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Note: Cross sections not normally included in plans sold to prospective bidders, but may be had upon request.
OVERLAY SUPERELEVATED SECTION
STA. 1187+38.38 TO STA. 1219+03.38

NOTES:
1. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LATERAL JOINTS SHALL BE AT LANE LINES.

OVERLAY TYPICAL SECTION
STA. 1219+03.38 TO TA. 1220+03.38
NOTCH & WIDEN TYPICAL SECTION

NOTCH & WIDEN SUPERELEVATED SECTION

NOTES:
1. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHEN DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE Amount OF ASPHALT NEEDED AND WIDENING CALCULATIONS WILL NOT BE PAID DIRECTLY, BUT PAYMENT WILL BE CONSIDERED IN THE VARIOUS PAY-ITEMS.
2. THE FINAL 3" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN Laid. CONSEQUENTIAL JOINTS SHALL BE Laid AT LINE LINES.
3. REFER TO CROSS SECTIONS FOR Deviations FROM THE NORMAL SLOPES. No DEVIATIONS SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.
4. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE INTENDED PLUS OR MINUS ONE-INCH OF THE PLANNED THICKNESS. THE CONTRACTOR WILL CORRECT ANY DEVIATIONS FROM THE THICKNESS INDICATED. PAYMENT WILL BE MADE FROM THE PLANNED THICKNESS PLUS OR MINUS ONE-INCH OF THE THICKNESS INDICATED.
5. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE CONTRACTOR, THE NEXT THICKNESS OF AGGREGATE SURFACE Course 1/10" IN LAY OF AGGREGATE Base COURSE ON THE SHOULDER.

TYPICAL SECTIONS OF IMPROVEMENT

NOTCH & WIDEN TYPICAL SECTION

NOTCH & WIDEN SUPERELEVATED SECTION

TYPICAL SECTIONS OF IMPROVEMENT

FULL DEPTH CONSTRUCTION TYPICAL SECTION

STA. 1281+92.58 TO STA. 1289+99.41

NOTES:

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

2. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

3. THE THERMOS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" OF THE PLAN THICKNESS. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS TO MEET THE TOLERANCE INDICATED.

4. THE APPROVAL OF THE ENGINEER WILL BE CONSIDERED AS THE NET COST TO THE DEPARTMENT. THE FIRST LIFT OF AC CM SURFACE COURSE (9'/') IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

5. AGGREGATE BASE COURSE (CLASS 7)

6. ON ALL SURFACE ELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 8.00'.
SECTION A-A  LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

NOTES:

1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND PARALLEL TO THE SHOULDER EDGE LINE AS WELL AS TO AVOID LONGITUDINAL JOINTS.

2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB EXTENSIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTIONS OR ROADSIDE OR RESIDENTIAL OR COMMERCIAL AREAS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

3. THE 6' OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.

4. RUMBLE STRIPS SHALL BE MEASURED AT THE EDGE OF THE SHOULDER ALONG THE EDGE LINE. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH THE RUMBLE STRIPS HAVE BEEN CONSTRUCTED.

5. THE 6' DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.

DETAILS OF RUMBLE STRIPS

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB EXTENSIONS, BRIDGE DECKS, APPROACH SLABS, INTERSECTIONS OR ROADSIDE OR RESIDENTIAL OR COMMERCIAL AREAS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

2. RUMBLE STRIPS SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECCELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.

3. THE 6' OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.

4. RUMBLE STRIPS SHALL BE MEASURED AT THE EDGE OF THE SHOULDER ALONG THE EDGE LINE. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH THE RUMBLE STRIPS HAVE BEEN CONSTRUCTED.

5. THE 6' DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 12' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
DETAIL FOR APPROACH SLAB

DETAIL FOR COHESIVE SOIL BACKFILL FOR ABUTMENT WALLS

PAY LIMITS FOR PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

DETAIL FOR PAVEMENT REPAIR OVER CULVERTS (CONCRETE)
ASPHALT CONCRETE HOT MIX SURFACE COURSE (5'/1000 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS T) 6" COMP'D. DEPTH IF ASPHALT DRIVE EXISTING OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

NOTE: REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROADS.

NOTE: REFER TO REINFORCED CONCRETE RETAINING WALL DETAILS FOR ADDITIONAL INFORMATION.
NOTES:
1. THIS DETAIL TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF RAISING GRADE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS 100 FEET OR LESS.
NOTE: SEE PLAN & PROFILE FOR ADDITIONAL NOTES.
SPECIAL DETAILS

NOTES: SEE PLAN & PROFILE FOR ADDITIONAL NOTES.

DRIVEWAY AT STA. 283+00

NOTES: SEE PLAN & PROFILE FOR ADDITIONAL NOTES.

DRIVEWAY AT STA. 286+25

NOTES: SEE PLAN & PROFILE FOR ADDITIONAL NOTES.

TEMPORARY CONNECTOR TO DRIVE AT STA. 286+25

NOTE: SEE PLAN & PROFILE FOR ADDITIONAL NOTES.
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SPECIAL
DETAILS
LOCATION
I
I
KIOSK LOCATION
STA. 229+52.6
OFFSET 343.6'I'.LT.
LAT. 35.852742N
LONG. 90.132291W
DENOTES AREA TO BE GRADED AND ADD 2" OF CLASS 7 AGGREGATE BASE.

NOTE:
AREAS WITH EXISTING AGGREGATE ONLY TO BE GRADED AND ADD 2" OF CLASS 7 AGGREGATE BASE.
NO WORK SHALL BE PERFORMED ON GRASSY AREAS. GRADE TO DRAIN.

KIOSK LOCATIONS SHALL BE COORDINATED WITH THE BIG LAKE NATIONAL WILDLIFE REFUGE AUTHORITIES.
REFER TO SPECIAL PROVISION "INFORMATIONAL KIOSKS" FOR ADDITIONAL INFORMATION.

KIOSK LOCATION 2
STA. 289+24.72
OFFSET 594.75' LT.
LAT. 35.852742N
LONG. 90.125431W
DENOTES AREA TO BE GRADED AND ADD 2" OF CLASS 7 AGGREGATE BASE.

NOTE:
AREAS WITH EXISTING AGGREGATE ONLY TO BE GRADED AND ADD 2" OF CLASS 7 AGGREGATE BASE.
NO WORK Shall Be PERFORMED ON GRASSY AREAS. GRADE TO DRAIN.

KIOSK LOCATIONS SHALL BE COORDINATED WITH THE BIG LAKE NATIONAL WILDLIFE REFUGE AUTHORITIES.
REFER TO SPECIAL PROVISION "INFORMATIONAL KIOSKS" FOR ADDITIONAL INFORMATION.
**INTERNAL REINFORCEMENT LOCATIONS**

- **Stage 2 Construction**
  - **Existing Traffic**
  - **Existing Concrete**
  - **Temp. P.C.C.B. Wall - Stage 3**

- **Stage 3 Construction**
  - **2' Existing Concrete**
  - **Temp. P.C.C.B. Wall - Stage 3**

**VARIABLE LENGTHS**

- **Timber Piles & Spacing C.C.**
  - +5'

**REFERENCES**

- Refer to Special Provision "Shoring" and Bridge Plans for additional information.
- Refer to cross sections for deviation from the normal slopes. The slopes shall be made from the planned slopes without the approval of the engineer.

**Plan Tip Elevation of Timber Piles.**
CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO AVOID ANY AND ALL UTILITIES WITHIN THE SOIL DENSIFICATION AREA.

BENDING FOR THE INSTALLATION OF INTERNAL REINFORCEMENT SHALL BE INCLUDED IN THE PRICE BID FOR COMPACTED EMBANKMENT (SPECIAL).

REFER TO SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION" FOR ADDITIONAL INFORMATION.

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES MAY BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.

COMPILATION OF EMBANKMENT FILL TO BE VERIFIED ON BOTH SIDES OF SHEET PILES. SPECIFIED COMPACTION MUST BE ACHIEVED UP TO SHEETS.

SUBGRADE UNDERCUT DEPTH AND WIDTH REQUIREMENTS TO BE FIELD VERIFIED BY THE ENGINEER.

NOTE: CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO AVOID ANY AND ALL UTILITIES WITHIN THE SOIL DENSIFICATION AREA.

REFER TO SPECIAL PROVISION "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION" FOR ADDITIONAL INFORMATION.

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COMPILATION OF EMBANKMENT FILL TO BE VERIFIED ON BOTH SIDES OF SHEET PILES. SPECIFIED COMPACTION MUST BE ACHIEVED UP TO SHEETS.

SUBGRADE UNDERCUT DEPTH AND WIDTH REQUIREMENTS TO BE FIELD VERIFIED BY THE ENGINEER.
Note: See roadway plans for maintenance of traffic details not shown.

Temporary sharing may be required. See SP Job CA002 "Sharing for Culverts".

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Temporary sharing may be required. See SP Job CA002 "Sharing for Culverts".
### MID-SECTION

#### BAR LAP TABLE

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<td>8</td>
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*The bar lap required for the Steel End Section shall be considered subsidiary to the form "Reinforcement Steel Schedule, 02/02/00."*

#### INLET WALL SECTION

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#### SLOPE END SECTION

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### SHEET 1 OF 2

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

**QUADRUPLE BARREL BOX CULVERT**

Sta. 1222-59

**SPECIAL DETAILS**
The octuol number and dimensions shown are for estimating purposes only. The actual number and length required shall be determined in field. Unless otherwise noted, all dimensions are in inches.
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Leads to Non-Skewed Boxes

GENERAL NOTES:


LIVE LOADING: H-6.93
All concrete shall be Class 5 with a minimum 28-day compressive strength of 3,500 psi and shall be cured in the dry. All exposed surfaces shall be Class 5, and shall be sealed with a minimum 2-inch thick coating of a suitable sealant material.

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M522, Type A, with mill test reports.

Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in "Manual of Standard Practice" published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for transverse bars such as Figure 3 on page 7-4 of the CRSI Manual shall be twice zero to

Excavation and backfilling shall be in accordance with the requirements of Section 801.

Membrane Waterproofing shall be Type F and as directed by the Engineer. Application shall be in accordance with the requirements of Section 801.

Concrete shall be supplied in accordance with the requirements of Section 801.

3.5'-

This detail shall be used when rock fill is specified for embankment construction.

VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

For Details of Excavation and Pay Limits, see Standard Drawing ROD-2.

WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

CL, R.C. Deline or Multi-Barrel Culvert

WINGWALL & CULVERT DRAINAGE DETAIL
Note: When top side of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

WATERPROOFING MEMBRANE

(Cover C) Length = 18" (566 mm)

Wingwall

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB REINFORCEMENT

WINGWALL ATTACHMENT

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

TYPICAL KEYWAY DETAIL

(All Construction sketch)

SKewed END SECTION DETAILS

SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT
SPECIAL DETAILS
Temporary erosion control details prior to construction

NOTE:
Stationing of erosion control devices taken along Hwy. B.C. construction.
Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.

Legend:
- Silt fence

Revisions:

Temporary erosion control details

Station, 1220+00.00
Begin Job CA1002
Log Mile 1.77
NOTE:
STATIONS OF EROSION CONTROL DETAILS TAKEN ALONG HT.
Erosion control measures to be placed during appropriate stages; these devices shall be left in place as long as required to control erosion.

Temporary Erosion Control Details
Prior to Construction
NOTE:

STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY. C.L. CONSTRUCTION.

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.
NOTE:
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY. 18 C.L. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED AT APPROXIMATE STAGES SHOWN. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

- TIMBER FENCE
- Silt fence

REVISIONS

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TEMPORARY EROSION CONTROL DETAILS
PRIOR TO CONSTRUCTION

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NOTE:

STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY. C.L.: CONSTRUCTION.

EROSION CONTROL MEASURES TO BE PLACED ALONG APPROPRIATE STATIONS. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

EC = SILT FENCE
TEIIPORARY EROSION CONTROL DETAILS

NOTE:
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY. 18 CONTRUCTION. EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

SILT FENCE

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LEGEND

CC = Silt Fence
NOTE: STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG E.N.R. CONSTRUCTION. EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.
NOTES:
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG INT. & CL. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHOULD BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STATION MARKS

LEGEND

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

SAND BAG DITCH CHECKS

STA. 1450 LT. SIDE 22
STA. 1500 RT. SIDE 22
STA. 1550 RT. SIDE 22

ROCK DITCH CHECKS

STA. 1600 RT. SIDE 3
TEMPORARY EROSION CONTROL DETAILS

STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY & C.L. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

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

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REVISIONS

SAND BAG DITCH CHECKS
- STA. 1220+00, RT. SIDE 22
- STA. 1225+00, RT. SIDE 22

ROCK DITCH CHECKS
- STA. 1224+00, RT. SIDE 3
- STA. 1226+00, RT. SIDE 3

Note: Stationing of erosion control devices taken along HWY & C.L. construction.
Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.

STA. 1220+00,00
BEGIN JOB CA1002
LOG MILE 1.77

DENOTES PAVEMENT TO BE CONSTRUCTED
REVISIONS

LEGEND

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

DATE | REVISION
--- | ---

SAND BAG DITCH CHECKS
STA 1236+00 RT, SIDE 22

ROCK DITCH CHECKS
STA 1237+50 RT, SIDE 3

NOTE:
STATIONS OF EROSION CONTROL MEASURES TO BE PLACED ALONG HWY. TO E.L. CONSTRUCTION.

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS NEEDED TO CONTROL EROSION.
**Temporary Erosion Control Details**

**Stage 2**

**Legend**
- S = Sand Bag Ditch Checks
- R = Rock Ditch Checks
- S = Silt Fence

**Notes:**
- Stationing of erosion control devices taken along N.M.I.E.C. construction limits.
- Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.

**Temporary Erosion Control Details**

---

*Temporary Erosion Control Details*

*Stage 2*

**Legend**
- *S*: Sand Bag Ditch Checks
- *R*: Rock Ditch Checks
- *S*: Silt Fence

**Notes:**
- Stationing of erosion control devices taken along N.M.I.E.C. construction limits.
- Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.
NOTE:
STATIONS OF EROSION CONTROL DEVICES TAKEN ALONG HWY 18 O.L. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SLT. FENCE

SAND BAG DITCH CHECKS
STA: 1264+50 LT. SIDE 22
STA: 1264+00 RT. SIDE 22

ROCK DITCH CHECKS
STA: 1265+50 LT. SIDE 3
STA: 1265+00 RT. SIDE 3
NOTE:

STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG I-35W & C.L. CONSTRUCTION.

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES, THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

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

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TEMPORARY EROSION CONTROL DETAILS
STAGE 2
NOTE:
- STATIONS OF EROSION CONTROL DEVICES TAKEN ALONG HWY 18 CONSTRUCTION.
- EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND
- @ = SAND BAG DITCH CHECKS
- @ = ROCK DITCH CHECKS
- @ = SILT FENCE

SAND BAG DITCH CHECKS
STA. 098+00 LT. SIDE 22

ROCK DITCH CHECKS
STA. 096+00 LT. SIDE 3
STA. 100+50 LT. SIDE 3

TEMPORARY EROSION CONTROL DETAILS
STAGE 2
Temporary Erosion Control Details

Stage 2

Note:
Stanting of erosion control devices taken along WRT R CL construction.
Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.

Legend:
- Sand Bag Ditch Checks
- Rock Ditch Checks
- Silt Fence

Stationing of erosion control devices:
- STA. 1304+50 LT. SIDE 22
- STA. 1305+50 LT. SIDE 22
- STA. 1307+00 LT. SIDE 3
- STA. 1308+00 LT. SIDE 3

Denotes pavement to be constructed.
STA. 1220+00, 00
BEGIN JOB CA1002
LOG MILE 1.77
NOTE:
- STATIONING OF EROSION CONTROL DEVICES DURING CONSTRUCTION.
- EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

DENOTES PAVEMENT TO BE CONSTRUCTED.

NOTE:
- Rock Ditch Checks
- Sand Bag Ditch Checks
- Silt Fence

DATE | REVISION
---|---

LEGEND

TEMPORARY EROSION CONTROL DETAILS
STAGE 3
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY 18 C.L. CONSTRUCTION.

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

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

TEMPORARY EROSION CONTROL DETAILS

STAGE 3
**Temporary Erosion Control Details**

**Stage 3**

**Legend**

- $\Box$ = Sand Bag Ditch Checks
- $\square$ = Rock Ditch Checks
- $\Delta$ = Silt Fence

*NOTE: Stationing of erosion control devices taken along M.C.L. construction. Erosion control measures to be placed along appropriate stages. These devices shall be left in place as long as required to control erosion.*

**Temporary Erosion Control Details**

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Temporary Erosion Control Details

Stage 3

Legend:
- $\square$ = Sand Bag Ditch Checks
- $\square$ = Rock Ditch Checks
- $\square$ = Silt Fence

NOTE:
Stationing of erosion control devices taken along HWY 18 C.L. construction.
Erosion control measures to be placed during appropriate stages. These devices shall be left in place as long as required to control erosion.

Stationing of erosion control devices along HWY 18 C.L. construction.

Temporary erosion control details
DENOTES PAVEMENT TO BE CONSTRUCTED

NOTE:
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY B.C. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

LEGEND

- = SAND BAG DITCH CHECKS
- = ROCK DITCH CHECKS
- = SILT FENCE
DENOTES PAVEMENT TO BE CONSTRUCTED

NOTE:
STATIONING OF EROSION CONTROL DEVICES TAKEN ALONG HWY. 18 C.L. CONSTRUCTION.
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

SAND BAG DITCH CHECKS

STA. 1314+96.37 END JOB CAT002 LOG MILE 3.57

BAG

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ROCK DITCH CHECKS

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LEGEND

- = SAND BAG DITCH CHECKS

- = ROCK DITCH CHECKS

- = Silt Fence

TEMPORARY EROSION CONTROL DETAILS

STAGE 3
NOTE: THESE SIGNS MAY BE TEMPORARILY REPLACED BY SOME OF THE ADVANCE SIGNS FOR LANE CLOSURES WHILE WORK IS UNDERWAY IN THESE AREAS.

ADVANCE SIGNS AT BEGINNING AND END OF JOB CA002 ALL STAGES

MOTION OF TRAFFIC ADVANCE WARNING SIGNS
NOTE: ALL ADVANCE WARNING SIGNS SHALL BE LEFT IN PLACE UNTIL THE PROJECT HAS BEEN COMPLETED.

SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN STAGE 1A:
- Construct N. County Rd. 305
- Construct Wildlife Refuge Rd.
- Maintain EB & WB traffic on existing Hwy. 18
- Construct portions of Hwy. 18 roadway and bridges
- Close EB & WB traffic to newly constructed pavement
- Construct remaining portions of Hwy. 18 roadway and bridges
- Placement of final layer of surfacing
- Placement of permanent pavement markings

NOTE: THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES.

MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 1A
NOTES TO CONTRACTOR:
- The contractor shall maintain traffic at all times.

SEQUENCE OF CONSTRUCTION FOR HWY. 1B NOTCH AND WIDEN:

STAGE 1A: CONSTRUCT N. COUNTY RD. 305
STAGE 2: CONSTRUCT WILDLIFE REFUGE RD.
STAGE 3: MAINTAIN EB & WB TRAFFIC ON EXISTING HWY. 1B CONSTRUCT PORTIONS OF HWY. 1B ROADWAY AND DIVIDES
STAGE 4: ROUTE EB & WB TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT CONSTRUCT REMAINING PORTIONS OF HWY. 1B ROADWAY AND BRIDGES

NOTES:
- All advance warning signs shall be left in place until the project has been completed.
- The contractor shall maintain traffic at all times.

MAINTENANCE OF TRAFFIC
HWY. 1B STAGE 1B
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN:

STAGE 1A:
- Construct N. County Rd. 305
- Construct Wildlife Refuge Rd.

STAGE 2:
- Maintain EB & WB Traffic on existing HWY. 18
- Construct portions of HWY. 18 roadway and bridges
- Route EB & WB Traffic to newly constructed pavement
- Construct remaining portions of HWY. 18 roadway and bridges
- Placement of final layers of surfacing
- Placement of permanent pavement markings

STAGE 2:
- STA. 1220+00 to STA. 1223+15
- Furnish and Install Precast Concrete Barrier + 2 each

NOTE: All Advance Warning Signs Shall Be Left in Place Until the Project Has Been Completed.

SECTION A-A

BEGIN JOB CA1002
LOG MILE 1.77

STAGE 2:
- STA. 1220+00 to STA. 1223+15
- Furnish and Install Precast Concrete Barrier + 2 each

MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 2
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN
STAGE IA
CONSTRUCT N. COUNTY RD. 305
STAGE IB
CONSTRUCT WILDLIFE REFUGE RD.
STAGE IC
MAINTAIN EB & WB TRAFFIC ON EXISTING HWY. 18
CONSTRUCT PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
STAGE ID
ROUTE EB & WB TRAFFIC TO HEAVILY CONSTRUCTED PORTIONS
STAGE IE
CONSTRUCT REMAINING PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
STAGE IF
PLACEMENT OF FINAL LAYER OF SURFACE PLACEMENT OF PERMANENT PAVEMENT MARKINGS

NOTES:
REQUIREMENTS FOR SPECIAL DETAILS, BRIDGE SHORING AND SCAFFOLDING, WIND, FLOOD, EARTHQUAKES, AND HUMAN CONSTRUCTION ACTIVITIES
FILLING FOR SMALL DETAIL CONSTRUCTION WORK SPATIAL SEQUENCING OF CONSTRUCTION ACTIVITIES AND ANY ADDITIONAL INFORMATION FOR THE CONSTRUCTION OF THE BRIDGE APPROACHES.

VERTICAL PANELS
STA. 1230+00 TO STA. 1245+00 0° 0' 0.0" C.C.
STA. 1230+03 TO STA. 1237+83 FURNISH AND INSTALL P.C.C.B.
STA. 1240+47 TO STA. 1242+80 FURNISH AND INSTALL P.C.C.B.

MAINTENANCE OF TRAFFIC HWY. 18 STAGE 2
SEQUENCE OF CONSTRUCTION FOR HWY, 1B NITION AND WIDEN

STAGE 1A

- CONSTRUCT N. COUNTY RD. 305

STAGE 1B

- CONSTRUCT WILDLIFE REFUGE RD.

STAGE 2

- MAINTAIN EB & WB TRAFFIC ON EXISTING HWY, 1B
- CONSTRUCT PORTIONS OF HWY, 1B ROADWAY AND BRIDGES
- ROUTE EB & WB TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT
- CONSTRUCT REMAINING PORTIONS OF HWY, 1B ROADWAY AND BRIDGES

STAGE 3

- PLACEMENT OF FINAL LAYERS OF SURFACE
- PLACEMENT OF PERMANENT PAVEMENT MARKINGS

STAGE 4

- MAINTAIN EB & WB TRAFFIC ON EXISTING HWY, 1B
- CONSTRUCT REMAINING PORTIONS OF HWY, 1B ROADWAY AND BRIDGES
- PLACEMENT OF FINAL LAYER OF SURFACE OF PERMANENT PAVEMENT MARKINGS

- MAINTENANCE OF TRAFFIC

HWY, 1B STAGE 2

SECTION A-A

VERTICAL PANELS
STA. 1245+00 TO STA. 1260+00
17 % 30' D.C.
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN
STAGE 1
CONSTRUCT N. COUNTY RD. 305
STAGE 2
CONSTRUCT WILDLIFE REFUGE RD.
STAGE 3
ROUTE EB & WB TRAFFIC TO EXISTING HWY. 18
CONSTRUCT PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
STAGE 4
ROUTE EB & WB TRAFFIC TO NEARLY CONSTRUCTED PAVERED
CONSTRUCT REMAINING PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
PLACEMENT OF FINAL LAYER OF SURFACE
PLACEMENT OF PERMANENT PAVEMENT MARKINGS

VERTICAL PANELS STA.064+68 TO STA.072+00
H @ 90'0.C.

MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 2
STAGE 2
STA. 1275+00 to STA. 1280+57
Furnish and Install Precast Concrete Barrier + 519 L.F.
Temporary Impact Attenuation Barrier = 1 each

NOTE:
A. Advance Warning Signs shall be left in place until the project has been completed.

MAINTENANCE OF TRAFFIC
Hwy. 18  STAGE 2

VERTICAL PANELS
STA. 1285+00 to STA. 1290+57

E x 90' C.C.

NOTE:
Refer to Special Details, Bridge Drawings and Special Provisions for Geosynthetic Internal Reinforced Embankment Construction & Timber Fitting for soil conditions for locations.

See Special Details for additional information and any additional information for the Construction of the Bridge Approaches.
MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 2

SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN

STAGE 1A
1. CONSTRUCT N. COUNTY RD. 305
2. CONSTRUCT WILDLIFE REFUGE RD.
3. MAINTAIN ST. & WB TRAFFIC ON EXISTING HWY. 18
4. CONSTRUCT PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
5. CONSTRUCT REMAINING PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
6. PLACEMENT OF FINAL LAYER OF SURFACE
7. PLACEMENT OF PERMANENT PAVEMENT MARKINGS
8. TEMPORARY IMPACT ATTENUATION BARRIER

NOTE: REFER TO SPECIAL PROVISIONS, BRIDGE DRAWING AND
SPECIAL PROVISIONS.COORDINATING INTERFACEx VERTICAL PANELS
LIMITED LENGTH CONCRETE CONSTRUCTION:
AND ANY ADDITIONAL INFORMATION FOR THE CONSTRUCTION
OF THE BRIDGE APPROACHES.

NOTE: TO BE PLACED AT THE STATE LINE OUTLET
DITCH BOAT RAMP.
SEQUENCE OF CONSTRUCTION FOR HWY, 18

STAGE 1:
- CONSTRUCT N. COUNTY RD. 305
- CONSTRUCT PLOPPE REFUSE RD.

STAGE 2:
- MAINTAIN RD. & MSR TRAFFIC ON EXISTING HWY, 18
- CONSTRUCT PORTIONS OF HWY, 18 ROADWAY AND BRIDGES
- ROUTE CD & MS TRAFFIC TO NON-K CONSTRUCTED PORTION
- CONSTRUCT REMAINING PORTIONS OF HWY, 18 ROADWAY AND BRIDGES

STAGE 3:
- MAINTAIN EB & WE TRAFFIC ON EXISTING HWY, 18
- CONSTRUCT PORTIONS OF HWY, 18 ROADWAY AND BRIDGES
- ROUTE CD & MS TRAFFIC TO NON-K CONSTRUCTED PORTION
- CONSTRUCT REMAINING PORTIONS OF HWY, 18 ROADWAY AND BRIDGES

STAGE 4:
- PLACEMENT OF FINAL LAYER OF SURFACE
- PLACEMENT OF PERMANENT PAVEMENT MARKINGS

MAINTENANCE OF TRAFFIC
HWY, 18 STAGE 2
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN

STAGE 1A
CONSTRUCT N. COUNTY RD. 305

STAGE 2
CONSTRUCT WILDLIFE REFUGE RD.

STAGE 3
MAINTAIN EB & WB TRAFFIC ON EXISTING HWY. 18

ROUTE EB & WB TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT

PLACEMENT OF FINAL LAYERS OF SURFACE

DECLARE CONSTRUCTION DRAWINGS FOR STAGE 3 TRAFFIC

REMOVE EXISTING PIER OF ABANDONED RAILROAD BRIDGE

RELOCATE TEMP. IMPACT ATTENUATION BARRIER TO STAGE 3

RELOCATE TEMP. IMPACT ATTENUATION BARRIER TO STAGE 4

RELOCATE TEMP. IMPACT ATTENUATION BARRIER TO STAGE 5

FOR STAGE 5 TRAFFIC.
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NITHE AND WIDEN
STAGE 1A
CONSTRUCT N. COUNTY RD. 305
STAGE 1B
CONSTRUCT WILDLIFE REFUG. RD.
STAGE 2
MAINTAIN NB & WS TRAFFIC ON EXISTING HWY. 18
ROUTE CB & WS TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT
STAGE 2A
CONSTRUCT PORTIONS OF HWY. 18 ROADWAY AND BRIDGES
STAGE 2B
PLACEMENT OF PAVEMENT TO BE CONSTRUCTED
STAGE 3
CONSTRUCTION PAVEMENT MARKINGS
STAGE 3A
YELLOW 4" CONTINUOUS
STAGE 3B
WHITE 4" CONTINUOUS
WHITE 4" CONTINUOUS
SECTION A-A
MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 3
WHITE 4" DOUBLES CONT.
YELLOW 4" CONT.
WHITE 4" CONT.
TRAFFIC DRUM
TRAFFIC DRUM
TRAFFIC DRUM
TRAFFIC DRUM
SEQUENCE OF CONSTRUCTION FOR HWY. 18 NOTCH AND WIDEN

STAGE 1A
CONSTRUCT N. COUNTY RD. 305

STAGE 1B
CONSTRUCT WILDLIFE REFUGE RD.

STAGE 2
CONSTRUCT REMAINING PORTIONS OF HWY. 18 ROADWAY AND BRIDGES

STAGE 3
ROUTE EB & WB TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT

STAGE 4
PLACE FINAL LAYER OF SURFACE

MAINTENANCE OF TRAFFIC
HWY. 18 STAGE 3

NOTE: ALL ADVANCE WARNING SIGNS SHALL BE LEFT IN PLACE UNTIL THE PROJECT HAS BEEN COMPLETED.
PERMANENT STRIPING QUANTITIES
HWY. 9 (STA. 1217+38.38 TO STA. 1220+03.38)

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<td>4&quot; YELLOW SKIP</td>
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<td>RAISED PAVEMENT MARKER (TYPE II) YELLOW/YELLOW</td>
<td>20 EACH</td>
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STA. 1220+00.00 AHD.
STA. 1220+03.38 BK.
BEGIN JOB CA1002
LOG MILE 1.77
PERMANENT STRIPING QUANTITIES
HWY. 83 (STA. 1230+00) TO STA. 1245+00

<table>
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<tr>
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<th>QUANTITY</th>
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<tbody>
<tr>
<td>1.</td>
<td>4&quot; White Skip</td>
<td>500 L.F.</td>
</tr>
<tr>
<td>2.</td>
<td>4&quot; White Continuous</td>
<td>3000 L.F.</td>
</tr>
<tr>
<td>3.</td>
<td>4&quot; Yellow Skip</td>
<td>400 L.F.</td>
</tr>
<tr>
<td>4.</td>
<td>Raised Pavement Marker (Type II) White/Red</td>
<td>31 EACH</td>
</tr>
<tr>
<td>5.</td>
<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>3 EACH</td>
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<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1.</td>
<td>4&quot; White Skip</td>
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<tr>
<td>2.</td>
<td>4&quot; White Continuous</td>
<td>3000 L.F.</td>
</tr>
<tr>
<td>3.</td>
<td>4&quot; Yellow Skip</td>
<td>440 L.F.</td>
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<td>Raised Pavement Marker (Type II) White/Red</td>
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<tr>
<td>5.</td>
<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>3 EACH</td>
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<td>4&quot; White Skip</td>
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<td>4&quot; Yellow Skip</td>
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<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>31 EACH</td>
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<tbody>
<tr>
<td>1.</td>
<td>4&quot; White Skip</td>
<td>3500 L.F.</td>
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<td>4&quot; Yellow Continuous</td>
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<td>4.</td>
<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>31 EACH</td>
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<tr>
<td>1.</td>
<td>4&quot; White Skip</td>
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<tr>
<td>2.</td>
<td>4&quot; Yellow Continuous</td>
<td>190 L.F.</td>
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<td>Raised Pavement Marker (Type II) White/Red</td>
<td>37 EACH</td>
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<tr>
<td>4.</td>
<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>31 EACH</td>
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<table>
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<th>DESCRIPTION</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>1.</td>
<td>4&quot; White Skip</td>
<td>190 L.F.</td>
</tr>
<tr>
<td>2.</td>
<td>4&quot; Yellow Continuous</td>
<td>190 L.F.</td>
</tr>
<tr>
<td>3.</td>
<td>Raised Pavement Marker (Type II) White/Red</td>
<td>37 EACH</td>
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<tr>
<td>4.</td>
<td>Raised Pavement Marker (Type III) Yellow/Yellow</td>
<td>31 EACH</td>
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PERMANENT STRIPING QUANTITIES
HWY. B STA. 1245+00 TO STA. 1260+00

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>4&quot; WHITE SKIP</td>
<td>750 L.F.</td>
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<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>3500 L.F.</td>
</tr>
<tr>
<td>4&quot; YELLOW CONTINUOUS</td>
<td>750 L.F.</td>
</tr>
<tr>
<td>4&quot; YELLOW SKIP</td>
<td>750 L.F.</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE II WHITE/RED)</td>
<td>36 EACH</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE II YELLOW/YELLOW)</td>
<td>36 EACH</td>
</tr>
</tbody>
</table>

PERMANENT PAVEMENT MARKING DETAILS

RAISED PAVEMENT MARKERS 40' O.C. (TYPE II WHITE/RED)
MONTH: 9
DAY: 6
YEAR: 2016

ARCHITECT: JACOBS
PROJECT NO.: 67-03
PERMANENT STRIPING QUANTITIES
HWY.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
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</thead>
<tbody>
<tr>
<td>4&quot; WHITE SKIP</td>
<td>380 L.F.</td>
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<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>435 L.F.</td>
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<tr>
<td>4&quot; YELLOW SKIP</td>
<td>270 L.F.</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER TYPE III WHITE/RED</td>
<td>42 EACH</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER TYPE III YELLOW/YELLOW</td>
<td>34 EACH</td>
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</table>

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot; WHITE SKIP</td>
<td>350 L.F.</td>
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<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>355 L.F.</td>
</tr>
<tr>
<td>4&quot; YELLOW SKIP</td>
<td>300 L.F.</td>
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<tr>
<td>4&quot; YELLOW CONTINUOUS</td>
<td>300 L.F.</td>
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RAISED PAVEMENT MARKER (TYPE II) WHITE/RED

<table>
<thead>
<tr>
<th>QUANTITY</th>
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</thead>
<tbody>
<tr>
<td>42 EACH</td>
</tr>
</tbody>
</table>

RAISED PAVEMENT MARKER (TYPE II) YELLOW/YELLOW

<table>
<thead>
<tr>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 EACH</td>
</tr>
</tbody>
</table>

PERMANENT PAVEMENT MARKING DETAILS
### Permanent Striping Quantities

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>4&quot; white skip</td>
<td>430</td>
<td>L.F.</td>
</tr>
<tr>
<td>4&quot; yellow skip</td>
<td>205</td>
<td>L.F.</td>
</tr>
<tr>
<td>Raised pavement marker (type II) white/red</td>
<td>40</td>
<td>each</td>
</tr>
<tr>
<td>4&quot; white continuous</td>
<td>340</td>
<td>L.F.</td>
</tr>
<tr>
<td>4&quot; yellow continuous</td>
<td>180</td>
<td>L.F.</td>
</tr>
<tr>
<td>Raised pavement marker (type II) yellow/yellow</td>
<td>25</td>
<td>each</td>
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</tbody>
</table>

### High Performance Contrast Pavement Markings

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>4&quot; white continuous</td>
<td>352</td>
<td>L.F.</td>
</tr>
<tr>
<td>4&quot; yellow continuous</td>
<td>192</td>
<td>L.F.</td>
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<tr>
<td>Raised pavement marker (type II) white/red</td>
<td>64</td>
<td>each</td>
</tr>
<tr>
<td>4&quot; white skip</td>
<td>450</td>
<td>L.F.</td>
</tr>
<tr>
<td>4&quot; yellow skip</td>
<td>230</td>
<td>L.F.</td>
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<tr>
<td>Raised pavement marker (type II) yellow/yellow</td>
<td>30</td>
<td>each</td>
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</table>

### Bridge No. 03926 STA 1295+15.4 TO STA 1295+28.59

- **High Performance Contrast Pavement Markings**
- **Raised Pavement Markers**
- **End Contrast Pavement Markings**
PERMANENT STRIPING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; WHITE SKIP</td>
<td>750 LF.</td>
</tr>
<tr>
<td>6&quot; WHITE CONTINUOUS</td>
<td>3000 LF.</td>
</tr>
<tr>
<td>6&quot; YELLOW CONTINUOUS</td>
<td>3000 LF.</td>
</tr>
<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>1000 LF.</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE II WHITE/RED)</td>
<td>36 EACH</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE II YELLOW/YELLOW)</td>
<td>36 EACH</td>
</tr>
</tbody>
</table>

REMOVAL OF PERM. PAVEMENT MARKINGS 2260'

RAISED PAVEMENT MARKERS & RD O.C. TYPE II (WHITE/RED)

RAISED PAVEMENT MARKERS & RD O.C. TYPE II (YELLOW/YELLOW)

STA. 1314 + 96.37
END JOB CA1002
LOG MILE 3.57

PERMANENT PAVEMENT MARKING DETAILS
PERMANENT STRIPING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; WHITE SKIP</td>
<td>700 L.F.</td>
</tr>
<tr>
<td>6&quot; WHITE CONTINUOUS</td>
<td>3000 L.F.</td>
</tr>
<tr>
<td>6&quot; YELLOW CONTINUOUS</td>
<td>3000 L.F.</td>
</tr>
<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>3000 L.F.</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE I) WHITE/RED</td>
<td>38 EACH</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER (TYPE I) YELLOW/YELLOW</td>
<td>38 EACH</td>
</tr>
</tbody>
</table>

REMOVAL OF PERM. PAVEMENT MARKINGS 2260'

PERMANENT PAVEMENT MARKING DETAILS
PERMANENT STRIPING QUANTITIES
Hwy. # 157A, 1335+00 TO 137A, 1337+37

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot; WHITE SKIP</td>
<td>100 L.F.</td>
</tr>
<tr>
<td>4&quot; WHITE CONTINUOUS</td>
<td>520 L.F.</td>
</tr>
<tr>
<td>4&quot; YELLOW CONTINUOUS</td>
<td>520 L.F.</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER TYPE II WHITE/RED</td>
<td>4 EACH</td>
</tr>
<tr>
<td>RAISED PAVEMENT MARKER TYPE II YELLOW/YELLOW</td>
<td>4 EACH</td>
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REMOVAL OF PERM. PAVEMENT MARKINGS 2260'
### REMOVAL AND DISPOSAL ITEMS

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<tr>
<th>STATION</th>
<th>SIDE</th>
<th>LOCATION</th>
<th>STATION</th>
<th>SIDE</th>
<th>LOCATION</th>
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</thead>
<tbody>
<tr>
<td>1299+00</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1299+00</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
</tr>
<tr>
<td>1311+99</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1312+00</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
</tr>
<tr>
<td>1321+99</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1322+00</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
</tr>
<tr>
<td>1327+57</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1327+60</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
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<tr>
<td>1327+65</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1327+70</td>
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<tr>
<td>1327+75</td>
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<td>1327+80</td>
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<td>C.L. HWY 18</td>
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<tr>
<td>1327+85</td>
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<td>C.L. HWY 18</td>
<td>1327+90</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
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<tr>
<td>1327+95</td>
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<td>C.L. HWY 18</td>
<td>1328+00</td>
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<td>C.L. HWY 18</td>
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<tr>
<td>1330+08</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
<td>1330+13</td>
<td>LEFT</td>
<td>C.L. HWY 18</td>
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</table>

#### Pipe Culverts
- SHOWN FOR STATION STATIO
- SHOWN FOR LOCATION EACH
- NOTE: FOR THE CLEARING AND GRUBBING QUANTITIES SHALL BE FROM RIGHT OF WAY TOP TO BOTTOM UNLESS OTHERWISE NOTED ON THE PLAN.

### BENCH MARKS

<table>
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<tr>
<td>1291+00</td>
<td>S.E. CORNER OF BOX Culvert</td>
<td>1</td>
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<td>1291+80</td>
<td>N.W. CORNER OF BRIDGE</td>
<td>1</td>
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<tr>
<td>1291+85</td>
<td>NORTH-WEST CORNER OF BRIDGE</td>
<td>1</td>
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<tr>
<td>1290+10</td>
<td>NORTH-WEST CORNER OF BRIDGE</td>
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#### Flowable Select Material

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<th>DEPTH</th>
<th>CU. YD.</th>
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<tr>
<td>1240+00</td>
<td>C.L. HWY 18</td>
<td>22</td>
<td>3.67</td>
<td>5.00</td>
<td>1.8</td>
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<tr>
<td>1240+06</td>
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<td>55</td>
<td>3.60</td>
<td>2.00</td>
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<td>84</td>
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<td>1258+00</td>
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<td>3.05</td>
<td>2.20</td>
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<td>1262+00</td>
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<td>1266+00</td>
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<td>3.05</td>
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<td>1270+00</td>
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<td>45</td>
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#### TOTAL:
- 106.6

**Note:** For the pavement repair (non-culvert), note the following:
- For the abscission of box culvert.
- For the abscission of temporary pipe culvert.

### Removal of Existing Portland Cement Concrete Pavement

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<tr>
<td>1236+10</td>
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<td>138</td>
<td>22</td>
<td>626</td>
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<tr>
<td>1237+15</td>
<td>C.L. HWY 18</td>
<td>135</td>
<td>22</td>
<td>612</td>
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<tr>
<td>1237+20</td>
<td>C.L. HWY 18</td>
<td>135</td>
<td>22</td>
<td>612</td>
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<tr>
<td>1237+25</td>
<td>C.L. HWY 18</td>
<td>138</td>
<td>22</td>
<td>612</td>
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<tr>
<td>1238+12</td>
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<td>138</td>
<td>22</td>
<td>612</td>
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<td>1238+17</td>
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<td>22</td>
<td>612</td>
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<tr>
<td>1238+22</td>
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<td>138</td>
<td>22</td>
<td>612</td>
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<td>1238+27</td>
<td>C.L. HWY 18</td>
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<td>22</td>
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#### TOTAL:
- 1768

### Earthwork

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<th>DESCRIPTION</th>
<th>UNCLASSIFIED ELEVATION</th>
<th>COMPACTED EMBANKMENT</th>
<th>COMPACTED EMBANKMENT (SPECIAL)</th>
<th>COHESIVE SOIL BACKFILL</th>
<th>SOIL STABILIZATION</th>
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<tr>
<td>1220+00</td>
<td>1221+00</td>
<td>HWY 18</td>
<td>6400</td>
<td>8000</td>
<td>1500</td>
<td>1400</td>
<td>1000</td>
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<tr>
<td>1120+00</td>
<td>1121+00</td>
<td>HWY 18</td>
<td>5000</td>
<td>5000</td>
<td>500</td>
<td>1500</td>
<td>1000</td>
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<td>1223+10</td>
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<td>HWY 18</td>
<td>7000</td>
<td>5000</td>
<td>500</td>
<td>1500</td>
<td>1000</td>
</tr>
<tr>
<td>1225+00</td>
<td>1226+00</td>
<td>HWY 18</td>
<td>7000</td>
<td>5000</td>
<td>500</td>
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#### TOTALS:
- 1768

**Note:** Quantities estimated. See Section 10408 of the STD. SPECS.
## PERMANENT EROSION CONTROL

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### APPROACH GUTTERS AND SLABS

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### RUMBLE STRIPS IN ASPHALT SHOULDER

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### TEMPORARY EROSION CONTROL ITEMS AND DEVICES

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<th>SAND BAG CHECKS</th>
<th>ROCK DITCH CHECKS</th>
<th>SLIT FENCE</th>
<th>SEDIMENT BASIN</th>
<th>OBLITERATION OF SEDIMENT BARN</th>
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### QUANTITIES

TOTAL: 696.96

Note: Average milling depth 1'.
### SOIL LOG

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### DRIVEWAYS & TURNSOUTS

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### SELECTED PIPE BEDDING

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### STRUCTURES

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<th>LENGTH</th>
<th>CLASS &amp; SPEC.</th>
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### SOIL CHARACTERISTICS TABLED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLES AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF VARIATIONS FROM THE ABOVE TABULATIONS.

### NOTES ON PIPE BEDDING

- NOTE: QUANTITY ESTIMATES:
  - SEE SECTION 10A.06 OF THE STD. SPECS.
  - CONTRACT 1: 7.00 C.U.YD.
  - CONTRACT 2: 7.00 C.U.YD.
### Asphalt Concrete Patching for Maintenance of Traffic

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Note: Quantities estimated. See Section 104.03 of the STD. Specs.

### ACHP Patching of Existing Roadway

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Note: Quantities estimated. See Section 104.03 of the STD. Specs.

### Informational Kiosk

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Note: Refer to Special Provision - Informational Kiosk for additional information.

### Concrete Island

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### PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

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### Concreting Ditch Paving

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Note: Quantities estimated. See Section 104.03 of the STD. Specs.

### Concrete Ditch Paving

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### Concrete Island

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### Informational Kiosk

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Note: Refer to Special Provision - Informational Kiosk for additional information.

### Curbing

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### Mailboxes

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<td>1</td>
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### Retaining Walls

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<th>Rein. Steel</th>
<th>Aggregate Base Course</th>
<th>SELECT/granular Backfill</th>
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<td>1271+46</td>
<td>Right</td>
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<td>22414</td>
<td>2017</td>
<td>1685</td>
<td>183</td>
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<tr>
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<td><strong>1685</strong></td>
<td><strong>183</strong></td>
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### Quantities

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Note: Refer to Special Provision - Informational Kiosk for additional information.
BASE AND SURFACING - MAIN LANES

<table>
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<tr>
<th>STATION</th>
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<th>LOCATION</th>
<th>LENGTH</th>
<th>AGGREGATE BASE COURSE (PIECE #)</th>
<th>GEOTEXTILE FABRIC (TYPE #)</th>
<th>TACK COAT</th>
<th>ACHIB BASE COURSE (1/2&quot;)</th>
<th>ACCH Binder COURSE (1&quot;)</th>
<th>ACCH Surface COURSE (1/2&quot;)</th>
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**NOTES:**

1. For SH 1004, SH 1066, SH 1110, and SH 1150, the quantities in the table are estimated based on historical data and may not reflect the exact quantities required. For SH 1030 and SH 1070, the quantities are based on a detailed survey of the project area.

2. The quantities in the table are provided for guidance and should be reviewed in conjunction with the project specifications and drawings.

**BASE AND SURFACING - MAIN LANES (Continued)**

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<th>TACK COAT</th>
<th>ACHIB BASE COURSE (1/2&quot;)</th>
<th>ACCH Binder COURSE (1&quot;)</th>
<th>ACCH Surface COURSE (1/2&quot;)</th>
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**NOTE:**

The quantities in the table are subject to change based on the final project specifications and may require adjustments during the construction phase.
### BASE AND SURFACING - SHOULDERS

<table>
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<tr>
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<th>AGGREGATE BASE COURSE (CLASS T7)</th>
<th>TACK COAT</th>
<th>GEOTEXTILE FABRIC (TYPE A)</th>
<th>ACHMI BINDER COURSE (G)</th>
<th>ACHMI SURFACE COURSE (G)</th>
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**Quantities**

**ACHMI SURFACE COURSE (G)**
- 54.5% MIN. ASPHALT
- 4% ASPHALT Binder

**ACHMI BINDER COURSE (G)**
- 56.5% MIN. ASPHALT
- 4% ASPHALT Binder

**MAXIMUM NUMBER OF LAYERS** = 115 FOR PG 64-22
# SCHEDULE OF BRIDGE QUANTITIES - JOB NO. CA0202

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SP &amp; I.D.</th>
<th>BRIDGE, WING, PLATE</th>
<th>UNIT OF MEASUREMENT</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
<th>DETAIL</th>
<th>REV.</th>
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<tr>
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**TOTALS FOR BRIDGE NO. CA0202**

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**TOTALS FOR JOB NO. CA0202**

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</table>
ARKANSAS

USE

Project Name: 4103007
Date: 2/13/1972
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GSP CONTROL
Projected to Ground

ARKANSAS STATE PLANE - NORTH ZONE BASED ON GSP CONTROL
PROJECTED TO GROUND.

UNITED STATES SURVEY FOOT

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<tr>
<th>Point</th>
<th>Name</th>
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Note - Upper and Cap - Standard **Repair w/ 2" Aluminum Cap stamped

*standard markings common to all copes as indicated

**Upper markings indicate in the point description of the individual point.

USE CAP - 1.0 FOR STARTER FOR THIS PROJECT

A PROJECT CAP OF 0,00001/16=00001/1677 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.

THIS CAP IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.

GRID DISTANCE - GRID COORDINATE X GRID DISTANCE Y

COPES

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</tbody>
</table>

SURVEY CONTROL DETAILS
SURVEY CONTROL DETAILS
SURVEY CONTROL DETAILS

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ALL DISTANCES ARE APPROXIMATED BASED ON SURVEY CONTROL POINTS.
ALL DISTANCES ARE MEASURED FROM SURVEY CONTROL POINTS.

SURVEY BASELINE 1:
- 1290
- 1295
- 1292
- 1297
- 1300

SURVEY BASELINE 2:
- 1290
- 1305

POLYSTANDARD ANCHOR REBAR AND CAP

---

SURVEYOR: [Signature]
DATE: 9/12/16

---

PROJECT SUPERVISOR: [Signature]
DATE: 9/12/16

---

ENGINEER: [Signature]
DATE: 9/12/16

---

SURVEYOR: [Signature]
DATE: 9/12/16
ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND
*THE CONTRACTOR SHALL OBTAIN THE AS- BUILT CONSTRUCTION PLANS FROM THE MANILA WATER DEPARTMENT PRIOR TO CONSTRUCTION.*
GENERAL NOTES

EXISTING BRIDGE Existing Bridge No. 03225 (Gle No. 9) has bridge 1,880 ft and west of 2,147 ft long and 93.3' wide, and 38.8' wide, and 78-1/2' wide. The bridge is supported on concrete columns and column bases. The existing bridge occupies the proposed right-of-way. Any existing super-elevation within the limits of the soil classification shown on Drawing No. 58640 should be removed prior to driving new steel piles and adding new piles. Shells shall be replaced after driving new piles. Removal of existing super-elevation within the limits of the soil classification shown on Drawing No. 58640 should be removed from the Construction Contract Procurement Section of the Project Management Division. See Drawing No. 58633 - 6836 and 58638.

Eight existing concrete piles of an abandoned railroad bridge consisting of concrete caps supported by solid wales are located near the bridge. See Roadway Plans for location.

REMOVAL AND SALVAGE: Remove existing piles of abandoned railroad bridge in accordance with Section 303. After Stage 2 Construction of the new bridge is opened to traffic, Existing Bridge No. 03225 will be removed from the right-of-way. The Contractor shall be considered as full and complete fulfillment of the contract when the contractor has removed all superstructure and remaining structural subcomponents. Any existing railroad structure shall be removed by the Contractor.

METHOD OF SUPERELEVATION TRANSITION

Scale: 1 - 20 Horizontal
P - 4 Vertical

Note: Use the following equations to calculate centerline and outside of shoulder elevations within the limits of the super-elevation transition. "F" is the distance from the centerline to the point on the roadway.

CENTERLINE

\[ F = \frac{1}{2} \times \left| \frac{\text{Radius} - \text{Intersection Radius}}{\text{Intersection Radius}} \right| \times \left( \frac{1}{2} \times \text{Intersection Radius} \right) \]

RIGHT Outside OF SHOULDER

\[ F = \frac{1}{2} \times \left( \frac{1}{2} \times \text{Intersection Radius} \right) \]

LEFT Outside OF SHOULDER

\[ F = \frac{1}{2} \times \left( \frac{1}{2} \times \text{Intersection Radius} \right) \]

Note: The right outside of shoulder line of the bridge has been calculated with a continuous curve. The deck slope of any section is to be taken as the average of the shoulder line outside the depressed shoulder line to the centerline and right outside of shoulder.
This Stage Hydrograph was obtained from the United States Army Corps of Engineers and was plotted by Jacobs Engineering. Broken lines in hydrograph signify missing data.

This hydrograph is provided for information only. More concise gauge height information can be found at http://waterdata.usgs.gov/arkansas/nwis/uv/daily for the Little River basin in the Memphis District.

Base Name: BL1l5 Ditch 81 Extended (Upstream) near Manila, AR.
Location Longitude: 90°8'21", Latitude: 35°51'12", at River Mile 0.

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2010

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2011

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2012

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2013

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2014

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2015

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2016

January February March April May June July August September October November December
DAILY ELEVATIONS FOR JANUARY THROUGH SEPTEMBER 2016
**SECTION A-A**

**DETAILS OF TIMBER PILE TIP**

<table>
<thead>
<tr>
<th>Pile No.</th>
<th>Minimum Tip Elev.</th>
<th>Estimated Tip Length, ft</th>
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<tr>
<td>2</td>
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<td>20</td>
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<tr>
<td>3</td>
<td>240</td>
<td>30</td>
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</tbody>
</table>

- Steel piles shall be driven prior to timber piling for each stage of bridge construction.
- Any existing ramps interfering with the driving of timber piles or steel piles shall be removed prior to driving as directed by the Engineer. Driving shall be performed after driving as directed by the Engineer. Drive number and length of timber piles as directed by the Engineer.
- Timber piles shall be driven prior to driving as directed by the Engineer. Drive number and length of timber piles as directed by the Engineer.
- Contractor shall coordinate with the Engineer to avoid any and all in-service utilities within the soil densification areas.

**TIMBER PILE LAYOUT FOR SOIL DENSIFFICATION**

- Steel piles shall be driven prior to timber piling for each stage of bridge construction.
- Any existing ramps interfering with the driving of timber piles or steel piles shall be removed prior to driving as directed by the Engineer. Driving shall be performed after driving as directed by the Engineer. Drive number and length of timber piles as directed by the Engineer.
- Timber piles shall be driven prior to driving as directed by the Engineer. Drive number and length of timber piles as directed by the Engineer.
- Contractor shall coordinate with the Engineer to avoid any and all in-service utilities within the soil densification areas.
Note: Construction vehicles shall not travel on the cantilever portion of the deck.

Approx. 32'-2" (Stage 2 Traffic)

Note: Details which relate to Maintenance of Traffic are shown on the Bridge Plans for information only.

Stage 5 and 6 is connected in County Rd 350 and Wildlife Refuge Rd do not affect bridge construction and are not shown. See roadway Plans for Maintenance of Traffic.

For Details of Temporary Precast Barrier, see Std. detail TC-4.

STAGE 2 CONSTRUCTION

Notes:
- Horizontal dimensions shown are along radial lines.
- All Stage 3 Construction is complete and opened to traffic. Existing Bridge No. 05225 shall be removed and Stage 3 Construction completed.

STAGE 3 CONSTRUCTION

Note: Details which relate to Maintenance of Traffic are shown on the Bridge Plans for information only.

Stage 5 and 6 is connected in County Rd 350 and Wildlife Refuge Rd do not affect bridge construction and are not shown. See roadway Plans for Maintenance of Traffic.

For Details of Temporary Precast Barrier, see Std. detail TC-4.
Note: All longitudinal lines shall be constructed on curves concentric to C.L. bridge and C.L. construction.

GENERAL NOTES

Concrete shall be Class "5" with a minimum 28 day compressive strength of 12,000 psi.
Concrete shall be placed in the dry and exposed corners shall be chamfered unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 40,000 psi) conforming to AASHTO M-270, Gr. 60S or AASHTO M-272, Gr. 60S, or equivalent.

All reinforcing steel shall be Grade 60 (yield strength = 40,000 psi) conforming to AASHTO M-270, Gr. 60S or AASHTO M-272, Gr. 60S, or equivalent.

Structural steel in end bents shall be M100, Gr. 50 and shall be paid for as "Structural Steel Plate Bents" as defined in Section 7A10.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or shear web elements.

Clap 1 Protective Surface Treatment shall be applied to roadway face, top of wing roll, and to the top of the backwall.

For additional information, see "Legend".

Mildew treatment for excavation and subgrade shall be considered subsidiary to Class 3 Concrete Bridge.

CONSTRUCTION JOINT DETAIL

Note: Payment for rebar to be considered subsidiary to Class 3 Concrete Bridge.
GENERAL NOTES

Concrete shall be Class "S" with a minimum 28-day compressive strength of 4,000 psi. Concrete shall be placed in the dry and exposed corners shall be chemically treated, unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength ~ 60,000 psi) conforming to A615/10 or A612, Type A with mill test reports.

Structural steel in end bents shall be A572-Gr. 50W and shall be painted for "Structural Steel in Piles" Grade "Spray M270-L, Grade 50W".

Top reinforcing bars in cap shall properly spaced to avoid interference with anchor bolts or steel reinforcing bars. Class 1 Protective Surface Treatment shall be applied to the roadway face, top of the wing walls, and to the top of the backwall. For additional information, see Layout.

Note: Payment for membrane to be considered subsidiary to Class 5 Concrete Bridge.

CONSTRUCTION JOINT DETAIL

Scale: Y = 1'-0"}

Note: Parallel lines shall be constructed on curves parallel to C.L. bridge and C.L. construction.

TABLE OF ELEVATIONS

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>TOP OF PILE ELEVATIONS</th>
</tr>
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BEAM SEAT ELEVATIONS

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<tr>
<td>&quot;I&quot;</td>
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</table>

Note: For additional information, see Layout.
**Notes:**
See Drawing No. 59664 for Sections E-1, F-1, G-1, and "Pipe Details".

**Part Elevation View Showing Reinforcement:**
- 99 Pairs of D602E & 99 sets of three pairs of D602E spaced with D604E, D804E & D804E (Stage 3 Construction)
- 31 Pairs of D802E & 31 sets of three pairs of D602E spaced with D604E, D804E & D804E (Stage 2 Construction)
- Scale: 1" = 1'-0"

**Section C-C - Part Plan of Concrete Diaphragm Showing Reinforcement:**
- Scale: 1" = 1'-0"

**Section D-D - Plan of Beam Cap Showing Reinforcement:**
- Scale: 1" = 1'-0"

**Notes:**
- Portion rolls and slab steel are not shown for clarity.

**Details of Intermediate Bents 2 & 3**
**Bridge Over Ditch B1**
MISSISSIPPI COUNTY
LITTLE ROCK, ARKANSAS

**SCALE:** 1" = 1'-0"
**DATE:** 9/12/2016
**REVISED:**
**DATE:**
**SHEET:** 2 of 4
**FILE No.:** 59663
**DRAWING No.:** 07300
**BRIDGE No.:** 07300
**STATE:** ARKANSAS
**DRAWN BY:**
**CHECKED BY:**
**DESIGNED BY:**
**DATE:** 9/12/2016
**STATE:** MISSISSIPPI COUNTY
**FILE No.:** 59663
**DRAWING No.:** 07300
**BRIDGE No.:** 07300
**STATE:** ARKANSAS
**DRAWN BY:**
**CHECKED BY:**
**DESIGNED BY:**
**DATE:** 9/12/2016
**STATE:** MISSISSIPPI COUNTY
**FILE No.:** 59663
**DRAWING No.:** 07300
**BRIDGE No.:** 07300
**STATE:** ARKANSAS
Note:
All structural steel, including girder, K-Frame, bearing stiffener plates, connection plates, and intermediate stiffener plates, shall be ASTM A709 Gr. 50W.

INTERMEDIATE K-FRAME DETAIL
Scale 1" = 1'-0"

SPECIAL K-FRAME DETAIL
Scale 1" = 1'-0"

TABLE FOR WELDS

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<thead>
<tr>
<th>Material Thickness</th>
<th>Minimum Size of Fillet Weld Diameter</th>
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<tr>
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<tr>
<td>Over 1/2&quot;</td>
<td>3/32&quot;</td>
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</table>

Note: When a weld size as shown on the plans is larger than the minimum, the first pass shall be that specified for minimum size of fill weld.

NOTE: When ft-lb solid line is shown on the plans, it shall be satisfied with a weld of a size not less than specified, or equivalent splice plates, stirrups, or other means.

SPECIAL K-FRAME CONNECTION PROCEDURE:
1. Before Stage 3 deck is poured, connect one end of Special K-Frame to Girder 6 and fully tighten connection bolts. Leave Girder 5 and connection unbolted until after the Stage 3 deck concrete is in place.
2. After Stage 3 deck has been poured, field drill holes in Girder 5 connection plates, install connection bolts, and tighten in accordance with Subsection B5.7.1.
3. The Contractor shall provide proper girder alignment and all K-frames are completely installed. This may require temporary bracing.
### Table of Dead Load Deflections (Inches)

<table>
<thead>
<tr>
<th>Span</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
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### Table of Dead Load Deflections (Inches)

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<th>Group 7</th>
<th>Group 8</th>
<th>Group 9</th>
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<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
</tr>
</tbody>
</table>

### Dead Load Deflection Diagram

- **Group**: Steel, Slab, & Parapet
- **Deflection**: Plus
- **Orientation**: Vertical curve
- **Response**: Positive sign

---

Note: Corner girders for dead load deflection plus vertical curve and superimposed function. Tolerance is ±0.5 inches. Deflections shown are from a chart extending from C.S. Bearing to C.S. Bearing. Post-tensioning corrections and superimposed function are not included. Negative sign indicates point shown above.
Note:
- Transverse slab reinforcing steel shall be placed on deadload.
- Spacing shown is measured along the Longitudinal Construction Joint.
- Longitudinal lines and longitudinal slab reinforcing steel shall be placed on curves concentric with C.L. Bridge CP-926037 curve with.
- Transverse dimensions are measured radially.

- Pouring joints shall line with Gusset Joints and Pouring Sequence Construction Joints.

Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.02(i). Use 501.02(h) Joint Sealer shall be measured and paid for on C.B. 04.

Concrete Bridge. Slab piers shall extend to the outside edge of the deck slab and shall line with open joints of the front face of the pier. Slab piers shall be located before the pour, and in a pour. Slab joints shall be closed to allow sealing of the pour without change to the construction. Slab joints shall be closed to the slab or the deck slab.

Use Concrete Bridge. Slab piers shall extend to the outside edge of the deck slab and shall line with open joints of the front face of the pier. Slab piers shall be located before the pour, and in a pour. Slab joints shall be closed to allow sealing of the pour without change to the construction. Slab joints shall be closed to the slab or the deck slab.

SLAB REINFORCING PLAN

Scale 7/8" = 1'-0"

Stage 2 Construction Stage 3 Construction

Girders have 6" x 24" placed around the deck slab.

Stage 2 external supports at Gird No. 6 shall remain in place and after completion of the Stage 3 decks pour.

REINFORCING DETAIL

Gird No. 5 Gird No. 6

Stage 2 external supports at Gird No. 6 shall remain in place for additional information and after completion of the Stage 3 decks pour.

No Scale
C.L. Expansion Joint of End Bent

- Wire shall be smooth and conform to AASHTO M 279, Class 3, galvanization and dimensions.
- Bar to lighten smooth wire shall be smooth.
- All smooth wire shall be placed on the inside faces of the reinforcing.
- The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and finish. Exposed surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of the Class 2 Rubbed Finish.

Iron Finishes:
- No. 58577
- Req'd. Constr. Jt. (Level) on SHEET 10 OF 13

Concrete Parapet Rail (Stage 1)
- Scale 1/8" = 1'-0"
**Silicone Joint Data**

- **W** width perpendicular to joint at 24 hour average temperature of 0°F
- **O** perpendicular to joint at 0°F
- **B-ax** Bumper Plate Size: 2.5" x 1.5" x 0.375"

Note: Temperature used to set the joint spacing to achieve the appropriate average temperature during the 24 hour period immediately before the bars are tightened. The Engineer shall establish the temperature of the spacers by the table if necessary.

The expansion temperature inherent recommended by the Silicon Joint manufacturer for the particular expansion joint used at this location was 0°F. Use an appropriately sized bumper plate of the depth shown in the manufacturer's literature based on the joint width and the time of sealing. Unless otherwise noted, all bumper plates shall be sized as shown and cannot be added to. Bumper plates are to be removed from the joint material after the joint material has set.

Joint sections shall be extended beyond the length of poured joint in Stage 2, with the two joints on the properly aligned together prior to mixing and pouring, to prevent pianaling of the joint. A joint shall be allowed to be poured without installation of the joint on the same day of concrete is placed. This is to prevent pianaling of the joint. The Joint Joint manufacturer for the particular joint used at this location was 0°F. Use an appropriately sized bumper plate of the depth shown in the manufacturer's literature based on the joint width and the time of sealing. Unless otherwise noted, all bumper plates shall be sized as shown and cannot be added to. Bumper plates are to be removed from the joint material after the joint material has set.

Joint sections shall be extended beyond the length of poured joint in Stage 2, with the two joints on the properly aligned together prior to mixing and pouring, to prevent pianaling of the joint. A joint shall be allowed to be poured without installation of the joint on the same day of concrete is placed. This is to prevent pianaling of the joint.

**Expansion Device Installation at End Bents**

The Contractor may reject the installation device using one of the following two alternatives:

1. The concrete pour adjacent to the joint shall be placed before the end bent backfill is placed. After the end joint backfill is placed, the expansion joint shall be installed and adjusted for grade. The expansion joint shall be fully tightened prior to placing the backfill. The expansion joint installation shall be performed prior to pouring the expansion joint on the same day of concrete is placed. This is to prevent pianaling of the joint. The Joint Joint manufacturer for the particular joint used at this location was 0°F. Use an appropriately sized bumper plate of the depth shown in the manufacturer's literature based on the joint width and the time of sealing. Unless otherwise noted, all bumper plates shall be sized as shown and cannot be added to. Bumper plates are to be removed from the joint material after the joint material has set.

2. The backfill shall be poured to the optional construction joint after grinders are removed. The expansion joint shall be installed and adjusted for grade. The expansion joint shall be fully tightened prior to placing the backfill. The expansion joint installation shall be performed prior to pouring the expansion joint on the same day of concrete is placed. This is to prevent pianaling of the joint. The Joint Joint manufacturer for the particular joint used at this location was 0°F. Use an appropriately sized bumper plate of the depth shown in the manufacturer's literature based on the joint width and the time of sealing. Unless otherwise noted, all bumper plates shall be sized as shown and cannot be added to. Bumper plates are to be removed from the joint material after the joint material has set.

**Alternate Anchors**

- No anchor

Note: As an alternative to 0.5" Dia. Stud, 0.5" Dia. x 0.8" stud spaced as shown may be used with a 0.5" effect of view. Use 0.5" Dia. x 0.8" stud as basis of measurement of structural steel in anchors.

**Silicone Joint Sealant**

- Poured Silicone Joint Sealant

**Joint Seal Placement at Parapet**

- No joint

**Joint Cover Flange Channel**

- C.L. Joint

**Channel Connection Details**

- No 30687

- C.L. Joint

- C.L. Joint

- C.L. Joint

- C.L. Joint
SUPERSTRUCTURE (GENERAL NOTES):

CONSTRUCTION SPECIFICATIONS:
Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2007), with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS:

MATERIALS AND STRENGTH:

Class SAD.1 Concrete (superstructural):
- Fck = 4,000 psi
- Fcm = 6,000 psi

Reinforcing Steel (AASHTO M 186 A-112):
- Type A, 60 ksi
- Type B, 70 ksi
- Type C, 80 ksi

Structural Steel (AASHTO M 270, GI.50):
- Fy = 50 ksi
- Fu = 80 ksi

Another Steel (AASHTO M 270, SI.50):
- Fy = 36 ksi
- Fu = 55 ksi

CONCRETE:

All concrete shall be Class G506 with a minimum 28 day compressive strength of Fck = 4,000 psi. Concrete shall be placed in the dry and all exposed corners are to be chamfered 4" unless noted otherwise.

The superstructure details shown are for use on a removable deck form system used and are the basis for measurement of Class SAD.1 Concrete. See Standard Drawing No. 55205 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete is to be superstructure shall be planked and consolidated for the entire pour and spread out off before any concrete has taken its initial set. This may require the use of a delaying agent.

The concrete bridge deck shall be given a fine finish in accordance with Subsection B22 for a 3 inch Deck Finish. Surface finish shall be in the Forming machine across the new concrete shall be used on the entire concrete surface. The concrete shall be suitably cured, and all exposed corners are to be chamfered 4" unless noted otherwise.

Concrete shall be placed ahead of the strike off to avoid the grader. Use of a speeded spreader is prohibited.

For each stage of construction, a minimum of 72 hours shall elapse between completion of deck and placing of the specified curing. Any curing pour made before the entire deck has been poured shall be permitted by the Engineer.

REMOVING STEEL:

All removing steel shall conform to AASHTO M 214 or M 222 Type A Grade 60 with Grade 36 steel rebar. The superstructure shall be removed the rebar locally by area. Proposed supports sufficient to allow removal the bracing during the course of construction. The work supports shall not be made for the directly but shall be considered subsidiary to the item of "Maintenance of Traffic".

BEAMS:

Concretes shall be fully removed in accordance with Subsection B468.0. This work and materials to be considered subsidiary to the item "Maintenance of Traffic" and shall not be paid for directly.

Anchor bolts shall be AASHTO M270 Grade 50 unless supplemental requirement 55 shall be manufactured in accordance with AASHTO M302, Type I or Type II. All anchor bolts shall be paid for at the contract price list for "Structural Steel in Place Grider Spans (M50) - 0.50" No. 9930.0

Shears Drawing No. 55208 for detailing of external load plates on elastomeric bearings.

STRIKE-OFF:

All structural steel shall be AASHTO M302 Grade 50 unless otherwise noted and shall be paid for as "Structural Steel in Place Grid Spans (M50) - 0.50" unless otherwise noted. All surfaces shall be sheared in accordance with Subsection B37.844 unless otherwise noted. Structural steel completely encased in concrete may be AASHTO M270, GI.50 unless otherwise noted.

Drawings show generalizations of design only. Shop drawings shall be made in accordance with the specifications, submitted, and superseding to the fabricator is drawn.

Requests for submission of structural steel shop drawings shall be submitted by the Contractor to the Engineer for approval. Shop drawings for structural steel greater than 200 ksi shall be submitted only when shown on the approved shop drawings. Shop drawings shall be made on the basis of payment and no additional compensation will be made for any substantial changes. The shop drawings shall be submitted to Subsection B277.0. This work and materials shall be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Place Grid Spans (M302) - 0.75" No. 9930.0

Steel plates for main load-carrying members (flange and web plate) and for flange field plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and compressive stresses.

Orders plates may be by shop sizing with a minimum length of 25'-0" for sections. Flange plates longer than 30'-0" may be by shop sizing with a minimum length of 25'-0" for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment will be made for these splices.

Gusset plates in main plate girder members shall be Quality Control (QC) tested by nondestructive testing, as required by the Standard Specifications. Field welds to web connections shall be QC tested by magnetic particle method. All QC testing is at the Contractor's expense.

All connection plates shall be fabricated normal to the flange beam and on the side of the girders on the actual spans. All beams shall be fabricated to fit the beams in their finished position.

All girders shall be checked for their false position in the shop with the webs horizontal in sections as specified at Subsection 807.20, the center length of sections, distance between flanges, and spacing of joints shall be specified at the erection, and the flange in the shop shall be checked for the vertical alignment. Specifications and local permanent record of this file. The component parts shall be marked in the shop and these marks shall be shown on the erection drawing. All girder dimensions are based on a temperature of 70°F. A tolerance of ± 0.10" shall be allowed for this.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed in the shop drawings and submitted for approval. If additional work are required, whether permanent or temporary, detailed drawings shall be submitted to the Engineer for approval. However, additional work used for attaching nuts/bolts support devices, or screw rod supports to the structure, with the exception of 807.32 may not be required by the Engineer. All welding shall conform to Subsection B677-06.

SUPERSTRUCTURE (GENERAL NOTES) contd:

High strength bolts for field splices shall be 1/2" diameter unless noted otherwise. Open holes shall be "N" diameter unless noted otherwise. Bolt spacing shall be 2" for 3/4" diameter bolts unless noted otherwise.

K-Frames shall be included on girder ends of girders. High strength bolts for K-Frames shall be 1/2" in diameter, and holes shall be 5/8" in diameter unless noted otherwise. Bolt spacing shall be 3" for 3/4" diameter bolts unless noted otherwise. All bolts shall be analyzed and tightened in accordance with the provisions of Special K-Frames drawings. No bolts or washers shall be included on girder ends of girders.

All weld connections shall be made with fluxed, solid flux, or equal and substantially equal and be satisfied in accordance with the recommendations of the manufacturer.

EJECTION OF STRUCTURAL STEEL:
The erection of the structural steel shall be performed according to a plan permitting the steel to be erected planted with bolts tightened while the steel is as close as possible to its final position, so that the bolt holes can be allowed. This requirement may necessitate the use of large capacity cranes, temporary staging or jacking frames.

The Contractor shall submit to the Engineer for informed and recent purposes details of framework construction in accordance with Subsection B37.84.

The Contractor shall ensure field girders are fabricated through the erection process. The Contractor will be responsible for providing temporary bracing or stiffness devices to accommodate handling stresses in individual members or segments of the structure during erection.
The neoprene pods shall be bonded to the bearing seat with an epoxy adhesive in accordance with the bearing manufacturer's recommendations for bonding neoprene to concrete to prevent sliding.

GENERAL NOTES

Elastomeric bearings shall conform to Section 358 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

Bearings shall be placed on level, uniform surfaces in accordance with Subsection 808.06. Any equipment in the support shall be cambered to form a level surface. Work and materials shall be considered subsidiary to the items "Elastomeric Bearings" and will not be paid for directly.

The neoprene pods shall be bonded to the bearing seat with an epoxy adhesive in accordance with the bearing manufacturer's recommendations for bonding neoprene to concrete to prevent sliding.

TABLE OF FABRICATOR VARIABLES

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<th>NO. &amp; THICKNESS OF STEEL LAMINATE</th>
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<td>500 2% 15° 3 ½ ⅛ 4 &amp; 12 ga. 2%</td>
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*Maximum Load = Service + Live Load*
QUANTITIES FOR ONE
TYPE SPECIAL APPROACH SLAB

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</table>

Notes:
- Continuous Approach Slab, including longitudinal reinforcing, is centered on C.L. Construction.
- Transverse reinforcing steel shall be placed on rigid lines. Spacing is measured along C.L. Construction.
- Transverse reinforcing is shown.
- Longitudinal reinforcing is shown.

GENERAL NOTES
All Concrete shall be Class 5404 with a minimum 28 day compressive strength of 4,000 psi and shall be poured in dry.

Bar List

SECTION X-X
No Scale

SECTION Y-Y
No Scale

SECTION Z-Z
No Scale

Notes:
- Reinforcement shall be Grade 60 with a yield strength of 60,000 psi, conforming to AASHTO W23 or W22, Type X, with no post-tensioning.

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

The surface finish for Approach Slabs shall match that used on the bridge deck.
**Boring Legend**

- Boring No. 9: 47° Right of C.L. Constr.
  - 39.0-40.0, N.14, E.: Dense to very dense gray fine to medium sand, with ferrous pockets.
  - 59.0-60.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 69.0-70.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 79.0-80.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 89.0-90.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 99.0-100.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 109.0-110.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 119.0-120.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 129.0-130.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 139.0-140.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 149.0-150.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.

- Boring No. 10: 47° Right of C.L. Constr.
  - 39.0-40.0, N.14: Dense to very dense gray fine to medium sand, with ferrous pockets.
  - 59.0-60.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 69.0-70.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 79.0-80.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 89.0-90.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 99.0-100.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 109.0-110.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 119.0-120.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 129.0-130.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 139.0-140.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 149.0-150.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.

- Boring No. 11: 47° Left of C.L. Constr.
  - 39.0-40.0, N.14: Dense to very dense gray fine to medium sand, with ferrous pockets.
  - 59.0-60.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 69.0-70.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 79.0-80.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 89.0-90.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 99.0-100.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 109.0-110.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 119.0-120.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 129.0-130.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 139.0-140.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
  - 149.0-150.0, N.14: Dense to very dense gray fine to medium sand, with silt pockets.
GENERAL NOTES


DESIGN SPECIFICATIONS:


SITE CLASS: D

OPERATIONAL IMPORTANCE: Typical Bridge

MATERIALS AND STRENGTH:

Class 5 Concrete (unshrinkable, 8% Off-Dia. Plugs) M500, No. 2

Class 5 Concrete (unshrinkable, 8% Off-Dia. Plugs) M500, No. 3

Class 5 Concrete (unshrinkable, 8% Off-Dia. Plugs) M500, No. 4

Reinforcing Steel (AASHTO M140, Grade 60) Type A, Grade 60

Reinforcing Steel (AASHTO M140, Grade 60) Type B, Grade 60

Structural Steel (AASHTO M140, Grade 50)

Structural Steel (AASHTO M140, Grade 50)

Structural Steel (AASHTO M270, Grade 100)

Structural Steel (AASHTO M270, Grade 100)

Structural Steel (AASHTO M696, Grade 50)

Structural Steel (AASHTO M696, Grade 50)

Structural Steel (AASHTO M696, Grade 100)

Structural Steel (AASHTO M696, Grade 100)

Self-Consolidating Concrete (18" CISS)

Estimated quantities are based on a 90° plastic strain energy of 800,000 ft-lb per blow to be required to obtain the ultimate bearing capacity of the pile. Any pile driving beyond this limit is prohibited. See Section 300.2 of the Code of Practice for additional information.

PREBORING: Pre-estimated results are based on a 90° plastic strain energy of 800,000 ft-lb per blow to be required to obtain the ultimate bearing capacity of the pile. Any pile driving beyond this limit is prohibited. See Section 300.2 of the Code of Practice for additional information.

Piling, Steel:

Bridges shall be designed and fabricated in accordance with the American Institute of Steel Construction Standard Specifications for Highway Bridges (2013 Edition). All pile piles shall be driven with an approved air-driven or diesel hammer. Lengths of piles drives are estimated for bidding quantities only. The actual lengths will be determined in the field. Filing for Bents 1 & 10 shall be 48" diameter concrete filled steel sheet piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile and for Bents 2 to 9 shall be 48" diameter concrete filled steel sheet piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile. All piles shall be driven to a minimum ultimate bearing capacity of 575 kips per pile.
This Stage Hydrograph was obtained from the United States Army Corps of Engineers and was plotted by Jacobs Engineering. Broken lines in hydrograph signify missing data.

This hydrograph is provided for information only. Additional stage height information can be found at http://waterdata.usgs.gov/ark.watercenter/Arkansas/GaugeViewer2.cfm?gid=1576420&g for the Little River basin in the Memphis District.

Gauge Name: L117
Right Hand Chute at Little River at Pottsville, AR
Location: Longitude 90°7'39",Latitude 35°50'39", at River Mile 23.

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2010

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2011

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2012

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2013

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2014

DAILY ELEVATIONS FOR JANUARY THROUGH DECEMBER 2015

DAILY ELEVATIONS FOR JANUARY THROUGH SEPTEMBER 2016
**TIMBER PILE DATA**

<table>
<thead>
<tr>
<th>Bent No.</th>
<th>Estimated No. of Piles</th>
<th>Minimum Tip Dia.</th>
<th>Estimated Pile Length, ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90</td>
<td>200.0</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>90</td>
<td>200.0</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
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<td>200.0</td>
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</tr>
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<tr>
<td>9</td>
<td>437</td>
<td>200.0</td>
<td>45</td>
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</tbody>
</table>

**NOTES:**
- Drive number and length of timber piles as directed by the Engineer.
- Timber pile layout shall be in accordance with SP Job C49002 "Timber Pile for Soil Densification" and as directed by the Engineer.
- Drive number and length of timber piles as directed by the Engineer.
- Timber pile layout shall be in accordance with SP Job C49002 "Timber Pile for Soil Densification" and as directed by the Engineer.
- Timber pile layout shall be in accordance with SP Job C49002 "Timber Pile for Soil Densification" and as directed by the Engineer.

**ELEVEN:**

**TYPICAL SPICE DETAILS**

**SECTION A-A:**

**DETAILS OF TIMBER PILE TIP**
Note: After Stage 2 Construction is complete and opened to traffic, Temporary Precast Barrier shall be removed.

**STAGE 2 CONSTRUCTION**

Looking Ahead

---

**STAGE 3 CONSTRUCTION**

Looking Ahead

---

Note: Details which relate to Maintenance of Traffic are shown on the Bridge Plans for information only.

For Details of Temporary Precast Barrier, see Std. Dwg. TC-4.
GENERAL NOTES

A. Concrete shall be Class ‘S’ with a minimum 28-day compressive strength of Fc=3,500 psi.

B. Concrete shall be placed in the dry and exposed corners and shall be chipped free of ice, unless otherwise noted.

C. Reinforcing steel shall be Grades 60 (yield strength = 60,000 psi) conforming to ASTM A416, and Grade 70, Type A, A616 rebar as noted.

D. Structural steel in end bents shall be M270 gr. 50 steel and shall be paid for as ‘Structural Steel in Plate Girder Span’ in AR-375, DR-375.

E. Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts in steel members.

F. Class I Protective Surface Treatment shall be applied to the roadway face, top of the wing walls, and to the top of the bottom.

G. For additional information, see Layout.

CONSTRUCTION JOINT DETAIL

1. Membrane waterproofing Type C or equivalent. See Section 02 of the Standard Specifications.

2. Where a cross-drain is extended, type C joint be applied to the pavement bracket.

3. Concrete and reinforcing steel in bents shall be Class 5 Concrete-Bridge.

4. See Sheet 1 for Bridge Details and Section 6 for Bridge Specifications.

5. All dimensions shown are to C.L. Construction Joint.

6. Elevations shown apply to C.L. Construction Joint.

7. See Drawing No. 56890 for ‘Stub Wall Detail’ on Deck No. 56703.

8. Begin Bridge Dwg. Ext. 0.67 for 5625.00 Ext. 265.30

9. See Drawing No. 56803 for Concrete Reinforcement Detail.

10. See Drawing No. 56890 for Concrete Reinforcement Detail.

11. See ‘Typical Anchor Bolt Layout’ for Section 6-10

12. Table of Elevations

<table>
<thead>
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<th>Table of Elevations</th>
<th>BENT 1 - ELEVATION</th>
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<tr>
<td>Dev. &quot;A&quot;</td>
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<tr>
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<td>251.55</td>
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<tr>
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<tr>
<td>Dev. &quot;D&quot;</td>
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<tr>
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<tr>
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<tr>
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</tbody>
</table>

BENT 1 - PLAN

Scale 1" = 1'-0"
No Scale

SECTION F-F

- See "Top Bar Detail" (Typ.)
- See "Top Bar Detail" (Typ.)
- End spiral reinforcing with S50 turns.
- End spiral reinforcing with S50 turns.
- Concrete Tip Elevation
- Tie No. 58698 or D805E
- Tie No. 58697, 58698 or D804E
- Tie No. 58696, 58697 or D803E
- Concrete Diaphragm shall be poured monolithically with deck slab.

SECTION C-C

No Scale

- See "Top Bar Detail" (Typ.)
- See "Top Bar Detail" (Typ.)
- See Drawing No. 58702 for details of 5'6" dia. steel shell pile not shown.

SECTION E-E

- See "Top Bar Detail" (Typ.)
- End spiral reinforcing with S50 turns.
- Concrete Tip Elevation
- Tie No. 58698 or D805E
- Tie No. 58697, 58698 or D804E
- Tie No. 58696, 58697 or D803E
- Concrete Diaphragm shall be poured monolithically with deck slab.

Note:
- Concrete diaphragm shall be poured monolithically with deck slab.
- CSDS, C1011 and C1012 are not shown for clarity.
### Intermediate Bend Notes:

Concrete in the cap shall be Class "D" with a minimum 28-day compressive strength of 3500 psi. Quantities is indicated in the building "Class D" concrete - bridge.

Concrete shall be poured in the dry and all exposed areas to be observed. Any other noted.

Aluminizing steel shall conform to ASTM A572 or A570, Type A, as well as the requirements of AASHTO M522, Grade 60. This steel shall be Grade 70 with a minimum diameter of 5/8".

Spiral reinforcing shall be placed round or deformed steel bars meeting the requirements of AASHTO M522 or M520, Type A, with a slip test report (Grade 80) or shall be round deformed, meeting the requirements of AASHTO M522, Grade 70 with a minimum diameter of 5/8".

Spiral reinforcing shall be paid for at the contract and price set per ton for "Reinforcing Steel - type SPIRAL BAR". The spiral reinforcing shall be made with proper or braced for assembly, shaping, handling, or erection.

For additional information, see Lay-out.

### Bar List Per Bent

#### Stage 2 Construction

<table>
<thead>
<tr>
<th>Bar No.</th>
<th>Diam.</th>
<th>Length</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>CB100</td>
<td>4</td>
<td>18'7&quot;</td>
<td>2&quot;</td>
<td>4&quot;</td>
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<tr>
<td>CB200</td>
<td>2</td>
<td>25'5&quot;</td>
<td>2&quot;</td>
<td>4&quot;</td>
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<td>CB300</td>
<td>2</td>
<td>33'7&quot;</td>
<td>2&quot;</td>
<td>4&quot;</td>
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#### Stage 3 Construction

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<tr>
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<td>25'5&quot;</td>
<td>2&quot;</td>
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<td>CB600</td>
<td>2</td>
<td>33'7&quot;</td>
<td>2&quot;</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

### Diagram Notes:

- Dimensions are out to end of bars.
- Ends of spiral shall be terminated with 3/4" turns, and a 120° hook with a 60" tail around a vertical bar. Hook may be field bent.

### Diagram Information:

- Dimensions shown are to build plate and may vary based on mechanical coupler used.
- Ends of spiral shall be terminated with 3/4" turns, and a 120° hook with a 60" tail around a vertical bar. Hook may be field bent.
TYPICAL ROADWAY SECTION - STAGE 3

(looking ahead)

Scale: 1" = 1'-0"

Stage 2 Construction

Stage 3 Construction

TYPICAL SECTION NEAR Poured SILICONE JOINT AT BENTS 1 & 10 - STAGE 3

(looking ahead)

Scale: 1" = 1'-0"

Stage 2 Construction

Stage 3 Construction

DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

SEE DROWING NO. 58703 FOR NOTES 1, 2, 3, 4 & 5.
In this girder bay connection plates and K-frames shall be fabricated, as necessary, to facilitate installation of K-frames between adjacent girders with differential deflections. See "Super-Box Frame Detail" on Drawing No. 58710.

PARTIAL GIRDER FRAMING PLAN - UNIT 2
Scale 1" = 1'-0"

Note:
Concrete diaphragms at Intermediate Bents 5 & 6 are not shown for clarity. See Dwg. No. 58710, 58699 & 58697 for details.
Concrete diaphragms at Intermediate Bents 4 & 7 are not shown for clarity. See Dwg. No. 58705 & 58706 for details.

DETAIL H
Scale 1" = 1'-0"

Prior to pouring concrete, remove rail scale with wire brush of concrete diaphragm.

SCEM RAIL SUPPORT DETAIL
No Scale
Note:
Two Stud shear connectors will be required at about 10" spacing if the bolted field splice is omitted. Payment will be made on the basis of the plan quantities.

Two Stud shear connectors will be required at about 8" spacing if the bolted field splice is omitted. Payment will be made on the basis of the plan quantities.

TABLE OF WELDS

<table>
<thead>
<tr>
<th>Material Thickness</th>
<th>Minimum Size of Welded Flange</th>
<th>Single Pass</th>
<th>Double Pass</th>
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<tbody>
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<td>1/4&quot; or less</td>
<td>1/8&quot;</td>
<td>Must be Used</td>
<td>Must be Used</td>
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<td>Over 1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
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</table>

Note: When a weld size, as shown on the plans, is larger than the minimum, the first pass should be that specified for minimum size of weld.

Table: Weld Splice Details

Note: All stress plates shall be ARKSTO NO. 5730.

Shear Connector Detail

Sheet 6 of 20

Details of Continuous Composite Plate Girder Units

Bridge Over Big Lake Outlet, Mississippi County
Route No. 8

Arkansas State Highway Commission
Little Rock, Arkansas

Print Date: 7/30/2018

Design: L'Eau Design

Drawn by:abor

Revised By: 11/1/2018

Details of Welded Splices

Details of Bottom Flange Transition
SPECIAL K-FRAME DETAIL
Scale: 1"=1'-0"

Notes:
- All structural steel, including girders, K-Frames, bearing stiffener plates, connection plates, and intermediate stiffener plates, shall be ASTM A572 Gr. 50.
- All K-Frames are completed installed. This may require temporary bracing.

TABLE FOR WELDS

<table>
<thead>
<tr>
<th>Material Thickness of Thicker Port Joined (inches)</th>
<th>Minimum Size of Fillet Weld, Single Pass (inches)</th>
<th>Must Be Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 1/8&quot; inclusive</td>
<td>1/4</td>
<td></td>
</tr>
<tr>
<td>Over 1/8&quot;</td>
<td>3/32</td>
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Note: When a weld size is shown on the plans, it is larger than the minimum, the first pass shall be that specified for minimum size of that weld.

SPECIAL K-FRAME CONNECTION PROCEDURE:

1. Before Stage 3 deck is poured, connect one end of Special K-Frame to Girder 4 and fully tighten connection bolts. Leave Order 5 connection unbolted until after the Stage 3 deck concrete is in place.

2. After Stage 3 Deck has been poured, field drill holes in Girders 5 connection plates, install connection bolts, and tighten in accordance with Subsection 801.71.

3. The Contractor shall maintain proper girder alignment until all K-Frames are completely installed. This may require temporary bracing.
<table>
<thead>
<tr>
<th>Span</th>
<th>Point</th>
<th>Structural Steel</th>
<th>Structural Steel &amp; Slab</th>
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**TABLE OF DEAD LOAD DEFLECTIONS (INCHES)**

DEAD LOAD DEFLECTION DIAGRAM

No Scale

Note: Member orders for dead load deflection plus vertical curve. Tolerance is ± 0.01. Deflections shown are from a chord extending from C.L. Bearing to C.L. Bearing. Vertical curve corrections are not included. Negative sign (-) indicates point above chord.
DECK POURING SEQUENCE
No Scale

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT
No Scale

Concrete Diaphragms of bents with expansion joints shall be placed a minimum of 48 hours before the first deck pour of each stage of construction.

Concrete Diaphragms of intermediate bents 2, 3, 5, 6 and 8 shall be poured monolithically with deck area.

Concrete Diaphragms of bents with expansion joints shall be poured a minimum of 48 hours before the first deck pour.

Note: Pouring joints shall align with Slob Joints and Pouring Sequence Construction Joints.

Stage 1 Construction
Stage 2 Construction
Stage 3 Construction
Concrete Diaphragms of bents and expansion joints shall be poured a minimum of 60 concrete days before the first deck pour at each stage of construction.

F-Feet

JOINT - 9'

SECTION A-A
No Scale

SECTION B-B
No Scale

SECTION C-C
No Scale

SECTION D-D
No Scale
Note: Polystyrene shall be used as a bond between the concrete restrainer and the concrete deck, and may remain in place. Polystyrene may be considered subsidiary to "Class (A/E) Concrete - Bridge".

**Partial View of Longitudinal Restrainer and Concrete Restrainer at Intermediate Bents 4 & 7**

**TABLE A**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>256°F</th>
<th>260°F</th>
<th>264°F</th>
<th>268°F</th>
<th>272°F</th>
<th>276°F</th>
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</table>

**Plan View of Longitudinal Restrainer**

**Reinasser Rod Assembly Detail**

Lateral restrainer rod shall conform to AASHTO M270, Gr. 50, with threads conforming to American Standard, Class 3-7, A6 Specifications B11. Washers for lateral restrainer rod shall conform to AASHTO M270, Gr. 50, only for lateral restrainer steel in accordance with Subsection 803.4. Both, such as are designed and used in this construction, shall be additionally in accordance with Subsection 803.4.8. This Restrainer Rod Assembly Detail. Restrainer Rod, washers and plates shall be made for "Structural Steel in Plate Girder Spans" M270, Gr. 50.

**Reinasser Rod Installation Detail**

After gap width has been set, lock washers and nuts to be restrainer rod.
ELEVATION OF LEFT PARAPET RAIL (STAGE 2)

Scale 1/4" = 1'-0"

- Left parapet rail (Stage 2) shown, right parapet rail (Stage 2) similar by 180° rotation.
- C.L. Complete Parapet Joint (5'-0" to 9'-0" max.):
  - Step 1'-2" from top of slab.
- C.L. Full Depth Parapet Joint (3'-0" to 7'-0" max.):
  - Step 8'-0" from top of slab.
- Minimum splice length for PARADE & PARADE bars - 2'-7".
Wire shall be smooth & gap
3 transverse grooves.

For actual placement of reinforcing
steels, see parapet details.

Name plate detail

The cutout shall conform to the
horizontal and vertical lines
drawn on the plate or as directed by the Engineer
and shall present a smooth surface appearance.
Exposed surfaces may be coated or as directed by the Engineer.

Place Type D Bridge Name Plate
on right parapet rail approximately
2'0" from front, for visual identification.

Note:
The surfaces of the 1/2" slabs which will not be
in contact with concrete shall be painted in
accordance with Section 5.30 or as approved
by the Engineer. The concrete shall be
placed in the laboratory shop. Painting
will not be paid for directly, but will be considered
an additional item of "Structural Steel in Plate Girders Spans"
Mode 7, 8, 9, 11.
EXTRUSION NO. 58721

SECTION D-D

DETAILED SPECIFICATIONS

No Scale

Details of Neoprene Seal at Gutterline

Note: Details of joint turn-up in parapet are general and show typical details only. Method of installation and specifications are to be determined in detail. See Section 800 of the Standard Specifications.

END DRAWING 11/12/1999

No Scale

GENERAL NOTES

EXPANSION DEVICE INSTALLATION AT BENTS 4 & 7

After all grades are on each side of the joint, the initial expansion device shall be indexed and adjusted for grade. Grade concrete shall be placed in the roadway unit or road the joint before deck concrete of the other side is placed. No concrete shall be placed on the other side. The expansion joint shall be able to accommodate the deflection between the two grades.

The method of attachment of the cover plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.
Note: The direction of load of the External Load Plate may not be assumed, and the load is to be applied with respect to the "FLP" and "FLA" values shown in the "Table of Fabricator Variables".

Unless otherwise approved by the Engineer, welding of the top external load plates or expansion bearings to the girders will be allowed only after the concrete has set for the period immediately preceding welding is between 40°F and 90°F and the top flange of the girders has been cooled off. The top flange of the girders shall be positioned to ensure that if anchor bolts are not horizontal with the external load plate, a horizontal deviation of the elastic pad is equal to the welding of anchor bolt tolerances. If such procedures are required, the Engineer will provide adjustment tests.

GENERAL NOTES:

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be cast for the unit price bid for "Elastomeric Bearings." External load plates and shear blocks shall conform to AASHO M 270, Grade 50W, and will be cast for the unit price bid for "Elastomeric Bearings." All shear bolts shall be galvanized to conform to AASHO M 322, Class C or ASTM 896, Class 50.

The anchoring bolts and nuts shall conform to Subsection 807.17 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables." The bolts shall be of the desired length and be cast for the unit price bid for "Structural Steel in Place Group Spans (6079, Gr. 50W)."

All anchor bolts shall be coated with a non-shrink grout which completely fills the holes. Coated steel sleeve anchors will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Place Group Spans (6079, Gr. 50W)."

Item 807.17.2: Other surfacing materials shall be applied conforming to Subsection 807.84(a) for unspecified Grade 50W steel. Item 807.17.3: Anchor Bolt Washers and Nuts shall conform to Subsection 807.17.1 of the Standard Specifications.

Pipe sleeves, Anchor Bolt Washers and Nuts are to be paid for the unit price bid for "Structural Steel in Place Group Spans (6079, Gr. 50W)."

Details of Elastomeric Expansion Bearings

Date: 9/26/2016

Arkansas State Highway Commission

LITTLE ROCK, ARKANSAS
Table of Fabricator Variables

<table>
<thead>
<tr>
<th>BRIDGE NO.</th>
<th>LOCATION</th>
<th>NO. OF BRICKS</th>
<th>MAXIMUM DESIGN LOAD (kip)</th>
<th>ELASTOMERIC PADS</th>
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<td>2, 3, 5, 6 &amp; 9</td>
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</tbody>
</table>

Notes:
- ELASTOMERIC BEARING:
- Number of layers of thickness = 1
- Thickness of elastomer between steel and laminate = 1
- Thickness of elastomer cover on top and bottom of pad = 1
- Number of elastomer strips of thickness 1

General Notes:
- Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."
- Bearings shall be placed on level uniform surfaces in accordance with Subsection 808.03. Any adjustment in the support shall be corrected to form a level surface. Work shall be in accordance with any necessary supplementary to the item.
- The response pads shall be bonded to the bearing seat with an epoxy adhesive in accordance with the bearing manufacturer's recommendations for bonding response pads to concrete to prevent sliding.
Temporary Precast Barrier
(Do not connect to new deck)

Substructure Const.

Construction vehicles shall not travel on the cantilever portion of the deck.

Note:
After Stage 2 Construction is complete and opened to traffic, Existing Bridge No. 06060 shall be removed and Stage 3 Construction completed.

STAGE 2 CONSTRUCTION
Looking Ahead

Note: Details which relate to Maintenance of Traffic are shown on the Bridge Plans for information only.

Stages 1A and 1B to construct N. County Rd. 305 and Middle Refuge Rd. do not affect bridge construction and are not shown. See roadway plans for maintenance of traffic.

For details of Temporary Precast Barrier, see Std. Dwg. TC-4.

STAGE 3 CONSTRUCTION
Looking Ahead

Details of Stage Construction

Bridge Over Big Lake Floodway Relief
Manila - East (Widening) (S)
Mississippi County
Route 16
Arkansas State Highway Commission
Little Rock, Arkansas
Concrete Diaphragms at the bents shall be built vertical.

The concrete diameter of the pile will be needed for the construction of reinforcement spirals and for the determination of the reinforcement requirements. Concrete shall be C30 with a minimum 28 day compressive strength of 3500 psi, unless otherwise approved by the Engineer.

Concrete shall be Self-Consolidating Concrete in accordance with Special Provision Job No. CA1002 "Self-Consolidating Concrete". Self-Consolidating Concrete shall be a minimum 28 day compressive strength of 3000 psi.

The pile cap shall be built in the specified depth and driving shall continue to verify the minimum ultimate bearing capacity. At no time shall the pile have a soil plug depth of less than 3.0 feet.

The inside of the pile shall be cleaned with an appropriate tool to remove any and all adhering soil and other materials.

No top splices will be permitted.

Reinforcement shall be Heated Steel Bars in accordance with Special Provision Job No. CA1002 "Heated Steel Bars for Concrete Reinforcement".

Mechanical couplers in the beam cap shall maintain the dimensions shown. They shall be installed adjacent to the trucking bars. The coupler heads are to be turned 180 degrees to develop the full strength of the bar.

See Special Provision Job No. CA1002 "Steel Pile Flange (18 Inch Diameter)".

Field splices of steel shells will be permitted with 100% ultrasonic and visual inspection.

No field splices of steel shells will be permitted.

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TYPICAL ROADWAY SECTION - STAGE 3

Looking Ahead
Scale 1/2" = 1'-0"

Stage 2 Construction
Stage 3 Construction

Order No. 4

LAPPED DETAIL OF TRUSSED BARS

SECTION W-W

No Scale

For channel webs and steel extrusion tapping channel web.

DETAIl OF WELD LOCATION
FOR EXPANSION DEVICE

No Scale

TYPICAL SECTION NEAR STRIP SEAL JOINT - STAGE 3

Looking Ahead
Scale 1/2" = 1'-0"

Stage 2 Construction
Stage 3 Construction

Order No. 4

ORDER NO. 4

Later Stage 2 Pour & prior to Stage 3 Pour.

For channel webs and steel extrusion tapping channel web.

DETAIl OF WELD LOCATION
FOR EXPANSION DEVICE

No Scale

SHEET 2 OF 13
DETAILS OF 4,340'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER BIG LBE FLOODWAY RELIEF MISSISSIPPI COUNTY
MISSISSIPPI COUNTY BOUNDARY
ROUTE 13 Sec X
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER
PRINT DATE: 5/10/2011

ARKANSAS DIVISION OF HIGHWAYS
CONTRACT NO. JH-M-596

DESIGNED BY: DATE: 07/22/2009

BRIDGE NO. 81742
DRAWING NO. 58742

SHEET NO. 2/13

NATURAL GROUT BAGGAGE
### TABLE OF WELDS

<table>
<thead>
<tr>
<th>Material Thickness of Welded Parts</th>
<th>Minimum Size of Welded Parts</th>
<th>Single Pass Weld</th>
<th>Double Pass Weld</th>
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<td>Thickness (in)</td>
<td>Minimum Size (in)</td>
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<tr>
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<td>5/32</td>
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<td>1/2 to 1/4</td>
<td>3/32</td>
<td>3/32</td>
<td>1/8</td>
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Note: Where a fillet weld size, as shown on the plans, is larger than the minimum, the first passes shall be that specified for minimum size of fillet weld.

### SHEAR CONNECTOR DETAIL

No Scale

Stud shear connectors shown shall be 5/8" dia. x 4" long, grooved, full filled, solid flanged or edged, and automatically welded to the tension flange in accordance with the manufacturer's instructions. No. 2 Studs may be used in place of the 5/8" Studs shown in the sections of 12'-0" x 180" Stiffeners. No. 2 Studs will be used on field measurement of structural steel shear connectors. Minimum stud spacing = 24".

### TYPICAL PLATE ORDER ELEVATION

No Scale

1. Two V-Disc shear connectors will be required at about 8" spacing if the bolted field splice is omitted. Payment will be made on the basis of the plan quantities.

2. Two V-Disc shear connectors will be required at about 8" spacing if the bolted field splice is omitted. Payment will be made on the basis of the plan quantities.

3. Two V-Disc shear connectors will be required at about 8" spacing if the bolted field splice is omitted. Payment will be made on the basis of the plan quantities.

### BOTTOM FLANGE SPlice DETAIL

Scale: 1" = 1'-0"

Note: All splice plates shall be ARDOT MTL Gr. 50W, unless otherwise noted. Bolted field splices may be eliminated or they, welded splices may be substituted with the approval of the Structural Engineer. Payment will be made on the basis of the plan quantities.

### DETAIL OF BOTTOM FLANGE TRANSITION

No Scale

### DETAILS OF WELDED SPUSCES

No Scale

### SHEET 4 OF 13

**DETAILS OF 434'-0" CONTINUOUS COMPOSITE PLATE ORDER UNIT BRIDGE OVER BIG LAKE FLOODWAY RELIEF ROUTE M SEC 4**

**ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARKANSAS**

**PRINT DATE: 9/12/2016**
INTERMEDIATE K-FRAME DETAIL

Grade: 45 ksi

SPECIAL K-FRAME DETAIL

Scale: 1" = 1'0"

Notes:
All structural steel, including girders, K-frames, bearing stiffener plates, connection plates, and intermediate stiffener plates, shall be ASTM A709 Gr. 50W.

SPECIAL K-FRAME CONNECTION PROCEDURE:
1. Before Stage 3 deck is poured, connect one end of Special K-Frame to Girder 4 and fully tighten connection bolts. Leave Girder 5 connection unlocked until after the Stage 3 deck concrete is in place.
2. After Stage 3 Deck has been poured, field-drill holes in Girder 5 connection plates, install connection bolts, and tighten in accordance with Subsection B317.
3. The Contractor shall maintain proper girder alignment until all K-Frames are completely installed. You may require temporary bracing.

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<tr>
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<td></td>
</tr>
</tbody>
</table>

Note: When a weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

SHEET 5 OF 13
DETAILS OF 434'-0" CONTINUOUS COMPOSITE PLATE ORDER UNIT
BRIDGE OVER BIG LAKE FLOODWAY RELIEF
MISSISSIPPI COUNTY
ROUTE 16   SEC. 6
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER: JACOBS
DRAWN BY: LHG
PRINT DATE: 3/2/2016
CHECKED BY: --TJC--
DESIGNED BY: --TJC--
SCALED: As Noted
DRAWING NO. 50743

PRINT DATE: 1/12/2016

SPECIAL K-FRAME CONNECTION PROCEDURE:
1. Before Stage 3 deck is poured, connect one end of Special K-Frame to Girder 4 and fully tighten connection bolts. Leave Girder 5 connection unlocked until after the Stage 3 deck concrete is in place.
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SHEET 5 OF 13
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BRIDGE OVER BIG LAKE FLOODWAY RELIEF
MISSISSIPPI COUNTY
ROUTE 16   SEC. 6
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER: JACOBS
DRAWN BY: LHG
PRINT DATE: 3/2/2016
CHECKED BY: --TJC--
DESIGNED BY: --TJC--
SCALED: As Noted
DRAWING NO. 50743

PRINT DATE: 1/12/2016

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SHEET 5 OF 13
DETAILS OF 434'-0" CONTINUOUS COMPOSITE PLATE ORDER UNIT
BRIDGE OVER BIG LAKE FLOODWAY RELIEF
MISSISSIPPI COUNTY
ROUTE 16   SEC. 6
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER: JACOBS
DRAWN BY: LHG
PRINT DATE: 3/2/2016
CHECKED BY: --TJC--
DESIGNED BY: --TJC--
SCALED: As Noted
DRAWING NO. 50743

PRINT DATE: 1/12/2016

SPECIAL K-FRAME CONNECTION PROCEDURE:
1. Before Stage 3 deck is poured, connect one end of Special K-Frame to Girder 4 and fully tighten connection bolts. Leave Girder 5 connection unlocked until after the Stage 3 deck concrete is in place.
2. After Stage 3 Deck has been poured, field-drill holes in Girder 5 connection plates, install connection bolts, and tighten in accordance with Subsection B317.
3. The Contractor shall maintain proper girder alignment until all K-Frames are completely installed. You may require temporary bracing.

TABLE FOR WELDS

<table>
<thead>
<tr>
<th>Material Thickness of Thicker Port Joined (inches)</th>
<th>Minimum Size of Fillet Weld (inches)</th>
<th>Single Pass Weld Must Be Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 0.062 inclusive</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td>Over 0.062</td>
<td>3/32</td>
<td></td>
</tr>
</tbody>
</table>

Note: When a weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

SHEET 5 OF 13
DETAILS OF 434'-0" CONTINUOUS COMPOSITE PLATE ORDER UNIT
BRIDGE OVER BIG LAKE FLOODWAY RELIEF
MISSISSIPPI COUNTY
ROUTE 16   SEC. 6
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER: JACOBS
DRAWN BY: LHG
PRINT DATE: 3/2/2016
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<td>3/32</td>
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</tr>
</tbody>
</table>

Note: When a weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.
**TABLE FOR WELDS**

<table>
<thead>
<tr>
<th>Material Thickness</th>
<th>Minimum Size of Weld (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>of Thicker Part</td>
<td>Welded Thickness</td>
</tr>
<tr>
<td>M-S 0.375</td>
<td>0.375</td>
</tr>
<tr>
<td>M-S 0.500</td>
<td>0.500</td>
</tr>
<tr>
<td>M-S 0.625</td>
<td>0.625</td>
</tr>
</tbody>
</table>

Notes:
- Bearing stiffeners shall be fabricated to be placed in their final positions.
- All structural steel, including girders, stiffeners, bearing stiffener plates, connection plates, and intermediate stiffener plates, shall be WEARIS W330 ST. D. SAW.
- When a flat weld size, as shown on the plans, is larger than the minimum, the full size shall be used for minimum size of flat weld.
- Use No. 5-45 fillet weld.

---

**DETAIL A**

Bearing Stiffener & End Bents

Scale: 1" = 1'-0"

**DETAIL B**

Bearing Stiffener & Intermediate Bents

Scale: 1" = 1'-0"

**DETAIL C**

Intermediate Stiffener

Scale: 1" = 1'-0"

**DETAIL D**

2-Sided Conn Plate with 12" Top Flange

Scale: 1" = 1'-0"

**DETAIL E**

2-Sided Conn Plate with 17" Top Flange

Scale: 1" = 1'-0"

**DETAIL F**

1-Sided Conn Plate with 12" Top Flange

Scale: 1" = 1'-0"

---

**VIEW A-A**

---

**SHEET 6 OF 13**

DETAILS OF 434'-0" CONTINUOUS COMPOSITE PLATE ORDER UNIT

BRIDGE OVER BIG LAKE FLOODWAY RELIEF MISSISSIPPI COUNTY

ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARKANSAS

BRIDGE ENGINEER

PRINT DATE: 5/12/2018

FILENAME: b31002_sx6.dgn

SCALE: As Noted

DRAWN NO. 56749

JACOBS
Details of Optional Slipforming of Concrete Parapet Rail

No Scale

Place Type D Bridge Name Plate on right parapet rail approximately 2'-0" from front face of backwall. (Beginning of bridge only.)

Name Plate Detail

No Scale

The extruded parapet shall conform to the horizontal and vertical dimensions shown on the plans as referenced to the Engineer and Contractor.

Exposed surfaces may be given a light smooth finish or a Class 3 Textured Coating Finish as shown in the Class 2 Rake Face Finish.

Details of Optional Slipforming of Concrete Parapet Rail

No Scale

For actual placement of reinforcing steel, see parapet details.

All smooth wire bracing shall be placed on the inside faces of the parapet.

Bar to lighten smooth wire shall be fiberglass.

Aluminum sheet shall be shown to prevent rocking. Aluminum sheet and smooth or shown as practiced to a minimum width of 1/2" to prevent cracking before sawing. Aluminum sheet or shown as practiced to a minimum width of 1/2" to prevent cracking before sawing. All smooth wire bracing shall be placed on the inside faces of the parapet.

Wire shall be smooth 5-gage and conform to AASHO M 279, Class 3 galvanization and dimensions.

Three M-6 fiberglass reinforcing bars shall be included as shown across driven units with a 20" minimum lap on each sidebar.

Note:

Parapet details shall be the 4'-0" long grillage for Web, end, rails, or equal and automatically welded to the plans. Steel and joints shall meet the requirements of Section 607. Steel and joints shall be measured and paid for as "Structural Steel & Pipe Girder Spans (AASHTO, Gr. 50W)."

The surfaces of the 3" plates which will not be in contact with concrete shall be painted in accordance with Section 608 or as approved by the Engineer. The one coat to be applied and will be painted in the corresponding Shop. Painting will not be required for the construction, unless necessary to "Structural Steel & Pipe Girder Spans (AASHTO, Gr. 50W)."
**EXTRACTION FACTORY INSTALLATION AT END BENTS**

The Contractor may elect to install the expansion device using one of the following two alternatives:

1. The concrete span adjacent to joint shall be placed after the end blocks. Bents shall be placed and the girder erected to the box-shaped expansion device shall be installed and adjusted for grade. All connection bolts shall be tighten prior to placing the deck concrete adjacent to the bent. Immediately prior to placing the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade. Steel bolts shall not be placed behind the backwall until the deck concrete on the adjacent span has been poured.

2. The backwall shall be poured to the optional construction after girders are placed. The optional expansion device shall be installed and adjusted for grade. All connection bolts shall be tighten prior to placing the backwall concrete. The blocking shall be removed and the opening adjusted for temperature and grade. Steel bolts shall not be placed behind the backwall until the deck concrete on the adjacent span has been poured.

**SECTION D-D**

Note: Dimension "X" equals the width of the recess in the gutterline to allow for removal or repair of joint. The expansion joint shall be ANSI M570, Grade 30W. All structural steel, except for the steel expansion for the strip seal, shall be painted with "Structural Steel in Plate Grade Sprays M100, G1010." The stainless-steel expansion joint shall be painted in accordance with Section 305 of the Standard Specifications.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to fabrication of any structural steel of the expansion device. Slider plates shall be ANSI M570, Grade 30, and shall be placed to conform to "Structural Steel in Plate Grade Sprays M570, G1010." The surfaces of the slider plates shall be coated with the correct spray to be consistent with the contractor to be coated to prevent material in the manufacturer's shop. Spraying shall not be performed for direct, but will be considered subsidiary to "Structural Steel in Plate Grade Sprays M570, G1010." The method of installation and fabrication shall be determined by the manufacturer.

Anchor bolts shall not be paid for directly, but will be considered subsidiary to "Structural Steel in Plate Grade Sprays M570, G1010."
however, additional welds used to detailed tolerances Al permonent to girders outside side position cut out Steel M270, not short Al plutes in the Conktor's consideration subsidiary will be sufficient in the use of Longaneer. The component will be firmly in place for testing is not the Conktor's approved shop drawings. Shop splicing with members will require special K-Frame bolts for splices. No intermediote sections. distance between intermediate stiffeners will be considered subsidiary to the item of "Galvanic Coated Hangering Steel (Grade 60)".

BEARINGS:
Bedding shall be firmly seated in accordance with Subsection 20.06.05. This work and materials to be considered subsidiary to the item "Concrete Bedding" and will not be paid for directly.

Anchor bolts shall be designated ASTM A 574 or ASTM A 193 B 7 unless otherwise noted and shall be paid for at the contract unit price listed in the "Structural Steel in Plate Girders Spans (M270, Gr. 50W)". See Drawing No. 58754 for details on splicing of external plate on eccentric bearings.

STREET:
All girder to be designated M270, Gr. 50W unless otherwise noted and shall be paid for at the contract unit price listed in the "Structural Steel in Plate Girders Spans (M270, Gr. 50W)". All splices shall be in accordance with Subsection 827.84 unless otherwise noted. Structural steel completely embedded in concrete may be designated M270, Gr. 36 unless otherwise noted. Girders shall not be painted. For painting and painting of other girders, see Drawing No. 58752.

Drawings show general features of design only. Drawings shall be made in accordance with the specifications, standards, and approved orders before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the contractor to the Engineer for approval. Steel equal or greater strengths will be approved only when the change is not more than 10% of the total cross section. The change in section shall be reflected in the bills of quantity and no additional compensation will be made for any adjustments to substructures.

All splices and fillets, and field splice plates are considered main load carrying members and shall meet the longitudinal yield (k-F) limits specified in Subsection 827.03. This work and materials will be considered subsidiary to the item "Steel in Plate Girders Spans (M270, Gr. 50W)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile or compressive stresses.

Girder webs may be made with shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made with shop splicing with a maximum length of 25'-0" for sections. Material specifications for shop-welded specials, if any, shall be shown on the shop drawings. Additional payment will be made for such work.

Gusset plates in main plate girders shall be Quality Control (QC) tested by non-destructive testing, as required by the Standard Specifications. Field welds of flange to web connections shall be QC tested by the magnetic-particle method. All welds are to be inspected by the Contractor's expense.

All connection plates and intermediate stiffeners shall be fabricated normal to the top flange and at the side of the girder as indicated on the towing. Intermediate stiffeners are to be placed on the outside of the exterior girder sections as noted. All bolting stiffeners shall be fabricated to be bolted in their final conditions.

All girders shall be bolted to their true position in the shop with the webs horizontal as groups as specified in Subsection 827.04. All weld length of welding especially, between bearing, and lap splices of parts shall be measured with the girder in their final position and this information shall be part of the permanent records of this job. The component parts shall be matched marked in this operation and these markings shall always be on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of ± 1/8" is allowed for camber.

All welding to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval if additional welds are required. Neither permanent or temporary, or field erected welds shall be submitted to the Engineer for approval. Temporary welds, shall be used for efficient field support only and are to be removed prior to the final welding or testing of the structure. The Engineer will allow for temporary field welding if required.

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### General Notes

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings".

**External load plates and shear blocks** shall conform to ASDOT M 270, Grade 50W and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings".

Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to ASTM A500, Grade B or ASTM A500, Grade 50.

External load plates shall be completely fabricated (including level, bolt holes and shop welding) and shall be cleaned before installation and shall conform to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808-01.

**Anchor Bolts, Washers, and Nuts** shall conform to Subsection 807-07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Notes" of Fabricator Variables. The anchor bolts shall be circular with rounded bottoms and staggered shoulders.

Pipes, Sleeves, Anchor Bolts, Washers, and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans, W 270, Gr. 50W."

Bearings shall be erected in accordance with Subsection 808-06. Work and materials shall be considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

### Table of Fabricator Variables

<table>
<thead>
<tr>
<th>Bearing No.</th>
<th>Location</th>
<th>Order No.</th>
<th>No. of Br.</th>
<th>HDG</th>
<th>Type</th>
<th>No. &amp; Thickness</th>
<th>ANCHOR BOLT</th>
</tr>
</thead>
<tbody>
<tr>
<td>02889</td>
<td>S. &amp; S</td>
<td>0.5</td>
<td>4.54</td>
<td>10</td>
<td>10</td>
<td>7 / 12 gage</td>
<td>2 / 2, 2 / 2</td>
</tr>
</tbody>
</table>

**Maximum Load = Service Limit State**

---

**NOTE:**

Anchor Bolts may be used in place of drilled and grouted into place. If Anchor Bolts are to be used in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be used in place as shown. Sleeves shall be designed and fabricated in accordance with the design requirements of the Engineer.

Elastomeric Beoining for Unit No. 1, Girder No. 1 will be Seated in the position shown in the detail. The direction and location of Structural Steel members shall be influenced by the positions of Structural Steel. The dry pack shall be removed and holes bored for the anchor bolts shall be completely drilled into the mast elements placed before the mast elements are fixed. Elastomeric Bearing anchors shall be securely fixed and bolted using a 50w approved grade of structural bolt. The end anchors shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans, W 270, Gr. 50W."
C.L. Elastomeric pad shall be aligned with C.L. Girder.

GENERAL NOTES:

Elastomeric Bearings shall conform to Section 306 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings".

Bearings shall be erected on level, uniform surfaces in accordance with Subsection E06.03. Any misalignment in the support shall be corrected to form a level surface. Work and materials shall be considered subsidiary to the item "Elastomeric bearings" and will not be paid for directly.

The neoprene pads shall be bonded to the bearing seat with an epoxy adhesive in accordance with the bearing manufacturer’s recommendations for bonding neoprene to concrete to prevent sliding.

TABLE OF FABRICATOR VARIABLES

<table>
<thead>
<tr>
<th>BRIDGE NO.</th>
<th>LOCATION NO.</th>
<th>NO. OF DRGS.</th>
<th>MINIMUM DESIGN LOAD (KIPS)</th>
<th>MAXIMUM LOAD (KIPS)</th>
<th>H</th>
<th>A</th>
<th>B</th>
<th>N</th>
<th>T</th>
<th>I</th>
<th>NO. &amp; THICKNESS OF ELASTIC LAMINATES</th>
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<tbody>
<tr>
<td>07392</td>
<td>3</td>
<td>4</td>
<td>434</td>
<td>102</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>75</td>
<td>125</td>
<td>75</td>
<td>4.5 x 4.5</td>
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<tr>
<td>07392</td>
<td>3</td>
<td>4</td>
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<td>102</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>75</td>
<td>125</td>
<td>75</td>
<td>4.5 x 4.5</td>
</tr>
</tbody>
</table>

Maximum Load - Service / Limit State
**PLAN OF FOOTING SHOWING REINFORCEMENT**

**ELEVATION**

- **Details of Reinforced Concrete Retaining Wall**
  - STA 1270-25 to STA 1272-65
  - Mississippi County

**Notes:**
- Longitudinal dimensions shown are horizontal along Fill Face of wall.
- Construction Joints and Expansion Joints are to be built vertical.

**For Section A-A, see Drawing No. 58757.**
**For Drain Pipe Details see Drawing No. 58757.**
ELEVATION

PLAN OF FOOTING SHOWING REINFORCEMENT

Notes:
- Longitudinal dimensions shown are horizontal along Fill Face of wall.
- Construction Joints and Expansion Joints are to be built vertical.
- For Section A-A, see Drawing No. 13757.
- For Drain Pipe Details see Drawing No. 13757.

For Section A-A, see Drawing No. 13757.
For Drain Pipe Details see Drawing No. 13757.

SHEET 4 OF 6
DETAILED OF REINFORCED CONCRETE RETAINING WALL
STA. 1270-25 TO STA. 1272-65
MISSISSIPPI COUNTY
MOTIVE 6
SEC. 6
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

PRINT DATE: 9/12/2016
CHECKED BY:
DETAILED BY:
DESIGNED BY:
DRAWING NO.: 58759

JACOBS
PLAN OF FOOTING SHOWING REINFORCEMENT
ELEVATION

PLAN OF FOOTING SHOWING REINFORCEMENT

Notes:
- Longitudinal dimensions shown are horizontal along Fill Face of wall.
- Construction Joints and Expansion Joints are to be built vertical.
- For Section A-A see Drawing No. 58757.
- For Drain Pipe Details see Drawing No. 58757.

Sheet 6 of 6
Details of Reinforced Concrete Retaining Wall
STA 1270.25 to STA 1272.65
MISSISSIPPI COUNTY

LITTLE ROCK, ARKANSAS

ARKANSAS STATE HIGHWAY COMMISSION

DESIGNED BY CMW DATE: 11/4/2016
DRAWN BY JVT DATE: 11/4/2016
SCALING: " = 1'-0"
DRAWING NO. 58757

Print Date: 1/10/2016

JACOBS

Print Name: tech53522_w11.dgn

Page 1 of 1
ARKANSAS HIGHWAY COMMISSION
DICK TRAMMEL - CHAIR
TOM SCHEUER - VICE CHAIR
ROBERT S. MOORE, JR.
FRANK D. SCOTT, JR.
DALTON A. "ALEC" FARMER, JR.
DIRECTOR - SCOTT E. BENNETT
DEPUTY DIRECTOR/CHIEF OPERATING OFFICER - LORIE H. TUDOR
DEPUTY DIRECTOR/CHIEF ENGINEER - EMANUEL BANKS

CONTRACTOR
COMPANY NAME
YEAR

TYPICAL BRIDGE NAME PLATE

---

GREAT DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, AR

DATE: 2-27-2024
CHECKED BY: EJS
SCALE: NO SCALE
DRAWING NO. 3500
REFER TO TABULATION OF QUANTITIES FOR W & Y DIMENSIONS

TYPE A

NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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

TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

TOE WALL DETAIL FOR CONCRETE DITCH PAVING

GENERAL NOTES:
THE FULL WIDTH OF EACH SECTION SHALL BE Poured MONOLITHICALLY.
TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND POURED MONOLITHICALLY.
SOLID 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 45' INTERVALS, THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M63.

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.

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1
CONCRETE COMBINATION CURB AND GUTTER

DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB

DETAILS OF MODIFIED CURB
NOTE: USE MODIFIED CURB AS SPECIFIED ON STANDARD DRAWING CC-I.
COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.
### Table of Dimensions

<table>
<thead>
<tr>
<th>Arch Pipe</th>
<th>Circular Pipe</th>
<th>C.M. Arch Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dia.</td>
<td>M</td>
<td>A</td>
</tr>
<tr>
<td>X</td>
<td>Y</td>
<td>Z</td>
</tr>
<tr>
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<td>Y</td>
<td>Z</td>
</tr>
<tr>
<td>X</td>
<td>Y</td>
<td>Z</td>
</tr>
</tbody>
</table>

**Arch Pipe**
- The measured span and rise shall not vary more than 1/2% from the values specified by AASHTO M206.

**Circular Pipe**
- Alternate connections to the pipe culverts, in accordance with manufacturer's standard practices, may be made subject to the approval of the engineer.

**Multiple R.C. Pipe Culverts**
- Multiple C.M. Pipe Culverts

**Flared End Section**
- Standard Drawing FES-2
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

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

ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE 2) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.

LEGEND

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>4', 75'</td>
<td>STANDARD DRAWING CR-9</td>
</tr>
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</table>

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING CR-9
DETAILS OF WIDENING FOR GUARD RAIL

SECTION A-A

SECTION B-B

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE
THREE BEAM RAIL

NOTE: BLOCKOUTS SHALL BE GALVANIZED AFTER FORMATION, GALVANIZED TO SUBSECTION BOLTS OR THE BLOCKOUTS SHALL BE MADE OF STEEL AND BE GALVANIZED OR STAINED.

STRUCTURAL STEEL BLOCKOUT DETAIL

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE ASKED WOOD OR AI AND SHALL BE GALVANIZED.

GENERAL NOTES

1. ALL BOLT STANDARDS ARE C.M. SPECIFICATIONS. CONNECTOR PLATE SHALL CONFORM TO SUBSTITUTE BOLTS OR THE SPECIFICATIONS CONNECTOR PLATE SHALL BE USED.

THREE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10
THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST 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

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
  normally in cross section.
- Wood posts & post bases shall be either green or structural or
  better CPF (cold-pressed) wood, or W.S. (Western Pine).

**Notes:**
- These dimensions will need to be adjusted in the field to make the transition from
  the W-beam to the 3-thre beam posts.

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-IOA
PLAN - GUARD RAIL TERMINAL (TYPE I)

SECTION 1

THE SECTION TO BE TWISTED THROUGH 90°

TERMINAL ANCHOR POST

ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:

SECTION 1 OF GUARD RAIL TERMINAL

3/4" X 2" X 1/2" SLOTS

SECION 1

TERMINAL ANCHOR POST

NOTE:

SECTIONS 1 OF GUARD RAIL TERMINAL

3/4" X 2" X 1/2" SLOTS

TERMINAL ANCHOR POST

NOTE:

SECTIONS 1 OF GUARD RAIL TERMINAL

3/4" X 2" X 1/2" SLOTS
GENERAL NOTES

1. Mailbox posts may be ROD or METAL. ROD posts shall be ground treated and shall comply with Section 637.02 of the Standards Specifications.

2. Anti-twist plates shall be used only on METAL posts. Anti-twist plates shall be galvanized steel (GALV) or lacquered steel (LACQ). The minimum thickness of the steel shall be 0.145".

3. Wood shelf, bracket & platform shall be galvanized or painted steel, however treated wood may be used with wooden posts. The minimum thickness of the wood shall be 3/4".

4. Mailbox shelf and platform that is shown is for standard size mailboxes. The shelf and platform size shall be modified to fit mailboxes of a different size.

5. Metal pipe for mailbox support shall be 2" O.D. steel with a wall thickness of 0.145" and a weight of 2.12 lbs per ft. Outside diameter and weight shall have a tolerance of +/- 5% according to AASHTO M 186.

6. Mailbox support system differing from those shown may be used provided they are on the anti-twist devices list for mailbox supports.

ANTI-TWIST PLATE

NOMINAL 2" MUFFLER CLAMP

LENGTH TO FIT

NOMINAL 1/2" STL WT PIPE

ANCHOR BOLT

MOUNTING FLANGE

CABINET BACK

SHELF

PLATFORM

SINGLE INSTALLATION

MAILBOX DETAILS

STANDARD DRAWING MB-1

ARKANSAS STATE HIGHWAY COMMISSION
INSTALLATION

2.5 5 7 2

54-60

EOUIV, t20

OIA.

72 42

24

TYPE

FOR

l8

NOTE:

ELLIPTICAL PIPE

MINIMUM COVER

VALUES "H" SHALL

BE OBTAINED FROM THE

CLASS III SPECIFICATIONS.

VALUES "H" IN

ORNAMENTAL CONCRETE

PIPING, OR WHEN

A AASHTO CLASS III

CONCRETE PIPE IS REQUIRED

BY THE ENGINEER.

WHERE BONE IS NOT

AVAILABLE, THE ENGINEER MAY

AUTHORIZE THE USE OF "SELECTED

PIPE BACKFILL".

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE WHOLE DIAMETER OF THE PIPE.
4. INSTALL foreign material, if specified in the specifications.
5. INSTALL EXISTING MATERIAL, IF SPECIFIED IN THE SPECIFICATIONS.
6. NOTE: HOAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BD PER LINEAR FOOT OF CONCRETE PIPE.

REINFORCED CONCRETE ARCH PIPE VERTICES

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE VERTICES

MINIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

MINIMUM COVER VALUES "H" SHALL INCLUDE A MINIMUM OF 3" OF PAYMENT AND BASE.

NOTES:

PIPE TO BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSENGES, EMBANKMENTS, OR OTHER EXCAVATIONS.

THE MINIMUM TRENCH WITH "H" SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 36 INCHES. THE MAXIMUM ALLOWABLE TRENCH WITH "H" SHALL BE THE MINIMUM PRACTICABLE FOR WORKING CONDITIONS.

MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES. THE DIAMETERS OF PIPE SHOWN ARE FOR MAXIMUM CAPACITY WHEN SIZED FOR MAXIMUM CLEARANCE WHERE LAYED END TO END ARE USED.

IMPOSSIBLE MATERIAL SHOULD BE AS PLACED AS DIRECTED BY THE ENGINEER. AT THE ENDS OF THE STRUCTURAL HOAUNCHES PRIOR TO THE DEFLECTION BE MOUNTED IN SITU NEEDED FOR THE PIPING. TRENCH OPENING COIN STANG TO A PERPENDICULAR CHAIN TO THE STRUCTURAL HOAUNCH TO THE HOAUNCH, THEN FOR THE HYPO-TO HOAUNCH PLATH.

NOTES:

PIPING TO BE INSTALLED IN A CURVE, A ‘SELECTED PIPE BACKFILL' SHALL BE USED IN A "SELECTED" PIPE BACKFILL.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL COMPLY WITH THE SPECIFICATIONS, INCLUDING ADDITIONAL REQUIREMENTSpheric CONCRETE PIPE CULVERTS OVER CIRCULAR R.C. PIPE CULVERTS.

MAXIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

MINIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

MINIMUM COVER VALUES "H" SHALL INCLUDE A MINIMUM OF 3" OF PAYMENT AND BASE.

NOTES:

PIPE TO BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSENGES, EMBANKMENTS, OR OTHER EXCAVATIONS.

THE MINIMUM TRENCH WITH "H" SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 36 INCHES. THE MAXIMUM ALLOWABLE TRENCH WITH "H" SHALL BE THE MINIMUM PRACTICABLE FOR WORKING CONDITIONS.

MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES. THE DIAMETERS OF PIPE SHOWN ARE FOR MAXIMUM CAPACITY WHEN SIZED FOR MAXIMUM CLEARANCE WHERE LAYED END TO END ARE USED.

IMPOSSIBLE MATERIAL SHOULD BE AS PLACED AS DIRECTED BY THE ENGINEER. AT THE ENDS OF THE STRUCTURAL HOAUNCHES PRIOR TO THE DEFLECTION BE MOUNTED IN SITU NEEDED FOR THE PIPING. TRENCH OPENING COIN STANG TO A PERPENDICULAR CHAIN TO THE STRUCTURAL HOAUNCH TO THE HOAUNCH, THEN FOR THE HYPO-TO HOAUNCH PLATH.

NOTES:

PIPING TO BE INSTALLED IN A CURVE, A ‘SELECTED PIPE BACKFILL' SHALL BE USED IN A "SELECTED" PIPE BACKFILL.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL COMPLY WITH THE SPECIFICATIONS, INCLUDING ADDITIONAL REQUIREMENTSpheric CONCRETE PIPE CULVERTS OVER CIRCULAR R.C. PIPE CULVERTS.

MAXIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

MINIMUM HEIGHT OF FILL "H"

OVER CIRCULAR R.C. PIPE CULVERTS

MAXIMUM HEIGHT OF FILL "H"

OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

MINIMUM COVER VALUES "H" SHALL INCLUDE A MINIMUM OF 3" OF PAYMENT AND BASE.

NOTES:

PIPE TO BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSENGES, EMBANKMENTS, OR OTHER EXCAVATIONS.

THE MINIMUM TRENCH WITH "H" SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 36 INCHES. THE MAXIMUM ALLOWABLE TRENCH WITH "H" SHALL BE THE MINIMUM PRACTICABLE FOR WORKING CONDITIONS.

MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES. THE DIAMETERS OF PIPE SHOWN ARE FOR MAXIMUM CAPACITY WHEN SIZED FOR MAXIMUM CLEARANCE WHERE LAYED END TO END ARE USED.

IMPOSSIBLE MATERIAL SHOULD BE AS PLACED AS DIRECTED BY THE ENGINEER. AT THE ENDS OF THE STRUCTURAL HOAUNCHES PRIOR TO THE DEFLECTION BE MOUNTED IN SITU NEEDED FOR THE PIPING. TRENCH OPENING COIN STANG TO A PERPENDICULAR CHAIN TO THE STRUCTURAL HOAUNCH TO THE HOAUNCH, THEN FOR THE HYPO-TO HOAUNCH PLATH.

NOTES:

PIPING TO BE INSTALLED IN A CURVE, A ‘SELECTED PIPE BACKFILL' SHALL BE USED IN A "SELECTED" PIPE BACKFILL.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL COMPLY WITH THE SPECIFICATIONS, INCLUDING ADDITIONAL REQUIREMENTSpheric CONCRETE PIPE CULVERTS OVER CIRCULAR R.C. PIPE CULVERTS.
### EQUIVALENT METAL THICKNESSES AND GAUGES

<table>
<thead>
<tr>
<th>Thickness in Inches</th>
<th>Zinc Coated</th>
<th>Uncorated</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.064</td>
<td>0.009</td>
<td>0.005</td>
<td>0.004</td>
</tr>
<tr>
<td>0.079</td>
<td>0.009</td>
<td>0.005</td>
<td>0.004</td>
</tr>
<tr>
<td>0.088</td>
<td>0.011</td>
<td>0.008</td>
<td>0.005</td>
</tr>
<tr>
<td>0.094</td>
<td>0.011</td>
<td>0.008</td>
<td>0.005</td>
</tr>
<tr>
<td>0.109</td>
<td>0.011</td>
<td>0.008</td>
<td>0.005</td>
</tr>
</tbody>
</table>

### CONSTRUCTION SEQUENCE

1. Place structural bedding material to grade, do not compact.
2. Install structural bedding outside the middle third of the pipe.
3. Place a 1" to 2" base course in a layer of minimum 4" thick or as required.
4. Compact base course and bedding material to a density of 95.

### EMBANKMENT AND TRENCH INSTALLATIONS

1. Structural backfill and structural bedding material shall be compacted to 95% of the maximum density according to test results.
2. Installation type 2 may be used for corrugated steel or corrugated pipe rounds.
3. Installation type 1 shall be used for corrugated steel or corrugated pipe rounds with 2½" x ½" corrugation.
4. Installation type 2 or 2 may be used for corrugated steel or corrugated pipe rounds with 2½" x ½" corrugation.

### GENERAL NOTES

2. Backfill shall be placed in accordance with the standard specifications.
3. Backfill shall be placed in accordance with the standard specifications.
4. Metal pipe culvert construction shall be covered by a cover sufficient to prevent water from deteriorating the pipe.
5. The minimum trench width shall be the inside diameter of the pipe plus 4 feet. The maximum allowable trench width shall be the minimum width practicable for working conditions.
6. Metal pipe culverts shall be placed with a minimum clearance of 4 inches from the nearest structural backfill wall. A minimum clearance of 4 inches shall be maintained around the pipe after the trench is backfilled.
7. Structural backfill material shall be placed as directed by the Engineer. If the pipe is placed in a trench, the pipe shall be installed according to the standard specifications.
8. Backfill shall be placed in accordance with the standard specifications.
9. Structural backfill material shall be placed as directed by the Engineer. If the pipe is placed in a trench, the pipe shall be installed according to the standard specifications.
10. Backfill shall be placed in accordance with the standard specifications.
**INSTALLATION**

*SM3 IN PER FREE LIEU HIGH DIMENSION, DENSITY OIAMETER BACKFILL ANO 24" 42" 36" 30" 48" 60" tfi" HOPE PIPE. BACKFILL AND FROZEN LUMPS.*

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

<table>
<thead>
<tr>
<th>TRENCH WIDTH FEET</th>
<th>D &quot;H &lt; 0-0&quot;</th>
<th>&quot;H OR 0-0&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>0-0</td>
<td>0-0</td>
</tr>
<tr>
<td>4&quot;</td>
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</tr>
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</tr>
<tr>
<td>6&quot;</td>
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</tr>
<tr>
<td>10&quot;</td>
<td>0-0</td>
<td>0-0</td>
</tr>
<tr>
<td>12&quot;</td>
<td>0-0</td>
<td>0-0</td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>PIPE DIAMETER (IN.)</th>
<th>CLEAR DISTANCE (IN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0-0</td>
</tr>
<tr>
<td>4</td>
<td>0-0</td>
</tr>
<tr>
<td>5</td>
<td>0-0</td>
</tr>
<tr>
<td>6</td>
<td>0-0</td>
</tr>
<tr>
<td>8</td>
<td>0-0</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**

1. PIPE SHALL CONFORM TO AASHTO M120 TYPE 5 INSTALLATION SHALL CONFORM TO JOB SPECIAL PREVISION "PLASTIC PIPE AND SECTION 690 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION-2015 EDITION.*

2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (DISCussed WITh JOB ENGINEER).

3. THE MINIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WITH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT MUDHOLE AND OTHER BACKFILL MATERIAL.

4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER. AT THE ENDS OF THE EMBOY TO PREVENT LOSS OF STRUCTURAL BACKFILL AND/or PERVIOUS MATERIAL IF USED FOR STRUCTURAL BACKFILL AND/OR BACKFILL.

5. WHEN DIRECTED BY THE ENGINEER, IMPERVIOUS MATERIAL THAT IS DISCARDED AT THE BOTTOM OF THE EXCAVATED TRENCH UNDER THE AREA DESIGNATED AT "STRUCTURAL BEDDING" AND/OR EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."

6. WHEN THE EXCAVATING MATERIAL EXCAVATED FOR THE TRENCH IS DETERMINED BY THE ENGINEER TO BE IMPINGSY FOR USE IN THE EXCAVATED AREA DESIGNATED AT "STRUCTURAL BEDDING" AND/OR EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE, THE EXCAVATING MATERIAL MAY BE USED FOR HIGHWAY CONSTRUCTION. THIS EXCAVATING MATERIAL SHALL BE USED FOR HIGHWAY CONSTRUCTION. THE PIPE, IF IMPERVIOUS MATERIAL IS NOT USED, CAN BE SELECTED TO BE IMPERVIOUS. IF SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE, THE EXCAVATING MATERIAL MAY BE USED FOR HIGHWAY CONSTRUCTION.

7. FOR PIPE TYPES THAT ARE NOT MOUNTED ON THE OUTSIDE CORRELATE WITH PROFICIES, SELECT PIPE BEDDING AND PAID FOR AS "SELECTED PIPE BEDDING."

8. MINIMUM DENSITY POLYETHYLENE PIPE OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.

9. JOINTS FOR HOLE PIPE SHALL MEET THE REQUIREMENTS FOR SOLID TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS."

**CONSTRUCTION SEQUENCE**

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

2. INSTALL PIPE TO GRADE.

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

4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 2'-0" THICKNESS. THE LAYERS SHALL BE BROUGHT TO EVENTLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.

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

**LEGEND**

- **R** = FILL HEIGHT (FT.)
- **D** = OUTER DIAMETER OF PIPE
- **K** = MINIMUM DIAMETER
- **H** = MAX. STRUCTURAL BEDDING MATERIAL
- **X** = SM-3 UNCOMPACTED MATERIAL
- **S** = UNDISTURBED SOIL

**Multiple Installation of High Density Polyethylene Pipes**

**Minimum Cover for Construction Loads**

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

**Diagram of Embankment and Trench Installations**

**Arkansas State Highway Commission**

**Plastic Pipe Culvert (High Density Polyethylene)**

**Standard Drawing PCP-1**
**INSTALLATION**

1. PVC shall conform to ASTM F949, CELL CLASS I, II, III, or IV. PVC pipe shall be made with corrosion-resistant material and suitably finished to withstand freezing conditions.

2. Plastic pipe Culvert shall conform to AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION.

3. The minimum allowable trench shall be the minimum width plus a sufficient width to ensure working room to properly and safely locate and compact bedding and other backfill material.

4. Inconspicuous 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. When directed by the engineer, unconsolidated material that is encountered in the bottom of the excavated trench shall be treated as "structural bedding." Such material shall be excavated and replaced with structural bedding material as specified in the engineer's written directions.

6. The maximum allowable height shall be the minimum height plus a sufficient height to ensure working room to properly and safely locate and compact bedding and other backfill material.

7. The minimum allowable cover shall be measured from the top of pipe to the top of the maintained construction baseline surface. The surface shall be maintained.

8. PVC pipes of diameters other than shown will not be allowed.

9. Joints shall be selected per the requirements for soil thickness as specified in AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. Joints shall be installed per manufacturer's recommendations.

---

**MAXIMUM FILL HEIGHT**

**BASED ON STRUCTURAL BACKFILL**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>&quot;H&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>18&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>24&quot;</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PVC PIPE DIAMETER</th>
<th>TRENCH WIDTH (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>4'-6&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>5'-0&quot;</td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>PVC PIPE DIAMETER</th>
<th>COVER (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>9&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>12&quot;</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**

1. PVC shall conform to ASTM F949, CELL CLASS I, II, III, or IV. PVC pipe shall be made with corrosion-resistant material and suitably finished to withstand freezing conditions.

2. Plastic pipe Culvert shall conform to AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION.

3. The minimum allowable trench shall be the minimum width plus a sufficient width to ensure working room to properly and safely locate and compact bedding and other backfill material.

4. Inconspicuous 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. When directed by the engineer, unconsolidated material that is encountered in the bottom of the excavated trench shall be treated as "structural bedding." Such material shall be excavated and replaced with structural bedding material as specified in the engineer's written directions.

6. The maximum allowable height shall be the minimum height plus a sufficient height to ensure working room to properly and safely locate and compact bedding and other backfill material.

7. The minimum allowable cover shall be measured from the top of pipe to the top of the maintained construction baseline surface. The surface shall be maintained.

8. PVC pipes of diameters other than shown will not be allowed.

9. Joints shall be selected per the requirements for soil thickness as specified in AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. Joints shall be installed per manufacturer's recommendations.
30 CENTER RAISED PAVEMENT MARKER (TYP.)

CENTER LINE

CENTER STRIPE ON CENTER LINE.

CENTER LINE

SOLID LINE STRIPE ON CENTER LINE.

SOLID LINE STRIPE ON ASPHALT PAVEMENT

BREAK LINE STRIPING

SOLID LINE STRIPING ON CONCRETE PAVEMENT

SOLID LINE STRIPING ON ASPHALT PAVEMENT

CONCRETE PAVEMENT

ASPHALT PAVEMENT

APPLICABLE FOR ASPHALT OR CONCRETE PAVEMENT

6" FOR BITUMINOUS SURFACE TREATMENT

6" FOR ASPHALT OR CONCRETE PAVEMENT

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.

NOTES:

I. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.

II. THE RED LENS OF THE TYPE II RPM SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

III. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

IV. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.
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 A3650 WITH 5 OR 6 GRADE 60.
CONSTRUCTION AND MATERIALS FOR WINGWALL AND CULVERT DIAMETERS, INCLUDING WEEP HOLES AND CRANIAL MATERIAL, SHALL BE SUBSIDIARY TO THE BIG ITEM "CLASS 5 CONCRETE.

MEMORANDUM WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION B5 OF THE STANDARD SPECIFICATIONS.

MEMORANDUM WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEBAR OF RX BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAINTING SHALL BE MADE FOR THIS ITEM BUT PAINTING WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS B10 FOR THE RX BOX CULVERT.

REINFORCING STEEL, TOLERANCES FOR REINFORCING STEEL, SHALL MEET THOSE LISTED IN MANUAL OF STANDARD PRACTICE PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 1-4 OF THE CRIMANUAL SHALL BE WIND TEND TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF IO -0- AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE GRAN OPENING SHALL BE 4" DIAMETER AND SHALL BE placing 0" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN MINIMUMS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 0 -0- AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH “BAR” LENGTH AND SHALL BE PLACING 0" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERSEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.

REINFORCED CONCRETE BOX CULVERT MODIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION

REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1
PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW 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.
### SUPERELEVATION TABLE FOR TWO-WAY TRAFFIC

<table>
<thead>
<tr>
<th>Degree Curve</th>
<th>15 MPH</th>
<th>25 MPH</th>
<th>35 MPH</th>
<th>45 MPH</th>
<th>55 MPH</th>
<th>65 MPH</th>
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**General Notes:**

1. On payment with two-way traffic, the super-elevation shall be resolved on the inside pavement edge unless otherwise noted on the plans.
2. Rates of super-elevation shall be computed in multiples of 0.5 ft. or 0.50 ft.
3. Relief shall be provided on outside pavement edge for 65 mph and greater.
4. Pavements wider than 2 lanes shall have additional transition length as follows:
   - 2 LANE UNDIVIDED: 200 ft
   - 2 LANE DIVIDED: 400 ft

**Notes:**

- Maintain normal crown on inside until super-elevation exceeds 2C.
- Rate of super-elevation shall be computed on straight line method where applicable.
- Maximum super-elevation is 6C.

---

**Diagram:**

- Standard method when super-elevation revolves around inner subgrade point or inner pavement edge.
- Standard method when super-elevation revolves around center line.
- Maximum super-elevation.
- 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
4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (see BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRAW. TC-41). E-ZE@. REYE®.}

Special End Unit

Proposed Cut Line

Taper Rate 10k/s

Traffic Either Way

C.L. Bridge

** Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NDRP-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.”

BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

** Offset Distance Table

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance (ft.)</th>
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<tbody>
<tr>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>35</td>
<td>18</td>
</tr>
</tbody>
</table>

If Offset Distance is not attainable, use BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET described below.

BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

** Offset Distance For Two Way Traffic Only

Edge of Travel Lane

Precast Unit

Delineators @ 10' spacing (typ.)

Traffic Either Way

C.L. Roadway

** Offset Distance Traffic Only

40' Min.

Off-set Distance (See Table)

SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NDRP-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.”

BARRIER PLACEMENT WITH ATTENUATOR

** Offset Distance Traffic Only

** Offset Distance For Two Way Traffic Only

** Win. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

ARMS SATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-5
GENERAL NOTES

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 ONSLOPE STAKES AT AN ANGLE TO THE TRENCH. PLACE STAKES AT THE TOP AND BOTTOM OF DITCH.

A DITCH CHECK SHALL BE APPLIED AT THE Top AND Bottom OF EACH Ditch. PLACE STAKES AT THE TOP AND BOTTOM OF DITCH.

NUMBER OF SAND BAGS 72 + PER FOOT OF Ditch

Aircraft or vehicle compatible with site conditions.

PLACED SAND BAGS AT BASE OF Ditch CHECK IN AREA OF STREAMFLOW

GENERAL NOTES

1. Baled straw shall be used to form a bale with an area of 32 square feet. The bales shall be a minimum of 48 inches in length.

2. No gaps shall be left between bales.

3. Baled straw filter barriers completed and accepted shall be measured by the engineer and/or the engineer and/or the contract unit price bid per bale for baled straw filter check.

NUMBER OF SAND BAGS 72 + PER FOOT OF Ditch

Aircraft or vehicle compatible with site conditions.

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Aircraft or vehicle compatible with site conditions.

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CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. Place perimeter controls (e.g., silt fences, diversion ditches, sediment basins, etc.).
2. Perform clearing and grubbing operation.

EXCAVATION

EXISTING GROUND

INTERCEPTOR OR DIVERSION DITCH

EXISTING GROUND

NOTE: NUMBER OF PHASES WILL VARY. ILLUSTRATION PROVIDED FOR ILLUSTRATION.

GENERAL NOTE

ALL CUT SLOPES SHALL BE DUG, PREPARED, SEEDED AND MAINTAINED AS SPECIFIED. ALL FILL SLOPES SHALL BE DUG, PREPARED, SEEDED AND MAINTAINED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. Excavate and stabilize interceptor or diversion ditches.
2. Excavate and stabilize interceptor or diversion ditches.
3. Perform Phase 1 Excavation, place permanent or temporary seeding.
4. Perform Phase 2 Excavation, place permanent or temporary seeding.
5. Perform Phase 3 Excavation, place permanent or temporary seeding.
6. Prepare cut slopes.
7. Place permanent or other erosion control devices as required.

EMBANKMENT

COVENANT DITCH TO BE IN PLACE DURING INTERCEPTOR OR DIVERSION DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, ETC.

GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DUG, PREPARED, SEEDED AND MAINTAINED AS SPECIFIED. EMBANKMENTS TO BEST STABILIZED IN EMBANKMENTS TO BEST STABILIZED NOT TO EXCEED 25 FEET MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE
1. Excavate diversion ditches, ditch checks, sediment basins, silt fences, or other erosion control devices as specified.
2. Place Phase 1 Embankment, with permanent or temporary seeding.
3. Place Phase 2 Embankment, with permanent or temporary seeding.
4. Place Phase 3 Embankment, with permanent or temporary seeding.
5. Prepare cut slopes.
6. Place permanent or other erosion control devices as required and maintain.

ARIZONA STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3
TEMPORARY DITCH LINER

TRIANGULAR SILT DIKE INSTALLATION FOR DROPOUT DITCH AND/OR DITCH LINER

SECTION C-C

SILT DIKE UNIT INSTALLATION FOR CONTINUOUS BARRIER

SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION FOR DRAINAGE DITCH OR ROADWAY DITCH

SECTION E-E

TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS

SYMBOLS

NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SWEEP LOCATIONS.

GENERAL NOTES

1. THE WORKshall consist of furnishing, installing, and maintaining the triangular silt dike(s) as shown on the plans and as directed by the engineer. SEE STANDARD DRAWING TEC-4.

2. THE DIKE SHALL BE TRANSFORMED CHARLIE A HEIGHT OF AT LEAST 5" BEYOND INDICATIONS ON THE PLANS. THE DIKE SHALL BE ORIENTED IN A LEANING FASHION AND BE SECURED TO THE SLOPE, SUCH AS TO PREVENT INTRA-BARRIER WATER ACCUMULATION. SEE STANDARD DRAWING TEC-4.

3. POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DINE AND NOT UNDER THE DINE.

4. STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNITS AS SHOWN ON THE DRAINAGE.
CROSS SECTIONS STA. 1221+00 TO STA. 1222+00
STAGE 3 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 2 TRAFFIC
STAGE 2 CONSTRUCTION

STA. 1225+95.71 BEGIN SUPERELEVATION
STA. 1226+00 END, SDR, RT, DL, GR
ELEV. = 236.93

STA. 1226+00
END, SDR, RT, DL, GR
ELEV. = 236.93

STA. 1226+50
BEGIN, O, D25 RT, DL, GR
ELEV. = 236.93

CROSS SECTION STA. 1225+50 TO STA. 1226+50
STA. 1225+95.71 BEGIN SUPERELEVATION
STA. 1229+45.71 MAX. SUPERELEVATION (0.055')
STA. 1240+00.72 MAX. SUPERELEVATION (0.055')
STA. 1245+40.72 END SUPERELEVATION

CROSS SECTIONS

STAGE 3 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC
STAGE 2 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 3 CONSTRUCTION
STAGE 2 TRAFFIC
STAGE 2 CONSTRUCTION

LEVELING
OF EXISTING PAVEMENT RETAIN AND OVERLAY

CROSS SECTION STA. 1228+50 TO STA. 1229+50
STA. 1225+95.71 BEGIN SUPERELEVATION
STA. 1231+35.71 MAX. SUPERELEVATION 10.005' / 1
STA. 1240+00.72 MAX. SUPERELEVATION 10.005' / 1
STA. 1240+40.72 END SUPERELEVATION
STA. 1225-95.71 BEGIN SUPERELEVATION
STA. 1231-35.71 MAX. SUPERELEVATION 10.055/1
STA. 1240-00.72 MAX. SUPERELEVATION 10.055/1
STA. 1245-40.72 END SUPERELEVATION

END MAX. SUPER ELEVATION 10.055/1 STA. 1240+00.72

STAGE 3 CONSTRUCTION
STAGE 2 TRAFFIC
STAGE 2 CONSTRUCTION
STAGE 3 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 2 CONSTRUCTION

STA. 1237+50 CROSS SECTION STA. 1237+90
CROSS SECTIONS STA. 1243+00 TO STA. 1244+00
CROSS SECTION STA. 1248+50 TO STA. 1249+00

STAGE 3 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 3 TRAFFIC

STAGE 2 TRAFFIC

LEVELING

24' CURB PAINT, RETAIN, AND OVERLAY

GRADE TO PROVIDE TEMPORARY DRAINAGE

24' CURB PAINT, RETAIN, AND OVERLAY

GRADE TO PROVIDE TEMPORARY DRAINAGE

STAGE 3 TRAFFIC

STAGE 2 TRAFFIC

STAGE 2 CONSTRUCTION
CROSS SECTION STA. 1249+50 TO STA. 1250+00
CROSS SECTIONS STA. 1252+50 TO STA. 1253+50

Stage 3 Construction - Stage 3 Traffic
Stage 2 Traffic - Stage 2 Construction
Stage 2 Construction - Stage 2 Traffic
Stage 3 Traffic - Stage 3 Construction

LEVELING
2P Existing Pavement Retain and Overlay

Levelling

Existing Pavement
Retain and Overlay
CROSS SECTION STA. 1268+50 TO STA. 1269+00

STAGE 2 CONSTRUCTION

STAGE 2 TRAFFIC

STAGE 3 CONSTRUCTION

STAGE 3 TRAFFIC

METHOD OF WORK: HOE, Operator: T. Price

23 EXISTING PAINT, RETAR AND OVERLAY

METHOD OF WORK: HOE, Operator: T. Price

23 EXISTING PAINT, RETAR AND OVERLAY

CROSS SECTIONS

JOB NO. 1A002

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140

140

1268-00

1269+00

215

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220

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265

-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140
CROSS SECTION STA. 1272+90 TO STA. 1281+50
CROSS SECTION STA. 1286 + 50 TO STA. 1287 + 00
CROSS SECTION STA. 1288+50 TO STA. 1289+00
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION 10.077'/'
STA. 1308+28.55 MAX. SUPERELEVATION 10.077'/'
STA. 1313+68.55 END SUPERELEVATION
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION (0.077'/l)
STA. 1309+28.55 MAX. SUPERELEVATION (0.077'/l)
STA. 1313+68.55 END SUPERELEVATION

CROSS SECTIONS
STAGE 1 TRAFFIC
STAGE 1 CONSTRUCTION
STAGE 2 TRAFFIC
STAGE 2 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 3 CONSTRUCTION
STAGE 4 TRAFFIC
STAGE 4 CONSTRUCTION
STAGE 5 TRAFFIC
STAGE 5 CONSTRUCTION

STA. 1294+80.89 BEGIN SUPERELEVATION

CROSS SECTION STA. 1295+00 TO STA. 1295+50
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION (0.077°/ft)
STA. 1308+28.55 MAX. SUPERELEVATION (0.077°/ft)
STA. 1313+68.55 END SUPERELEVATION

CROSS SECTIONS

STAGE 2 CONSTRUCTION
STAGE 3 TRAFFIC
STAGE 3 CONSTRUCTION
STAGE 2 TRAFFIC

STA. 1297+50 C.R. (2) CONSTRUCTION APRIL 20 RT. # 345 CUL YS.

EXISTING PARTY WALL

CROSS SECTION STA. 1297+50 TO STA. 1298+00
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION (0.077')
STA. 1308+28.55 MAX. SUPERELEVATION (0.077')
STA. 1313+68.55 END SUPERELEVATION

CROSS SECTION STA. 1298+50 TO STA. 1299+00
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION 10.077'/1
STA. 1308+28.55 MAX. SUPERELEVATION 10.077'/1
STA. 1313+68.55 END SUPERELEVATION
STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION (0.077' /')
STA. 1309+28.55 MAX. SUPERELEVATION (0.077' /')
STA. 1313+68.55 END SUPERELEVATION

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CROSS SECTIONS

STAGE 3 TRAFFIC
STAGE 3 CONSTRUCTION
STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC

STAGE 3 TRAFFIC
STAGE 3 CONSTRUCTION
STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC

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CROSS SECTION STA. 1301+50 TO STA. 1302+00
STA. 1204+80, 89 BEGIN SUPERELEVATION
STA. 1300+20, 89 MAX. SUPERELEVATION (0.077'/')
STA. 1308+28, 55 MAX. SUPERELEVATION (0.077'/')
STA. 1313+68, 55 END SUPERELEVATION

STAGE 3 TRAFFIC  STAGE 3 CONSTRUCTION
STAGE 2 CONSTRUCTION
STAGE 2 TRAFFIC

STA. 1308+49 IN PLACE
24" X 14" RCC PIPE CULV.,}
JUNCTION BOX
36" X 36" RCC PIPE CULV.,}
RTI GIRD GRAIN
24" X 14" RCC PIPE CULV.,}
RTI GIRD GRAIN
CONST. BEG. ON ST. + 250 CU. YD,
CROSS SECTIONS
STA. 1304+80.89 BEGIN SUPERELEVATION
STA. 1300+20.69 MAX. SUPERELEVATION (0.077")
STA. 1308+28.55 MAX. SUPERELEVATION (0.077")
STA. 1313+68.55 END SUPERELEVATION

STAGE 3 TRAFFIC | STAGE 3 CONSTRUCTION | STAGE 2 CONSTRUCTION | STAGE 2 TRAFFIC

STAGE 3 TRAFFIC | STAGE 3 CONSTRUCTION | STAGE 2 CONSTRUCTION | STAGE 2 TRAFFIC

STAGE 3 TRAFFIC | STAGE 3 CONSTRUCTION | STAGE 2 CONSTRUCTION | STAGE 2 TRAFFIC

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STAGE 3 TRAFFIC | STAGE 3 CONSTRUCTION | STAGE 2 CONSTRUCTION | STAGE 2 TRAFFIC

STAGE 3 TRAFFIC | STAGE 3 CONSTRUCTION | STAGE 2 CONSTRUCTION | STAGE 2 TRAFFIC

CROSS SECTION STA. 1310+00 TO STA. 1311+00
STAGE 3 TRAFFIC  
STAGE 3 CONSTRUCTION  
STAGE 2 CONSTRUCTION  
STAGE 2 TRAFFIC

CROSS SECTIONS

STA. 1294+80.89 BEGIN SUPERELEVATION
STA. 1300+20.89 MAX. SUPERELEVATION 10.077'/1
STA. 1308+26.55 MAX. SUPERELEVATION 10.077'/1
STA. 1313+68.55 END SUPERELEVATION

CROSS SECTION STA. 1311+50 TO STA. 1312+50

STAGE 3 TRAFFIC  
STAGE 3 CONSTRUCTION  
STAGE 2 CONSTRUCTION  
STAGE 2 TRAFFIC

CROSS SECTIONS