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PCC.1  CONCRETE PIPE CULVERT FULL HEIGHTS & BEDDING 07-28-15
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TC.2  STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION 05-30-21
TC.3  STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION 05-30-21
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INDEX OF SHEETS AND STANDARD DRAWINGS
GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.

2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.

3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.

5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 157.12 OF THE STANDARD SPECIFICATIONS.

6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DECISION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARVIST AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.

8. THE SEQUENCE SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN 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 CONSIDERED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.

9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EROOSION.

10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAVING ALONG A BASELINE. AFTER SAVING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

11. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONALWIDE PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
NOTE: TURNS outs and PRIVATE drives shall be modified WHERE NECESSARY to meet LOCAL CONDITIONS as DIRECTED by the ENGINEER.

DETAIL FOR DRIVeway TURNOUTS (collectORS)

AGGREGATE BASE COURSE (CLASS 7)
3" COMPL. DEPTH OR COMPL. TO existing DRIVEWAY

ASPHALT CONCRETE HOT MIX SURFACE COURSE 2500 LB. PER SQ. YD. 9" COMPL.
6" CONCRETE IF CONCRETE DRIVE EXIST.

NOTE: TURNS outs shall be modified WHERE NECESSARY to meet LOCAL CONDITIONS as DIRECTED by the ENGINEER.

DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULder SECTION

AGGREGATE SURFACE Course (1/2"")
1200 LB. PER SQ. YD. AND AGGREGATE BASE COURSE (CLASS 7)
7" COMPL. DEPTH
METHOD OF RAISING GRADE

1. 6" AGGREGATE BASE COURSE (CLASS 7)
   TO BE REPLACED WITH AGG. Binder Course (1")

2. 4" AGG. SURFACE COURSE (1/8"
   1200 LBS. PER SQ. YD. & TACK COAT

3. 3" AGG. Binder Course (1/2"
   1200 LBS. PER SQ. YD. & TACK COAT

NOTES:
1. THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SURFACE WAS ONE FOOT OR LESS.
3. IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SOWRIDE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARRIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 213, SUBSECTION 213.080, OF THE STANDARD SPECIFICATIONS.

FULL DEPTH SHOULDER
FOR MAINTENANCE OF TRAFFIC

STATION 100+00.00 - 115+19.65

SPECIAL DETAILS
**Stage 1 Construction Sequence**

Install Stage 1 advance warning signs and end road work signs at the beginning and end of job as shown on the advance warning detail.  

Notch and widen on last existing road from Sta. 100+00.00 - Sta. 100+70.00 and Sta. 107+00.00 - Sta. 117+00.00.  

Maintain traffic on existing lanes using traffic drums spaced 40' O.C.  

Use traffic drums to delineate driveways.  

Construct a new box culvert left of centerline and 32' sight of centerline at Sta. 115+00.00 and new roadway left lane and shoulder.

**Stage 2 Construction Sequence**

Install Stage 2 advance warning signs and end road work signs at the beginning and end of job as shown on the advance warning detail.  

Apply construction pavement markings as shown in the stage 2 maintenance of traffic details.  

Shift traffic to new location road as shown in the stage 2 maintenance of traffic details and utilize a portable traffic signal for traffic control.  

Construct new location right lane.  

Using traffic drums spaced 40' O.C.  

Use traffic drums to delineate driveways.  

Apply final 2' lift of 40cm surface course and place permanent pavement markings as shown in the permanent pavement markings details.

**Advance Warning (Stage 2)**

Advance warning series for one-lane traffic.  

**Advance Warning (Stage 1)**

Advance warning.  

**Maintenance of Traffic - Stage 1 Quantities**

- Signs: 240.0 sq. ft.  
- Vertical panels: 20 each  
- Traffic drums: 20 each  
- Precast concrete barriers: 300 lin. ft.  
- Construction pavement markings: 5362 sq. ft.

**Maintenance of Traffic - Stage 2 Quantities**

- Signs: 240.0 sq. ft.  
- Vertical panels: 20 each  
- Traffic drums: 20 each  
- Precast concrete barriers: 300 lin. ft.  
- Construction pavement markings: 3612 sq. ft.
LOG MILE 7.91
BEGIN JOB A80011
STA. 100+00.00

TRAFFIC DRUMS
SPACED 40' O.C.

WHITE SOLID
CONST. PAVT.
MARKINGS

MLE 8.43'

TRAFFIC DRUMS
WHITE SOLID
MARKINGS

WHITE SOLID
MARKING STOP LINE

TRAFFIC DRUMS
WHITE SOLID
MARKINGS

PORTABLE TRAFFIC SIGNAL SYSTEM

TRAFFIC DRUMS
WHITE SOLID
MARKINGS

WHITE SOLID
MARKING STOP LINE

PORTABLE TRAFFIC SIGNAL SYSTEM
PERMANENT PAVEMENT MARKINGS

REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (6") = 3800 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS YELLOW (6") = 3800 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) (80' O.C.) = 23 EACH

REFLECTORIZED PAINT PAVEMENT MARKINGS (6") WHITE

RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW) SPACED 80' ON CENTER

TYPICAL 2-LANE PERMANENT PAVEMENT MARKING LAYOUT
## Construction Pavement Markings and Permanent Pavement Markings

<table>
<thead>
<tr>
<th>Description</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>End of Job</th>
<th>Raised Pavement Markers</th>
<th>ReflectORIZED Paint Pavement Marking</th>
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<tr>
<td>CONSTRUCTION PAVEMENT MARKINGS</td>
<td>5,800</td>
<td>3,020</td>
<td>10,820</td>
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<td>3,800</td>
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<tr>
<td>REFLECTORIZED PAINT PAVEMENT MARKING, YELLOW (6&quot;)</td>
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<td>3,800</td>
<td>3,800</td>
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<tr>
<td>TOTALS</td>
<td>10,820</td>
<td>13</td>
<td>3,800</td>
<td>3,800</td>
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</table>

*Note: This is a low traffic volume road as defined in Section 804.03, Standard Specifications for Highway Construction.*

### Fencing

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Location</th>
<th>WBE Fence</th>
<th>Type D</th>
<th>1 H&quot; GATES</th>
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<tbody>
<tr>
<td>99-96</td>
<td>109-71</td>
<td>HAV, 323</td>
<td>399</td>
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<tr>
<td>110-59</td>
<td>113-67</td>
<td>HAV, 323</td>
<td>399</td>
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<td></td>
<td>798</td>
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*Denotes alternate bid item.

## 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>Maximum Number Required</th>
<th>Total Signs Required</th>
<th>Vertical Panels</th>
<th>Traffic Drums</th>
<th>Barricades (Type II)</th>
<th>Furnishing &amp; Installing Precast Concrete Barrier</th>
<th>Relocating Precast Concrete Barrier</th>
<th>Temporary Impact Attenuation Barrier</th>
<th>Portable Traffic Signal System-Actuated</th>
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</thead>
<tbody>
<tr>
<td>V00-1</td>
<td>ROAD WORK, 1000 FT.</td>
<td>48&quot;h x 8&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>32 32</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>V00-2</td>
<td>ROAD WORK, 500 FT.</td>
<td>48&quot;h x 8&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>32 32</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>V00-3</td>
<td>ROAD WORK, AHEAD</td>
<td>48&quot;h x 8&quot;w</td>
<td>1 1 1 1 1 1</td>
<td>18 18</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>R-1</td>
<td>END ROAD WORK</td>
<td>48&quot;h x 8&quot;w</td>
<td>3 3 3 3 3 3</td>
<td>24 24</td>
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<tr>
<td>R-2</td>
<td>DO NOT PASS</td>
<td>24&quot;h x 30&quot;w</td>
<td>4 4 4 4 4 4</td>
<td>20 20</td>
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</tr>
<tr>
<td>W01-0</td>
<td>RIGHT SHOULDER CLOSED</td>
<td>36&quot;h x 12&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>18 18</td>
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<tr>
<td>W01-1</td>
<td>BLANK</td>
<td>30&quot;h x 30&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>12 12</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>W02-0</td>
<td>ONE LANE ROAD, 1/2 MILE</td>
<td>48&quot;h x 8&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>32 32</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>W02-1</td>
<td>BE PREPARED TO STOP</td>
<td>36&quot;h x 8&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>18 18</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>W03-0</td>
<td>SIGNAL AHEAD</td>
<td>30&quot;h x 30&quot;w</td>
<td>2 2 2 2 2 2</td>
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<tr>
<td>R1S-0</td>
<td>STOP HERE COMED</td>
<td>24&quot;h x 30&quot;w</td>
<td>2 2 2 2 2 2</td>
<td>12 12</td>
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</table>

**Note:** This is a low traffic volume road as defined in Section 804.03, Standard Specifications for Highway Construction.
**EARTHWORK**

<table>
<thead>
<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION / DESCRIPTION</th>
<th>UNCLASSIFIED EROSION CONTROL</th>
<th>COMPACTED EMBANKMENT</th>
<th>*SOL STABILIZATION</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>CU. FT.</td>
<td>TON</td>
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<tr>
<td>ENTIRE PROJECT</td>
<td>STAGE 1 MAINLANES</td>
<td>1569</td>
<td>19847</td>
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<td>STAGE 2 MAINLANES</td>
<td>2839</td>
<td>5381</td>
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<td>CHANNEL CHANGE</td>
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<td>TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
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<td>100</td>
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**TOTALS:** 8565 25888 100

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

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

**REMOVAL AND DISPOSAL OF ITEMS**

<table>
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<th>STATION</th>
<th>LOCATION / QUADRANT</th>
<th>QUADRANT</th>
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<td></td>
<td></td>
<td>LIN. FT.</td>
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<tr>
<td>10944</td>
<td>110-80</td>
<td>HWY. 333 RT.</td>
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<tr>
<td>10945</td>
<td>110-80</td>
<td>HWY. 333 LT.</td>
<td>140</td>
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**TOTAL:** 280

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF QUADRANT SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL QUADRANT TERMINALS AND TERMINAL ANCHOR POSTS.

**SELECTED PIPE BEDDING**

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

**BENCH MARKS**

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<tbody>
<tr>
<td>1/15-82</td>
<td>HWY. 333 HEADWALL LT.</td>
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**TOTAL:** 1

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

**PAVEMENT REPAIR OVER CULVERTS (CONCRETE)**

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<th>LOCATION</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>CU. YD.</th>
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</thead>
<tbody>
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**AVG DEPTH = 12"**

**EROSION CONTROL**

**PERMANENT EROSION CONTROL**

<table>
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<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>SEEDING</th>
<th>LIME</th>
<th>MULCH COVER</th>
<th>WATER</th>
<th>SECOND SEEDING APPLICATION</th>
<th>TEMPORARY SEEDING</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>ACRES</td>
<td>TON</td>
<td>ACRE</td>
<td>ACRE</td>
<td>M.GAL</td>
<td>ACRE</td>
<td>ACRE</td>
<td>ACRE</td>
<td>M.GAL</td>
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<td>5.55</td>
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**TOTALS:** 3.74 7.37 5.66 372.6 3.96 13.39 13.39 279.3 51 21 89 1768 50 543 476

**TEMPORARY EROSION CONTROL**

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<th>LOCATION</th>
<th>SAND BAG DITCH CHECKS</th>
<th>ROCK DITCH CHECKS</th>
<th>FILTER SOCKS</th>
<th>SLT FENCE</th>
<th>SEDIMENT BAG</th>
<th>OBSTRUCTION OF SEDIMENT BAG</th>
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<tr>
<td></td>
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<td>ACRES</td>
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<td>TON</td>
<td>FT.</td>
<td>FT.</td>
<td>FT.</td>
<td>FT.</td>
</tr>
<tr>
<td>ENTIRE PROJECT</td>
<td>CLEARING AND SHRUBBING</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ENTIRE PROJECT</td>
<td>STAGE 1</td>
<td>1.14</td>
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<td>1.45</td>
<td>1.45</td>
<td>1.45</td>
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<td>ENTIRE PROJECT</td>
<td>STAGE 2</td>
<td>1.48</td>
<td>2.86</td>
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<td>TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
<td>0.73</td>
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<td>0.73</td>
<td>0.73</td>
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<td>2.58</td>
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**TOTALS:** 3.74 7.37 5.66 372.6 3.96 13.39 13.39 279.3 51 21 89 1768 50 543 476

**BAGS OF ESTIMATE:**

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<tr>
<th>MATERIAL</th>
<th>QTY</th>
<th>RATE</th>
<th>TOTAL</th>
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</thead>
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<tr>
<td>LIME</td>
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<tr>
<td>WATER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAND BAG DITCH CHECKS</td>
<td></td>
<td>220 G/L</td>
<td>33.3</td>
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<tr>
<td>ROCK DITCH CHECKS</td>
<td></td>
<td>220 G/L</td>
<td>33.3</td>
</tr>
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**NOTE:** THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCHA SEQUENCE AS TO BE EFFECTIVE AND SUFFICIENT FOR JOURNEY ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

* QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.
## 4" PIPE UNDERDRAIN

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<th>LOCATION</th>
<th>UNDERDRAIN</th>
<th>PIPE UNDERDRAIN</th>
<th>PROTECTORS</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>EACH</td>
<td>EACH</td>
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</tbody>
</table>

**ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER**

**TOTAL:**

|          |          | EACH       |
| 500      | 2        |

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

## MAILBOXES

<table>
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<tr>
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<th>MAILBOXES</th>
<th>MAILBOX SUPPORTS</th>
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<tbody>
<tr>
<td>EACH</td>
<td>EACH</td>
<td>SINGLE</td>
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**TOTALS:**

| EACH     | 2         |
| EACH     | 2         |

## STRUCTURES

**STATION**

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<tr>
<th>PIPE CULVERT ALTERNATES</th>
<th>FLARED END SECTION</th>
<th>ALTERNATES FOR PIPE CULVERT ALTERNATES</th>
<th>SPAN</th>
<th>HEIGHT</th>
<th>LENGTH</th>
<th>CLASS 5 CONCRETE ROADWAY</th>
<th>REINF. STEEL-ROADWAY GRADE 60</th>
<th>UNCLEXC. FOR STR.-ROADWAY</th>
<th>SOLID SCODING</th>
<th>WATER</th>
<th>STD. DWG. NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-55</td>
<td>CONST. 44&quot;X27&quot;X48 CROSS DRAIN</td>
<td>EACH</td>
<td>24</td>
<td>46</td>
<td>46</td>
<td>C+YD</td>
<td>POUND</td>
<td>CU+YD</td>
<td>99.03</td>
<td>529.03</td>
<td>PCC-1, PCC-1</td>
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<tr>
<td>SUBTOTALS</td>
<td>2</td>
<td></td>
<td>99.03</td>
<td>159.03</td>
<td>208</td>
<td></td>
<td></td>
<td>72</td>
<td>0.31</td>
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</tbody>
</table>

**STURCTURES OVER 10'-6" SPAN**

| 115-55                  | TR, 12X10" R.G. BOX CULVERT 30'-RT. PWD, SOD. |                                          | 12   | 10     | 158    | 99.03                  | 529.03                     | 46                  | 19         |        |               |
| SUBTOTALS               |                                                   |                                        | 99.03| 159.03 | 208    |                        |                            | 72                  | 0.31        |        |               |

**TOTALS:**

| 46                   | 46       |

**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.

## CLEARING AND GRUBBING

<table>
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<th>LOCATION</th>
<th>CLEARING</th>
<th>GRUBBING</th>
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<tbody>
<tr>
<td>99-00</td>
<td>Hwy. 333</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>118-50</td>
<td>Hwy. 333</td>
<td>19</td>
<td>19</td>
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<tr>
<td>TOTALS:</td>
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<td>19</td>
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**NOTE:** AVERAGE WIDTH = 6' 0".

## EROSION CONTROL MATTING

<table>
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<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>LENGTH</th>
<th>CLASS 3</th>
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<tr>
<td>104-00</td>
<td>Hwy. 333 RT</td>
<td>200-20</td>
<td>177.78</td>
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**TOTAL:**

| 177.78  |

## REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)

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<th>LOCATION</th>
<th>LUMP SUM</th>
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<tr>
<td>109-70</td>
<td>Hwy. 33, BR, NO. 540000</td>
<td>1.00</td>
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<tr>
<td>110-34</td>
<td>Hwy. 33, BR, NO. 540000</td>
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**NOTE:** QUANTITIES SHOWN ABOVE WILL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.
### DRIVEWAYS & TURNOUTS

<table>
<thead>
<tr>
<th>STATION</th>
<th>SIDE</th>
<th>LOCATION</th>
<th>WIDTH</th>
<th>ACME SURFACE COURSE (1/2&quot;) 220 LBS. PER SQ. YD. (PG 64-22)</th>
<th>AGGREGATE BASE COURSE (CLASS 7) SIDES</th>
<th>STANDARD DRAWINGS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>FEET</td>
<td>SQ. YD.</td>
<td>TON</td>
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<tr>
<td>101+09</td>
<td>LT</td>
<td>EUBANKS RD.</td>
<td>16</td>
<td>56.47</td>
<td>9.51</td>
<td>69.31</td>
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<tr>
<td>113-90</td>
<td>LT</td>
<td>HWY 332</td>
<td>20</td>
<td>162.10</td>
<td>17.83</td>
<td>66.19</td>
</tr>
<tr>
<td>113-83</td>
<td>RT</td>
<td>HWY 332</td>
<td>16</td>
<td>84.04</td>
<td>9.29</td>
<td>34.00</td>
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<tr>
<td>117-27</td>
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<td>HWY 333</td>
<td>16</td>
<td>80.87</td>
<td>9.90</td>
<td>33.22</td>
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<tr>
<td>TOTAL:</td>
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<td>413.93</td>
<td>65.53</td>
<td>186.62</td>
<td>34.00</td>
</tr>
</tbody>
</table>

**BASES OF ESTIMATE:**

ACME SURFACE COURSE (1/2") .. 94.5% N宁, AGGR. .. 5.5% ASPHALT BINDER

**MAXIMUM NUMBER OF GALLONS** = 115 FOR PG 64-22

* SEE SECTION 104-03 OF THE STD. SPECS.

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

---

### COLD MILLING ASPHALT PAVEMENT

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>AVG. WIDTH</th>
<th>COLD MILLING ASPHALT PAVEMENT</th>
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<tbody>
<tr>
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<td>FEET</td>
<td>SQ. YD.</td>
</tr>
<tr>
<td>99+00.00</td>
<td>100+00.00</td>
<td>MAIN LANES</td>
<td>22.02</td>
</tr>
<tr>
<td>117+00.00</td>
<td>118+00.00</td>
<td>MAIN LANES</td>
<td>22.02</td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
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<td>446.44</td>
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</table>

**NOTE:** AVERAGE MILLING DEPTH 1".

COLD MILLING SHALL BE STOCKPILED AT THE FOLLOWING LOCATION:

NORTH SIDE OF HWY 332,

SECTION 1, LOG MILE 6.14

---

### SOIL LOG

<table>
<thead>
<tr>
<th>STATION</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>LOCATION</th>
<th>DEPTH</th>
<th>LIQUID LIMIT</th>
<th>PLASTICITY INDEX</th>
<th>ASHHTO CLASSIFICATION</th>
<th>COLOR</th>
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</thead>
<tbody>
<tr>
<td>102+00</td>
<td>38° 24' 51.70&quot;</td>
<td>93° 13' 32.00&quot;</td>
<td>90 FT</td>
<td>0.5</td>
<td>27</td>
<td>10</td>
<td>A-403</td>
<td>BROWN</td>
</tr>
<tr>
<td>102+00</td>
<td>38° 24' 51.70&quot;</td>
<td>93° 13' 32.00&quot;</td>
<td>24 FT</td>
<td>0.4</td>
<td>25</td>
<td>9</td>
<td>A-403</td>
<td>BROWN</td>
</tr>
<tr>
<td>118+00</td>
<td>38° 24' 51.70&quot;</td>
<td>93° 13' 32.00&quot;</td>
<td>60 FT</td>
<td>0.32</td>
<td>26</td>
<td>9</td>
<td>A-403</td>
<td>BROWN</td>
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<tr>
<td>118+00</td>
<td>38° 24' 51.70&quot;</td>
<td>93° 13' 32.00&quot;</td>
<td>24 FT</td>
<td>0.22</td>
<td>28</td>
<td>10</td>
<td>A-403</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

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

- AUGER REFUSAL

---

### QUANTITIES

### ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TON</th>
<th>TACK COAT GALLON</th>
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<tbody>
<tr>
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<td>25</td>
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<tr>
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<td>25</td>
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**BASES OF ESTIMATE:**

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC... 25 TONNEAL TACK COAT FOR MAINTENANCE OF TRAFFIC.......................... 50 GALLON MILE

---

### CONCRETE DITCHPAYING

<table>
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<tr>
<th>STATION</th>
<th>STATION</th>
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<th>LENGTH</th>
<th>&quot;W&quot;</th>
<th>CONC. DITCH PAYING</th>
<th>SOLID SODDING</th>
<th>WATER</th>
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<tbody>
<tr>
<td>101+00.00</td>
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<td>HWY 333 LT</td>
<td>200.00</td>
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<td>203.37</td>
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<tr>
<td>108+00.00</td>
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<td>111+00.00</td>
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**BASES OF ESTIMATE:**

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

---

### QUANTITIES
## Basic and Surface Course

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Location</th>
<th>Length</th>
<th>Aggregate Base Course (Class 7)</th>
<th>Tack Coat</th>
<th>ACHM Binder Course (1&quot;)</th>
<th>ACHM Surface Course (1&quot;)</th>
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</thead>
<tbody>
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### Additional For Leveling

<table>
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<th>Station</th>
<th>Location</th>
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<th>Aggregate Base Course (Class 7)</th>
<th>Tack Coat</th>
<th>ACHM Binder Course (1&quot;)</th>
<th>ACHM Surface Course (1&quot;)</th>
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</thead>
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### Additional For Narrowing Median

<table>
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<th>Station</th>
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<th>Tack Coat</th>
<th>ACHM Binder Course (1&quot;)</th>
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</thead>
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</tbody>
</table>

### Basis of Estimate

- ACHM SURFACE COURSE (1") 0.34% Min. AAGR. 5.0% ASPHALT BINDER
- ACHM BINDER COURSE (1") 13.5% Min. AAGR. 4.0% ASPHALT BINDER
- Maximum Number of observations = 10 for PO 64-22

TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.
### SUMMARY OF QUANTITIES AND REVISIONS

#### ITEM NUMBER
- 021: CLEARING
- 027: DRAINING
- 022: REMOVAL AND DISPOSAL OF FENCE
- 023: REMOVAL AND DISPOSAL OF PILE (CULVERTS)
- 024: REMOVAL AND DISPOSAL OF SHRUBS
- 025: UNASSIGNED EXCAVATION
- 026: CONTRACTED EMBANKMENT
- 027: TANK (CULVERTS)
- 028: ROOFGRADE BASE COURSE (CURB 7)
- 029: DRAIN COAT
- 030: MEDICAL-ASSOCIATED RADIOISOTOPES COUNTER (1)
- 031: HOSPITAL IRON RATION (2) (PM RATION COURSE 15)
- 032: AQUIAM (PM RATION (2) (PM RATION COURSE 15)
- 033: COLD MISTING WITH AERIAL PAVEMENT
- 034: G40 (COLD MISTING WITH AERIAL PAVEMENT)
- 035: MILL-OFF EXISTING MADE

#### QUANTITY AND UNIT
- 021: CLEARING 10 STATION
- 027: DRAINING 10 STATION
- 022: REMOVAL AND DISPOSAL OF FENCE 1,000 YD
- 023: REMOVAL AND DISPOSAL OF PILE (CULVERTS) 20 YD
- 024: REMOVAL AND DISPOSAL OF SHRUBS 200 YD
- 025: UNASSIGNED EXCAVATION 5155 YD
- 026: CONTRACTED EMBANKMENT 36296 YD
- 027: TANK (CULVERTS) 79 YD
- 028: ROOFGRADE BASE COURSE (CURB 7) 3000 TON
- 029: DRAIN COAT 100 CAL
- 030: MEDICAL-ASSOCIATED RADIOISOTOPES COUNTER (1) 100 TON
- 031: HOSPITAL IRON RATION (2) (PM RATION COURSE 15) 20 TON
- 032: AQUIAM (PM RATION (2) (PM RATION COURSE 15) 10 TON
- 033: COLD MISTING WITH AERIAL PAVEMENT 400 SQ. YD
- 034: G40 (COLD MISTING WITH AERIAL PAVEMENT) 300 SQ. YD
- 035: MILL-OFF EXISTING MADE 2000 YD

#### REVISIONS

<table>
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<th>SHEET NUMBER</th>
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<td>07-22-21</td>
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<tr>
<td>03-25-22</td>
<td>2, 9, 24, 26</td>
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<tr>
<td>03-21-22</td>
<td>13, 15, 16, 18, 15, 26</td>
</tr>
</tbody>
</table>

#### STRUCTURES OVER 20 SPAN
- 025: REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) 1000 YD

#### SUMMARY OF QUANTITIES AND REVISIONS

- **NOTE**: DENOTES ALTERNATE JOB ITEMS
### Survey Control Coordinates

#### Project Name: AR080613

**Date:** 9/26/2013

**Coordinate System:** Arkansas State Plane - North Zone based on GPS Control, Projected to Ground.

**Units:** U.S.S. Survey Foot

<table>
<thead>
<tr>
<th>Point Name</th>
<th>Northing</th>
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<th>Elev</th>
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</table>

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

**Grid Distance:** Ground Distance X Cap.

**Grid Coordinates are stored under file name AR080613g1.ctl**

**Horizontal Datum:** NAD 83 (2011)

**Vertical Datum:** NAVD 88 positional accuracy third order, unless specified otherwise at a specific point.

**Reference Points (1500 Series):** Are to be used to establish control if the primary control points listed above have been destroyed.

**Basis of Bearing:**

**AR080613 Basis of Bearing:**

**Basis of Bearing:**

**Grid Azimuth:** Astronomical Azimuth - Convergence Angle.
CROSS SECTION STA. 100+00 TO STA. 102+00

BEGIN 100' TRANSITION STA. 99+00

END 100' TRANSITION BEGIN JOB A80011

20' EXIST. PAV'T.

4 8 4 .6 3

3 :1

0 .0 4 0 '/

4 :1

4 8 1 .9 2

4 8 4 .4 2

4 8 4 .5 8

4 8 4 .8 0

4 8 4 .5 8

4 8 4 .4 2

4 7 9 .7 9

4 7 4 .0 7

4 7 3 .9 2

4 7 6 .4 2

4 7 6 .5 8

4 7 6 .8 0

4 7 6 .5 8

4 7 6 .4 2

4 7 3 .9 2

4 7 0 .4 3

3 :1

4 :1

0 .0 4 0 '/

4 :1

4 6 4 .2 2

4 6 5 .9 2

4 6 8 .4 2

4 6 8 .5 8

4 6 8 .8 0

4 6 8 .5 8

4 6 8 .4 2

4 6 5 .9 2

4 5 9 .5 5

6

ARK.

STATE SHEET NO. TOTAL SHEETS

DATE REVISED DATE REVISED

JOB NO. FED.AID PROJ.NO.

FED.RD. DIST.NO.
CROSS SECTION STA. 109+00 TO STA. 109+86

20' EXIST. PAV'T.

STAGE 1

STAGE 2

SLOPE

2:1 TEMP.
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 4’ intervals, the space shall be filled with approved joint filler complying with AASHTO M213.
- The walls shall not be paid for directly, but shall be considered to be included in the price bid for concrete ditch paving.
- 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.'

EXCAVATION DETAILS ADDED

TYPED A & B

DATE

REVISION

DATE FILM'D

11-1-84
ADDED NOTE TO ENERGY DISS.

11-3-86
ADDED GENERAL NOTE

4-3-87
REVISED ENERGY DISSIPATOR

532-1-9-87
MODIFIED NOTE ON ENERGY DISS.

599-12-1-86
ADDED NOTE TO ENERGY DISS.

671-4-3-87
REVISED DISSIPATOR NOTE

653-7-15-88
ELIMINATED MIN. ROWS OF ELEMENTS

7-15-88
7-15-88

ARIZONA STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1
TABLE OF DIMENSIONS

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<th>Dia.</th>
<th>WALL</th>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>SPAN</th>
<th>P</th>
<th>H/2</th>
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ARCH PIPE

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<th>D</th>
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NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

PIPE PAY LENGTH

<table>
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<th>NOTES</th>
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<tr>
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END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS
GENERAL NOTES
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. PLATFORMS, WHETHER WOOD, STEEL, OR CAST IRON, SHALL BE SHATTERPROOF.
4. THE MAILBOX SHELF AND PLATFORM UNIT IS SHOWN ONLY FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM UNIT SHOWN FOR MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE SO DESIGNED AND BUILT. THE MAILBOX SHELF AND PLATFORM SHOULD BE GROUPED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. MAILBOX SUPPORT SYSTEM OFFERING FROM THOSE SHOWN MAY BE SO DESIGNED AND BUILT. THE MAILBOX SHELF AND PLATFORM SHOULD BE GROUPED TO FIT MAILBOXES OF A DIFFERENT SIZE.
6. WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM. BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 2" FLATHEAD HEADS SHALL BE A MINIMUM OF 4" THICK AND SHALL BE ASSEMBLED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED AND SAID TO BE WOODEN POSTS.
7. THE MAILBOX SHELF PLATFORM UNIT SHOWN FOR STANDARD SIZE MAILBOXES. THE MAILBOX SHELF PLATFORM UNIT SHOWN FOR MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE SO DESIGNED AND BUILT.
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9. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.

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9. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
GENERAL NOTES

1. PRECAST CURTAIN WALLS AND SPAN WINGWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS DIRECTED BY THE ENGINEER.

2. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF PRECAST CULVERT.

3. WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

4. MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERIOR SURFACE TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

5. END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING.

6. PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE CURTAIN WALL.

BAR LIST

<table>
<thead>
<tr>
<th>NO.</th>
<th>BAR</th>
<th>SIZE</th>
<th>LENGTH</th>
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<td>1'-11&quot;</td>
</tr>
<tr>
<td>10</td>
<td>#4</td>
<td></td>
<td>1'-12&quot;</td>
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</table>

LEAN GROUT

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

![Bar List Image](image-url)

PLAN VIEW

![Plan View Diagram](image-url)

END VIEW

![End View Diagram](image-url)
CONSTRUCTION SEQUENCE

1. Place the structural bedding material to grade, do not compact.
2. Install the pipe to grade, do not compact.
3. Pipe is installed and backfilled to the minimum height.
4. Pipe is compacted to the maximum height, according to the type or class of pipe.
5. Pipe is backfilled to the maximum height, according to the type or class of pipe.

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

**LEGEND**

- **N**: Normal concrete diameter of pipe
- **F**: Full length of pipe
- **H**: Height of fill
- **M**: Machined pipe
- **P**: Partial length of pipe

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>
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</thead>
<tbody>
<tr>
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<td>TYPE 3</td>
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MINIMUM 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>
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<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TYPE 2</td>
<td>2.5</td>
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<tr>
<td>TYPE 3</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

MINIMUM 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>13</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>TYPE 2</td>
<td>10</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>
## Construction Sequence

1. Place structural backfill and fill inside the middle thirds of the pipe. Do not compact.
2. Install structural backfill and fill outside the middle thirds of the pipe. Do not compact.
3. Compact structural backfill and fill outside the middle thirds of the pipe.

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

### Installation Type

<table>
<thead>
<tr>
<th>Material Requirements</th>
<th>Type 1</th>
<th>Type 2</th>
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<tbody>
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### Equivalent Metal Thicknesses and Gauges

<table>
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<tr>
<th>Steel</th>
<th>Zinc Coated</th>
<th>Uncoated</th>
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<tbody>
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<td></td>
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</tbody>
</table>

** legend **

- **EQUIV.** = EQUIVALENT DIAMETER
- **SPECIAL** = SPECIAL SPECIFICATIONS AND SPECIAL DETAILS SUSPENDED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
- **UNCOATED** = UNCOATED METAL PIPE OR STRUCTURAL PIPE.
- **ZINC COATED** = STRUCTURAL PIPE WITH ZINC COATING.

---

### General Notes

6. Metal pipe culverts shall be constructed in accordance with the requirements of the standard construction specifications and shall not be used for any purpose other than for the purpose specified in the plans, sections, and subsections.
7. Metal pipe culverts shall be constructed in accordance with the requirements of the standard construction specifications and shall not be used for any purpose other than for the purpose specified in the plans, sections, and subsections.
8. Metal pipe culverts shall be constructed in accordance with the requirements of the standard construction specifications and shall not be used for any purpose other than for the purpose specified in the plans, sections, and subsections.
9. Metal pipe culverts shall be constructed in accordance with the requirements of the standard construction specifications and shall not be used for any purpose other than for the purpose specified in the plans, sections, and subsections.
10. Metal pipe culverts shall be constructed in accordance with the requirements of the standard construction specifications and shall not be used for any purpose other than for the purpose specified in the plans, sections, and subsections.

---

### Embankment and Trench Installations

1. Structural backfill, embankment, and other structural bedding materials shall be compacted to 95% of the maximum density according to the type of class of material involved.
2. Installation type 1 shall be used for corrugated steel or aluminum pipe culverts.
3. Installation type 1 shall be used for corrugated steel or aluminum pipe culverts with 2 1/2" x 1/2" corrugation.
4. Installation type 2 may be used for corrugated steel or aluminum pipe culverts with 2 1/2" x 1/2" corrugation.

---

### Metal Pipe Culvert Fill Heights & Bedding

<table>
<thead>
<tr>
<th></th>
<th>TYPE 1</th>
<th>TYPE 2</th>
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<tbody>
<tr>
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**Note:** This document includes detailed specifications and diagrams for the installation of metal pipe culverts, including the requirements for structural backfill and bedding materials, as well as the construction sequence and installation types. It also provides equivalent metal thicknesses and gauges for different types of steel and zinc-coated metal pipe. The general notes section outlines the requirements for the construction and installation of metal pipe culverts, ensuring they meet the standards and specifications outlined in the standard construction specifications.
**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT “H”**

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**GENERAL NOTES**

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION.
2. PLACE PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN MULTIPLE INSTALLATIONS OF HIGH DENSITY POLYETHYLENE PIPES.

**MINIMUM COVER FOR CONSTRUCTION LOADS**

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<thead>
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<th>COVER FOR CONSTRUCTION LOADS</th>
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**REPLACEMENT COURT PAVING**

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<td>6'-6&quot;</td>
<td>7'-0&quot;</td>
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**LEGEND**

- STRUCTURAL BACKFILL MATERIAL
- STRUCTURAL BEDDING MATERIAL
- UNDISTURBED SOIL
**GENERAL NOTES**

1. Pipe shall conform to the requirements of ASTM Standards F949, Cell Class 12454. Installation shall conform to the job special provisions.


3. Structural Backfill, Embankment, and Outer Structural Bedding materials shall be compacted to 95% of the maximum density according to the type or class of material used.

4. The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.

5. The structural backfill shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.

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 as "Structural Backfill" above), Borrow material or Other approved methods in order to maintain the structural backfill.

7. For Pipe Types that are not smooth on the outside (corrugated or profile walls), Backfill Gradients shall be selected such that will permit the filling of the corrugation or profile valley.

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

9. To place structural backfill material to grade, do not compact.

10. Compact structural backfill outside the inside third of the pipe.

11. The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.

**CONSTRUCTION SEQUENCE**

1. Place Structural Backfill Material to Grade, do not compact.

2. Install Pipe to Grade.

3. Compact Structural Backfill outside the inside third of the pipe.

4. The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.

**TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS**

1. Structural backfill, embankment, and Outer structural bedding materials shall be compacted to 95% of the maximum density according to the type or class of material used.

**MINIMUM COVER FOR CONSTRUCTION LOADS**

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<th>Load Class</th>
<th>Minimum Cover (feet)</th>
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<td>2</td>
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**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"**

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<th>Fill Height &quot;H&quot; (feet)</th>
<th>Trench Width (feet)</th>
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<tr>
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<tr>
<td>3</td>
<td>5</td>
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<tr>
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<td>6</td>
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</table>

**MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL**

<table>
<thead>
<tr>
<th>Fill Height &quot;H&quot; (feet)</th>
<th>Maximum Fill Height (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
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<tr>
<td>3</td>
<td>5</td>
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<td>4</td>
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**TABLE**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
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<td>30&quot;</td>
<td>3</td>
</tr>
<tr>
<td>36&quot;</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**NOTES**

- Structural backfill, embankment, and outer structural bedding materials shall be compacted to 95% of the maximum density according to the type or class of material used.
- The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.
- The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.
- 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" above), Borrow material or Other approved methods in order to maintain the structural backfill.
- PVC pipes of diameters other than shown will not be allowed.
- For Pipe Types that are not smooth on the outside (corrugated or profile walls), Backfill Gradients shall be selected such that will permit the filling of the corrugation or profile valley.
- Structural backfill, embankment, and outer structural bedding materials shall be compacted to 95% of the maximum density according to the type or class of material used.
- The structural backfill shall be placed and compacted in multiple layers not exceeding 8". The layers shall be brought up evenly and simultaneously to the elevation of the minimum cover.
- 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" above), Borrow material or Other approved methods in order to maintain the structural backfill.
- PVC pipes of diameters other than shown will not be allowed.

**ARMS” Load Class 4, 5, 6, or 7 may be used as long as specific requirements are met.
MATERIALS

TYPE 1

- Aggregate Base Course (Class G, D, B, C)
- Structural Backfill
- Structural Bedding

TYPE 2

- Excavation and Structural Backfill
- Structural Bedding

MINIMUM TRENCH WIDTH

BASED ON FILL HEIGHT "H"

MINIMUM COVER FOR CONSTRUCTION LOADS

DIAMETER

MIN. COVER (FT) FOR INDICATED CONSTRUCTION LOADS

EMBANKMENT AND TRENCH INSTALLATIONS

CONSTRUCTION SEQUENCE

1. Place structural bedding material to grade, do not compact,
2. Install pipe to grade,
3. Compact structural bedding outside the whole width of the pipe,
4. The structural bedding shall be placed and compacted to
5. Compacted soil

EMBANKMENT INSTALLATION

1. Structural bedding and structural backfill material shall be compacted to
2. The maximum density according to the type or class of material used

GENERAL NOTES

1. Pipe shall conform to standard provisions of the Standard Specifications and be compatible with the pipeline system.
2. Trench width shall be based on the maximum fill height of the pipeline system and other factors.
3. Minimum cover shall be maintained to prevent loss of structural bedding when compaction cannot be completed to
4. The structural bedding shall be placed and compacted to
5. When compaction cannot be completed to
6. The maximum density according to the type or class of material used

MINIMUM TRENCH WIDTH

BASED ON FILL HEIGHT "H"

MINIMUM COVER VALUES, "H" = MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED

SPECIAL DRAWING PCP-3

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

MINIMUM TRENCH WIDTH

BASED ON FILL HEIGHT "H"

MINIMUM COVER VALUES, "H" = MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED

SPECIAL DRAWING PCP-3

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)

MINIMUM TRENCH WIDTH

BASED ON FILL HEIGHT "H"

MINIMUM COVER VALUES, "H" = MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED

SPECIAL DRAWING PCP-3

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (POLYPROPYLENE)
NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE REMOVAL AND DISPOSAL OF EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

8. 4" SNAP ADAPTERS MAY BE USED TO INSTALL ISOLATED PIPE LATERALS OR LATERALS ALIGNED WITH EXISTING UNDERDRAINS.

9. ORTHOGONAL GAUGE MATERIAL SHALL BE WRAPPED AROUND PIPE LATERALS TO ENSURE PROPER INSTALLATION OF OUTLET PROTECTORS.

10. STAINLESS STEEL #4 BOLTS AND WASHERS IN APPROX. CENTER OF SCREEN SHALL BE INCLUDED FOR ADEQUATE FIXTURE." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

D-R-I

ADDED NOTES FOR PIPE UNDERDRAINS:
- REVISED RODENT SCREEN DETAIL AND NOTES.
- REVISED NOTE 3
- ADDED NOTE FOR GEOTEXTILE FABRIC
- REVISED NOTE 2 FOR GRANULAR MATERIAL,
- REVISED RODENT SCREEN DETAIL AND NOTES,
- ADDED NOTES FOR PIPE UNDERDRAINS,
- NOTE: DETAILS OF PIPE UNDERDRAIN

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1
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 AS-310 M 310 OR M 53, GRADE 60.

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

WINGWALL & CULVERT DRAINAGE DETAILS

Membrane waterproofing shall be applied to all construction joints in the top slab and the side walls 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.

Steelfabrication, reinforcing steel fabrication shall conform to the requirements of Sections 403.01 and 625.02 of the Standard Specifications.

REINFORCED CONCRETE BOX CULVERT DETAILS

Standard Drawing RCB-1

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS
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 ABOVE THE 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.

EXCAVATION PAY LIMITS:
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.
### General Notes

1. On pavement with two-way traffic, the super-elevation shall be reversed on the inside pavement edge unless otherwise noted on the plans.

2. Super-elevation values shown on the cross sections are values to permit simpler calculations.

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% $L_s$
   - 4 lane undivided: +50% $L_s$
   - 5 lane undivided: +80% $L_s$
   - 6 lane undivided: +100% $L_s$

### Super-elevation Table for Two-way Traffic

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</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
- $L_s$ - Length of super-elevation transition (ft.)
- $C$ - Normal Crown (ft.)
- $e$ - Rate of super-elevation (ft. per ft.)

### Super-elevation Formula

$e = \frac{C}{L_s}$

### Maximum Super-elevation

For two-way traffic, the maximum super-elevation should be calculated as follows:

- Inside pavement or subgrade edge: $e = \frac{C}{L_s}$
- Outside pavement or subgrade edge: $\pm \frac{3}{4} L_s$

### Super-elevation Diagrams

- Standard Method: When super-elevation revolves around center line or inner pavement edge.
- Maximum: Outside or inside pavement edge.
- Uniformly increasing or decreasing super-elevation.
- Control point: Notes maintain normal crown on edges until super-elevation exceeds 2C.

### Revised Super-elevation Table

[Table and Method of Super-elevation for Two-Way Traffic]

---

**ARKANSAS STATE HIGHWAY COMMISSION**

**AR Form SE-2**

Super-elevation for two-way traffic.

---

**General Notes**

- Uniformly increasing super-elevation.
- Uniformly decreasing super-elevation.

---

**Superelevation**

- Inside pavement or subgrade edge.
- Outside pavement or subgrade edge.

---

**Super-elevation Diagrams**

- Standard Method.
- Maximum Super-elevation.

---

**Tables and Method of Super-elevation for Two-way Traffic**

[Diagram of super-elevation transitions and control points]
DETAILS OF CONCRETE STEPS & WALKS

REINFORCED CONCRETE SPRING BOX

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

GENERAL NOTES

- Materials may be varied as directed by the Engineer.
- Steps are varied as directed by the Engineer.
- All steps in a flight are the same height.
- Handrail details shall be as shown.

RUBBER RAMPS SHALL BE PLACED ON CONCRETE WALKS AT 4'-0" INTERVALS.

DETIAL OF HAND RAILING SET IN CONCRETE 

DETAIL OF HAND RAILING

POST CONNECTION DETAILS

BASE PLATE

SPECIAL ITEMS

CONTRACTOR AGREES TO PROVIDE ALL STEEL TO BE #4 BARS.

EXISTING PAVEMENT

REINFORCED CONCRETE SPRING BOX

BASE PLATE

6" X 6" WIRE MESH (W2.9 X W2.9) AT T/2

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

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6" X 6" WIRE MESH (W2.9 X W2.9) AT T/2

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DETIAL OF HAND RAILING SET IN CONCRETE 

DETAIL OF HAND RAILING

POST CONNECTION DETAILS

BASE PLATE

SPECIAL ITEMS

CONTRACTOR AGREES TO PROVIDE ALL STEEL TO BE #4 BARS.

EXISTING PAVEMENT

REINFORCED CONCRETE SPRING BOX

BASE PLATE

6" X 6" WIRE MESH (W2.9 X W2.9) AT T/2

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

GENERAL NOTES

- Materials may be varied as directed by the Engineer.
- Steps are varied as directed by the Engineer.
- All steps in a flight are the same height.
- Handrail details shall be as shown.

RUBBER RAMPS SHALL BE PLACED ON CONCRETE WALKS AT 4'-0" INTERVALS.

DETIAL OF HAND RAILING SET IN CONCRETE 

DETAIL OF HAND RAILING

POST CONNECTION DETAILS

BASE PLATE

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**Offset Distance Table**

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-0</td>
<td>18</td>
</tr>
<tr>
<td>&gt; 35</td>
<td>18</td>
</tr>
</tbody>
</table>

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

**General Notes**

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."
SAND BAGS
FLOW
ADDED FILTER SOCK E-3 AND E-13
R U N O F F
AND ARRANGEMENT VARIABLE
NUMBER OF SAND BAGS
WITH SECTION 625
(TYPE 4) IN ACCORDANCE
GEOTEXTILE FABRIC
2' MAX.
STAKES
AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES
BACKFILL
SAND BAGS
DITCH CHECK
WATTLE
SECTION A-A
(V-TYPE)
SECTION A-A
A
6'' MIN.
WATER LEVEL
SAND BAG DITCH CHECK (E-5)
STAKES
2'  UPSLOPE
ROCK DITCH CHECK (E-6)
WILL NOT BE MADE.
ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE
SILT FENCE (E-11)
6 ' MAX.
NATURAL GROUND
GENERAL NOTES
18'' TO 24'' NORMAL
ROCK FILTER
WATER LEVEL
2'
DOWNSLOPE
APPROX. 2:1 SLOPE
2'
POST (EMBED 2' MIN.)
GENERAL NOTES
IN AREA OF OVERFLOW
(SURFACE FLOW
WITH SECTION 625
(TYPE 3) IN ACCORDANCE
GEOTEXTILE FABRIC
END OF FABRIC
BACKFILL
EARTH
WOOD POSTS
2''X4'' NOMINAL
CLOTH; COMPACT THOROUGHLY.
DROP INLET SILT FENCE (E-7)
WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER
WITH SECTION 625
(TYPE 3) IN ACCORDANCE
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CLEARING AND GRUBBING

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

EXCAVATION

EXISTING GROUND
INTERCEPTOR OR DIVERSION DITCH
PHASE 1 EXCAVATION
PHASE 2 EXCAVATION
FINAL PHASE EXCAVATION

GENERAL NOTE

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, sediment drainage, other erosion control devices as required

EMBANKMENT

EXISTING GROUND
PHASE 1 EMBANKMENT
PHASE 2 EMBANKMENT
FINAL PHASE EMBANKMENT

GENERAL NOTE

Construction Sequence
1. Construct diversion ditches, check ditches, sediment basins, silt fences, or other erosion control devices as specified
2. Place phase 1 embankment with permanent or temporary seeding, 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 silt fences 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, provide diversion ditches and silt fences and maintain until entire slope is stabilized

NOTE:
Number of phases will vary, three phases shown for illustration.

Slopes shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically.

All embankment slopes shall be cleared, prepared, seeded, and stabilized as the work progresses. Seeding shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically

NOTES:
Number of phases will vary, three phases shown for illustration

All embankment slopes shall be cleared, prepared, seeded, and stabilized as the work progresses. Seeding shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically.

Arkansas State Highway Commission
Temporary Erosion Control Devices

Standard Drawing TEC-3
GENERAL NOTES:

1. THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATIONS WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNELS OR DEPRESSIONS WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

2. WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

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4. IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE DITCHES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

5. PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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