TYPICAL SECTIONS OF IMPROVEMENT

AGGREGATE BASE COURSE (6/33) VAR. LUMP DEPTH (VAR. TONS PER STA.)

FULL DEPTH - NORMAL CROWN CONSTRUCTION
SECTION 6-STA. 200-79.00 TO STA. 200-100.00
SECTION 6-STA. 200-100.00 TO STA. 200-107.00
SECTION 8-STA. 300-26.00 TO STA. 300-88.00

AGGREGATE BASE COURSE (6/33) VAR. LUMP DEPTH (VAR. TONS PER STA.)

NOTES:
REFER TO CROSS SECTIONS FOR
DEViations FROM THE NORMAL SLOPE, 
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 PLAN
THICKNESS SHOWN. THE CONTRACTOR
WILL CORRECT ANY DEFICIENT THICKNESS
INDICATED FOR REAL ESTATE
OF 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 ADAM
BASE COURSE ON THE SHOULDERS
AS AN ALTERNATIVE TO
AGGREGATE BASE COURSE ON THE SHOULDERS.

THE FINAL 2" OF SURFACE COURSE IS TO BE
PLACED AFTER ALL OTHER COURSES HAVE BEEN
PLACED. TRANSITIONAL JOINTS SHALL BE AT
LAME LINES.
NOTES:
REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

THE THICKNESS OF 48G BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIALS PLACED IN EXCESS OF THE TOLERANCE INDICATED.
STA 303+15.00
BEGIN SECTION 3
LOG MILE = 14.23

STA 307+40.00
END SECTION 3
END JOB 050012

LEGEND

DATE OF REVISION

REVISION

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING
SEQUENCE OF CONSTRUCTION

STAGE 1: CONSTRUCT DETOUR ON LEFT

STAGE 2: STRIP DETOUR ON LEFT AND MOVE TRAFFIC TO DETOUR ON LEFT
CONSTRUCT MAIN LANES ON RIGHT BETWEEN DETOUR TEE-INS AND MAIN LANES ON LEFT BETWEEN DETOUR TEE-INS

STAGE 3: MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON LEFT AND STRIPING AT DETOUR TEE-INS
FINISH CONSTRUCTION OF MAIN LANES ON LEFT AND RIGHT AT DETOUR TEE-INS

END OF JOB
INSTALL FINAL STRIPING

VERTICAL PANELS + REACH TRAFFIC DRUMS = 32 EACH

MAINTENANCE OF TRAFFIC NOTES:

TRAFFIC SHOULD BE MAINTAINED IN THE EXISTING LANES USING VERTICAL PANELS & 100' SPACING ON THE SIDE BEING WIDENED. AND TRAFFIC DRUMS & 100' SPACING ON THE SIDE BRING TO GRADE.

MAINTENANCE OF TRAFFIC DETAILS
SECTION 1: STAGE 1
SEQUENCE OF CONSTRUCTION

STAGE 1
Construct Detour on Right

STAGE 2
- Stripe Detour on Right and Move Traffic to Detour on Right
- Construct Main Lanes on Left for Length of Site and Main Lanes on Right Between Detour Tie-Ins

STAGE 3
- Move Traffic to Proposed Lanes and Remove Detour on Right and Striping at Detour Tie-Ins
- Finish Construction of Main Lanes on Right at Detour Tie-Ins

END OF JOB
Install Final Striping

MAINTENANCE OF TRAFFIC NOTES:

Traffic is to be maintained in the existing lanes using vertical panels & b ld spacing on the side being widened, and striping once widening is brought to grade.
MAINTENANCE OF TRAFFIC NOTES:

TRAFFIC IS TO BE MAINTAINED IN THE EXISTING LANE USING VERTICAL PANELS @ 50' SPACING ON THE SIDE BEING WIDENED. TRAFFIC DRUMS @ 100' SPACING ON THE SIDE BEING WIDENED IS Brought TO SHANE.

VERTICAL PANELS = 11 EACH
TRAFFIC DRUMS = 17 EACH

STA. 303+15.00 - BEGIN SECTION 3

STA. 307+40.00 - END SECTION 3
- END JOB 050012

SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
STRIP DETOUR ON RIGHT AND MOVE TRAFFIC TO DETOUR ON RIGHT
CONSTRUCT MAIN LANES ON LEFT AND ON RIGHT FOR LENGTH OF SITE

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON RIGHT AND STRIPING AT DETOUR TIE-INS

END OF JOB
INSTALL FINAL STRIPING

MAINTENANCE OF TRAFFIC DETAILS
SECTION 3: STAGE 1
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON LEFT

STAGE 2
STRIP DETOUR ON LEFT AND MOVE TRAFFIC TO DETOUR ON LEFT
CONSTRUCT MAIN LANES ON RIGHT BETWEEN DETOUR TIE-INS AND MAIN LANES ON LEFT BETWEEN DETOUR TIE-INS

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON LEFT AND STRIPING AT DETOUR TIE-INS
FINISH CONSTRUCTION OF MAIN LANES ON LEFT AND RIGHT AT DETOUR TIE-INS

END OF JOB
INSTALL FINAL STRIPING

STA. 101+00.00 - BEGIN
JOB 050012 - BEGIN SECTION 1

STA. 100+10.00 - END SECTION 1
- BEGIN JOB EXCEPTION

TRAFFIC DRUMS = 37 EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 2480 LIN. FT.
REMOVABLE CONST. PAVEMENT MARKINGS = 2240 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 2200 LIN. FT.
RAISED PAVEMENT MARKERS TY/YELLOW/YELLOW = 28 EA.
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
STRIP DETOUR ON RIGHT AND MOVE TRAFFIC TO DETOUR ON RIGHT
CONSTRUCT MAIN LAKES ON LEFT FOR LENGTH OF SITE AND MAIN LANES ON RIGHT BETWEEN DETOUR TE-INS

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON RIGHT AND TRACING AT DETOUR TE-INS
FINISH CONSTRUCTION OF MAIN LAKES ON RIGHT AT DETOUR TE-INS

END OF JOB
INSTALL FINAL STRIPING

TRAFFIC DRUMS: 28 EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS: 1500 LIN FT.
REMOVABLE CONVEYOR MARKINGS: 1700 LIN FT.
CONSTRUCTION PAVEMENT MARKINGS: 2400 LIN FT.
RAISED PAVEMENT MARKERS: 5 LIGHT 5 YELLOW/YELLOW: 26 EA.

MAINTENANCE OF TRAFFIC DETAILS
SECTION 2: STAGE 2
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
STRIP DETOUR ON RIGHT AND MOVE TRAFFIC TO DETOUR ON RIGHT
CONSTRUCT MAIN LANES ON LEFT AND ON RIGHT FOR LENGTH OF SITE

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON RIGHT AND STRIPING AT DETOUR TIE-INS

END OF JOB
INSTALL FINAL STRIPING

TRAFFIC DRUMS = 26 EACH
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 2000 LIN. FT.
REMOVABLE CONSTR. PAVEMENT MARKINGS = 500 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 3000 LIN. FT.
RAISED PAVEMENT MARKERS TY: YELLOW/YELLOW = 29 EA.
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON LEFT

STAGE 2
STRIP DETOUR ON LEFT AND MOVE TRAFFIC TO DETOUR ON LEFT
CONSTRUCT MAIN LANES ON RIGHT BETWEEN DETOUR TIE-INS AND MAIN LANES ON LEFT BETWEEN DETOUR TIE-INS

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON LEFT AND STRIPING AT DETOUR TIE-INS
FINISH CONSTRUCTION OF MAIN LANES ON LEFT AND RIGHT AT DETOUR TIE-INS

END OF JOB
INSTALL FINAL STRIPING

STA. 101+00.00 - BEGIN
JOB 050002 - BEGIN SECTION 1

STA. 110+10.00 - END SECTION 1
- BEGIN JOB EXCEPTION

STAGE 3
CONSTRUCTION PAVEMENT MARKINGS
ONE EDGE LINE + OBL CENTERLINE ON CL CONSTRUCTION
AT DETOUR TIE-IN LOCATIONS
= 2/80 IN. L/FT.
TRAFFIC DRUMS = 53 EACH

MAINTENANCE OF TRAFFIC DETAILS
SECTION 1: STAGE 3
STA. 205+60.00 - END SECTION 2
- BEGIN JOB EXCEPTION

 SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
stripe detour on right and move traffic to detour on right
construct main lanes on left for length of site and main lanes on right between detour tie-ins

STAGE 3
move traffic to proposed lanes and remove detour on right and striping at detour tie-ins
finish construction of main lanes on right at detour tie-ins

END OF JOB
install final striping

TRAFFIC DRUMS = 25 EACH
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
STRIP DETOUR ON RIGHT AND MOVE TRAFFIC TO DETOUR ON RIGHT
CONSTRUCT MAIN LAKES ON LEFT AND ON RIGHT FOR LENGTH OF SITE

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON RIGHT AND STRIPING AT DETOUR TE-INS

END OF JOB
INSTALL FINAL STRIPING

TRAFFIC DRUMS x 29 EACH

23 TRAFFIC DRUMS 50' o.c.

TRAFFIC DRUMS ON APPROACH

0.0500 JO 0.0750

STA 307+40.00 - END SECTION 3
- END JOB 05002

STA 303+15.00 - BEGIN SECTION 3
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON LEFT

STAGE 2
STRIPE DETOUR ON LEFT AND MOVE TRAFFIC TO DETOUR ON LEFT
CONSTRUCT MAIN LANES ON RIGHT BETWEEN DETOUR TIE-INS AND MAIN LANES ON LEFT BETWEEN DETOUR TIE-INS

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON LEFT AND STRIPING AT DETOUR TIE-INS
FINISH CONSTRUCTION OF MAIN LANES ON LEFT AND RIGHT AT DETOUR TIE-INS

END OF JOB
INSTALL FINAL STRIPING

END OF JOB
REFLECTORIZED PAINT MARKINGS
L.T. & R.T. EDGE LINES = 2220 LIN. FT., 4" WHITE
+ D.B.L. CENTERLINE = 2220 LIN. FT., 4" YELLOW
RAISED PAVEMENT MARKERS 40" O.C.
+ TYPE A1YEL/YEL ON CENTERLINE = 28 EACH

+ NOTE:
CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONES.
END OF JOB

REFLECTORIZED PAINT MARKINGS
- LT. & RT. EDGE LINES: 2040 LF, FT, 4" WHITE
- OBL. CENTERLINE: 2040 LF, FT, 4" YELLOW
RAISED PAVEMENT MARKERS 40" O.C.,
TYPE WHITE/YELLOW CENTERLINE: 26 EACH

* NOTE:
CONTACT MAINTENANCE DIVISION TO DETERMINE NO PASSING ZONES.

STA. 202+50.00
BEGIN SECTION 2

4" WHITE REFLECTORIZED PAVEMENT MARKING

STA. 205+60.00
END SECTION 2
BEGIN JOB EXCEPTION
SEQUENCE OF CONSTRUCTION

STAGE 1
CONSTRUCT DETOUR ON RIGHT

STAGE 2
STRIP DETOUR ON RIGHT AND MOVE TRAFFIC TO DETOUR ON RIGHT
CONSTRUCT MAIN LANES ON LEFT AND ON RIGHT FOR LENGTH OF SITE

STAGE 3
MOVE TRAFFIC TO PROPOSED LANES AND REMOVE DETOUR ON RIGHT AND STRIPING AT DETOUR TE-INS
END OF JOB
INSTALL FINAL STRIPING

REFLECTORIZED PAINT MARKINGS
LT. & RT. EDGE LINES = 2400 LIN. FT, 4" WHITE
• DBL.CENTERLINE = 2400 LIN. FT, 4" YELLOW
RAISED PAVEMENT MARKERS 40' O.C.
TYPE R16/YELLOW CENTERLINE + 30 EACH

* NOTE:
CONTACT MAINTENANCE DIVISION TO DETERMINE
NO PASSING ZONES.

STA. 307+40.00 - END SECTION 3
END JOB 050012
### ADVANCE WARNING SIGNS AND DEVICES

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGNS REQUIRED</th>
<th>VERTICAL PANELS</th>
<th>TRAFFIC DRUMS</th>
<th>BARRIACDES (TYPE B)</th>
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<tbody>
<tr>
<td>W00-1</td>
<td>ROAD WORK 1000 FT</td>
<td>6</td>
<td>6</td>
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<td>W00-2</td>
<td>ROAD WORK 1000 FT</td>
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<td>6</td>
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<td>W00-3</td>
<td>ROAD WORK 500 FT</td>
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<td>6</td>
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<td>O00-2</td>
<td>END ROAD WORK</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<tr>
<td>O00-3</td>
<td>ROAD WORK NEXT 6 MILES</td>
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<td>V1-AL</td>
<td>REVERSE CURVE LR</td>
<td>4</td>
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<td>W1-1R</td>
<td>ROAD CLOSED</td>
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<td>W1-2R</td>
<td>DEFL. MARK (MED)</td>
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<td>W1-3R</td>
<td>DEFL. MARK (LR)</td>
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<td>W1-4R</td>
<td>DEFL. MARK (RR)</td>
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<tr>
<td>W1-5R</td>
<td>LANE ASSWY</td>
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<td>V1-6R</td>
<td>CHEVRONS</td>
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<td>V1-7R</td>
<td>LANE ASSWY</td>
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### 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>REMOVAL OF PERMANENT PAVEMENT MARKINGS</th>
<th>REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS</th>
<th>REFLECTORIZED PAINT MARKERS</th>
<th>UNDERDRAIN OUTLET PROTECTORS</th>
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<td>REMOVAL OF PERMANENT PAVEMENT MARKINGS</td>
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<tr>
<td>CONSTRUCTION PAVEMENT MARKINGS</td>
<td>6300</td>
<td>6300</td>
<td>10000</td>
<td>5560</td>
<td>187</td>
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### CONCRETE DITCH PAVING

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<tr>
<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>LENGTH</th>
<th>DITCH PAVING</th>
<th>SOLID SODDING</th>
<th>WATER</th>
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<tbody>
<tr>
<td>106-50</td>
<td>106-50</td>
<td>LT. OF MAIN LANE</td>
<td>70.00</td>
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<td>68.53</td>
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<td>107-15</td>
<td>107-15</td>
<td>LT. OF MAIN LANE</td>
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<td>106-15</td>
<td>106-15</td>
<td>LT. OF MAIN LANE</td>
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<td>LT. OF MAIN LANE</td>
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<td>70.83</td>
<td>37.75</td>
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<td>106-15</td>
<td>LT. OF MAIN LANE</td>
<td>85.00</td>
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<td>54.23</td>
<td>24.44</td>
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<td>106-15</td>
<td>106-15</td>
<td>LT. OF MAIN LANE</td>
<td>85.00</td>
<td>7.5</td>
<td>45.23</td>
<td>24.44</td>
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<td>106-15</td>
<td>LT. OF MAIN LANE</td>
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<td>83.33</td>
<td>44.44</td>
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<td>LT. OF MAIN LANE</td>
<td>24.00</td>
<td>7.5</td>
<td>20.00</td>
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### DRIVEWAYS & TURNSOUTS

<table>
<thead>
<tr>
<th>STATION</th>
<th>SIDE</th>
<th>LOCATION</th>
<th>WIDTH</th>
<th>ACHM SURFACE COURSE (10&quot;)/200 LBS. PER SQ. YD. (PG 64-22)</th>
<th>AGGREGATE BASE COURSE (CLASS 7)</th>
<th>SIDE DRAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-75</td>
<td>LT.</td>
<td>SECTION 1</td>
<td>18</td>
<td>59.8</td>
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<tr>
<td>104-40</td>
<td>LT.</td>
<td>SECTION 1</td>
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<td>RT.</td>
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<td>206-15</td>
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<td>18</td>
<td>54.8</td>
<td>8.0</td>
<td>22.4</td>
</tr>
</tbody>
</table>

### QUANTITIES

- TOTALS: 39.4 102 28
- ACHM SURFACE COURSE (10")/200 LBS. PER SQ. YD. (PG 64-22) 94.6% MIN. AGGR. 5.4% ASPHALT BINDER
- MAXIMUM NUMBER OF CYLINDERS = 115 FOR PG 64-22
- NOTE: FOR C.R. PIPE CALVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
- NOTE: FOR C.M. PIPE CALVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
### Clearing and Grubbing

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Clearing</th>
<th>Grubbing</th>
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<tbody>
<tr>
<td>101+00</td>
<td>114+00</td>
<td>10</td>
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</tr>
<tr>
<td>201+00</td>
<td>210+00</td>
<td>9</td>
<td>9</td>
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<tr>
<td>300+00</td>
<td>311+00</td>
<td>11</td>
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<tr>
<td>Totals:</td>
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### Removal and Disposal of Items

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Coarse Culvert Signs</th>
<th>Each</th>
</tr>
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<tbody>
<tr>
<td>101+00</td>
<td>Lt. of Main Lanes</td>
<td>1</td>
<td>1</td>
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<tr>
<td>300+08</td>
<td>Ty X 24 R.C. Box Culvert</td>
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<td>Totals:</td>
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NOTE: STA. 101+00 R.C. BOX CULVERT TO BE PLUGGED AND ABANDONED

### Removal of Disposal of Fence

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Fence Lin. Ft.</th>
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<tbody>
<tr>
<td>107+42</td>
<td>110+50</td>
<td>4 STRAND BAR B. LT. OF MAIN Lanes</td>
</tr>
<tr>
<td>111+43</td>
<td>161+57</td>
<td>2 STRAND WEB. LT. OF MAIN Lanes</td>
</tr>
<tr>
<td>204+45</td>
<td>305+36</td>
<td>5 STRAND BAR B. LT. OF MAIN Lanes</td>
</tr>
<tr>
<td>300+00</td>
<td>306+68</td>
<td>1 STRAND BAR B. WEB RT. OF MAIN Lanes</td>
</tr>
<tr>
<td>301+10</td>
<td>312+10</td>
<td>1 STRAND BAR B. WEB RT. OF MAIN Lanes</td>
</tr>
<tr>
<td>303+10</td>
<td>307+30</td>
<td>5 STRAND BAR B. LT. OF MAIN Lanes</td>
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<tr>
<td>Totals:</td>
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<td>2363</td>
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### Cold Milling Asphalt Pavement

<table>
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<tr>
<th>Station</th>
<th>Location</th>
<th>Average Width</th>
<th>Cold Milling Pavement Sq. Yd.</th>
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<tbody>
<tr>
<td>101+00</td>
<td>103+00</td>
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<td>244.44</td>
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<tr>
<td>110+10</td>
<td>111+10</td>
<td>22</td>
<td>244.44</td>
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NOTE: AVERAGE MILLING DEPTH 12".

### Erosion Control Matting

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NOTE: QUANTITIES ESTIMATED.

### Flowable Select Material

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NOTE: QUANTITIES ESTIMATED.

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NOTE: QUANTITIES ESTIMATED.

### Earthwork

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SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SITE, AND FROM SURFACE CONDITIONS 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.

- AUGER REFRACT
- NP - NON-PLASTIC
- ND - NOT DETERMINED

### Quantities

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

SEE SECTION 104.09 OF THE STANDARD SPECIFICATIONS.
## FENCING

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## SELECTED PIPE BEDDING & BACKFILL

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* Denotes Alternate Bid Item.

## EROSION CONTROL

### PERMANENT EROSION CONTROL

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<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>ROCK DITCH CHECKS</th>
<th>SVT FENCE</th>
<th>SEDIMENT BASIN</th>
<th>OBILITERATION OF SEDIMENT BASIN</th>
<th>*SEDIMENT REMOVAL &amp; DISPOSAL</th>
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### TEMPORARY EROSION CONTROL

#### BASIS OF ESTIMATE

- LIME: 2 TONS/ACRE OF SEEDING
- WATER: 0.1023 M.G./ACRE OF SEEDING
- WATER: 20.4 M.G./ACRE OF TEMPORARY SEEDING
- ROCK DITCH CHECKS: 3 CU.YD./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.

*Quantities are estimated. See Section 104 of the Std. Specs.*

## STRUCTURES

### REINFORCED CONCRETE PIPE

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### FLARED END SECTIONS FOR R.C. PIPE CULVERTS

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### WATERS

- **1.2 GALL/SD. YD. OF SOLID SODDING**

#### NOTE

- For R.C. pipe culvert installations, use Type 2 bedding unless otherwise specified.
- For C.M. pipe culvert installations, use Type 2 bedding unless otherwise specified.

## QUANTITIES

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**Note:** Shown for information only. Bench marks shall be furnished and placed by State forces.

### PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

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

### BASE AND SURFACING

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<td>SECTION 1 TRANSITION</td>
<td>200.00</td>
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#### AGGREGATE BASE COURSE (CLASS 7)

<table>
<thead>
<tr>
<th>STATION</th>
<th>FEET</th>
<th>TON</th>
<th>£250</th>
<th>AVG. WDL</th>
<th>SQ.YD.</th>
<th>GALLON</th>
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</thead>
<tbody>
<tr>
<td>100+00</td>
<td>200</td>
<td>292.80</td>
<td>0.03</td>
<td>8.78</td>
<td>12.40</td>
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#### TACK COAT

<table>
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<th>AVG. WDL</th>
<th>SQ.YD.</th>
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<tbody>
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<td>200</td>
<td>292.80</td>
<td>0.03</td>
<td>8.78</td>
<td>12.40</td>
<td>330.00</td>
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#### ACHM Binder Course (1")

<table>
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<tr>
<th>STATION</th>
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<th>AVG. WDL</th>
<th>SQ.YD.</th>
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</thead>
<tbody>
<tr>
<td>100+00</td>
<td>200</td>
<td>292.80</td>
<td>0.03</td>
<td>8.78</td>
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#### ACHM Surface Course (1")

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<th>AVG. WDL</th>
<th>SQ.YD.</th>
<th>GALLON</th>
</tr>
</thead>
<tbody>
<tr>
<td>100+00</td>
<td>200</td>
<td>292.80</td>
<td>0.03</td>
<td>8.78</td>
<td>12.40</td>
<td>330.00</td>
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#### DETOUR

<table>
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<tr>
<td>400+50</td>
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#### ADDITIONAL FOR LEVELING

<table>
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<tr>
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<tbody>
<tr>
<td>105+00</td>
<td>SECTION 1 MAIN Lanes</td>
<td>100.00</td>
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#### METHOD OF GRADE RAISE

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<td>102+73</td>
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#### ADDITIONAL FOR SUPERELEVATION

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<th>LENGTH</th>
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<tr>
<td>105+16.5</td>
<td>SECTION 1 SUPERELEVATION</td>
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**Total Quantities**

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<th>Total</th>
<th>Gals.</th>
<th>Units</th>
<th>Tons</th>
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<tbody>
<tr>
<td>695.88</td>
<td>463.26</td>
<td>128.03</td>
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**Note:** Basis of estimate:
- ACHM Surface Course (1") - 94.8% Min. Aggr. 2.4% Asphalt Binder
- ACHM Binder Course (1") - 95.8% Min. Aggr. 2.4% Asphalt Binder

**Maximum Number of Gyration:** 115 for PG 64-22
STA. 202+50.00
BEGIN SECTION 2
LOG MILE 13.11

STA. 205+60.00
END SECTION 2
TYPE A

ENERGY DISSIPATORS

NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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

TYPE B

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

TOE WALL DETAIL FOR CONCRETE DITCH PAVING

GENERAL NOTES:
THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.
SOLID SDS ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS, THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH ARDM 203.

ARKANSAS STATE HIGHWAY COMMISSION
CONCRETE DITCH PAVING
STANDARD DRAWING CDP-1
### Metal Pipe Culvert Fill Heights & Bedding

**Corrugated Steel Pipe Round H-20 Loading**

**Corrugated Metal Pipe Round H-20 Loading**

**Corrugated Aluminum Pipe Round H-20 Loading**

<table>
<thead>
<tr>
<th>Material</th>
<th>Wall Thickness</th>
<th>Zinc-Center</th>
<th>Steel Thickness</th>
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<tbody>
<tr>
<td>Aluminum</td>
<td>0.010 in.</td>
<td>0.040 in.</td>
<td>0.010 in.</td>
</tr>
<tr>
<td>Steel</td>
<td>0.012 in.</td>
<td>0.042 in.</td>
<td>0.012 in.</td>
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</tbody>
</table>

**General Notes**

- **Construction Resilience:** The fill height and bedding shall be designed to withstand the specified loading conditions.
- **Moisture Management:** Ensuring moisture management is crucial to prevent corrosion and structural integrity.
- **Foundation Stability:** The foundation shall be stable and suitably reinforced to support the pipe's weight.

**Legend**

- **Legend:**
  - **A:** Main stream line
  - **B:** Contour line
  - **C:** Reference point
  - **D:** Pipe centerline
  - **E:** Foundation line

**Type Environment and Trench Installations**

- **Installation Procedures:** Follow the specified procedures to ensure correct installation and adherence to environmental regulations.
- **Material Handling:** Proper handling of materials to prevent damage and ensure quality.

---

**Note:** All dimensions are approximate and may vary based on specific site conditions and engineering calculations.
CONCRETE PAVEMENT  

BROKEN LINE STRIPING  

ASPHALT PAVEMENT  

SOLID LINE STRIPE ON CONCRETE PAVEMENT  

SOLID LINE STRIPE ON ASPHALT PAVEMENT  

ASPHALT PAVEMENT  

CONCRETE PAVEMENT  

STRIPING AT ADJACENT NO PASSING LANES  

CROSSWALK AND STOPBAR DETAILS  

NOTES:
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 710 OF THE STANDARD SPECIFICATIONS.
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIPE LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.
REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS 5 WITH A MINIMUM 28 DAY COMpressive STRENGTH OF 3000 PSI.
REINFORCING STEEL SHALL BE ASHMT M 32 OR M 51 GRADE 60.
CONSTRUCTION AND MATERIALS FOR WINGWALL DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBORDINATE TO THE BID ITEM "CLASS 5 CONCRETE".
MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDESWALLS 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 THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THE PEOPLE'S MANUAL OF STANDARD PRACTICE PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE. SUCH AS FIGURE 3 ON PAGE 7-4 OF THE OGS MANUAL SHALL BE MINUS 0.005 PLUS 0.03 INCH.
WEEP HOLES IN WINGWALLS, THE MAXIMUM HORIZONTAL SPACING OF WEEP HOLES IN WINGWALLS SHALL BE 6'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4'-0" DIAMETER OR 12" ABOVE TOP OF WINGWALL FOUNDING.
THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERSEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.

R.C. BOX CULVERT HEADWALL MODIFICATIONS

REINFORCED CONCRETE BOX CULVERT DETAILS

ARKANSAS STATE HIGHWAY COMMISSION

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

PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING W Alls

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

SECTION B-B
DETAILS FOR NEW 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 COMPUTED 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 COMPUTED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDENCY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

Longitudinal Section
Backfill Details for Box Culvert

Section A-A
Details Through Existing Channels

ARKANSAS STATE HIGHWAY COMMISSION

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

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

<table>
<thead>
<tr>
<th>Degree of Curve</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
<th>30%</th>
<th>35%</th>
<th>40%</th>
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<tbody>
<tr>
<td>Le (ft)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory Slope</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Abbreviations**
- N: Normal Crown
- R: Reverse Crown
- S: Superelevation at normal crown slope
- ST: Superelevation Transition
- T: Transition Length
- U: Unconnected Transition Length
- W: Width of Subgrade
- X: Maximum

**General Notes**
1. On pavement with two-way traffic, the superelevation shall be resolved on the inside pavement edge unless otherwise noted on the plans.
2. Superelevation values shown on the plans represent the minimum superelevation.
3. Lengths for T may be provided in multiples of 25 ft. or 50 ft.
4. Pavement wider than 2 lanes shall have additional transition length as follows:
   - 3 LANE UNDIVIDED: 125 ft.
   - 4 LANE UNDIVIDED: 165 ft.
   - 6 LANE UNDIVIDED: 245 ft.

**Formulas**
- **Superelevation Formula**: \[ S = \frac{R}{L} \]
- **Outside Subgrade Edge**: \[ G \text{ Profile} \]
- **Inside Subgrade Edge**: \[ G \text{ Profile} \]

**Standard Method When Superelevation Revolves Around Center Line**

**Standard Drawing SE-2**
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. PLACE PERIMETER CONTROLS (E.G., SILT FENCES, DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION

EXISTING GROUND
- INTERCEPTOR OR DIVERSION DITCH

NOTES:
- NUMBER OF PHASES WILL VARY,
- PHASES SHOWN FOR ILLUSTRATION
- HORIZONTAL LENGTH OF PHASES EXCEED 50 FEET

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

CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM PHASE 3 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING, STABILIZE DITCHES, CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, AND OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT

ALL EMBANKMENT SLOPES SHALL BE DREDGED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EMBANKED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. COMPLETE DIVERSION DITCHES/DITCH CHECKS, DREDGING, AND SEEDING, IN ACCORDANCE WITH DESIGN REQUIREMENTS.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
4. PLACE PHASE 3 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING.
5. PLACE PHASE 4 EMBANKMENT WITH PERMANENT SEEDING.

THE EMBANKMENT OWNER SHALL MAINTAIN THE EMBANKMENT UNTIL THE ENTIRE EMBANKMENT IS STABILIZED.

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3
**TYPE C FENCE (WOOD POSTS)**

- **ANKOR PLATE**
- **LINE POST**
- **CONCRETE**
- **NOTES**: STEEL LINE POSTS SHALL BE 6'-0" MINIMUM LENGTH.

**TYPE C FENCE (STEEL POSTS)**

- **4 STRANDS BARED WIRE (0.1)**
- **5 STRANDS BARED WIRE (0.05)**
- **6 STRANDS BARED WIRE (0.03)**

**GROUND LINE**

- **LINE POSTS**
- **3-MAIL CORNER POSTS**
- **GATES POSTS**

**NOTES**: SPACING AND SIZE (EXCEPT LENGTHS OF POSTS, APPROACH SPANS, FULL POST ASSEMBLY, AND CORNER BRACING FOR TYPE D FENCE) SHALL CONFORM TO THE SPECIFIED STYLES ON WOOD POSTS AND APPROVED PATTERN ON STEEL POSTS.

**GENERAL NOTES**

STANDARD FENCES SHALL BE CONSTRUCTED AS PER THE DRAWING SPECIFICATIONS. POSTS AND RAILS SHALL BE MADE FROM STEEL OR WOOD, PREVIOUSLY APPROVED AND ACCEPTABLE TO THE ENGINEER. LENGTH OF TUBULAR OR WOODEN POSTS SHOWN ON DRAWING SHEET.

THE CONTRACTOR SHALL PROVIDE AT LEAST TWO TYPICAL LINE POSTS OF 7'-0" LENGTH IN EVERY CROSSING, AT EACH ENTRANCE AND EXIT, OR AT ENTRANCE AND EXIT OF THE GATEWAY. THE CONTRACTOR SHALL ALSO PROVIDE AT LEAST TWO TYPICAL POSTS OF 7'-0" LENGTH IN EVERY CROSSING, AT EACH ENTRANCE AND EXIT, OR AT ENTRANCE AND EXIT OF THE GATEWAY. THE CONTRACTOR SHALL PROVIDE AT LEAST TWO TYPICAL POSTS OF 7'-0" LENGTH IN EVERY CROSSING, AT EACH ENTRANCE AND EXIT, OR AT ENTRANCE AND EXIT OF THE GATEWAY.

**ARIZONA STATE HIGHWAY COMMISSION**

**WIRE FENCE TYPE C AND D**

**STANDARD DRAWING WF-4**

- **WIRE FENCE**
- **TYPICAL VEHICULAR GATES**
- **INTERIM TYPE**

The method of securing gate latch and/or lock shall meet the approval of the engineer.
### General Notes:
- Dimensions shown are in feet and inches.
- All distances shown are for reference only and should be verified by actual survey.
- All sections are to be constructed as shown in the drawing.
- All materials shall conform to the specifications of the Arkansas State Highway Commission.
- All work shall be performed in accordance with the approved plans and specifications.

### Design Data:
- **Design Load:**
  - U.S. Army Corps of Engineers Load Code 3/120: 1000 psf
  - Military Load

### Reinforced Concrete Box Culverts:
- **Materials:**
  - 4-inch corrugated spring: 3:120:12 slopes
  - Quadruples: Under 24" cover
- **Standard Drawing:** No. R-6002-2

### REVISED CONCRETE BOX CULVERTS

### ARKANSAS STATE HIGHWAY COMMISSION

### DETAILS OF STANDARD BARRIER SECTIONS

### REINFORCED CONCRETE BOX CULVERTS
- 4-inch corrugated springs: 3:120:1 slopes
- Quadruples: Under 24" cover
- Standard Drawing No. R-6002-2

---

### Table Content

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Material Type</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
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<tbody>
<tr>
<td>1</td>
<td>Barrier Section</td>
<td>Reinforced Concrete</td>
<td>100 ft</td>
<td>8 ft</td>
<td>4 ft</td>
</tr>
<tr>
<td>2</td>
<td>Barrier Section</td>
<td>Reinforced Concrete</td>
<td>200 ft</td>
<td>10 ft</td>
<td>5 ft</td>
</tr>
<tr>
<td>3</td>
<td>Barrier Section</td>
<td>Reinforced Concrete</td>
<td>300 ft</td>
<td>12 ft</td>
<td>6 ft</td>
</tr>
</tbody>
</table>

---

### Diagram Details

- **Part Length/Diagram Section:**
  - Diagram showing the layout of the culverts with dimensions and materials.
  - Notes: The dimensions shown are to be used in conjunction with Standard Drawing No. R-6002-2.

---

### Notes
- The diagram and table data are provided for planning and construction purposes.
- All work shall be performed in accordance with the approved plans and specifications.
- All distances shown are for reference only and should be verified by actual survey.
- All materials shall conform to the specifications of the Arkansas State Highway Commission.