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

ARRAUKA 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 NOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERS 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 PUBLIC MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS E0 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 SPARED AS DIRECTED BY THE ENGINEER, CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARPED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAVING ALONG A NEAT LINE. AFTER SAVING THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
STA, 101+00.00 - STA, 107+00.00

STA, 107+00.00 - STA, 110+92.68
STA, 112+00.00 - STA, 137+91.25
STA, 138+40.95 - STA, 209+00.04

NOTES:

REFER TO CROSS SECTIONS FOR SLOPES OF 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 PLANNED THICKNESS. VARIATIONS IN THE THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED, PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR LEVELING OF EXISTING PAVEMENT SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED OVERALL, ALL OTHER COURSES HAVE BEEN MADE CONDITIONAL. JOINT'S SHALL BE AT LANE ENDIES.

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST 1/2" OF ACWM SURFACE COURSE 1/2" IN LUB OF AGGREGATE BASE COURSE ON THE SHOULDERS.
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 FOURTH 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.

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 MOLDING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

THE FINAL "C" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAYED. 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 CONTRACTOR, MATERIALS OTHER THAN AGGREGATE BASE COURSE IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

SUPERELEVATION SECTION
Note: Turnouts and private drives shall be modified where necessary to meet local conditions as directed by the engineer.

Detail for County Road Turnouts
Open Shoulder Section

Detail for Driveway Turnouts (Collectors)

Construction Limits

Asphalt concrete hot mix surface course (1 1/2")
Aggregate base course (1 1/2")

Top View
Min 3" cover

Nor. 4 bars at 12" horizontal spacing
Variable height

Front View
Side View

Pipe Extension
Reinforced Concrete Collar Detail

Detail for Transitions

SPECIAL DETAILS
LEGEND

- EB = SAND BAG DITCH CHECK
- RC = ROCK DITCH CHECK
- SL = SILT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

<table>
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LEGEND

- F-5 = SAND BAG DITCH CHECK
- F-6 = ROCK DITCH CHECK
- F-0 = SLT FENCE

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.
STA. 10+00.00
BEGIN JOB II0557
LOG MILE = 0.06
LEGEND

- E-6 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = SILT FENCE

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

DATE OF REVISION

REVISION

STAGE 2
TEMPORARY EROSION CONTROL DETAILS
A detailed diagram showing the layout of a construction site with labeled sections and lines. The diagram includes various annotations and symbols indicating proposed and existing rows, as well as revisions and fill details. At the bottom, there is a label for STA 209+00.04, indicating a specific location or milestone in the construction project.
ADVANCE WARNING (ALL STAGES)

STA 15+65.00, E. ROGERS RD.
STA 46+70.00, GREEN RIVER RD.
NOTE: ALL STATIONS BASED OFF HWY. 147.

ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

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

DO NOT PASS

BUMP

ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
**Stage 1**

**Vertical Panels at Notch & Widening Right of Existing**

**Stage 2**

**Vertical Panels at Notch & Widening Left of Existing**

**Notes:**
- The total length of the work area on the entire project having a vertical difference greater than 4 in. shall be limited to one mile.
- Replace vertical panels when pavement construction reduces notch depth to less than 4 inches.

**Additional Note:**
- The quantity of vertical panels provided in the contract is for one side of the roadway for the full length of the job.
- This is the maximum quantity required to allow the contractor to notch one mile, backfill to a point where the vertical differential is 4 in. or less, and then notch another one-mile section. This is the maximum number of vertical panels that will be paid for under ITS section 1452 of the Standard Specifications for Construction Requirements.
STAGE II
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK
SIGNS AS SHOWN ON THE ADVANCE WARNING DETAIL.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 55 G.C.
TO DELINATE THE WORK ZONE. USE TRAFFIC DRUMS TO
DELINATE DRIVEWAYS.

NOTCH AND WIDEN HWY. 147 ON THE RIGHT.

APPLY LEVELING COURSE/SAND WHERE DIRECTED BY THE
ENGINEER.

STAGE I QUANTITIES

VERTICAL PANELS SPACED 55 ON CENTER

STA. 101+00.00
BEGIN JOB ROSS
LOG MILE = 0.06

SIGN = 273.5 SQ. FT.
TRAFFIC DRUMS = 329 EACH
VERTICAL PANELS = 193 EACH
FURNISHING AND INSTALLING P.C.C.B. = 306 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 43999 LIN. FT.
STAGE 2

INSTALL CONSTRUCTION PAVEMENT MARKINGS AND TRAFFIC DRUMS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 55' O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

NOTCH AND WIDEN HWY. 447 ON THE LEFT.

APPLY FINAL 2" UPMAC HM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT EREAVEMENT MARKINGS DETAILS.

STAGE 2 QUANTITIES

CULTIVATED FIELD

SIGN = 573 EN, 50 FT.

TRAFFIC DRUMS = 28 EA.

VERTICAL PANELS = 93 EA.

RELOCATING P.C.C.B. = 153 LIN. FT.

TEMPORARY IMPACT ATTENUATION BARRIER = 1 EACH

CONSTRUCTION PAVEMENT MARKINGS = 44,000 LIN. FT.

VERTICAL PANELS SPACED 50' ON CENTER

4" WHITE CONSTRUCTION PAVEMENT MARKING

CULTIVATED FIELD

VERTICAL PANELS SPACED 50' ON CENTER

4" DOUBLE YELLOW CONSTRUCTION PAVEMENT MARKING

PROPOSED ROW

CULTIVATED FIELD

PROPOSED ROW

CULTIVATED FIELD

PROPOSED ROW

CULTIVATED FIELD

PROPOSED ROW

CULTIVATED FIELD

PROPOSED ROW

CULTIVATED FIELD

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS
PERMANENT PAVEMENT MARKING DETAILS

REFLECTORIZED PAINT PAVEMENT MARKINGS

WHITE (4") = 22000 LIN. FT.

REFLECTORIZED PAINT PAVEMENT MARKINGS

YELLOW (4") = 23000 LIN. FT.

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS

YELLOW (4") = 320 LIN. FT.

NOTE:

THE 4" YELLOW STRIPE QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPE. 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

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<th>Description</th>
<th>Sign Size</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Maximum Number Required</th>
<th>Total Signs Required</th>
<th>Vertical Panels</th>
<th>Traffic Drums</th>
<th>Furnishing &amp; Installing Precast Concrete Barrier</th>
<th>Relocating Precast Concrete Barrier</th>
<th>Temporary Impact Attenuation Barrier</th>
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<td>VERTICAL PANELS</td>
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<td>FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER</td>
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</tr>
</tbody>
</table>

**Note:** This is a low traffic volume road as defined in section 060.03, standard specifications for highway construction.

The quantity of vertical panels provided in the contract is for one side of the roadway for the full length of the job. This is the maximum quantity required to allow the contractor to notch one mile, backfill to a point where the vertical differential is 4” or less, and then notch another one-mile section. This is the maximum number of vertical panels that will be paid for. Refer to section 033.02 of the standard specifications for construction requirements.

### Construction Pavement Markings and Permanent Pavement Markings

<table>
<thead>
<tr>
<th>Description</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>End of Job</th>
<th>Construction Pavement Markings</th>
<th>ReflectORIZED Paint Pavement Marking</th>
<th>High Performance Contrast Pavement Marking</th>
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<td>38001</td>
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**Note:** This is a low traffic volume road as defined in section 060.03, standard specifications for highway construction.

**Note:** The 4" yellow striping quantity has been estimated based on a double yellow centerline stripe for the entire project. The project must be marked for passing/standing 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.
### Clearing and Grubbing

<table>
<thead>
<tr>
<th>Station</th>
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<th>Grubbing</th>
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**Total:** 32 32

### Removal and Disposal of Items

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<th>Sign Foundation</th>
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**Total:** 3 6

### Bench Marks

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**Total:** 1

### Erosion Control Matting

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**Total:** 3111.13

### Erosion Control

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<th>Seeding</th>
<th>Line</th>
<th>Mulch Cover</th>
<th>Water</th>
<th>Second Seeding</th>
<th>Temporary Seeding</th>
<th>Mulch Cover</th>
<th>Water</th>
<th>Wattle Ditch Checks</th>
<th>Sand Bag Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Silt Fence</th>
<th>Triangular Silt Dike</th>
<th>Sediment Basin</th>
<th>Obliteration of Sediment Basin</th>
<th>Sediment Removal &amp; Disposal</th>
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<tbody>
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</tr>
<tr>
<td></td>
<td></td>
<td>Stage 2</td>
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**Total:** 17.01 34.80 17.91 1708.9 17.91 21.18 21.18 433.1 99 1122 219 1518 230 532 532 1229

### Quantities

- **Earthwork:**
  - Steep Banks:
  - Erosion Control Devices:
  - Sediment Control Devices:

- **Removal and Disposal of Items:**
  - 104+70 RT. OF HWY. 147
  - 106+30 RT. OF HWY. 147
  - 116+18 RT. OF HWY. 147

- **Bench Marks:**
  - 151+72 WINDWALL OF R.C. BOX CULVERT

- **Erosion Control Matting:**
  - Length:
  - Class 3:

- **Erosion Control:**
  - Seeding:
  - Line:
  - Mulch Cover:
  - Water:
  - Second Seeding Application:
  - Temporary Seeding:
  - Seeding:
  - Line:
  - Mulch Cover:
  - Water:
  - Second Seeding Application:
  - Temporary Seeding:

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

- **Quantity Estimated:**
  - See Section 104.06 of the STD. SPECS.
### Mailboxes

<table>
<thead>
<tr>
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<th>Mailboxes</th>
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### Culvert Clean Out

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### Cold Milling Asphalt Pavement

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<th>Cold Milling Asphalt Pavement</th>
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<th>Cust. Length</th>
<th>Cust. Unit</th>
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**Total:** 1333.32

Note: Average Milling Depth 1".

### Paverment Repair Over Culverts (Concrete)

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**Total:** 28.5

### 4th Pipe Underdrain

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<th>Station</th>
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<th>4th Pipe Underdrains</th>
<th>Underdrain Outlet Protectors</th>
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<td></td>
<td></td>
<td></td>
<td>LIn. P.T.</td>
<td>EACH</td>
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**Total:** 1000 | 8

Note: Quantity estimated. See Section 104.03 of the Std. Spec.

### Structures

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<th>Station</th>
<th>Description</th>
<th>Reinforced Concrete Pipe Culvert</th>
<th>*Pipe Culvert Alternates 2, 3, 4, 5, 6</th>
<th>Flared End Sections Alternates 2, 3, 4, 5, 6</th>
<th>Flared End Sections Alternates 2, 3, 4, 5, 6</th>
<th>Span</th>
<th>Length</th>
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<th>Reinforced Steel Roadway</th>
<th>Unl. Exc. for Str. Roadway</th>
<th>Solid Sodding</th>
<th>Water</th>
<th>Std. Dwg. Nos.</th>
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</table>


Note: For R/C Pipe Culvert Installations Use Type 3 Bedding Unless Otherwise Specified.

Note: For C/M Pipe Culvert Installations Use Type 2 Bedding Unless Otherwise Specified.

* Denotes Alternate Bid Items.

### Quantities

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**Total:** 50 | 100

Note: Quantity Estimated. See Section 104.03 of the Std. Spec.
### Driveways & Turnouts

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<th>LOCATION</th>
<th>WIDTH</th>
<th>ACHEM SURFACE COURSE (&quot;C&quot;)</th>
<th>ACHEM SURFACE COURSE (&quot;C&quot;)</th>
<th>AGGREGATE BASE COURSE (CLASS 7)</th>
<th>SIDE DRAWS</th>
<th>STANDARD DRAWINGS</th>
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**Basis of Estimate:**
ACHEM Surface Course ("C") 94.8% MIN. AGGR. 5.2% ASPHALT BINDER  
Maximum Number of Driveways = 115 for PG 64-22  
* Quantity Estimated  
** For Information Only  

* To be used if P and where DIRECTED by the Engineer.  

** NOTES:**  
- For R/C PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.  
- For C/I PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

---

### Base and Surfacing

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<tr>
<th>STATION</th>
<th>STATION</th>
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<th>ACHEM BINDER COURSE (&quot;C&quot;)</th>
<th>ACHEM SURFACE COURSE (&quot;C&quot;)</th>
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**BASE AND SURFACING**

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**Quantities**

- ACHEM Surface Course ("C") 94.8% MIN. AGGR. 5.2% Asphalt Binder  
- Maximum Number of Driveways = 115 for PG 64-22  
- **Notes:**  
  - For R/C Pipe Culvert Installations use Type 3 Bedding unless otherwise specified.  
  - For C/I Pipe Culvert Installations use Type 2 Bedding unless otherwise specified.
<table>
<thead>
<tr>
<th>STATION</th>
<th>LATITUDE</th>
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<th>LOCATION</th>
<th>DEPTH</th>
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SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT. 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.
STA. 101+00.00
BEGIN JOB III0557
LOG MILE = 0.06

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

- UNNAMED TRIBUTARY AT STA. 000+00
- CLASSIFIED AS INFIRMARY\REMOVE THE TOP OF CHANNEL ELEVATION IS 950.00 FT MSL
- REFER TO SECTION 9000\TEMPORARY FILL OF THE 2014 STANDARD SPECIFICATIONS

STATE: ALABAMA
COUNTY: CARMACK
LOCATION: LEAF \RIVER
DRAWN BY: 7/24/15
ENGINEERS: ALDUS

PLAN AND PROFILE SHEETS

CULTIVATED FIELD

PROPOSED ROW

COUNTY LINE

CULTIVATED FIELD

STA. 460+20 IN PLACE 16% PVC PIPE 3LVFT, 12' SEE DRAIN
CONSTR. APPR. ON RT. = 240 CU. YD.

STA. 000+00 INSTALL 24" PVC PIPE 3LVFT, 12' SEE DRAIN
CONSTR. APPR. ON RT. = 260 CU. YD.

STA. 500+00 INSTALL 24" PVC PIPE 3LVFT, 12' SEE DRAIN
CONSTR. APPR. = 30 CU. YD.

STA. 600+00 INSTALL 24" PVC PIPE 3LVFT, 12' SEE DRAIN
CONSTR. APPR. = 30 CU. YD.

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
STA. 209+00.04
END JOB II0557
LOG MILE = 2.4

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS

SECTION A-A
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

ARIZONA DEPARTMENT OF TRANSPORTATION

FLARED END SECTION

STANDARD DRAWING FES-2
CONSTRUCTION SEQUENCE

1. Place structural bedding material to grade, do not compact.
2. Install pipe to design depth and slope outside the limits of the pipe.
3. Place and compact bedding inside the limits of the pipe
4. Complete installation according to specification requirements.

NOTE: None of the structural bedding material will be paid for separately, but compensation will be considered to be included in the price bid per linear foot of concrete pipe.

- LEGEND -

Legend:

1. Surficial or near-surface pipes are pipes that are within 2 feet of the surface of the pipe.
2. Surficial or near-surface pipes are pipes that are within 2 feet of the surface of the pipe.
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103. Surficial or near-surface pipes are pipes that are within 2 feet of the surface of the pipe.
MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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<th>TRENCH BOTH</th>
<th>&quot;H&quot; 10&quot; - 0&quot;</th>
<th>&quot;H&quot; 99&quot; - 0&quot;</th>
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<td>4&quot;</td>
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</tr>
<tr>
<td>6&quot;</td>
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<tr>
<td>8&quot;</td>
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MINIMUM COVER VALUES "H" SHALL INCLUDE A MINIMUM 2" OF PAYLOAD AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

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<thead>
<tr>
<th>LOAD</th>
<th>MINIMUM COVER (IN)</th>
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<tbody>
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<td>18</td>
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<td>12</td>
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<tr>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>20</td>
<td>28</td>
</tr>
</tbody>
</table>

MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

2. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.
3. INSTALL PIPE TO GRADE.
4. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
5. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 6" THICK WITH A COMPARE TIME NOT TO EXCEED 24 HOURS.
6. INSTALL SELECTED PIPE BEDDING (SELECTED PIPES ARE COMPACTED WITH SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING").

RANGE OF TRENCHES SHOWN ON DIAGRAM ARE FOR REFERENCE PURPOSES AND ARE NOT TO SCALE. EMBANKMENT MATERIALS SHOWN AS STRUCTURAL Backfill MATERIAL ON THE DIAGRAM ARE UNCOMPACTED MATERIALS. THE ENGIME MAY AUTHORIZE THE USE OF "SELECTED PIPE BEDDING" IN SUCH CASES.

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASABE TYPE 5 INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE AND SECTION SIZE OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION)."
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO ASABE CULVERT DESIGN SPECIFICATIONS, FIFTH EDITION.
3. THE MAINTAINABLE ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HARDSIDE AND OTHER BACKFILL MATERIAL.
4. HARDSIDE MATERIAL SHALL BE PLACED AS DIRECTED BY THE ENGINEER AT THE END OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNCOMPACTED MATERIAL THAT IS EXCAVATED AT THE BOTTOM OF THE EXCAVATED TRENCH SHALL BE THE AREA IDENTIFIED AS "STRUCTURAL BACKFILL." PRIOR TO PLACING OR COMPACTING WITH HEAVY EQUIPMENT, THE AREA SHALL BE CLEAR OF ALL IMPORTED MATERIAL.
6. IMPORTED MATERIAL SHOWN ON THE DIAGRAM FOR THE AREA IDENTIFIED AS "STRUCTURAL BACKFILL" SHALL BE UNCOMPACTED SELECTED PIPE BEDDING MATERIAL PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
**MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL**

### TYPE 2

#### SELECTED MATERIALS (CLASS 3M4, M4, OR M4-H)

- **Aggregate Base Course Class 4, 5, 6, or 501 may be used in lieu of selected materials.**
- **Skim will not be allowed.**

### STRUCTURAL BEDDING MATERIAL

- **Minimum Trench Width Based on Fill Height "H"**

| Pipe Diameter | "H" ("H" ≤ 6")-
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>6&quot; - 16&quot;</td>
</tr>
<tr>
<td>14&quot;</td>
<td>6&quot; - 16&quot;</td>
</tr>
<tr>
<td>15&quot;</td>
<td>6&quot; - 16&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>6&quot; - 16&quot;</td>
</tr>
</tbody>
</table>

### Minimum Cover for Construction Loads

#### Type 2 Embankment and Trench Installations

1. Structural backfill, embankment, and outer structural bedding material shall be compacted to 92% of the maximum density according to the type or class of material used.

#### Construction Sequence

1. Place structural bedding material to grade, do not compact.
2. Install pipe to grade.
3. Compact structural bedding outside the middle third of the pipe.
4. The structural backfill shall be placed and compacted in 12" lift increments. The final lift shall be compacted with an energy input of not less than 2000 Btu/ft³.
5. Pipe installation may require the use of restraints, weights, or other approved methods in order to help maintain grade and alignment.

### General Notes

- Pipe shall conform to ASTM F949, Class 3M4. Installation shall conform to job special provisions.
- The minimum allowable trench width shall be the minimum width plus a sufficient width in order to ensure working room for properly and safely placing and compacting bedding and other backfill material.
- Nuisance material should be placed as directed by the engineer. At the end of the culvert to prevent loss of structural bedding when nuisance material is used for structural bedding and/or backfill.
- When directed by the engineer, unacceptable material that is encountered at the bottom of the excavated trench below the area identified as "structural bedding" and/or shall be excavated and replaced with new bed at the cost of the contractor. Structural bedding shall be an extension of the pipe base where the groundwater table is encountered. If the groundwater is not available, the engineer may authorize the use of "selected pipe backfill".
- Valve installation is not based on the pipe formulation or profile valley. Valves shall be selected that will form the transition of the corrugation or profile valley.
- PVC pipes of diameters other than shown shall not be allowed.

### Diagram

- **Trench Section**
- **Embankment Section**

### Legend

- **H** = Fill Height ft.
- **D"** = Outside Diameter of Pipe
- **M"** = Maximum Diameter
- **W"** = Structural Backfill Material
- **S"** = Undisturbed Soil

---

**Arkansas State Highway Commission**

**Plastic Pipe Culvert (PVC F949)**

**Standard Drawing PCP-2**
GENERAL NOTES:

- The dimensions shown for raised pavement markers are typical only.
- The final location of the striping and raised pavement markers shall be determined by the Engineer.
- The drawings should be used in conjunction with the "Manual on Uniform Traffic Control Devices," latest revision.

NOTES:

- All lines shall have a width of 4 inches.
- The thickness and rate of paint application shall be as specified in Section 8 of the Standard Specifications.
- This drawing shall be used in conjunction with the latest revised edition of the "Manual on Uniform Traffic Control Devices."
- Raised pavement markers shall be centered between strip lines on 40 feet spacing unless otherwise shown on the plans.

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-I
REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS 5 WITH A MINIMUM 28 DAY COMpressive STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE A36 T-I 3 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BIG ITEM, "CLASS 5 CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 85 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL TOLERANCES. THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE. EXCEPT THAT THE TOLERANCE FOR TRUE BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE OPUS MANUAL SHALL BE 0.025 INSTEAD OF 0.040.

KEEP HOLES IN BOX CULVERT BARS SHALL NOT HAVE A MAXIMUM HORIZONTAL SPACING OF 0'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRILL OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 2'-6" ABOVE THE TOP OF THE BOTTOM SLAB.

REINFORCING STEEL BARS OF BENT BARS MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

<table>
<thead>
<tr>
<th>BAR SIZE</th>
<th>LENGTH OF HOOKED BAR</th>
<th>LENGTH OF STRAIGHT BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>L = r' - 1'-0&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>4&quot;</td>
<td>L = r' - 2&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>5&quot;</td>
<td>L = r' - 4&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>6&quot;</td>
<td>L = r' - 6&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>7&quot;</td>
<td>L = r' - 8&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>8&quot;</td>
<td>L = r' - 10&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>9&quot;</td>
<td>L = r' - 12&quot;</td>
<td>SEE &quot;A&quot; BAR LENGTH</td>
</tr>
<tr>
<td>L = &quot;OW&quot;</td>
<td>3 INCHES</td>
<td></td>
</tr>
</tbody>
</table>


ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1
GENERAL NOTES

1. THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTH, MAKING NO ALLOWANCE FOR OVERRUN ON BEYOND THE LENGTHS INDICATED.

2. IN ALL INSTANCES, CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 4 IN DIAMETER GAP OF REINFORCING STEEL.

3. REINFORCING STEEL, REMOVED FROM EXISTING STRUCTURE, SHALL NOT BE REUSED IN CONSTRUCTING EXTENSIONS.

4. ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE, APPROX. ALL OLD CONCRETE SHALL BE REMOVED WITH THE WINGS, THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE SO PER CURE YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

5. MATERIALS FOR SOURCING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTIONS 7 through 8 of the STANDARD SPECIFICATIONS.


7. THE CONTRACTOR SHALL HAVE THE OPTION OF USING OTHER METHODS OF METHOD 2, PROVIDED IN WHICH METHOD 2 IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 2.

NOTE:

1. PART OF THE STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

2. USE STANDARD DRAWING LETTER IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3
### Superelevation Table for Two-Way Traffic

<table>
<thead>
<tr>
<th>Degree of Curve</th>
<th>Left (ft)</th>
<th>Right (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>175</td>
<td>206</td>
</tr>
<tr>
<td>7.5%</td>
<td>188</td>
<td>225</td>
</tr>
<tr>
<td>10%</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>12.5%</td>
<td>215</td>
<td>300</td>
</tr>
<tr>
<td>15%</td>
<td>225</td>
<td>300</td>
</tr>
<tr>
<td>17.5%</td>
<td>240</td>
<td>350</td>
</tr>
<tr>
<td>20%</td>
<td>250</td>
<td>350</td>
</tr>
<tr>
<td>25%</td>
<td>280</td>
<td>400</td>
</tr>
<tr>
<td>30%</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>35%</td>
<td>325</td>
<td>400</td>
</tr>
</tbody>
</table>

### Abbreviations
- NC: Normal Crown
- RC: Reverse Crown
- Superelevation at Normal Crown Slope
- L: Length of Superelevation Transition
- La: Length of Superelevation Transition to Any Point
- Wp: Width of Pavement
- Wp/min: Minimum Width of Subgrade
- Wn: Normal Crown
- O/P: Outside Profile
- I/P: Inside Profile
- C: Control Point

### General Notes
1. On pavement with through traffic, the superelevation shall be reversed on the inside pave- ment edge unless otherwise noted on the plating plan.
2. The minimum length of superelevation transition shall be doubled when the gradient is 1:1 to 1:2, or divided by 2 when the gradient is 1:2 or shall be 25 ft or 50 ft, whichever is greater.
3. Lengths for La may be rounded in multiples of 25 ft or 50 ft, to permit simplified calculations.

### Standard Method When Superelevation Revolves Around Inner Subgrade Point or Inner Pavement Edge

**Note:** Maintain normal crown on inside until superelevation exceeds 2%. Parts of superelevation shall be composed of two or more line segments using applicable La.

### Standard Method When Superelevation Revolves Around Center Line

**Note:** Maintain normal crown on inside until superelevation exceeds 2%.

### Arkansas State Highway Commission

Tables and Method of Superelevation for Two-Way Traffic

**Standard Drawing SE-2**
**Details of Concrete Steps & Walks**

- **General Notes**: Lines and tread dimensions of steps may be varied as directed by the engineer. However, tread widths shall be 0 ft. All steps in a flight shall have consistent treads & risers.
- **Concrete Expansion Joints**: Shall be placed in concrete walks at 45° intervals.

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**Reinforced Concrete Spring Box**

- **Steel Schedule**: BARS | NUMBER | LENGTH |
  - A | 12 | 6'-0" |
  - B | 20 | 6'-0" |
  - C | 6 | 6'-0" |

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**Details of Alternate Post Anchor System**

- **Epoxy Adhesive Anchors**
- **Hand Railing Details**

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**Arkansas State Highway Commission**

**Details of Special Items**

**Standard Drawing SI-1**

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**Arkansas State Highway Commission**

**Details of Special Items**

**Standard Drawing SI-1**
The contractor shall furnish the Precast Concrete Barrier units and necessary hardware for the manufacture, alignment, storage, and placement and removal. At the completion of the project, the units shall be stored on the property of the contractor.

Concrete shall meet the following minimum requirements:
- 2000 psi compressive strength at 28 days.
- Reinforcing Steel AWS No. 3 or No. 5 Grade 60 Structural Steel AWS D707-M75 Grade 50
- Unless otherwise specified in the construction documents, and unless otherwise indicated in the project addendum, 50 ksi shall be used in place of the specified Connection Pin.

7.4.3. Precast barriers shall be mounted on 10" splices on top of precast barrier.

In situations where barrier walls within 6 feet of a traffic lane, additional barriers should be placed on the barrier at an angle approximately one foot from the top of the barrier.

In accordance with the bid drawings and specifications, the manufacturer shall furnish traffic control devices.

The contractor shall furnish to the Engineer a set of working drawings and the as-built drawings as shown on the final drawing.

Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration must meet the requirements of the Federal Highway Administration Report 85104 and the American Association of State Highway and Transportation Officials (AASHTO) bridge series, including the performance criteria for the Federal Highway Administration Report 85104 and the AASHTO bridge series.

Sheave holes in pavement or bridge decks that are not to remain in place shall be filled with an approved asphalt or epoxy in accordance with the specifications and approval of the Engineer.

Where required, sheave holes shall be filled with a 4" sheave as shown in detail in the final drawings and specifications.

A "D" type Adjustable Anchor Arm, Stabilization Pin and Sheave Slides shall be used as shown in the final drawings and specifications.
**Offset Distance for Two Way Traffic Only**

<table>
<thead>
<tr>
<th>Offset Distance Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1.55</td>
</tr>
<tr>
<td>3.0</td>
</tr>
</tbody>
</table>

If offset distance is not attainable, use the "Special Placement With Attenuator".

**General Notes**
When shown on the Plan, 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 BARRENNESS CONTROLS (G.S. SILT FENCES, DEERHOOD DITCHES, EROSION BARRIER, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION

EXCAVATION

EXISTING GROUND
INTERCEPTOR OR
DEERHOOD DITCH

GENERAL NOTE
ALL CUT FLUDES SHALL BE DRIED, PREPARED, SEEDED, AND MOWED AS THE WORK PROGRESSES. FLUDES SHALL BE EXCAViTED AND STABlLIZED IN
EQUAL INCREMENTS NOT TO EXCEED 12 FT. HORIZONTAL, VERTICALLY.

CONSTRUCTION SEQUENCE
1. EXCAVATE AND STABlLIZE INTERCEPTOR AND/OR DEERHOOD DITCHES.
2. PERFORM PHASE 1 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION, PLACE PERMANENT OR TEMPORARY SEEDING. STABlLIZE INTERCEPTOR/DEERHOOD DITCHES, DEERHOOD BARRIER, OR OTHER EROSION CONTROL DEVICES AS NEEDED.

EMBANKMENT

SIDE DITCH
STABlLIZED AS NEEDED

GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRIED, PREPARED, SEEDED, AND MOWED AS THE WORK PROGRESSES. SLOPES SHALL BE STABlLIZED IN
EQUAL INCREMENTS NOT TO EXCEED 12 FT. HORIZONTAL, VERTICALLY.

CONSTRUCTION SEQUENCE
1. CONSTRUCT EMBANKMENT, PLACE INTERCEPTOR/DEERHOOD DITCHES, DEERHOOD BARRIER, OR OTHER EROSION CONTROL DEVICES AS NEEDED.
2. PLACE PHASE 1 EMBANKMENT, PLACE PERMANENT OR TEMPORARY SEEDING.
3. PLACE PHASE 2 EMBANKMENT, PLACE PERMANENT OR TEMPORARY SEEDING.
4. PLACE FINAL PHASE OF EMBANKMENT, PLACE PERMANENT OR TEMPORARY SEEDING. STABlLIZE INTERCEPTOR/DEERHOOD DITCHES AND SLIP DRIPS AND MAINTAIN UNTIL ENTIRE
SLOPE IS STABlLIZED.

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION
CONTROL DEVICES

STANDARD DRAWING TEC-3
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER

TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

GENERAL NOTES

1. THE WORK SHALL CONSIST OF PURCHASING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER IN ACCORDANCE WITH THE REQUIREMENTS SHOWN IN THE ATTACHED DRAWING. THE CONTRACTOR SHALL INSTALLY THE ATTACHED DRAWING ON THE DIVERSION DITCH AND/OR DITCH LINER AS SHOWN.

2. TRIANGULAR SILT DIKE INSTALLATION SHALL BE INSTALLED IN SUCH A MANNER THAT THE TOPS OF THE DIKES ARE AT LEAST 6"o" ABOVE THE LOWEST POINT OF THE DIVERSION DITCH OR DITCH LINER.

3. TRAFFIC ON THE ROADWAY DITCH OR DRAINAGE DITCH SHALL BE DIVERTED AROUND THE DIVERSION DITCH OR DITCH LINER.

SYMBOLS

- TRIANGLE: SYMBOL TO BE USED TO IDENTIFY Silt Dike Locations.
### Bar List for Barrel Section B106 in Length

<table>
<thead>
<tr>
<th>Bar Type</th>
<th>Dia (in.)</th>
<th>Spacing (in.)</th>
<th>Cover (in.)</th>
<th>Length (ft)</th>
<th>Bend Angle</th>
<th>Bend Shape</th>
<th>Bend Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/2</td>
<td>10</td>
<td>6</td>
<td>10</td>
<td>30</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>3/8</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>45</td>
<td>2</td>
<td>0.2</td>
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<tr>
<td>3</td>
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<td>2</td>
<td>6</td>
<td>90</td>
<td>3</td>
<td>0.1</td>
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</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Height</td>
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</tr>
<tr>
<td>Diameter</td>
<td>10</td>
</tr>
</tbody>
</table>

### Quantities

<table>
<thead>
<tr>
<th>Unit</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar</td>
<td>100</td>
</tr>
</tbody>
</table>

### Typical Section View

- **Profile Conditioned Section**
- **Plan**
- **Longitudinal Section**

### General Notes:
- Concrete: All concrete in the Class B, and shall be placed in the dry.
- Reinforcement: The steel reinforcement shall be Grade 60 bars.
- Expansion Joints: Expansion joints shall be provided as required by the Project Engineer.

### Design Live Load

- **SPECIAL SET-UP LOADS**

### Class B Concrete

**ARIZONA STATE HIGHWAY COMMISSION**

**Details of Standard Barrel Sections for Reinforced Concrete Box Culverts**

**5% and 6% Slopes**

**Singles**

**Under 5% Cover**

**Standard Drawing No. R-000X-0**
CUT AREA 79 SQ.FT.
FILL AREA 62 SQ.FT.

CUT VOLUME 34 CYLD.
FILL VOLUME 219 CYLD.

CUT AREA 90 SQ.FT.
FILL AREA 57 SQ.FT.

CUT VOLUME 347 CYLD.
FILL VOLUME 89 CYLD.

STA J75+00 TO STA J76+00