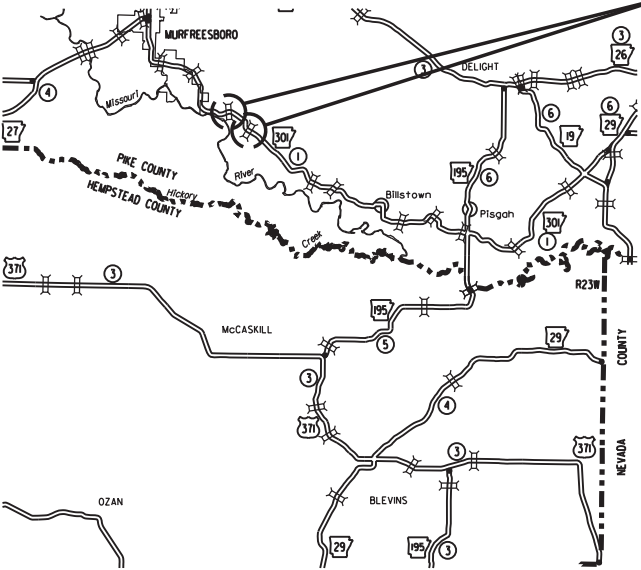


DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	1	44
HWY. 301 FLOOD DAMAGE REPAIRS (PIKE CO.) (S)						



VICINITY MAP

PROJECT
LOCATIONS

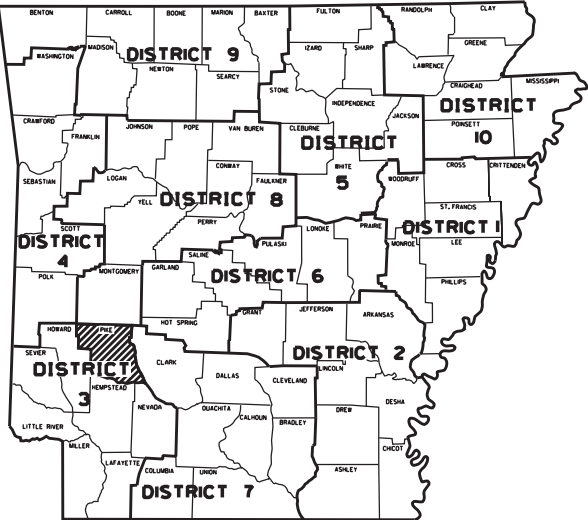
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 301 FLOOD DAMAGE
REPAIRS (PIKE CO.) (S)

PIKE COUNTY
ROUTE 301 SECTION 1

JOB 030598

FED. AID PROJ. ER-0055(34)



ARK. HWY. DIST. NO. 3

DESIGN TRAFFIC DATA

DESIGN YEAR	2044
2024 ADT	350
2044 ADT	390
2044 DHV	43
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	9%
AVG. RUNNING SPEED	30 MPH

STRUCTURES OVER 20'-0" SPAN

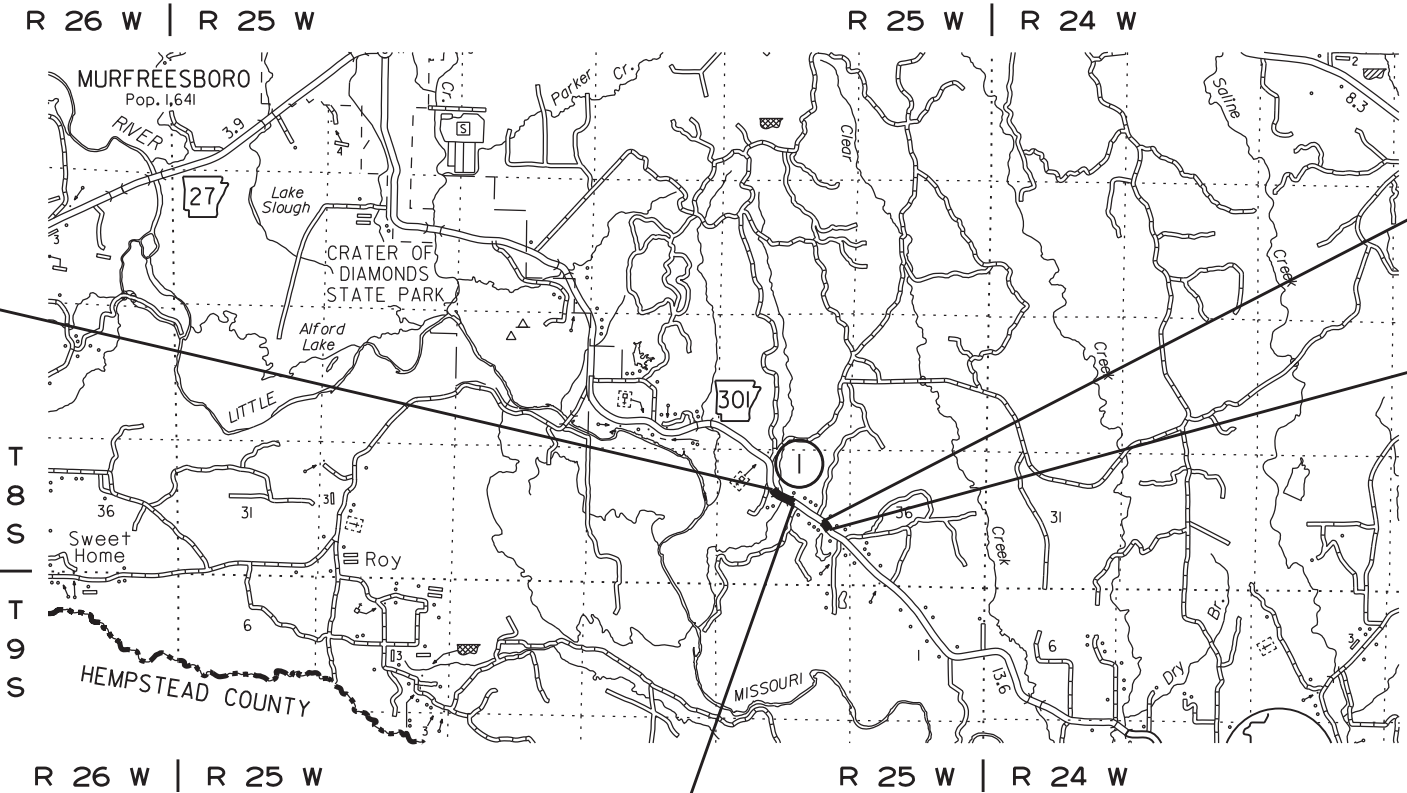
- ① STA. 705+56 - CONSTRUCT
TRI. 10' x 7' x 54' R.C. BOX CULV'T.
WITH 3:1 WINGS LT. AND RT. (15° RT. FWD. SKEW)
SPAN = 32'-5"
Q25 = 1320 CFS; D.A. = 1.33 SQ. MI.

NOT TO SCALE

STA. 704+50.00
BEGIN JOB 030598
BEGIN SITE 1
LOG MILE 5.412

STA. 804+50.00
BEGIN SITE 2
LOG MILE 5.857

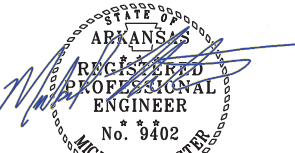
STA. 805+50.00
END SITE 2
END JOB 030598



STA. 706+50.00
END SITE 1

BEGINNING OF SITE 1	MID POINT OF SITE 1	END OF SITE 1
LATITUDE = N 34°00'49"	LATITUDE = N 34°00'48"	LATITUDE = N 34°00'48"
LONGITUDE = W 93°38'22"	LONGITUDE = W 93°38'21"	LONGITUDE = W 93°38'20"
BEGINNING OF SITE 2	MID POINT OF SITE 2	END OF SITE 2
LATITUDE = N 34°00'36"	LATITUDE = N 34°00'36"	LATITUDE = N 34°00'36"
LONGITUDE = W 93°38'01"	LONGITUDE = W 93°38'00"	LONGITUDE = W 93°38'00"

LENGTH OF PROJECT CALCULATED ALONG C.L.					
GROSS LENGTH OF PROJECT	300.00	FEET	OR	0.057	MILES
NET . . . ROADWAY	267.58			0.051	MILES
NET . . . BRIDGES	32.42			0.006	MILES
NET . . . PROJECT	300.00			0.057	MILES



Digitally signed by Michael L. Foster
Date: 2024.03.05 09:47:47 -06'00'

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	2	44
INDEX OF SHEETS AND STANDARD DRAWINGS						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 6	TYPICAL SECTIONS OF IMPROVEMENT
7 - 15	SPECIAL DETAILS
16 - 19	TEMPORARY EROSION CONTROL DETAILS
20 - 24	MAINTENANCE OF TRAFFIC DETAILS
25	PERMANENT PAVEMENT MARKING DETAILS
26 - 29	QUANTITIES
30	SUMMARY OF QUANTITIES AND REVISIONS
31 - 32	SURVEY CONTROL DETAILS
33 - 36	PLAN AND PROFILE SHEETS
37 - 44	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
WF-2	WIRE FENCE WATER GAPS	04-20-79
WF-4	WIRE FENCE TYPE C AND D	08-22-02

GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-3	CONTRACTOR'S LICENSE
100-4	DEPARTMENT NAME CHANGE
102-2	ISSUANCE OF PROPOSALS
102-3	PREQUALIFICATION OF BIDDERS
103-2	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
105-4	MAINTENANCE DURING CONSTRUCTION
107-2	RESTRAINING CONDITIONS
108-1	LIQUIDATED DAMAGES
108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
210-1	UNCLASSIFIED EXCAVATION
303-1	AGGREGATE BASE COURSE
306-1	QUALITY CONTROL AND ACCEPTANCE
400-1	TACK COATS
400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6	LIQUID ANTI-STRIP ADDITIVE
400-7	TRACKLESS TACK
404-3	DESIGN OF ASPHALT MIXTURES
409-2	ASPHALT LABORATORY FACILITY
410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
416-1	RECYCLED ASPHALT PAVEMENT
501-3	PORTLAND CEMENT CONCRETE PAVEMENT
600-2	INCIDENTAL CONSTRUCTION
603-1	LANE CLOSURE NOTIFICATION
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
605-1	CONCRETE DITCH PAVING
619-1	FENCES
620-1	MULCH COVER
800-1	STRUCTURES
802-5	CONCRETE FOR STRUCTURES
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 030598	BIDDING REQUIREMENTS AND CONDITIONS
JOB 030598	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 030598	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 030598	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 030598	CARGO PREFERENCE ACT REQUIREMENTS
JOB 030598	COLD MILLING – COUNTY PROPERTY
JOB 030598	DESIGN AND QUALITY CONTROL ASPHALT MIXTURES
JOB 030598	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 030598	FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT
JOB 030598	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 030598	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 030598	MANDATORY ELECTRONIC CONTRACT
JOB 030598	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 030598	NESTING SITES OF MIGRATORY BIRDS
JOB 030598	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 030598	PERCENT AIR VOIDS AND NDESIGN FOR ACHM SURFACE MIX DESIGNS
JOB 030598	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 030598	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 030598	PRICE ADJUSTMENT FOR FUEL
JOB 030598	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 030598	SHORING FOR CULVERTS
JOB 030598	SOIL STABILIZATION
JOB 030598	SPECIAL CLEARING REQUIREMENTS
JOB 030598	STORM WATER POLLUTION PREVENTION PLAN
JOB 030598	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 030598	UTILITY ADJUSTMENTS
JOB 030598	WARM MIX ASPHALT

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	3	44
GOVERNING SPECIFICATIONS AND GENERAL NOTES						



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.09.09

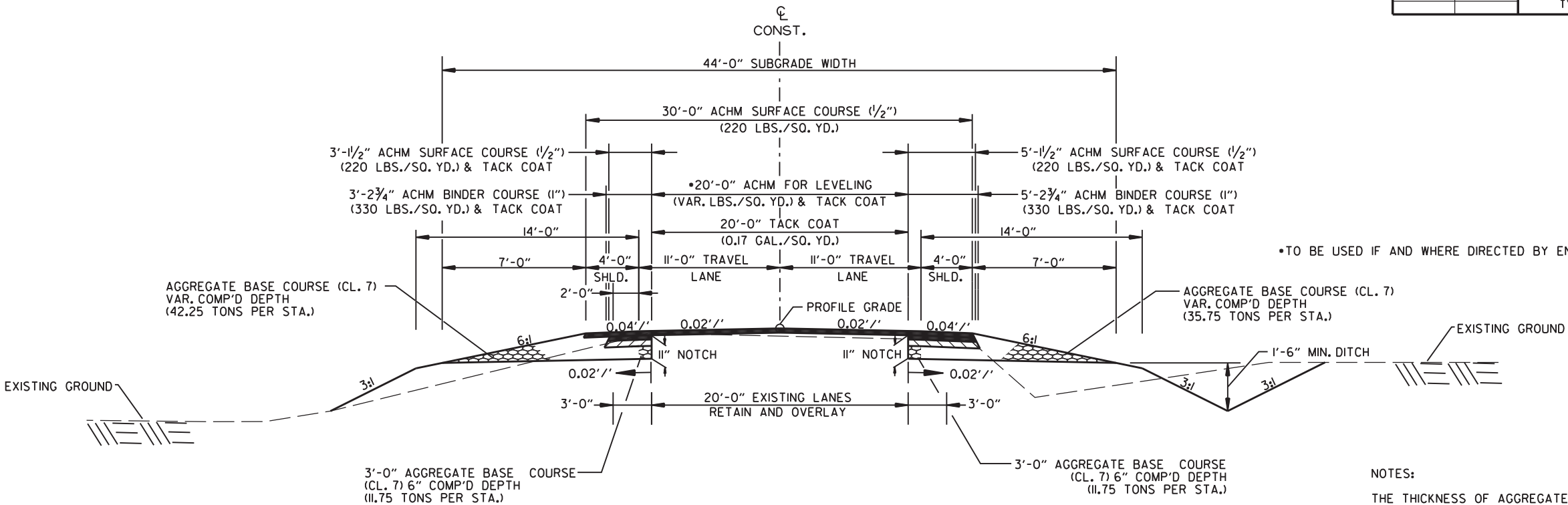
GENERAL NOTES

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

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	4	44
TYPICAL SECTIONS OF IMPROVEMENT						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05



HWY. 301 - TWO LANE NOTCH AND WIDEN OPEN SHOULDER
STA. 704+50.00 - STA. 705+10.00 - SITE 1
STA. 706+00.00 - STA. 706+50.00 - SITE 1

NOTES:

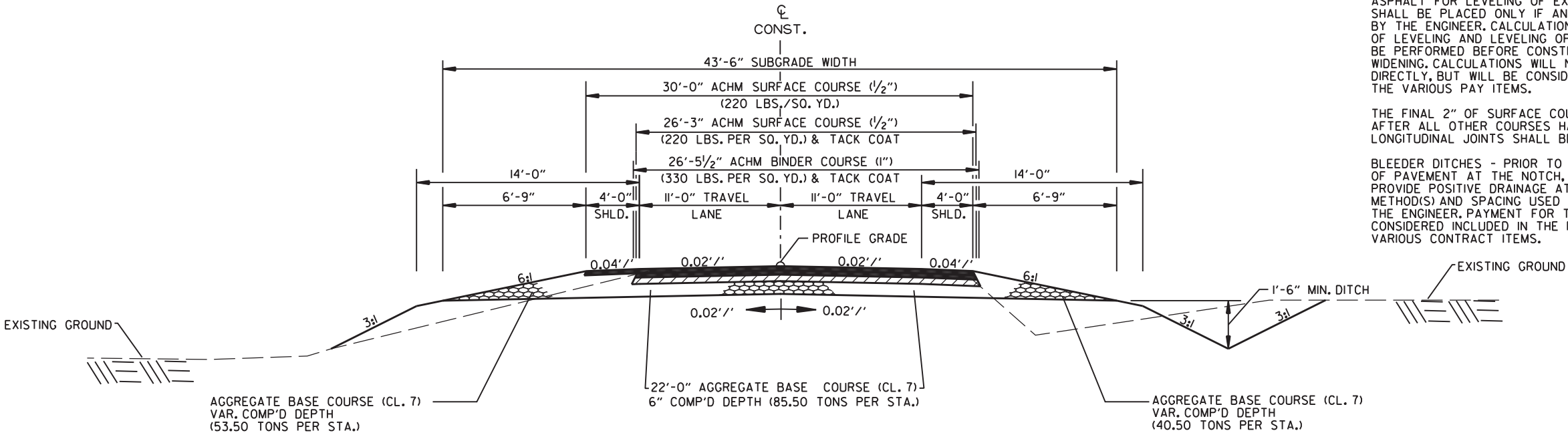
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

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

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

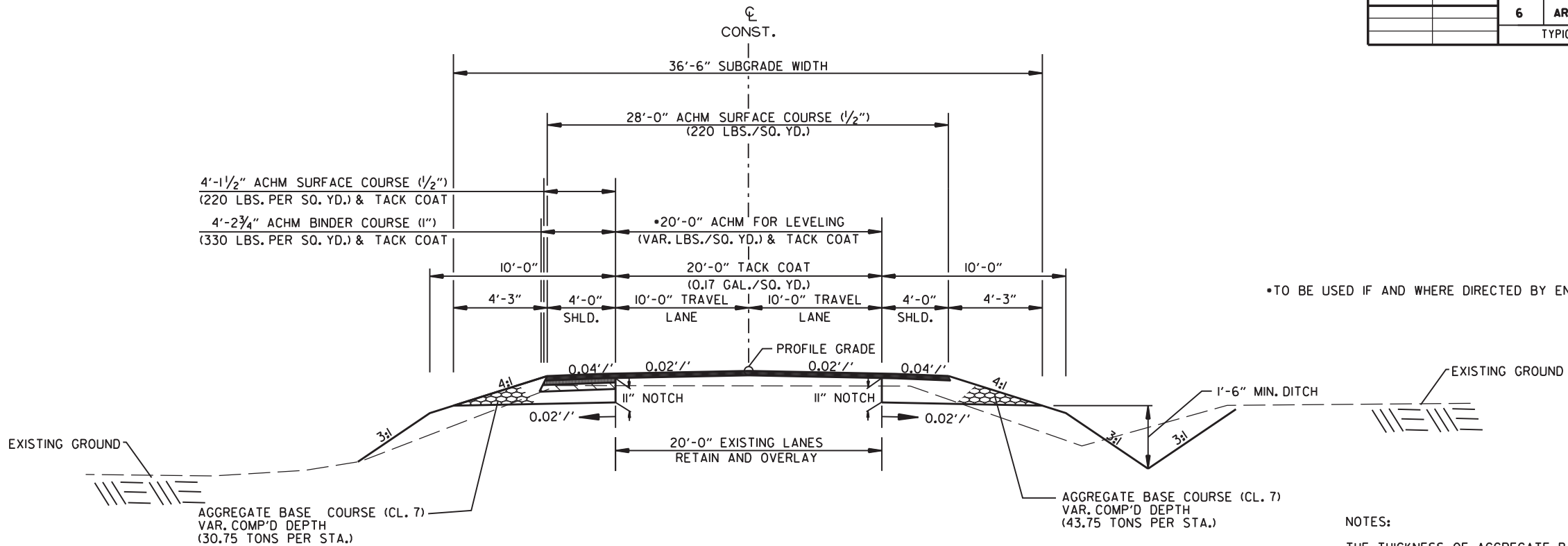


HWY. 301 - TWO LANE FULL DEPTH OPEN SHOULDER
STA. 705+10.00 - STA. 706+00.00 - SITE 1

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	5	44
TYPICAL SECTIONS OF IMPROVEMENT						



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Date: 2024.03.05



•TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

HWY. 301 - TWO LANE NOTCH AND WIDEN OPEN SHOULDER
STA. 804+50.00 - STA. 804+95.00 - SITE 2

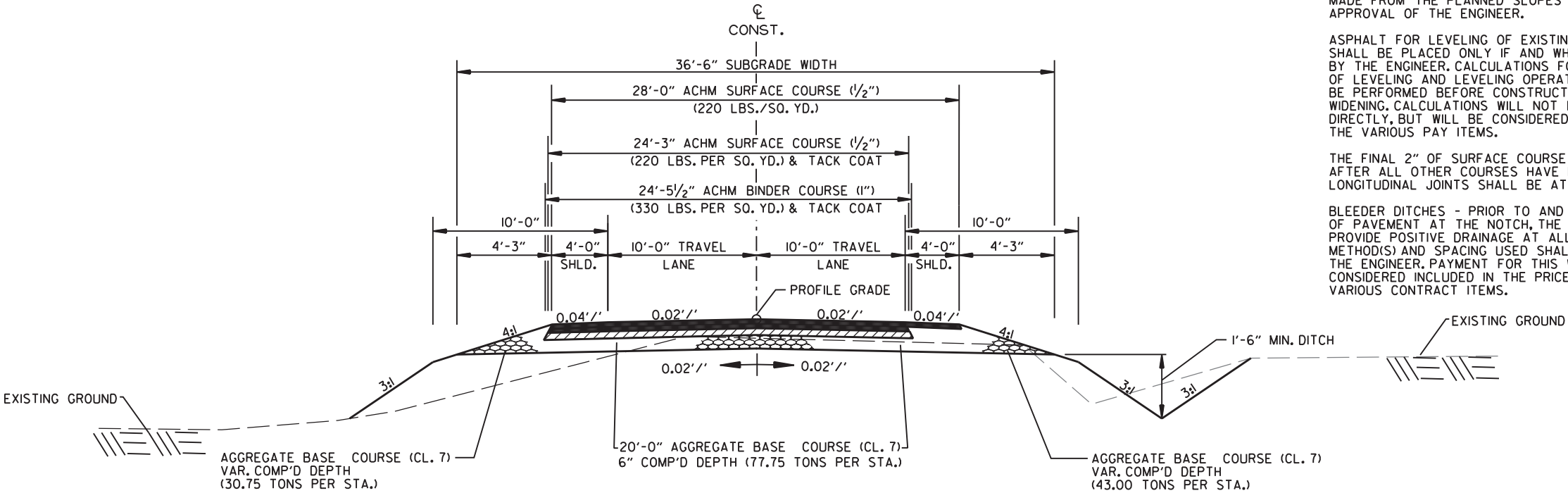
NOTES:
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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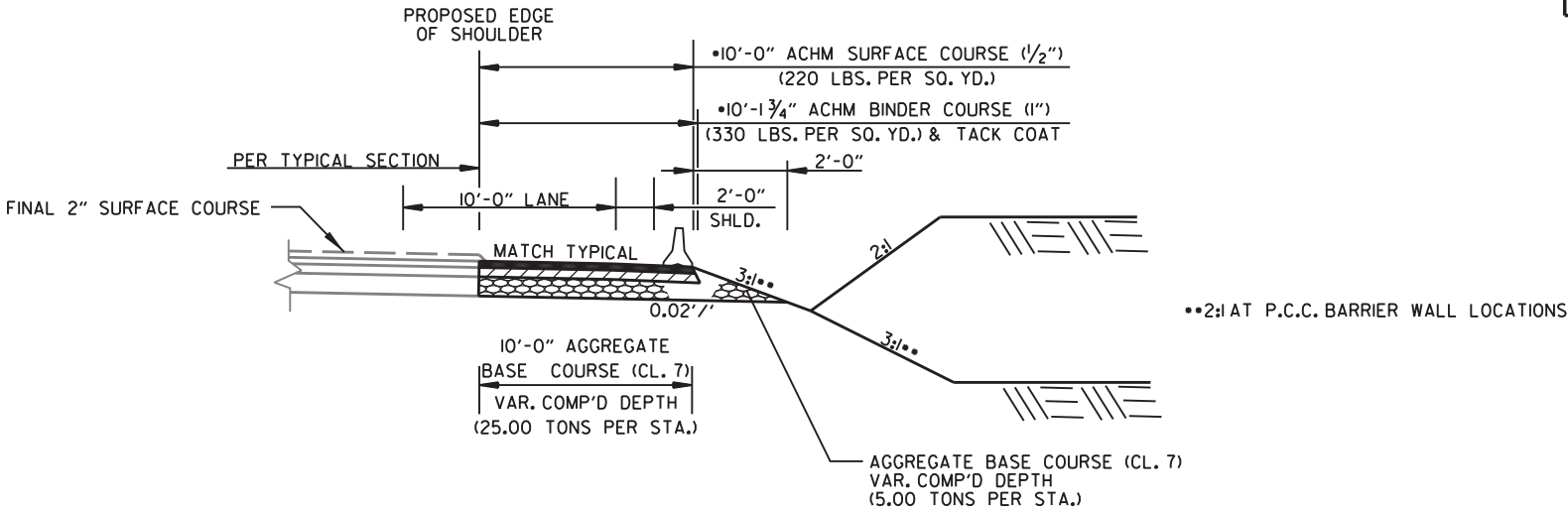
HWY. 301 - TWO LANE FULL DEPTH OPEN SHOULDER
STA. 804+95.00 - STA. 805+50.00 - SITE 2

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	6	44
TYPICAL SECTIONS OF IMPROVEMENT						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05

•WIDTH TRANSITION:
STA. 703+50.00 - STA. 704+65.00 - SITE 1
STA. 706+35.00 - STA. 707+50.00 - SITE 1
P.C.C.B. WALL LOCATIONS



HWY. 301 DETOUR - ADDITIONAL WIDENING FOR MAINTENANCE OF TRAFFIC
STA. 703+50.00 - STA. 707+50.00 - SITE 1

NOTES:

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

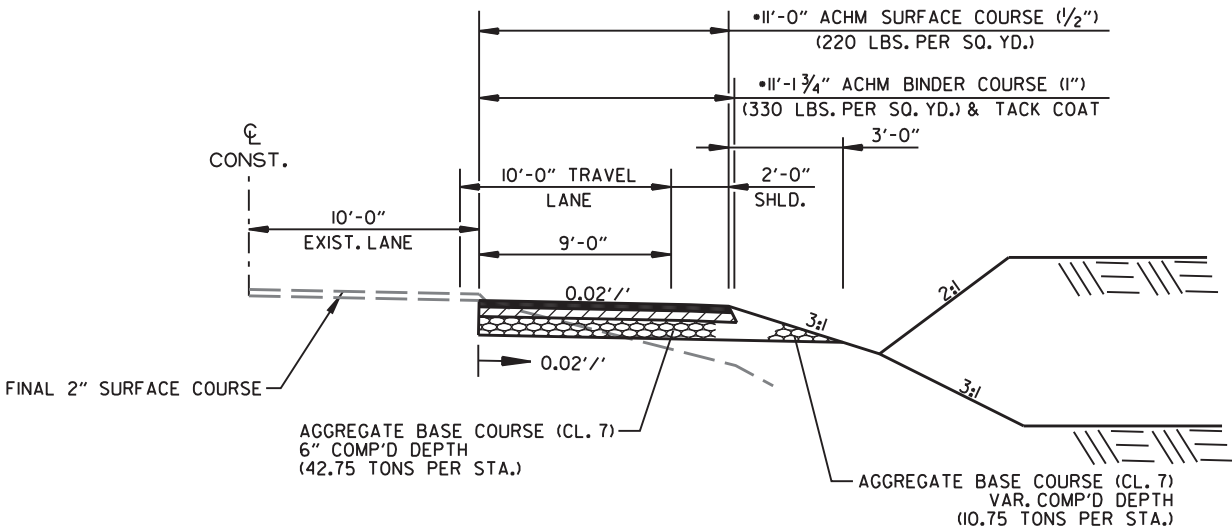
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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•WIDTH TRANSITION:
STA. 803+50.00 - STA. 804+45.00 - SITE 2
STA. 805+55.00 - STA. 806+50.00 - SITE 2

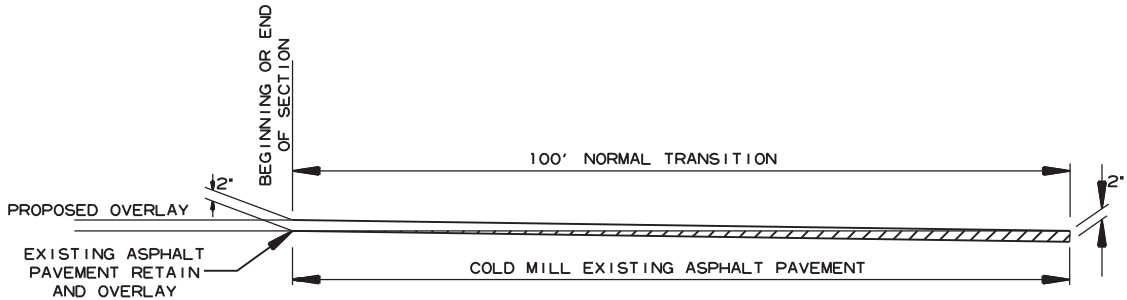


HWY. 301 DETOUR - ADDITIONAL WIDENING FOR MAINTENANCE OF TRAFFIC
STA. 803+50.00 - STA. 806+50.00 - SITE 2

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	7	44
SPECIAL DETAILS						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05



DETAIL FOR TRANSITIONS

INLET SLOPE SECTION(S)

INLET SKEWED END SECTION

INLET WINGWALL TABLE

[illegible]

CU. YDS.	CLASS "S" CONCRETE
125.15	REINFORCING STEEL (GR. 60)
17,351	LBS.

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.

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 705+56

SPECIAL DETAILS



OUTLET SKEWED END SECTION

OUTLET WINGWALL TABLE

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

	CU. YDS.	CLASS "S" CONCRETE
TOTAL		

[illegible]

STATE OF
ARKANSAS

LICENSED
PROFESSIONAL
ENGINEER

No. 16493
COMMISSION EXPIRES 12/31/2016
RICHARD L. FERGUSON
CLINTON

TABULAR DATA BY: CZP DATE: 05/24/2023
CHECKED BY: RCF DATE: 05/24/2023

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

Unless otherwise noted, all dimensions are in inches.

INLET SLOPE SECTION(S)

INLET SKEWED END SECTION

INLET WINGWALL TABLE

[illegible]

49.82	CU. YDS.	CLASS "S" CONCRETE
6,526	LBS.	REINFORCING STEEL (GR. 60)

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.

CU. YDS.	CLASS "S" CONCRETE
0.13	
TOTAL	
0.13	
	REINFORCING STEEL (GR. 60)
37	LBS.

49.82	CU. YDS.	CLASS "S" CONCRETE
6,526	LBS.	REINFORCING STEEL (GR. 60)

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
TRIPLE BARREL BOX CULVERT
Sta. 805+19

SPECIAL DETAILS



① SPECIAL DETAILS

1

MID-SECTION
BAR LAP TABLE

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

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

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

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



03/06/2024

TABULAR DATA BY: CZP DATE: 05/24/2023
CHECKED BY: RCF DATE: 05/24/2023

OUTLET SLOPE SECTION(S)

[illegible]

		CU. YDS.	CLASS "S" CONCRETE
		LBS.	REINFORCING STEEL (GR. 60)
TOTAL			
0.13	37		

OUTLET SKEWED END SECTION

[illegible]

OUTLET WINGWALL TABLE

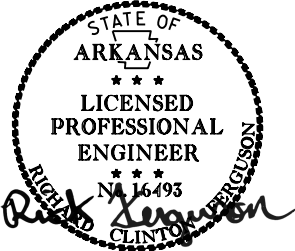
[illegible]

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

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

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.		030598	11	44
				SPECIAL DETAILS				

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



03/06/2024

TABULAR DATA BY: CZP DATE: 05/24/2023
CHECKED BY: RCF DATE: 05/24/2023

SHEET 2 OF 2
S OF R.C. BOX CULVERT
LE BARREL BOX CULVERT
Sta. 805+19

SPECIAL DETAILS



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

Unless otherwise noted, all dimensions are in inches.

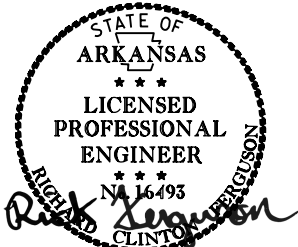
2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

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

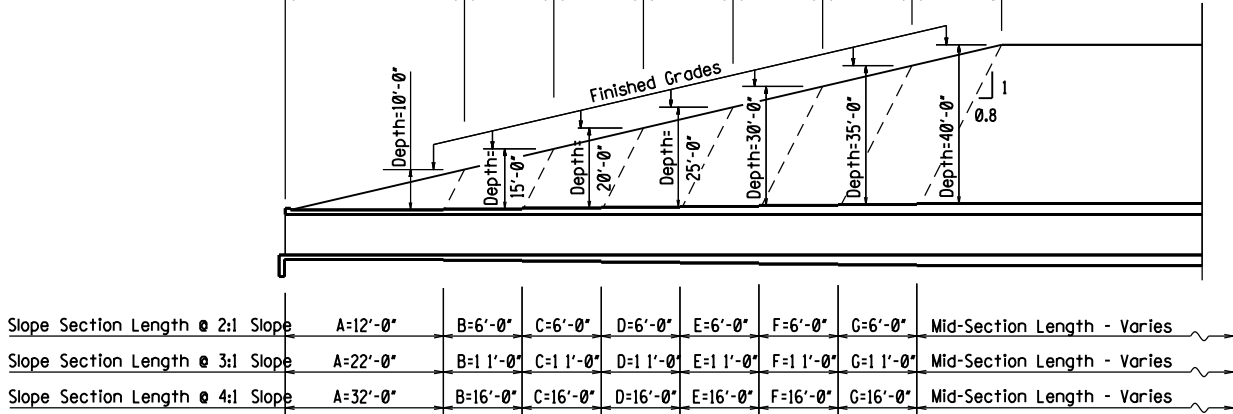
* LL = Skewed End Section Length - See "Skewed End Section Details"
Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.		030598		12		44		

SPECIAL DETAILS

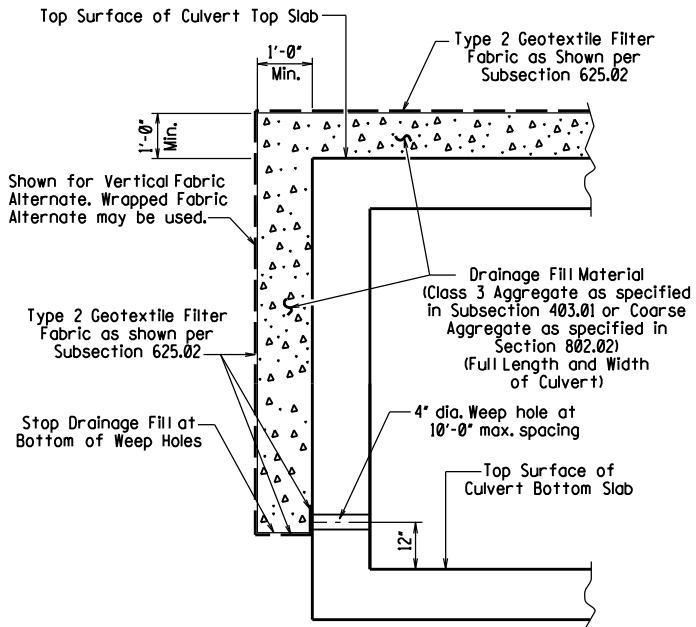


03/06/2024



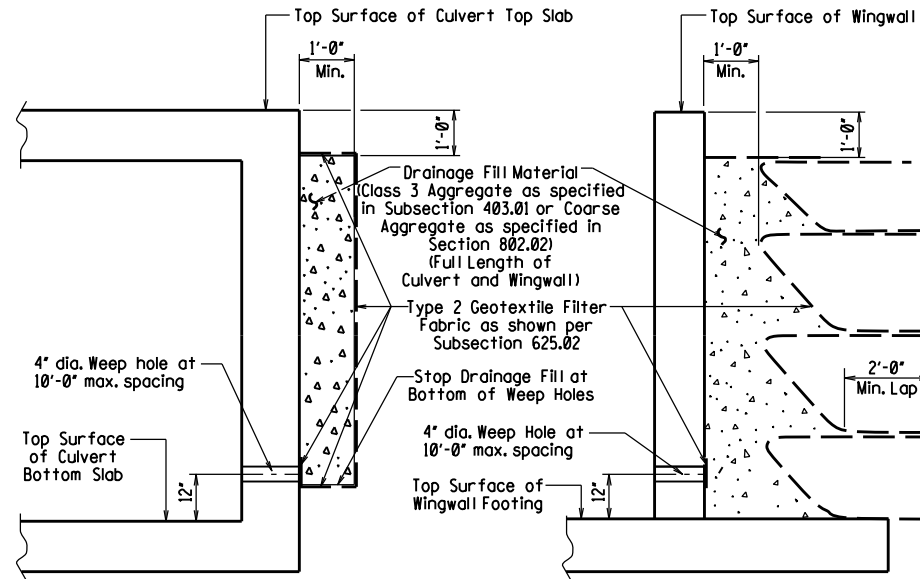
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



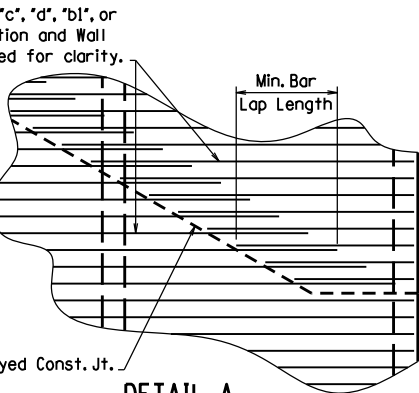
VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

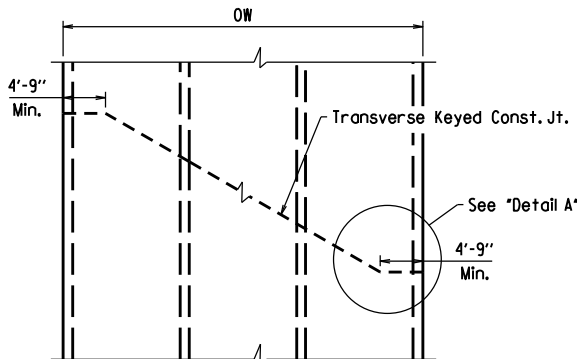
WINGWALL & CULVERT DRAINAGE DETAIL



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.



SKEVED TRANSVERSE JOINT DETAIL

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

GENERAL NOTES:

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

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

LIVE LOADING: HL-93

All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 1/2" chamfers.

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

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

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

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

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

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

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

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

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

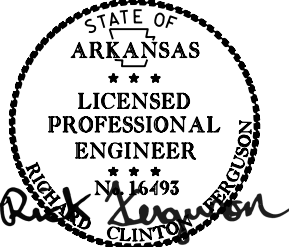
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert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

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

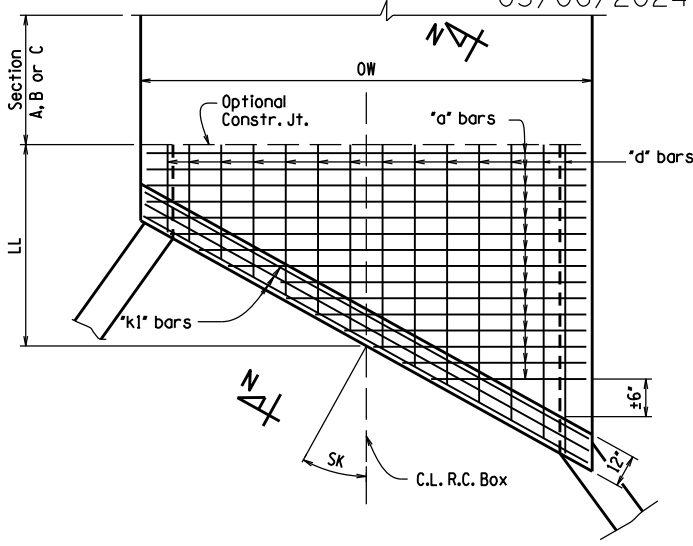


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030598	13	44

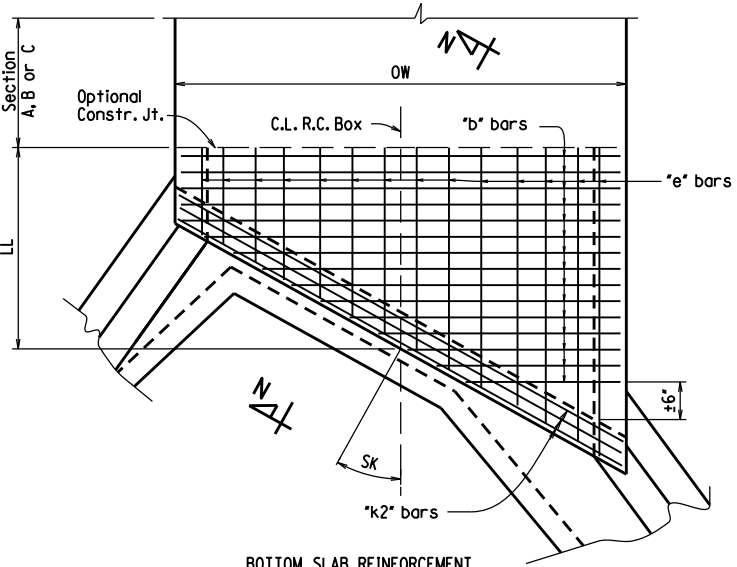
1 SPECIAL DETAILS



03/06/2024



TOP SLAB REINFORCEMENT

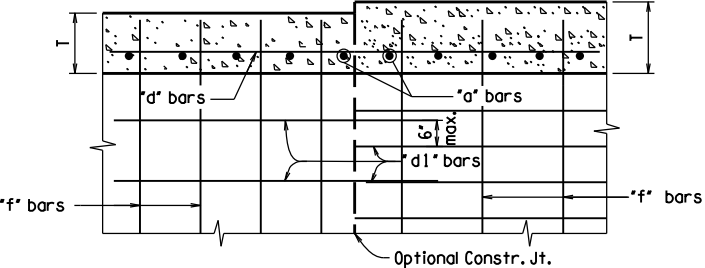


BOTTOM SLAB REINFORCEMENT

SKewed END SECTION DETAILS

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

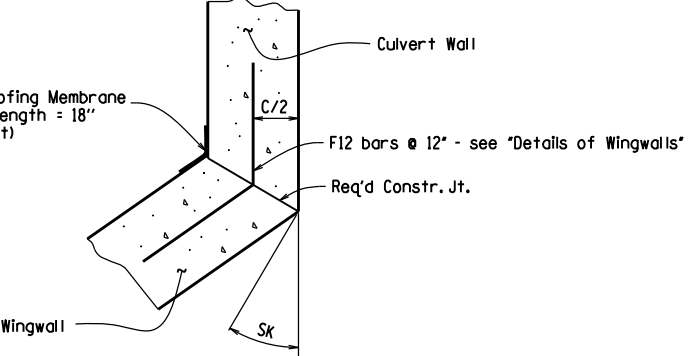
SPECIAL DETAILS



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

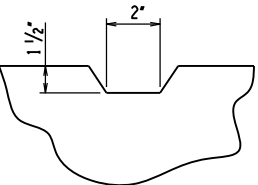
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



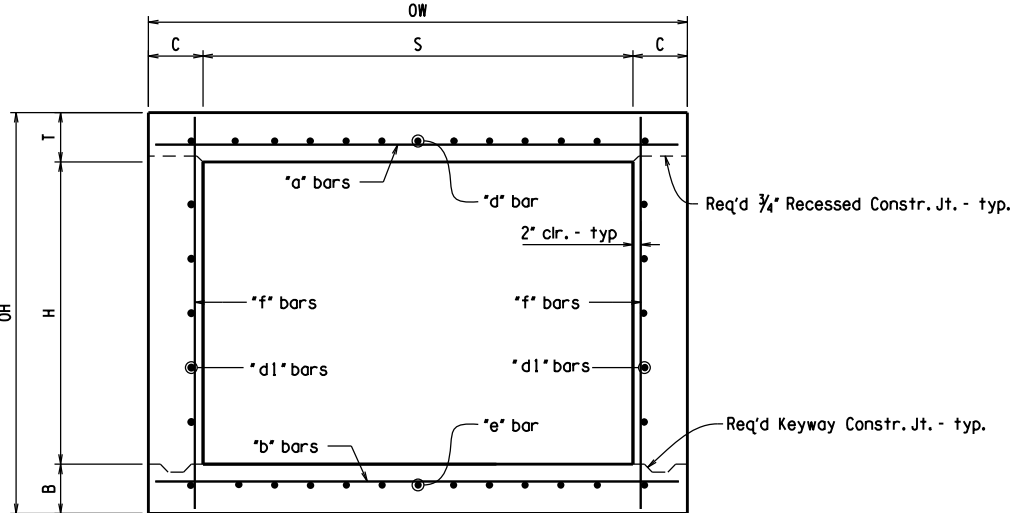
WINGWALL ATTACHMENT

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

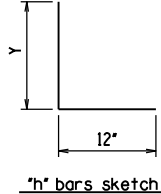


TYPICAL KEYWAY DETAIL

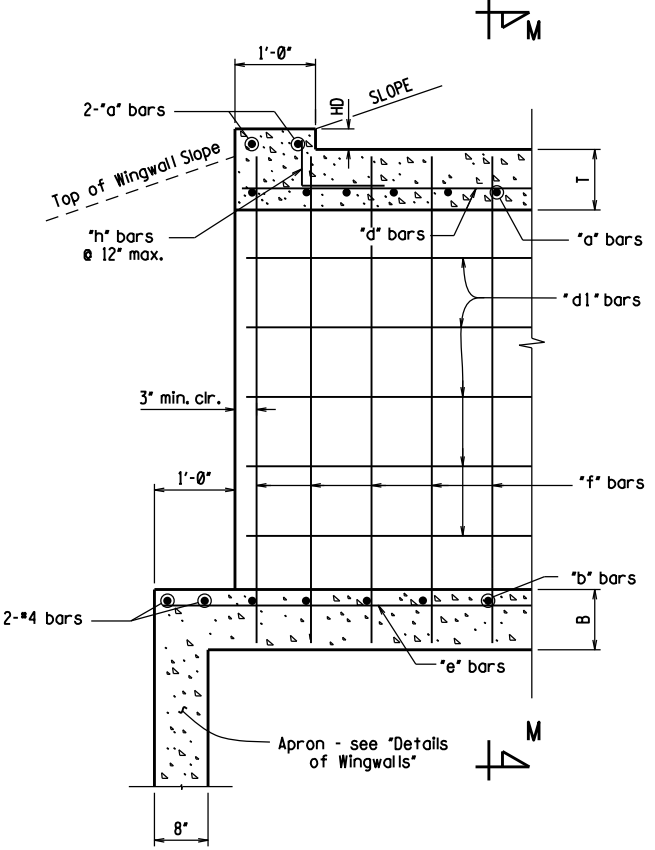
(All Construction Joints)



TYPICAL SECTION M-M

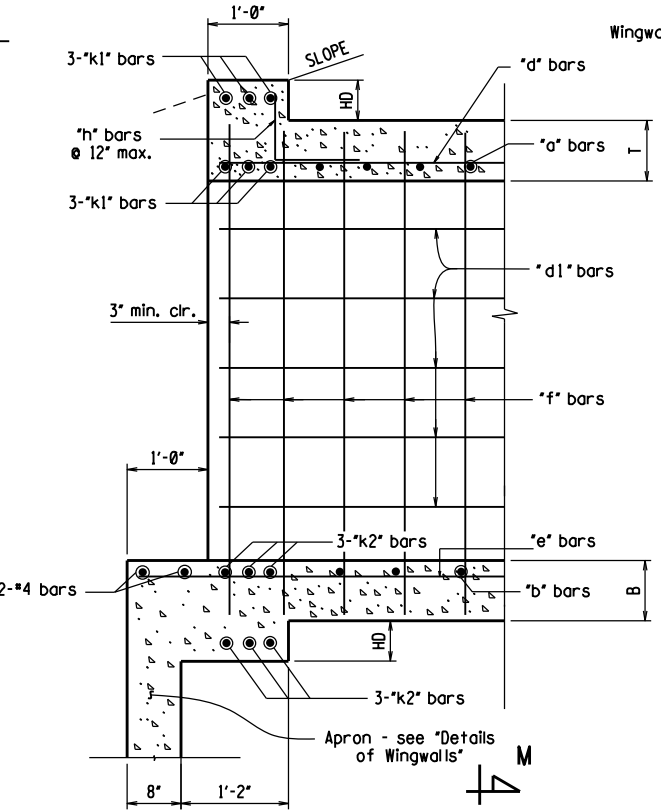


"h" bars sketch



PART LONGITUDINAL SECTION

(Non-Skewed Ends)



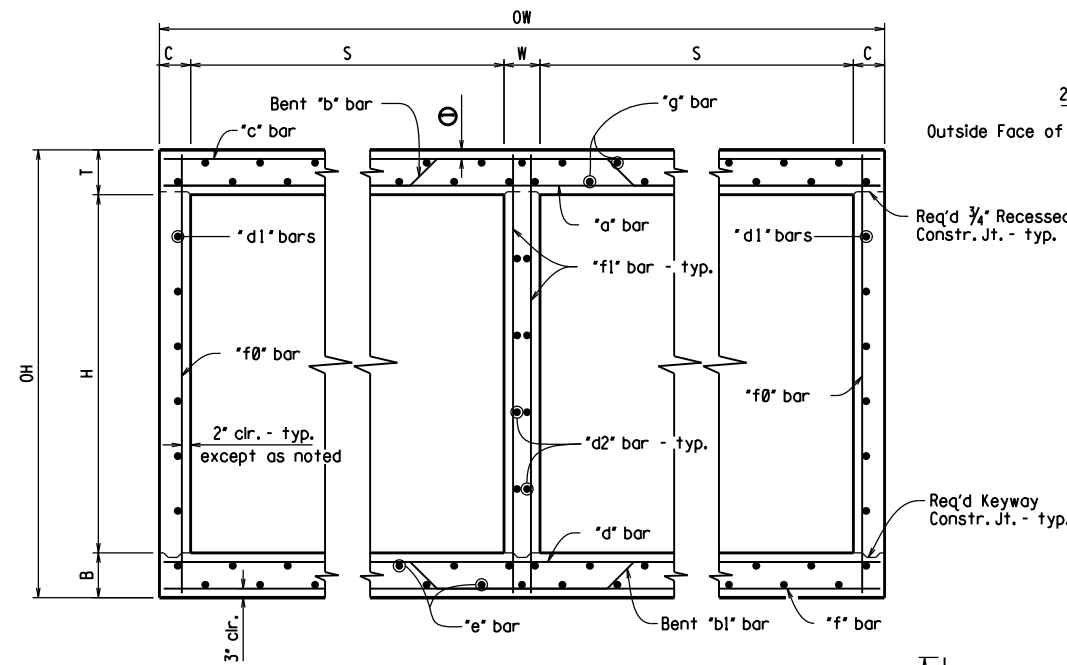
PART LONGITUDINAL SECTION N-N

(Skewed Ends)

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

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

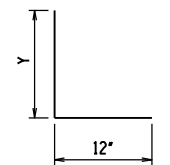
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



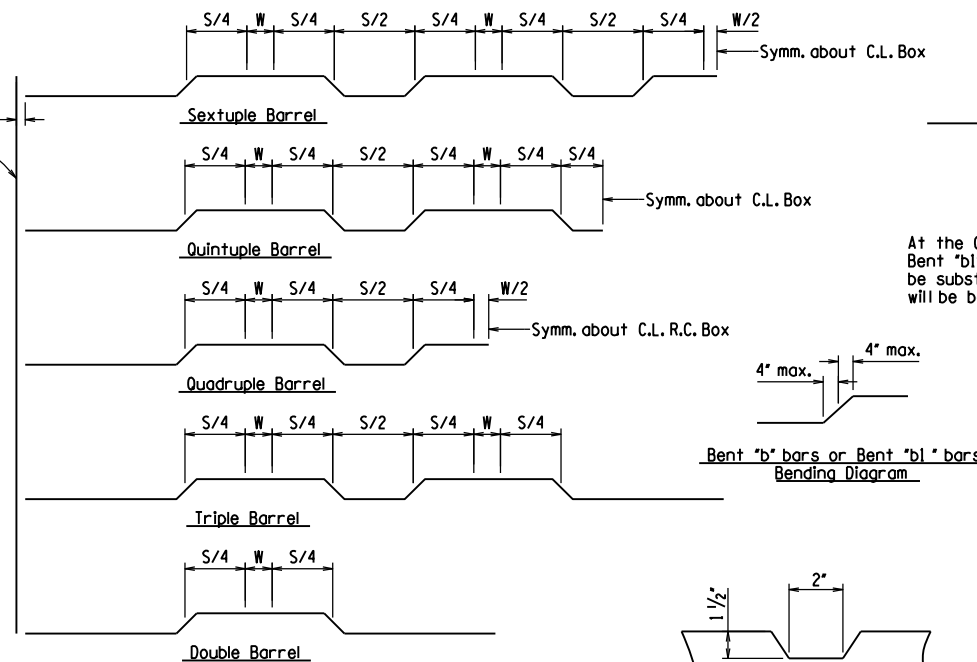
TYPICAL SECTION M-M

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

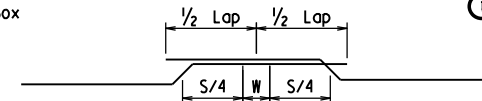


Bent 'b' bars or Bent 'bl' bars sketch

TYPICAL KEYWAY DETAIL
(All Construction Joints)

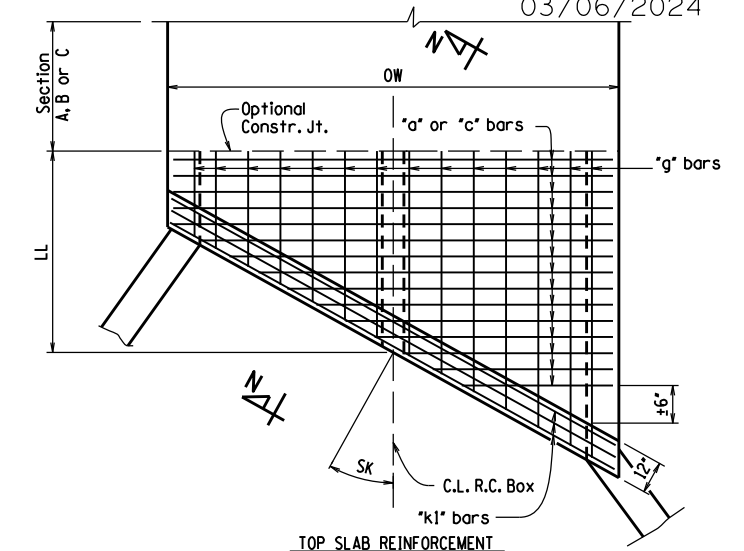
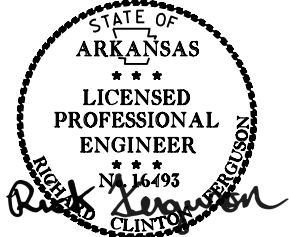
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030598	14	44

SPECIAL DETAILS



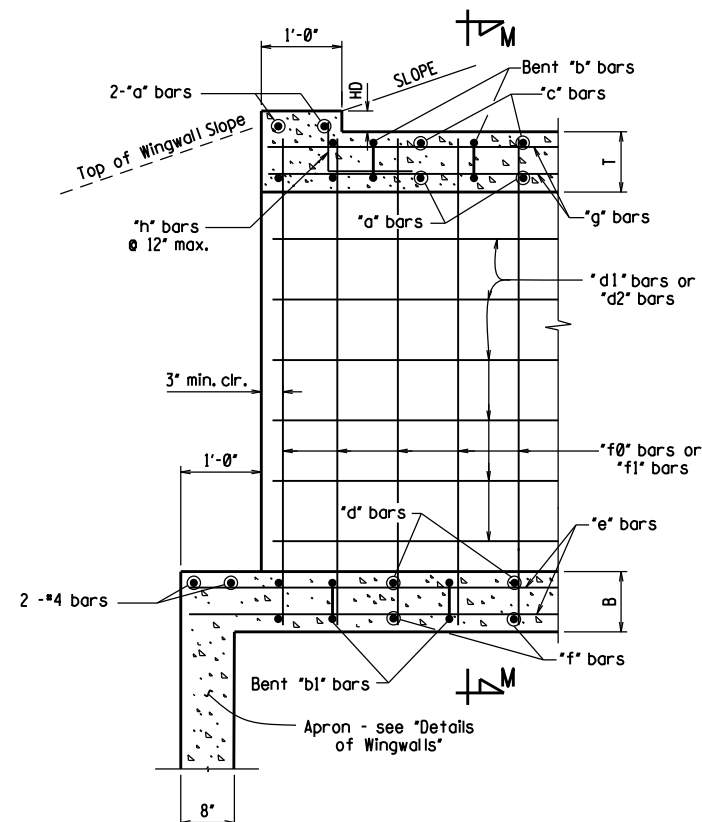
Lap Detail
For Bent 'b' bars and Bent 'bl' bars

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



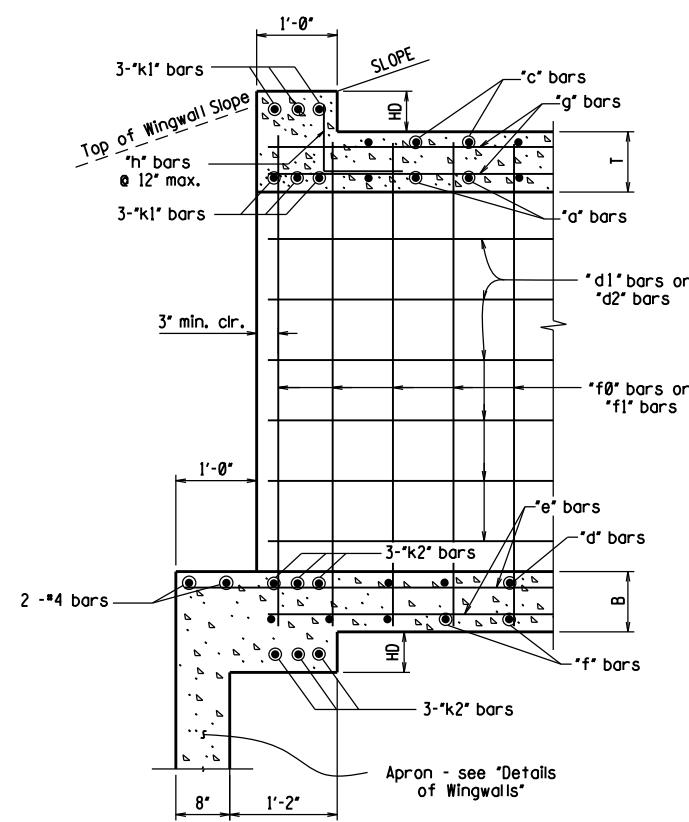
TOP SLAB REINFORCEMENT

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



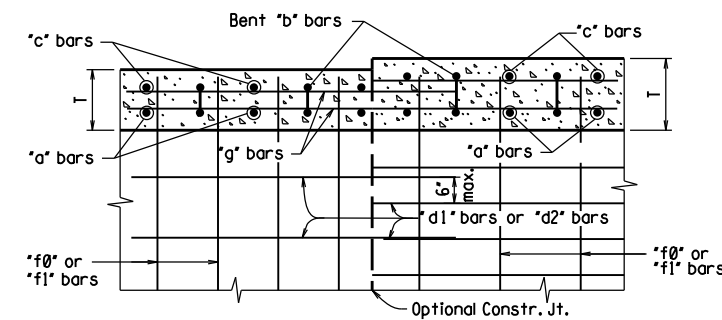
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

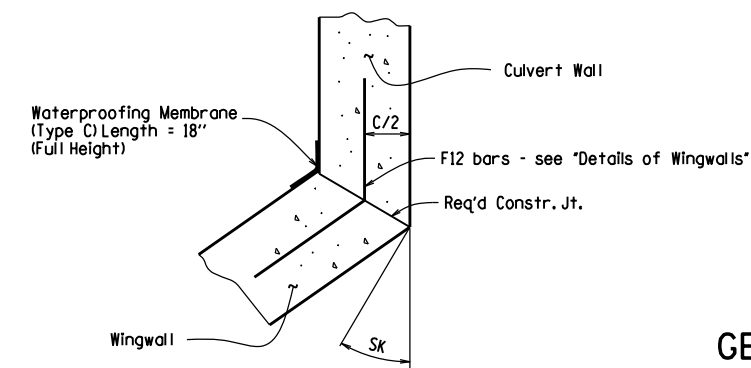
(Skewed Ends)



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.

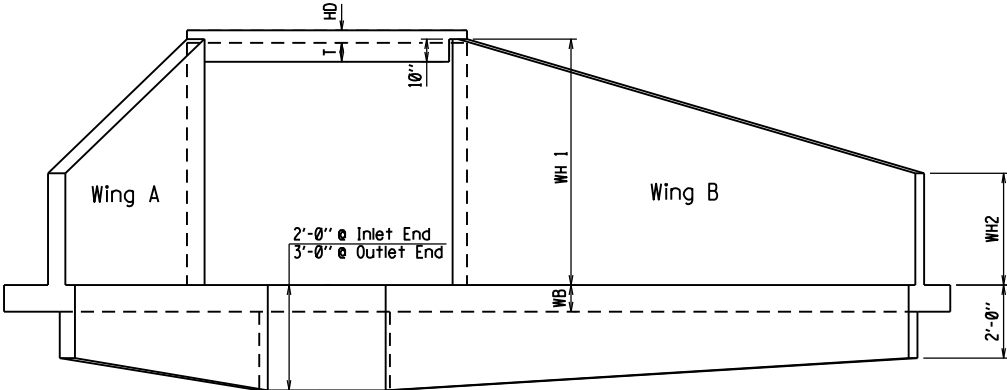
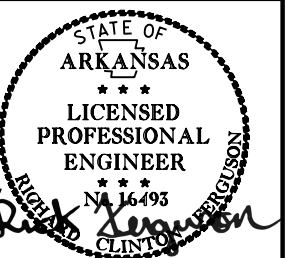
SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

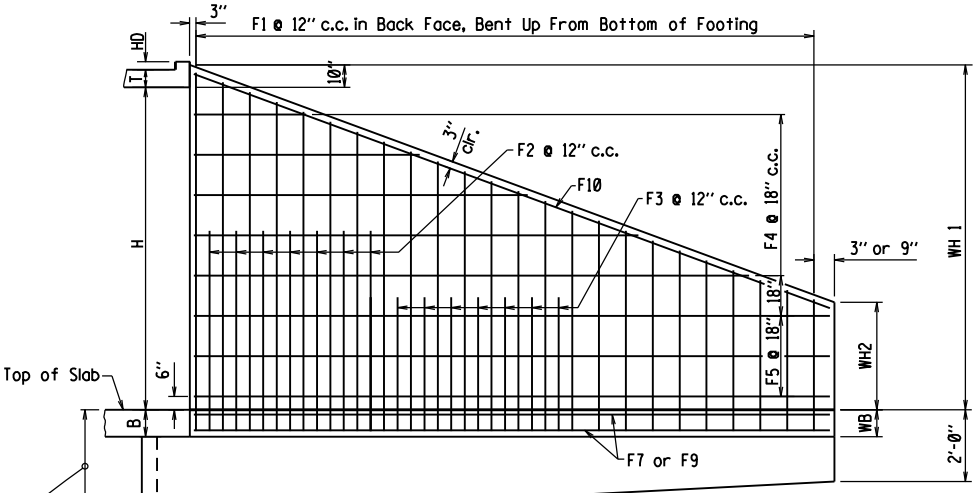


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030598	15	44

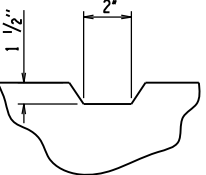
SPECIAL DETAILS



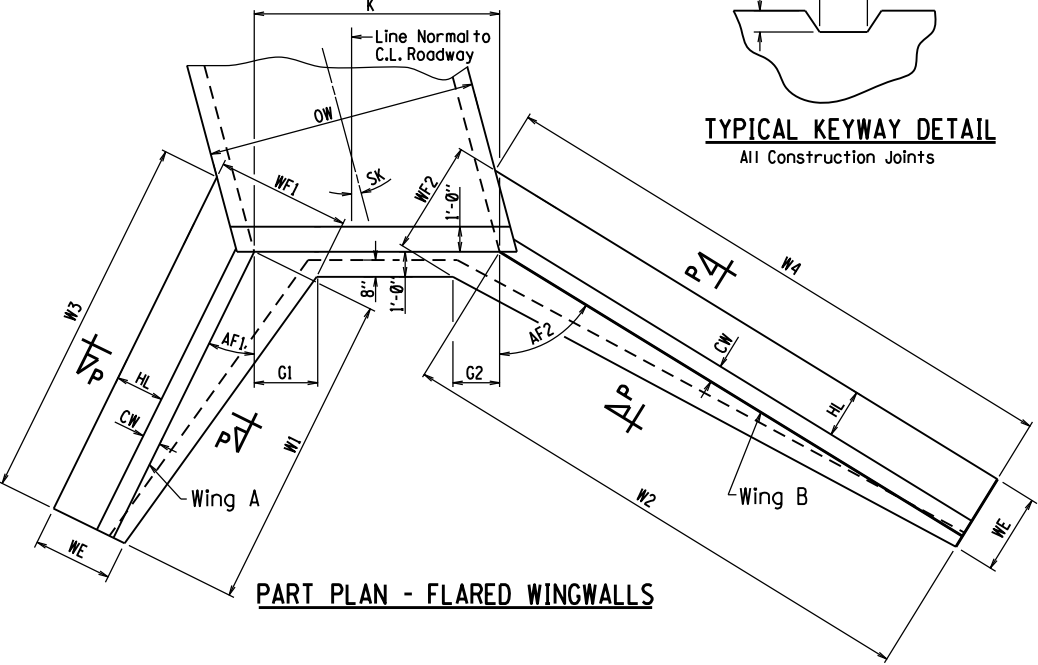
END ELEVATION
Flared Wingwalls Shown



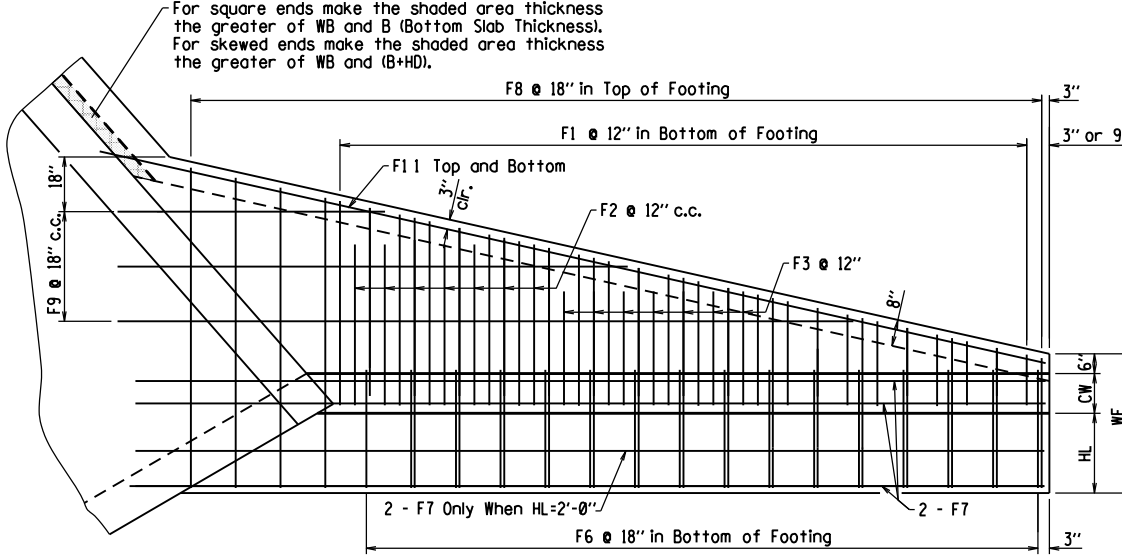
WINGWALL ELEVATION
Showing Back Face Reinforcement



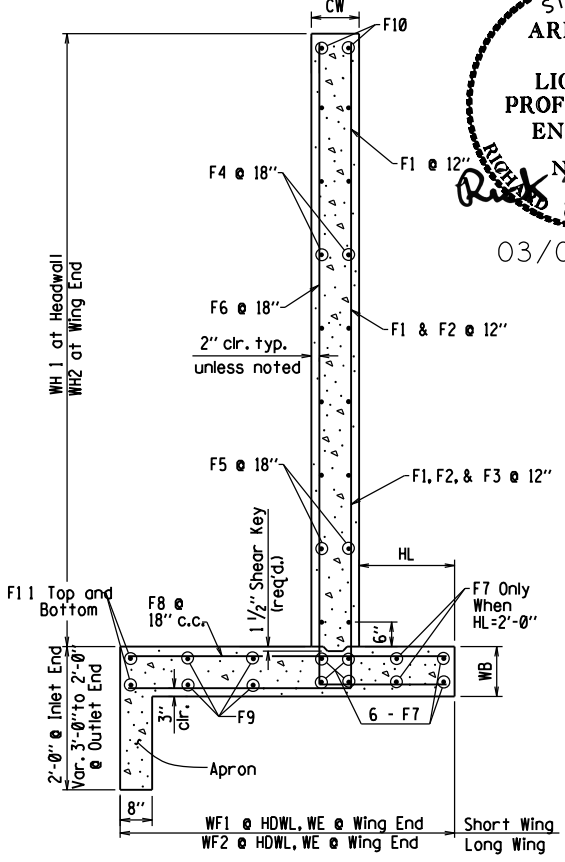
TYPICAL KEYWAY DETAIL
All Construction Joints



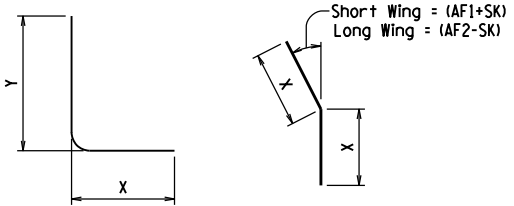
PART PLAN - FLARED WINGWALLS



PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

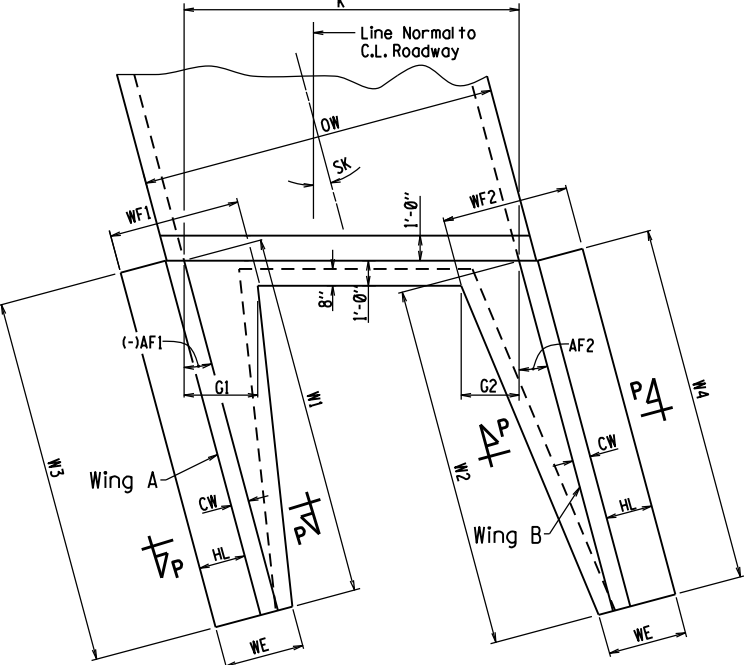


WINGWALL SECTION P-P

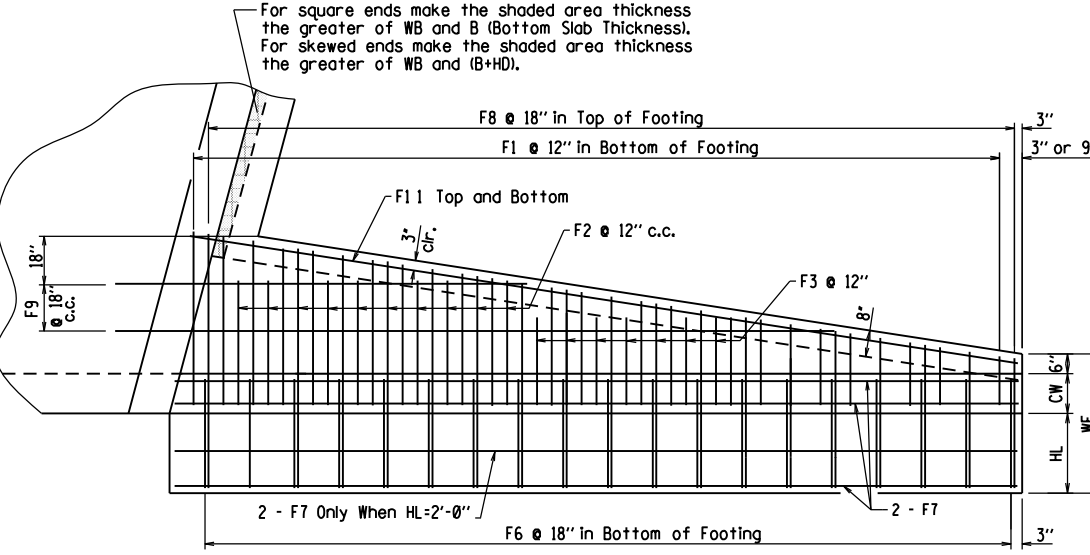


F1, F2, F3, & F6 BARS **F12 BAR**

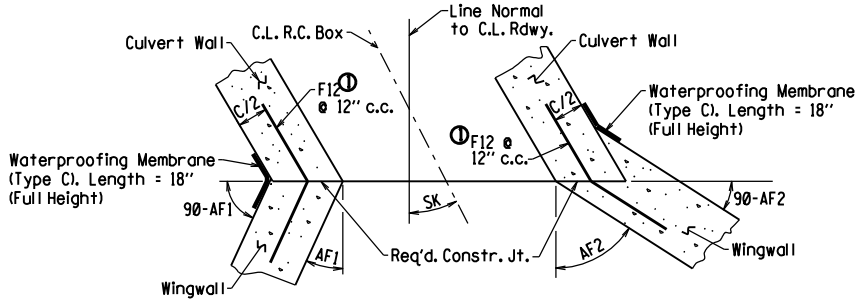
F12 is a straight bar for parallel wingwalls



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



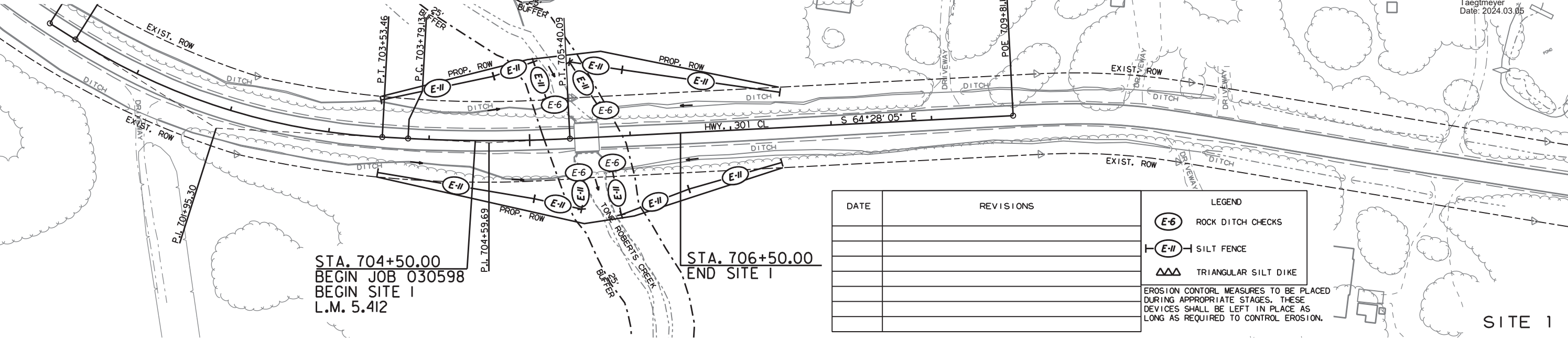
CONSTRUCTION JOINTS
Flared Wingwalls Shown

HWY. 301

TEMPORARY SEEDING & MULCH COVER	LT.	ACRE
STA. 703+50 TO 707+50	LT.	0.47

ROCK DITCH CHECKS	LT.	RT.	INSTALLATION
STA. 705+26 TO 705+77	LT.		2
STA. 705+47 TO 705+81	RT.		2

SILT FENCE	LT.	RT.	LIN. FT.
STA. 703+50 TO 705+18	LT.		195
STA. 703+51 TO 705+47	RT.		234
STA. 705+43 TO 707+51	LT.		261
STA. 705+81 TO 707+49	RT.		212

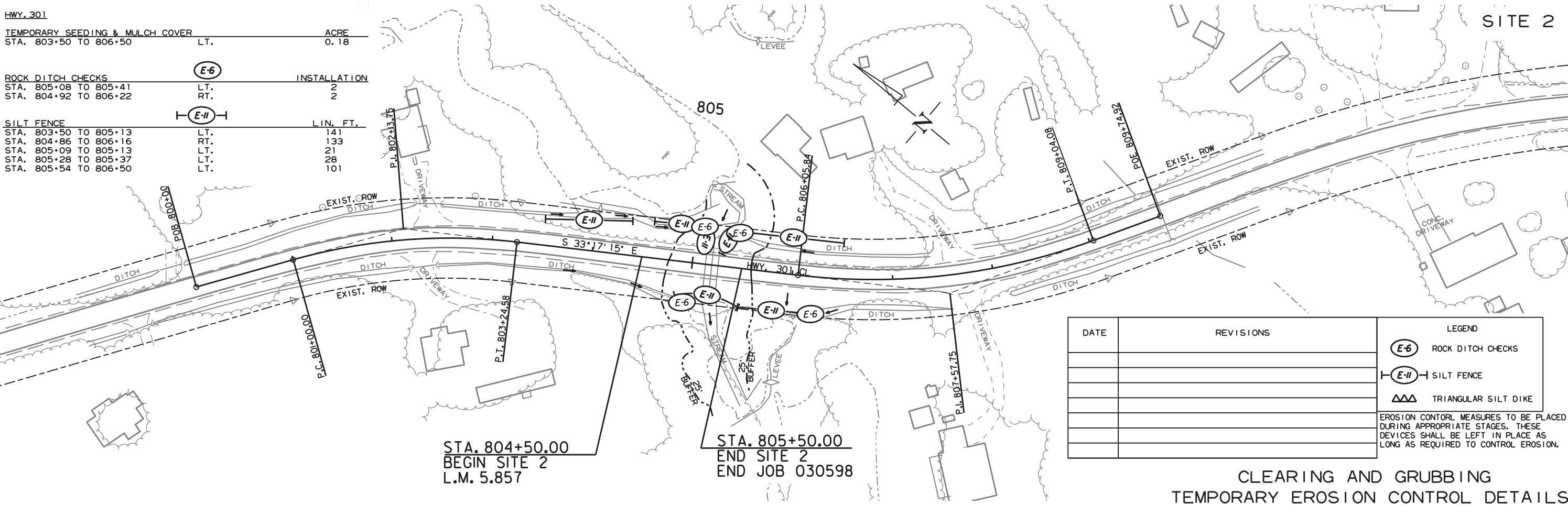


HWY. 301

TEMPORARY SEEDING & MULCH COVER	LT.	ACRE
STA. 803+50 TO 806+50	LT.	0.18

ROCK DITCH CHECKS	LT.	RT.	INSTALLATION
STA. 805+08 TO 805+41	LT.		2
STA. 804+92 TO 806+22	RT.		2

SILT FENCE	LT.	RT.	LIN. FT.
STA. 803+50 TO 805+13	LT.		141
STA. 804+86 TO 806+16	RT.		133
STA. 805+09 TO 805+13	LT.		21
STA. 805+28 TO 805+37	LT.		28
STA. 805+54 TO 806+50	RT.		101



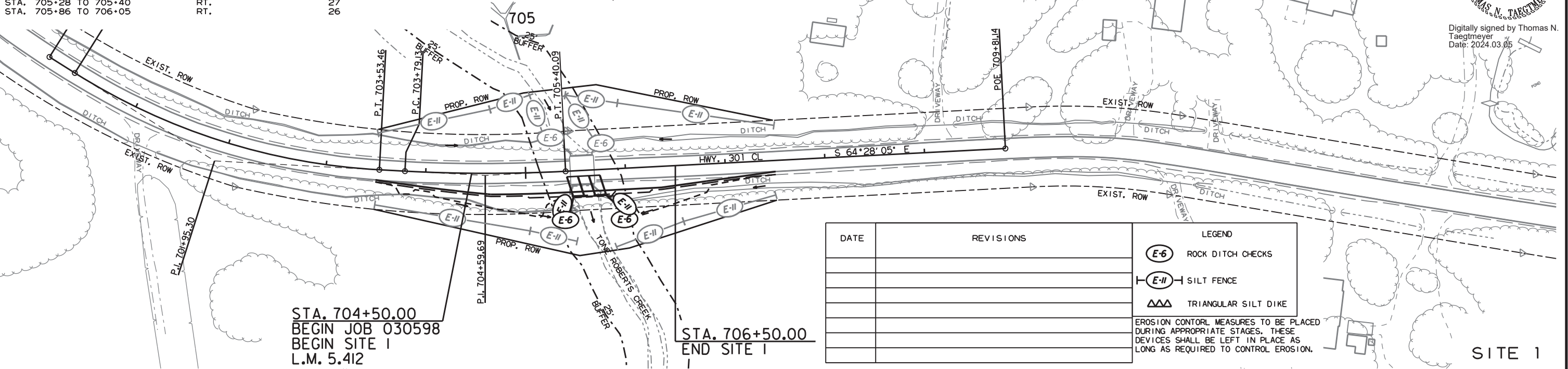
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

HWY. 301		
TEMPORARY SEEDING & MULCH COVER		
STA. 703+50 TO 707+50	RT.	ACRE 0.39
ROCK DITCH CHECKS		
STA. 705+38	RT.	1
STA. 705+96	RT.	1
SILT FENCE		
STA. 705+28 TO 705+40	RT.	27
STA. 705+86 TO 706+05	RT.	26

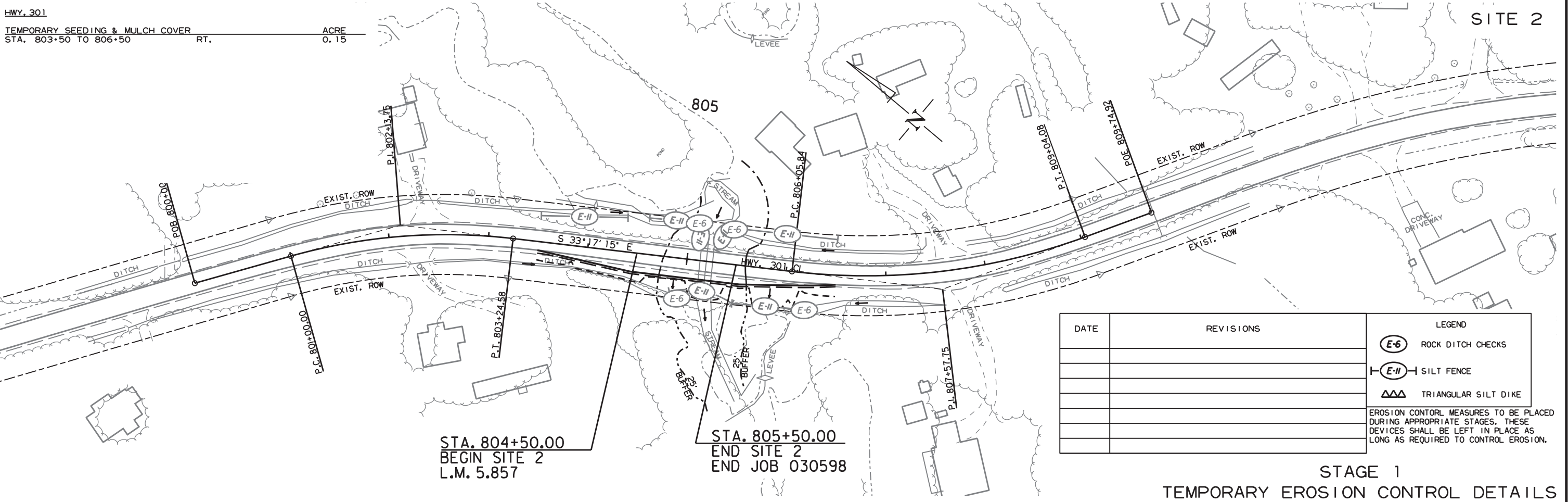
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	17	44
TEMPORARY EROSION CONTROL DETAILS						



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05

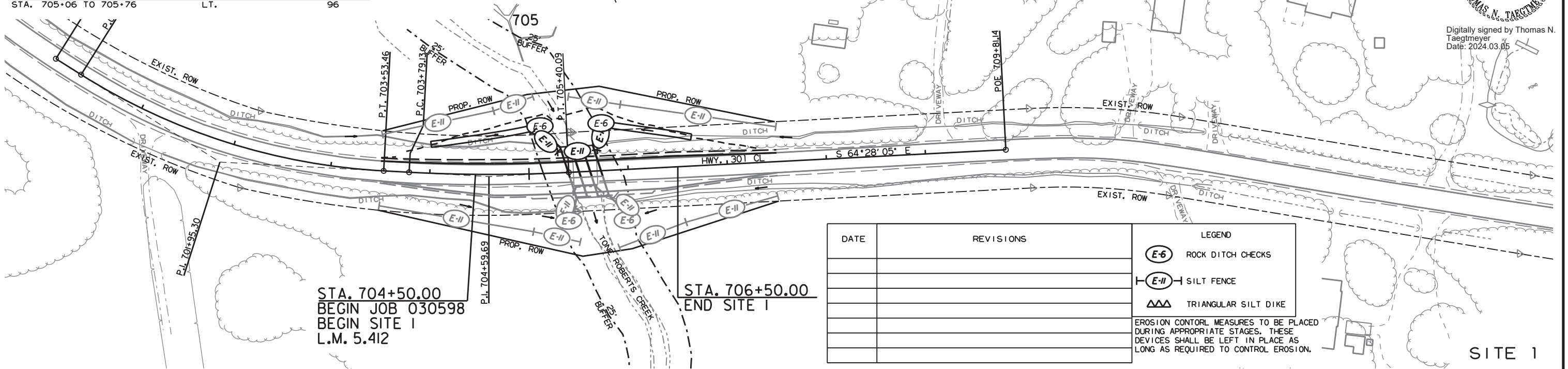


HWY. 301		
TEMPORARY SEEDING & MULCH COVER		
STA. 803+50 TO 806+50	RT.	ACRE 0.15



STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 19605
THOMAS N. TAEGTMEIER

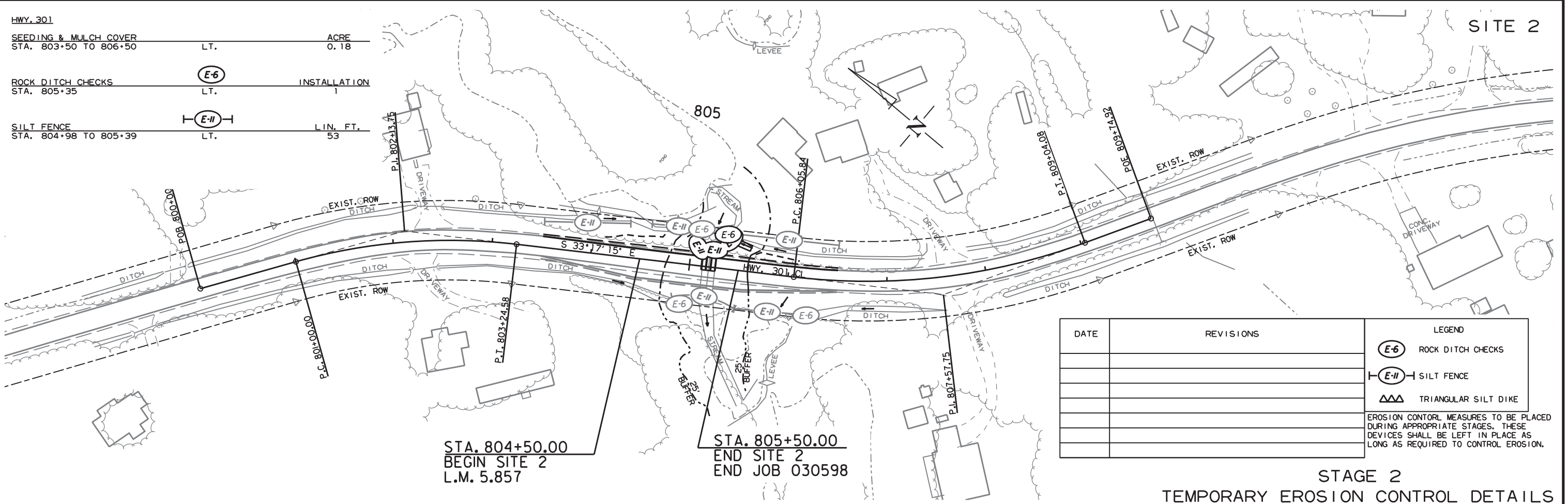
HWY. 301		
SEEDING & MULCH COVER		ACRE
STA. 703+50 TO 707+50	LT.	0.47
		
ROCK DITCH CHECKS		INSTALLATION
STA. 705+12	LT.	1
STA. 705+75	LT.	1
		
SILT FENCE		LIN. FT.
STA. 705+06 TO 705+76	LT.	96



DATE	REVISIONS	LEGEND
		 ROCK DITCH CHECKS
		 SILT FENCE
		 TRIANGULAR SILT DIKE
		EROSION CONTROL MEASURES TO BE DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE LONG AS REQUIRED TO CONTROL EROSION.

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

HWY. 301		
SEEDING & MULCH COVER		ACRE
STA. 803+50 TO 806+50	LT.	0.18
		
ROCK DITCH CHECKS		INSTALLATION
STA. 805+35	LT.	1
		
SILT FENCE		LIN. FT.
STA. 804+98 TO 805+39	LT.	53



DATE	REVISIONS	LEGEND
		 ROCK DITCH CHECKS
		 SILT FENCE
		 TRIANGULAR SILT DIKE
		EROSION CONTROL MEASURES TO BE PLACED IN PLACE DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

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

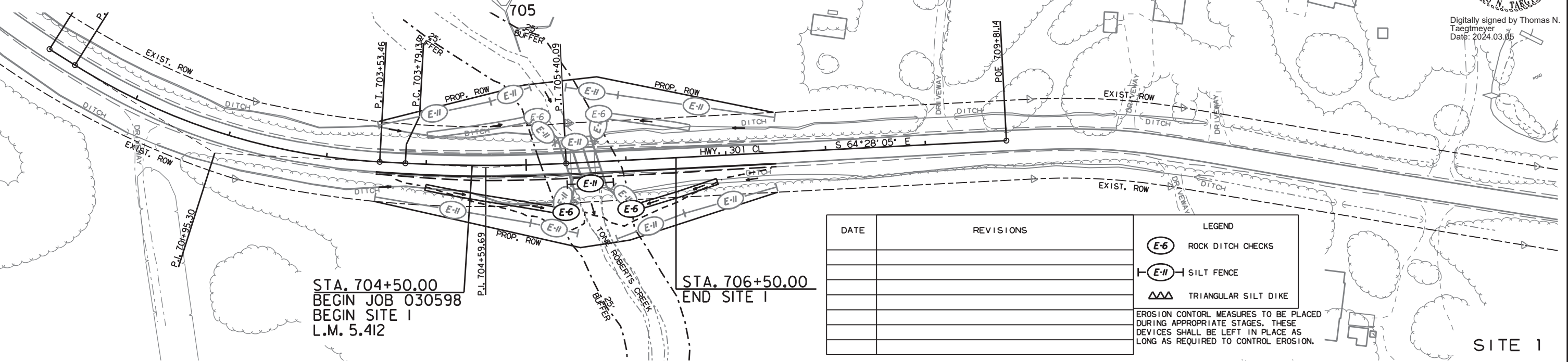
STAGE 2 TEMPORARY EROSION CONTROL DETAILS

HWY. 301

SEEDING & MULCH COVER
STA. 703+50 TO 707+50 RT. ACRE
0.39

ROCK DITCH CHECKS
STA. 705+38 RT. INSTALLATION
STA. 706+03 RT. 1

SILT FENCE
STA. 705+40 TO 705+88 RT. LIN. FT.
46



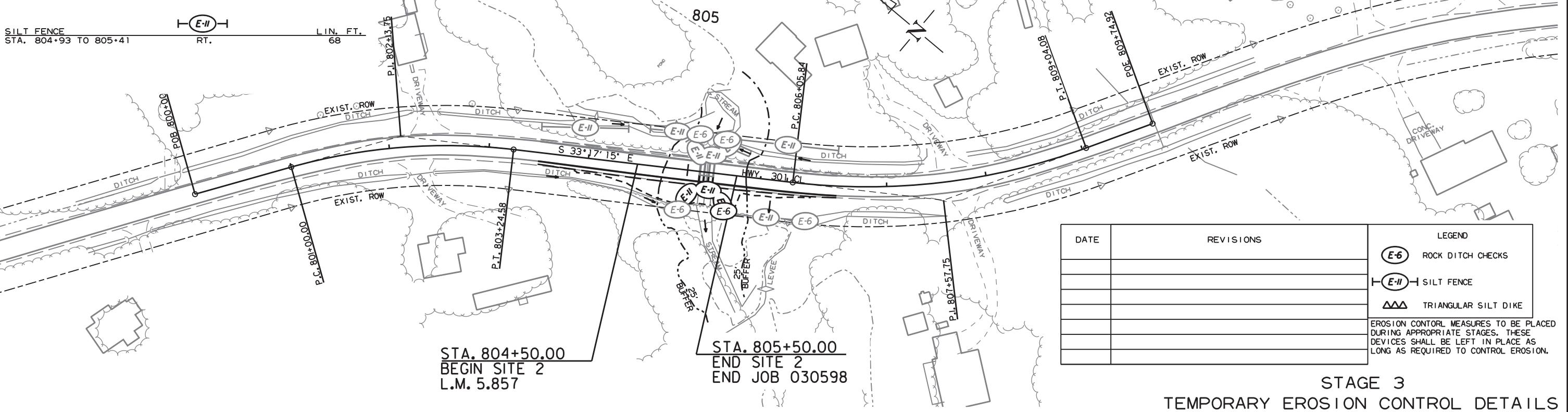
SITE 1

HWY. 301

SEEDING & MULCH COVER
STA. 803+50 TO 806+50 RT. ACRE
0.19

ROCK DITCH CHECKS
STA. 805+40 RT. INSTALLATION

SILT FENCE
STA. 804+93 TO 805+41 RT. LIN. FT.
68



SITE 2

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

STAGE 1 CONSTRUCTION SEQUENCE:

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

REMOVE CONFLICTING PAVEMENT MARKINGS, INSTALL CONSTRUCTION PAVEMENT MARKINGS AND SHIFT TRAFFIC AS SHOWN IN STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

PARTIALLY REMOVE EXISTING BRIDGE STRUCTURE AS SHOWN AND CONSTRUCT PARTIAL ROADWAY AND R.C. BOX CULVERT INCLUDING DETOUR FOR SITE 1. CONSTRUCT DETOUR FOR SITE 2.

STAGE 2 CONSTRUCTION SEQUENCE:

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

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

SHIFT TRAFFIC TO DETOUR AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS FOR SITE 1. SHIFT TRAFFIC ONTO PARTIALLY CONSTRUCTED ROADWAY FOR SITE 2.

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

CONSTRUCT R.C. BOX CULVERTS AND ROADWAY.

STAGE 3 CONSTRUCTION SEQUENCE:

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

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

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

OBLITERATE DETOUR AND CONSTRUCT SHOULDERS AND SLOPE AT DETOUR CONNECTIONS FOR SITE 1. OBLITERATE DETOUR AND CONSTRUCT REMAINING R.C. BOX CULVERT AND ROADWAY FOR SITE 2.

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

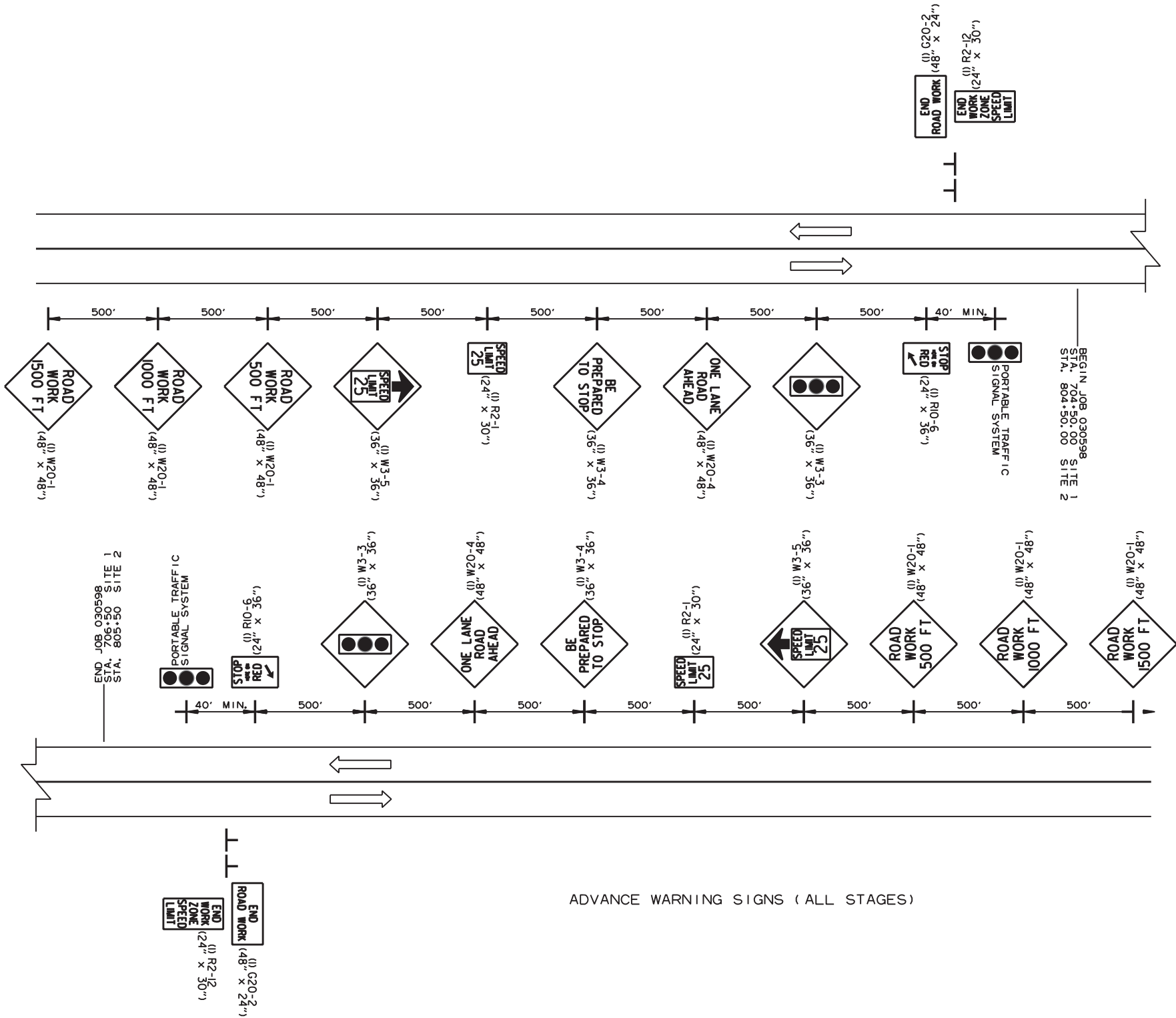


DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	20	44

MAINTENANCE OF TRAFFIC DETAILS

Arkansas
REGISTERED
PROFESSIONAL
ENGINEER
No. 19605
THOMAS N. TAEGTMEYER

Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05

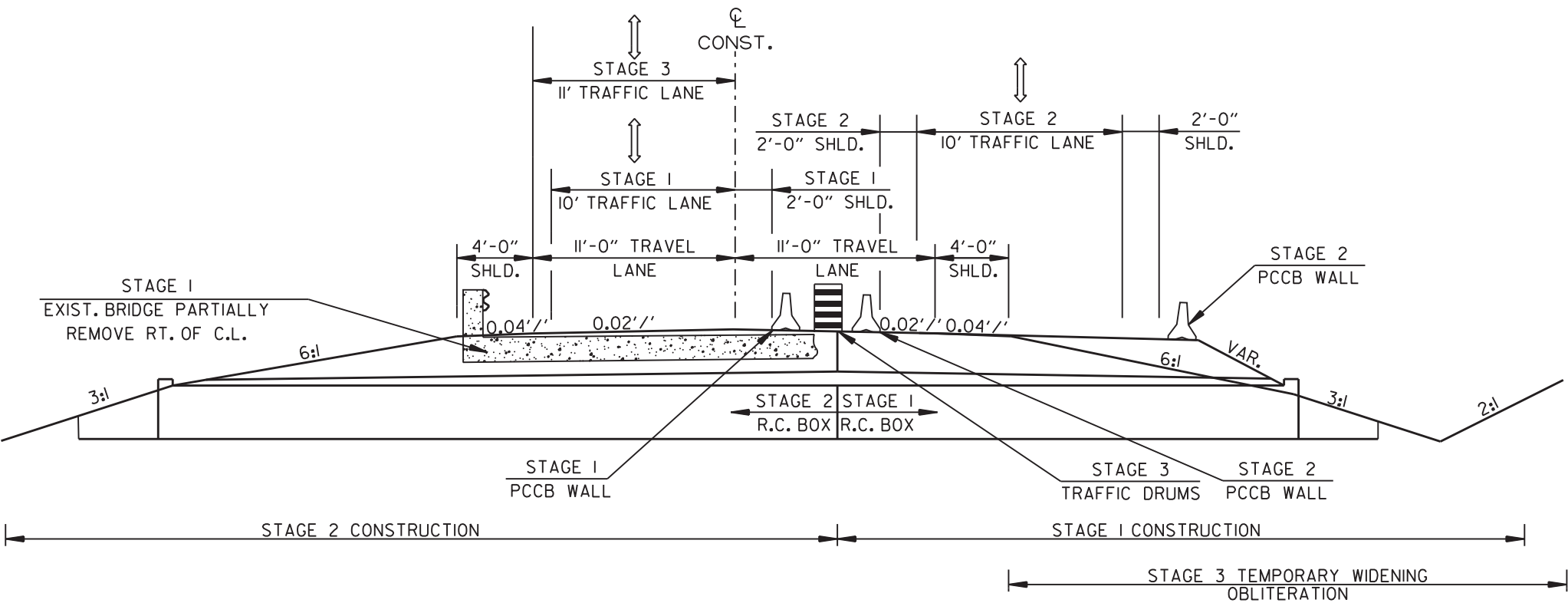


ADVANCE WARNING SIGNS (ALL STAGES)

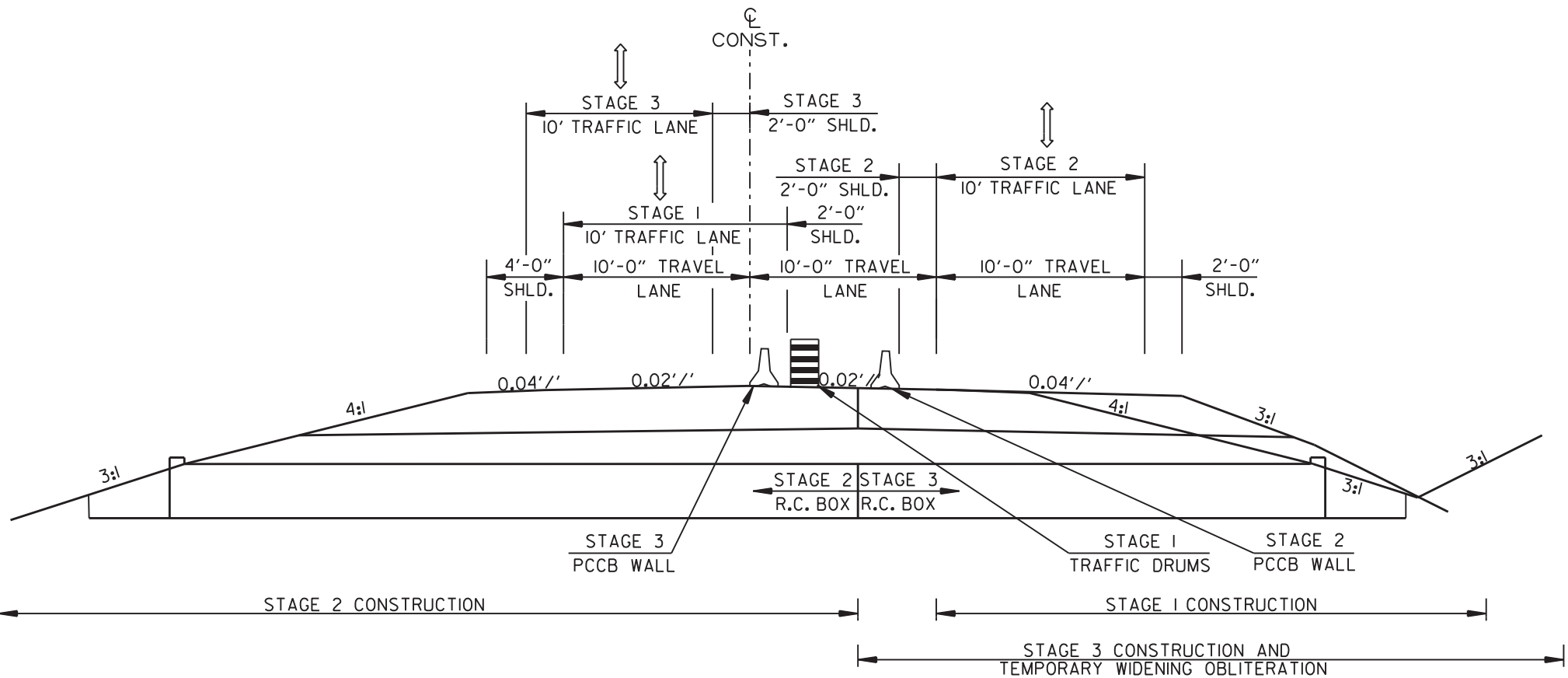
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	21	44
MAINTENANCE OF TRAFFIC DETAILS						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05



SITE 1

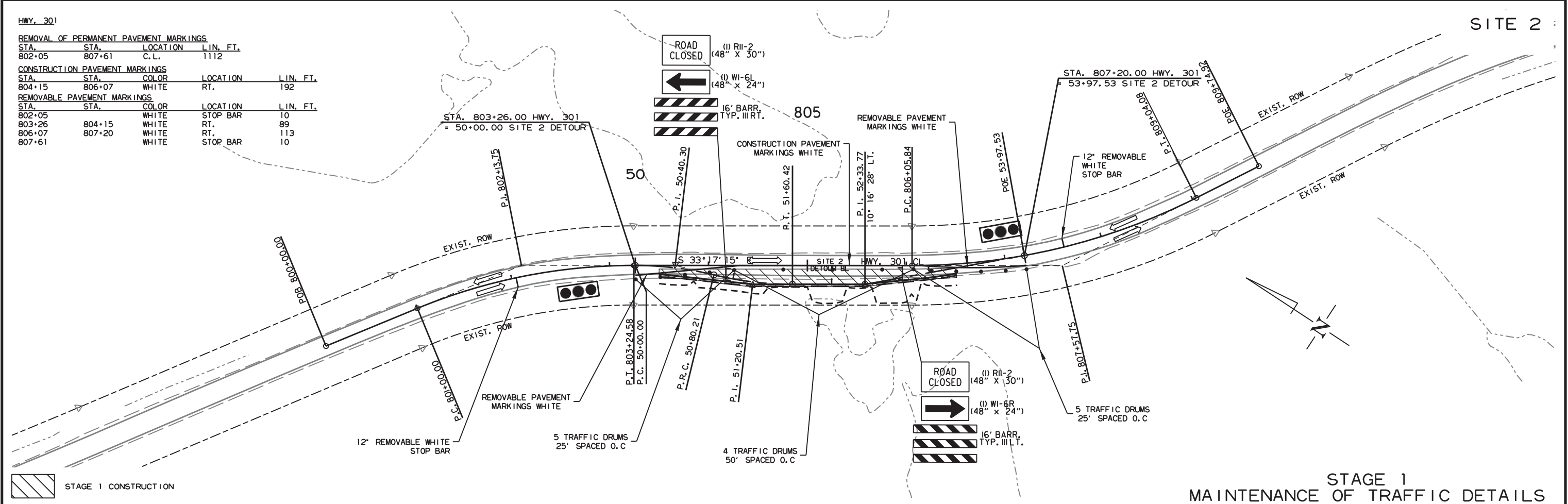
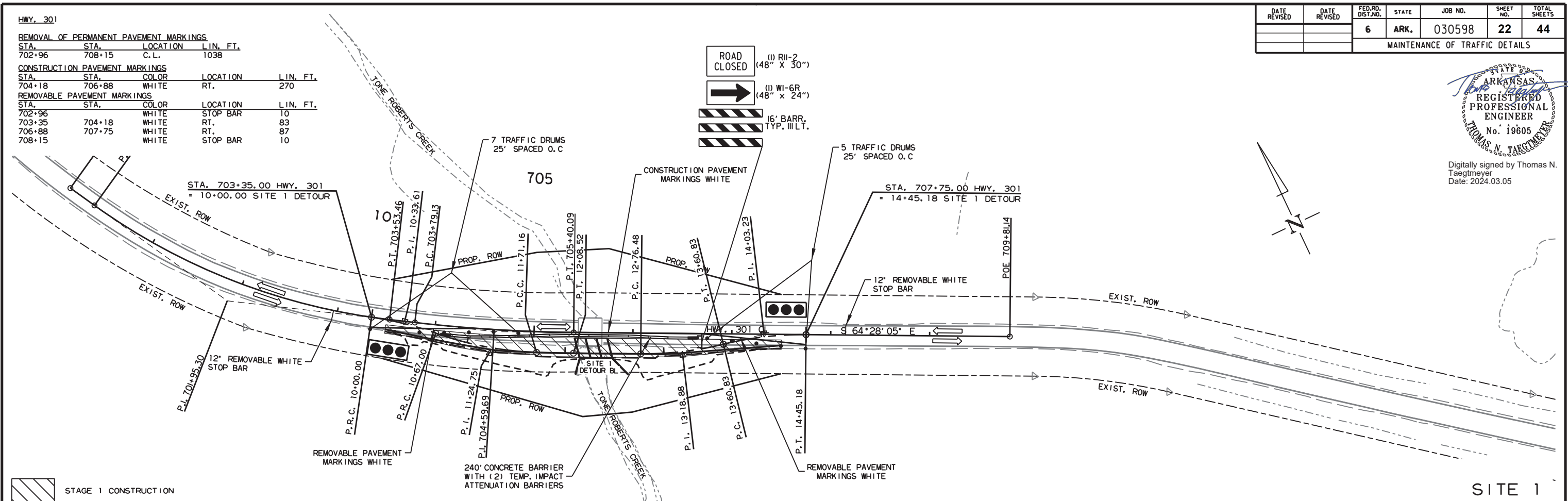


SITE 2

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	22	44
		MAINTENANCE OF TRAFFIC DETAILS				



Digitally signed by Thomas N.
Taegtmeyer
Date: 2024.03.05

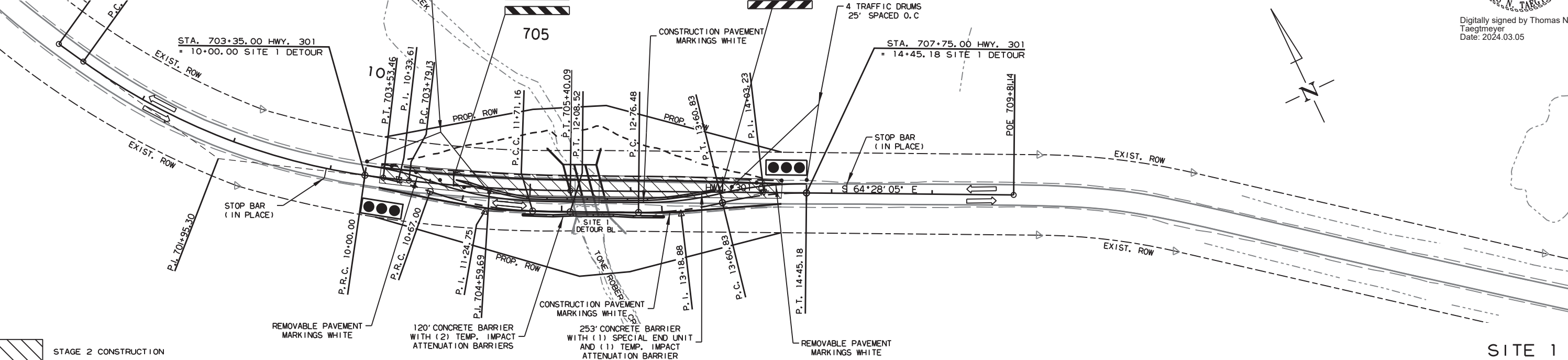


HWY. 301 - SITE 1 DETOUR

REMOVAL OF PERMANENT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
10+15	11+16	RT.	100
13+20	14+20	RT.	100

CONSTRUCTION PAVEMENT MARKINGS			
STA.	STA.	COLOR	LOCATION
10+16	14+19	WHITE	RT.
10+82	13+59	WHITE	LT.

REMOVABLE PAVEMENT MARKINGS			
STA.	STA.	COLOR	LOCATION
10+00	10+82	WHITE	LT.
13+59	14+45	WHITE	LT.

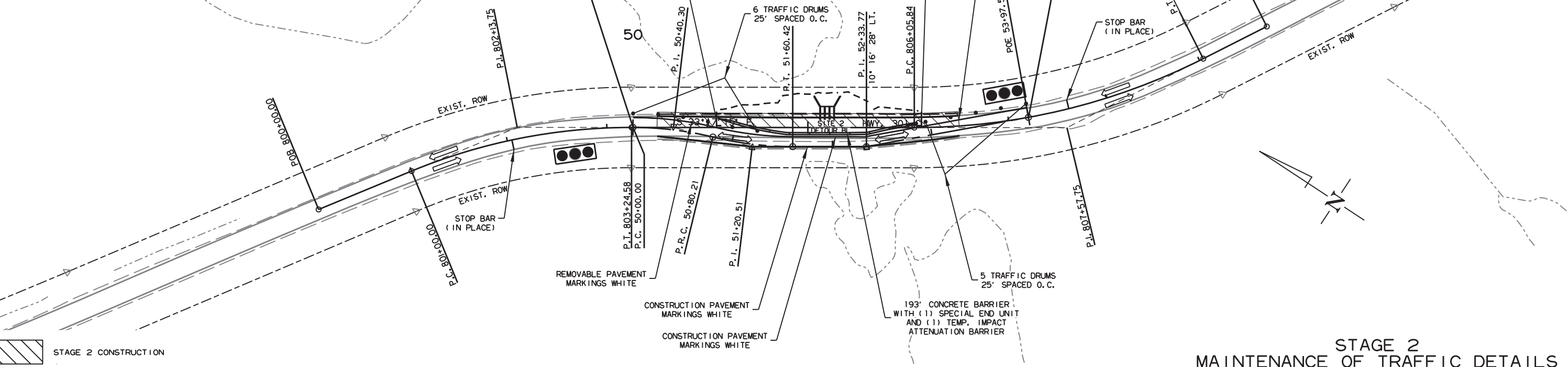


HWY. 301 - SITE 2 DETOUR

REMOVAL OF PERMANENT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
50+24	51+25	RT.	100
52+26	53+26	RT.	100

CONSTRUCTION PAVEMENT MARKINGS			
STA.	STA.	COLOR	LOCATION
50+25	53+26	WHITE	RT.
50+88	52+85	WHITE	LT.

REMOVABLE PAVEMENT MARKINGS			
STA.	STA.	COLOR	LOCATION
50+00	50+88	WHITE	LT.
52+85	53+98	WHITE	LT.



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	23	44
MAINTENANCE OF TRAFFIC DETAILS						

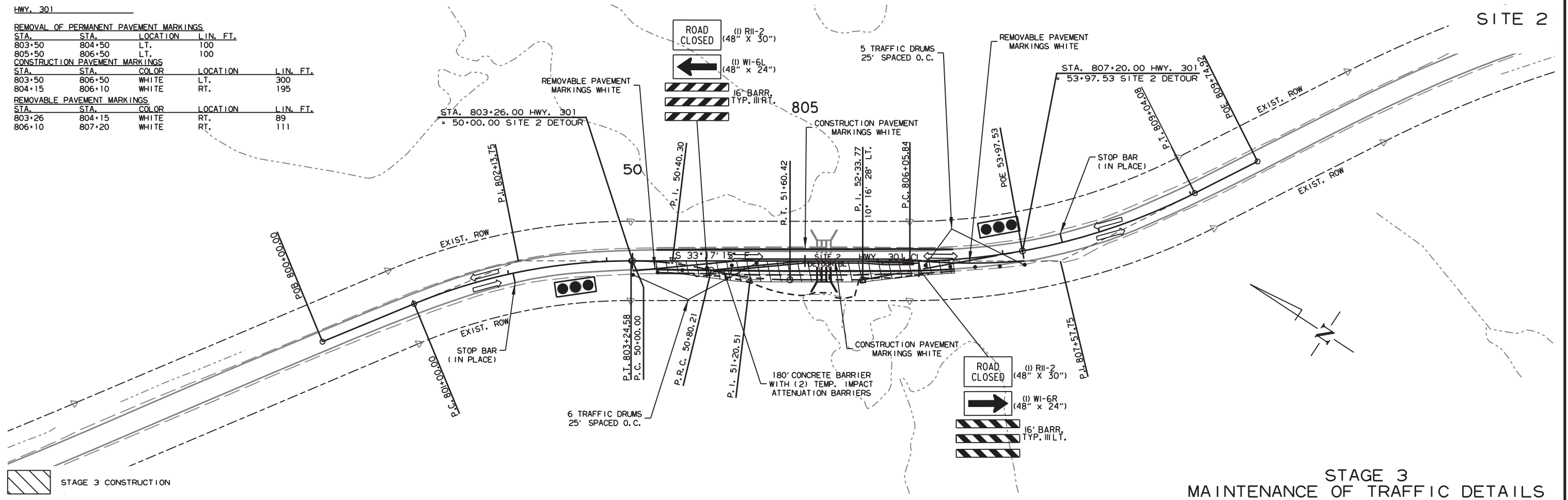
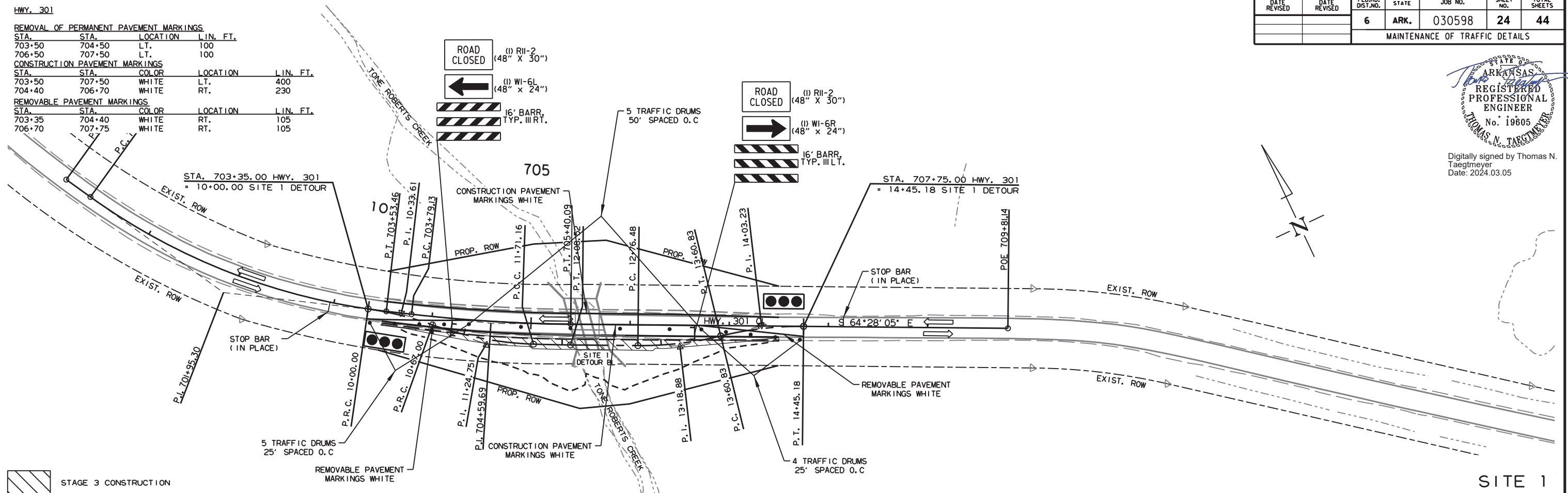


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DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	24	44
		MAINTENANCE OF TRAFFIC DETAILS				

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 19605
THOMAS N. TAEZMEIER

Digitally signed by Thomas N.
Taegtmeyer
Date: 2024.03.05



HWY. 301 - SITE 1

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
702+96	708+15	LT.	519
702+96	708+15	RT.	519

6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
702+96	708+15	C.L.	1038

RAISED PAVEMENT MARKERS (TYPE III)				
STA.	STA.	COLOR/COLOR	LOCATION	EACH
702+96	708+15	YELLOW/YELLOW	C.L.	7

705

STA. 702+96 START
PAVEMENT MARKINGS

6" SOLID DBL.
YELLOW CENTERLINE
& R.P.M. 80' O.C.

6" SOLID WHITE

STA. 708+15 END
PAVEMENT MARKINGS

HWY. 301 CL

STA. 704+50.00
BEGIN JOB 030598
SITE 1
L.M. 5.412

STA. 706+50.00
END JOB 030598
SITE 1

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

SITE 1

HWY. 301 - SITE 2

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
802+05	807+61	LT.	556
802+05	807+61	RT.	556

6" YELLOW REFLECTORIZED PAINT PAVEMENT MARKINGS			
STA.	STA.	LOCATION	LIN. FT.
802+05	807+61	C.L.	1112

RAISED PAVEMENT MARKERS (TYPE III)				
STA.	STA.	COLOR/COLOR	LOCATION	EACH
802+05	807+61	YELLOW/YELLOW	C.L.	8

805

STA. 802+05 START
PAVEMENT MARKINGS

6" SOLID DBL.
YELLOW CENTERLINE
& R.P.M. 80' O.C.

6" SOLID WHITE

STA. 807+61 END
PAVEMENT MARKINGS

HWY. 301 CL

STA. 804+50.00
BEGIN JOB 030598
SITE 2
L.M. 5.857

STA. 805+50.00
END JOB 030598
SITE 2

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

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	25	44
PERMANENT PAVEMENT MARKING DETAILS						



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Taegtmeyer
Date: 2024.03.05

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	26	44
QUANTITIES						



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Date: 2024.03.05

ADVANCE WARNING SIGNS AND DEVICES																		
SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN. BARR. (REPAIR)	TEMP. IMPACT ATTEN. BARR. (RELOCATION)	PORTABLE TRAFFIC SIGNAL SYSTEM
											RIGHT	LEFT						
			LIN. FT. - EACH				NO.	SQ. FT.			EACH	LIN. FT.						
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	4	64.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	4	64.0										
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	4	64.0										
G20-2	END ROAD WORK	48"x24"	4	4	4	4	4	32.0										
OM-3	OBJECT MARKER	12"x36"	6	18	6	18	18	54.0										
W1-6L	ARROW	48"x24"	1	2	2	2	2	16.0										
W1-6R	ARROW	48"x24"	2	2	2	2	2	16.0										
W3-3	SIGNAL AHEAD	36"X36"	4	4	4	4	4	36.0										
W3-4	BE PREPARED TO STOP	36"X36"	4	4	4	4	4	36.0										
W3-5	REDUCED SPEED LIMIT AHEAD	36"X36"	4	4	4	4	4	36.0										
R2-1	SPEED LIMIT	24"x30"	4	4	4	4	4	20.0										
R2-12	END WORK ZONE SPEED LIMIT	24"x30"	2	2	2	2	2	10.0										
R4-1	DO NOT PASS	24"x30"	4	4	4	4	4	20.0										
R10-6	STOP HERE ON RED	24"x30"	4	4	4	4	4	20.0										
R11-2	ROAD CLOSED	48"x30"	3	4	4	4	4	40.0										
W20-4	ONE LANE ROAD AHEAD	48"x48"	4	4	4	4	4	64.0										
W21-5a	RIGHT SHOULDER CLOSED	36"X36"	4	4	4	4	4	36.0										
W8-1	BUMP	30"x30"	4	4	4	4	4	25.0										
	VERTICAL PANELS		16	16	16	16			16									
	TRAFFIC DRUMS		26	21	25	26				26								
	TYPE III BARRICADE-RT. (16')		1	2	2	2					32							
	TYPE III BARRICADE-LT. (16')		2	2	2	2						32						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		240	326		566							566					
	RELOCATING PRECAST CONCRETE BARRIER			240	180	420								420				
	TEMPORARY IMPACT ATTENUATION BARRIER		2	2	1	5									5			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	2	1	5										5		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			2	1	3											3	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED		2	2	2	2												24
TOTALS:								653.0	16	26	32	32	566	420	5	5	3	24

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

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING		
								TYPE II	6"		
								(YELLOW/YELLOW)	WHITE	YELLOW	
	LIN. FT. - EACH					LIN. FT.		LIN. FT.	EACH	LIN. FT.	
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2150	400	400		2950						
CONSTRUCTION PAVEMENT MARKINGS	462	1178	1125			2765					
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	412	369	410				1191				
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)				15				15			
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")				2150					2150		
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")				2150						2150	
TOTALS:					2950	2765	1191	15	2150	2150	

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

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

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	27	44
QUANTITIES						



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Date: 2024.05.17

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
705+45	705+69	BRIDGE NO. M3277 - SITE NO. 1	1.00

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
805+19	HWY. 301 - SITE 2	3
TOTAL:		3

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
703+69	705+43	HWY. 301 - SITE 1 RT.	207
705+73	705+94	HWY. 301 - SITE 1 RT.	25
TOTAL:			232

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE	PROJECT	TO BE USED IF AND WHERE	200	2
		DIRECTED BY THE ENGINEER		
TOTALS:			200	2

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

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
703+50	707+50	SITE 1 - STAGE 1	372	433
703+50	707+50	SITE 1 - STAGE 2	299	538
703+50	707+50	SITE 1 - STAGE 3	111	
803+50	806+50	SITE 2 - STAGE 1	79	19
803+50	806+50	SITE 2 - STAGE 2	111	14
803+50	806+50	SITE 2 - STAGE 3	117	2
SITE 1		CHANNEL CHANGE	958	
SITE 2		CHANNEL CHANGE	342	
TOTALS:			2389	1006

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

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:			50

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	5	10
TOTALS:		5 10

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

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
703+50	707+50	HWY. 301 SITE 1 - LT. & RT.	5	5
803+50	806+50	HWY. 301 SITE 2 - LT. & RT.	4	4
TOTALS:			9	9

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE D) LIN. FT.	* 16'-0" GATES EACH
703+69	705+43	HWY. 301 - SITE 1 RT.	197	1
705+95	707+50	HWY. 301 - SITE 1 RT.	172	
TOTALS:			369	1

* DENOTES ALTERNATE BID ITEM.

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
705+56	HWY. 301 - SITE 1 HEADWALL ON RT.	1
805+19	HWY. 301 - SITE 2 HEADWALL ON RT.	1
TOTAL:		2

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
703+50	704+50	DEPTH TRANSITION - SITE 1	20.00	222.22
706+50	707+50	DEPTH TRANSITION - SITE 1	20.00	222.22
803+50	804+50	DEPTH TRANSITION - SITE 2	20.00	222.22
805+50	806+50	DEPTH TRANSITION - SITE 2	20.00	222.22
TOTAL:				888.88

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

ACHM PATCHING OF EXISTING ROADWAY

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

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

DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	28	44
QUANTITIES						



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05

STRUCTURES

STATION	DESCRIPTION	CLASS S CONCRETE- ROADWAY	REINF. STEEL- ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.- ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
805+19	TRI. 4' x 4' x 42' R.C. BOX CULVERT	60	7511	36	34	0.43	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:		60.00	7511	36	34	0.43	
STRUCTURES OVER 20' - 0" SPAN							
705+56	TRI. 10' x 7' x 54' R.C. BOX CULVERT	189.43	26167	97	18	0.23	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:		189.43	26167	97	18	0.23	
TOTALS:		249.43	33678	133	52	0.66	

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
704+00.00	705+15.00	HWY. 301 -SITE 1 LT.	115.00	6.33	80.88	51.11	0.64
705+70.00	706+65.00	HWY. 301 -SITE 1 LT.	95.00	6.33	66.82	42.22	0.53
704+00.00	705+40.00	HWY. 301 -SITE 1 RT.	140.00	6.33	98.47	62.22	0.78
705+95.00	706+90.00	HWY. 301 -SITE 1 RT.	95.00	6.33	66.82	42.22	0.53
805+45.00	805+60.00	HWY. 301 - SITE 2 LT.	15.00	6.33	10.55	6.67	0.08
TOTALS:					323.54	204.44	2.56

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

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL					
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	ROCK DITCH CHECKS	SILT FENCE	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-6) CU.YD.	(E-11) LIN. FT.	CU. YD.
SITE 1	SITE 1	CLEARING AND GRUBBING						0.47	0.47	9.6	12	902	33
SITE 2	SITE 2	CLEARING AND GRUBBING						0.18	0.18	3.7	12	424	16
SITE 1	SITE 1	STAGE 1						0.39	0.39	8.0	6	53	2
SITE 2	SITE 2	STAGE 1						0.15	0.15	3.1			
SITE 1	SITE 1	STAGE 2	0.47	0.94	0.47	47.9	0.47				6	96	4
SITE 2	SITE 2	STAGE 2	0.18	0.36	0.18	18.4	0.18				3	53	2
SITE 1	SITE 1	STAGE 3	0.39	0.78	0.39	39.8	0.39				6	46	2
SITE 2	SITE 2	STAGE 3	0.19	0.38	0.19	19.4	0.19				3	68	5
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.33	0.66	0.33	33.7	0.33	0.30	0.30	6.1	12	450	17
TOTALS:			1.56	3.12	1.56	159.2	1.56	1.49	1.49	30.5	60	2092	81

BASIS OF ESTIMATE:
LIME 2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
ROCK DITCH CHECKS.....3 CU.YD./LOCATION
NOTE: THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.
*QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	29	44
QUANTITIES						



Digitally signed by Thomas N. Taegtmeier
Date: 2024.03.05

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")									
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
						TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON														
MAIN LANES																									
703+50.00	704+50.00	TRANSITION - SITE 1	100.00	VAR.	93.63	VAR.	181.50	9.08	20.00	222.22	37.78	46.86	6.96	77.33	33000	12.76	6.75	75.00	220.00	8.25	28.00	311.11	220.00	34.22	42.47
704+50.00	705+10.00	NOTCH AND WIDEN - SITE 1	60.00	101.50	60.90	36.72	244.80	12.24				12.24	8.46	56.40	33000	9.31	8.26	55.07	220.00	6.06	30.00	200.00	220.00	22.00	28.06
705+10.00	706+00.00	FULL DEPTH - SITE 1	90.00	179.50	161.55	52.71	527.10	26.36				26.36	26.42	264.20	33000	43.59	26.25	262.50	220.00	28.88	30.00	300.00	220.00	33.00	61.88
706+00.00	706+50.00	NOTCH AND WIDEN - SITE 1	50.00	101.50	50.75	36.72	204.00	10.20				10.20	8.46	47.00	33000	7.76	8.26	45.89	220.00	5.05	30.00	166.67	220.00	18.33	23.38
706+50.00	707+50.00	TRANSITION - SITE 1	100.00	VAR.	93.63	VAR.	181.50	9.08	20.00	222.22	37.78	46.86	6.96	77.33	33000	12.76	6.75	75.00	220.00	8.25	28.00	311.11	220.00	34.22	42.47
803+50.00	804+50.00	TRANSITION - SITE 2	100.00	VAR.	70.88	VAR.	81.71	4.09	20.00	222.22	37.78	41.87	3.73	41.44	33000	6.84	3.63	40.33	220.00	4.44	27.00	300.00	220.00	33.00	37.44
804+50.00	804+95.00	NOTCH AND WIDEN - SITE 2	45.00	74.50	33.53	28.35	141.75	7.09				7.09	4.23	21.15	33000	3.49	4.13	20.65	220.00	2.27	28.00	140.00	220.00	15.40	17.67
804+95.00	805+50.00	FULL DEPTH - SITE 2	55.00	151.50	83.33	48.71	297.67	14.88				14.88	24.46	149.48	33000	24.66	24.25	148.19	220.00	16.30	28.00	171.11	220.00	18.82	35.12
805+50.00	806+50.00	TRANSITION - SITE 2	100.00	VAR.	70.88	VAR.	81.71	4.09	20.00	222.22	37.78	41.87	3.73	41.44	33000	6.84	3.63	40.33	220.00	4.44	27.00	300.00	220.00	33.00	37.44
703+50.00	704+65.00	DETOUR TRANSITION - SITE 1	115.00	VAR.	23.86	5.15	65.81	3.29				3.29	5.15	65.81	33000	10.86					5.00	63.89	220.00	7.03	7.03
704+65.00	706+35.00	DETOUR - SITE 1	170.00	30.00	51.00	10.15	191.72	9.59				9.59	10.15	191.72	33100	31.73					10.00	188.89	221.00	20.87	20.87
706+35.00	707+50.00	DETOUR TRANSITION - SITE 1	115.00	VAR.	23.86	5.15	65.81	3.29				3.29	5.15	65.81	33200	10.92					5.00	63.89	222.00	7.09	7.09
803+50.00	804+45.00	DETOUR TRANSITION - SITE 2	95.00	VAR.	34.20	5.65	59.64	2.98				2.98	5.65	59.64	33000	9.84					5.50	58.06	220.00	6.39	6.39
804+45.00	805+55.00	DETOUR - SITE 2	110.00	53.50	58.85	11.15	136.28	6.81				6.81	11.15	136.28	33000	22.49					11.00	134.44	221.00	14.86	14.86
805+55.00	806+50.00	DETOUR TRANSITION - SITE 2	95.00	VAR.	34.20	5.65	59.64	2.98				2.98	5.65	59.64	33000	9.84					5.50	58.06	222.00	6.44	6.44
ADDITIONAL FOR LEVELING																									
704+50.00	705+10.00	LEVELING - SITE 1	60.00						20.00	133.33	22.67	22.67					20.00	133.33	VAR.	6.34					6.34
706+00.00	706+50.00	LEVELING - SITE 1	50.00						20.00	111.11	18.89	18.89					20.00	111.11	VAR.	5.29					5.29
804+50.00	804+95.00	LEVELING - SITE 2	45.00						20.00	100.00	17.00	17.00					20.00	100.00	VAR.	7.02					7.02
TOTALS:					945.05		2520.64	126.05		1233.32	209.68	335.73		1354.67		223.69		1107.40		102.59		2767.23		304.67	407.26

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.3% MIN. AGGR.....5.7% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.7% MIN. AGGR.....4.3% ASPHALT BINDER
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

SUMMARY OF QUANTITIES			
ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	9	STATION
201	GRUBBING	9	STATION
202	REMOVAL AND DISPOSAL OF FENCE	232	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	3	EACH
SP, SS, & 210	UNCLASSIFIED EXCAVATION	2389	CU. YD.
SP & 210	COMPACTED EMBANKMENT	1006	CU. YD.
SP & 210	SOIL STABILIZATION	50	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	945	TON
SS & 401	TACK COAT	346	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	214	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	10	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	384	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	23	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	889	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	5	TON
SP, SS, & 415	ACHM PATCHNG OF EXISTING ROADWAY	25	TON
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	653	SQ. FT.
SS & 604	BARRICADES	64	LIN. FT.
SS & 604	TRAFFIC DRUMS	26	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	566	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	420	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	2765	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1191	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2950	LIN. FT.
SS & 604	VERTICAL PANELS	16	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	324	SQ. YD.
SS & 611	4" PIPE UNDERDRAINS	200	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	2	EACH
SS & 619	WIRE FENCE (TYPE D)	369	LIN. FT.
* SS & 619	16' STEEL GATES (ALTERNATE NO. 1)	1	EACH
* SS & 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	EACH
620	LIME	3	TON
620	SEEDING	1.56	ACRE
SS & 620	MULCH COVER	3.05	ACRE
620	WATER	192.9	M. GAL.
621	TEMPORARY SEEDING	1.49	ACRE
621	SILT FENCE	2092	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	81	CU. YD.
621	ROCK DITCH CHECKS	60	CU. YD.
623	SECOND SEEDING APPLICATION	1.56	ACRE
624	SOLID SODDING	256	SQ. YD.
635	ROADWAY CCNSTRUCTION CONTROL	1.00	LUMP SUM
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	24	WEEK
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	2150	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	2150	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	15	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	5	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	5	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	3	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	36	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	60.00	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	7511	POUND
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	97	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	189.43	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	26167	POUND

* DENOTES ALTERNATE BID ITEMS.

REVISIONS		
DATE	REVISION	SHEET NUMBER

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	30	44
SUMMARY OF QUANTITIES AND REVISIONS						



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.09.09

SURVEY CONTROL COORDINATES

Project Name: s030598

Date: 3/6/2023

Coordinate System: ARKANSAS STATE PLANE – SOUTH ZONE BASED ON CONTROL, PN:1 & 5 – PN:6 & 10
GRID PROJECT.

Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1805629.6770	816814.4857	384.18	CTL	ARDOT STD MON STAMPED PN:1
2	1805338.7620	817222.3970	378.73	CTL	ARDOT STD MON STAMPED PN:2
3	1805058.0690	817368.3278	362.09	CTL	ARDOT STD MON STAMPED PN:3
4	1804878.0120	817564.1683	370.40	CTL	ARDOT STD MON STAMPED PN:4
5	1804617.4260	817981.4446	370.44	CTL	ARDOT STD MON STAMPED PN:5
6	1806984.3020	815125.6130	375.96	CTL	ARDOT STD MON STAMPED PN:6
7	1806568.1450	815302.1752	368.12	CTL	ARDOT STD MON STAMPED PN:7
8	1806343.0420	815609.6864	341.37	CTL	ARDOT STD MON STAMPED PN:8
9	1806086.8660	816192.7764	371.71	CTL	ARDOT STD MON STAMPED PN:9
10	1805678.2310	816735.7675	381.43	CTL	ARDOT STD MON STAMPED PN:10
901	1805417.3820	817163.7920	382.45	TBM	CHI SQU ON 5X5 CONC R/W MARKER
902	1806337.3010	815637.2198	340.86	TBM	CHS SQU IN BR WING WALL

*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).

NOTE THIS IS A GRID PROJECT

GRID COORDINATES ARE STORED UNDER FILE NAME S030598gi.CTL

HORIZONTAL DATUM: NAD 83 (2011)

VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.

REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:

ARKANSAS STATE PLANE GRID BEARINGS – 0302–SOUTH ZONE

DETERMINED FROM GPS CONTROL POINTS: PN:1 & 5 – PN:6 & 10

CONVERGENCE ANGLE: 00 54 51.1 LEFT AT PN:3 LT:N34°00'35.5863" LG:W93°38'00.2593"

GRID AZIMUTH = ASTRONOMICAL AZIMUTH – CONVERGENCE ANGLE.

HWY. 301 CONST. - SITE 1

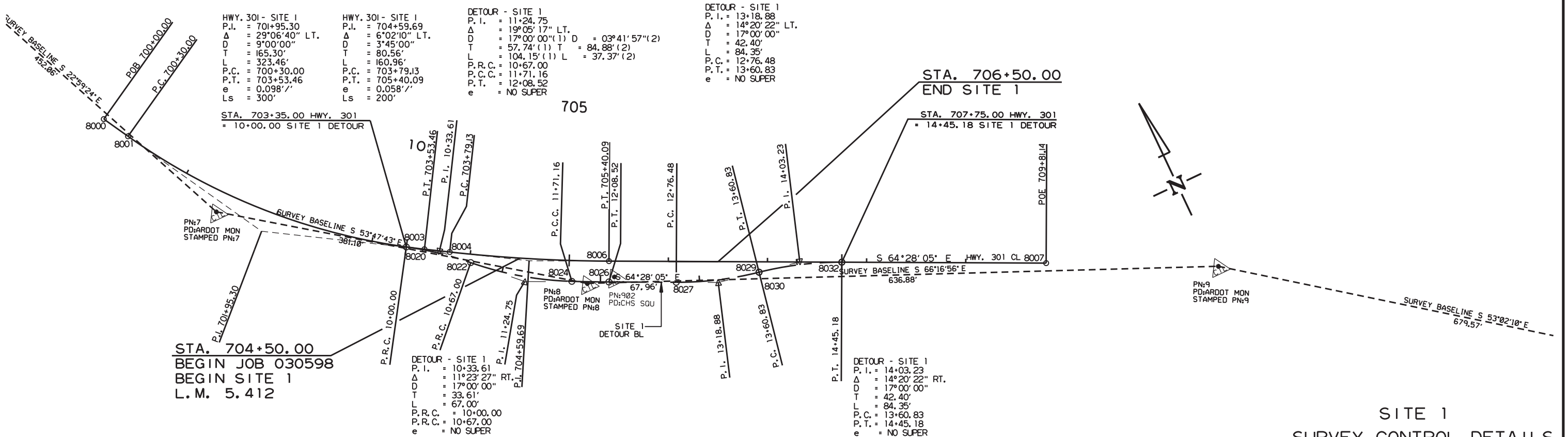
POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	700+00.00	1806700.9989	815239.5216
8001	PC	700+30.00	1806674.8421	815254.2126
8003	PT	703+53.46	1806444.1824	815475.9984
8004	PC	703+79.13	1806430.7412	815497.8742
8006	PT	705+40.09	1806353.8485	815639.1987
8007	POE	709+81.14	1806163.7536	816037.1696

DETOUR CONST. - SITE 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8020	POB/PRC	10+00.00	1806454.0713	815460.4151
8022	PRC	10+67.00	1806412.0422	815512.4568
8024	PCC	11+71.16	1806351.4088	815596.6293
8026	PT	12+08.52	1806334.8985	815630.1486
8027	PC	12+76.48	1806305.6066	815691.4722
8029	PT	13+60.83	1806279.1039	815771.3178
8030	PC	13+60.83	1806279.1038	815771.3186
8032	POE/PT	14+45.18	1806252.6011	815851.1640



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05



SITE 1
SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES

Project Name: s030598

Date: 3/6/2023

Coordinate System: ARKANSAS STATE PLANE – SOUTH ZONE BASED ON CONTROL, PN:1 & 5 – PN:6 & 10
GRID PROJECT.

Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1805629.6770	816814.4857	384.18	CTL	ARDOT STD MON STAMPED PN:1
2	1805338.7620	817222.3970	378.73	CTL	ARDOT STD MON STAMPED PN:2
3	1805058.0690	817368.3278	362.09	CTL	ARDOT STD MON STAMPED PN:3
4	1804878.0120	817564.1683	370.40	CTL	ARDOT STD MON STAMPED PN:4
5	1804617.4260	817981.4446	370.44	CTL	ARDOT STD MON STAMPED PN:5
6	1806984.3020	815125.6130	375.96	CTL	ARDOT STD MON STAMPED PN:6
7	1806568.1450	815302.1752	368.12	CTL	ARDOT STD MON STAMPED PN:7
8	1806343.0420	815609.6864	341.37	CTL	ARDOT STD MON STAMPED PN:8
9	1806086.8660	816192.7764	371.71	CTL	ARDOT STD MON STAMPED PN:9
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901	1805417.3820	817163.7920	382.45	TBM	CHI SQU ON 5X5 CONC R/W MARKER
902	1806337.3010	815637.2198	340.86	TBM	CHS SQU IN BR WING WALL

*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).

NOTE THIS IS A GRID PROJECT

GRID COORDINATES ARE STORED UNDER FILE NAME S030598gi.CTL

HORIZONTAL DATUM: NAD 83 (2011)

VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.

REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:

ARKANSAS STATE PLANE GRID BEARINGS – 0302–SOUTH ZONE

DETERMINED FROM GPS CONTROL POINTS: PN:1 & 5 – PN:6 & 10

CONVERGENCE ANGLE: 00 54 51.1 LEFT AT PN:3 LT:N34°00'35.5863” LG:W93°38'00.2593”

GRID AZIMUTH = ASTRONOMICAL AZIMUTH – CONVERGENCE ANGLE.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	32	44
SURVEY CONTROL DETAILS						



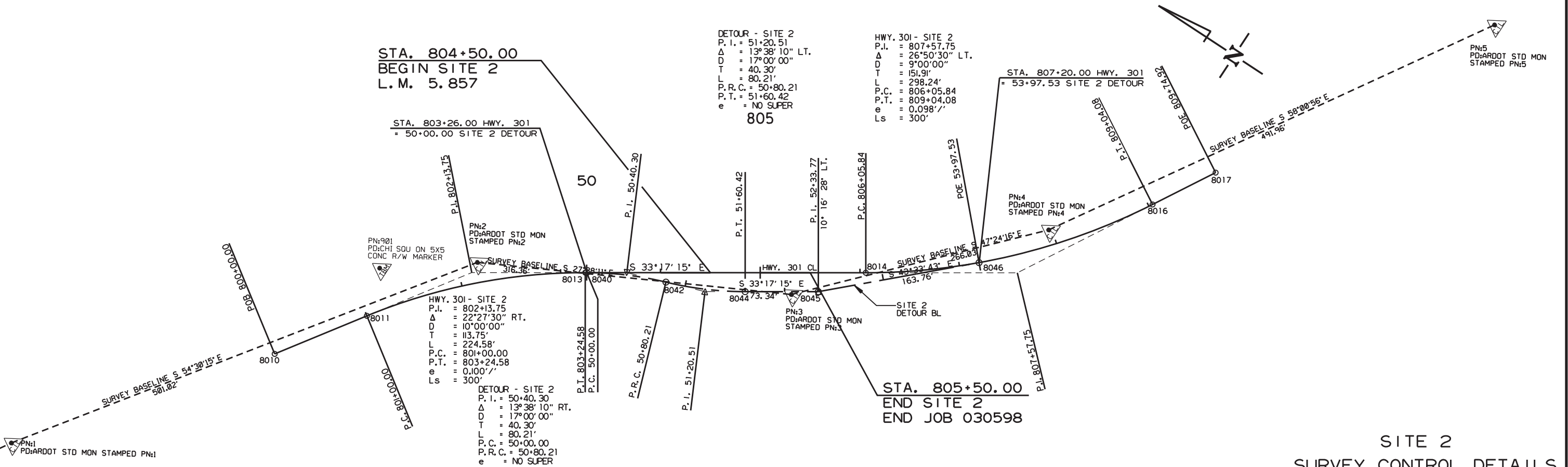
Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05

HWY. 301 CONST. - SITE 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8010	POB	800+00.00	1805457.9234	817034.1183
8011	PC	801+00.00	1805401.6369	817116.7732
8013	PT	803+24.58	1805242.5217	817273.2262
8014	PC	806+05.84	1805007.4122	817427.5909
8016	PT	809+04.08	1804804.7698	817642.6925
8017	POE	809+74.92	1804769.4875	817704.1227

DETOUR CONST. - SITE 2

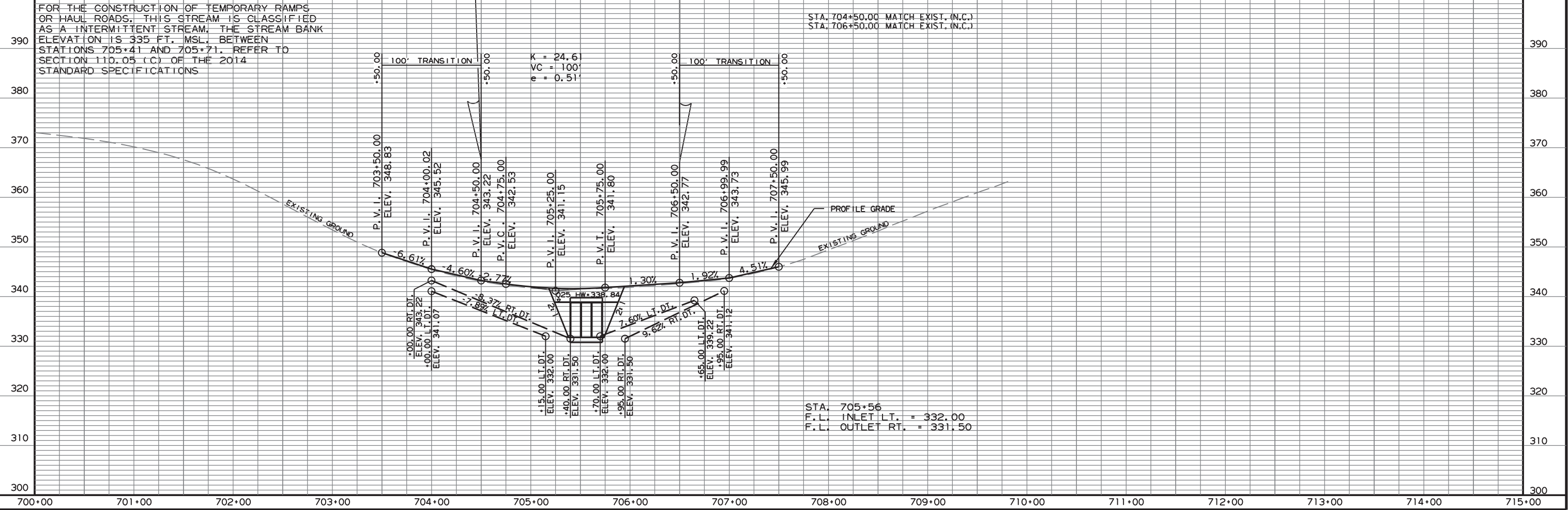
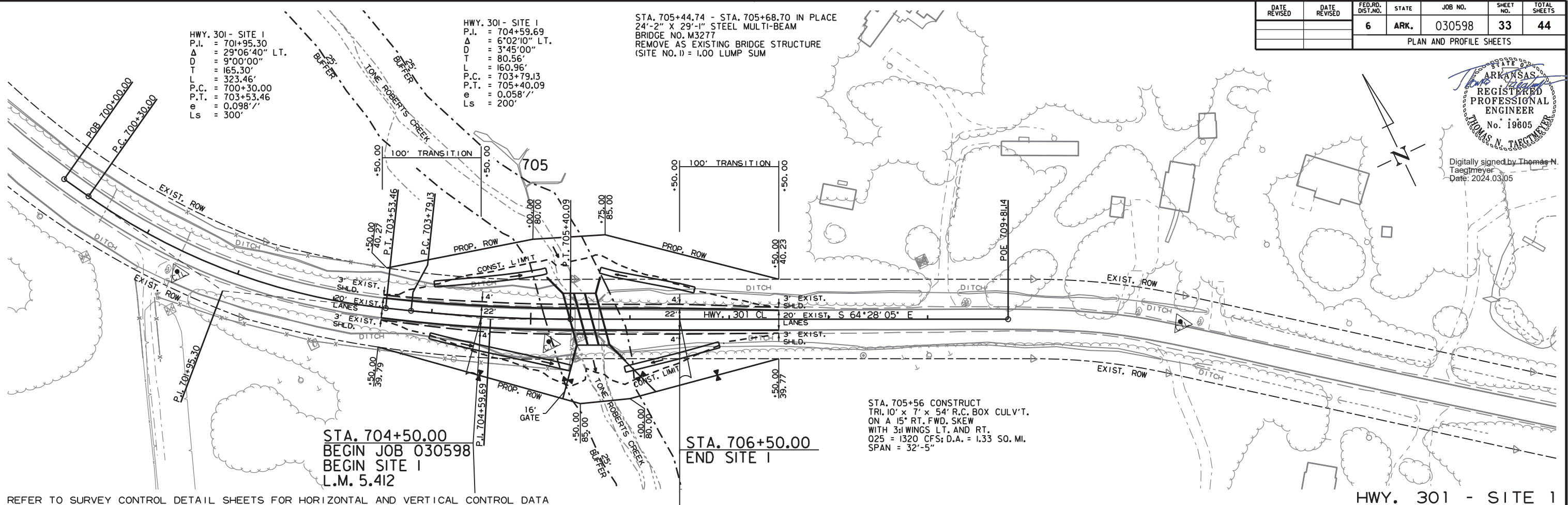
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8040	POB/PC	50+00.00	1805241.3375	817274.0038
8042	PRC	50+80.21	1805169.7034	817309.6716
8044	PT	51+60.42	1805098.0692	817345.3395
8045	PI	52+33.77	1805036.7594	817385.5934
8046	POE	53+97.53	1804918.0954	817498.4454



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	33	44
PLAN AND PROFILE SHEETS						

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 19805
THOMAS N. TAEGTMEYER

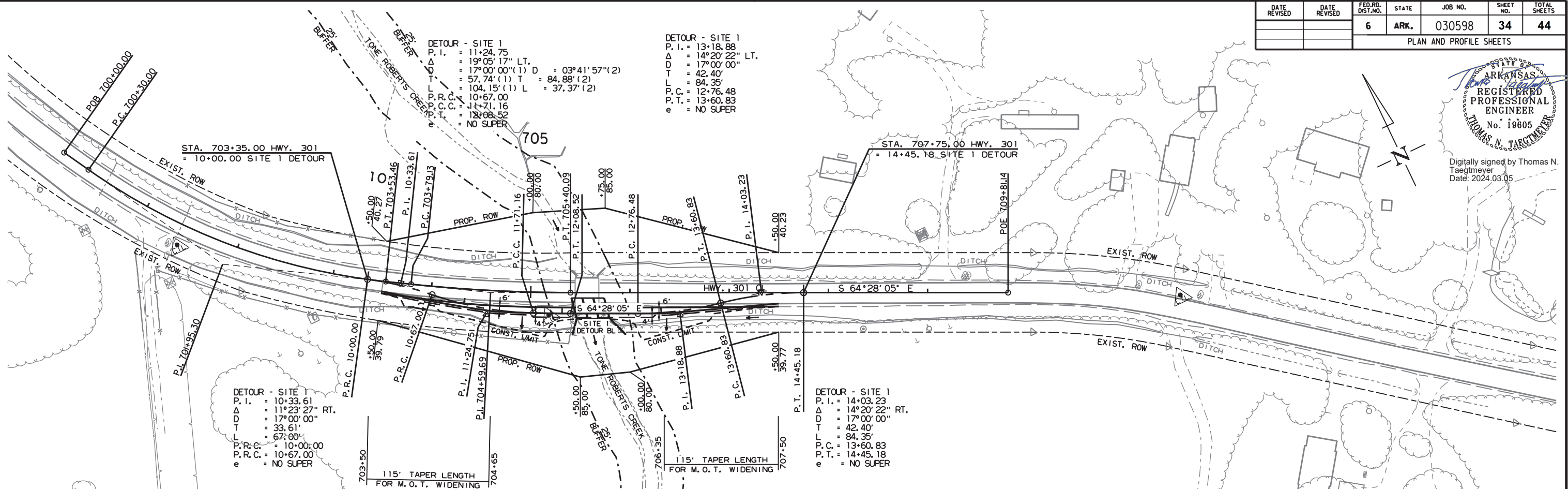
Digitally signed by Thomas N.
Taegtmeier
Date: 2024.03.05



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	34	44
PLAN AND PROFILE SHEETS						

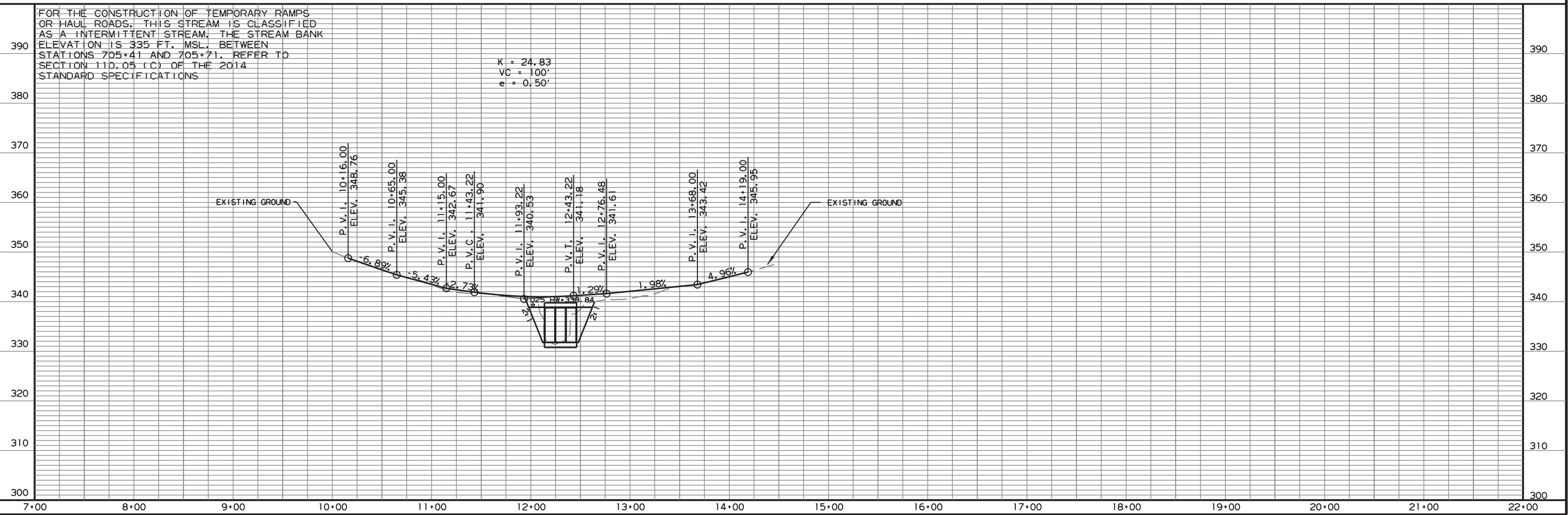
STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 19805

Digitally signed by Thomas N.
Taedtmeier
Date: 2024.03.05



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

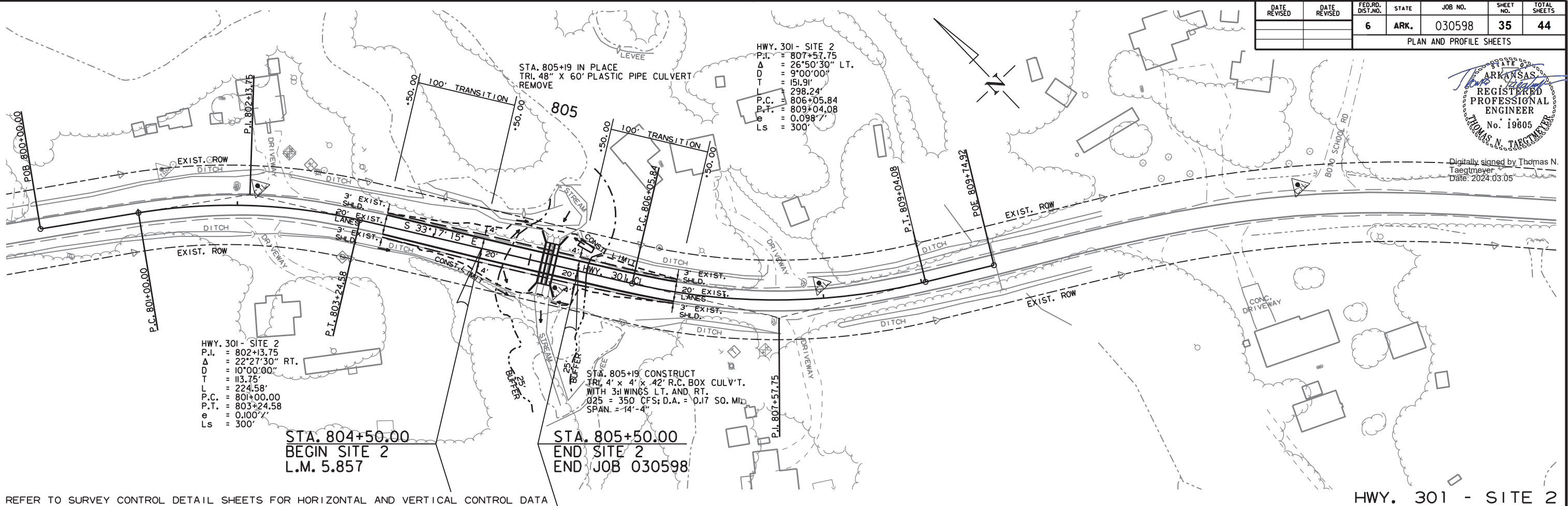
HWY. 301 - SITE 1 - DETOUR



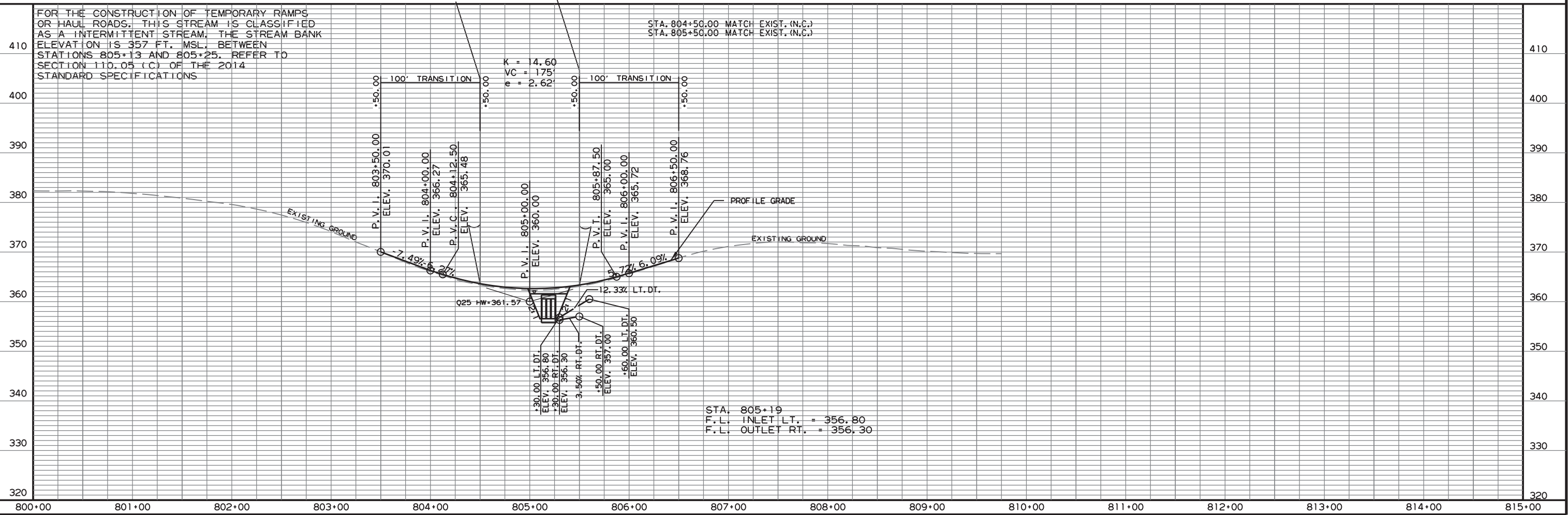
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	35	44
PLAN AND PROFILE SHEETS						



Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05



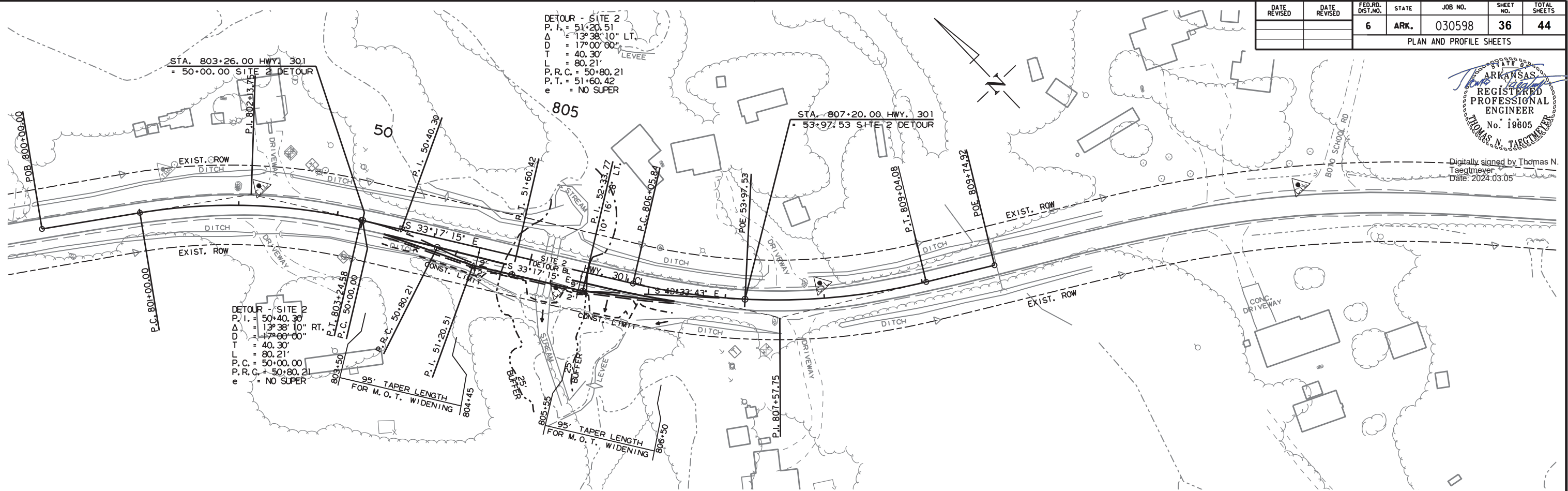
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	36	44
PLAN AND PROFILE SHEETS						

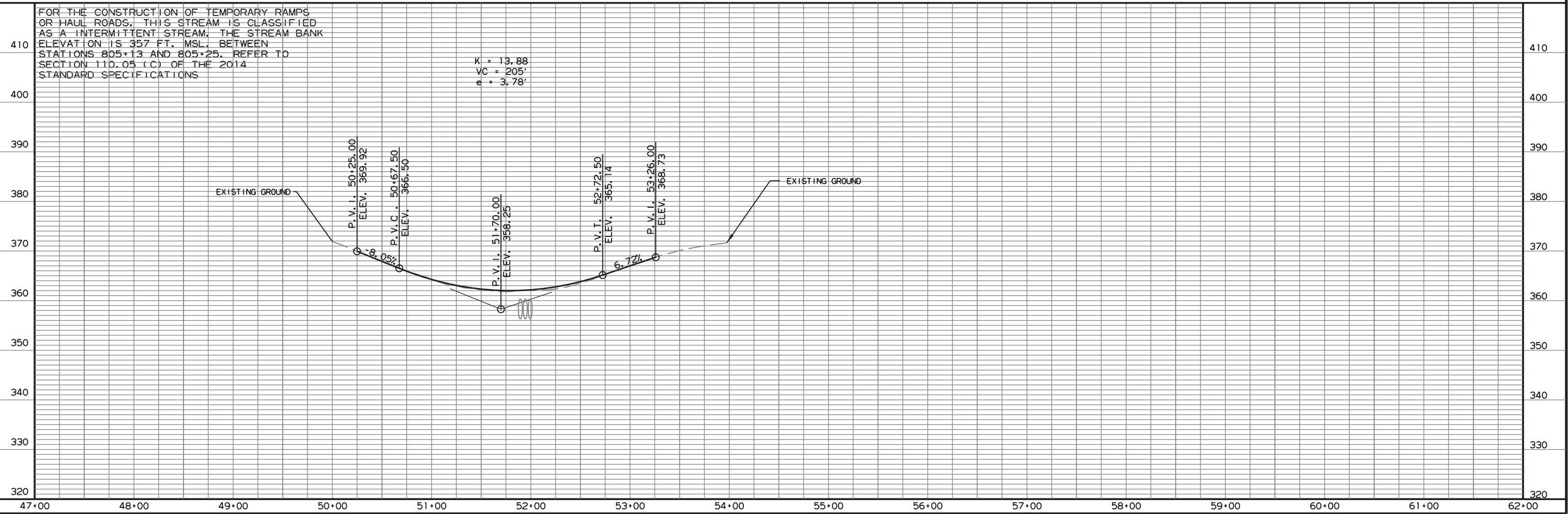


Digitally signed by Thomas N. Taegtmeyer
Date: 2024.03.05

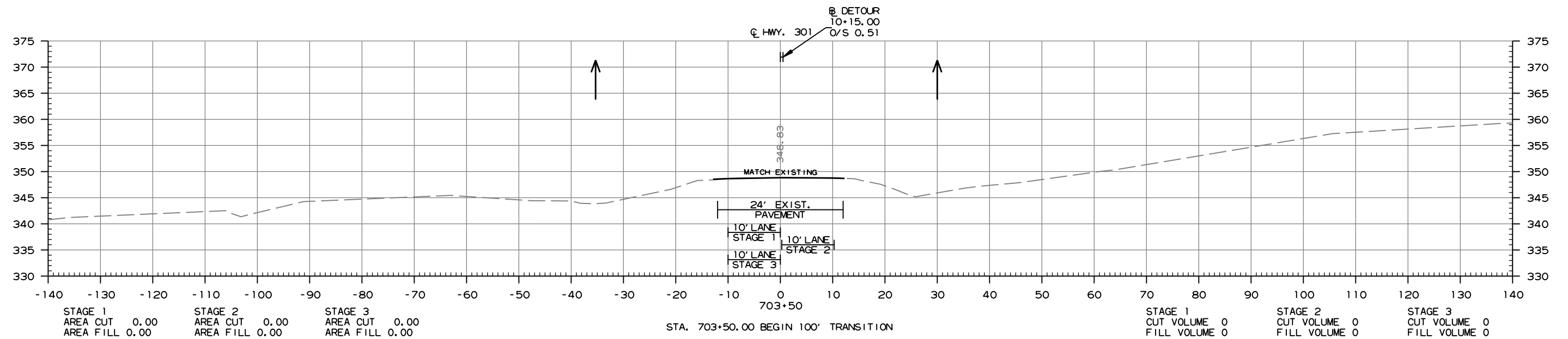
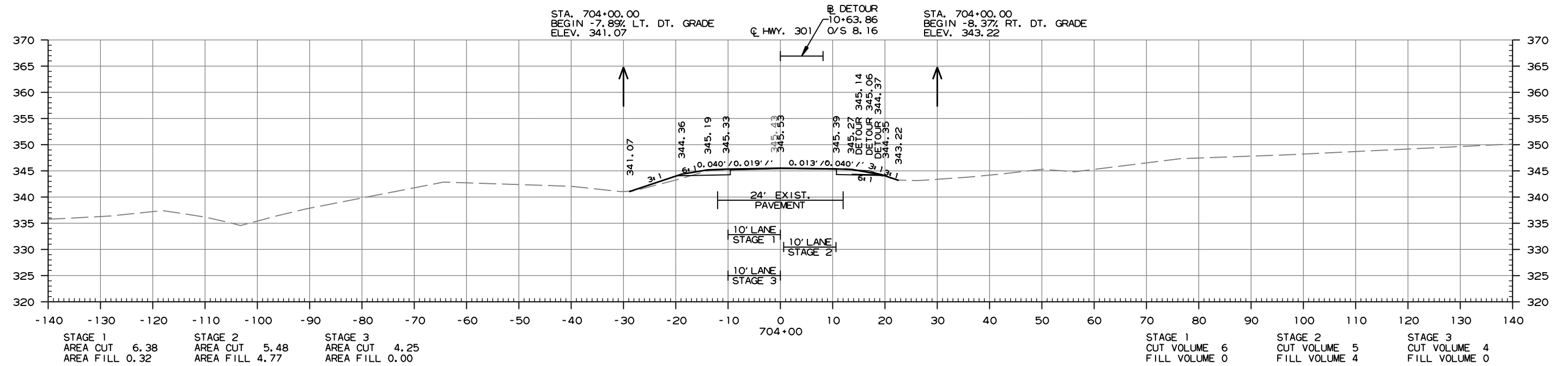


REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA

HWY. 301 - SITE 2 - DETOUR

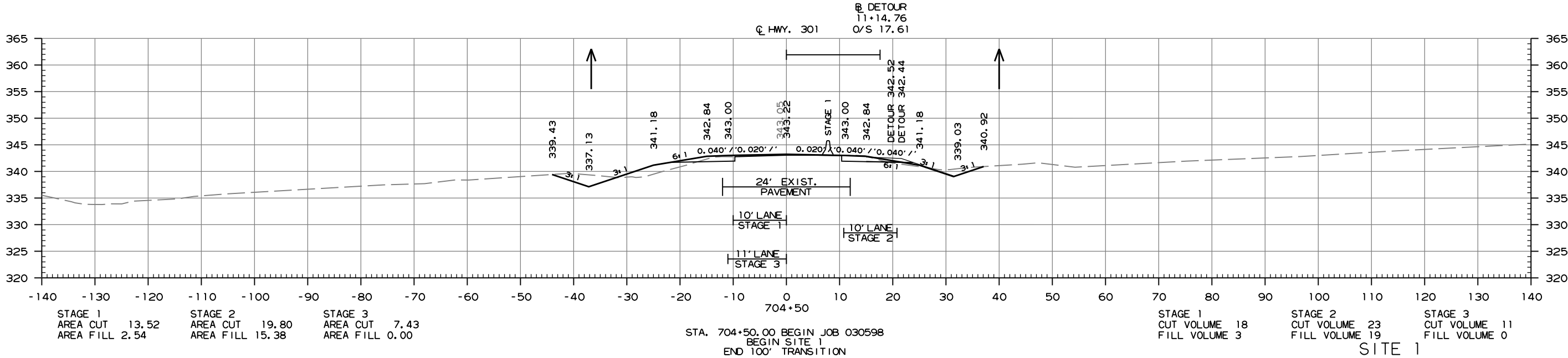
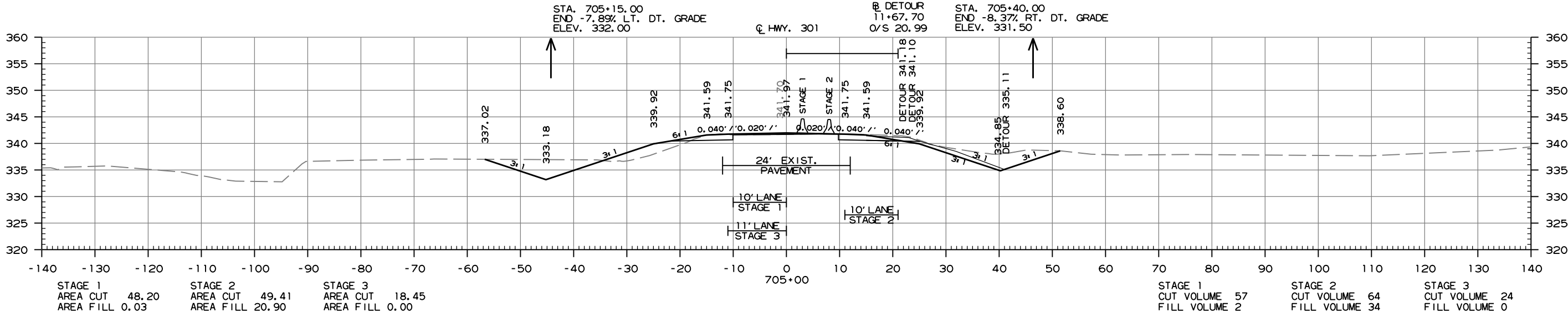
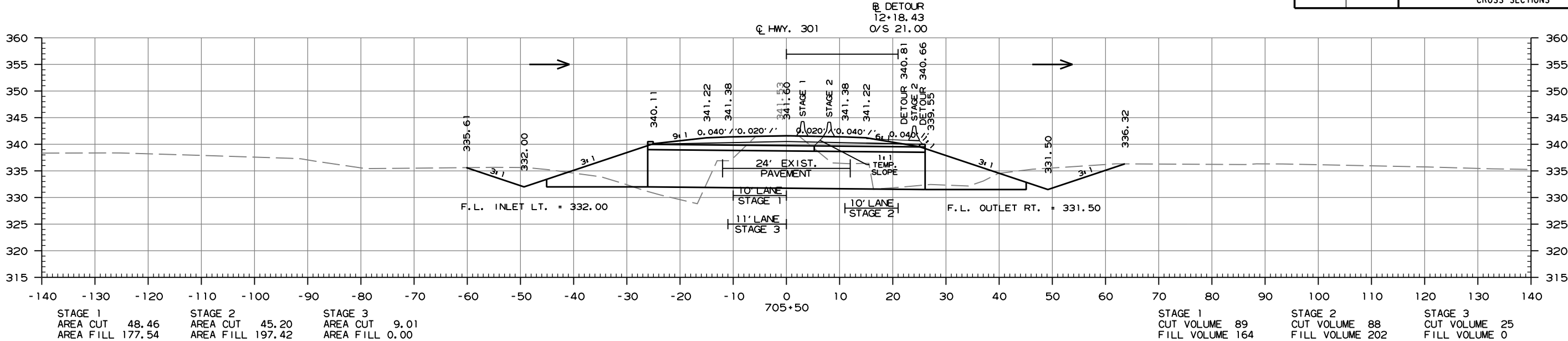


DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	37	44
		CROSS SECTIONS				



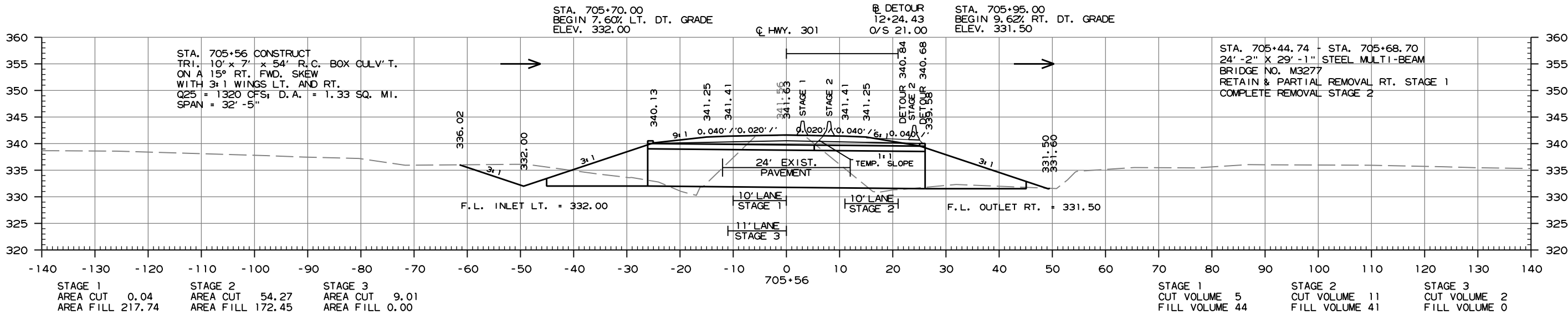
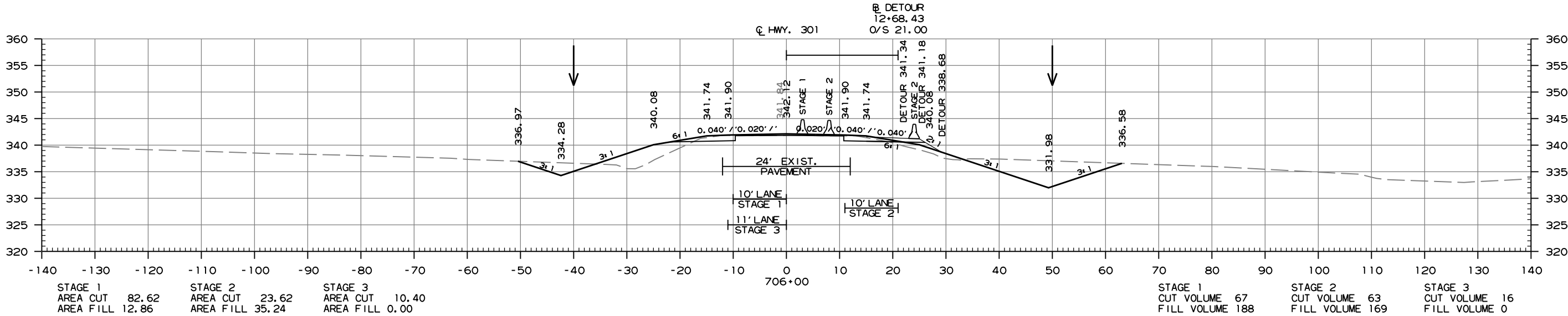
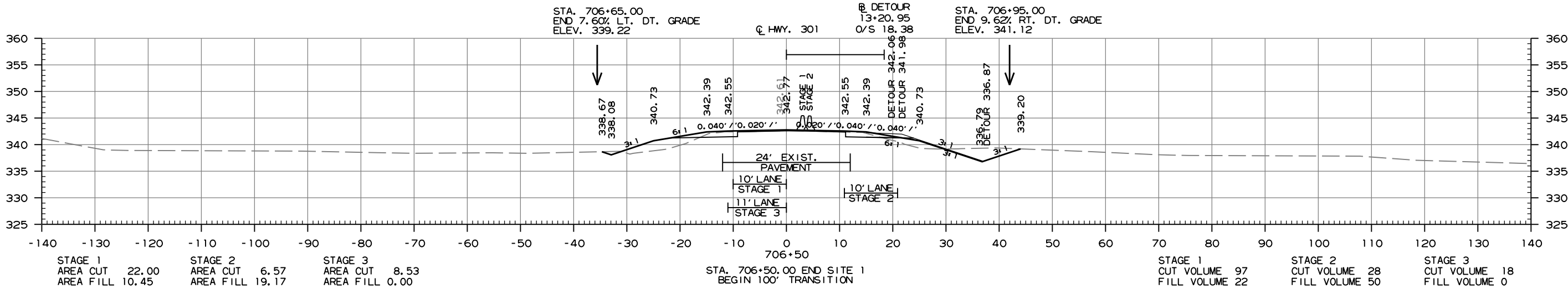
CROSS SECTION STA. 703+50 TO STA. 704+00

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	38	44
CROSS SECTIONS						



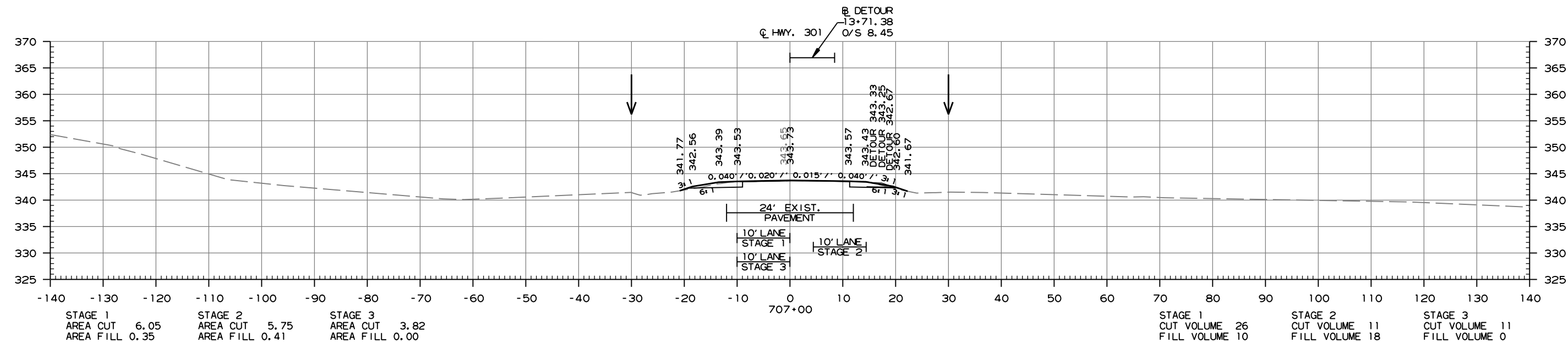
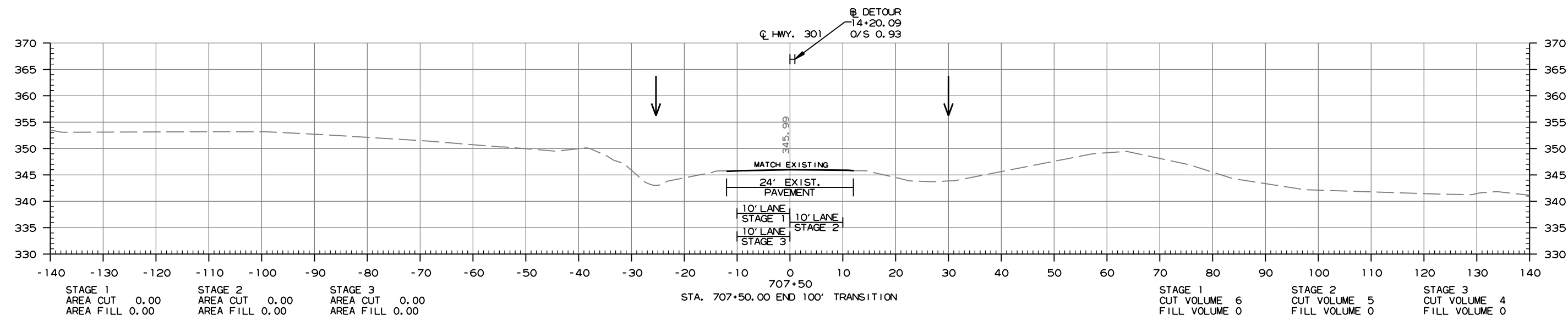
CROSS SECTION STA. 704+50 TO STA. 705+50

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	39	44
CROSS SECTIONS						



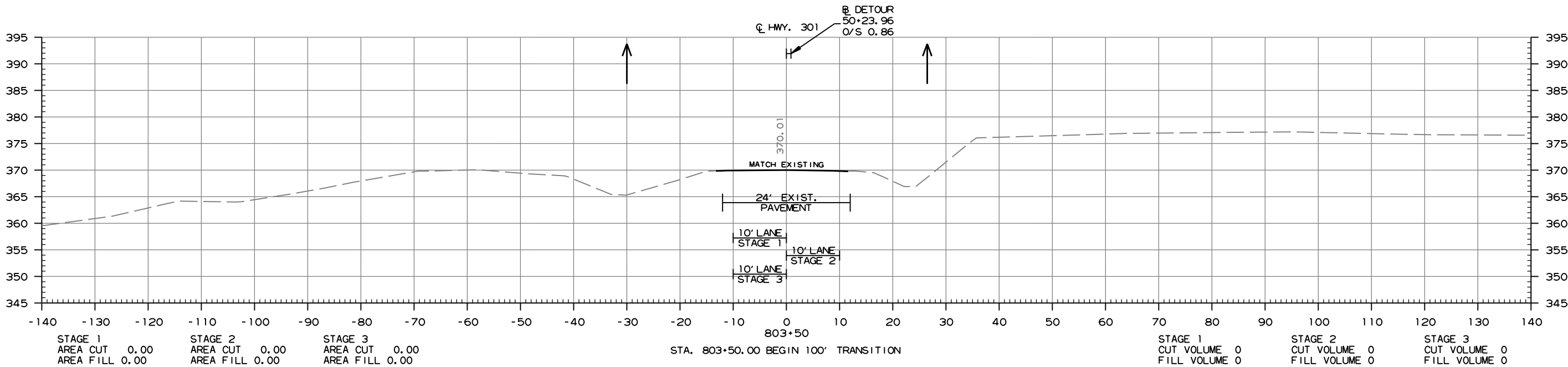
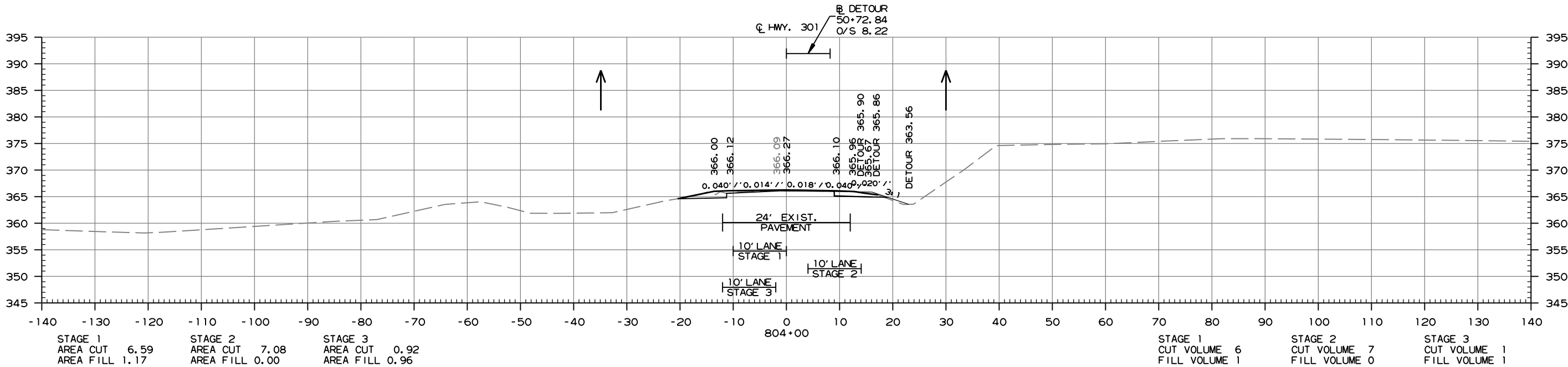
CROSS SECTION STA. 705+56 TO STA. 706+50

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	40	44
CROSS SECTIONS						



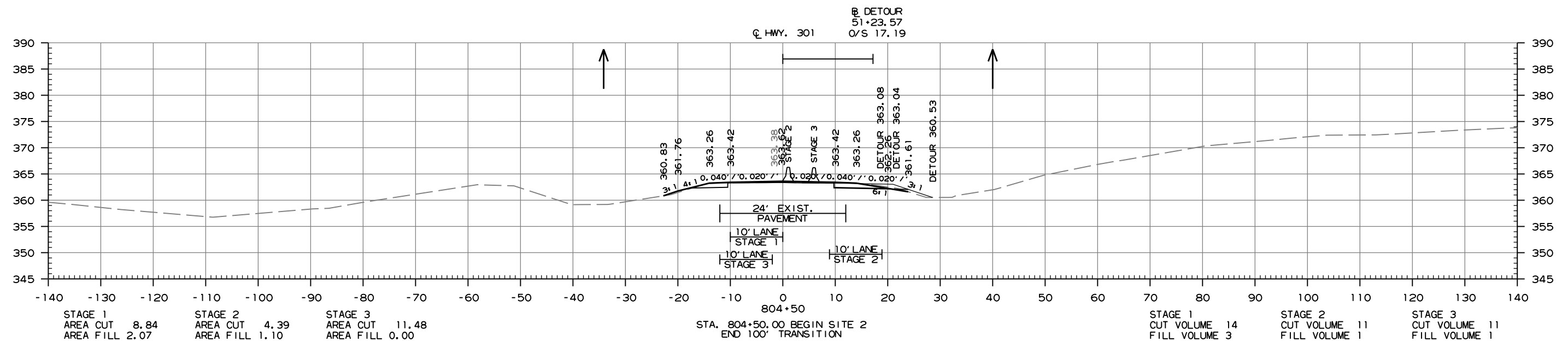
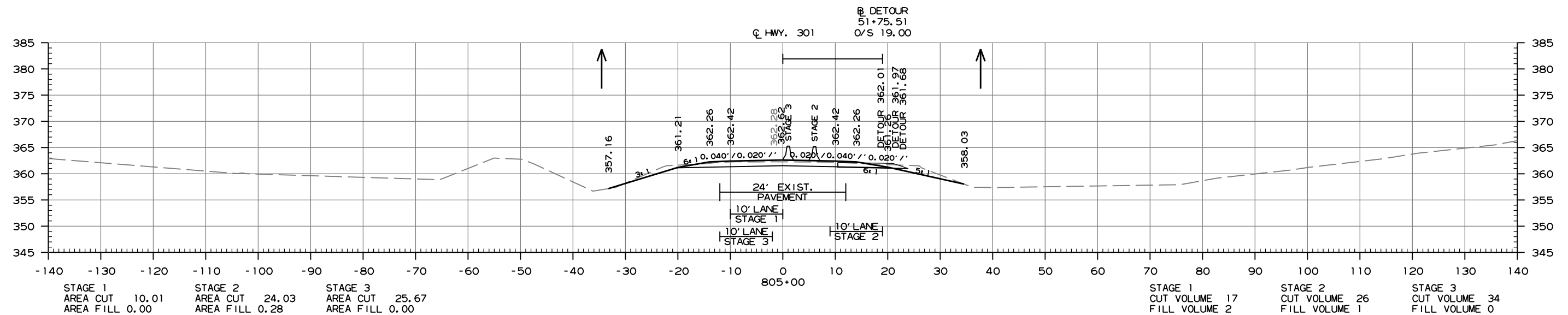
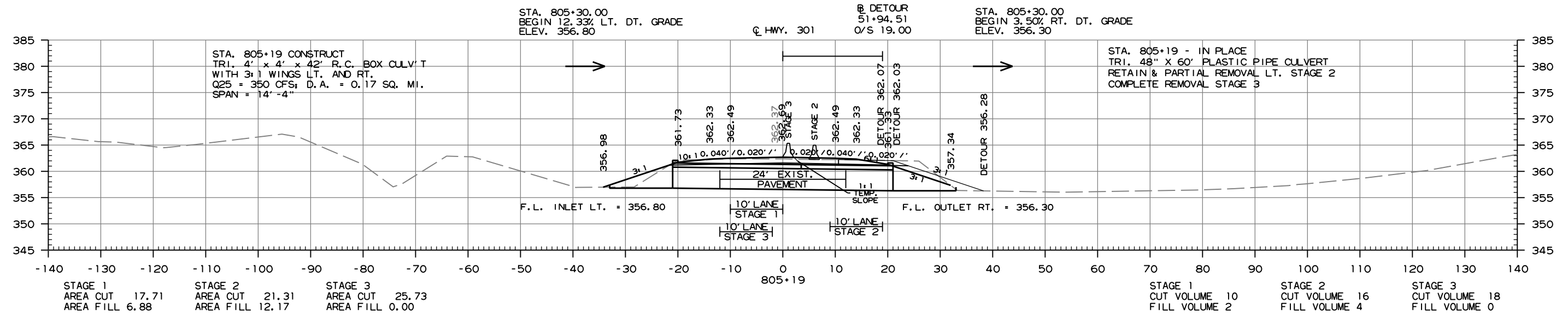
SITE 1
CROSS SECTION STA. 707+00 TO STA. 707+50

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	41	44
CROSS SECTIONS						



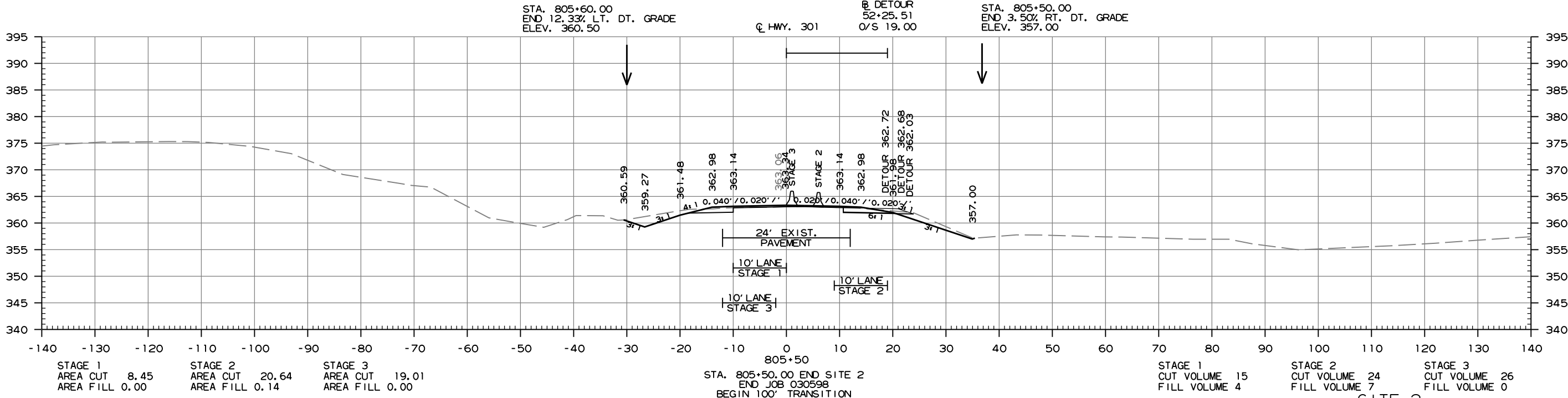
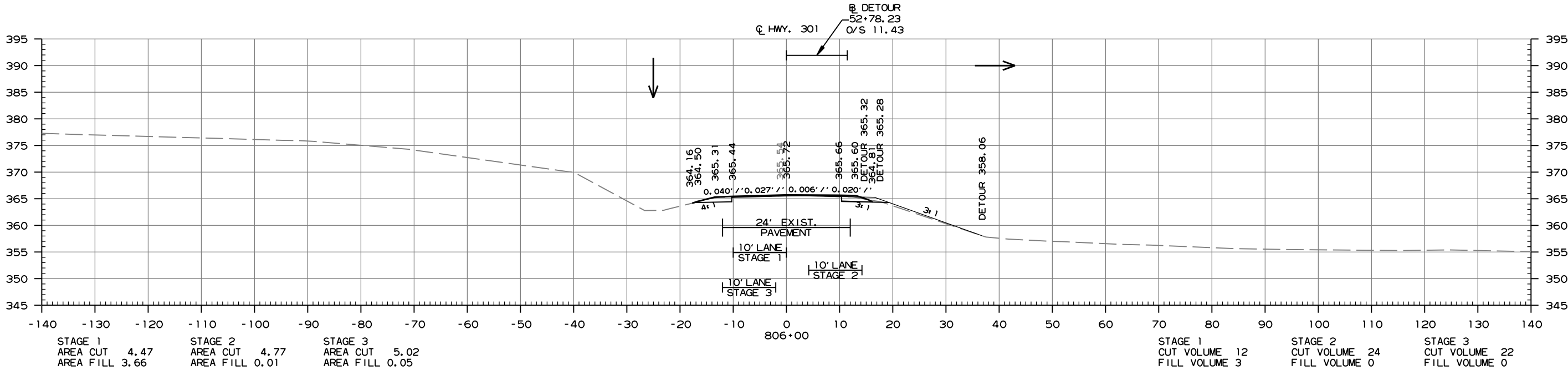
SITE 2
CROSS SECTION STA. 803+50 TO STA. 804+00

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	42	44
		CROSS SECTIONS				



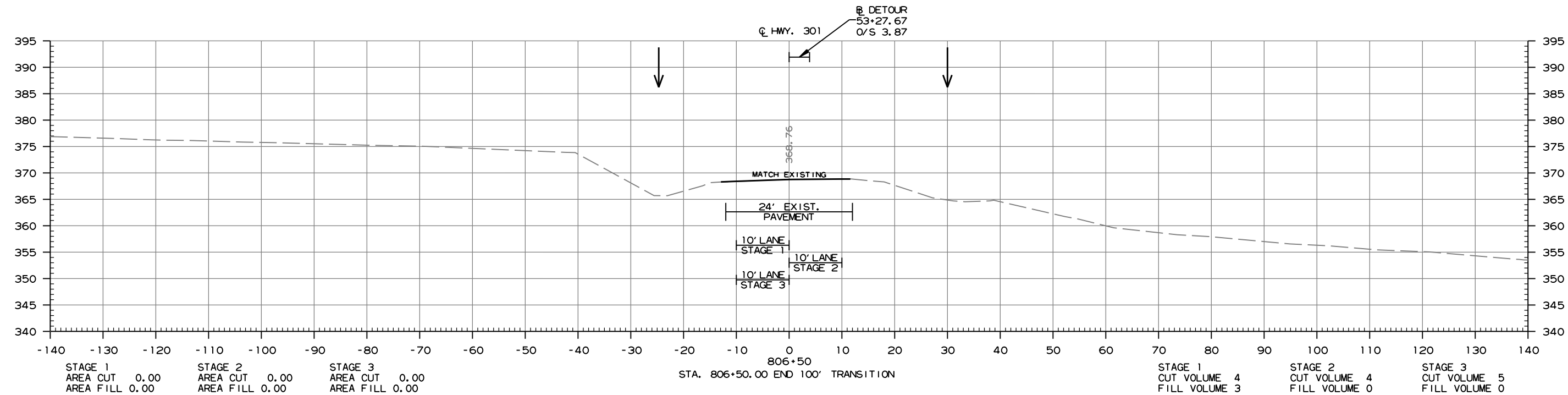
CROSS SECTION STA. 804+50 TO STA. 805+19

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	43	44
CROSS SECTIONS						

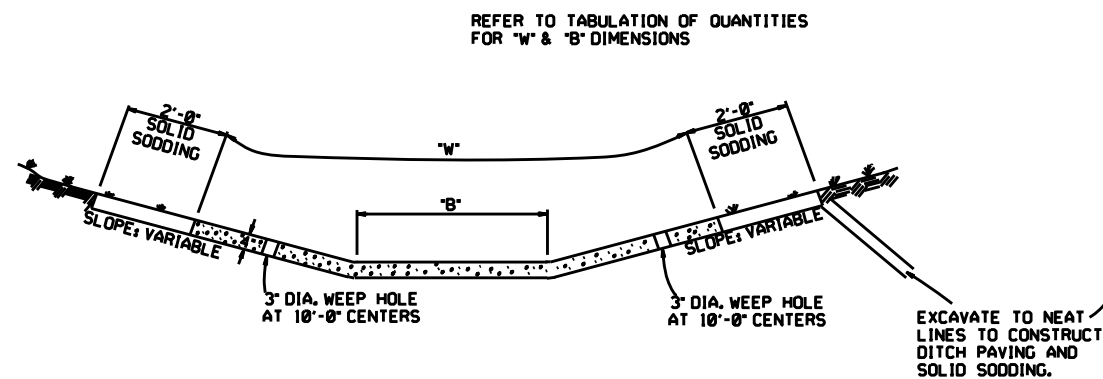


CROSS SECTION STA. 805+50 TO STA. 806+00

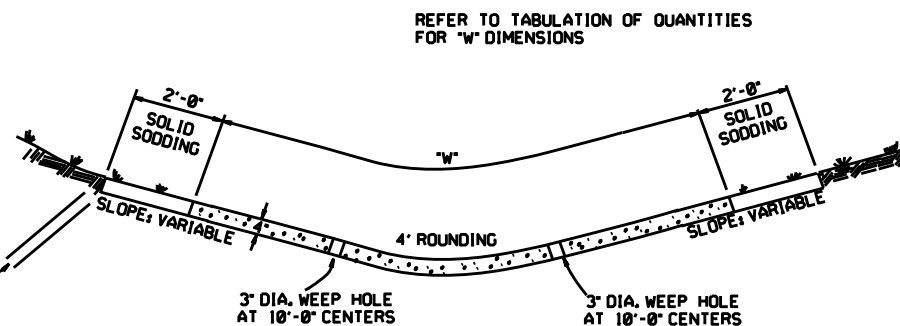
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	030598	44	44
CROSS SECTIONS						



SITE 2
CROSS SECTION STA. 806+50 TO STA. 806+50

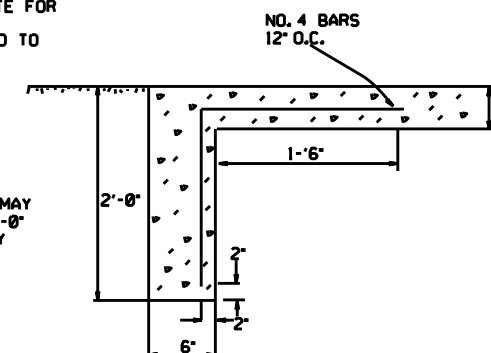


TYPE A

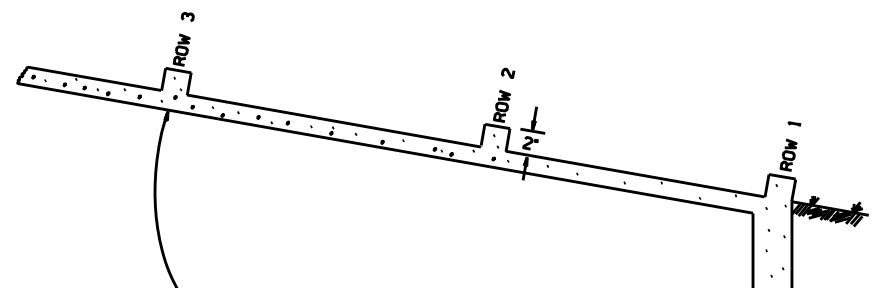


TYPE B

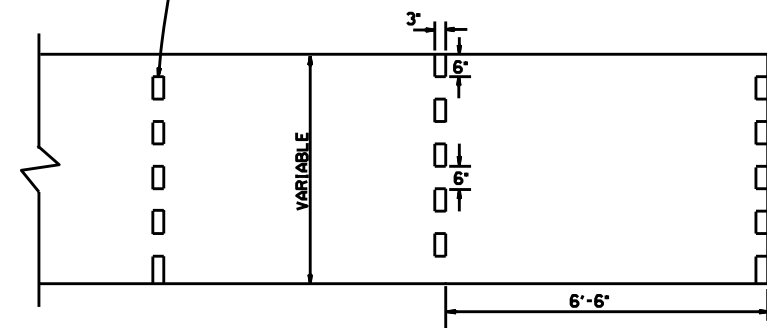
THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."



TOE WALL DETAIL FOR CONCRETE DITCH PAVING



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



ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

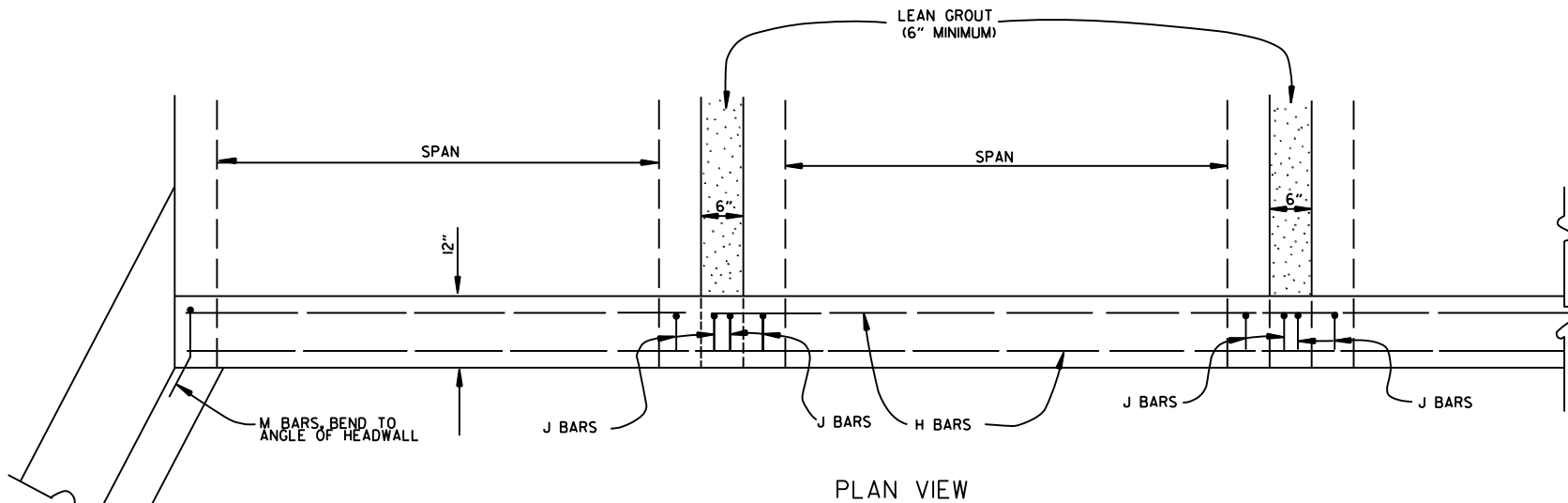
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-88	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	632-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	639-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
10-2-72	TYPED A & B	
	REVISED AND REDRAWN	508-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1



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

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

GENERAL NOTES

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

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

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

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

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

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

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

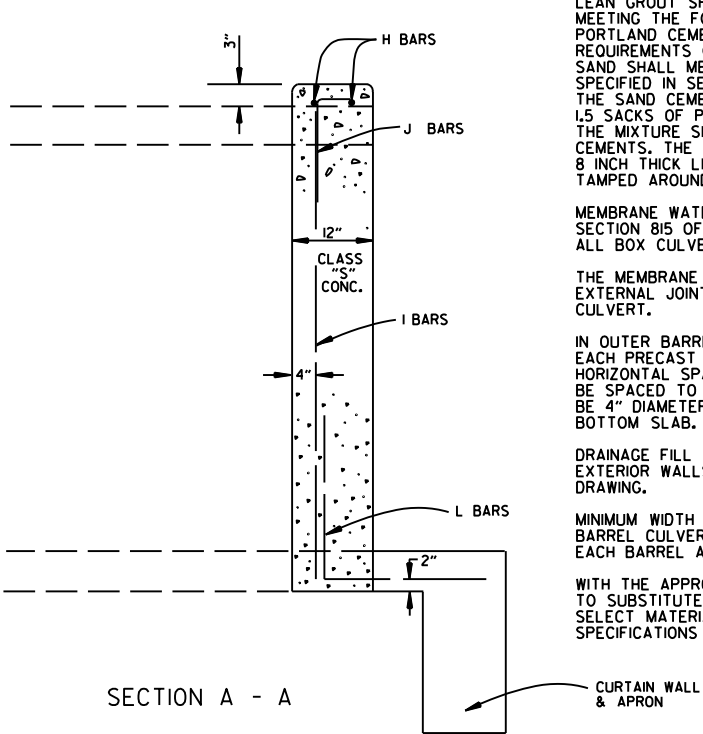
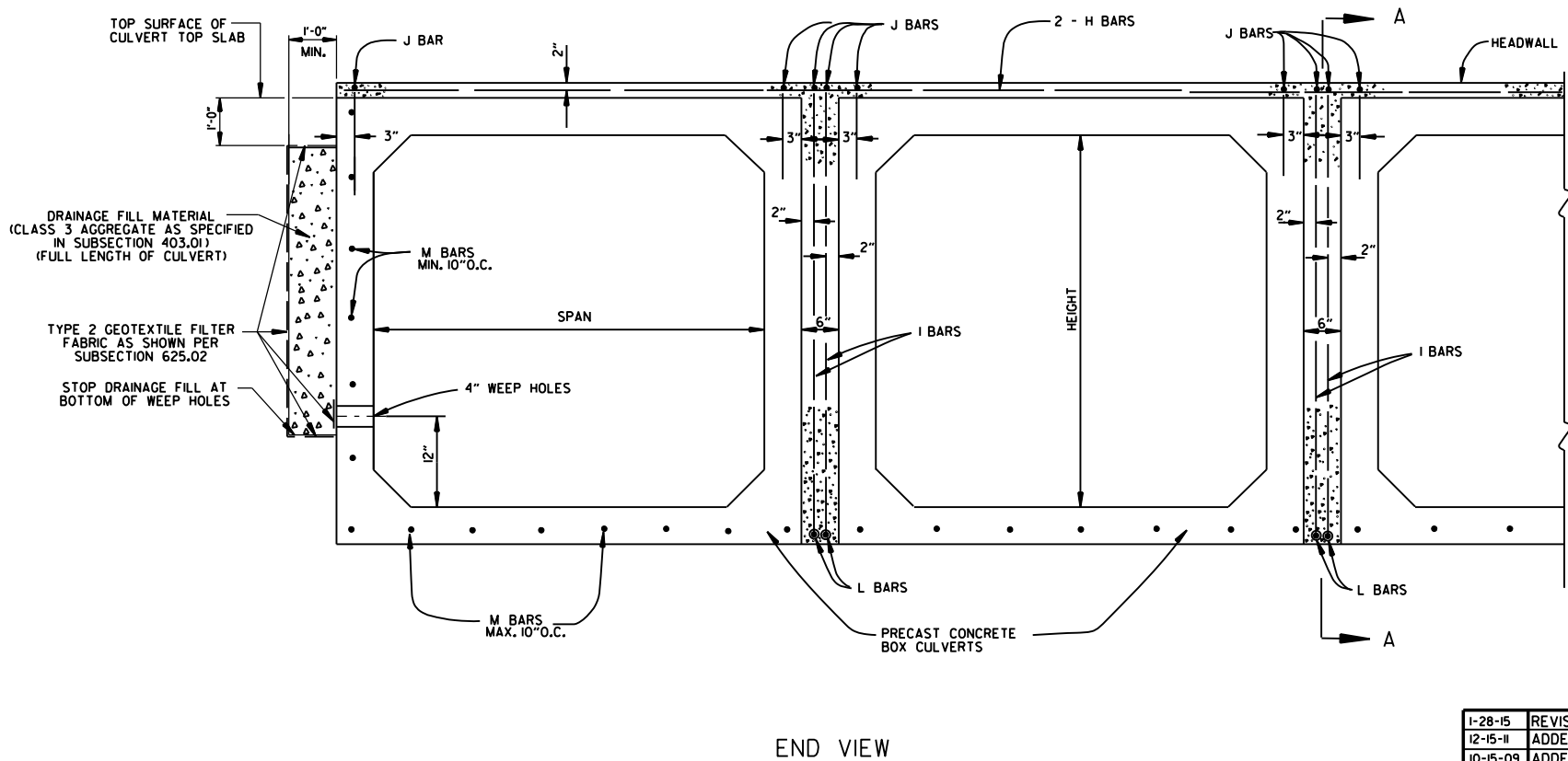
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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

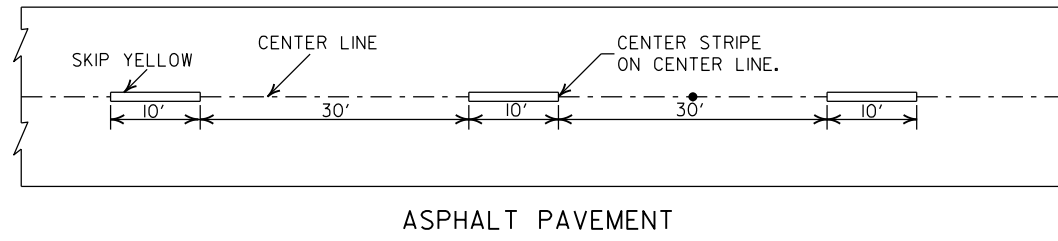
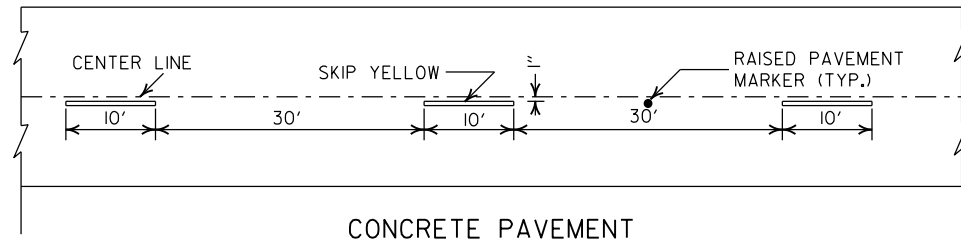


1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF \"M\" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE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

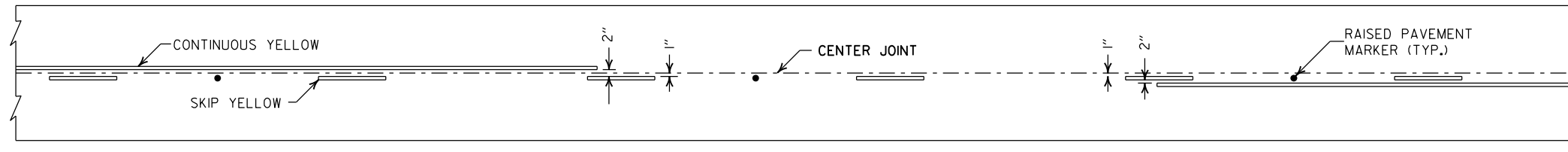
ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

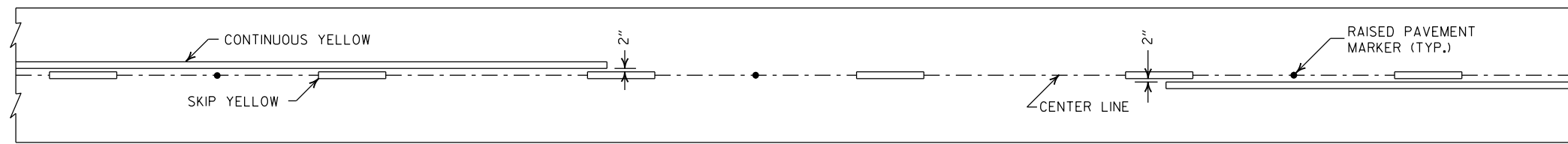
STANDARD DRAWING PBC-1



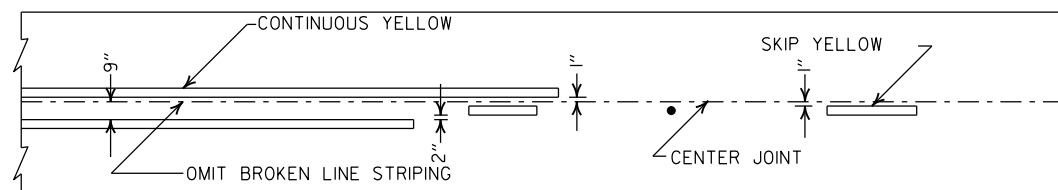
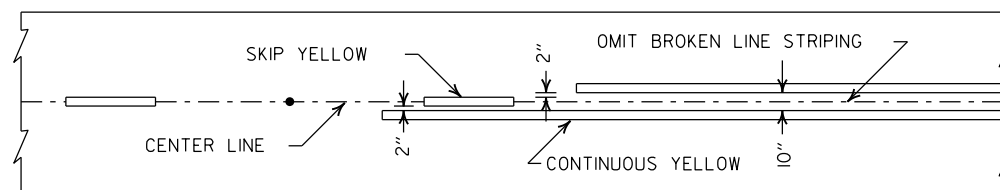
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



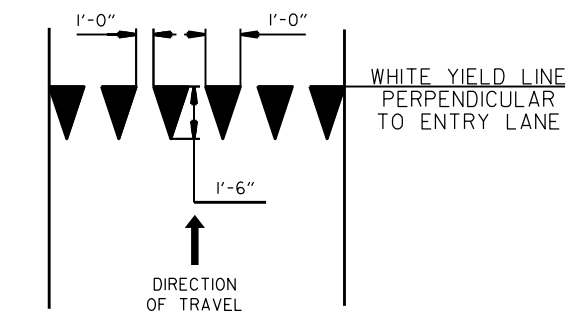
SOLID LINE STRIPING ON ASPHALT PAVEMENT



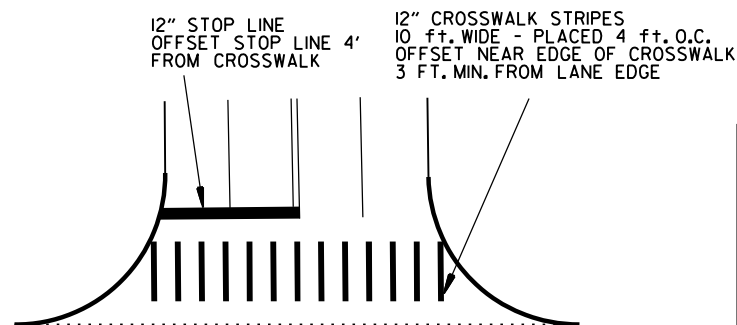
ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL

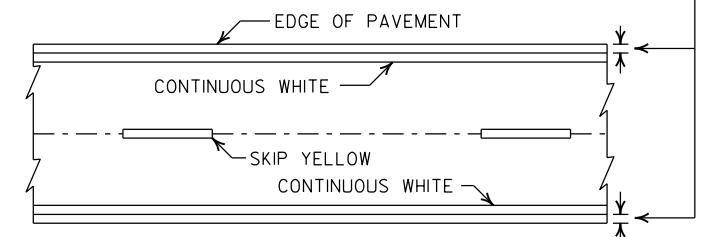


CROSSWALK AND STOP LINE DETAILS

NOTES:

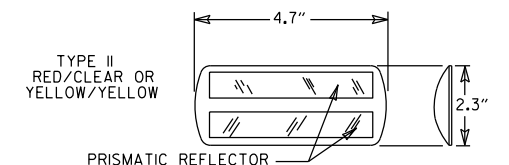
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

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

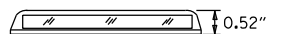


PAVEMENT EDGE LINE MARKING

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



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



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

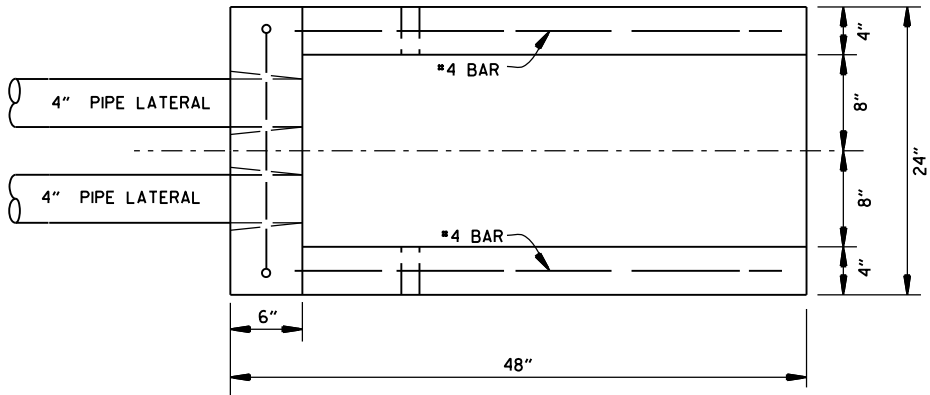
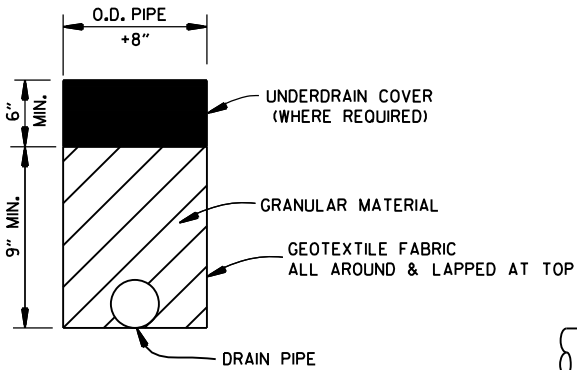
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK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

ARKANSAS STATE HIGHWAY COMMISSION

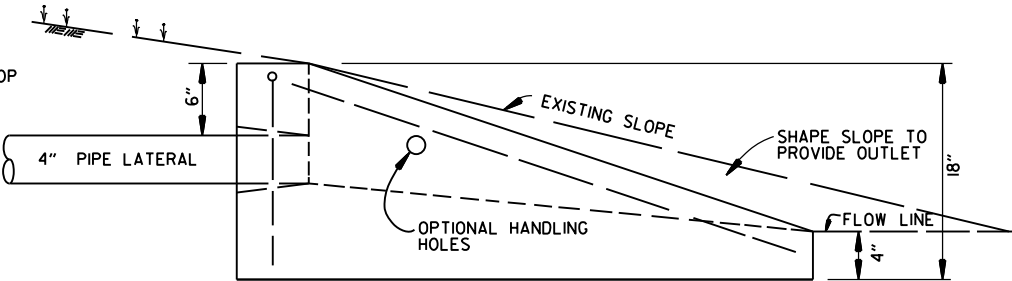
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

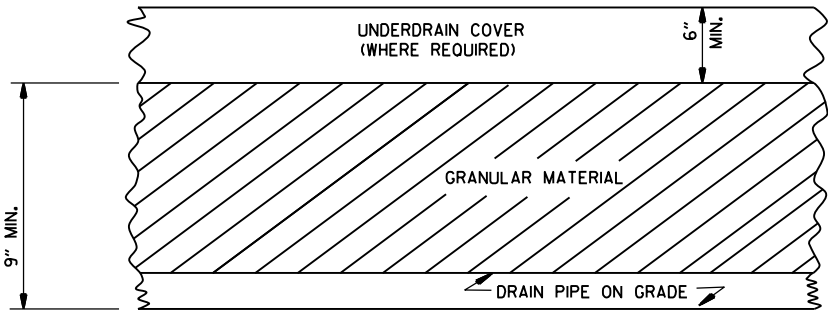
NOTE:
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



PLAN VIEW



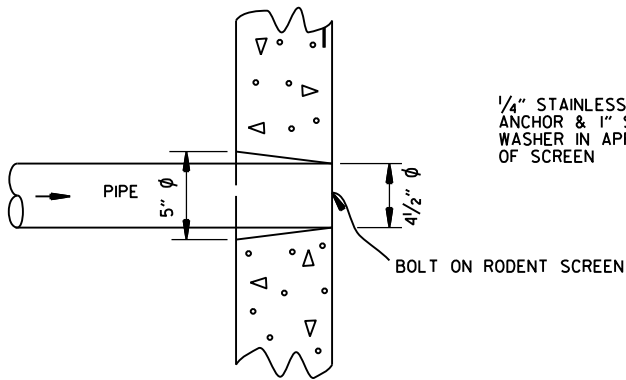
SIDE VIEW



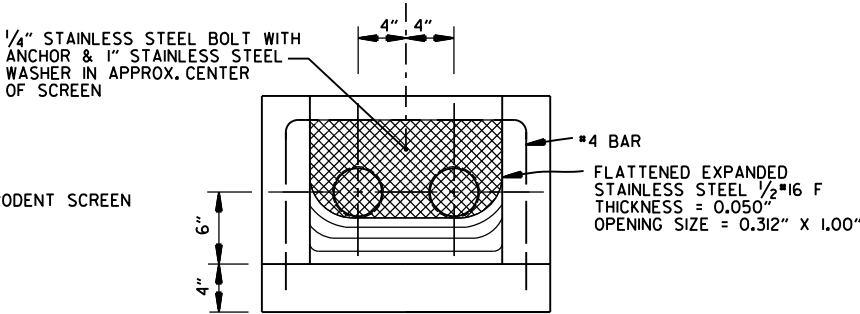
DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.
5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.



DETAIL OF HOLE FOR 4" PIPE

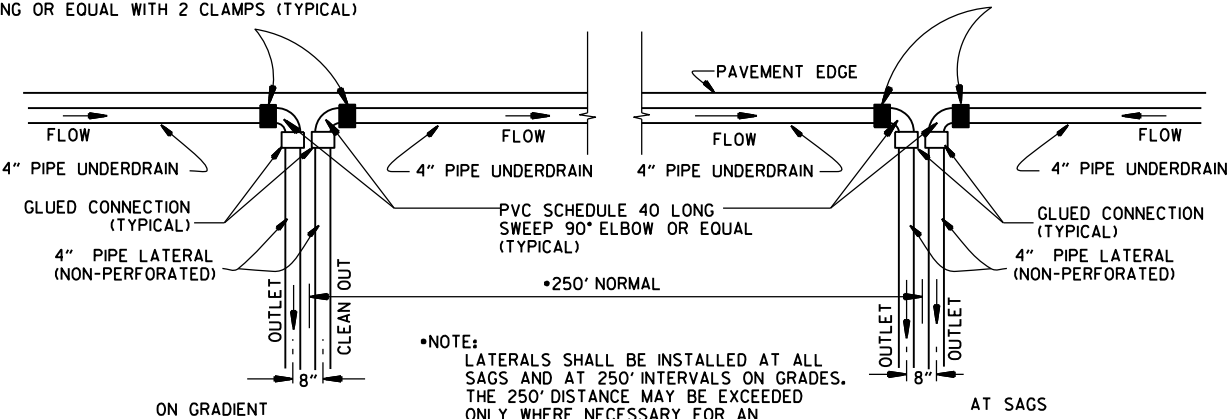


FRONT VIEW
(DETAIL OF RODENT SCREEN)

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



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.

12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE: 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
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

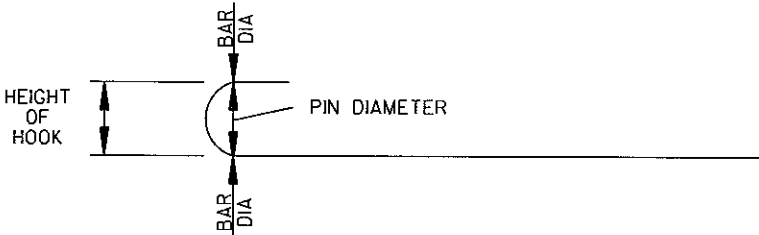
DETAILS OF PIPE UNDERDRAIN

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

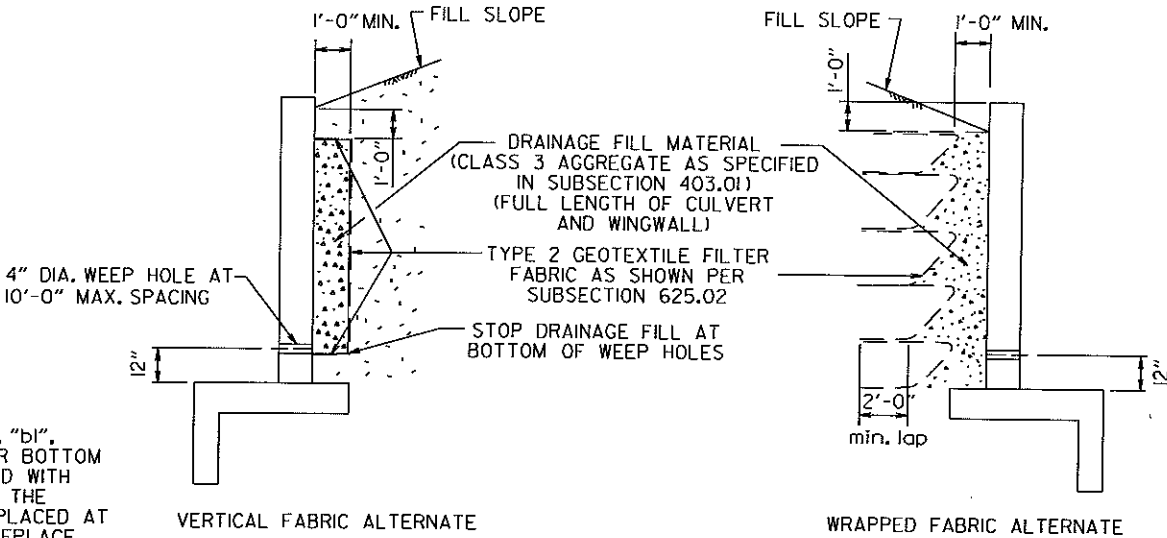
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

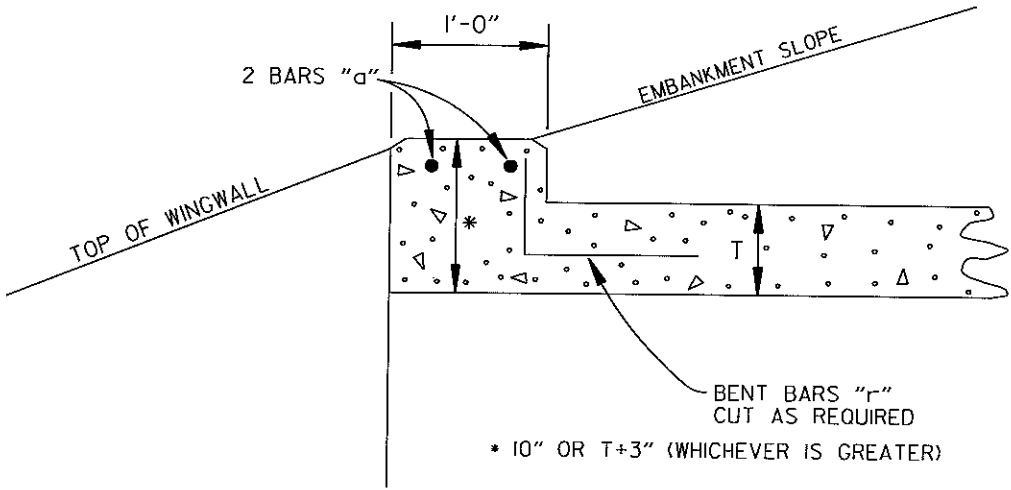
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

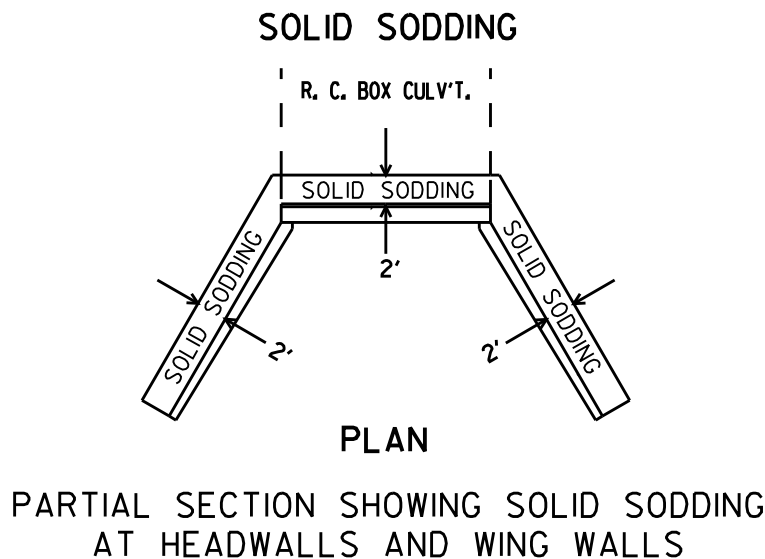
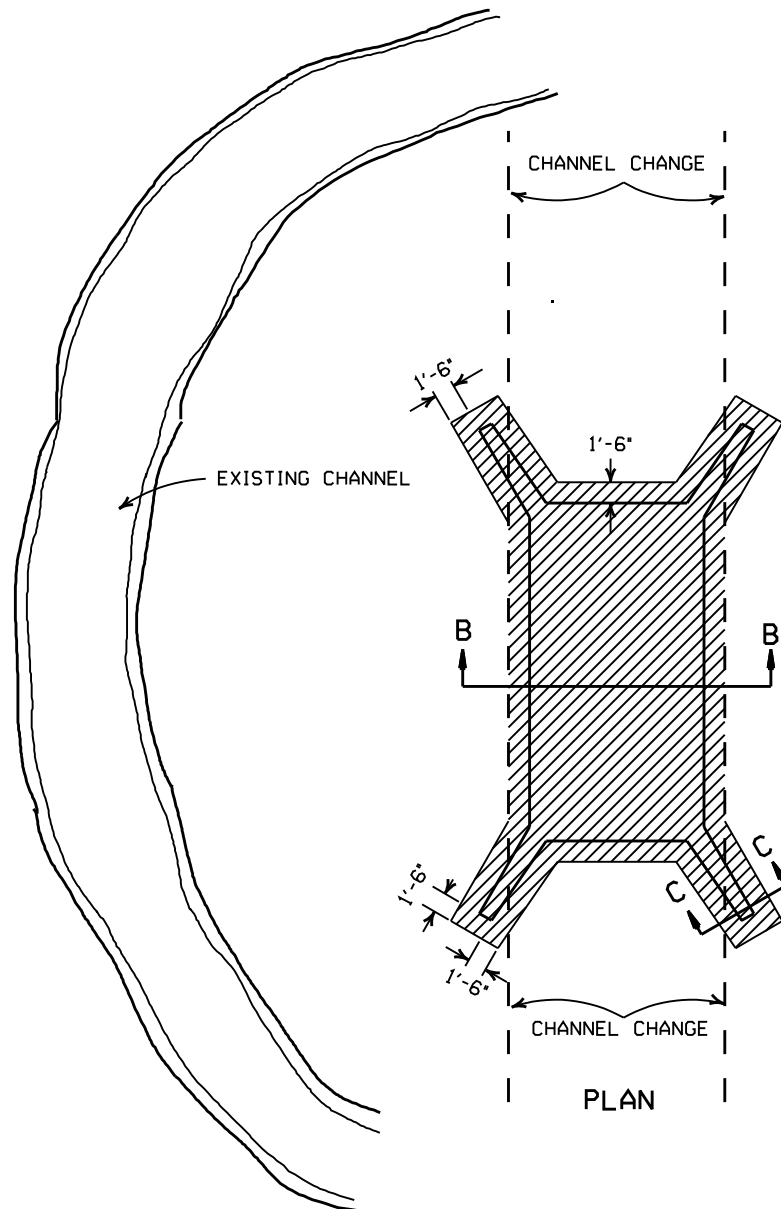
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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	

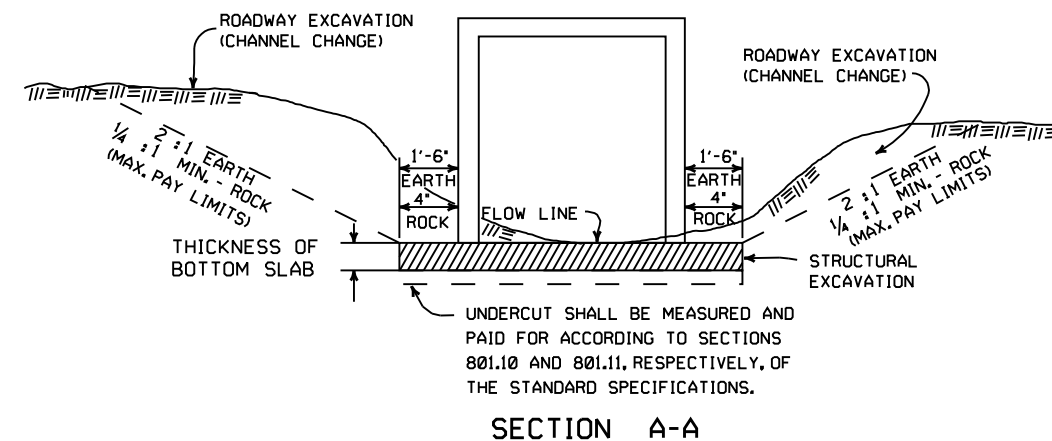
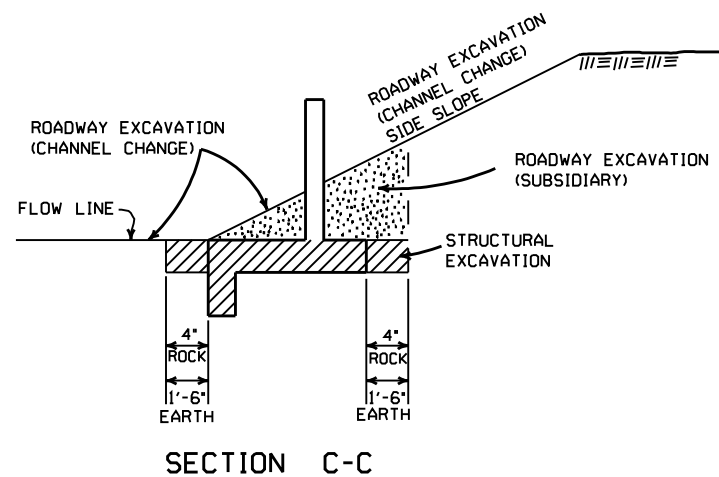
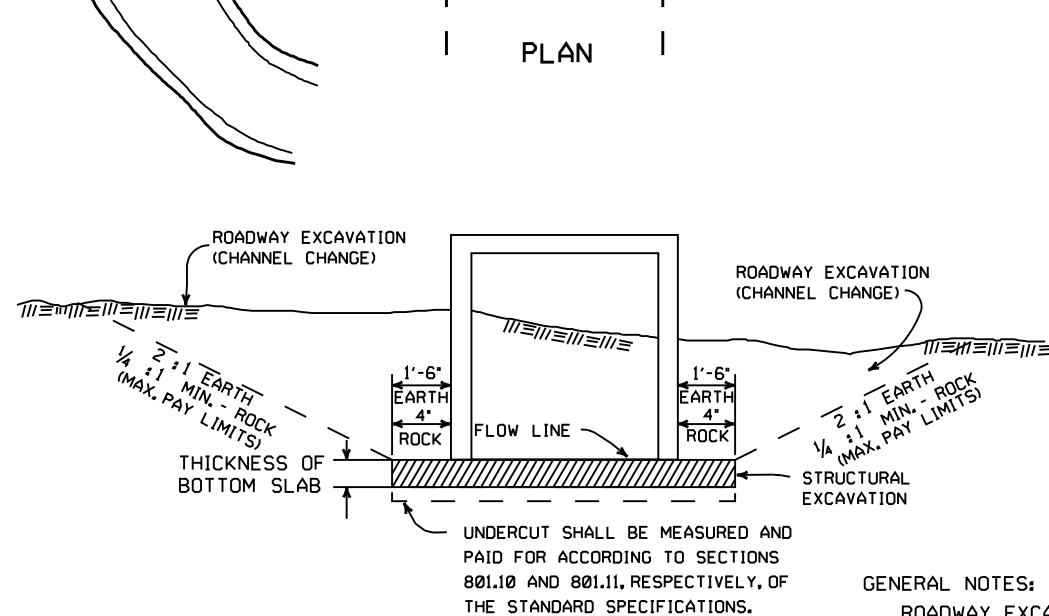
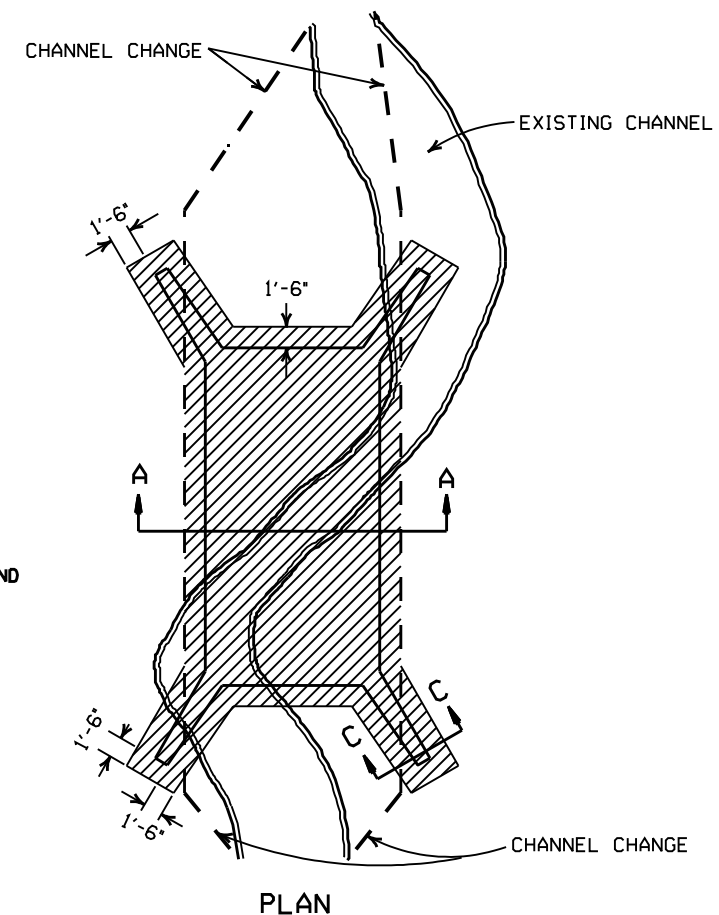
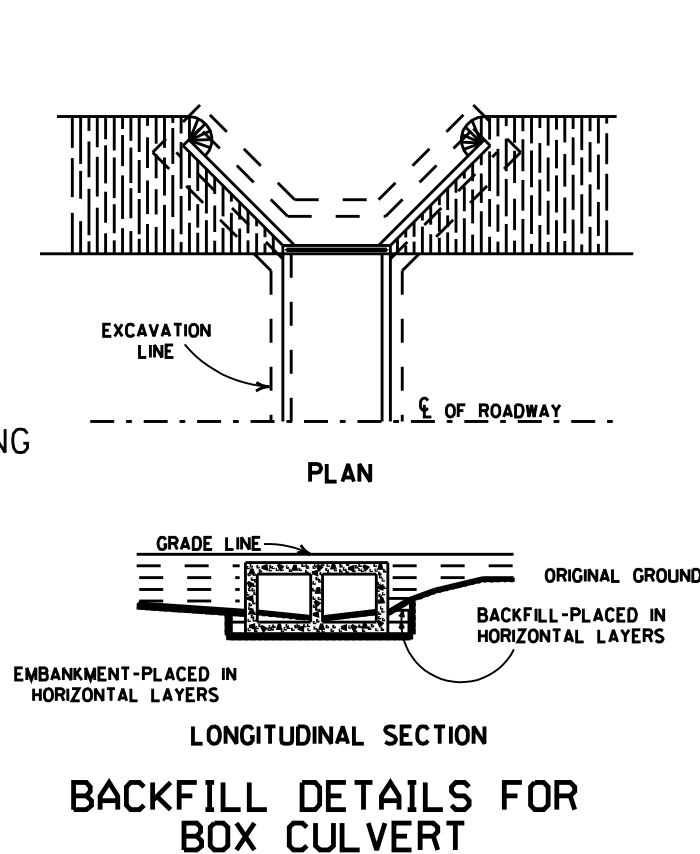
ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX
CULVERT DETAILS

STANDARD DRAWING RCB-1



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



DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

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

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

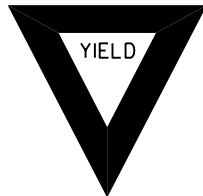
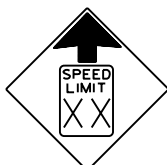
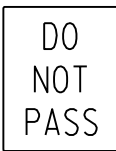
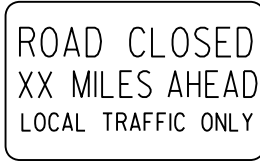
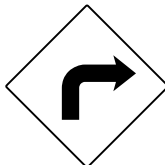
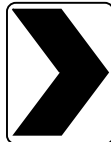
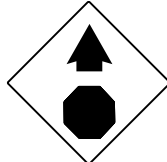
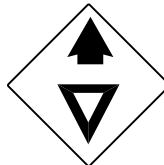
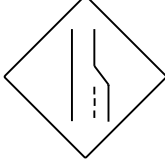
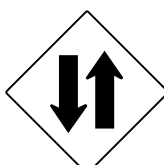
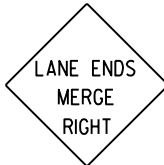
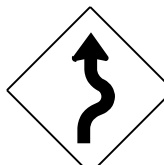
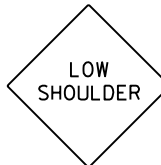
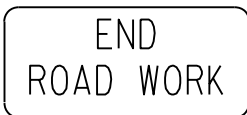
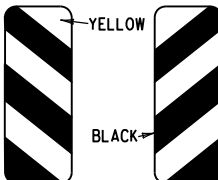
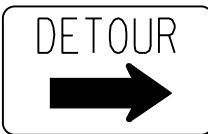
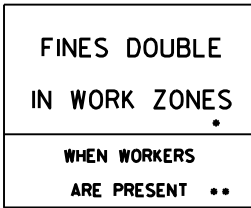
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

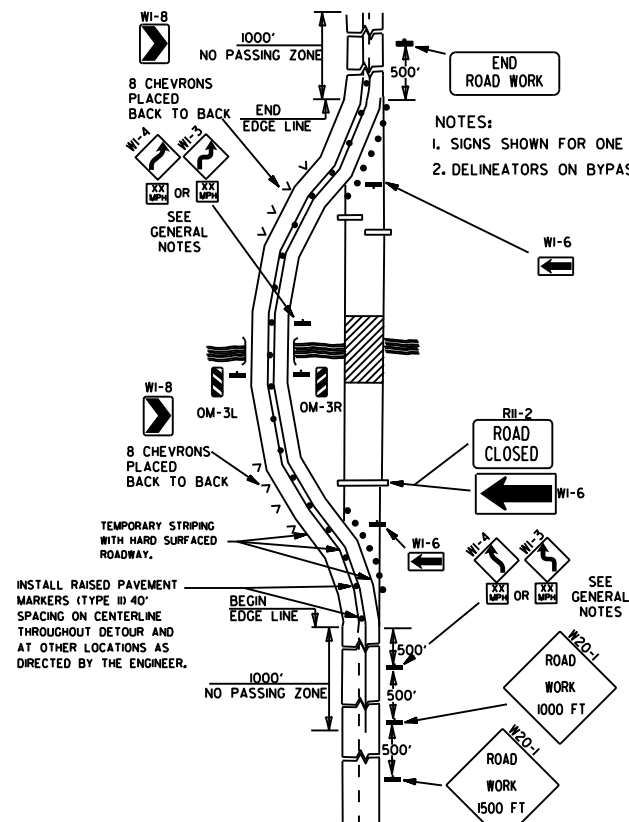
EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

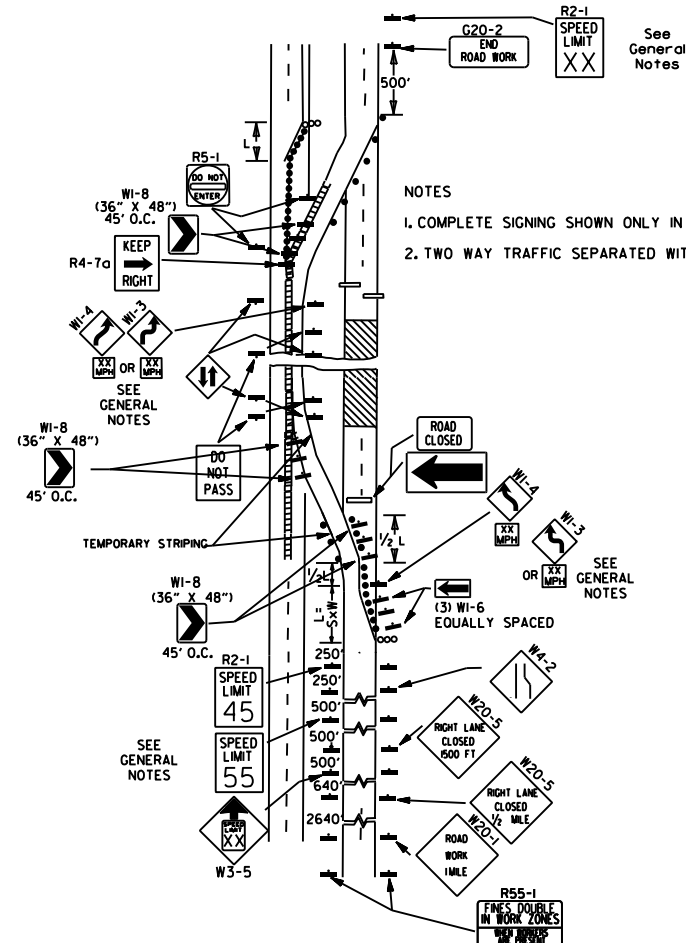
RI-I  STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"	RI-2  STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"	R2-I  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	W3-5  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	W3-5a  STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"	R4-I  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	R4-2  STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"	ADVANCE DISTANCES (XXXX) 500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD GENERAL NOTES: 1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. 2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER. 3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED. 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE. 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3. 6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE. 7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS. 8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS. 9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT. 10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN. • NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.
R5-I  STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"	R1I-2  48"x30"	R1I-3A  60"x30"	R1I-4  60"x30"	W2I-5a  STD. 36"x36" FWY. 48"x48"	W1-I  STD. 36"x36" FWY. 48"x48"	W1-2  STD. 36"x36" FWY. 48"x48"	
W1-3  STD. 48"x48"	W1-4  STD. 48"x48"	W1-6  STD. 48"x24" SPECIAL 60"x30"	W1-8  STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"	W3-I  STD. 36"x36" SPECIAL 48"x48"	W3-2  STD. 36"x36" SPECIAL 48"x48"	W4-2  STD. 36"x36" FWY. 48"x48"	
W5-I  STD. 36"x36" SPECIAL 48"x48"	W6-3  EXPWY. 36"x36" SPECIAL 48"x48"	W8-7  EXPWY. 36"x36" FWY. 48"x48"	W9-2  STD. 36"x36" FWY. 48"x48"	W13-I  STD. 24"x24"	W20-I  STD. 48"x48"	W20-2  STD. 48"x48"	W20-3  STD. 48"x48"
W20-4  STD. 48"x48"	W20-5  STD. 48"x48"	W20-7a  18" 500 FEET 24" W16-2 STD. 36"x36" FWY. 48"x48"	W2I-2  STD. 30"x30" SPECIAL 36"x36"	W2I-5  STD. 30"x30" SPECIAL 36"x36"	W24-I  STD. 36"x36"	W1-4b  STD. 48"x48"	R56-I  STD. 18"x18"
W8-II  STD. 36"x36" FWY. 48"x48"	W8-9  STD. 36"x36" FWY. 48"x48"	G20-I  60"x24"	G20-2  48"x24"	OM-3L OM-3R  12"x36"	M4-9  STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"	M4-10  48"x18"	R55-I  36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS

II-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W2I-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

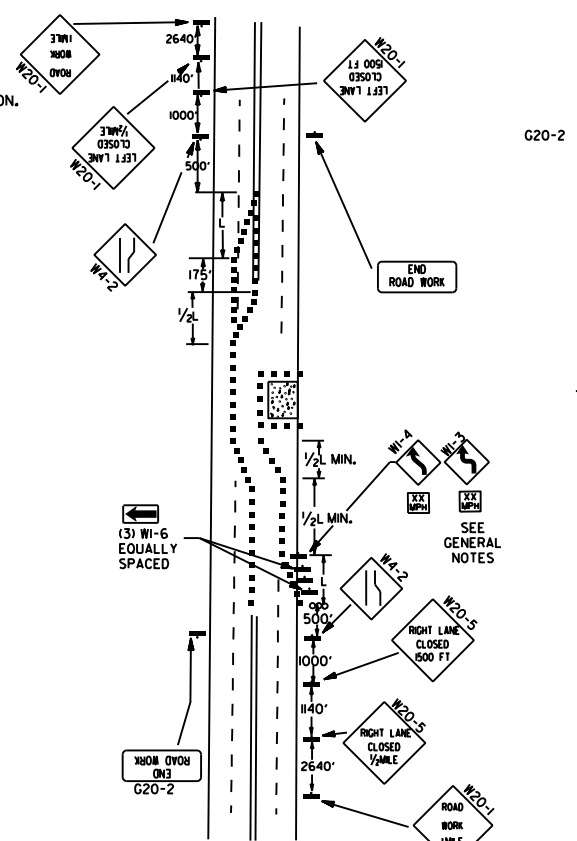
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



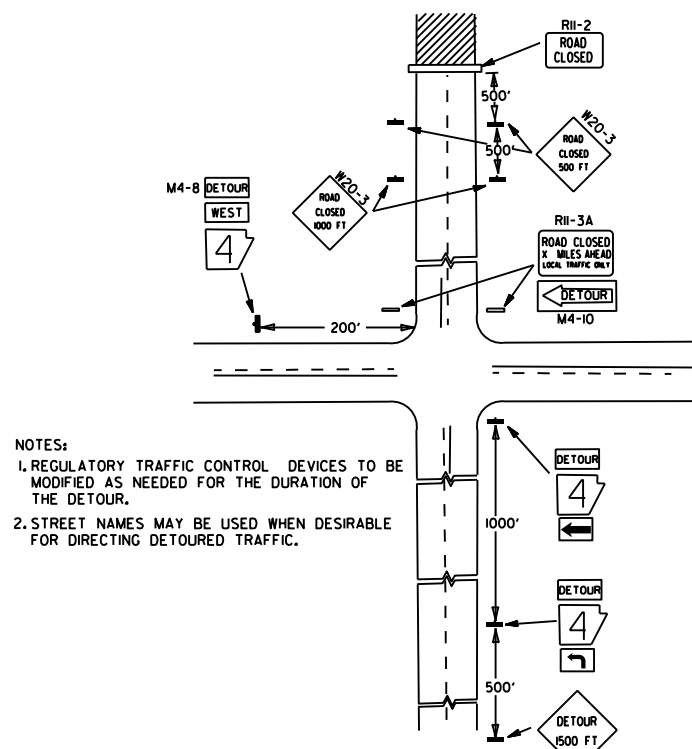
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



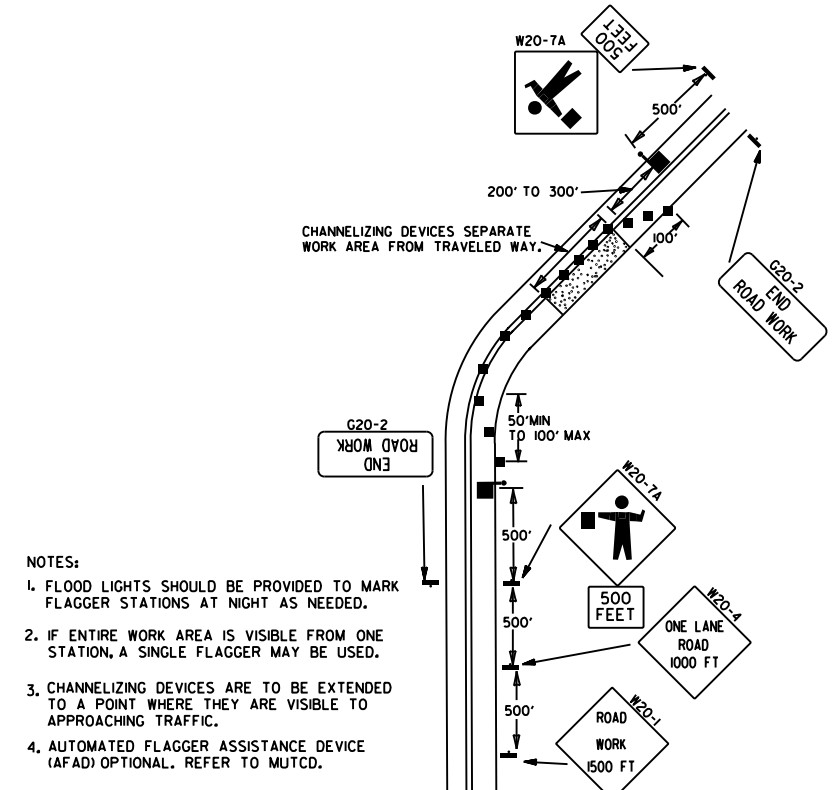
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



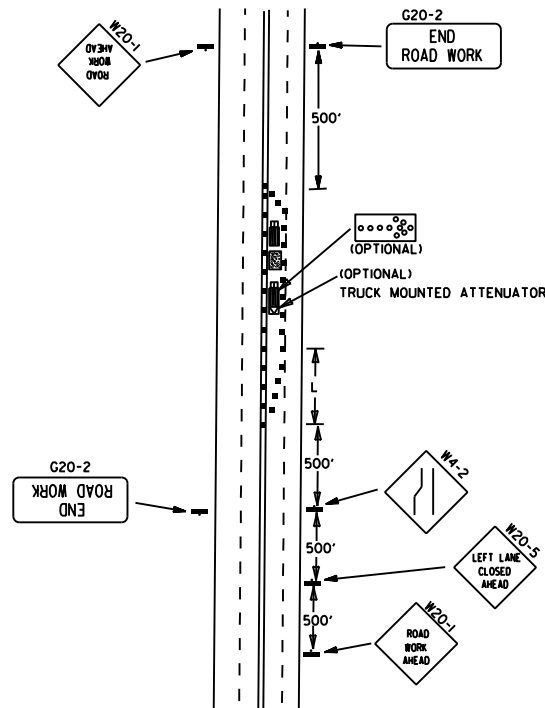
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

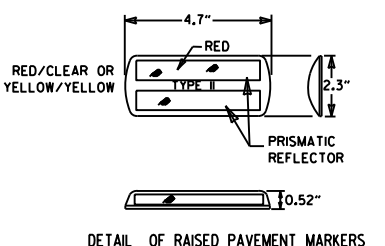


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

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



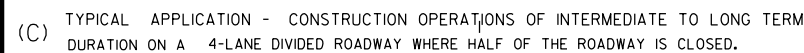
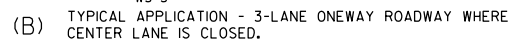
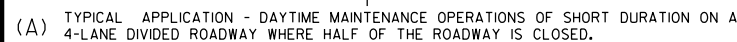
TYPICAL ADVANCE WARNING SIGN PLACEMENT

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

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

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

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



3/8"

3" DIA. PLATE 3/8" THICK

BAR 1 1/4" DIA. x 26" LONG

CONNECTING PIN

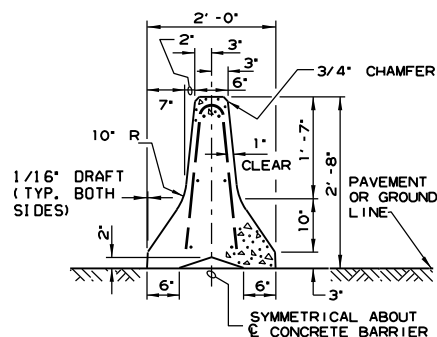
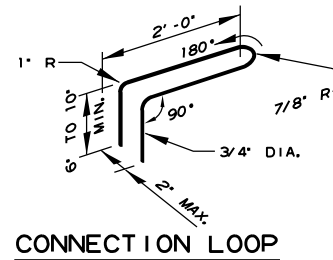
3/4" DIA. STEEL BAR

1 1/2" x 4" GROOVE

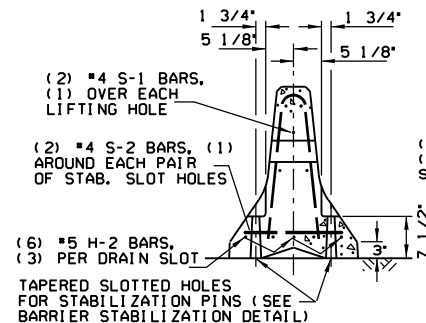
END OF UNIT

SECTION E-E

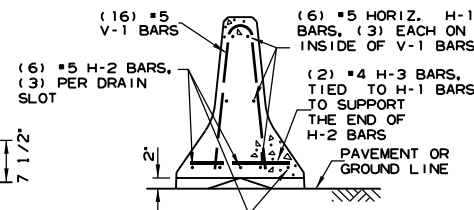
CONNECTION DETAILS



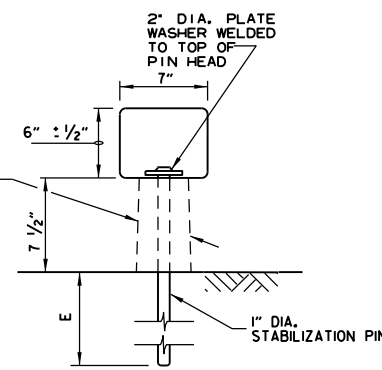
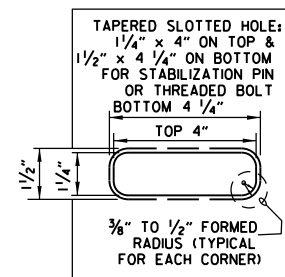
SECTION A-A



SECTION B-B



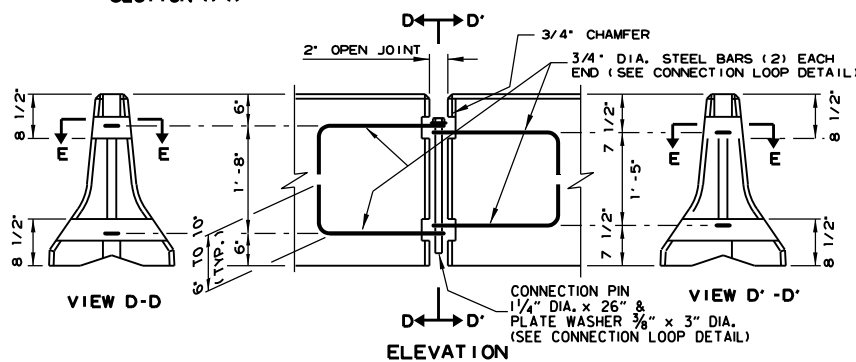
SECTION C-C



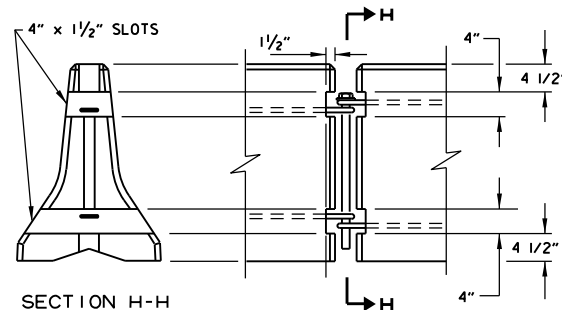
BARRIER STABILIZATION DETAIL

ROADWAY SECTION

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



ELEVATION

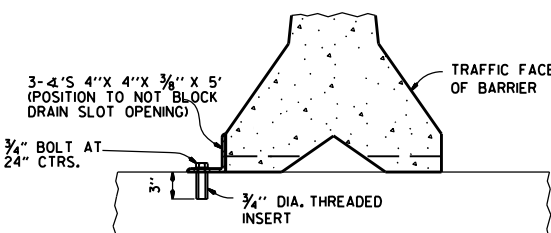


SECTION H-H

ELEVATION

BARRIER REMOVAL SLOT DETAILS

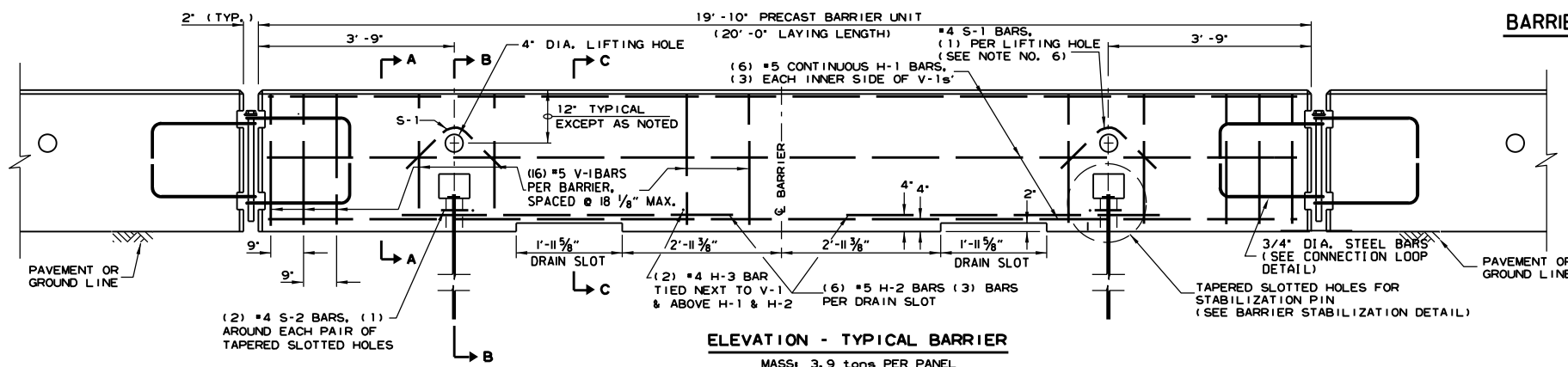
4"



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

BARRIER STABILIZATION DETAIL

BRIDGE DECKS



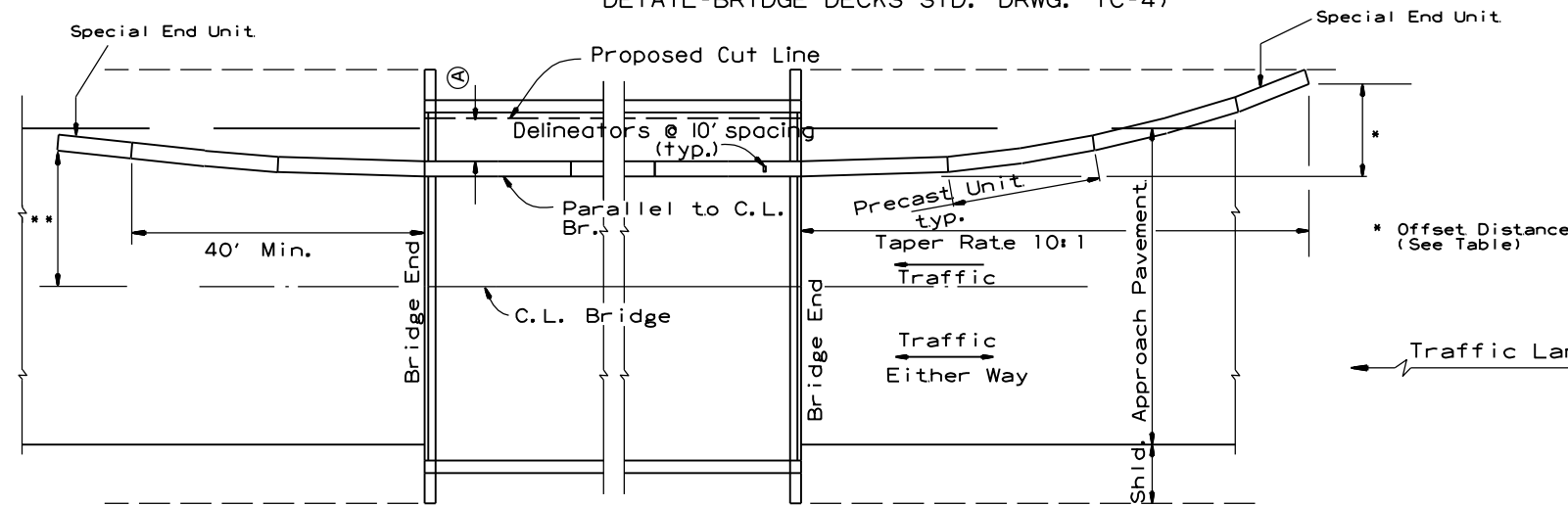
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

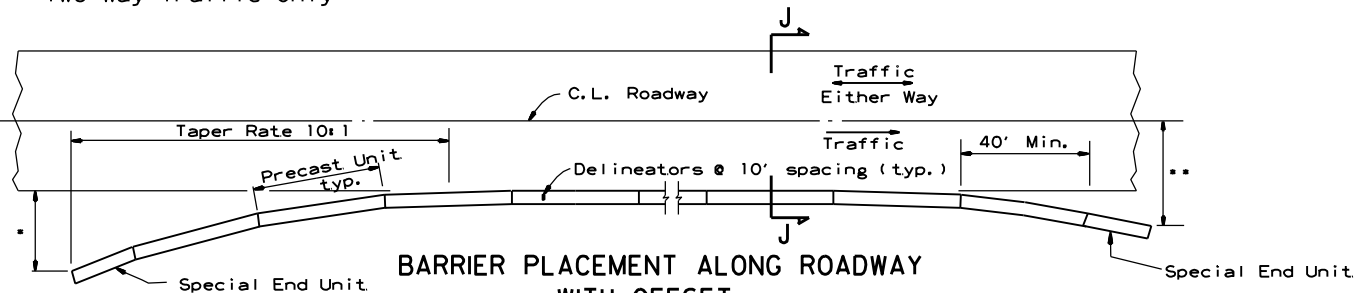
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

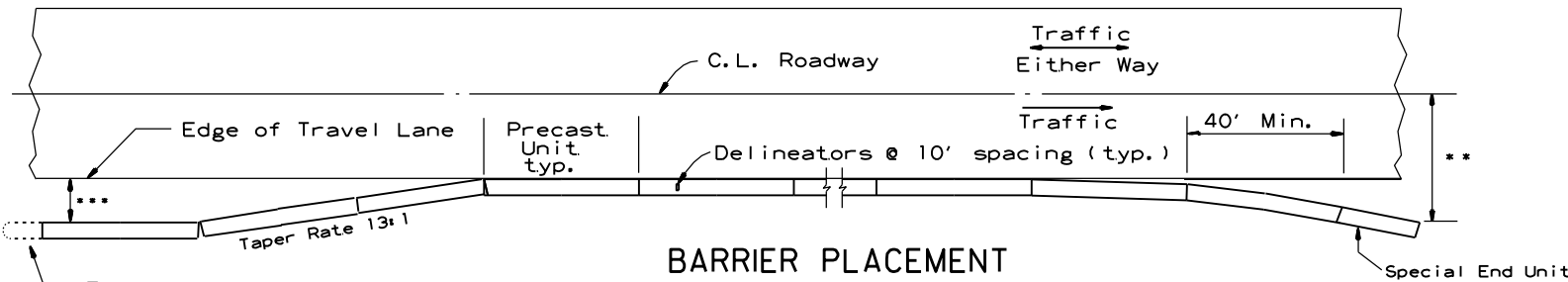
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

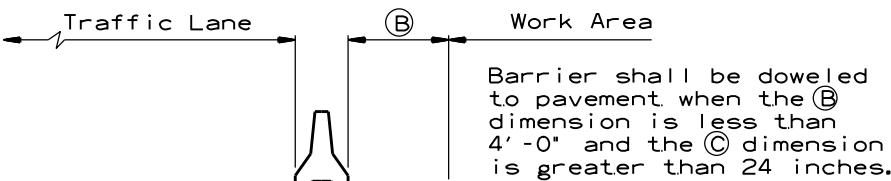


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

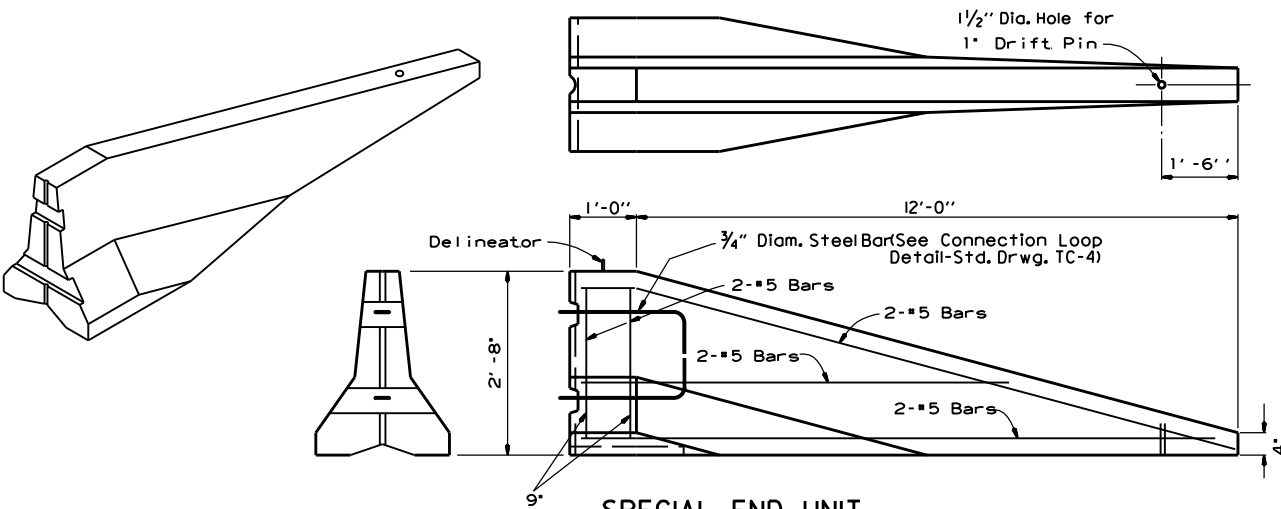
** Offset Distance For Two Way Traffic Only

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



SECTION J-J

No Scale



SPECIAL END UNIT

No Scale

General Notes

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

DATE	REVISION	FILMED
11-07-19	REVISED NOTE	
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

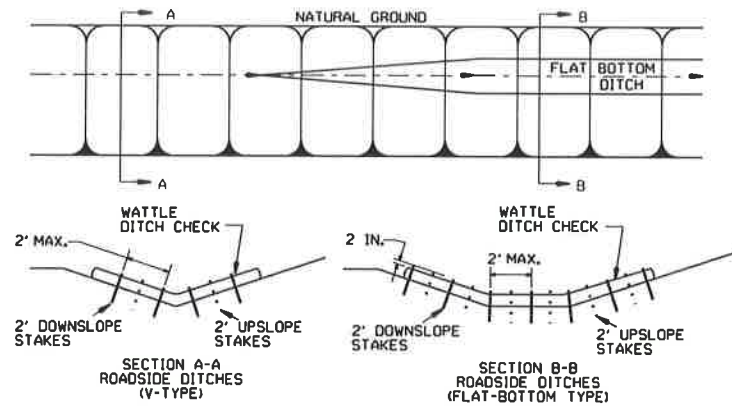
ARKANSAS STATE HIGHWAY COMMISSION

**STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION -
TEMPORARY PRECAST BARRIER**

STANDARD DRAWING TC-5

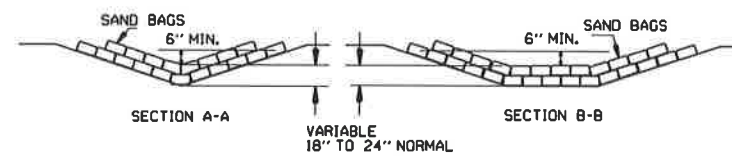
GENERAL NOTES

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

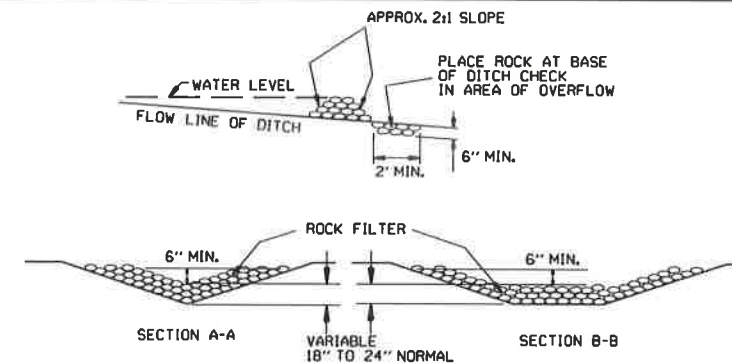


WATTLE DITCH CHECK (E-1)

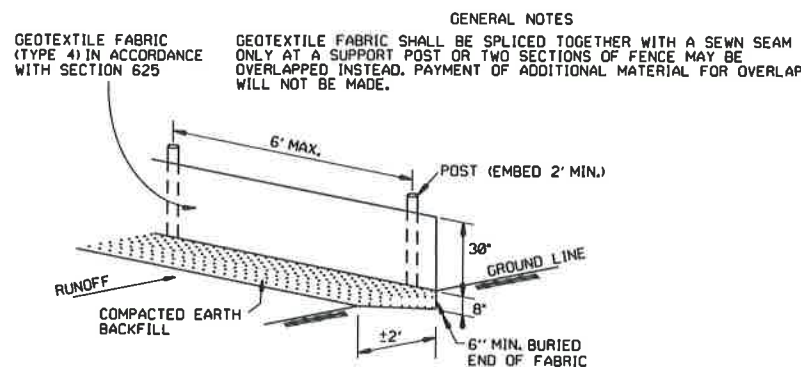
NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.



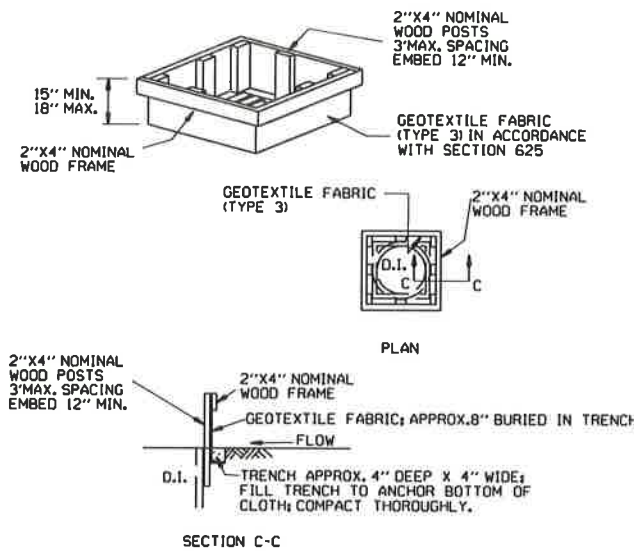
SAND BAG DITCH CHECK (E-5)



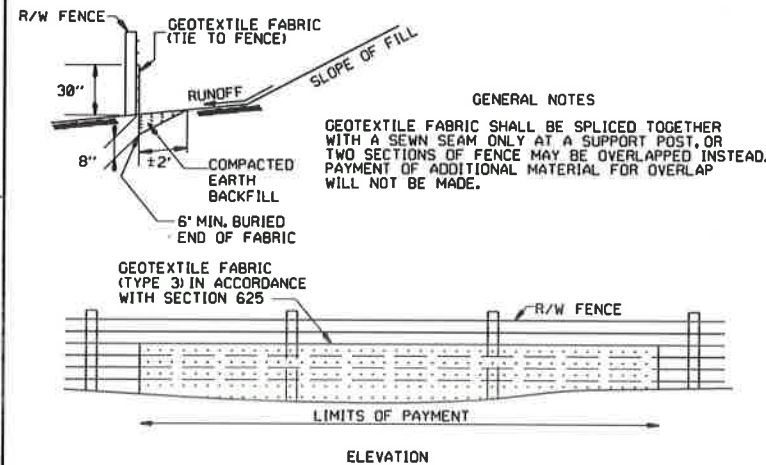
ROCK DITCH CHECK (E-6)



SILTS FENCE (E-11)

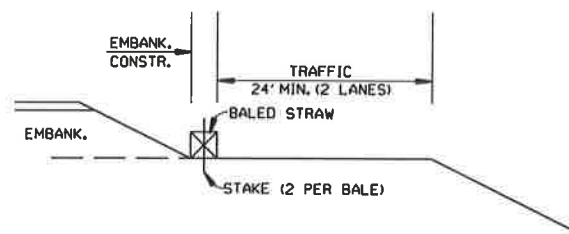


DROP INLET SILTS FENCE (E-7)

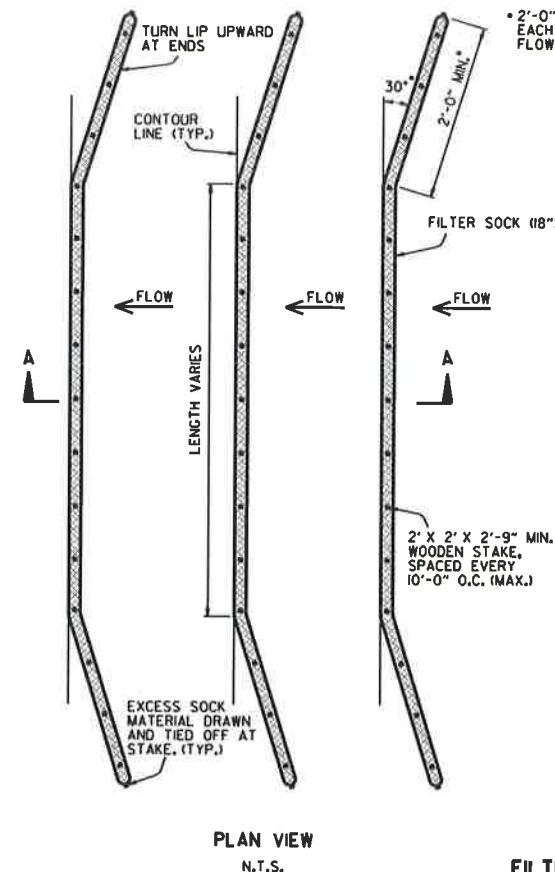


SILTS FENCE ON R/W FENCE (E-4)

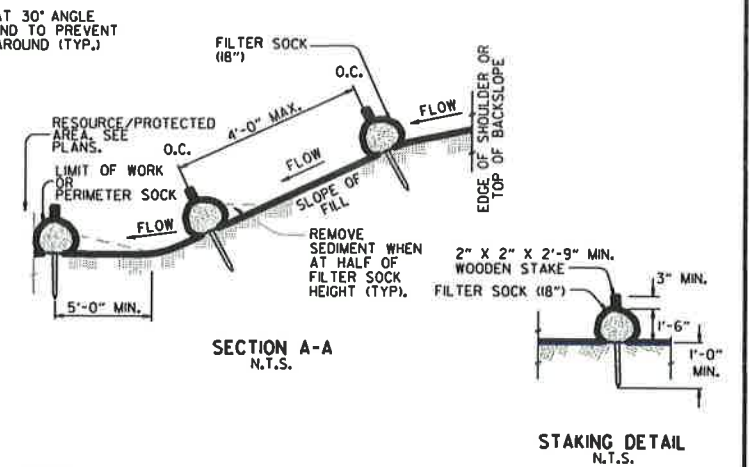
GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL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



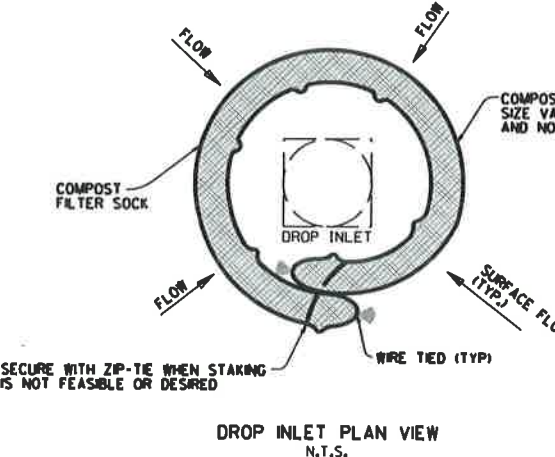
BALED STRAW FILTER BARRIER (E-2)



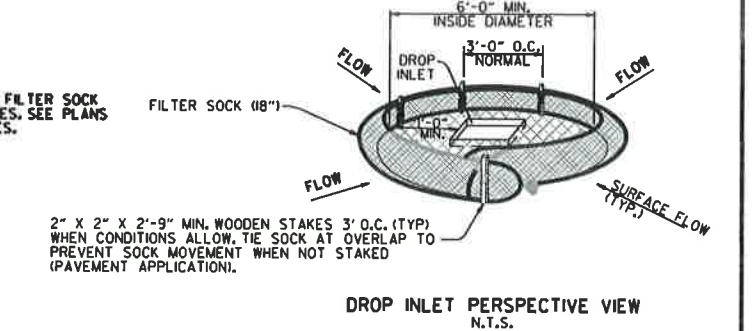
FILTER SOCK ALONG SLOPE (E-3)



NOTES:
1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18")."
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.
5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.



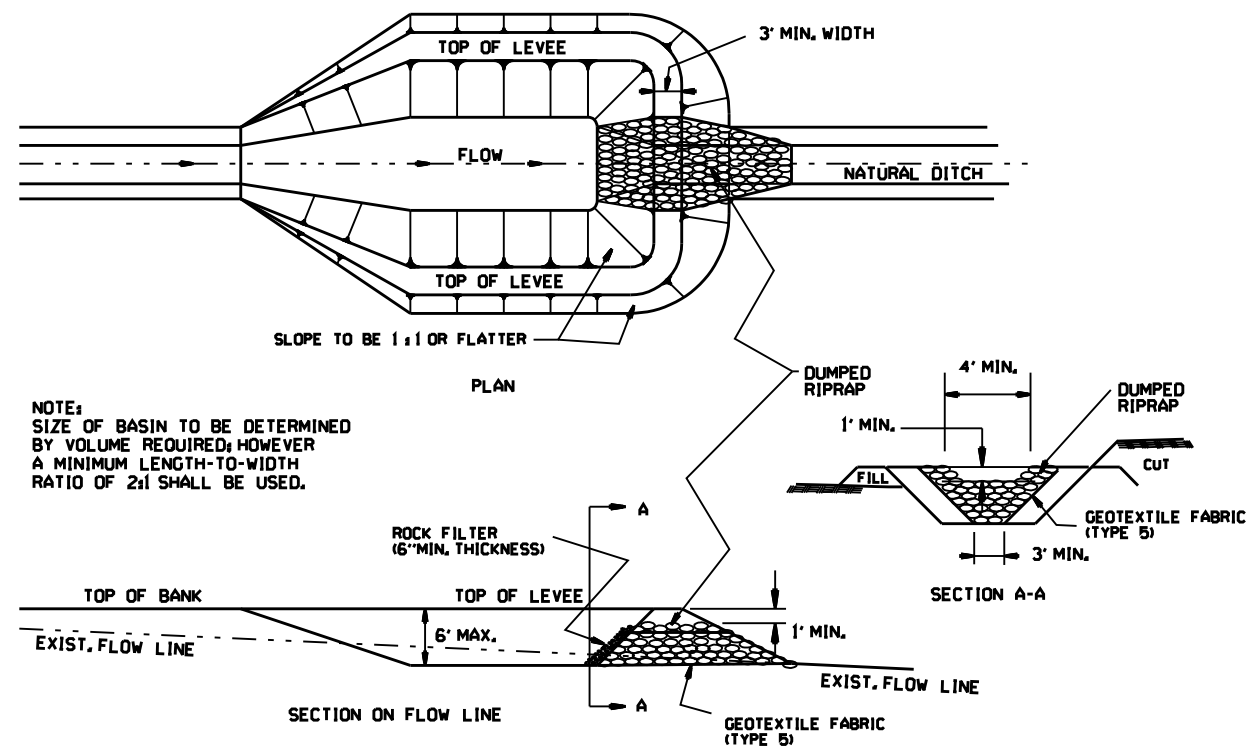
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)



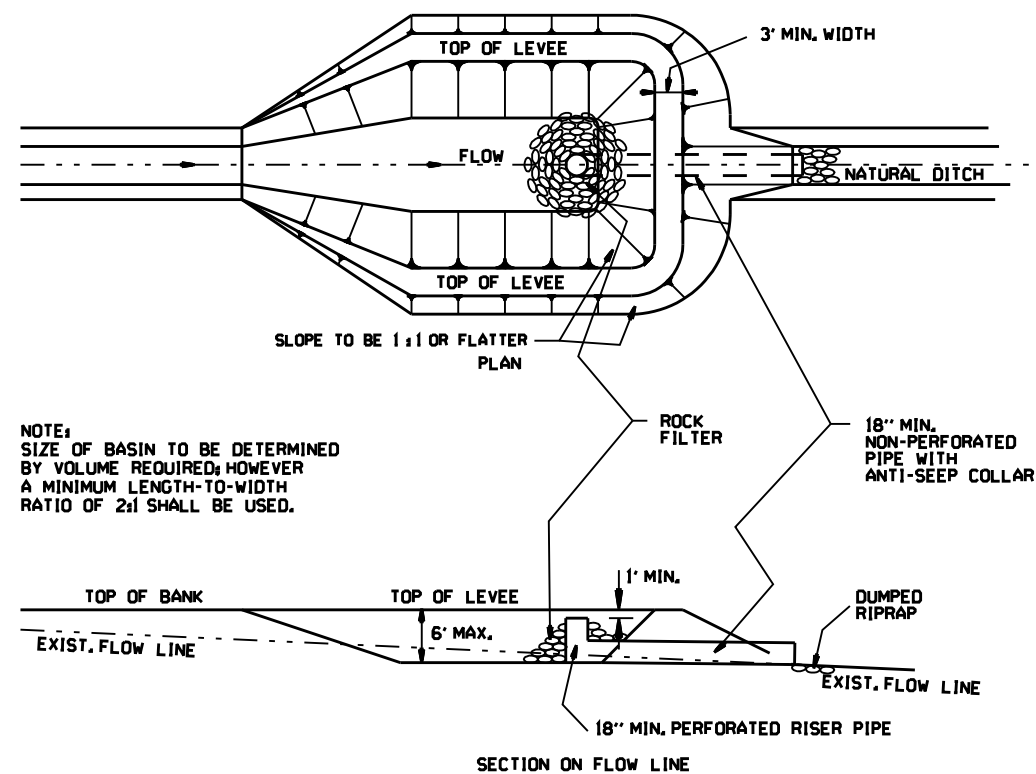
NOTES:
1. OVERLAP ENDS OF SOCK (1" MIN. 3" MAX.).
2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

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

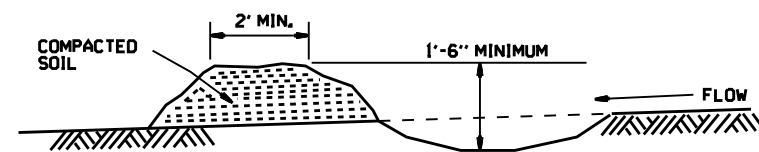
ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION
CONTROL DEVICES
STANDARD DRAWING TEC-1



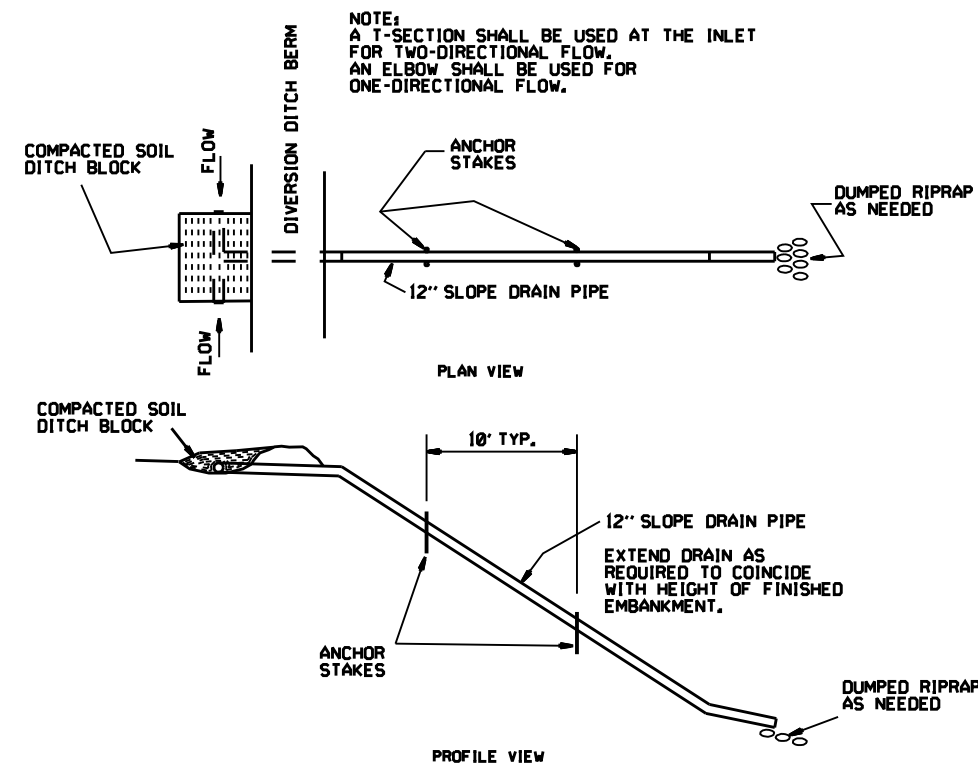
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



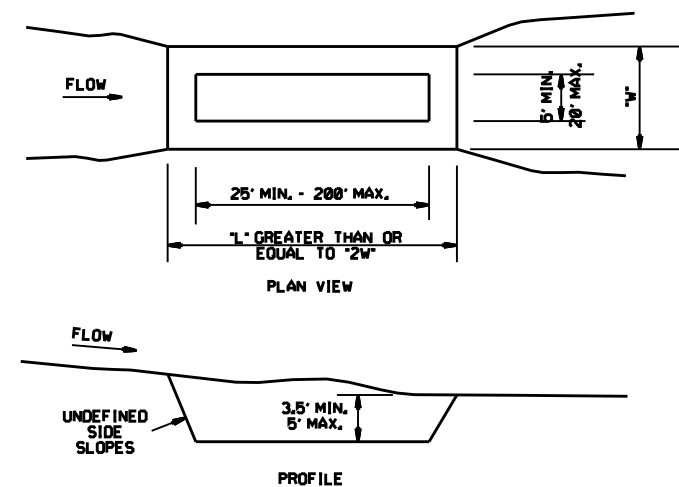
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



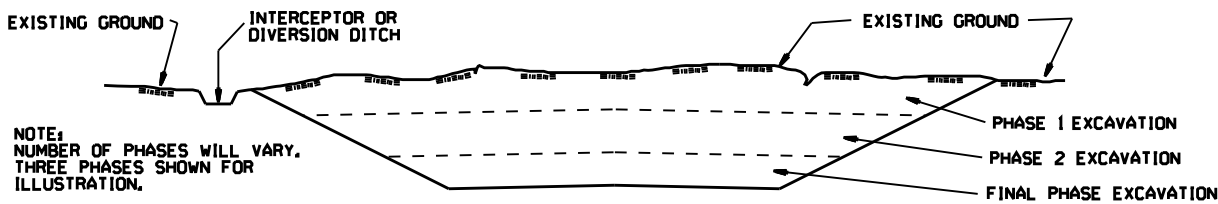
SEDIMENT BASIN (E-14)

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

CLEARING AND GRUBBING

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

EXCAVATION

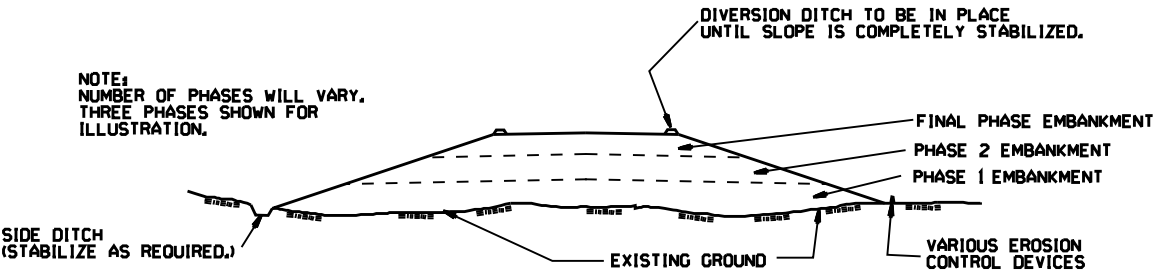


GENERAL NOTE

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

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

EMBANKMENT

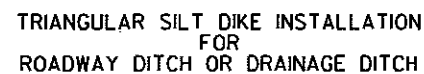
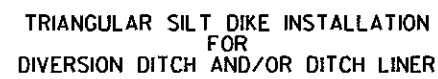


GENERAL NOTE

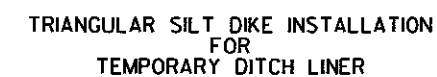
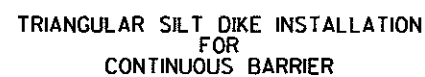
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

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

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



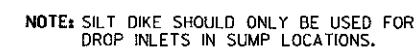
- POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



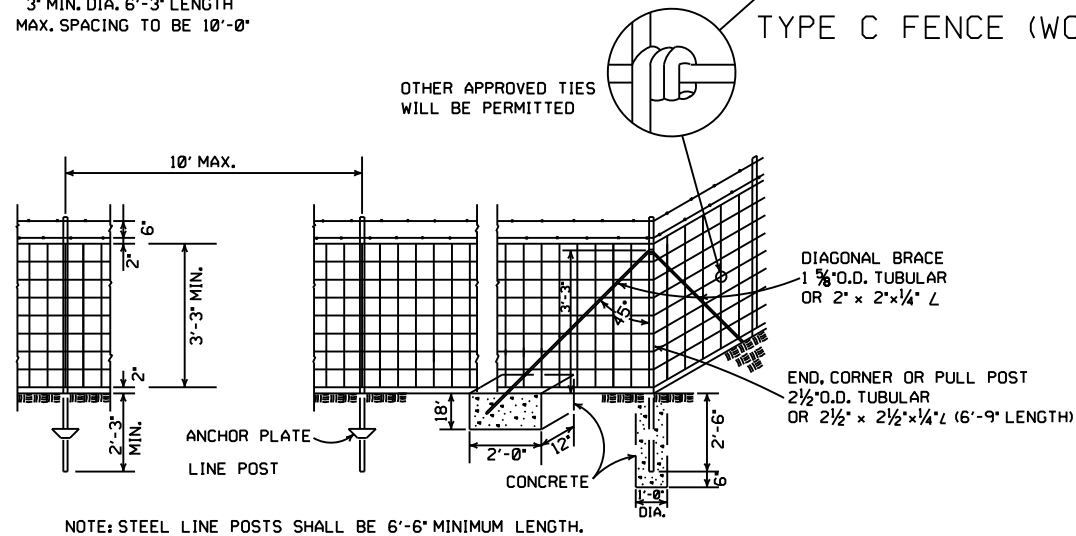
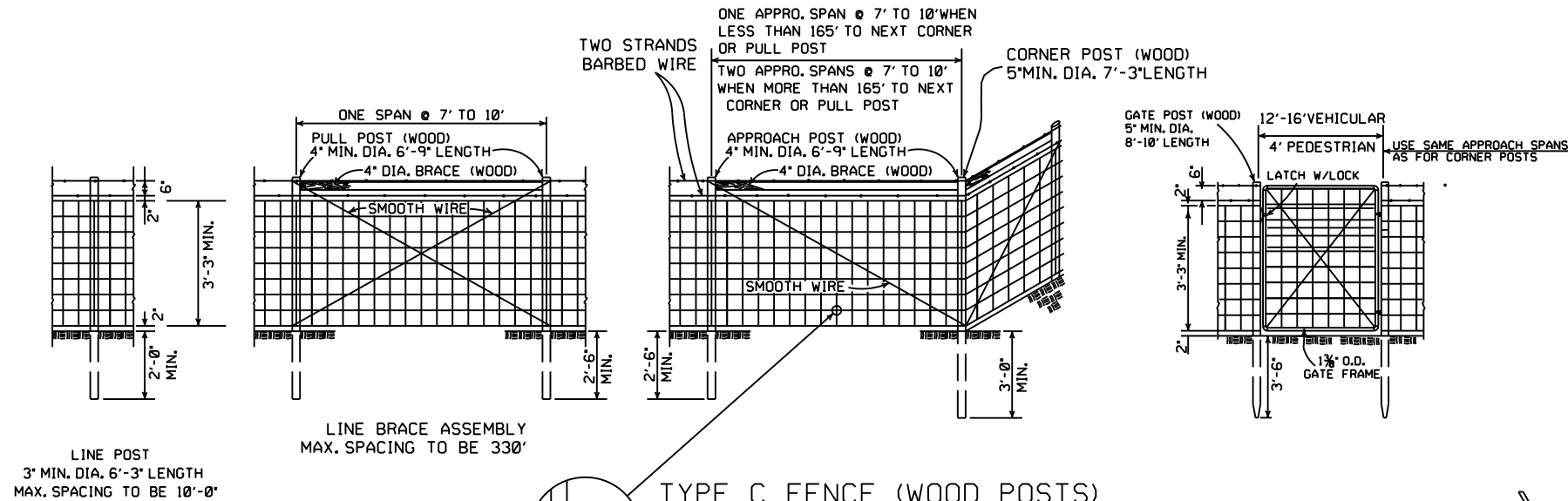
1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.
2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 24" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE WILDFIRE RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 10 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.
- THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

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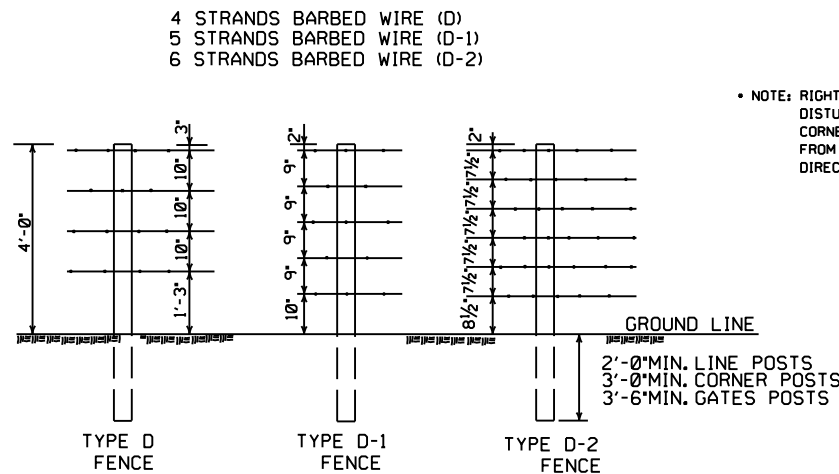
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.



		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
7-26-12	REVISED GENERAL NOTE 2.		STANDARD DRAWING TEC-4
12-15-11	ISSUED		
DATE	REVISION	FILED	

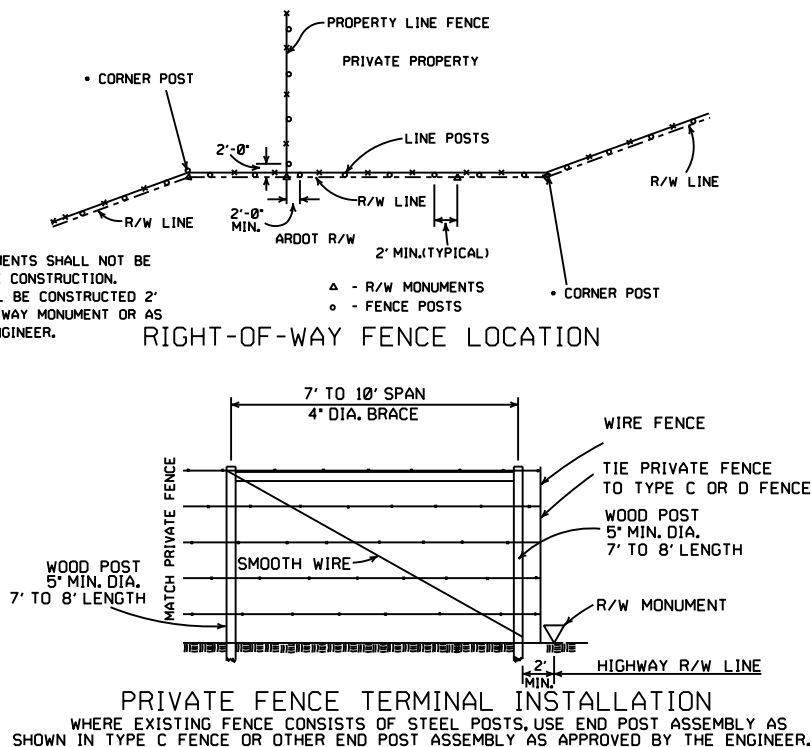


TYPE C FENCE (STEEL POSTS)



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

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



GENERAL NOTES:

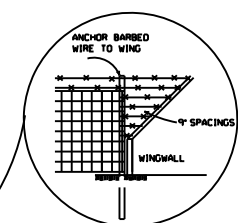
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE. AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO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

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

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

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

NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.

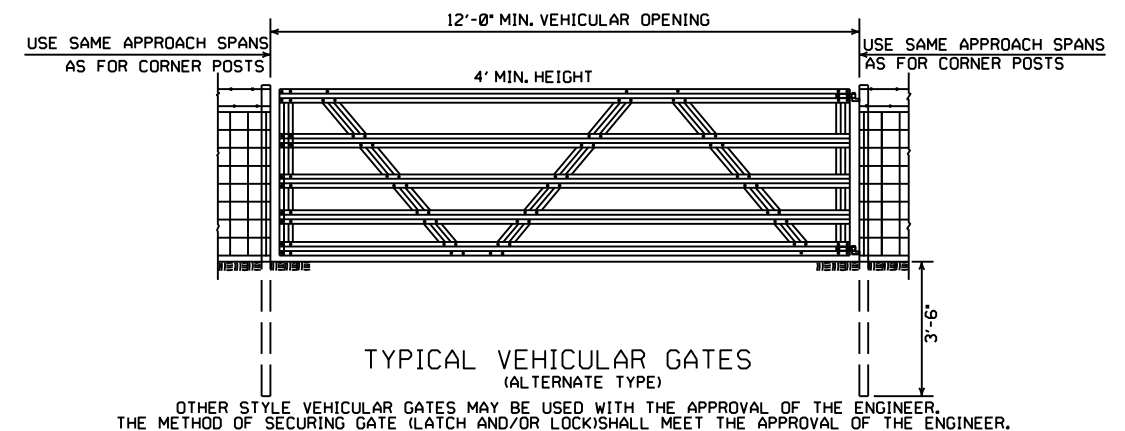


DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

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

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

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



8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND	6-2-94
	ADDED CORNER POST NOTES	
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4