ARMSKAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

BRANCH OF ILLINOIS RIVER
STR. & APPRS. (S)
WASHINGTON COUNTY
ROUTE 170 SECTION 2
F.A.P. STPB-0072(40)
JOB 040570

NOT TO SCALE

STA. 11+12.00
BEGIN JOB 040570
LOG MILE 0.53

STA. 28+94.41
END JOB 040570

PROJECT COORDINATES:

BEGIN MID-POINT END
LAT. N36° 00' 01" N36° 00' 01" N36° 00' 01"
LON. W94° 16' 42" W94° 16' 28" W94° 16' 18"

GROSS LENGTH OF PROJECT 1762.41 FEET OR 0.338 MILE
NET LENGTH OF ROADWAY 1731.91 FEET OR 0.328 MILE
NET LENGTH OF BRIDGES 50.50 FEET OR 0.010 MILE
NET LENGTH OF PROJECT 1762.41 FEET OR 0.338 MILE

DESIGN TRAFFIC DATA

DESIGN YEAR: 2014
2014 ADT: 900
2034 ADT: 1200
2034 DVR: 132
DIRECTIONAL DISTRIBUTION: 60%
TRUCKS: 4%
DESIGN SPEED: 45 MPH

APPROVED

DEPUTY DIRECTOR
AND CHEF ENGINEER
NOTES:

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

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

THE THICKNESS OF AGG. BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLANNED THICKNESS SHOWN. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR NOT MEETING TOLERANCES INDICATED. PAYMENTS WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACMI SURFACE COURSE 1/2 IN LEIU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING.
NOTES:

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

THE FINAL 2 INCHES OF SURFACE COURSE C-1 TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN Laid, LONdITONAL JOINTS SHALL BE AT THE LINE
LINES.

THE THICKNESS OF AGG. BASE COURSE SHAll BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL BE ALLOWED FOR MATERIAL USED IN EXCESS OF THE TOLERANCE INDICATED.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF AGG. SURFACE COURSE ¾" IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED IF AND WHERE DIRECTED BY THE ENGINEER, CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND MOLDING.
COLD MILLING DETAIL
AT EXISTING PAVEMENT TIE-INS
NOTE: 50 PER 1" OF OVERLAY FOR MAIN LAINES

FULL DEPTH SHOULDERS
FOR MAINTENANCE OF TRAFFIC
STATION 11+20 - STATION 29+20

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

DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

CONSTRUCTION LIMITS

DETAIL FOR DRIVEWAY TURNOUTS
(Collectors)

SPECIAL DETAILS
4"x4" SPlice

U-BOLT DETAIL & METHOD OF ATTACHING 1/2" WIRE ROPE TO POST

4"x4" SPlice
METHOD OF RAISING GRADE

1. Aggregate Base Course (Class 7) to be replaced with A.C.M. Binder Course (1")

NOTES:
1. THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

CONSTRUCTION STAGE 1

VAR. WIDTH ACH-M SURFACE COURSE (1/2")
220 LBS. PER SQ. YD.

VAR. WIDTH 8" AGGREGATE BASE COURSE (CLASS 7)

STAGE 1 CONSTRUCTION
MAINTENANCE OF TRAFFIC TEMPORARY WIDEN DETAILS
Note: When top of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.

**TYPICAL SECTION M-M**

**PART LONGITUDINAL SECTION**
- Non-Skewed End

**PART LONGITUDINAL SECTION N-N**
- Skewed End

**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**
- Top Slab Shear Bottom Slab Shear

**WINDWALL ATTACHMENT**
- See "Details of Windwall" for additional information and windwall details.

**TYPICAL KEYWAY DETAIL**
- WI Construction Joint

**SKEWED END SECTION DETAILS**

**GENERAL DETAILS OF R.C. BOX CULVERT**

**DETAILS OF SINGLE BARREL R.C. BOX CULVERT**

**SPECIAL DETAILS**
STA. 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53

SILT FENCE

<table>
<thead>
<tr>
<th>STA.</th>
<th>STA.</th>
<th>SIDE</th>
<th>LIN FT.</th>
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<tr>
<td>11-10</td>
<td>13-12</td>
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<td>16-20</td>
<td>19-32</td>
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EROSION CONTROL REVISIONS

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<tr>
<th>DATE</th>
<th>REVISION MADE</th>
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</table>

TEMPORARY EROSION CONTROL DETAILS: STAGE 1
STA 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53

NOTE: RETAIN STAGE 1 CONSTRUCTION
TEMPORARY EROSION CONTROL DEVICES
IF & WHERE DIRECTED BY THE ENGINEER.
STA. 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53

NOTE: RETAIN STAGE 1 CONSTRUCTION TEMORARY EROSION CONTROL DEVICES IF & WHERE DIRECTED BY THE ENGINEER.
MAINTENANCE OF TRAFFIC QUANTITIES - STAGE 1

SILTS - 231.6 SQ. FT.
VERTICAL PANELS - 41 EACH
TRAFFIC DRUMS - 6 EACH
BARRIERS - 32 LIN. FT.
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER - 80 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER - 2 EACH
TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) - 2 EACH

THE QUANTITY OF VERTICAL PANELS PROVIDED IN THE CONTRACT IS FOR ONE SIDE OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. THIS IS THE MAXIMUM QUANTITY REQUIRED TO ALLOW THE CONTRACTOR TO NOTCH ONE MILE, BACKFILL TO A POINT WHERE THE VERTICAL DIFFERENTIAL IS 4" OR LESS, AND THEN NOTCH ANOTHER ONE MILE SECTION. THIS IS THE MAXIMUM NUMBER OF VERTICAL PANELS THAT WILL BE PAID FOR. REFER TO SECTION 630.20 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.

NOTE: VERTICAL PANELS 45° O.C.

NOTE: RH-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTE: RSP-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

ADVANCE WARNING SIGN PLACEMENT
PLACE ON WY-70 AT THE BEGINNING AND END OF THE PROJECT.
ALL STAGES

STA. 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53

STA 13+00 CONSTRUCT
TEMPORARY 12" X 12" PIPE CUVERT

STA 14+41 CONSTRUCT
TEMPORARY 12" X 12" PIPE CUVERT

1B: TRAFFIC CONSTRUCTION STAGE 1
9' 0" 9'

STATE: M-550, 500 PANELS 10" X 10" X 2.00"
ADVANCE WARNING SIGN PLACEMENT
PLACE ON HWY. 170 AT THE BEGINNING AND END OF THE PROJECT.
ALL STAGES

STA. 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53
ALL STAGES:

INSTALL ADVANCE WARNING SIGNS AT THE BEGINNING AND END OF PROJECT AND ON HWY, 170.
PLACE W00 1 (ROAD WORK AHEAD) AND G20-2 (END ROAD WORK) SIGNS ON ALL INTERSECTING STREETS.

REFER TO SPECIAL PROVISIONS "CURED PRECAST REINFORCED CONCRETE BOX CULVERTS" AND "SHRINKING". SPECIAL DETAILS FOR R.C. BOX CULVERT CROSS SECTIONS AND MAINTENANCE OF TRAFFIC DETAILS WHEN CONSTRUCTING TRIPLE R.C. BOX CULVERT AT STATION 20+40.

STAGE 1

MAINTAIN TRAFFIC ON THE EXISTING LANES.
DELINATE DRIVEWAYS AND COUNTY ROADS ON THE RIGHT SIDE WITH TRAFFIC DRUMS (6 PER DRIVE).

MAINTAIN TRAFFIC THROUGH EXITING THE PROJECT USING VERTICAL PANELS PLACED AT 40" R.C. ON THE RIGHT SIDE.

ON THE RIGHT, CONSTRUCT THE ROADWAY AND TEMPORARY WIDENING REQUIRED FOR STAGE 2 TRAFFIC AS SHOWN ON THE CROSS SECTIONS.

CONSTRUCT CROSS DRAIN PIPE CULVERTS AT STA. 13+15 AND STA. 14+41.

CONSTRUCT THE RIGHT SECTIONS OF THE TRIPLE R.C. BOX CULVERT AT STA. 20+40 WITH HEADWALL & RUNDOWNS.

INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC SIGNS IN PREPARATION FOR THE TRAFFIC SHIFT FOR STAGE 2 TRAFFIC AS SHOWN ON THE CROSS SECTIONS.

STAGE 2

SHIFT TRAFFIC FROM THE EXISTING LANES TO STAGE 2 TRAFFIC.

DELINATE DRIVEWAYS AND CITY STREETS ON THE LEFT SIDE WITH TRAFFIC DRUMS (3 PER DRIVE).

ON THE LEFT, CONSTRUCT THE REMAINDER OF THE ROADWAY EMBANKMENT.

INSTALL TEMPORARY PRECAST BARRIER WALL, PER STANDARD DRAWINGS ON LEFT OF STAGE 2 TRAFFIC FROM STA. 19+50 TO STA. 21+50.

REMOVE THE EXISTING ONE LANE BRIDGE STRUCTURE AT STA. 20+46.66 TO STA. 20+95.12

CONSTRUCT THE REMAINDER OF THE TRIPLE R.C. BOX CULVERT AT STA. 20+40 WITH HEADWALL & RUNDOWNS.

STAGE 3

REMOVE CONFLICTING MAINTENANCE OF TRAFFIC ITEMS AND CONSTRUCT THE 2" ACI SURFACE COURSE ON THE NEW ROADWAY UNDER TRAFFIC.

REMOVE THE TEMPORARY WIDENING USED FOR STAGE 2 TRAFFIC.

APPLY PERMANENT PAVEMENT MARKINGS AS SHOWN ON THE PERMANENT PAVEMENT MARKING DETAILS.

MAINTENANCE OF TRAFFIC DETAILS - STAGE 2
MAINTENANCE OF TRAFFIC QUANTITIES - STAGE 3

SIGNS = 170.0 SQ. FT.
TRAFFIC DRUMS = 52 EACH
CONSTRUCTION PAVEMENT MARKINGS = 7729 L.IN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 2973 L.IN. FT.

NOTE: TRAFFIC DRUMS 45° OR C.
NOTE: P2-1 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

DO NOT PASS

ADVANCE WARNING SIGN PLACEMENT
PLACE ON HRT. AT THE BEGINNING AND END OF THE PROJECT.
ALL STAGES

STA. 11+12.00
BEGIN JOB 040570
LOG MILE = 0.53

MAINTENANCE OF TRAFFIC
STAGE 3
ALL STAGES:
INSTALL ADVANCE WARNING SIGNS AT THE BEGINNING AND END OF PROJECT AND ON HWY. 170.
PLACE NO. 1 (ROAD WORK AHEAD) AND NO. 2 (END ROAD WORK) SIGNS ON ALL INTERSECTING STREETS.

REFER TO SPECIAL PROVISIONS "LORD PRECAST RE-INFORCED CONCRETE BOX CULVERTS" AND "WORKING SPECIAL DETAILS FOR R.C. BOX CULVERT, CROSS SECTIONS AND MAINTENANCE OF TRAFFIC DETAILS WHEN CONSTRUCTING TRIPLE R.C. BOX CULVERT AT STATION 20+40.

STAGE 1:
MAINTAIN TRAFFIC ON THE EXISTING LINES.
DELINEATE DRIVEWAYS AND CURVING ON THE RIGHT SIDE WITH TRAFFIC DRUMS 16 PER DIRECTION.

MAINTAIN TRAFFIC THROUGHOUT THE PROJECT USING VERTICAL PANELS PLACED AT 40' O.C. ON THE RIGHT SIDE.
ON THE RIGHT, CONSTRUCT THE ROADWAY AND TEMPORARY WIDENING REQUIRED FOR STAGE 2 TRAFFIC AS SHOWN ON THE CROSS SECTIONS.

CONSTRUCT CROSS DRAIN PIPE CULVERTS AT STA. 13+15 AND STA. 14+41.
CONSTRUCT THE RIGHT SECTIONS OF THE TRIPLE R.C. BOX CULVERT AT STA. 20+40 WITH HEADWALL & WINDWALL.
INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC DRUMS IN PREPARATION FOR THE TRAFFIC SHIFT FOR STAGE 2 TRAFFIC AS SHOWN ON THE CROSS SECTIONS.

STAGE 2:
SHIFT TRAFFIC FROM THE EXISTING LINES TO STAGE 2 TRAFFIC.
DELINEATE DRIVEWAYS AND CITY STREETS ON THE LEFT SIDE WITH TRAFFIC DRUMS 16 PER DIRECTION.
ON THE LEFT, CONSTRUCT THE REMAINDER OF THE ROADWAY EMBANKMENT.
INSTALL TEMPORARY PRECAST BARRIER WALL PER STANDARD DRAWINGS ON LEFT OF STAGE 2 TRAFFIC FROM STA. 19+50 TO STA. 21+50.
REMOVE THE EXISTING ONE LANE BRIDGE STRUCTURE AT STA. 20+65.66 TO STA. 20+95.12
CONSTRUCT THE REMAINDER OF THE TRIPLE R.C. BOX CULVERT AT STA. 20+40 WITH HEADWALL & WINDWALL.

STAGE 3:
REMOVE CONTRUCTING MAINTENANCE OF TRAFFIC ITEMS AND CONSTRUCT THE 2ND LANE SURFACE COURSE ON THE NEW ROADWAY UNDER TRAFFIC.
REMOVE THE TEMPORARY WIDENING USED FOR STAGE 2 TRAFFIC.
APPLY PERMANENT PAVEMENT MARKINGS AS SHOWN ON THE PERMANENT PAVEMENT MARKING DETAILS.
REFER TO THE PERMANENT PAVEMENT MARKING DETAILS, ON STD. DRWG. PM-1.

PERMANENT PAVEMENT MARKINGS

REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") = 3763 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") = 3765 LIN. FT.

NOTE: THE REFLECTORIZED PAVEMENT MARKING YELLOW (4") QUANTITY IS ESTIMATED, AND IS BASED ON THE PLACEMENT OF A DOUBLE YELLOW CENTERLINE FOR THE ENTIRE PROJECT. THE CONTRACTOR SHALL NOT PLACE ANY PERMANENT PAVEMENT MARKINGS UNTIL THE PASSING/NO PASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.
### ADVANCE WARNING SIGNS AND DEVICES

| SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1 | STAGE 2 | STAGE 3 | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | VERTICAL PANELS | TRAFFIC DRUMS | BARRIERS (TYPE & BAR) | HORIZONTAL INSTALLING PRECAST CONCRETE BARRIER | RELOCATING PRECAST CONCRETE BARRIER | TEMPORARY IMPACT ATTENUATION BARRIER | TEMP. IMPACT ATTENUATION BARRIER (REPAIR) | QUANTITY SHEETS |
|-------------|-------------|-----------|---------|---------|---------|------------------------|----------------------|-----------------|---------------|------------------|---------------------------------------------|----------------------------------------|--------------------------|---------------------------------|------------------------|-------------------------|
| WS0-1       | ROAD WORK 1300 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-2       | ROAD WORK 2500 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-3       | ROAD WORK 4000 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-4       | ROAD WORK AHEAD     | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-5       | ROAD WORK 5000 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-6       | ROAD WORK 6500 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-7       | ROAD WORK 7000 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |
| WS0-8       | ROAD WORK 7500 FT   | 48X19"P  | 2       | 2       | 2       | 2 32.0                 | 4                     | 2               | 2             | 2               | 2, 2, 2                                      | 2                                      | 2                         | 2                                | 2, 2                   |

### CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>STAGE 2</th>
<th>STAGE 3</th>
<th>END OF JOB</th>
<th>CONSTRUCTION PAVEMENT MARKINGS</th>
<th>REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS</th>
<th>REFLECTORIZED PAVEMENT MARKINGS</th>
<th>TOTALS</th>
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</thead>
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### EROSION CONTROL MATTING

<table>
<thead>
<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>LENGTH</th>
<th>CLASS D</th>
<th>WIDTH</th>
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<td>TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
<td>100 0</td>
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<td>102 0</td>
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### EROSION CONTROL

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<th>LOCATION</th>
<th>PERMANENT EROSION CONTROL</th>
<th>TEMPORARY EROSION CONTROL</th>
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<tr>
<td>ENTER</td>
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<td>TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
<td>100 0</td>
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### QUANTITY SHEETS

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<tr>
<td>TOTALS</td>
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**Concrete Ditch Paving**

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<th>Station</th>
<th>Location</th>
<th>Length (&quot;R&quot;)</th>
<th>Conc. Ditch Paving</th>
<th>Solids Sodding</th>
<th>Water</th>
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<tbody>
<tr>
<td>10-50</td>
<td>13+00</td>
<td>100.00</td>
<td>130.30</td>
<td>109.57</td>
<td>0.94</td>
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<tr>
<td>10-55</td>
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<td>100.00</td>
<td>130.30</td>
<td>109.57</td>
<td>0.94</td>
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<td>10-60</td>
<td>20+00</td>
<td>124.00</td>
<td>160.30</td>
<td>155.11</td>
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<td></td>
<td><strong>304.00</strong></td>
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**Concrete Millings**

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<th>Conc. Millings</th>
<th>Solids Sodding</th>
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<tr>
<td>12+50</td>
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<td>124.00</td>
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**Asphalt Concrete Patching for Maintenance of Traffic**

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<th>Tonnage</th>
<th>Tack Coat</th>
<th>Gallon</th>
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<td>24</td>
<td>0.94</td>
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<td>13+30</td>
<td>10</td>
<td>24</td>
<td>0.94</td>
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<tr>
<td><strong>TOTALS</strong></td>
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<td><strong>30</strong></td>
<td><strong>72</strong></td>
<td><strong>2.82</strong></td>
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**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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<td>13+10</td>
<td>95.00</td>
<td>6.5</td>
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<td>15-20</td>
<td>13+20</td>
<td>95.00</td>
<td>6.5</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>190.00</strong></td>
<td><strong>13.0</strong></td>
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**Cold Milling Asphalt Pavement**

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<th>AVG. Width</th>
<th>Cold Milling Asphalt Pavement</th>
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<tr>
<td>10-12</td>
<td>13+00</td>
<td>15.00</td>
<td>210.00</td>
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<tr>
<td>14-41</td>
<td>13+41</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>43.44</strong></td>
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### Driveways & Turnouts

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<th>Station</th>
<th>Side</th>
<th>Location</th>
<th>Width (Feet)</th>
<th>Adequate Surface Course (Class 7)</th>
<th>Adequate Grade Base Course (Class 7)</th>
<th>Standard Drawings</th>
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#### Dipped Riprap and Filter Blanket

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<th>Dipped Riprap (Filter Blanket)</th>
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### Base and Surfacing

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<th>Station</th>
<th>Length (Linear Feet)</th>
<th>Tack Coat</th>
<th>Adequate Binder Course (Class 7)</th>
<th>Adequate Surface Course (Class 7)</th>
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### Structures

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<th>Height</th>
<th>Length</th>
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### Selected Pipe Bedding

<table>
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---

**Note:** Quantities are estimated.

---

**Base of Estimate:**

- 14% Min. Aggr. and 5.9% Asphalt Binder
- Maximum Number of Driveways = 115 for PG 64-22

---

**Notes:**

- For R.C. Pipe Culvert Installation use Type 3 Sodding unless otherwise specified.
- For C.A. Pipe Culvert Installation use Type 2 Sodding unless otherwise specified.
- Details for the filter blanket shall be specified in the contract documents.

---

**Base of Estimate:**

- 14% Min. Aggr. and 5.9% Asphalt Binder
- Maximum Number of Driveways = 115 for PG 64-22

---

**Notes:**

- The contractor, with the approval of the engineer, will be allowed to substitute a high performance grade asphalt surface course for the designated asphalt surface course.
- All prices shown are estimated and subject to change.
- The standard specifications shall be used where applicable.

---

**Base of Estimate:**

- 14% Min. Aggr. and 5.9% Asphalt Binder
- Maximum Number of Driveways = 115 for PG 64-22

---

**Notes:**

- For C.A. Pipe Culvert Installation use Type 2 Sodding unless otherwise specified.
### SUMMARY OF QUANTITIES

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<thead>
<tr>
<th>ITEM NUMBER</th>
<th>ITEM</th>
<th>QUANTITY</th>
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<td>201</td>
<td>GRUBBING</td>
<td>13</td>
<td>STATION</td>
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<td>202</td>
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<td>206</td>
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<td>207</td>
<td>TACK COAT</td>
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**Note:** denotes alternate bid items

### STRUCTURES OVER 22' SPAN

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<td>UNCLASSIFIED EXCAVATION FOR STRUCTURES/ROADWAY</td>
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<td>CUB. YD</td>
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<tr>
<td>SS &amp; 604</td>
<td>CLASS 5 CONCRETE ROADWAY</td>
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<tr>
<td>SS &amp; 604</td>
<td>REINFORCED STEEL ROADWAY (GRADE 60)</td>
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### REVISIONS

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<th>DATE</th>
<th>REVISION</th>
<th>SHEET NUMBER</th>
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<tr>
<td>1/3/2014</td>
<td>REVISED 42&quot; ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE) TO 42&quot; ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)</td>
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<tr>
<td>1/4/2014</td>
<td>ADDED SPECIAL DETAIL FOR WATER GATE</td>
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### Survey Control Coordinates

**Project Name:** e040570  
**Dates:** 5/16/2011  
**Coordinate System:** ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.  
**Units:** U.S. SURVEY FOOT

#### Survey Control Points

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<th>Elev</th>
<th>Feature Description</th>
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<td>633764, 21731115, 18R</td>
<td>RM</td>
<td>STANDARD DIFS</td>
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<td>635681, 70481126, 322</td>
<td>TBM</td>
<td>CHSLD SQ W END HEADWALL 22.5 W EP</td>
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<td>637949, 58631152, 960</td>
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<td>639510, 48531137, 241</td>
<td>TBM</td>
<td>1 INCH PIPE SW COR OF</td>
</tr>
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---

**Note:** Rebar and Cap - Standard. **"** Rebar with 2" Aluminum Cap stamped **"** (standard markings common to all caps), or as indicated (other markings indicated in the point description of the individual point).

ALL DISTANCES ARE GROUND.

USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.

A PROJECT CAF OF 0.999932499 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.

THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.

GRID DISTANCE + GROUND DISTANCE X CAF.

GRID COORDINATES ARE STORED UNDER FILE NAME e040570g.txt.

**Horizontal Datum:** NAD 83 (1997)

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

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

**Basis of Bearing:**

ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE

CONVERGENCE ANGLE 01 19 24, 85 LEFT AT LT 36-00-01, 0 LG 094-16-28, 4

GRID AZIMUTH + ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

---

**Survey Control Details**
TOE WALL DETAIL FOR CONCRETE DITCH PAVING

GENERAL NOTES:

1. THE FULL WIDTH OF EACH SECTION SHALL BE Poured MONOLITHICALLY.
2. TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND Poured MONOLITHICALLY.
3. SOLIDS BAG ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.
4. 2" WIDE TRAVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 40 FEET INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AIRPORT NO.3.

CONCRETE DITCH PAVING

ARAKANS STATE HIGHWAY COMMISSION

STANDARD DRAWING CDP-1
GENERAL NOTES

1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 427.03 OF THE STANDARD SPECIFICATIONS.

2. WOOD OR METAL PLATES SHALL BE USED ONLY ON METAL POSTS.

3. WOOD OR METAL PLATES SHALL BE CONNECTED TO THE POST WITH WELDS OR ACCURATELY FITTED WITH HAMMERED OR切れした鋼板. WOODEN TREATED WOOD MAY BE USED.

4. WITH WOODEN POSTS, THE MOUNTING BRACKET & PLATFORM SHALL BE IN A MANNER AS TO FULLY SUPPORT THE PLATFORM TO THE POST.

5. THE MOUNTING BRACKET & PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES, THE SIZE AND PLACEMENT OF PLATFORMS AND MOUNTING BRACKETS MAY VARY.

6. WOODEN SUPPORT SYSTEMS OFFERING FROM THOSE SHOWN MAY BE USED PROVIDED THEY ARE ON THE AMERICAN NATIONAL OR OTHER EQUIVALENT LIST FOR MAILBOX SUPPORTS.

ATTACHTED TO THE WALL.
### Construction Sequence

1. Place structural bedding material to grade, do not compact.
2. Roll pipe to compact structural bedding outside the middle third of the pipe. (Compaction is not required if pipe is supported by working fill, sheet piling, etc.)
3. Compaction of structural bedding material shall not exceed 24 inches in the sides of the pipe. Kind as level.

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

### Material Requirements

<table>
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<tr>
<th>Type</th>
<th>Description</th>
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<tbody>
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<td>Type 1</td>
<td>Marine coated, high-load, structural bedding and structural backfill.</td>
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<tr>
<td>Type 2</td>
<td>Selected materials compatible with the metal pipe.</td>
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### Equal Metal Thicknesses and Gauges

<table>
<thead>
<tr>
<th>Steel</th>
<th>Gauge Number</th>
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| Zinc coated | UNPRODUCT, ZP, ZP-L *

### Embankment and Trench Installations

1. Structural backfill, embankment and outer structural bedding material shall be compacted to 95% of the maximum density according to the type or class of material used.
3. Installation type 1 shall be used for corrugated steel, or aluminum pipe with 2x5 1/2 for corrugation.
4. Installation type 2 may be used for corrugated steel or aluminum pipe with 3x1 1/4 or 3x2 1/2 for corrugation.

### General Notes

1. Metal pipe culvert construction shall conform to Arkansas State Highway and Transportation Department (AHD) specifications for recently constructed structural steel pipe used with AHD structures. Provided herein in accordance with AHD standards of section and submittals to the standards construction specifications for structural steel pipe used with AHD structures.
2. Structural steel pipe shall be made of corrugated steel pipe with a cover sufficient to prevent damage.
3. The maximum thickness shall be the outside diameter of the pipe plus 24 inches.
4. The maximum allowable trench width shall be the minimum thickness specified for the type of lining material used.
5. Multiple metal pipe culverts shall be installed with a minimum clearance of 24 inches between centers of the pipe culverts to prevent interaction and piping of the various metal pipes.
6. When directed by the Engineer, the pipe shall be cut to length and placed in the trench with the pipe ends against the edge of the trench and the pipe ends shall be cut at an angle of 45 degrees to the horizontal to form the required alignment.
7. The pipe shall be installed in the trench with the pipe ends against the edge of the trench and the pipe ends shall be cut at an angle of 45 degrees to the horizontal to form the required alignment.
8. When installed by the Engineer, the use of corrugated steel pipe is for the purpose of supporting the pipe and should be installed in accordance with the specifications for corrugated steel pipe used with AHD structures. Provided herein in accordance with AHD standards.
9. When installed by the Engineer, the use of corrugated steel pipe is for the purpose of supporting the pipe and should be installed in accordance with the specifications for corrugated steel pipe used with AHD structures. Provided herein in accordance with AHD standards.

### Structural Steel Pipe

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>3/4</td>
<td>1-1/2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>3/4</td>
<td>1-1/2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>3/4</td>
<td>1-1/2</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>60</td>
<td>3/4</td>
<td>1-1/2</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>80</td>
<td>3/4</td>
<td>1-1/2</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>100</td>
<td>3/4</td>
<td>1-1/2</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>120</td>
<td>3/4</td>
<td>1-1/2</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

* For minimum cover values, ZP shall include a minimum 1/2 of pavement and/or base.
**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT \( H \)**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>( H = 0' )</th>
<th>( H = 1' - 2' )</th>
<th>( H &gt; 2' )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5'</td>
<td>2.0' - 2.5'</td>
<td>2.5' - 3.0'</td>
<td>3.0' - 3.5'</td>
</tr>
<tr>
<td>0.7'</td>
<td>2.5' - 3.0'</td>
<td>3.0' - 3.5'</td>
<td>3.5' - 4.0'</td>
</tr>
<tr>
<td>0.9'</td>
<td>3.0' - 3.5'</td>
<td>3.5' - 4.0'</td>
<td>4.0' - 4.5'</td>
</tr>
<tr>
<td>1.2'</td>
<td>3.5' - 4.0'</td>
<td>4.0' - 4.5'</td>
<td>4.5' - 5.0'</td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>COVER REQUIREMENT FOR CONSTRUCTION LOADS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5' - 0.75'</td>
<td>12' or more, 18' or more for live loads.</td>
</tr>
<tr>
<td>0.75' - 0.9'</td>
<td>12' or more, 15' or more for live loads.</td>
</tr>
<tr>
<td>0.9' - 1.2'</td>
<td>12' or more, 14' or more for live loads.</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**

1. PIPE SHALL CONFORM TO ASABE MAR, TYPE 2 INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION PLASTIC PIPE AND GROIN WALLS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2012 EDITION.
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO ASABE GUIDELINES FOR THE INSTALLATION OF PLASTIC PIPE CULVERTS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUITABLE MARGIN TO ENSURE WORKING ROOM TO PROPERLY AND EASILY PLACE AND INSTALL THE PIPE AND谷 Trenching MATERIAL.
4. MATERIALS SELECTED FOR USE SHALL BE APPROVED BY THE ENGINEER. AT THE END OF THE TRENCH TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERISHABLE MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN CONVERTED TO THE ENGINEER, UNFRIED MATERIAL THAT ENCOUNTERS THE END OF THE TRENCH BE ENCLOSED AS STRUCTURAL BEDDING MATERIALS. THE END COVER MATERIALS ARE TO BE EMBEDDED AT THE END OF THE TRENCH AND TO PROVIDE A MINIMUM CLEARANCE OF 18 INCHES ABOVE AND 12 INCHES TO THE SIDE OF THE TRENCH.
6. WHEN THE EXISTING MATERIAL SELECTED FOR USE IS DETERMINED TO BE INEFFECTIVE FOR THE WORK, THE AREA IDENTIFIED AS STRUCTURAL BEDDING MATERIALS ARE TO BE EMOTATED AND REPLACED WITH A MINIMUM CLEARANCE OF 12 INCHES ABOVE AND 12 INCHES TO THE SIDE OF THE TRENCH.
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILED), BACKFILL QUALEITIES SHOULD BE SELECTED THAT WILL PROVIDE THE CORRECTION OF PIPE WALLS.
8. HIGH DENSITY POLYETHYLENE PIPE OF Diameters other than shown shall not be used.
9. Joints for use pipe shall meet the requirements for joint integrity as specified in ASABE section 24.8.6.1.
10. ALL PLASTIC PIPE AREAS EXPOSED TO EXTERNAL TRAFFIC OR SPECIFIC SPECIFICATIONS, JOINTS SHALL BE INSTALLED FOR MANUFACTURERS' RECOMMENDATIONS.

**TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS**

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRDS OF THE PIPE.
4. THE STRUCTURAL BEDDING SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 4" IN THICKNESS, THE LATERAL GAP IS BROADENED AN EQUAL AMOUNT AS THE MAXIMUM RECOMMENDED TRENCH WIDTH.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF THE APPROVED METHODS OR TECHNIQUES IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.
**MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL**

**TYPE 2**

**SELECTED MATERIALS**

Class 300, 350, or 375-

- **MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"**

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>9&quot;</th>
<th>12&quot;</th>
<th>15&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRENCH WIDTH</td>
<td>94&quot;</td>
<td>96&quot;</td>
<td>98&quot;</td>
</tr>
</tbody>
</table>

- **MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>9&quot;</th>
<th>12&quot;</th>
<th>15&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVER NO.</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>15&quot;</td>
</tr>
</tbody>
</table>

**MULTIPLE INSTALLATION OF PVC PIPES**

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTANCE BETWEEN PIPES</td>
<td>2&quot;</td>
<td>4&quot;</td>
<td>6&quot;</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**

1. **PIPE SHALL CONFORM TO ASTM F494.**
2. **PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION (2019).**
3. **THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MAXIMUM WIDTH PLUS A SUITABLE WIDTH TO ENSURE WORKING ROOM FOR PROPERLY AND EASILY PLACE AND COMPACT MACHINERY AND OTHER BACKFILL MATERIAL.**
4. **MINERAL MATERIALS SHOULD BE PLACED AS DIRECTED BY THE ENGINEER. THE SANDS OF THE OLD BOTTOM TO PREVENT LOSS OF STRUCTURAL BEDDING. ANY MULCH MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.**
5. **WHEN DIRECTED BY THE ENGINEER, UNCOMPACTED MATERIALS THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH, BEST PRAC.**
6. **ALL MATERIALS ARE TO BE CONSULTED AS STRUCTURAL BEDDING MATERIALS.**
7. **FOR PIPE TYPES THAT ARE NOT SUITABLE FOR THE OUTSIDE CONTINUOUS OR PROFILE MASONRY BACKFILL GRADING, THE DIAL LOGIC SHALL BE INSERTED.**
8. **PLASTIC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.**

---

**ARKANSAS STATE HIGHWAY COMMISSION**

**PLASTIC PIPE CULVERT**

**STANDARD DRAWING PCP-2**
CONCRETE PAVEMENT

BROKEN LINE STRIPING

4" CONTINUOUS YELLOW
4" CONTINUOUS YELLOW
4" SKIP YELLOW

4" SKIP YELLOW

ASPHALT PAVEMENT

SOLID LINE STRIPING ON CONCRETE PAVEMENT

4" CONTINUOUS YELLOW
4" CONTINUOUS YELLOW
4" SKIP YELLOW

4" SKIP YELLOW

SOLID LINE STRIPING ON ASPHALT PAVEMENT

4" CONTINUOUS YELLOW
4" CONTINUOUS YELLOW
4" SKIP YELLOW

4" SKIP YELLOW

ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPIING AT ADJACENT NO PASSING LANES

CROSSWALK AND STOPBAR DETAILS

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 78 OF THE
   STANDARDS SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH
   THE LATEST REVISED ADDITION OF THE "MANUAL ON
   UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED
   BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS
   OTHERWISE SHOWN ON THE PLANS.

EDGE OF PAVEMENT

4" CONTINUOUS WHITE

4" SKIP YELLOW

STRIPE 4" CONTINUOUS WHITE

PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE
REFLECTOR SHALL
FACE THE DIRECT
TRAFFIC MOVEMENT.

DETAIL OF STANDARD
RAISED PAVEMENT MARKERS

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

CROSSWALK AND STOPBAR DETAILS

CONCRETE PAVEMENT

ASPHALT PAVEMENT

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

GENERAL NOTES:

1. THE DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY.
   ALL LINES FOR THE STRIPING AND RAISED
   PAVEMENT MARKERS SHALL BE DETERMINED BY THE
   CONTRACTOR.

2. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH
   THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES."
   LATEST REVISION.

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

4. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.

5. THE THICKNESS AND RATE OF PAINT APPLICATION
   SHALL BE AS SPECIFIED IN SECTION 78 OF THE
   STANDARDS SPECIFICATIONS.

6. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH
   THE LATEST REVISED ADDITION OF THE "MANUAL ON
   UNIFORM TRAFFIC CONTROL DEVICES."

7. RAISED PAVEMENT MARKERS SHALL BE CENTERED
   BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS
   OTHERWISE SHOWN ON THE PLANS.

8. EDGE OF PAVEMENT

9. 4" CONTINUOUS WHITE

10. 4" SKIP YELLOW

11. STRIPE 4" CONTINUOUS WHITE

12. NOTE:
    THE RED LENS OF THE
    REFLECTOR SHALL
    FACE THE DIRECT
    TRAFFIC MOVEMENT.

13. DETAIL OF STANDARD
    RAISED PAVEMENT MARKERS

14. ARKANSAS STATE HIGHWAY COMMISSION

15. PAVEMENT MARKING DETAILS

16. CROSSWALK AND STOPBAR DETAILS

17. CONCRETE PAVEMENT

18. ASPHALT PAVEMENT

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

20. GENERAL NOTES:
    1. THE DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY.
       ALL LINES FOR THE STRIPING AND RAISED
       PAVEMENT MARKERS SHALL BE DETERMINED BY THE
       CONTRACTOR.

21. THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH
    THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES."
    LATEST REVISION.

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

23. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.

24. THE THICKNESS AND RATE OF PAINT APPLICATION
    SHALL BE AS SPECIFIED IN SECTION 78 OF THE
    STANDARDS SPECIFICATIONS.

25. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH
    THE LATEST REVISED ADDITION OF THE "MANUAL ON
    UNIFORM TRAFFIC CONTROL DEVICES."

26. RAISED PAVEMENT MARKERS SHALL BE CENTERED
    BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS
    OTHERWISE SHOWN ON THE PLANS.
REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS 5 WITH A MINIMUM 28 DAY COMpressive STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE ASHTO N 3.0 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR MAXIMUM & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBORDINATE TO THE BD ITEM "CLASS 5 CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05 OF THE STANDARD SPECIFICATIONS.

MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDES AND TOPS 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 BD FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE EXCEPT THAT THE TOLERANCE FOR TALL BARS SUCH AS FIGURE 1 ON PAGE 515 OF THE MANUAL SHALL BE MINUS ZERO TO PLUS 1/4 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MINIMUM HORIZONTAL SPACING OF 6'-0" AND SHALL BE PLACED 4'-0" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE PLACED 2'-0" ABOVE THE TOP OF THE WINGWALL FOOTING.

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

OVERALL HEIGHT OF HOOKED BAR DIAGRAM


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

REPLACEMENT BAR LENGTHS TABLE

<table>
<thead>
<tr>
<th>BAR SIZE</th>
<th>LENGTH OF HOOKED BAR</th>
<th>LENGTH OF STRAIGHT BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>L + 6'-0&quot;</td>
<td>SEE &quot;5&quot; BAR LENGTH</td>
</tr>
<tr>
<td>#5</td>
<td>L + 4'-0&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
</tr>
<tr>
<td>#6</td>
<td>L + 4'-0&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
</tr>
<tr>
<td>#7</td>
<td>L + 4'-0&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
</tr>
<tr>
<td>#8</td>
<td>L + 4'-0&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
</tr>
<tr>
<td>#9</td>
<td>L + 4'-0&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
</tr>
<tr>
<td>L + 6'-6&quot;</td>
<td>SEE &quot;0&quot; BAR LENGTH</td>
<td></td>
</tr>
</tbody>
</table>

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

BENT BARS "I" CUT AS REQUIRED
* 10" OR 7'-3" (WHICHEVER IS GREATER)


R.C. BOX CULVERT HEADWALL MODIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1
SOLID SODDING
R.C. BOX CULVERT

PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

EXCAVATION LINE

% OF ROADWAY

LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:
ROADWAY EXCAVATION (CHANNEL CHANGED) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS, IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINDED TO THE LIMITS SHOWN AND SHALL BE CONFINE TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL. FLOW LINE.
ROADWAY EXCAVATION EARTH, ROCK, ETC. SHALL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

SECTION B-B
DETAILS FOR NEW CHANNELS

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2
### Superlevation Table for Two-Way Traffic

<table>
<thead>
<tr>
<th>Degree (Curve)</th>
<th>Curve Length</th>
<th>Super Grade</th>
<th>Super Level</th>
<th>Super Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>200 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>1°</td>
<td>250 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>2°</td>
<td>300 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>3°</td>
<td>350 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>4°</td>
<td>400 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>5°</td>
<td>450 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>6°</td>
<td>500 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>7°</td>
<td>550 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>8°</td>
<td>600 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>9°</td>
<td>650 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
<tr>
<td>10°</td>
<td>700 ft</td>
<td>0.5%</td>
<td>1.0%</td>
<td>0.50 ft</td>
</tr>
</tbody>
</table>

#### General Notes
1. On pavement with two-way traffic, the super elevation shall be revoked on the inside pavement edge unless otherwise noted on the plans.
2. Super elevation values shown on the cross sections are measured from the inside pavement edge.
3. Lengths for L may be rounded in multiples of 25 ft or 50 ft.
4. Pavement wider than 2 lanes shall have additional transition lengths as follows:
   - 2 lane undivided: 200 ft
   - 2 lane divided: 200 ft
   - 3 lane divided: 200 ft

**Note:** Maintain normal crown on inside until super elevation exceeds 20. Oil of super elevation shall be computed by straight line method using applicable L4.
A 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)

** Offset Distance for Two Way Traffic Only

** Offset Distance Table

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>12</td>
</tr>
<tr>
<td>60</td>
<td>18</td>
</tr>
</tbody>
</table>

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

** Min. 3'-0" from Edge of Travel Lane to nearest edge of Attenuator

** Offset Distance for Two Way Traffic Only

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuator Barrier."

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. PLACE PERIMETER CONTROLS (i.e., D3T Fences, DIVERSION DITCHES, SEDIMENT BASINS, ETC.).
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION

EXISTING GROUND
INTERCEPTOR OR DIVERSION DITCH
EXISTING GROUND

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

GENERAL NOTE
ALL CUT SLOPES SHALL BE DREDGED, PREPARED, SEeded, AND MILLED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM PHASE 3 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING, STABILIZE DITCHES, CONSTRUCT DITCHS (SUCH AS DIVERSION DITCHES), SEEDMEN, BARRIERS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT

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

GENERAL NOTE
ALL EMBANKMENT SLOPES SHALL BE DREDGED, PREPARED, SEeded, AND MILLED AS THE WORK PROGRESSES. SLOPES SHALL BE STABILIZED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. CONSTRUCT DREDGED DIVERSION DITCHES, SEDIMENT BARRIERS, Silt Fences, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING, PREPARATION DIVERSION DITCHES AND SLOPES MUST BE 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.
4. PLACE PHASE 3 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
5. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3

0-2-54 CONSTRUCTION DRAWING
03-04 SHEET 5 OF 5 SHEETS
CROSS SECTION STA. 28+00 TO STA. 29+00