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

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

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### 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 APPARATUS 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. MAIL BOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED. ALL TREES NOT TO BE REMOVED SHALL BE HANDLED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIIN LIVESTOCK.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EROSION.
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 TO THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR’S EXPENSE.
10. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY ORDER AS APPROVED BY THE RESIDENT ENGINEER.
HWY. 350 - FULL DEPTH SECTION
STA. 402+00.00 TO STA. 409+36.00
STA. 409+83.00 TO STA. 417+11.00

NOTES:

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.

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.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAI.

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

WITH 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.

TYPICAL SECTIONS OF IMPROVEMENT
NOTES:

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.

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.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN Laid.

LONSDAL JOINTS SHALL BE AT LANE LINES.

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.

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACVM SURFACE COURSE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
Hwy. 350 - Notch and Widen Section Left

NOTES:
- 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.
- 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.
- The final 2" of surface course is to be placed after all other courses have been laid. Longitudinal joints shall be at lane lines.
- 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.
- With approval of the engineer, the contractor will be allowed to substitute, at no additional cost to the department, the first lift of aggregate surface course 1/2" in lieu of aggregate base course on the shoulders.

Typical Sections of Improvement
NOTES:

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.

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.

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

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACIM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
TYPICAL SECTIONS OF IMPROVEMENT - DETOUR ROAD
STA. 16+06.10 - STA. 16+82.58

DETAIL FOR TRANSITIONS

DETAIL OF SILT FENCE
AT R.C. BOX

DETAIL OF SILT FENCE
AT CROSS DRAINS

SECTION OF APPROACH SLAB

AGGREGATE BASE COURSE (CLASS 7)
VARIABLE - 6" W/M. COMPACTED DEPTH

- SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SPECIAL DETAILS
### MID-SECTION

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- **Wt. Per Lap Required**
- **Min. Bar Dia.**
- **Reinforcing Steel**
- **Top Slab Distribution**
- **Side Wall Distribution**
- **Bottom Slab Distribution**
- **Interior Wall Distribution**

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- **Top Slab Reinforcing Steel**
- **Bottom Slab Reinforcing Steel**
- **Side Wall Reinforcing Steel**
- **Interior Wall Reinforcing Steel**

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- **Top Slab Distribution**
- **Bottom Slab Distribution**
- **Side Wall Distribution**
- **Interior Wall Distribution**

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- **Additional Notes**
- **Top Slab**
- **Bottom Slab**
- **Side Wall**
- **Interior Wall**

### MID-SECTION

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- **Top Slab Distribution**
- **Bottom Slab Distribution**
- **Side Wall Distribution**
- **Interior Wall Distribution**

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**SPECIAL DETAILS**

**Details of R.C. Box Culvert**

**Sta. 306+50.50**

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**Sheet 1 of 2**

**Details of R.C. Box Culvert**

**Double Barrel Box Culvert**

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**Actual Fill Depth**

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**Data shown for Mid-Section, Slope Sections, and Skewed End Section are based on the design fill depth shown in Table 1.**
The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
DOUBLE BARREL BOX CULVERT
Sta. 306+50.50

SPECIAL DETAILS
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.

**TYPICAL SECTION M-M**

**PART LONGITUDINAL SECTION**
Non-Skewed End

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

**LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS**
Top Slab Same, Bottom Slab Same

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

**TYPICAL KEYWAY DETAIL**
(See Construction Notes)

**SKEWED END SECTION DETAILS**
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF SINGLE BARREL R.C. BOX CULVERT
SPECIAL DETAILS
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
LEGEND

- Sand bag ditch checks
- Rock ditch checks
- Drop inlet silt fence
- Silt fence

NOTE: Perimeter controls shall be placed as clearing and grubbing operations are started.
CLEARING AND GRUBBING STAGE - SITE 3
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

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NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
STA. 394+78.40
BEGIN SITE 4

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

LEGEND
- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DROP INLET SLT FENCE
- SLT FENCE

REVISIONS

DATE OF REVISION
REVISION

STA. 424+06.10
END SITE 4

CLEARING AND GRUBBING STAGE - SITE 4
TEMPORARY EROSION CONTROL DETAILS
STA. 500+98.84
BEGIN SITE 5

LEGEND

- + SAND BAG DITCH CHECKS
- + ROCK DITCH CHECKS
- + DROP INLET SILT FENCE
- = SILT FENCE

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

STA. 517+00.00
END SITE 5

CLEARING AND GRUBBING STAGE - SITE 5
TEMPORARY EROSION CONTROL DETAILS
STA 100+75.63
BEGIN JOB 110574
BEGIN SITE

LEGEND
- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DROP INLET SILT FENCE
- SILT FENCE

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

STA 120+30.79
END SITE 1

TEMPORARY EROSION CONTROL DETAILS
LEGEND

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

- = SAND BAG DITCH CHECKS
- = ROCK DITCH CHECKS
- = DROP INLET SILT FENCE
- = SILT FENCE

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

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STA. 305+50.00
BEGIN SITE 3

STA. 309+80.00
END SITE 3

STAGE I - SITE 3
TEMPORARY EROSION CONTROL DETAILS
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
STA. 500+98.84
BEGIN SITE 5

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

LEGEND

- = SAND BAG DITCH CHECKS
0 = ROCK DITCH CHECKS
0 = DROP INLET SILT FENCE
00 = SILT FENCE

DATE OF REVISION
REVISION

STA. 517+00.00
END JOB 110574
END SITE 5

STAGE 1 - SITE 5
TEMPORARY EROSION CONTROL DETAILS
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DROP INLET SILT FENCE
- SILT FENCE

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

DATE OF REVISION
REVISION

TEMPORARY EROSION CONTROL DETAILS

STA. 202+51.81
BEGIN SITE 2

STA. 221+14.80
END SITE 2

STAGE 2 - SITE 2
LEGEND

- Sand Bag Ditch Checks
- Rock Ditch Checks
- Drop Inlet Silt Fence
- Silt Fence

NOTE: Perimeter Controls shall be placed as clearing and grubbing operations are started.

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STAGE 2 - SITE 3
TEMPORARY EROSION CONTROL DETAILS
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DRAIN INLET SLT FENCE
- SLT FENCE

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

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STA. 394+78.40
BEGIN SITE 4

STA. 424+06.10
END SITE 4

TEMPORARY EROSION CONTROL DETAILS
STA. 100+75.63
BEGIN JOB 110574
BEGIN SITE 1

STA. 120+30.79
END SITE 1

LEGEND
1. = Sand bag ditch checks
2. = Rock ditch checks
3. = Drop inlet silt fence
4. = Silt fence

NOTE: Perimeter controls shall be placed as clearing and grading operations are started.
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DROP INLET SLT FENCE
- SILT FENCE

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

- Sand Bag Ditch Checks
- Rock Ditch Checks
- Drop Inlet Silt Fence
- Silt Fence

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

REVISIONS

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STAGE 3 - SITE 3
TEMPORARY EROSION CONTROL DETAILS
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- DROP INLET SILT FENCE
- SILT FENCE

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

STAGE 3 - SITE 4
TEMPORARY EROSION CONTROL DETAILS
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
SITE 1

STAGE 1

INSTALL ADVANCE WARNING SIGNS AS SHOWN, INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVeways.

CONSTRUCT BRIDGE NO. 01446 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2

M AINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 1 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2’ LIFT OF SURFACE COURSE, INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 2

STAGE 1

INSTALL ADVANCE WARNING SIGNS AS SHOWN, INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVeways.

CONSTRUCT BRIDGE NO. 01445 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2

M AINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 2 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2’ LIFT OF SURFACE COURSE, INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 3

STAGE 1

INSTALL ADVANCE WARNING SIGNS AS SHOWN, INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVeways.

CONSTRUCT DETOUR ROADWAY FROM STA. 323+97.82 AS SHOWN ON STAGE 1 - SITE 3 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2

M AINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS AND STRIPING AS SHOWN ON STAGE 2 - SITE 3 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO DETOUR.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

SITE 4

STAGE 1

INSTALL ADVANCE WARNING SIGNS AS SHOWN, INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVeways.

CONSTRUCT BRIDGE NO. 01446 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2

M AINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 4 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2’ LIFT OF SURFACE COURSE, INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 5

STAGE 1

INSTALL ADVANCE WARNING SIGNS AS SHOWN, INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVeways.

CONSTRUCT BRIDGE NO. 01445 AND PROPOSED ROADWAY THROUGH THE FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2

M AINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 5 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2’ LIFT OF SURFACE COURSE, INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.
STAGE I

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07444 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STA. 100 + 75.63
BEGIN JOB 110574
BEGIN SITE 1

STA. 120 + 30.79
END SITE 1

MAINTENANCE OF TRAFFIC DETAILS
INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND THE NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07445 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE. REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.
MAINTENANCE OF TRAFFIC DETAILS

STAGE I - SITE 3

STA. 305+50.00
BEGIN SITE 3

STA. 309+80.00
END SITE 3

STAGE II

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVETWAYS.

CONSTRUCT DETOUR FROM STA. 302+03.77 TO STA. 302+03.82 AS SHOWN ON STAGE I - SITE 3 MAINTENANCE OF TRAFFIC DETAILS.
STA. 394+78.40 BEGIN SITE 4

STA. 424+06.10 END SITE 4

STAGE I

MAINTENANCE OF TRAFFIC DETAILS

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY ORIGINATIONS.

CONSTRUCT BRIDGE NO. 07446 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE. REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

MAINTENANCE OF TRAFFIC DETAILS

STAGE II

CONSTRUCTION
STA. 500+98.84
BEGIN SITE 5

STA. 517+00.00
END JOB NO. 110574
END SITE 5

STAGE 1 - SITE 5
MAINTENANCE OF TRAFFIC DETAILS

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07447 AND PROPOSED ROADWAY THROUGH THE FIRST LAYER OF SURFACE COURSE, REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.
STA. 100+75.63
BEGIN JOB 110574
BEGIN SITE 1

STA. 120+30.79
END SITE 1

STAGE 2: MAINTAIN ADVANCE WARNING SIGNS, INSTALL TRAFFIC DRUMS AND STRIPING AS SHOWN ON STAGE 2 - SITE MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO PROPOSED ROADWAY.
FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.
MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.
STAGE 2

MAINTENANCE OF TRAFFIC DETAILS

STAGE 2:

- CONSTRUCT ROAD CLOSED MARKINGS - WHITE and PAVEMENT
- CONSTRUCT ROAD CLOSED MARKINGS - DOUBLE YELLOWS
- INSTALL 16' BARRIERS - TYPE IIIB OR TYPE IIILT
- INSTALL ROAD CLOSED SIGNS

FINAL:"n
- LIFT OF ROAD WORK AS SHOWN ON STAGE 2 - SITE 2 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.
- FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.
- MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 3" LIFT OF SURFACE COURSE, INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 2 MAINTENANCE OF TRAFFIC DETAILS

05/11/2009

DRAWN BY: R. ROY
REVISION: 43, 176

84-44-64

11/01/2009

STAGE 2:

- MAINTAIN ADVANCE WARNING SIGNS, TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 2 MAINTENANCE OF TRAFFIC DETAILS, SHIFT TRAFFIC ONTO PROPOSED ROADWAY.
- MAINTAIN ROAD CLOSED AND ROAD CLOSED SIGNS
- MAINTAIN ROAD CLOSED MARKINGS - WHITE and PAVEMENT
- MAINTAIN ROAD CLOSED MARKINGS - DOUBLE YELLOWS
STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS, INSTALL TRAFFIC DRUMS AND STRIPING AS SHOWN ON STAGE 2. SITE 3 MAINTENANCE OF TRAFFIC DETAILS.

SHIFT TRAFFIC ONTO DETOUR.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT 12' X 7' X 8' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 305+50.00.

NOTCH AND WIDEN EXISTING ROADWAY FROM STA. 305+50.00 TO STA. 309+80.00.
STA. 394+78.40
BEGIN SITE 4

STA. 424+06.10
END SITE 4

STAGE 2 - SITE 4
MAINTENANCE OF TRAFFIC DETAILS

STAGE 2:

- Maintain advance warning signs, traffic drums, and striping as shown on Stage 2 - Site 4 maintenance of traffic details. Shift traffic onto proposed roadway.
- Finish slopes and remove existing bridge structure.
- Mill out the transitions at both ends of the job and place final lift of surface course. Install permanent pavement markings as shown in the permanent pavement markings details.

SITE 4: MAINTENANCE OF TRAFFIC DETAILS

- Road closed
- Traffic drums
- Vertical panels
- Construction pavement markings
- Existing rows
-.Prop. rows
- Vertical panels
- Traffic drum
- Construction limits
- Vertical panels
- Construction pavement markings
- Existing rows
- Prop. rows
- Vertical panels
- Traffic drum
- Construction limits
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- Construction limits
- Vertical panels
STA. 500+98.84
BEGIN SITE 5

STA. 507+00.00
END JOB 110574
END SITE 5

STAGE 2:
MAINTAIN ADVANCE WARNING SIGNS, TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 5 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

FINISH SLOPES AND REMOVE EXISTING BRIDGE STRUCTURE.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.
STAGE 3 - SITE 3
MAINTENANCE OF TRAFFIC DETAILS

STAGE 3c
DETER DETOUR AND INSTALL CONCRETE DITCH PAVING AS SHOWN ON STAGE 3 - SITE 3 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC BACK ONTO EXISTING ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.
The yellow striping quantity has been estimated based on a double yellow centerline stripe for the entire project. The project must be marked for passing/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.
### Construction Paving Markings and Permanent Paving Markings

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**Note:** This is a low traffic volume road as defined in Section 840.40, Standard Specifications for Highway Construction.

The project must be marked for 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 (BOX 1 OF 3)

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**Note:** This is a low traffic volume road as defined in Section 604.03, Standard Specifications for Highway Construction.

**Summary:**
- Total Signs Required: 511.0
- Traffic Drums: 55
- Bariacades (Type III): 129, 120

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<td></td>
<td>TYPE II BARRICADE-LT (16”)</td>
<td>1</td>
<td>1</td>
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<td>1</td>
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<td>1</td>
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</table>

**Quantities**

| SUBTOTALS (BOX 2 OF 3) | 540.0 | 45 | 84 | 128 | 128 |

Note: This is a low traffic volume road as defined in Section 604.03, Standard Specifications for Highway Construction.
## Advance Warning Signs and Devices (Box 3 of 3)

<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>Maximum Number Required</th>
<th>Total Signs Required</th>
<th>Vertical Panels</th>
<th>Traffic Drums</th>
<th>Barricades (Type B)</th>
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<tbody>
<tr>
<td>V00-1</td>
<td>Road Work 1000 F.T.</td>
<td>48&quot; x 48&quot;</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
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<td>2</td>
<td>22</td>
<td>6</td>
<td>44</td>
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<td>O20-2</td>
<td>End Road Work</td>
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<td>1</td>
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<td>1</td>
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<td>8</td>
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<td>R11-2</td>
<td>Road Closed</td>
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<td>W1-6</td>
<td>Large Arrow</td>
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<td>R4-1</td>
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<td>10</td>
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<td>V02-5a</td>
<td>Right Shoulder Closed</td>
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<td>2</td>
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<td>V08-1</td>
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<td>6</td>
<td>44</td>
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**Note:** This is a low traffic volume road as defined in Section 864-D1 Standard Specifications for Highway Construction.
### GUARDRAIL

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<tr>
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<th>STATION</th>
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<th>GUARDRAIL (TYPE B)</th>
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<td>SITE 1</td>
<td>107+82.45</td>
<td>HWY 350 ON RT.</td>
<td>150</td>
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<td>1</td>
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<td>509+90.98</td>
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### CONCRETE DITCH PAVING

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<th>LENGTH</th>
<th>&quot;W&quot;</th>
<th>CONC DITCH PAVING TYPE B</th>
<th>SOLID SODDING</th>
<th>WATER</th>
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<tbody>
<tr>
<td>SITE 1</td>
<td>300+14.31</td>
<td>HWY 350 - SITE 3</td>
<td>99.92</td>
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<td>300-00.77</td>
<td>HWY 350 - SITE 3</td>
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<td>7.00</td>
<td>45.20</td>
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<td>300+01.31</td>
<td>HWY 350 - SITE 3</td>
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<td>7.00</td>
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### REMOVAL AND DISPOSAL OF ITEMS

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<tr>
<th>STATION</th>
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<th>FENCE</th>
<th>GATES</th>
<th>CATTLE GUARD</th>
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<tr>
<td>SITE 1</td>
<td>109+52</td>
<td>LT HWY 350 SITE 1</td>
<td>109+41</td>
<td>110+40</td>
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<tr>
<td>SITE 2</td>
<td>202+70</td>
<td>LT HWY 350 SITE 2</td>
<td>201+70</td>
<td>201+79</td>
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<td>SITE 3</td>
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<td>LT HWY 350 SITE 3</td>
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### REMOVALS AND EXCAVATIONS

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<th>PIPE CULVERT ALTERNATES</th>
<th>SOLID SODDING</th>
<th>WATER</th>
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<tbody>
<tr>
<td>SITE 1</td>
<td>104+57</td>
<td>26&quot; X 56&quot; PIPE CULVERT</td>
<td>56</td>
<td>60</td>
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<tr>
<td>SITE 2</td>
<td>207+75</td>
<td>24&quot; X 102&quot; PIPE CULVERT</td>
<td>103</td>
<td>105</td>
<td>2</td>
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<tr>
<td>SITE 3</td>
<td>11+75</td>
<td>22&quot; X 14&quot; X 28' TEMP. PIPE CULVERT</td>
<td>28</td>
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<td>13+75</td>
<td>25&quot; X 14&quot; X 28' TEMP. PIPE CULVERT</td>
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<td>15+40</td>
<td>18&quot; X 32' TEMP. PIPE CULVERT</td>
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<td>16+63</td>
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### QUEUES

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<th>LOCATION</th>
<th>AVG. WIDTH</th>
<th>COLD MILLING ASPHALT PAVEMENT</th>
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### FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
| STATION | STATION | LOCATION | PERMANENT EROSION CONTROL | SEEDING | LIME | MULCH | WATER | SECOND SEEDING APPLICATION | MULCH | WATER | WAFFLE (2FT) DITCH CHECKS | 16" FILTER CHECKS | SAND BAG DITCH CHECKS | ROCK DITCH CHECKS | TRANQUILIZER SILT DIKE | SILT FENCE | SEDIMENT BASIN | OBLITERATION OF SEDIMENT BASIN | SEDIMENT REMOVAL & DISPOSAL |
|---------|---------|==========|---------------------------|----------|------|-------|-------|-----------------------------|-------|-------|---------------------------|-----------------|-------------------|-------------------|-----------------|-------------|-------------|---------------------------|------------------|
| HYW 335 SITE 1 | 100-150 | 120-31 | CLEARING AND GRUBBING / STAGE 1 | 8.00 | 8.00 | 104.4 | 27 | 950 | 39 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| HYW 335 SITE 2 | 200-150 | 221-15 | CLEARING AND GRUBBING / STAGE 1 | 6.82 | 6.82 | 139.1 | 67 | 259 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 |
| HYW 335 SITE 3 | 300-150 | 309-60 | CLEARING AND GRUBBING / STAGE 1 / DETOUR | 2.46 | 2.46 | 50.2 | 12 | 153 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| HYW 335 SITE 4 | 400-150 | 421-06 | CLEARING AND GRUBBING / STAGE 1 | 2.00 | 2.00 | 186.6 | 33 | 203 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| HYW 335 SITE 5 | 500-150 | 517-00 | CLEARING AND GRUBBING / STAGE 1 | 6.98 | 6.98 | 121.6 | 21 | 897 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| HYW 335 SITE 6 | 600-150 | 617-00 | CLEARING AND GRUBBING / STAGE 1 | 1.90 | 1.90 | 183.6 | 15 | 491 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| TOTALS | | | | 14.01 | 28.01 | 1022.0 | 14.01 | 43.26 | 43.26 | 682.5 | 353 | 2093 | 604 | 2093 | 1171 | 1090 | 1090 | 683 |

**Basis of Estimate:**
- 2 TONS / ACRE OF SEEDING
- LIME: 102.0 LB. / ACRE OF SEEDING
- WATER: 21.4 M.G. / ACRE OF TEMPORARY SEEDING
- WAFFLE DITCH CHECKS: 8 LIN. FT. / LOCATION
- SAND BAG DITCH CHECKS: 20 SAGS / LOCATION
- ROCK DITCH CHECKS: 3 CU.YD. / LOCATION

**Quantities Estimated:**
See Section 104.03 of the 3rd Spec.
EROSION CONTROL MATING

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TOTAL: 6994.44

NOTE: AVERAGE WIDTH IS 8'-0"

SOIL LOG

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<tbody>
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<td>90 50 48.70</td>
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<td>17</td>
<td>A-5(12)</td>
<td>BROWN</td>
</tr>
</tbody>
</table>

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 any deviations in the soil characteristics and/or extent of same differing from the above tabulations.

MAILBOXES

<table>
<thead>
<tr>
<th>LOCATION</th>
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<tbody>
<tr>
<td>HWY 350 - SITE 1</td>
<td>3</td>
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<tr>
<td>HWY 350 - SITE 2</td>
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<td>HWY 350 - SITE 3</td>
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TOTALS: 8

BENCH MARKS

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<tr>
<td>HWY 350 - SITE 3</td>
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TOTALS: 5

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

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<tr>
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TOTAL AVG. DEPTH IS 9".

4" PIPE UNDERDRAIN

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TOTALS: 2500

NOTE: QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STD. SPECS.
### Rumble Strips in Asphalt Shoulders

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<td>102+64</td>
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<td>111+05</td>
<td>114+22</td>
<td>HWY 350</td>
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### Driveways & Turnouts

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<th>LOCATION</th>
<th>WIDTH</th>
<th>AC/SHM Surface Course (1/2&quot;) 298 Lbs/Sq. Yd. Per Sq. Yd. (Pg 64-22)</th>
<th>AGGREGATE BASE COURSE (Class 7)</th>
<th>SIDE DRAINS</th>
<th>STANDARD DRAWINGS</th>
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<td>SITE 1</td>
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<td>16</td>
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<td>44.77 4.92 27.47</td>
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### Quantities

- **Total:** 1832.17 201.38 2485.10 720 184 160

**Basis of Estimate:**
1. AC/SHM Surface Course (1/2")...
2. 84.7% Min. Agg.
3. 53.7% Asphalt Binder
4. Maximum number of quantities = 115 for PG 64-22

**Note:** For R.C. Pipe Culvert Installations use type 3 bedding unless otherwise specified.
<table>
<thead>
<tr>
<th>STATION</th>
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<th>BASE AND SURFACING</th>
<th>VOLUME OF MATERIAL (TON)</th>
<th>AVG. VOLUME (CM)</th>
<th>VOLUME OF MATERIAL (TON)</th>
<th>AVG. VOLUME (CM)</th>
<th>VOLUME OF MATERIAL (TON)</th>
<th>AVG. VOLUME (CM)</th>
<th>VOLUME OF MATERIAL (TON)</th>
<th>AVG. VOLUME (CM)</th>
<th>VOLUME OF MATERIAL (TON)</th>
<th>AVG. VOLUME (CM)</th>
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<td>10.62</td>
<td>0.55</td>
<td>10.62</td>
<td>0.55</td>
<td>10.62</td>
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<tr>
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**Quantities:**

The quantities were calculated using the specified asphalt rates. Refer to TxDOT-114-11 for the residual asphalt application rates.
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<td>207</td>
<td>CU.YD</td>
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<td>CU.YD</td>
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**TOTALS FOR BRIDGE NO. 110574**

- Steel shell piles shall conform to ASTM A520, Grade 3, 1"+ 45,000 psi.
- Existing Bridge No. W2931 (Job Mile 5.941 to 23.3, 120.0' Clear Roadway) and 57' Long and consists of a concrete deck and timber subdeck on timber beams supported by timber pile bents. The existing bridge is to be removed.
- Remnant timber piling from a previous structure shall also be removed. Removal of remnant timber piling shall be to a depth of 2' below subgrade or final ground surface. All work shall be considered sub-grade to the item "Removal of existing bridge structure (Site No. 1)". All material, including additional debris, from the existing bridge and previous structure shall become the property of the contractor.
<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
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<td>202</td>
<td>CLEANING</td>
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<td>STATION</td>
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<tr>
<td>203</td>
<td>REMOVAL AND DISPOSAL OFF FIRE</td>
<td>450</td>
<td>LN, FT</td>
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<tr>
<td>204</td>
<td>REMOVAL OF DISPOSAL OF GATES</td>
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<td>205</td>
<td>REMOVAL OF DISPOSAL OF CATTLE GUARD</td>
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<td>212</td>
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**SUMMARY OF QUANTITIES**

**REVISIONS**

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</table>
STA. 305+50.00  
BEGIN SITE 3

STA. 309+80.00  
END SITE 3

SURVEY CONTROL DETAILS
STA. 500+98.84
BEGIN SITE 5

STA. 517+00.00
END JOB 110574
AND SITE 5

SURVEY CONTROL DETAILS
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 103+75.63 BEGN. SUPERELEVATION
STA. 103+73.28 MAX. SUPERELEVATION 10.00% / 1
STA. 103+70.75 END SUPERELEVATION

STA. 105+20.75 BEGN. SUPERELEVATION
STA. 105+19.76 MAX. SUPERELEVATION 10.00% / 1
STA. 105+20.76 END SUPERELEVATION

NOTE:
This stream is classified as a perennial stream, the stream bank elevation is 2.04 ft. MSL between stations 105+20.76 and 105+23.14 refer to section 4.0460 of the 2014 standard specifications.
CONSTRUCT APPROACH: 20 CU. YDS.

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

STA. 120+3.07 END SUPERELEVATION

END SITE 1
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
Refer to survey control detail sheets for horizontal and vertical control data.
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 394+78.40
BEGIN SITE 4
STA 420+56.06
P.I. 0+378.17
E 0+409.30
C: 1000
S: 4.5
P.C. 420+06.00
P.T. 420+06.00

Refer to survey control detail sheets for horizontal and vertical control data.

Hwy. 350 - Site 4

STA 424+06.10
END SITE 4

K = 454.55
H.C. = 207
E. C. = 0.29

Refer to survey control detail sheets for horizontal and vertical control data.

Hwy. 350 - Site 4
STA. 516+03 IN PLACE
INSTALL 60 X 32 PIPE CULVERT
L.T. DBO DRAW
CONSTRUCT APPROACH = 30 CU. YDS.

STA. 516+17 IN PLACE
INSTALL 60 X 32 PIPE CULVERT
L.T. DBO DRAW
REMOTE AND INSTALL
CONSTRUCT APPROACH = 25 CU. YDS.

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

STA. 517+00.00
END SITE 5
AND JOB 110574

HWY. 350 - SITE 5

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
TYP. HALF-SECTION THROUGH ROADWAY NEAR BRIDGE ENDS

Dross I Protective Surface Treatment shall be applied to the roadway surface and to the roadway face & top of the Concrete Poropet Rail.

$\frac{1}{2}$" x $\frac{1}{2}$" Type 3 or 4 joint sealers. Subsections 5B0.09(b) and 5D0.05(b) Backer Rod filler will not be required. Joint sealers shall be measured and paid for. Do not specify Concrete Bases. Joint sealers shall extend to the outside edge of the deck slab. Sub joints shall be made by the following procedures are removed and before the pour is started. Joint sealers are to be used. They shall be keyed as soon as the concrete has sufficient set to allow sawing of the joint without damage to the slab. Sub joints shall be placed at all pouring sequence contraction joints and required sub joint locations. Sub joints shall align with pour joint openings.

$\frac{1}{2}$" Rounding

$\frac{1}{4}$" min. Bearing Pad (due to cost)

Optional Construction Joint

$\frac{1}{4}$" min. Bearing Pad (due to cast)

No Scale

DETAIL A

No Scale

OBJECT DECK SLAB

CONST. J1, DETAIL

No Scale

C.L. Bridge on P100.07 Curve 1

Pour No. 1

Pour No. 2

Pour No. 3

Pour No. 4

Pour No. 5

POURING SEQUENCE FOR CONTINUOUS R.C. SLAB UNITS

No Scale

LITTLE ROCK AIRPORT

LICK CREEK

CONTINUOUS R.C. SLAB UNIT

STATE HIGHWAY COMMISSION

ARANSAS COUNTY

ROUTE

LICK CREEK

SEC.

LITTLE ROCK AIRPORT

BRIDGE NO. 01444

DRAWING NO. 6019

ENGINER

M. H. D. (

DESIGNER

D. D. N.

CHECKED BY

DATE

P. S. R.

DATE

P. S. R.

DATE

P. S. R.

DATE

P. S. R.

DATE

P. S. R.

DATE

P. S. R.

DATE

P. S. R.
REINFORCING PLAN - TOP OF SLAB

Symmetrical About This Point

DEAD LOAD DEFLECTIONS

Span 1
Span 2
Half Span 3

Note: Longitudinal lines of concrete bridge deck and longitudinal reinforcing bars are curved and concentric to a 700'-0" curve left which is located along centerline of bridge. Transverse reinforcing bars are placed on radial lines. Spacing shown for transverse reinforcing bars is measured along centerline of bridge.

Deflections shown are from a chord from C.L. Bent to C.L. Bent. Vertical curve corrections are not included. Tolerance +7/8" for center and vertical alignment.

REINFORCING PLAN - BOTTOM OF SLAB

Symmetrical About This Line

DEAD LOAD CAMBER DIAGRAM

Symmetrical About This Point

Sheet 2 of 2
Details of 175'-0"
Continuous RC, slab unit
Lick Creek

Arkansas State Highway Commission

LITTLE ROCK, ARK.

DESIGNER:

ARCHITECT:

CONTRACTOR:

ENGINEER:

DRAWN BY:

CHECKED BY:

SHEET NO:

SCALE:

B R I D G E  N O :  0 1 4 4

D R A W I N G  N O :  6 0 7 2 0
ELEVATION - CONCRETE PARAPET RAIL

NAME PLATE DETAIL

SECTION X-X

SECTION Y-Y

ROUNDING DETAIL

TABLE OF VARIABLES
ELEVATION OF SOIL BORINGS

BORING LEGEND

- Loamy Clay
- Fluvial Clay
- Drift Sand
- E Sand
- Silt Loam Clay
- Grayish Silty Sand

"N" VALUES

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HYDRAULIC DATA

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Proposed Bridge Construction

Existing Ground Line Along C.L. Construction
**SECTION A-A**
Bents 1 and 6

1. Bents 2-5
2. Adjust position of B80R as necessary to avoid interference with piles.

**SECTION B-B**
Bents 1 and 6

- Plan anchorages, see Std. Dwg. No. 5505 for additional information.
- Bents 1 and 6
REINFORCING PLAN - TOP OF SLAB

REINFORCING PLAN - BOTTOM OF SLAB

POURING SEQUENCE FOR CONTINUOUS R.C. SLAB UNITS

DEAD LOAD DEFLECTIONS

DEAD LOAD CAMBER DIAGRAM

Sheet 2 of 2
DETAILS OF 105'-0" UNIT - LICK CREEK

CONTINUOUS R.C. SLAB UNIT

ARKANSAS STATE HIGHWAY COMMISSION

ROUTE 3 SEC.

ARKANSAS STATE HIGHWAY COMMISSION

BRIDGE NO. 0145

DRAWING NO. 60728

DRAINED NO. 60728

DATE: 07/01/2012

SCALE: As Drawn

Licensed Professional Engineer

Arkansas State Highway Commission

Route 3 Section

CONTINUOUS R.C. SLAB UNIT

LICK CREEK
PLAN OF BRIDGE

SECTION A-A
Bents 1 and 2

SECTION B-B
Bents 1 and 2

SECTION A-A
Bents 2 - 5

SECTION B-B
Bents 2 - 5

VIEW D-D
Bents 1 and 4

VIEW C-C
Bents 1 and 4

ADD. or End of Bridge
Approach Slab
SEC. 2

Begin or End of Bridge
Approach Slab
SEC. 2

PROFESSIONAL ENGINEER

STATE OF ARKANSAS
LICENSED

ARKANSAS STATE HIGHWAY COMMISSION

Sheet 2 of 2
Details of Bents
Drainage Ditch

ROUTE

SEC.

LITTLE ROCK, Ark.

DRAUGHTED BY: H. M. H. HUGHES
DESIGNED BY: J. H. ROTHFUS
APPROVED BY: J. H. ROTHFUS
BRIDGE NO. 07446
DRAWING NO. 00732
Class I Protective Surface Treatment shall be applied to the Roadway Surface and to the Roadway Faced Top of the Concrete Parapet Rolls.

1/2" Rounding

1/2" Thick Bearing Pad Glue to Cap

Top of Cap

10" Height

060E Details (See Bent Details)

No Scale

See Deg. No. 6073 for details of concrete parapet rolls.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 1085. Placement of slab barriers or tri-chords with full length lower runners directly on removable deck forms will not be allowed.

Sheet 1 of 2 Details of 105'-0" Continuous R.C. Slab Unit Drainage Ditch

Arkansas State Highway Commission

Bridge No. 07446 — Drawing No. 60733

ROUTE

LITTLE ROCK ARP.

SKILLARD "AR" PRINT

BLOOMINGTOE

ARKANSAS CITY COMMISSION

No Score

No Score
The Contractor may pour the entire bridge slab unit at once or may elect to form and pour the slab unit in three separate pours according to the pouring sequence shown. No part of the formwork for the entire unit shall be removed until all of the concrete in the slab has been placed and cured. Before removal of formwork begins, both the top and sides of the concrete slab shall be exposed to the atmosphere for a period of at least one hour. It shall be the responsibility of the Contractor to keep the concrete: slab exposed to the atmosphere for a period of at least one hour after the entire bridge slab unit has been poured.

Concrete in the bridge superstructure shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Engineer for any deviation from the pouring sequence shown and for any rolling pours made before the entire bridge slab has been poured.

Pouring sequence for continuous R.C. slab units

No Scale

Symmetrical About This Line

Span 1

Half Span 2

Dead Load Deflections

No Scale

Symmetrical About This Point

Deflections shown are from a chord from C.L. Bent to C.L. Bent. Vertical curve corrections are not included. Tolerance = \( \frac{1}{8} \) inch for camber and vertical alignment.
The Contractor may pour the entire bridge slab unit at once or may elect to form and pour the slab unit in three separate pours according to the pouring sequence shown. No part of the framework for the entire unit shall be removed until all of the concrete in the slab has been placed and cured. Before removal of framework begins, both the form and rebar shall be dried. All pours shall begin at one end of the bridge and proceed in sequence to the other end of the bridge. 11 hours shall elapse between ends of a pour and the start of the next pour.

Concrete in the bridge superstructure shall be placed and completed for the entire pour before any concrete has risen its initial set. This may require the use of a reheating agent. The Contractor must obtain approval from the Engineer for any deviation from the pouring sequence shown and for any rolling pours made before the entire bridge slab has been poured.

POURING SEQUENCE FOR CONTINUOUS R.C. SLAB UNITS

No Scale

Symmetrical About This Line

DEAD LOAD DEFLECTIONS

No Scale

Symmetrical About This Plane

Deflections shown are from a chord from C.L. Bent to C.L. Bent. Vertical curve corrections are not included. Tolerance +½" for camber and vertical alignment.

SHEET 2 OF 2

DETAILS OF 105'-0"
CONTINUOUS R.C. SLAB UNIT
DRAINAGE DITCH

ARKANSAS STATE HIGHWAY COMMISSION
ROUTE SEC.
LITTLE ROCK, ARK.

SIGNED BY:  DATE:  SCALE:  AS SHOWN
DESIGNATED ENGINEER:  DATE:  SCALE:  AS SHOWN
BRIECE NO. 0741 DRAINAGE NO. 0074D
STA. 20+40
BEGIN 0.5% L, 1% GR. ELEV. 217.6

BEGIN SUPERELEVATION - STA. 211+01.41
STA 219-37 IN PLACE
24" x 34 PIPE CULVERT
LT. SIDE DRAIN
REMOVING AND INSTALLING
24" x 34 PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH + 25 CU. YDS.

CUT VOLUME
FILL VOLUME
CUT VOLUME
FILL VOLUME
CUT VOLUME
FILL VOLUME
CUT VOLUME
FILL VOLUME

20' EXIST. LANES

STA. 218-00.00 TO STA. 219+37.00
STA. 220+00 IN PLACE
24' X 24' Pipe Culvert
REPLACE 24' X 24' PIPE CULVERT
COMPLETE DRAIN
CONSTRUCT APPROACH = 20 CU. YDS.

STA. 221+48.80 END SITE 2
BEGIN 100' TRANSITION

STA. 220+00.00 TO STA. 221+14.80
CROSS SECTIONS: SITE 4

STAGE 1
CUT AREA 0
FILL AREA 291.02

STAGE 2
CUT AREA 26.64
FILL AREA 0

STAGE 1
CUT VOLUME 12.28
FILL VOLUME 553.19

STAGE 2
CUT VOLUME 23.96
FILL VOLUME 0

CUT AREA 0
FILL AREA 0

20' EXIST. LANES

STA. 409+63.00 TO STA. 410+00.00
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS

EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS

EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH PILE END BENTS

EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge and including around the end of approach. Embankment adjacent to structures shall be constructed in the same manner as slopes under the bridge and shall be extended as required by the applicable Subsections 2603, 2610, and 8018 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION
**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 sod along ditch paving to be placed within 14 days of ditch paving construction.
- 1" wide transverse expansion joints shall be placed in concrete ditch paving at 40" intervals. The space shall be filled with approved joint filler complying with AASHTO M23.

**ENERGY DISSIPATORS**

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 A**

- Ditch width 10'-0" centers.
- Excavate to next lower line to construct ditch paving and solid sodding.

**TYPE B**

- Ditch width 16'-0" centers.
- Excavate to next lower line to construct ditch paving and solid sodding.

**NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED**

**TOE WALL DETAIL FOR CONCRETE DITCH PAVING**

**REFERENCES TO TABLES OF QUANTITIES FOR W & B DIMENSIONS**
TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES

TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES

TYPICAL MULTIPLE PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL DETAILS

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

REINFORCING STEEL SCHEDULE

SOLID SODDING

CAST-IN-PLACE

PRECAST

GENERAL NOTES


FLARED END SECTION

FLARED END SECTION & FLATTENED ADJACENT SLOPES

TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES

R.C. CURTAIN WALL DETAILS

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

REINFORCING STEEL SCHEDULE

SOLID SODDING

CAST-IN-PLACE

PRECAST
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<th>E</th>
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*The measured span and rise shall not vary more than ±2 per cent from the values specified by AASHTO. Note: for reinforced concrete pipe, the rise shall not exceed 0.07 times the span.*

### CIRCULAR PIPE

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METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

- THREE BEAM GUARD RAIL TERMINAL

** GUARD RAIL TERMINAL (TYPE 1)

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9
EDGE OF TRAVELED WAY

EDGE OF SHOULDER

TRAFFIC

END TERMINAL

GUARD RAIL

5'-6" NORM.

VAR. 5'-6" NORM.

NORM. SHDLR. SURF.

0.04 FT/FT

0.02 FT/FT

SECTION A-A

SLOPE AS SHOWN ON TYPICAL SECTION

DETAILS OF WIDENING FOR GUARD RAIL

SLOPE AS SHOWN ON TYPICAL SECTION

2'-0" FLAT

SECTION B-B

LIMITS OF WIDENING FOR GUARD RAIL
(NW HC SHOULDER SLOPE)

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 9'-6"
EACH SIDE TO SUPPORT GUARD RAIL.

NORMAL ROADWAY WIDTH

WIDTH OF SURFACING

SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

SHOULDER PIER PROTECTION

MEDIAN PIER PROTECTION

METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING OR-9A
THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POSTS 1-7

W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST POST 8

THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUTS & WOOD POSTS POSTS 1-6

THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST POST 7

W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST POST 8

GENERAL NOTES:
- RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
- WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DESCEND NO. 1 STRUCTURAL OR BETTER 3.7 FT (WOOD) OR NO. 1550 SOUTHERN PINE.

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-II
INSTALLATION

TYPE 2 . SELECTED MATERIALS (CLASS SM-I, TYPE STRUCTURAL BEDDING)

AGGREGATE IN PER LINEAR FOOT OF TILL WILL NOT FREE SIZE OF INCH.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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<tr>
<td>&quot;5'-6&quot;</td>
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<tr>
<td>&quot;6'-0&quot;</td>
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<tr>
<td>&quot;6'-6&quot;</td>
</tr>
</tbody>
</table>

MINIMUM COVER FOR CONSTRUCTION LOADS

<table>
<thead>
<tr>
<th>MINIMUM COVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;M&quot;</td>
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<tr>
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<td>&quot;5'-6&quot;</td>
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<tr>
<td>&quot;6'-0&quot;</td>
</tr>
<tr>
<td>&quot;6'-6&quot;</td>
</tr>
</tbody>
</table>

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M-294. TYPE 2 INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISIONS "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

2. SELECTED PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO U.P.O. BRIDGE DESIGN SPECIFICATIONS, EIGHTH EDITION, LOOPS WITH JOB INSTRUCTIONS.

3. THE MAXIMUM ALLOWED TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUITABLE WIDER TO ENOUGH WORKSPACE TO PROVIDE AND SAFELY PLACE AND COMPACT MATERIAL AND OTHER BACKFILL MATERIAL.

4. IMPERVIOUS MATERIALS SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PREFERRED MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.

5. WHEN DIRECTED BY THE ENGINEER, UNSTABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH DESIGN IS AREA (APPROVED AS "STRUCTURAL BEDDING" AREA) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE CULVERT DESIGN SPECIFICATIONS, EIGHTH EDITION. MATERIALS FOR MATERIALS DIRECTED WHO WILL BE ACCREDITED BY THE ENGINEER AT THE END OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING.

6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSTABLE FOR LOADS, THE PIPE USES THE RECOMMENDED Width AS STRUCTURAL BEDDING MATERIALS. FROM THE EXISTING EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF STABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL..."

7. FOR PIPE TYPES THAT ARE NOT CORRUGATED ON THE OUTSIDE OF PIPE, MULTIPLE BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE USE OF CORRUGATED OR PROFILE VALLEY.

8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN 30" WILL NOT BE ALLOWED.

9. JOINTS FOR HIGH PIPE CULVERT SHALL MEET THE REQUIREMENTS FOR SOLIDITY AS SPECIFIED IN AASHTO SECTION 2.4.2.4 AND 24.4.2.4 "HIGH DENSITY POLYETHYLENE PIPE INSTALLATION" RECOMMENDATIONS.

CONSTRUCTION SEQUENCE

4. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.

5. INSTALL PIPE TO GRADE.

6. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.

7. THE STRUCTURAL BEDDING SHALL BE COMPACTED AND/OR LEVELED AND SIMULTANEOUSLY TO THE ELEVATION OF THE MIDDLE THIRD.

8. PLACE PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, MATTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OTHER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

LEGEND

H = FILL HEIGHT (FT.)
G = OUTSIDE DIAMETER OF PIPE
M = MINIMUM
N = MAXIMUM
S = STRUCTURAL BACKFILL MATERIAL
U = UNDISTURBED SOIL

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

<table>
<thead>
<tr>
<th>DIAMETER</th>
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<tbody>
<tr>
<td>4'-0&quot;</td>
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<td>4'-6&quot;</td>
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<td>5'-0&quot;</td>
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<tr>
<td>6'-0&quot;</td>
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<td>6'-6&quot;</td>
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</tbody>
</table>

MATERIAL SHALL BE DESIGNED BY THE ENGINEER AS SELECTED PIPE CULVERT DESIGN SPECIFICATIONS, EIGHTH EDITION.
**INSTALLATION REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING**

**TYPE 2**

1. Aggregate base course class 4, 5, 6, or 7 may be used in lieu of selected material. Sand will not be allowed.

2. Structural bedding material shall have a maximum particle size of 3". Structural bedding material under 3" in greatest dimension or frozen lumps will not be allowed.

**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT “H”**

<table>
<thead>
<tr>
<th>Trench Width</th>
<th>Fill Height “H”</th>
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</thead>
<tbody>
<tr>
<td>3’</td>
<td>2’</td>
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<tr>
<td>4’</td>
<td>3’</td>
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<tr>
<td>5’</td>
<td>4’</td>
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<tr>
<td>6’</td>
<td>5’</td>
</tr>
<tr>
<td>7’</td>
<td>6’</td>
</tr>
<tr>
<td>8’</td>
<td>7’</td>
</tr>
</tbody>
</table>

3. Structural bedding material shall be used prior to trench excavation. Structural bedding material will be a minimum of 2” of selected material per linear foot of trench.

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>Cover (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36”</td>
<td>3’</td>
</tr>
<tr>
<td>42”</td>
<td>4’</td>
</tr>
</tbody>
</table>

**NOTE:**
- 4” min. 0.05 – 24” diameter
- Minimum cover value “H” shall include a minimum 2” of pavement and/or base.

**GENERAL NOTES**

1. Pipes shall conform to ASTM F949. PVC pipes installation shall conform to job special provision.
2. Plastic pipe culvert design shall conform to ASABE/UR164.4.0 design specifications, fifth edition.
3. Trench width shall be the minimum width plus a sufficient width to ensure working room to properly and safely place and compact backfill and other backfill materials.
4. Structural bedding material should be placed as directed by the engineer at the ends of the culvert to prevent loss of structural bedding when pervious material is used for structural bedding and/or backfill.
5. Structural bedding material that is excavated at the bottom of the excavated trench shall be backfilled with structural bedding material backfill. Structural bedding material should be placed as directed by the engineer at the ends of the culvert to prevent loss of structural bedding when pervious material is used for structural bedding and/or backfill.
6. Structural bedding material shall be placed to a maximum density according to the type of pipe material used.
7. Structural bedding material shall be placed to a maximum density according to the type of pipe material used.
8. Structural bedding material shall be placed to a maximum density according to the type of pipe material used.
9. Structural bedding material shall be placed to a maximum density according to the type of pipe material used.
10. Structural bedding material shall be placed to a maximum density according to the type of pipe material used.

**LEGEND**

- * = STRUCTURAL BACKFILL MATERIAL
- = UNDISTURBED SOIL

**CONSTRUCTION SEQUENCE**

1. Place structural bedding material to grade, do not compact.
2. Install pipe to grade.
3. Compact structural bedding outside of pipe to grade.
4. Structural bedding shall be placed to a maximum density according to the type of pipe material used.
5. Pipe installation may require the use of restraints, bedding, or other approved methods in order to maintain grade and alignment.

**TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS**

1. Structural bedding material shall be compacted to 90% of the maximum density according to the type of pipe material used.
2. Structural bedding material shall be compacted to 90% of the maximum density according to the type of pipe material used.
3. Structural bedding material shall be compacted to 90% of the maximum density according to the type of pipe material used.
4. Structural bedding material shall be compacted to 90% of the maximum density according to the type of pipe material used.
5. Structural bedding material shall be compacted to 90% of the maximum density according to the type of pipe material used.
CONCRETE PAVEMENT

BROKEN LINE STRIPING

ASPHALT PAVEMENT

SOLID LINE STRIPING ON CONCRETE PAVEMENT

SOLID LINE STRIPING ON ASPHALT PAVEMENT

ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

YIELD LINE DETAIL

CROSSWALK AND STOPBAR DETAILS

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1
STANDARD DRAWING RCB.2

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

LONGITUDINAL SECTION

SECTION C-C

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:
ROADWAY EXCAVATION (CHANNEL CHANGES) WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO LIMITS SHOWN AND WILL BE CONFINED TO THE PORTION BETWEEN THE FLOW LINE AND 1' ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGES) 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 LIMITS SHOWN AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE CHANNEL FLOW LINE.

ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

SECTION A-A

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

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD DRAWING RCB-2
### Super-elevation Table for Two-way Traffic

<table>
<thead>
<tr>
<th>Degree of Curve</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
<th>Le (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>300</td>
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<td>200</td>
<td>200</td>
<td>200</td>
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</tr>
</tbody>
</table>

#### Abbreviations:
- NC: Normal Crown
- SC: Standard Super-elevation at Normal Crown
- PE: Pave Edge
- ITU: Inside Turning Unit
- ITG: Inside Turning Grade
- OP: Outer Pavement
- SE: Sub Surface Edge
- SP: Sub Grade Point

#### General Notes:
1. On curves in two-way traffic, the super-elevation shall be perpendicular to the inside pavement edge unless otherwise noted on the plans.
2. Super-elevation values shown on the plans are values shall be added to or subtracted from the point of control.
3. Lengths for Le may be resolved in multiples of 25 ft or 50 ft.
4. Right or left hand curve shall have additional transition length as follows:
   - 1 Lane Unhanded: 1000 ft
   - 2 Lane Unhanded: 2000 ft

#### Super-elevation Formula:

\[ e = \frac{\text{Le} \times \text{L}}{2 \times \text{L}} \]

#### Standard Method when Super-elevation revolves around Center Line

- Outside Subgrade Edge
- Inside Subgrade Edge
- Inside Profile

#### Standard Method when Super-elevation revolves around Inner Subgrade Point or Inner Pavement Edge

- Outside Pavement or Subgrade Edge
- Inside Pavement or Subgrade Edge

---

**Arkansas State Highway Commission**

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

**Standard Drawing SE-2**
**GENERAL NOTES**

End sections shall be fabricated from galvanized steel meeting the requirements of SUBSECTION 606.02(D) of the STANDARD SPECIFICATIONS.

- Use a Type 1 connector extension shall be punched and bolted to end section apron lip with %1 diameter galvanized bolts. Steel for pipe plate extension shall be same gauge as end section.
- Dimensions shall be overall width less 6' by 8' high.
- Attachment to circular pipes 10" through 24" diameter shall be made with Type 1 straps. All other sizes shall be attached with Type 2 straps and loops.
- Mesh shall be fabricated from steel meeting the requirements of ASTM A-53 Schedule 48 specifications. Safety bars shall be hot-dipped galvanized after fabrication.
- All work and materials required for construction and installation of safety and end section shall be included in the PRICE BID EACH FOR SAFETY END SECTIONS FOR PIPE CULVERTS.
- Longitudinal and transverse bars will be required for cross drain structures when span is greater than 30'. No safety bars will be required for 30' SPAN OR LESS WHEN USES ON CROSS DRAIN STRUCTURES. Transverse bars will be required for all sizes of side drain structures.
- Class 1 safety and end sections shall be end sections with a 60' slope.
- Class 2 safety and end sections shall be end sections with a 45' slope.

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**SAFETY END SECTIONS FOR PIPE CULVERTS**

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Pipe Arch</th>
<th>Min. End Sections</th>
<th>Dimensions in Inches</th>
<th>A</th>
<th>H</th>
<th>W</th>
<th>D</th>
<th>D'</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
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<td>60 24&quot;</td>
<td></td>
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<tr>
<td>48 1/2&quot;</td>
<td>24 8&quot;</td>
<td>60 24&quot;</td>
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</table>

**SAFETY END SECTIONS FOR CIRCULAR PIPES**

<table>
<thead>
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<th>Pipe Size</th>
<th>Min. End Sections</th>
<th>Dimensions in Inches</th>
<th>A</th>
<th>H</th>
<th>W</th>
<th>D</th>
<th>D'</th>
<th>L</th>
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</thead>
<tbody>
<tr>
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<td>18&quot;</td>
<td>60 24&quot;</td>
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**ARIZONA STATE HIGHWAY COMMISSION**

**SAFETY END SECTION FOR CIRCULAR AND ARCH PIPES**

**STANDARD DRAWING**

**DRAWING NO.**

**DATE**

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**NOTES:**

- Tapered sleeves to be 12 Ga. smooth galvanized steel in accordance with AASHTO M 218 U.

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STANDARD HIGHWAY SIGNS

SUPPORT ASSEMBLIES

COUNTY NAME. ROUTE LETTER & NUMBER & BORDER ON A BLUE BACKGROUND.

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 50" IN THE SOIL.

NOTE: REFLECTORIZED YELLOW LETTER & NUMBER & BORDER IN A BLUE BACKGROUND.
NOTE:
ALL
STEEL TO BE

A 2" MIL-HARD CURE IS REQUIRED WHEN CONCRETE MIX IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURE SHALL BE CONSIDERED INCLUDED IN THE PRICE ON FOR CONCRETE MULL.

SCHEDULE PAVEREMENT

REINFORCED CONCRETE SPRING BOX

CONCRETE 3-1/2" YDS. REINFORCING STEEL OR LBR.

GENERAL NOTE:
THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND BY R.C.P. PIPE CULVERT.

ALL STEEL TO BE 4 BARS

REINFORCEMENT DETAILS

BASE PLATE

HAND RAILING DETAILS

POST CONNECTION TO WALL

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPoxy ADHESIVE ANCHORS)

POST CONNECTION TO WALL

DETAILS OF CONCRETE STEPS & WALKS
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."
CLEARING AND GRUBBING

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

EXCAVATION

EXISTING GROUND

INTERCEPTOR OR DIVERSION DITCH

EXISTING GROUND

PHASE 1 EXCAVATION

PHASE 2 EXCAVATION

PHASE 3 EXCAVATION

GENERAL NOTE

THE PHASES WILL VARY, THESE PHASES SHOWN FOR ILLUSTRATION.

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

EMBANKMENT

NOTE:

- NUMBER OF PHASES WILL VARY. THESE PHASES SHOWN FOR ILLUSTRATION.

- SIDE DITCH STABILIZE AS REQUIRED

EMBANKMENT

GENERAL NOTE

- ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MAINTAINED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 20 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, AND OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT SEEDING, STABILIZE DITCHES, CONSTRUCT DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.
3. PLACE PHASE 2 EMBANKMENT, WITH PERMANENT SEEDING, AND MAINTAIN FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE PHASE 3 EMBANKMENT, WITH PERMANENT SEEDING, AND MAINTAIN FOR A PERIOD OF GREATER THAN 21 DAYS.
5. PLACE PHASE 4 EMBANKMENT AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3
TRIANGULAR SLT DKE INSTALLATION FOR
DIVERSION DITCH AND/OR DITCH LINER

GENERAL NOTES
1. This work shall consist of furnishing, installing and maintaining the triangular slt dke. The slt dke shall be used as a continuous barrier at the top of slope or across the roadway ditch to contain sediment and minimize erosion or directed by the engineer. The slt dke shall be installed and located as shown on the plans.

2. Triangular slt dke shall be triangular shaped having a height of at least 8 ft. at the crest with slt dke size of 10 ft. to 20 ft. wide. The triangular shaped slt dke material shall be concrete form. The outside cover shall be a woven geotextile fabric placed behind the material and held in place by welding both sides of the triangular slt dke. The fabric shall be installed per the manufacturer's recommendations for installing slt dke. The triangular slt dke shall be attached to the ground with wire staples. The staples shall be made with wire and be at least 6" to 8" long. Staples shall be placed as shown on these details.

3. Drop inlets shall be placed where the units overlap and in the center of the unit as shown on the diagram.

STABILIZATION
SYMBOL TO BE USED TO DENOTE DEVICES ON PLANS

NOTES
SLT DKE SHOULD ONLY BE USED FOR DROP INLETS IN SWEEP LOCATIONS.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES
STANDARD DRAWING TEC-4
GENERAL NOTES:

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION
WIRE FENCE WATER GAPS
STANDARD DRAWING WF-2