ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08’/FT.

NOTES:

THE FINAL 2” OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN Laid.
LONGITUDINAL JOINTS SHALL BE AT LANE LINES.
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY 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. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DIFFICENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED, PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED 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 ACM SURFACE COURSE 1/2” IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

HWY. 216 - NOTCH AND WIDEN (SUPERELEVATION)

STA. 102+50.00 – STA. 104+00.00
STA. 120+91.00 – STA. 121+06.66

HWY. 216 - FULL DEPTH (SUPERELEVATION)

STA. 104+00.00 – STA. 120+91.00
NOTES:

The final 2" of surface course is to be placed after all other courses have been laid. Longitudinal joints shall be at lane lines.

Refer to Cross Sections for deviation from the normal slopes, no changes shall be made from the planned slopes without the approval of the Engineer.

Asphalt for leveling of existing pavement shall be placed only if directed by the Engineer. Calculations for the amount of leveling and/or leveling operations shall be performed before constructing notch and widening. Calculations shall not be paid for directly but payment will be considered included in the various pay items.

The thickness of aggregate base course shall be within plus or minus one inch of the plan thickness shown. The Contractor will correct any deficient thickness that does not meet tolerance indicated. Payment will not be made for material placed in excess of the tolerance indicated.

With the approval of the Engineer, the Contractor will be allowed to substitute, at no additional cost to the Department, the first lift of ACHM surface course, 0/2", in lieu of aggregate base course on the shoulders.

TYPICAL SECTIONS OF IMPROVEMENT

TYPICAL SECTION OF IMPROVEMENT

GRIFFIN LANE

ALLEN POINT
DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS

DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

SPECIAL DETAILS
UNDERCUT DETAIL

LOCATIONS OF UNDERCUT AS DIRECTED BY THE ENGINEER WHERE EMBANKMENT CONSTRUCTION EXTENDS OVER EXISTING BORROW DITCHES.

METHOD OF RAISING GRADE

NOTES:

1. THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

3. IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.
TYPICAL CREEK RELOCATION AND IMPROVEMENT

STA. 105+00.00 - STA. 112+42.01 RIGHT
C.L. CONSTRUCTION

SILT FENCE TYPE E-11

DETAILED OF SILT FENCE
AT CROSS DRAINS
### MID-SECTION

#### BAR LAP TABLE

<table>
<thead>
<tr>
<th># of Lap</th>
<th>Long. Refd.</th>
<th>Section Length</th>
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<tr>
<td>0</td>
<td>1' - 1/2&quot;</td>
<td>10' 0&quot;</td>
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<tr>
<td>1</td>
<td>1' - 1/2&quot;</td>
<td>12' 9 3/4&quot;</td>
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<td>1' - 1/2&quot;</td>
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</tr>
<tr>
<td>3</td>
<td>1' - 1/2&quot;</td>
<td>17' 11 3/4&quot;</td>
</tr>
</tbody>
</table>

#### RCB CONCRETE

- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²
- Blade Area: 145.0 ft²

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

---

#### SHEET 1 OF 2

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

**Sta. 112+42**

**SPECIAL DETAILS**
### MID-SECTION

#### BAR LAP TABLE

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<tr>
<td>9</td>
<td>9</td>
<td>&gt; 490D – 550D</td>
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</table>

#### Special Details

- **Flowline Designation:** 1
- **Type:** R.C. Box Culvert
- **Span:** 7.42
- **Depth:** 1.07
- **Free Flow Depth:** 0.14
- **Flowline Depth:** 0.49
- **Flowline Width:** 0.00

#### Advance Details

- **Additional Build-Up:** 0.00
- **Total Build-Up:** 0.00

#### Sheet 1 of 2

- **Details of R.C. Box Culvert Double Barrel**
- **Station 7+42**

---

**TABLE DATA:**

- **INC:**
- **DATE:** 5/23/2009
- **CHECKED BY:**
- **J.A.C.

---

*Note: Bar Lap Required for the Slowed End Section also.*
The required number of bars and lengths shown are for estimating purposes only. The actual number and length required shall be determined in field, unless otherwise noted, all dimensions are in inches.
STA. 102+50.00
BEGIN JOB 080446
LOG MILE 0.70

LEGEND

- = SAND BAG DITCH CHECK
- = ROCK DITCH CHECK
- = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRABBING OPERATIONS ARE STARTED.

REVISIONS

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STAGE 1
TEMPORARY EROSION CONTROL DETAILS
STA. 121+92.72
END JOB 080446

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

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STAGE 1
TEMPORARY EROSION CONTROL DETAILS
STA. 102+50.00
BEGIN JOB 080446
LOG MILE 0.70

LEGEND

□ = SAND BAG DITCH CHECK
□ = ROCK DITCH CHECK
□ = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

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<th>REVISION</th>
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STAGE 2
TEMPORARY EROSION CONTROL DETAILS
STA. 121+92.72
END JOB 080446

REVISIONS

DATE OF
REVISION

REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

LEGEND

= SAND BAG DITCH CHECK
= ROCK DITCH CHECK
= SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRABBING OPERATIONS ARE STARTED.
STA. 102+50.00
BEGIN JOB 080446
LOG MILE 0.70

ADVANCE WARNING - SIDE ROADS (ALL STAGES)

STA. 105+00, ALLEN POINT
STA. 106+50.00, PINE VALLEY ROAD
STA. 108+42.00, GRIFFIN LANE
NOTE: ALL STATIONS BASED ON HWY 216.

STA. 121+92.72
END JOB 080446

ADDITIONAL SIGNS NEEDED PlACED AS DIRECTED BY ENGINEER
TRAFFIC DRUMS = 6 EACH

LOCAL ROAD TRAFFIC DRUM AND ADVANCE SIGN WARNING DETAIL

TRAFFIC DRUMS = 6 EACH

DRIVEWAY TRAFFIC DRUM DETAIL

STAGE 1
STA, 108+42
STA, 117+94
STA, 116+76
STA, 119+71

STAGE 2
STA, 104+00 (2)
STA, 105+48
STA, 109+07
STA, 110+84
STA, 116+08
STA, 117+70
STA, 120+91

R.C. BOX STA. 112+42

10 TRAFFIC DRUMS @ 20° O.C.
GM-3R = 1 EACH
GM-5L = 1 EACH

TRAFFIC DRUMS AND SIGNS ON EXISTING SHOULDER FOR EXTENDING/CONSTRUCTING PIPE CULVERTS LT. AND RT.

STA, 104+50
STA, 118+32

TEMPORARY IMPACT ATTENUATION BARRIER

SPECIAL END UNIT

APPROX. WORK AREA

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 180 LINEAL,
INCLUDES @ SPECIAL END UNIT AND 10 TEMPORARY IMPACT ATTENUATION BARRIER

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2 CONSTRUCTION

STAGE 2 TRAFFIC

8'-0"  12'-0" LANE  12'-0" LANE  8'-0"
SHOULDER     SHOULDER
       0.037'/'     0.037'/'     0.040'/'

STAGE 1 CONSTRUCTION

18'-0"
EXIST. PAV'T.
STAGE 1 TRAFFIC

STAGE CONSTRUCTION DETAIL

MAINTENANCE OF TRAFFIC DETAILS
SEQUENCING

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY, CONSTRUCT CROSS DRAIN, EXTEND CROSS DRAIN AND CONSTRUCT R.C. BOX CULVERT ON RT. OF EXISTING LANE EDGE, PERFORM LEVELING OPERATIONS WHERE APPLICABLE, PLACE CONSTRUCTION PAVEMENT MARKINGS, NOTCH AND WIDEN FOR LANE ON RT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 5' O.C. SPACING, CONSTRUCT NEW ALIGNMENT AND R.C. BOX CULVERT FOR GRIFFIN LANE.

STAGE 2: NOTCH AND WIDEN FOR LANE ON LT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 5' O.C. SPACING ON LT. EXTEND CROSS DRAIN AND CONSTRUCT REMAINING R.C. BOX CULVERTS ON LT. OF EXISTING LANE EDGE, REALIGN INTERSECTION OF ALLEN LANE AND PINE VALLEY ROAD.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS:
LT. & RT., EDGE LINES + 120' CENTERLINE ON HWY. 26
STA. 0+00 - STA. 0+92, 72 + 80' LANE

STA. 8+47 - STA. 8+53 CL, CONST
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 206 LIN. FT.
INCLUDES Q1 SPECIAL END UNITS.
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY, CONSTRUCT CROSS DRAIN, EXTEND CROSS DRAIN AND CONSTRUCT R/C BOX CULVERT ON RT. OF EXISTING LANE EDGE, PERFORM LEVELING OPERATIONS WHERE APPLICABLE, PLACE CONSTRUCTION PAVEMENT MARKINGS, NOTCH AND WIDEN FOR LANE ON RT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55" O.C. SPACING, CONSTRUCT NEW ALIGNMENT AND R/C BOX CULVERT FOR GRIFFIN LANE.

STAGE 2: NOTCH AND WIDEN FOR LANE ON LT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 55" O.C. SPACING ON LT. EXTEND CROSS DRAIN AND CONSTRUCT REMAINING R/C BOX CULVERTS ON LT. OF EXISTING LANE EDGE, REALIGN INTERSECTION OF ALLEN LANE AND PINE VALLEY ROAD.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STA. 121+92.72
END JOB 080446

CONSTRUCTION PAVEMENT MARKINGS
LT. & RT. EDGE LINES = OBL. CENTERLINE ON HWY. 216
STA. 121+92.72 - STA. 121+92.72 + 850' L/H.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 206 L/H.
INCLUDES 12 SPECIAL END UNITS

MAINTENANCE OF TRAFFIC DETAILS
STA. 102+50.00
BEGIN JOB 080446
LOG MILE 0.70

SEQUENCING:
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY, CONSTRUCT CROSS DRAIN, EXTEND CROSS DRAIN AND CONSTRUCT R.C. BOX CULVERT ON RT. OF EXISTING LANE EDGE, PERFORM LEVELING OPERATIONS WHERE APPLICABLE, PLACE CONSTRUCTION PAVEMENT MARKINGS, NOTCH AND WIDEN FOR LANE ON RT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C., SPACING, CONSTRUCT NEW ALIGNMENT AND R.C. BOX CULVERT FOR GRIFFIN LANE.

STAGE 2: NOTCH AND WIDEN FOR LANE ON LT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C., SPACING ON LT. EXTEND CROSS DRAIN AND CONSTRUCT REMAINING R.C. BOX CULVERTS ON LT. OF EXISTING LANE EDGE, REMOVE INTERSECTION OF ALLEN LANE AND PINE VALLEY ROAD.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS
LT. & RT. EDGE LINES + DBL. CENTERLINE ON HWY. 216 STA. 102+50 = STA. 101+90.72 = 871' LINFT.
LT. & RT. EDGE LINES + DBL. CENTERLINE ON ALLEN POINT STA. 102+50 = STA. 102+92.72 = 920' LINFT.
LT. & RT. EDGE LINES + DBL. CENTERLINE ON GRIFFIN LANE STA. 102+50 = STA. 101+92.72 = 844' LINFT.

PRECAST CONCRETE BARRIER LT. OF STAGE 2 ALIGNMENT
STA. 8+47 = STA. 9+53 CL CONRT
RELOCATING PRECAST CONCRETE BARRIER = 206
INCLUDES 123 SPECIAL END UNITS
SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY; CONSTRUCT CROSS DRAIN; EXTEND CROSS DRAIN AND CONSTRUCT R.C. BOX CULVERT ON RT. OF EXISTING LANE EDGE; PERFORM LEVELING OPERATIONS WHERE APPLICABLE; PLACE CONSTRUCTION PAVEMENT MARKINGS, NOTCH AND WIDEN FOR LANE ON RT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' G.C. SPACING; CONSTRUCT NEW ALIGNMENT AND R.C. BOX CULVERT FOR GRIFIN LANE.

STAGE 2: NOTCH AND WIDEN FOR LANE ON LT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' G.C. SPACING ON LT. EXTEND CROSS DRAIN AND CONSTRUCT REMAINING R.C. BOX CULVERTS ON LT. OF EXISTING LANE EDGE; REALIGN INTERSECTION OF ALLEN LANE AND PINE VALLEY ROAD.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING.

STA. 121+92.72
END JOB 080446
*THE 4" YELLOW STRIPE QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPES. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACES TO SCHEDULE THE ZONING OF THE PROJECT.

**PERMANENT PAVEMENT MARKING DETAILS**

**MAIN LANES:**
- THERMOPLASTIC PAVEMENT MARKINGS:
  - RT. AND LT. EDGE LINES = 4080 LIN. FT. WHITE
  - DBL. CENTERLINE = 4080 LIN. FT. YELLOW
- ALLEN POINT:
  - REFLECTORIZED PAINT PAVEMENT MARKINGS:
    - RT. AND LT. EDGE LINES = 560 LIN. FT. WHITE
    - DBL. CENTERLINE = 560 LIN. FT. YELLOW
- GRIFFIN LANE:
  - REFLECTORIZED PAINT PAVEMENT MARKINGS:
    - RT. AND LT. EDGE LINES = 422 LIN. FT. WHITE
    - DBL. CENTERLINE = 422 LIN. FT. YELLOW
### Construction Paving 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>Construction Pavement Markings</th>
<th>Thermoplastic Pavement Marking</th>
<th>Reflectorized Paint Pavement Marking</th>
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<td>4096</td>
<td>962</td>
<td>992</td>
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**Note:** This is a low traffic volume road as defined in Section 603.3, Standard Specifications for Highway Construction.

**Note:** The 4" yellow striping quantity has been estimated based on a double yellow centerline stripe for the entire project. The project must be marked for passing (no passing zones) prior to the placement of any final striping. Contact the maintenance division after the final lift of surface course has been placed to schedule the zoning of the project.

---

### 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>End of Job</th>
<th>Maximum Number Required</th>
<th>Total Signs Requires</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 (REPAIR)</th>
<th>TEMP-IMPACT ATTEN.BARR. (REPAIR)</th>
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<tr>
<td>W20-1</td>
<td>ROAD WORK 1500 FT.</td>
<td>48&quot; x 48&quot;</td>
<td>2</td>
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<td>W20-2</td>
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<td>R11-2</td>
<td>ROAD CLOSED</td>
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<td>LANE MARKINGS</td>
<td>48&quot; x 48&quot;</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>48.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** This is a low traffic volume road as defined in Section 603.3, Standard Specifications for Highway Construction.

**Note:** 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 nail backfill to a point where the vertical differential is 6" or less, and then notch another one-able section. This is the maximum number of vertical panels that will be paid for. Refer to Section 603.2 of the Standard Specifications for construction requirements.
### Earthwork

<table>
<thead>
<tr>
<th>Station</th>
<th>Location / Description</th>
<th>Unclassified Excavation (Embankment)</th>
<th>Compactified Backfill</th>
<th>*Soil Stabilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Project</td>
<td>6059</td>
<td>5952</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>1802</td>
<td>1693</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>44</td>
<td></td>
<td></td>
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<tr>
<td>Entire</td>
<td>Project</td>
<td>2001</td>
<td>4082</td>
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<tr>
<td>Entire</td>
<td>Project</td>
<td>230</td>
<td>1114</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>50</td>
<td>265</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>280</td>
<td></td>
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</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Project</td>
<td>2813</td>
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<tr>
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<td>Project</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 14814

**Quantity Estimated:** See Section 104.03 of the STD. SPECs.

**Note:** Earthwork quantities shown above shall be paid as planning quantities.

### 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>AASHTO Classification</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-00</td>
<td>34.57</td>
<td>-88.60</td>
<td>STAGE 1</td>
<td>0.5</td>
<td>38</td>
<td>21</td>
<td>A-6 (14)</td>
<td>BROWN</td>
</tr>
<tr>
<td>101-00</td>
<td>34.57</td>
<td>-88.60</td>
<td>STAGE 2</td>
<td>0.5</td>
<td>39</td>
<td>21</td>
<td>A-6 (14)</td>
<td>BROWN</td>
</tr>
<tr>
<td>117-00</td>
<td>34.57</td>
<td>-88.60</td>
<td>STAGE 1</td>
<td>0.5</td>
<td>21</td>
<td>17</td>
<td>A-8 (9)</td>
<td>BROWN</td>
</tr>
<tr>
<td>117-00</td>
<td>34.57</td>
<td>-88.60</td>
<td>STAGE 2</td>
<td>0.5</td>
<td>27</td>
<td>12</td>
<td>A-6 (9)</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

**Total:** 2047

**Soil characteristics 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 characteristics and extent of same differing from the above tabulations.

### Erosion Control

**Permanent Erosion Control**

<table>
<thead>
<tr>
<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>
<th>Mulch Cover</th>
<th>Water</th>
<th>Wattles (DPS)</th>
<th>Band Bag Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Silt Fence</th>
<th>Sediment Basin</th>
<th>Obliteration of Sediment Basin</th>
<th>Sediment Removal &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Project</td>
<td>Stage 1</td>
<td>3.25</td>
<td>6.50</td>
<td>3.30</td>
<td>320.5</td>
<td>7.39</td>
<td>4.10</td>
<td>3.50</td>
<td>6.70</td>
<td>900.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

**Total:** 8.83

**Temporary Erosion Control**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch Cover</th>
<th>Water</th>
<th>Wattles (DPS)</th>
<th>Band Bag Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Silt Fence</th>
<th>Sediment Basin</th>
<th>Obliteration of Sediment Basin</th>
<th>Sediment Removal &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Project</td>
<td>Stage 1</td>
<td>3.25</td>
<td>6.50</td>
<td>3.30</td>
<td>320.5</td>
<td>7.39</td>
<td>4.10</td>
<td>3.50</td>
<td>6.70</td>
<td>900.0</td>
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</tbody>
</table>

**Total:** 8.83

**Note:** Quantities shown above shall include removal & disposal of all headwalls and flared end sections if applicable.

### Erosion Control Matting

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Length</th>
<th>Class 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-40</td>
<td>108-27</td>
<td>327.0</td>
<td>20.7</td>
</tr>
<tr>
<td>110-40</td>
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<tr>
<td>110-40</td>
<td>112-15</td>
<td>7.0</td>
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**Total:** 613.3

**Note:** Average width = 6'-0"

### Removal and Disposal of Fences

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<tr>
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<th>Location</th>
<th>Fencing</th>
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<tbody>
<tr>
<td>101-40</td>
<td>110-40</td>
<td>LIN. FT.</td>
</tr>
<tr>
<td>101-40</td>
<td>110-40</td>
<td>100.0</td>
</tr>
<tr>
<td>110-40</td>
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<tr>
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<td>100.0</td>
</tr>
<tr>
<td>110-40</td>
<td>112-40</td>
<td>100.0</td>
</tr>
<tr>
<td>110-40</td>
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<td>100.0</td>
</tr>
<tr>
<td>110-40</td>
<td>112-40</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Total:** 2047

### Removal and Disposal of Culverts

<table>
<thead>
<tr>
<th>Station</th>
<th>Description</th>
<th>Pipe Culvert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Project</td>
<td>EACH</td>
</tr>
<tr>
<td>104-95</td>
<td>28 + 0+ 33</td>
<td>ARCH C.M. PIPE CULVERT</td>
</tr>
<tr>
<td>104-95</td>
<td>28 + 0+ 33</td>
<td>ARCH C.M. PIPE CULVERT</td>
</tr>
<tr>
<td>104-95</td>
<td>28 + 0+ 33</td>
<td>ARCH C.M. PIPE CULVERT</td>
</tr>
<tr>
<td>104-95</td>
<td>28 + 0+ 33</td>
<td>ARCH C.M. PIPE CULVERT</td>
</tr>
<tr>
<td>104-95</td>
<td>28 + 0+ 33</td>
<td>ARCH C.M. PIPE CULVERT</td>
</tr>
</tbody>
</table>

**Total:** 6

### Clearing and Grubbing

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Clearing and Grubbing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Project</td>
<td>STATION</td>
</tr>
<tr>
<td>101-40</td>
<td>112-40</td>
<td>MAIN LANES</td>
</tr>
</tbody>
</table>

**Total:** 22

### Quantities

**REMOVAL OF EXISTING BRIDGE STRUCTURE:**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Lump Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-40</td>
<td>112-40</td>
<td>112-58</td>
</tr>
</tbody>
</table>

**Total:** 1.00

**Note:** Quantities shown above shall include removal & disposal of all headwalls and flared end sections if applicable.
### SELECTED PIPE BEDDING

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SELECTED PIPE BEDDING</th>
<th>C.U.YD.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE PROJECT TO BE USED F. AND WHERE DIRECTED BY THE ENGINEER</td>
<td></td>
<td>50</td>
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</table>

**TOTAL:** 50

*NOTE: QUANTITY ESTIMATED.*

SEE SECTION 104.03 OF THE STD. SPECS.

---

### ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TON</th>
<th>TACK COAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE PROJECT - TO BE USED F. AND WHERE DIRECTED BY THE ENGINEER</td>
<td>12</td>
<td>24</td>
</tr>
</tbody>
</table>

**TOTALS:** 12 | 24

*BASE OF ESTIMATE: ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...50 TONNABLE TACK COAT FOR MAINTENANCE OF TRAFFIC...50 QAL/QAR

*NOTE: QUANTITY ESTIMATED.*

SEE SECTION 104.03 OF THE STD. SPECS.

---

### TACKING MAINTAINANCE OF TRAFFIC

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>WIDENING</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-50.00</td>
<td>101-50.00</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>102-50.00</td>
<td>104-00.00</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>105-00.00</td>
<td>121-60.72</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>107-00.00</td>
<td>121-60.72</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>110-00.00</td>
<td>111-42.86</td>
<td>TRANSITION</td>
</tr>
<tr>
<td>111-42.86</td>
<td>111-42.86</td>
<td>TRANSITION</td>
</tr>
<tr>
<td>112-00.00</td>
<td>114-00.00</td>
<td>TRANSITION</td>
</tr>
<tr>
<td>114-00.00</td>
<td>121-66.66</td>
<td>TRANSITION</td>
</tr>
<tr>
<td>115-00.00</td>
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<td>TRANSITION</td>
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<tr>
<td>115-00.00</td>
<td>115-00.00</td>
<td>TRANSITION</td>
</tr>
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**TOTAL: 18**

*BASE OF ESTIMATE: ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...50 QAL/QAR

*NOTE: QUANTITY ESTIMATED.*

SEE SECTION 104.03 OF THE STD. SPECS.

### ACHM PATCHING OF EXISTING ROADWAY

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TON</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE PROJECT - TO BE USED F. AND WHERE DIRECTED BY THE ENGINEER</td>
<td>15</td>
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</table>

**TOTAL:** 15

*NOTE: QUANTITY ESTIMATED.*

SEE SECTION 104.03 OF THE STD. SPECS.

---

### PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>TON</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-50.00</td>
<td>MAIN LAKES</td>
<td>6,00</td>
<td>29</td>
<td>12</td>
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**TOTAL:** 12

*BASE OF ESTIMATE: ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...50 TONNABLE TACK COAT FOR MAINTENANCE OF TRAFFIC...50 QAL/QAR

*NOTE: QUANTITY ESTIMATED.*

SEE SECTION 104.03 OF THE STD. SPECS.

---

### BASE AND SURFACING

#### AGGREGATE BASE COURSE (CLASS III)

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-50.00</td>
<td>114-60.72</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>102-50.00</td>
<td>102-50.00</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>107-00.00</td>
<td>107-00.00</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>110-00.00</td>
<td>110-00.00</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>111-42.86</td>
<td>111-42.86</td>
<td>MAIN LAKES</td>
</tr>
<tr>
<td>112-00.00</td>
<td>112-00.00</td>
<td>MAIN LAKES</td>
</tr>
</tbody>
</table>

**TOTAL:**

*BASE OF ESTIMATE: ACHM SURFACE COURSE (CLASS III)...

---

### ACHM Binder Course ("a")

| STATION | LOCATION | TON | AVG. W.D. | SQ.YD. | ACHM Binder Course "a"
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>101-50.00</td>
<td>114-60.72</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
</tr>
<tr>
<td>102-50.00</td>
<td>102-50.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
</tr>
<tr>
<td>107-00.00</td>
<td>107-00.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
</tr>
<tr>
<td>110-00.00</td>
<td>110-00.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
</tr>
<tr>
<td>111-42.86</td>
<td>111-42.86</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
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<tr>
<td>112-00.00</td>
<td>112-00.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
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</tr>
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</table>

**TOTAL:**

*BASE OF ESTIMATE: ACHM SURFACE COURSE (CLASS III)...

---

### ACHM Surface Course ("b")

| STATION | LOCATION | TON | AVG. W.D. | SQ.YD. | ACHM Surface Course "b"
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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>101-50.00</td>
<td>114-60.72</td>
<td>MAIN LAKES</td>
<td>10.00</td>
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<tr>
<td>102-50.00</td>
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<td>MAIN LAKES</td>
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<td>8.99</td>
</tr>
<tr>
<td>107-00.00</td>
<td>107-00.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
</tr>
<tr>
<td>110-00.00</td>
<td>110-00.00</td>
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<td>8.99</td>
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<td>111-42.86</td>
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<td>112-00.00</td>
<td>MAIN LAKES</td>
<td>10.00</td>
<td>64.89</td>
<td>8.99</td>
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</table>

**TOTAL:**

*BASE OF ESTIMATE: ACHM SURFACE COURSE (CLASS III)...

---

### COLD MILLING ASPHALT PAVEMENT

<table>
<thead>
<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>AVG. W.D.</th>
<th>COLD MILLING ASPHALT PAVEMENT</th>
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<tbody>
<tr>
<td>101-50.00</td>
<td>101-50.00</td>
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<td>102-50.00</td>
<td>MAIN LAKES</td>
<td>18</td>
<td>200.00</td>
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</table>

**TOTAL:** 200.00

*BASE OF ESTIMATE: AVERAGE MILLING DEPTH..."n"

---

### QUANTITIES

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>BENCH MARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>112+42</td>
<td>HEADWALL OF R.O.C. BOX CULVERT</td>
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</tr>
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<td>741+85</td>
<td>HEADWALL OF R.O.C. BOX CULVERT</td>
<td>1</td>
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**TOTAL:** 2

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

---

### QUANTITIES

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<thead>
<tr>
<th>STATE</th>
<th>AREA</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>ACHF</td>
<td>309446</td>
<td>31,88</td>
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### QUANTITIES

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<th>SQ.YD.</th>
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<tbody>
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<td>102-50.00</td>
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<tr>
<td>102-50.00</td>
<td>102-50.00</td>
<td>MAIN LAKES</td>
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**TOTAL:** 400.00

*BASE OF ESTIMATE: AVERAGE MILLING DEPTH..."n"*
## SUMMARY OF QUANTITIES

<table>
<thead>
<tr>
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<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
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<td>CLEARING</td>
<td>22</td>
<td>STATION</td>
</tr>
<tr>
<td>202</td>
<td>GRADING</td>
<td>22</td>
<td>STATION</td>
</tr>
<tr>
<td>203</td>
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<td>REMOVAL AND DISPOSAL OF PIPE CULVERTS</td>
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<td>SEAL STABILIZATION</td>
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<td>213</td>
<td>AGGREGATE BASE COURSE (CLASS 7)</td>
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<td>TRACK COAT</td>
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<td>GALL</td>
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<td>MINERAL AGGREGATE IN ACMB EMBANK CURVE (1&quot;)</td>
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<td>ASPHALT BRICK (320 GAL IN ACMB EMBANK CURVE (1&quot;)</td>
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<td>ASPHALT BRICK (320 GAL IN ACMB STABILIZATION)</td>
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<td>ASPHALT BRICK (1&quot; IN ACMB CURVE (1&quot;)</td>
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<td>COLD MILLING ASPHALT PAVEMENT</td>
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<td>ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC</td>
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<td>ACMB PATCHING OF EXISTING ROADWAY</td>
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<td>236</td>
<td>FURNISHING FIELD OFFICE</td>
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<td>MAINTENANCE OF TRAFFIC</td>
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<td>CONCRETE DRIP PAVING (TYPE B)</td>
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<td>24&quot; PVC PIPE</td>
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<td>25&quot; X 2 FLARED END SECTIONS FOR CORRUGATED STEEL ARCH PIPE CULVERT</td>
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<td>4&quot; STEEL CHAIN LINK FENCE</td>
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<td>SEDIMENT REMOVAL AND DISPOSAL</td>
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<td>EROSION CONTROL MATTING (CLASS 3)</td>
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<td>MAIL BOX SUPPORT (UNLIT)</td>
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<td>REFINING STEEL ROADWAY (GRADE 80)</td>
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### STRUCTURES OVER 20 SPAN

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**REVISIONS**

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<tr>
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<th>REVISION</th>
<th>SHEET NUMBER</th>
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* Denotes Alternate Bid Items.
SURVEY CONTROL COORDINATES

Project Name: 000446
Date: 5/31/1993
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name | Northing | Easting | Elev | Feature Description
--- | --- | --- | --- | ---
2 | 2309278.3604 | 1079013.8051 | 300.48 CTL | AHTD STD, MON STAPLED PK 2
3 | 230916.0100 | 1079058.6969 | 397.46 CTL | AHTD STD, MON STAPLED PK 3
4 | 230781.0699 | 1078944.5705 | 299.86 CTL | AHTD STD, MON STAPLED PK 4
5 | 230780.4694 | 1078961.1766 | 315.74 CTL | AHTD STD, MON STAPLED PK 5
100 | 229593.8232 | 1074107.5862 | 356.34 GPS | AHTD GPS +530012
101 | 229450.5123 | 1074513.0966 | 362.65 GPS | AHTD GPS +530012A
102 | 229324.3832 | 1075259.1871 | 291.73 GPS | AHTD GPS +530013A
103 | 228291.1886 | 1123497.2332 | 317.94 GPS | AHTD GPS +530014
900 | 230158.1392 | 1076056.0188 | 325.58 TBM | 2' ALUM CAP+BB
999 | 245495.5032 | 1077854.5576 | 300.49 BM | NGS 2ND ORDER B M 3 PID F00412

*Note - Rebar and Cap - Standard + * Rebar with 2" Aluminum Cap stamped

*Standard markings common to all caddie, 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 0.999998240992 HAS BEEN USED TO COMPUTE THE ABOVE LISTED GROUND COORDINATES.

THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.

GRID DISTANCE = GROUND DISTANCE X CAF.

GROUND COORDINATES ARE PROJECTED FROM AR. STATE PLANE GRID COORDINATES BY SCALING ALL X, Y VALUES WITH THE INVERSE (1/CAF) OF THE COMBINED ADJUSTMENT FACTOR (CAF) ABOUT X=0, Y=0.

GRID COORDINATES ARE STORED UNDER FILE NAME: 000446i.gct.

HORIZONTAL DATUM: NAD 83 (1997)

VERTICAL DATUM: NAVD 88 ELEVATIONS FOR POINTS 1-5, 100-103, 900 & 999 WERE ESTABLISHED BY 3-WIRE LEVEL TECHNIQUES FROM NGS BENCHMARKS.

POSITIONAL ACCURACY

HORIZONTAL:GPS POINTS 100-103: 1.0 CM 10 RPM, PRIMARY CONTROL POINTS 1-5: 2.0 CM 20 RPM

VERTICAL:POSITIVE ACCURACY IS THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT

BASIS OF BEARING:

ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE DETERMINED FROM GPS CONTROL POINTS 530012, 530013A, 530014 CONVERGENCE ANGLES: 00 37 16.63 LEFT AT PK 3

GRID AZIMUTH = ASTRONOMICAL AZIMUTH + CONVERGENCE ANGLE.

LAT = 34°54'47.74" N 092°46'52.57"
GRID NORTHING: 229912.3886 GRID EASTING: 1078238.7135

GROUND NORTHING: 229916.0100 GROUND EASTING: 1078255.6969

---

HMW, 216

POINT NO. | TYPE | STATION | NORTHING | EASTING
--- | --- | --- | --- | ---
8000 | PDB | 100-00, 00 | 230192.3747 | 1077086.2560
8001 | PC | 103-60, 96 | 230182.2500 | 1077459.0731
8003 | PT | 110-55, 39 | 229688.3025 | 1078063.2005
8004 | PC | 112-70, 33 | 229635.5745 | 1079873.7464
8006 | PT | 118-81, 66 | 229580.9027 | 1078824.7954
8007 | PDB | 122-92, 72 | 229467.7893 | 1079219.9776

ALLEN POINT

POINT NO. | TYPE | STATION | NORTHING | EASTING
--- | --- | --- | --- | ---
8013 | PDB | 20-00, 00 | 230350.8384 | 1077442.9059
8014 | PC | 20-61, 70 | 230317.8337 | 1077455.0363
8016 | PT | 21-67, 16 | 230245.2597 | 1077482.0872
8017 | PDB | 22-00, 00 | 230192.5504 | 1077484.8174

GRiffin Lane

POINT NO. | TYPE | STATION | NORTHING | EASTING
--- | --- | --- | --- | ---
8008 | PDB | 5-00, 00 | 229760.7154 | 1077886.2005
8009 | PC | 5-83, 21 | 229843.9279 | 1078787.7509
8011 | PT | 6-67, 70 | 229905.6764 | 1079903.6845
8012 | PDB | 5-66, 84 | 230026.2119 | 1079791.1810
STA. 22+12.00 ON ALLEN POINT:
STA. 104+00.00 ON HWY. 216
\[ \Delta = 90°00'00"

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

STA. 7+97.85 ON GRIFFIN LANE = STA. 109+14.00 ON HWY. 216
\[ \Delta = 90'00'00" \]

STA. 5+60.00 GRIFFIN LANE

BEGIN

DITCH PAVING

EROSION CONTROL MATING

LENGTH CLASS 3

Refer to Survey Control Detail Sheets for Horizontal and Vertical Control Data.

GRiffin LANE
CONSTRUCTION SEQUENCE
1. Place structural bedding material to grade, do not compact.
2. Compact structural bedding outside the whole third of the pipe.
3. Place ANY compact the balance area up to the middle of the pipe.
4. Place compact fill material according to subbase specifications.

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

- LEGEND -
D = NORMAL inside diameter of pipe
Dh = Structural pipe end diameter
H = Height over pipe feet
F = Undisturbed soil

INSTALLATION TYPE
MATERIAL REQUIREMENTS FOR Haulage and Structural Bedding

TYPE 1
AGGREGATE BASE CORE (CLASS 3 OR CLASS 4)

TYPE 2
SELECTED MATERIALS (CLASS 3, 4, 5 OR 6, MIN. 2-IN. INSTALLATION MATERIAL)

TYPE 3
MATERIAL CLASSIFICATION IS 1THRU 4 IN SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* MATERIALS WILL NOT BE ALLOWED.
** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.

EMBANKMENT AND TRENCH INSTALLATIONS
1. MATERIAL IN THE MIDDLE AND OUTER STRUCTURAL BEDDING CLASSES OF MATERIAL, WILL BE COMPACTED TO 92% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
   .5. FOR TRENCHES WITH 6" TO 12" THICKNESS, THE DEPTH OF THE SOIL IN THE OUTER BEDDING CLASSES OF MATERIAL, WILL BE COMPACTED TO 92% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE OUTER SOC BEDDING CLASSES OF MATERIAL, WILL BE COMPACTED TO 92% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES
1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT 5050 (5050) SPECIFICATIONS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), 7000 (7000) SPECIFICATIONS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), AND 7010 (7010) SPECIFICATIONS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION). NOTED IN THE PLANTS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. ALL EMBANKMENT MATERIAL SHALL BE LIFTED AND COMPACTED TO A MAXIMUM OF 18 INCHES.
3. ALL PIPE SHALL CONFORM TO SECTION 5460 (5460) PIPE REQUIREMENTS, AS CONFORMED TO ARKANSAS (ARKS) MANDATORY, SPECIFICATIONS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), THE MANDATORY, AND PREFERRED MATERIALS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), THE MANDATORY, AND PREFERRED MATERIALS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), THE MANDATORY, AND PREFERRED MATERIALS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION), THE MANDATORY, AND PREFERRED MATERIALS FOR STRUCTURAL CONSTRUCTION CURRENT EDITION (FIFTH EDITION).
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE TO PIPE DURING INSTALLATION.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH FOR USEABLE CONSTRUCTION.
6. ALL MULTI-PART PIPE CORBOTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STEMS OF PIPE REFER TO STANDARDS FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHALL BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE PIPE TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING ABOVE OR BELOW.
8. NOT [TEXT CUT OFF].
9. MATERIALS PLACED OR DEPOSITED IN THE TRENCH BY THE CONTRACTOR FOR THE PURPOSE OF PROVIDING TEMPORARY FILL ABOVE THE STRUCTURAL BEDDING, SHALL BE COMPACTED TO THE REQUIREMENTS OF THIS SPECIFICATION.
10. MATERIALS PLACED OR DEPOSITED IN THE TRENCH BY THE CONTRACTOR FOR THE PURPOSE OF PROVIDING TEMPORARY FILL ABOVE THE STRUCTURAL BEDDING, SHALL BE COMPACTED TO THE REQUIREMENTS OF THIS SPECIFICATION.
11. MATERIALS PLACED OR DEPOSITED IN THE TRENCH BY THE CONTRACTOR FOR THE PURPOSE OF PROVIDING TEMPORARY FILL ABOVE THE STRUCTURAL BEDDING, SHALL BE COMPACTED TO THE REQUIREMENTS OF THIS SPECIFICATION.
12. MATERIALS PLACED OR DEPOSITED IN THE TRENCH BY THE CONTRACTOR FOR THE PURPOSE OF PROVIDING TEMPORARY FILL ABOVE THE STRUCTURAL BEDDING, SHALL BE COMPACTED TO THE REQUIREMENTS OF THIS SPECIFICATION.
CONSTRUCTION SEQUENCE
1. PLACE STRUCTURAL MATERIAL TO GRADE, DO NOT COMPACT.
2. INSTALL PIPE TO DESIGN ELEVATION AS REQUIRED.
3. COMPLETE STRUCTURAL BEARING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL, OPERATION BY WORKING FROM SIDE TO SIDE, WITH A MINIMUM OF 6 INCHES OF DIRT OR SOIL OF THE SIZE OF THE PIPE.

NOTES:
- STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE INCLUDED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.
- INSTALLATION TYPE 2 (SELECTED MATERIALS) IS NOT APPROPRIATE FOR WATER PIPE INSTALLATION.
- INSTALLATION TYPE 1 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.

EMBANKMENT AND TRENCH INSTALLATIONS
1. INSTALL TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
2. INSTALLATION OF MATERIALS SHOULD BE CONFORM TO SECTION 607.05.3.0 FOR WATER PIPE INSTALLATION.
3. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.

GENERAL NOTES
1. METAL PIPE CULVERT CONSTRUCTION SHALL COMPLY WITH ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION CURRENT EDITION, WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS, UNLESS OTHERWISE NOTED IN THE PLANS.
2. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
3. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
4. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
5. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
6. INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.

EQUIVALENT DIAMETERS AND length:
- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.

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<tr>
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<th>MINIMUM WALL THICKNESS (INCHES)</th>
<th>STEEL</th>
<th>ALUMINUM</th>
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Type:
- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
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- INSTALLATION TYPE 2 IS THE ONLY TYPE TO BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE INSTALLATION.
MINIMUM TRENCH WIDTH
BASED ON FILL HEIGHT "H"

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<th>TRENCH WIDTH</th>
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<td>&quot;H&quot; 4'-0&quot;</td>
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MINIMUM COVER FOR CONSTRUCTION LOADS

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
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<tbody>
<tr>
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<td>36&quot;</td>
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GENERAL NOTES

1. PIPE SHALL CONFORM TO ASPHALT MPA TYPE 2. INSTALLATION SHALL CONFORM TO JOE SPECIAL PROVISION PLASTIC PIPE AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION CURRENT EDITION.

2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO ASPHALT MPA BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION, LOADS WITH 20% INTERMITTENT.

3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WEIGHT PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND EASILY PLACE AND COMPACT BACKFILL AND OTHER BACKFILL MATERIAL.

4. IMPERVIOUS MATERIAL SHOULD BE PLACED AT THE END OF THE TRENCH TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.

5. WHEN DIRECTED BY THE ENGINEER, IMPERVIOUS MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH BELOW THE AREA DESIGNATED AS "STRUCTURAL BEDDING" SHALL BE EXCAVATED AND REPLACED WITH SELECTED BACKFILL. THE QUANTITY OF MATERIAL REQUIRED TO REACH THE AREA DESIGNATED AS "STRUCTURAL BEDDING" WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING." THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS TO BE EXCAVATED AND REPLACED WITH SELECTED BACKFILL. THE QUANTITY OF MATERIAL REQUIRED TO REACH THE AREA DESIGNATED AS "STRUCTURAL BEDDING" WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING.

6. THE ENGINEER MAY REQUIRE THE REMOVAL OF IMPERVIOUS MATERIAL EXISTING ABOVE THE STRUCTURAL BEDDING TO PREVENT COMPACTION OF THE STRUCTURAL BEDDING MATERIAL. IMPERVIOUS MATERIAL EXISTING ABOVE THE STRUCTURAL BEDDING WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING.

7. FOR PIPE TYPES THAT ARE NOT SMOOTH, THE OUTSIDE DIAMETER OF THE PIPE SHALL BE USED. THE ENGINEER MAY REQUIRE THE REMOVAL OF IMPERVIOUS MATERIAL EXISTING ABOVE THE STRUCTURAL BEDDING TO PREVENT COMPACTION OF THE STRUCTURAL BEDDING MATERIAL. IMPERVIOUS MATERIAL EXISTING ABOVE THE STRUCTURAL BEDDING WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING.

8. HIGH DENSITY POLYETHYLENE PIPE OF DIAMETERS OTHER THAN SHOWN SHALL NOT BE ALLOWED.

9. JOINTS FOR HIGH DENSITY POLYETHYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SIA, TIGHTNESS AS SPECIFIED IN ASPHALT MPA SECTION 606.1.4 AND OTHER APPLICABLE DIA. TRENCH WIDTH SHORTAGE CONSTRUCTION SPECIFICATIONS. JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BEDDING SHALL BE PLACEED AND COMPACTED TO ADEQUATELY SUPPORT THE ELASTIC PLANNING OF THE PIPE COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WORTHING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -
- "H" 0'-0"   - FILL HEIGHT ("H")
- "H" 0'-0"   - "H" 3'-0"  - "H" 0'-0"   - "H" 3'-0"
- SELECTED PIPE BEDDING GRADE OF SELECTED PIPE BEDDING (DIRECTED OF ENGINEER)
- UNCOMPACTED SOIL
- STRUCTURAL BACKFILL MATERIAL
- IMPERVIOUS SOIL

ARKANSAS STATE HIGHWAY COMMISSION
PLASTIC PIPE CULVERT
(HIGH DENSITY POLYETHYLENE)
STANDARD DRAWING PCP-1
**INSTALLATION TYPE**  
- **SELECTED MATERIALS**  
  (KCL: 61-91, 151-191, 180-219)  
  **NOTE:** MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL, AND STRUCTURAL BEDDING  
  TYPE 2  

- **AGGREGATE BASE COURSE: CLASS 4, 5, 6, OR 7 MAY BE USED IN LAY  OF SELECTED MATERIAL.**  
  **NOTE:** MONTAL KCL WILL NOT BE ALLOWED.  

- **STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 6" IN DIAMETER. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIALS, DIRT, CLAY, Gravel larger than 100 mesh in CEMENT, AND/or FROZEN CLAY.**  
  **NOTE:** STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE USED FOR SEPARATELY BURIED PIPE. **NOTE:** COMPARTMENT MUST BE CONSIDERED TO BE INCLUDED IN THE PIECE BED PER LINEAR FOOT OF PVC PIPE.  

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

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>TRENCH WIDTH</th>
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**MINIMUM COVER FOR PVC PIPES**  

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**MULTIPLE INSTALLATION OF PVC PIPE**  

**MAXIMUM FILL HEIGHT BASED ON CONSTRUCTION LOADS**  

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<td>34</td>
<td>36.5</td>
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**NOTE:** "H" = FILL HEIGHT (FT)  
- **OUTSIDE DIAMETER OF PIPE**  
  - **MAXIMUM**  
  - **MINIMUM**  

**STRUCTURAL BACKFILL MATERIAL**  
- **UNDISTURBED SOIL**  

**CONSTRUCTION SEQUENCE**  
1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.  
2. INSTALL PVC TO GRADE.  
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.  
4. THE STRUCTURAL BAKCILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 2", THE LAYERS SHALL BE BRING UP EVENTLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MAXIMUM COVER.  
5. PVC INSTALLATION MAY REQUIRE THE USE OF RESTRICTIONS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

**GENERAL NOTES**  
1. PVC SHALL CONFORM TO ASTM F924 CL. 61944 INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION.  
   "PLASTIC PIPE" AND SECTION 8.4 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION ENQUIRY EDITION.  
2. SELECTED PIPE CULVERT DESIGN SHALL CONFORM TO AASHO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION  
   (2006) WITH 2009 INTERMEDIATE.  
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A "S" WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT LOADING LANDING AND OTHER SELECTED MATERIALS.  
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER. THE IDEAS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BACKFILL WHEN PIPING MATERIAL, IS USED FOR STRUCTURAL BAKCILL AND PVC BAKCILL.  
5. WHEN DIRECTED BY THE ENGINEER, IMPERVIOUS MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH SHALL BE MANDATORY AS "STRUCTURAL BAKCILL" WHICH WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BAKCILL. THE QUANTITY OF MATERIAL REQUIRED TO BAKCILL THE SHOAL UP TO THE SELECTED PIPE BAKCILL PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS SELECTED PIPE BAKCILL.  
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED TO BE ORDINARY, THE EXISTING MATERIAL BAKCILL THE AREA DESIGNATED ABOVE AS "STRUCTURAL BAKCILL", IMPERVIOUS MATERIAL SHOULD BE USED TO REPLACE THE EXISTING MATERIAL.  
7. IMPERVIOUS MATERIAL SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE IDEAS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BACKFILL WHEN PIPING MATERIAL, IS USED FOR STRUCTURAL BAKCILL AND PVC BAKCILL.  
8. PVC TRENCH CONNECTS THAT ARE NOT INSURED ON THE OUTLINE ELEVATIONS AND/OR PROFILE VALLEYS  
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR DUR. TIGHTNESS AS SPECIFIED IN AASHO SECTION 6.4.4 AND 6.4.4.2 "AASHO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
Steel fabrication, reinforcing steel fabrication shall conform to the dimensions listed in the table below.

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<th>Bar Size</th>
<th>Pin Diameter</th>
<th>Hook Extension &quot;K&quot;</th>
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<td>8</td>
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If the overall height of the hook size diagram below for a "K", "K", "K", "K", "K", or "K" bent bar is greater than the corresponding top or bottom slab thickness, each bent bar shall be replaced with one hocked bar and one straight bar using length as shown in the table below. The two bars shall be placed at the same spacing as the "K", "K", "K", or "K" bent bars they replace.

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMpressive STRENGTH OF 2500 P.S.I.
REINFORCING STEEL SHALL BE AASHTO M 20 OR M 21, GRADE 60.
CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEJP HOLES AND DRAINAGE MATERIAL, SHALL BE SUBMITTED TO THE CRT ITEM "CLASS S CONCRETE".
MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 85 OF THE STANDARD SPECIFICATIONS.
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION KNOTS IN THE TOP SLAB AND THE SIDEBALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.
REINFORCING STEEL TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS CRANK 3 ON PAGE 74 OF THE CFM MANUAL SHALL BE MINUS ZERO TO PLUS 1/2".
WEJP HOLES IN BOX CULVERT BOLLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 40"-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 0" ABOVE THE TOP OF THE BOX CULVERT.
WEJP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 40"-0" AND SHALL BE SPACED CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEJP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 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.

VERTICAL FABRIC ALTERNATE
WRAPPED FABRIC ALTERNATE

WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT HEADWALL MODIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1
SOLID SODDING

PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

LONGITUDINAL SECTION
BACKFILL DETAILS FOR BOX CULVERT

SECTION C-C
DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:
ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE COMPARED 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 COMPARED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE. ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBGRADE MAY NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.
### Super-elevation Table for Two-Way Traffic

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#### General Notes
1. On a curve with two-way traffic, the super-elevation shall be resolved on the inside pavement edge unless otherwise noted on the plans.
2. Super-elevation values shown on the plans are values of 175 or 350 to be added to or subtracted from the point of control.
3. Lengths for L may be rounded in multiples of 25 ft. or 50 ft.
4. Pavements wider than 2 lanes shall have additional transition lengths as follows:
   - 3 lane: 175 ft
   - 4 lane: 350 ft
   - 5 lane: 525 ft

#### Abbreviations
- C - Normal Crown
- RC - Reverse Crown
- SC - Super-elevation at Normal Crown Slope
- D - Rate of Super-elevation Transition (ft)
- L - Length of Super-elevation Transition (ft)
- W - Width of Pavement (ft)
- Wb - Width of Subgrade (ft)

#### Standard Method

- When super-elevation revolves around an inner subgrade point or inner pavement edge:
- Outside Subgrade Edge
- Inside Subgrade Edge
- Inside Pavement Edge

#### Standard Drawing

- Super-elevation formula
- Control Point

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**Arkansas State Highway Commission**

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

**Standard Drawing SE-2**
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**

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance (in)</th>
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<tbody>
<tr>
<td>25</td>
<td>3</td>
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<tr>
<td>45</td>
<td>10</td>
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If offset distance is not attainable, then see "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 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 Attenuation Barrier".

**SPECIAL END UNIT**

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 (E.G. SILT FENCES, CONCESSION DITCHES, REMEDY BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION

EXCAVATION

EXISTING GROUND
INTERCEPTOR OR EROSION DITCH
EXISTING GROUND

GENERAL NOTE
ALL CUT BLOCS SHALL BE PROPPED, PREPARED, SEEDED AND MACHINED AS PER PLANNED DESIGN. BLOCKS SHALL BE EXCAVATED AND STABILIZED IN EQUITABLE INCREMENTS NOT TO EXCEED 20 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR EROSION 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, COMPLETE PROGRESS OF SECTIONS, PLACE GREEN COVER, SEED, PLANT STABILIZATION PLANTS OR OTHER EROSION CONTROL DEVICES AS NECESSARY.

EMBANKMENT

SLOPE STABILIZATION TO BE IN PLACE DURING EMBANKMENT.

FINAL PHASE EMBANKMENT
PHASE 2 EMBANKMENT
PHASE 1 EMBANKMENT
GENERAL NOTE
ALL EMBANKMENT SLOPES SHALL BE PROPPED, PROTECTED OR SEEDED AND SEQUENCE AS THE WORK PROGRESSES SLOPES SHALL BE STABILIZED AND SEEDED IN EQUITABLE INCREMENTS NOT TO EXCEED 20 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. CONSTRUCT EMBANKMENT TARGET SLOPE AND SEEDING BANDS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. IT IS TO BE TEMPORARILY SEEDED FOR A PERIOD OF TIME OF GREATER THAN 180 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. IT IS TO BE TEMPORARILY SEEDED FOR A PERIOD OF TIME OF GREATER THAN 180 DAYS.
5. PLACE SEEDING PROPS AND SHELTER HOUSING AND MAINTAIN UNTIL EMBANKMENT IS STABILIZED.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3
GENERAL NOTES

NORMA L LINE FENCING TO CONTINUE ON GRADE

DEADMAN TO CONTINUE ON GRADE

ARMS MOUNTED COLUMN

NORMAL LINE FENCING

8 STRANDS OF TWISTED
WIRE OR CABLE

LINE POSTS

LINE POSTS

6" MIN. DIA. TREATED POST OR TIMBER TO BE FREE SWINGING

10'-0" MAX

20'-0" MAX

30'-0" MAX

BARRED WIRE 5'-0"OC.

NORMAL FLOW

BRACE IF NEEDED TO PREVENT WIRE FROM DAMAGING POSTS

2 5/8" G.D. STEEL OR 3" G.D.
ALUMINUM POSTS

EXTRA LENGTH POST TO BE USED AS DIRECTED BY THE ENGINEER

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