ARKANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION PLANS  

HWY. 39 STRS. & APPRS.  
(N. OF BLACKTON) (S)  
MONROE COUNTY  
ROUTE 39 SECTION 10  
JOB 110124  
FED. AID PROJ. STPR-0048(35)

NOT TO SCALE

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>BEGIN OF PROJECT</th>
<th>MIDDLE POINT OF PROJECT</th>
<th>END OF PROJECT</th>
<th>LEN LENGTH OF PROJECT</th>
<th>NET LENGTH OF ROADWAY</th>
<th>NET LENGTH OF RIDGES</th>
<th>NET LENGTH OF PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE 1</td>
<td></td>
<td></td>
<td></td>
<td>200,000 FEET</td>
<td>133.91 FEET</td>
<td>66.09 FEET</td>
<td>200,200 FEET</td>
</tr>
<tr>
<td></td>
<td>LATITUDE</td>
<td>N 34°40'03&quot;</td>
<td>N 34°40'03&quot;</td>
<td>0.238 MILES</td>
<td>0.225 MILES</td>
<td>0.03 MILES</td>
<td>0.258 MILES</td>
</tr>
<tr>
<td>SITE 2</td>
<td></td>
<td></td>
<td></td>
<td>200,000 FEET</td>
<td>133.91 FEET</td>
<td>66.09 FEET</td>
<td>200,200 FEET</td>
</tr>
<tr>
<td></td>
<td>LATITUDE</td>
<td>N 34°42'00&quot;</td>
<td>N 34°42'00&quot;</td>
<td>0.238 MILES</td>
<td>0.225 MILES</td>
<td>0.03 MILES</td>
<td>0.258 MILES</td>
</tr>
</tbody>
</table>
### INDEX OF SHEETS

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TITLE SHEET</td>
</tr>
<tr>
<td>2</td>
<td>INDEX OF SHEETS AND STANDARD DRAWINGS</td>
</tr>
<tr>
<td>3</td>
<td>GOVERNING SPECIFICATIONS AND GENERAL NOTES</td>
</tr>
<tr>
<td>4 - 5</td>
<td>TYPICAL SECTIONS OF IMPROVEMENT</td>
</tr>
<tr>
<td>6 - 14</td>
<td>SPECIAL DETAILS</td>
</tr>
<tr>
<td>15 - 19</td>
<td>TEMPORARY EROSION CONTROL DETAILS</td>
</tr>
<tr>
<td>20 - 29</td>
<td>MAINTENANCE OF TRAFFIC DETAILS</td>
</tr>
<tr>
<td>30 - 31</td>
<td>PERMANENT PAVEMENT MARKING DETAILS</td>
</tr>
<tr>
<td>32 - 33</td>
<td>QUANTITIES</td>
</tr>
<tr>
<td>34</td>
<td>SUMMARY OF QUANTITIES AND REVISIONS</td>
</tr>
<tr>
<td>35 - 36</td>
<td>SURVEY CONTROL DETAILS</td>
</tr>
<tr>
<td>37 - 39</td>
<td>PLAN AND PROFILE SHEETS</td>
</tr>
<tr>
<td>40 - 44</td>
<td>CROSS SECTIONS</td>
</tr>
</tbody>
</table>

### ROADWAY STANDARD DRAWINGS

<table>
<thead>
<tr>
<th>DRWG NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPD-1</td>
<td>CONCRETE DETAIL PAVING</td>
</tr>
<tr>
<td>PRC-1</td>
<td>PRECAST CONCRETE BOX DUCHEM</td>
</tr>
<tr>
<td>PSC-1</td>
<td>CONCRETE PIPE DUCHEM</td>
</tr>
<tr>
<td>PCP-1</td>
<td>PLASTIC PIPE DUCHEM (HIGH DENSITY POLYTHYLEN)</td>
</tr>
<tr>
<td>PCP-2</td>
<td>PLASTIC PIPE DUCHEM (PLASTIC)</td>
</tr>
<tr>
<td>RM-1</td>
<td>PAVEMENT MARKING DETAILS</td>
</tr>
<tr>
<td>RCB-1</td>
<td>REMOVED CONCRETE BOX DUCHEM DETAILS</td>
</tr>
<tr>
<td>RCB-2</td>
<td>EXCAVATION PAV LIMITS, SADCHIL &amp; SOL &amp; SOIL SOOS FOR BOX DUCHEM</td>
</tr>
<tr>
<td>SE-2</td>
<td>TABLES AND METHODS OF SUPPLEMENT FOR TWO-WAY TRAFFIC</td>
</tr>
<tr>
<td>TC-1</td>
<td>STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION</td>
</tr>
<tr>
<td>TC-2</td>
<td>STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION</td>
</tr>
<tr>
<td>TC-3</td>
<td>STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION</td>
</tr>
<tr>
<td>TC-4</td>
<td>STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION</td>
</tr>
<tr>
<td>TEC-1</td>
<td>TEMPORARY EROSION CONTROL DEVICES</td>
</tr>
<tr>
<td>TEC-2</td>
<td>TEMPORARY EROSION CONTROL DEVICES</td>
</tr>
<tr>
<td>TEC-3</td>
<td>TEMPORARY EROSION CONTROL DEVICES</td>
</tr>
</tbody>
</table>
Governing Specifications


Number

1. Grade line denotes finished grade where shown on plans.
2. All pipe lines, power, telephone, and telegraph lines to be moved or lowered by the respective owners as per agreement with such owners.
3. Any equipment or apparatus that interferes with the proposed construction and which may be the property of utility service organizations shall be moved by the owners unless otherwise provided.
4. The contractor shall be responsible for maintaining U.S. mail boxes within the project limits in such a manner that the public may receive continued mail service. Payment will be considered included in the proposal bid for the various items.
5. All underground facilities within the construction area shall be protected in accordance with Section 107 of the standard specifications.
6. All trees that do not directly interfere with the proposed construction shall be spared if and where directed by the engineer. Damage and destruction shall be used to ensure that all trees not spared removed shall be hauled as little as possible during the construction operations.
7. The contractor shall be responsible for preserving trees to prevent the destruction of any trees where partial or all benefits will be gained or in lieu thereof, the contractor at his own expense, may elect to provide temporary fencing suitable to contain live stock.
8. The sequence as shown on the maintenance of traffic plans is a general outline for the construction of the project and may not be interpreted to cover every detail of the project. Items not critical to the construction sequence may be constructed any stage as approved by the resident engineer.
9. All flexible base and asphaltic pavements removed shall be paid for under the item 216-unclassified excavation.
10. The existing asphalt pavement to be removed prior to the final paving shall be separated by sawing along a center line. After sawing the pavement to be removed shall be carefully removed in a manner that will not damage the pavement that is to remain. Any damage of the asphalt pavement that is to remain in place shall be repaired at the contractors own expense.
11. This project is covered under a Section 49 Nationalwide Item. Refer to Section 109 of the standard specifications, edition of 2019, for permit requirements.

General Notes

1. Grade line denotes finished grade where shown on plans.
2. All pipe lines, power, telephone, and telegraph lines to be moved or lowered by the respective owners as per agreement with such owners.
3. Any equipment or apparatus that interferes with the proposed construction and which may be the property of utility service organizations shall be moved by the owners unless otherwise provided.
4. The contractor shall be responsible for maintaining U.S. mail boxes within the project limits in such a manner that the public may receive continued mail service. Payment will be considered included in the proposal bid for the various items.
5. All underground facilities within the construction area shall be protected in accordance with Section 107 of the standard specifications.
6. All trees that do not directly interfere with the proposed construction shall be spared if and where directed by the engineer. Damage and destruction shall be used to ensure that all trees not spared removed shall be hauled as little as possible during the construction operations.
7. The contractor shall be responsible for preserving trees to prevent the destruction of any trees where partial or all benefits will be gained or in lieu thereof, the contractor at his own expense, may elect to provide temporary fencing suitable to contain live stock.
8. The sequence as shown on the maintenance of traffic plans is a general outline for the construction of the project and may not be interpreted to cover every detail of the project. Items not critical to the construction sequence may be constructed any stage as approved by the resident engineer.
9. All flexible base and asphaltic pavements removed shall be paid for under the item 216-unclassified excavation.
10. The existing asphalt pavement to be removed prior to the final paving shall be separated by sawing along a center line. After sawing the pavement to be removed shall be carefully removed in a manner that will not damage the pavement that is to remain. Any damage of the asphalt pavement that is to remain in place shall be repaired at the contractors own expense.
11. This project is covered under a Section 49 Nationalwide Item. Refer to Section 109 of the standard specifications, edition of 2019, for permit requirements.
TYPICAL SECTIONS OF IMPROVEMENT

NOTES:
1. REFER TO CROSS SECTIONS FOR Deviation FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN TOLERANCE OF THE PROJECT THICKNESS SHOWN.
3. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS, EXCESS OF THE TOLERANCE INDICATED.

PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED.

TANGENT SECTION

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

After all other courses have been laid, the final 2" of surface course is to be placed.

The thickness of aggregate base course shall be

NOTE: The planned slopes without the approval of the engineer.

The contractor will correct any deficient thickness, excess of the tolerance indicated.

Payment will not be made for material placed in thickness that does not meet tolerance indicated.

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

TANGENT SECTION

NOTES:
1. REFER TO CROSS SECTIONS FOR Deviation FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN TOLERANCE OF THE PROJECT THICKNESS SHOWN.
3. THE CONTRACTOR WILL CORRECT ANY DEFICIENT

THICKNESS, EXCESS OF THE TOLERANCE INDICATED.

PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED.

TANGENT SECTION

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

After all other courses have been laid, the final 2" of surface course is to be placed.

The thickness of aggregate base course shall be

NOTE: The planned slopes without the approval of the engineer.

The contractor will correct any deficient thickness, excess of the tolerance indicated.

Payment will not be made for material placed in thickness that does not meet tolerance indicated.

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

TANGENT SECTION

NOTE: Refer to cross sections for deviation from the normal slopes. No changes shall be made from the planned slopes without the approval of the engineer.

2. The thickness of aggregate base course shall be within tolerance of the project thickness shown. The contractor will correct any deficient thickness, excess of the tolerance indicated.

Payment will not be made for material placed in thickness that does not meet tolerance indicated.

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

After all other courses have been laid, the final 2" of surface course is to be placed.
SITE 2
TEMPORARY DETOUR
TANGENT SECTION

STA. 22+00 TO STA. 27+00

SITE 2
TEMPORARY DETOUR
SUPERELEVATED SECTION

NOTE:
1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE
NORMAL SLOPES OF TANGENT SHOWN IN CROSS SECTIONS
THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE
AFTER PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS.
THE THICKNESS OF AGGREGATE BASE COURSE SHOWN MAY NOT BE MADE TO SUPERFICIAL REPAIR.
THE CONTRACTOR WILL CORRECT ANY DEFICIENT
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE
THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

REFERENCES:
REFER TO MAINTENANCE OF TRAFFIC DETAILS
FOR ROAD CLOSURE OF SITE 2

TYPICAL SECTIONS OF IMPROVEMENT
### MID-SECTION

#### QUINTUPLE BARREL BOX CULVERT

**Details of R.C. Box Culvert**

**Sheet 1 of 2**

**Quintuple Barrel Box Culvert**

**Sta. 105+00**

**Tabular Data By:**

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

**Reinforcing Steel -**

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

**Design**

<table>
<thead>
<tr>
<th>Design</th>
<th>Reinforced Actual</th>
<th>Reinforced Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.21 to 2.01</td>
<td>0.21 to 2.01</td>
</tr>
<tr>
<td>3</td>
<td>0.2 to 3.0</td>
<td>0.2 to 3.0</td>
</tr>
<tr>
<td>4</td>
<td>0.25 to 4.0</td>
<td>0.25 to 4.0</td>
</tr>
<tr>
<td>5</td>
<td>0.3 to 5.0</td>
<td>0.3 to 5.0</td>
</tr>
<tr>
<td>6</td>
<td>0.35 to 6.0</td>
<td>0.35 to 6.0</td>
</tr>
</tbody>
</table>

*Data drawn for Mid-Section, Skew Sectional, and Skew End Sections is based on the design. The Following Plans and Profile Sheets are for actual fill.*

**Sheets for actual fill:**

**Plan and Profile Sheets**
### DETAILS OF R.C. BOX CULVERT

**QUINTUPLE BARREL BOX CULVERT**

**Sta. 105+00**

---

**OUTLET WALL TABLE**

<table>
<thead>
<tr>
<th>DESIGN</th>
<th>FD</th>
<th>LBS</th>
<th>2'</th>
<th>3'</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
<th>8'</th>
<th>9'</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**OUTLET SKEWED END SECTION**

<table>
<thead>
<tr>
<th>DESIGN</th>
<th>FD</th>
<th>LBS</th>
<th>2'</th>
<th>3'</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
<th>8'</th>
<th>9'</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**OUTLET SLOPE SECTION**

<table>
<thead>
<tr>
<th>DESIGN</th>
<th>FD</th>
<th>LBS</th>
<th>2'</th>
<th>3'</th>
<th>4'</th>
<th>5'</th>
<th>6'</th>
<th>7'</th>
<th>8'</th>
<th>9'</th>
<th>10'</th>
<th>11'</th>
<th>12'</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Outlet Details**

1. Out of 2 Sheet
2. The required number of bars and lengths shown are for estimating purpose only. The actual number and length values shall be determined in field, unless otherwise noted, all dimensions are in inches.
### Outlets Wingwall Table

<table>
<thead>
<tr>
<th>No.</th>
<th>DST</th>
<th>B</th>
<th>C</th>
<th>W</th>
<th>OH</th>
<th>SK</th>
<th>SL</th>
<th>K</th>
<th>H</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W5</th>
<th>W6</th>
<th>W7</th>
<th>W8</th>
<th>W9</th>
<th>W10</th>
<th>W11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>12</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>18</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Outlet Section**

- **Top Slab Reinforcing Steel**
- **Bottom Slab Reinforcing Steel**
- **Side Wall Reinforcing Steel**
- **Interior Wall Reinforcing Steel**
- **Top Slab Distribution Reinforcing Steel**
- **Bottom Slab Distribution Reinforcing Steel**
- **Side Wall Distribution Reinforcing Steel**
- **Interior Wall Distribution Reinforcing Steel**

**Outlet Slope Sections**

- **Overall Height**
- **Additional Area for Total**

### TRIPEL BARREL BOX CULVERT

**Details of R.C. Box Culvert**

- **Sta. 225+00**

- **TRIPLE BARREL BOX CULVERT**

**Tabular Data by:**

- Unless otherwise noted, all dimensions are in inches.

**Reinforcing Steel - Roadway (Grade 60).**

Any Bar Lap Required for the Skewed End Section

**OUTLET WINGWALL TABLE**

**OUTLET SKEWED END SECTION**

**OUTLET SLOPE SECTIONS**

### Notes:

- **Board of Professional Engineers of the State of Arkansas:**
  - No. 13640
  - Licensed Professional Engineer
  - Stephe. Bosio

- **Revision Date:**
  - 05/20/2020

- **Submitted by:**
  - 3:40:36 PM

- **Works Space:**
  - 6/8/2021

- **64, 47, 62 X**

- **ARKANSAS STATE SHEET NO. 2 OF 2**

### Special Details

- Any Bar Lap Required for the Skewed End Section.
- **Reinforcing Steel - Roadway (Grade 60).**
- Any Bar Lap Required for the Skewed End Section.
TEMPORARY EROSION CONTROL DETAILS

LOG MILE 5.00
BEGIN SITE 1
BEGIN JOB 110124
STA. 104+50.00
STA 105+50.00
END SITE 1
LOG MILE 5.00

TEMPORARY EROSION CONTROL GENERAL NOTES:
The quantities and locations of the erosion control devices shown in this plan are estimated and may be altered if and when directed by the Engineer.
The quantities that are estimated in an area shall reflect the soil disturbing activity in that area before.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SPECIAL PROVISION "STORM WATER POLLUTION PREVENTION PLAN".

CLEARING AND GRUBBING

LEGEND

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>020</td>
<td>SEDIMENT BASIN</td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>SILT FENCE</td>
<td></td>
</tr>
</tbody>
</table>

SILT FENCE

SILT FENCE

Temporary Erosion Control General Notes:
The quantities and locations of the erosion control devices shown in this plan are estimated and may be altered if and when directed by the Engineer.
The quantities that are estimated in an area shall reflect the soil disturbing activity in that area before.

Refer to Section 110 of the Standard Specifications for additional requirements.

Special Provision "Storm Water Pollution Prevention Plan".

Clearing and grubbing shall remain in place throughout Stage 1 and Stage 2 or until final stabilization.
TEMPORARY EROSION CONTROL DETAILS

LEGEND
- Rock Ditch Checks
= Silt Fence
- Segment Basin

Temporary Erosion Control General Notes:
The quantities and locations of the erosion control devices shown in the plans are estimated and may be adjusted if and when directed by the Engineer to maintain their effectiveness. The devices are to be installed in an area where the soil disturbing activity begins.

Refer to Section 110 of the Standards Specifications for additional requirements.

Erosion control measures to be placed during appropriate stages, these devices shall be left in place as long as required to control erosion.

Erosion control measures installed in uplifting and grading shall remain in place until final stabilization.

NOTE: CONCRETE DITCH PAVING QUANTITIES ARE SHOWN ON PLAN & PROFILE SHEETS.

STA. 104+50.00
BEGIN JOB 110124
BEGIN SITE 1
LOG MILE 5.00

STA 105+50.00
END SITE 1

TEMPORARY EROSION CONTROL GENERAL NOTES:
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ADJUSTED IF AND WHEN DIRECTED BY THE ENGINEER TO MAINTAIN THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA WHERE THE SOIL DISTURBING ACTIVITY BEGINS.

REFER TO SECTION 110 OF THE STANDARDS SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES INSTALLED IN UPLIFTING AND GRADING SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION.

NOTE: CONCRETE DITCH PAVING QUANTITIES ARE SHOWN ON PLAN & PROFILE SHEETS.

STA. 104+50.00
BEGIN JOB 110124
BEGIN SITE 1
LOG MILE 5.00

STA 105+50.00
END SITE 1

TEMPORARY EROSION CONTROL GENERAL NOTES:
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ADJUSTED IF AND WHEN DIRECTED BY THE ENGINEER TO MAINTAIN THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA WHERE THE SOIL DISTURBING ACTIVITY BEGINS.

REFER TO SECTION 110 OF THE STANDARDS SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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

EROSION CONTROL MEASURES INSTALLED IN UPLIFTING AND GRADING SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION.

NOTE: CONCRETE DITCH PAVING QUANTITIES ARE SHOWN ON PLAN & PROFILE SHEETS.
CLEARING AND GRUBBING SHALL REMAIN IN PLACE CONTROL EROSION.
EROSION CONTROL MEASURES TO BE PLACED REFER TO SECTION 110 OF THE STANDARD ONLY WHEN THE SOIL DISTURBING ACTIVITY IF AND WHERE DIRECTED BY THE ENGINEER EROSION CONTROL DEVICES SHOWN IN THE

LEGEND

- Sand Bag Check
- Rock Check
- Silt Fence
- Sediment Basin

TEMPORARY EROSION CONTROL GENERAL NOTES:
THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ADJUSTED IF AND WHEN DIRECTED BY THE ENGINEER TO MAINTAIN TEMPORARY EROSION CONTROL MEASURES TO BE INSTALLED IN AN AREA WHERE SOIL DISTURBING ACTIVITY IS OCCURRING.

DEVICES TO BE INSTALLED IN AN AREA WHERE SOIL DISTURBING ACTIVITY IS OCCURRING.

SPECIAL PROVISION "STORM WATER INSTALLATION"

SAND BAG CHECKS
<table>
<thead>
<tr>
<th>STA</th>
<th>INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>224+46</td>
<td>L</td>
</tr>
<tr>
<td>225+06</td>
<td>L</td>
</tr>
</tbody>
</table>

ROCK CHECKS
<table>
<thead>
<tr>
<th>STA</th>
<th>INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>224+46</td>
<td>L</td>
</tr>
<tr>
<td>225+06</td>
<td>L</td>
</tr>
</tbody>
</table>

UNMOWN INUNDATION TO BCYPRESS CREEK

HWY. 39 (EXIST.)

C.L. HWY. 39 STA. 220+54.00
C.L. TEMP. DETOUR STA. 20+54.00 = EXIST. R/W

E-11

H W Y . 3 9 (E X I S T .)

N0°13'47"W

DIST.NO. 6

JOB NO. 181124

SHEET L

REVISIONS

STATE DATE

REVISION

PROFESSIONAL ENGINEER

 LICENSED IN ARKANSAS

NO. 135642

ARKANSAS

LICENSED PROFESSIONAL ENGINEER

STAGE 1

TIME TO SITE 2

END SITE 2

END JOB 181124

STA 224+55.00

LOG MILE 2.69

STA 225+55.00

STA 225+58.00

SILT FENCE

ROCK DITCH CHECK

LEGEND

SITE 2

110124

181124

REV

DATE

DATE
CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STAGE 1:
1. Install advance warning signs and road closure traffic control items.
2. Clearing and grubbing operations may begin if and where directed by the engineer.
3. Close HWY. 39 using the traffic control items shown. Refer to special provision, "Maintenance of Traffic Details.
4. Remove the existing bridge.
5. Construct the new box culvert barrels and roadway.
6. Open HWY. 39 to normal traffic.

STAGE 2:
1. Install advance warning signs and road closure traffic control items.
2. Clearing and grubbing operations may begin if and where directed by the engineer.
3. Close HWY. 39 using the traffic control items shown. Refer to special provision, "Maintenance of Traffic Details.
4. Remove the existing bridge.
5. Construct the new box culvert barrels and roadway.
6. Open HWY. 39 to normal traffic.

STAGE 3:
1. Install advance warning signs and road closure traffic control items.
2. Clearing and grubbing operations may begin if and where directed by the engineer.
3. Close HWY. 39 using the traffic control items shown. Refer to special provision, "Maintenance of Traffic Details.
4. Remove the existing bridge.
5. Construct the new box culvert barrels and roadway.
6. Open HWY. 39 to normal traffic.

LEGEND
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS

ADVANCE WARNING DETAILS
SITE 1 AND 2 - ALL STAGES
SEQUENCE OF CONSTRUCTION
HWY. 39 - SITE 1

STAGE 1
1. INSTALL ADVANCE WARNING SIGNS AND ROAD CLOSURE TRAFFIC
   CONTROL ITEMS.
2. CLEARING AND GRUBBING OPERATIONS MAY BEGIN
   AT AND WHERE DIRECTED BY THE ENGINEER.
3. CLOSE HWY. 39 USING THE TRAFFIC CONTROL ITEMS SHOWN.
   REFER TO SPECIAL "MAINTENANCE OF TRAFFIC".
4. REMOVE THE EXISTING BRIDGE.
5. CONSTRUCT THE NEW BOX CULVERT BARRIERS AND ROADWAY.
6. OPEN HWY. 39 TO NORMAL TRAFFIC.

STAGE 2
1. CONSTRUCT THE HEADWALLS AND WINGS OF THE BOX CULVERT.
2. CONSTRUCT FINAL SURFACE COURSE AND STRIPING.
3. CLOSE HWY. 39 USING THE TRAFFIC CONTROL ITEMS SHOWN.
   IF AND WHERE DIRECTED BY THE ENGINEER.
4. REMOVE THE EXISTING BRIDGE.
5. CONSTRUCT THE NEW BOX CULVERT BARRIERS AND ROADWAY.
6. OPEN HWY. 39 TO NORMAL TRAFFIC.

LEGEND
- TEMPORARY SIGNS
- TRAFFIC FLOW ARROWS

MAINTENANCE OF TRAFFIC DETAILS

NOT TO SCALE
SEQUENCE OF CONSTRUCTION
HWY. 39 - SITE 1

STAGE 1
1. INSTALL ADVANCE WARNING SIGNS AND ROAD CLOSURE TRAFFIC CONTROL ITEMS.
2. CLEARING AND GRUBBING OPERATIONS MAY BEGIN AND ARE Directed BY THE ENGINEER.
3. CONSTRUCT THE HEADWALLS AND WINGS OF THE BOX CULVERT. REFER TO SPECIAL PROVISION, "MAINTENANCE OF TRAFFIC".
4. REMOVE THE EXISTING BRIDGE.
5. CONSTRUCT THE NEW BOX CULVERT BARRELS AND ROADWAY.
6. OPEN HWY. 39 TO NORMAL TRAFFIC.

STAGE 2
1. INSTALL ADVANCE WARNING SIGNS AND ROAD CLOSURE TRAFFIC CONTROL ITEMS.
2. CLEARING AND GRUBBING OPERATIONS MAY BEGIN AND ARE Directed BY THE ENGINEER.
3. CONSTRUCT THE HEADWALLS AND WINGS OF THE BOX CULVERT.
4. CONSTRUCT FINAL SURFACE COURSE AND STRIPING.
5. CONSTRUCT THE NEW BOX CULVERT BARRELS AND ROADWAY.
6. OPEN HWY. 39 TO NORMAL TRAFFIC.

LEGEND

ROAD CLOSED
PROPOSED CONSTRUCTION AREA
TRAFFIC FLOW ARROWS
SEQUENCE OF CONSTRUCTION
HWY. 39 - SITE 1

STAGE 1
1. INSTALL ADVANCE WARNING SIGNS AND ROAD CLOSURE TRAFFIC CONTROL DEVICES.
2. CLEARING AND GRUBBING OPERATIONS MAY BEGIN AND ARE DIRECTED BY THE ENGINEER.
3. REMOVE THE EXISTING BRIDGE.
4. CONSTRUCT THE NEW BOX CULVERT BARRELS AND ROADWAY.
5. OPEN HWY. 39 TO NORMAL TRAFFIC.

STAGE 2
1. CONSTRUCT THE HEADWALLS AND WINGS OF THE BOX CULVERT.
2. CONSTRUCT FINAL SURFACE COURSE AND STRIPING.

MAINTENANCE OF TRAFFIC DETAILS

LEGEND
- PROPOSED CONSTRUCTION AREA
- TRAFFIC FLOW ARROWS
- TRAFFIC DRUMS

CONSTRUCTION PAYMENT MARKINGS
5.00' X 0.00' X 6" - BLACK (C.L.)
5.00' X 0.00' X 6" - RED (C.L.)
5.00' X 0.00' X 6" - WHITE EDGE LINE (T.T.)
5.00' X 0.00' X 6" - WHITE EDGE LINE (T.T.)
(50'-0" TO 100'-0"
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER)

TRAFFIC DRUMS WILL BE RELOCATED TO LEFT SIDE TO COMPLETE BOX CULVERT WINGS

TRAFFIC DRUMS @ 40' OFFSET

TRAFFIC DRUMS @ 50' OFFSET

P V T R A F F I C  D R U M S  @  5 0 ' O F F S E T

SIDE TO COMPLETE R.C. BOX CULVERT WINGS

T R A F F I C  D R U M S           7  E A C H

C O N S T R U C T I O N  P A V E M E N T  M A R K I N G S

S T A . 100 + 00.00 - 108 + 09.94: 6" DBL. YELLOW C.L. = 1620 LIN. FT.
S T A . 100 + 00.00 - 108 + 09.94: 6" WHITE EDGE LINE - R.T. = 810 LIN. FT.
S T A . 100 + 00.00 - 108 + 09.94: 6" WHITE EDGE LINE - L.T. = 810 LIN. FT.
(R TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER)
CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STAGE 1:
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS SHOWN ON THE ADVANCE WARNING DETAILS.
CLEARING AND GRADING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT AND OBLITERATE TEMPORARY DETOUR.
CONSTRUCT REMAINDER OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR THE PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION STAGE 1
VARIES

EXISTING SB
10'-0"

EXISTING NB
10'-0"

CONSTRUCTION STAGE 1
VARIES

EXISTING SB
10'-0"

EXISTING NB
10'-0"
CONSTRUCTION SEQUENCE

HWY. 39 - SITE 2

STAGE 1:
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.
CLOSING AND DIVERTING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT AND OBLITERATE TEMPORARY DETOUR.
CONSTRUCT REMAINDER OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR THE PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.
CONSTRUCTION SEQUENCE

HWY. 39 - SITE 2

STAGE 1:
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.
CLEANING AND GRADING OPERATIONS MAY BEGIN IN STAGE 1 AND WILL BE DIRECTED BY THE ENGINEER.

STAGE 2:
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT AND COMPLETE TEMPORARY DETOUR.
CONSTRUCT REMAINDER OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR THE PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND

: OBLITERATION

CONSTRUCTION STAGE 3

HWY. 39 - SITE 2

STAGE 3

HWY. 39 - SITE 2

STAGE 3

MAINTENANCE OF TRAFFIC DETAILS
CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STAGE 1
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.
CLEARING AND GRUBBING OPERATIONS MAY BEGIN IF AND WHERE DIRECTED BY THE ENGINEER.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT AND OBLITERATE TEMPORARY DETOUR.
CONSTRUCT REMAINDER OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR THE PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

LEGEND
- FIRE BARRIERS
- PROPOSED CONSTRUCTION AREA
- TRAFFIC FLOW ARROWS
- VERTICAL PANELS
- TRAFFIC DRUM

CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2
STAGE 1
MAINTENANCE OF TRAFFIC DETAILS
CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STAGE I
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE
LOCATIONS LISTED IN THE ADVANCE WARNING DETAILS.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR
AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

STAGE II
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRUCT PORTIONS
OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN
THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE III
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT
AND COMPLETE TEMPORARY DETOUR.
COMPLETE REMOVAL OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY,
AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

NOTE:
PRECAST CONCRETE BARRIER WALL.
SPECIAL END UNIT IS SUBSIDIARY TO PAY ITEM
PRECAST CONCRETE BARRIER WALL.

TEMPORARY IMPACT ATTENUATOR

PRECAST CONCRETE BARRIER WALL.

LEGEND
- TYPE II BARRICADE
- TRAFFIC DRUM
- PROPOSED CONSTRUCTION AREA
- TRAFFIC FLOW ARROWS
- TEMPORARY TRAFFIC SIGN

HWY. 39 - SITE 2
STAGE 2
MAINTENANCE OF TRAFFIC DETAILS
CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STAGE 1:
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.
CLEANING AND CUTTING OPERATIONS MAY BE CONDUCTED AT THE ENGINEER'S DISCRETION.
INSTALL TEMPORARY PIPE CULVERTS AND CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:
SHIFT TRAFFIC TO TEMPORARY DETOUR AND CONSTRCT PORTIONS OF PROPOSED ROADWAY, DRAINAGE, AND BOX CULVERT AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 3:
SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BOX CULVERT AND OBLITERATE TEMPORARY DETOUR.
CONSTRUCT REMAINDER OF THE BOX CULVERT, ROADWAY TIES, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR THE PROJECT AS SHOWN IN STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION SEQUENCE
HWY. 39 - SITE 2

STA 224+55.00  LOG MILE 2.69
BEGIN SITE 2

STA 225+55.00  END SITE 2
END JOB NO.110124

CONSTRUCTION PAVEMENT MARKINGS
STA 220+54.00 - STA 229+41.08: 6" DBL. YELLOW CENTERLINE = 1774 LIN. FT.
STA 220+54.00 - STA 224+55.00: 6" WHITE EDGE LINE = 19 TRAFFIC DRUMS @ 50' O.C.

CONSTRUCTION PAVEMENT MARKINGS
STA 225+55.00 - STA 229+41.08 = 1562 LIN. FT.
STA 220+54.00 - STA 224+55.00 = 1302 LIN. FT.

NOTE: THE ADH SURFACE COURSE AND AGGREGATE BASE COURSE FROM THE TEMPORARY DETOUR DEMOLITION WILL BE STOCKPILED AND STORED AT THE DISTRICT. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE MONROE COUNTY DISTRICT MAINTENANCE SITE. THE MATERIALS WILL THEN BE STOCKPILED AT THE DISTRICT. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE.

THE MATERIALS SHALL BE STOCKPILED AT THE DISTRICT. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE. THE CONTRACTOR WILL TRANSPORT THE MATERIALS TO THE ARDOT MONROE COUNTY AREA MAINTENANCE SITE.

CONTRACTOR'S DESCRIPTION: C.L. HWY. 39
C.L. TEMP DETOUR
N 18°28'32"W
N 17°36'02"E
N0°13'47"W
19 TRAFFIC DRUMS @ 50' O.C.

LEGEND

ROAD CLOSED
CONSTRUCTION PAVEMENT MARKINGS
TRAFFIC DRUM
PROPOSED CONSTRUCTION AREA
TEMPORARY DETOUR REMOVAL
TRAFFIC FLOW ARROWS

HWY. 39 - SITE 2
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS
NOTE:

PERMANENT PAINTED LINES CAN NOT BE MARKED ON A DOUBLE YELLOW STRIPE WITHOUT A CENTERLINE TRANSITION STRIP. THE PROJECT MUST BE MARKED FOR 24 HOURS prior to the removal of the control material. The final centerline with a centerline transition strip in place. If any of the above items are not met, the project may be denied for construction.

Arkansas Department of Transportation

100' TRANSITION
STA. 103+50.00 TO 106+50.00 - 300 LIN. FT. 6" WHITE SOLID EDGE LINE (LT.) REFLECTORIZED PAINT PAVEMENT MARKING

STA. 103+50.00 TO 106+50.00 - 300 LIN. FT. 6" WHITE SOLID EDGE LINE (RT.) REFLECTORIZED PAINT PAVEMENT MARKING

CONTINUOUS WHITE EDGE LINE 6" REFLECTORIZED PAINT PAVEMENT MARKING AT 80' SPACING (TYP.) II YELLOW/YELLOW R.P.M.

CONTINUOUS DOUBLE YELLOW LINE W/ RPM 80' O.C. (TYP.) 6" REFLECTORIZED PAINT PAVEMENT MARKING

LOG MILE 5.00 BEGIN SITE 1

STA. 104+50.00 BEGIN JOB 110124

STA. 105+50.00 END SITE 1 LOC MILE 5.00

NOTE:

YELLOW/YELLOW RAISED PAVEMENT MARKERS = 15

6" YELLOW = 2374 LIN. FT.

6" WHITE EDGE = 2374 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKINGS

HWY 39 PROJECT QUANTITY TOTALS:

SITE 1

P.O.B HWY 39

P.O.E HWY 39
PERMANENT PAVEMENT MARKINGS DETAILS

NOTE:
The 6" yellow striping quantity has been corrected based on a color change throughout the State for the entire project. The project must be marked with yellow striping. The maintenance divided after the final lift of surface course has been placed to schedule the marking of project.

6" REFLECTORIZED PAINT PAVEMENT MARKING
CONTINUOUS WHITE EDGE LINE
STA. 220+54.00 TO 229+41.00 - 887 LIN. FT.

6" REFLECTORIZED PAINT PAVEMENT MARKING
DOUBLE YELLOW LINE WITH TYPE
YELLOW/YELLOW RPM
AT 80' SPACING (TYP.)

STA. 224+55.00 BEGIN SITE 2
LOG MILE 2.69

STA. 225+55.00 END SITE 2
END JOB 110124

YELLOW/YELLOW RAISED PAVEMENT MARKERS = 15
6" YELLOW = 2374 LIN. FT.
6" WHITE EDGE = 2374 LIN. FT.

HWY. 39 - SITE 2
PERMANENT PAVEMENT MARKINGS DETAILS
### ADVANCE WARNING SIGNS AND DEVICES

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGN SIZE</th>
<th>STAGE 1</th>
<th>STAGE 2</th>
<th>STAGE 3</th>
<th>MAXIMUM NUMBER REQUIRED</th>
<th>TOTAL SIGN REQUIRED</th>
<th>VERTICAL PANELS</th>
<th>TRAFFIC GRADES</th>
<th>BARREIACES (TYPE &amp; SIZE)</th>
<th>FURNISHING &amp; INSTALLING PRECAST CONCRETE BARRIERS</th>
<th>TEMPORARY IMPACT ATTENUATION BARRIER</th>
<th>TEMP IMPACT ATTENUATOR (REMOVABLE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IN-FT.</td>
<td>EACH</td>
<td>IN-FT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### EROSION CONTROL

<table>
<thead>
<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>BREEDING</th>
<th>LIWM</th>
<th>WOOLY</th>
<th>WATER</th>
<th>SECOND</th>
<th>BERSOY</th>
<th>TEMPORARY</th>
<th>WOOLY</th>
<th>WATER</th>
<th>BLOBS</th>
<th>BLIT</th>
<th>PERCENT</th>
<th>BLOBS</th>
<th>LIWM</th>
<th>WOOLY</th>
<th>WATER</th>
<th>BLOBS</th>
<th>BLIT</th>
<th>PERCENT</th>
<th>BLOBS</th>
<th>LIWM</th>
<th>WOOLY</th>
<th>WATER</th>
<th>BLOBS</th>
<th>BLIT</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CLEARING AND GRUBBING

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>LINING / GRUBBING</th>
<th>STATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CONCRETE DITCH PAVING

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>LINING / DITCH</th>
<th>ROLLING / DITCH</th>
<th>WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REMOVAL AND DISPOSAL OF ITEMS

<table>
<thead>
<tr>
<th>GUARDRAIL</th>
<th>LOCATION</th>
<th>QNTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### QUANTITIES

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>QNTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### NOTE

- This is a temporary traffic volume road as defined in Section 4.1.3. Standard Specifications for Highway Construction.
### Structures

<table>
<thead>
<tr>
<th>Station</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Base and Surfacing

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Length</th>
<th>Aggregate Base Course (Class 7)</th>
<th>Tack Coat</th>
<th>Aggregate Binder Course (Class 2)</th>
<th>Tack Coat</th>
<th>Aggregate Surface Course (Class 1)</th>
<th>Tack Coat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Asphalt Concrete Patching for Maintenance of Traffic

<table>
<thead>
<tr>
<th>Location</th>
<th>Aggregate Base Course (Class 7)</th>
<th>Tack Coat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rock Fill and Geotextile Fabric

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Rock Fill</th>
<th>Geotextile Fabric (TY-16)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dumped Riprap and Filter Blanket

<table>
<thead>
<tr>
<th>Location</th>
<th>Dumped Riprap</th>
<th>Filter Blanket</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Earthwork

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Underground Associations (UTC)</th>
<th>Compacted Earth (TY-20)</th>
<th>Soil Stabilization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Quantities

- General Notes:
- Quantities Estimated - To be Used and Where Directed by the Engineer.
- Section 104-03 of the Standard Specifications

- Site 2 Stage 3 - The Aggregate Surface Course and Aggregate Base Course from the Temporary Detour Shall Be Plumbed and Stockpiled for this Stage. The Contractor Shall Transport the Material to the Artho-Miner County Area Maintenance Headquarters, Located on HWY. 15, 44 Miles West of Batavia. This Material Shall Be Stockpiled in stockpiles Directed by the Engineer. "PAYMENT" FOR THIS WORK SHALL BE INCLUDED IN THE BID FOR THE VARIOUS CONTRACT ITEMS.

- Basis of Estimate:
- Mixes for Maintenance of Traffic, 28 Tonnelle

- Notes:
- Filter Blanket Shall Be Geotextile Fabric (TY-16)
<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>TRAFFIC</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>17</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>19</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>21</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>23</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>TRAFFIC</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>26</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>27</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>29</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>31</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>32</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>33</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>34</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>35</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>37</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>38</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>39</td>
<td>YD.</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>41</td>
<td>SUM</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>42</td>
<td>FT.</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>43</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>44</td>
<td>YD.</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY OF QUANTITIES**

**REVISIONS**
### Survey Control Details

**Alignment Name:** HWY. 39 (SITE 1)

<table>
<thead>
<tr>
<th>POINT</th>
<th>STATION</th>
<th>TYPE</th>
<th>NORTHING</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8004</td>
<td>10144.81</td>
<td>POF</td>
<td>2041627.4135</td>
<td>1581611.3215</td>
</tr>
</tbody>
</table>

**Datum:** ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL

**Survey Control Coordinates:**

<table>
<thead>
<tr>
<th>Point</th>
<th>Northing</th>
<th>Easting</th>
<th>Elev</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>2047334.6357</td>
<td>1580336.6166</td>
<td>179.884</td>
<td>GPS</td>
<td>ARDOT GPS #480023A</td>
</tr>
<tr>
<td>100</td>
<td>2047338.3399</td>
<td>1581706.2600</td>
<td>182.159</td>
<td>GPS</td>
<td>ARDOT GPS #480023</td>
</tr>
<tr>
<td>11</td>
<td>2054720.6604</td>
<td>1581662.2673</td>
<td>184.668</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:11</td>
</tr>
<tr>
<td>10</td>
<td>2054056.4041</td>
<td>1581664.2263</td>
<td>181.675</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:10</td>
</tr>
<tr>
<td>9</td>
<td>2053420.9444</td>
<td>1581667.5939</td>
<td>182.504</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:9</td>
</tr>
<tr>
<td>8</td>
<td>2052813.0032</td>
<td>1581673.2824</td>
<td>180.619</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:8</td>
</tr>
<tr>
<td>7</td>
<td>2052204.3982</td>
<td>1581676.3730</td>
<td>180.580</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:7</td>
</tr>
<tr>
<td>6</td>
<td>2042290.5756</td>
<td>1581686.4806</td>
<td>181.219</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:6</td>
</tr>
<tr>
<td>5</td>
<td>2041638.8137</td>
<td>1581731.0228</td>
<td>181.337</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:5</td>
</tr>
<tr>
<td>4</td>
<td>2041637.8704</td>
<td>1581327.3071</td>
<td>179.112</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:4</td>
</tr>
<tr>
<td>3</td>
<td>2041213.5727</td>
<td>1581341.4523</td>
<td>180.782</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:3</td>
</tr>
<tr>
<td>2</td>
<td>2041967.0625</td>
<td>1580245.6155</td>
<td>181.380</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:2</td>
</tr>
<tr>
<td>1</td>
<td>2041608.7317</td>
<td>1580804.8125</td>
<td>180.977</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:1</td>
</tr>
</tbody>
</table>

---

**Survey Base Information:**

**Primary Control Points:** ARDOT GPS #480023A, ARDOT GPS #480023

**Control Points:**
- 902: 2049277.3053, 1581651.4022, 181.211, TBM, CHSQ IN SE WINGWALL
- 901: 2043334.6103, 1581682.2323, 180.315, TBM, CHSQ IN E HW 12.4' E OF C/L HWY.

**Grid Coordinates:**
- Grid Distance = Ground Distance × CAF.
- A Project CAF of 0.999977807387 has been used to compute the above ground coordinates.
- Use CAF = 1.0 for stakeout for this project.

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

**Reference Points:**
- Reference Points are not to be used for vertical control.
- If the primary control points listed above have been destroyed, reference points (1500 series) are to be used to establish control at a specific point.

**Datum Conversion:**
- NAVD 88 Positional Accuracy Third Order, unless specified otherwise.
- Grid coordinates are stored under file name s110124gi.ctl

---

**Survey Control Coordinate System:**
- Arkansas State Plane Grid Bearings - 0302-South Zone
- Basis of Bearing:
  - Reference Points are not to be used for vertical control.

---

**Survey Control Details:**
- Project Name: s110124
- Survey Control Coordinates:
  - GRID COORDINATES ARE STORED UNDER FILE NAME s110124gi.ctl
  - GRID DISTANCE = GROUND DISTANCE × CAF.

---

**Survey Control Points:**
- Project CAF of 0.999977807387 has been used to compute the above ground coordinates.
- Use CAF = 1.0 for stakeout for this project.

---

**Survey Control Points (continued):**
- Other markings indicated in the point description of the individual point.

---

**Survey Control Points (continued):**
- Standard markings common to all caps, or as indicated.

---

**Survey Control Points (continued):**
- If the primary control points listed above have been destroyed, reference points (1500 series) are to be used to establish control at a specific point.
**SURVEY CONTROL DETAILS**

Project Name: ARDOT 173210 110124

<table>
<thead>
<tr>
<th>Station</th>
<th>Northing (feet)</th>
<th>Easting (feet)</th>
<th>Elev. (feet)</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>902</td>
<td>2049277.3053</td>
<td>1581651.4022</td>
<td>181.211</td>
<td>TBM</td>
<td>CHSQ IN SE WINGWALL</td>
</tr>
<tr>
<td>901</td>
<td>2043334.6103</td>
<td>1581682.2323</td>
<td>180.315</td>
<td>TBM</td>
<td>CHSQ IN E HW 12.4' E OF C/L HWY. 39</td>
</tr>
<tr>
<td>101</td>
<td>2047334.6357</td>
<td>1580336.6166</td>
<td>179.884</td>
<td>GPS</td>
<td>ARDOT GPS #480023A</td>
</tr>
<tr>
<td>100</td>
<td>2047338.3399</td>
<td>1581706.2600</td>
<td>182.159</td>
<td>GPS</td>
<td>ARDOT GPS #480023</td>
</tr>
<tr>
<td>10</td>
<td>2054056.4041</td>
<td>1581664.2263</td>
<td>181.675</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:10</td>
</tr>
<tr>
<td>8</td>
<td>2052813.0032</td>
<td>1581673.2824</td>
<td>180.619</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:8</td>
</tr>
<tr>
<td>7</td>
<td>2052204.3982</td>
<td>1581676.3730</td>
<td>180.580</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:7</td>
</tr>
<tr>
<td>6</td>
<td>2042290.5756</td>
<td>1581686.4806</td>
<td>181.219</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:6</td>
</tr>
<tr>
<td>5</td>
<td>2041638.8137</td>
<td>1581731.0228</td>
<td>181.337</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:5</td>
</tr>
<tr>
<td>4</td>
<td>2041608.7317</td>
<td>1580804.8125</td>
<td>180.977</td>
<td>CTL</td>
<td>ARDOT STD. MON. STAMPED PN:4</td>
</tr>
</tbody>
</table>

Note: Station #101 and #100 are common to all projects, or as indicated.

*Other markings indicated in the point description of the individual point.*

---

**SURVEY CONTROL COORDINATES**

**COORDINATE SYSTEM:** WGS84 NAD83 (HARN) - SOUTH ZONE 15

**PROJECTED TO GROUND:**

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

**THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.**

**USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT**

**REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL:**

**REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL AT A SPECIFIC POINT:**

---

**ALIGNMENT NAME: HWY. 39 SITE 2**

**POINT | STATION | TYPE | NORTHING | EASTING | DESCRIPTION**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
<td>205456.92</td>
<td>POE</td>
<td>2050234.53</td>
<td>1581785.26</td>
<td>ARDOT STD. MON. STAMPED PN:9</td>
</tr>
<tr>
<td>807</td>
<td>229+44.01</td>
<td>POE</td>
<td>2050982.13</td>
<td>1581653.73</td>
<td>ARDOT STD. MON. STAMPED PN:8</td>
</tr>
</tbody>
</table>

---

**SURVEY CONTROL DETAILS**

**PROFESSIONAL ENGINEER**

**No. 13640**

**SURVEY BASELINE**

**ARKANSAS LICENSED PROFESSIONAL ENGINEER**

**NO SUPER P.T. = 29+55.91**

**P.R.C. = 27+30.43**

---

**GRAY SCALE**

**END SITE 2**

**END JOB 110124**
STA 104+50.00
BEGIN JOB NO 1024
BEGIN SITE 1
LOG MILE 5.00

STA 105+50.00
END SITE 1

LEGEND

PAYMENT TRANSITION

Situation:

- STA 104+50.00
- STA 105+50.00
- BEGIN JOB NO 1024
- BEGIN SITE 1
- END SITE 1
- LOG MILE 5.00

Details for Horizontal and Vertical Controls.
GENERAL NOTES:
The full width of each section shall be poured monolithically.
Toe walls to be constructed full width at each end of ditch paving and poured monolithically.
Solid sod along ditch paving to be placed within 14 days of ditch paving construction.
1" wide transverse expansion joints shall be placed in concrete ditch paving at 30' intervals. The space shall be filled with approved joint filler complying with AASHTO M213.

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

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND POURED MONOLITHICALLY.
SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 30' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

SOLID SODDING.
DITCH PAVING AND LINES TO CONSTRUCT TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND POURED MONOLITHICALLY.

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

NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED.
ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

NOTE TO Tabulation of Quantities:
- For "W" dimensions, refer to Tabulation of Quantities.
- For "B" dimensions, refer to Tabulation of Quantities.

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

ARAKANS STATE HIGHWAY COMMISSION
CONCRETE DITCH PAVING
STANDARD DRAWING CDP-1
**GENERAL NOTES**

**BAR LIST**

<table>
<thead>
<tr>
<th>BAR NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>#4</td>
<td>3'-2&quot;</td>
</tr>
<tr>
<td>2</td>
<td>#4</td>
<td>1'-8&quot;</td>
</tr>
<tr>
<td>J</td>
<td>#4</td>
<td>1'-5&quot;</td>
</tr>
<tr>
<td>I</td>
<td>#4</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>M</td>
<td>#4</td>
<td>1'-0&quot;</td>
</tr>
<tr>
<td>H</td>
<td>#4</td>
<td>1'-0&quot;</td>
</tr>
</tbody>
</table>

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

**LEAN GROUT**

- Consists of a sand-cement mixture meeting the following requirements:
  - Proportion of sand to cement: 6:1 minimum
  - Mixing water to sand-cement ratio: 0.40 to 0.45

**BOX CULVERTS**

- Will not be paid for directly but will be considered to be included in the price bid for the items directed by the engineer.
- Labor, materials and equipment required for installing precast concrete box culverts will be paid for.

**Curtains, Walls, and Footings**

- May be adjusted in the field as directed by the engineer.
- All exposed corners to have 1/4" chamfers.

**Section A - A**

**PLAN VIEW**

- Top surface of culvert top slab
- Stop drainage fill at 4" below bottom of weep holes
- Drainage fill material with geotextile fabric is required at the bottom of weep holes
- Drainage fill material with geotextile fabric is required at the bottom slab

**END VIEW**

- Wing walls and footings may be adjusted in the field as directed by the engineer.
- Wing walls and footings shall be considered in accordance with the applicable drainage fill and concrete quantities as specified in Section 403.01 of the Standard Specifications.

**AR Hawkins, Arkansas Highway Commission**

**PRECAST CONCRETE BOX CULVERTS**

**ARKANSAS STATE HIGHWAY COMMISSION**

**STANDARD DRAWING PBC-I**
### Construction Sequence

1. Place backfill material to change do not compact.
2. Install pipe.
3. Compact backfill material on the whole hole of pipe.
4. Place and compact the backfill material to the middle of pipe.
5. Complete backfilling to the required height.

Note: Haunch and structural bedding material will not be paid separately, but compensation will be considered to be included in the price bid per linear foot of concrete pipe.

### Material Requirements for Haunch and Structural Bedding

- **Type 1 Installation**: Adequate back course grade is on Grade II:
  - *Note*: Should not exceed the values specified by ARDOT.

### Minimum Height of Fill "H" Over Circular R.C. Pipe Culverts

<table>
<thead>
<tr>
<th>Class of Pipe</th>
<th>Installation Type</th>
<th>Width (feet)</th>
<th>Height (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>Type 3</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Type 3</td>
<td>Type 2</td>
<td>9</td>
<td>36</td>
</tr>
</tbody>
</table>

**Note**: Any higher backfill height than specified shall be considered the final height.

### Maximum Height of Fill "H" Over Circular R.C. Pipe Culverts

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Class III</th>
<th>Class IV</th>
<th>Class V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>27</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Type 2</td>
<td>24</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Type 3</td>
<td>21</td>
<td>16</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note**: Heights shall not exceed the values specified by ARDOT.

### Minimum Height of Fill "H" Over R.C., Arch & Horizontal Elliptical Pipe Culverts

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Class III</th>
<th>Class IV</th>
<th>Class V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>27</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Type 2</td>
<td>24</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Type 3</td>
<td>21</td>
<td>16</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note**: Heights shall not exceed the values specified by ARDOT.

### Maximum Height of Fill "H" Over R.C., Arch & Horizontal Elliptical Pipe Culverts

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Class III</th>
<th>Class IV</th>
<th>Class V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>27</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Type 2</td>
<td>24</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Type 3</td>
<td>21</td>
<td>16</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note**: Heights shall not exceed the values specified by ARDOT.

---

**REINFORCED CONCRETE PIPE ARCH DIMENSIONS**

<table>
<thead>
<tr>
<th>Diameter (inches)</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>55</td>
<td>48</td>
<td>41</td>
</tr>
<tr>
<td>16</td>
<td>58</td>
<td>51</td>
<td>44</td>
</tr>
<tr>
<td>18</td>
<td>65</td>
<td>59</td>
<td>53</td>
</tr>
<tr>
<td>20</td>
<td>73</td>
<td>65</td>
<td>51</td>
</tr>
<tr>
<td>21</td>
<td>77</td>
<td>71</td>
<td>56</td>
</tr>
<tr>
<td>24</td>
<td>85</td>
<td>79</td>
<td>65</td>
</tr>
<tr>
<td>25</td>
<td>92</td>
<td>87</td>
<td>72</td>
</tr>
<tr>
<td>26</td>
<td>98</td>
<td>94</td>
<td>80</td>
</tr>
</tbody>
</table>

**Note**: Heights shall not exceed the values specified by ARDOT.

---

**INSTALLATION**

- **Pipe ID (in.)**: 84-108
- **Min. Height of Fill "H" Over R.C. Arch & Horizontal Equiv.**
  - TYPE 1 INSTALLATION: 48
  - TYPE 2 INSTALLATION: 60
  - TYPE 3 INSTALLATION: 90

**Note**: For minimum cover values, "H" shall include a minimum height of fill "H" over R.C. arch & horizontal equivalent.

---

**GENERAL NOTES**

1. Concrete pipe culvert construction shall conform to standard specifications of transportation authorities.
2. The minimum material grade shall comply with the requirements of Sections 606. Circular R.C. pipe culverts shall be protected during construction by a cover sufficient to prevent damage from falling loads.
3. Structural bedding shall conform to AASHTO M207. Concrete pipe culverts shall be protected during construction by a cover sufficient to prevent damage from falling loads.
4. The minimum material grade shall be the same as that of the pipe to be connected. The minimum concrete bedding shall be the minimum required for the pipe to be connected.
5. Any pipe bedding shall be installed with a minimum thickness of 2 inches. The minimum concrete bedding grade shall be on or above the minimum required for the pipe to be connected.
6. Structural bedding materials shall be placed as directed by the Engineer at the end of the placement list and previous pipe is used for structural bedding in another segment.
7. Structural bedding shall be placed as directed by the Engineer at the end of the placement list and previous pipe is used for structural bedding in another segment.
8. Not more than one lifting hole may be provided in concrete pipe to facilitate the placement of the concrete bedding. The concrete bedding shall be placed in accordance with the manufacturer's instructions. The concrete bedding shall be placed as directed by the Engineer at the end of the placement list and previous pipe is used for structural bedding in another segment.

---

**CONSTRUCTION SEQUENCE**

1. Material in the haunch and outer structural bedding shall be compacted to 95% of the maximum density according to the type of material used.
2. For trenches with walls of natural soil, the density of the soil in the lower side zone shall be compacted 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 of material used.
4. Material in the haunch and outer structural bedding shall be compacted to 95% of the maximum density according to the type of material used.
5. The minimum material grade shall be the same as that of the pipe to be connected. The minimum concrete bedding shall be the minimum required for the pipe to be connected.
6. Structural bedding materials shall be placed as directed by the Engineer at the end of the placement list and previous pipe is used for structural bedding in another segment.
7. Structural bedding shall be placed as directed by the Engineer at the end of the placement list and previous pipe is used for structural bedding in another segment.
### General Notes

1. **Metal Pipe Culvert Construction** shall be in accordance with the Arkansas Department of Transportation Standard Specifications for Highway Construction and with the Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

2. **Metal Pipe Culvert Design** shall conform to AASHTO LRFD Bridge Design Specifications, Fifth Edition.

3. **Installation** Type 1 shall be used for corrugated steel or aluminum pipe arches with 2-2/3" x 1" or 5" x 1" corrugations. Where the standard 2-2/3" x 1" corrugation and a gauge are specified for a given diameter, a pipe of the same diameter and gauge, but with a 5" x 1" corrugation, may be substituted, provided it is coated for a full inside condition equal to or greater than the maximum fill condition for the specified gauge and corrugation.

4. **Metal Pipe Culvert Materials and Installations** shall comply with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

5. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

6. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

7. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

8. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

9. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

10. **Metal Pipe Culverts** shall be installed in conformance with the requirements of the Select Standard Specifications for Highway Construction, with the Select Standard Specifications for Structural Backfill Materials, or the applicable Standard Specifications for other materials as specified in the plans and specifications.

### Equivalent Metal Thicknesses and Gauges

<table>
<thead>
<tr>
<th>Metal Thickness in Inches</th>
<th>Steel</th>
<th>Grade Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.0747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1046</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1644</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Construction Sequence

1. Place structural backfill material to depth, then compact.

2. Install corrugated steel or aluminum pipe arches with 2-2/3" x 1" or 5" x 1" corrugations, or the standard 2-2/3" x 1" corrugation and a gauge, but with a 5" x 1" corrugation, may be substituted, provided it is coated for a full inside condition equal to or greater than the maximum fill condition for the specified gauge and corrugation.

3. Structural backfill and structural bedding material shall not be paid for separately, but compensation will be considered to be included in the price bid per linear foot of metal pipe.

### Installation Type Material Requirements for Structural Backfill and Structural Bedding

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Material Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td></td>
</tr>
<tr>
<td>Type 2</td>
<td></td>
</tr>
</tbody>
</table>

### Revised Note 1

- **Installation** Type 1
- **Pressure** 0.105
- **Type** 1
- **Revision** 0.164
- **Date** 0.138

### Revised Note 2

- **Installation** Type 1
- **Pressure** 0.079
- **Type** 1
- **Revision** 0.138
- **Date** 0.164

### Revised Note 3

- **Installation** Type 1
- **Pressure** 0.105
- **Type** 1
- **Revision** 0.164
- **Date** 0.138

### Revised Note 4

- **Installation** Type 1
- **Pressure** 0.079
- **Type** 1
- **Revision** 0.138
- **Date** 0.164
**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"**

<table>
<thead>
<tr>
<th>Trench Width</th>
<th>2'-6&quot;</th>
<th>3'-0&quot;</th>
<th>3'-6&quot;</th>
<th>4'-0&quot;</th>
<th>4'-6&quot;</th>
<th>5'-0&quot;</th>
<th>5'-6&quot;</th>
<th>6'-0&quot;</th>
<th>6'-6&quot;</th>
<th>7'-0&quot;</th>
<th>7'-6&quot;</th>
<th>8'-0&quot;</th>
<th>9'-0&quot;</th>
<th>10'-0&quot;</th>
<th>11'-0&quot;</th>
<th>12'-0&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0&lt; &quot;H&quot; &lt; 10'</td>
<td>20&quot;</td>
<td>24&quot;</td>
<td>30&quot;</td>
<td>36&quot;</td>
<td>42&quot;</td>
<td>48&quot;</td>
<td>54&quot;</td>
<td>60&quot;</td>
<td>66&quot;</td>
<td>72&quot;</td>
<td>78&quot;</td>
<td>84&quot;</td>
<td>90&quot;</td>
<td>96&quot;</td>
<td>102&quot;</td>
<td>108&quot;</td>
</tr>
<tr>
<td>&quot;H&quot; &gt; 10'</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>14&quot;</td>
<td>16&quot;</td>
<td>18&quot;</td>
<td>20&quot;</td>
<td>22&quot;</td>
<td>24&quot;</td>
<td>26&quot;</td>
<td>28&quot;</td>
<td>30&quot;</td>
<td>32&quot;</td>
<td>34&quot;</td>
<td>36&quot;</td>
<td>38&quot;</td>
<td>40&quot;</td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

- **Type 1:** Plastic Pipe Culvert Design
- **Type 2:** Embankment and Trench Installations

**Structural Requirements:**
- Structural Backfill and Structural Bedding Material shall be compacted to 95% of the maximum density according to the type or class of material used.
- 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.

**General Notes:**
1. Pipe shall conform to AASHTO M294, Type S. Installation shall conform to Job Special Provisions.
2. Place structural bedding material to grade, do not compact.
3. Install pipe to grade.
4. The structural bedding shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly simultaneously to the elevation of the minimum cover.
5. When directed by the engineer, unsuitable material that is encountered at the bottom of the excavated trench shall be excavated and replaced with suitable material. The excavated material shall be placed at the bottom of the trench and compacted to a minimum of 95% of the maximum density.
6. Compact structural bedding outside the middle third of the pipe.
7. Place structural bedding material to grade. Do not compact.
8. Structural bedding, embankment, and outer structural bedding material shall be compacted to 95% of the maximum density according to the type or class of material used.
9. 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.

**Legend:**
- **Loose Fill**
- **Structural Backfill**
- **Outer Structural Bedding**
- **Selected Pipe Bedding**
- **Undisturbed Soil**
- **Structural Bedding Material**
- **Inferred Materials**
- **Legend**

**Construction Sequence:**
1. Place structural bedding material to grade, do not compact.
2. Install pipe to grade.
3. Compact structural bedding outside the middle third of the pipe.
4. The structural bedding shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly simultaneously to the elevation of the minimum cover.
5. Pipe installation may require the use of restraint, anchoring, or other approved methods in order to help maintain grade and alignment.
**GENERAL NOTES**

1. PVC PIPE CULVERT DESIGN SHALL CONFORM TO ASME F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION DIRECTED BY ENGINEER.

2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

3. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION DIRECTED BY ENGINEER.

4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.

5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OF SELECTED PIPE BEDDING AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.

6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR SELECTED MATERIALS FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE EXCAVATED USE FOR STRUCTURAL BEDDING AND/OR BACKFILL.

7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.

8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.

9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.

10. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

11. PVC PIPES SHALL NOT BE ALLOWED.

12. INSTALL PIPE TO GRADE.

13. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.

14. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.

15. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN UNDISTURBED SOIL.

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

17. MATERIAL REQUIREMENTS FOR TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS: EMBANKMENT, OUTER STRUCTURAL BEDDING, AND INNER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
GENERAL NOTES

1. Pipe shall comply with AASHTO M330, Type S. Installation shall comply with Job Special Provision.


3. Compact structural bedding outside the middle third of the pipe.

4. When the existing material excavated for the pipe trench is determined by the engineer to be unsuitable for backfilling the pipe (above the area identified above as structural backfill), borrow material or other approved methods in order to help maintain grade and alignment.

5. Pipe installation may require the use of restraints, weighted down or other approved methods in order to help maintain grade and alignment.

6. Polypropylene pipes of diameters other than shown will not be allowed.

7. Contents for polypropylene pipe shall meet the requirements for the looseness of earth, soil, or rock. This is to prevent the shifting of the crowned or plumbed pipe.

8. Polypropylene pipes of diameters other than shown will not be allowed.

9. Contents for polypropylene pipe shall meet the requirements for the looseness of earth, soil, or rock. This is to prevent the shifting of the crowned or plumbed pipe.
CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCED STEEL SHALL BE ASTM A 36 OR A 572, GRADE 50.

CONSTRUCTION AND MATERIALS FOR REINFORCED CONCRETE BOX CULVERTS, INCLUDING REINFORCING STEEL AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM "CLASS S CONCRETE".

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

<table>
<thead>
<tr>
<th>BAR SIZE</th>
<th>PIN DIAMETER</th>
<th>HOOK EXTENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>7/8&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>4</td>
<td>5/8&quot;</td>
<td>4/8&quot;</td>
</tr>
<tr>
<td>3</td>
<td>5/8&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>2</td>
<td>5/8&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>1</td>
<td>5/8&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>0</td>
<td>5/8&quot;</td>
<td>10&quot;</td>
</tr>
</tbody>
</table>

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

REINFORCED CONCRETE BOX CULVERT HEADWALL MODIFICATIONS

REINFORCED CONCRETE BOX CULVERT DETAILS

WINGWALL & CULVERT DRAINAGE DETAIL

REPLACE BARS "a" CUT AS REQUIRED
* 3" OR 4" DEPENDS ON WHICH IS GREATER


ARKANSAS STATE HIGHWAY COMMISSION

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1
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 CONFRAED
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
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE
MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE
VARIOUS ITEMS OF EXCAVATION.

SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

SECTION B-B

DETAILS FOR NEW CHANNELS

SECTION C-C

FLOW LINE
BACKFILL DETAILS FOR BOX CULVERT

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

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

ARIZONA STATE HIGHWAY COMMISSION
STANDARD DRAWING RCB-2
### General Notes
1. On pavements with two-way traffic, the super-elevation shall be revolved on the inside pavement edge unless otherwise noted on the plans.
2. Super-elevation values shown on the cross sections are to be determined from the point of control.
3. Lengths for $L$ may be rounded in multiples of 25 ft. or 50 ft.
4. Pavements wider than 2 lanes shall have additional transition lengths as follows:
   - 3 lane undivided: +20%
   - 4 lane undivided: +50%
   - 5 lane undivided: +80%
   - 6 lane undivided: +100%

### Table 1: Super-Elevation for Two-Way Traffic

<table>
<thead>
<tr>
<th>Degree of Curvature</th>
<th>50 MPH</th>
<th>60 MPH</th>
<th>70 MPH</th>
<th>80 MPH</th>
<th>90 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (no curve)</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>2.5%</td>
<td>0.026</td>
<td>0.029</td>
<td>0.032</td>
<td>0.036</td>
<td>0.040</td>
</tr>
<tr>
<td>3%</td>
<td>0.031</td>
<td>0.034</td>
<td>0.038</td>
<td>0.043</td>
<td>0.048</td>
</tr>
<tr>
<td>4%</td>
<td>0.036</td>
<td>0.040</td>
<td>0.045</td>
<td>0.050</td>
<td>0.055</td>
</tr>
</tbody>
</table>

### Abbreviations
- **NC**: Normal Crown
- **RC**: Reverse Crown, Super-Elevation at Normal Crown Slope
- **L**: Distance from beginning of super-elevation transition to any point (ft.)
- **d**: Width of pavement
- **Ls**: Length of super-elevation transition (ft.)
- **C**: Normal Crown (ft.)
- **e**: Rate of super-elevation (ft. per ft.)

### Example Formula

$$ \frac{L_{de}}{L_s} = \frac{3}{4} $$

### Notes and Instructions
- Maintain normal crown on inside until super-elevation exceeds $2C$. Rate of super-elevation shall be computed on straight line method using applicable $L_s$.
- Super-elevation for two-way traffic
- Tables and method of super-elevation for two-way traffic
- Control point
- Standard method when super-elevation revolves around inner subgrade point or inner pavement edge
- Uniformly increasing super-elevation
- Uniformly decreasing super-elevation
- Maximum super-elevation
- Inside subgrade edge
- Outside subgrade edge
- Maximum inside pavement edge
- Maximum outside pavement edge
- Inside pavement edge
- Outside pavement edge

### Diagram

- Standard method when super-elevation revolves around center line
- Super-elevation for two-way traffic
- Notes maintain normal crown on inside until super-elevation exceeds $2C$. Rate of super-elevation shall be computed on straight line method using applicable $L_s$.
**CLEARING AND GRUBBING**

**CONSTRUCTION SEQUENCE**
1. Place perimeter controls (i.e., silts fences, diversion ditches, sediment basins).
2. Perform clearing and grubbing operation.

**EXCAVATION**

**EXISTING GROUND**

**EXISTING GROUND**

**DIVERSION DITCH**

**INTERCEPTOR OR**

**PHASE 1 EXCAVATION**

**PHASE 2 EXCAVATION**

**FINAL PHASE EXCAVATION**

**GENERAL NOTE**

**CONSTRUCTION SEQUENCE**
1. Excavate and stabilize interceptors 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. Sediment basins, etc. to be temporarily abandoned for a period of greater than 21 days. Provide diversion ditches and slope drains and maintain until entire slope is stabilized.

**EMBANKMENT**

**EXISTING GROUND**

**EXISTING GROUND**

**PHASE 1 EMBANKMENT**

**PHASE 2 EMBANKMENT**

**FINAL PHASE EMBANKMENT**

**GENERAL NOTE**

**CONSTRUCTION SEQUENCE**
1. Construct diversion ditches, check, silt fences, sediment basins, etc. as required.
2. Place phase 1 embankment with permanent or temporary seeding.
3. Place phase 2 embankment with permanent or temporary seeding. All embankment slopes shall be dressed, prepared, and seeded as required.
4. Place final phase of embankment with permanent or temporary seeding. All embankment slopes shall be dressed, prepared, and seeded as required.

**ILLUSTRATION**

THREE PHASES SHOWN FOR ILLUSTRATION.

NUMBER OF PHASES WILL VARY.

THIS ILLUSTRATION SHOWN FOR ILLUSTRATION.