

ARKANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD



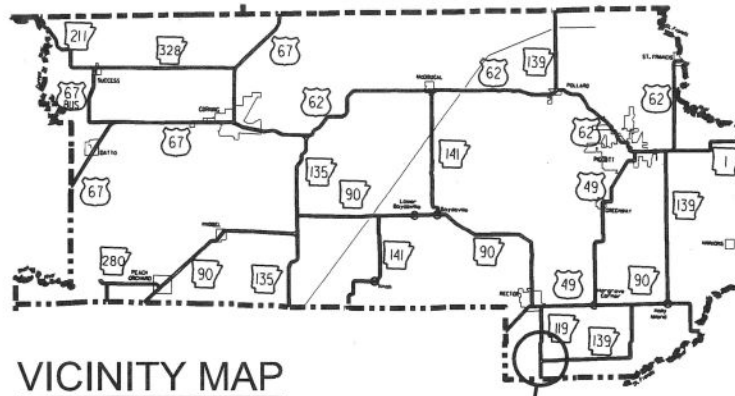
**WHITE WALNUT CREEK STR. & APPRS. NO. 2 (S)**

**CO. RD. 76 (CCR 502)**

**CLAY COUNTY  
JOB BR1113**

**FED. AID PROJECT STPB-0011(56)**

NOT TO SCALE



VICINITY MAP

PROJECT  
LOCATION



ARKANSAS HIGHWAY DISTRICT 10

DESIGN TRAFFIC DATA

|                          |        |
|--------------------------|--------|
| DESIGN YEAR              | 2043   |
| 2023 ADT                 | 200    |
| 2043 ADT                 | 280    |
| 2043 DHV                 | 42     |
| DIRECTIONAL DISTRIBUTION | 0.60   |
| TRUCKS                   | 7%     |
| DESIGN SPEED             | 40 MPH |

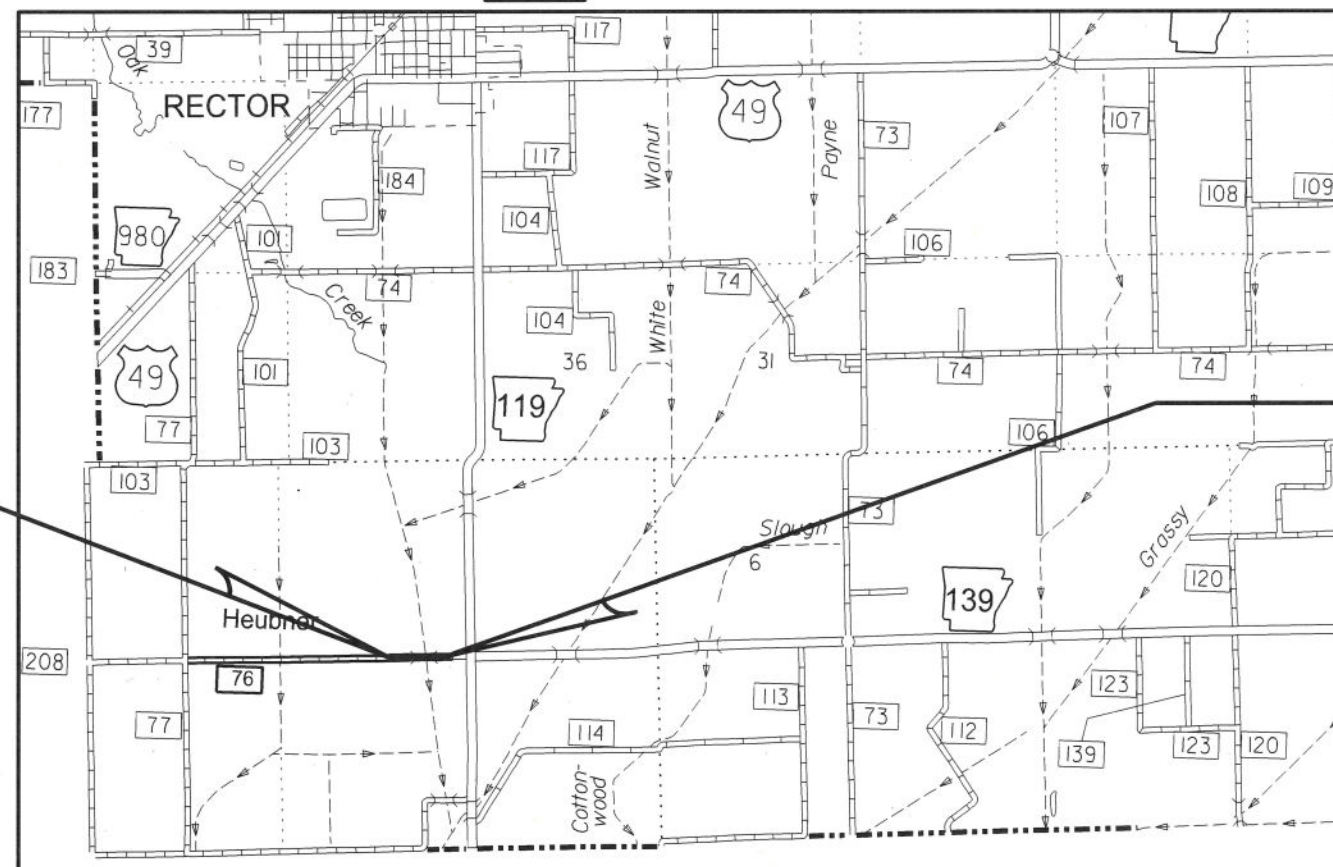
STA. 115+50.00  
END JOB BR1113

APPROVED



CHIEF ENGINEER - PRECONSTRUCTION

OCT 26 2023



STA. 104+00.00  
BEGIN JOB BR1113

**① STRUCTURE OVER 20' - 0" SPAN**

STATION 110+21  
QUAD 11' x 11' x 48'  
R.C. BOX CULVERT  
SPAN 47'- 8" CLEAR ROADWAY  
D.A.= 17.0 MI.  
Q25= 4240 CFS

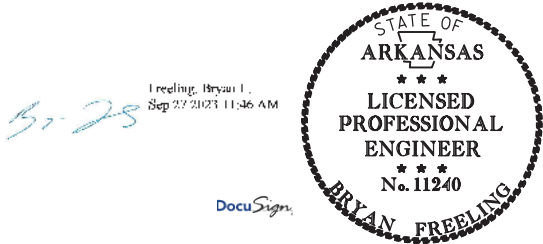
PROJECT COORDINATES:

|       | BEGIN         | MID-POINT     | END           |
|-------|---------------|---------------|---------------|
| LAT.  | N 36° 12' 54" | N 36° 12' 54" | N 36° 12' 54" |
| LONG. | W 90° 17' 30" | W 90° 17' 22" | W 90° 17' 16" |

| LENGTH OF PROJECT CALCULATED ALONG CL CONSTRUCTION |          |         |       |       |
|----------------------------------------------------|----------|---------|-------|-------|
| GROSS LENGTH OF PROJECT                            | 1150.000 | FEET OR | 0.218 | MILES |
| NET " " ROADWAY                                    | 1101.500 | " "     | 0.209 | "     |
| NET " " BRIDGE                                     | 47.667   | " "     | 0.009 | "     |
| NET " " PROJECT                                    | 1150.000 | " "     | 0.218 | "     |

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|-------|--------------------|--------------|-----------------|
|                 |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                 |                |                 |                | JOB NO.               |       | BR1113             | 2            | 26              |

4 INDEX OF SHEETS AND STANDARD DRAWINGS



INDEX OF SHEETS

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| 2 _____       | INDEX OF SHEETS AND STANDARD DRAWINGS      |
| 3 _____       | GOVERNING SPECIFICATIONS AND GENERAL NOTES |
| 4 _____       | TYPICAL SECTIONS OF IMPROVEMENT            |
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| 15 - 16 _____ | QUANTITIES                                 |
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| 18 - 20 _____ | SURVEY CONTROL DETAILS                     |
| 21 - 22 _____ | PLAN AND PROFILE SHEETS                    |
| 23 - 26 _____ | CROSS SECTIONS                             |

NOTE: CROSS SECTIONS NOT INCLUDED IN PROSPECTIVE BIDDERS' PLANS MAY BE OBTAINED UPON REQUEST.

ROADWAY STANDARD DRAWINGS

| DRWG. NO.   | TITLE                                                                   | DATE     |
|-------------|-------------------------------------------------------------------------|----------|
| 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 |
| RCB-1 _____ | REINFORCED CONCRETE BOX CULVERT DETAILS _____                           | 07-26-12 |
| RCB-2 _____ | EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS _____ | 11-20-03 |
| SHS-1 _____ | STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES _____                     | 09-12-13 |
| SHS-2 _____ | U-CHANNEL POST ASSEMBLIES _____                                         | 07-25-19 |
| TC-1 _____  | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION _____                | 11-07-19 |
| TC-2 _____  | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION _____                | 05-20-21 |
| TC-3 _____  | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION _____                | 08-12-21 |
| 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 |

INDEX OF SHEETS AND STANDARD DRAWINGS

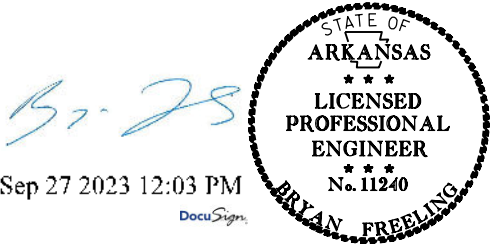
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|                 |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                 |                |                 |                | JOB NO.               |       | BR1113             | 3            | 26              |

4 GOVERNING SPECIFICATIONS & GENERAL NOTES

GOVERNING SPECIFICATIONS

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

| NUMBER     | TITLE                                                                                  |
|------------|----------------------------------------------------------------------------------------|
| ERRATA     | ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS                                         |
| FHWA-1273  | REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS                        |
| FHWA-1273  | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS                      |
| FHWA-1273  | SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)    |
| FHWA-1273  | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES                       |
| FHWA-1273  | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS                          |
| FHWA-1273  | SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS                     |
| FHWA-1273  | SUPPLEMENT - WAGE RATE DETERMINATION                                                   |
| 100-3      | CONTRACTOR'S LICENSE                                                                   |
| 100-4      | DEPARTMENT NAME CHANGE                                                                 |
| 102-2      | ISSUANCE OF PROPOSALS                                                                  |
| 105-4      | MAINTENANCE DURING CONSTRUCTION                                                        |
| 107-2      | RESTRAINING CONDITIONS                                                                 |
| 108-1      | LIQUIDATED DAMAGES                                                                     |
| 108-2      | WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER                                           |
| 110-1      | PROTECTION OF WATER QUALITY AND WETLANDS                                               |
| 210-1      | UNCLASSIFIED EXCAVATION                                                                |
| 303-1      | AGGREGATE BASE COURSE                                                                  |
| 306-1      | QUALITY CONTROL AND ACCEPTANCE                                                         |
| 400-1      | TACK COATS                                                                             |
| 400-2      | ASPHALT SURFACE TREATMENT                                                              |
| 400-7      | TRACKLESS TACK                                                                         |
| 501-2      | CEMENT                                                                                 |
| 604-1      | RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES             |
| 604-3      | TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)                                   |
| 606-1      | PIPE CULVERTS FOR SIDE DRAINS                                                          |
| 620-1      | MULCH COVER                                                                            |
| 621-1      | FILTER SOCKS                                                                           |
| 723-1      | GENERAL REQUIREMENTS FOR SIGNS                                                         |
| 729-1      | CHANNEL POST SIGN SUPPORT                                                              |
| 800-1      | STRUCTURES                                                                             |
| 802-4      | CEMENT                                                                                 |
| 804-2      | REINFORCING STEEL FOR STRUCTURES                                                       |
| JOB BR1113 | BIDDING REQUIREMENTS AND CONDITIONS                                                    |
| JOB BR1113 | BROADBAND INTERNET SERVICE FOR FIELD OFFICE                                            |
| JOB BR1113 | BUY AMERICA - CONSTRUCTION MATERIALS                                                   |
| JOB BR1113 | CARGO PREFERENCE ACT REQUIREMENTS                                                      |
| JOB BR1113 | CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS                                             |
| JOB BR1113 | CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS                                         |
| JOB BR1113 | DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES                            |
| JOB BR1113 | ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT                                      |
| JOB BR1113 | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION                              |
| JOB BR1113 | LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS                                          |
| JOB BR1113 | MANDATORY ELECTRONIC CONTRACT                                                          |
| JOB BR1113 | MANDATORY ELECTRONIC DOCUMENT SUBMITTAL                                                |
| JOB BR1113 | NESTING SITES OF MIGRATORY BIRDS                                                       |
| JOB BR1113 | OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS               |
| JOB BR1113 | PLASTIC PIPE                                                                           |
| JOB BR1113 | PRICE ADJUSTMENT FOR FUEL                                                              |
| JOB BR1113 | PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT |
| JOB BR1113 | SHORING FOR CULVERTS                                                                   |
| JOB BR1113 | SPECIAL CLEARING REQUIREMENTS                                                          |
| JOB BR1113 | STORM WATER POLLUTION PREVENTION PLAN                                                  |
| JOB BR1113 | TOTAL SOLAR ECLIPSE                                                                    |
| JOB BR1113 | UTILITY ADJUSTMENTS                                                                    |



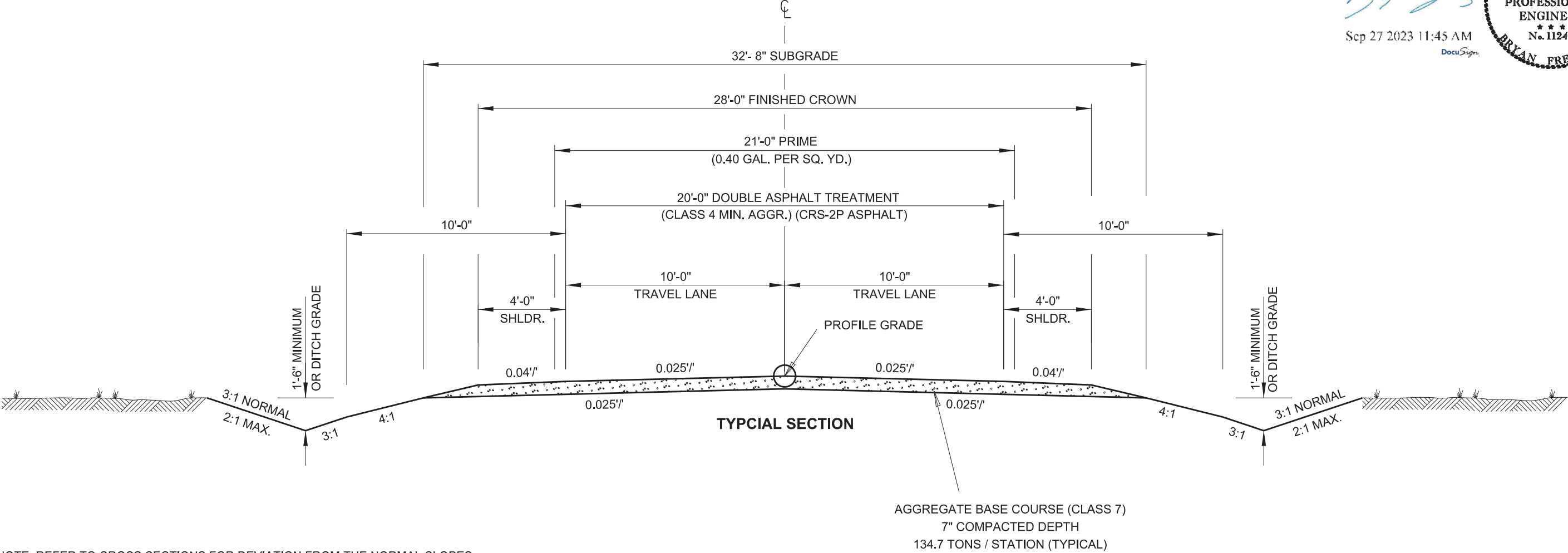
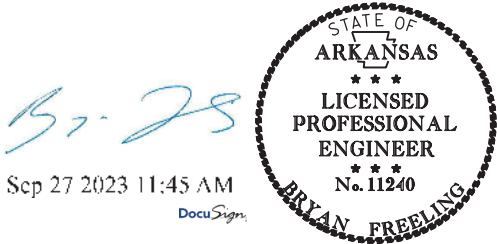
GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN IN PLANS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- 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.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR PERMIT REQUIREMENTS.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- TEMPORARY EASEMENTS ARE PROVIDED FOR CONTRACTOR ACCESS. AREAS OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE CLEARED OR GRUBBED UNLESS DIRECTED BY THE ENGINEER.
- THE ROAD WILL BE CLOSED TO THROUGH TRAFFIC UNTIL THE NEW BOX CULVERT IS COMPLETED AND OPEN TO TRAFFIC.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- THE 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.
- EXISTING BRIDGE NO. 21740 SHALL BE REMOVED IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS, EDITION 2014. THE MATERIAL FROM THE EXISTING BRIDGE WILL BECOME THE PROPERTY OF THE COUNTY.
- SUPPLYING UTILITY RISERS AND INSTALLATION OF PERMANENT TRAFFIC SAFETY SIGNS NOT SHOWN IN THE PLANS ARE THE RESPONSIBILITIES OF CLAY COUNTY.

GOVERNING SPECIFICATIONS AND GENERAL NOTES

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
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|                 |                |                 |                | 6                     | ARK.  |                    |              |                 |
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④ TYPICAL SECTIONS OF IMPROVEMENT



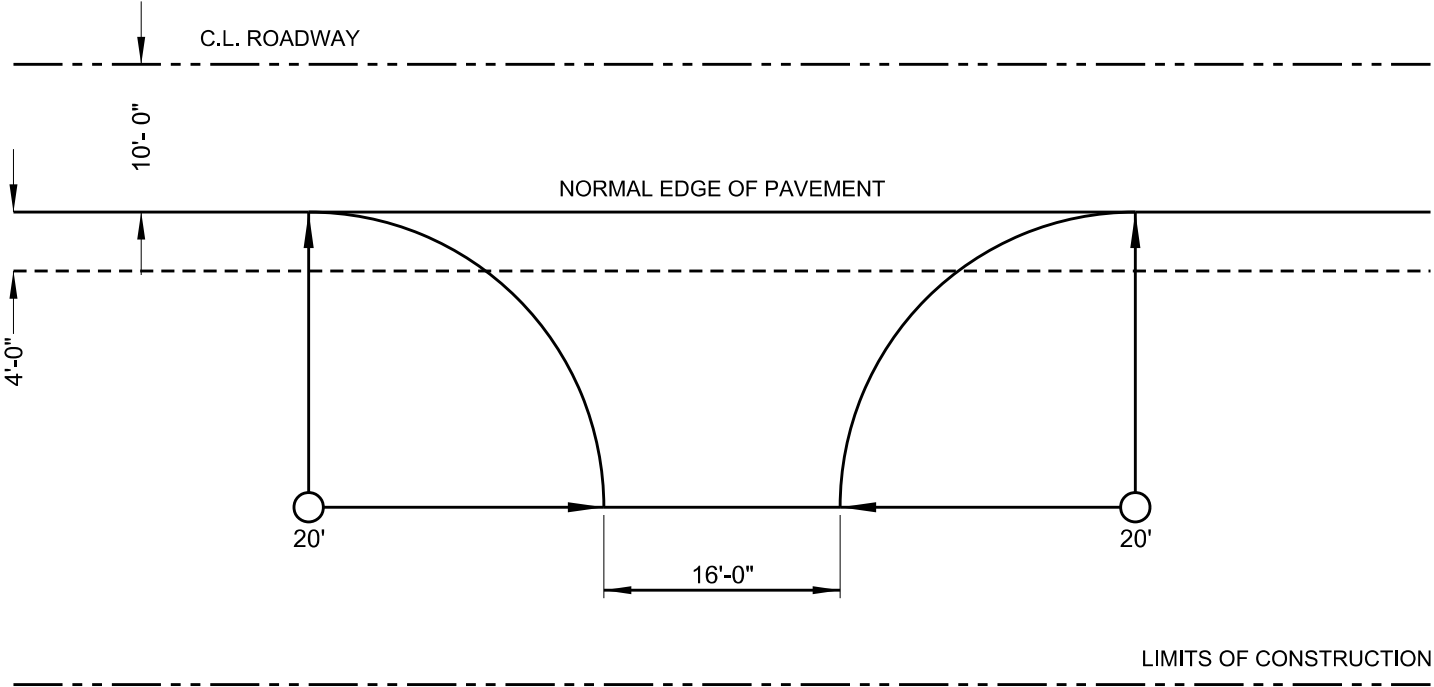
NOTE: REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES.  
NO CHANGE SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE  
APPROVAL OF THE ENGINEER.

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

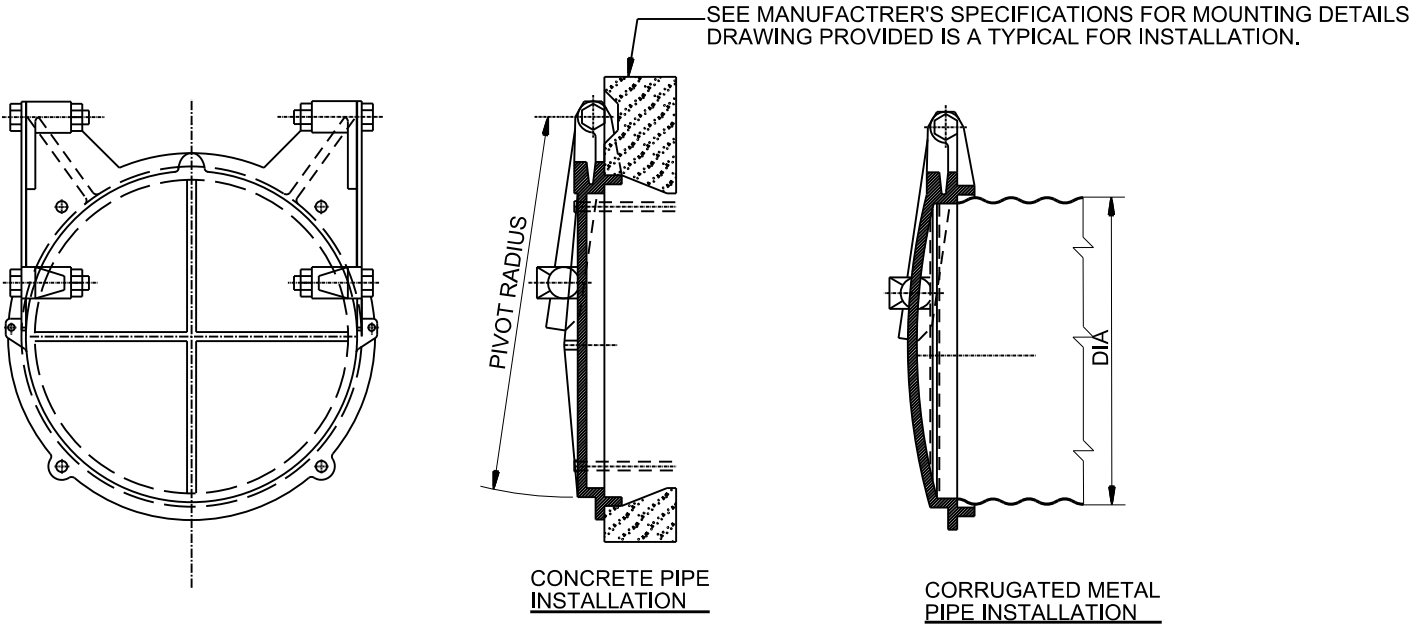
NOTE: DETAILS MAY BE MODIFIED TO MEET LOCAL  
CONDITIONS AS DIRECTED BY THE ENGINEER.

**TYPICAL SECTIONS OF IMPROVEMENT**

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



**TYPICAL DRIVEWAY**  
**ADDITIONAL SURFACING AREAS =**  
**STA. 111+92 RT. : 92.4 SQ. YD.**  
**STA. 113+24 RT. : 89.9 SQ. YD.**  
**STA. 114+19 RT. : 72.0 SQ. YD.**



**TYPICAL AUTOMATIC FLOODGATE DETAILS**

THE 30" FLOODGATE DIMENSIONS AND MOUNTING HARDWARE  
WILL BE AS REQUIRED BY THE MANUFACTURER'S SPECIFICATIONS.

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|-------|-----------------------|--------------|-----------------|
| 10-25-2023      |                |                 |                | 6                     | ARK.  |                       |              |                 |
|                 |                |                 |                |                       |       | JOB NO.               | BR1113       | 5               |
|                 |                |                 |                |                       |       |                       |              | 26              |
| SPECIAL DETAILS |                |                 |                |                       |       |                       |              |                 |

Oct 27 2023 3:41 PM  
DocuSign

STATE OF  
ARKANSAS  
\*\*\*  
LICENSED  
PROFESSIONAL  
ENGINEER  
No. 11240  
BRYAN FREELING

**SPECIAL DETAILS**

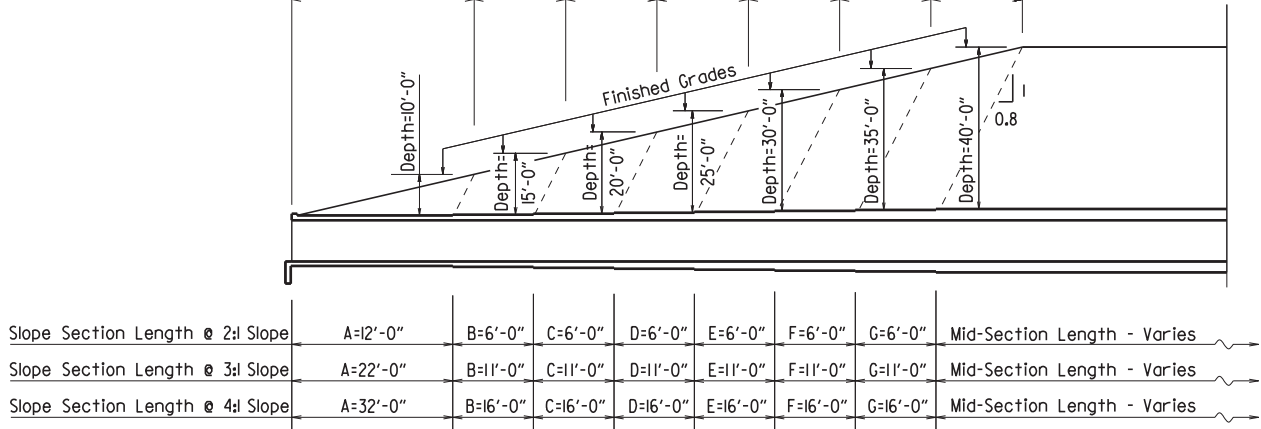
|           |        |        |        |        |        |        |        |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| 2:1 Slope | 20'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" |
| 3:1 Slope | 30'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0"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

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

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

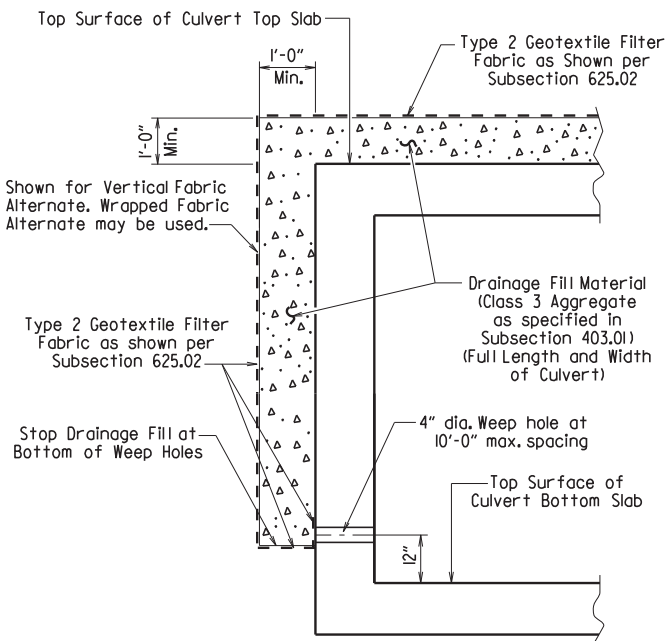
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1 SPECIAL DETAILS



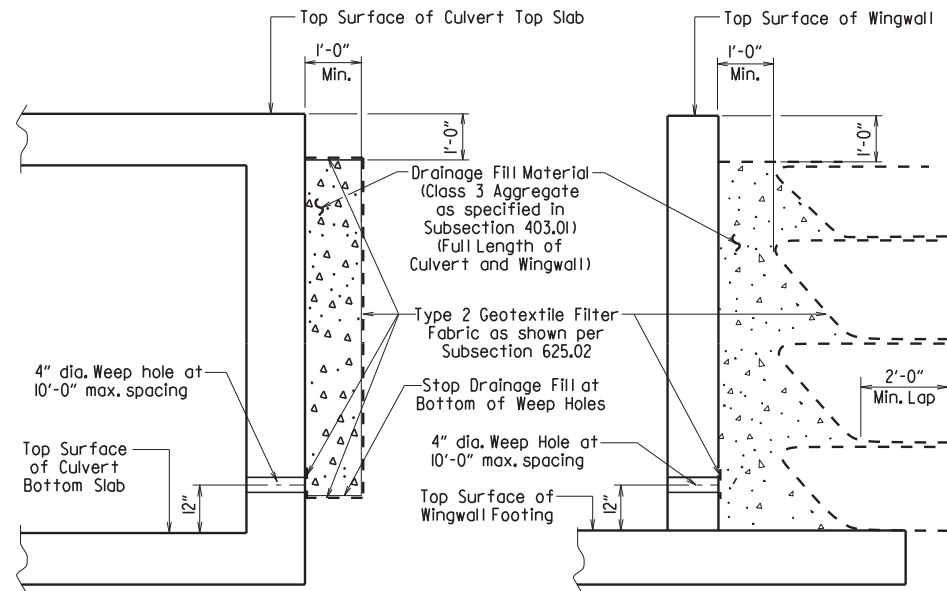
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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



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

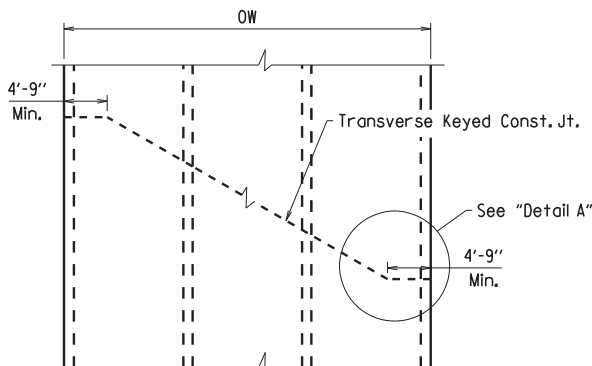
VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

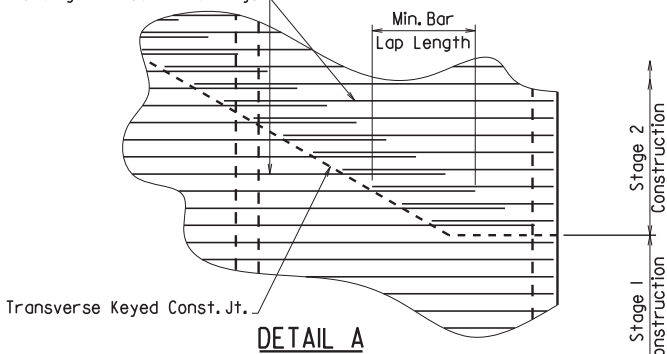
WINGWALL & CULVERT DRAINAGE DETAIL



SKewed TRANSVERSE JOINT DETAIL

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

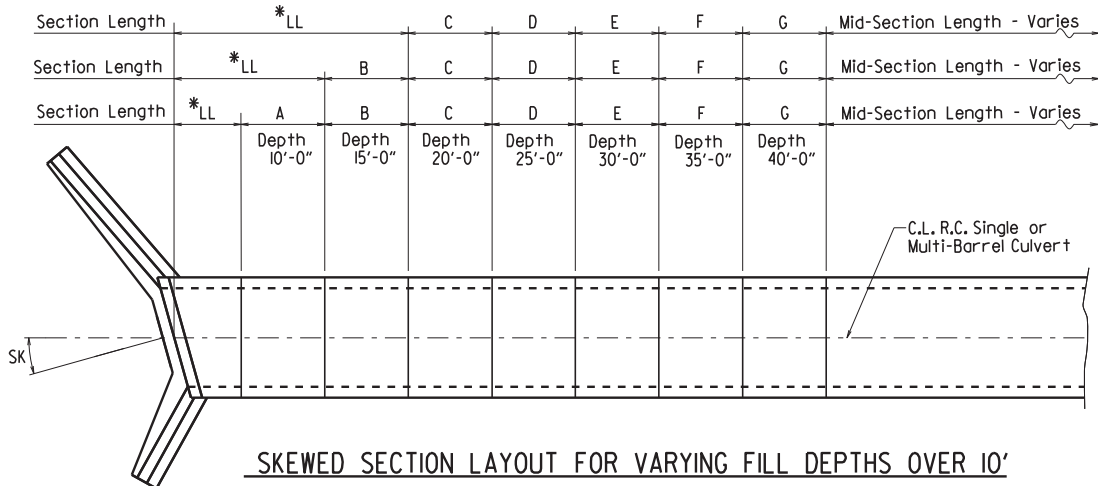
Slab bars "a", "b", "c", "d", "bl", or "f". Slab distribution and Wall reinforcing omitted for clarity.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.



SKewed SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

#### GENERAL NOTES:

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

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

**LIVE LOADING:** HL-93

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

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

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

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

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

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

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

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

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

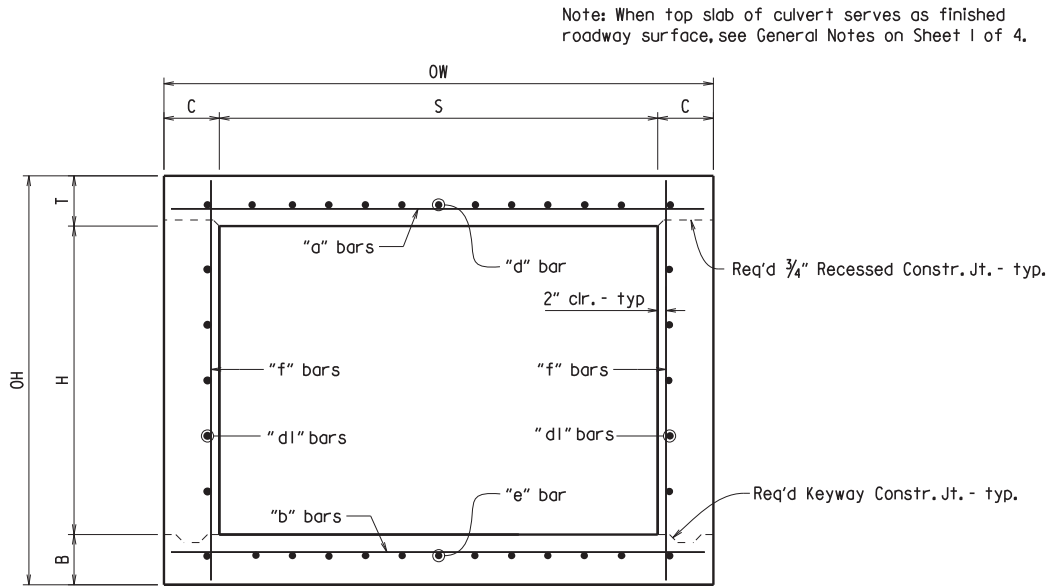
When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing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

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

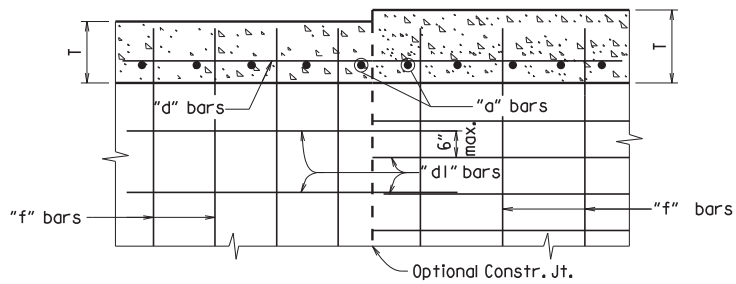


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1 SPECIAL DETAILS

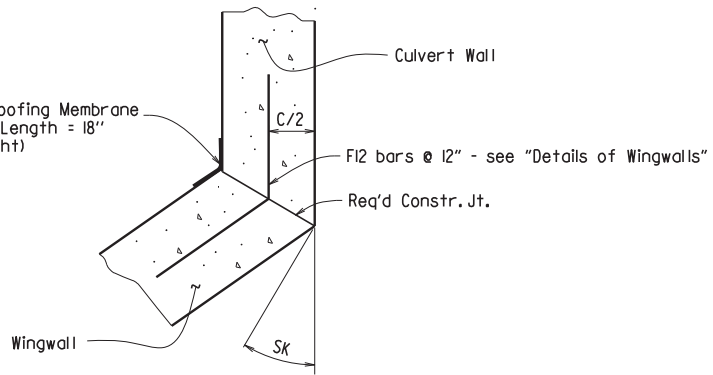


TYPICAL SECTION M-M

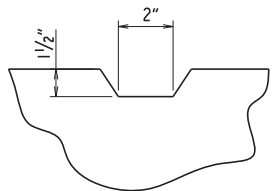


LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

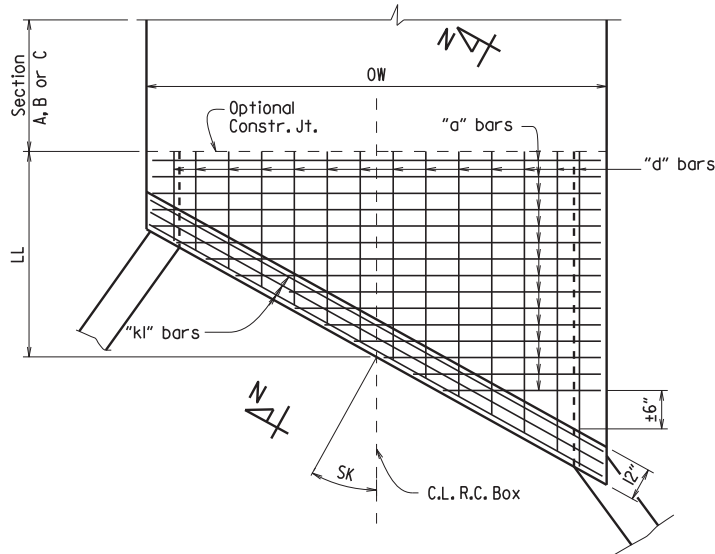
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



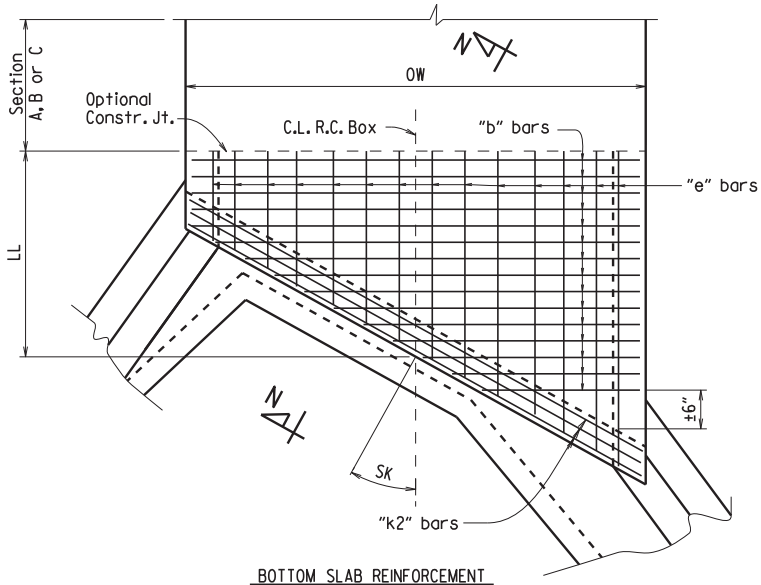
WINGWALL ATTACHMENT  
See "Details of Wingwalls" for additional information and wingwall details.



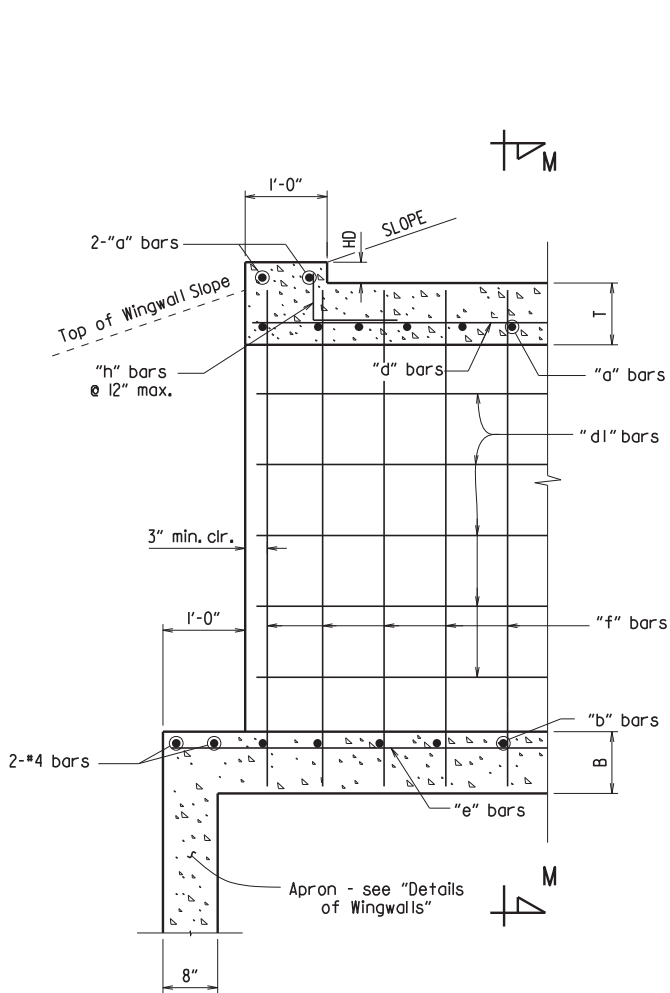
TYPICAL KEYWAY DETAIL  
(All Construction Joints)



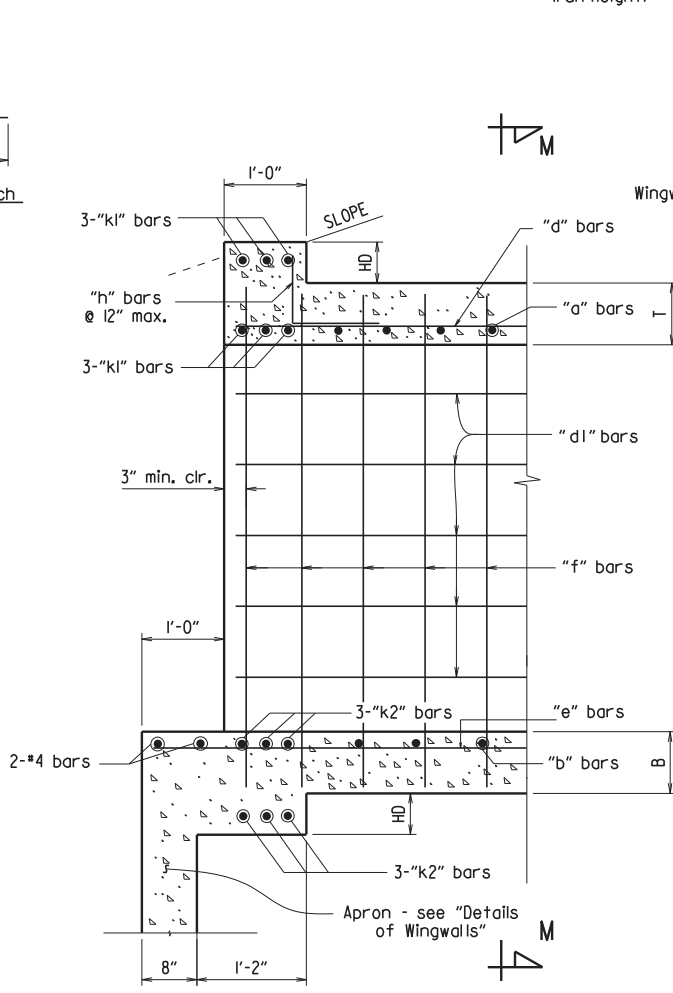
TOP SLAB REINFORCEMENT



BOTTOM SLAB REINFORCEMENT



PART LONGITUDINAL SECTION  
(Non-Skewed Ends)



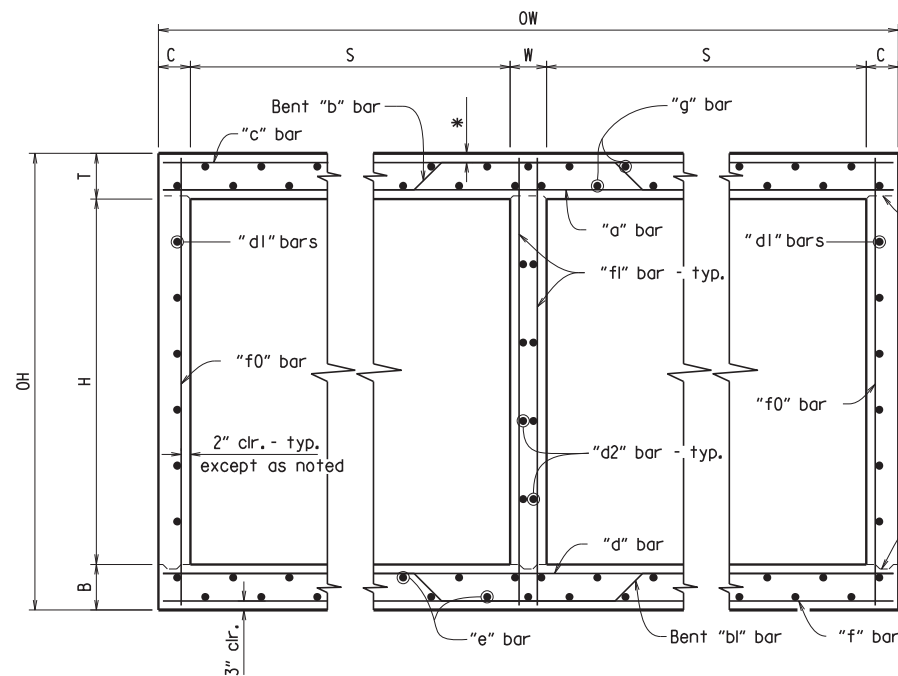
PART LONGITUDINAL SECTION N-N  
(Skewed Ends)

SKEWED END SECTION DETAILS  
SHEET 2 OF 5  
GENERAL DETAILS OF R.C. BOX CULVERT  
DETAILS OF SINGLE BARREL  
R.C. BOX CULVERT  
SPECIAL DETAILS



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

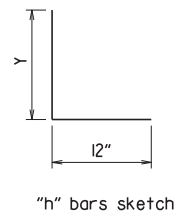
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



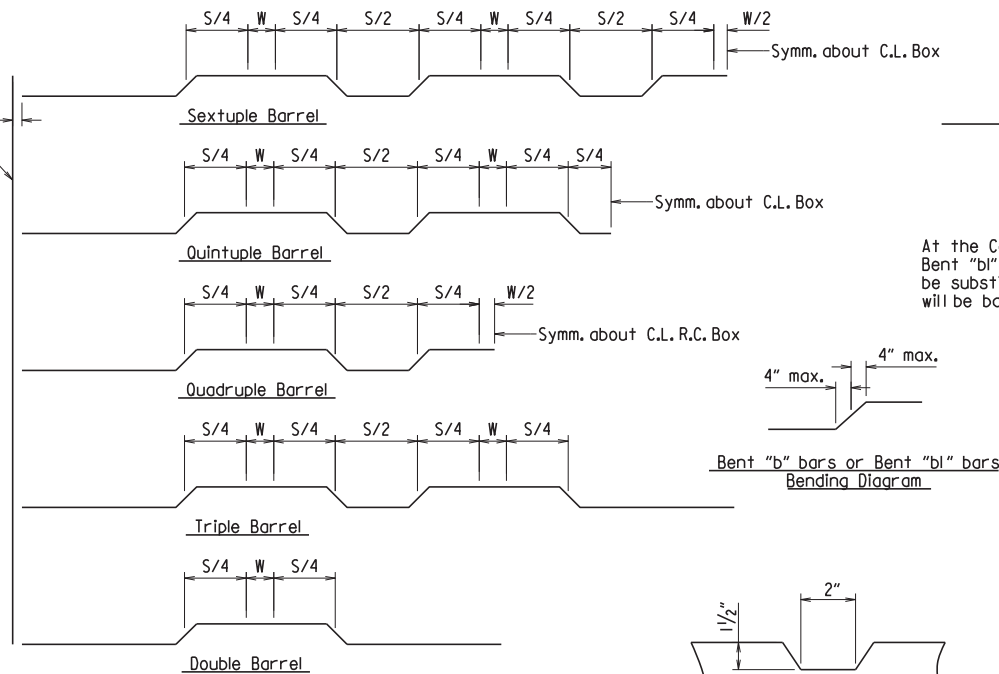
TYPICAL SECTION M-M

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

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



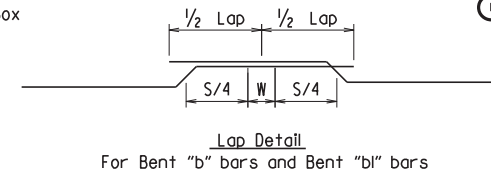
"h" bars sketch



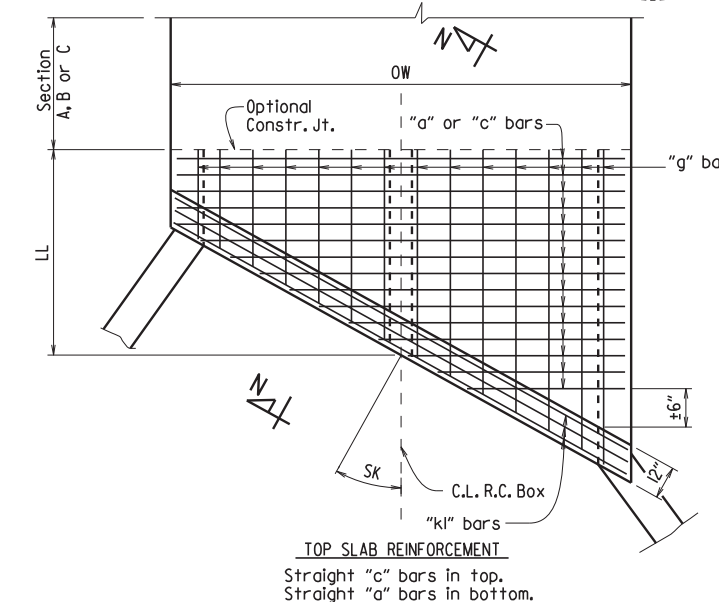
Bent "b" bars or Bent "bl" bars sketch

TYPICAL KEYWAY DETAIL  
(All Construction Joints)

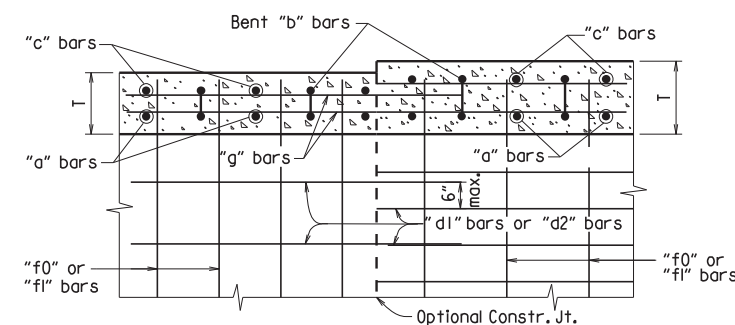
| DATE REVISED | DATE FILMED | REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|---------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |         |             | 6                   | ARK.  |                    |           |              |
|              |             |         |             | JOB NO.             | BR113 |                    | 8         | 26           |



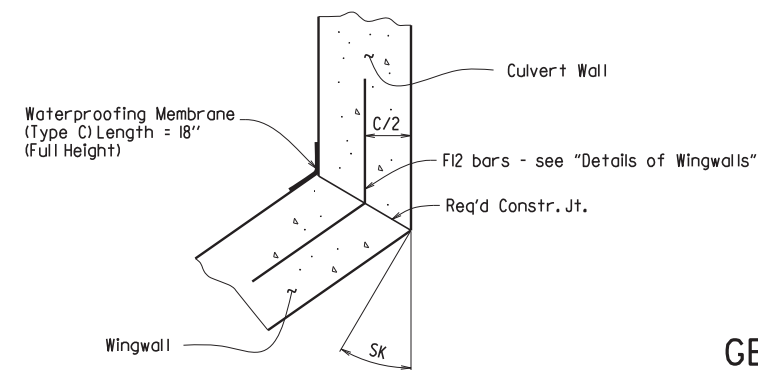
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



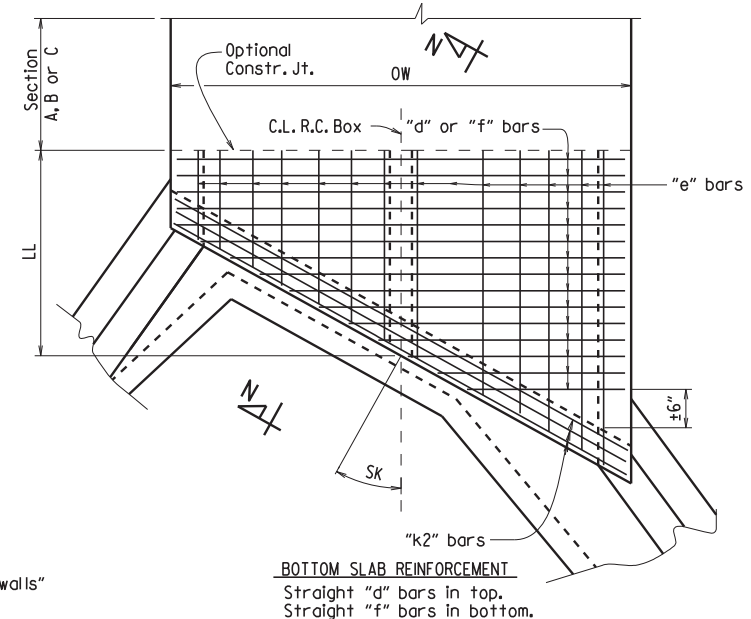
TOP SLAB REINFORCEMENT  
Straight "c" bars in top.  
Straight "a" bars in bottom.



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



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



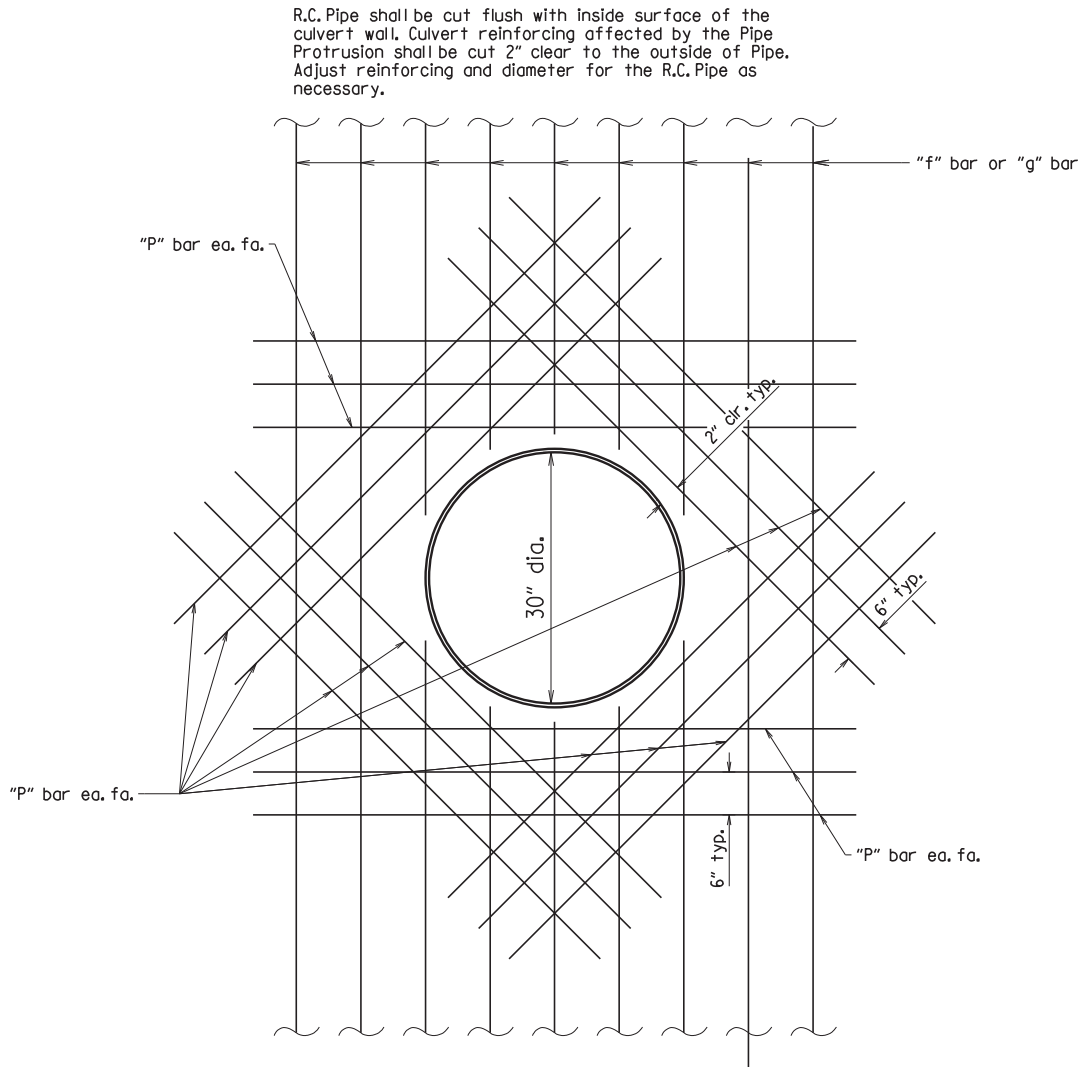
SKewed END SECTION DETAILS

SHEET 3 OF 5  
GENERAL DETAILS OF R.C. BOX CULVERT  
DETAILS OF MULTI-BARREL  
R.C. BOX CULVERT  
SPECIAL DETAILS





| DATE<br>REVISED   | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. ROAD<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-------------------|----------------|-----------------|----------------|------------------------|-------|--------------------|--------------|-----------------|
|                   |                |                 |                | 6                      | ARK.  |                    |              |                 |
|                   |                |                 |                | JOB NO.                |       | BR1113             | 10           | 26              |
| ① SPECIAL DETAILS |                |                 |                |                        |       |                    |              |                 |



R.C. PIPE PROTRUSION DETAIL

ADDITIONAL QUANTITIES FOR  
R.C. PIPE PROTRUSION  
(FOR INFORMATION ONLY)

| BAR SIZE, "P" | NO. REQ'D | BAR LENGTH | REINFORCING<br>STEEL (GR. 60)<br>(LBS) |
|---------------|-----------|------------|----------------------------------------|
| #5            | 144       | 6'-0"      | 901                                    |



|  | R.C. BOX SECTION |   | DESIGN DATA             |    |                  |      |                    |    |               |        | 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 |             |           |      |             |           |
|--|------------------|---|-------------------------|----|------------------|------|--------------------|----|---------------|--------|----------------------------|---|----------------|---|--------------------|---|----------------|-----------|-------------------------------|---|----------------------|---|--------------------------|---|---------|-----------|-----------------------------|---------|-----------|--------|---------------------------------|---------|-----------|--------|------------------------------------|---------|-----------|---------------------------------------|-------------|-----------|-------------------------------------|-------------|-----------|-----------------------------------------|-------------|-----------|------|-------------|-----------|
|  |                  |   | 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.) |   | LENGTH = OW - 4' + BENDS |   |         |           | LENGTH = OW - 4' + BENDS    |         |           |        | LENGTH = OH - 4'                |         |           |        | LENGTH = OH - 4'                   |         |           |                                       | LENGTH = SL |           |                                     | LENGTH = SL |           |                                         | LENGTH = SL |           |      | LENGTH = SL |           |
|  | D                | S | H                       | T  | B                | C    | W                  | OW | OH            | SL     | SIZE                       | L | SIZE           | L | SIZE               | L | SPACING        | NO. REQ'D | SIZE                          | L | SIZE                 | L | SIZE                     | L | SPACING | NO. REQ'D | SIZE                        | SPACING | NO. REQ'D | LENGTH | SIZE                            | SPACING | NO. REQ'D | LENGTH | SIZE                               | SPACING | NO. REQ'D | SIZE                                  | SPACING     | NO. REQ'D | SIZE                                | SPACING     | NO. REQ'D | SIZE                                    | SPACING     | NO. REQ'D | SIZE | SPACING     | NO. REQ'D |
|  | A                | 2 | 11                      | 11 | 14.5             | 14.5 | 10                 | 8  | 47'-8"        | 13'-5" | 48                         | 4 | 47'-4"         | 8 | 48'-9"             | 8 | 47'-4"         | 20        | 28                            | 4 | 47'-4"               | 5 | 48'-8"                   | 4 | 47'-4"  | 12        | 48                          | 6       | 5         | 230    | 13'-1"                          | 5       | 12        | 288    | 13'-1"                             | 4       | 7.5       | 151                                   | 4           | 7.5       | 151                                 | 4           | 11        | 24                                      | 4           | 12        | 66   |             |           |

|        |          |                               |
|--------|----------|-------------------------------|
| 276.49 | CU. YDS. | CLASS "S"<br>CONCRETE         |
| 36215  | LBS.     | REINFORCING<br>STEEL (GR. 60) |

SHEET 1 OF 2  
DETAILS OF R.C. BOX CULVERT  
QUADRUPLE BARREL BOX CULVERT  
Sta. 110+21

[illegible]

|      |          |                               |
|------|----------|-------------------------------|
|      | CU. YDS. | CLASS "S"<br>CONCRETE         |
|      | LBS.     | REINFORCING<br>STEEL (GR. 60) |
|      |          |                               |
|      |          |                               |
|      |          |                               |
|      |          |                               |
|      |          |                               |
|      |          |                               |
|      | TOTAL    |                               |
| 0.44 | 131      |                               |

| Design Fill Depth | Range of Actual Fill Depth |
|-------------------|----------------------------|
| 2                 | 0.0 ft - 2.0 ft            |
| 5                 | >2.0 ft - 5.0 ft           |
| 10                | >5.0 ft - 10.0 ft          |
| 15                | >10.0 ft - 15.0 ft         |
| 20                | >15.0 ft - 20.0 ft         |
| 25                | >20.0 ft - 25.0 ft         |
| 30                | >25.0 ft - 30.0 ft         |
| 35                | >30.0 ft - 35.0 ft         |
| 40                | >35.0 ft - 40.0 ft         |

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

[illegible]

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

| 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 WING WALLS |        | 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 |                        |        |                                     |                                                         |
|                |              |              |                |                 |       |             |       |             |             |                         |        |                           |                                |        |                                      |        |                      |        |                        |        |                                     |                                                         |
|                |              |              |                |                 |       |             |       |             |             |                         |        |                           |                                |        |                                      |        |                      |        |                        |        |                                     |                                                         |
| OW             | H            | WB           | CW             | SK              | SL    | K           | HL    | WH1         | WH2         | AF1                     | AF2    | WE                        | WF1                            | WF2    | G1                                   | G2     | W1                   | W2     | W3                     | W4     | CU.YD                               | LBS.                                                    |
| 47'-8"         | 11'-0"       | 1'-0"        | 0'-11"         | 0               | 3:1   | 46'-0"      | 2'-0" | 11'-10"     | 11'-10"     | 0                       | 0      | 5'-3"                     | 5'-3"                          | 5'-3"  | 2'-4"                                | 2'-4"  | 22'-0"               | 22'-0" | 22'-0"                 | 22'-0" | 29.82                               | 2570                                                    |

| WING   | F1       |              |           |                               | F2       |         |           |             | F3       |         |           |         | F4       |         |           |         | F5       |         |           |         | F6       |           |         |                                 | F7      |           | F8      |          | F9        |         |               |           | F10     |          | F11           |         | F12 |        | REINF. STEEL QTY. PER WING (LBS) |   |        |   |    |            |            |      |
|--------|----------|--------------|-----------|-------------------------------|----------|---------|-----------|-------------|----------|---------|-----------|---------|----------|---------|-----------|---------|----------|---------|-----------|---------|----------|-----------|---------|---------------------------------|---------|-----------|---------|----------|-----------|---------|---------------|-----------|---------|----------|---------------|---------|-----|--------|----------------------------------|---|--------|---|----|------------|------------|------|
|        | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY                  | BAR SIZE | SPACING | NO. REQ'D | LENGTHS     | BAR SIZE | SPACING | NO. REQ'D | LENGTHS | BAR SIZE | SPACING | NO. REQ'D | LENGTHS | BAR SIZE | SPACING | NO. REQ'D | LENGTHS | BAR SIZE | NO. REQ'D | LENGTHS | BAR SIZE                        | SPACING | NO. REQ'D | LENGTHS | BAR SIZE | NO. REQ'D | LENGTHS | BAR SIZE      | NO. REQ'D | LENGTHS | BAR SIZE | NO. REQ'D     | LENGTHS |     |        |                                  |   |        |   |    |            |            |      |
|        |          |              |           |                               |          |         |           |             |          |         |           |         |          |         |           |         |          |         |           |         |          |           |         |                                 |         |           |         |          |           |         |               |           |         |          |               |         |     |        |                                  |   |        |   |    |            |            |      |
|        |          |              |           |                               |          |         |           |             |          |         |           |         |          |         |           |         |          |         |           |         |          |           |         |                                 |         |           |         |          |           |         |               |           |         |          |               |         |     |        |                                  |   |        |   |    |            |            |      |
| WING A | 4        | 12           | 22        | L<br>Min 15'-3"<br>Max 15'-3" | 5        | 12      | 21        | L<br>15'-3" |          |         |           | L       |          |         |           | Min     | 4        | 18      | 16        | 21'-8"  | 4        | 18        | 15      | L<br>Min 14'-11"<br>Max 14'-11" | 4       | 8         | 21'-8"  | 4        | 18        | 15      | Min<br>4'-11" | 4         | 18      | 2        | Min<br>23'-7" | 4       | 2   | 21'-8" | 4                                | 2 | 23'-7" | 6 | 12 | 11         | L<br>3'-4" | 1285 |
|        |          |              | X         | Min 2'-11"<br>Max 2'-11"      |          |         | X         | 2'-11"      |          |         |           | X       |          |         |           | Max     |          |         |           | 21'-8"  |          |           |         | X<br>Min 2'-7"<br>Max 2'-7"     |         |           |         | 4        | 18        | 15      | Max<br>2'-7"  |           |         |          | Max<br>23'-7" |         |     |        | 4                                | 2 | 23'-7" |   |    | X<br>1'-8" |            | 1285 |
| WING B | 4        | 12           | 22        | L<br>Min 15'-3"<br>Max 15'-3" | 5        | 12      | 21        | L<br>15'-3" |          |         |           | L       |          |         |           | Min     | 4        | 18      | 16        | 21'-8"  | 4        | 18        | 15      | L<br>Min 14'-11"<br>Max 14'-11" | 4       | 8         | 21'-8"  | 4        | 18        | 15      | Min<br>4'-11" | 4         | 18      | 2        | Min<br>23'-7" | 4       | 2   | 21'-8" | 4                                | 2 | 23'-7" | 6 | 12 | 11         | L<br>3'-4" | 1285 |
|        |          |              | X         | Min 2'-11"<br>Max 2'-11"      |          |         | X         | 2'-11"      |          |         |           | X       |          |         |           | Max     |          |         |           | 21'-8"  |          |           |         | X<br>Min 2'-7"<br>Max 2'-7"     |         |           |         | 4        | 18        | 15      | Max<br>2'-7"  |           |         |          | Max<br>23'-7" |         |     |        | 4                                | 2 | 23'-7" |   |    | X<br>1'-8" |            | 1285 |

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

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

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

TABULAR DATA BY: DPT DATE: 8/31/2023  
CHECKED BY: BAB DATE: 9/19/2023



## MID-SECTION

## BAR LAP TABLE

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.

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. ROAD<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|------------------------|-------|--------------------|--------------|-----------------|
|                 |                |                 |                | 6                      | ARK.  |                    |              |                 |
|                 |                |                 |                | JOB NO.                |       | BR1113             | 11           | 26              |

①

## SPECIAL DETAILS

|                        |       |                    |              |                 |
|------------------------|-------|--------------------|--------------|-----------------|
| FED. ROAD<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
| 6                      | ARK.  |                    |              |                 |
| JOB NO.                | BR113 |                    | 11           | 26              |
| SPECIAL DETAILS        |       |                    |              |                 |

OUTLET SLOPE SECTION(S)

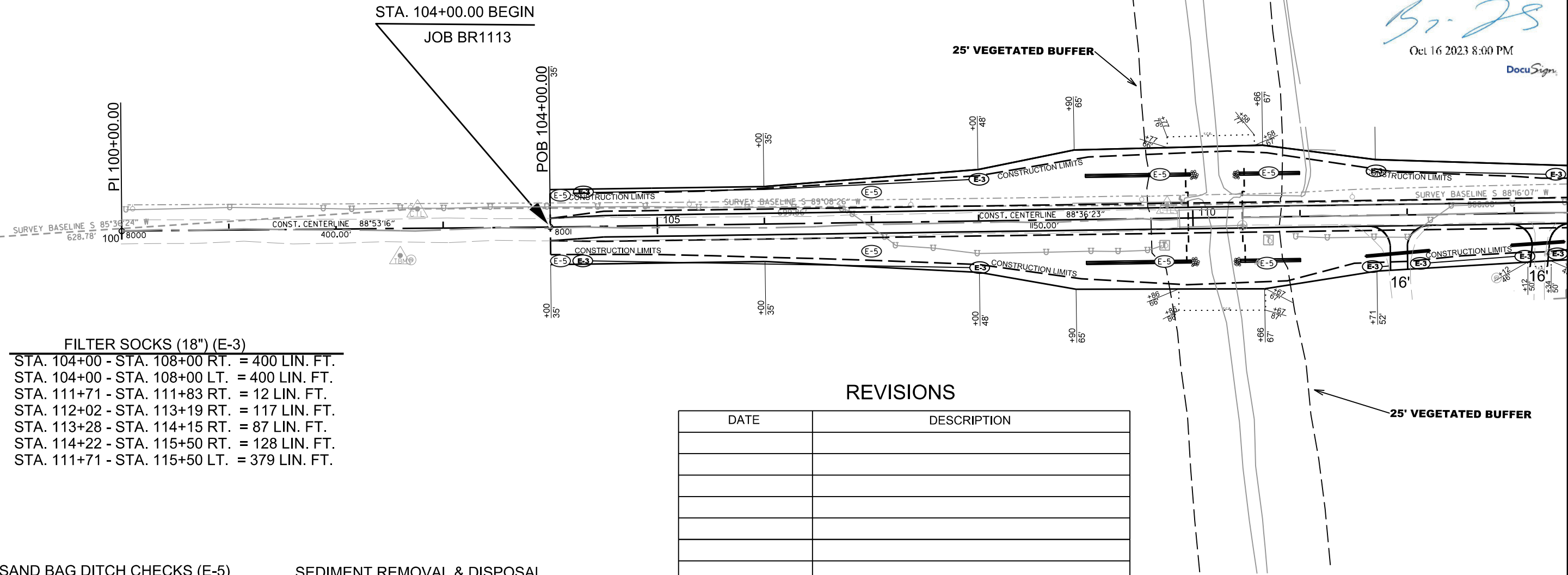
| R.C. BOX SECTION |  | DESIGN FILL DEPTH (FT.)  |  | CLEAR SPAN (FT.)         |  | CLEAR HEIGHT (FT.) |  | TOP SLAB THK. | BOTTOM SLAB THK | SIDE WALL THK | INTERIOR WALL THK. | OVER ALL WIDTH   | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL |                  |         |           |      |             |           |        | BOTTOM SLAB REINFORCING STEEL |             |           |        |      |             |           |      | SIDE WALL REINFORCING STEEL "f0" |             |      |         | INTERIOR WALL REINFORCING STEEL "f1" |      |         |           | TOP SLAB DISTRIBUTION REINF. STEEL "g" |         |           |      | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" |           |      |         | SIDE WALL DISTRIBUTION REINF. STEEL "d1" |      |         |           | INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |
|------------------|--|--------------------------|--|--------------------------|--|--------------------|--|---------------|-----------------|---------------|--------------------|------------------|-----------------|----------------------|----------------------------|------------------|---------|-----------|------|-------------|-----------|--------|-------------------------------|-------------|-----------|--------|------|-------------|-----------|------|----------------------------------|-------------|------|---------|--------------------------------------|------|---------|-----------|----------------------------------------|---------|-----------|------|-------------------------------------------|-----------|------|---------|------------------------------------------|------|---------|-----------|----------------------------------------------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|
|                  |  | LENGTH = OW - 4" + BENDS |  | LENGTH = OW - 4" + BENDS |  |                    |  |               |                 |               |                    | LENGTH = OH - 4" |                 |                      |                            | LENGTH = OH - 4" |         |           |      | LENGTH = SL |           |        |                               | LENGTH = SL |           |        |      | LENGTH = SL |           |      |                                  | LENGTH = SL |      |         |                                      |      |         |           |                                        |         |           |      |                                           |           |      |         |                                          |      |         |           |                                              |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |           |      |         |
|                  |  | "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     | NO. REQ'D | SIZE | SPACING                          | NO. REQ'D   | SIZE | SPACING | NO. REQ'D                            | SIZE | SPACING | NO. REQ'D | SIZE                                   | SPACING | NO. REQ'D | SIZE | SPACING                                   | NO. REQ'D | SIZE | SPACING | NO. REQ'D                                | SIZE | SPACING | NO. REQ'D | SIZE                                         | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST. NO. | STATE                     | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|-------------------|---------------------------|------------------|-----------|--------------|
| 10-11-2023   |             |              |             | 6                 | ARK.                      |                  |           |              |
|              |             |              |             | JOB NO.           |                           | BR1113           | 13        | 26           |
|              |             |              |             | ④                 | TEMPORARY EROSION CONTROL |                  |           |              |

- E-5 SAND BAG DITCH CHECKS
- E-3 FILTER SOCKS (18")



Oct 16 2023 8:00 PM  
DocuSign



- FILTER SOCKS (18") (E-3)
- STA. 104+00 - STA. 108+00 RT. = 400 LIN. FT.
- STA. 104+00 - STA. 108+00 LT. = 400 LIN. FT.
- STA. 111+71 - STA. 111+83 RT. = 12 LIN. FT.
- STA. 112+02 - STA. 113+19 RT. = 117 LIN. FT.
- STA. 113+28 - STA. 114+15 RT. = 87 LIN. FT.
- STA. 114+22 - STA. 115+50 RT. = 128 LIN. FT.
- STA. 111+71 - STA. 115+50 LT. = 379 LIN. FT.

| SAND BAG DITCH CHECKS (E-5) |                     | SEDIMENT REMOVAL & DISPOSAL |
|-----------------------------|---------------------|-----------------------------|
| STA. 104+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |
| STA. 107+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |
| STA. 109+60                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |
| STA. 110+80                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |
| STA. 113+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |
| STA. 115+50                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |

REVISIONS

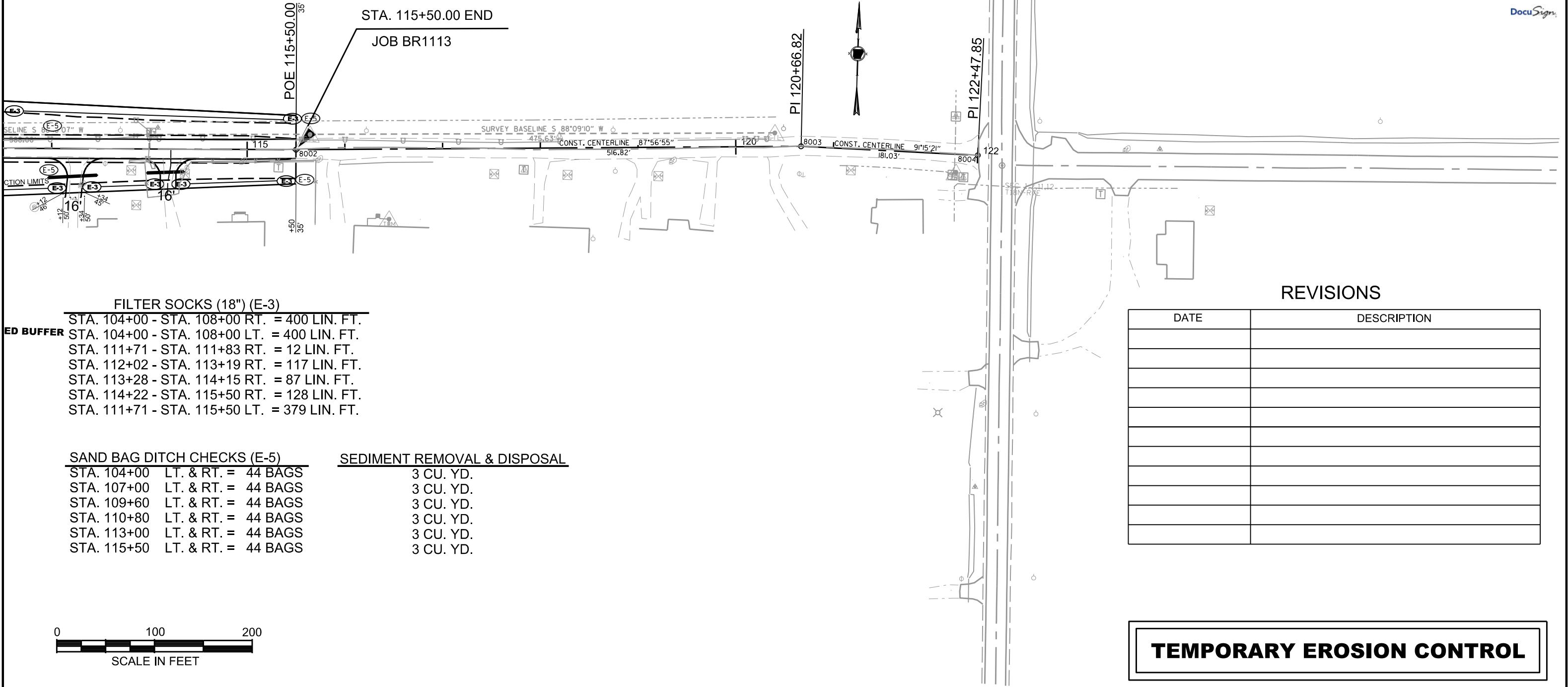
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TEMPORARY EROSION CONTROL

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST. NO. | STATE                     | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|-------------------|---------------------------|------------------|-----------|--------------|
| 10-11-2023   |             |              |             | 6                 | ARK.                      |                  |           |              |
|              |             |              |             | JOB NO.           |                           | BR1113           | 14        | 26           |
|              |             |              |             | ④                 | TEMPORARY EROSION CONTROL |                  |           |              |



*Bryan Freeling*  
Oct 16 2023 8:00 PM  
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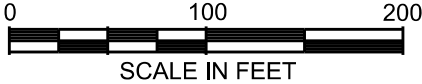
REVISIONS

| DATE | DESCRIPTION |
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TEMPORARY EROSION CONTROL

| FILTER SOCKS (18") (E-3)      |                |
|-------------------------------|----------------|
| STA. 104+00 - STA. 108+00 RT. | = 400 LIN. FT. |
| STA. 104+00 - STA. 108+00 LT. | = 400 LIN. FT. |
| STA. 111+71 - STA. 111+83 RT. | = 12 LIN. FT.  |
| STA. 112+02 - STA. 113+19 RT. | = 117 LIN. FT. |
| STA. 113+28 - STA. 114+15 RT. | = 87 LIN. FT.  |
| STA. 114+22 - STA. 115+50 RT. | = 128 LIN. FT. |
| STA. 111+71 - STA. 115+50 LT. | = 379 LIN. FT. |

| SAND BAG DITCH CHECKS (E-5) |                     | SEDIMENT REMOVAL & DISPOSAL |  |
|-----------------------------|---------------------|-----------------------------|--|
| STA. 104+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |
| STA. 107+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |
| STA. 109+60                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |
| STA. 110+80                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |
| STA. 113+00                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |
| STA. 115+50                 | LT. & RT. = 44 BAGS | 3 CU. YD.                   |  |



④

| STATION        | STATION | DESCRIPTION              | LENGTH | AGGREGATE<br>BASE<br>COURSE<br>(CLASS 7) | PRIME COAT |        | DOUBLE ASPHALT SURFACE TREATMENT |                |                                   |                     |
|----------------|---------|--------------------------|--------|------------------------------------------|------------|--------|----------------------------------|----------------|-----------------------------------|---------------------|
|                |         |                          |        |                                          |            |        | TOTAL<br>WIDTH                   | SQUARE<br>YARD | MINERAL<br>AGGREGATE<br>(CLASS 4) | ASPHALT<br>(CRS-2P) |
|                |         |                          | FEET   |                                          |            |        | TON                              | SQ YD.         | GAL.                              | FEET                |
| 104+00         | 115+50  | ENTIRE PROJECT           | 1150   | 1549.1                                   | 2683.3     | 1073.3 | 20                               | 2555.6         | 83.1                              | 1916.7              |
|                | 111+92  | DRIVEWAY                 | 40     | 37.7                                     | 102.2      | 40.9   | 16                               | 92.4           | 3.0                               | 69.3                |
|                | 113+24  | DRIVEWAY                 | 40     | 36.7                                     | 99.7       | 39.9   | 16                               | 89.9           | 2.9                               | 67.4                |
|                | 114+21  | DRIVEWAY                 | 31     | 29.4                                     | 80.6       | 32.2   | 16                               | 72.0           | 2.3                               | 54.0                |
| ENTIRE PROJECT |         | * MAINTENANCE OF TRAFFIC |        | 300.0                                    |            |        |                                  |                |                                   |                     |
| TOTALS:        |         |                          |        | 1952.9                                   |            | 1186.3 |                                  |                | 91.3                              | 2107.4              |
| USE:           |         |                          |        | 1953                                     |            | 1186   |                                  |                | 91                                | 2107                |

| STATION    | SIDE      | STANDARD SIGN NO. |         |       |         |      |         | SUPPORT ASSEMBLIES |        | STANDARD<br>DRAWING NUMBER |
|------------|-----------|-------------------|---------|-------|---------|------|---------|--------------------|--------|----------------------------|
|            |           | OM-3L             |         | OM-3R |         | R1-1 |         | TYPE A             | TYPE C |                            |
|            |           | NO.               | SQ. FT. | NO.   | SQ. FT. | NO.  | SQ. FT. |                    |        |                            |
| 109+95     | LT. & RT. | 1                 | 3.00    | 1     | 3.00    |      |         |                    | 2      | SHS-1 & SHS-2              |
| 110+44     | LT. & RT. | 1                 | 3.00    | 1     | 3.00    |      |         |                    | 2      | SHS-1 & SHS-2              |
| END OF JOB |           |                   |         |       |         | 1    | 6.25    | 1                  |        | SHS-1 & SHS-2              |
|            |           |                   |         |       |         |      |         |                    |        |                            |
| TOTALS:    |           | 2                 | 6.00    | 2     | 6.00    | 1    | 6.25    | 1                  | 4      |                            |

| STATION | STATION | DESCRIPTION | SIDE  | LIN. FT. |
|---------|---------|-------------|-------|----------|
| 113+95  | 115+50  | TYPE D-1    | RIGHT | 155      |
|         |         |             |       |          |
| TOTALS: |         |             |       | 155      |

| STATION | STATION | DESCRIPTION | SIDE  | LIN. FT. |
|---------|---------|-------------|-------|----------|
| 114+30  | 115+50  | TYPE D-1    | RIGHT | 144      |
| TOTALS: |         |             |       | 144      |

| STATION | STATION | LOCATION       | PERMANENT EROSION CONTROL |         |             |          |
|---------|---------|----------------|---------------------------|---------|-------------|----------|
|         |         |                | LIME                      | SEEDING | MULCH COVER | WATER    |
|         |         |                | TONS                      | ACRES   | ACRES       | M. GALS. |
| 104+00  | 115+50  | ENTIRE PROJECT | 4                         | 1.78    | 3.57        | 181.6    |
|         |         |                |                           |         |             |          |
| TOTALS: |         |                | 4                         | 1.78    | 3.57        | 181.6    |

| STATION | STATION | DESCRIPTION                                                                                            | REMOVAL OF EXISTING BRIDGE STRUCTURE |
|---------|---------|--------------------------------------------------------------------------------------------------------|--------------------------------------|
|         |         |                                                                                                        | LUMP SUM                             |
| 109+87  | 110+46  | 59' X 16' 4-Span TIMBER DECK W/TIMBER I-BEAMS/GIRDER SUPPORTED BY TIMBER SUBSTRUCTURE BRIDGE NO. 21740 | 1.00                                 |
|         |         |                                                                                                        |                                      |
| TOTAL:  |         |                                                                                                        | 1.00                                 |

| STATION | DESCRIPTION    | PIPE CULVERT | HEADWALL |
|---------|----------------|--------------|----------|
|         |                | EACH         | EACH     |
| 109+40  | 18" CMP X 104' | 1            |          |
| 109+89  | RIGHT          |              | 1        |
| 110+47  | LEFT AND RIGHT |              | 2        |
| 110+74  | 30" IRON X 56' | 1            |          |
|         |                |              |          |
| TOTAL:  |                | 2            | 3        |

| STATION | DESCRIPTION        | TREE |
|---------|--------------------|------|
|         |                    | EACH |
| 113+02  | TREE ON RIGHT SIDE | 1    |
| TOTAL:  |                    | 1    |

| STATION | STATION | GRUBBING |
|---------|---------|----------|
|         |         | STATION  |
| 104+00  | 115+50  | 12       |
|         |         |          |
|         |         |          |
|         |         |          |
|         |         |          |
|         |         |          |
| TOTAL:  |         | 12       |

| LOCATION                                                        | TEMPORARY SEEDING | MULCH COVER | WATER   | FILTER SOCKS (18") | SAND BAG DITCH CHECKS | SILT FENCE | SEDIMENT REMOVAL AND DISPOSAL |
|-----------------------------------------------------------------|-------------------|-------------|---------|--------------------|-----------------------|------------|-------------------------------|
|                                                                 |                   |             |         | (E-3)              | (E-5)                 | (E-11)     |                               |
|                                                                 | ACRES             | ACRES       | M. GALS | LIN. FT.           | BAGS                  | LIN. FT.   | CU. YDS                       |
| ENTIRE PROJECT AS SHOWN ON THE TEMPORARY EROSION CONTROL DETAIL |                   |             |         | 1523               | 264                   |            | 186                           |
| ENTIRE PROJECT                                                  | 2.51              | 2.51        | 51.2    | 377                | 66                    | 1000       | 156                           |
| TOTAL:                                                          | 2.51              | 2.51        | 51.2    | 1900               | 330                   | 1000       | 342                           |

## QUANTITIES

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE   | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|---------|--------------------|--------------|-----------------|
| 10-11-2023      |                |                 |                | 6                     | ARK.    |                    |              |                 |
|                 |                |                 |                |                       | JOB NO. | BR1113             | 16           | 26              |

④ QUANTITIES

| DESCRIPTION                     | W20-3<br>(ROAD CLOSED AHEAD) |         | G20-2<br>(END ROAD<br>WORK) |         | W21-5a<br>(SHOULDER<br>WORK) |         | W20-1<br>(ROAD WORK<br>AHEAD) |         | R11-2<br>(ROAD<br>CLOSED) |         | R11-4<br>(ROAD<br>CLOSED TO<br>THRU TRAFFIC) |         | BARRICADES<br>(TYPE III)* | TRAFFIC<br>DRUMS* | STANDARD<br>DRAWING<br>NUMBER |
|---------------------------------|------------------------------|---------|-----------------------------|---------|------------------------------|---------|-------------------------------|---------|---------------------------|---------|----------------------------------------------|---------|---------------------------|-------------------|-------------------------------|
|                                 | 500 FT.                      |         |                             |         |                              |         |                               |         |                           |         |                                              |         | LIN. FT.                  | EACH              |                               |
|                                 | NO.                          | SQ. FT. | NO.                         | SQ. FT. | NO.                          | SQ. FT. | NO.                           | SQ. FT. | NO.                       | SQ. FT. | NO.                                          | SQ. FT. |                           |                   |                               |
| CO. RD. 76 (CCR 502) & FARM RD. |                              |         |                             |         |                              |         |                               |         | 1                         | 10.00   |                                              |         | 16                        |                   | TC-1, TC-2, TC-3              |
| CO. RD. 76 (CCR 502) & HWY. 119 |                              |         |                             |         |                              |         |                               |         |                           |         | 1                                            | 12.50   |                           |                   | TC-1, TC-2, TC-3              |
| STA. 111+00                     |                              |         |                             |         |                              |         |                               |         |                           |         |                                              |         | 16                        |                   | TC-1, TC-2, TC-3              |
| STA. 116+00                     | 1                            | 16.00   |                             |         |                              |         |                               |         |                           |         |                                              |         |                           |                   | TC-1, TC-2, TC-3              |
| END OF JOB                      |                              |         | 1                           | 8.00    | 1                            | 9.00    | 1                             | 16.00   |                           |         |                                              |         |                           |                   | TC-1, TC-2, TC-3              |
| AS DIRECTED                     |                              |         |                             |         |                              |         |                               |         |                           |         |                                              |         |                           | 75*               |                               |
| TOTALS:                         | 1                            | 16.00   | 1                           | 8.00    | 1                            | 9.00    | 1                             | 16.00   | 1                         | 10.00   | 1                                            | 12.50   | 32                        | 75*               |                               |

NOTE: LOCATION OF THE TRAFFIC CONTROL DEVICES TO BE AS DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

\*NOTE: ESTIMATED QUANTITY. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.  
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.



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FARTHWORK

| STATION    | STATION | LOCATION / DESCRIPTION      | UNCLASSIFIED<br>EXCAVATION | COMPACTED<br>EMBANKMENT |
|------------|---------|-----------------------------|----------------------------|-------------------------|
|            |         |                             | CUBIC YARDS                |                         |
| 100+00     | 115+50  | MAIN LANE                   | 1231                       | 4161                    |
| 110+21     |         | R.C. BOX CULVERT EXCAVATION | 1773                       | 0                       |
| 110+21     |         | CHANNEL CHANGE              | 545                        | 0                       |
| 111+92 RT. |         | PRIVATE ENTRANCE            | 0                          | 90                      |
| 113+24 RT. |         | PRIVATE ENTRANCE            | 0                          | 85                      |
| 114+19 RT. |         | PRIVATE ENTRANCE            | 0                          | 45                      |
| TOTALS:    |         |                             | 3549                       | 4381                    |

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

NOTE: CHANNEL CHANGE EXCAVATION, IF DEEMED SUITABLE BY THE ENGINEER, TO BE USED AS ROADWAY EMBANKMENT.

STRUCTURES

| STATION                     | DESCRIPTION                                         | S<br>P<br>A<br>N | H<br>E<br>I<br>G<br>H<br>T | L<br>E<br>N<br>G<br>T<br>H | SIDE DRAINS |     | FLOOD<br>GATES | CLASS S<br>CONCRETE<br>ROADWAY | REINFORCED<br>STEEL -<br>ROADWAY<br>(GRADE 60) | UNCLASSIFIED<br>EXCAVATION FOR<br>STRUCTURES -<br>ROADWAY | SOLID<br>SODDING | WATER | DUMPED<br>RIPRAP | FILTER<br>BLANKET | STANDARD DRAWING<br>NUMBERS |
|-----------------------------|-----------------------------------------------------|------------------|----------------------------|----------------------------|-------------|-----|----------------|--------------------------------|------------------------------------------------|-----------------------------------------------------------|------------------|-------|------------------|-------------------|-----------------------------|
|                             |                                                     |                  |                            |                            | 18"         | 30" |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
|                             |                                                     |                  |                            |                            | LINEAR FT.  |     |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
| 109+49                      | INSTALL PIPE CULVERT RT. SIDE FIELD                 |                  |                            |                            |             | 98  | 1              |                                |                                                |                                                           |                  |       | 12.0             | 33.0              | PCM-1, PCC-1                |
| 109+49                      | INSTALL PIPE CULVERT LT. SIDE FIELD                 |                  |                            |                            |             | 98  | 1              |                                |                                                |                                                           |                  |       | 12.0             | 33.0              | PCM-1, PCC-1                |
| 110+77                      | INSTALL PIPE CULVERT LT. SIDE FIELD                 |                  |                            |                            |             | 56  | 1              |                                |                                                |                                                           |                  |       | 12.0             | 33.0              | PCM-1, PCC-1                |
| 110+77                      | INSTALL PIPE CULVERT RT. SIDE FIELD                 |                  |                            |                            |             | 56  | 1              |                                |                                                |                                                           |                  |       | 12.0             | 33.0              | PCM-1, PCC-1                |
| 111+92                      | INSTALL PIPE CULVERT RT. SIDE DRAIN                 |                  |                            |                            | 60          |     |                |                                |                                                |                                                           |                  |       |                  |                   | PCM-1, PCC-1                |
| 113+24                      | INSTALL PIPE CULVERT RT. SIDE DRAIN                 |                  |                            |                            | 50          |     |                |                                |                                                |                                                           |                  |       |                  |                   | PCM-1, PCC-1                |
| 114+19                      | INSTALL PIPE CULVERT RT. SIDE DRAIN                 |                  |                            |                            | 38          |     |                |                                |                                                |                                                           |                  |       |                  |                   | PCM-1, PCC-1                |
| STRUCTURES OVER 20'-0" SPAN |                                                     |                  |                            |                            |             |     |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
| 110+21                      | QUAD R.C. BOX CULVERT WITH HEADWALLS AND WING WALLS | 11               | 11                         | 48                         |             |     |                | 338.55                         | 42518                                          | 171                                                       | 44               | 0.6   |                  |                   | RCB-1, RCB-2                |
|                             |                                                     |                  |                            |                            |             |     |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
|                             |                                                     |                  |                            |                            |             |     |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
|                             |                                                     |                  |                            |                            |             |     |                |                                |                                                |                                                           |                  |       |                  |                   |                             |
| TOTALS:                     |                                                     |                  |                            |                            | 148         | 308 | 4              | 338.55                         | 42518                                          | 171                                                       | 44               | 0.6   | 48.0             | 132.0             |                             |

BASIS OF ESTIMATE:  
WATER..... 12.6 GALLONS PER SQUARE YARD

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

QUANTITIES

| SUMMARY OF QUANTITIES       |                                                          |          |          |
|-----------------------------|----------------------------------------------------------|----------|----------|
| ITEM NO.                    | ITEM                                                     | QUANTITY | UNIT     |
| 201                         | GRUBBING                                                 | 12       | STATION  |
| SP & 201                    | CLEARING AND GRUBBING TREES                              | 1        | EACH     |
| 202                         | REMOVAL AND DISPOSAL OF FENCE                            | 155      | LIN. FT. |
| 202                         | REMOVAL AND DISPOSAL OF PIPE CULVERTS                    | 2        | EACH     |
| 202                         | REMOVAL AND DISPOSAL OF HEADWALLS                        | 3        | EACH     |
| SP, SS & 210                | UNCLASSIFIED EXCAVATION                                  | 3549     | CU. YD.  |
| SP & 210                    | COMPACTED EMBANKMENT                                     | 4381     | CU. YD.  |
| SS & 303                    | AGGREGATE BASE COURSE (CLASS 7)                          | 1953     | TON      |
| SS & 401                    | PRIME COAT                                               | 1186     | GAL.     |
| SS & 402                    | MINERAL AGGREGATE IN ASPHALT SURFACE TREATMENT (CLASS 4) | 91       | TON      |
| SP, SS & 402                | POLYMER MODIFIED CATIONIC EMULSIFIED ASPHALT (CRS-2P)    | 2107     | GAL.     |
| 601                         | MOBILIZATION                                             | 1.00     | LUMP SUM |
| SP & 602                    | FURNISHING FIELD OFFICE                                  | 1        | EACH     |
| 603                         | MAINTENANCE OF TRAFFIC                                   | 1.00     | LUMP SUM |
| SS & 604                    | SIGNS                                                    | 72       | SQ. FT.  |
| SS & 604                    | BARRICADES                                               | 32       | LIN. FT. |
| SS & 604                    | TRAFFIC DRUMS                                            | 75       | EACH     |
| SP, SS, & 606               | 18" SIDE DRAIN                                           | 148      | LIN. FT. |
| SP, SS, & 606               | 30" SIDE DRAIN                                           | 308      | LIN. FT. |
| 616                         | 30" AUTOMATIC FLOODGATES                                 | 4        | EACH     |
| 619                         | WIRE FENCE (TYPE D-1)                                    | 144      | LIN. FT. |
| 620                         | LIME                                                     | 4        | TON      |
| 620                         | SEEDING                                                  | 1.78     | ACRE     |
| SS & 620                    | MULCH COVER                                              | 6.08     | ACRE     |
| 620                         | WATER                                                    | 233.4    | M. GAL.  |
| 621                         | TEMPORARY SEEDING                                        | 2.51     | ACRE     |
| 621                         | SILT FENCE                                               | 1000     | LIN. FT. |
| 621                         | SAND BAG DITCH CHECKS                                    | 330      | BAG      |
| 621                         | SEDIMENT REMOVAL AND DISPOSAL                            | 342.0    | CU. YD.  |
| SS & 621                    | FILTER SOCK (18")                                        | 1900     | LIN. FT. |
| 624                         | SOLID SODDING                                            | 44       | SQ. YD.  |
| 635                         | ROADWAY CONSTRUCTION CONTROL                             | 1.00     | LUMP SUM |
| SS & 726                    | STANDARD SIGN                                            | 18.25    | SQ. FT.  |
| SS & 729                    | CHANNEL POST SIGN SUPPORT (TYPE A)                       | 1        | EACH     |
| SS & 729                    | CHANNEL POST SIGN SUPPORT (TYPE C)                       | 4        | EACH     |
| 816                         | FILTER BLANKET                                           | 132      | SQ. YD.  |
| 816                         | DUMPED RIPRAP                                            | 48       | CU. YD.  |
| STRUCTURES OVER 20'-0" SPAN |                                                          |          |          |
| 205                         | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)        | 1.00     | LUMP SUM |
| 801                         | UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY           | 171      | CU. YD.  |
| SP, SS & 802                | CLASS S CONCRETE-ROADWAY                                 | 338.55   | CU. YD.  |
| SS & 804                    | REINFORCING STEEL-ROADWAY (GRADE 60)                     | 42518    | POUND    |
|                             |                                                          |          |          |
|                             |                                                          |          |          |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 10-11-2023   |             |              |             | 6                  | ARK.  |                    |           |              |
| 10-25-2023   |             |              |             |                    |       |                    |           |              |
|              |             |              |             | JOB NO.            |       | BR1113             | 17        | 26           |

4 SUMMARY OF QUANTITIES AND REVISIONS



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STATE OF  
ARKANSAS  
\*\*\*  
LICENSED  
PROFESSIONAL  
ENGINEER  
No. 11240  
BRYAN FREELING

REVISIONS

| DATE       | REVISION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SHEET NO.          |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 10/11/2023 | ADDED 25' BUFFER TO PLAN AND PROFILE AND TEMPORARY EROSION CONTROL. ADDED FLOW ARROWS TO CROSS SECTIONS. REVISED BEGIN STATION AND SAND BAG DITCH CHECK NOTES ON TEMPORARY EROSION CONTROL. REVISED MINERAL AGGREGATE CLASS IN BASE AND SURFACING QUANTITY BOX. REVISED GRUBBING HEADER QUANTITY BOX. REVISED BEGIN STATION IN WIRE FENCE QUANTITY BOX. REVISED STATIONING IN STRUCTURES QUANTITY BOX. REVISED STATIONING IN TRAFFIC CONTROL QUANTITY BOX REVISED END STATION ON SURVEY CONTROL DETAILS. REVISED SIDE DRAIN NOTES ON PLAN AND PROFILE. REVISED STORM WATER POLLUTION PREVENTION SP. | 13-17,20-26        |
| 10/25/2023 | ADDED FLOODGATE MOUNTING DETAILS. REVISED TITLE SHEET F.A.P. NUMBER. REVISED PAY ITEM UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE TO UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY IN SUMMARY OF QUANTITIES. REVISED SIDE DRAIN NOTES ON PLAN AND PROFILE. REMOVED STANDARD DRAWING MB-1.                                                                                                                                                                                                                                                                                                        | 1, 5, 17, 21, & 22 |

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES

Project Name: sBR1113  
Date: 1/30/2018  
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS STATIC POINTS 1 - 5  
PROJECTED TO GROUND.  
Units: U.S. SURVEY FOOT

| Point Name | Northing    | Easting      | Elev    | Feature | Description                      |
|------------|-------------|--------------|---------|---------|----------------------------------|
| 1          | 689377.1418 | 1817955.0715 | 256.655 | CTL     | ARDOT STD. MON. STAMPED PN: 1    |
| 2          | 689361.8101 | 1817479.6861 | 255.086 | CTL     | ARDOT STD. MON. STAMPED PN: 2    |
| 3          | 689344.0414 | 1816891.8715 | 259.856 | CTL     | ARDOT STD. MON. STAMPED PN: 3    |
| 4          | 689333.5429 | 1816192.0855 | 256.245 | CTL     | ARDOT STD. MON. STAMPED PN: 4    |
| 5          | 689285.3765 | 1815565.1524 | 254.346 | CTL     | ARDOT STD. MON. STAMPED PN: 5    |
| 900        | 689342.0353 | 1818141.5016 | 259.136 | TBM     | NORTH BOLT ON FIRE HYDRANT       |
| 901        | 689277.5485 | 1817563.0431 | 258.223 | TBM     | NE CORNER OF CONCRETE PORCH      |
| 902        | 689289.8137 | 1816176.4333 | 256.134 | TBM     | CHISELED SQUARE BOTTOM WELL HEAD |
| 990        | 694634.4125 | 1804922.1516 | 269.524 | BM      | NGS BM W187 AR STATE HWY 49      |

\*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped  
\*(standard markings common to all caps), or as indicated  
(other markings indicated in the point description of the individual point).  
ALL DISTANCES ARE GROUND.  
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.  
A PROJECT CAF OF 0.999988654 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 sBR1113gi.CTL  
HORIZONTAL DATUM: NAD 83 (1997)  
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: GPS STATIC POINTS 1 - 5  
CONVERGENCE ANGLE: 00-59-43 RIGHT AT PN: 3 LT: 36-12-54N LG: 090-17-22W  
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

| DATE REVISED           | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
|                        |             |              |             | 6                  | ARK.  |                    |           |              |
|                        |             |              |             | JOB NO.            |       | BR1113             | 18        | 26           |
| SURVEY CONTROL DETAILS |             |              |             |                    |       |                    |           |              |



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COORDINATE CONSTRUCTION CENTERLINE

| POINT NO. | TYPE | STATION   | NORTHING    | EASTING     |
|-----------|------|-----------|-------------|-------------|
| 8000      | PI   | 100+00.00 | 689309.9999 | 1815916.275 |
| 8001      | POB  | 104+00.00 | 689317.7640 | 1816316.197 |
| 8002      | POE  | 115+50.00 | 689345.7337 | 1817465.857 |
| 8003      | PI   | 120+66.82 | 689364.2343 | 1817982.347 |
| 8004      | PI   | 122+47.85 | 689360.2665 | 1818163.331 |

SURVEY CONTROL DETAILS

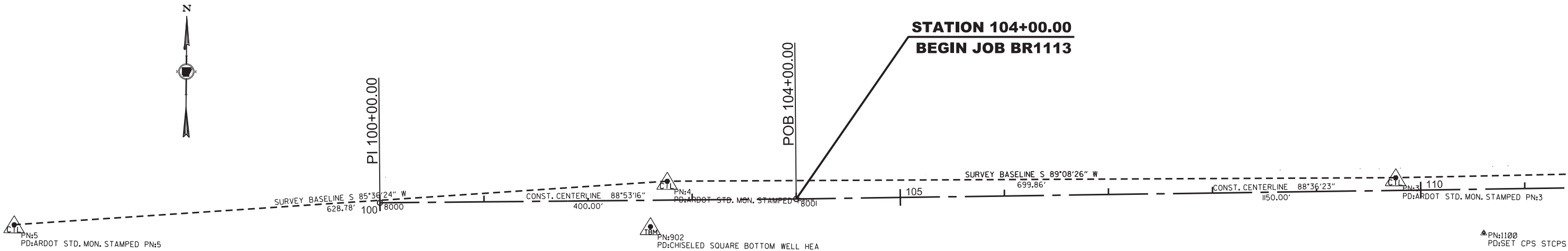
| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|-------|--------------------|--------------|-----------------|
|                 |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                 |                |                 |                | JOB NO.               |       | BR1113             | 19           | 26              |

④ SURVEY CONTROL DETAILS



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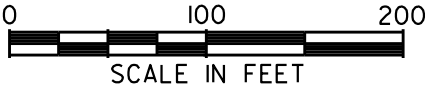
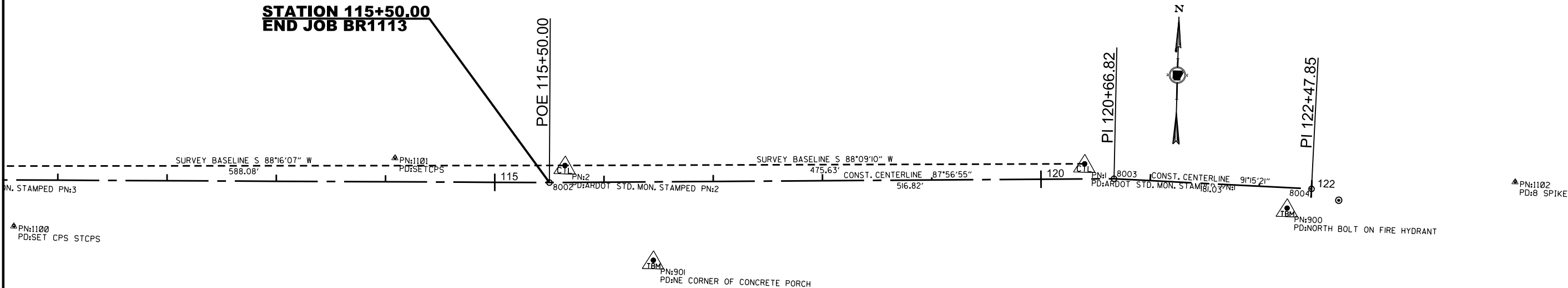
**SURVEY CONTROL DETAILS**

| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|-------|--------------------|--------------|-----------------|
| 10-11-2023      |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                 |                |                 |                |                       |       | JOB NO.            | BR1113       | 20              |
|                 |                |                 |                |                       |       |                    |              | 26              |

4 SURVEY CONTROL DETAILS



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**SURVEY CONTROL DETAILS**

STA. 109+40 REMOVE SIDE DRAIN  
18" X 104' C.M.P. CULVERT  
ON LT. UPSTREAM SIDE

STA. 109+49 INSTALL SIDE DRAIN  
30" X 98' PIPE CULVERT W/FLOODGATE  
THROUGH WINGWALL ON LT.  
DUMPED RIPRAP= 12 CU.YD.  
FILTER BLANKET= 33 SQ. YD.  
OUTLET ELEV. = 251.80'

STA. 104+00.00  
BEGIN JOB BR1113

STA. 109+95  
OM-3 ON LT.

STA. 110+21 CONSTRUCT  
QUAD. 11' X 11' X 48' R.C.B. BOX CULVERT  
D.A. 17.0 SQ. MI., Q25 = 4240 C.F.S.

STA. 110+74 REMOVE SIDE DRAIN  
30" X 56' IRON CULVERT  
ON LT. UPSTREAM SIDE

STA. 110+77 INSTALL SIDE DRAIN  
30" X 56' PIPE CULVERT W/FLOODGATE  
THROUGH WINGWALL ON LT.  
DUMPED RIPRAP= 12 CU.YD.  
FILTER BLANKET= 33 SQ. YD.  
OUTLET ELEV. = 251.92'



SCALE IN FEET

25' VEGETATED BUFFER

MR. FRED BUCY

STA. 110+44  
OM-3 ON LT.

STA. 109+87 - STA. 110+46-IN PLACE  
59' X 16' 4-SPAN TIMBER DECK  
W/TIMBER I-BEAMS/GIRDER  
SUPPORTED BY TIMBER  
SUSTRUCTURE BRIDGE NO. 21740  
REMOVE

CLEARING AND GRUBBING TREES  
STATION 113+02 ON RT. = 1 EACH

STA. 109+95  
OM-3 ON RT.

STA. 109+89  
HEADWALL ON RT.  
REMOVE

STA. 110+47  
HEADWALL ON LT. & RT.  
REMOVE

STA. 110+77 INSTALL SIDE DRAIN  
30" X 56' PIPE CULVERT W/FLOODGATE  
THROUGH WINGWALL ON RT.  
DUMPED RIPRAP= 12 CU.YD.  
FILTER BLANKET= 33 SQ. YD.  
OUTLET ELEV. = 251.92'

STA. 111+92 CONSTRUCT  
PRIVATE DRIVE ON RT.  
AND INSTALL SIDE DRAIN  
18" X 60' PIPE CULVERT  
COMPACTED EMBANKMENT = 90 CU. YDS.  
UNCLASSIFIED EXCAVATION = 0 CU. YDS.

FLOODPLAIN LIMITS  
ENTIRE PROJECT



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LEGEND

- POWER POLE
- COMBINATION POLE
- POLE W/GUY
- TELEPHONE RISER
- TELEPHONE POLE
- UNDERGROUND CABLE MKR.
- WATER METER
- WATER VALVE

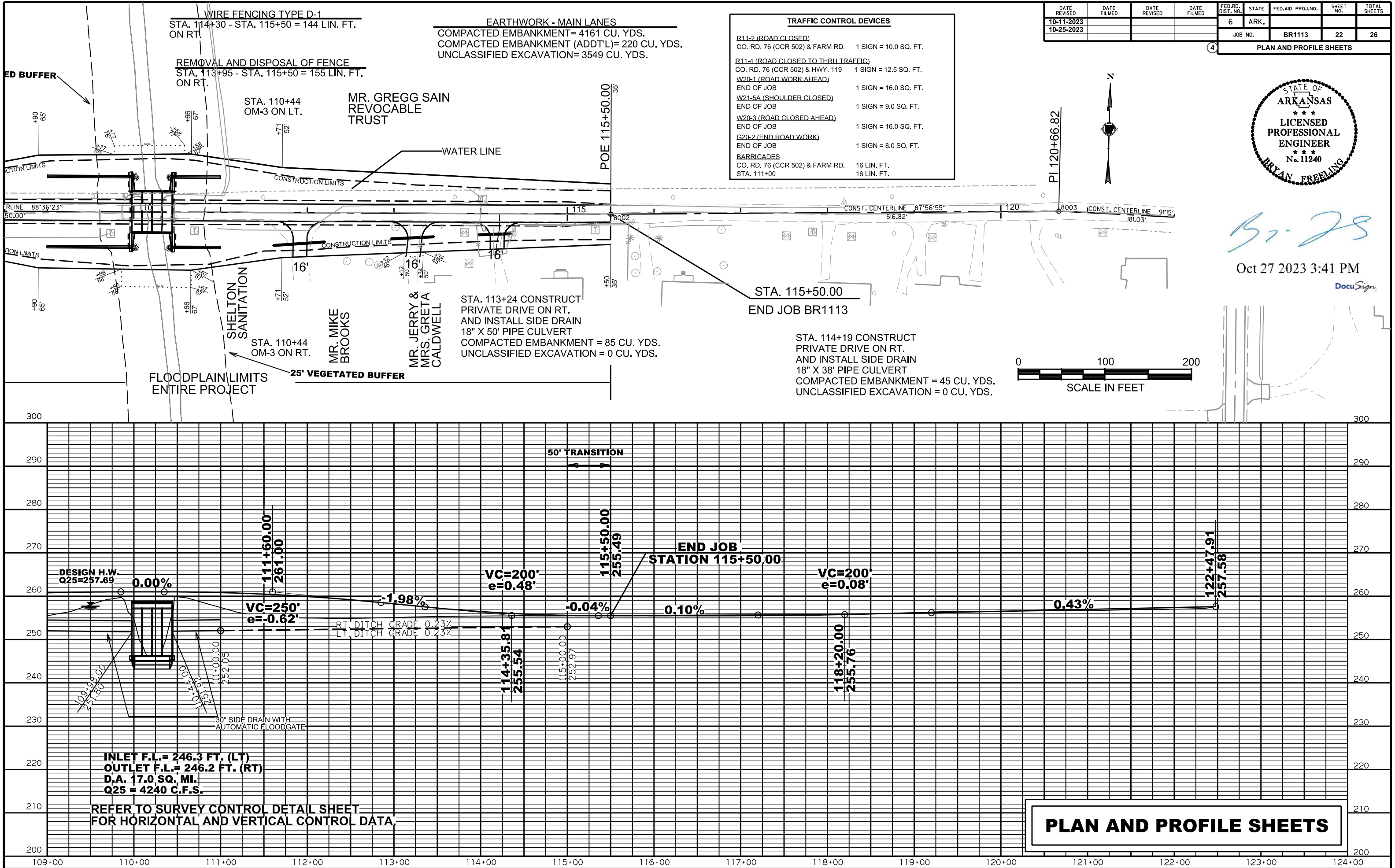
STA. 109+49 INSTALL SIDE DRAIN  
30" X 98' PIPE CULVERT W/FLOODGATE  
THROUGH WINGWALL ON RT.  
DUMPED RIPRAP= 12 CU.YD.  
FILTER BLANKET= 33 SQ. YD.  
OUTLET ELEV. = 251.80'

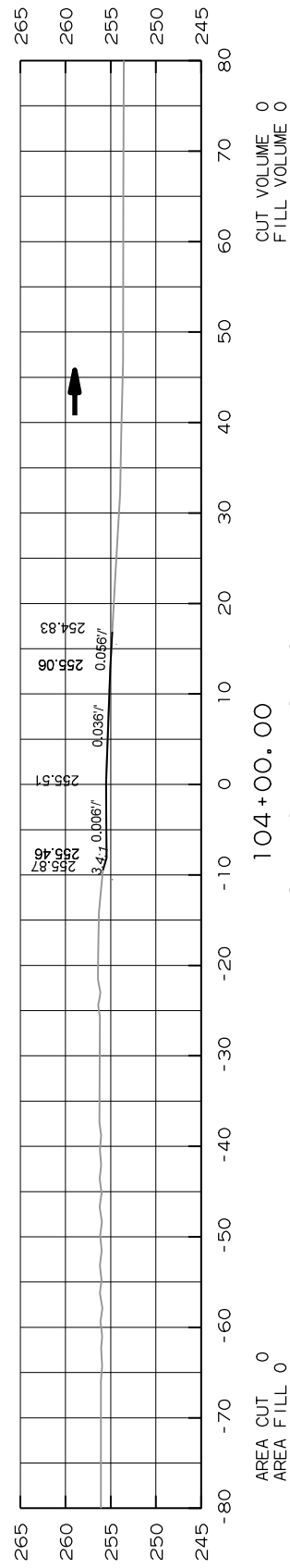
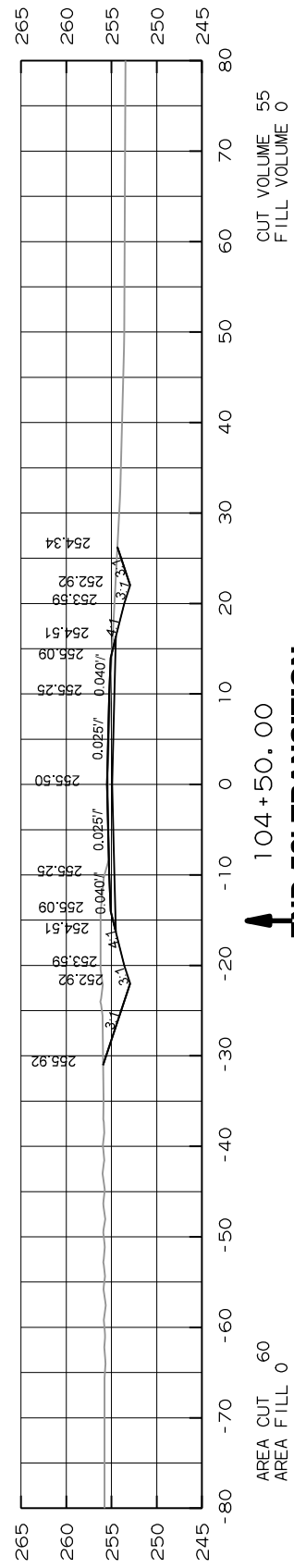
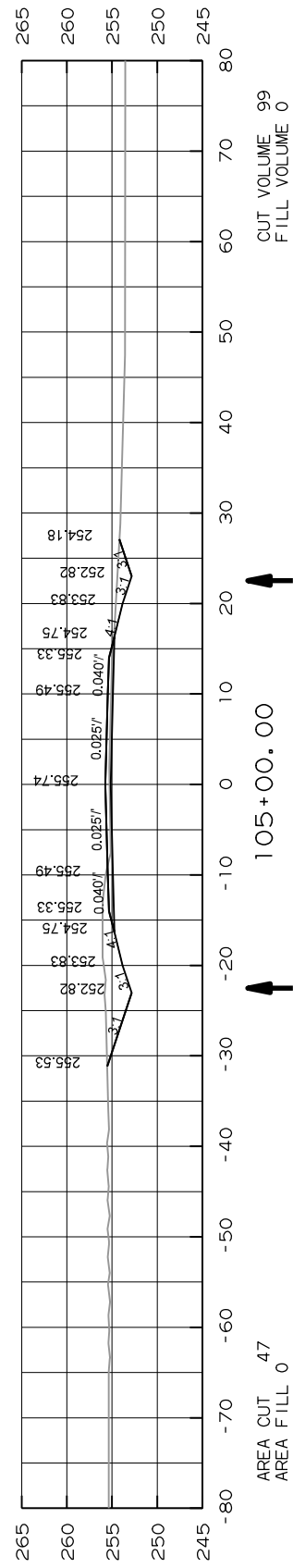
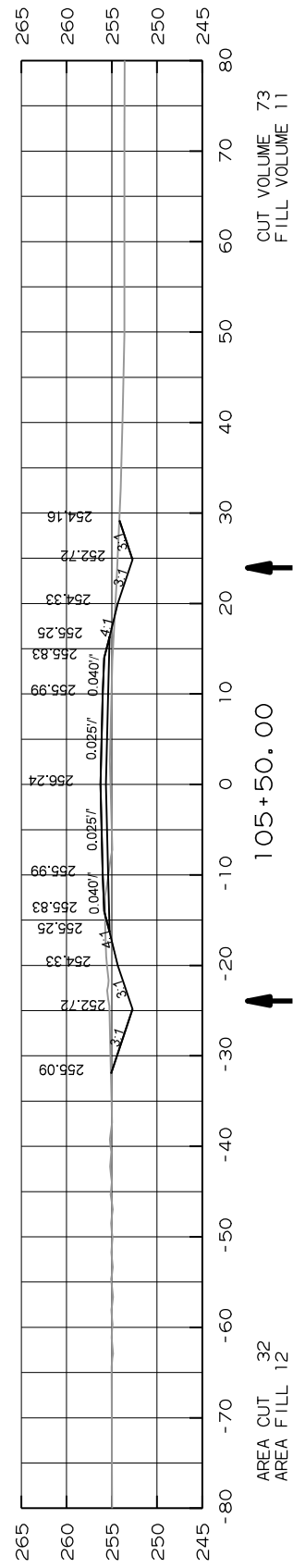
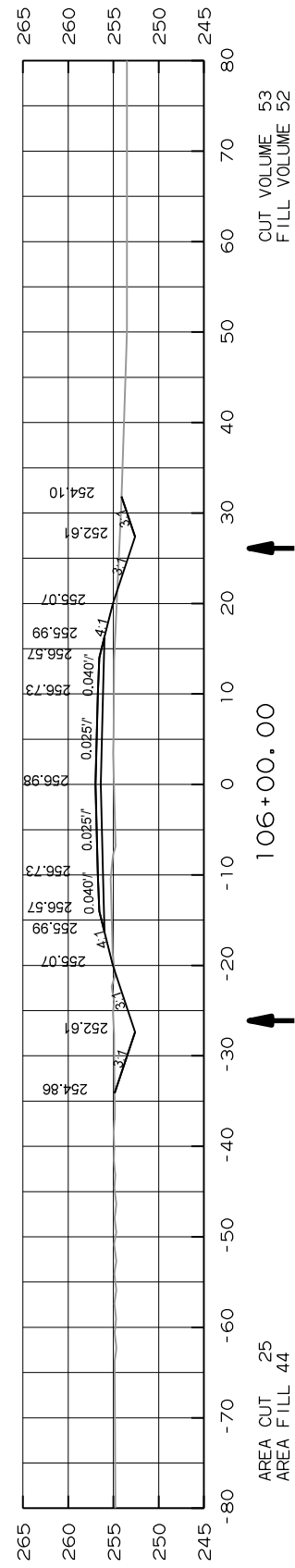
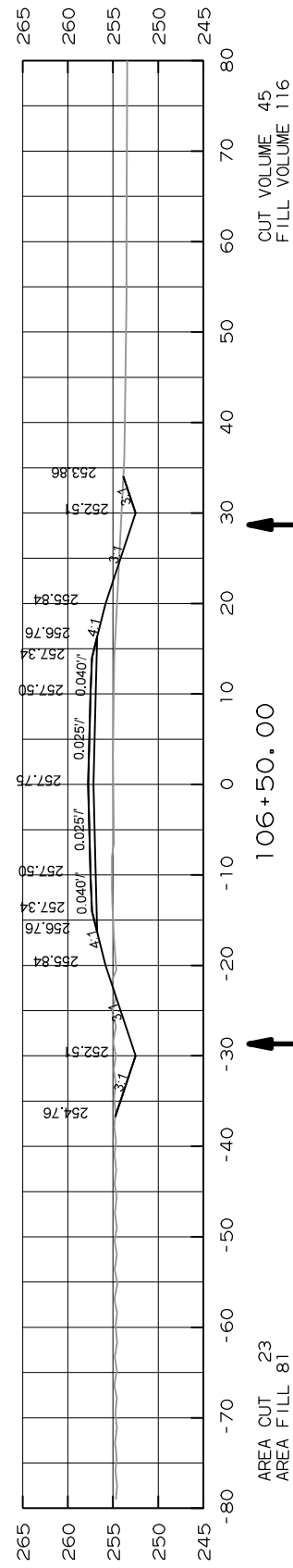
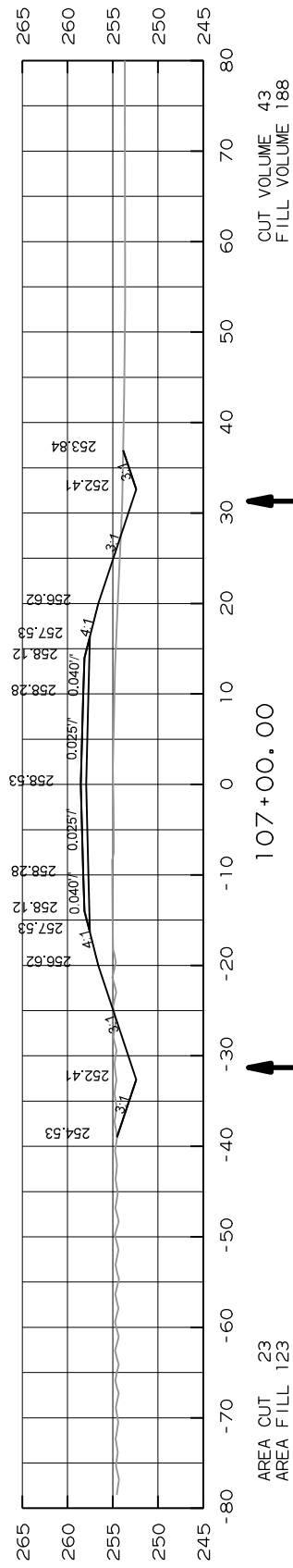
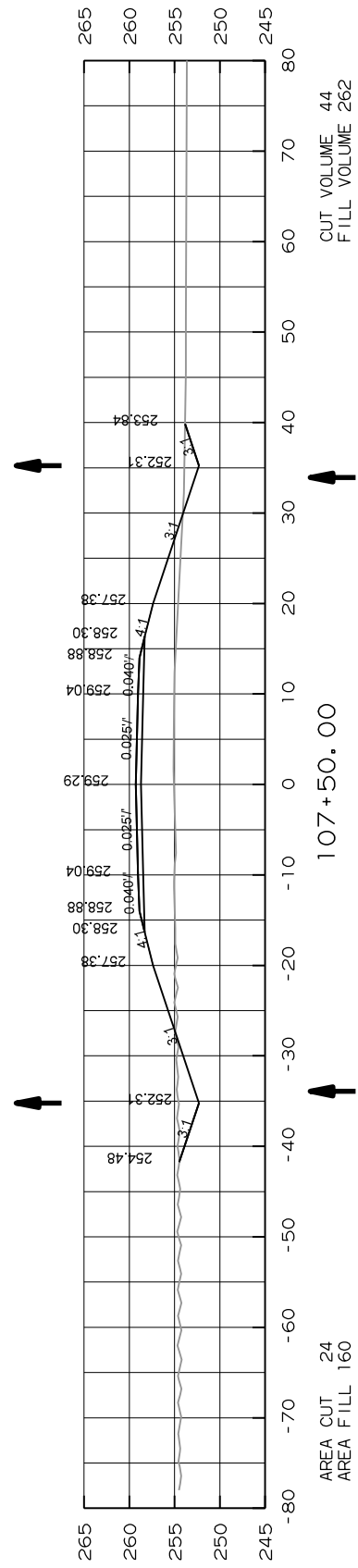
NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR  
HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL  
STREAM. THE STREAM BANK ELEVATIONS ARE 260 FEET MSL  
BETWEEN STA. 110+07 AND STA. 110+30 (STAGE CONST.)  
REFER TO SECTION 110.05(c) OF THE STANDARD SPECIFICATIONS.

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

INLET F.L. = 246.3 FT. (LT)  
OUTLET F.L. = 246.2 FT. (RT)  
D.A. 17.0 SQ. MI.  
Q25 = 4240 C.F.S.

PLAN AND PROFILE SHEETS

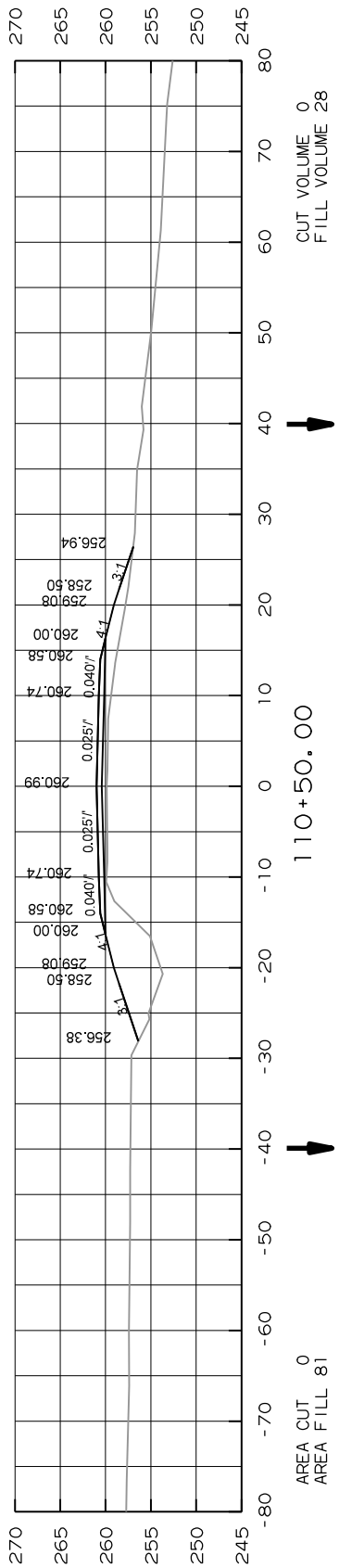
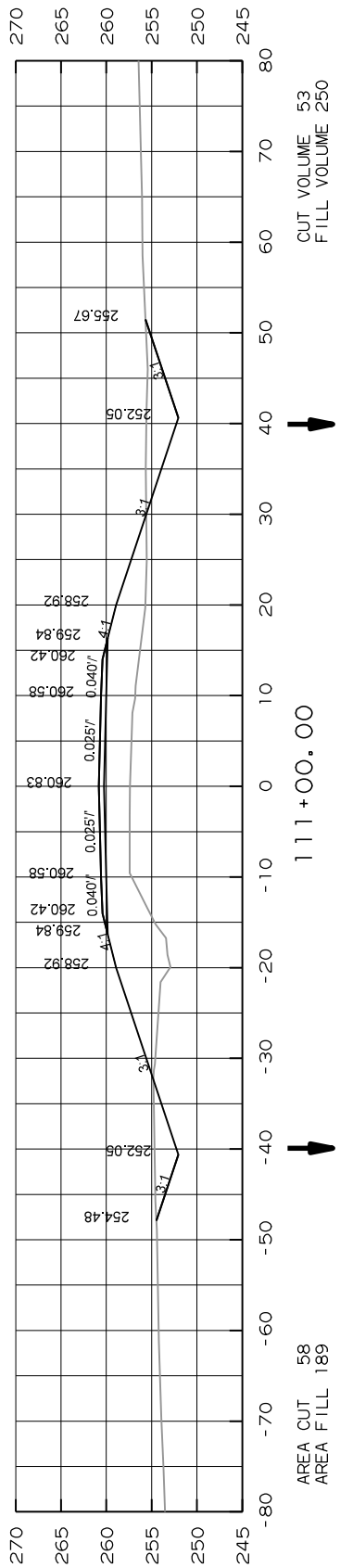
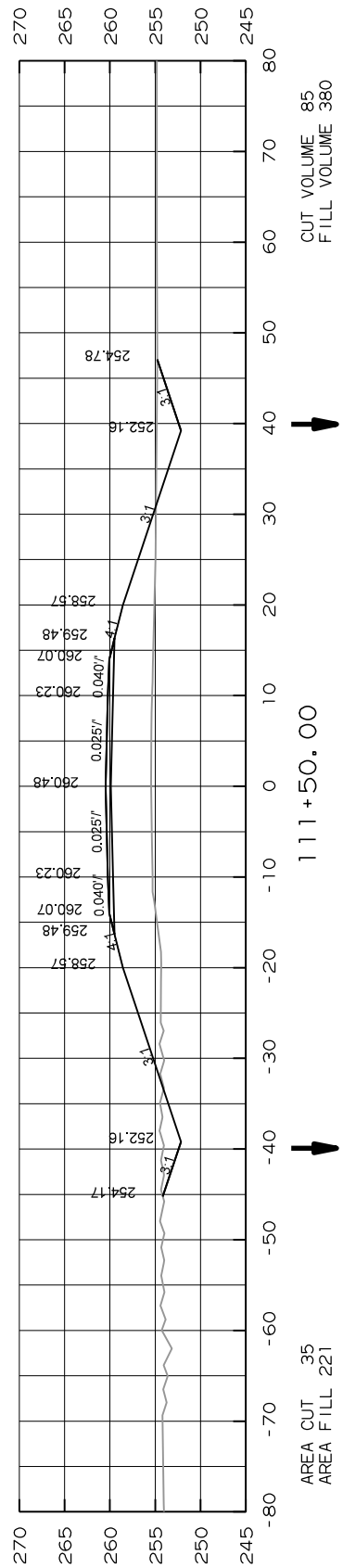
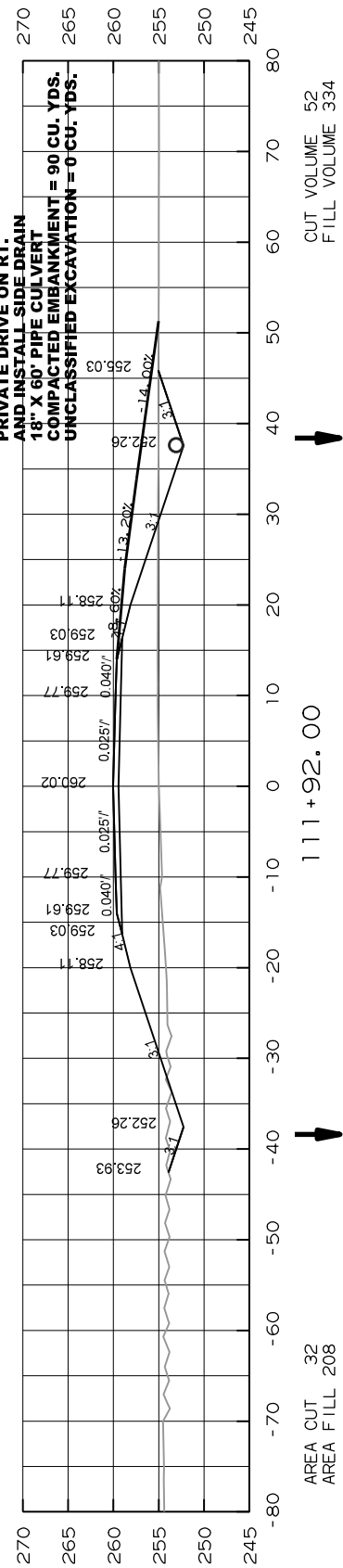
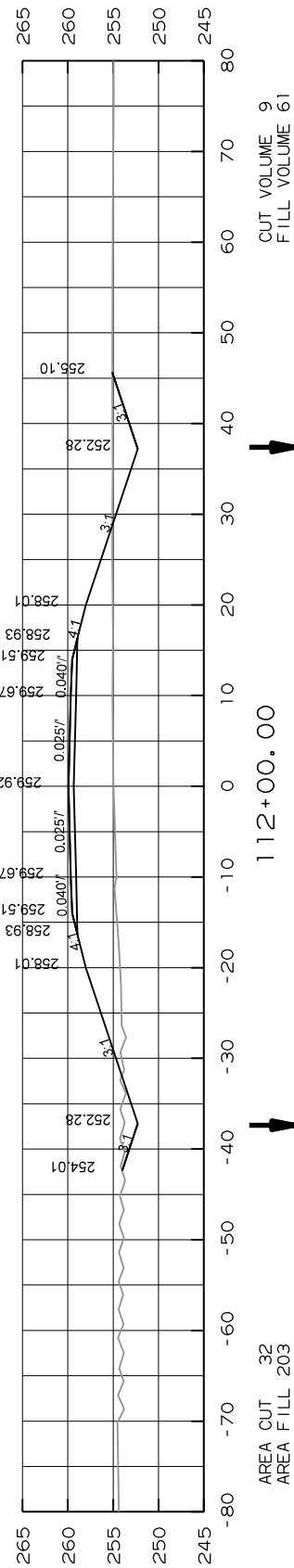
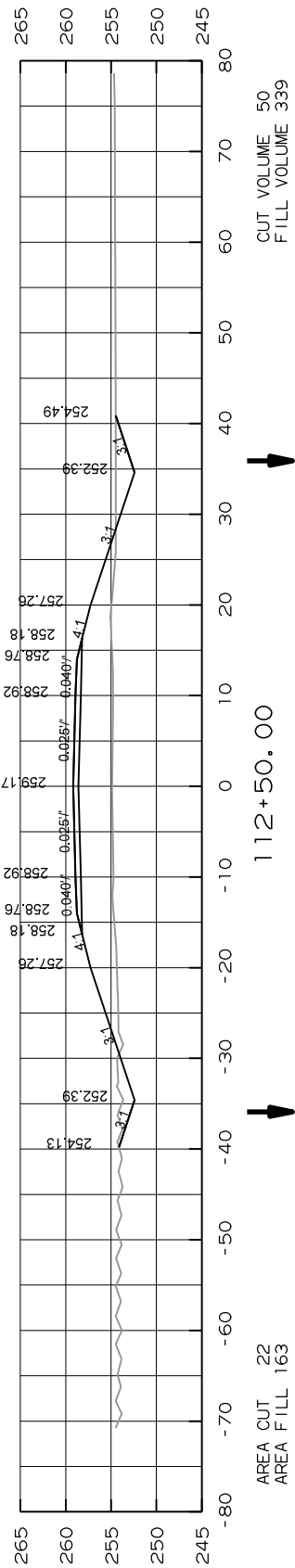
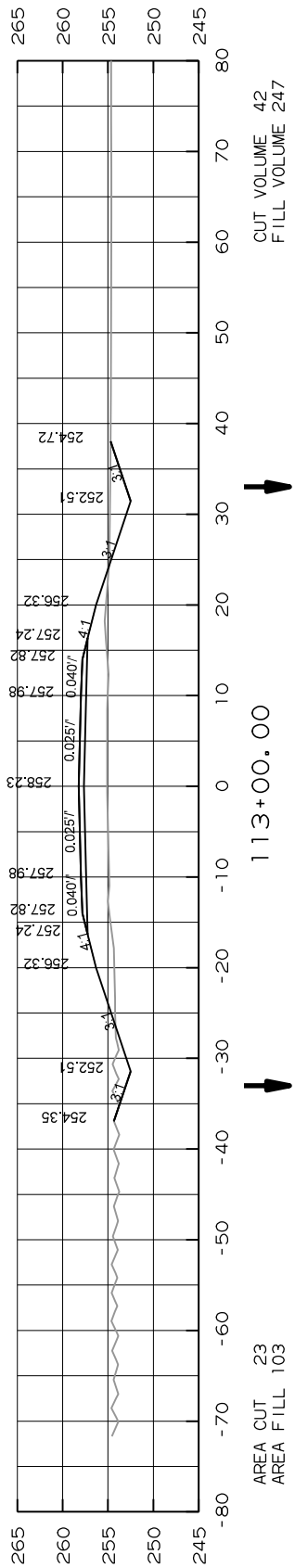
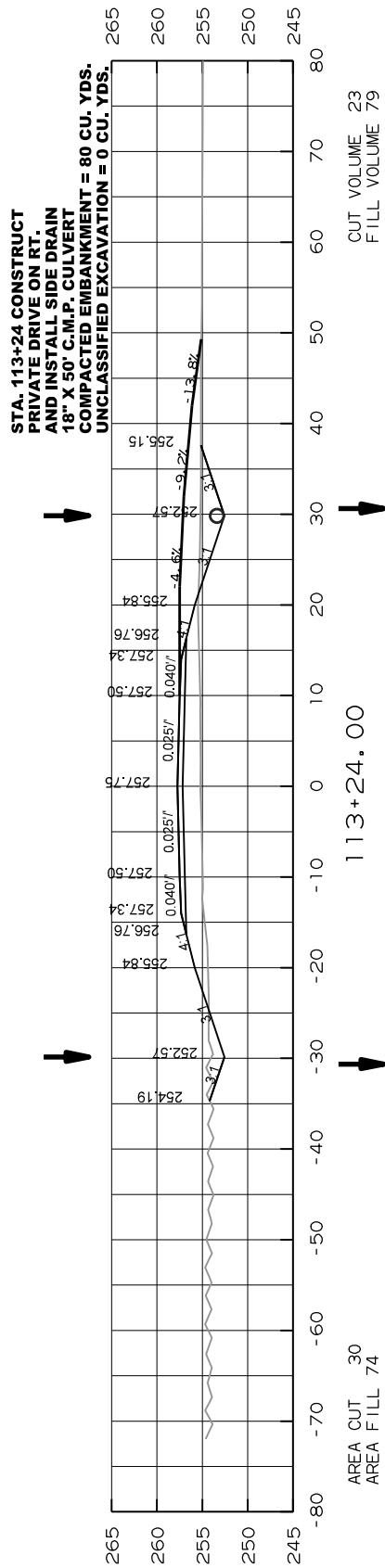




| DATE<br>REVISED                              | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|----------------------------------------------|----------------|-----------------|----------------|-----------------------|-------|--------------------|--------------|-----------------|
| 10-11-2023                                   |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                                              |                |                 |                | JOB NO.               |       | BR1113             | 23           | 26              |
| 4 CROSS SECTIONS STA. 104+00.00 TO 107+50.00 |                |                 |                |                       |       |                    |              |                 |

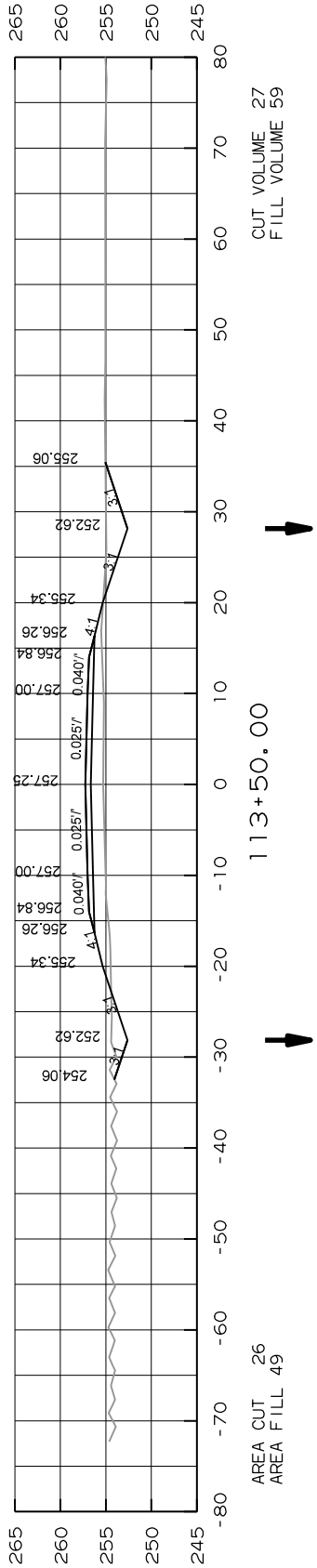
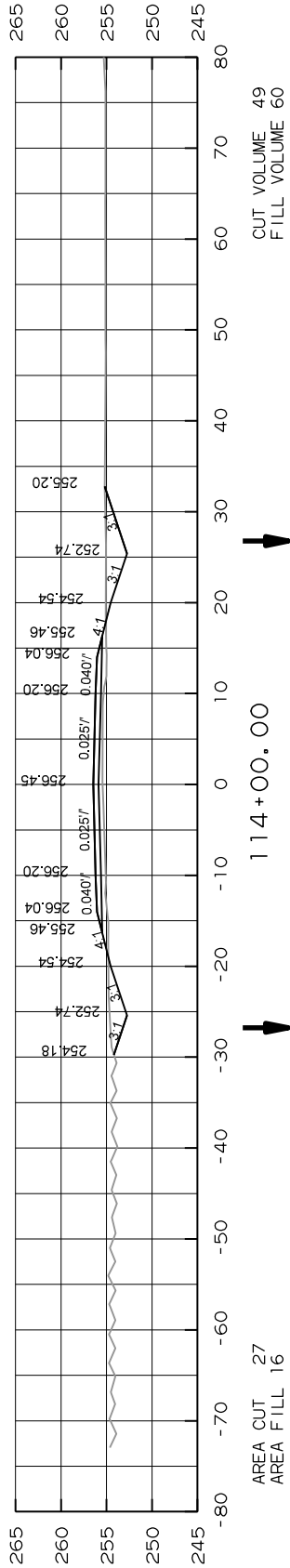
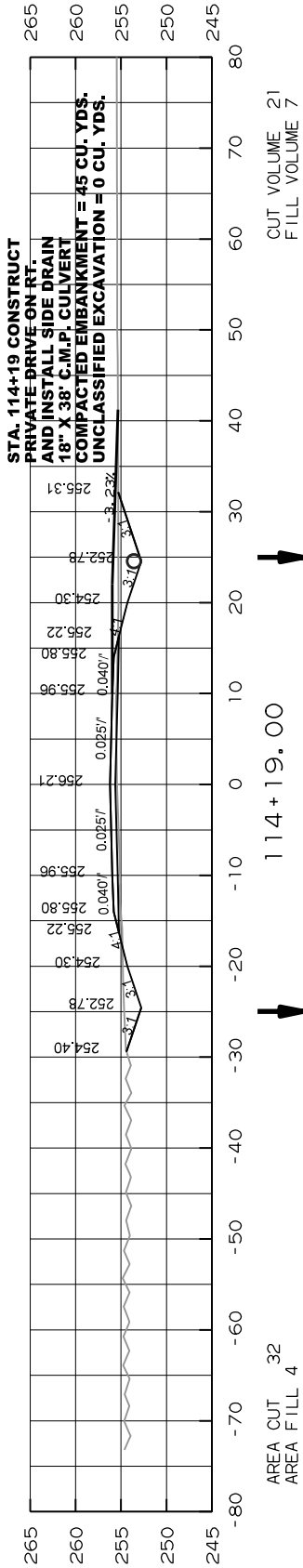
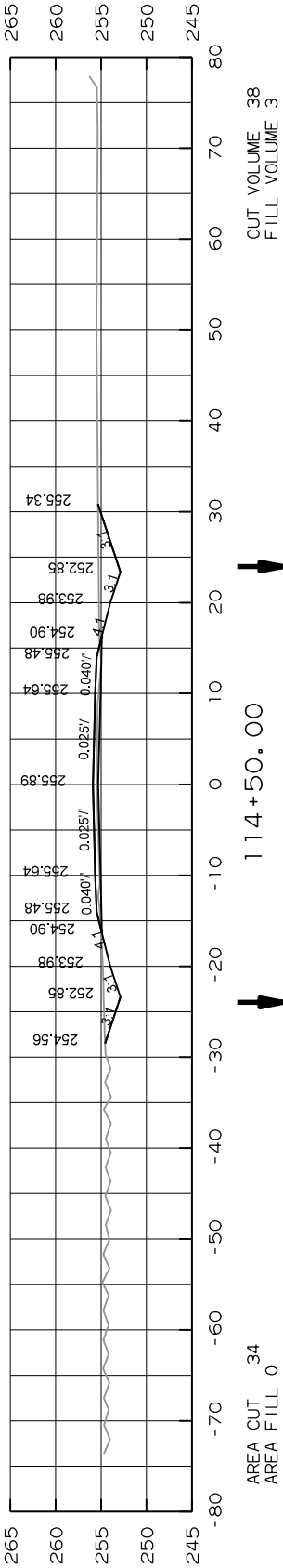
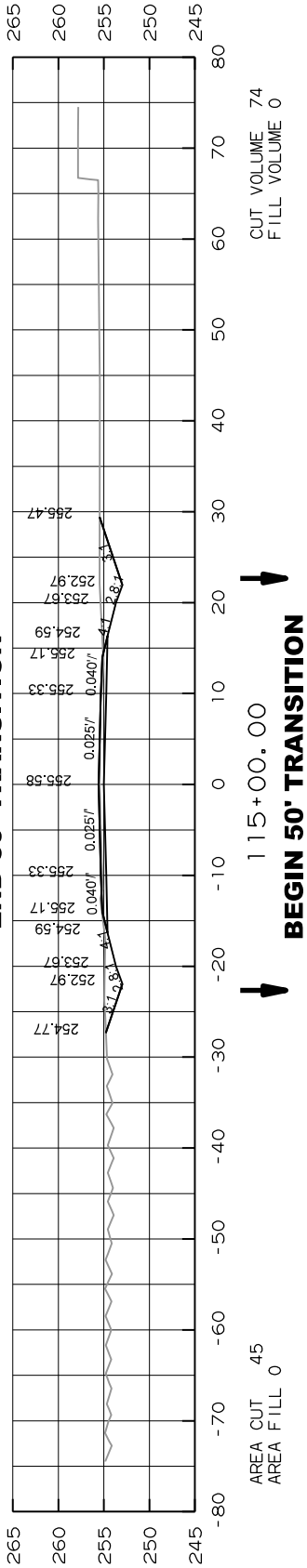
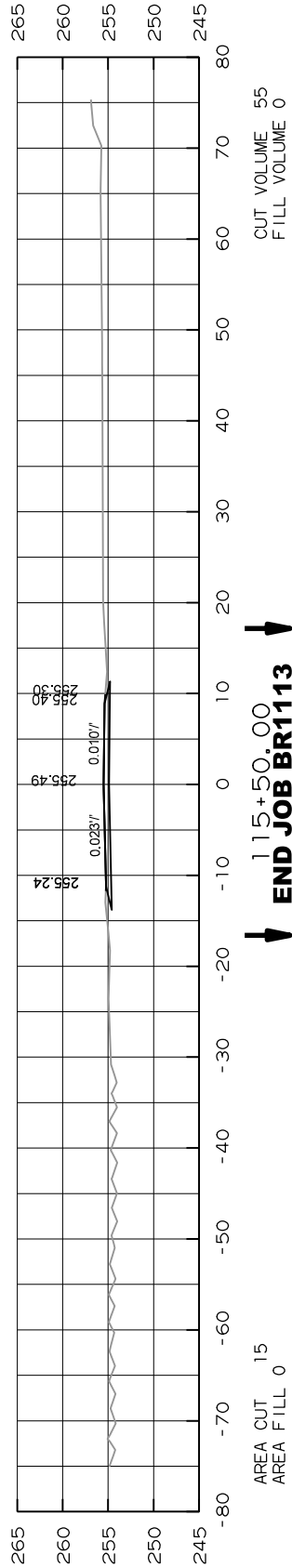


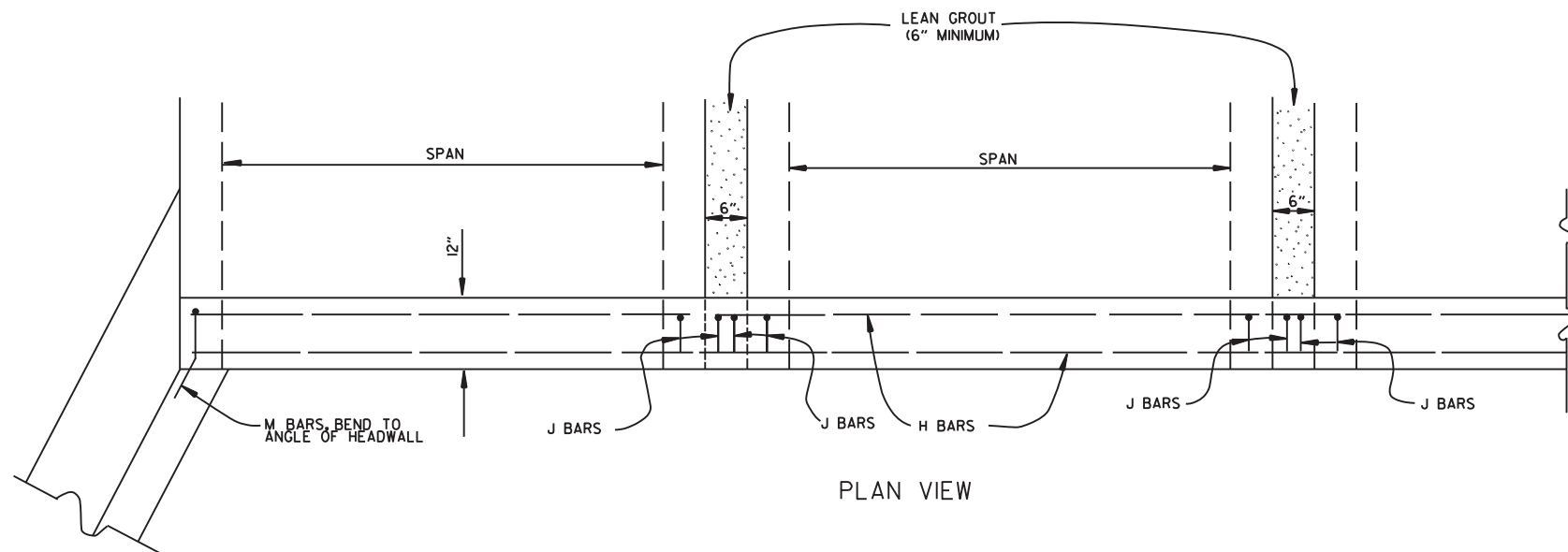
| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|-------|--------------------|--------------|-----------------|
| 10-11-2023      |                |                 |                | 6                     | ARK.  |                    |              |                 |
|                 |                |                 |                | JOB NO.               |       | BR1113             | 25           | 26              |



| DATE<br>REVISED | DATE<br>FILMED | DATE<br>REVISED | DATE<br>FILMED | FED. RD.<br>DIST. NO. | STATE   | FED. AID<br>PROJ. NO. | SHEET<br>NO. | TOTAL<br>SHEETS |
|-----------------|----------------|-----------------|----------------|-----------------------|---------|-----------------------|--------------|-----------------|
| 10-11-2023      |                |                 |                | 6                     | ARK.    |                       |              |                 |
|                 |                |                 |                |                       | JOB NO. | BR1113                | 26           | 26              |

4 CROSS SECTIONS STA. 113+50.00 TO 115+50.00





| 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  $\frac{3}{4}$ " CHAMFERS.

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

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

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

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

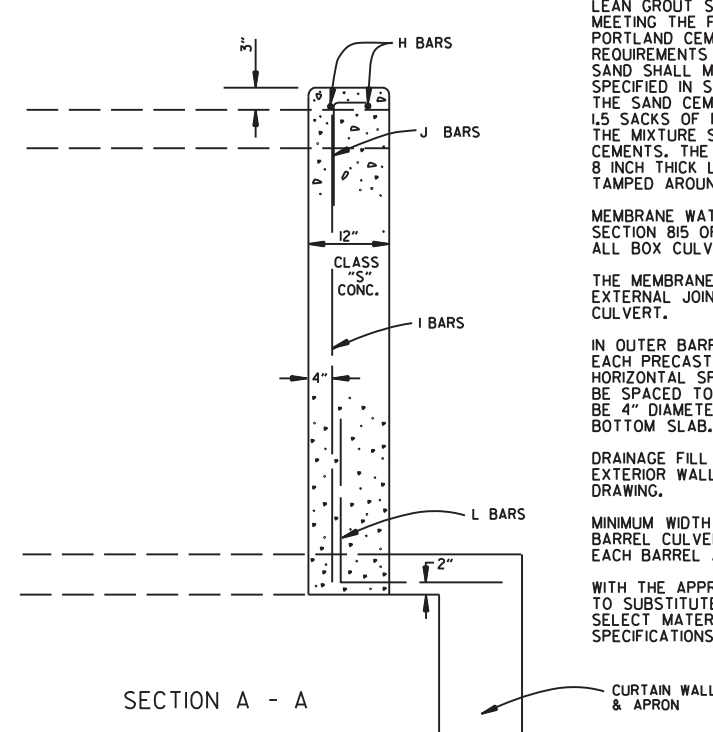
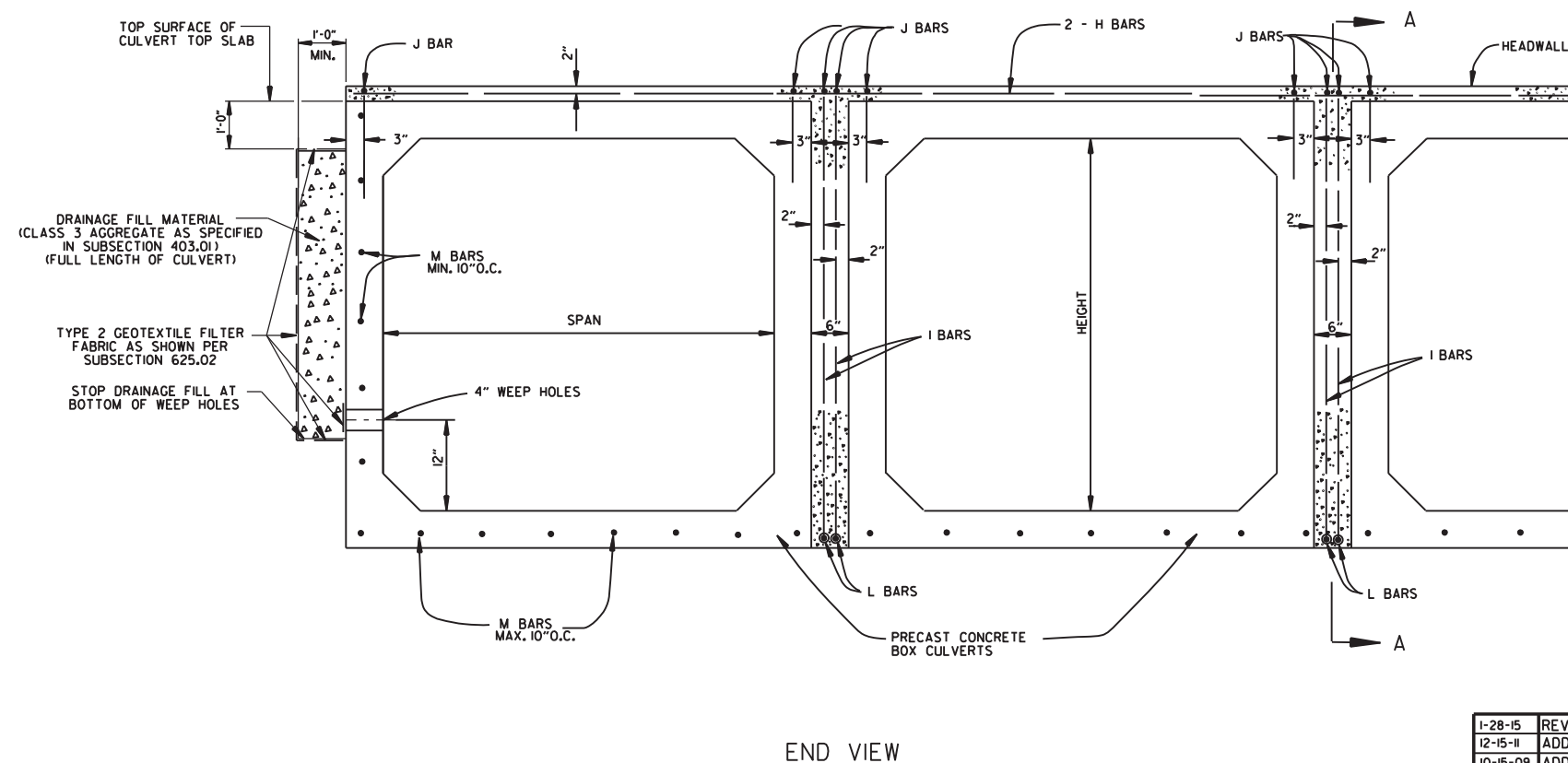
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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

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

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

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



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

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE  
ARCH PIPE DIMENSIONS

| EQUIV.<br>DIA. | SPAN            |                  | RISE            |                  |
|----------------|-----------------|------------------|-----------------|------------------|
|                | AASHTO<br>M 206 | ARDOT<br>NOMINAL | AASHTO<br>M 206 | ARDOT<br>NOMINAL |
| INCHES         | INCHES          |                  |                 |                  |
| 15             | 18              | 18               | 11              | 11               |
| 18             | 22              | 22               | 13½             | 14               |
| 21             | 26              | 26               | 15½             | 16               |
| 24             | 28½             | 29               | 18              | 18               |
| 30             | 36¼             | 36               | 22½             | 23               |
| 36             | 43¾             | 44               | 26¾             | 27               |
| 42             | 51⅝             | 51               | 31⅙             | 31               |
| 48             | 58½             | 59               | 36              | 36               |
| 54             | 65              | 65               | 40              | 40               |
| 60             | 73              | 73               | 45              | 45               |
| 72             | 88              | 88               | 54              | 54               |
| 84             | 102             | 102              | 62              | 62               |
| 90             | 115             | 115              | 72              | 72               |
| 96             | 122             | 122              | 77½             | 77               |
| 108            | 138             | 138              | 87⅝             | 87               |
| 120            | 154             | 154              | 96⅞             | 97               |
| 132            | 168¾            | 169              | 106½            | 107              |

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

REINFORCED CONCRETE  
HORIZONTAL ELLIPTICAL  
PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

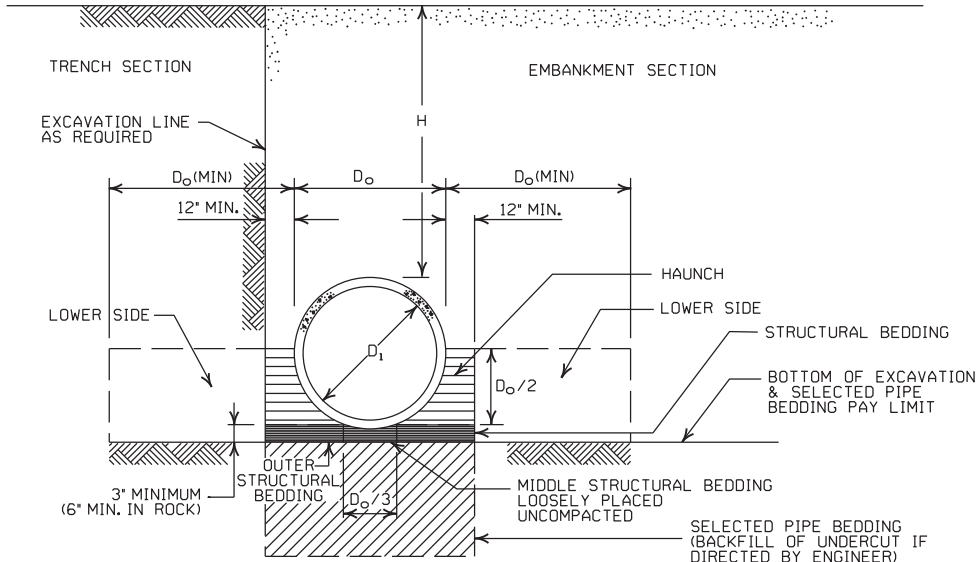
- LEGEND -

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

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

\*SM-3 WILL NOT BE ALLOWED.

\*\* MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606, CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M10, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



CORRUGATED STEEL PIPE (ROUND)

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

CORRUGATED ALUMINUM PIPE (ROUND)

| PIPE<br>DIAMETER<br>(INCHES) | ① MINIMUM<br>COVER TOP OF<br>PIPE TO TOP<br>OF GROUND<br>"H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)                      |       |       |       |       |
|------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------|-------|-------|-------|-------|
|                              |                                                                     | METAL THICKNESS IN INCHES                                          |       |       |       |       |
|                              |                                                                     | 0.060                                                              | 0.075 | 0.105 | 0.135 | 0.164 |
|                              |                                                                     | 2 3/4 INCH BY 1/2 INCH CORRUGATION<br>RIVETED OR HELICAL LOCK-SEAM |       |       |       |       |
| 12                           | 1                                                                   | 45                                                                 | 45    |       |       |       |
| 18                           | 2                                                                   | 30                                                                 | 30    |       |       |       |
| 24                           | 2                                                                   | 22                                                                 | 22    | 52    | 41    |       |
| 30                           | 2                                                                   |                                                                    | 18    | 31    | 32    | 34    |
| 36                           | 2.5                                                                 |                                                                    | 15    | 26    | 27    | 28    |
| 42                           | 2                                                                   |                                                                    |       | 43    | 43    | 44    |
| 48                           | 2                                                                   |                                                                    |       | 40    | 41    | 43    |
| 54                           | 2                                                                   |                                                                    |       | 35    | 37    | 38    |
| 60                           | 2                                                                   |                                                                    |       |       | 33    | 34    |
| 66                           | 2                                                                   |                                                                    |       |       |       | 31    |
| 72                           | 2                                                                   |                                                                    |       |       |       | 29    |

CORRUGATED METAL PIPE ARCHES

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

CONSTRUCTION SEQUENCE

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

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

| INSTALLATION<br>TYPE | MATERIAL REQUIREMENTS FOR<br>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)<br>OR TYPE 1 INSTALLATION MATERIAL ③ |

③ SM-3 WILL NOT BE ALLOWED.

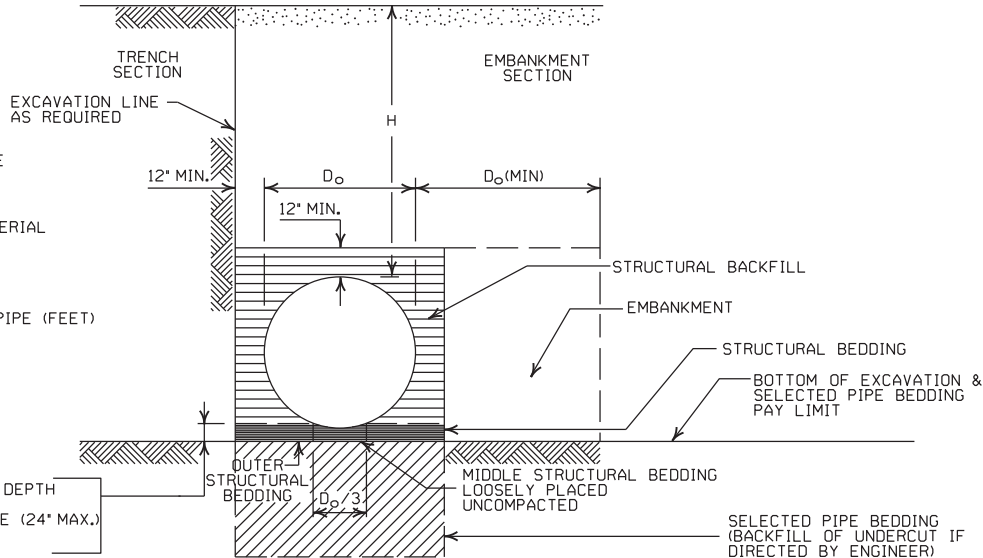
EQUIVALENT METAL THICKNESSES AND GAUGES

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

- LEGEND -

- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE  
MAX. = MAXIMUM  
MIN. = MINIMUM  
===== = STRUCTURAL BACKFILL MATERIAL  
===== = UNDISTURBED SOIL  
EQUIV. DIA. = EQUIVALENT DIAMETER  
H = FILL COVER HEIGHT OVER PIPE (FEET)

IN SOIL-MIN. EQUALS TWICE CORRUGATION DEPTH  
IN ROCK-MIN. EQUALS GREATER OF:  
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)  
TWICE CORRUGATION DEPTH



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT  
FILL HEIGHTS & BEDDING

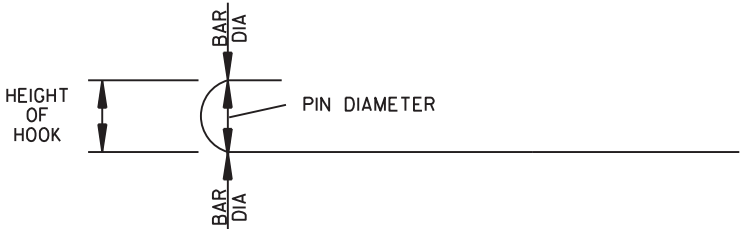
STANDARD DRAWING PCM-1



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", "bi", "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", "bi", "b2" OR "b3" BENT BARS THEY REPLACE.



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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

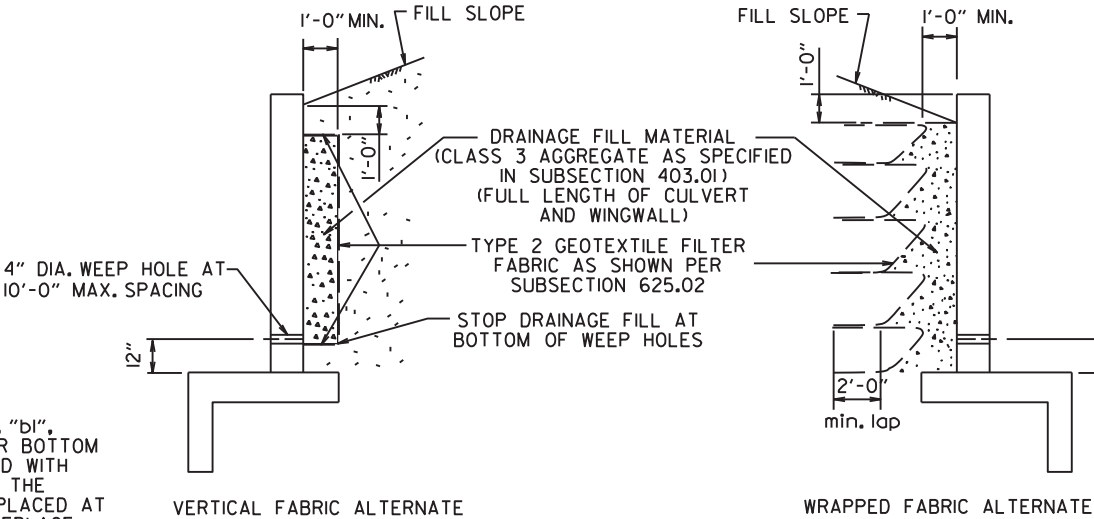
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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

REPLACEMENT BAR LENGTHS TABLE

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

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

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

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

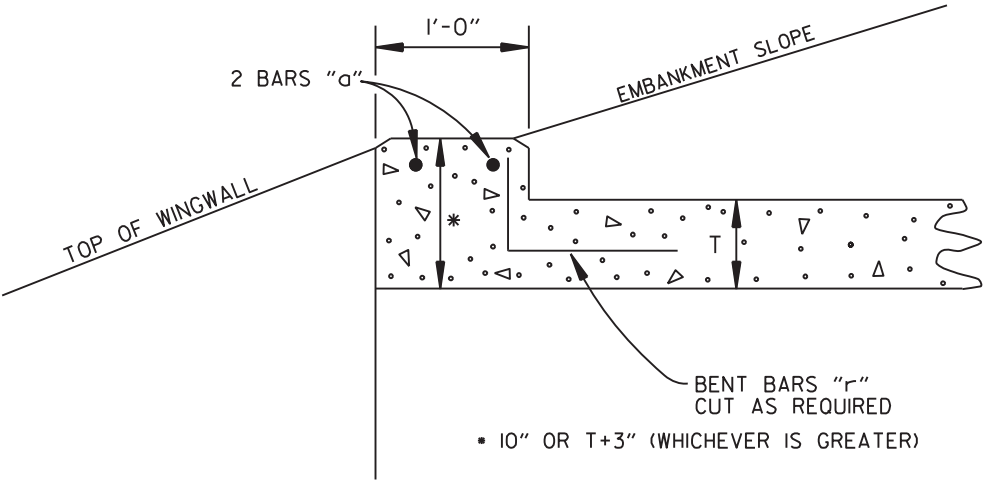
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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

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

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

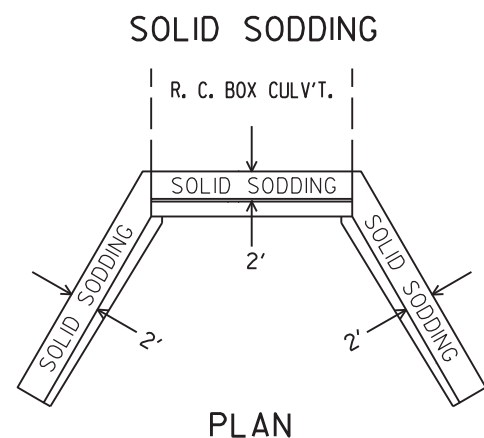
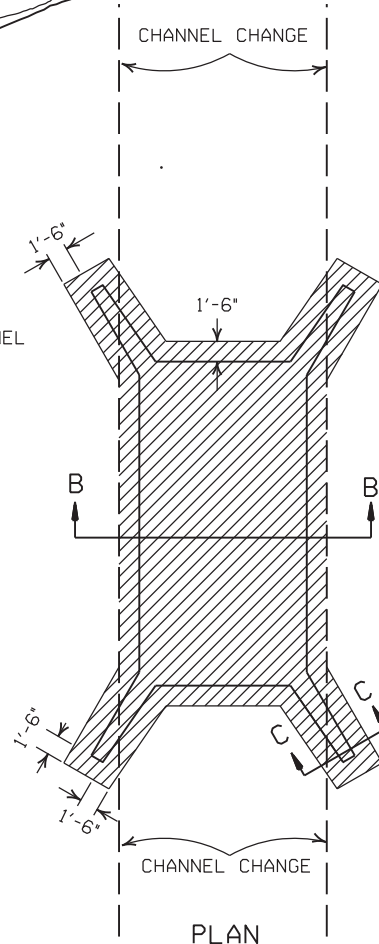
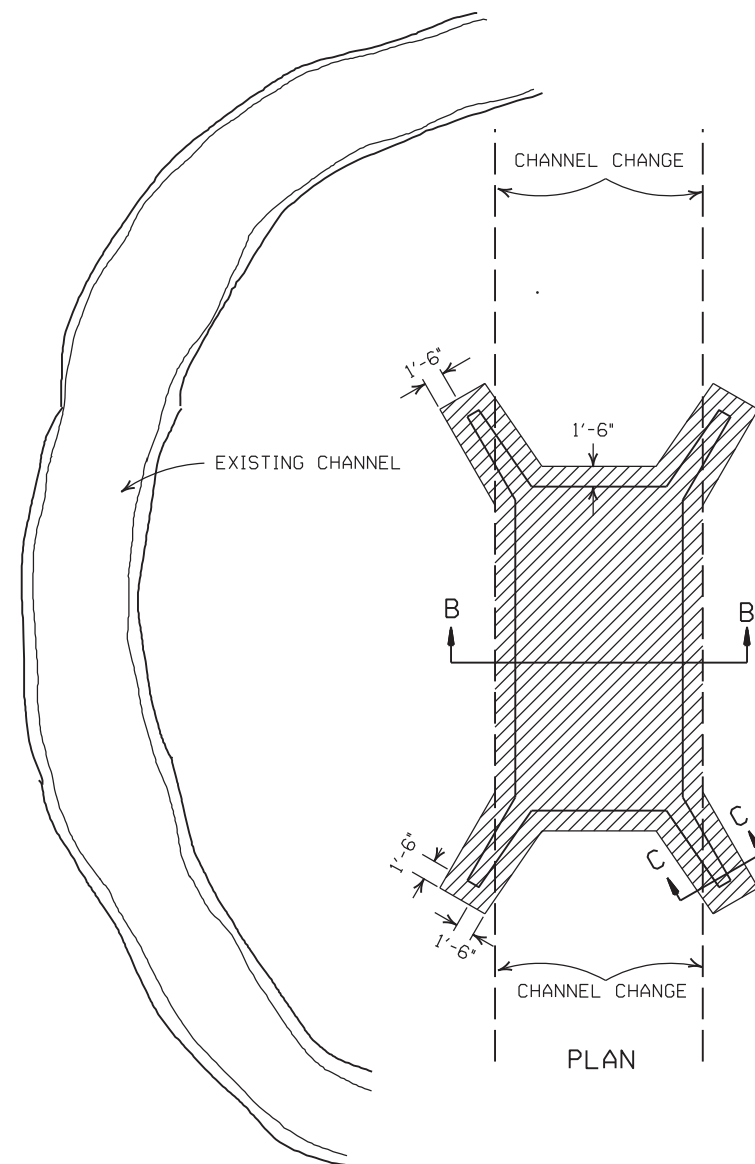
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



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

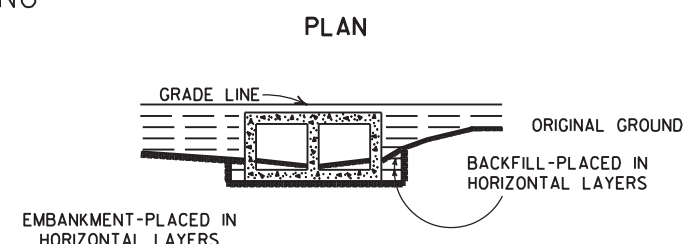
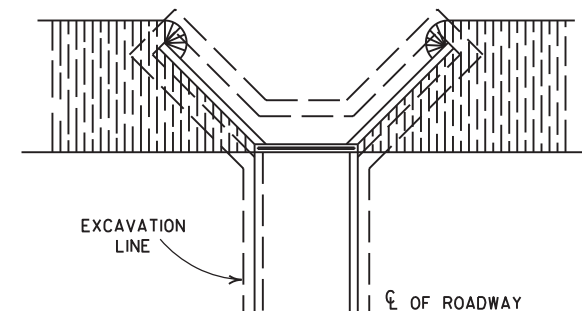
R.C. BOX CULVERT HEADWALL MODIFICATIONS

|          |                                                         |             |                                            |
|----------|---------------------------------------------------------|-------------|--------------------------------------------|
| 7/26/12  | REV. DRAINAGE FILL MATERIAL & DETAIL                    |             | ARKANSAS STATE HIGHWAY COMMISSION          |
| 12/15/11 | REQUIRE WEEP HOLES IN BOX CULVERT WALLS                 |             |                                            |
| 5-25-06  | REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM |             |                                            |
| 11-16-01 | ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES        |             | REINFORCED CONCRETE BOX<br>CULVERT DETAILS |
| 10-18-96 | REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM            |             |                                            |
| 10-12-95 | MOVED SOLID SODDING DETAIL TO RCB-2                     |             |                                            |
| 6-2-94   | ADDED SOLID SODDING PLAN DETAIL                         |             | STANDARD DRAWING RCB-1                     |
| 8-5-93   | REVISED PIN DIAMETER TO SPECS.                          |             |                                            |
| 8-15-91  | DRAWN AND ISSUED                                        |             |                                            |
| DATE     | REVISION                                                | DATE FILMED |                                            |



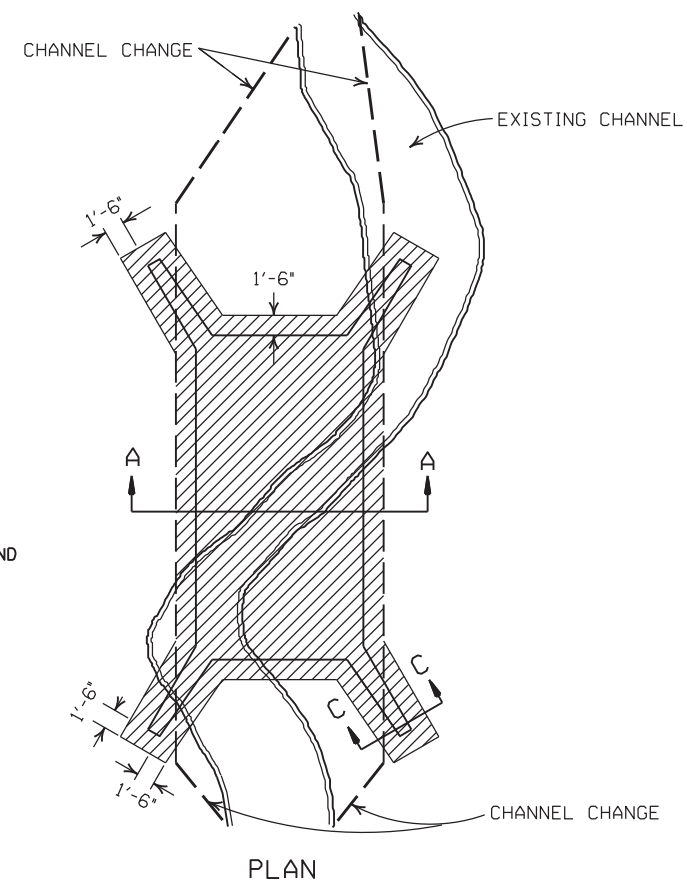
PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

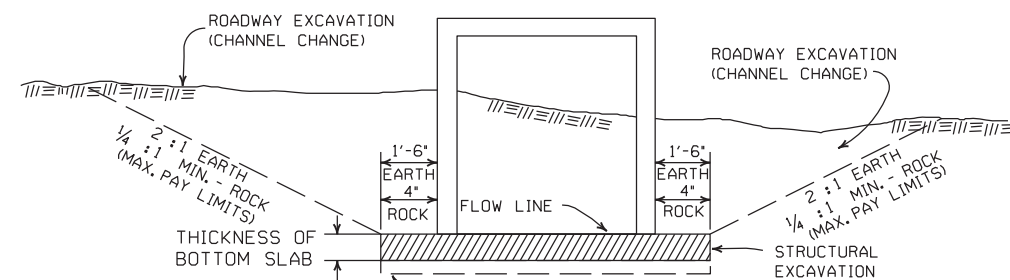


LONGITUDINAL SECTION

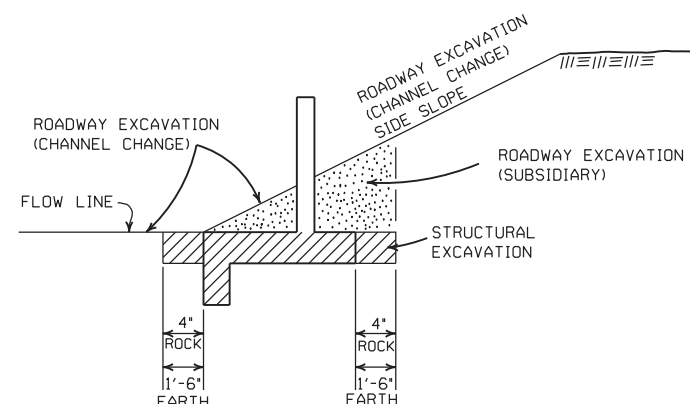
BACKFILL DETAILS FOR BOX CULVERT



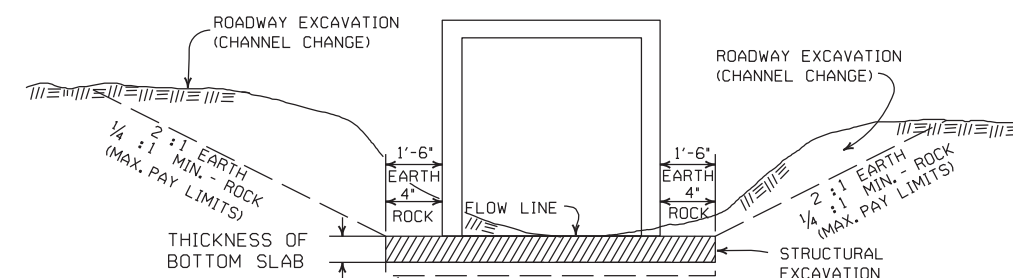
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SECTION B-B  
DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

#### GENERAL NOTES:

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

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

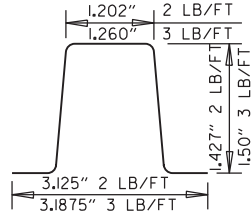
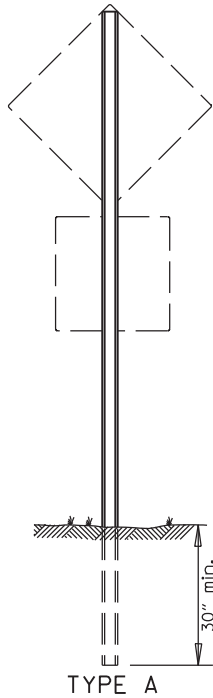
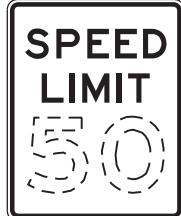
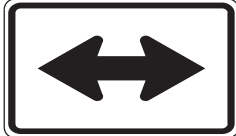
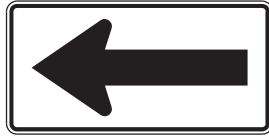
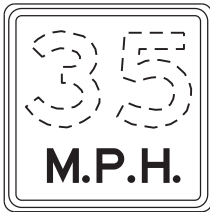
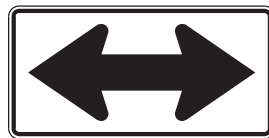
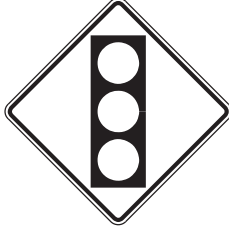
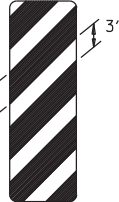
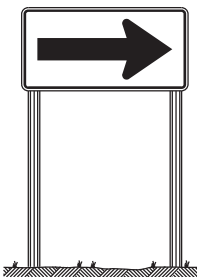
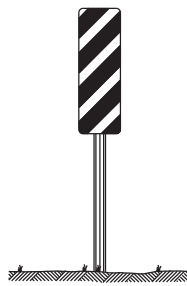
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

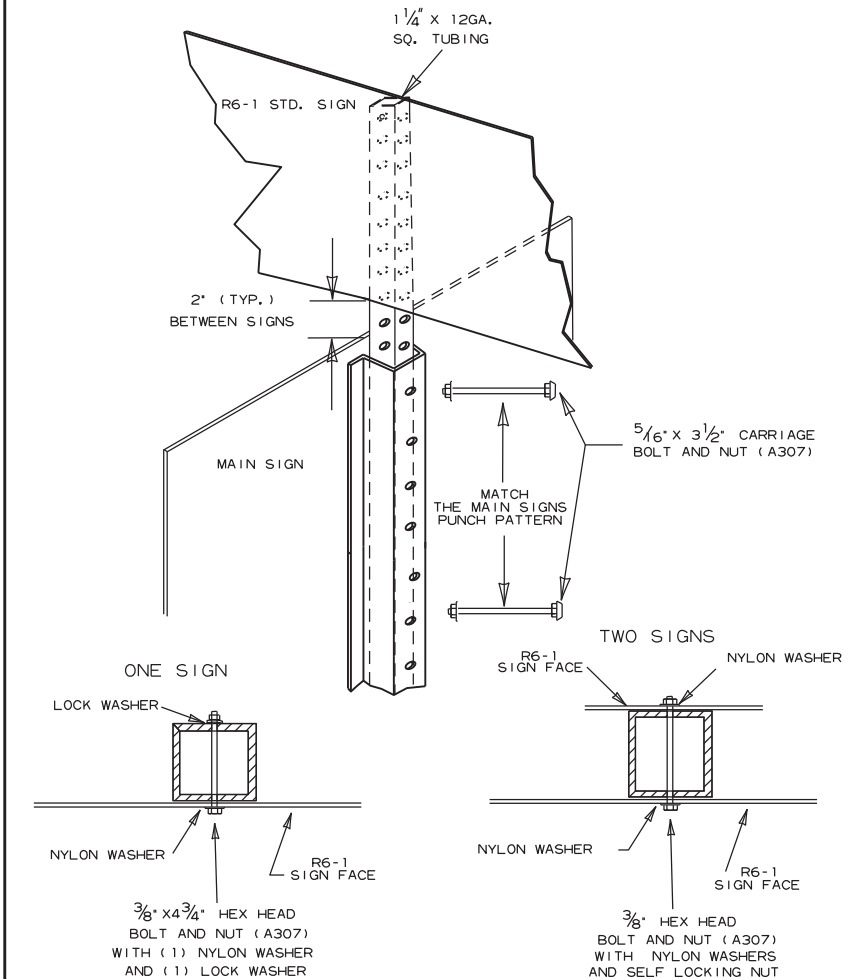
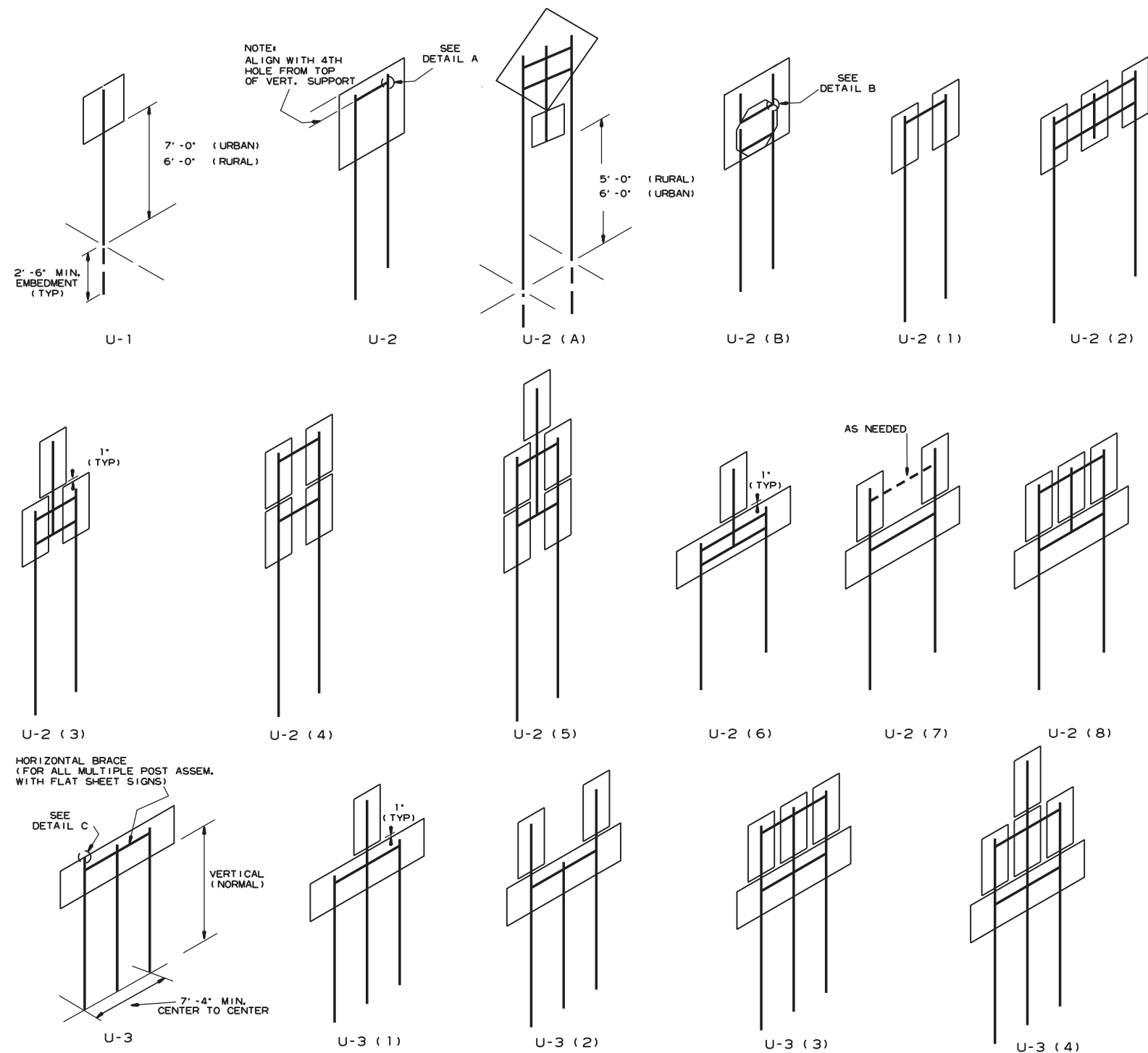
| DATE     | REVISION                                                 | FILMED       |
|----------|----------------------------------------------------------|--------------|
| 11-20-03 | REVISED SECTION A-A NOTE                                 |              |
| 8-22-02  | REVISED SECTION B-B NOTE                                 |              |
| 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

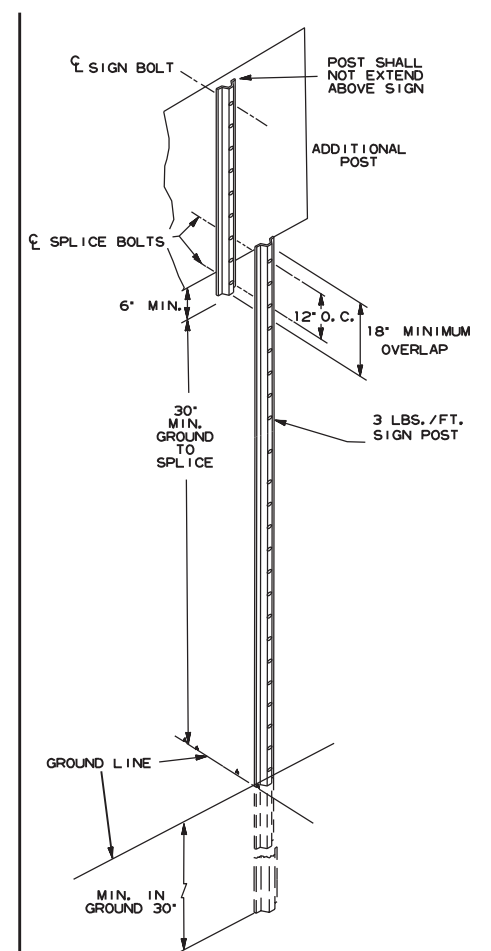
#### EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

|                                                                                                                                  |                                                                                                                                |                                                                                                                                  |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------|--|---------|----------------------------------------|--|---------|--------------------------------------|--|--------|---------|-------------|---------|--------------|-------------|--------|----------|------------|--------|----------------------------------------------|------------|---------|----------------------------|-------------|----------|--------------------|--------------|---------|--------|-------------|------|----------|-------------|
|  <div>RI-1<br/>30"x30"</div>                    |  <div>WI-3<br/>30"x30"<br/>(LT. OR RT.)</div> |  <div>WI-8<br/>18"x24"</div>                    |  <div>W2-5<br/>30"x30"</div>         |  <div>W3-1<br/>36"x36"</div>     |  <div>W5-1<br/>36"x36"</div>                                                                                                                                      |  <div>M6-3<br/>21"x15"</div>                                                                                                                      | <div><p>MINIMUM DIMENSIONS SHOWN</p><p>SUPPORT SECTION</p><p>(U-CHANNEL)<br/>STANDARD SUPPORT<br/>ASSEMBLIES</p><p>TYPE A</p><p>NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.</p></div>                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
|  <div>R2-1<br/>24"x30"</div>                    |  <div>WI-5<br/>30"x30"<br/>(LT. OR RT.)</div> |  <div>W2-2<br/>30"x30"</div>                    |  <div>W5-2<br/>36"x36"</div>         |  <div>W8-3<br/>36"x36"</div>     | <div>NOTE: REFLECTORIZED YELLOW<br/>LEGEND (COUNTY NAME, ROUTE<br/>LETTER &amp; NUMBER) &amp; BORDER<br/>ON A BLUE BACKGROUND.</div>  <div>MI-6<br/>24"x24"</div> |  <div>M6-4<br/>21"x15"</div>                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
|  <div>WI-1<br/>30"x30"<br/>(LT. OR RT.)</div> |  <div>WI-6<br/>48"x24"</div>                |  <div>W2-3<br/>30"x30"<br/>(LT. OR RT.)</div> |  <div>W5-3<br/>36"x36"</div>       |  <div>WI3-IP<br/>18"x18"</div> |  <div>M6-1<br/>21"x15"</div> <div>NOTE: ALL M6 SIGNS TO BE MADE<br/>WITH REFLECTORIZED YELLOW<br/>ARROW &amp; BORDER WITH BLUE<br/>BACKGROUND.</div>            |  <div>M6-6<br/>21"x15"</div>                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
|  <div>WI-2<br/>30"x30"<br/>(LT. OR RT.)</div> |  <div>WI-7<br/>48"x24"</div>                |  <div>W2-4<br/>30"x30"</div>                  |  <div>W10-1<br/>36" DIAMETER</div> |  <div>W3-3<br/>36"x36"</div>   |  <div>M6-2<br/>21"x15"</div>                                                                                                                                    |  <div>S4-3P<br/>24"x8"</div>  <div>S4-2P<br/>24"x10"</div> |  <div>OM-3<br/>12"x36"<br/>(LT. OR RT.)</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <div><p>TYPE B</p><p>TYPE C</p><p>MINIMUM WEIGHT</p><p>TYPE A &amp; B = 3 LBS./FT.<br/>TYPE C = 2 LBS./FT.</p></div> |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| <div>STANDARD HIGHWAY SIGNS</div>                                                                                                |                                                                                                                                |                                                                                                                                  |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      | <div><table><tr><td>9-12-13</td><td>DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P</td><td></td></tr><tr><td>4-17-08</td><td>REVISED SIGN DESIGNATION - W3-1 &amp; W3-2</td><td></td></tr><tr><td>4-10-03</td><td>REVISED W5-2, W8-3, OM-3; ADDED WI-8</td><td></td></tr><tr><td>1-5-81</td><td>REDRAWN</td><td>960-1-15-81</td></tr><tr><td>9-15-78</td><td>ADDED WI-4-3</td><td>877-9-15-78</td></tr><tr><td>9-2-76</td><td>POST WT.</td><td>623-9-3-76</td></tr><tr><td>5-3-76</td><td>STEEL POST WT. FROM 2*-3*; ADDED S4-2 &amp; S4-3</td><td>504-5-3-76</td></tr><tr><td>8-12-74</td><td>REV. HT. TYPE "C" ASSEMBLY</td><td>500-8-21-74</td></tr><tr><td>12-21-72</td><td>ADDED M6-2,3,4,5,6</td><td>500-12-21-72</td></tr><tr><td>12-1-72</td><td>ISSUED</td><td>562-12-1-72</td></tr><tr><td>DATE</td><td>REVISION</td><td>DATE FILMED</td></tr></table></div> |                                                                                                                                                                                                                                                                                                | 9-12-13 | DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P |  | 4-17-08 | REVISED SIGN DESIGNATION - W3-1 & W3-2 |  | 4-10-03 | REVISED W5-2, W8-3, OM-3; ADDED WI-8 |  | 1-5-81 | REDRAWN | 960-1-15-81 | 9-15-78 | ADDED WI-4-3 | 877-9-15-78 | 9-2-76 | POST WT. | 623-9-3-76 | 5-3-76 | STEEL POST WT. FROM 2*-3*; ADDED S4-2 & S4-3 | 504-5-3-76 | 8-12-74 | REV. HT. TYPE "C" ASSEMBLY | 500-8-21-74 | 12-21-72 | ADDED M6-2,3,4,5,6 | 500-12-21-72 | 12-1-72 | ISSUED | 562-12-1-72 | DATE | REVISION | DATE FILMED |
| 9-12-13                                                                                                                          | DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P                                                                                   |                                                                                                                                  |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 4-17-08                                                                                                                          | REVISED SIGN DESIGNATION - W3-1 & W3-2                                                                                         |                                                                                                                                  |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 4-10-03                                                                                                                          | REVISED W5-2, W8-3, OM-3; ADDED WI-8                                                                                           |                                                                                                                                  |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 1-5-81                                                                                                                           | REDRAWN                                                                                                                        | 960-1-15-81                                                                                                                      |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 9-15-78                                                                                                                          | ADDED WI-4-3                                                                                                                   | 877-9-15-78                                                                                                                      |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 9-2-76                                                                                                                           | POST WT.                                                                                                                       | 623-9-3-76                                                                                                                       |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 5-3-76                                                                                                                           | STEEL POST WT. FROM 2*-3*; ADDED S4-2 & S4-3                                                                                   | 504-5-3-76                                                                                                                       |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 8-12-74                                                                                                                          | REV. HT. TYPE "C" ASSEMBLY                                                                                                     | 500-8-21-74                                                                                                                      |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 12-21-72                                                                                                                         | ADDED M6-2,3,4,5,6                                                                                                             | 500-12-21-72                                                                                                                     |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| 12-1-72                                                                                                                          | ISSUED                                                                                                                         | 562-12-1-72                                                                                                                      |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |
| DATE                                                                                                                             | REVISION                                                                                                                       | DATE FILMED                                                                                                                      |                                                                                                                         |                                                                                                                     |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |         |                                              |  |         |                                        |  |         |                                      |  |        |         |             |         |              |             |        |          |            |        |                                              |            |         |                            |             |          |                    |              |         |        |             |      |          |             |



DETAIL E  
R6-1 EXTENSION  
FOR U-CHANNEL POST



DETAIL F  
DETAIL OF SPLICES

NOTES:

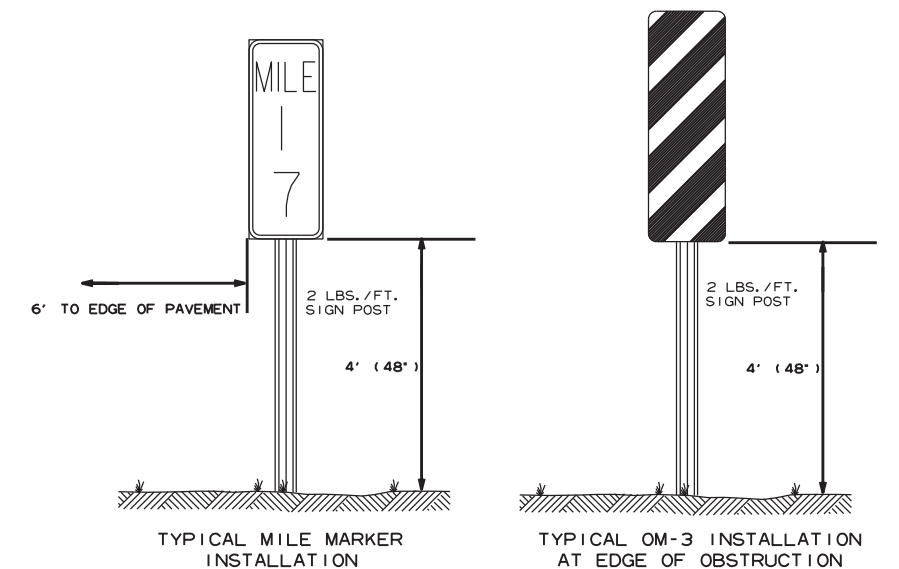
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL ( F ).

NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

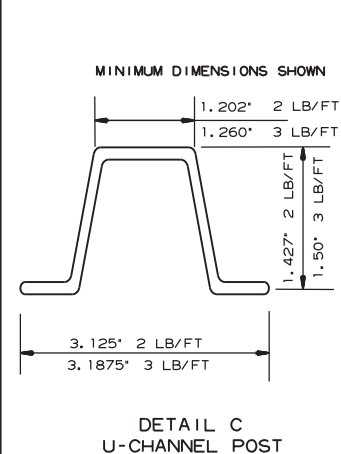
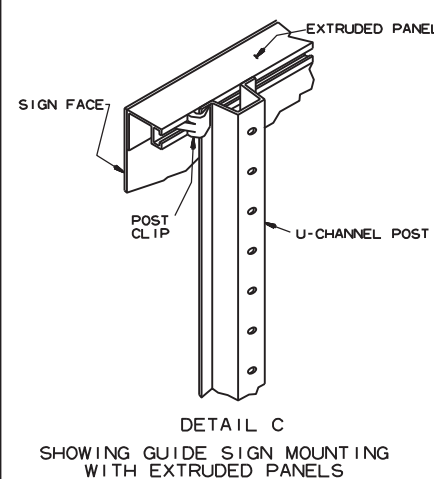
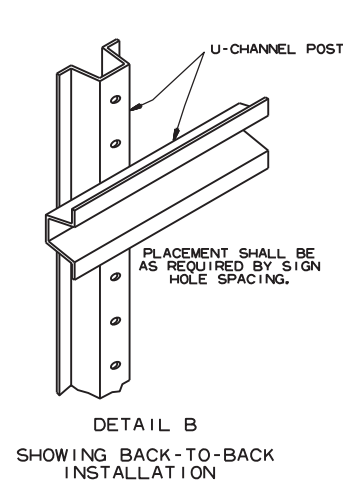
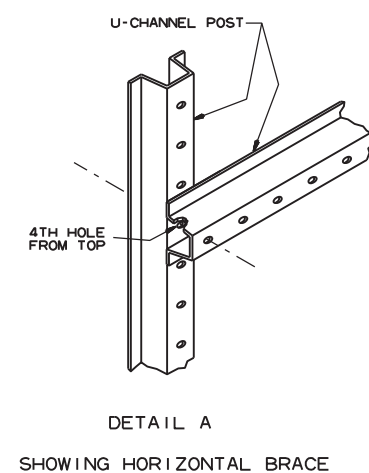
ALL SIGN POSTS SHALL BE PLUMB.

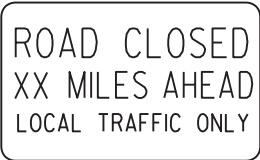
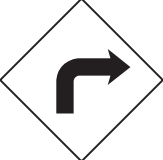
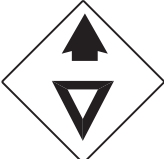
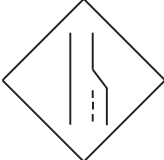
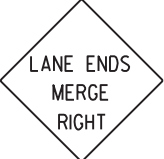
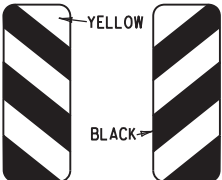
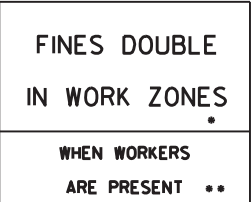
THE POST FOR 'TYPE U' SUPPORTS SHALL BE HOT DIP GALVANIZED.

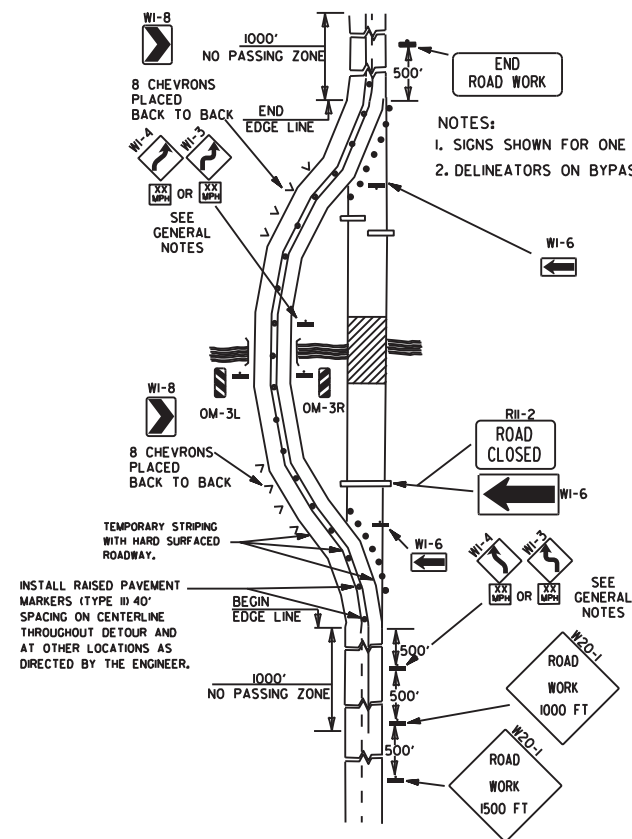


|          |                                                                                      |        |                                   |
|----------|--------------------------------------------------------------------------------------|--------|-----------------------------------|
| 7-25-19 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

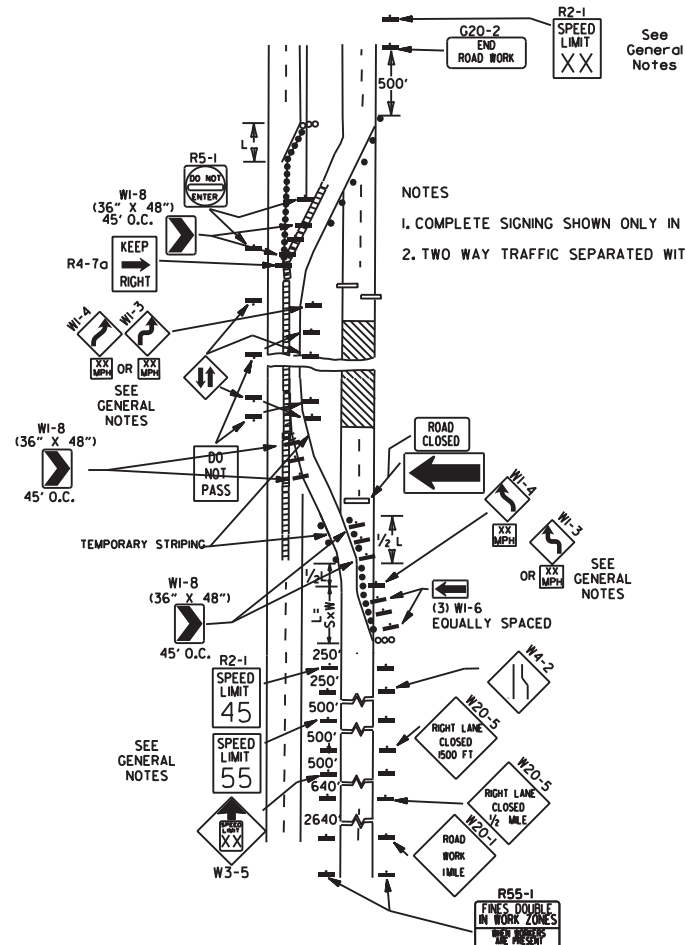
STANDARD DRAWING SHS-2



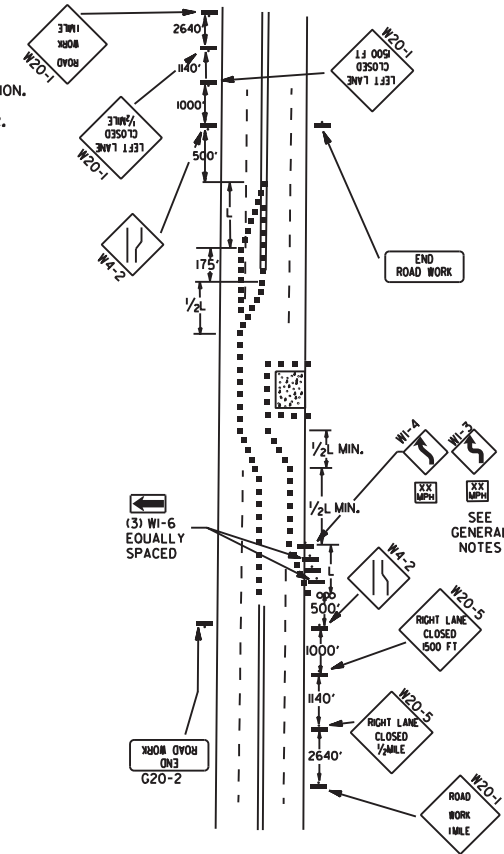
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| <div>RI-1</div> <div></div> <div>STANDARD 30"X30"<br/>EXPRESSWAY 36"X36"<br/>SPECIAL 48"X48"</div> | <div>RI-2</div> <div></div> <div>STD. 36"X36"X36"<br/>EXPWY. 48"X48"X48"<br/>FWY. 60"X60"X60"</div> | <div>R2-1</div> <div></div> <div>STD. 24"X30"<br/>EXPWY. 36"X48"<br/>FWY. 48"X60"</div>                   | <div>W3-5</div> <div></div> <div>STD. 36"X36"<br/>EXPWY. 48"X48"<br/>FWY. 48"X48"</div>                     | <div>W3-5a</div> <div></div> <div>STD. 36"X36"<br/>EXPWY. 48"X48"<br/>FWY. 48"X48"</div> | <div>R4-1</div> <div></div> <div>STD. 24"X30"<br/>EXPWY. 36"X48"<br/>FWY. 48"X60"</div>       | <div>R4-2</div> <div></div> <div>STD. 24"X30"<br/>EXPWY. 36"X48"<br/>FWY. 48"X60"</div> | <div>ADVANCE DISTANCES<br/>(XXXX)</div> <div>500 FT 1/2 MILE<br/>1000 FT 3/4 MILE<br/>1500 FT 1 MILE AHEAD</div> <div>GENERAL NOTES:<br/>1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.<br/>2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.<br/>3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.<br/>4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.<br/>5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.<br/>6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.<br/>7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.<br/>8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.<br/>9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.<br/>10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.<br/><br/>• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 &amp; 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.</div> |
| <div>R5-1</div> <div></div> <div>STD. 30"X30"<br/>EXPWY. 36"X36"<br/>SPECIAL 48"X48"</div>         | <div>R11-2</div> <div></div> <div>48"X30"</div>                                                     | <div>R11-3A</div> <div></div> <div>60"X30"</div>                                                          | <div>R11-4</div> <div></div> <div>60"X30"</div>                                                             | <div>W21-5a</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                   | <div>W1-1</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                          | <div>W1-2</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <div>W1-3</div> <div></div> <div>STD. 48"X48"</div>                                                | <div>W1-4</div> <div></div> <div>STD. 48"X48"</div>                                                 | <div>W1-6</div> <div></div> <div>STD. 48"X24"<br/>SPECIAL 60"X30"</div>                                   | <div>W1-8</div> <div></div> <div>STD. 18"X24"<br/>SPECIAL 24"X30"<br/>EXPWY. 30"X36"<br/>FWY. 36"X48"</div> | <div>W3-1</div> <div></div> <div>STD. 36"X36"<br/>SPECIAL 48"X48"</div>                  | <div>W3-2</div> <div></div> <div>STD. 36"X36"<br/>SPECIAL 48"X48"</div>                       | <div>W4-2</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <div>W5-1</div> <div></div> <div>STD. 36"X36"<br/>SPECIAL 48"X48"</div>                          | <div>W6-3</div> <div></div> <div>EXPWY. 36"X36"<br/>SPECIAL 48"X48"</div>                         | <div>W8-7</div> <div></div> <div>EXPWY. 36"X36"<br/>FWY. 48"X48"</div>                                  | <div>W9-2</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                                      | <div>W13-1</div> <div></div> <div>STD. 24"X24"</div>                                   | <div>W20-1</div> <div></div> <div>STD. 48"X48"</div>                                        | <div>W20-2</div> <div></div> <div>STD. 48"X48"</div>                                  | <div>W20-3</div> <div></div> <div>STD. 48"X48"</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <div>W20-4</div> <div></div> <div>STD. 48"X48"</div>                                             | <div>W20-5</div> <div></div> <div>STD. 48"X48"</div>                                              | <div>W20-7a</div> <div><div>18" 500 FEET W16-2 24"</div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div> | <div>W21-2</div> <div></div> <div>STD. 30"X30"<br/>SPECIAL 36"X36"</div>                                  | <div>W21-5</div> <div></div> <div>STD. 30"X30"<br/>SPECIAL 36"X36"</div>               | <div>W24-1</div> <div></div> <div>STD. 36"X36"</div>                                        | <div>W1-4b</div> <div></div> <div>STD. 48"X48"</div>                                  | <div>R56-1</div> <div></div> <div>STD. 18"X18"</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <div>W8-11</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                            | <div>W8-9</div> <div></div> <div>STD. 36"X36"<br/>FWY. 48"X48"</div>                              | <div>G20-1</div> <div></div> <div>60"X24"</div>                                                         | <div>G20-2</div> <div></div> <div>48"X24"</div>                                                           | <div>OM-3L OM-3R</div> <div></div> <div>12"X36"</div>                                  | <div>M4-9</div> <div></div> <div>STD. 30"X24"<br/>SPECIAL 48"X36"<br/>SPECIAL 60"X48"</div> | <div>M4-10</div> <div></div> <div>48"X18"</div>                                       | <div>R55-1</div> <div></div> <div>36"X60"<br/><br/>• USE 6" C LETTERS<br/>•• USE 4" D LETTERS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



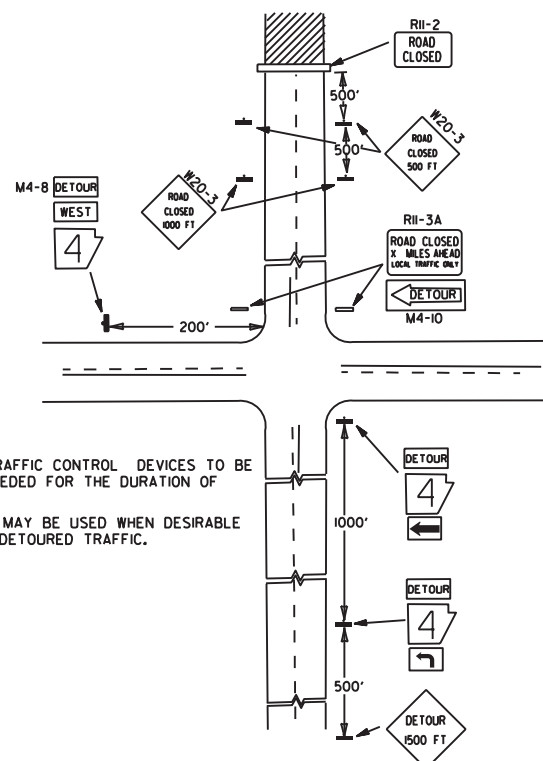
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



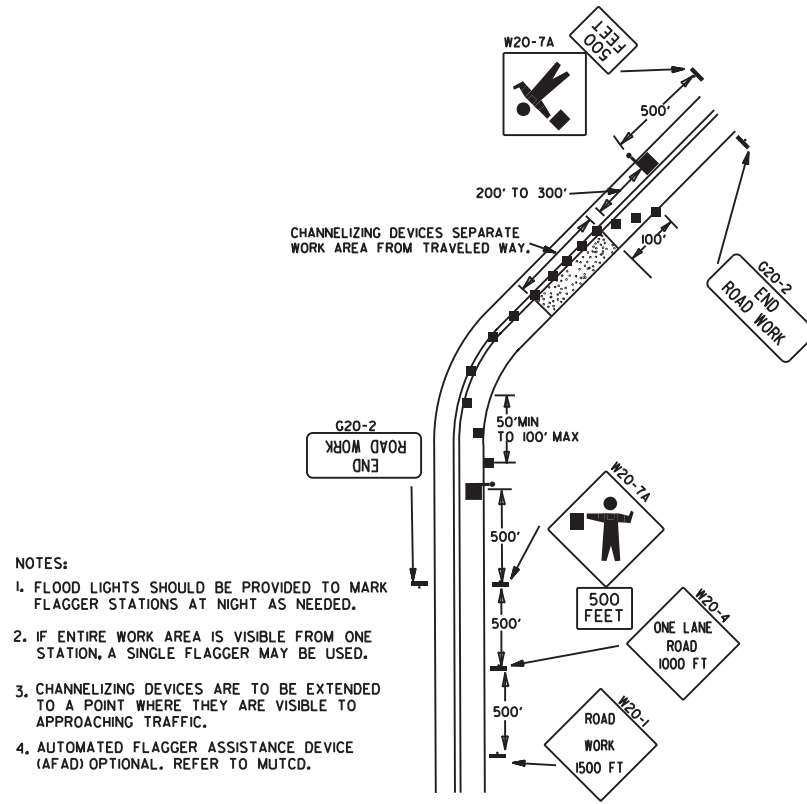
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



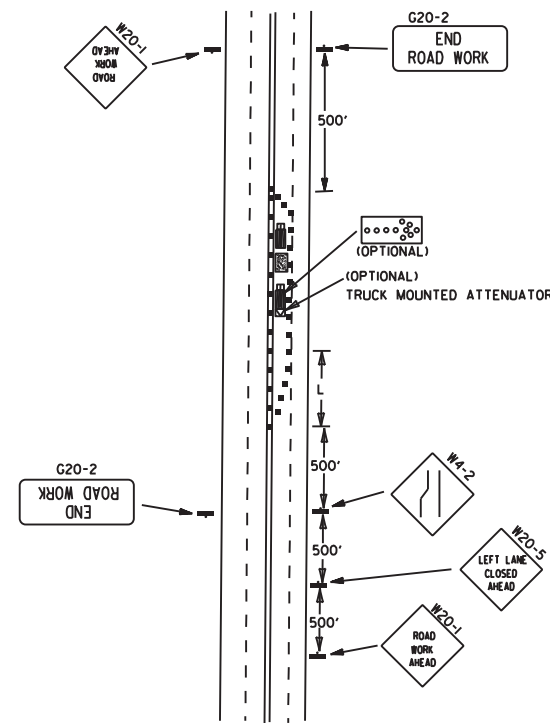
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



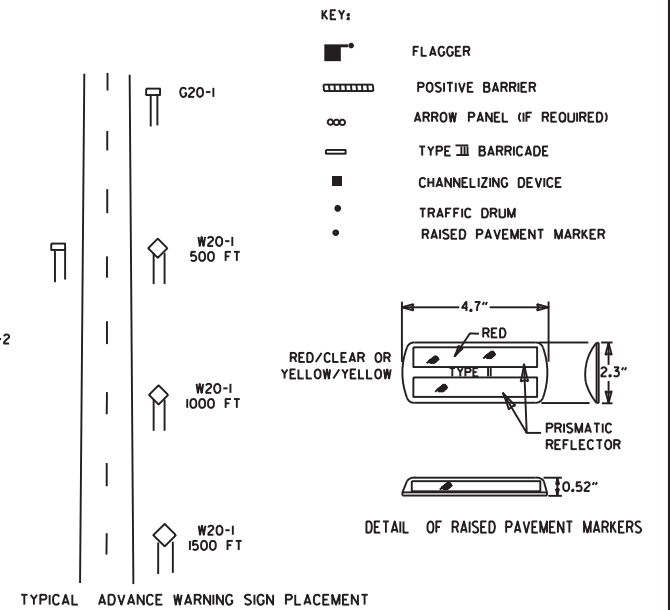
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



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



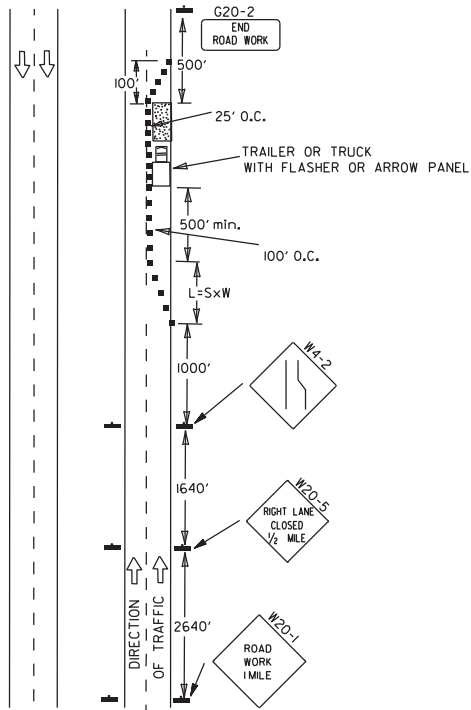
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.



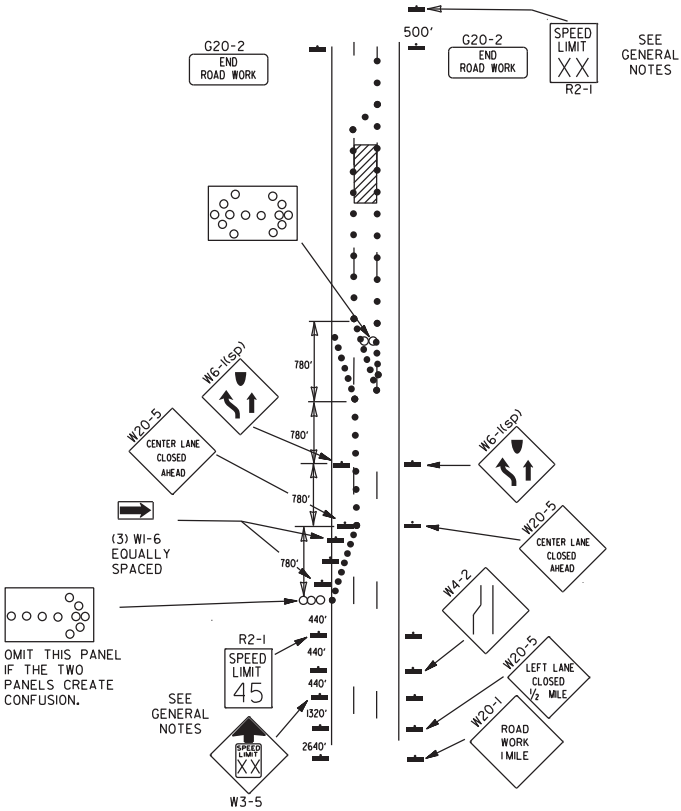
- GENERAL NOTES:
- THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
  - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(K5) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(K45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
  - THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
  - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
  - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
  - TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER, WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
  - DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
  - ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

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

CHANNELIZING DEVICES



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



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

KEY:

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

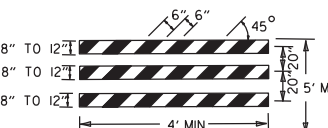
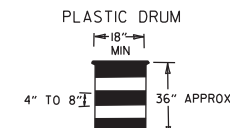
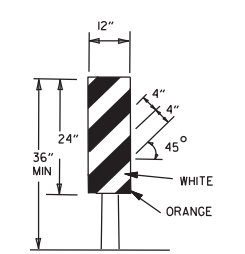
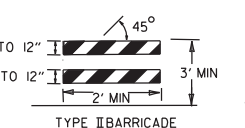
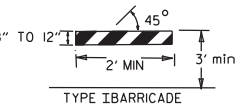
GENERAL NOTES:

- 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 R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1(45)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
- WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
- PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
- THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1(1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
- 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).

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

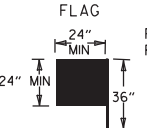
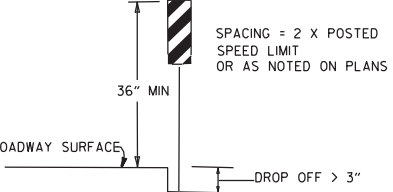
\* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

CONES



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

VERTICAL PANEL PLACEMENT



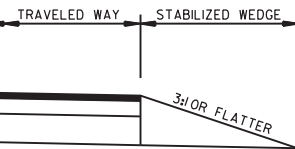
FLAG SHALL BE OF GOOD GRADE RED MATERIAL

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

| > 3"  | CENTERLINE                                | STANDARD LAI            |
|-------|-------------------------------------------|-------------------------|
| ≤ 3"  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9 AND TRA            |
| > 3"  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| ≤ 6"  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| > 6"  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| ≤ 18" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| > 18" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| ≤ 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| > 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST BARRIER(4) &    |

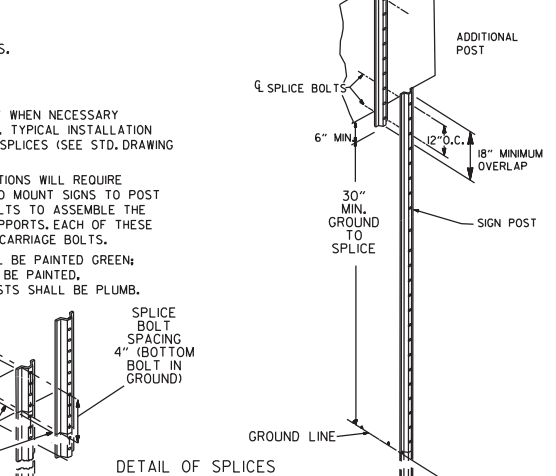
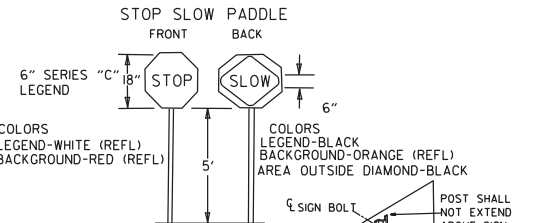
| VERTICAL DIFFERENTIAL | LOCATION                                  | TRAFFIC I               |
|-----------------------|-------------------------------------------|-------------------------|
| ≤ 3"                  | CENTERLINE                                | W8-11 AND LA            |
| ≤ 3"                  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9, EDGE L AND TRAFF  |
| > 3"                  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| ≤ 6"                  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE I AND TRAFF |
| > 6"                  | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONC            |

- 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).

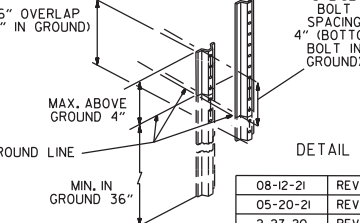


STABILIZED WEDGE

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

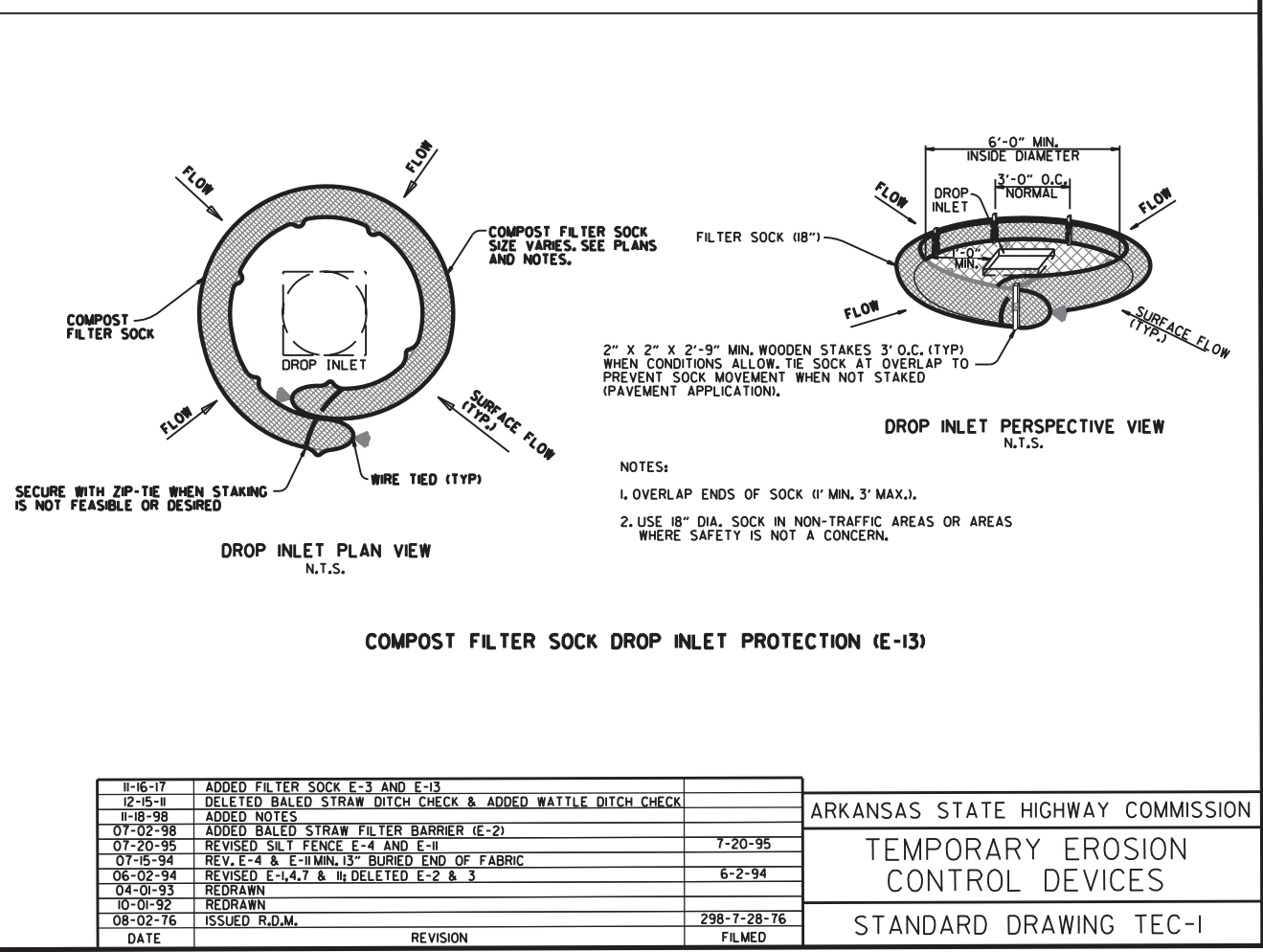
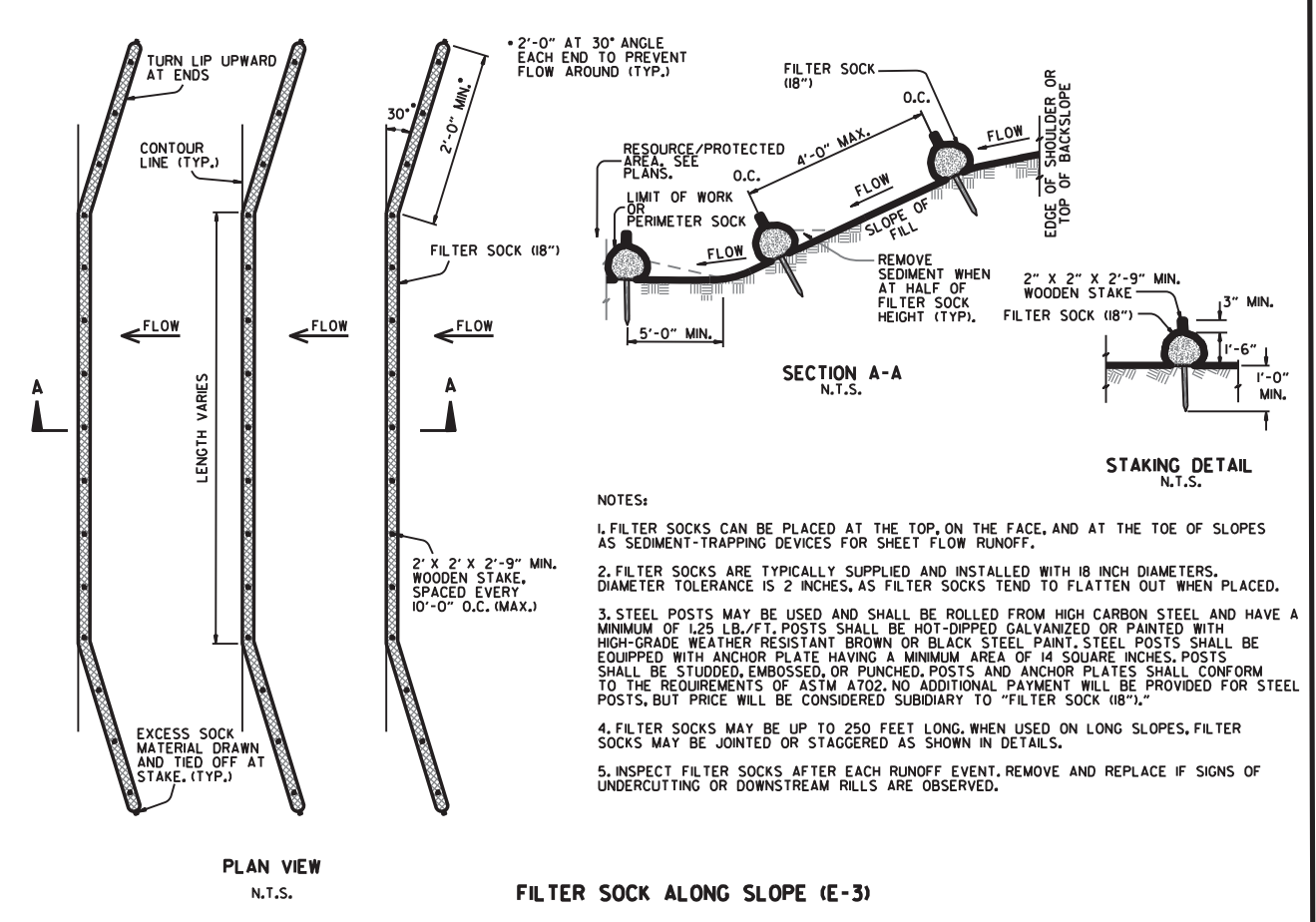
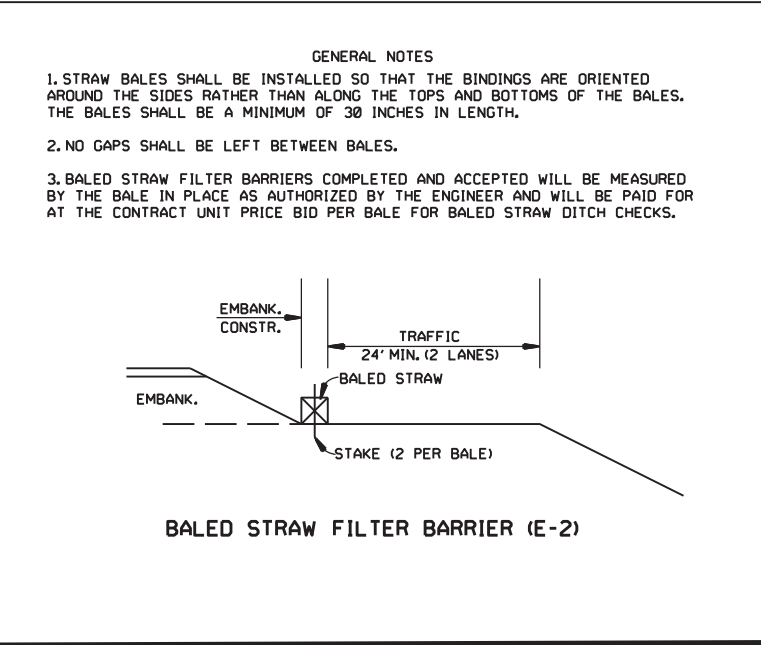
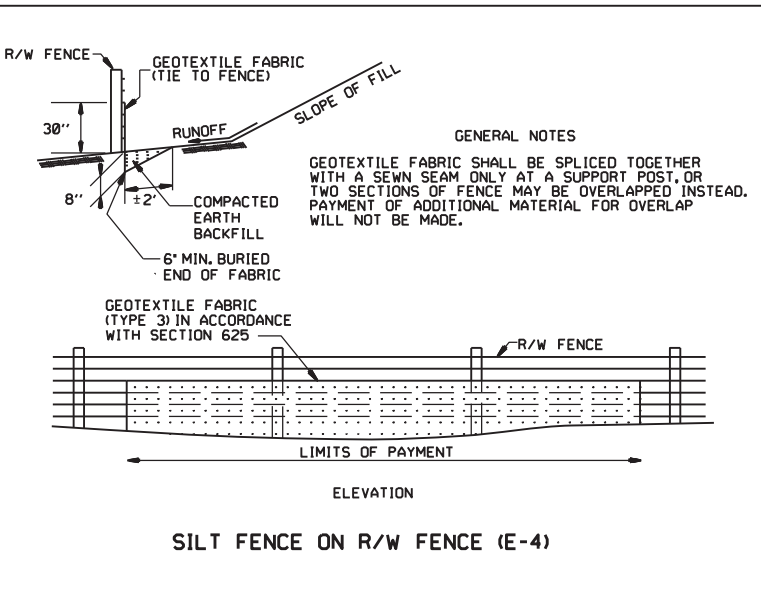
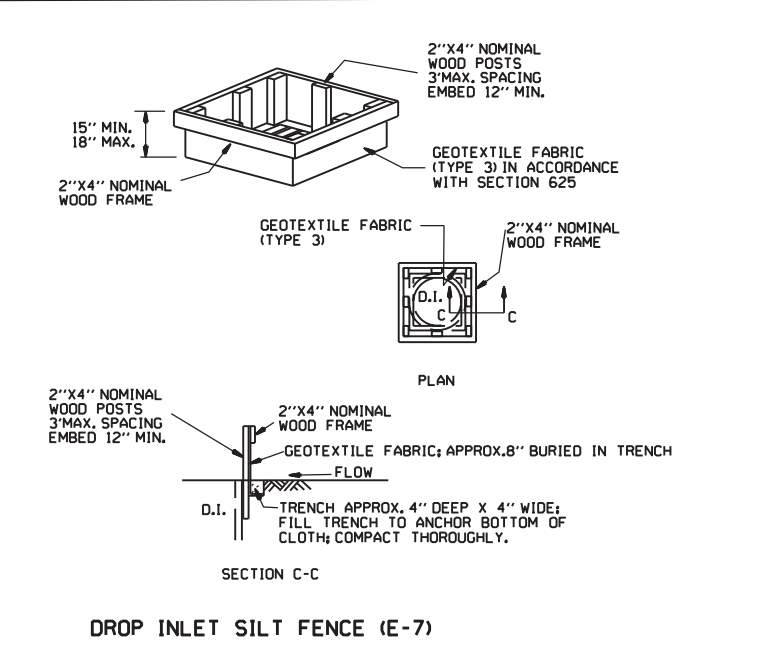
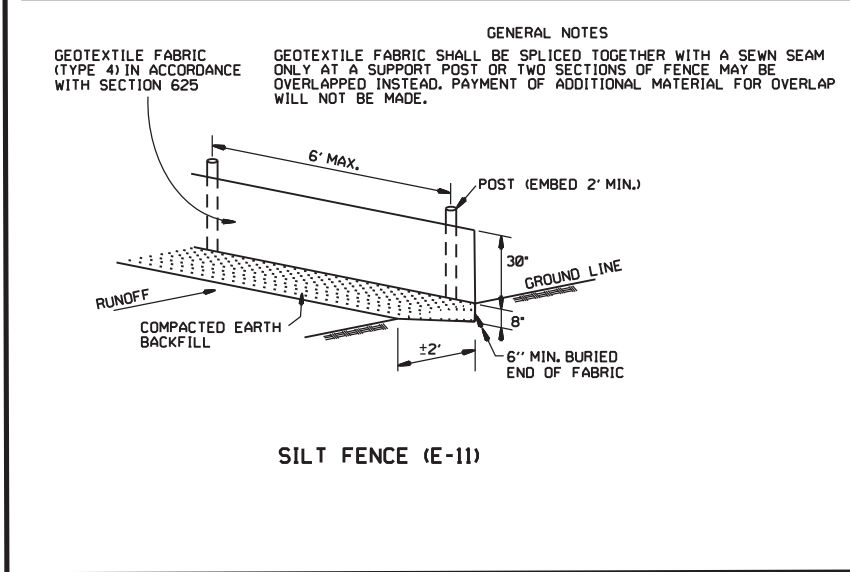
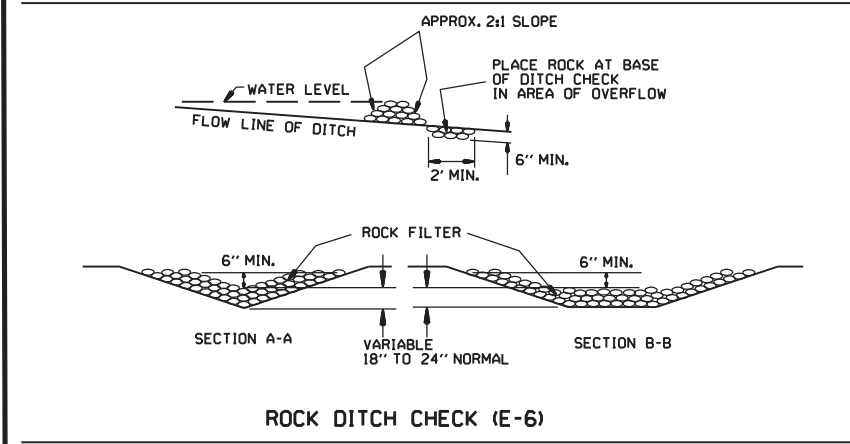
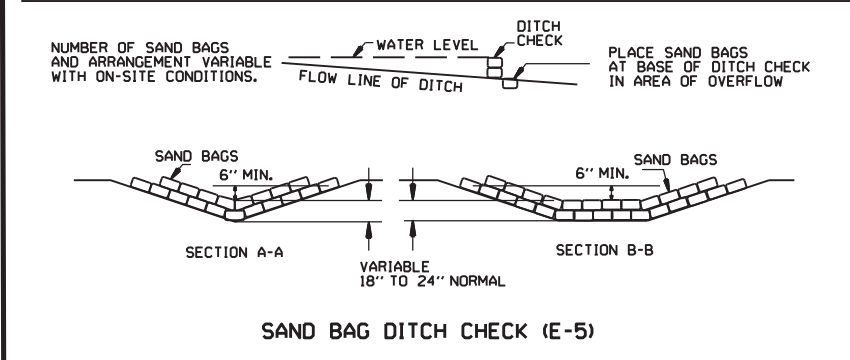
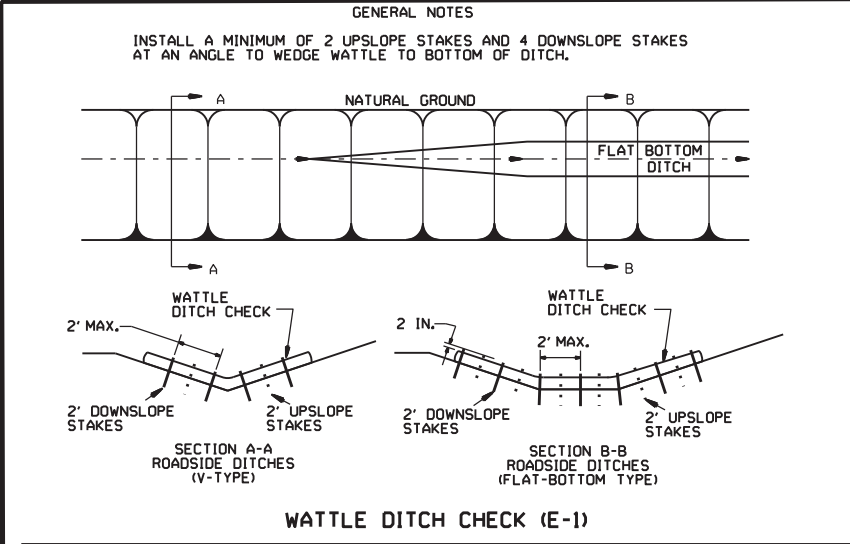


- NOTES:
- USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
  - NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE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



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

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

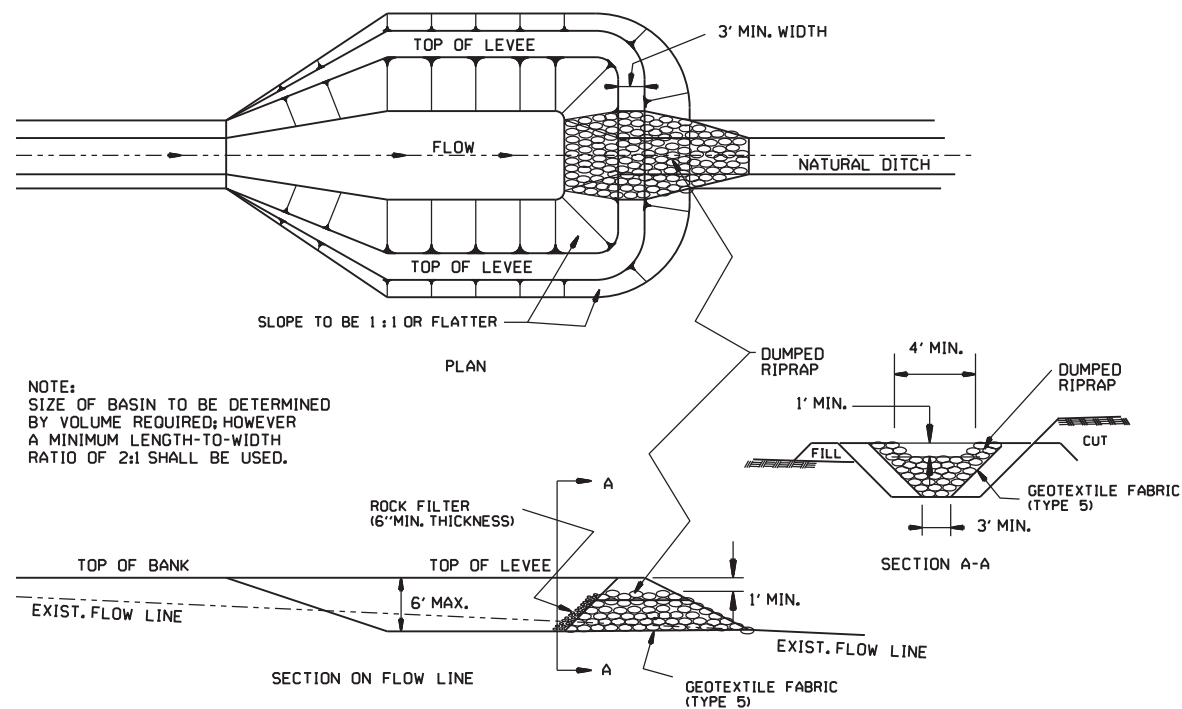


|          |                                                            |             |
|----------|------------------------------------------------------------|-------------|
| 11-16-17 | ADDED FILTER SOCK E-3 AND E-13                             |             |
| 12-15-11 | DELETED BALED STRAW DITCH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

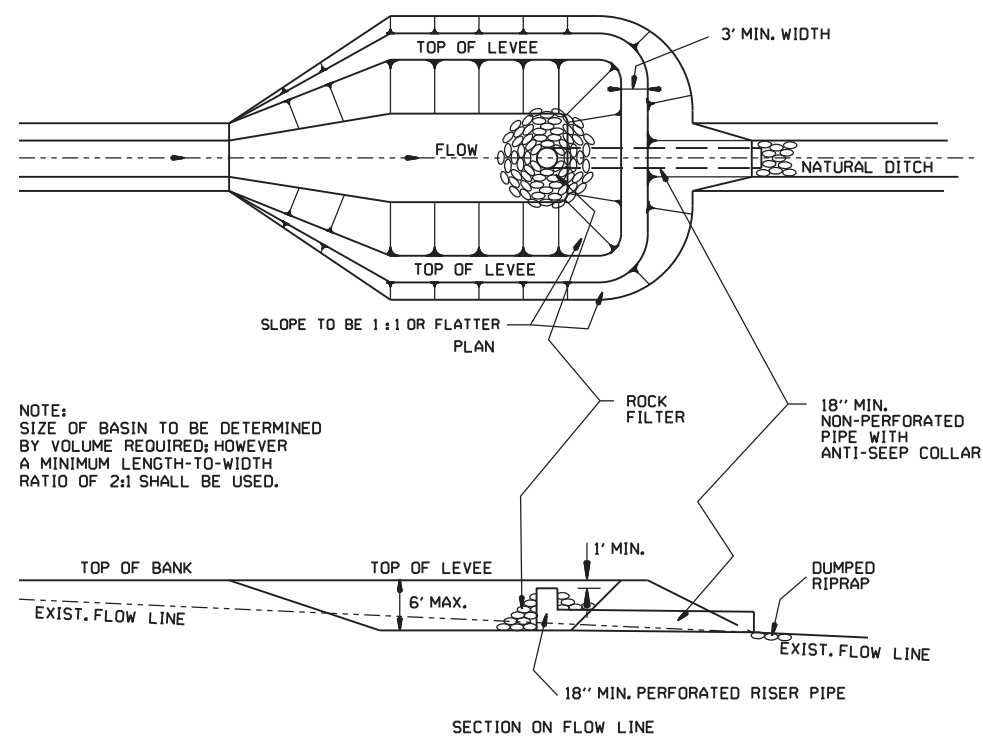
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

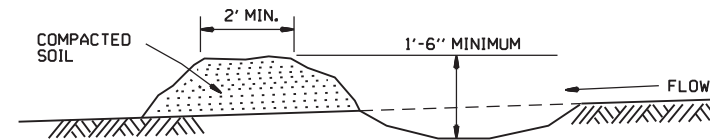
STANDARD DRAWING TEC-1



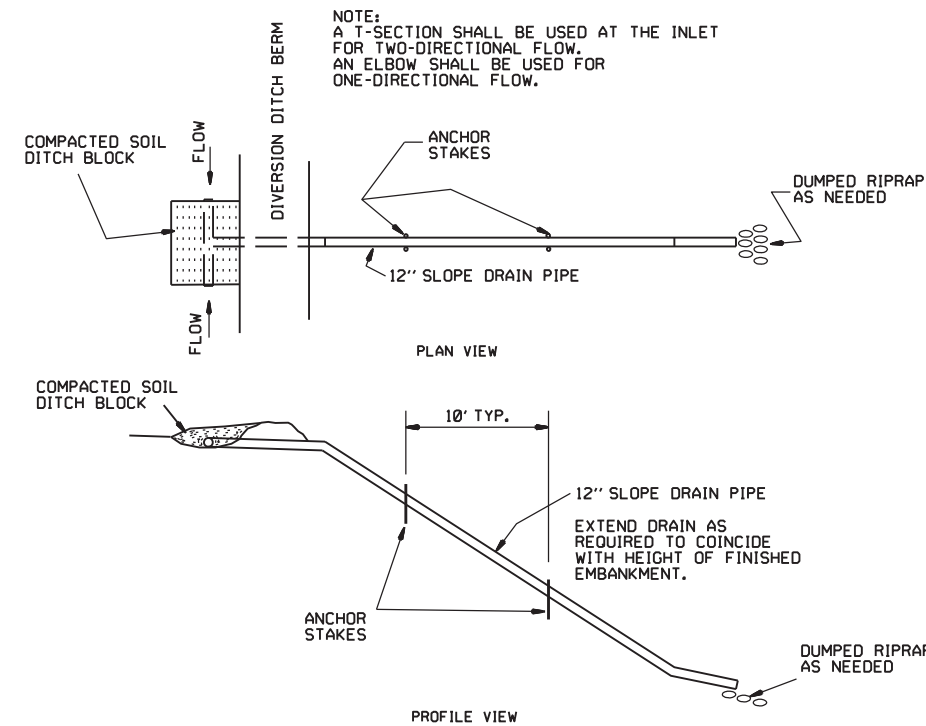
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



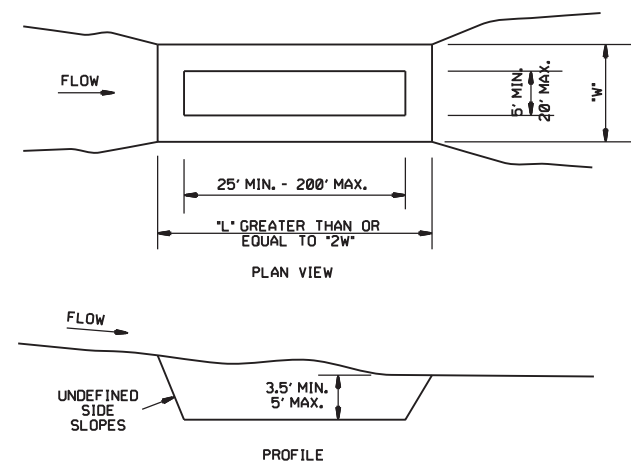
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



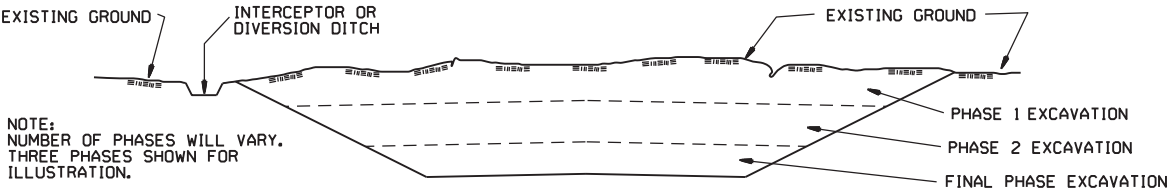
SEDIMENT BASIN (E-14)

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

CLEARING AND GRUBBING

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

EXCAVATION

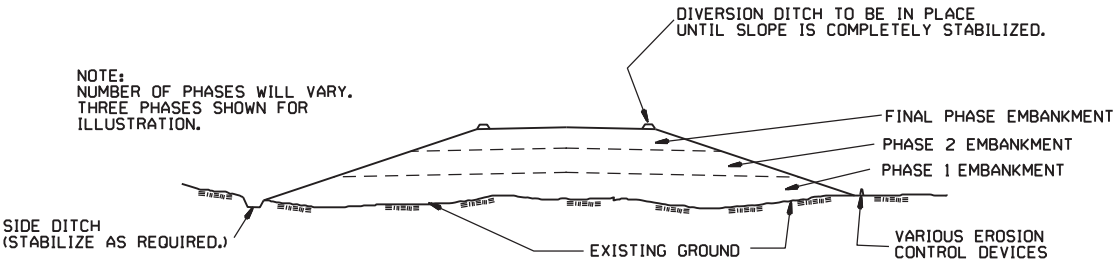


GENERAL NOTE

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

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

EMBANKMENT

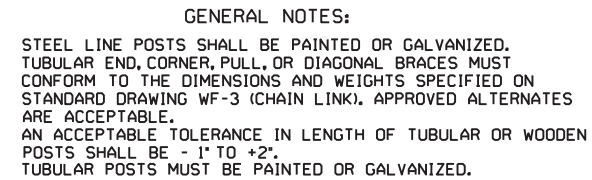


GENERAL NOTE

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

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

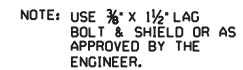
|          |                    |        |                                   |
|----------|--------------------|--------|-----------------------------------|
|          |                    |        | ARKANSAS STATE HIGHWAY COMMISSION |
|          |                    |        | TEMPORARY EROSION CONTROL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



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

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

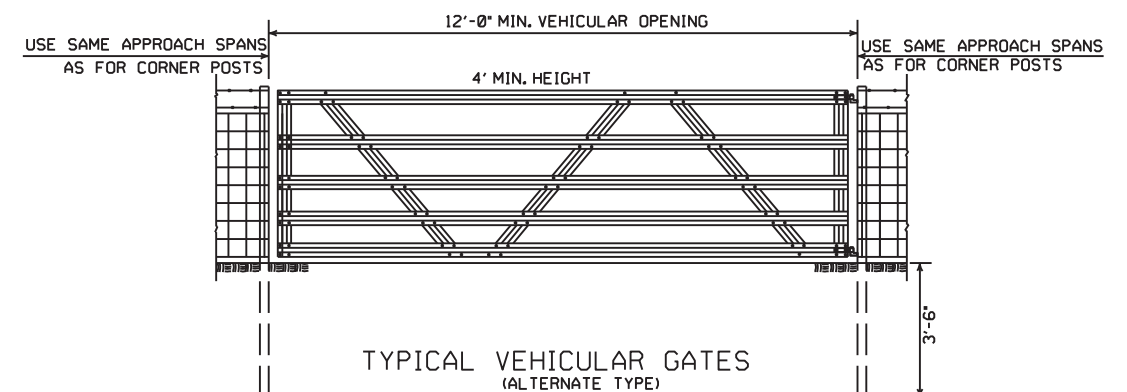
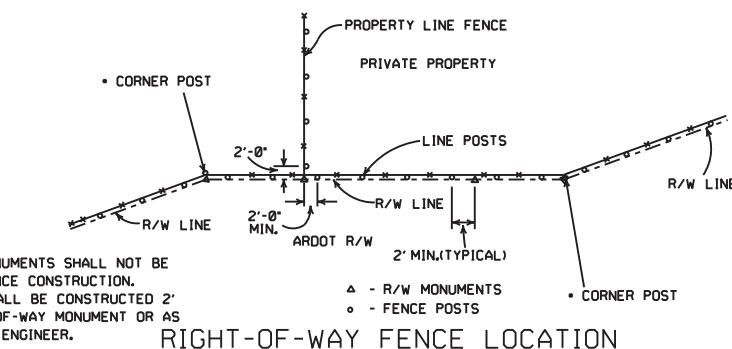
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS, WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD, WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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



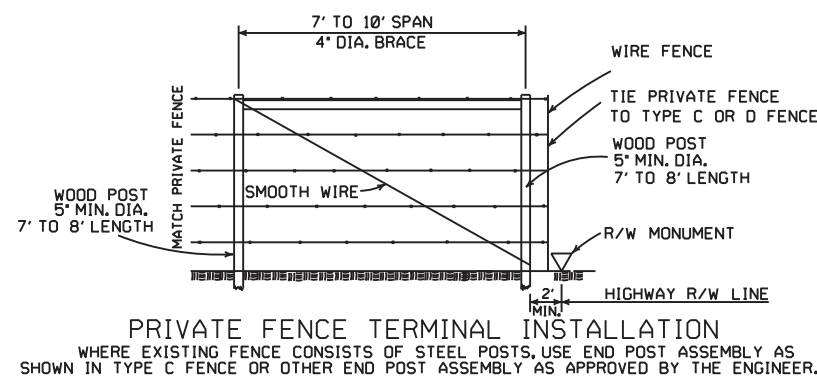
SPLICE FOR BARBED WIRE BETWEEN PULL  
PULL ASSEMBLY SHALL BE BY THE "EYE  
METHOD" AS DESCRIBED AS FOLLOWS:  
THE ENDS OF THE BARBED WIRE SHALL BE  
BENT TO FORM A LOOP. THE LOOPS SHALL  
BE CONNECTED. AFTER THE LOOPS ARE  
CONNECTED THE ENDS OF THE WIRE SHALL  
BE WRAPPED AROUND THE PROJECTING WIRES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

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

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



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



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

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE  
TYPE C AND D

STANDARD DRAWING WF-4