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NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE ADAPTED UPON REQUEST.

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE FOR THE VARIOUS BD ITEMS.
5. ALL LAND MUNDANTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE REMOVED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAVING ALONG A NEAT LINE. AFTER SAVING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
TANGENT SECTION

OVERLAY

STA. 227+50.00 - STA. 231+75.00

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATIONS FROM THE NORMAL SLOPES. ANY CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLANNED THICKNESS. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE AS INDIATED. PAYMENT WILL NOT BE MADE FOR AGGREGATE BASE COURSE LAYED OUTside THE TOLERANCE. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAYED, CONDITIONAL JOINTS SHALL BE AT LANE LINES.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ADH Mix MORTAR, Laid with AGGREGATE BASE COURSE ON THE SHOULDERS.

STA. 201+00 - STA. 208+50 RT.

STA. 200+00 - STA. 224+50 LT.
LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

DETAILS OF RUMBLE STRIPS

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.
4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPS HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPS HAVE NOT BEEN CONSTRUCTED.
5. THE ¾" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 2" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
DETAIL FOR DRIVEWAYS AND ROAD TURNOUTS

ASPHALT CONCRETE HOT MIX SURFACE
SLAB 1/12" THICK FOR 50 YR.
AND AGGREGATE BASE COURSE (CLASS D)
7" COMPLEMENTS IF ASPHALT DRIVE EXISTS
OR 6" CONCRETE IF CONCRETE DRIVE EXISTS.

AGGREGATE BASE COURSE (CLASS D)
7" COMPLEMENTS OR CONFORM TO EXISTING DRIVEWAY.

METHOD OF RAISING GRADE

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

DETAIL FOR TRANSITIONS

SPECIAL DETAILS
### MID-SECTION

#### BAR LAP TABLE

<table>
<thead>
<tr>
<th># of Long Bar Lap</th>
<th>Long Bar Length</th>
<th>Section Length</th>
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</thead>
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<td>0' 0&quot;</td>
<td>0' 0&quot;</td>
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<tr>
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<td>4' 0&quot;</td>
<td>4' 0&quot;</td>
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<tr>
<td>2</td>
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<td>3</td>
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<td>4</td>
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</tr>
<tr>
<td>5</td>
<td>20' 0&quot;</td>
<td>20' 0&quot;</td>
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</tbody>
</table>

#### SPECIAL DETAILS

- Bar Lap Required for the Sheared End Section shall be considered secondary to the following:
  - Shear Lap - 40" for Seap Sections greater than 40'-0" in length.
  - Bar Lap - Add one lap for each Seap section.

### SHEET 1 OF 2

#### DETAILS OF R.C. BOX CULVERT

- Sextuple Barrel Box Culvert
- Stc. 200+96

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Note: This drawing is to be used in conjunction with Sheet 1 of 2, General Notes & Longitudinal Section Length Schedule.
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 5'

LENGTHS FOR NON-SKEWED BOXES

GENERAL NOTES:


LIVE LOADING: HL-60

All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,000 psi and shall be poured in the dry. All exposed surfaces to be troweled.

Reinforcing Steel Tolerance: the tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Corrosion Resisting Steel Institute (CRSI) except that the tolerances for bars shall be as shown in Figure 3-3 on page 7-4 of the CRSI Manual shall be minus 0.025 in. plus 0.020 in.

Excavation and backfilling shall be in accordance with the requirements of Section 800.

Membrane Waterproofing shall conform to the requirements of Section 800 of the Standard Specifications. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalks of R.C. Box culverts and the connecting joint between wingwalls and R.C. Box culvert walls.

Warp Holes in box culvert walls shall have maximum horizontal spacing of 10.0' and shall be spaced to clear all reinforcing steel. The hole opening shall be 4" diameter and shall be placed 12" above the top of the bottom side. Warp holes in wingwalls shall have minimum horizontal spacing of 10.0' and shall be spaced to clear reinforcing steel. There shall be a minimum of two (2) warp holes in each wingwall. The hole opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.

Construction joints between beam and wall shall be made only when shown on the Plans. The maximum length of culvert for which a continuous pour will be permitted is 75 ft. For longer culvert construction, joints shall be provided at ends and walls at intervals no greater than 30 ft. Joints shall be formed to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joint unless shown otherwise.

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

When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1597 and meet the requirements of Special Provision 'LRFD Reinforced-Concrete Box Culverts'.
TYPICAL SECTION M-M

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB REINFORCEMENT

WINGWALL ATTACHMENT

See "Details of Wingwall" for additional information and wingwall details.

TYPICAL KEYWAY DETAIL

PART LONGITUDINAL SECTION

Non-Keaved End

PART LONGITUDINAL SECTION N-N

Keaved End

SKewed END SECTION DETAILS

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL

R.C. BOX CULVERT

SPECIAL DETAILS
STA 200+00.00
BEGIN JOB 080.386

REVISIONS

DATE

REVISION

RETAIN TEMPORARY EROSION CONTROL DEVICES FROM STAGE 2

CULTIVATED FIELD

TEMPORARY EROSION CONTROL DETAILS
STAGE 3
NOTE: RETAIN ADVANCE SIGNS FOR ALL STAGES

**MAINTENANCE OF TRAFFIC**

STAGE 1

NOTE: RETAIN ADVANCE SIGNS FOR ALL STAGES

CONSTRUCTION PAVEMENT MARKINGS
L & R. EDGE LINES + OBL CENTERLINE
OVER LANE FOR LEVELING AND/OR GRADE RAISE
STA 200-00 - STA 203-25 = 1300 LNF.

17 VERTICAL PANELS
50' G.C.

CONSTRUCTION PAVEMENT MARKINGS
L & R. EDGE LINES + OBL CENTERLINE
OVER LANE FOR LEVELING AND/OR GRADE RAISE
STA 234-05 - STA 237-50 = 2045 LNF.

STAGE 1 OPERATIONS
NOTCH RIGHT SIDE OF EXISTING ROADWAY
WHERE SHOWN ON PLANS AND WIDEN TO
CARRY STAGE 2 TRAFFIC
PLACE ENOUGH EMBANKMENT LEFT OF EXISTING ROADWAY
TO SUPPORT PRECAST CONCRETE BARRIER
WHERE SHOWN ON PLANS.
INSTALL PRECAST CONCRETE BARRIER AS SHOWN
BEGIN CONSTRUCTION OF SEXT. BOX CULVERT
AT STA 208-96

TRANSPORT FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER
STA 207-87 - STA 212-33 LT SHOULDER + 408 LNF.
THIS INCLUDES 10 SPECIAL END UNITS

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MAINTENANCE OF TRAFFIC

STAGE 2

PLACE ADW FOR GRADE RAISE & INSTALL CONSTRUCTION PAVEMENT MARKINGS
SHIFT TRAFFIC INTO STAGE 2 ALIGNMENT WHERE SHOWN
PARTIALLY-CONSTRUCT NEW ALIGNMENT LEFT OF EXISTING

25 TRAFFIC DRUMS 55' O.C. NORMAL

REMOVAL OF PERMANENT PAVEMENT MARKINGS
2: EDGE LINE & EXISTING CENTERLINE
STA 200-00 - STA 300-33 - 635 LINFT.

CONSTRUCTION PAVEMENT MARKINGS
1.5 FT EDGE LINE - ORL. CENTERLINE
STA 300-00 - STA 300-52.68 STAGE 2 ALIGNMENT - 333 LINFT.

MAINTENANCE OF TRAFFIC

BEGIN JOB 080.386
LDG MILE 7.25

STA 200-00.00
PERMANENT PAVEMENT MARKING DETAILS

STA 200+00.00
BEGIN JOB 080386
LOG MILE 7.25

PT 200+00.00
PT 200+10.00

LT & RT EDGE LINES
4" WHITE

DEL CENTERLINE
4" YELLOW

PERMANENT PAVEMENT MARKINGS
THERMOPLASTIC PAVEMENT MARKINGS
LT & RT EDGE LINES ENTIRE JOB = R350 LINFT 4" WHITE
DEL CENTERLINE ENTIRE JOB = R350 LINFT 4" YELLOW

NOTE: CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONE.

END OF JOB OPERATIONS
REMOVE WORN CENTERLINE MARKINGS FROM BRIDGE DECK
PLACE FINAL LIFT OF ACWM SURFACE
PLACE PERMANENT PAVEMENT MARKINGS
INSTALL HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS ON BRIDGE CENTERLINE

PERMANENT PAVEMENT MARKING MARKING DETAILS
### Construction Pavement Markings and Permanent Pavement Markings

<table>
<thead>
<tr>
<th>Description</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>End of Job</th>
<th>Maximum Number Required</th>
<th>Removal of Permanent Pavement Markings</th>
<th>Construction Pavement Markings</th>
<th>Removal of Construction Pavement Markings</th>
<th>Thermoplastic Pavement Markings</th>
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<td>Removal of Permanent Pavement Markings</td>
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**Note:** This is a high traffic volume road as defined in section 604.03, standard specifications for highway construction, 2003 edition.

### Advance Warning Signs and Devices

<table>
<thead>
<tr>
<th>Sign Number</th>
<th>Description</th>
<th>Sign Size</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>End of Job</th>
<th>Maximum Number Required</th>
<th>Total Signs Required</th>
<th>Traffic Drums</th>
<th>Barricades (Type R)</th>
<th>Furnishing and Installing Precast Concrete Barrier</th>
<th>Relocating Precast Concrete Barrier</th>
<th>Temporary Impact Attenuation Barrier</th>
<th>Temporary Impact Attenuation Barrier (Repair)</th>
<th>Vertical Panels</th>
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</thead>
<tbody>
<tr>
<td>W20-1</td>
<td>ROAD WORK 1500 FT.</td>
<td>48&quot;x48&quot;</td>
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<td>2</td>
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<tr>
<td>W20-1</td>
<td>ROAD WORK 1000 FT.</td>
<td>48&quot;x48&quot;</td>
<td>2</td>
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<td>W20-1</td>
<td>ROAD WORK 500 FT.</td>
<td>48&quot;x48&quot;</td>
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<td>2</td>
<td>32.0</td>
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<td>W20-1</td>
<td>END ROAD WORK</td>
<td>48&quot;x48&quot;</td>
<td>2</td>
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<td>LARGE ARROW</td>
<td>48&quot;x48&quot;</td>
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<td>R5-1</td>
<td>SHOULDER CLOSED</td>
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<td>R11-2</td>
<td>ROAD CLOSED</td>
<td>48&quot;x30&quot;</td>
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<td>R4-1</td>
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<td><strong>Traffic Drums</strong></td>
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<td>26</td>
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<tr>
<td><strong>Vertical Panels</strong></td>
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<td>17</td>
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</tr>
<tr>
<td>Type BS Barricade RT. (6&quot;)</td>
<td>1</td>
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<td>Type BS Barricade LT. (8&quot;)</td>
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<tr>
<td>Type BS Barricade RT. (16&quot;)</td>
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<td></td>
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<td><strong>Total</strong></td>
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**Note:** This is a high traffic volume road as defined in section 604.03, standard specifications for highway construction, 2003 edition.
### CLEARING AND GRUBBING

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Clearing</th>
<th>Grubbing</th>
</tr>
</thead>
<tbody>
<tr>
<td>201+00</td>
<td>214+00</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>220+00</td>
<td>225+00</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>235+00</td>
<td>250+00</td>
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</tr>
</tbody>
</table>

**Totals:** 18 18

### REMOVAL AND DISPOSAL OF PIPE CULVERTS

<table>
<thead>
<tr>
<th>Station</th>
<th>Description</th>
<th>Pipe Culverts</th>
</tr>
</thead>
<tbody>
<tr>
<td>208+96</td>
<td>12&quot; X 15' C.M. PIPE CULV'T CROSS DRAIN</td>
<td>2</td>
</tr>
<tr>
<td>220+08</td>
<td>24&quot; X 18' C.M. PIPE LT. SIDE DRAIN</td>
<td>1</td>
</tr>
<tr>
<td>212+08</td>
<td>12&quot; X 24' C.M. PIPE RT. SIDE DRAIN</td>
<td>1</td>
</tr>
<tr>
<td>225+08</td>
<td>14&quot; X 20' C.M. PIPE CULV'T SIDE DRAIN</td>
<td>1</td>
</tr>
</tbody>
</table>

**Totals:** 5

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

### EARTHWORK

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>Unclassified Excavation</th>
<th>Compact Embankment</th>
<th>Soil Stabilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Entire</td>
<td>312</td>
<td>812</td>
<td>612</td>
</tr>
<tr>
<td>Entire</td>
<td>Entire</td>
<td>293</td>
<td>1038</td>
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<td>Entire</td>
<td>Entire</td>
<td>688</td>
<td>665</td>
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<tr>
<td>Entire</td>
<td>Entire</td>
<td>147</td>
<td>1177</td>
<td>1177</td>
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<tr>
<td>Entire</td>
<td>Entire</td>
<td>517</td>
<td>3063</td>
<td>3063</td>
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<tr>
<td>233+00</td>
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<td>1357</td>
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<td>Entire</td>
<td>Entire</td>
<td>590</td>
<td>660</td>
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**Totals:** 23836 23836 200

* See Sheet 73 for Additional Information.
** Quantity Estimated. See Section 104.03 of the Std. Specs.

### SOIL LOG

<table>
<thead>
<tr>
<th>Station</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Depth</th>
<th>Classification</th>
<th>Liquid Limit</th>
<th>Cation Index</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>201+00</td>
<td>35</td>
<td>15</td>
<td>16.60</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
<tr>
<td>210+00</td>
<td>35</td>
<td>15</td>
<td>16.60</td>
<td>A-6(15)</td>
<td>35</td>
<td>17</td>
<td>Brown</td>
</tr>
<tr>
<td>217+00</td>
<td>35</td>
<td>15</td>
<td>16.60</td>
<td>A-6(7)</td>
<td>26</td>
<td>9</td>
<td>Brown</td>
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<tr>
<td>225+00</td>
<td>35</td>
<td>15</td>
<td>16.60</td>
<td>A-6(7)</td>
<td>26</td>
<td>9</td>
<td>Brown</td>
</tr>
<tr>
<td>235+00</td>
<td>35</td>
<td>15</td>
<td>43.30</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
<tr>
<td>235+00</td>
<td>35</td>
<td>15</td>
<td>43.30</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
<tr>
<td>225+00</td>
<td>35</td>
<td>15</td>
<td>43.30</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
<tr>
<td>235+00</td>
<td>35</td>
<td>15</td>
<td>50.00</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
<tr>
<td>235+00</td>
<td>35</td>
<td>15</td>
<td>43.30</td>
<td>A-6(11)</td>
<td>32</td>
<td>14</td>
<td>Brown</td>
</tr>
</tbody>
</table>

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE OF THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

### SELECTED PIPE BEDDING

<table>
<thead>
<tr>
<th>Location</th>
<th>Selected Pipe Bedding</th>
<th>C.U.YD.</th>
</tr>
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<tbody>
<tr>
<td>Entire</td>
<td>20</td>
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</table>

**Total:** 20

* Quantity estimated. See Section 104.03 of the Std. Specs.

### STRUCTURES

<table>
<thead>
<tr>
<th>Station</th>
<th>Description</th>
<th>Side Drains</th>
<th>Reinforced Concrete Box Culverts</th>
</tr>
</thead>
<tbody>
<tr>
<td>220+08</td>
<td>Install side drain on LT</td>
<td>24&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>225+08</td>
<td>Install side drain on RT</td>
<td>24&quot;</td>
<td>36&quot;</td>
</tr>
</tbody>
</table>

**Totals:** 52 52

**Note:** Quantity estimated. See Section 104.03 of the Std. Specs.

### FENCING

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Side</th>
<th>Wire Fence (Type D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>201441</td>
<td>206+45</td>
<td>RT</td>
<td>695</td>
</tr>
<tr>
<td>209+46</td>
<td>209+43</td>
<td>RT</td>
<td>187</td>
</tr>
<tr>
<td>202+00</td>
<td>LT</td>
<td>1</td>
<td></td>
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</table>

**Total:** 692 1

* Denotes Alternate Bid Item.

### QUANTITIES

10/6/2012

**Basis of Estimate:** 12.6 GALL / SQ. YD. OF SOLID SODGING.

**Note:** For R.C. Pipe Culvert Installations USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
**Note:** For C.M. Pipe Culvert Installations USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
### Rumble Strips in Asphalt Shoulders

**Station** | **Location** | **Rumble Strips**
---|---|---
230+00 | 209+75 | LT of CL Const. 1500
230+40 | 208+75 | RT of CL Const. 1698
230+64 | 208+00 | LT of CL Const. 566
230+64 | 230+00 | RT of CL Const. 176
230+66 | 230+75 | LT of CL Const. 152
230+69 | 231+75 | RT of CL Const. 216

**Total** | **4604**

### Main Lane Base and Surfacing

**Station** | **Location** | **Length** | **Aggregate Base Course (1st)** | **Tack Coat** | **Aggregate Binder Course (1st)** | **Aggregate Surface Course (1st)**
---|---|---|---|---|---|---
201+00 | 208+50 | 750.0 | 20+00 | 600.0 | 13+00 | 600.0 | 13+00 | 440.0 | 12+00 | 440.0 | 12+00 | 5.5
202+00 | 208+00 | 100+00 | 15+00 | 16+00 | 5+00 | 15+00 | 16+00 | 5+00 | 12+00 | 12+00 | 5.5
203+00 | 208+00 | 100+00 | 20+00 | 21+00 | 10+00 | 20+00 | 21+00 | 10+00 | 20+00 | 20+00 | 4.5
204+00 | 208+00 | 100+00 | 20+00 | 23+00 | 8+00 | 20+00 | 23+00 | 8+00 | 20+00 | 20+00 | 4.5
205+00 | 208+00 | 100+00 | 20+00 | 27+00 | 5+00 | 20+00 | 27+00 | 5+00 | 20+00 | 20+00 | 4.5
206+00 | 208+00 | 100+00 | 20+00 | 27+00 | 5+00 | 20+00 | 27+00 | 5+00 | 20+00 | 20+00 | 4.5
207+00 | 208+00 | 100+00 | 20+00 | 27+00 | 5+00 | 20+00 | 27+00 | 5+00 | 20+00 | 20+00 | 4.5
208+00 | 208+00 | 100+00 | 20+00 | 27+00 | 5+00 | 20+00 | 27+00 | 5+00 | 20+00 | 20+00 | 4.5

**Total** | **5759.4** | **20738.1** | **757.7** | **3481.2** | **3960.3** | **1686.5** | **24360.3** | **3740.0** | **2700.1**

---

**Basis of Estimate:**
- Aggregate Base Course (1st) | 94.5% Min. Aggr. | 5.5% Asphalt Binder
- Aggregate Surface Course (1st) | 95.5% Min. Aggr. | 4.5% Asphalt Binder
- Maximum Number of Gyration = 115

---

**Quantities**
### Erosion Control

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch</th>
<th>Second Seeding</th>
<th>Water</th>
<th>Temporary Seeding</th>
<th>Mulch</th>
<th>Water</th>
<th>Sand Bag Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Silt Fence</th>
<th>Sediment Basin</th>
<th>Orliteration of Sediment Basin</th>
<th>Sediment Removal and Disposal</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acre</td>
<td>Ton</td>
<td>Acre</td>
<td>Acre</td>
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<td>100</td>
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</tr>
<tr>
<td>200-00</td>
<td>212-00</td>
<td>Stage 1 RT &amp; LT.</td>
<td>2.00</td>
<td>4.00</td>
<td>2.00</td>
<td>2.00</td>
<td>204</td>
<td>1.00</td>
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<td>450</td>
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<td>38</td>
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<td>Stage 1 LT. of CL Const.</td>
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<td>2.00</td>
<td>2.00</td>
<td>204</td>
<td>1.00</td>
<td>1.00</td>
<td>20.4</td>
<td>110</td>
<td>36</td>
<td>450</td>
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<td>38</td>
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<td>Project</td>
<td>Stage 2 RT. of CL Const.</td>
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<td>1.00</td>
<td>20.4</td>
<td>110</td>
<td>36</td>
<td>450</td>
<td>66</td>
<td>66</td>
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<td>450</td>
<td>228</td>
<td>228</td>
<td>100</td>
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</tbody>
</table>

**Basis of Estimate:**
- Lime: 2.0 tons / acre of seeding
- Water: 150.0 m.g. / acre of seeding
- Water: 20.4 m.g. / acre of temporary seeding
- Sand bag ditch checks: 2.0 m.g. / location

*Note: The temporary erosion control devices shown above and on the plans shall be installed in such a sequence as to deter erosion and sedimentation on U.S. Waterways as explained by the National Pollutant Discharge Elimination System permit.

*Quantity estimated.

See Section 104.03 of the Std. Specs.

### Cold Milling

| Station | Station | Location | Avg. Width | Cold Milling Asphalt Pavement | Cold Milling Asphalt Pavement
<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>200-00</td>
<td>201-00</td>
<td>Main lanes</td>
<td>20</td>
<td>2022</td>
<td>2022</td>
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<tr>
<td>230-75</td>
<td>231-75</td>
<td>Main lanes</td>
<td>20</td>
<td>222</td>
<td>222</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>464</td>
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</tbody>
</table>

*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>ASPH. Conc. Patching for M.O. TON</th>
<th>Tack Coat</th>
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</thead>
<tbody>
<tr>
<td>Entire Project, to be used if and where directed by the Engineer</td>
<td>15</td>
<td>30</td>
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<tr>
<td>TOTALS</td>
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<td>30</td>
</tr>
</tbody>
</table>

*Note: Quantity estimated.

See Section 104.03 of the Std. Specs.

### Mailboxes

<table>
<thead>
<tr>
<th>Location</th>
<th>Mailbox Supports (Single)</th>
<th>EACH</th>
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</thead>
<tbody>
<tr>
<td>Entire Project</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TOTALS</td>
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<td>1</td>
</tr>
</tbody>
</table>

### Bench Marks

<table>
<thead>
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<th>Station</th>
<th>Description</th>
<th>Bench Marks EACH</th>
</tr>
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*Note: Shown for information only. Benchmarks shall be furnished and placed by State Forces.

### Filter Blanket

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*Note: Quantity estimated.

See Section 104.03 of the Standard Specifications.

*Note: Filter blanket shall be geotextile fabric (Type 5).
# SUMMARY OF QUANTITIES

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## STRUCTURES OVER 20' SPAN

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* Denotes Alternate 80-Item
### Survey Control Details

**Project Name:** 008396

**Date:** 4/23/2011

**Coordinate System:** ARKANSAS STATE PLANE - NORTH ZONE BASED ON GSP CONTROL

**Units:** U.S. SURVEY FOOT

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**Note:** Rebar and Cap - Standard "1" Rebar with 2" Aluminum Cap stamped with "4946". Alternate markings indicated in the point description of the individual point.

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

**Survey Control Details:**

- **Surveyor:** [Name and Signature]
- **Date:** [Date]
- **SURVEYOR CONTROL POINTS:**
  - ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
  - DETERMINED FROM GPS CONTROL POINTS, 150000 X 150009
  - CONVERGENCE ANGLE - 00 25 34.9 R Left
  - GRID AZIMUTH - ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.
### REINFORCED CONCRETE ARCH PIPE DIMENSIONS

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**Note:** The measured span and rise shall not vary more than 1/2 percent from the values specified by Asahitey Industries.

### REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

<table>
<thead>
<tr>
<th>SERIES</th>
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<th>H.</th>
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**Note:** The measured span and rise shall not vary more than 1/2 percent from the values specified by Asahitey Industries.

### Construction Sequence
1. Place structural bedding material to grade, do not compact.
2. Install pipe to shape, leaving a clearance along the inside diameter of the pipe, that is, the pipe shall be compacted to grade, and the bedding mix shall fill the voids between the pipe and the bedding mix.
3. Complete bedding, according to manufacturer specifications.

**Note:** The pipe and structural bedding material shall be paid for separately, but compensation will be allowed in the price bid per linear foot of concrete pipe.

### Legend
- **D:** Normal inside diameter of pipe
- **D:** Normal inside diameter of pipe
- **D:** Normal inside diameter of pipe
- **A:** Undersized soil

### Installation Type
- **TYPE 1:** Aggregate base course (Class B or Class 7)
- **TYPE 2:** Selective base course (Class A or Class 7) specified in Appendix A
- **TYPE 3:** Full width base course (Class A or Class 7) specified in Appendix A

### EMBANKMENT AND TRENCH INSTALLATIONS
1. All materials shall be in place and structural bedding shall be compacted to 95% of the maximum density according to the type of the pipe or material.
2. For trenches or walls of natural soil, the density of the soil in the lower side of the trench shall be at least 95% of the density required for the sides of the trench, except that the density required may be reduced to 90% of the maximum density according to the type of natural soil.
3. For embankments, the material in the lower side of the trench shall be compacted to 95% of the maximum density according to the type of material used.

### General Notes
1. Concrete pipe culvert construction shall conform to Arkansas State Highway and Transportation Department standard specifications for highway construction (U.S. DOT), with the requirement that pipe dimension specifications and specifications and special provisions, unless otherwise noted in the plans, sections and specifications refer to the standard construction specifications.
2. Concrete pipe culvert design shall conform to Asahitey Industries design specifications, fifth edition, copy with the plans.
3. All pipe shall conform to section 605 circular R.C. pipe culverts shall conform to Asahitey Industries standard for R.C. culverts and shall conform to Asahitey Industries and horizontal, vertical, and horizontal pipe culverts shall conform to Asahitey Industries.
4. All pipe shall be protected during construction by a cover sufficient to prevent damage from passage of equipment.
5. The maximum trench width shall be the outside diameter of the pipe plus 24 inches. The maximum trench width shall be the minimum width practicable for moving equipment.
6. Multiple pipe culverts shall be installed with a minimum clearance of 24 inches between string lines; pipe to string line, for minimum clearance. Where pipes pass under existing structures, the clearance shall be 36 inches. Where pipes pass under existing structures, the clearance shall be 48 inches. Where pipes pass under existing structures, the clearance shall be 60 inches. Where pipes pass under existing structures, the clearance shall be 72 inches.
7. Maximum material shall be placed as directed by the Engineer. The ends of the concrete shall be placed as directed by the Engineer. The ends of the concrete shall be placed as directed by the Engineer. The ends of the concrete shall be placed as directed by the Engineer.
8. No more than one lifting hole may be provided in concrete pipe to facilitate handling. All pipe shall be placed on the ground, in stages, according to the Engineer's specifications. All material shall be compacted in stages as directed by the Engineer. All material shall be compacted in stages as directed by the Engineer. All material shall be compacted in stages as directed by the Engineer.
9. The lower side of the pipe shall be extended with a concrete bedding pad, the top of the pipe shall be extended with a concrete bedding pad. The top of the pipe shall be extended with a concrete bedding pad. The top of the pipe shall be extended with a concrete bedding pad. The top of the pipe shall be extended with a concrete bedding pad.
10. Suitable materials are available for the use of selected pipe backing. Suitable materials are available for the use of selected pipe backing. Suitable materials are available for the use of selected pipe backing. Suitable materials are available for the use of selected pipe backing.
MINIMUM TRENCH WIDTH 
BASED ON FILL HEIGHT "H"

<table>
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MINIMUM COVER FOR CONSTRUCTION LOADS

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GENERAL NOTES

1. PIPE SHALL CONFORM TO ASHRAE 1418. TYPE 1 INSTALLATION SHALL CONFORM TO JOB SPECIFICATIONS.

2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO ASHRAE 1418. 5TH EDITION.

3. THE MINIMUM ALLOWABLE TRENCH WIDTHS SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ALLOW WORKING ROOM TO PROVIDE A SAFETY AND WORKING SPACE.

4. THE STRUCTURAL BACKFILL MATERIAL SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

5. THE FOLLOWING MATERIALS ARE RECOMMENDED FOR THE CONSTRUCTION OF THE TRENCH:
   - Backfill: Structural Backfill Material
   - Base: Compacted Sandy Gravel
   - Shoulder: Uncompacted Sandy Gravel
   - Liner: Polyethylene Pipe

6. ALL MATERIALS USED IN THE CONSTRUCTION OF THE TRENCH SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BACKFILL MATERIAL TO GRADE, DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BACKFILL OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED LAYERS NOT EXCEEDING 12" THICK AND滿SHALL NOT EXCEED THE ELEVATION OF THE LOWER PIPE.
5. PIPE INSTALLATION IS TO BE PERMITTED BY RESTRAINTS, MENDING, OR OTHER APPROVED METHODS IN ORDER TO MAINTAIN GRADE AND ALIGNMENT.

ARKANSAS STATE HIGHWAY COMMISSION
PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)
STANDARD DRAWING PCP-1
**Installation Type 2**

- **Material Requirements for Structural Backfill and Structural Bounding Material:***
  - Selected materials:
    - Class SMA or SMA-2*
      - Select materials with a maximum particle size of 8 in. (200 mm) or smaller than 6 in. (150 mm) and shall be free of deleterious materials such as clay, silt, organic matter, or mud
    - Structural backfill and structural bounding material shall be considered to be bonded to the sides of the trench and shall be placed at a maximum distance of 2 ft (0.6 m) from the edge of the trench.

**Maximum Fill Height Based on Structural Backfill**

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<th>Depth (ft)</th>
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**Minimum Trench Width Based on Fill Height “H”**

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**Minimum Cover for Construction Loads**

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<tr>
<td>Cover (ft)</td>
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<td>12'</td>
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**Multiple Installation of PVC Pipes**

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<td>Joint</td>
<td>Field</td>
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<tr>
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<td>4'</td>
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**Type 2 Embankment and Trench Installations**

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

**Construction Sequence**

1. Place structural bounding material to grade, do not compact.
2. Install pipe to grade.
3. Compact structural backfill outside of the embankment and structural bounding material to grade inside the trench.
4. Structural backfill shall be placed and compacted in layers not exceeding 8 ft (2.4 m) and shall be brought up to the elevation of the maximum cover.
5. Pipe installation may require the use of restraints, welds, or other approved methods to help maintain grade and alignment.

**General Notes**

1. Pipe shall conform to ASTM Type II, Class D, DRA Installation shall conform to User Group Association (UGA) and Section II. Table 1 of the Standard Specifications for Highway Construction, 2005 Edition.
3. Joints of the selected design shall be free of deleterious materials, such as clay, silt, organic matter, or mud.
4. Structural backfill shall be placed as directed by the engineer at the ends of the trench to prevent loss of structural bounding material due to settlement.
5. Structural backfill shall be placed as directed by the engineer at the ends of the trench to prevent loss of structural bounding material due to settlement.
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9. Structural backfill shall be placed as directed by the engineer at the ends of the trench to prevent loss of structural bounding material due to settlement.
10. Structural backfill shall be placed as directed by the engineer at the ends of the trench to prevent loss of structural bounding material due to settlement.
CONCRETE PAVEMENT

BROKEN LINE STRIPING

APPLY PAVEMENT MARKERS (TYPE)

CENTER LINE

4" SPACING

RAISED PAVEMENT MARKER (TYPE)

4" SKIP YELLOW

STROKE TO BE PAINTED ON CENTER LINE.

SOLID LINE STRIPING ON CONCRETE PAVEMENT

4" CONTINUOUS YELLOW

CENTER LINE

4" SKIP YELLOW

RAISED PAVEMENT MARKER (TYPE)

SOLID LINE STRIPING ON ASPHALT PAVEMENT

4" CONTINUOUS YELLOW

CENTER LINE

4" CONTINUOUS YELLOW

APPLY PAVEMENT MARKERS (TYPE)

CENTER LINE

4" CONTINUOUS YELLOW

APPLY PAVEMENT MARKERS (TYPE)

CROSSWALK AND STOPBAR DETAILS

10" STOPBAR OFFSET STOPBAR 4" FROM CROSSWALK

10" STOPBAR STRIPS

10" SPACING PLACED 4 FT. O.C.

3 FT. MIN. FROM LANE EDGE

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

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 7.6.5 OF THE STANDARD 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 4-FT. FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

EDGE OF PAVEMENT

2" FOR ASPHALT OR CONCRETE PAVEMENT

2" FOR BITUMINOUS SURFACE TREATMENT

PAVEMENT EDGE LINE MARKING

GENERAL NOTES:
THE DRAWING SHOULD BE CONSIDERED AS TYPICAL, ONLY
AND THE FINAL LOCATION OF THE STIPPLING AND RAISED
PAVEMENT MARKERS SHALL BE DETERMINED BY THE
ENGINEER.

THE DRAWING SHOULD BE USED IN CONJUNCTION WITH
"THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"

NOTES:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE
THEIR LOCATION AND THE ENGINEER MAY SUBSTITUTE SIMILAR
MARKERS WITH THE APPOINTMENT OF THE ENGINEER REQUESTING
APPROVAL. FOR FIGURE MARKERS MAY BE Omitted BY REFERING
TO THE NON QUALIFIED PRODUCTS LIST.
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 ASTM A615 M 3 OR M 52 GRADE 60.
CONSTRUCTION AND MATERIALS FOR NYLON/CAL VULCANIZED INCLING NYLON HOLES AND CRANULAR MATERIALS SHALL BE SUBSIDIARY TO THE BD ITEM "CLASS 5 CONCRETE".
MEMBRANE WATERPROOFING SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 85 OF THE STANDARD SPECIFICATIONS.
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE J OINTS 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 "MATERIALS OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-8 OF THE PREPARATION SHALL BE MADE ZERO TO PLUS 1/2 INCH.
WEIGHT HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 6'-0" AND SHALL BE SPACED TO CLEAR ALL CONCRETE STEEL. THE DAN OPENING SHALL BE 4'-0" DIAMETER AND SHALL BE PLACED ABOVE THE TOP OF THE BOTTOM SLAB.
WEIGHT HOLES IN MIDDLE WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 12'-0" AND SHALL BE SPACED TO CLEAR ALL CONCRETE STEEL. THERE SHALL BE A MINIMUM OF TWO 6'-0" HOLES IN EACH MIDDLE WALL. THE DAN OPENING SHALL BE 4'-0" DIAMETER AND SHALL BE PLACED ABOVE THE TOP OF THE MIDDLE WALLS.
THE REQUIREMENTS SHOWN IN THIS DRAWING SHALL SUPERSEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.

ARMS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RC8-1

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<th>LENGTH OF STRAIGHT BAR</th>
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<tr>
<td>8</td>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
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</tbody>
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NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM


FOR Skewed CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN TO FIT.
4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL—BRIDGE DECKS STD. DRAW. TC-41)

** Offset Distance for Two Way Traffic Only

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>Offset Distance for Two Way Traffic Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mph</td>
<td>6</td>
</tr>
</tbody>
</table>

If offset distance is not attainable, then see “Barrier Placement With Attenuator” Detail shown below.

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a 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."

| Standard Traffic Controls for Highway Construction - Temporary Precast Barrier |
|-----------------------------|-------------------------------|-----------------------------|
| Standard Drawing TC-5       | ARKANSAS STATE HIGHWAY COMMISSION |                           |

** Section J-J

** Offset Distance from Traffic Lane

<table>
<thead>
<tr>
<th>Traffic Lane</th>
<th>Offset Distance from Traffic Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.L. roadway</td>
<td>60 miles</td>
</tr>
</tbody>
</table>

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<tr>
<td>C.L. roadway</td>
<td>60 miles</td>
</tr>
</tbody>
</table>
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. PLACE PERMEABLE CONTROLS (e.g., SILT FENCE, DIVERSION DITCHES, BERMING, ETCH)
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 SEED, PREPARED, SEEDING AND MAINTAINED AS THE WORK PROGRESSES. CUT BASES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
5. REPAIR DIVERSION DITCHES AND BERMING AND OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT

DIVERSION DITCH TO BE IN PLACE UNTIL SLOPE IS COMPLETELY STABILIZED.

PHASE 1 EMBANKMENT
PHASE 2 EMBANKMENT
PHASE 3 EMBANKMENT
SLOPE STABILIZED AS REQUIRED
EXISTING GROUND
PARALLELEPIPED CONTROL DEVICES

GENERAL NOTE
ALL EMBANKMENT SLOPES SHALL BE SEED, PREPARED, SEEDING AND MAINTAINED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. CONSTRUCT DIVERSION DITCHES WITH TEMPORARY RETENTION BASEMENT, SILT BAGS, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
4. PLACE PHASE 3 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
5. REPAIR DIVERSION DITCHES AND SLOPE BASEMENT OF EMBANKMENT COMPONENT IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
6. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE BASEMENTS AND MAINTAIN UNTIL SLOPE IS STABILIZED.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES
STANDARD DRAWING TEC-3