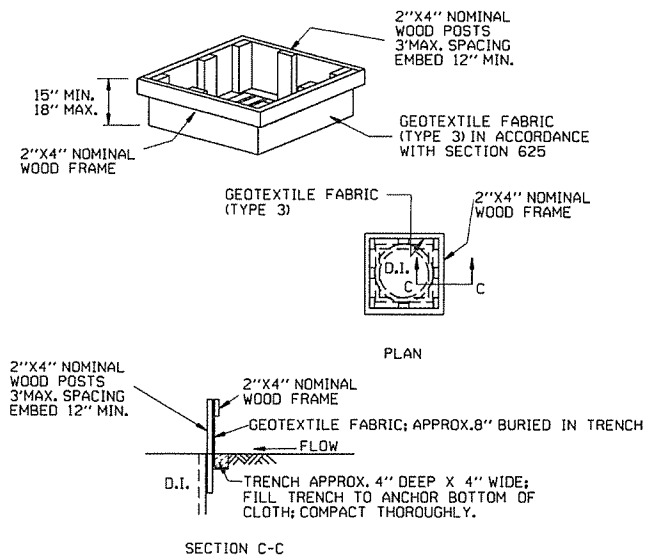
DATE	REVISION	FILED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95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

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-3

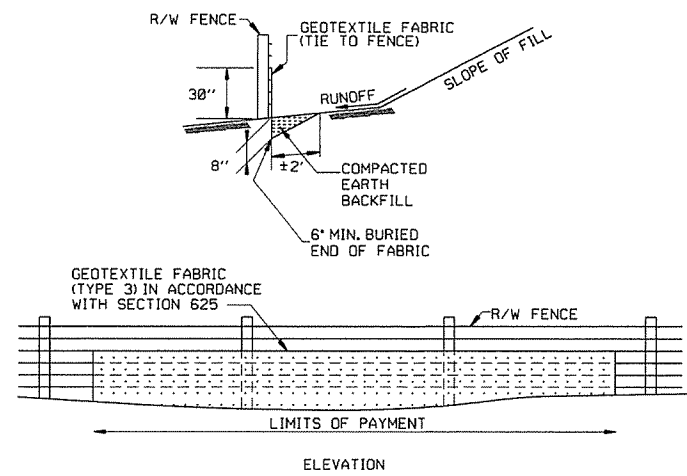
GENERAL NOTES
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



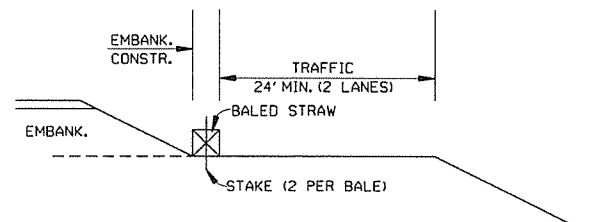
DROP INLET SILT FENCE (E-7)



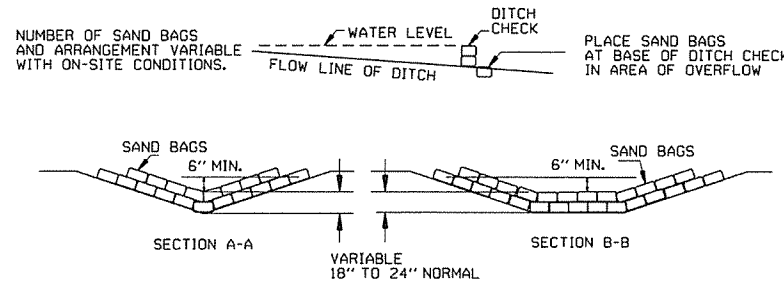
SILT FENCE ON R/W FENCE (E-4)

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

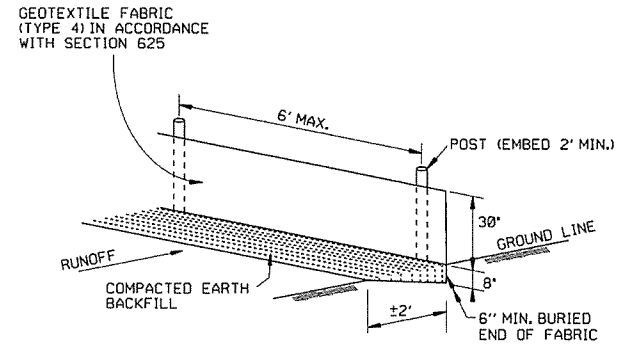
GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL 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)

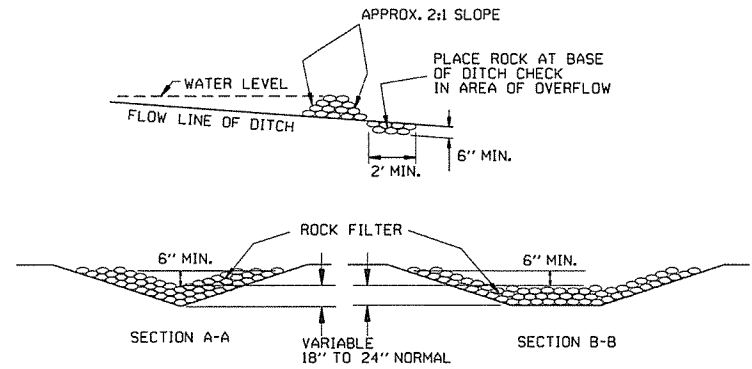


SAND BAG DITCH CHECK (E-5)



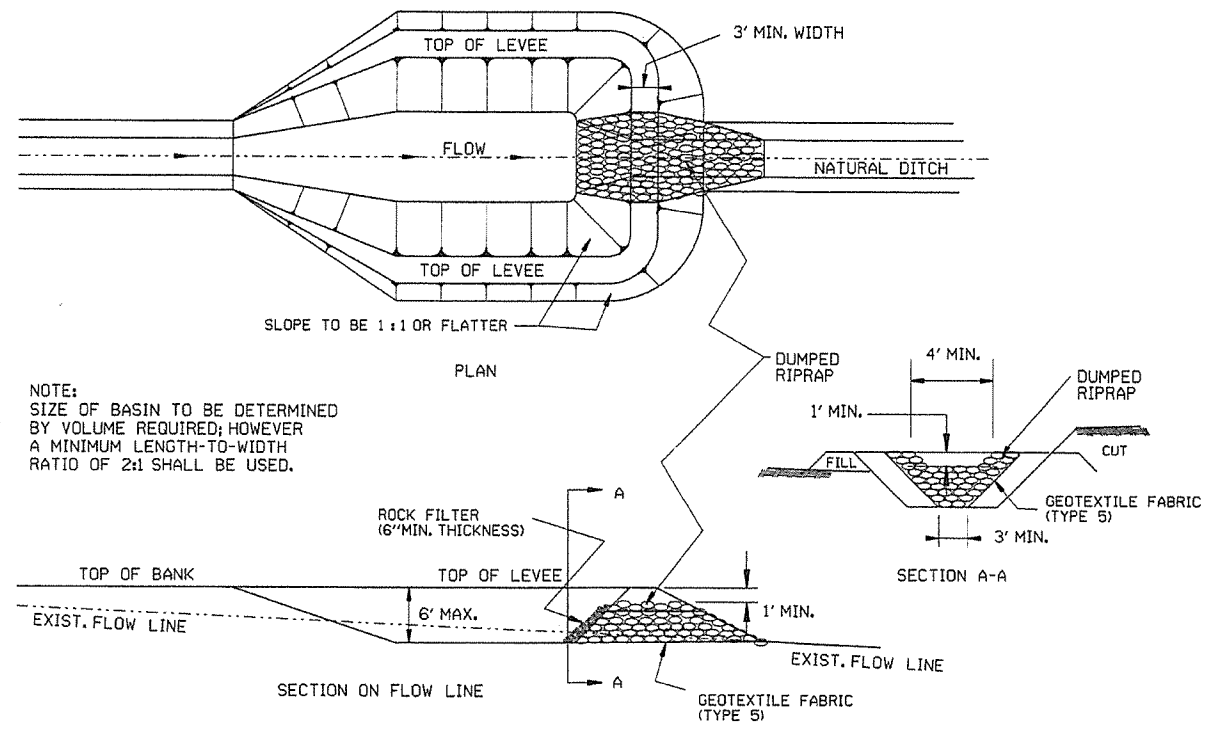
SILT FENCE (E-11)

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

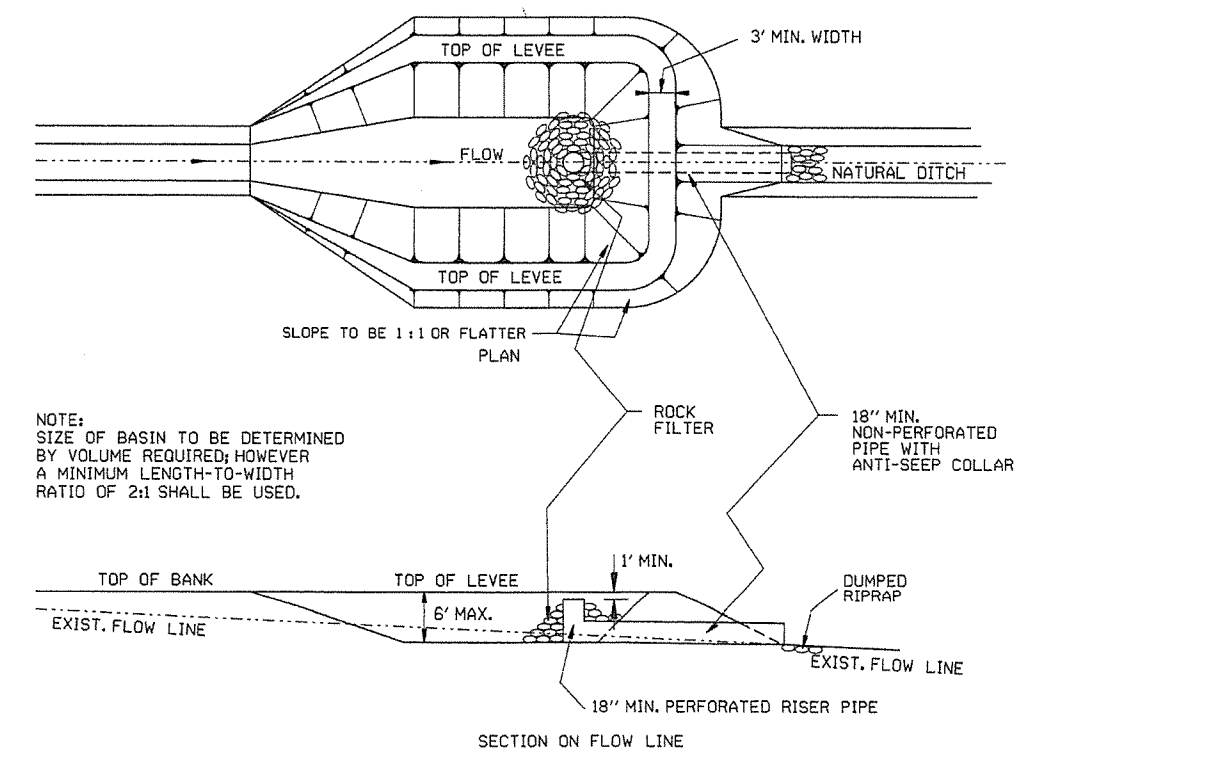


ROCK DITCH CHECK (E-6)

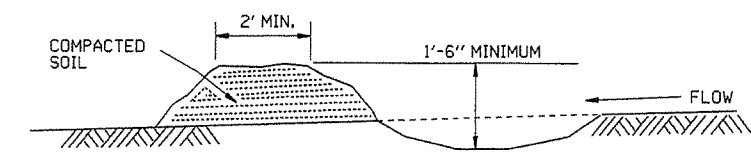
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		TEMPORARY EROSION CONTROL DEVICES
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	STANDARD DRAWING TEC-1
7-15-94	REV. E-4 & E-11 MIN. 13\"/>		
6-2-94	REVISED E-1, 4, 7 & 11; DELETED E-2 & 3	6-2-94	
4-1-93	REDRAWN		
10-1-92	REDRAWN		
8-2-76	ISSUED R.D.M.	298-7-28-76	
DATE	REVISION	FILMED	



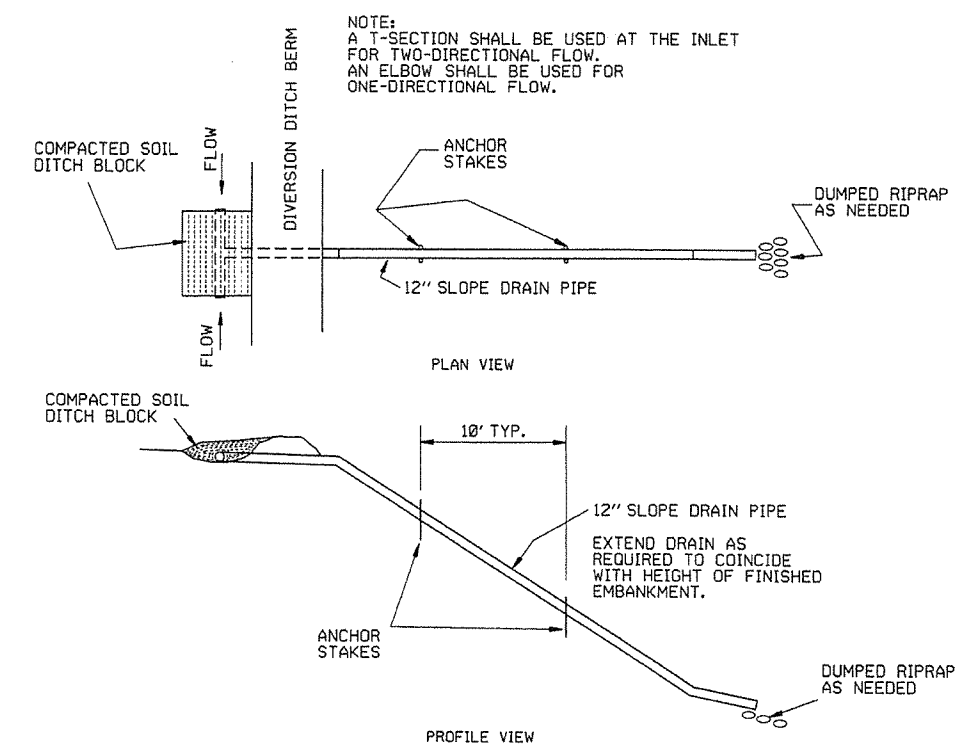
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



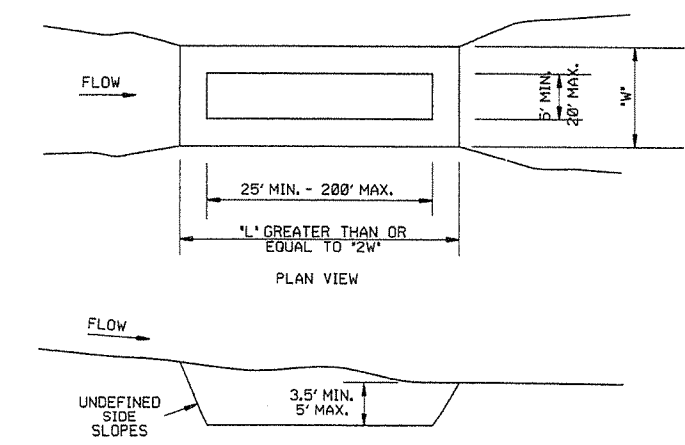
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

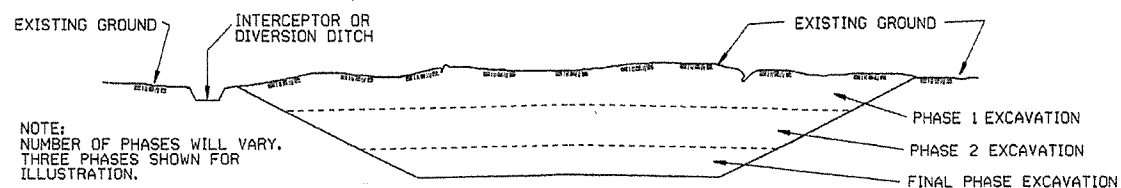
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

GENERAL NOTE

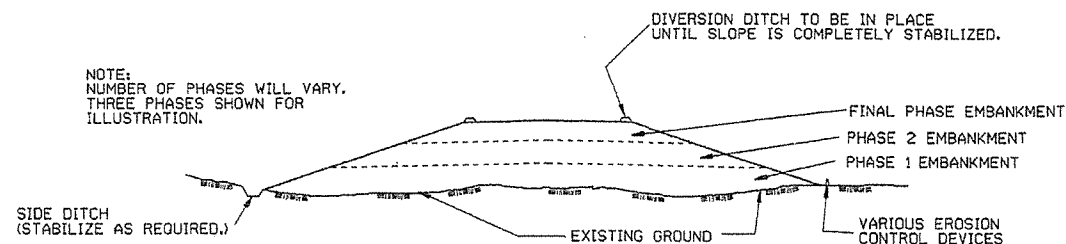
ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

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

EMBANKMENT

46



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

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

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. 110575							47	56

2 CROSS SECTIONS

AREA (STAGE 1)

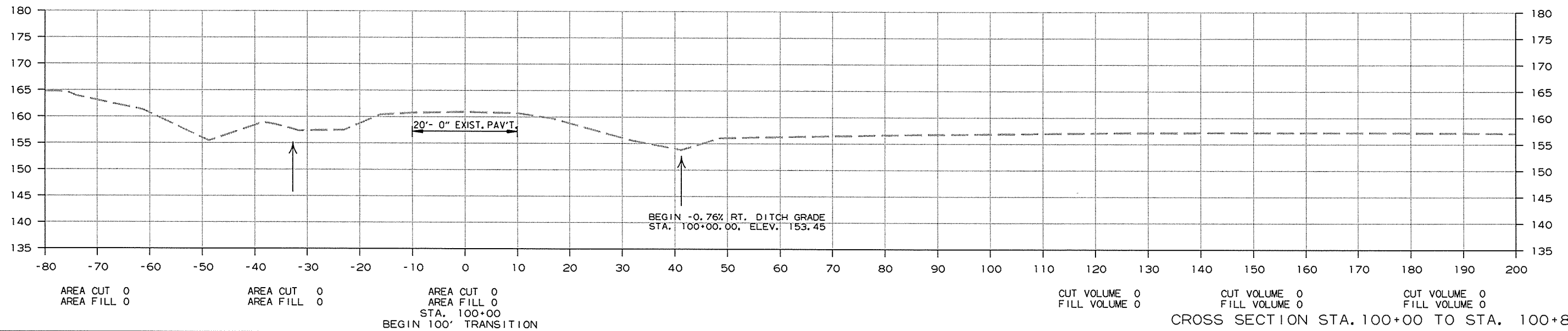
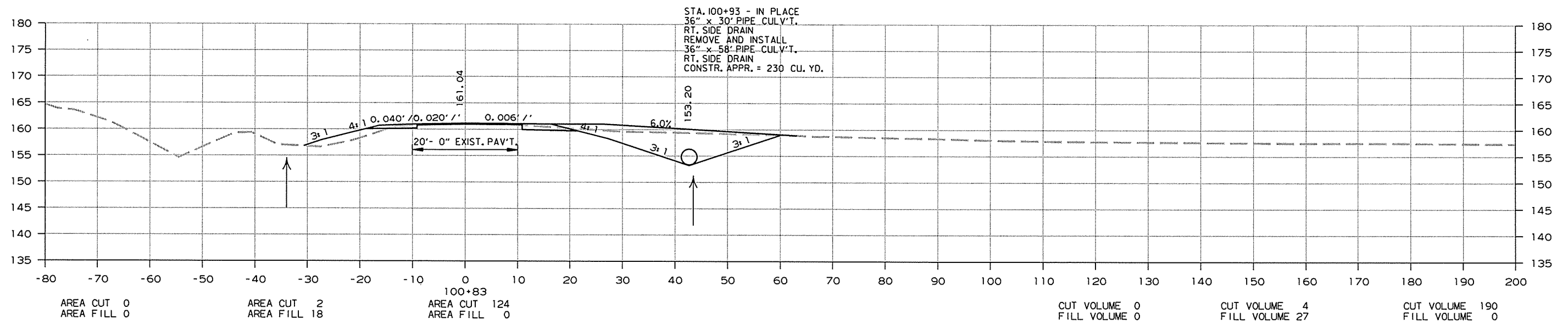
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 100+00 TO STA. 100+83

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. 110575							48	56

2 CROSS SECTIONS

AREA (STAGE 1)

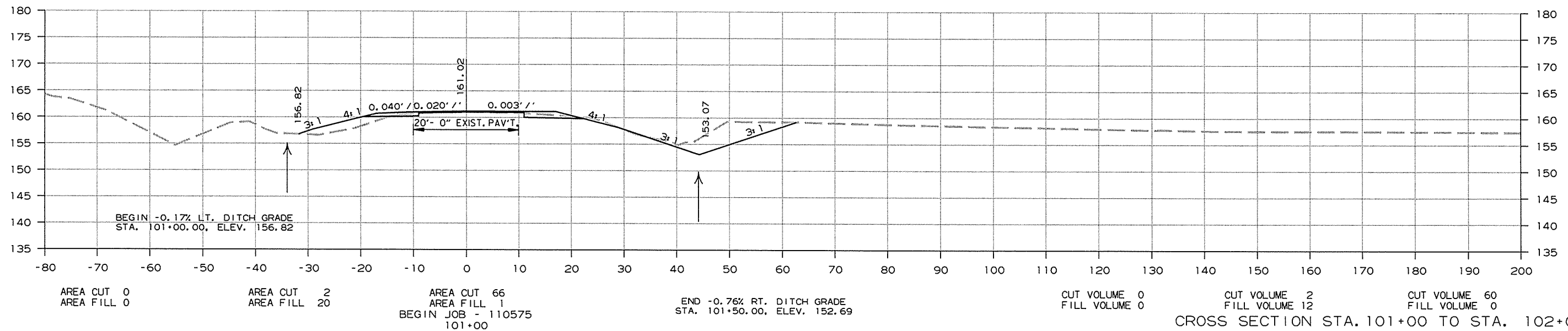
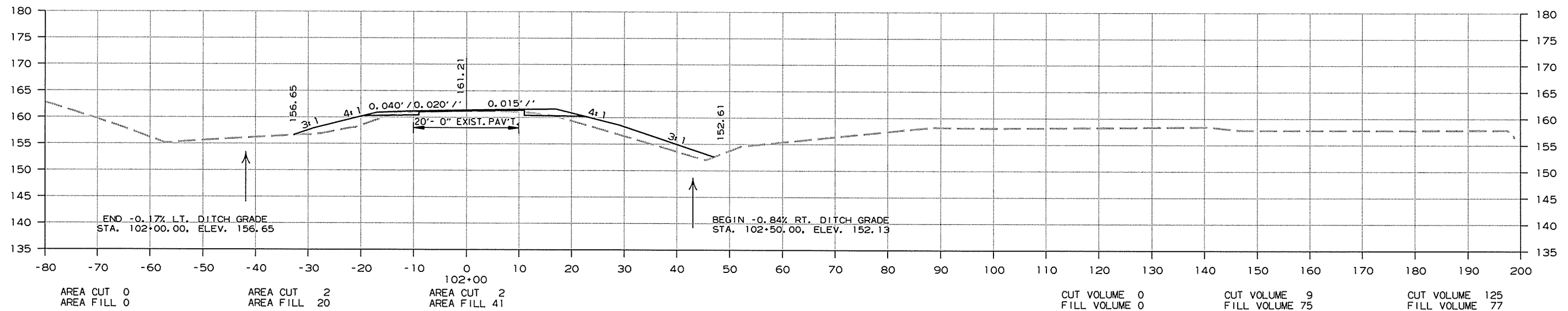
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



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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. 110575							49	56

2 CROSS SECTIONS

AREA (STAGE 1)

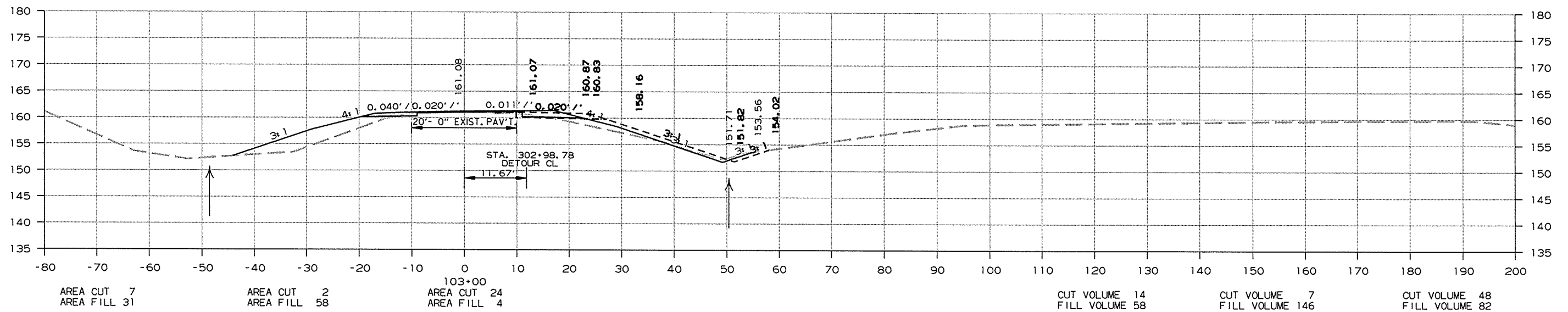
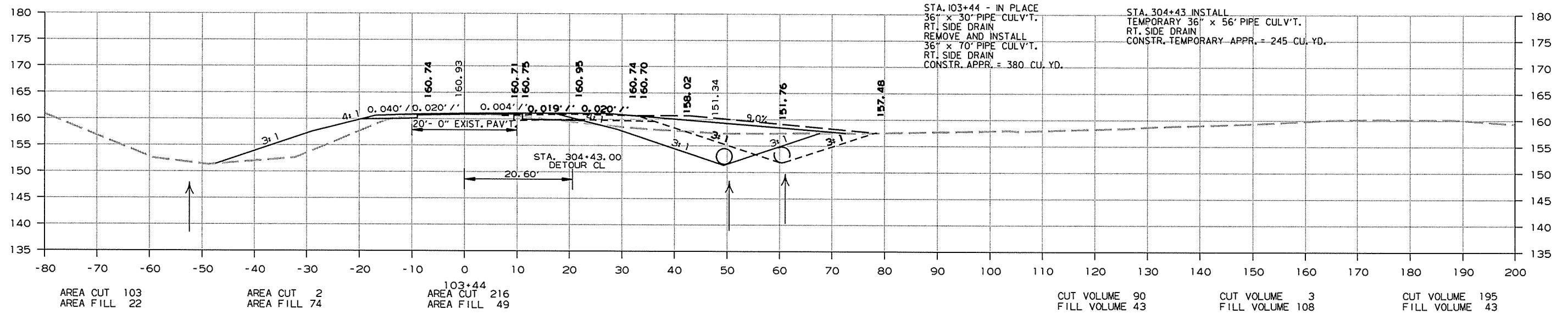
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 103+00 TO STA. 103+44

1/28/2014

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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. 110575							50	56

② CROSS SECTIONS

AREA (STAGE 1)

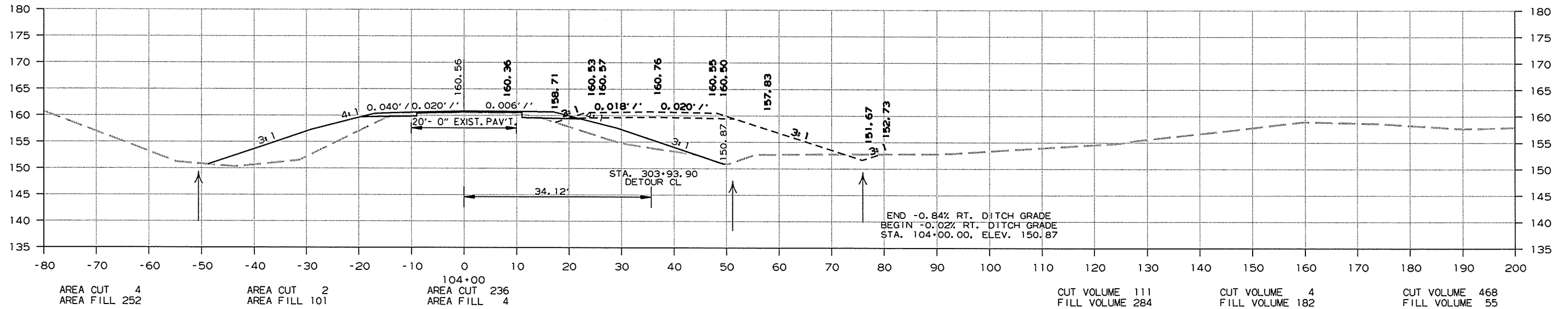
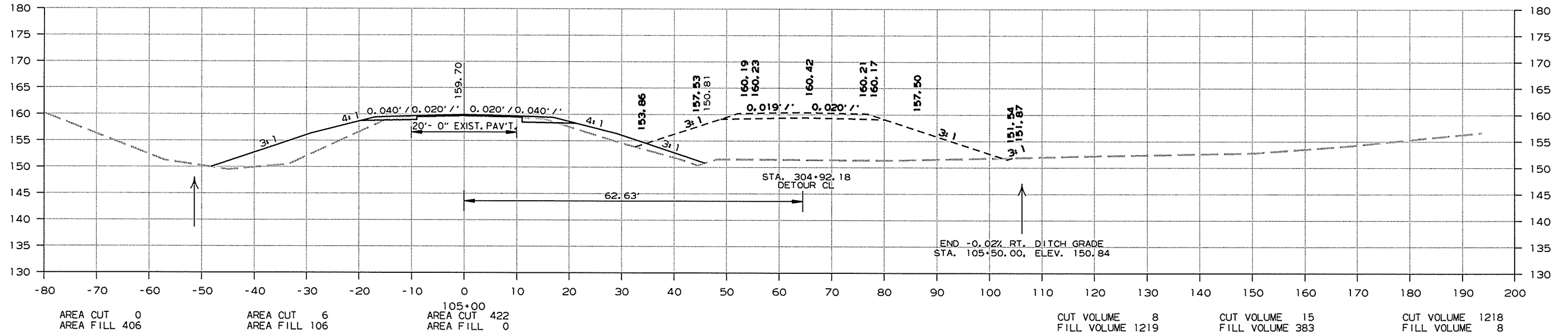
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 104+00 TO STA. 105+00

1/28/2014

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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. 110575							51	56

② CROSS SECTIONS

AREA (STAGE 1)

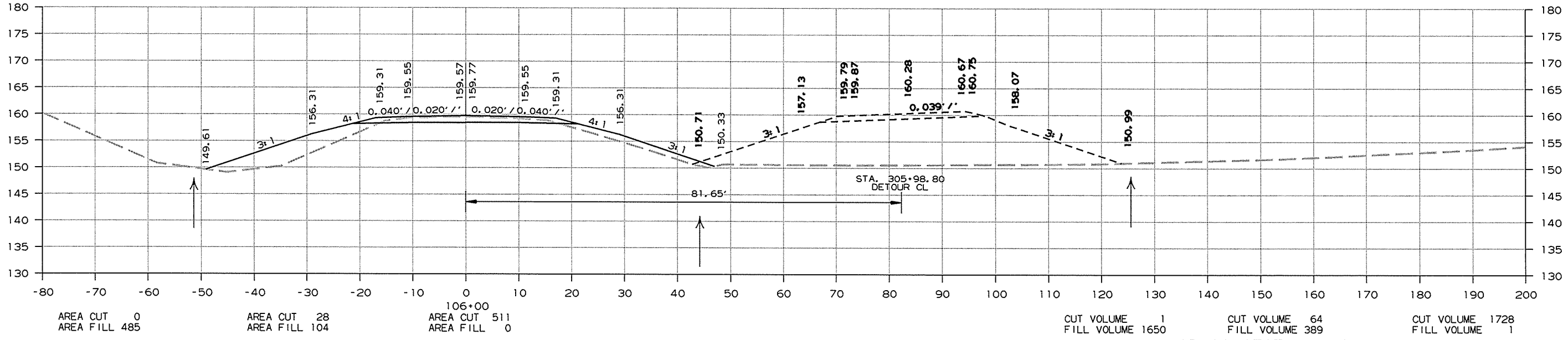
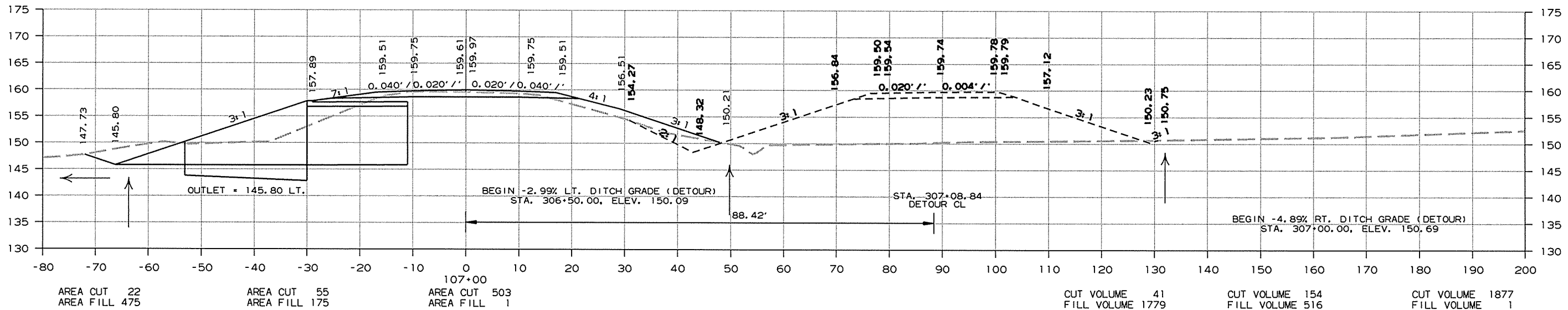
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 106+00 TO STA. 107+00

1/28/2014

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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. 110575							52	56

2 CROSS SECTIONS

AREA (STAGE 1)

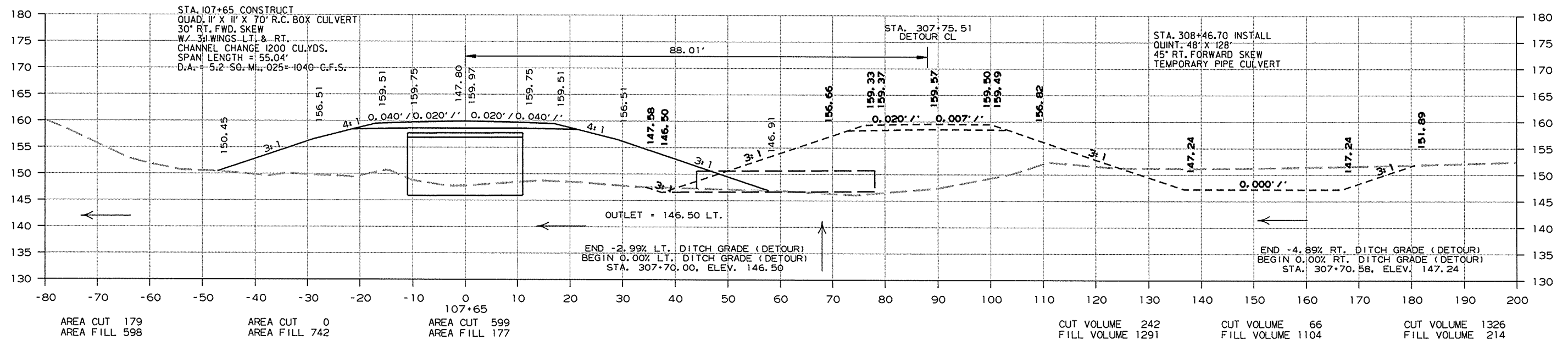
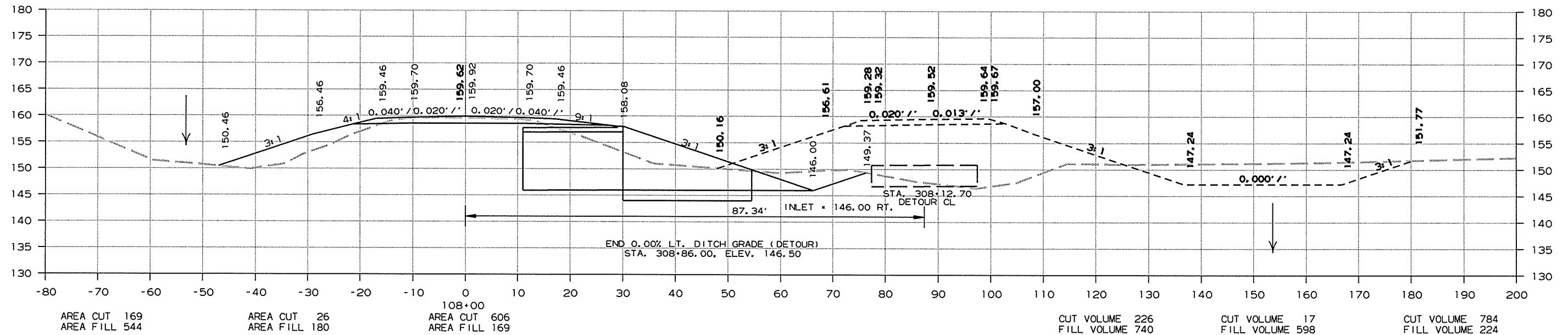
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 107+65 TO STA. 108+00

1/28/2014

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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. 110575							53	56

2 CROSS SECTIONS

AREA (STAGE 1)

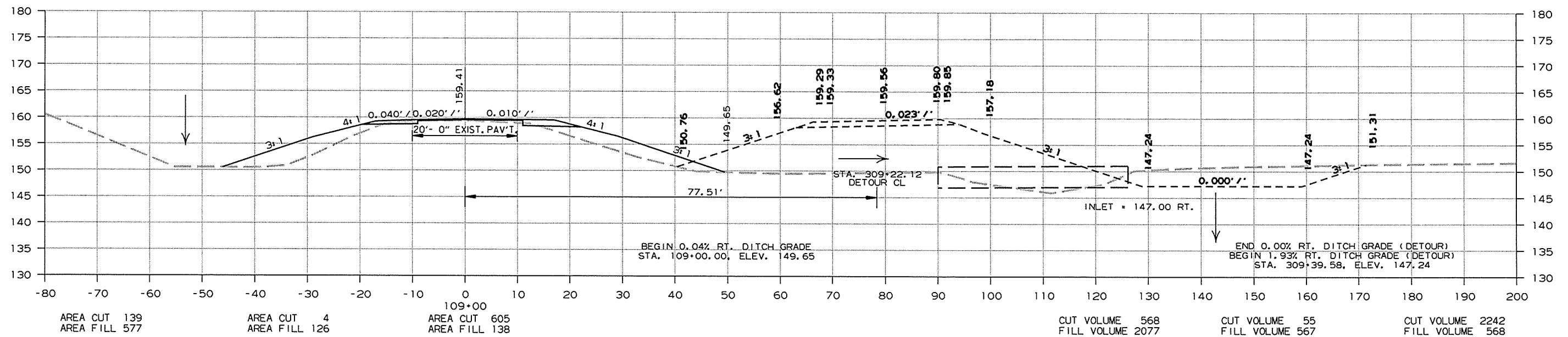
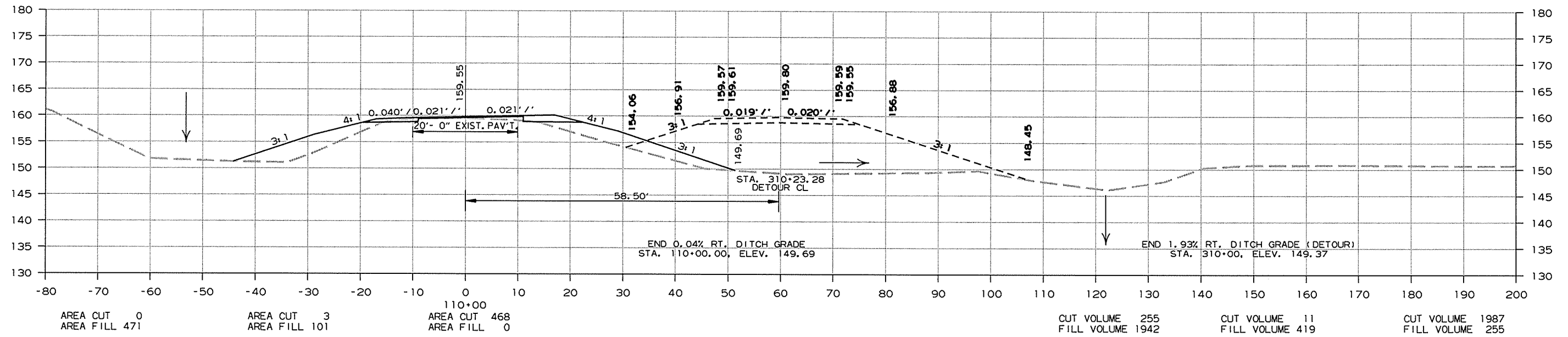
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 109+00 TO STA. 110+00

1/28/2014

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 110575							54	56

② CROSS SECTIONS

AREA (STAGE 1)

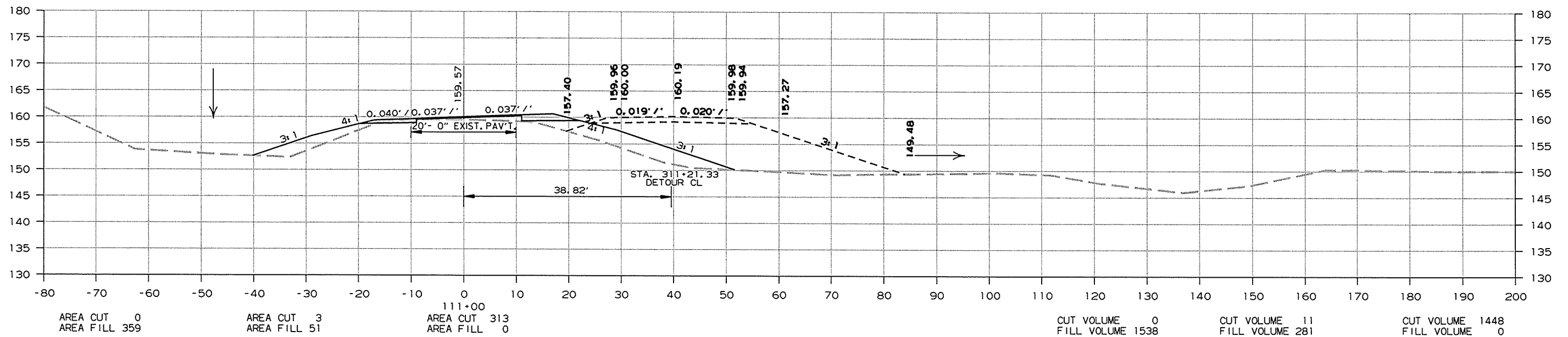
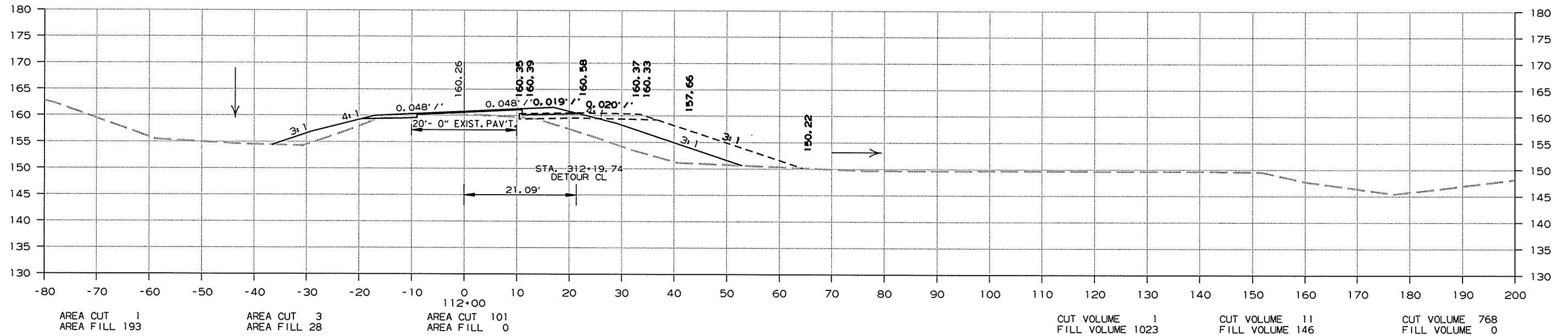
AREA (STAGE 2)

AREA (STAGE 3)

VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



CROSS SECTION STA. 111+00 TO STA. 112+00

1/28/2014

R110575.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 110575							55	56

② CROSS SECTIONS

AREA (STAGE 1)

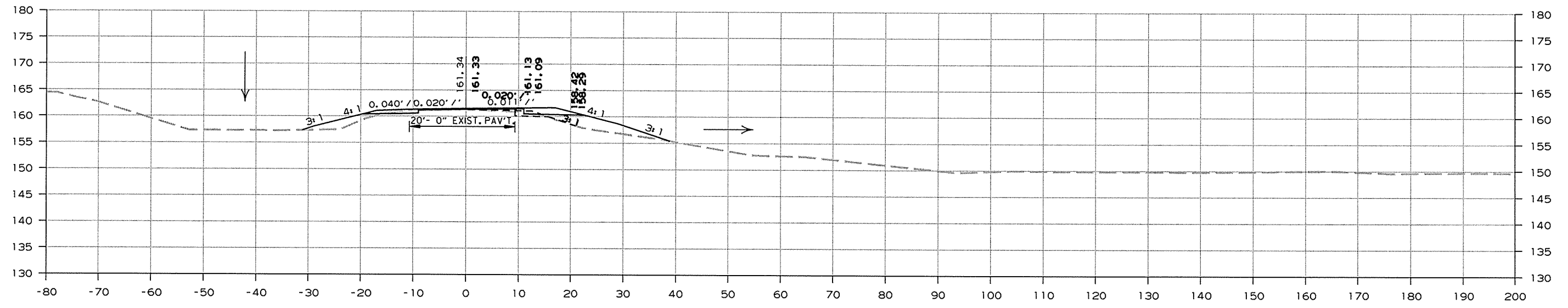
AREA (STAGE 2)

AREA (STAGE 3)

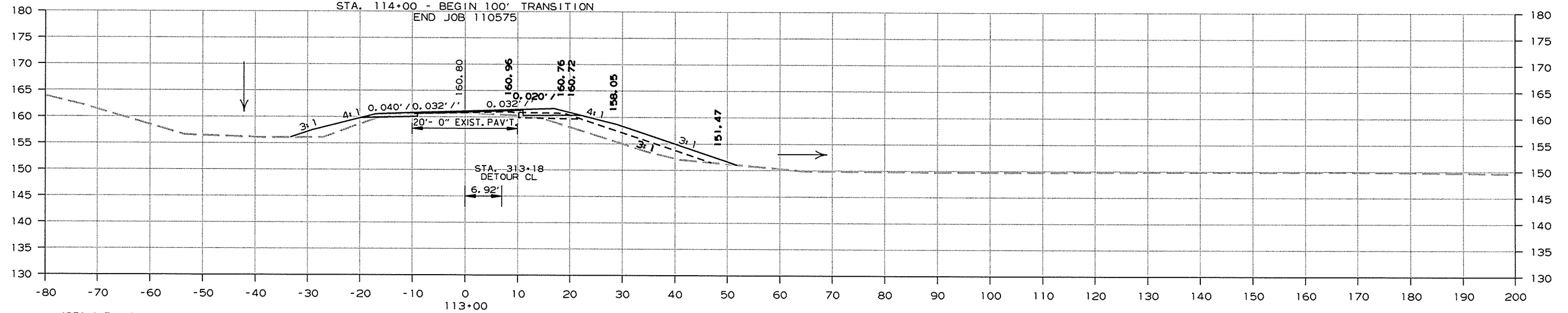
VOLUME (STAGE 1)

VOLUME (STAGE 2)

VOLUME (STAGE 3)



STA. 114+00 - BEGIN 100' TRANSITION
END JOB 110575



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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. 110575			56	56

② CROSS SECTIONS

AREA
(STAGE 1)

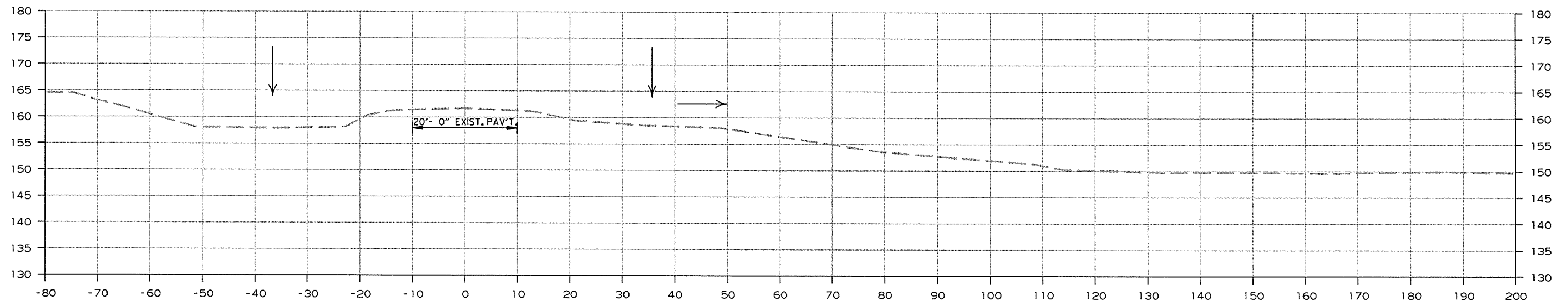
AREA
(STAGE 2)

AREA
(STAGE 3)

VOLUME
(STAGE 1)

VOLUME
(STAGE 2)

VOLUME
(STAGE 3)



AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0

AREA CUT 0
AREA FILL 0
STA. 115+00
END 100' TRANSITION

CUT VOLUME 4
FILL VOLUME 1

CUT VOLUME 5
FILL VOLUME 28

CUT VOLUME 0
FILL VOLUME 61

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

1/28/2014

R110575.DGN