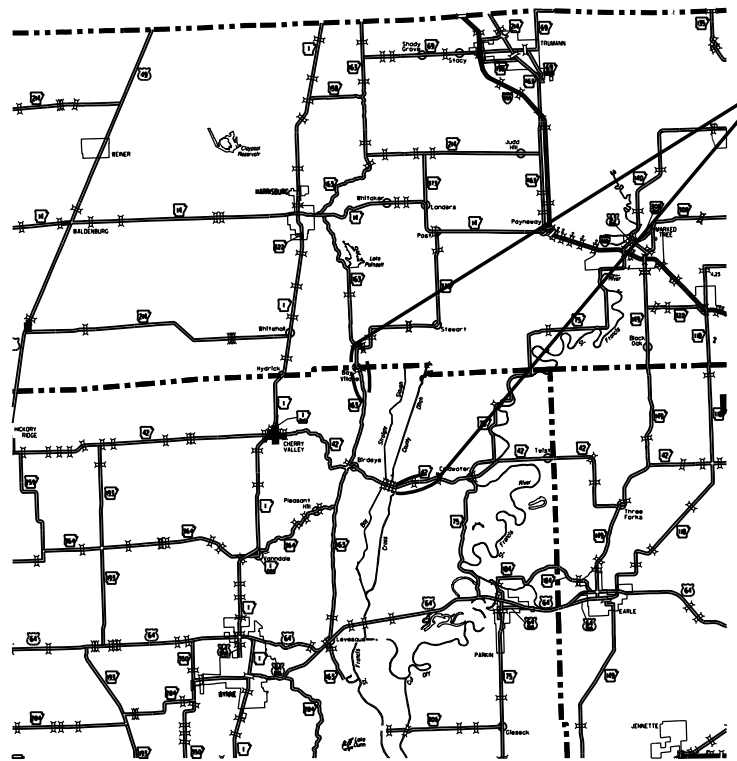
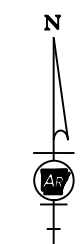


ARKANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION PLANS FOR STATE HIGHWAY

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	1	62
DRAINAGE DITCH & SUGAR CREEK STRS. & APPRS. (S)						



VICINITY MAP



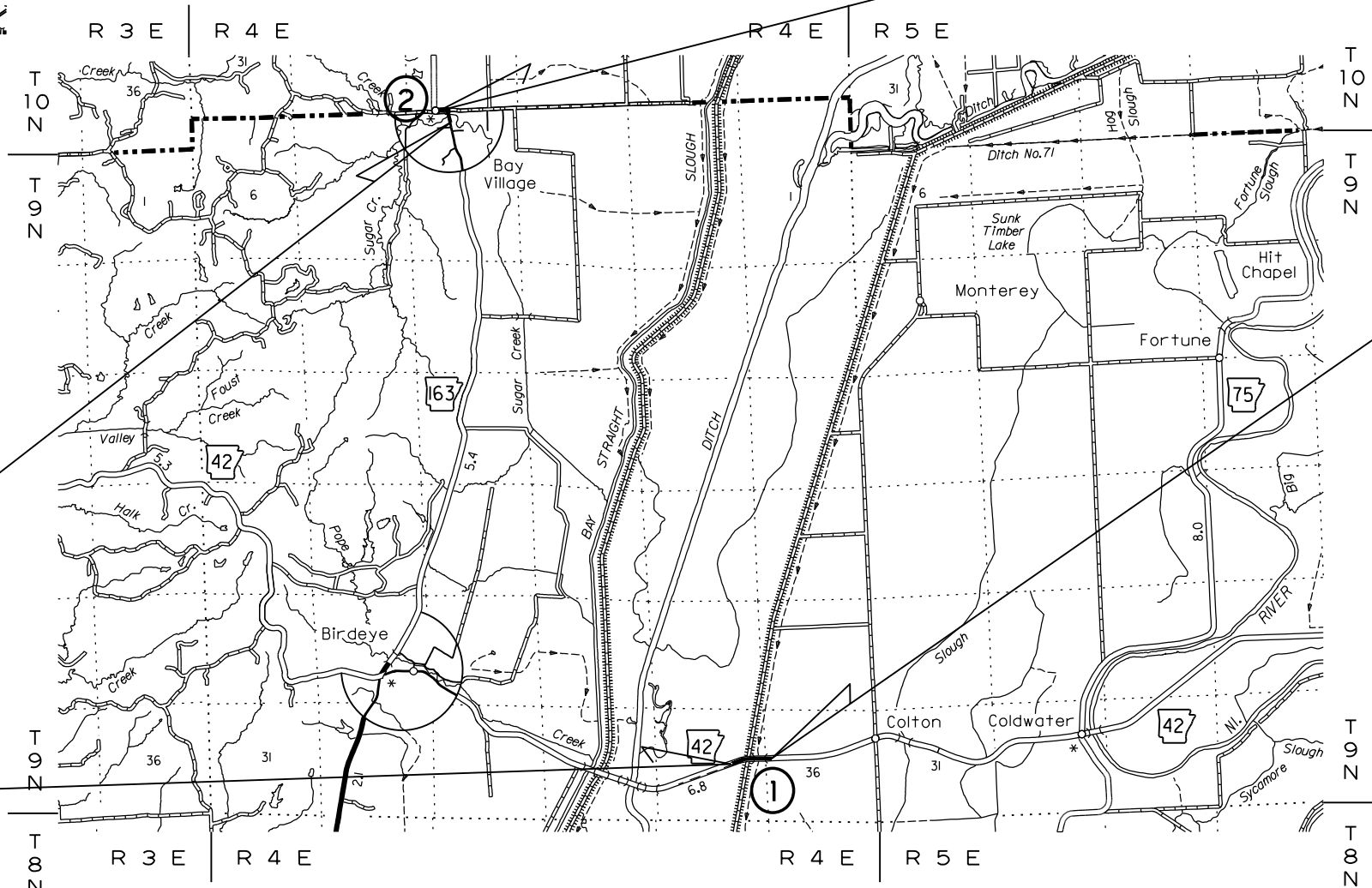
# DRAINAGE DITCH & SUGAR CREEK STRS. & APPRS. (S)

CROSS COUNTY  
ROUTE 42 SECTION 3  
ROUTE 163 SECTION 2  
JOB 110713

FED. AID PROJ. NHPP-0019(54)

NOT TO SCALE

STA. 225+01.73  
END SITE 2-HWY. 163



STA. 130+08.53  
END SITE 1-HWY. 42

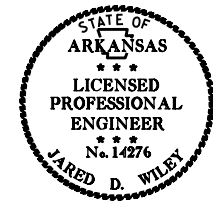
DESIGN TRAFFIC DATA - HWY. 163

DESIGN YEAR	2044
2024 ADT	400
2044 ADT	450
2044 DHV	50
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	35 MPH

DESIGN TRAFFIC DATA - HWY. 42

DESIGN YEAR	2044
2024 ADT	400
2044 ADT	450
2044 DHV	50
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	55 MPH

APPROVED



CHIEF ENGINEER - PRECONSTRUCTION

STRUCTURES OVER 20' -0" SPAN

- ① STA. 120+54 CONSTRUCT QUAD. 12' X 12' X 79' R. C. BOX CULVERT WITH 3:1 WINGS LT. & RT. Q25+370 CFS D. A. +5.64 SQ. MI. SPAN=52' -1'
- ② STA. 220+56 CONSTRUCT QUINT. 12' X 11' X 52' R. C. BOX CULVERT WITH 3:1 WINGS LT. & RT. Q25+2670 CFS D. A. +5.53 SQ. MI. SPAN=64' -4'

STA. 216+38.09  
BEGIN SITE 2-HWY. 163  
LOG MILE 14.23

STA. 109+47.84  
BEGIN SITE 1-HWY. 42  
LOG MILE 9.27

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	2924.33	FEET	OR	0.554	MILES
NET ROADWAY	2807.92			0.532	MILES
NET BRIDGES	116.41			0.022	MILES
NET PROJECT	2924.33			0.554	MILES

SITE 1			
	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°21'46"	N 35°21'47"	N 35°21'47"
LONGITUDE	W 90°38'02"	W 90°37'49"	W 90°37'37"
SITE 2			
	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°26'53"	N 35°26'57"	N 35°26'58"
LONGITUDE	W 90°40'30"	W 90°40'32"	W 90°40'36"

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	2	62
INDEX OF SHEETS AND STANDARD DRAWINGS						



### INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	INDEX OF SHEETS AND STANDARD DRAWINGS
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 7	TYPICAL SECTIONS OF IMPROVEMENT
8 - 16	SPECIAL DETAILS
17 - 22	TEMPORARY EROSION CONTROL DETAILS
23 - 30	MAINTENANCE OF TRAFFIC DETAILS
31 - 31	PERMANENT PAVEMENT MARKING DETAILS
32 - 34	QUANTITIES
35	SUMMARY OF QUANTITIES AND REVISIONS
36 - 38	SURVEY CONTROL DETAILS
39 - 42	PLAN AND PROFILE SHEETS
43 - 62	CROSS SECTIONS

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

### ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
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
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-4	WIRE FENCE TYPE C AND D	08-22-02

**GOVERNING SPECIFICATIONS**

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

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	3	62
<b>GOVERNING SPECIFICATIONS &amp; GENERAL NOTES</b>						



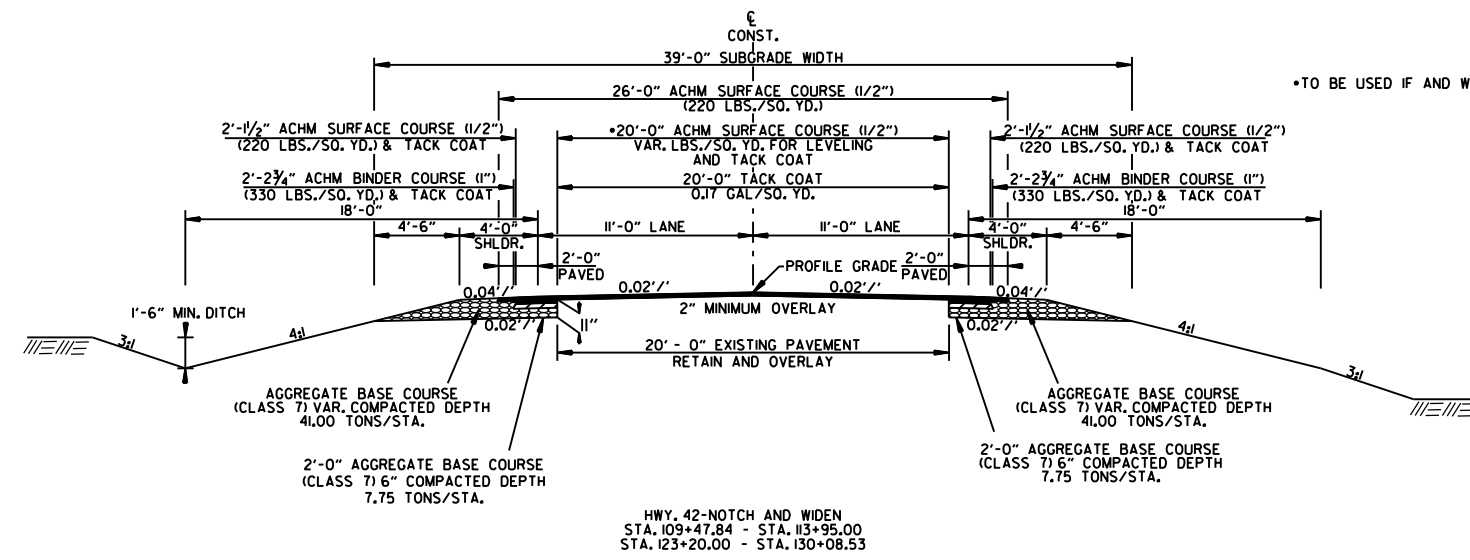
NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 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	PREQUALIFICATIONS OF BIDDERS
103-2	CONTACT INFORMATION FOR MOTORIST 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
606-1	PIPE CULVERTS FOR SIDE DRAINS
619-1	FENCES
620-1	MULCH COVER
637-1	MAILBOXES
800-1	STRUCTURES
802-5	CONCRETE FOR STRUCTURES
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 110713	BIDDING REQUIREMENTS AND CONDITIONS
JOB 110713	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 110713	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 110713	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 110713	CARGO PREFERENCE ACT REQUIREMENTS
JOB 110713	COLD MILLING - COUNTY PROPERTY
JOB 110713	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 110713	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 110713	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 110713	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 110713	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 110713	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 110713	MANDATORY ELECTRONIC CONTRACT
JOB 110713	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 110713	NESTING SITES OF MIGRATORY BIRDS
JOB 110713	PARTNERING REQUIREMENTS
JOB 110713	PERCENT AIR VOIDS AND NDESIGN FOR ACHM SURFACE MIX DESIGNS
JOB 110713	PLASTIC PIPE
JOB 110713	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB 110713	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 110713	PRICE ADJUSTMENT FOR FUEL
JOB 110713	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 110713	SHORING FOR CULVERTS
JOB 110713	SOIL STABILIZATION
JOB 110713	SEQUENCE OF WORK
JOB 110713	STORM WATER POLLUTION PREVENTION PLAN
JOB 110713	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 110713	UTILITY ADJUSTMENTS
JOB 110713	VALUE ENGINEERING
JOB 110713	WARM MIX ASPHALT

**GENERAL NOTES**

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. 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.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. 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.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE 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.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
10. 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.
11. 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.	110713	4	62
TYPICAL SECTIONS OF IMPROVEMENT						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



\*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

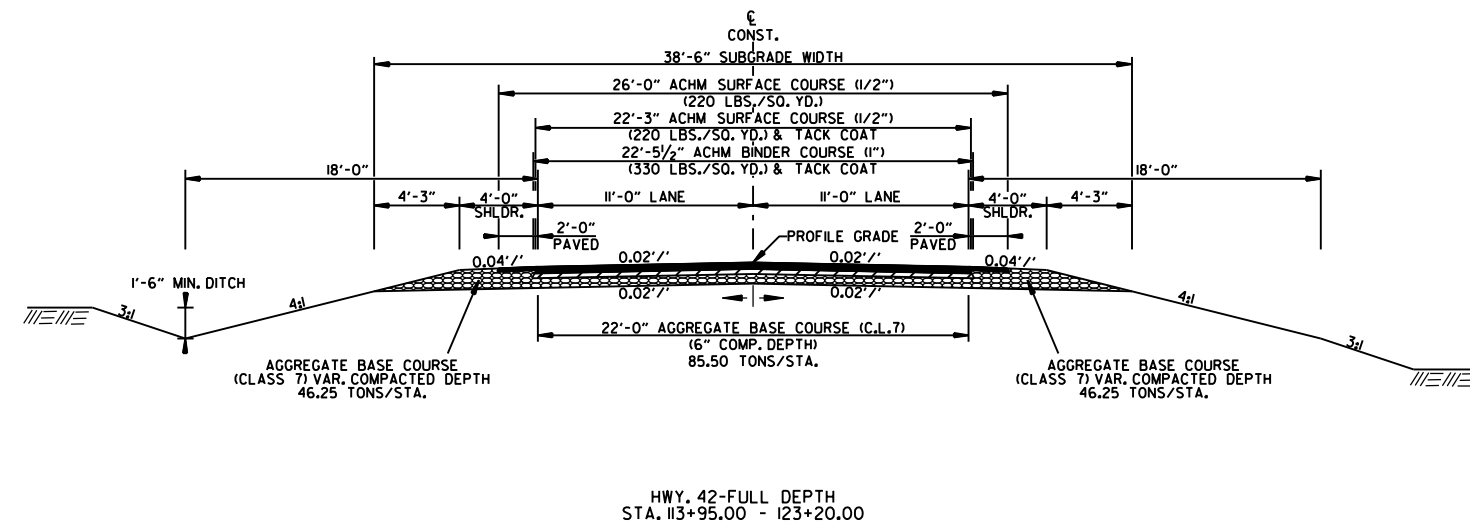
NOTES:  
 THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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.

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

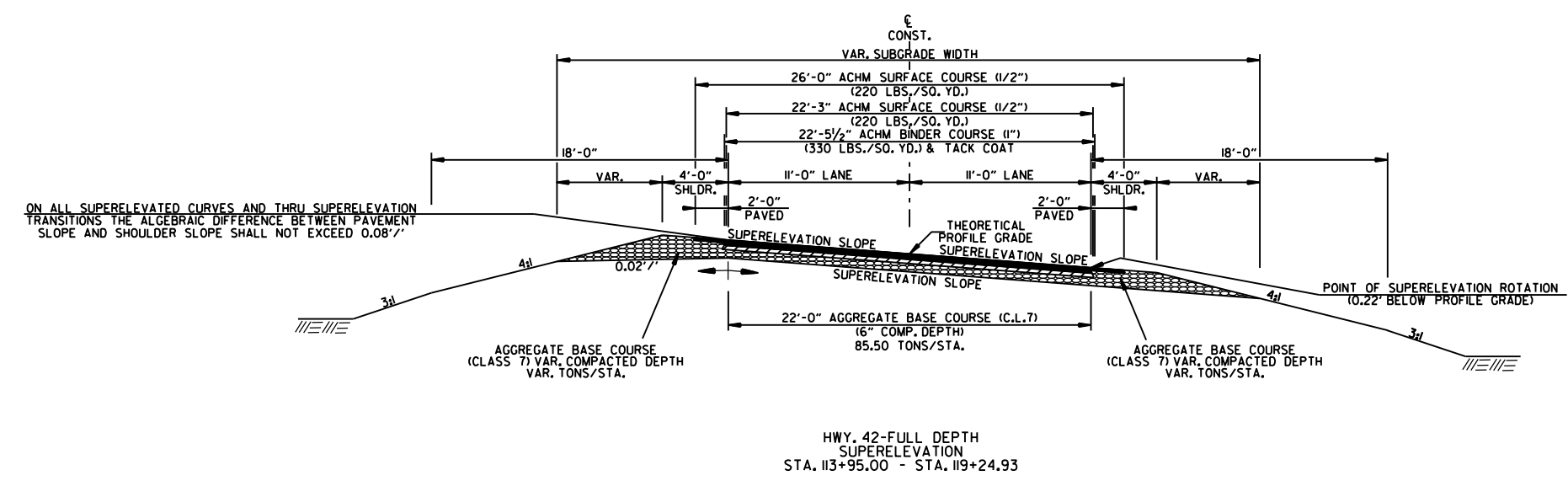
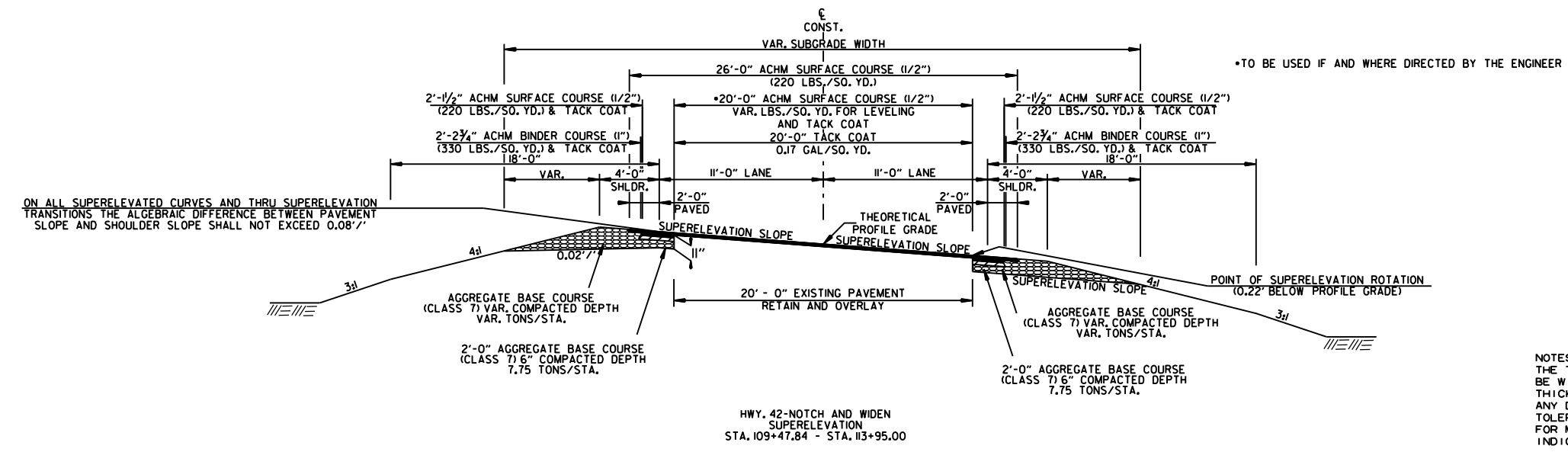
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WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACBM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	5	62
TYPICAL SECTIONS OF IMPROVEMENT						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'

ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'

\*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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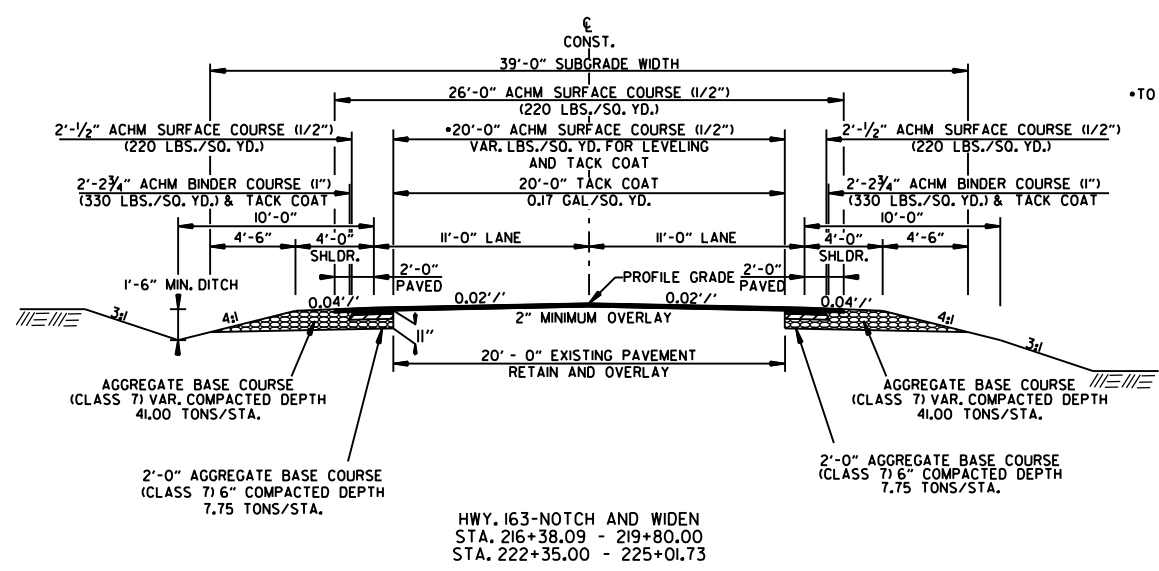
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	6	62
TYPICAL SECTIONS OF IMPROVEMENT						



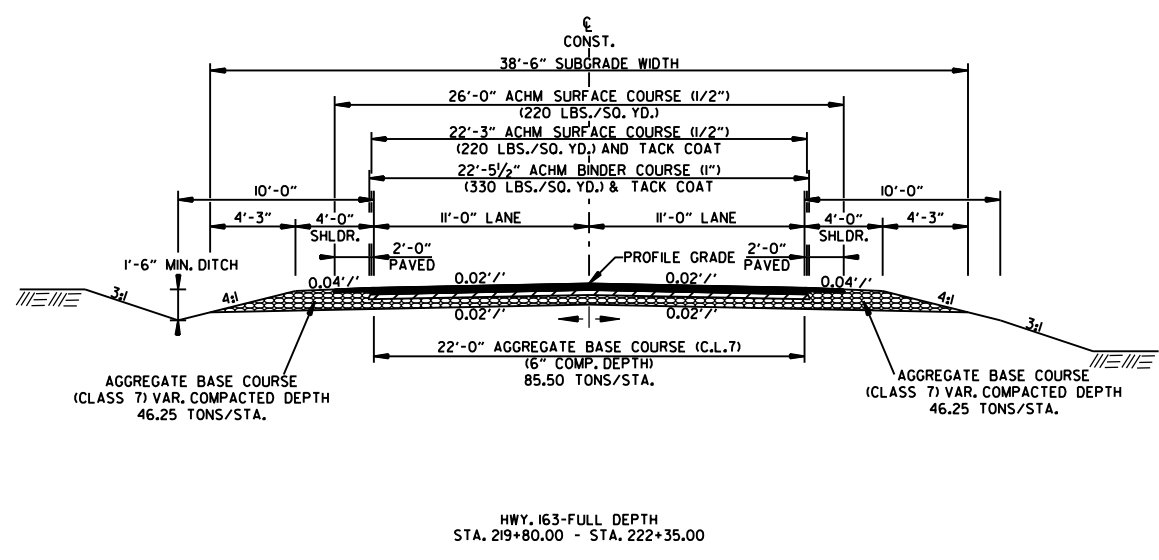
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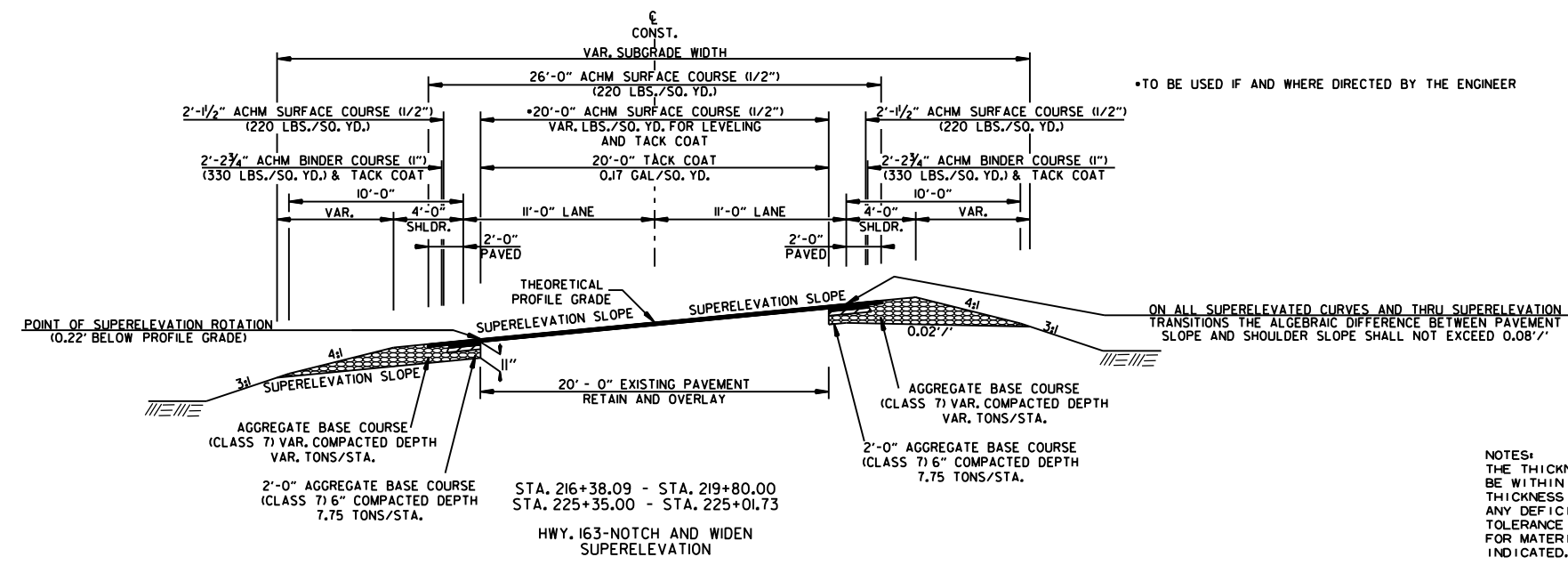
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WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACBM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	7	62

TYPICAL SECTIONS OF IMPROVEMENT



\*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

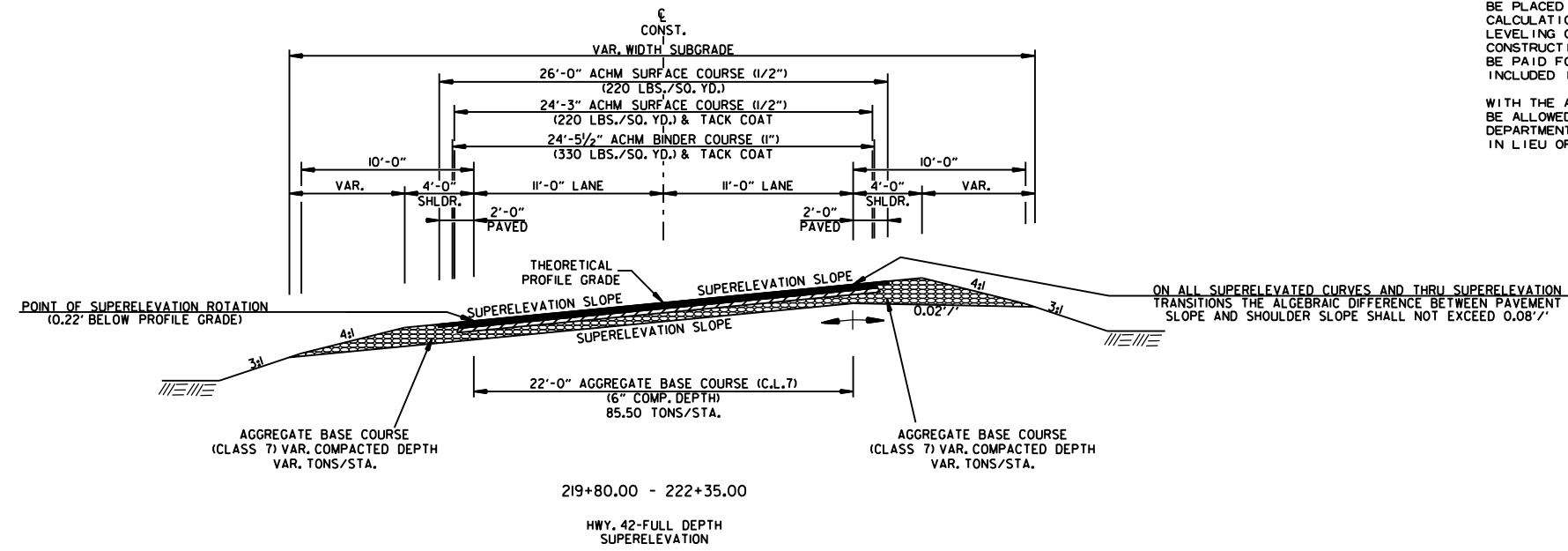
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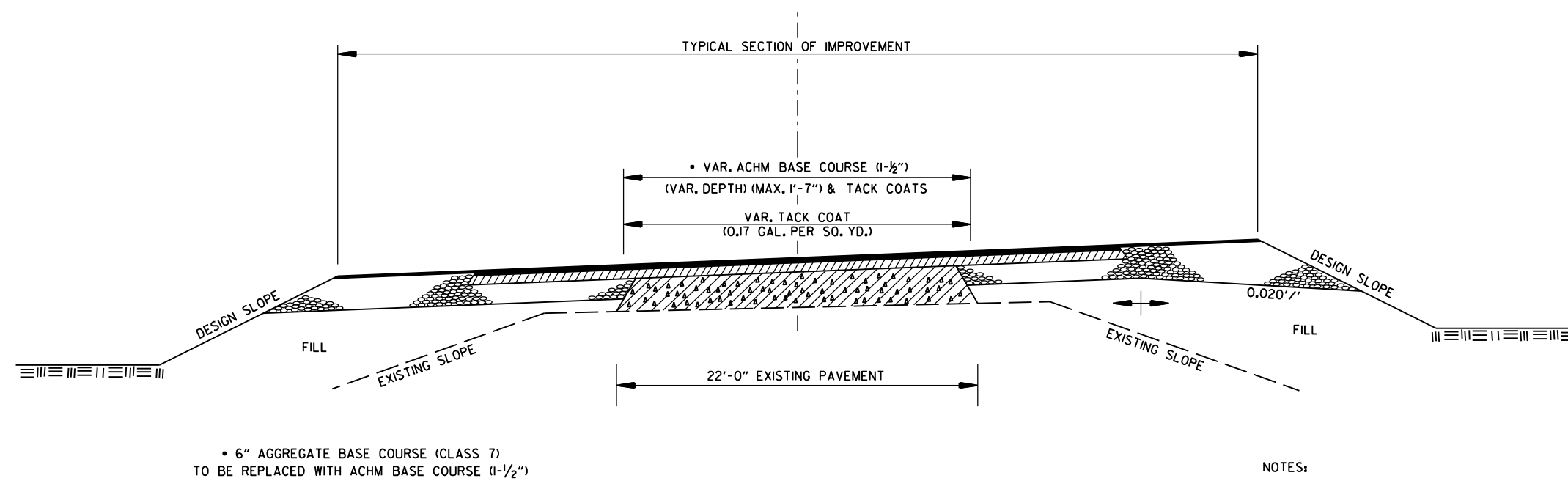
WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	8	62
SPECIAL DETAILS						

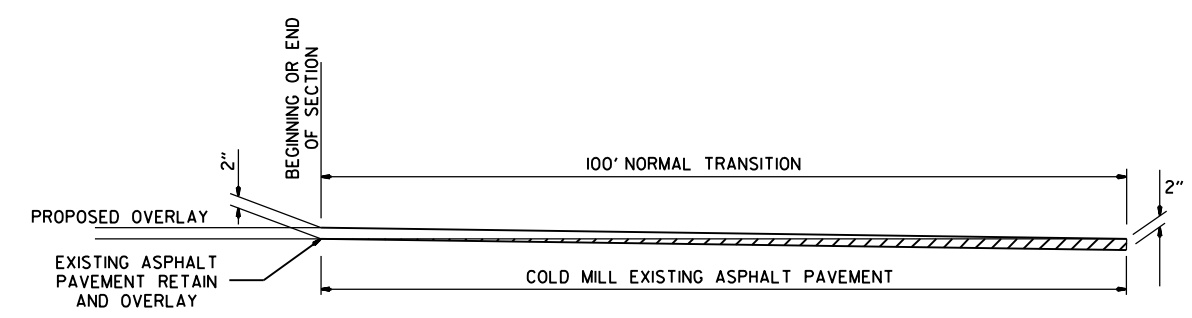
  
 TRINITY D. SMITH  
 08-15-2024



### METHOD OF RAISING GRADE

**NOTES:**

- (1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.
- (2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
- (3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.



### DETAIL FOR TRANSITIONS



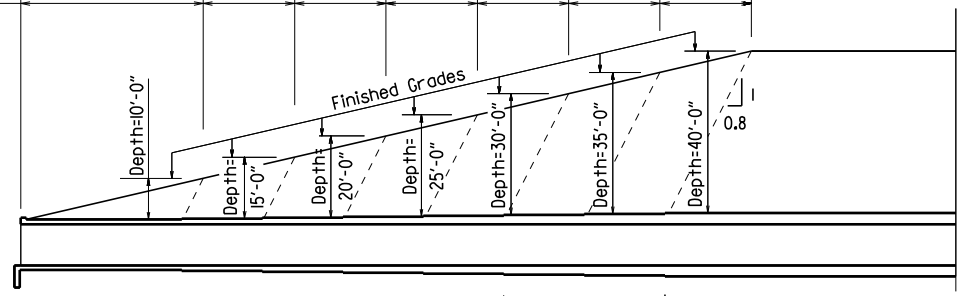
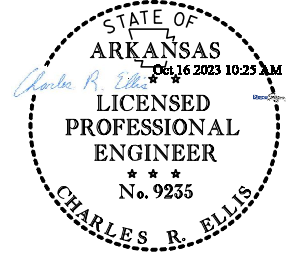
2:1 Slope	20'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
3:1 Slope	30'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
4:1 Slope	40'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	20'-0"

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

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

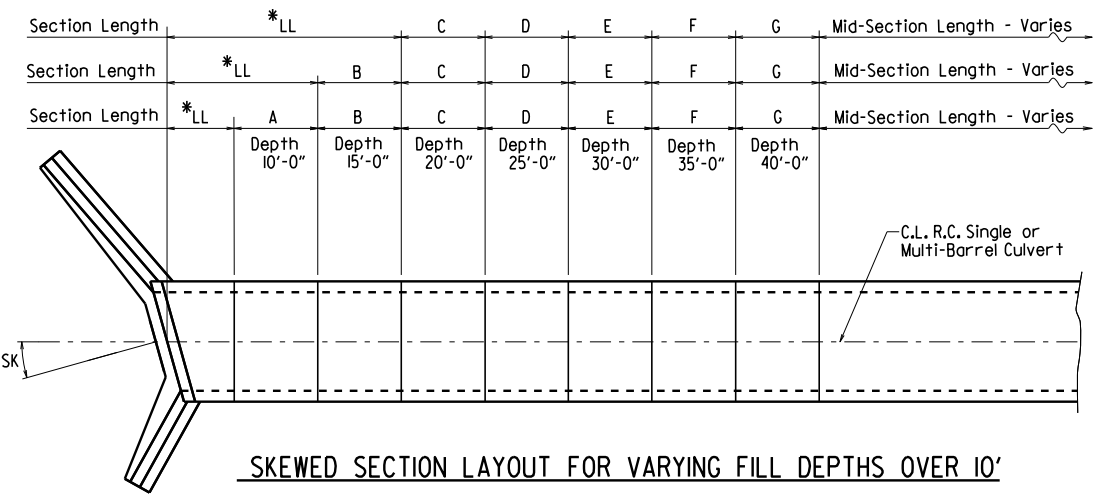
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		9	62
				JOB NO.	110713			

SPECIAL DETAILS



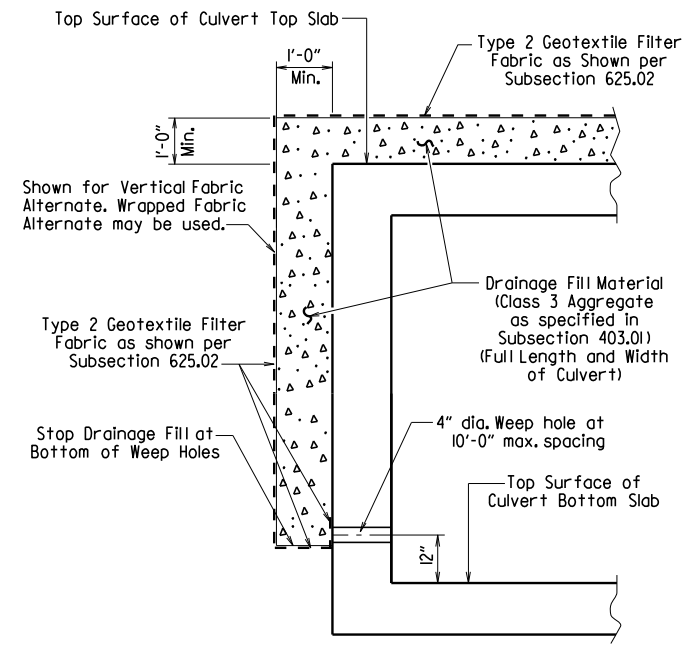
Slope Section Length @ 2:1 Slope	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	G=6'-0"	Mid-Section Length - Varies
Slope Section Length @ 3:1 Slope	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	G=11'-0"	Mid-Section Length - Varies
Slope Section Length @ 4:1 Slope	A=32'-0"	B=16'-0"	C=16'-0"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

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'



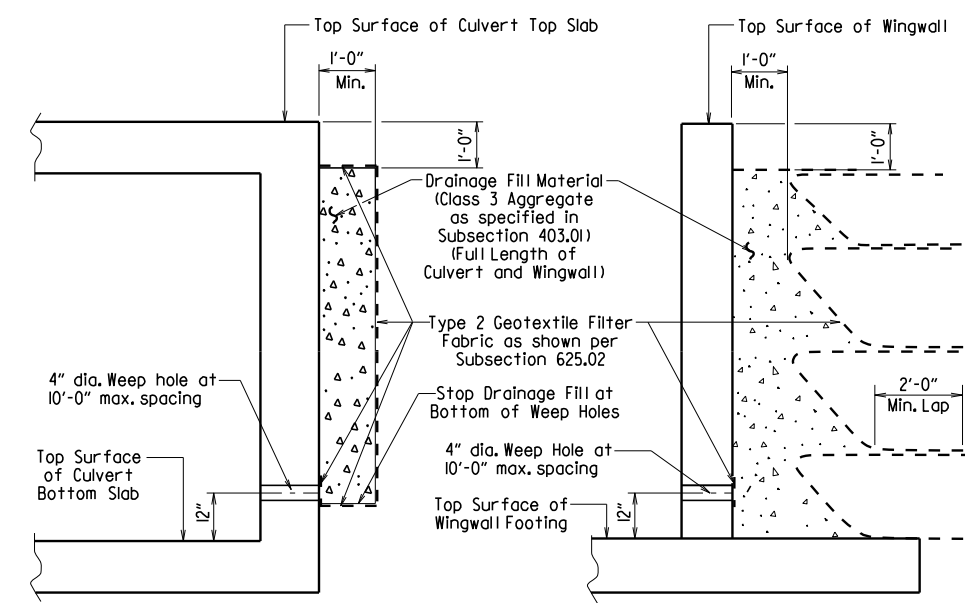
SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes



CULVERT DRAINAGE DETAIL FOR ROCK FILL

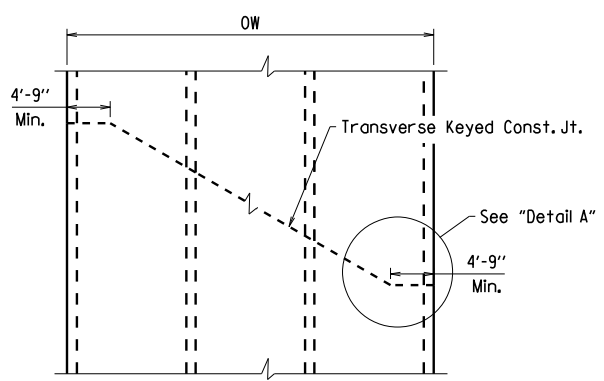
This detail shall be used when rock fill is specified for embankment construction.



VERTICAL FABRIC ALTERNATE (Shown for Culvert, Similar for Wingwall) WRAPPED FABRIC ALTERNATE (Shown for Wingwall, Similar for Culvert)

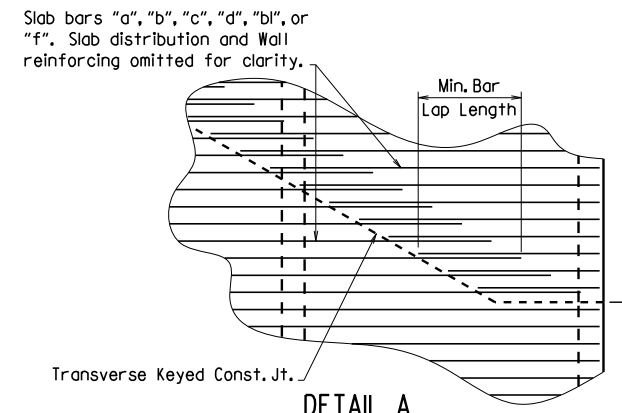
For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

WINGWALL & CULVERT DRAINAGE DETAIL



SKewed TRANSVERSE JOINT DETAIL

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



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

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

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

LIVE LOADING: HL-93

All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have 3/8" chamfers.

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

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

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

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

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

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

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

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

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

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

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

SPECIAL DETAILS



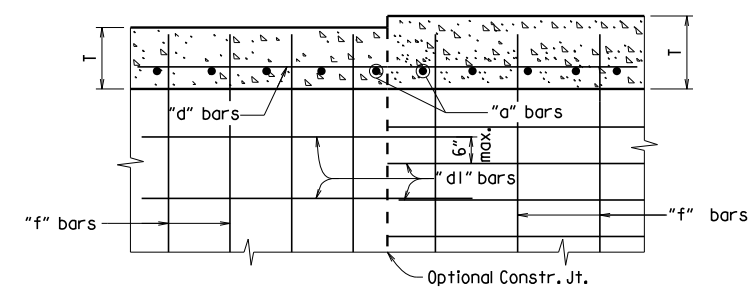
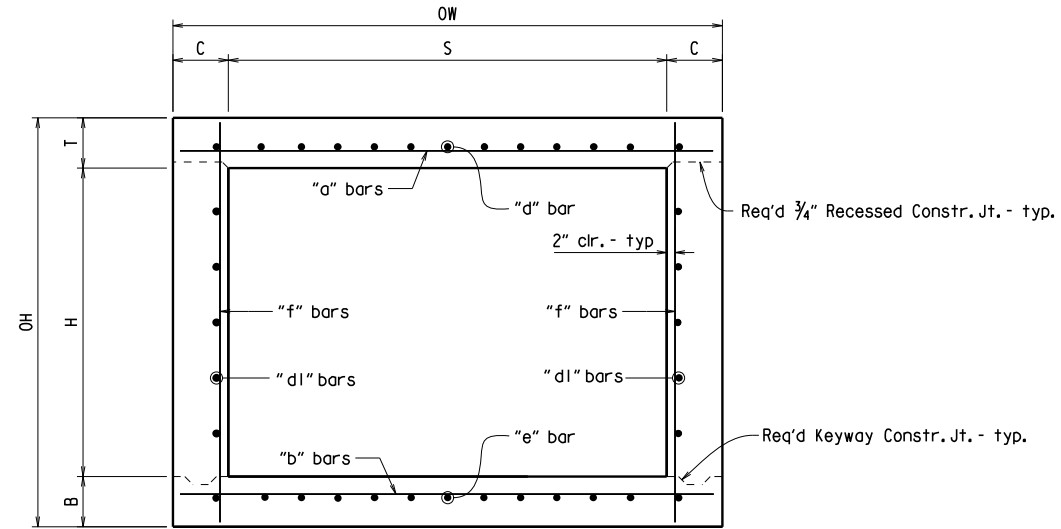
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		10	62
				JOB NO.		110713		

1 SPECIAL DETAILS



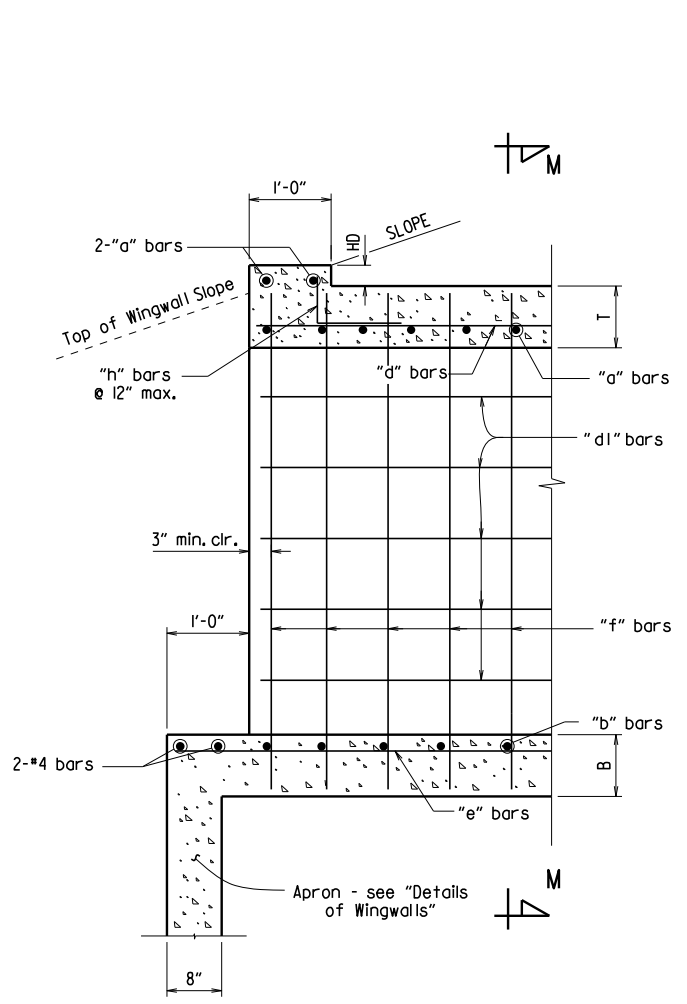
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**

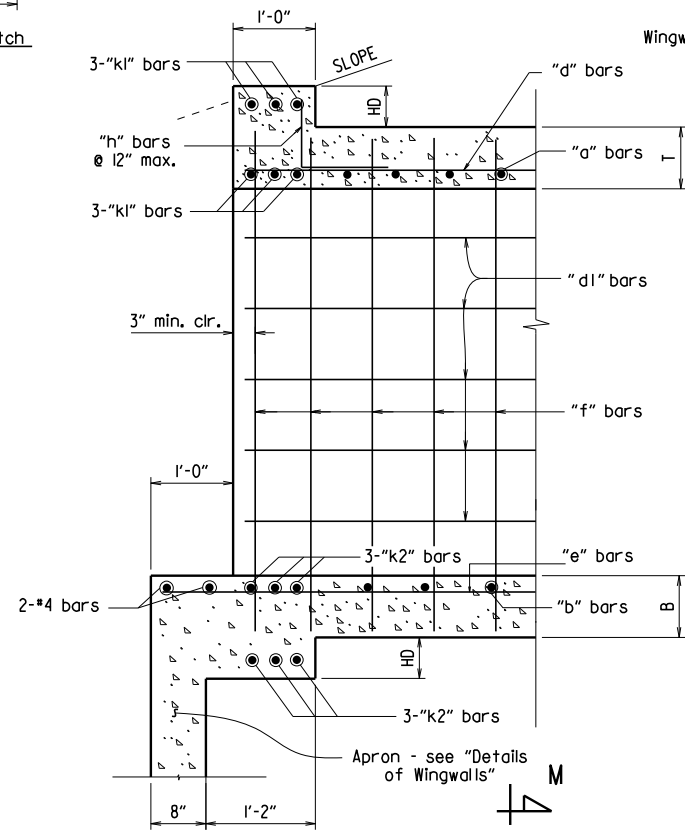
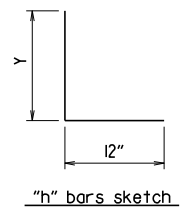
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

**TYPICAL SECTION M-M**



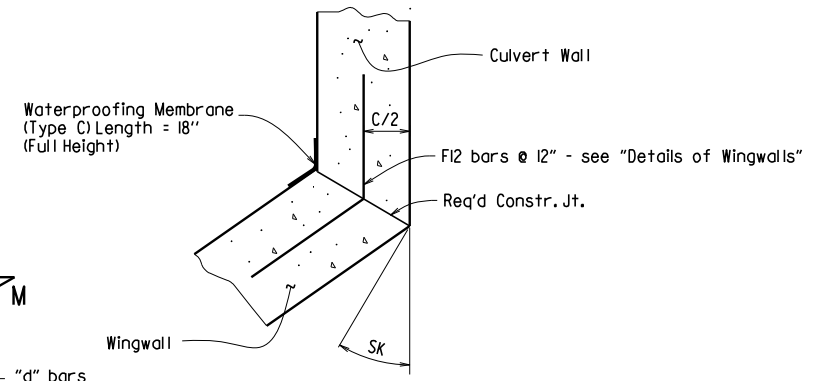
**PART LONGITUDINAL SECTION**

(Non-Skewed Ends)



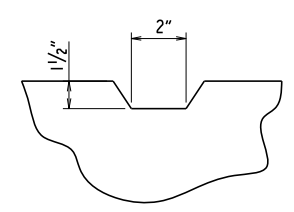
**PART LONGITUDINAL SECTION N-N**

(Skewed Ends)



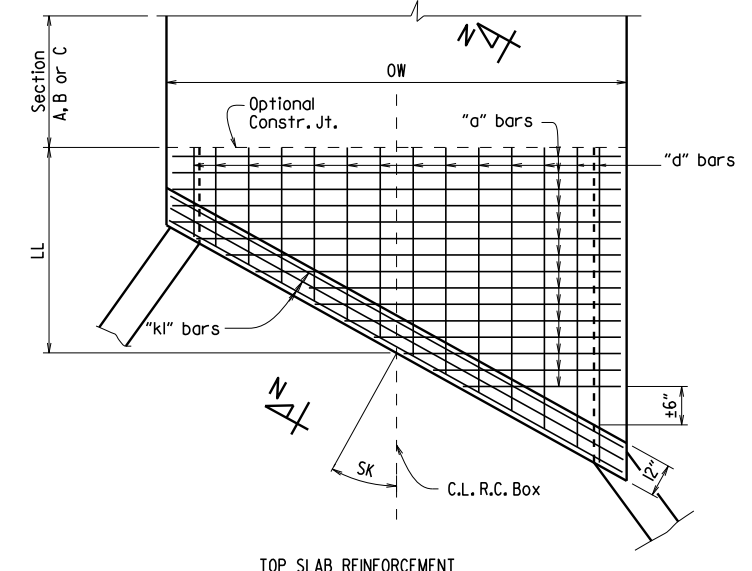
**WINGWALL ATTACHMENT**

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

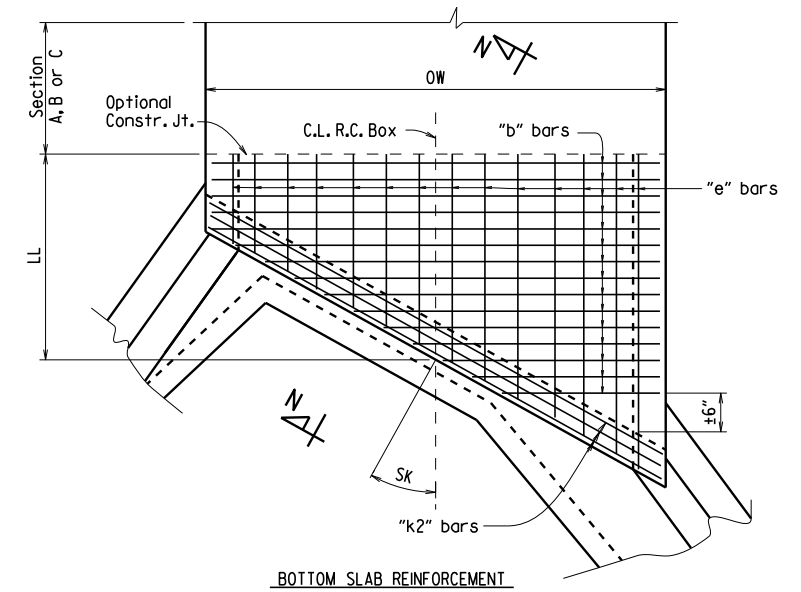


**TYPICAL KEYWAY DETAIL**

(All Construction Joints)



**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**

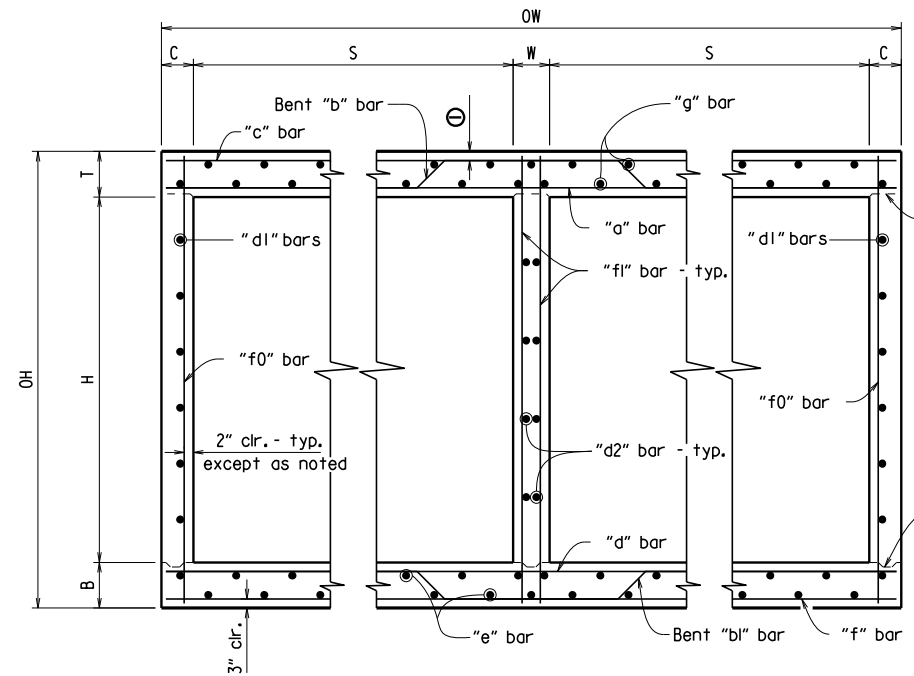


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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	110713	11	62
				JOB NO.		110713		

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

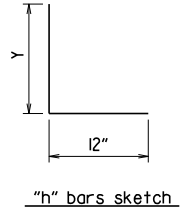
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



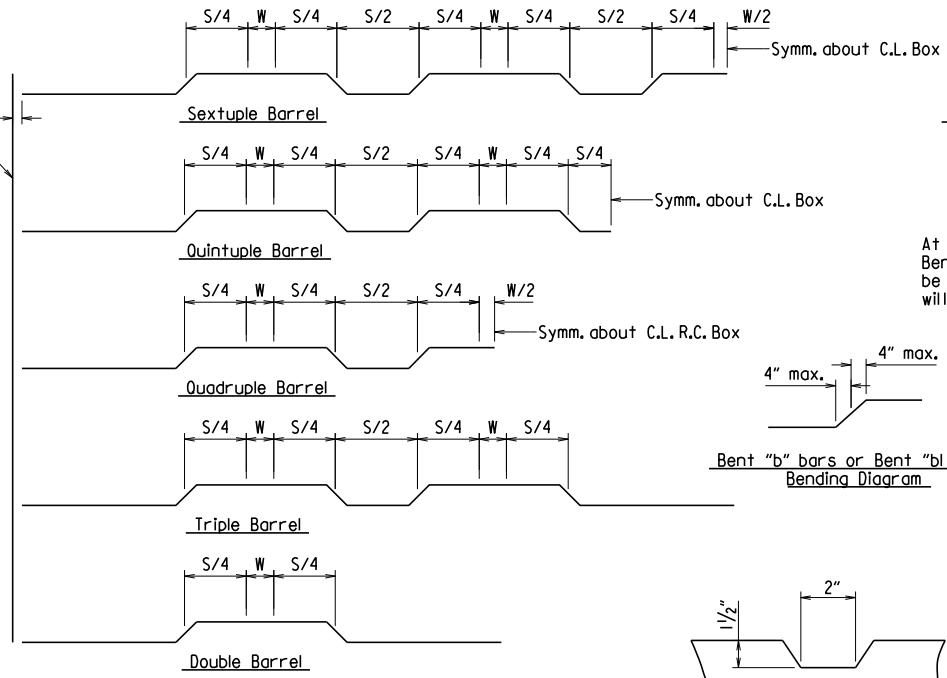
**TYPICAL SECTION M-M**

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

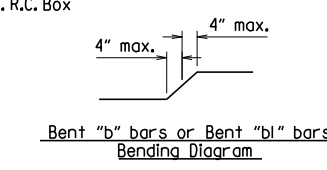
Bottom Slab  
 Straight "d" bars shall alternate with Bent "bl" bars in top.  
 Straight "f" bars shall alternate with Bent "bl" bars in bottom.



"h" bars sketch

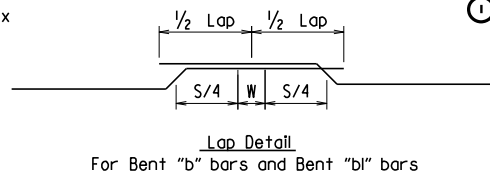


**Bent "b" bars or Bent "bl" bars sketch**

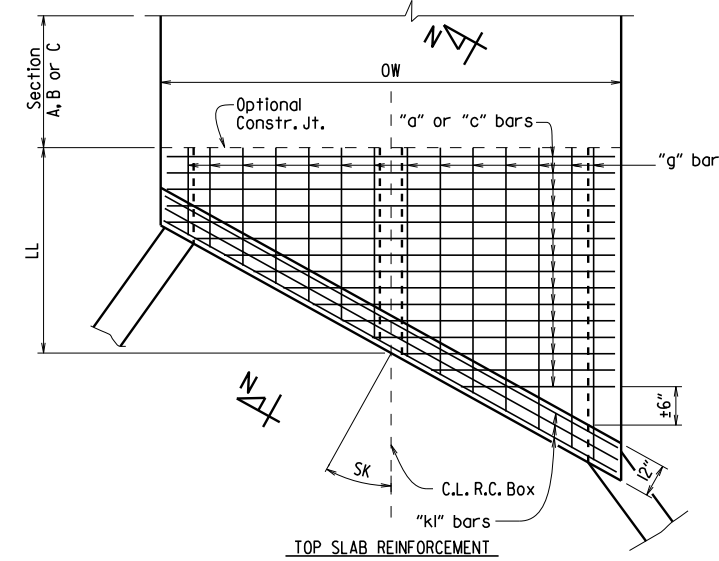
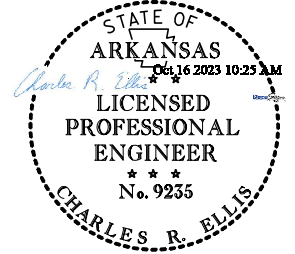


**TYPICAL KEYWAY DETAIL**

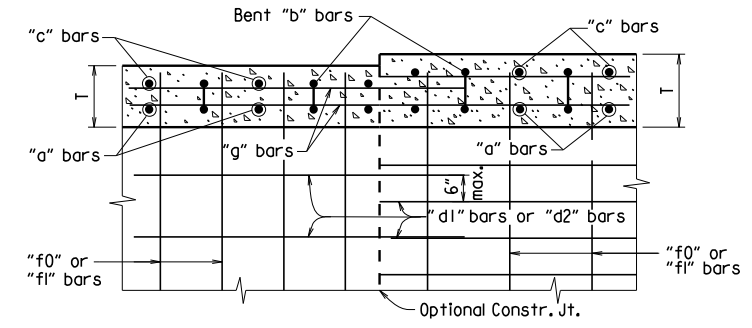
(All Construction Joints)



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.



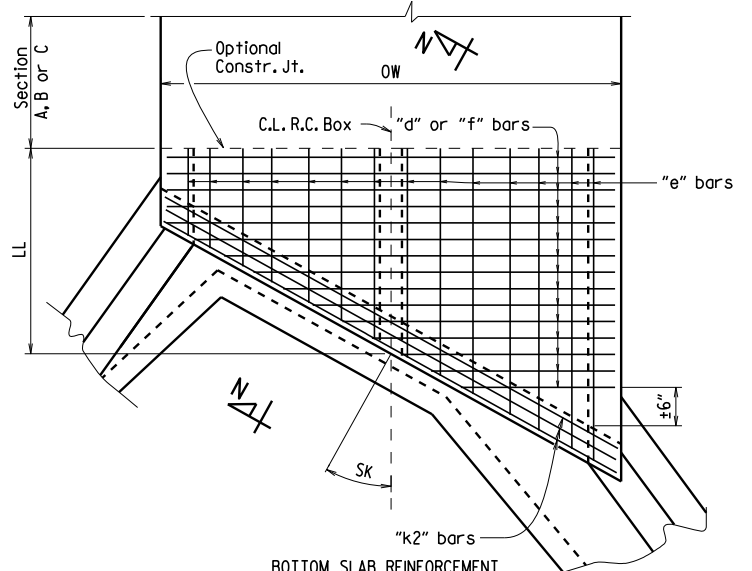
**TOP SLAB REINFORCEMENT**  
 Straight "c" bars in top.  
 Straight "a" bars in bottom.



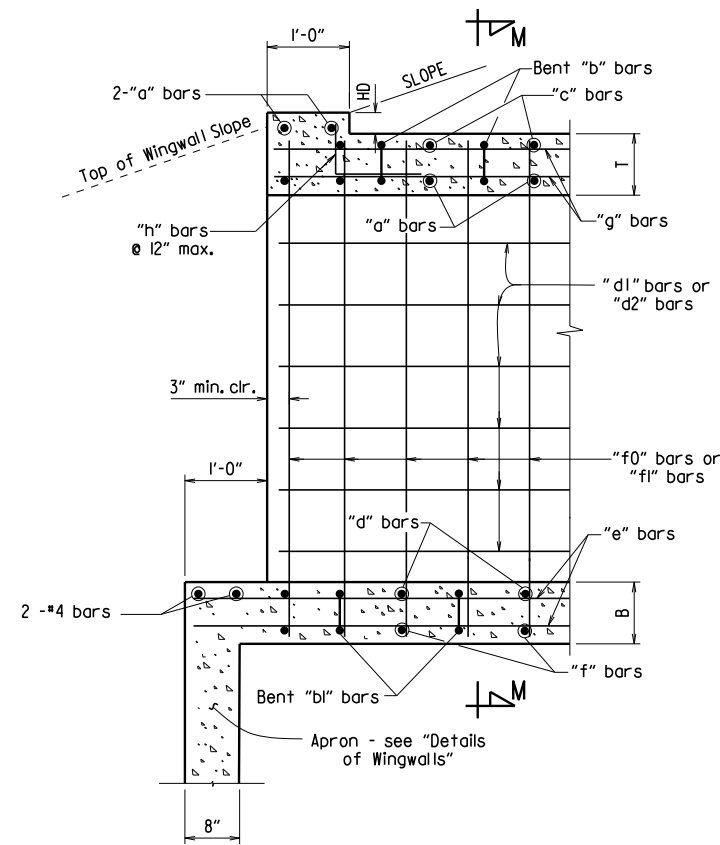
Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

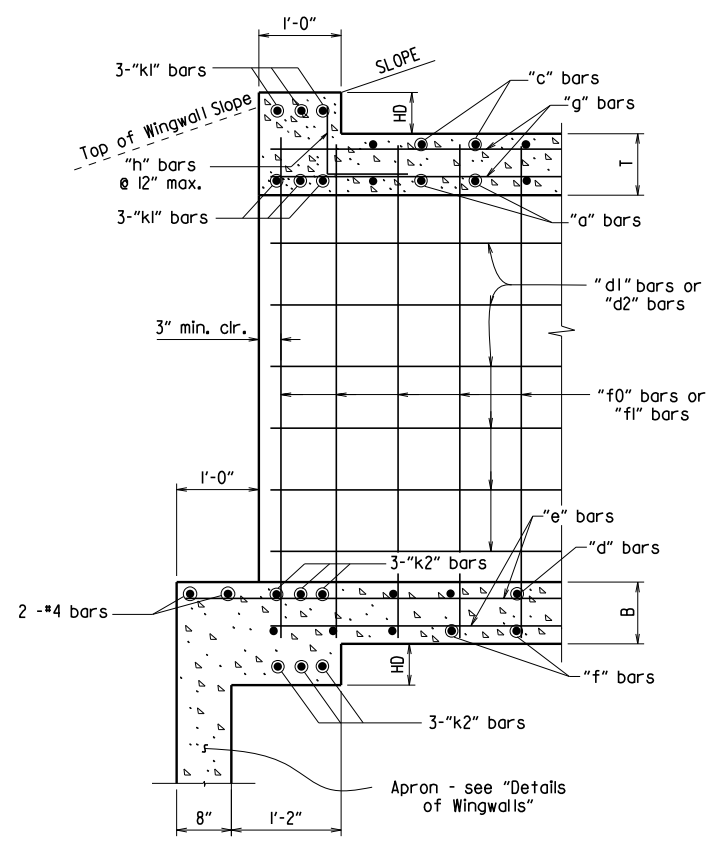


**SKEWED END SECTION DETAILS**  
 Straight "d" bars in top.  
 Straight "f" bars in bottom.



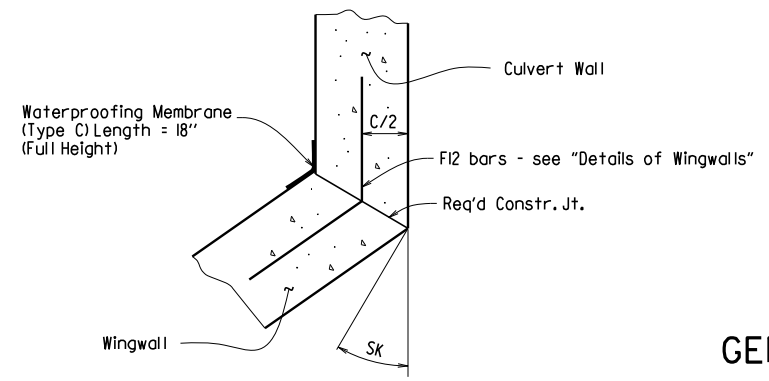
**PART LONGITUDINAL SECTION**

(Non-Skewed Ends)



**PART LONGITUDINAL SECTION N-N**

(Skewed Ends)



**WINGWALL ATTACHMENT**

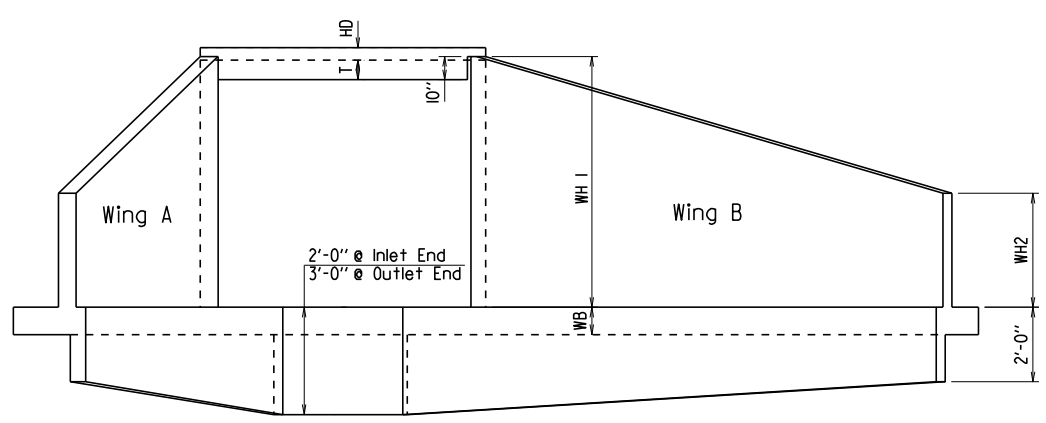
See "Details of Wingwalls" for additional information and wingwall details.

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

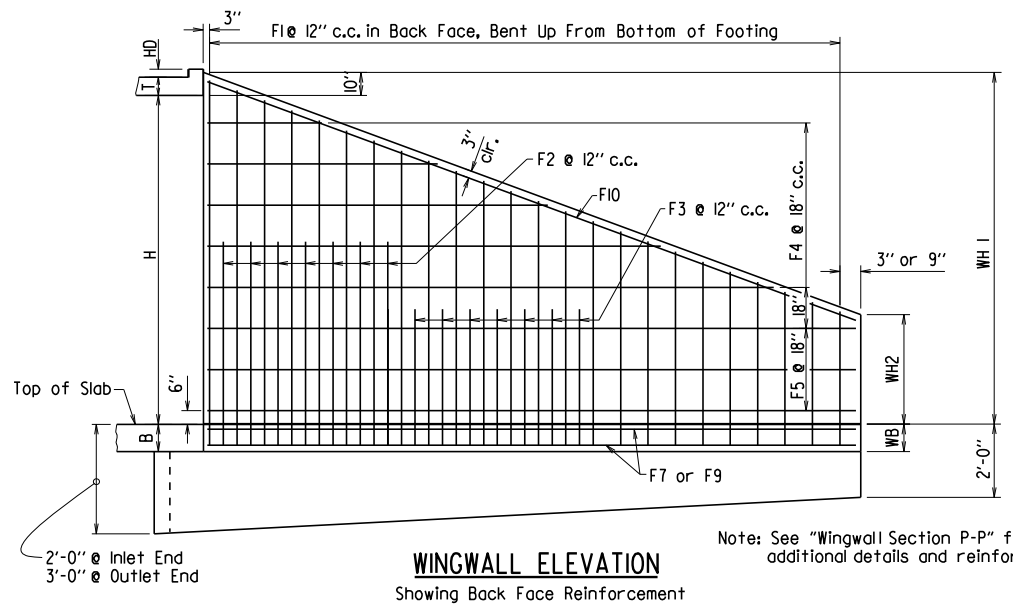


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		12	62
				JOB NO.		110713		

**SPECIAL DETAILS**

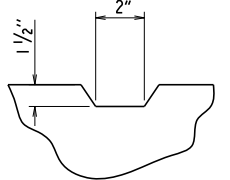


**END ELEVATION**  
Flared Wingwalls Shown

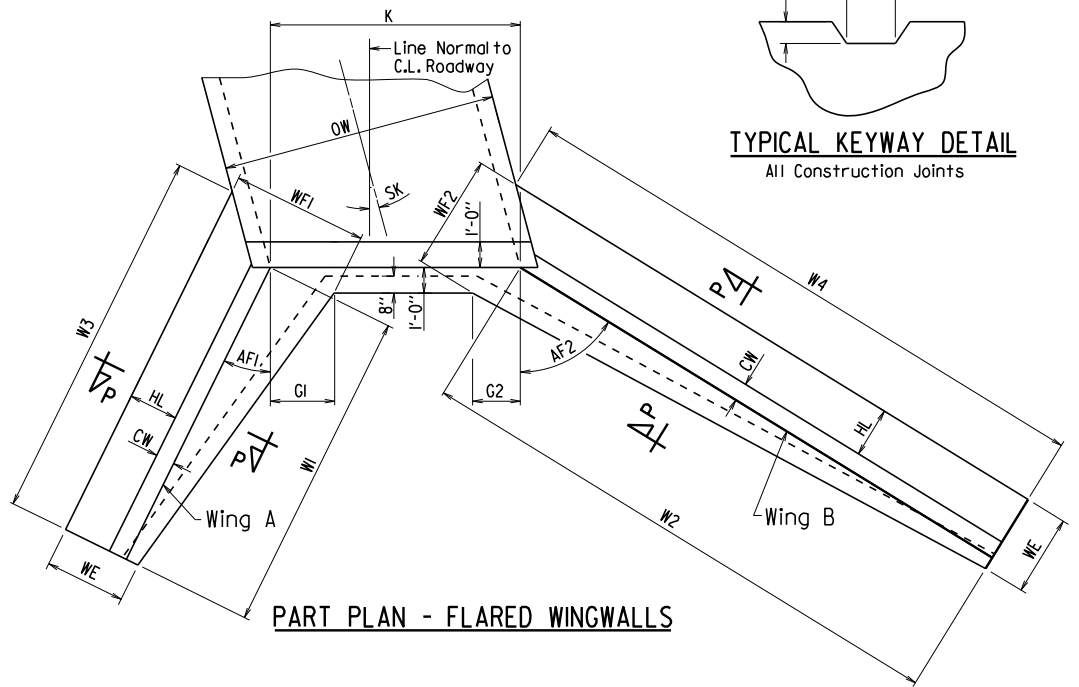


**WINGWALL ELEVATION**  
Showing Back Face Reinforcement

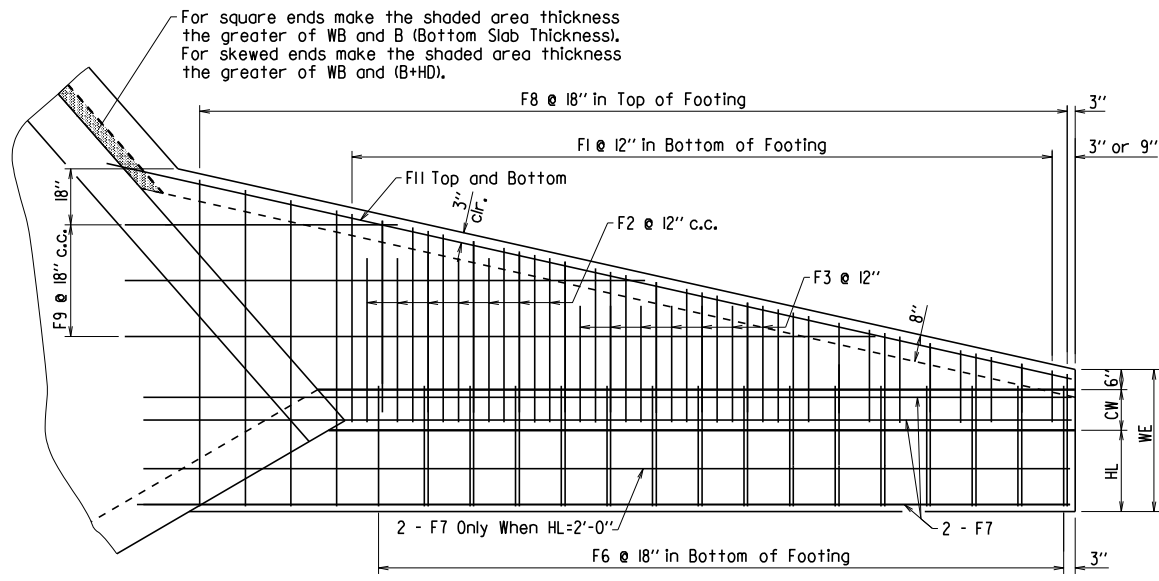
Note: See "Wingwall Section P-P" for additional details and reinforcing.



**TYPICAL KEYWAY DETAIL**  
All Construction Joints

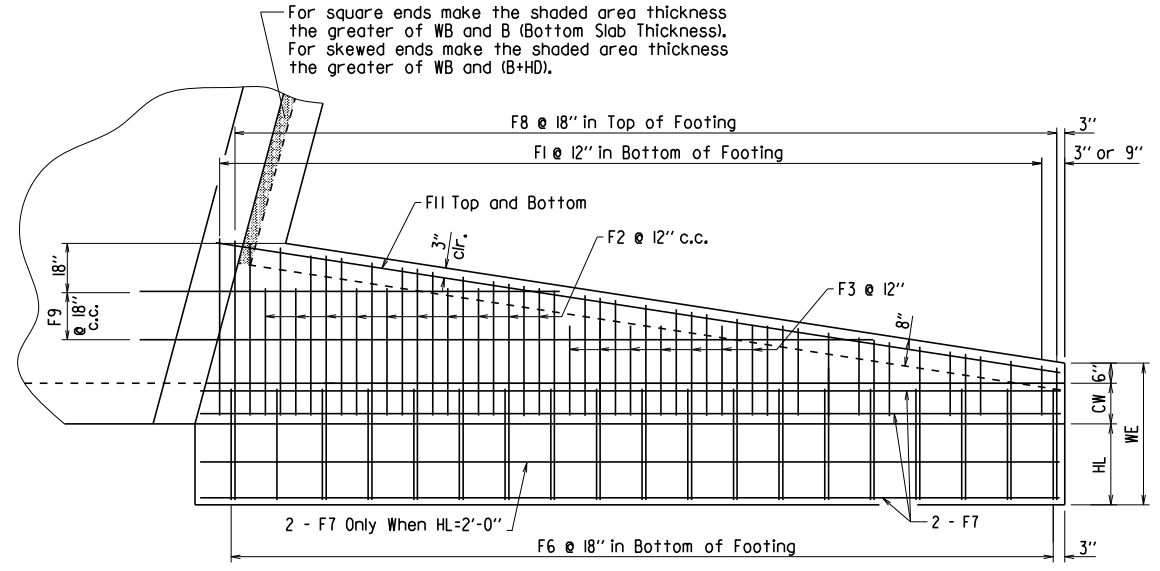


**PART PLAN - FLARED WINGWALLS**



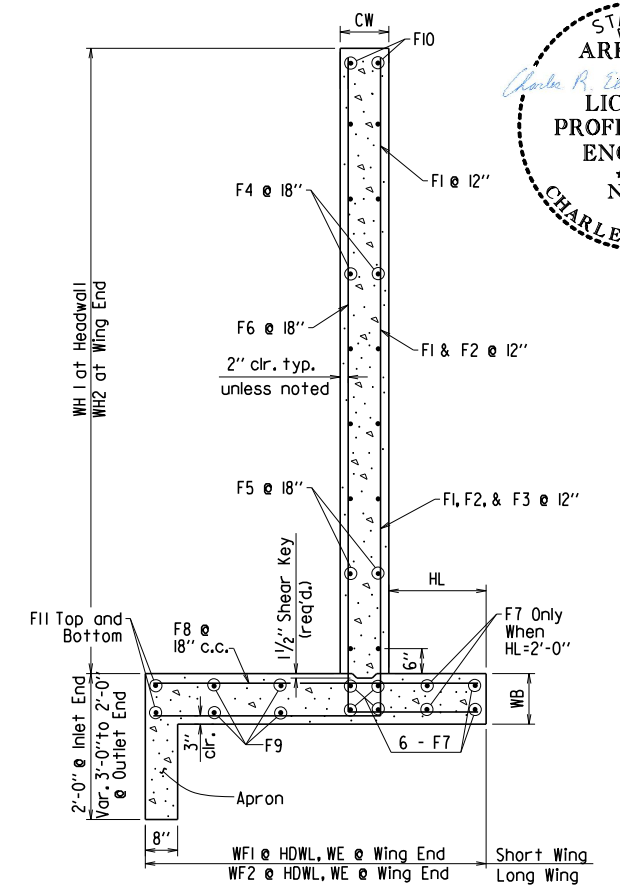
**PLAN - FLARED WINGWALLS**  
Showing Footing Reinforcement

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



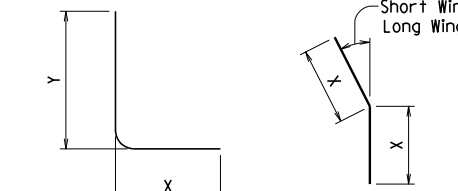
**PLAN - PARALLEL WINGWALLS**  
Showing Footing Reinforcement

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



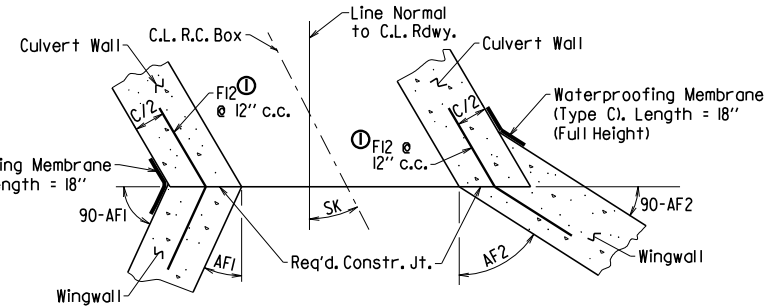
**WINGWALL SECTION P-P**

Short Wing = (AF1+SK)  
Long Wing = (AF2-SK)



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

F1, F2 is a straight bar for parallel wingwalls



**CONSTRUCTION JOINTS**  
Flared Wingwalls Shown

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

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MID-SECTION

Table for MID-SECTION details including R.C. BOX SECTION, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINF. STEEL, BOTTOM SLAB DISTRIBUTION REINF. STEEL, SIDE WALL DISTRIBUTION REINF. STEEL, INTERIOR WALL DISTRIBUTION REINF. STEEL, CLASS 'S' CONCRETE, and REINFORCING STEEL (GR. 60).

Summary table for MID-SECTION showing CLASS 'S' CONCRETE (CU. YDS. 524.35) and REINFORCING STEEL (GR. 60) (LBS. 69395).

INLET SLOPE SECTION(S)

Table for INLET SLOPE SECTION(S) details including R.C. BOX SECTION, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINF. STEEL, BOTTOM SLAB DISTRIBUTION REINF. STEEL, SIDE WALL DISTRIBUTION REINF. STEEL, INTERIOR WALL DISTRIBUTION REINF. STEEL, CLASS 'S' CONCRETE, and REINFORCING STEEL (GR. 60).

Summary table for INLET SLOPE SECTION(S) showing CLASS 'S' CONCRETE (CU. YDS. 0.48) and REINFORCING STEEL (GR. 60) (LBS. 146).

INLET SKEWED END SECTION

Table for INLET SKEWED END SECTION details including SKEW (DEGREE), DESIGN FILL DEPTH (FT.), CLEAR SPAN (FT.), CLEAR HEIGHT (FT.), SECTION LENGTH, TOP SLAB THK., HDWL DEPTH, BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL, CLASS 'S' CONCRETE (Includes HDWL), and REINFORCING STEEL (GR 60) (Includes HDWL).

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

INLET WINGWALL TABLE

Main table for INLET WINGWALL TABLE with columns for OVER ALL WIDTH, CLEAR HEIGHT, FOOTING THK., WING WALL THK., BOX SKEW (DEG.), SLOPE, HDWL LENGTH, HEEL, WALL HEIGHT (AT HDWL, AT WING END), WING WALL ANGLE (DEGREE), WING A, WING B, FOOTING DIMENSION PARALLEL WITH HDWL, FOOTING DIMENSION PERPENDICULAR WITH HDWL, LENGTH OF WING WALLS, LENGTH OF FOOTING HEEL, CLASS 'S' CONCRETE (Includes apron), and REINFORCING STEEL (Includes apron and laps if required).

MID-SECTION BAR LAP TABLE

Table for MID-SECTION BAR LAP TABLE showing # of Long. Laps Req'd. and Section Length (SL =).

Table for Min. Bar Lap Length showing bar sizes #4 through #8 and their corresponding lengths.

Table for Bar Pin Dia. Table showing bar sizes #4 through #8 and their corresponding pin diameters.

TABULAR DATA BY: BAB DATE: 10/9/2023 CHECKED BY: DPT DATE: 10/9/2023



Project information table including DATE REVISED, DATE FILMED, FEDERAL ROAD DIST. NO. (6), STATE (ARK.), FED. AID PROJ. NO. (110713), SHEET NO. (13), and TOTAL SHEETS (62).

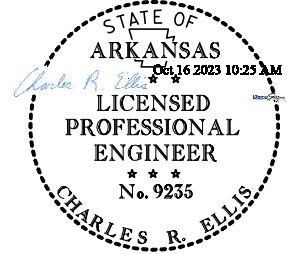
SHEET 1 OF 2 DETAILS OF R.C. BOX CULVERT QUADRUPLE BARREL BOX CULVERT Sta. I20+54 SPECIAL DETAILS



OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEEL	WALL HEIGHT		WINGWALL ANGLE (DEGREE)		FOOTING WIDTH AT WALL END	WIDTH OF WING FOOTINGS AT HDWL		FOOTING DIMENSION PARALLEL WITH HDWL		LENGTH OF WINGWALLS		LENGTH OF FOOTING HEEL		CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
								AT HDWL	AT WING END	WING A	WING B		WING A	WING B	WING A	WING B	WING A	WING B	WING A	WING B		
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
52'-1"	12'-0"	1'-1"	1'-0"	0	3:1	50'-0"	2'-0"	12'-10"	4'-0"	30	30	3'-6"	6'-6"	6'-6"	3'-5 1/2"	3'-5 1/2"	30'-6"	30'-6"	33'-7 3/8"	33'-7 3/8"	37.58	2804

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	110713	14	62
				JOB NO.		110713		
SPECIAL DETAILS								



TABULAR DATA BY: BAB DATE: 10/9/2023  
 CHECKED BY: DPT DATE: 10/9/2023

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"

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

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINFORCING STEEL		BOTTOM SLAB DISTRIBUTION REINFORCING STEEL		SIDE WALL DISTRIBUTION REINFORCING STEEL		INTERIOR WALL DISTRIBUTION REINFORCING STEEL		CLASS "S" CONCRETE (Includes HDWL)	REINFORCING STEEL (GR 60) (Includes HDWL)			
													"a"	"c"	"d"	"f"	"f0"	"f1"	"g"	"e"	"d1"	"d2"	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING			NO. REQ'D	LENGTH	SIZE
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTHS VARY	NO. REQ'D	SIZE	SPACING	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	CU. YDS.	LBS.
			"k1" HDWL BARS						"k2" HDWL BARS						"h" HDWL BARS																						
		SIZE	LENGTH	NO. REQ'D			SIZE	LENGTH	NO. REQ'D			SIZE	LENGTH	Y	NO. REQ'D																						

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINFORCING STEEL				BOTTOM SLAB REINFORCING STEEL				SIDE WALL REINFORCING STEEL		INTERIOR WALL REINFORCING STEEL		TOP SLAB DISTRIBUTION REINF. STEEL	BOTTOM SLAB DISTRIBUTION REINF. STEEL	SIDE WALL DISTRIBUTION REINF. STEEL	INTERIOR WALL DISTRIBUTION REINF. STEEL	CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)								
											"a"	Bent "b"	"c"	SPACING	NO. REQ'D	"d"	Bent "b1"	"f"	SPACING	NO. REQ'D	SIZE	SPACING							NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING
											LENGTH = OW - 4" + BENDS	LENGTH = OW - 4" + BENDS	LENGTH = OH - 4"	LENGTH = OH - 4"	LENGTH = SL	LENGTH = SL	LENGTH = SL	LENGTH = SL																		
		HDWL DEPTH	ADDITIONAL REINF. FOR HDWL						"h" HDWL BARS																											
		HD	LBS.						SIZE	Y	LENGTH	NO. REQ'D																								
		3"	69						4	1'-2"	2'-2"	53																								
				TOTAL																								0.48	146							

SHEET 2 OF 2  
 DETAILS OF R.C. BOX CULVERT  
 QUADRUPLE BARREL BOX CULVERT  
 Sta. I20+54  
 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.



MID-SECTION

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

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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 220+56

SPECIAL DETAILS



INLET SLOPE SECTIONS(S)

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

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

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

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

INLET SKEWED END SECTION

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

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

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

INLET WINGWALL TABLE

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

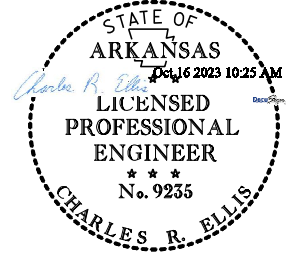
MID-SECTION BAR LAP TABLE

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

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

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

TABULAR DATA BY: BAB DATE: 10/9/2023
CHECKED BY: DPT DATE: 10/9/2023



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

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

OUTLET SLOPE SECTIONS

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

OUTLET SKEWED END SECTION

Table with columns for SKEW (DEGREE), SLOPE, DESIGN FILL DEPTH, CLEAR SPAN, CLEAR HEIGHT, SECTION LENGTH, TOP SLAB THK., HDWL DEPTH, BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVERALL WIDTH, OVERALL HEIGHT, TOP SLAB REINFORCING STEEL, BOTTOM SLAB REINFORCING STEEL, SIDE WALL REINFORCING STEEL, INTERIOR WALL REINFORCING STEEL, TOP SLAB DISTRIBUTION REINFORCING STEEL, BOTTOM SLAB DISTRIBUTION REINFORCING STEEL, SIDE WALL DISTRIBUTION REINFORCING STEEL, INTERIOR WALL DISTRIBUTION REINFORCING STEEL, CLASS "S" CONCRETE, REINFORCING STEEL (GR. 60).

OUTLET WINGWALL TABLE

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

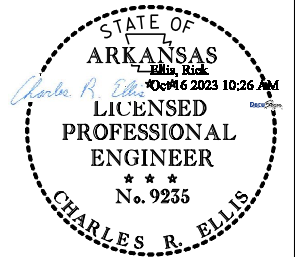
Table with columns: Min. Bar Lap Length, #4, #5, #6, #7, #8 and values: 1'-9", 2'-2", 2'-7", 3'-6", 4'-7".

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

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

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

SPECIAL DETAILS



TABULAR DATA BY: BAB DATE: 10/9/2023 CHECKED BY: DPT DATE: 10/9/2023

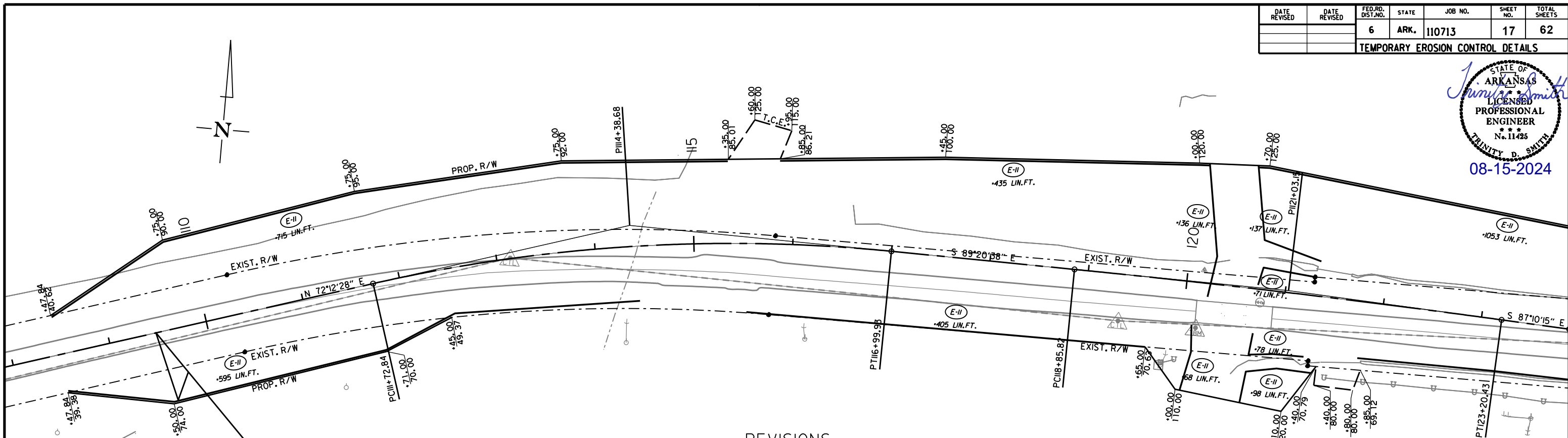




DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	17	62
TEMPORARY EROSION CONTROL DETAILS						



08-15-2024



STA. 109+47.84  
BEGIN SITE I-HWY. 42  
LOG MILE 9.29

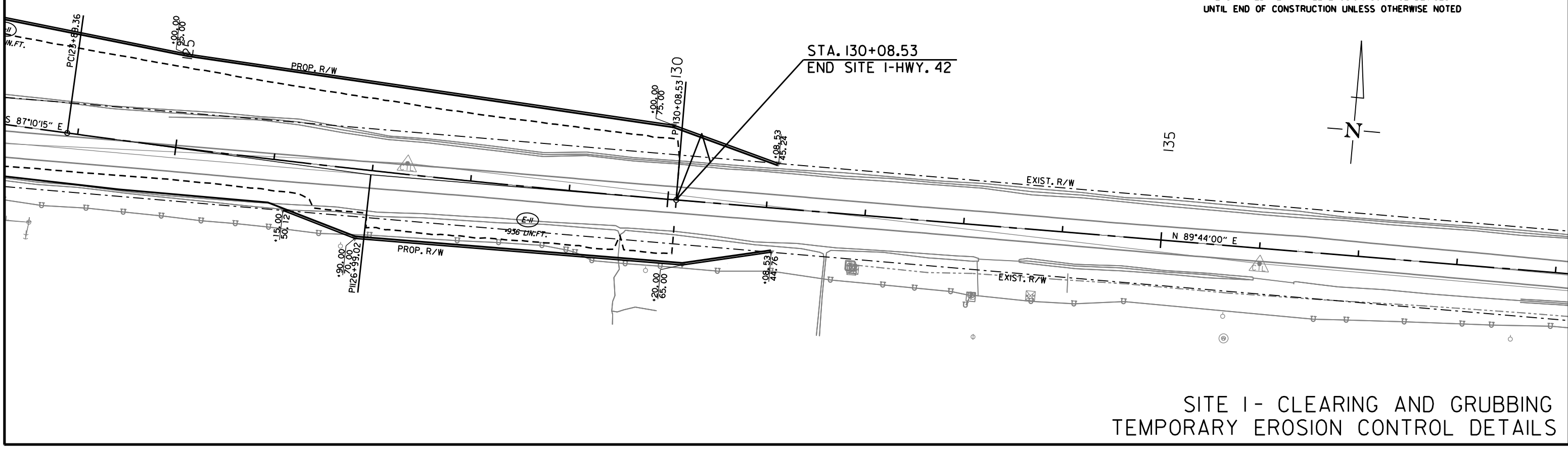
REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED

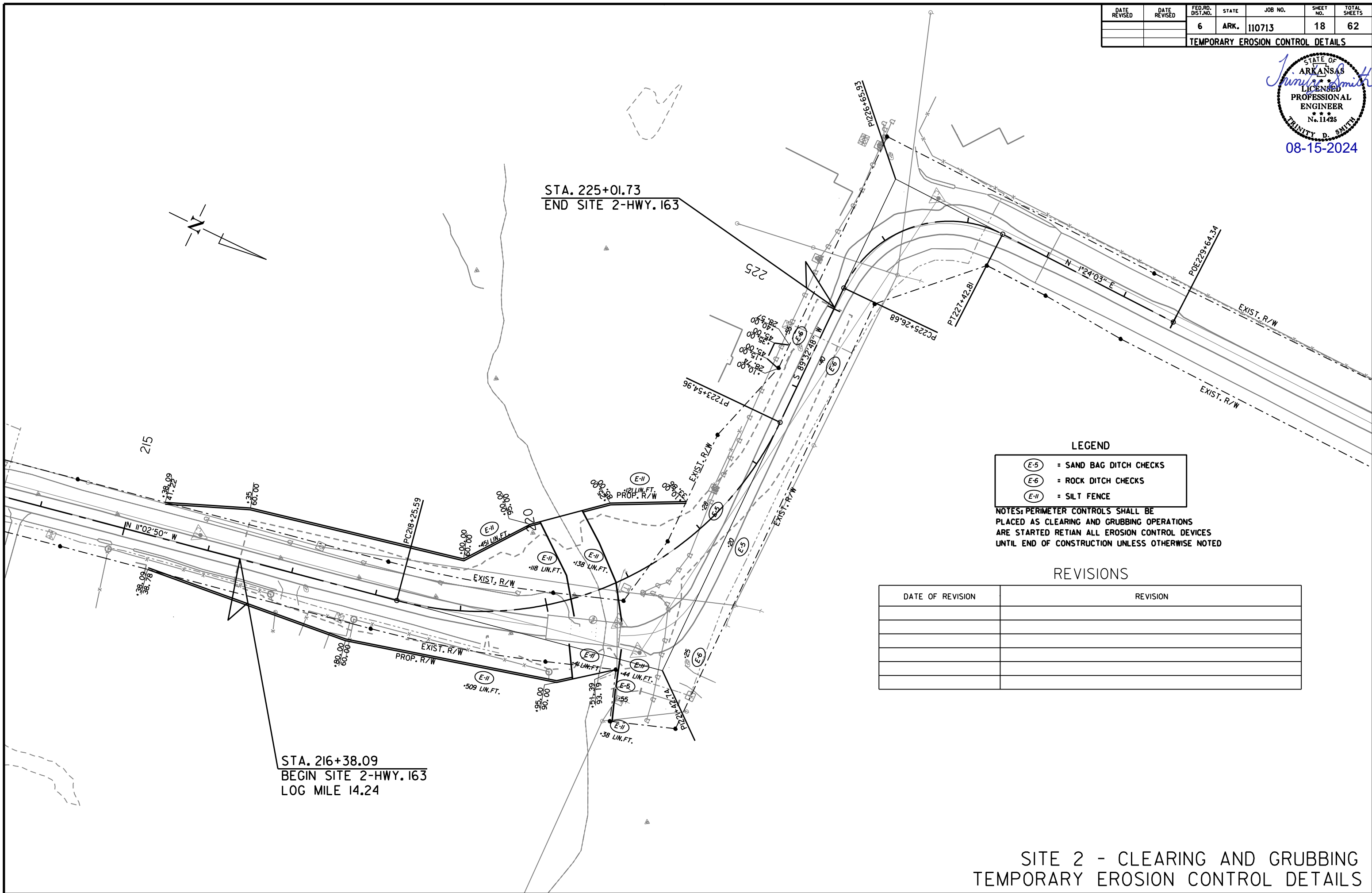


STA. 130+08.53  
END SITE I-HWY. 42

SITE I - CLEARING AND GRUBBING  
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	18	62
TEMPORARY EROSION CONTROL DETAILS						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



STA. 225+01.73  
END SITE 2-HWY. 163

STA. 216+38.09  
BEGIN SITE 2-HWY. 163  
LOG MILE 14.24

**LEGEND**

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

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED

**REVISIONS**

DATE OF REVISION	REVISION

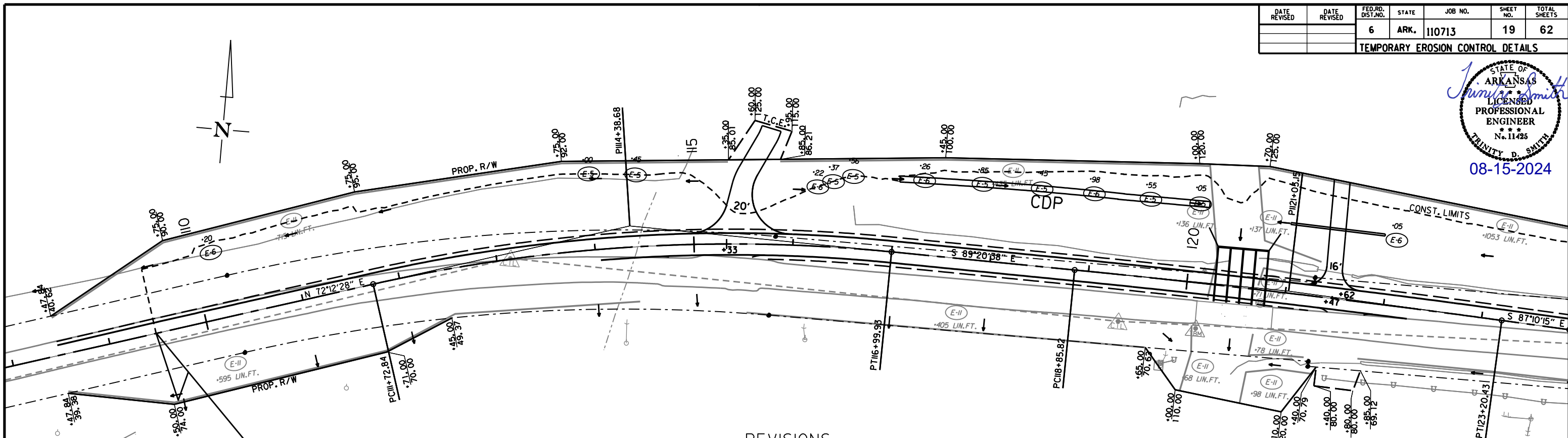
SITE 2 - CLEARING AND GRUBBING  
TEMPORARY EROSION CONTROL DETAILS

1w39665 7/29/2024  
 R110713.DGN

DATE REVISION	DATE REVISID	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	19	62



08-15-2024



STA. 109+47.84  
BEGIN SITE I-HWY. 42  
LOG MILE 9.29

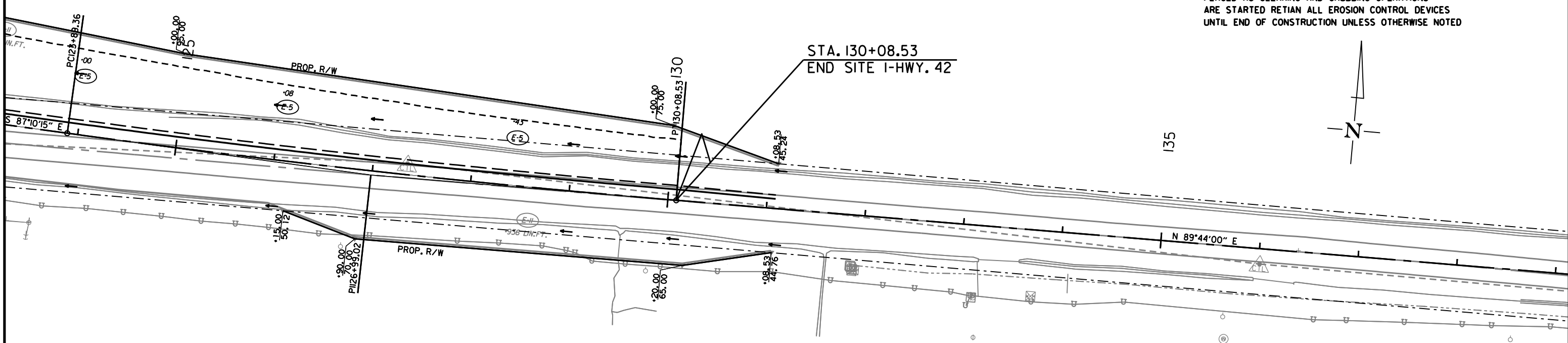
REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-II) = SILT FENCE

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED

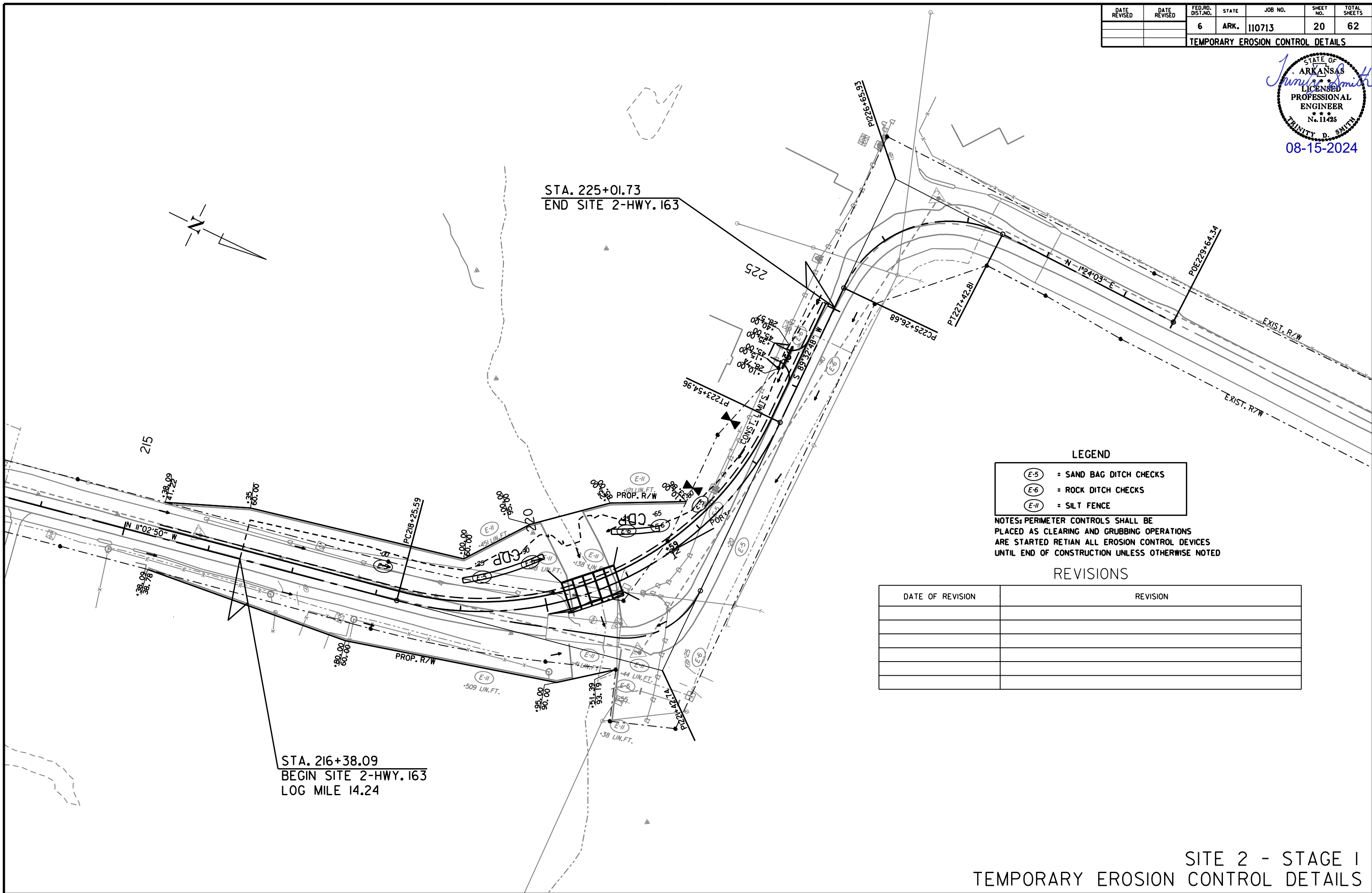


STA. 130+08.53  
END SITE I-HWY. 42

SITE I- STAGE I  
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	20	62
TEMPORARY EROSION CONTROL DETAILS						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



STA. 225+01.73  
END SITE 2-HWY. 163

STA. 216+38.09  
BEGIN SITE 2-HWY. 163  
LOG MILE 14.24

**LEGEND**

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

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED

**REVISIONS**

DATE OF REVISION	REVISION

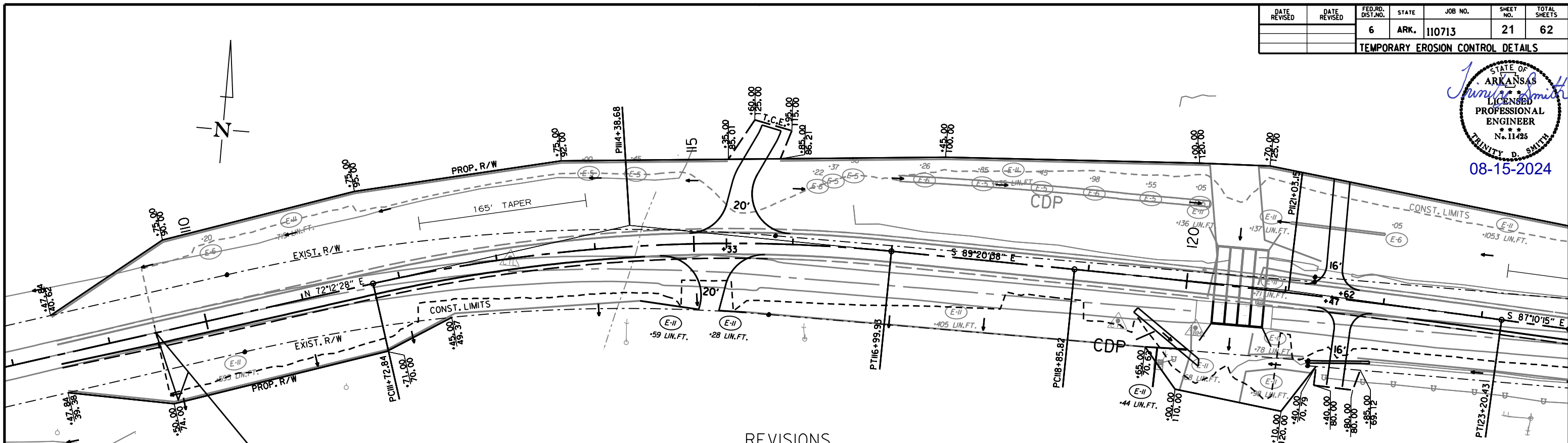
SITE 2 - STAGE 1  
TEMPORARY EROSION CONTROL DETAILS

1w39665 7/29/2024  
 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	21	62



08-15-2024



STA. 109+47.84  
BEGIN SITE I-HWY. 42  
LOG MILE 9.29

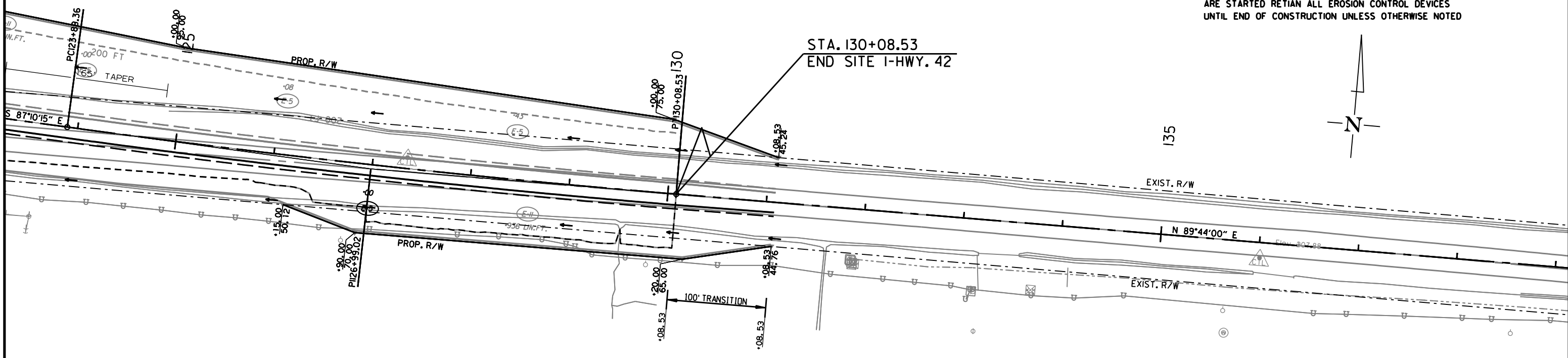
REVISIONS

DATE OF REVISION	REVISION

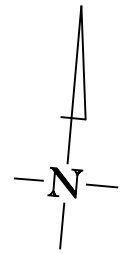
LEGEND

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

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED



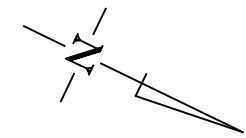
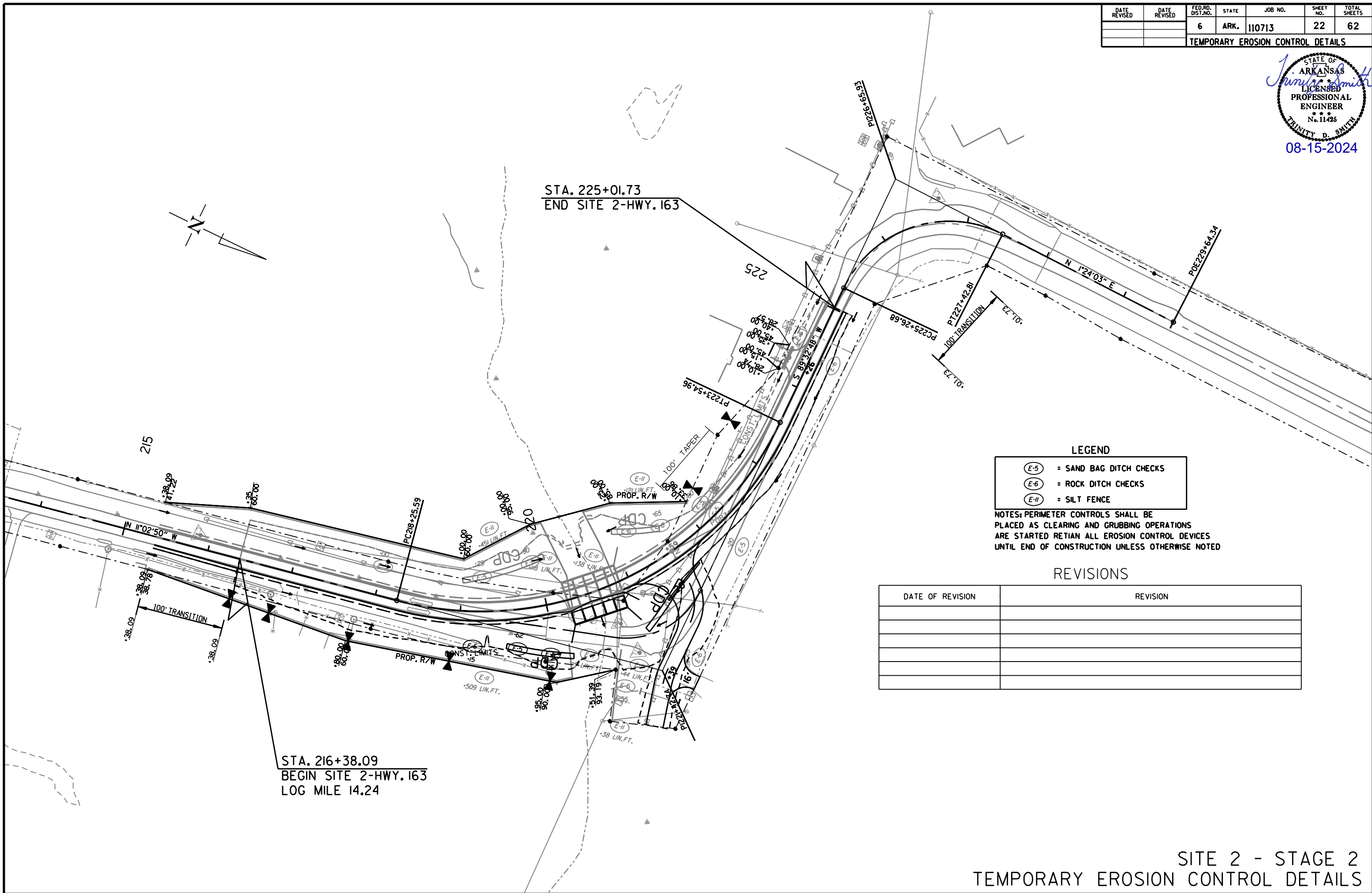
STA. 130+08.53  
END SITE I-HWY. 42



SITE I- STAGE 2  
TEMPORARY EROSION CONTROL DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	22	62
TEMPORARY EROSION CONTROL DETAILS						

STATE OF ARKANSAS  
 JUNIUS D. SMITH  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



STA. 225+01.73  
 END SITE 2-HWY. 163

STA. 216+38.09  
 BEGIN SITE 2-HWY. 163  
 LOG MILE 14.24

**LEGEND**

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

NOTES: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED RETIAN ALL EROSION CONTROL DEVICES UNTIL END OF CONSTRUCTION UNLESS OTHERWISE NOTED

**REVISIONS**

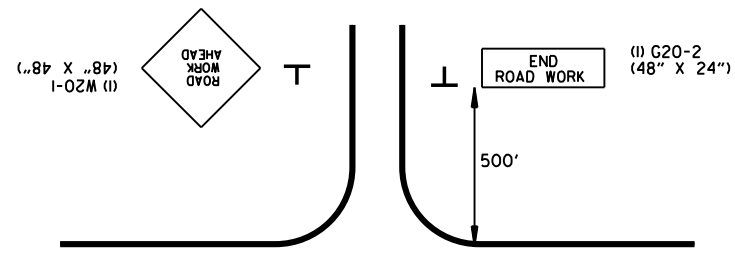
DATE OF REVISION	REVISION

1w39665 7/29/2024  
 R110713.DGN

SITE 2 - STAGE 2  
 TEMPORARY EROSION CONTROL DETAILS


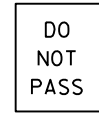

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	23	62
MAINTENANCE OF TRAFFIC DETAILS						

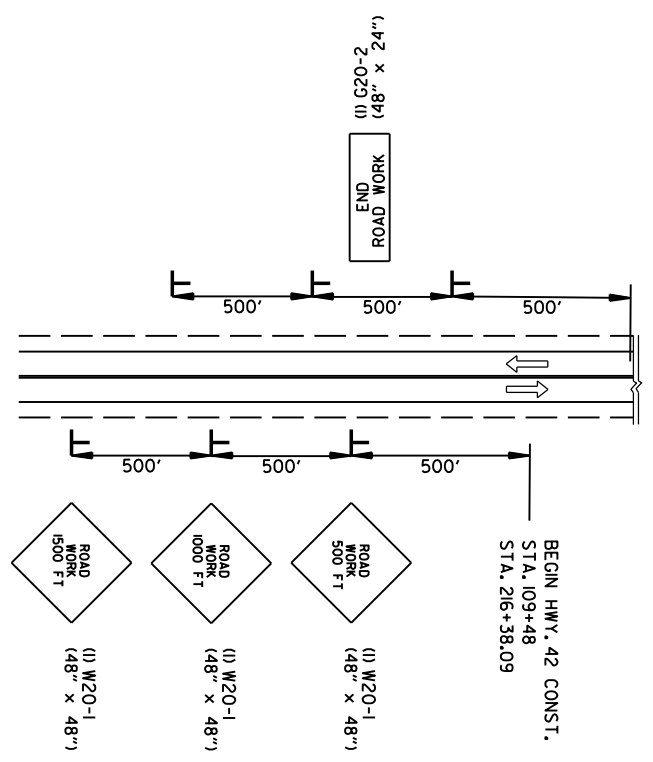
  
 08-15-2024



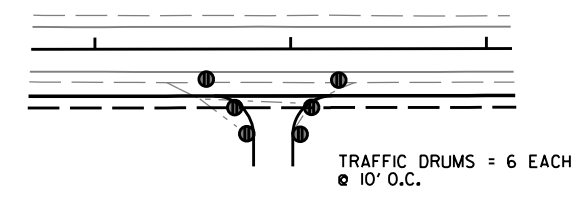
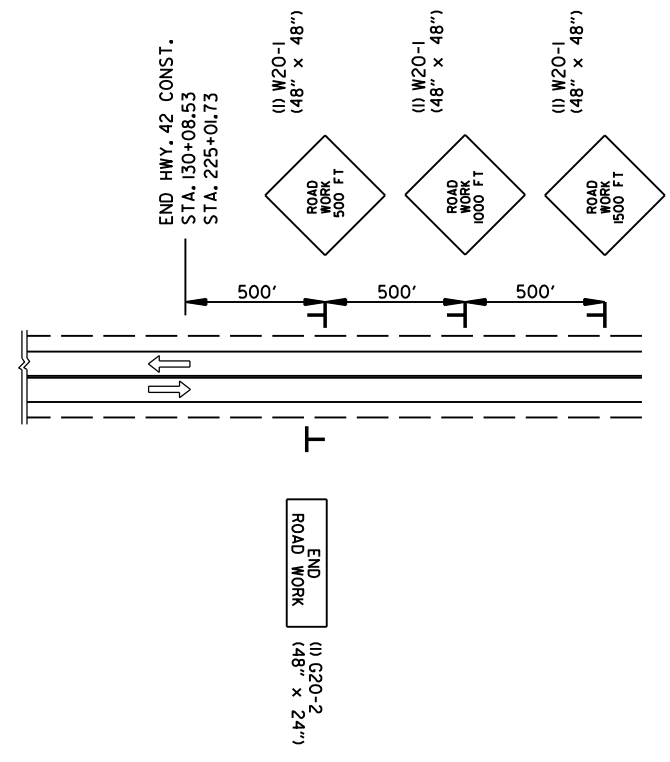
STA. 115+33 LT. - County Road 401  
 STA. 115+33 RT. - County Road 401  
 STA. 221+59 RT. - Bay Village Rd.

ADVANCE WARNING - SIDE ROADS  
( ALL STAGES )

- 
 ( ) W21-5a  
 (36" x 36")  
 ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
- 
 ( ) R4-1  
 (24" x 30")  
 ALL STAGES SPACED AT 1/4 MILE INTERVALS
- 
 ( ) W8-1  
 (30" x 30")  
 ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



ADVANCE WARNING  
(STAGE 1 SITES 1 & 2)  
(STAGE 2 SITE 1)



DRIVEWAY/TRAFFIC DRUM DETAIL

ADVANCE WARNING  
MAINTENANCE OF TRAFFIC DETAILS

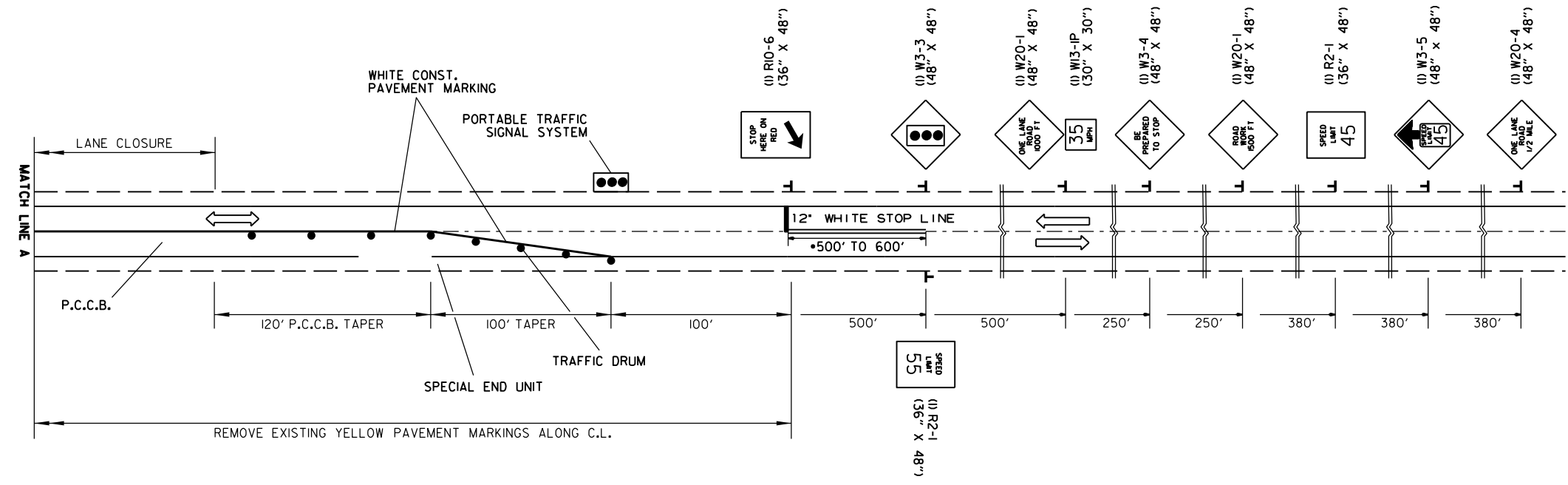
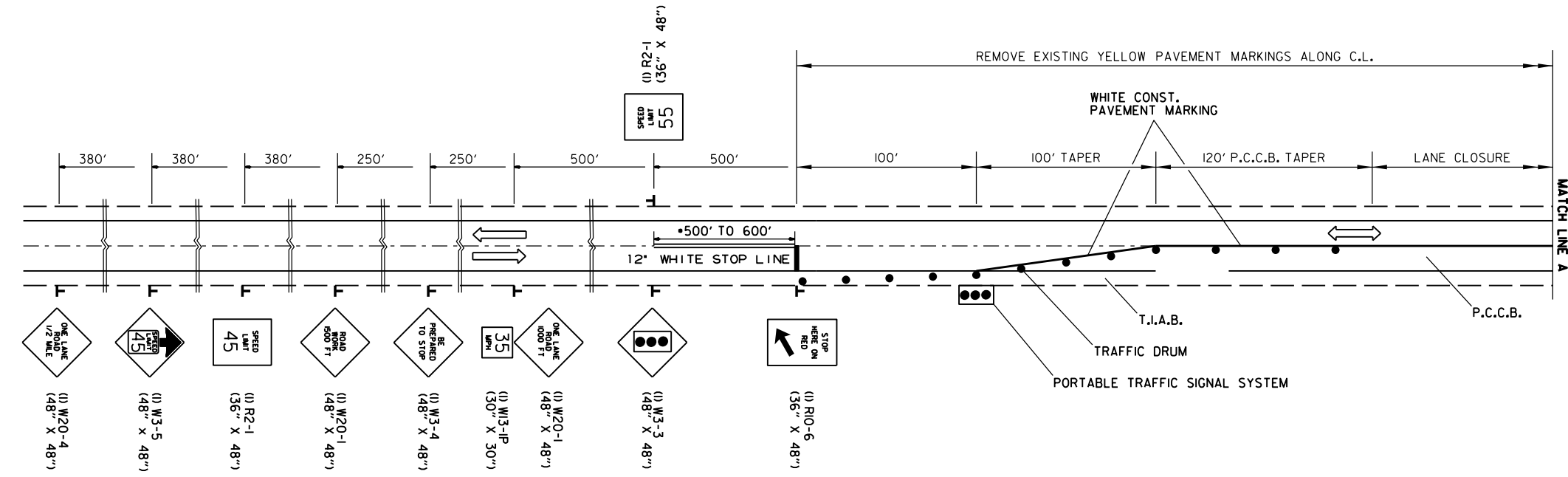
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	24	62

MAINTENANCE OF TRAFFIC DETAILS



08-15-2024

•YELLOW CONST. PAVEMENT MARKINGS TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER WHEN EXISTING PASSING LANES ARE PRESENT.



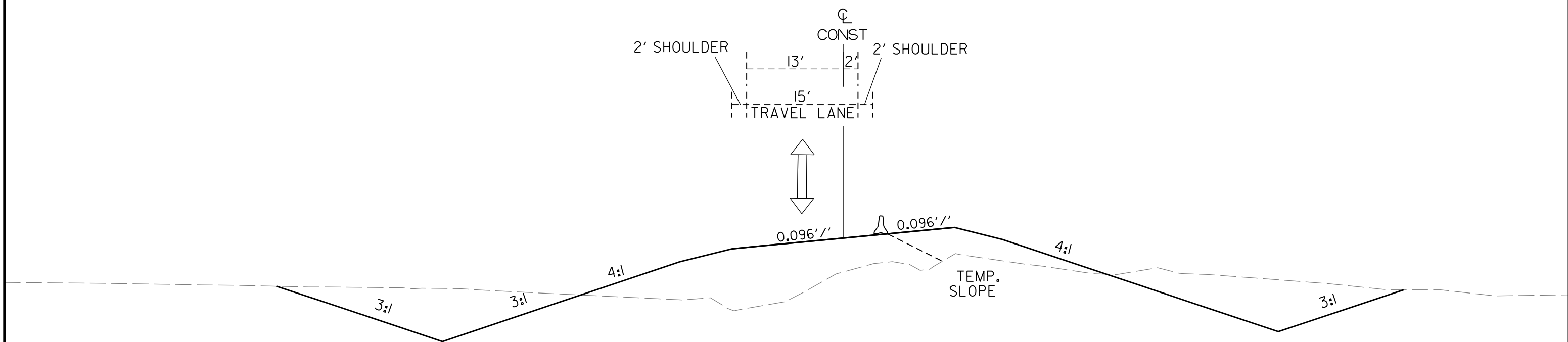
LANE CLOSURE WITH PORTABLE TRAFFIC SIGNAL SYSTEM & PRECAST CONCRETE BARRIER WALL



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	25	62
MAINTENANCE OF TRAFFIC DETAILS						



08-15-2024



SITE 2  
ALTERNATING ONE WAY TRAFFIC

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	26	62
MAINTENANCE OF TRAFFIC DETAILS						



**SITE 1 SEQUENCE OF CONSTRUCTION :**

**SITE 1 - STAGE 1**

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

MAINTAIN TRAFFIC IN EXISTING LANES.

INSTALL TRAFFIC DRUMS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN LEFT OF EXISTING ROAD FROM STA. 109+47.84 - STA. 113+95.00, STA. 123+20.00 - STA. 130+08.53. USE TRAFFIC DRUMS SPACED 55' O.C. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT R.C. BOX CULVERT LEFT OF CENTERLINE AND 16' RIGHT OF CENTERLINE AT STA. 120+54 AND NEW LOCATION ROADWAY FROM STA. 113+95.00 - STA. 123+20.00.

**SITE 1 - STAGE 2**

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 NEW LOCATION ROAD AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

REMOVE EXISTING BRIDGE

NOTCH AND WIDEN RIGHT OF EXISTING ROAD FROM STA. 109+47.84 - STA. 113+95.00, STA. 123+20.00 - STA. 130+08.53. USE TRAFFIC DRUMS SPACED 55' O.C. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT RIGHT SIDE OF R.C. BOX CULVERT AT STA. 120+54.00 AND

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

**MAINTENANCE OF TRAFFIC - STAGE 1 OF SITE 1 QUANTITIES**

SIGNS = 248.50 SQ. FT.  
TRAFFIC DRUMS = 56 EACH  
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 160 LIN. FT

**MAINTENANCE OF TRAFFIC - STAGE 2 OF SITE 1 QUANTITIES**

SIGNS = 248.50 SQ. FT.  
TRAFFIC DRUMS = 49 EACH  
RELOCATE PRECAST CONCRETE BARRIER = 120 LIN. FT.  
CONSTRUCTION PAVEMENT MARKINGS = 4524 LIN. FT.

**SITE 2 - SEQUENCE OF CONSTRUCTION :**

**SITE 2 - STAGE 1**

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

MAINTAIN TRAFFIC IN EXISTING LANES.

INSTALL TRAFFIC DRUMS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND WIDEN LEFT OF EXISTING ROAD FROM STA. 216+38.09 - STA. 219+80.00 AND STA. 222+35.00 - STA. 225+01.73. USE TRAFFIC DRUMS SPACED 55' O.C. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT R.C. BOX CULVERT LEFT OF CENTERLINE 14' RIGHT OF CENTERLINE AT STA. 220+56 AND 219+80.00 - STA. 222+35.00.

**SITE 2 - STAGE 2**

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 NEW LOCATION ROAD AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

REMOVE EXISTING BRIDGE.

NOTCH AND WIDEN RIGHT OF EXISTING ROAD STA. 216+38.09 - STA. 219+80.00, AND STA. 222+35.00 - STA. 225+01.73. USE TRAFFIC DRUMS SPACED 55' O.C. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT RIGHT SIDE OF R.C. BOX CULVERT AT STA. STA. 220+56.00.

**MAINTENANCE OF TRAFFIC - STAGE 1 OF SITE 2 QUANTITIES**

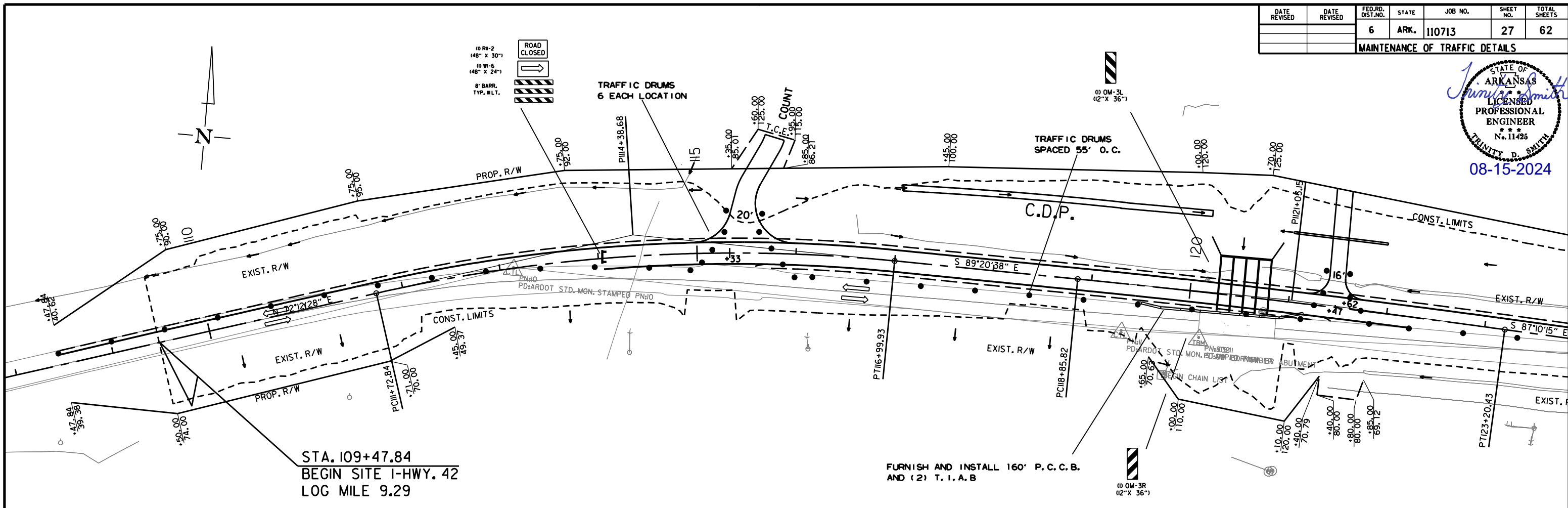
SIGNS = 224.50 SQ. FT.  
TRAFFIC DRUMS = 25 EACH

**MAINTENANCE OF TRAFFIC - STAGE 2 OF SITE 2 QUANTITIES**

SIGNS = 299.00 SQ. FT.  
TRAFFIC DRUMS = 31 EACH  
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 160 LIN. FT.  
CONSTRUCTION PAVEMENT MARKINGS = 1474 LIN. FT.

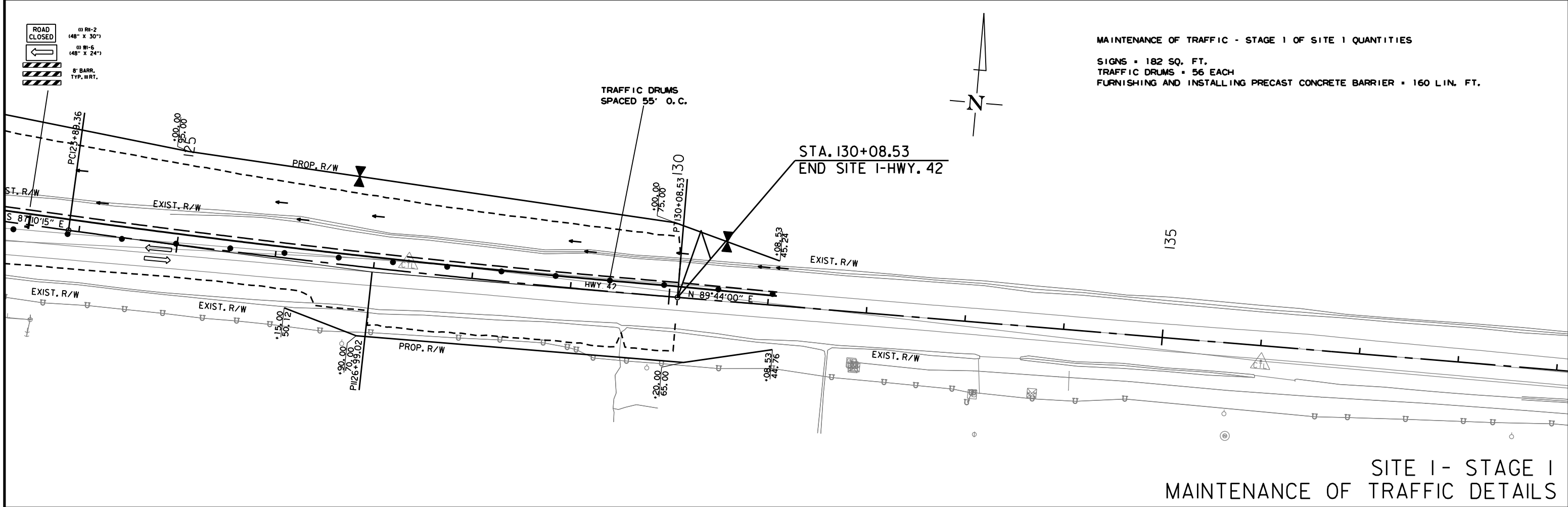
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	27	62

MAINTENANCE OF TRAFFIC DETAILS



STA. 109+47.84  
BEGIN SITE I-HWY. 42  
LOG MILE 9.29

FURNISH AND INSTALL 160' P. C. C. B.  
AND (2) T. I. A. B



MAINTENANCE OF TRAFFIC - STAGE 1 OF SITE 1 QUANTITIES  
SIGNS = 182 SQ. FT.  
TRAFFIC DRUMS = 56 EACH  
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 160 LIN. FT.

STA. 130+08.53  
END SITE I-HWY. 42

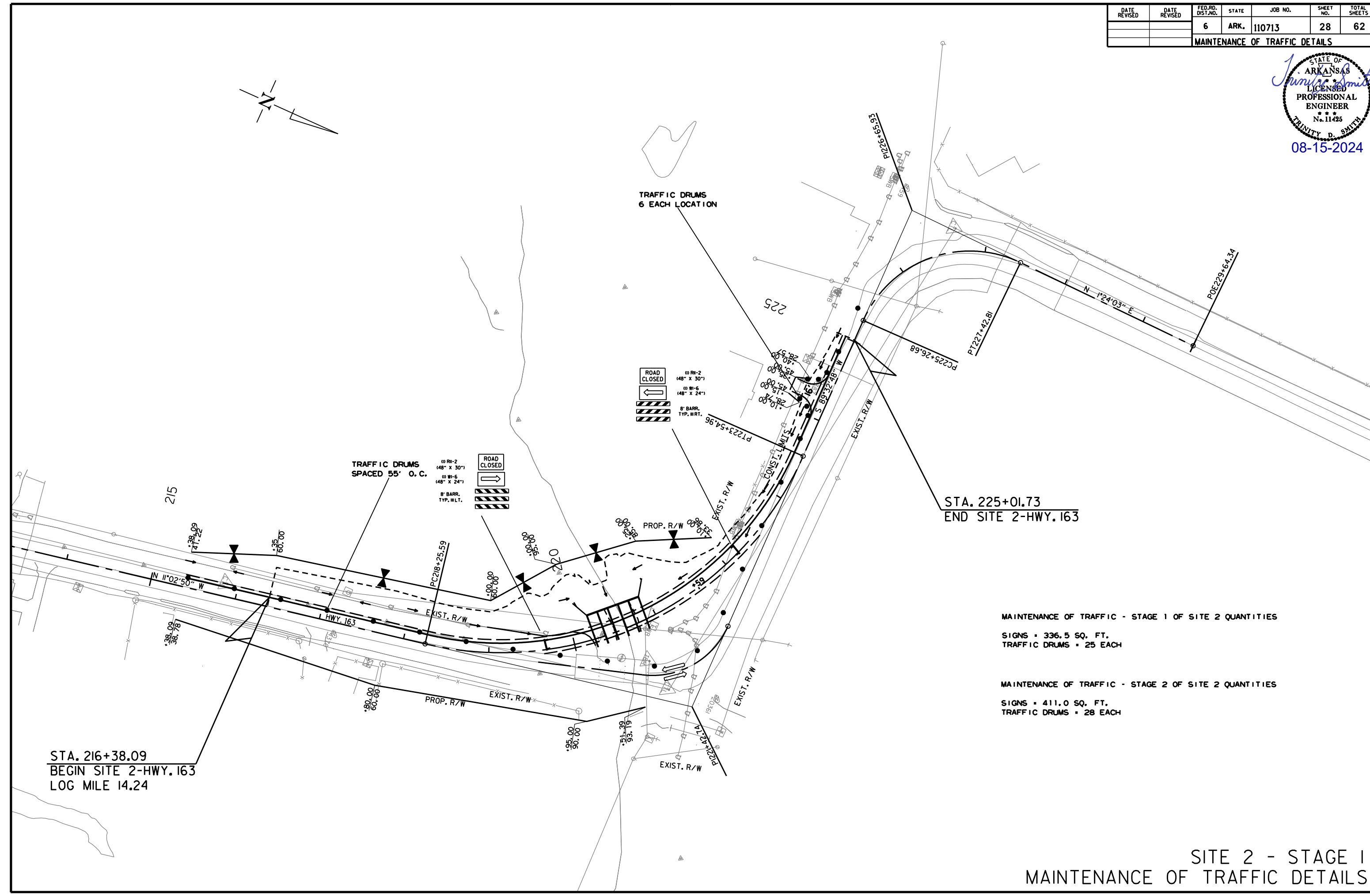
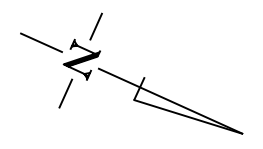
SITE I - STAGE I  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	28	62

MAINTENANCE OF TRAFFIC DETAILS



08-15-2024



STA. 216+38.09  
 BEGIN SITE 2-HWY. 163  
 LOG MILE 14.24

STA. 225+01.73  
 END SITE 2-HWY. 163

MAINTENANCE OF TRAFFIC - STAGE 1 OF SITE 2 QUANTITIES  
 SIGNS = 336.5 SQ. FT.  
 TRAFFIC DRUMS = 25 EACH

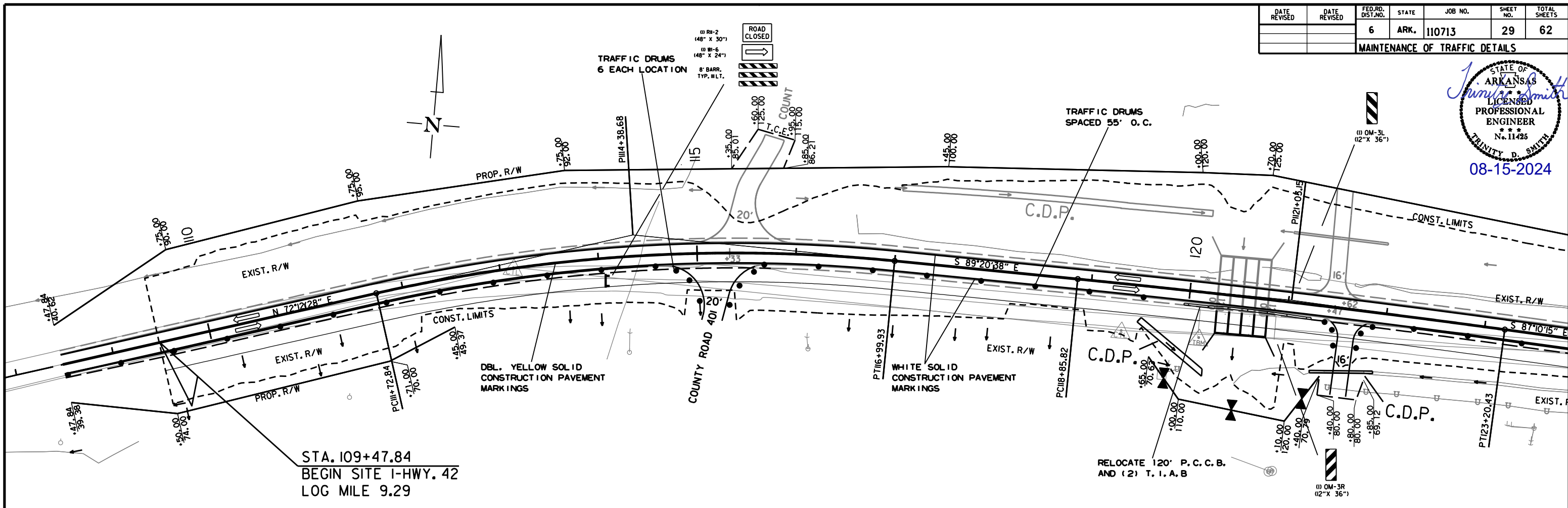
MAINTENANCE OF TRAFFIC - STAGE 2 OF SITE 2 QUANTITIES  
 SIGNS = 411.0 SQ. FT.  
 TRAFFIC DRUMS = 28 EACH

SITE 2 - STAGE 1  
 MAINTENANCE OF TRAFFIC DETAILS

DN42608 8/9/2024  
 R110713\_DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	29	62

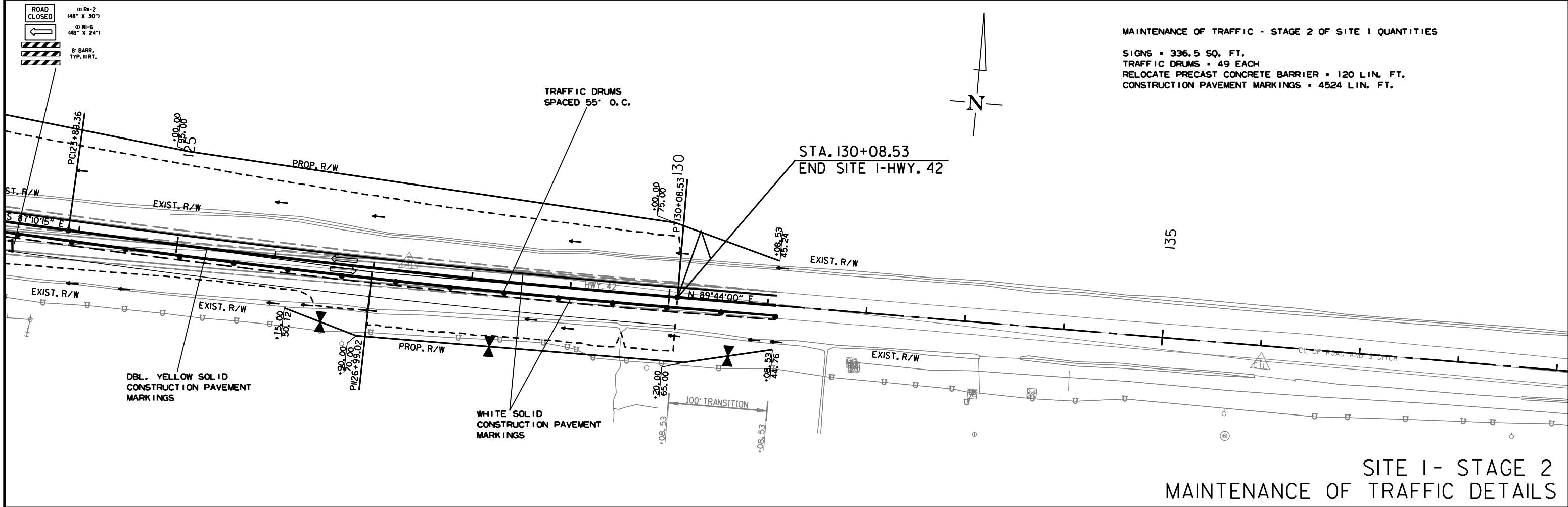
MAINTENANCE OF TRAFFIC DETAILS



STA. 109+47.84  
BEGIN SITE I-HWY. 42  
LOG MILE 9.29

MAINTENANCE OF TRAFFIC - STAGE 2 OF SITE 1 QUANTITIES

- SIGNS = 336.5 SQ. FT.
- TRAFFIC DRUMS = 49 EACH
- RELOCATE PRECAST CONCRETE BARRIER = 120 LIN. FT.
- CONSTRUCTION PAVEMENT MARKINGS = 4524 LIN. FT.

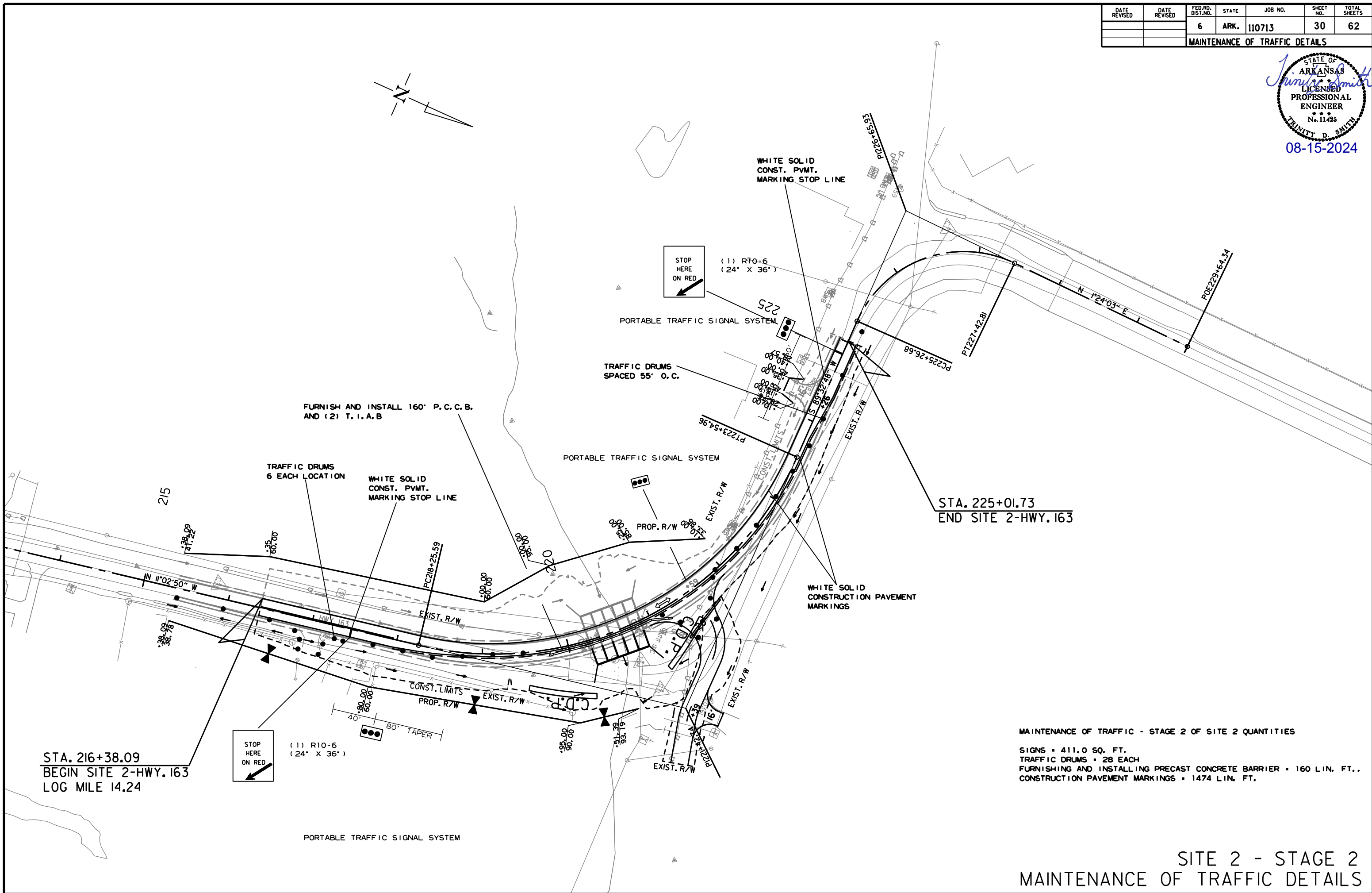


STA. 130+08.53  
END SITE I-HWY. 42

SITE I- STAGE 2  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	30	62
MAINTENANCE OF TRAFFIC DETAILS						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



STA. 216+38.09  
 BEGIN SITE 2-HWY. 163  
 LOG MILE 14.24

STA. 225+01.73  
 END SITE 2-HWY. 163

MAINTENANCE OF TRAFFIC - STAGE 2 OF SITE 2 QUANTITIES  
 SIGNS = 411.0 SQ. FT.  
 TRAFFIC DRUMS = 28 EACH  
 FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 160 LIN. FT.,  
 CONSTRUCTION PAVEMENT MARKINGS = 1474 LIN. FT.

SITE 2 - STAGE 2  
 MAINTENANCE OF TRAFFIC DETAILS

DN42608 8/9/2024  
 R110713\_DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	31	62
PERMANENT PAVEMENT MARKING DETAILS						

PERMANENT PAVEMENT MARKINGS

SITE 1:

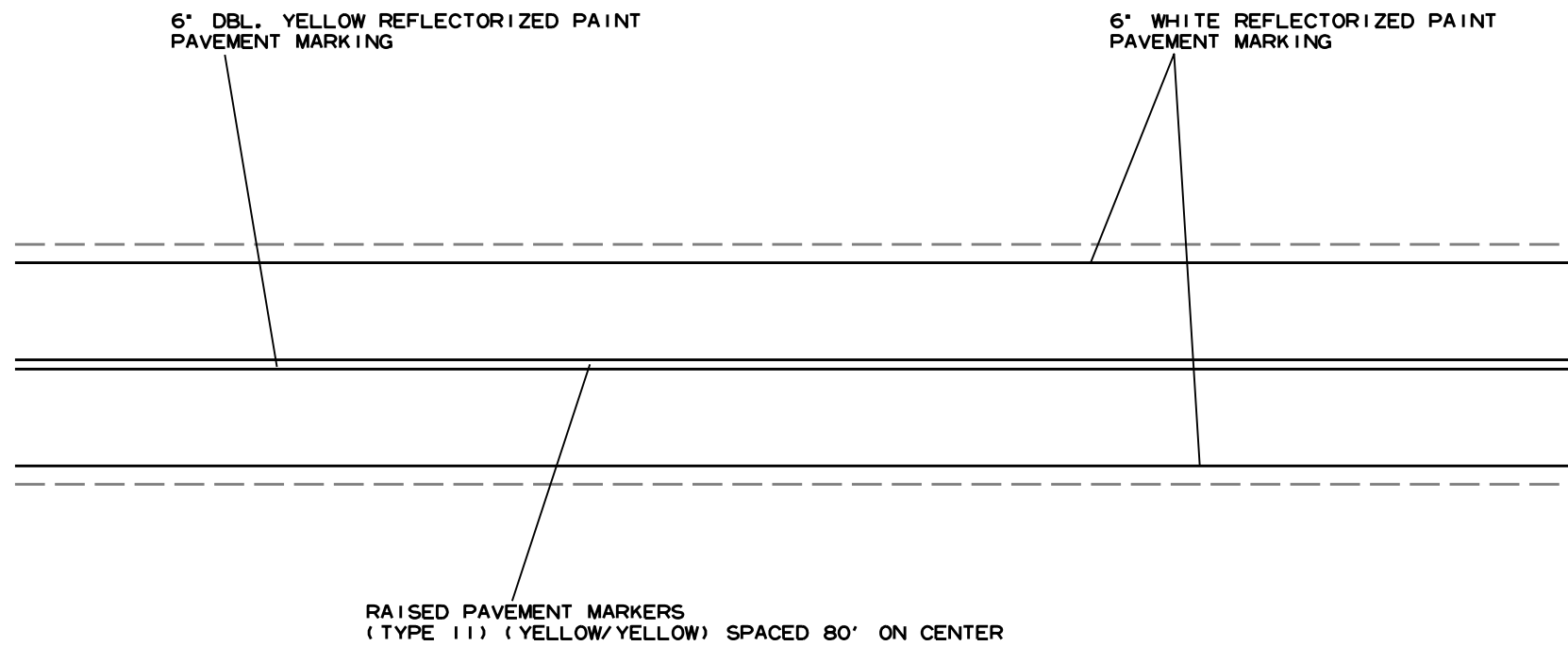
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 4522 LIN. FT.  
 REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 4122 LIN. FT.  
 RAISED PAVEMENT MARKERS TYPE 11 (YELLOW/YELLOW) (80' O.C.) = 29 EACH

SITE 2:

REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") = 1927 LIN. FT.  
 REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") = 1728 LIN. FT.  
 RAISED PAVEMENT MARKERS TYPE 11 (YELLOW/YELLOW) (80' O.C.) = 14 EACH



08-15-2024



TYPICAL STRIPING DETAIL



*Charles L. Martin*  
09/11/2024

**CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS**

DESCRIPTION	STAGE 1		STAGE 2		END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
	SITE 1	SITE 2	SITE 1	SITE 2			TYPE II (YELLOW/YELLOW)	6"	
								WHITE	YELLOW
LIN. FT. - EACH					LIN. FT.	EACH	LIN. FT.		
CONSTRUCTION PAVEMENT MARKINGS			4524	1474		5998			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)					43		43		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")					6449			6449	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")					5850				5850
<b>TOTALS:</b>						5998	43	6449	5850

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

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

**STRUCTURES**

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S	REINF.	UNCL. EXC.	SOLID	WATER	STD. DWG. NOS.
					CONCRETE-ROADWAY	STEEL-ROADWAY (GRADE 60)				
		LIN. FT.			CU. YD.	POUND	CU. YD.	SQ. YD.		
<b>STRUCTURES OVER 20' - 0" SPAN</b>										
120+54	QUAD. 12' x 12' x 79' W/ 3:1 WINGS LT. & RT.	12	12	79	598.63	75295	7620	21	0.26	SPECIAL DETAILS, RCB-1, RCB-2, PBC-1
220+56	QUINT. 12' x 11' x 52' W/ 3:1 WINGS LT. & RT.	12	11	52	443.68	59562	3432	23	0.29	SPECIAL DETAILS, RCB-1, RCB-2, PBC-1
<b>TOTALS:</b>					1042.31	134857	11052	44	0.55	

BASIS OF ESTIMATE:

WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING

**ADVANCE WARNING SIGNS AND DEVICES**

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN. BARR. (REPAIR)	PORTABLE TRAFFIC SIGNAL SYSTEM	
			LIN. FT. - EACH	LIN. FT. - EACH		NO.	SQ. FT.		EACH	RIGHT						LEFT
						NO.	SQ. FT.		EACH	LIN. FT.						EACH
W20-1	ROAD WORK 1500 FT.	48"x48"	4	4	4	4	64.0									
W20-1	ROAD WORK 1000 FT.	48"x48"	4	4	4	4	64.0									
W20-1	ROAD WORK 500 FT.	48"x48"	4	4	4	4	64.0									
W20-1	ROAD WORK AHEAD	48"x48"	7	7	7	7	112.0									
G20-2	END ROAD WORK	48"x24"	7	7	7	7	56.0									
OM-3L	OBJECT MARKER	12"x36"	1	1	1	1	3.0									
OM-3R	OBJECT MARKER	12"x36"	1	1	1	1	3.0									
R4-1	DO NOT PASS	24"x30"	2	2	2	2	10.0									
W1-6	LARGE ARROW	48"x24"	4	2	4	4	20.0									
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	18.0									
W8-1	BUMP	30"x30"	2	2	2	2	12.5									
W20-4	ONE LANE ROAD 1/2 MILE	48"x48"		2	2	2	32.0									
W3-4	BE PREPARED TO STOP	36"x36"		2	2	2	18.0									
W3-3	SIGNAL AHEAD	30"x30"		2	2	2	12.5									
R10-6	STOP HERE ON RED	24"x36"		2	2	2	12.0									
	TRAFFIC DRUMS		81	80	81			81								
	TYPE III BARRICADE-RT. (8')		2	2	2				16							
	TYPE III BARRICADE-LT. (8')		2	2	2					16						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		160	160	320					320						
	RELOCATING PRECAST CONCRETE BARRIER			120	120						120					
	TEMPORARY IMPACT ATTENUATION BARRIER		2	2	4							4				
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	2	4								4			
	PORTABLE TRAFFIC SIGNAL SYSTEM-ACTUATED														16	
<b>TOTALS:</b>							501.0	81	16	16	320	120	4	4	16	

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

QUANTITIES





*Charles L. Martin*  
09/11/2024

### EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL		
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU. YD.	LIN. FT.
ENTIRE PROJECT		CLEARING AND GRUBBING															
ENTIRE PROJECT		STAGE 1	3.61	7.22	3.61	368.2	3.61	4.95	4.95	101.0		462	36		6075		231
ENTIRE PROJECT		STAGE 2	2.25	4.50	2.25	229.5	2.25	3.79	3.79	77.3		66	3		1020		42
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.47	2.93	1.47	149.43	1.47	4.69	4.69	95.58	37.13	148.50	12.00		131.00		5
<b>TOTALS:</b>			<b>7.33</b>	<b>14.65</b>	<b>7.33</b>	<b>747.1</b>	<b>7.33</b>	<b>23.43</b>	<b>23.43</b>	<b>477.88</b>	<b>37.13</b>	<b>742.50</b>	<b>60.00</b>		<b>7226.00</b>		<b>311.00</b>

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  
 WATTLE DITCH CHECKS ..... 9 LIN. FT. / LOCATION  
 SAND BAG DITCH CHECKS ..... 22 BAGS / LOCATION  
 ROCK DITCH CHECKS ..... 3 CU. YD. / LOCATION

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

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

### CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH LIN. FT.	"W" FEET	CONC. DITCH PAVING	SOLID	WATER
					(TYPE B) SQ. YD.	SODDING SQ. YD.	M. GAL.
117+00.00	120+16.29	Hwy 49 LT	316.29	6.33	222.46	140.57	1.77
119+50.00	120+18.88	Hwy 49 RT	68.88	6.33	48.45	30.61	0.39
121+43.00	121+85.00	Hwy 49 RT	42.00	6.33	29.54	18.67	0.24
219+00.00	220+09.63	Hwy. 163 LT	109.63	6.33	77.11	48.72	0.61
221+05.30	221+65.00	Hwy. 163 LT	59.70	6.33	41.99	26.53	0.33
219+50.00	220+17.31	Hwy. 163 RT	67.31			29.92	0.38
220+93.35	221+50.00	Hwy. 163 RT	56.65			25.18	0.32
<b>TOTALS:</b>					<b>419.55</b>	<b>320.20</b>	<b>4.04</b>

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

### BENCH MARKS

STATION	LOCATION	BENCH MARKS
120+54	Hwy. 42 HEADWALL LT	1
220+56	Hwy. 163 HEADWALL LT	1
<b>TOTAL:</b>		<b>2</b>

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

### REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
120+07	120+82	SITE 1 - HWY. 42 - BR. NO. 03575	1.00
220+00	220+85	SITE 2 - HWY. 163 - BR. NO. 04046	1.00
<b>TOTAL:</b>			<b>2.00</b>

### EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			731	649.78
<b>TOTAL:</b>				<b>649.78</b>

NOTE: AVERAGE WIDTH = 8'-0"

### MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS
		(SINGLE)
ENTIRE PROJECT	3	3
<b>TOTALS:</b>		<b>3</b>

### DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH FEET	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS			STANDARD DRAWINGS
				SQ. YD.	TON		18"	24"	30"	
				TON	TON	LIN. FT.				
115+33	LT.	SITE 1 - HWY. 42	20	326.01	35.86	133.12				
115+33	RT.	SITE 1 - HWY. 42	20	194.03	21.34	79.23				
121+47	LT.	SITE 1 - HWY. 42	16	194.08	21.35	79.25		96		
121+62	RT.	SITE 1 - HWY. 42	16	137.90	15.17	56.31			64	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
221+59	RT.	SITE 2 - HWY. 163	20	533.41	58.68	217.81		56		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
224+26	LT.	SITE 2 - HWY. 163	16	56.80	6.25	23.19	28			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
301+39	LT.	BAY VILLAGE RD.	16	60.01	6.60	24.50				
*ENTIRE PROJECT TEMPORARY DRIVES						70.00				
<b>TOTALS:</b>				<b>1502.24</b>	<b>165.25</b>	<b>683.41</b>	<b>28</b>	<b>152</b>	<b>64</b>	

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2") ..... 94.2% MIN. AGGR. .... 5.8% ASPHALT BINDER

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

### FENCING

STATION	STATION	LOCATION	WIRE FENCE
			(TYPE D) LIN. FT.
216+38	216+86	SITE 2 - Hwy. 163 RT.	54
217+83	219+89	SITE 2 - Hwy. 163 RT.	277
222+28	223+29	SITE 2 - Hwy. 163 LT.	95
<b>TOTALS:</b>			<b>426</b>

### 4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			1500	12
<b>TOTALS:</b>			<b>1500</b>	<b>12</b>

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



**SUMMARY OF QUANTITIES**

DATE REVISION	DATE REVISION	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	35	62
<b>SUMMARY OF QUANTITIES AND REVISIONS</b>						



*Charles Martin*  
09/11/2024

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	32	STATION
201	GRUBBING	32	STATION
202	REMOVAL AND DISPOSAL OF FENCE	523	LIN. FT.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	2	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	350	LIN. FT.
SP, SS, & 210	UNCLASSIFIED EXCAVATION	18078	CU. YD.
SP & 210	COMPACTED EMBANKMENT	28186	CU. YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	5529	TON
SS & 401	TACK COAT	1354	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	23	TON
SP, SS, & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	1	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	602	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	27	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	2865	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	176	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	889	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	25	TON
SP, SS, & 415	ACHM PATCHING 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	501	SQ. FT.
SS & 604	BARRICADES	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	81	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	320	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	120	LIN. FT.
604	CONSTRUCTION PAVEMENT MARKINGS	5998	LIN. FT.
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	420	SQ. YD.
SP, SS, & 606	18" SIDE DRAIN	28	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	152	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN	64	LIN. FT.
SS & 606	SELECTED PIPE BEDDING	20	CU. YD.
SS & 611	4" PIPE UNDERDRAINS	1500	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS	12	EACH
SS & 619	WIRE FENCE (TYPE D)	426	LIN. FT.
620	LIME	15	TON
620	SEEDING	7.33	ACRE
SS & 620	MULCH COVER	30.76	ACRE
620	WATER	12296	M. GAL.
621	TEMPORARY SEEDING	23.43	ACRE
621	SILT FENCE	7226	LIN. FT.
621	SAND BAG DITCH CHECKS	743	BAG
621	SEDIMENT REMOVAL AND DISPOSAL	311	CU. YD.
621	ROCK DITCH CHECKS	60	CU. YD.
621	WATTLE (20")	37	LIN. FT.
623	SECOND SEEDING APPLICATION	7.33	ACRE
624	SOLID SODDING	364	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	650	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	3	EACH
SS & 637	MAILBOX SUPPORTS (SINGLE)	3	EACH
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	16	WEEK
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	6449	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	5850	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	43	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	4	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	4	EACH
<b>STRUCTURES OVER 20' SPAN</b>			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	11052	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	1042.31	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	134857	POUND

**REVISIONS**

DATE	REVISION	SHEET NUMBER
9/11/2024	REMOVED DR-1 STANDARD DRAWING. ADDED DR-2 STANDARD DRAWING. REMOVED "CEMENT" SUPPLEMENTAL SPECIFICATION. ADDED "SEQUENCE OF WORK" & "WARM MIX ASPHALT" SPECIAL PROVISIONS. ADDED "STRUCTURES", "PORTLAND CEMENT CONCRETE PAVEMENT", AND "CONCRETE FOR STRUCTURES" SUPPLEMENTAL SPECIFICATIONS. REVISED "UTILITY ADJUSTMENTS" SPECIAL PROVISION. REVISED "SIGNS", "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER", "RELOCATING PRECAST CONCRETE BARRIER", & "PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED" PAY ITEMS. ADDED "REMOVAL AND DISPOSAL OF GUARDRAIL" PAY ITEM. REVISED TEXT ERROR ON "BASE AND SURFACING" AND "BENCHMARK" QUANTITY BOXES. REVISED CROSS SECTION SHEETS IN PLANS.	3, 32, 33, 34, 35, 43 - 62

**SUMMARY OF QUANTITIES AND REVISIONS**

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	36	62
SURVEY CONTROL DETAILS						



SURVEY CONTROL COORDINATES

Project Name: s110713  
 Date: 7/30/2020  
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.  
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	406809.9879	1707472.7391	239.772	CTL	ARDOT STD. MON. STAMPED PN: 1
2	407554.1574	1707247.6943	243.508	CTL	ARDOT STD. MON. STAMPED PN: 2
3	408352.7908	1707098.0104	244.425	CTL	ARDOT STD. MON. STAMPED PN: 3
4	408868.3275	1706999.2359	244.660	CTL	ARDOT STD. MON. STAMPED PN: 4
5	408950.4378	1706376.5409	249.403	CTL	ARDOT STD. MON. STAMPED PN: 5
6	409707.2816	1706382.3263	248.357	CTL	ARDOT STD. MON. STAMPED PN: 6
7	410510.4941	1706428.2747	247.376	CTL	ARDOT STD. MON. STAMPED PN: 7
8	411021.9562	1706440.3534	247.743	CTL	ARDOT STD. MON. STAMPED PN: 8
9	377340.9860	1719286.8789	215.449	CTL	ARDOT STD. MON. STAMPED PN: 9
10	377637.8722	1720172.3184	218.092	CTL	ARDOT STD. MON. STAMPED PN: 10
11	377628.0778	1720789.6377	209.330	CTL	ARDOT STD. MON. STAMPED PN: 11
12	377658.7386	1721589.8883	206.274	CTL	ARDOT STD. MON. STAMPED PN: 12
13	377632.7324	1722456.3535	207.291	CTL	ARDOT STD. MON. STAMPED PN: 13
14	377632.0869	1723315.3901	206.747	CTL	ARDOT STD. MON. STAMPED PN: 14
100	376575.4022	1717002.6709	213.560	GPS	ARDOT GPS #190017
101	377098.5987	1718389.6858	214.542	GPS	ARDOT GPS #190017A
102	408924.5067	1707954.0418	237.878	GPS	ARDOT GPS #190018
103	408918.4883	1709562.2098	232.101	GPS	ARDOT GPS #190018A
901	408834.2280	1706978.3845	245.135	TBM	CH SQ NW COR BR 163-2A 14.39
902	377627.7242	1720868.2703	206.938	TBM	SW COR SW BR ABUTMENT

\*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped (standard markings common to all caps), or as indicated (other markings indicated in the point description of the individual point).  
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT  
 A PROJECT CAF OF 0.9999341207 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.  
 THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.  
 GRID DISTANCE = GROUND DISTANCE X CAF.  
 GRID COORDINATES ARE STORED UNDER FILE NAME s110713gi.cti  
 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 - 0301-NORTH ZONE  
 DETERMINED FROM GPS CONTROL POINTS: 190018 - 190018A - NORTH SECTION, 190017 - 190017A - SOUTH SECTION  
 CONVERGENCE ANGLE FOR NORTH SECTION: 0°46'15.18" RIGHT AT LAT N35°26'57.46" LON W90°40'30.83" (PN: 4)  
 CONVERGENCE ANGLE FOR SOUTH SECTION: 0°47'49.10" RIGHT AT LAT N35°21'46.65" LON W90°37'49.42" (PN: 11)  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 42

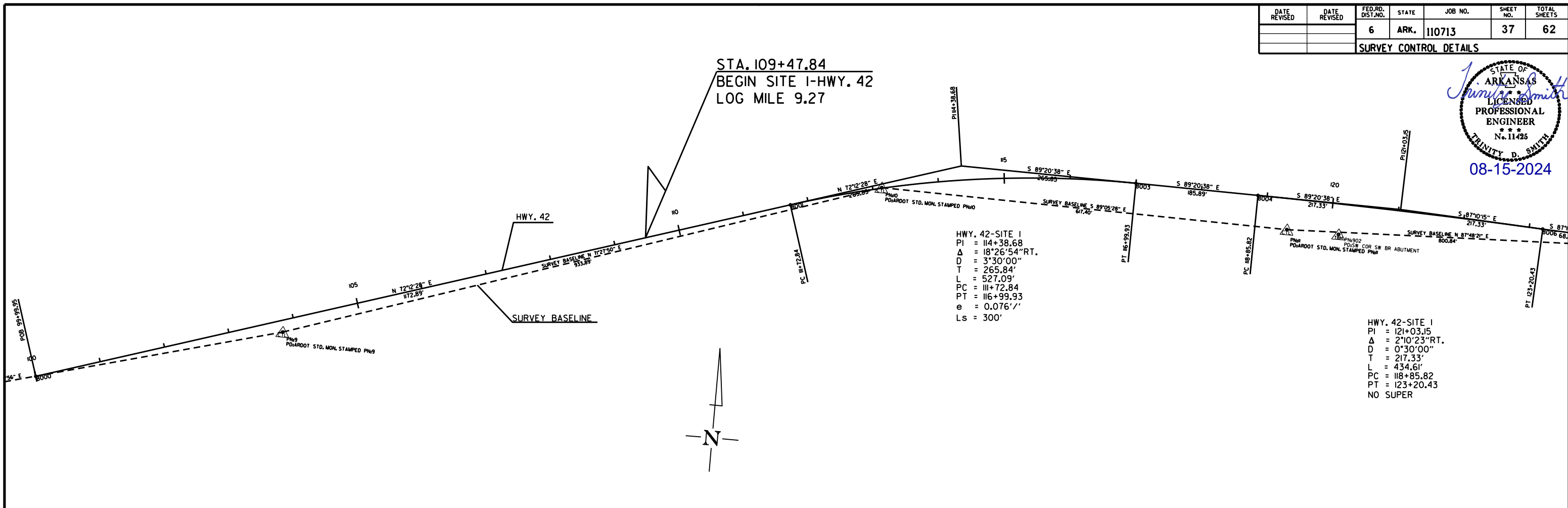
POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	99+99.95	377241.4875	1718919.7556
8001	PC	111+72.84	377599.8822	1720036.5450
8003	PT	116+99.93	377678.0722	1720555.5090
8004	PC	118+85.82	377675.9435	1720741.3849
8006	PT	123+20.43	377662.7278	1721175.7689
8007	PC	123+89.36	377659.3254	1721244.6168
8009	PT	130+08.53	377645.4824	1721863.5527
8010	POE	140+80.11	377650.4697	1722935.1210

HWY. 163

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	200+00.00	406821.2951	1707481.4271
8012	PC	200+48.55	406863.1772	1707456.8633
8014	PT	204+88.03	407273.9865	1707307.7130
8015	PC	209+30.83	407710.6928	1707234.5028
8017	PT	212+36.94	408011.8792	1707179.8660
8018	PC	218+25.59	408589.6175	1707067.0708
8020	PT	223+54.96	408898.3848	1706689.1545
8021	PC	225+26.68	408897.0259	1706517.4349
8023	PT	227+42.81	409035.1307	1706381.5948
8024	POE	229+64.34	409256.5889	1706387.0099

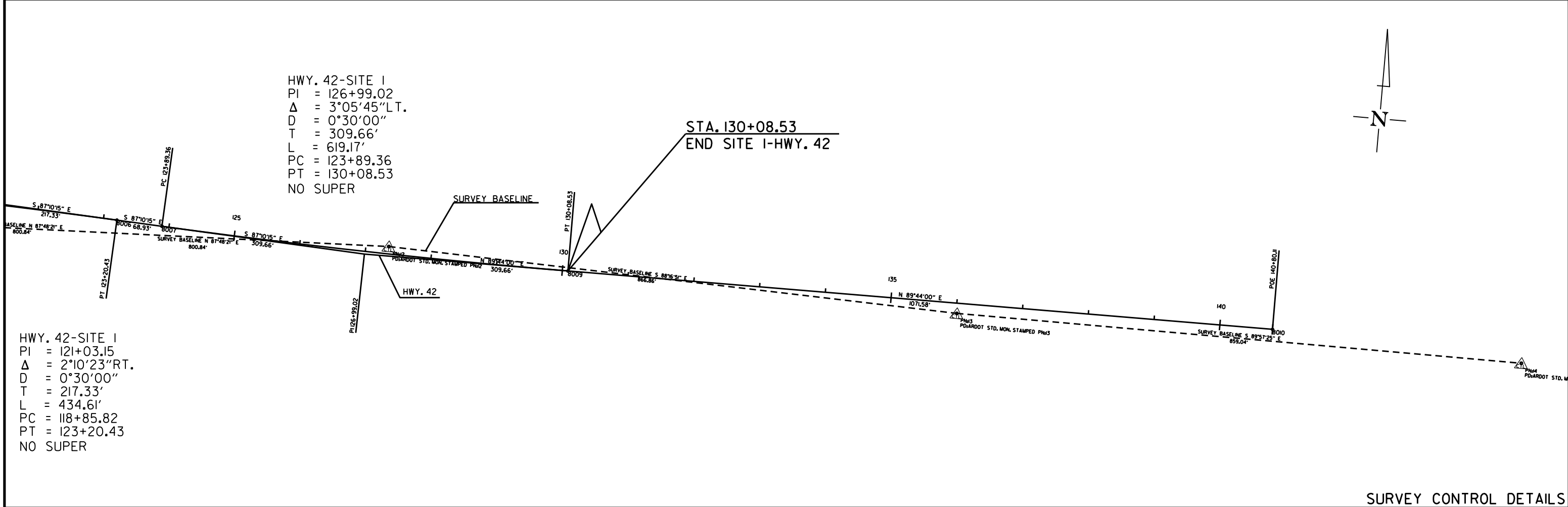
DATE REVISION	DATE REVISION	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	37	62
SURVEY CONTROL DETAILS						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024



HWY. 42-SITE I  
 PI = 114+38.68  
 $\Delta$  = 18°26'54" RT.  
 D = 3°30'00"  
 T = 265.84'  
 L = 527.09'  
 PC = 111+72.84  
 PT = 116+99.93  
 e = 0.076' /'  
 Ls = 300'

HWY. 42-SITE I  
 PI = 121+03.15  
 $\Delta$  = 2°10'23" RT.  
 D = 0°30'00"  
 T = 217.33'  
 L = 434.61'  
 PC = 118+85.82  
 PT = 123+20.43  
 NO SUPER



HWY. 42-SITE I  
 PI = 126+99.02  
 $\Delta$  = 3°05'45" LT.  
 D = 0°30'00"  
 T = 309.66'  
 L = 619.17'  
 PC = 123+89.36  
 PT = 130+08.53  
 NO SUPER

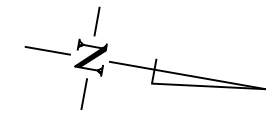
HWY. 42-SITE I  
 PI = 121+03.15  
 $\Delta$  = 2°10'23" RT.  
 D = 0°30'00"  
 T = 217.33'  
 L = 434.61'  
 PC = 118+85.82  
 PT = 123+20.43  
 NO SUPER

SURVEY CONTROL DETAILS

DATE REVISION	DATE REVISION	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	38	62
SURVEY CONTROL DETAILS						



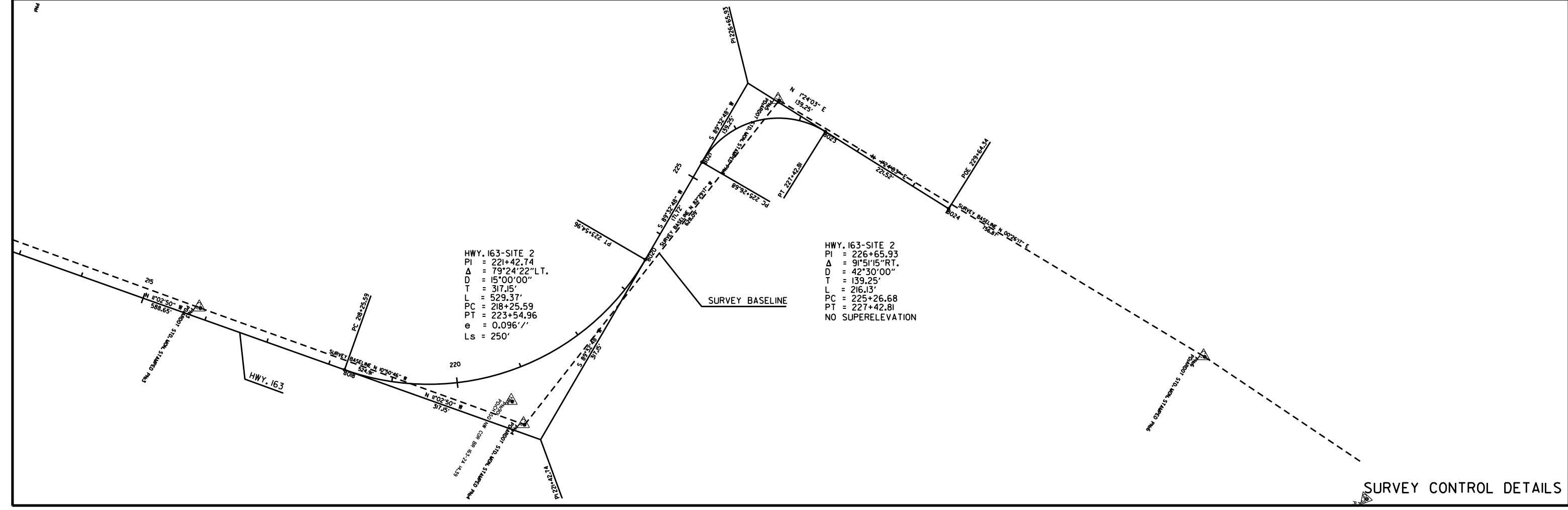
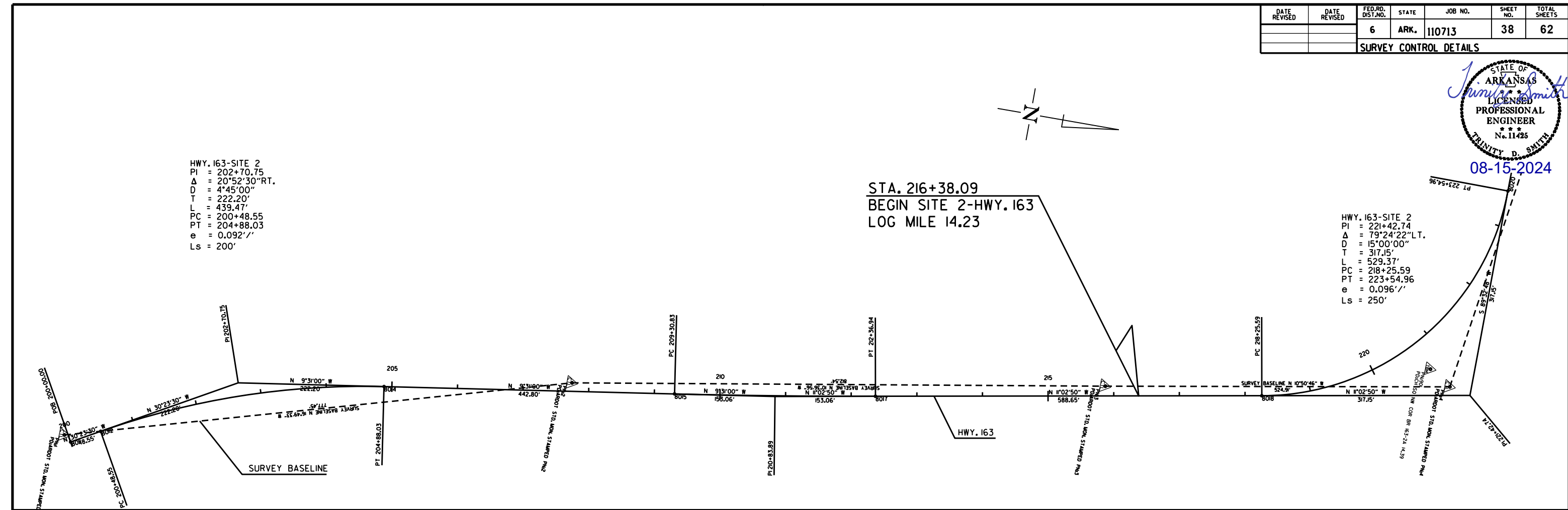
08-15-2024



HWY. 163-SITE 2  
 PI = 202+70.75  
 $\Delta$  = 20°52'30" RT.  
 D = 4°45'00"  
 T = 222.20'  
 L = 439.47'  
 PC = 200+48.55  
 PT = 204+88.03  
 e = 0.092'/'  
 Ls = 200'

STA. 216+38.09  
 BEGIN SITE 2-HWY. 163  
 LOG MILE 14.23

HWY. 163-SITE 2  
 PI = 221+42.74  
 $\Delta$  = 79°24'22" LT.  
 D = 15°00'00"  
 T = 317.15'  
 L = 529.37'  
 PC = 218+25.59  
 PT = 223+54.96  
 e = 0.096'/'  
 Ls = 250'



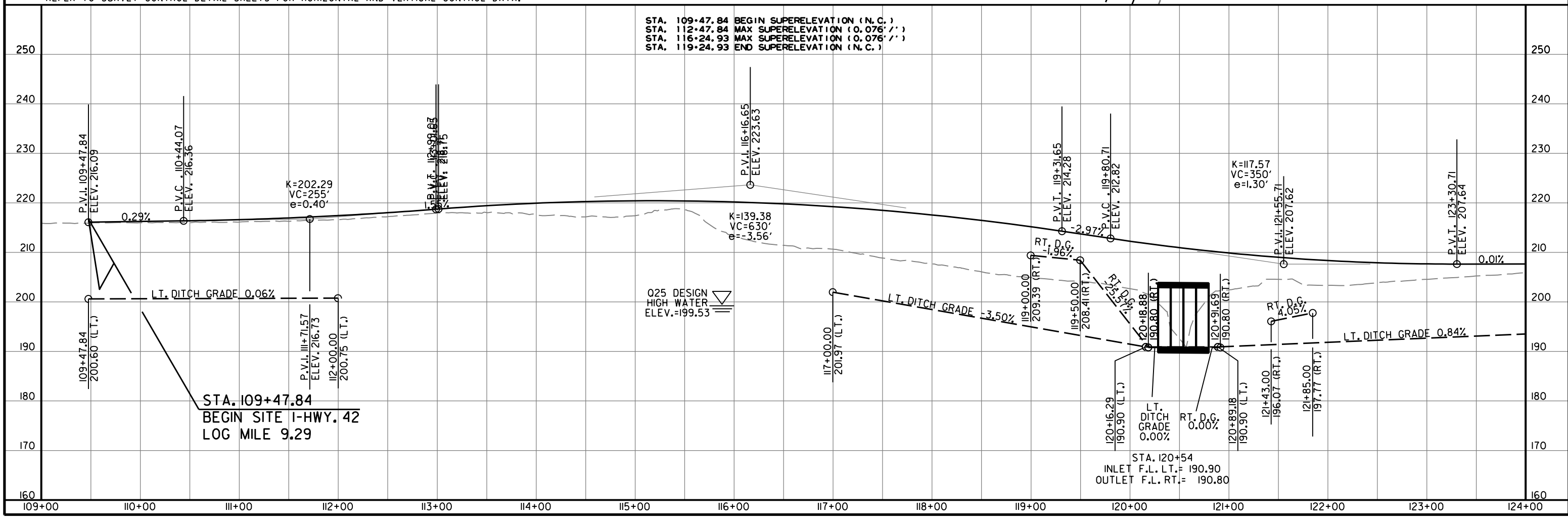
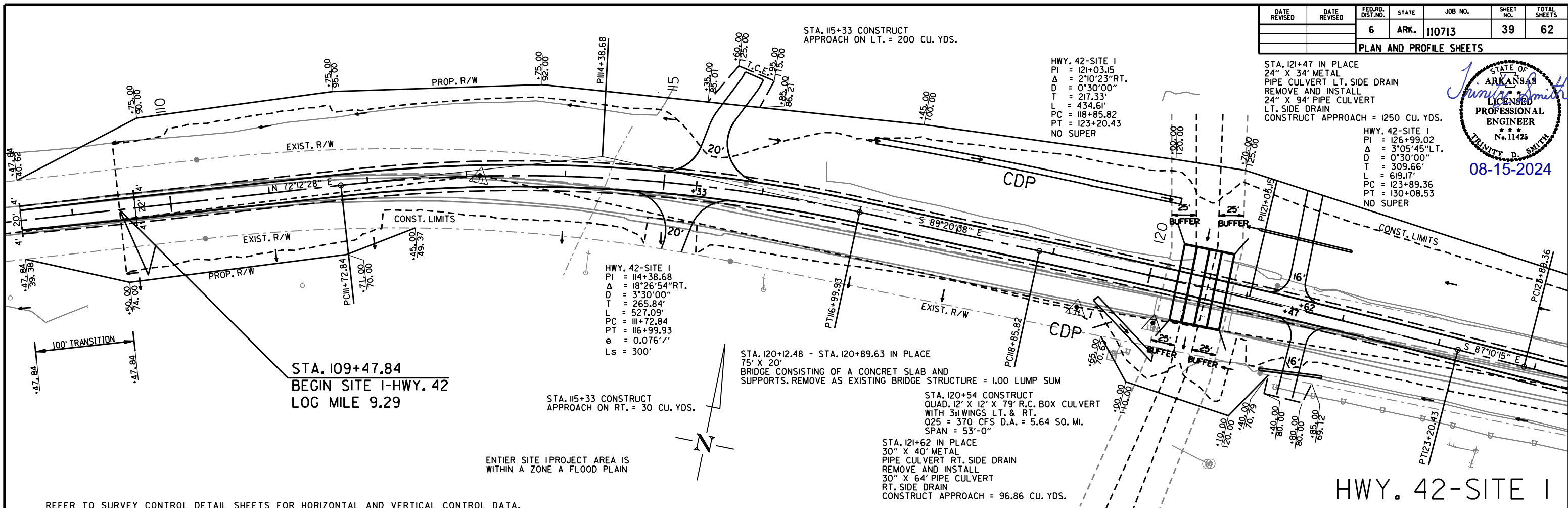
HWY. 163-SITE 2  
 PI = 221+42.74  
 $\Delta$  = 79°24'22" LT.  
 D = 15°00'00"  
 T = 317.15'  
 L = 529.37'  
 PC = 218+25.59  
 PT = 223+54.96  
 e = 0.096'/'  
 Ls = 250'

HWY. 163-SITE 2  
 PI = 226+65.93  
 $\Delta$  = 91°51'15" RT.  
 D = 42°30'00"  
 T = 139.25'  
 L = 216.13'  
 PC = 225+26.68  
 PT = 227+42.81  
 NO SUPERELEVATION

SURVEY CONTROL DETAILS

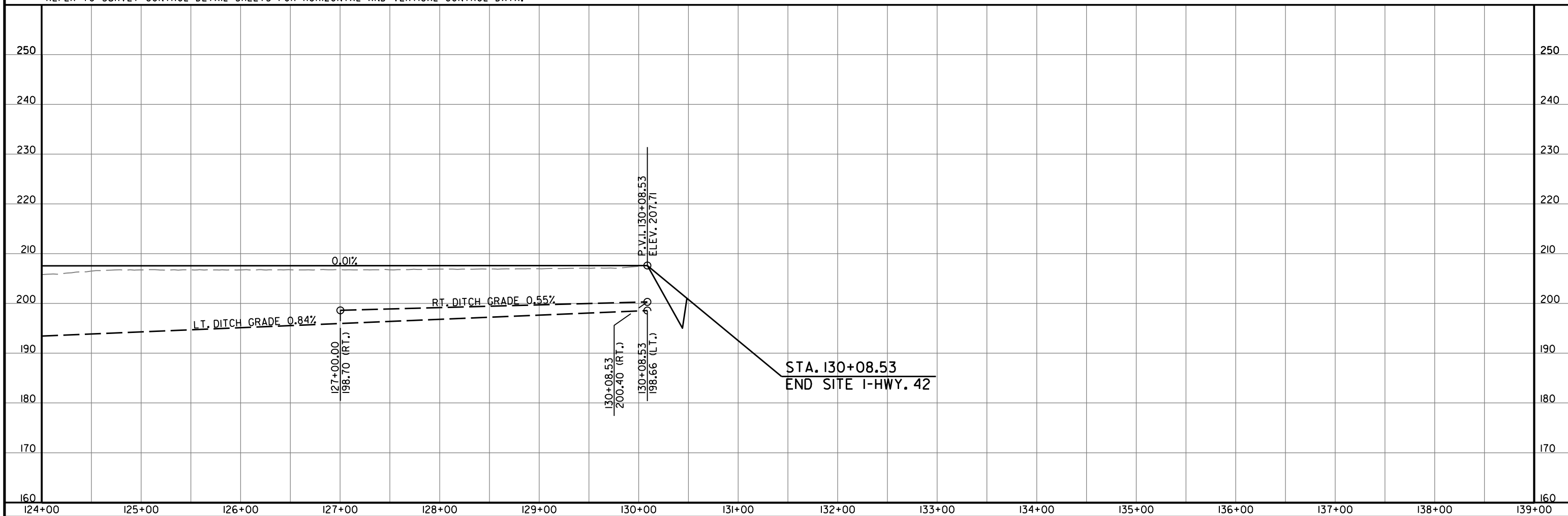
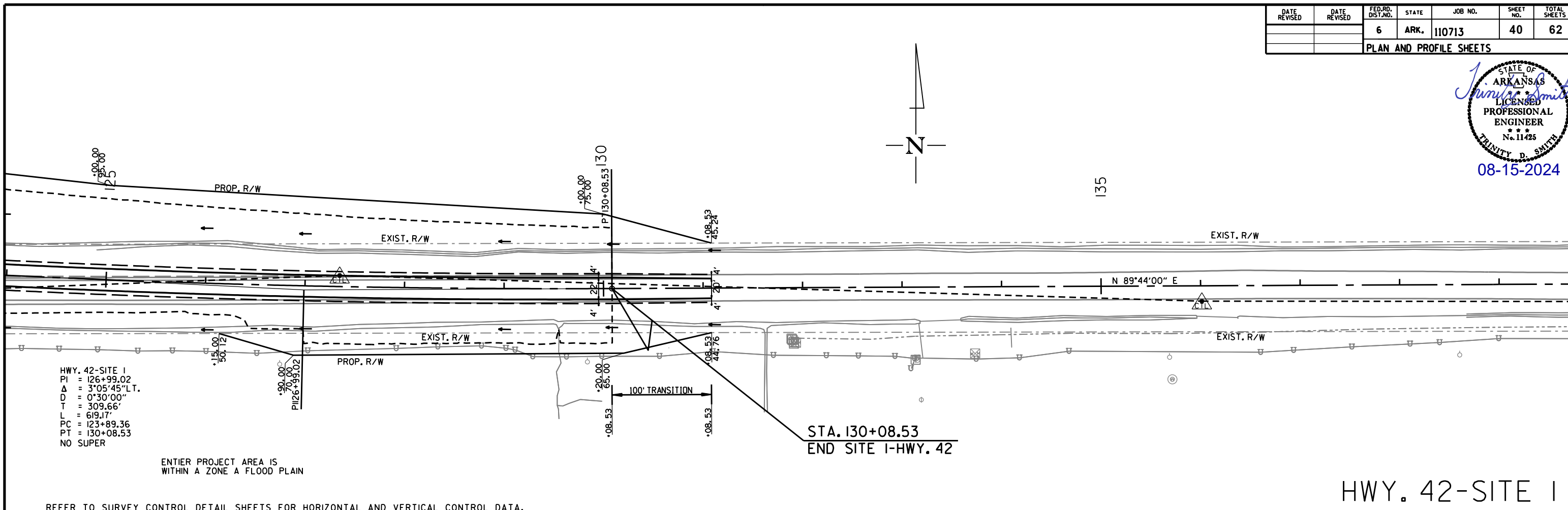
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	39	62

PLAN AND PROFILE SHEETS



1W39665 7/29/2024 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	40	62
PLAN AND PROFILE SHEETS						

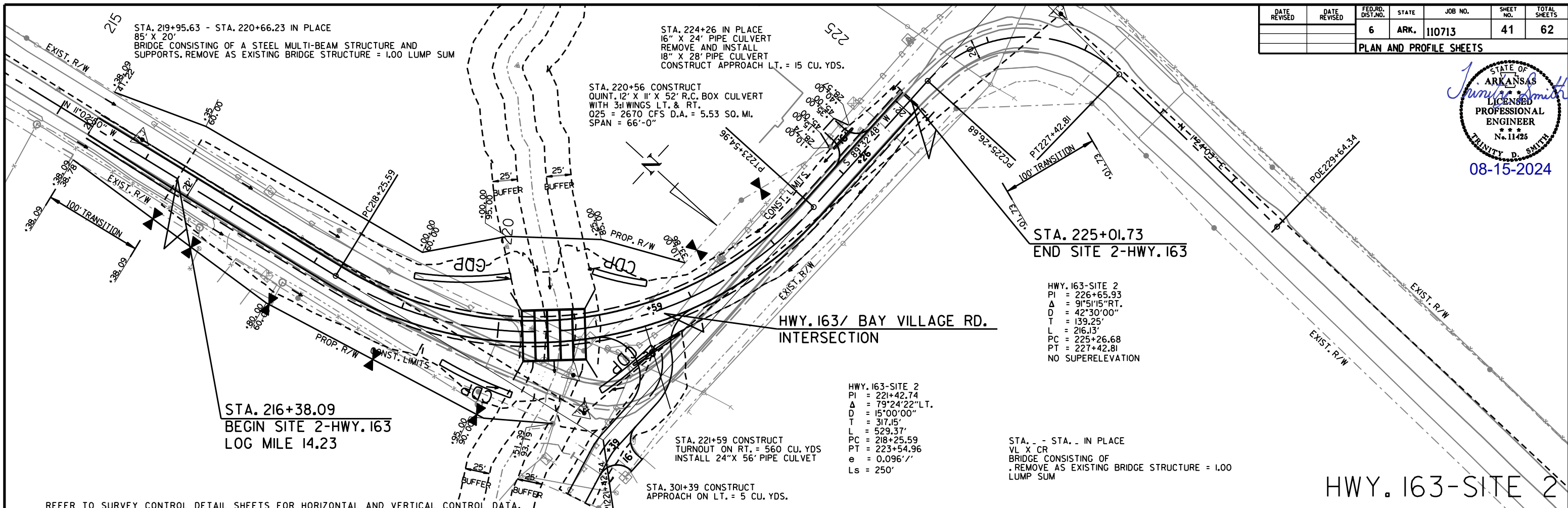


1W39665 7/29/2024  
 R110713.DGN



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	41	62

PLAN AND PROFILE SHEETS

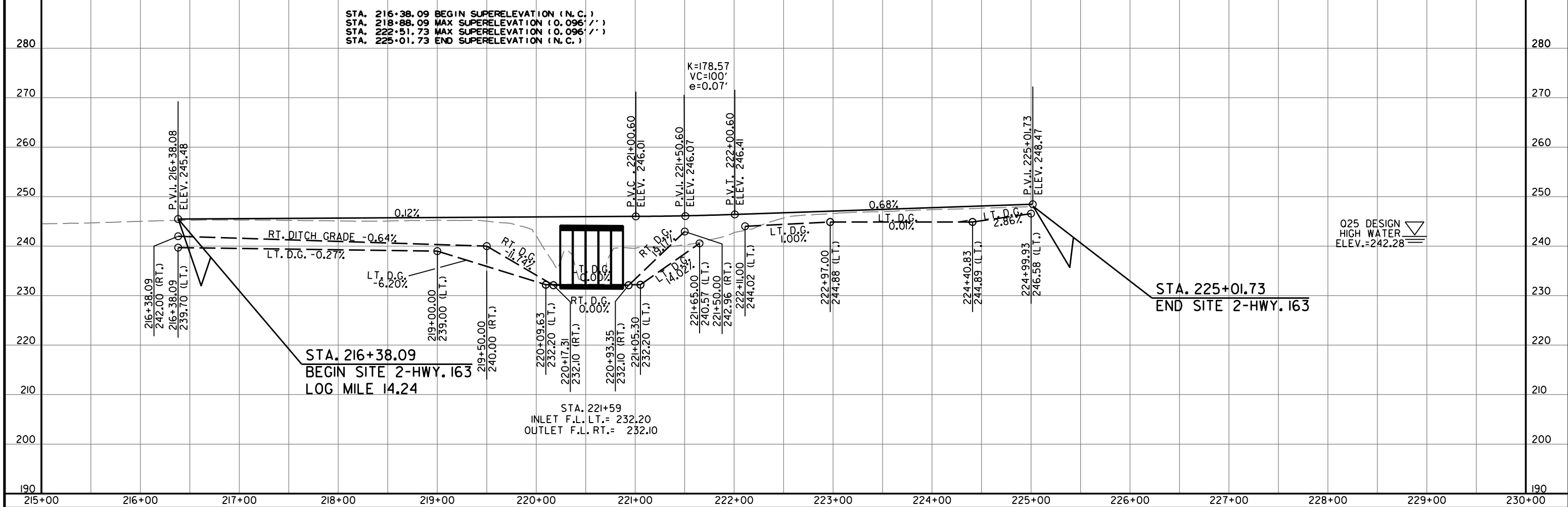


HWY. 163-SITE 2  
 PI = 226+65.93  
 Δ = 91°51'15" RT.  
 D = 42°30'00"  
 T = 139.25'  
 L = 216.13'  
 PC = 225+26.68  
 PT = 227+42.81  
 NO SUPERELEVATION

HWY. 163-SITE 2  
 PI = 221+42.74  
 Δ = 79°24'22" LT.  
 D = 15°00'00"  
 T = 317.15'  
 L = 529.37'  
 PC = 218+25.59  
 PT = 223+54.96  
 e = 0.096'/'  
 Ls = 250'

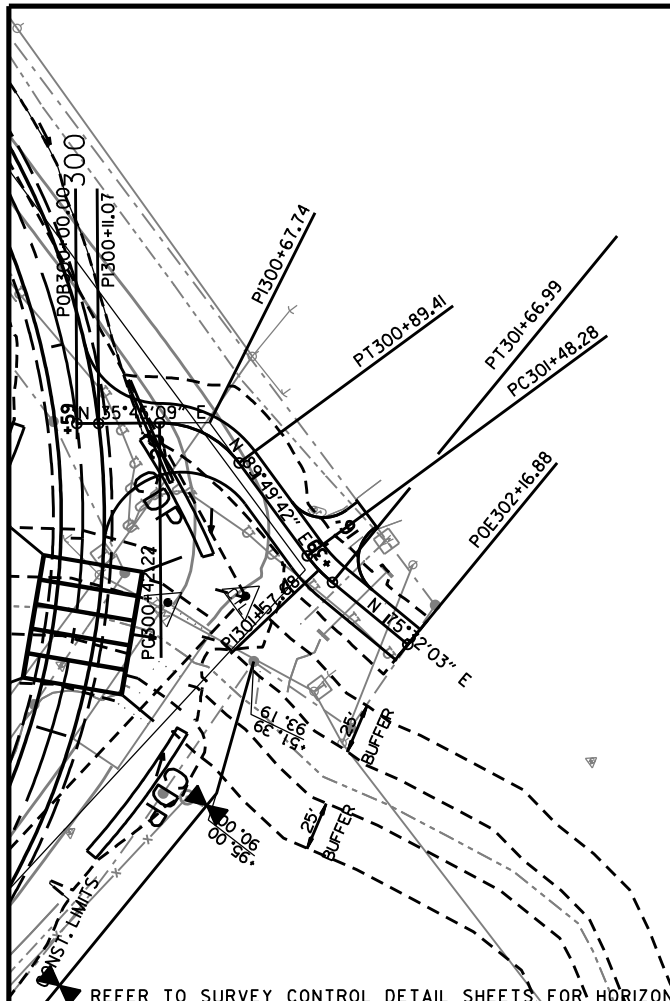
STA. - - STA. - IN PLACE  
 VL X CR  
 BRIDGE CONSISTING OF  
 . REMOVE AS EXISTING BRIDGE STRUCTURE = 1.00  
 LUMP SUM

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

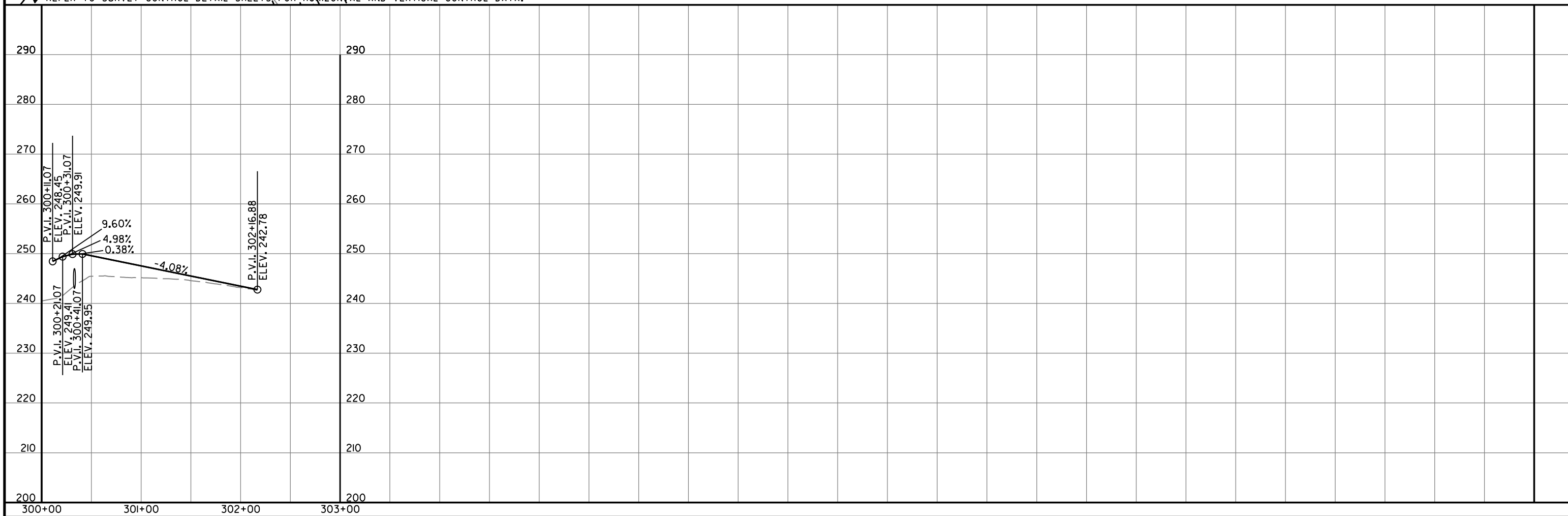


DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	110713	42	62
PLAN AND PROFILE SHEETS						

STATE OF ARKANSAS  
*Trinity D. Smith*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 11425  
 TRINITY D. SMITH  
 08-15-2024

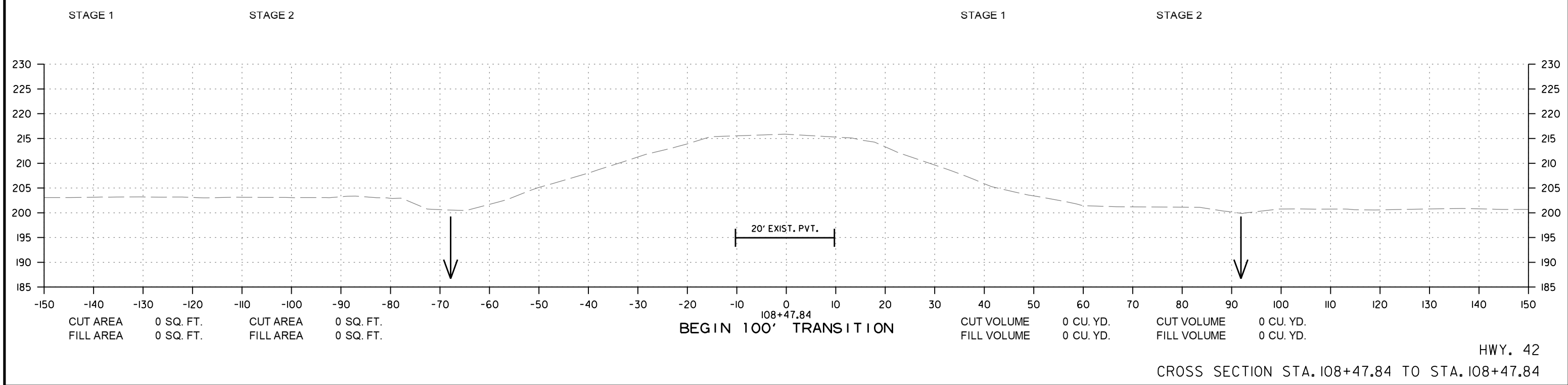


REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.



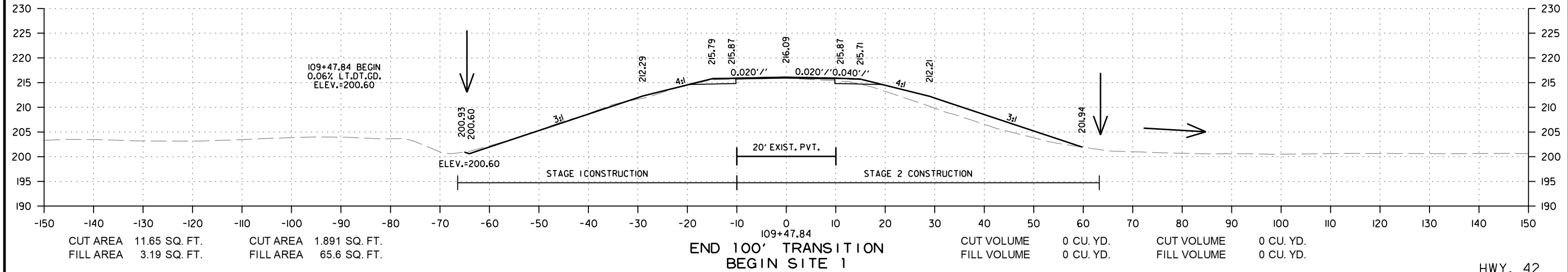
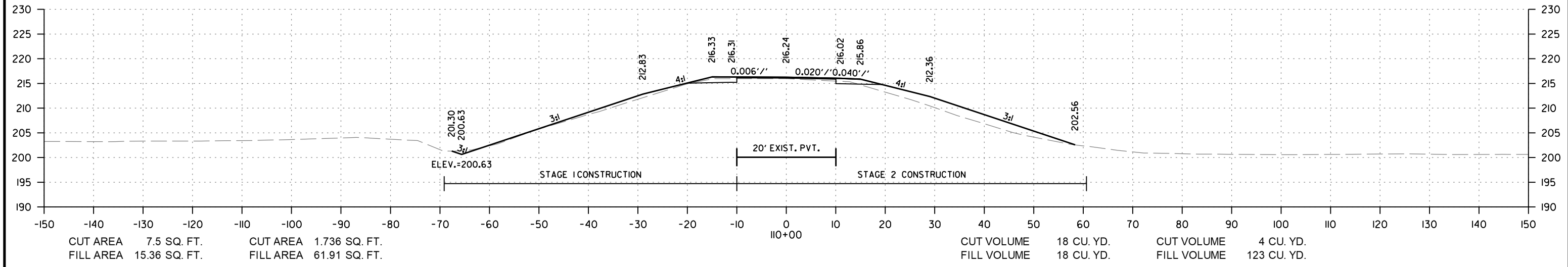
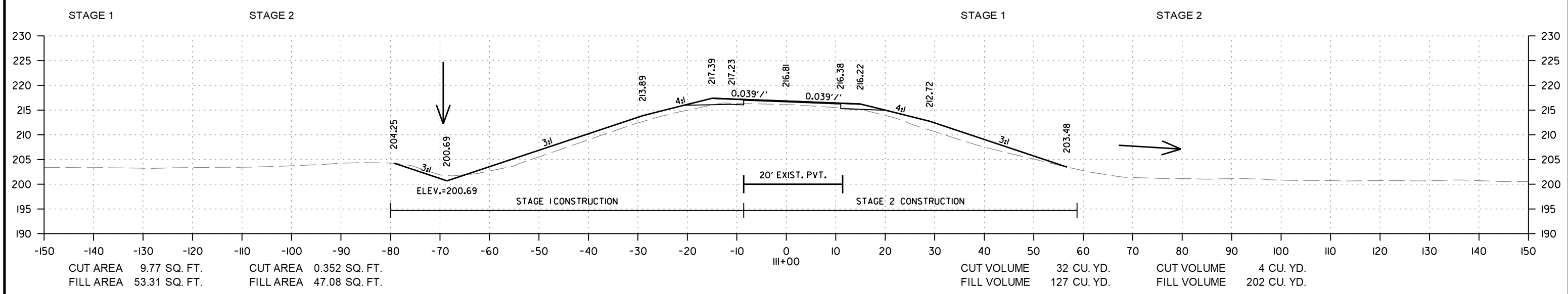
1w39665 7/29/2024  
 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	43	62
CROSS SECTIONS						



9/11/2024  
 DN42608  
 R110713.DGN

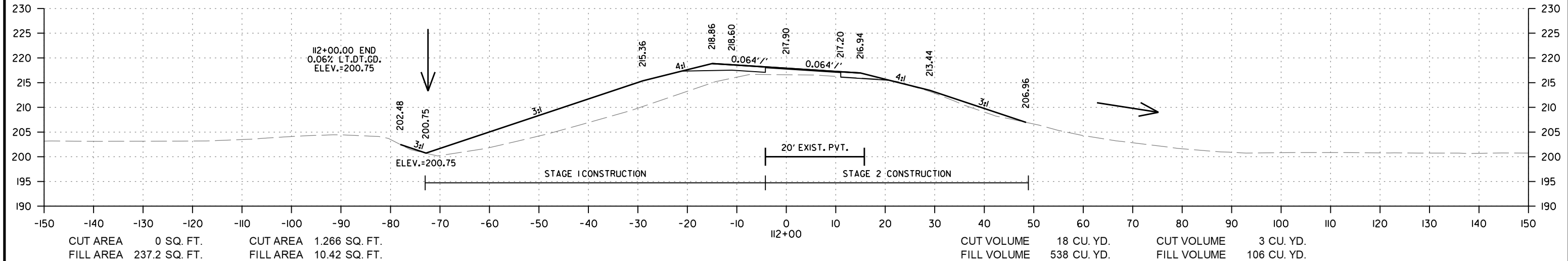
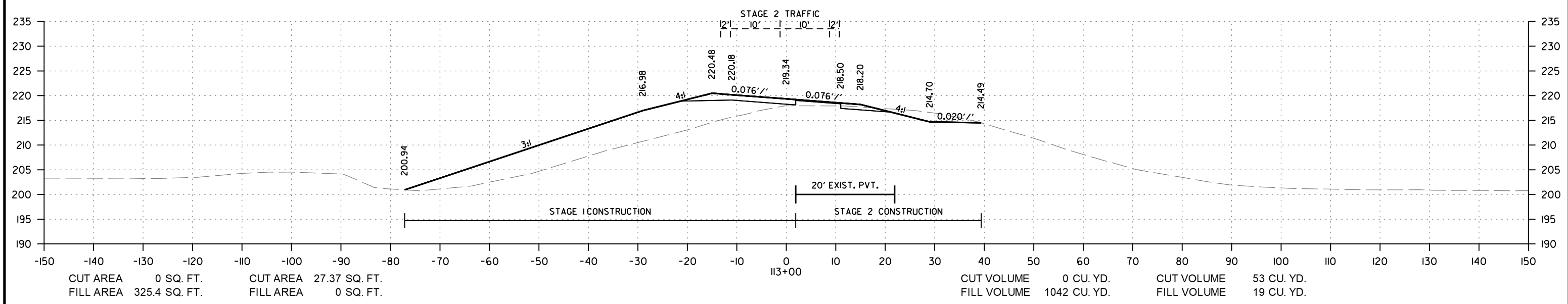
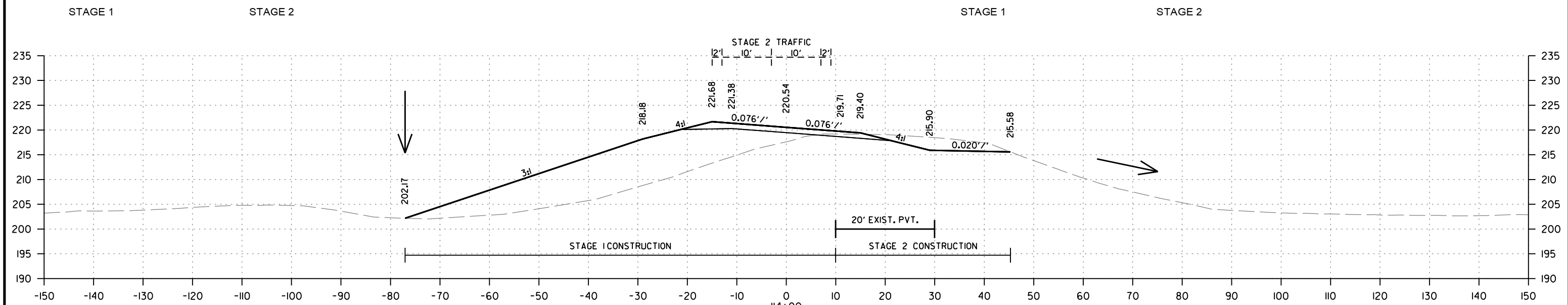
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	44	62
CROSS SECTIONS						



HWY. 42  
CROSS SECTION STA. 109+47.84 TO STA. 110+00

DN42608 9/11/2024 R110713.DGN

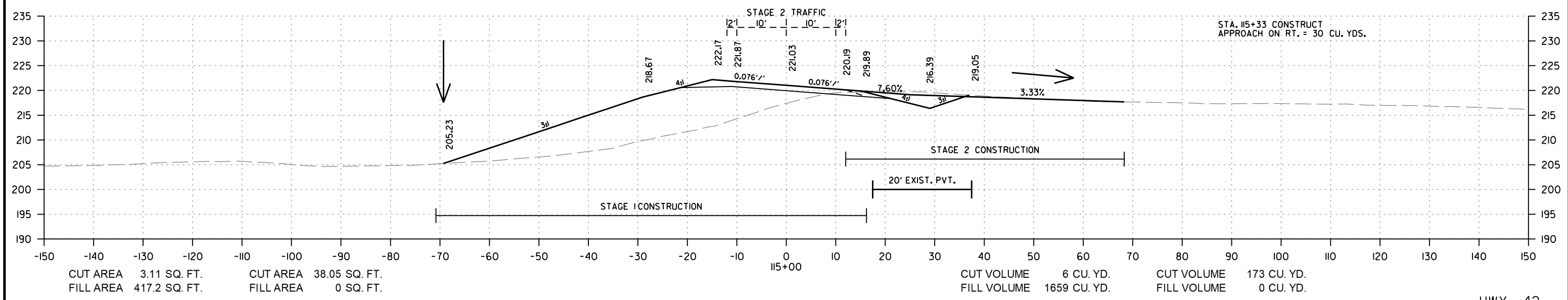
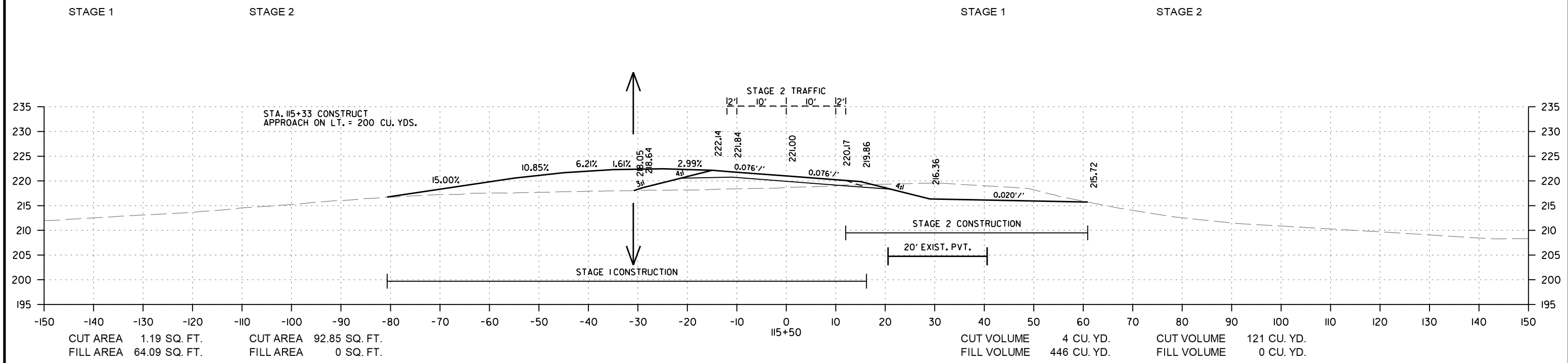
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	45	62
<b>CROSS SECTIONS</b>						



HWY. 42  
CROSS SECTION STA. 112+00 TO STA. 114+00

DN42608 9/11/2024 R110713.DGN

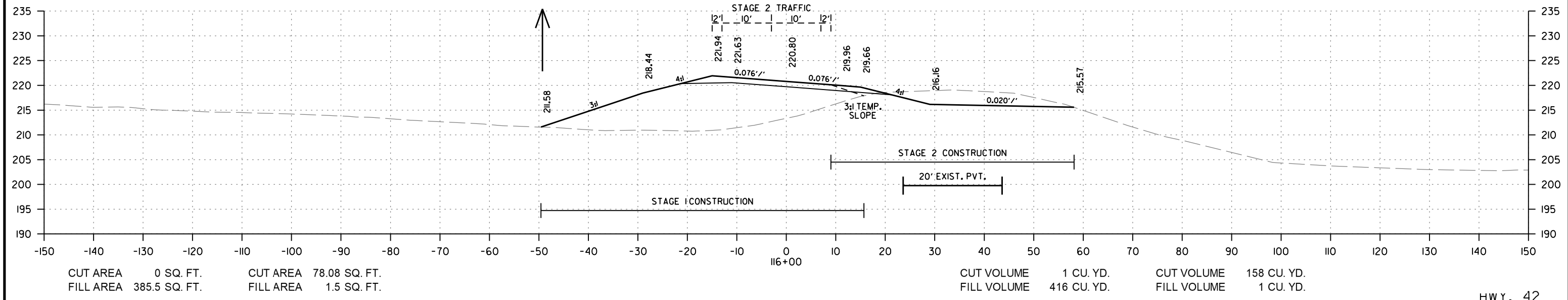
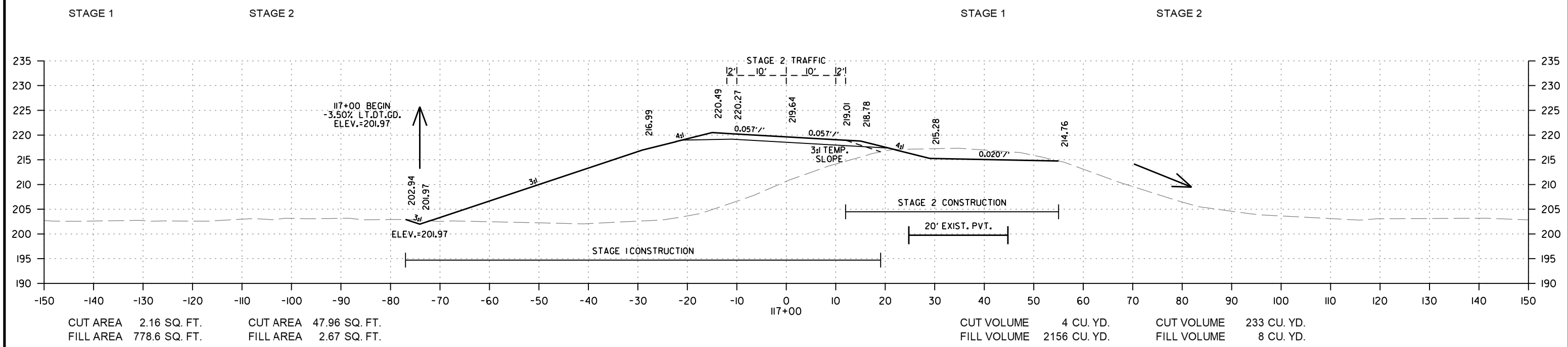
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	46	62
CROSS SECTIONS						



HWY. 42  
CROSS SECTION STA. 115+00 TO STA. 115+50

DN42608 9/11/2024 R110713.DGN

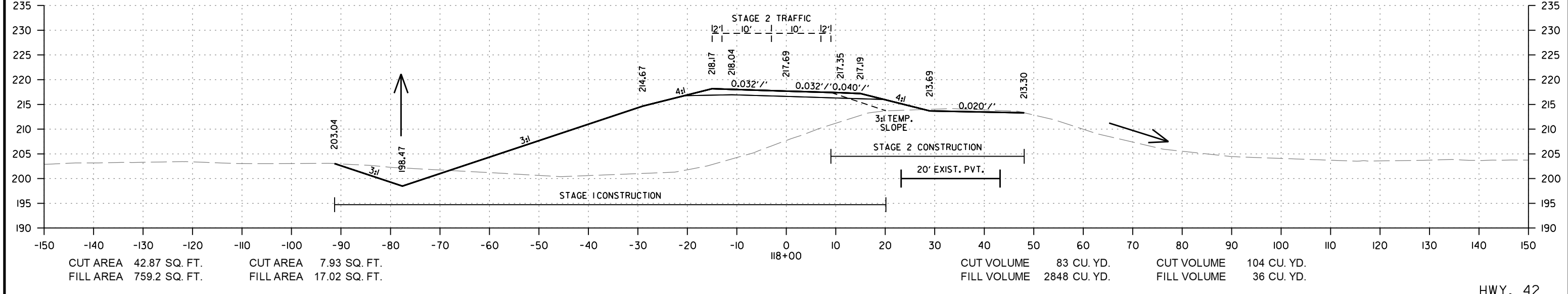
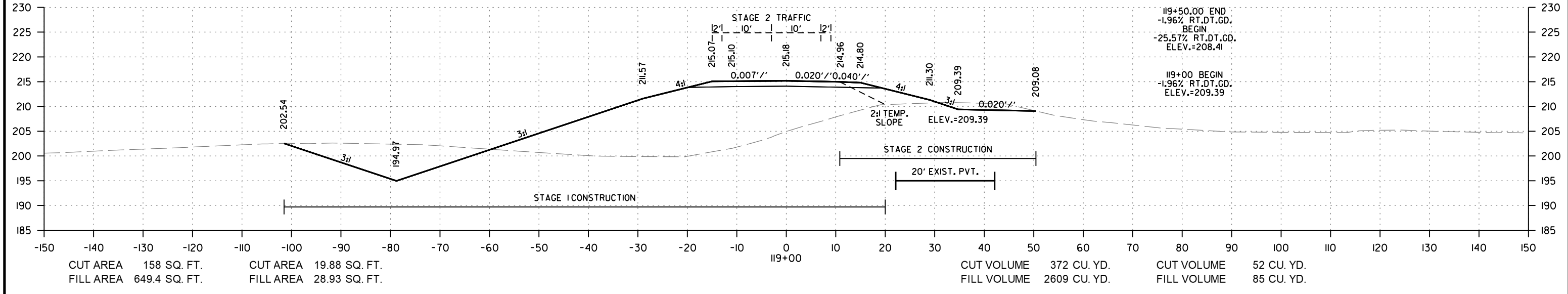
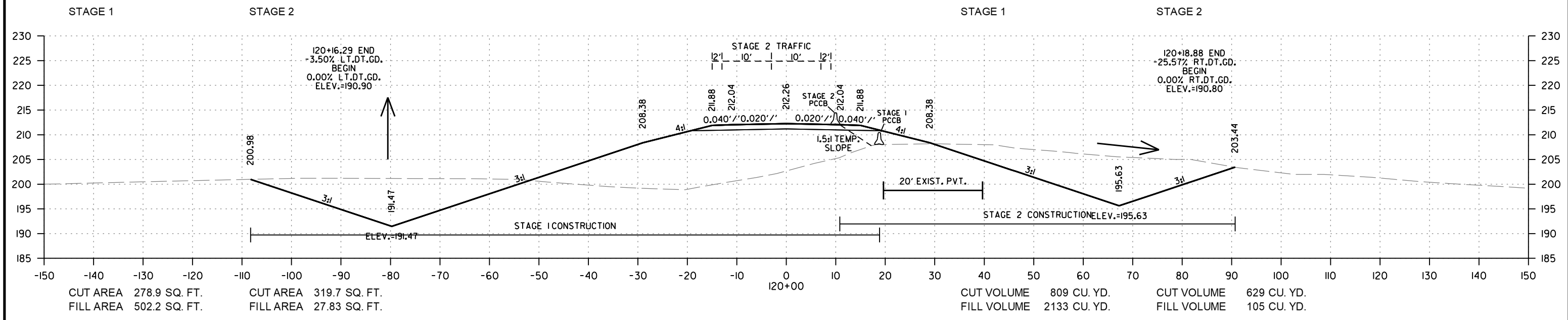
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	47	62
CROSS SECTIONS						



HWY. 42  
CROSS SECTION STA. 116+00 TO STA. 117+00

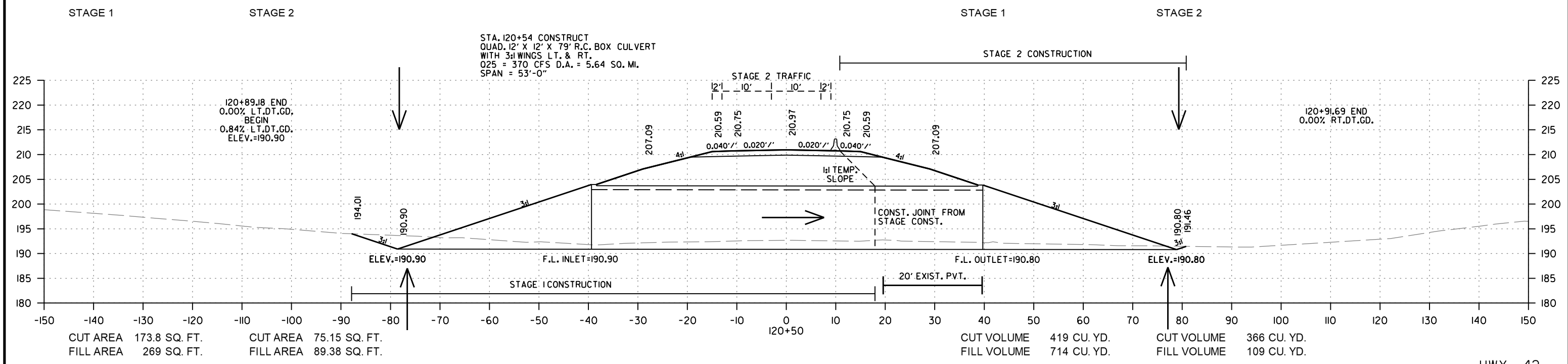
9/11/2024  
DN42608  
R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	48	62
<b>CROSS SECTIONS</b>						





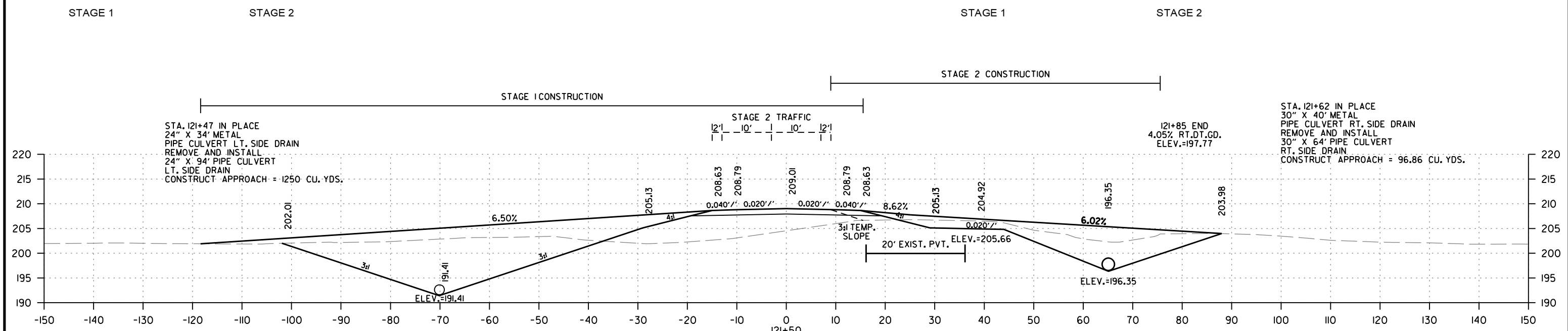
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	49	62
CROSS SECTIONS						



HWY. 42  
CROSS SECTION STA. 120+50 TO STA. 120+50

DN42608 9/11/2024 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	50	62
CROSS SECTIONS						

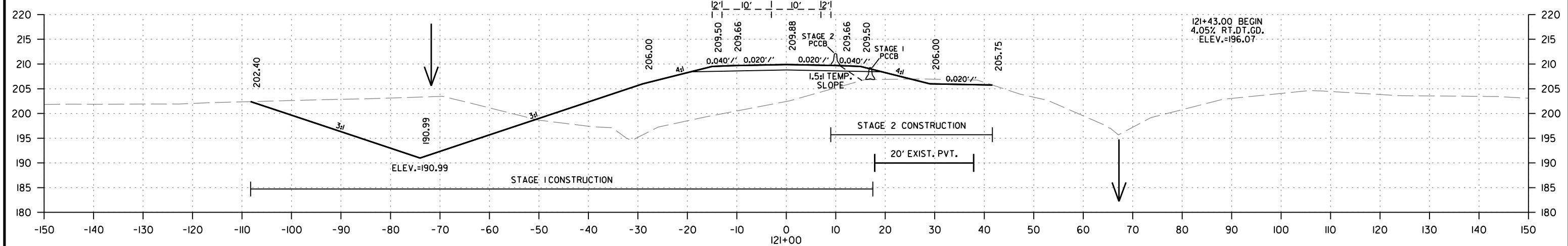


CUT AREA 382.1 SQ. FT.  
 FILL AREA 171.3 SQ. FT.

CUT AREA 175.9 SQ. FT.  
 FILL AREA 6.36 SQ. FT.

CUT VOLUME 693 CU. YD.  
 FILL VOLUME 551 CU. YD.

CUT VOLUME 174 CU. YD.  
 FILL VOLUME 18 CU. YD.



CUT AREA 366.8 SQ. FT.  
 FILL AREA 423.7 SQ. FT.

CUT AREA 12.4 SQ. FT.  
 FILL AREA 13.6 SQ. FT.

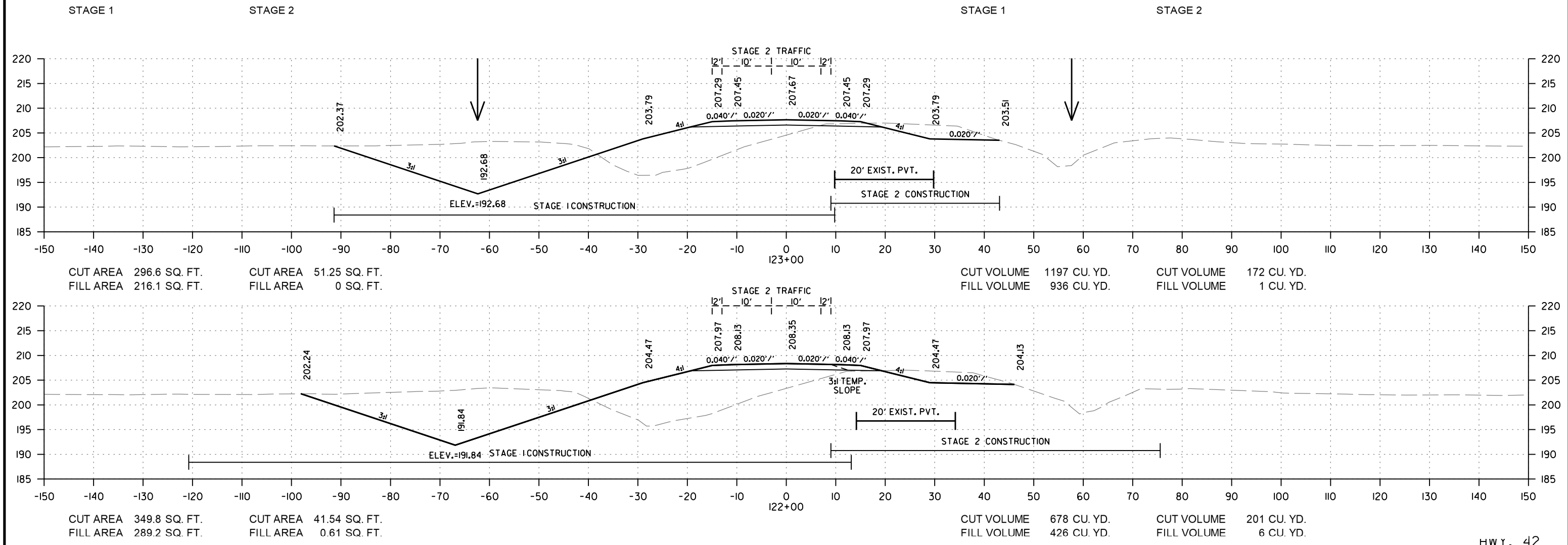
CUT VOLUME 501 CU. YD.  
 FILL VOLUME 641 CU. YD.

CUT VOLUME 81 CU. YD.  
 FILL VOLUME 95 CU. YD.

HWY. 42  
 CROSS SECTION STA. 121+00 TO STA. 121+50

9/11/2024  
 DN42608  
 R110713.DGN

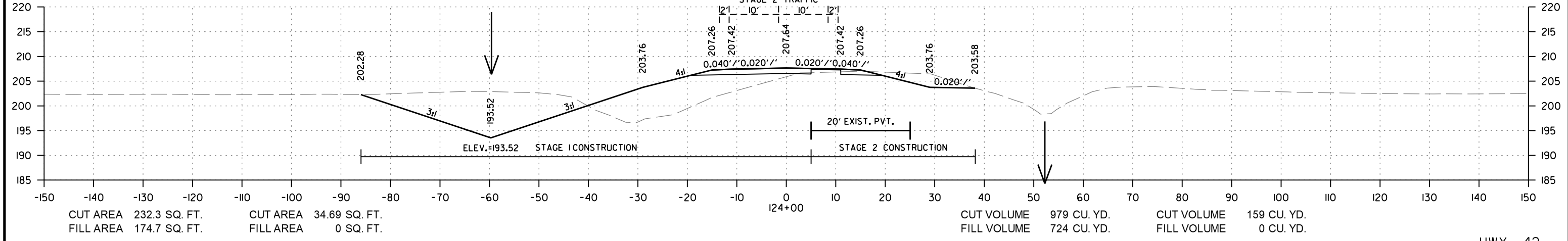
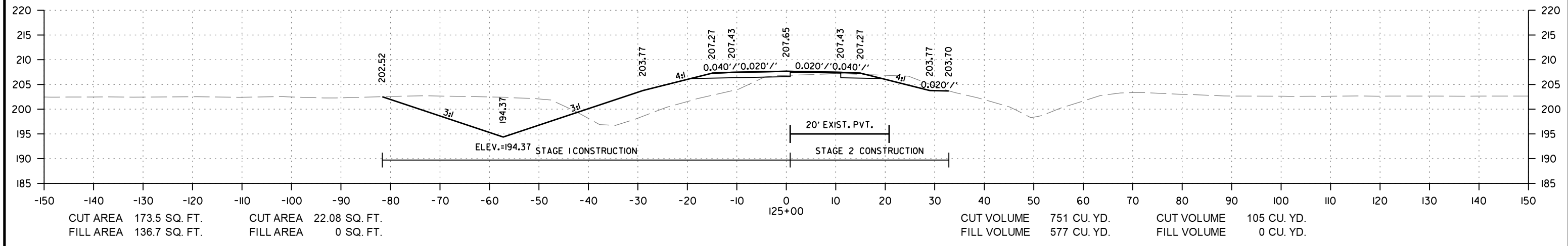
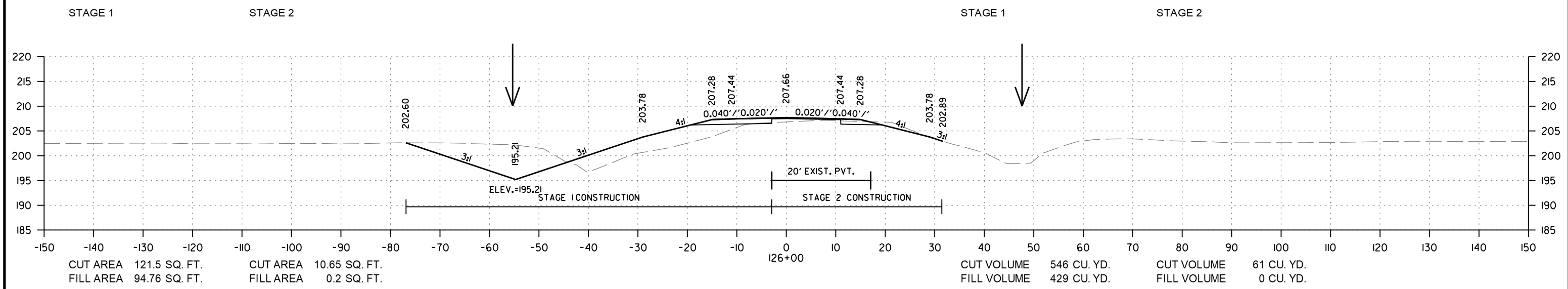
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	51	62
CROSS SECTIONS						



HWY. 42  
CROSS SECTION STA. 122+00 TO STA. 123+00

9/11/2024  
DN42608  
R110713.DGN

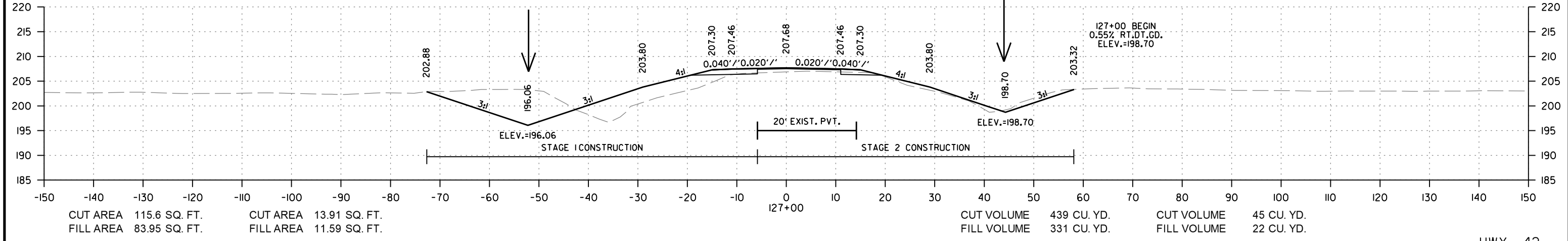
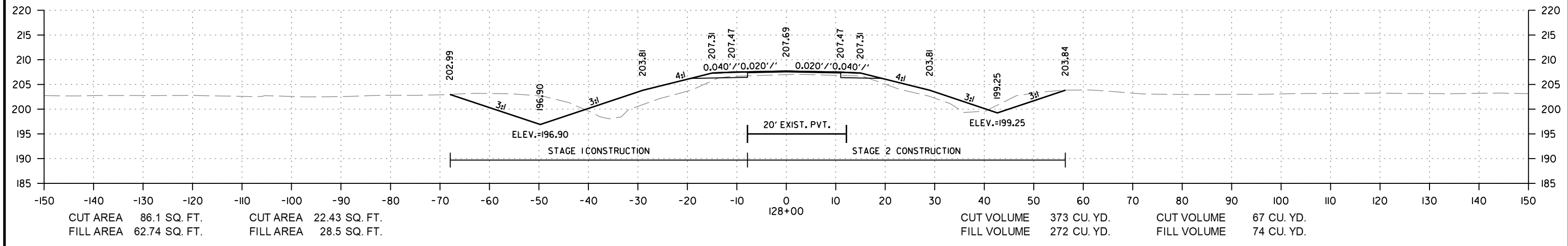
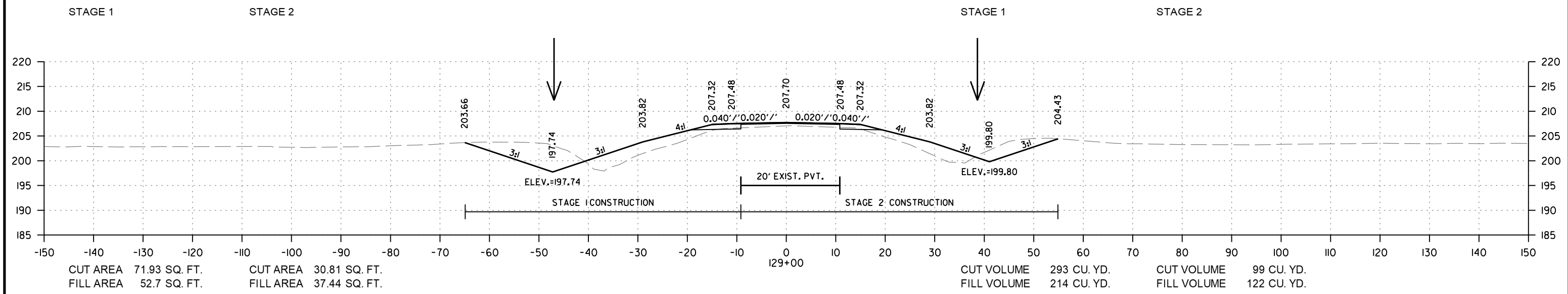
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	52	62
CROSS SECTIONS						



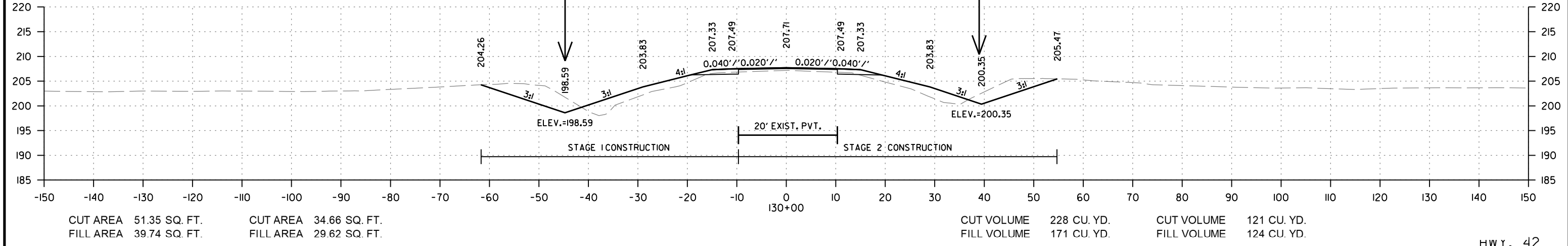
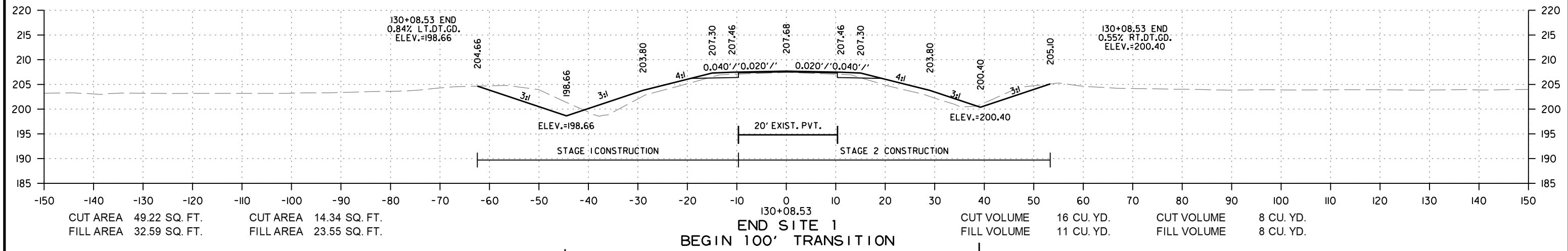
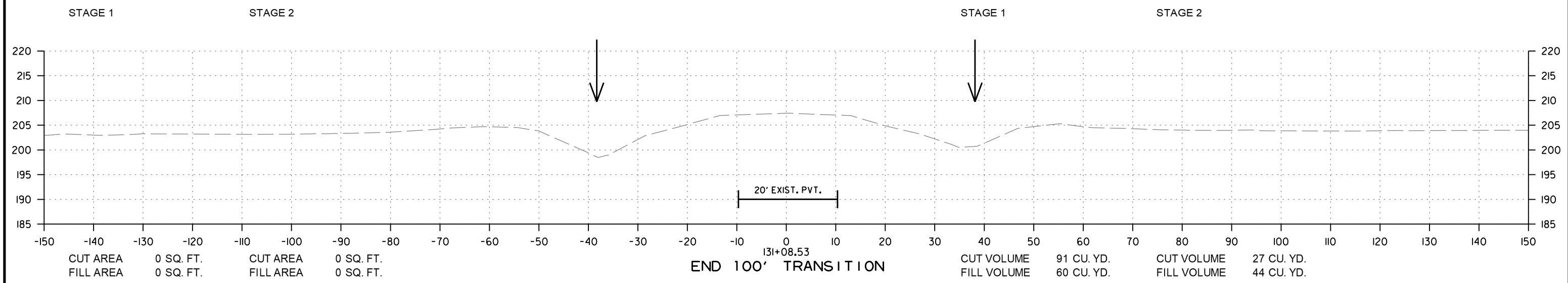
HWY. 42  
CROSS SECTION STA. 124+00 TO STA. 126+00

DN42608 9/11/2024 R110713.DGN

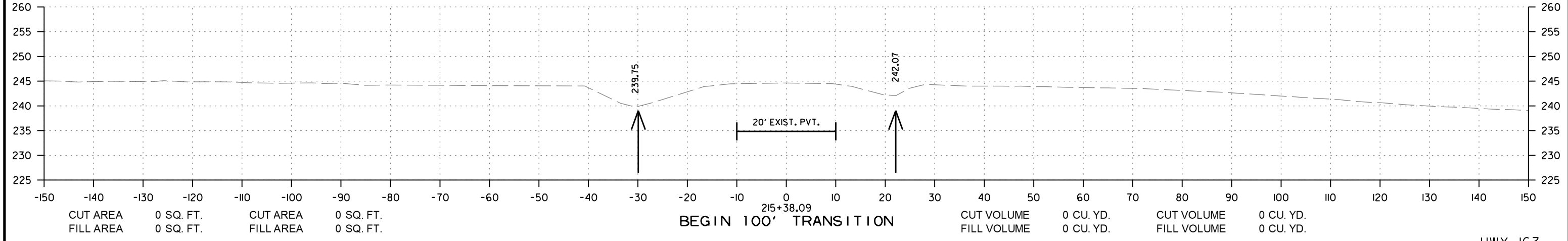
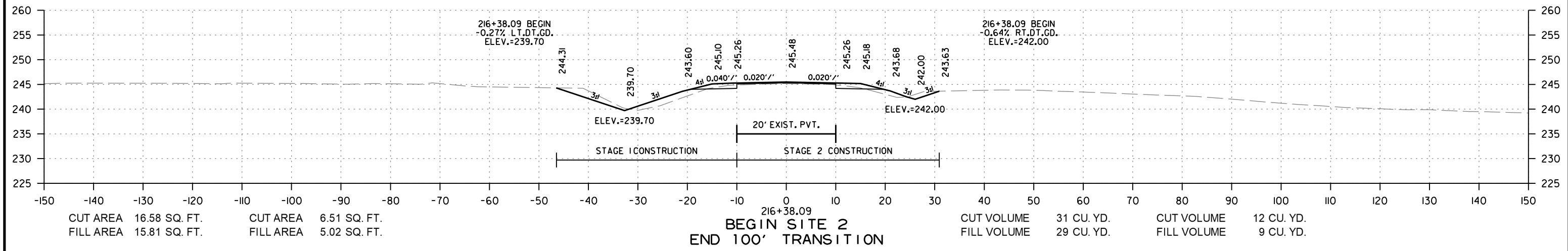
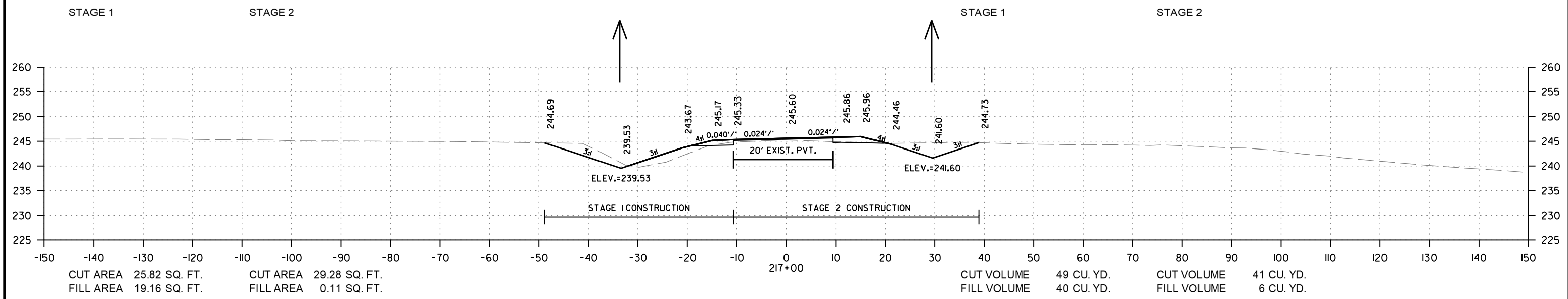
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	53	62
<b>CROSS SECTIONS</b>						



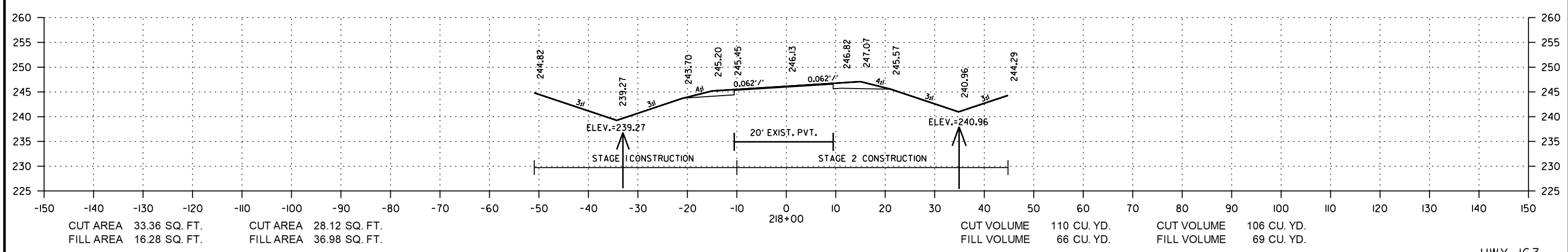
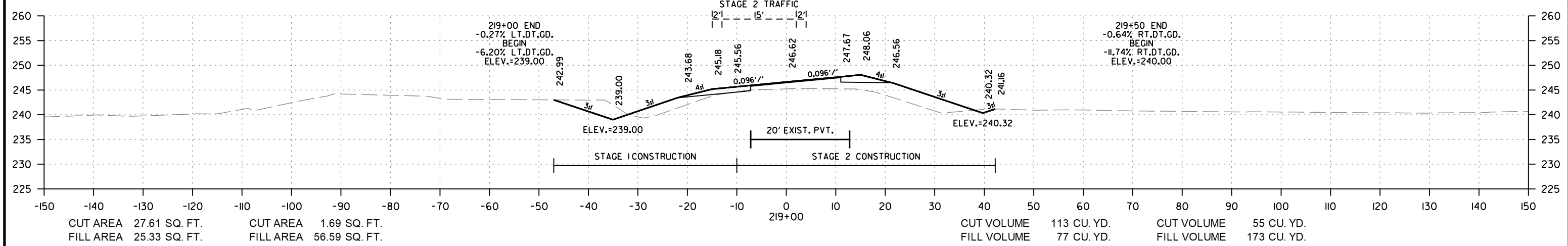
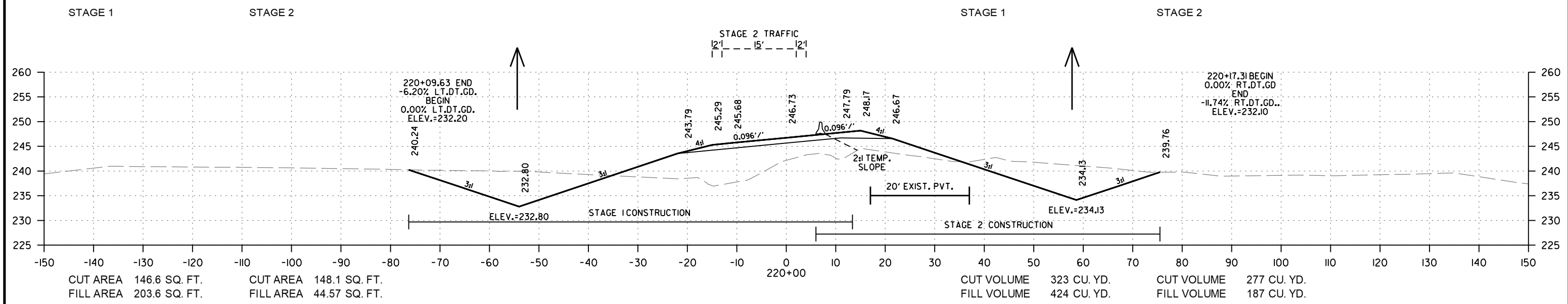
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	54	62
CROSS SECTIONS						



DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	55	62
CROSS SECTIONS						



DATE REVISION	DATE REVISION	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	56	62
CROSS SECTIONS						

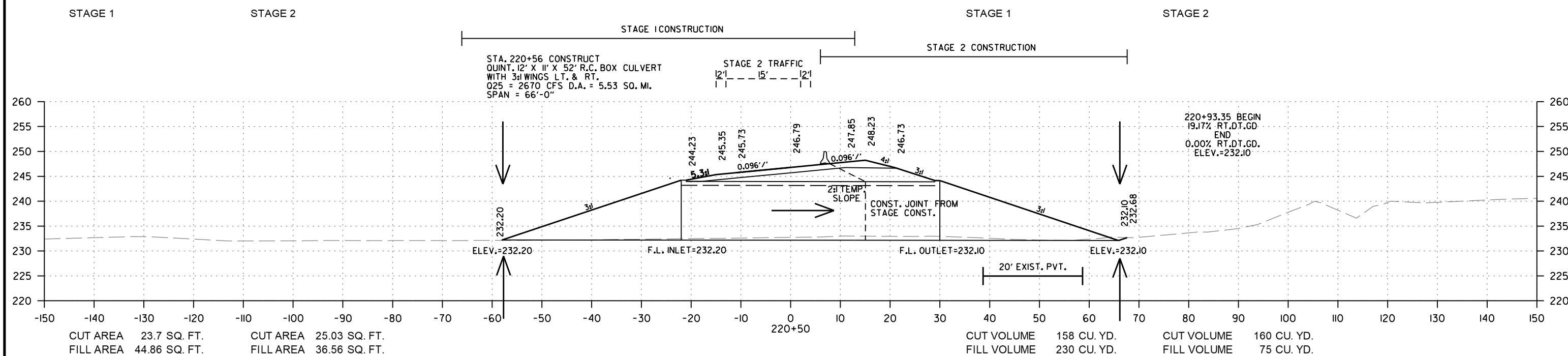


HWY. 163  
 CROSS SECTION STA. 218+00 TO STA. 220+00

9/11/2024  
 DN42608  
 R110713.DGN



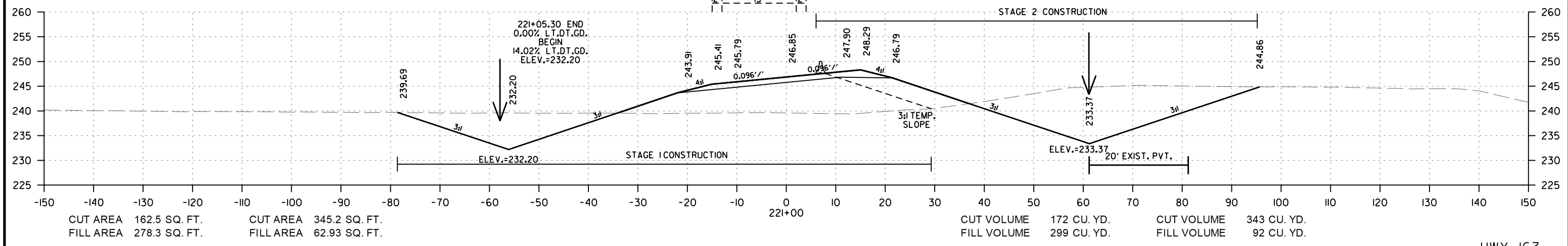
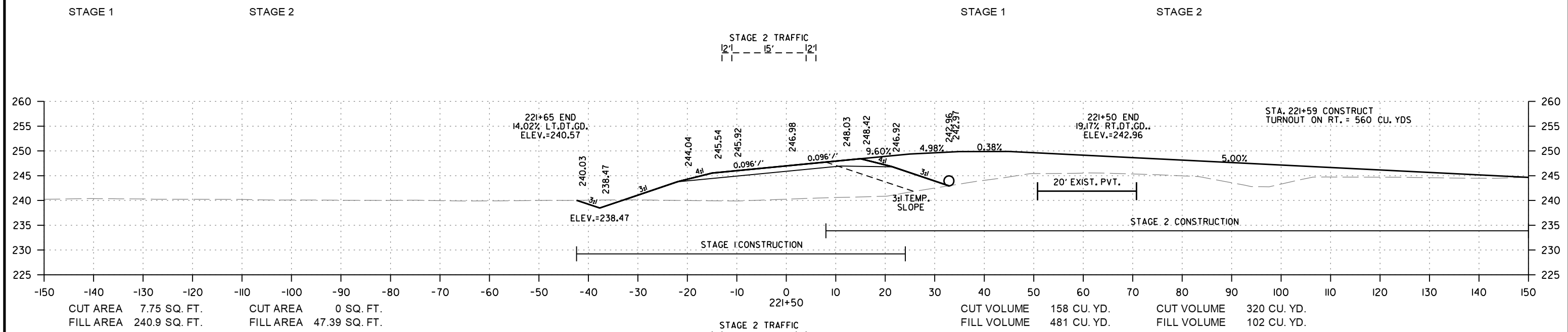
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	57	62
CROSS SECTIONS						



HWY. 163  
CROSS SECTION STA. 220+50 TO STA. 220+50

DN42608 9/11/2024 R110713.DGN

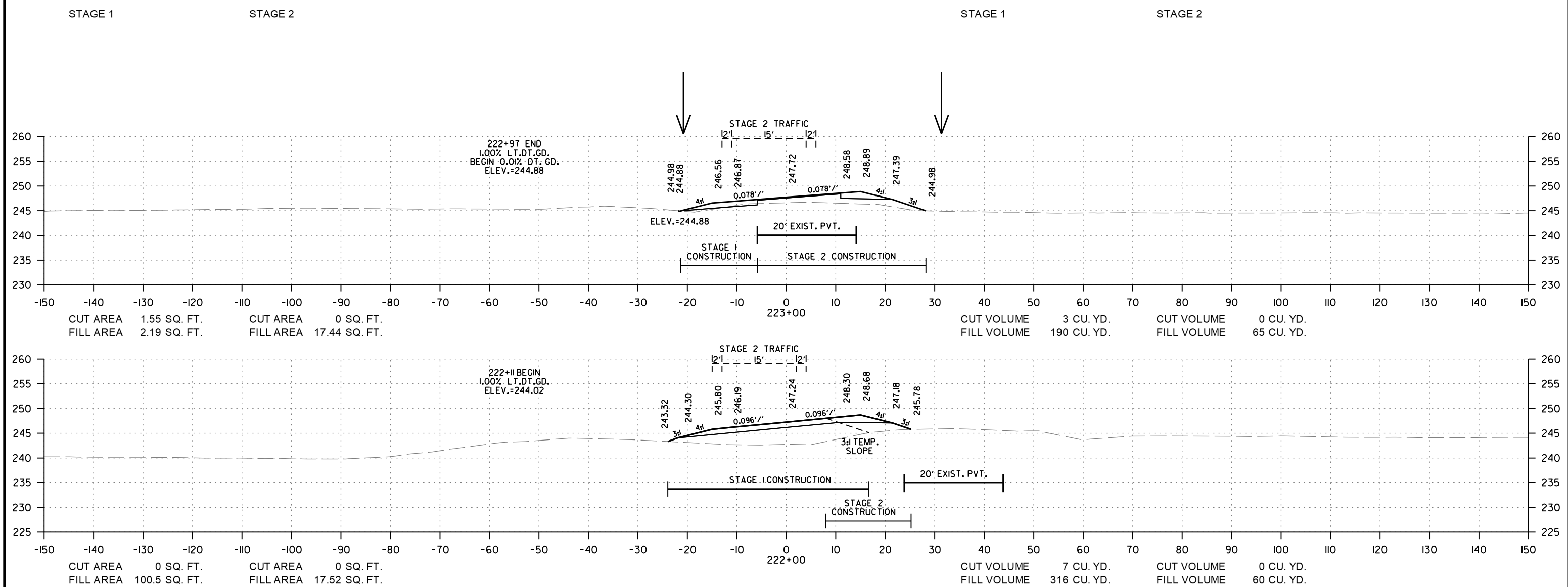
DATE REVISION	DATE REVISION	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	58	62
CROSS SECTIONS						



HWY. 163  
CROSS SECTION STA. 221+00 TO STA. 221+50

DN42608 9/11/2024 R110713.DGN

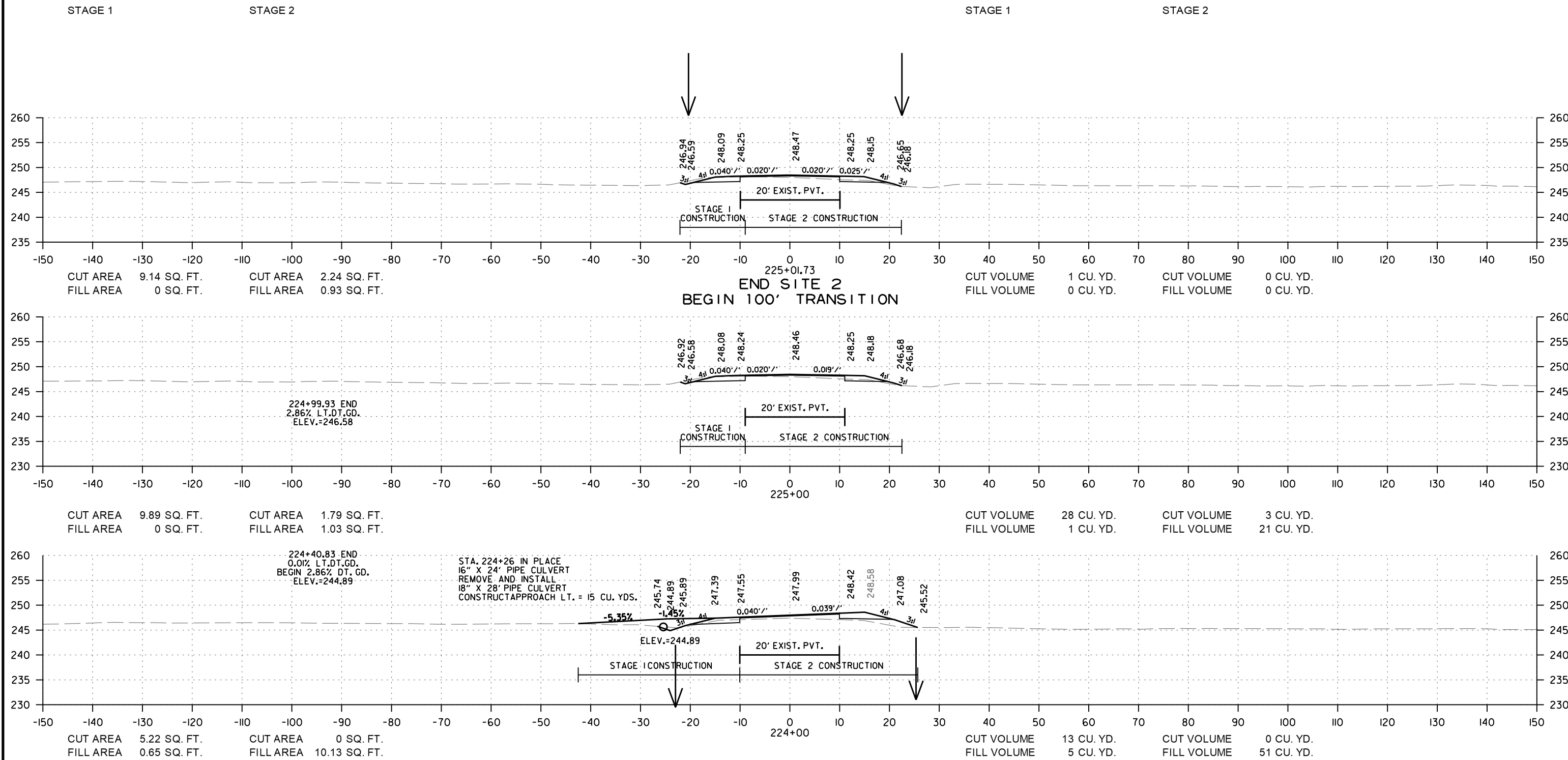
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	59	62
CROSS SECTIONS						



HWY. 163  
CROSS SECTION STA. 222+00 TO STA. 223+00

9/11/2024  
 DN42608  
 R110713.DGN

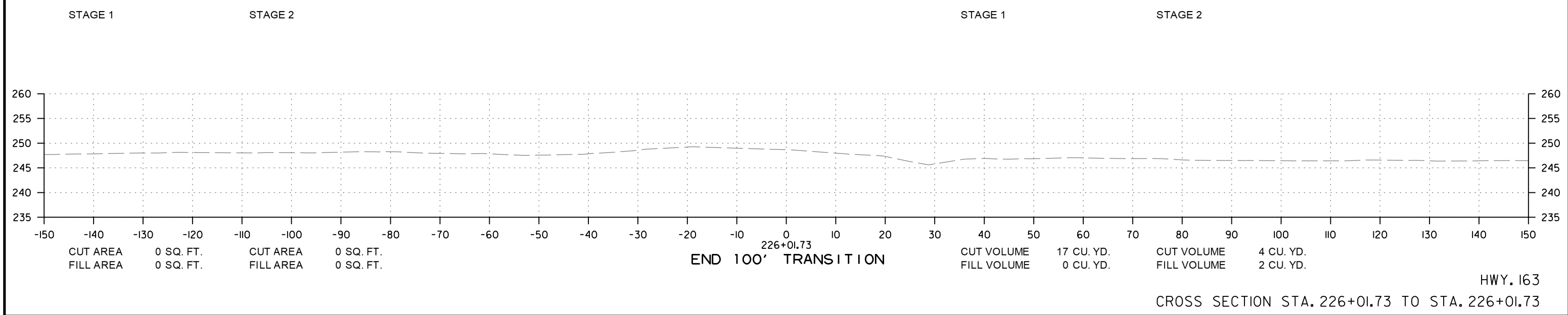
DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	60	62
CROSS SECTIONS						



HWY. 163  
CROSS SECTION STA. 226+01.73 TO STA. 226+01.73

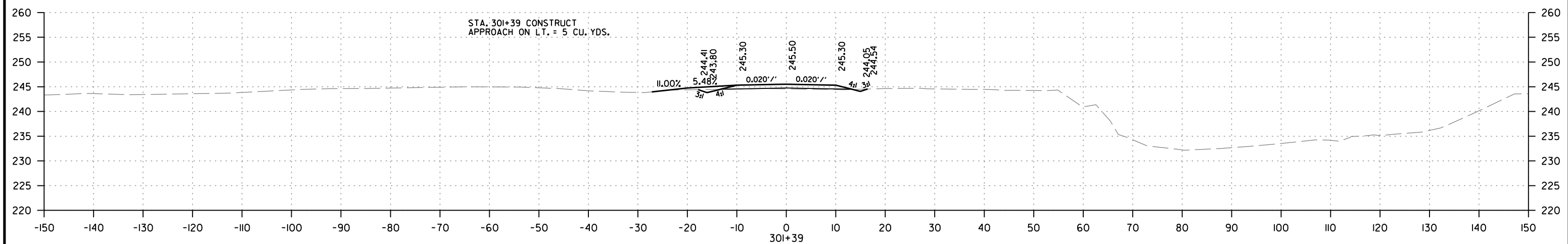
DN42608 9/11/2024 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	61	62
CROSS SECTIONS						



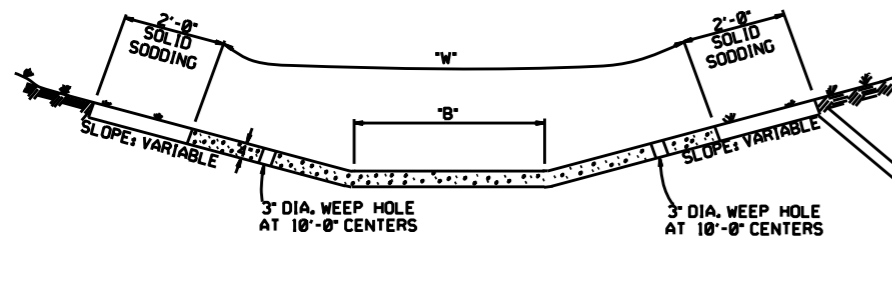
9/11/2024  
 DN42608  
 R110713.DGN

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
09-11-2024		6	ARK.	110713	62	62
CROSS SECTIONS						



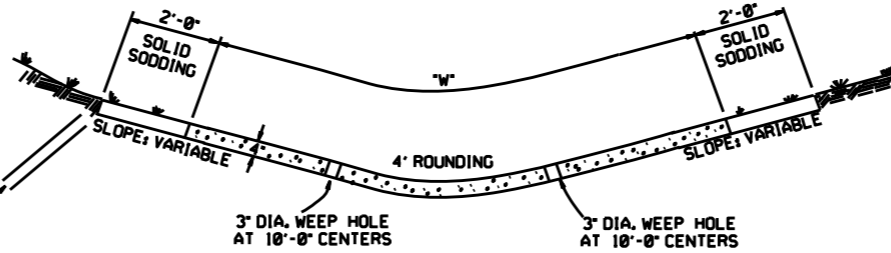
BAY VILLAGE RD.  
CROSS SECTION STA. 301+39 TO STA. 301+39

REFER TO TABULATION OF QUANTITIES FOR "W" & "B" DIMENSIONS



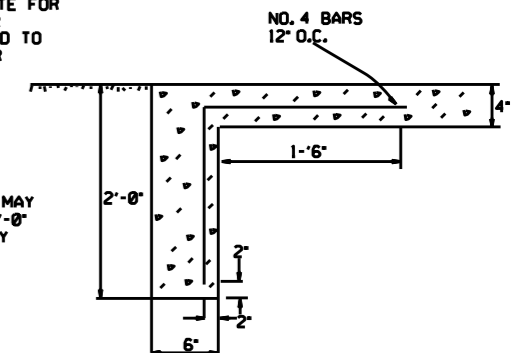
TYPE A

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



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."



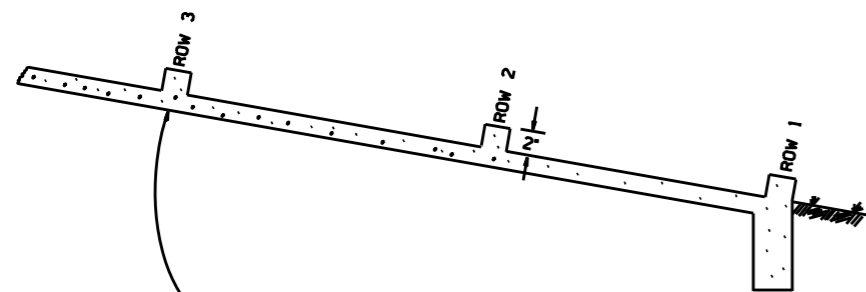
TOE WALL DETAIL FOR CONCRETE DITCH PAVING

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.

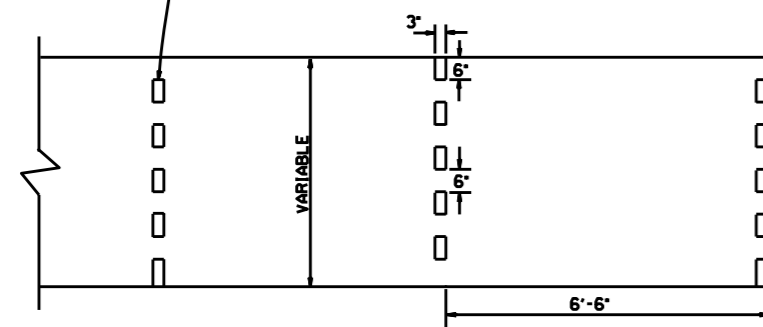
SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

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.



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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.



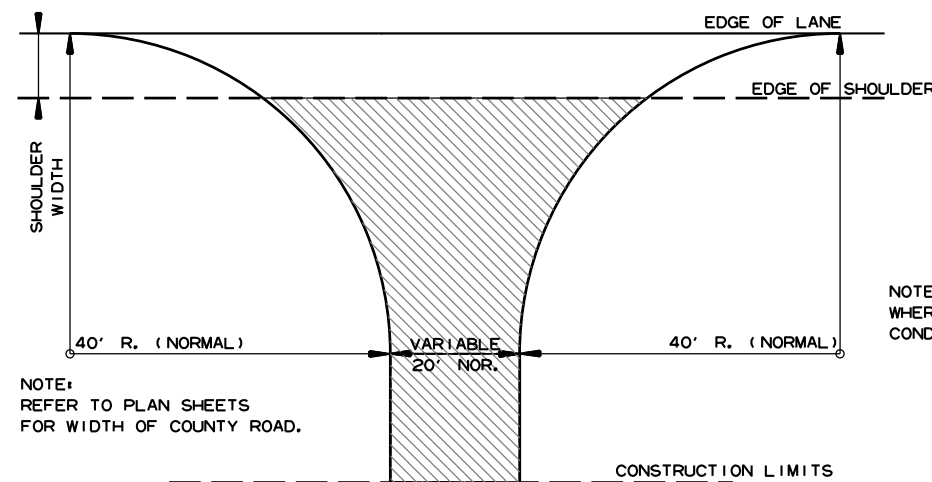
ENERGY DISSIPATORS  
(NO SCALE)

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	871-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	832-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	839-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED	
	TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72
	DATE	REVISION
		DATE FILM'D

ARKANSAS STATE HIGHWAY COMMISSION


CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

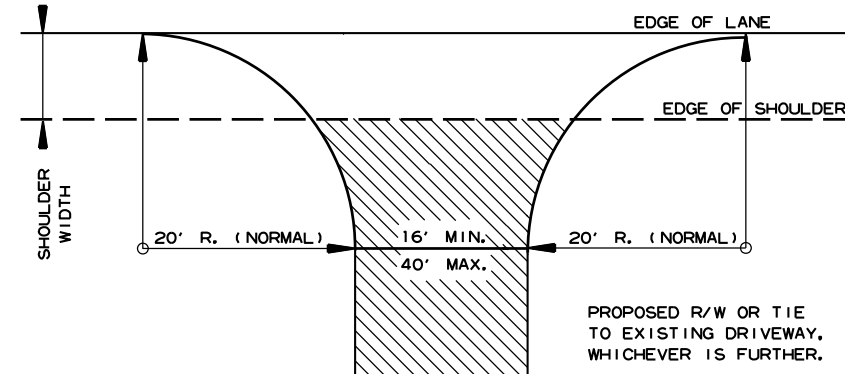


NOTE:  
REFER TO PLAN SHEETS  
FOR WIDTH OF COUNTY ROAD.


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

 ACHM SURFACE COURSE (1/2")  
(220 LBS. PER SQ. YD.) AND  
AGGREGATE BASE COURSE (CLASS 7)  
7" COMP. DEPTH, UNLESS OTHERWISE  
SPECIFIED IN PLANS.

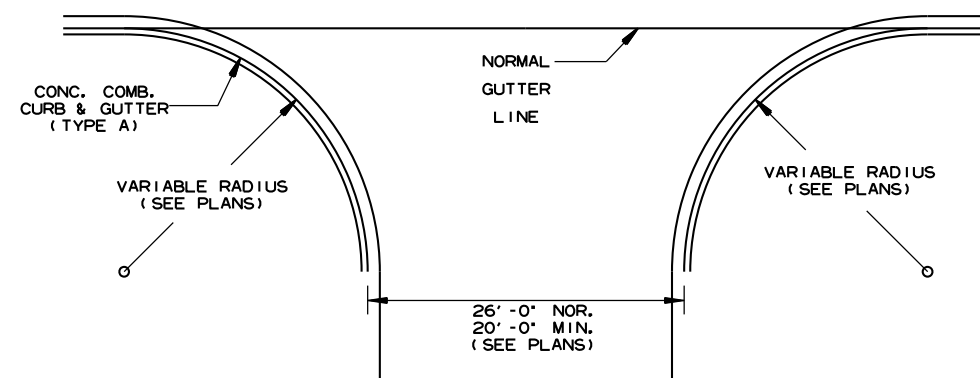
DETAIL FOR COUNTY ROAD TURNOUTS  
OPEN SHOULDER SECTION



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

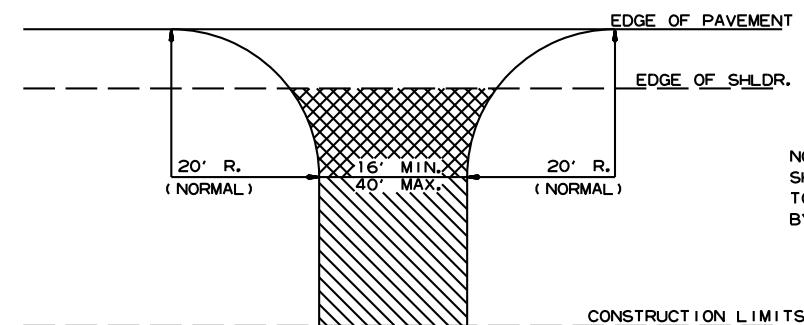
 ACHM SURFACE COURSE (1/2")  
(220 LBS. PER SQ. YD.) AND  
AGGREGATE BASE COURSE (CLASS 7)  
7" COMP. DEPTH IF ASPHALT OR  
GRAVEL DRIVE EXISTING; OR 6"  
CONCRETE IF CONCRETE DRIVE  
EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS  
OPEN SHOULDER SECTION  
(ARTERIALS)





NOTE:  
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS,  
& COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS,  
COUNTY ROADS & STATE HIGHWAYS  
CURB & GUTTER SECTION



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

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

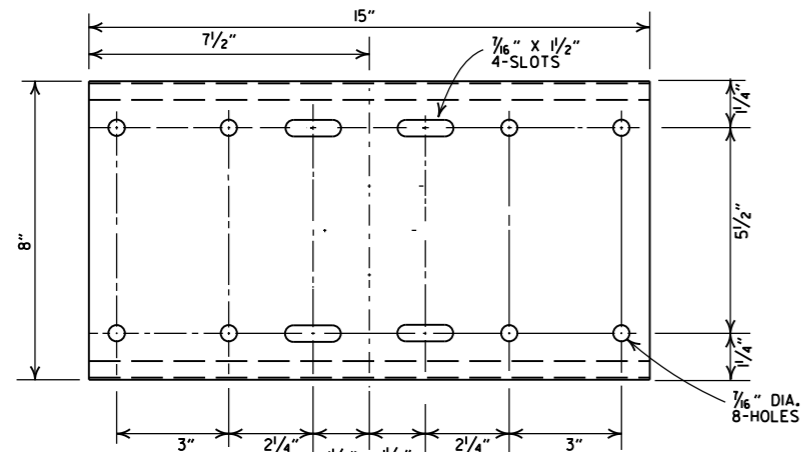
 AGGREGATE BASE COURSE (CLASS 7)  
9" COMP. DEPTH OR CONFORM  
TO EXISTING DRIVEWAY

DETAIL FOR DRIVEWAY TURNOUTS  
(COLLECTORS)

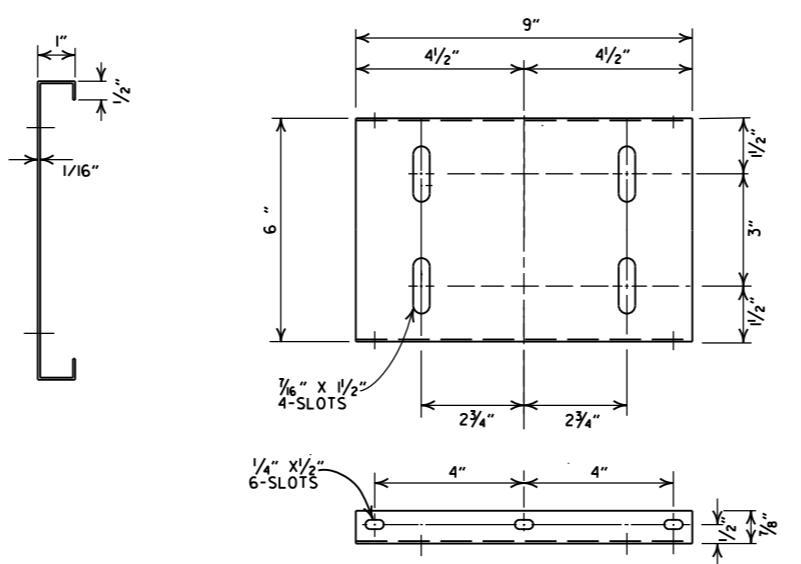
DATE	REV	DATE FILMED	DESCRIPTION
5-19-22			ISSUED

ARKANSAS STATE HIGHWAY COMMISSION  
DETAILS OF DRIVEWAYS & STREET  
TURNOUTS  
STANDARD DRAWING DR-2

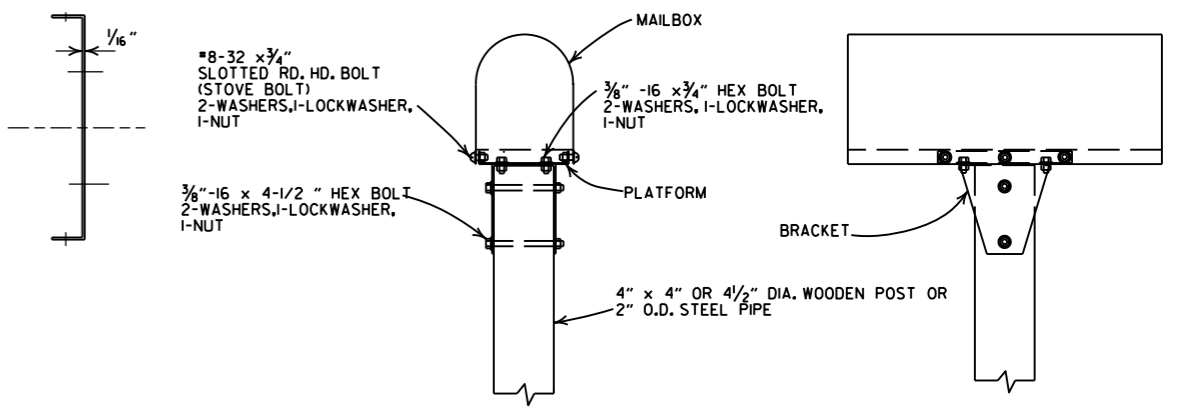




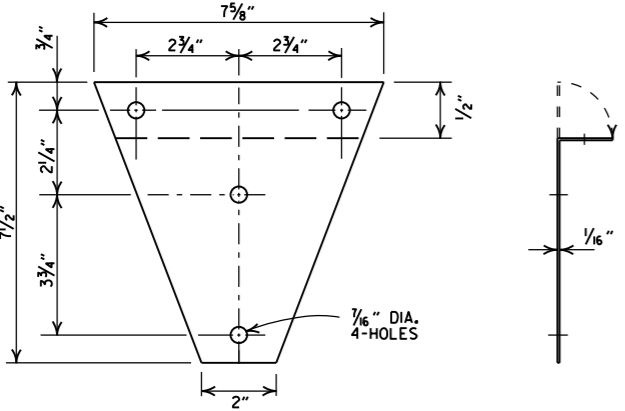
SHELF



PLATFORM

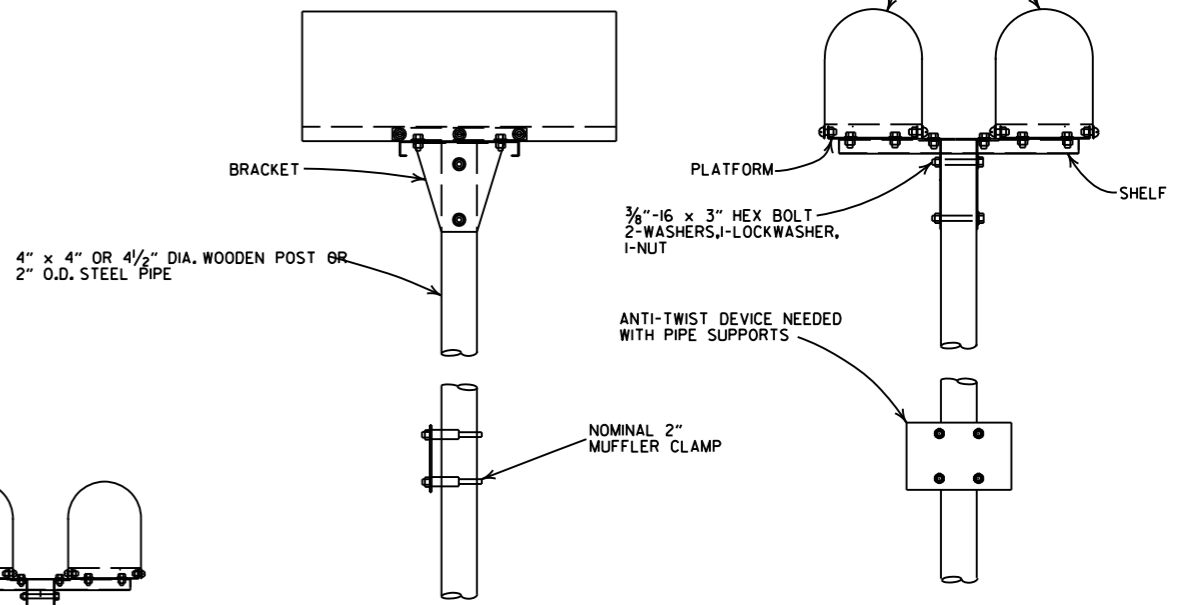


SINGLE INSTALLATION

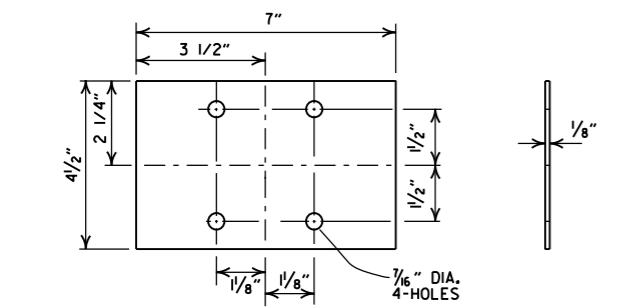


BRACKET

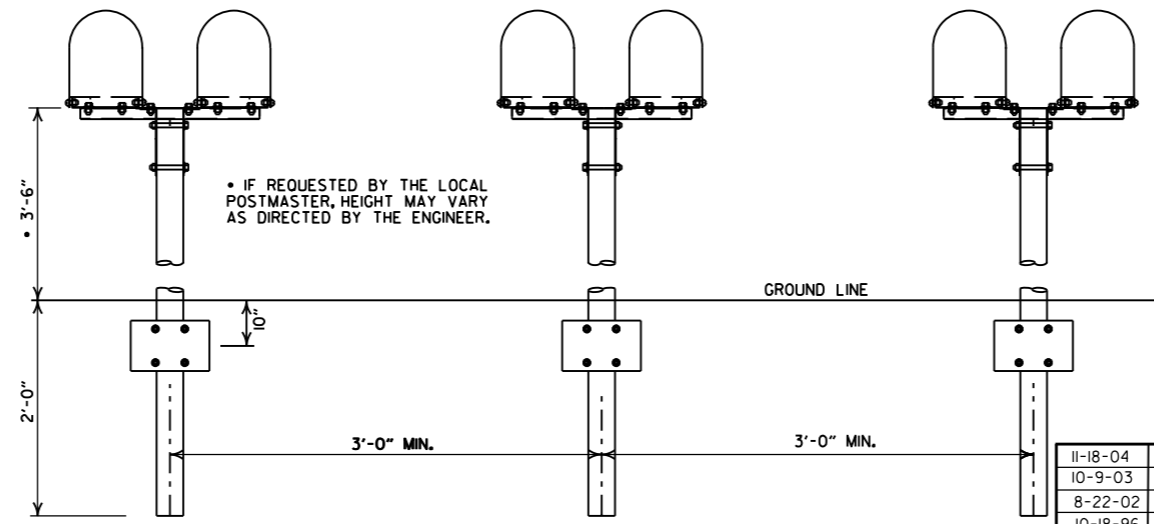
- GENERAL NOTES**
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
  2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
  3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 x 3/4" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
  4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES, THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
  5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
  6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



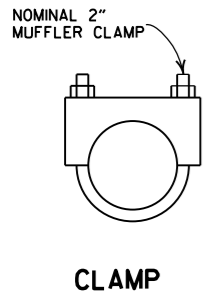
DOUBLE INSTALLATION



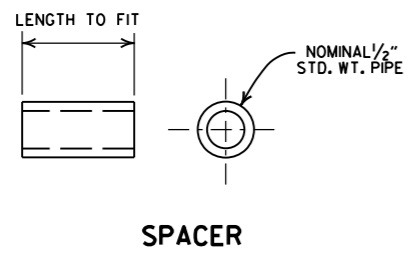
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



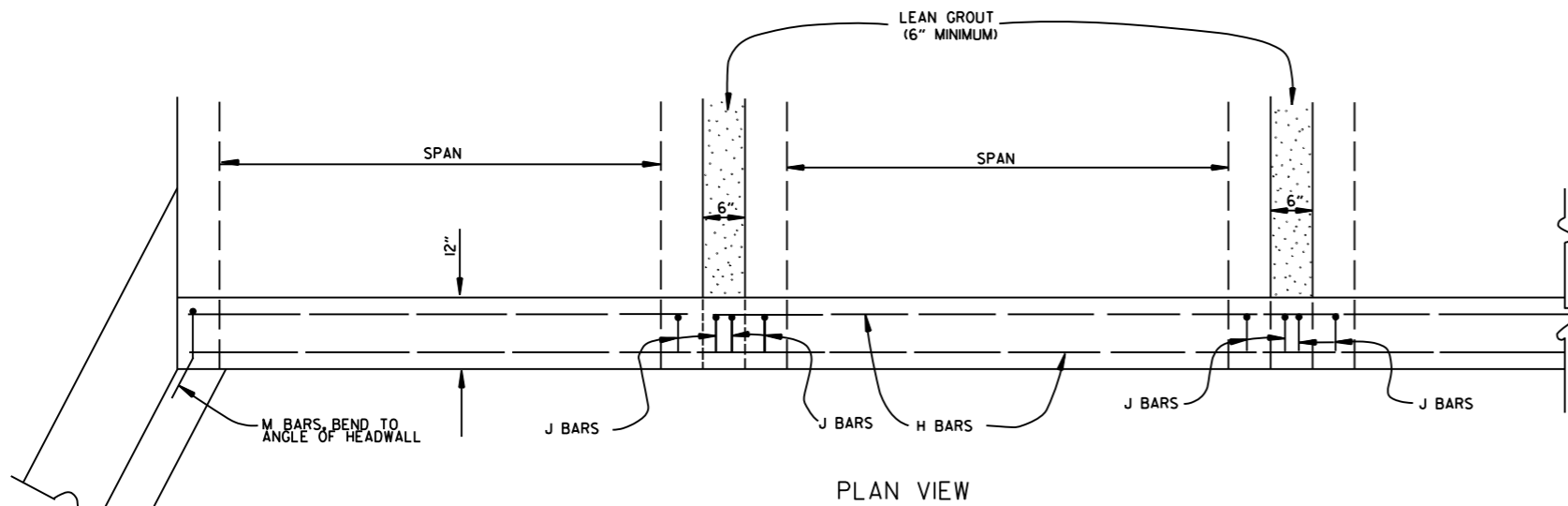
SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-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.

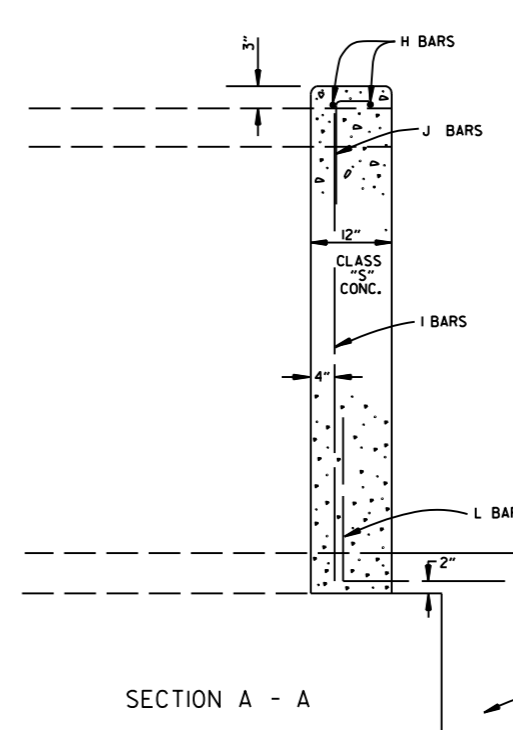
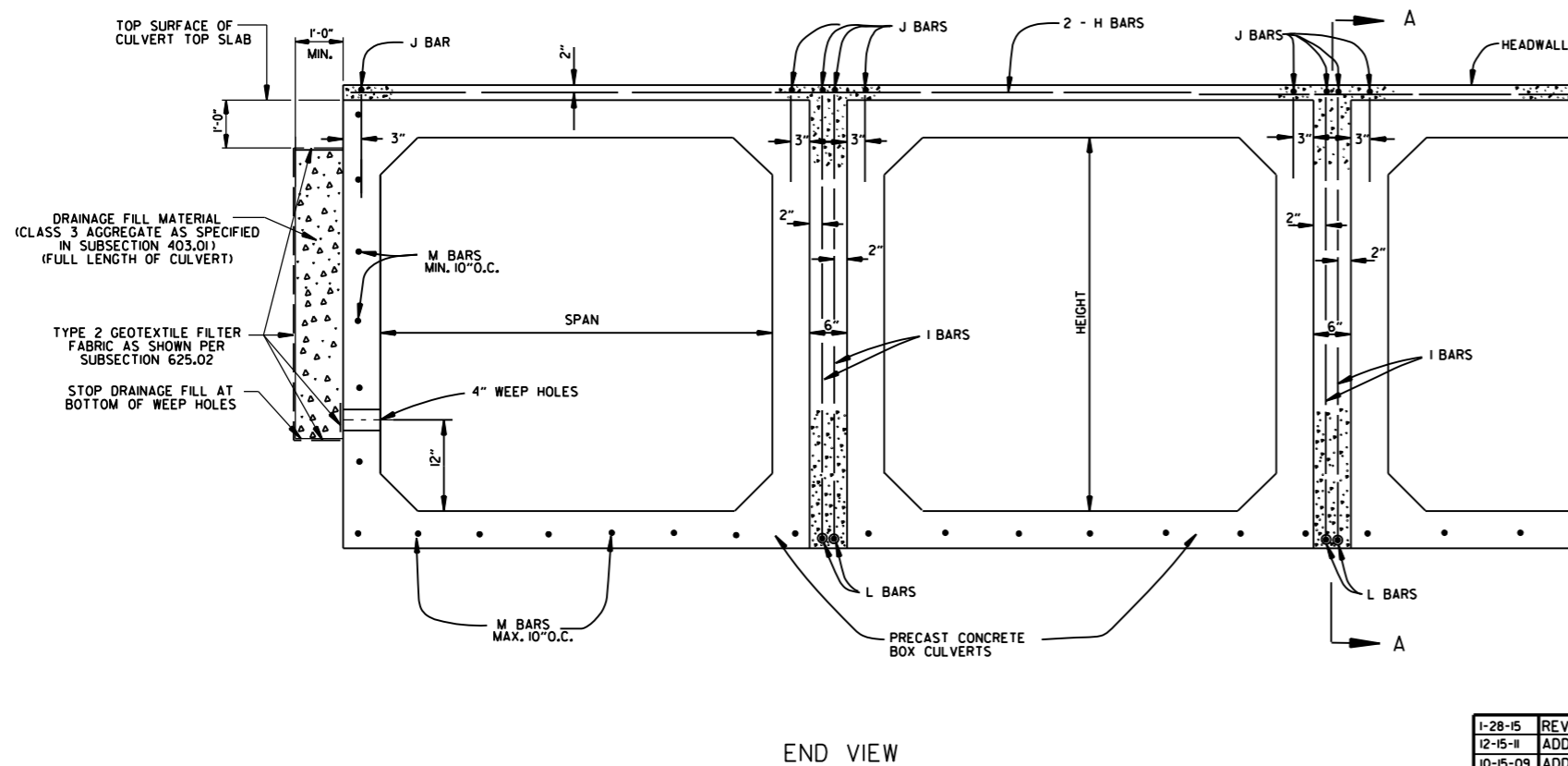
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.



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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1





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

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

### MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

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

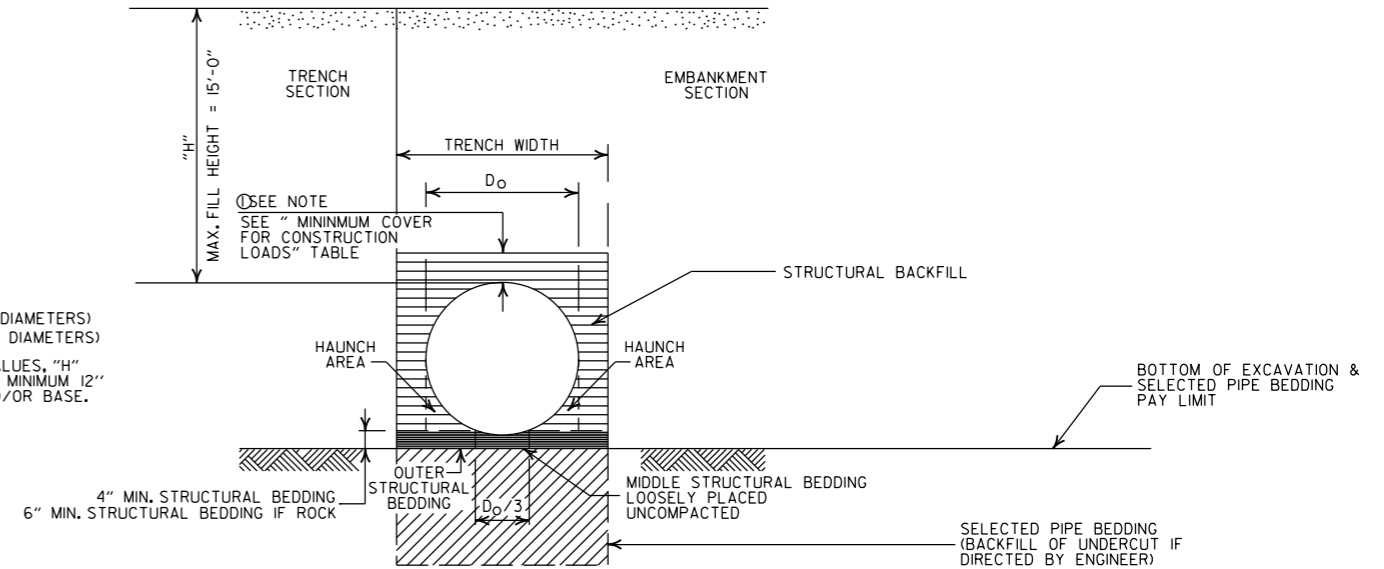
### MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

### MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



### TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

### CONSTRUCTION SEQUENCE

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

### - LEGEND -

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

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

### GENERAL NOTES

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

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

ARKANSAS STATE HIGHWAY COMMISSION

**PLASTIC PIPE CULVERT  
(HIGH DENSITY POLYETHYLENE)**

STANDARD DRAWING PCP-1

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

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

### MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

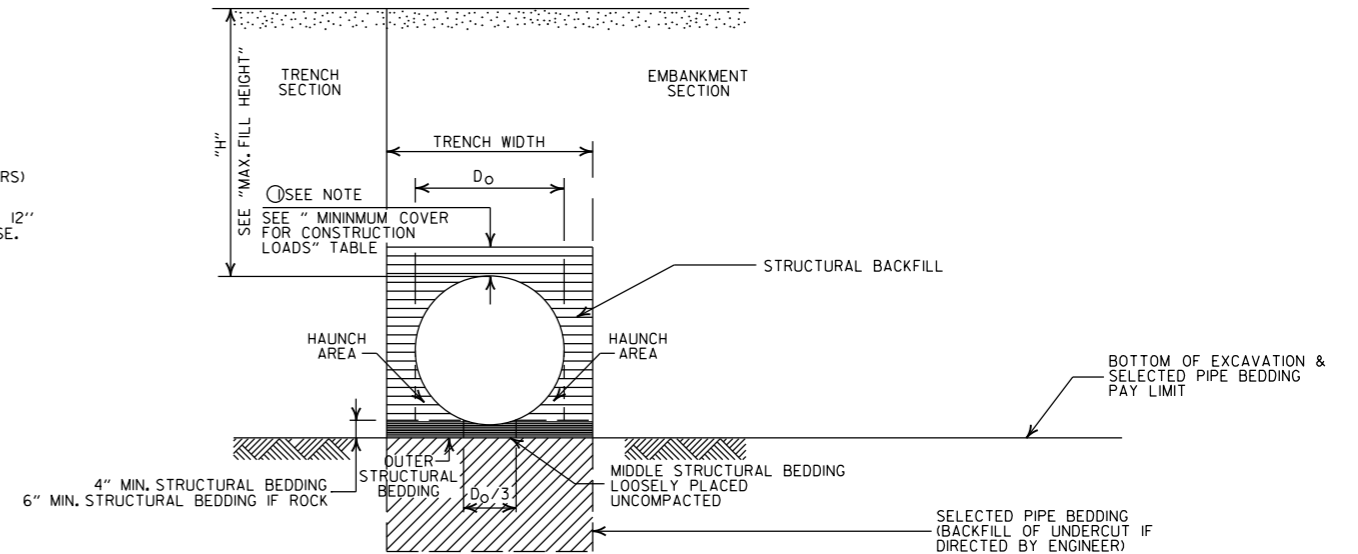
### MULTIPLE INSTALLATION OF PVC PIPES

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

### MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

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

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



### TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

### CONSTRUCTION SEQUENCE

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

### - LEGEND -

H = FILL HEIGHT (FT.)  
D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM

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

### GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS I2454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATED OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT  
(PVC F949)

STANDARD DRAWING PCP-2



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

\* SM3 WILL NOT BE ALLOWED.

\*\* STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

### MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

①NOTE:  
12" MIN. (18" - 42" DIAMETERS)  
24" MIN. (60" DIAMETER)  
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

### MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

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

### MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

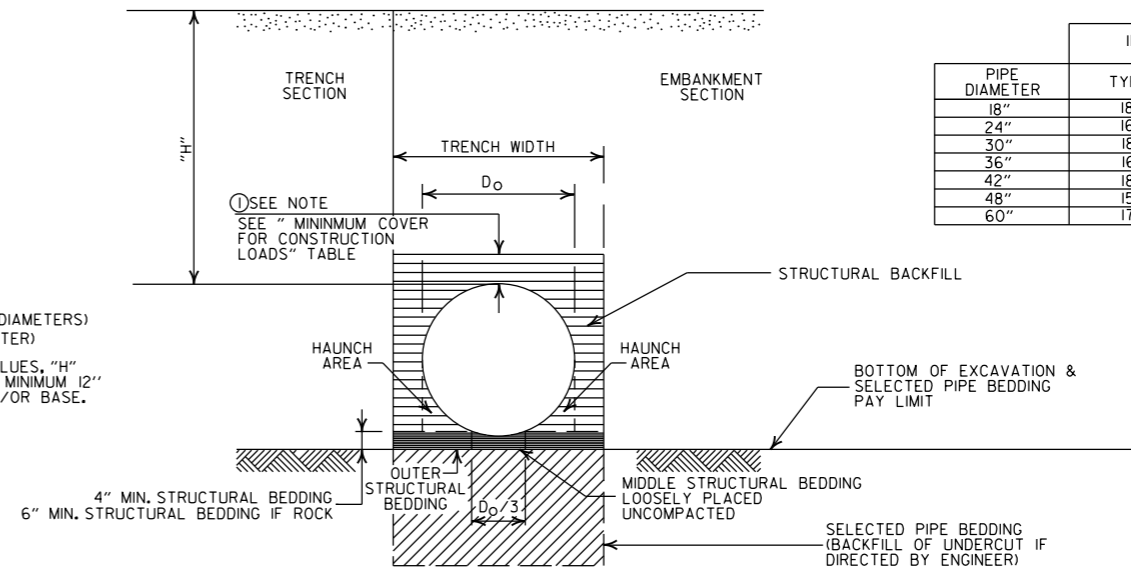
PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

### GENERAL NOTES

- PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
- WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
- WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
- FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
- POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

### MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'



### EMBANKMENT AND TRENCH INSTALLATIONS

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

### CONSTRUCTION SEQUENCE

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

### - LEGEND -

H = FILL HEIGHT (FT.)  
D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM

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

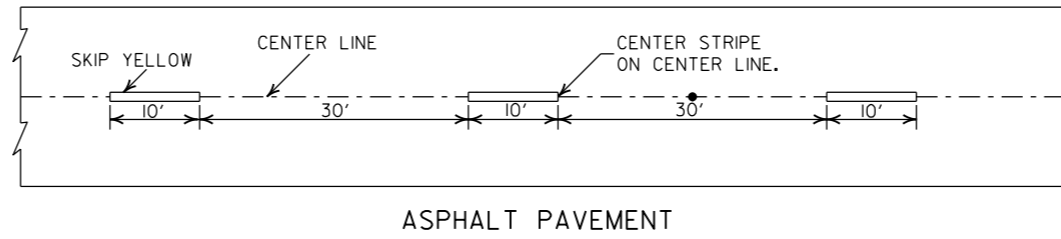
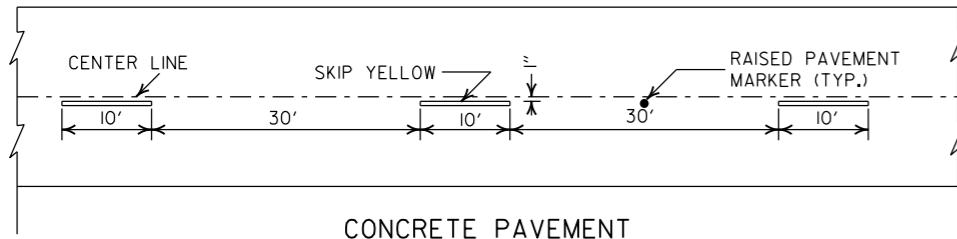
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT  
(POLYPROPYLENE)

STANDARD DRAWING PCP-3

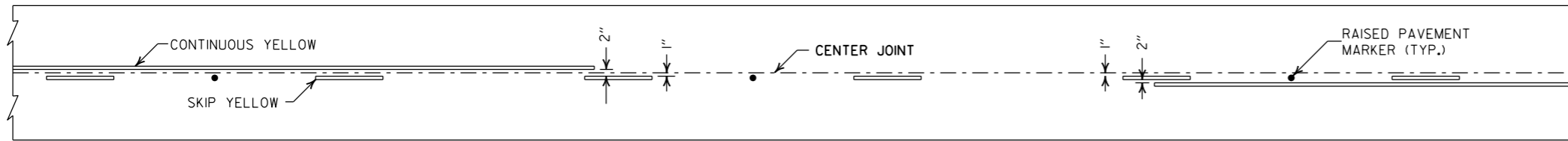




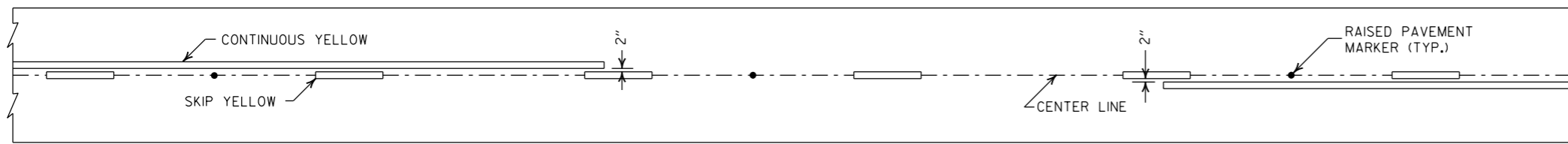
CONCRETE PAVEMENT

ASPHALT PAVEMENT

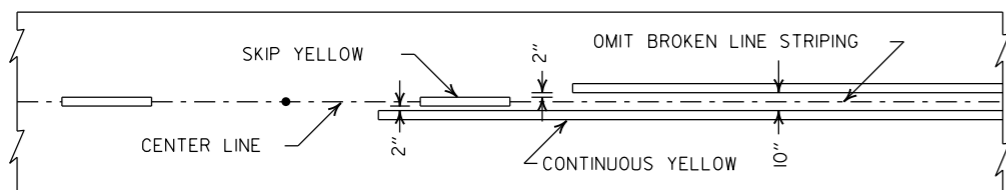
**BROKEN LINE STRIPING**



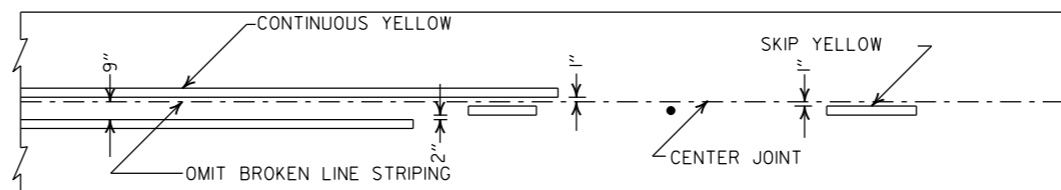
**SOLID LINE STRIPING ON CONCRETE PAVEMENT**



**SOLID LINE STRIPING ON ASPHALT PAVEMENT**

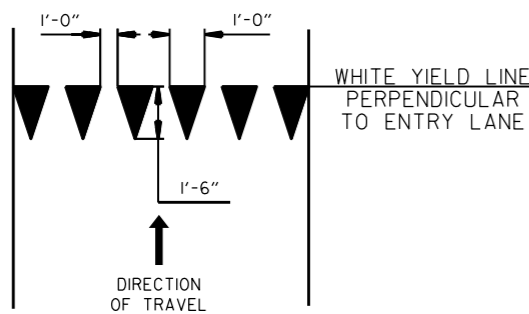


ASPHALT PAVEMENT

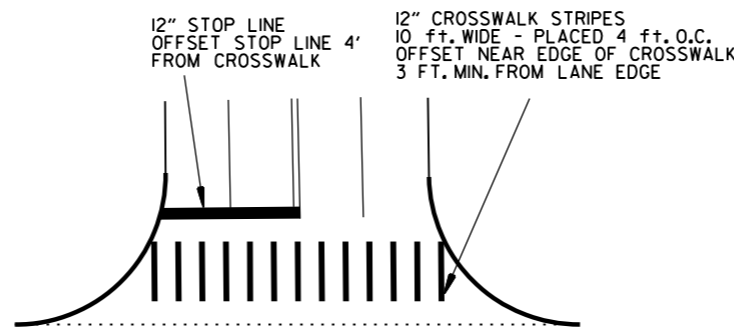


CONCRETE PAVEMENT

**STRIPING AT ADJACENT NO PASSING LANES**

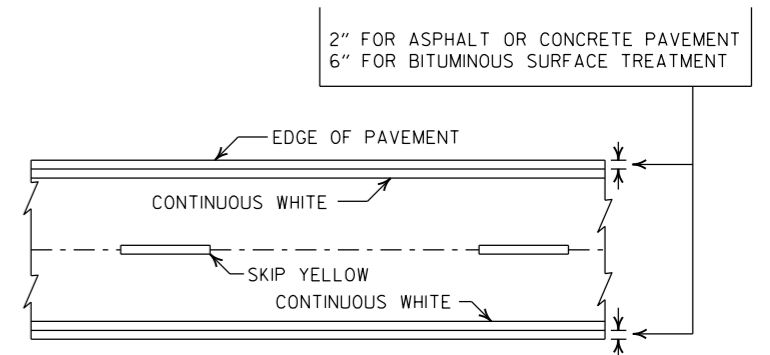


**YIELD LINE DETAIL**

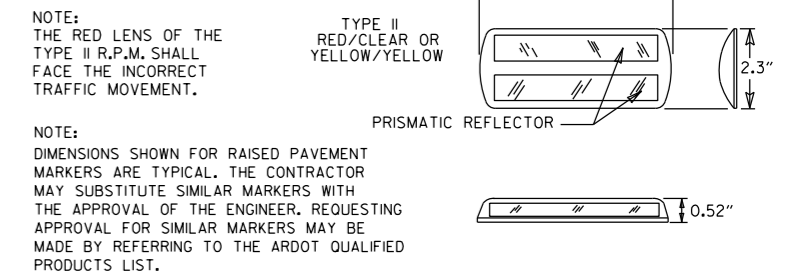


**CROSSWALK AND STOP LINE DETAILS**

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



**PAVEMENT EDGE LINE MARKING**



**DETAIL OF STANDARD RAISED PAVEMENT MARKERS**

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

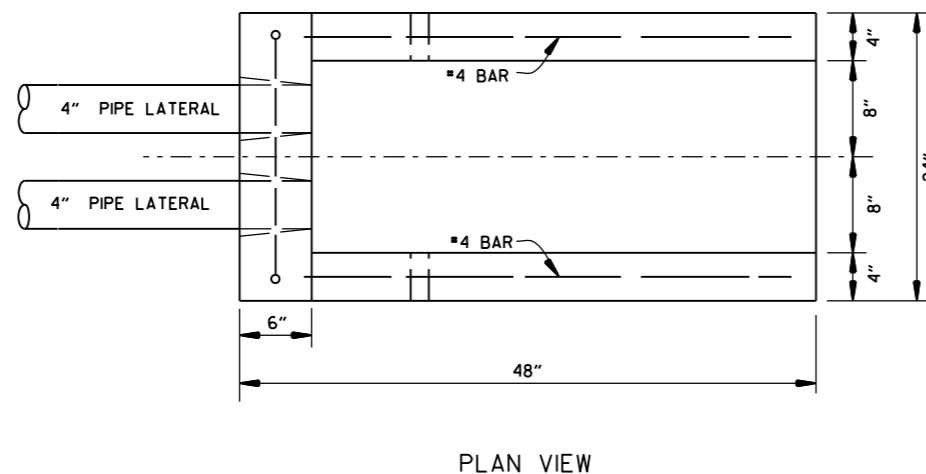
ARKANSAS STATE HIGHWAY COMMISSION

**PAVEMENT MARKING DETAILS**

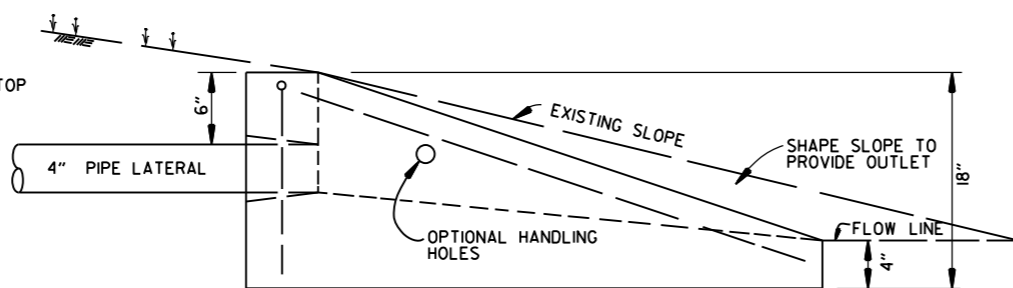
STANDARD DRAWING PM-1



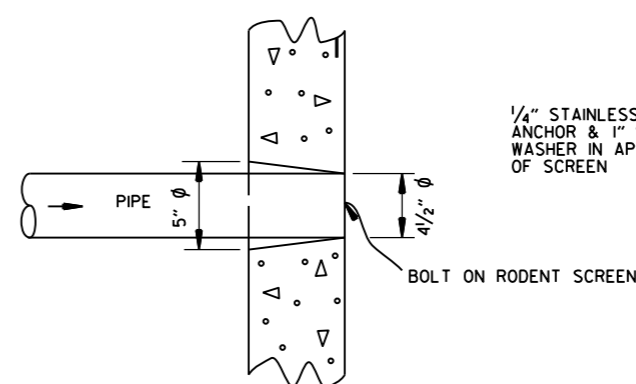
NOTE:  
 1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



PLAN VIEW

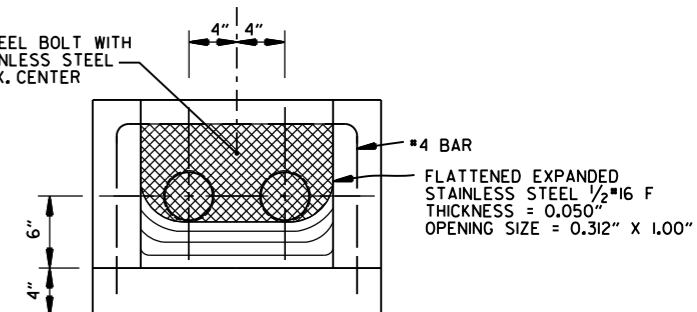


SIDE VIEW

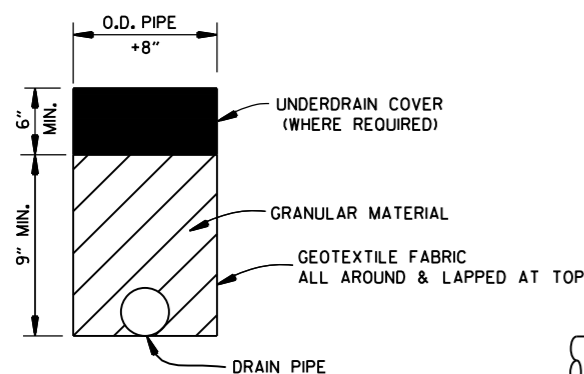


DETAIL OF HOLE FOR 4" PIPE

1/4" STAINLESS STEEL BOLT WITH ANCHOR & 1" STAINLESS STEEL WASHER IN APPROX. CENTER OF SCREEN



FRONT VIEW (DETAIL OF RODENT SCREEN)

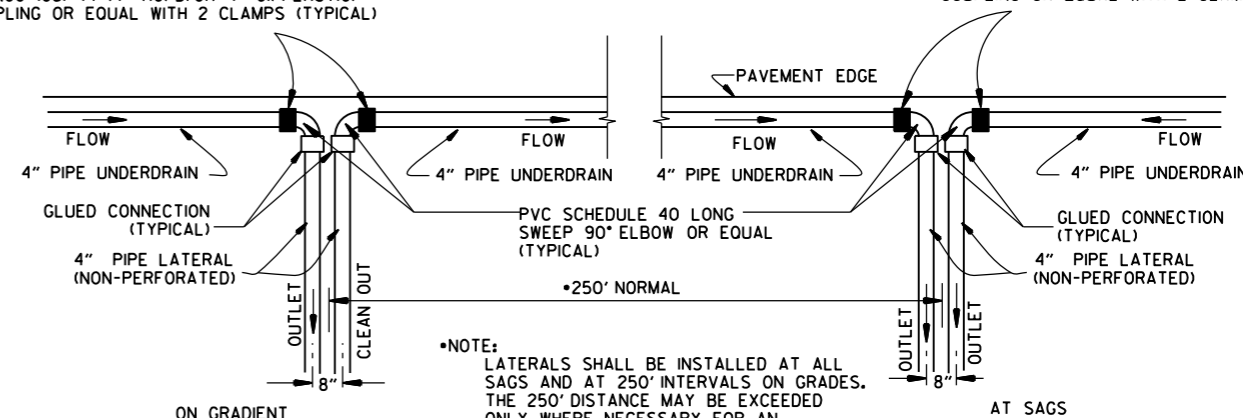


DETAILS OF PIPE UNDERDRAIN

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)



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.

NOTES FOR PIPE UNDERDRAINS

- 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.
- 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.
- 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."
- 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.
- PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
- 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."
- 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.

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

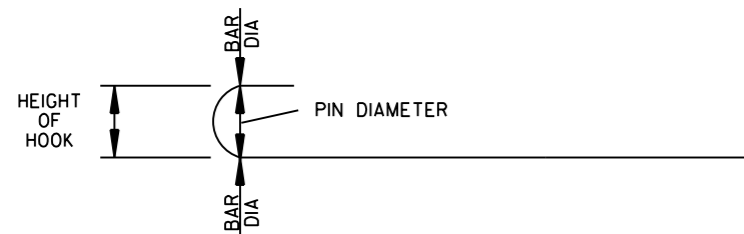
DETAILS OF PIPE UNDERDRAIN

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

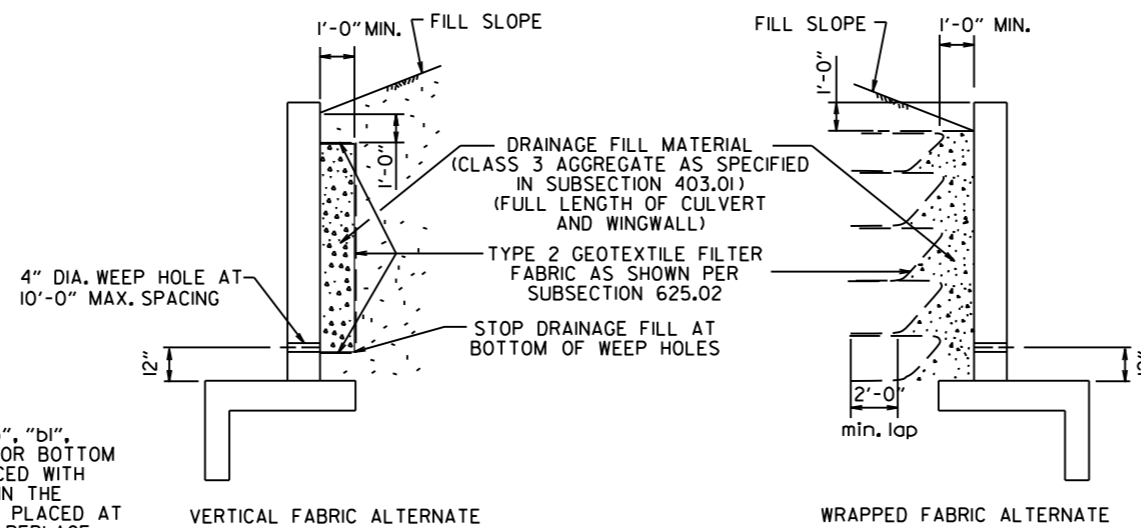
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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 31OR M 53, GRADE 60.

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

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

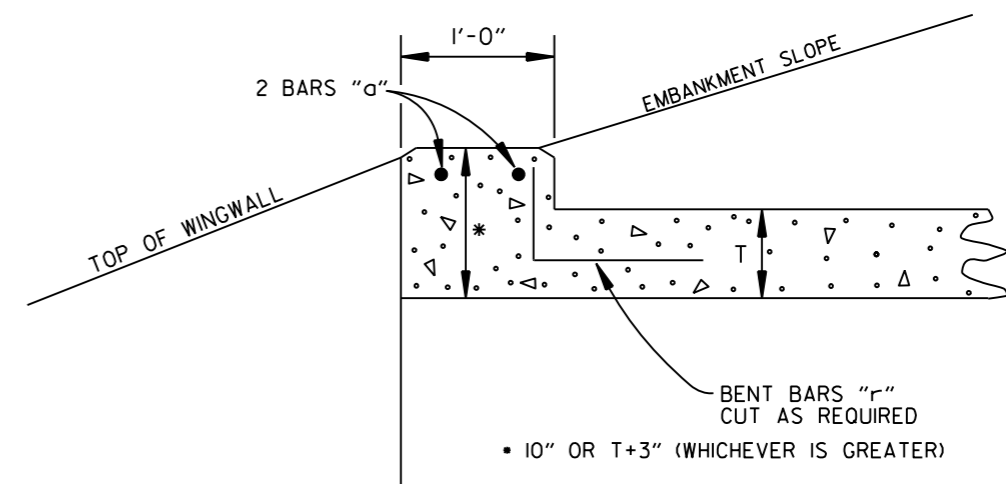
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

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



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

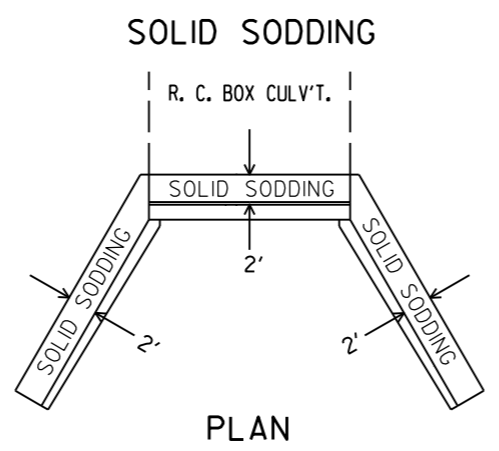
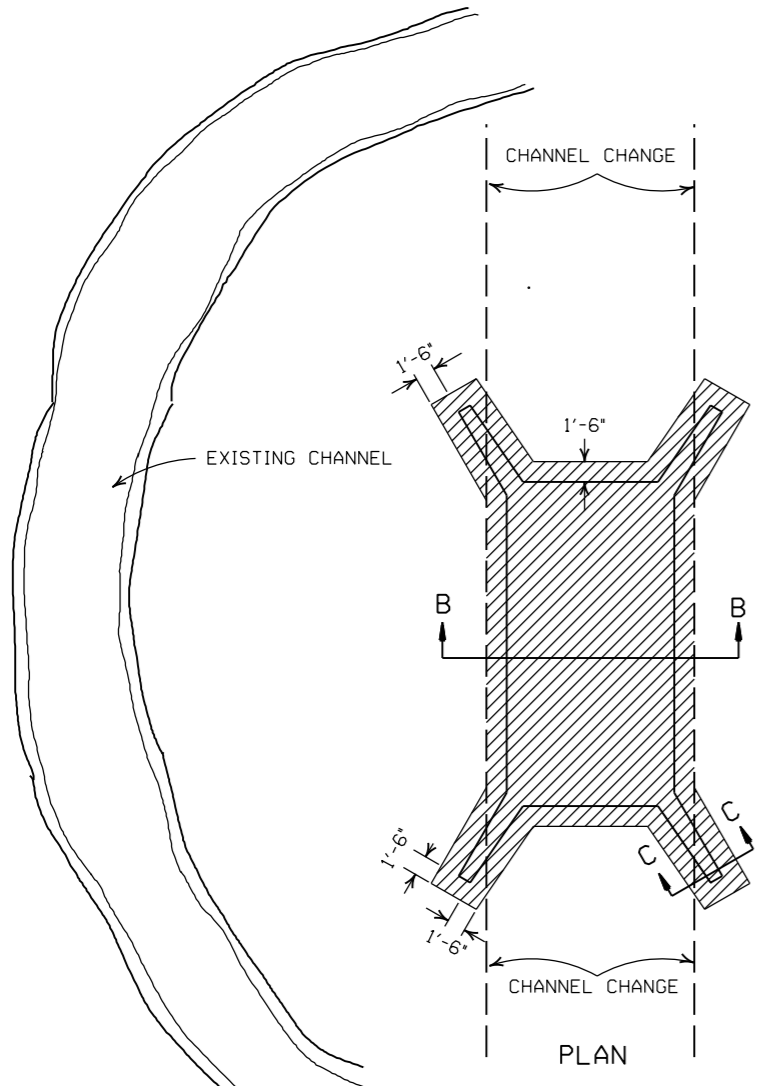
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

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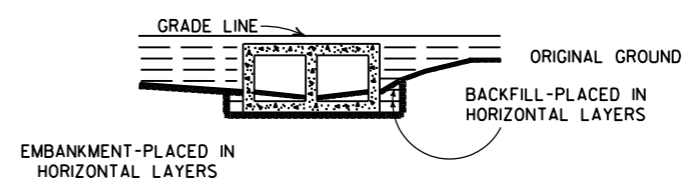
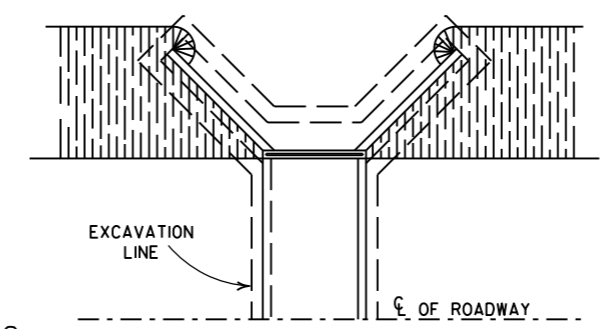
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

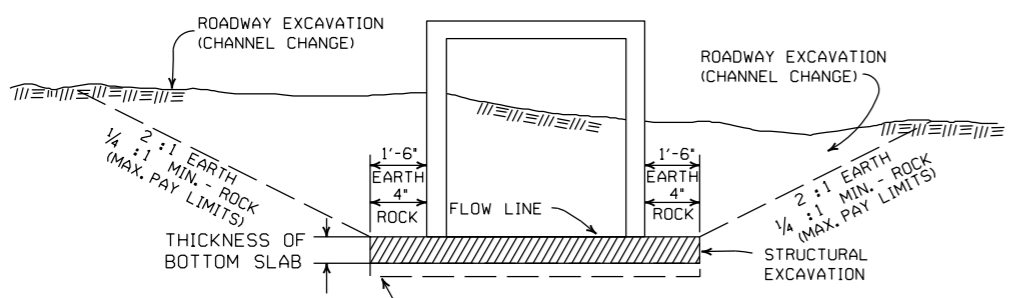
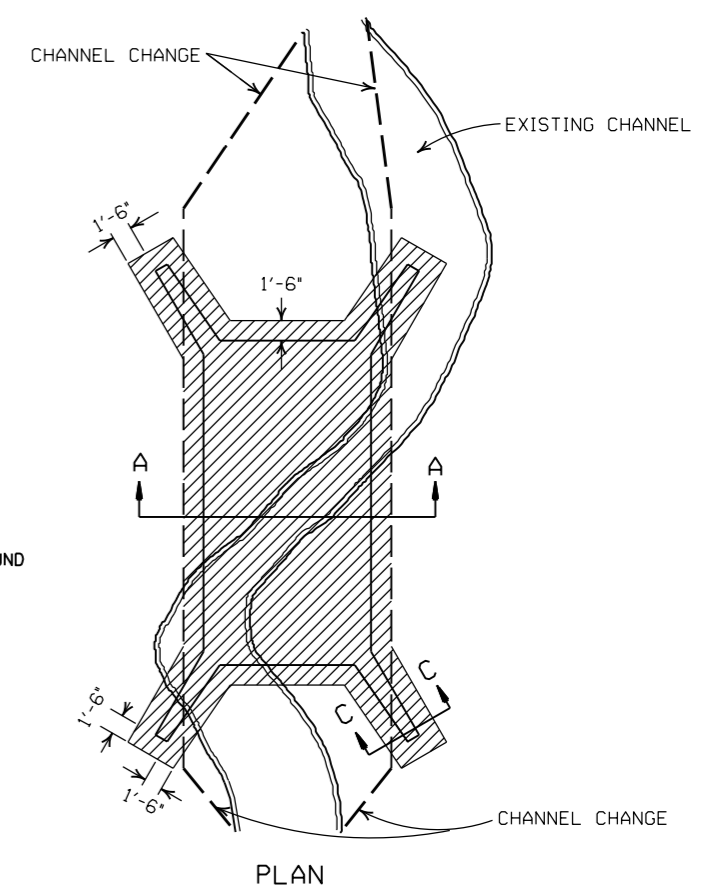


PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

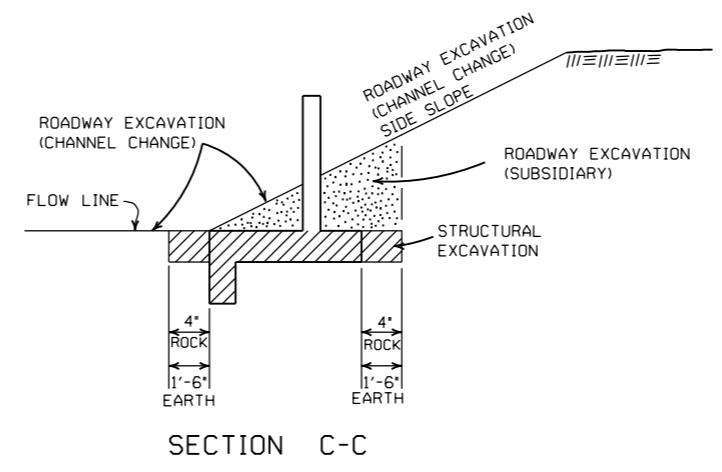


BACKFILL DETAILS FOR BOX CULVERT

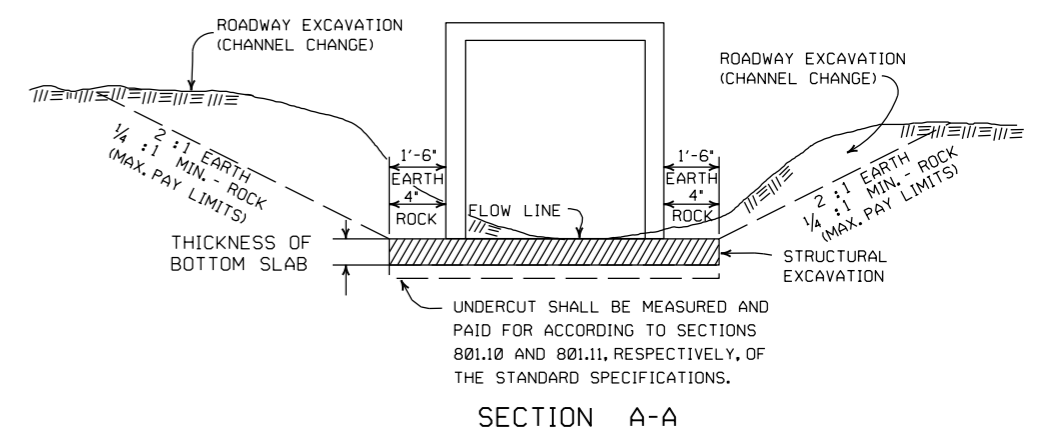


SECTION B-B DETAILS FOR NEW CHANNELS

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



SECTION C-C



DETAILS THROUGH EXISTING CHANNELS

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

GENERAL NOTES:

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

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

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


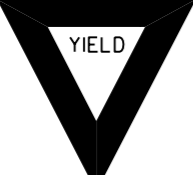







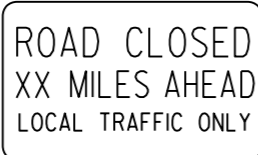
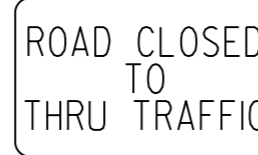







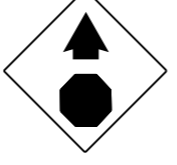

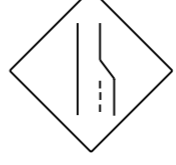



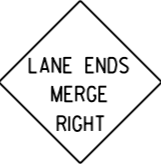















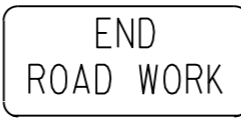
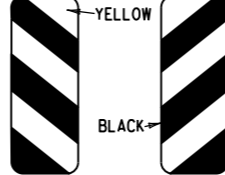


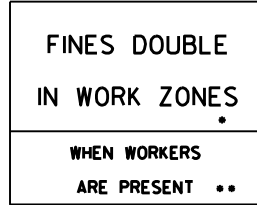
DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES AND ADDED MAXIMUM PAY LIMIT NOTES.	674-1-4-83
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2



<p>RI-1</p>  <p>STANDARD 30"X30" EXPRESSWAY 36"X36" SPECIAL 48"X48"</p>	<p>RI-2</p>  <p>STD. 36"X36"X36" EXPWY. 48"X48"X48" FWY. 60"X60"X60"</p>	<p>R2-1</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>W3-5</p>  <p>STD. 36"X36" EXPWY. 48"X48" FWY. 48"X48"</p>	<p>W3-5a</p>  <p>STD. 36"X36" EXPWY. 48"X48" FWY. 48"X48"</p>	<p>R4-1</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	<p>R4-2</p>  <p>STD. 24"X30" EXPWY. 36"X48" FWY. 48"X60"</p>	
<p>R5-1</p>  <p>STD. 30"X30" EXPWY. 36"X36" SPECIAL 48"X48"</p>	<p>R11-2</p>  <p>48"X30"</p>	<p>R11-3A</p>  <p>60"X30"</p>	<p>R11-4</p>  <p>60"X30"</p>	<p>W21-5a</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W1-1</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W1-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	
<p>W1-3</p>  <p>STD. 48"X48"</p>	<p>W1-4</p>  <p>STD. 48"X48"</p>	<p>W1-6</p>  <p>STD. 48"X24" SPECIAL 60"X30"</p>	<p>W1-8</p>  <p>STD. 18"X24" SPECIAL 24"X30" EXPWY. 30"X36" FWY. 36"X48"</p>	<p>W3-1</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W3-2</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W4-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	
<p>W5-1</p>  <p>STD. 36"X36" SPECIAL 48"X48"</p>	<p>W6-3</p>  <p>EXPWY. 36"X36" SPECIAL 48"X48"</p>	<p>W8-7</p>  <p>EXPWY. 36"X36" FWY. 48"X48"</p>	<p>W9-2</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W13-1</p>  <p>STD. 24"X24"</p>	<p>W20-1</p>  <p>STD. 48"X48"</p>	<p>W20-2</p>  <p>STD. 48"X48"</p>	<p>W20-3</p>  <p>STD. 48"X48"</p>
<p>W20-4</p>  <p>STD. 48"X48"</p>	<p>W20-5</p>  <p>STD. 48"X48"</p>	<p>W20-7a</p>  <p>500 FEET 18" 24" W16-2</p> <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W21-2</p>  <p>STD. 30"X30" SPECIAL 36"X36"</p>	<p>W21-5</p>  <p>STD. 30"X30" SPECIAL 36"X36"</p>	<p>W24-1</p>  <p>STD. 36"X36"</p>	<p>W1-4b</p>  <p>STD. 48"X48"</p>	<p>R56-1</p>  <p>STD. 18"X18"</p>
<p>W8-11</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>W8-9</p>  <p>STD. 36"X36" FWY. 48"X48"</p>	<p>G20-1</p>  <p>60"X24"</p>	<p>G20-2</p>  <p>48"X24"</p>	<p>OM-3L OM-3R</p>  <p>12"X36"</p>	<p>M4-9</p>  <p>STD. 30"X24" SPECIAL 48"X36" SPECIAL 60"X48"</p>	<p>M4-10</p>  <p>48"X18"</p>	<p>R55-1</p>  <p>36"X60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

**ADVANCE DISTANCES (XXXX)**

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

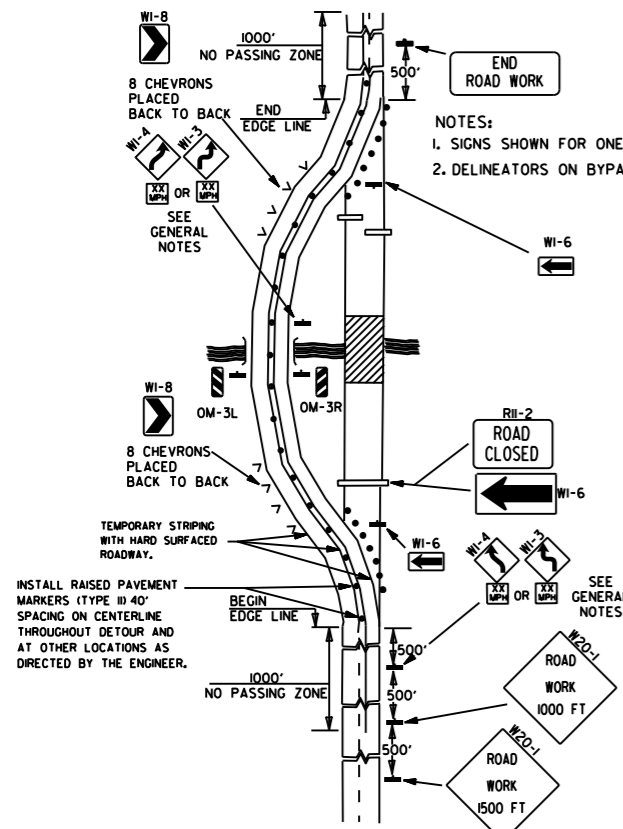
**GENERAL NOTES:**

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

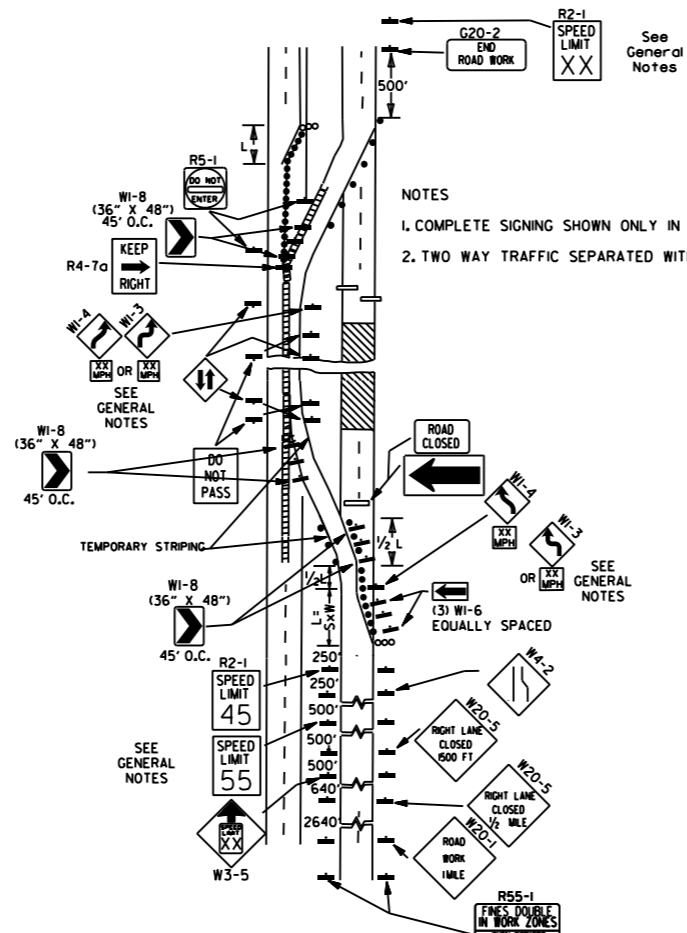
**• NOTE:** SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS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

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

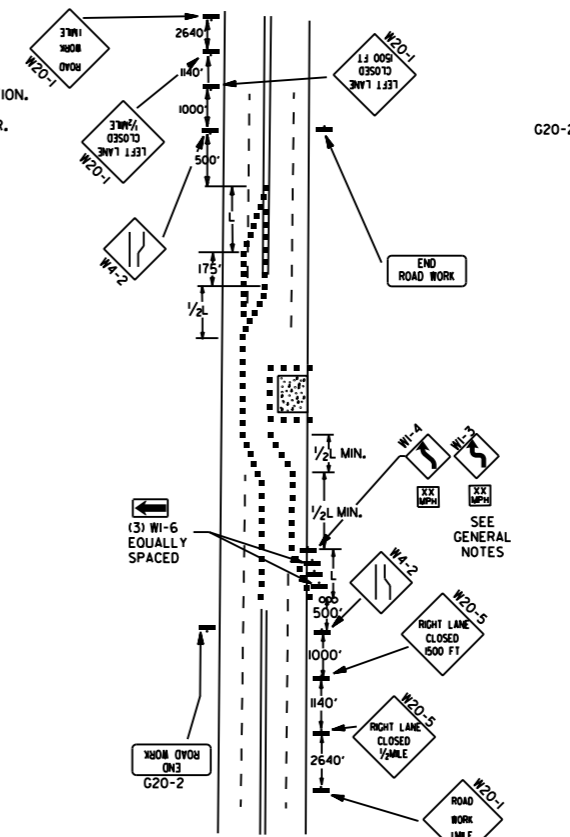
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION  
STANDARD DRAWING TC-1



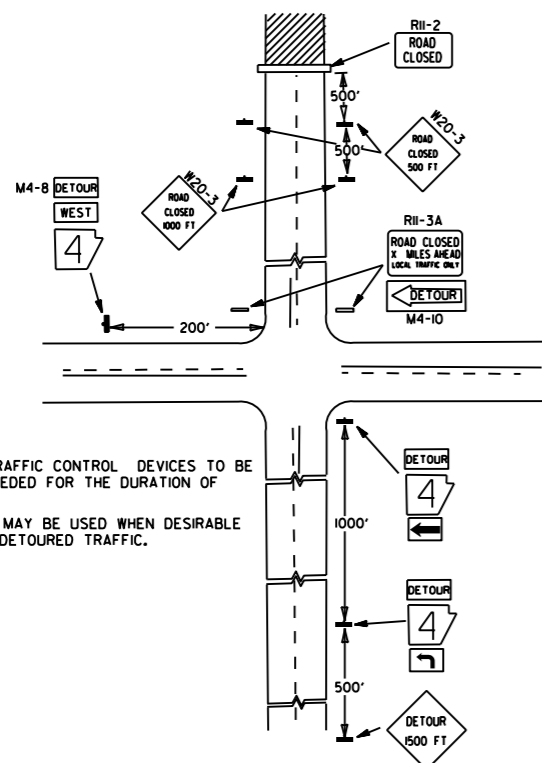
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



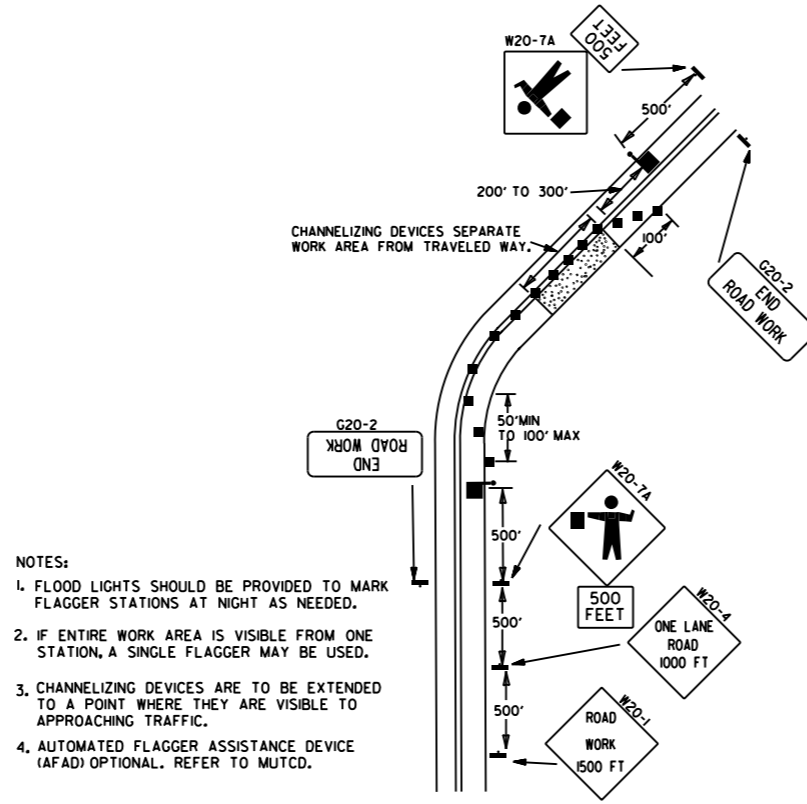
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



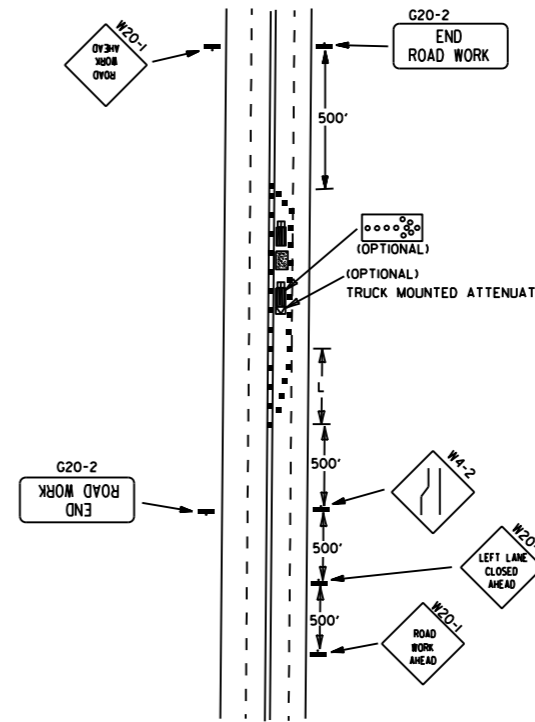
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

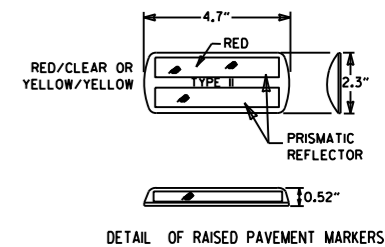


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



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

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



TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

$L = SXW$  FOR SPEEDS OF 45MPH OR MORE.

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

WHERE:

L = MINIMUM LENGTH OF TAPER.

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

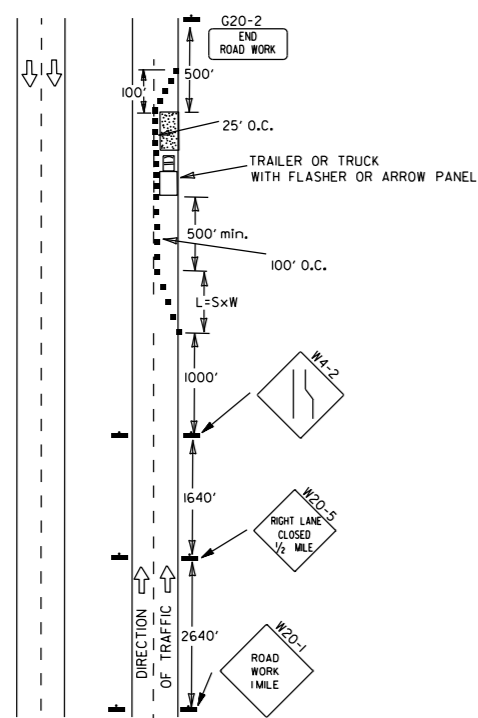
W = WIDTH OF OFFSET.

GENERAL NOTES:

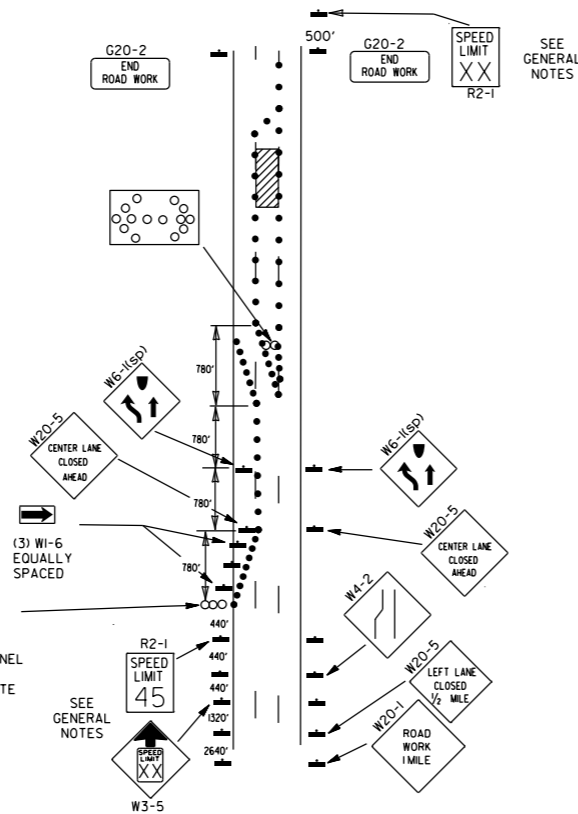
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(K65) SHALL BE OMITTED. ADDITIONAL R2-1(55MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

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

ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD TRAFFIC CONTROLS  
FOR HIGHWAY CONSTRUCTION



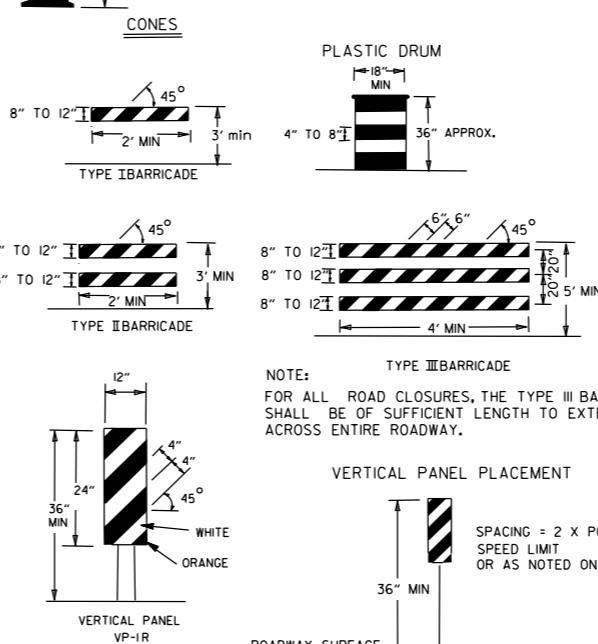
(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



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

CHANNELIZING DEVICES

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

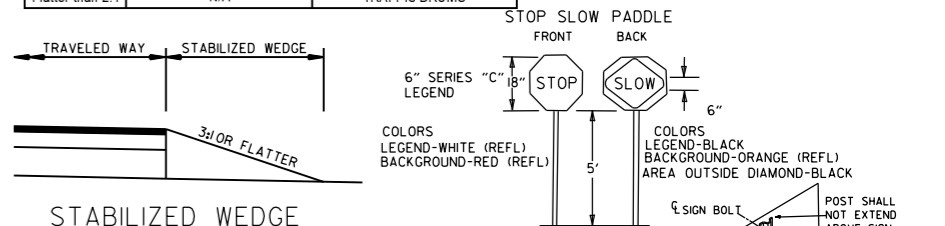


VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE <sup>(6)</sup>	STANDARD LANE CLOSURE <sup>(6)</sup>
≤ 3"	EDGE OF TRAVELED LANE OR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

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

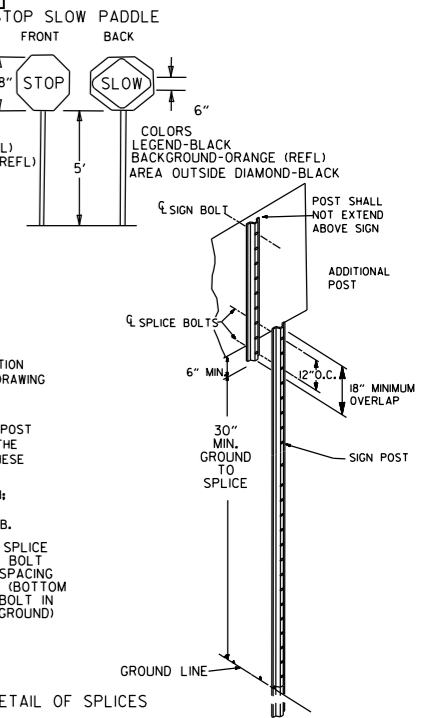
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

- GENERAL NOTES:
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
  - WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
  - PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
  - A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
  - W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
  - TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).



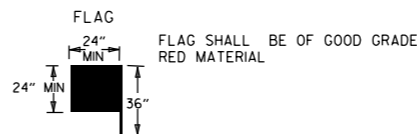
STABILIZED WEDGE

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

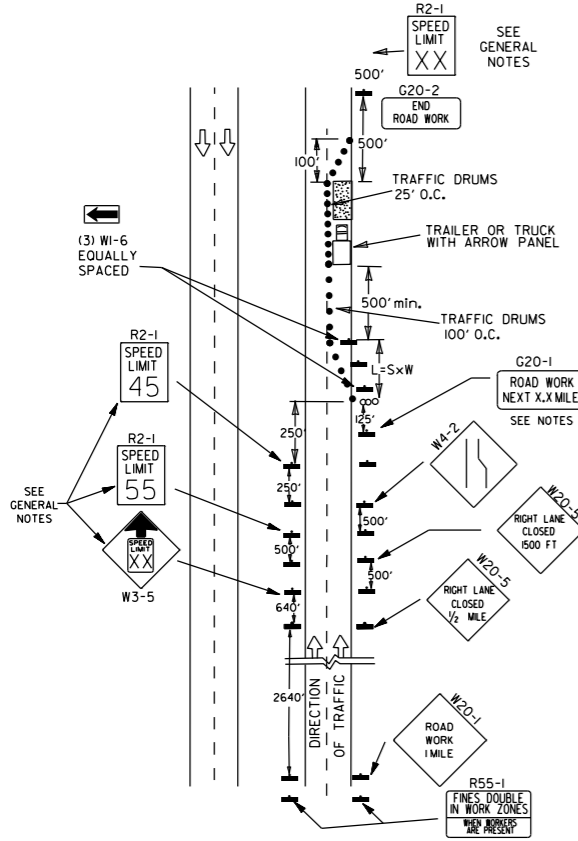


DATE	REVISION	FILED
08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE II	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED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

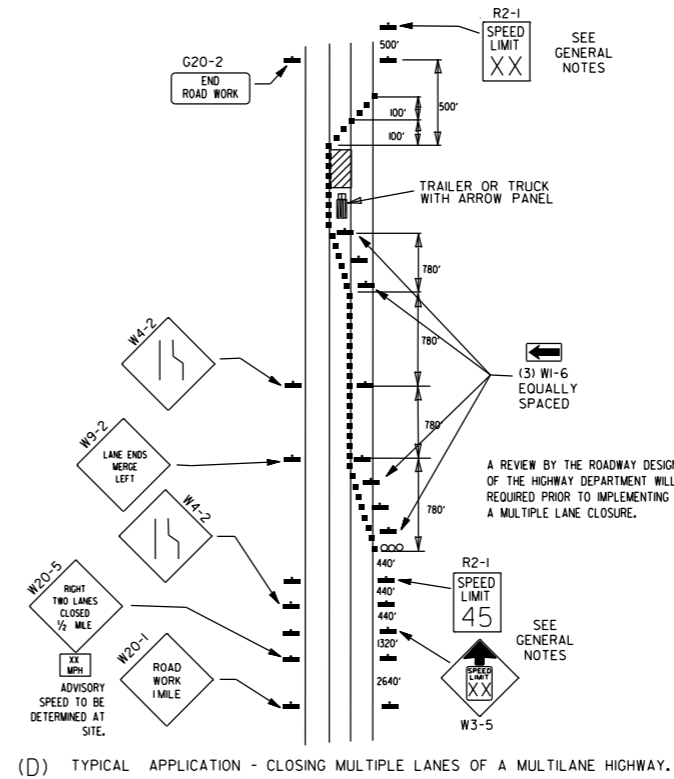
- KEY:
- ○ ○ ARROW PANEL (IF REQUIRED)
  - CHANNELIZING DEVICE
  - TRAFFIC DRUM
- GENERAL NOTES:
- A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
  - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(65) SHALL BE OMITTED. ADDITIONAL R2-1(55MPH) SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
  - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
  - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHOULD BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
  - THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1(1/4 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
  - FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
  - ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
  - TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
  - ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

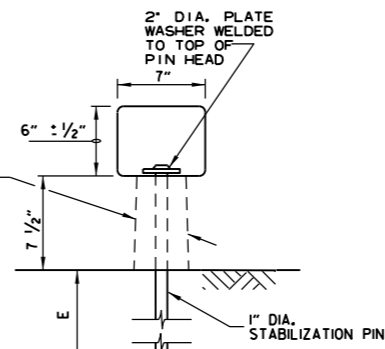
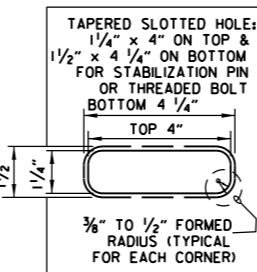
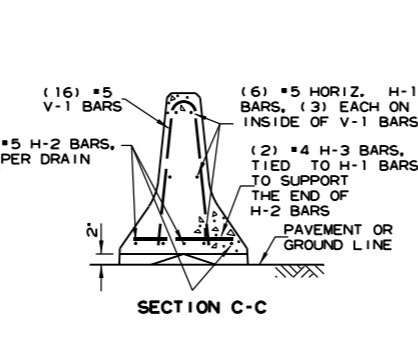
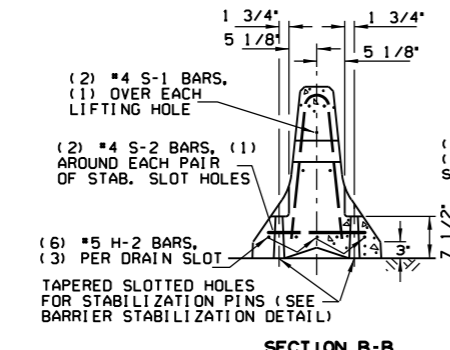
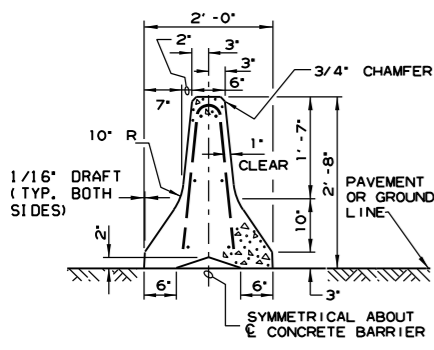
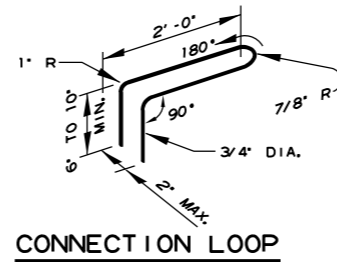
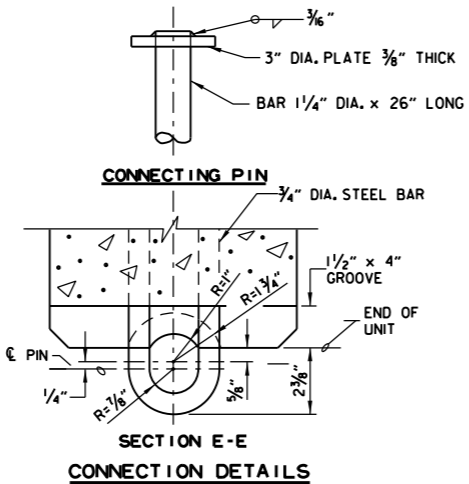


(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

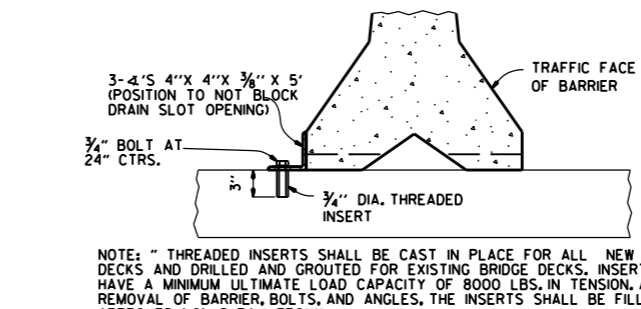
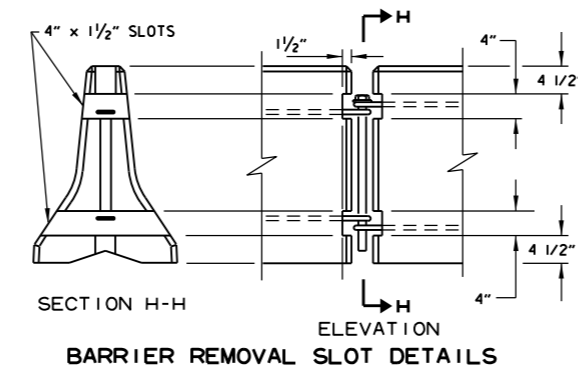
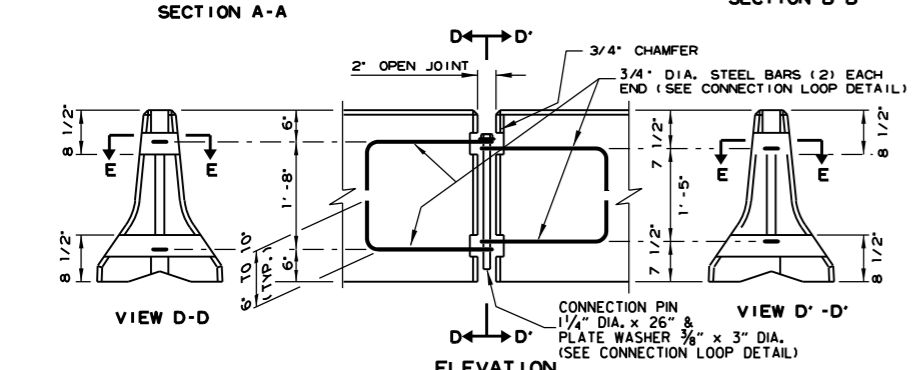


(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

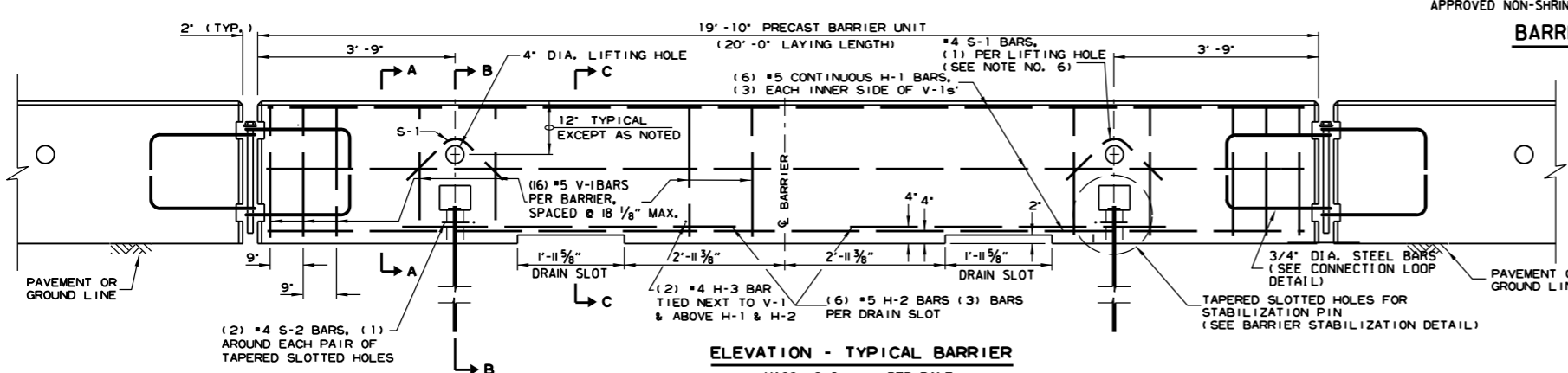
REINFORCING BAR TABLE PER BARRIER UNIT			
MARK	LOCATION	BAR SIZE (NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5 (6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5 (6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4 (2)	1'-6"
S-1	OVER LIFT HOLES	#4 (2)	
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S & DRAIN SLOTS	#4 (2)	
V-1	VERTICAL IN BARRIER (3) EACH END & (2) AT EACH DRAIN SLOTS	#5 (16)	



- GENERAL NOTES**
- THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.
  - MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:  
 CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.  
 REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60  
 STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.  
 DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.  
 IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS. DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.
  - OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.
  - DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.
  - ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.
  - A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.



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.

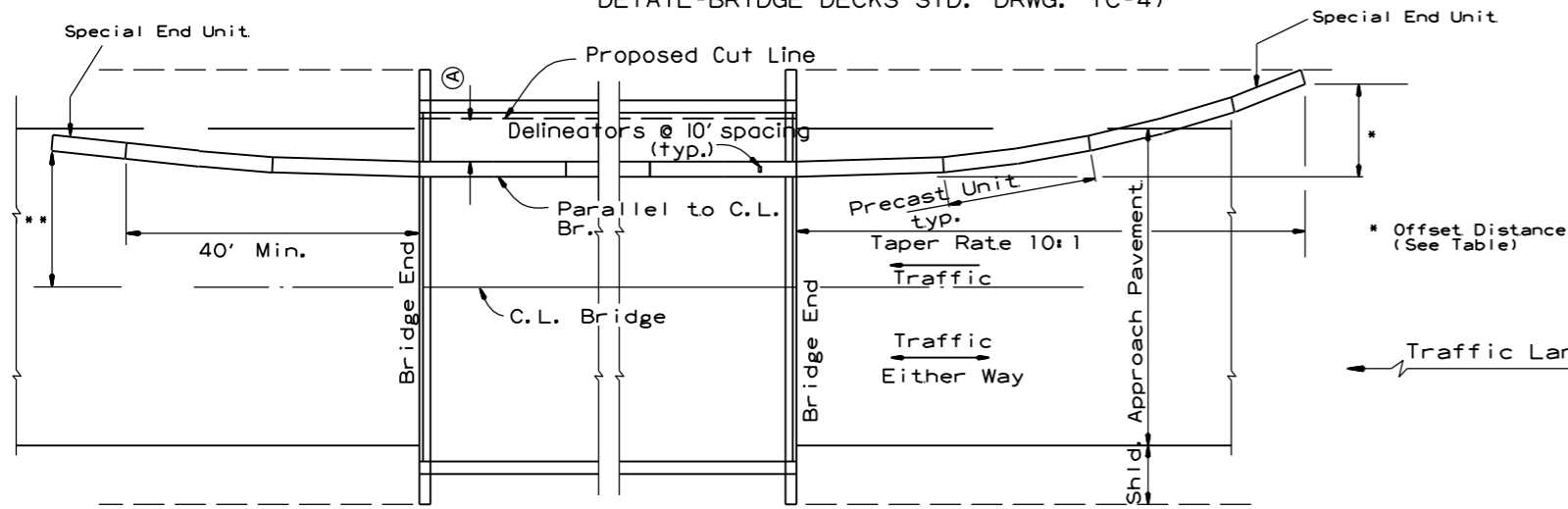


DATE	REVISION	FILMED
11-07-19	REVISED NOTE 3	
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED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

**ARKANSAS STATE HIGHWAY COMMISSION**  
**STANDARD TRAFFIC CONTROLS**  
**FOR HIGHWAY CONSTRUCTION -**  
**TEMPORARY PRECAST BARRIER**  
 STANDARD DRAWING TC-4



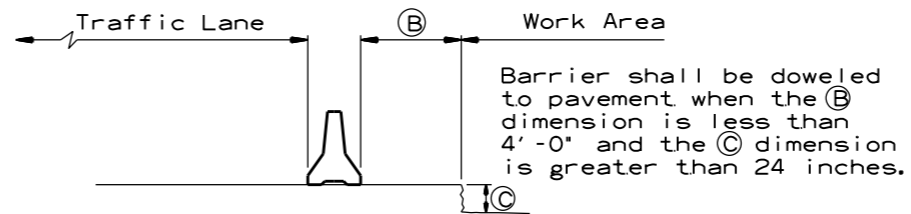
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



**BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET**

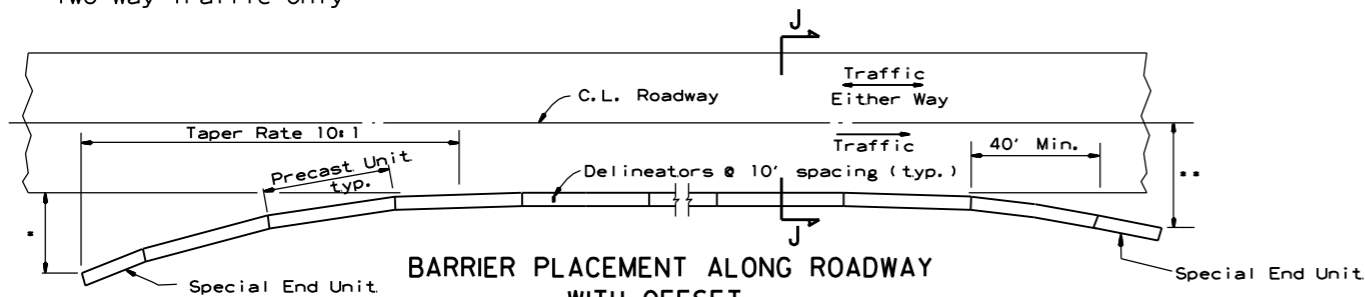
No Scale

\*\* Offset Distance for Two Way Traffic Only



**SECTION J-J**

No Scale



**BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET**

No Scale

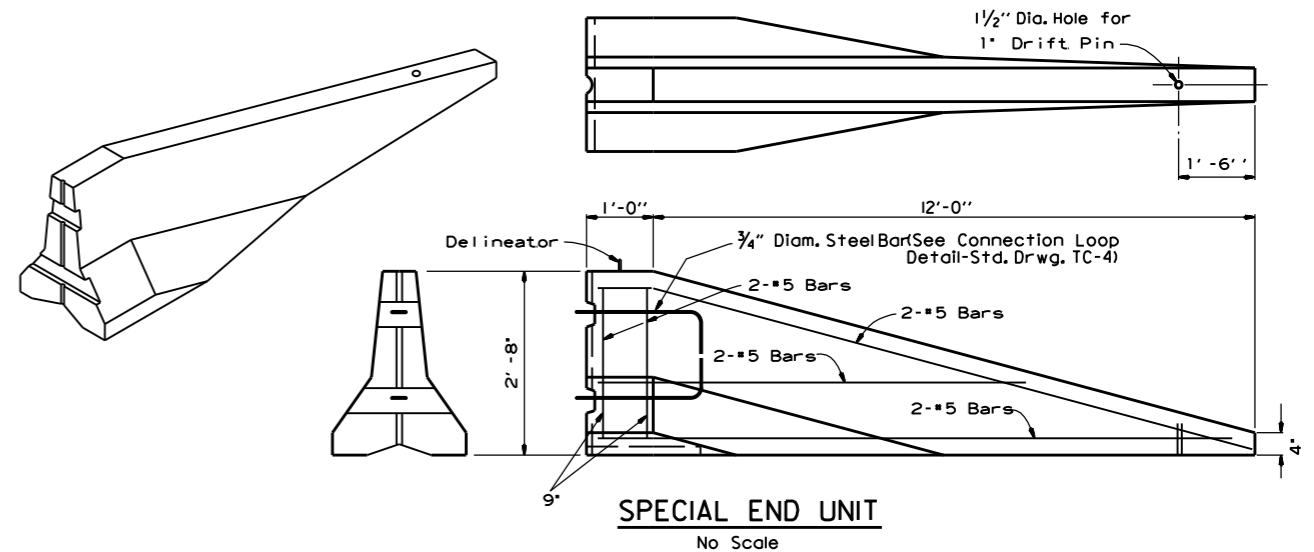
\* Offset Distance (See Table)

\*\* Offset Distance For Two Way Traffic Only

Offset Distance Table

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

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

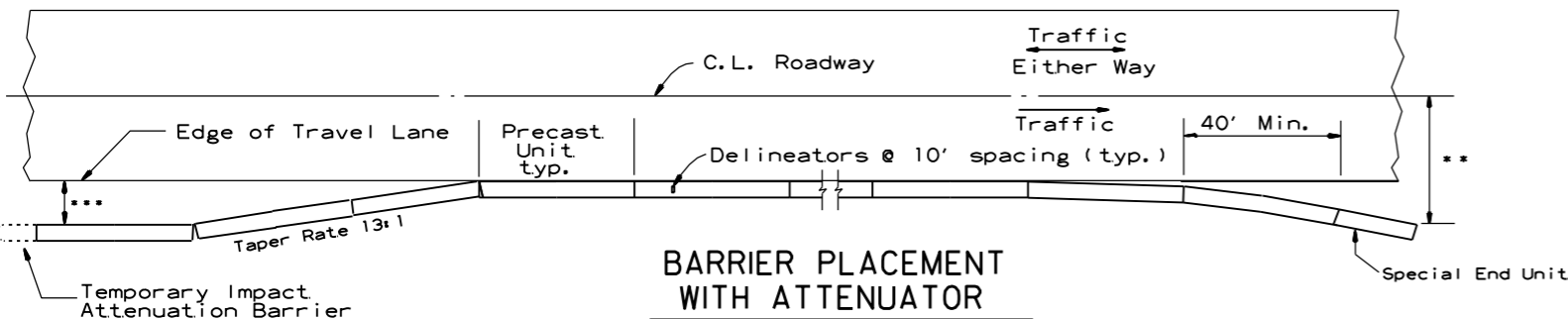


**SPECIAL END UNIT**

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."



**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

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	

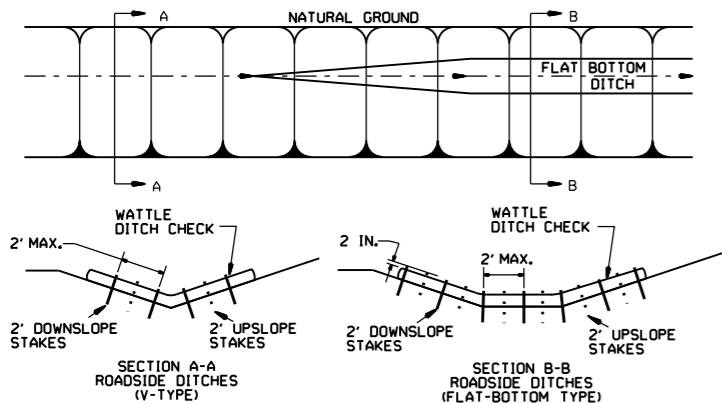
**ARKANSAS STATE HIGHWAY COMMISSION**

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

**STANDARD DRAWING TC-5**

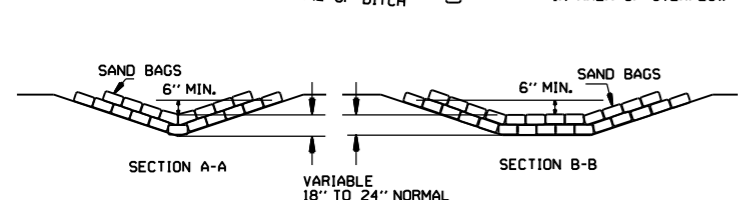
**GENERAL NOTES**

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

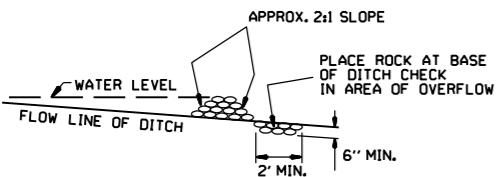


**WATTLE DITCH CHECK (E-1)**

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

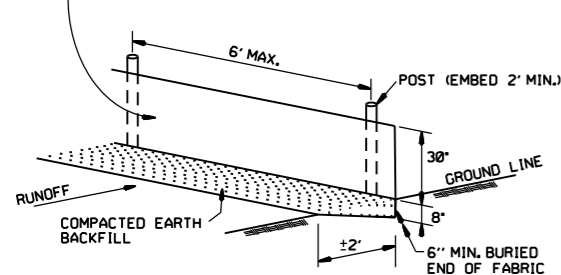


**SAND BAG DITCH CHECK (E-5)**

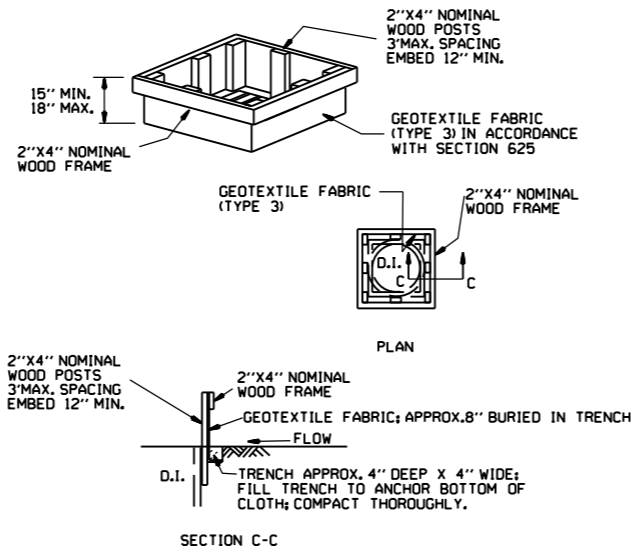


**ROCK DITCH CHECK (E-6)**

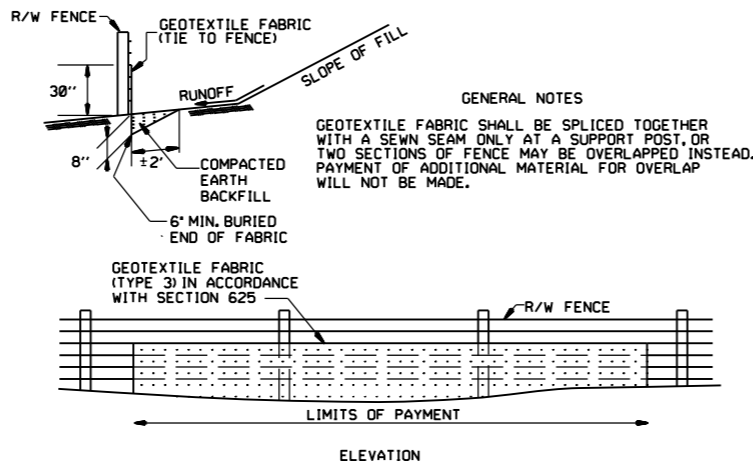
**GENERAL NOTES**  
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625  
 GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



**SILTS FENCE (E-11)**

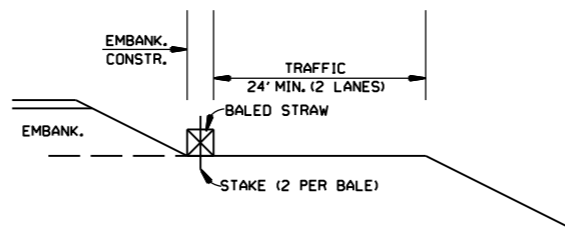


**DROP INLET SILTS FENCE (E-7)**

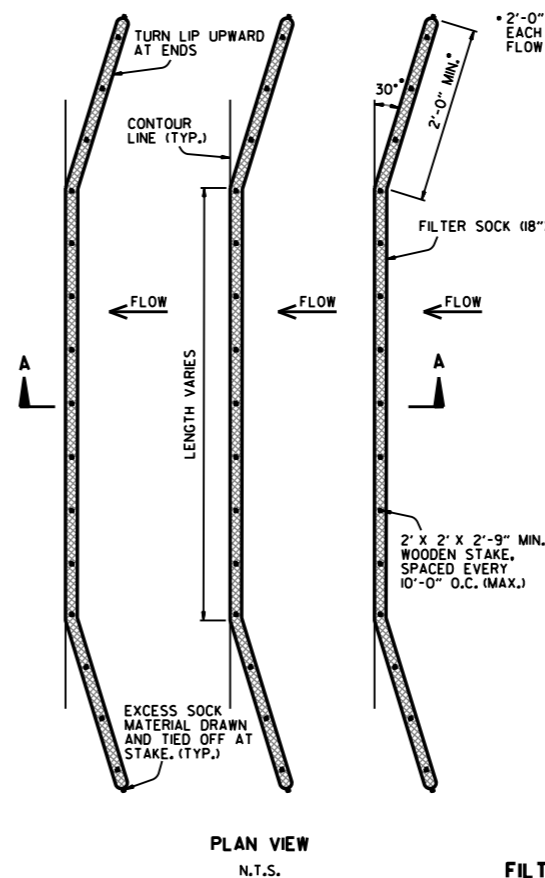


**SILTS FENCE ON R/W FENCE (E-4)**

**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.

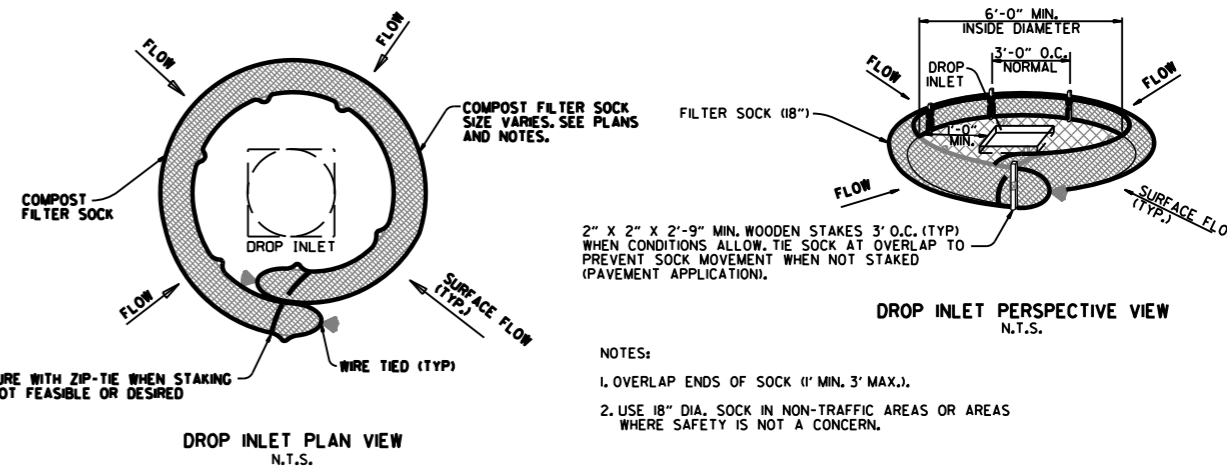


**BALED STRAW FILTER BARRIER (E-2)**



**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\"/>

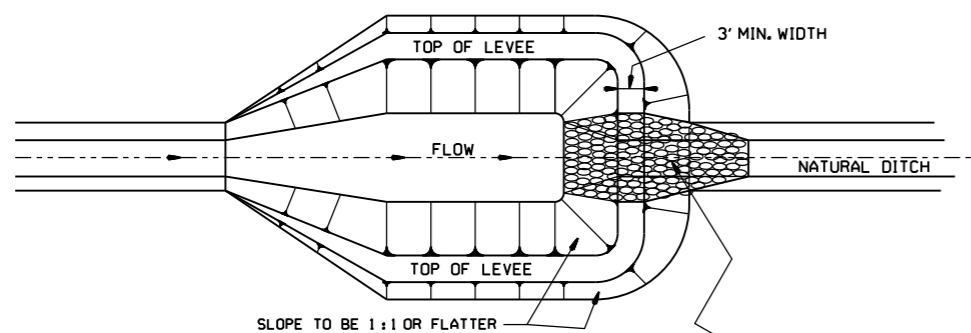


**COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)**

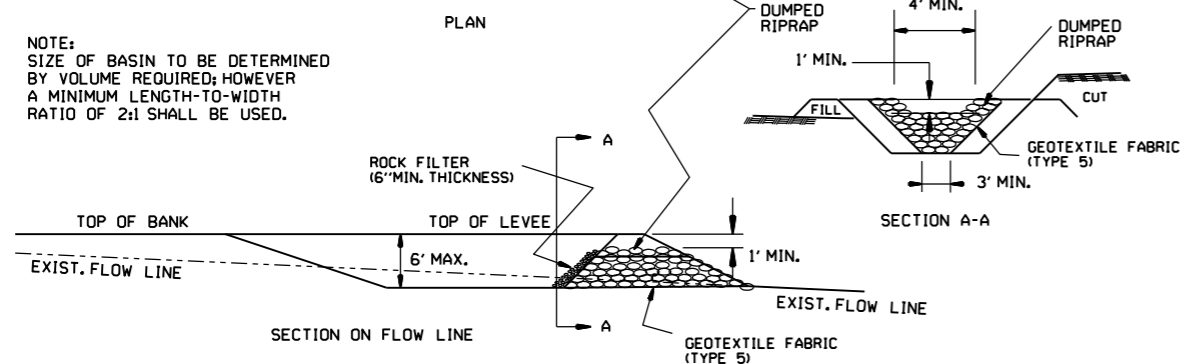
**NOTES:**  
 1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).  
 2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

DATE	REVISION
11-16-17	ADDED FILTER SOCK E-3 AND E-13
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK
11-18-98	ADDED NOTES
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)
07-20-95	REVISED SILTS FENCE E-4 AND E-11
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
04-01-93	REDRAWN
10-01-92	REDRAWN
08-02-76	ISSUED R.D.M.

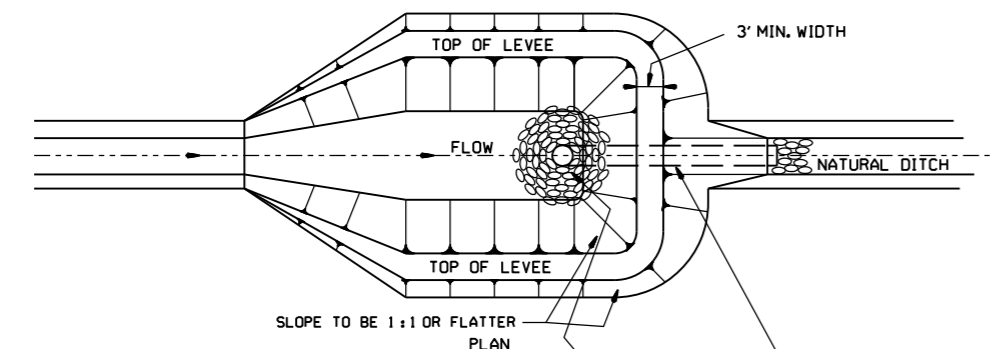
ARKANSAS STATE HIGHWAY COMMISSION  
 TEMPORARY EROSION CONTROL DEVICES  
 STANDARD DRAWING TEC-1



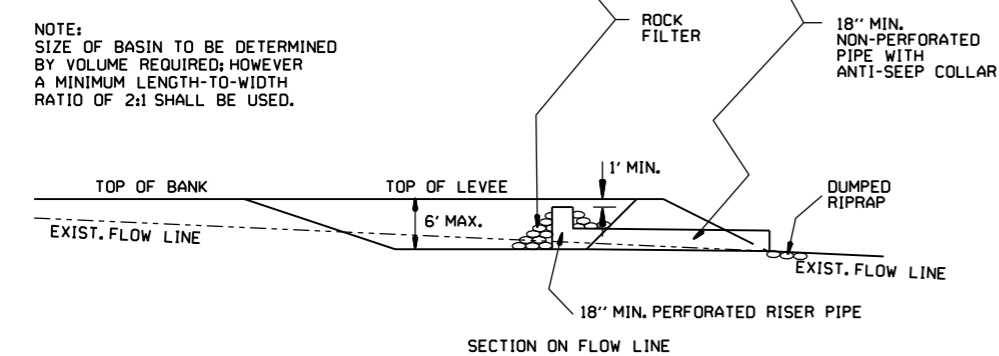
NOTE:  
SIZE OF BASIN TO BE DETERMINED  
BY VOLUME REQUIRED; HOWEVER  
A MINIMUM LENGTH-TO-WIDTH  
RATIO OF 2:1 SHALL BE USED.



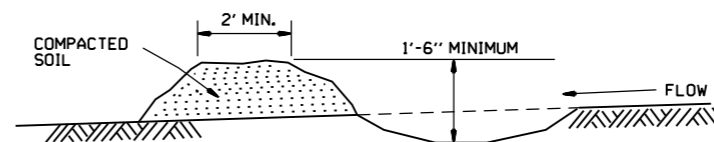
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



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

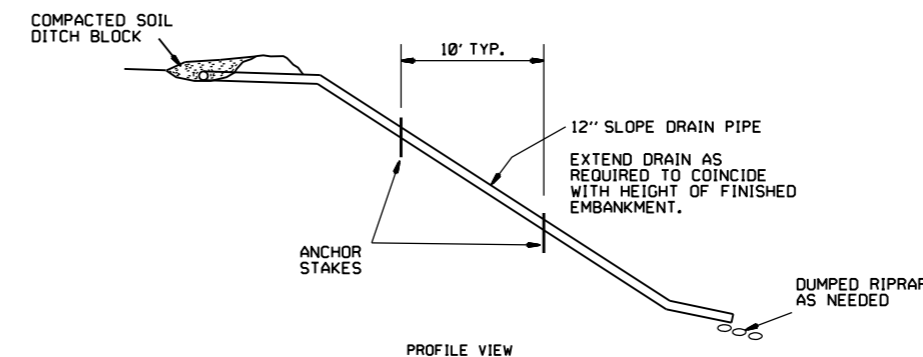
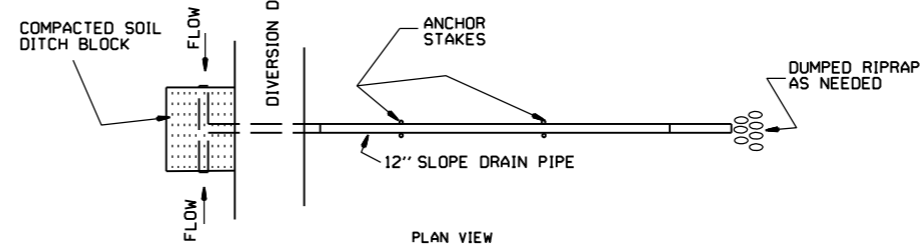


SEDIMENT BASIN WITH PIPE OUTLET (E-10)

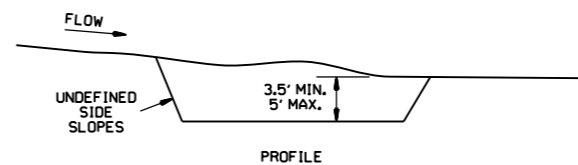
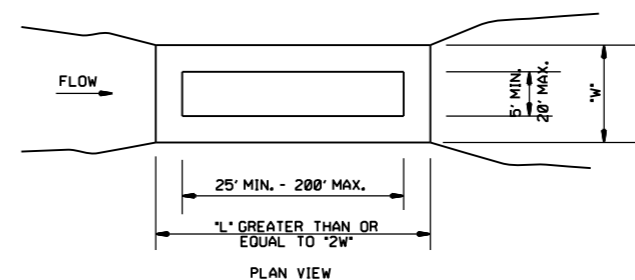


DIVERSION DITCH (E-8)

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



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

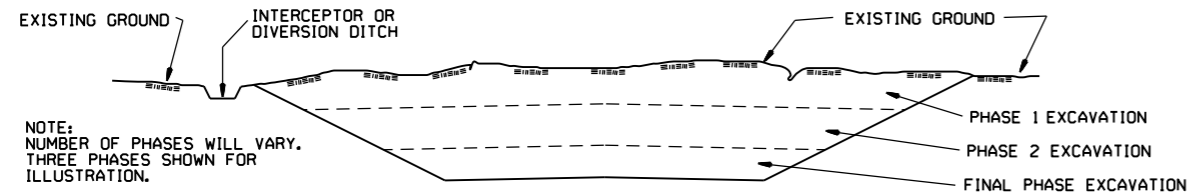
ARKANSAS STATE HIGHWAY COMMISSION  
TEMPORARY EROSION  
CONTROL DEVICES  
STANDARD DRAWING TEC-2

## CLEARING AND GRUBBING

### CONSTRUCTION SEQUENCE

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

## EXCAVATION



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

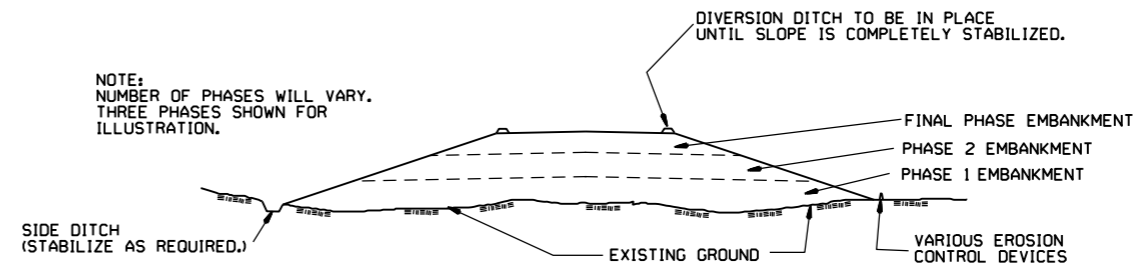
### GENERAL NOTE

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

### CONSTRUCTION SEQUENCE

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

## EMBANKMENT



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

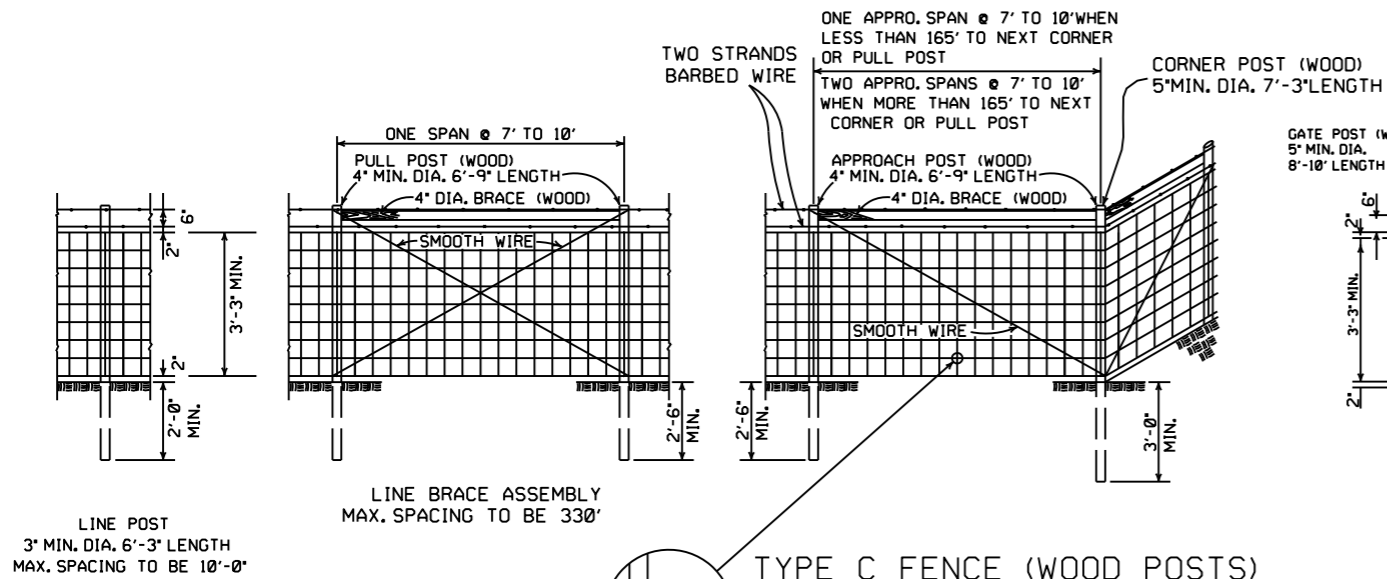
### GENERAL NOTE

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

### CONSTRUCTION SEQUENCE

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

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



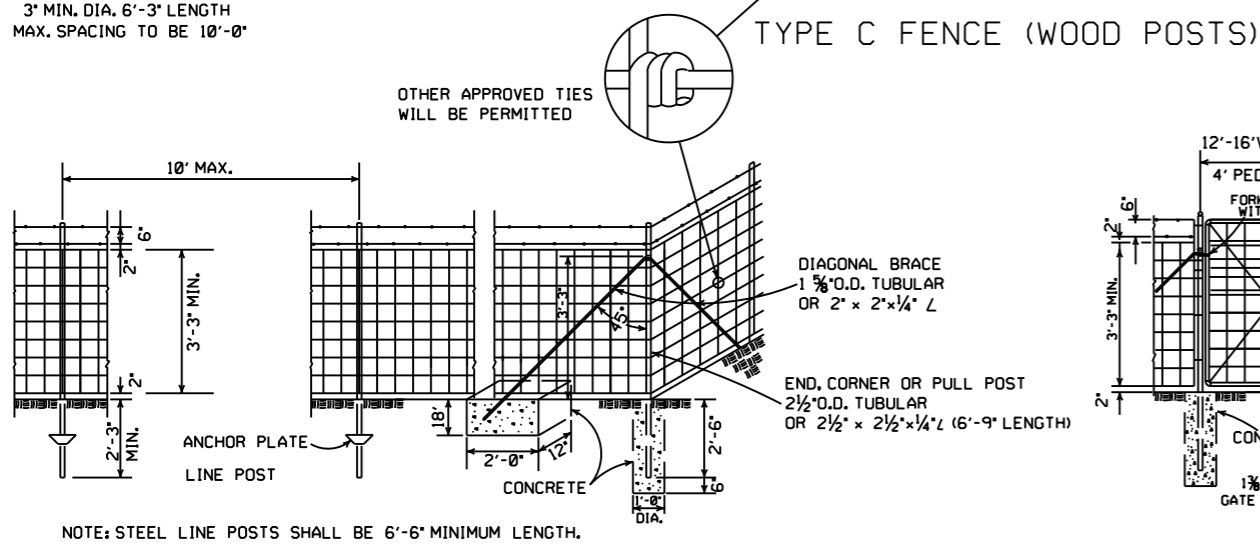
**GENERAL NOTES:**

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

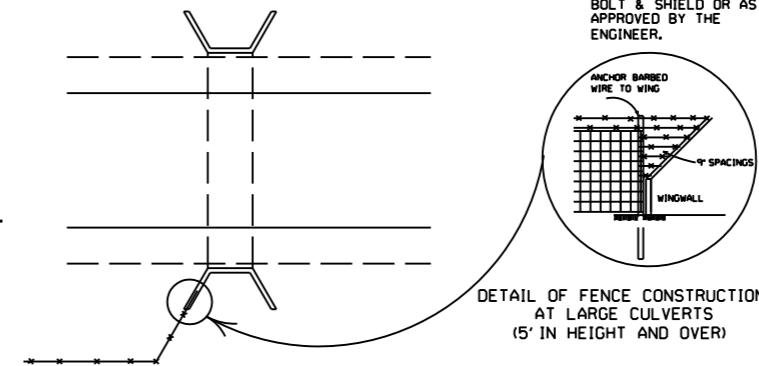
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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

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



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



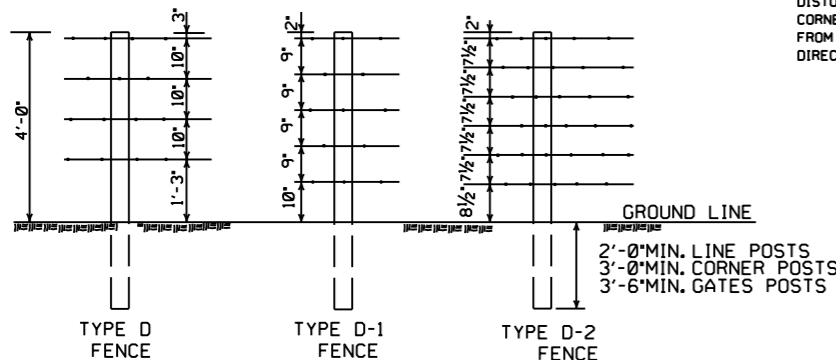
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF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

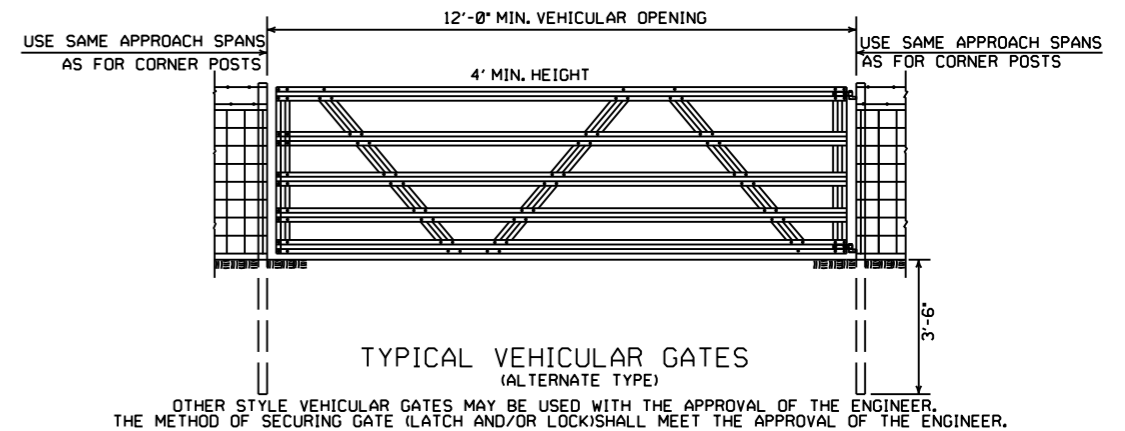
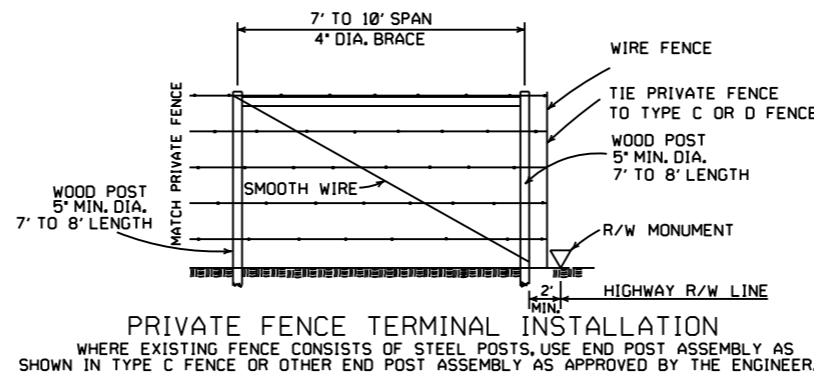
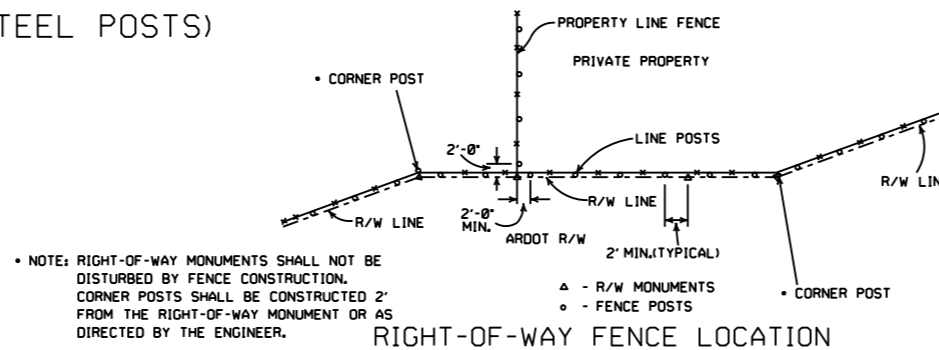
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

**TYPE C FENCE (STEEL POSTS)**

- 4 STRANDS BARBED WIRE (D)
- 5 STRANDS BARBED WIRE (D-1)
- 6 STRANDS BARBED WIRE (D-2)



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.



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

ARKANSAS STATE HIGHWAY COMMISSION

**WIRE FENCE**

**TYPE C AND D**

STANDARD DRAWING WF-4