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**NOTE:** Cross sections not normally included in Plans sold to Perspective Bidders, but may be had upon request.

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GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.

2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.

3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAIL BOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.

5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.

6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HANDLED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SERVED. WHERE FENCE MAY BE CONSTRUCTED IN WILTY OR IN UMNITOS, THE CONTRACTOR AT HIS OWN EXPENSE MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.

8. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.

9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 215 - UNCLASSIFIED EXCAVATION.

10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAVING ALONG A NEUTRAL LINE. AFTER SAVING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
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ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACWM SURFACE COURSE (6/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
SITE I - FULL DEPTH SECTION
STA 542+00 TO STA 546+00.00

NOTES:

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

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

5. THEORETICAL PROFILE GRADE

6. SUPERELEVATION SLOPE

NOTE: ON ALL SUPERELEVATED CURVES AND THRU SUPERELEVATION TRANSITIONS THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT SLOPE AND THE SHOULDER SLOPE SHALL NOT EXCEED 0.08'.
NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACWM SURFACE COURSE 1/2" IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
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THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS. INSTRUCTIONS WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACIM SURFACE COURSE 0/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
NOTES:

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. IF THE CONTRACTOR CORRECTS ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED, PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACWM SURFACE COURSE 6'/2" IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.
NOTES:

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

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NOTE:

ON ALL SUPERELEVATED CURVES AND THEIR SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.081'.
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TYPICAL SECTIONS OF IMPROVEMENT

HWY. 305 - FULL DEPTH SECTION
STA 403+60.98 TO STA 405+76.78

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. No CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

5. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACDA SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

6. VARIABLE SUBGRADE WIDTH

7. VARIABLE LANE WIDTH

NOTE: ON ALL SUPERELEVATED CURVES AND LEVEL -ELEVATION TRANSITIONS BETWEEN THE ENDS OF THE HYRER PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 1/8".
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

NOTE: TURNOUTS SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

NOTES REFER TO PLAN SHEETS FOR WIDTH OF COUNTY ROAD.

CONSTRUCTION LIMITS

DETAIL FOR DRIVeway TURNOUTS
(Collectors)

NOTES:
11) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.
12) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT BINDER WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
13) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.
PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL

DETAIL FOR TRANSITIONS

WIDENING FOR GUARDRAIL

SPECIAL DETAILS
CONSTRUCTION PROJECT INFORMATION SIGN

WORK WITH US SIGN

SECTION OF APPROACH SLAB
DETAILS OF RUMBLE STRIPE

LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER

DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH GLASS, INTERSECTING STREETS OR ROADWAYS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAP, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 6' DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.

PLAN VIEW

NOTE: GAP PATTERN SHALL BE ADJUSTED BY THE ENGINEER IN THE FIELD ALLOWING FOR DRIVEWAYS TO SERVE AS THE GAP.
DETAILS OF RUMBLE STRIPS

LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

DETAIL FOR RUMBLE STRIP GAP
AT DRIVEWAY TURNOUTS

GENERAL NOTES

1. RUMBLE STRIPS SHALL NOT BE INSTALLED ON CURB SECTIONS, BRIDGE DECKS, APPROACH GLASS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

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

3. THE 4" OFFSET FROM THE EDGE LINE MAY BE INCREASED TO AVOID LONGITUDINAL JOINTS. IN ALL CASES, THE LATERAL DEVIATION FROM THE PLANNED OFFSET SHOULD BE KEPT TO A MINIMUM.

4. RUMBLE STRIPS SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER WHERE RUMBLE STRIPS HAVE BEEN CONSTRUCTED IN MEASUREMENT OR PAYMENT WILL BE MADE FOR GAP, DRIVEWAYS, TURFIDS, OR DRIVES. STOPLINES TO THE INTERSECTION WHERE STRIPS HAVE NOT BEEN CONSTRUCTED.

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

PLAN VIEW

SPECIAL DETAILS
1. Rumble Stripes shall not be installed on bridge decks, approach slabs, intersecting streets or roadways, or across transverse joints of concrete shoulder.
2. Rumble Stripes shall be measured by the linear foot longitudinally along the centerline.
3. The 8" depth shall generally apply for the entire 16' length. Some variation to suit slope breaks may be necessary.
STA. 527+50.00
END SITE 1

SITE 1 - CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS
LOG MILE 8.40
BEGIN JOB 050280
STA. 510+48.33
BEGIN SITE 1
LOG MILE 9.54

REVISIONS

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LEGEND

- ROCK DITCH CHECKS
- SEDIMENT BASIN

NOTES:
- PERMITS CONTROL SHALL BE PLACED AS CLEARING AND DREDGING OPERATIONS ARE STARTED.
- USE OF EROSION CONTROL DEVICES DURING END OF CONSTRUCTION UNLESS OTHERWISE NOTED.

SITE 1 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS
### REVISIONS

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### LEGEND

- **C** + Rock Ditch Checks
- **F** + Silt Fence

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**SITE 2 - CLEARING AND GRUBBING**

TEMPORARY EROSION CONTROL DETAILS

STA. 804+00.00
BEGIN SITE 2
LOG MILE 11.22
SITE 2 - CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

STA. 834+00.00
END SITE 2

DATE OF REVISION

REVISION

LEGEND

= ROCK DITCH CHECKS
= Silt Fence

STRAIGHT TO STA 834+00.00
SPECIAL FLOOD HAZARD AREA
SITE 4 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

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LEGEND

- Rock Ditch Checks
- Salt Fence

STA. 313.98.00
BEGIN SITE 4
LOG MILE 16.14

STA. 324.51.00
END SITE 4
LOG MILE 17.07
END JOB 050280
ADVANCE WARNING (ALL STAGES)

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

DO NOT PASS

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

BLUMP

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

NOTE: OM-3L & OM-3R SIGNS SHALL BE EQUALLY SPACED ALONG P.C.C.B. TURNBACK.

DETAIL OF OBJECT MARKERS AT PRECAST CONCRETE BARRIER TURNBACKS

REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.
ADVANCE WARNING - SIDE ROADS (ALL STAGES)

L.M. 6.49, GRAVEL HILL ROAD
L.M. 6.49, NEWTON HOLLOW LANE
L.M. 6.64, GRANDVIEW LANE
L.M. 6.75, OLDHAM ROAD
STA. 5H+33, DONALDSON ROAD
L.M. 10.55, PINE CANYON ROAD
L.M. 10.85, CARMICHAIL ROAD
L.M. 1A, COLONEL BILES ROAD
STA. 8H+50, MIRANDA LANE
L.M. 1B+85, TATER HILL ROAD
STA. 12+89, TANNER ROAD
STA. 13+3L, BUTLER LANE
STA. 1H+92, BLOODWORTH ROAD
STA. 1E+05, CENTERVIEW CIRCLE
STA. 17+09, CENTERVIEW CIRCLE
STA. 18+48, YARNELL ROAD
STA. 20+48, NIELS LANE
STA. 205+04, HIGHWAY 320
L.M. 4.76, JAYBIRD LANE
L.M. 5.35, N SMYRNA ROAD
L.M. 5.75, S SMYRNA ROAD
STA. 3H+56, CROSBY ROAD
STA. 3H+55, NICHOLSON ROAD
L.M. 6.64, COFER ROAD

NOTE: ALL STATIONS/LOG MILES BASED OFF HWY. 36.
DETAIL FOR STAGE CONSTRUCTION
STA. 116+50.74 - STA. 134+00.00

DETAIL FOR STAGE CONSTRUCTION
STA. 134+00.00 - STA. 206+70.00
STA. 317+50.00 - STA. 321+21.00

TRAFFIC DRUMS AND SIGNS ON EXISTING SHOULDER
FOR EXTENDING/CONSTRUCTING PIPE CULVERTS LT. AND RT.

STA. 524+13 STA. 180+67
STA. 122+13 STA. 207+80
STA. 125+35 STA. 314+77
STA. 133+81 STA. 319+97

DRIVEWAY/TRAFFIC DRUM DETAIL

ALL STAGES
MAINTENANCE OF TRAFFIC DETAILS
MAINTENANCE OF TRAFFIC DETAILS

SITE 1 - STAGE 2

MAINTENANCE OF TRAFFIC DETAILS

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

1. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

2. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

3. TEMPORARY MEDIAN BARRIER (INSTALLATION)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

4. TEMPORARY MEDIAN BARRIER (REMOVAL)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

1. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

2. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

3. TEMPORARY MEDIAN BARRIER (INSTALLATION)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

4. TEMPORARY MEDIAN BARRIER (REMOVAL)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

1. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

2. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

3. TEMPORARY MEDIAN BARRIER (INSTALLATION)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

4. TEMPORARY MEDIAN BARRIER (REMOVAL)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

STAGE 2 QUANTITIES (SITES 1, 3, & 4)

1. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

2. CONSTRUCTION PAVEMENT MARKING
   - 600' x 600' per section
   - 10 sections per site
   - 30 sections per site

3. TEMPORARY MEDIAN BARRIER (INSTALLATION)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site

4. TEMPORARY MEDIAN BARRIER (REMOVAL)
   - 300' x 600' per section
   - 10 sections per site
   - 30 sections per site
SITE 1 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

STA. 527+50.00
END SITE 1
SITE 2 - STAGE 1 CONSTRUCTION SEQUENCE:

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

INSTALL VERTICAL PANELS SPACED 45° G.C. TO DELINTE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINTE OPTIONALLY.

NOTCH AND BLOCK HPO 36 LT. OF C.L. FROM STA 807-00.00 TO STA 807-25.00.

NOTCH AND BLOCK HPO 36 LT. OF C.L. FROM STA 807-26.00 TO STA 807-50.00.

NOTCH AND BLOCK HPO 36 LT. OF C.L. FROM STA 807-51.00 TO STA 807-75.00.

NOTCH AND BLOCK HPO 36 LT. OF C.L. FROM STA 807-76.00 TO STA 826-00.00 AS SHOWN ON THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELLING COURSE TO EXISTING LINES IF AND WHERE DIRECTED BY THE ENGINEER.

SITE 2 - STAGE 1 QUANTITIES:

SQUARES - 10.0 SQ. FT.

TRAFFIC DRUMS - 5 EA.

TEMPORARY IMPACT ATTENUATION BARRIER - 1 EACH

FLEXIBLE DESIGN PERMANENT MARKINGS - 3800 LF. PT.

CONSTRUCTION PAVEMENT MARKINGS - 1200 LF. PT.

SITE 2 - STAGE 1 MAINTENANCE OF TRAFFIC DETAILS:

STA. 804+00.00
BEGIN SITE 2
LOG MILE 11.22
SITE 2 - STAGE 2 CONSTRUCTION SEQUENCES

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS SPACED 45° O.C. TO DELIMITE THE WORK ZONE. USE TRAFFIC DRUMS TO DELIMITE WORK ZONES.

FURNISH AND INSTALL P.C.C.S. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND RIGID HRN. 36' R.T. R.I. FROM STA. 803-00.00 TO STA. 804-00.00, AND FROM STA. 802-73.33 TO STA. 803-00.00, AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

REMOVE EXISTING BRIDGE STRUCTURES.

APPLY FINAL 2" LIFT OF ADM SURFACE Course AND CURB IN THE PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 2 - STAGE 2 QUANTITIES

5" C.L. + 64 O.R., 46 FT.

TRAFFIC DRUMS + AS EACH CONSTRUCTION PAVEMENT MARKINGS + 1200 SQ. FT.

SITE 2 - STAGE 2 MAINTENANCE OF TRAFFIC DETAILS

STA. 804+00.00
BEGIN SITE 2
LOG MILE 11.22
SITE 3 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS

STA. 112+00.00
BEGIN SITE 3
LOG MILE 12, 30
SITE 3 - STAGE 1B CONSTRUCTION SEQUENCE

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' C.C. TO DELINATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINATE DRIVING LANE.

NOTCH AND WIDER HNV. 36 3' 0". C.C. FROM STA. 421 75 00 TO STA. 422 95 67 AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT HNV. 365 AS SHOWN IN THE STAGE 1B MAINTENANCE OF TRAFFIC DETAILS.

STAGE 1B QUANTITIES

SIGNS - 700 SQ. FT.

TRAFFIC DRUMS - 21 EACH

VERTICAL PANELS - 2 EACH

CONSTRUCTION PAVEMENT MARKINGS - 2100 SQ. FT.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 157 LIN. FT.

STA. 401+86.00 BEGIN HWY. 305
SITE 3 - STAGE 2 CONSTRUCTION SEQUENCE

1. INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
2. USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' O.C. TO DELINEATE THE WORK ZONE, USE TRAFFIC DRUMS TO DELINEATE DRIVERS.
3. DELEGATE P.C.C.B. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
4. EXTERIOR AND CONSTRUCT DRIVING SHORING AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
5. ADD AND REGRADE WORK ZONE AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
6. APPLY FINAL 2" LIFT OF ADAM SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

BEGIN SITE 3
LOG MILE 12.30

STA. 112+00.00

SITE 3 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS
SITE 4 - STAGE 1 CONSTRUCTION SEQUENCES

INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS SPACED 4 FT. O.C. TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE GREENWAYS.

EXTEND CROSS DRAWS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

NOTCH AND BURN HVP. 36 FT. OF C.L. AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

APPLY LEVELING COURSE TO EXISTING LANE IF AND WHERE DIRECTED BY THE ENGINEER.

STAGE 1 QUANTITIES

TRAFFIC DRUMS - 13 EACH
VERTICAL PANELS - 25 EACH
CONSTRUCTION PAVEMENT MARKINGS - 5012 LIN. FT.

STA. 313+98.00
BEGIN SITE 4
LOG MILE 16.14

STA. 324+51.00
END SITE 4
LOG MILE 17.07
END JOB 050280

SITE 4 - STAGE 1
MAINTENANCE OF TRAFFIC DETAILS
SITE 4 - STAGE 2 CONSTRUCTION SEQUENCES:

- INSTALL CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
- USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' O.C. IN THE LANE CHANGE ZONE. USE TRAFFIC DRUMS TO EXTEND CROSS DRUMS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
- RELOCATE AND REPAIR HAM. OF O.C. AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
- APPLY 2' LIFT OF ASPHALT SURFACE Course AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

STAGE 2 QUANTITIES:
- TRAFFIC DRUMS X 31 EACH
- VERTICAL PANELS X 1 EACH
- CONSTRUCTION PAVEMENT Markings + 5000 LIN. FT.
- REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 5002 LIN. FT.

STA. 313+98.00
BEGIN SITE 4
LOG MILE 16.14

STA. 324+51.00
END SITE 4
LOG MILE 17.07
END JOB 050280

MAINTENANCE OF TRAFFIC DETAILS
SITE 1
PERMANENT PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS TYPE I (110") X 100' G.C.I. + 24 EACH THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 100' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING WHITE 1/4" X 300' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW 1/4" X 216' L.I.N. FT.,

SITE 2
PERMANENT PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS TYPE I (110") X 100' G.C.I. + 40 EACH THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 1000' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING WHITE 1/4" X 300' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW 1/4" X 270' L.I.N. FT.,

SITE 3
PERMANENT PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS TYPE I (110") X 100' G.C.I. + 200 EACH THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 1000' L.I.N. FT.,
THERMOPLASTIC PAVEMENT MARKING YELLOW 1/4" X 500' L.I.N. FT.,
THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 300' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING WHITE 1/4" X 600' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW 1/4" X 500' L.I.N. FT.,

SITE 4
PERMANENT PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS TYPE I (110") X 100' G.C.I. + 24 EACH THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 1000' L.I.N. FT.,
THERMOPLASTIC PAVEMENT MARKING YELLOW 1/4" X 500' L.I.N. FT.,
THERMOPLASTIC PAVEMENT MARKING WHITE 1/4" X 300' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING WHITE 1/4" X 600' L.I.N. FT.,
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW 1/4" X 500' L.I.N. FT.,

6" DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING WITH RAISED PAVEMENT MARKERS TYPE I (YELLOW/YELLOW SPACED 20' ON CENTER)

6" DOUBLE YELLOW REFLECTORIZED PAINT PAVEMENT MARKING

6" WHITE THERMOPLASTIC PAVEMENT MARKING

6" WHITE REFLECTORIZED PAINT PAVEMENT MARKING

TYPICAL PERMANENT PAVEMENT MARKING LAYOUT
SITES 1 & 2

NOTE: THE 6" YELLOW STRIPLING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTRIFLUE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY PAVEMENT MARKING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.
STA. 112+00.00
BEGIN SITE 3
LOG MILE 12.30

STA. 210+00.00
END SITE 3

TYPICAL PERMANENT PAVEMENT MARKING LAYOUT
SITE 3

RAISED PAINT MARKERS
TYPE III YELLOW/YELLOW SPACED 80' ON CENTER

6' DOUBLE YELLOW THERMOPLASTIC PAINT MARKING

6' WHITE THERMOPLASTIC PAINT MARKING

6' WHITE REFLECTORIZED PAINT MARKING

6' DOUBLE YELLOW REFLECTORIZED PAINT MARKING

PERMANENT PAVEMENT MARKING DETAILS
### Construction Paving Markings and Permanent Paving Markings - HSIP-0073(60)

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<td>6</td>
<td>1514</td>
<td>1167    660</td>
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</tbody>
</table>

*Note: This is a high traffic volume road as defined in Section 604.03, standard specifications for highway construction. The project must be marked for passing zones prior to the placement of any final striping. Contact the maintenance division after the final lift of surface course has been placed to schedule the zoning of the project.*

### Site 2 - Construction Paving Markings and Permanent Paving Markings - HrP-0073(60)

<table>
<thead>
<tr>
<th>Description</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>End of</th>
<th>Construction</th>
<th>Raised Paving Markers</th>
<th>Thermoplastic Paving Marking</th>
<th>Reflectorized Paint Paving Marking</th>
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<tr>
<td></td>
<td>Site 1</td>
<td>Site 2</td>
<td>Site 2</td>
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<td>Raised Paving Markers Type II (Yellow/Black)</td>
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<td><strong>Total</strong></td>
<td>30210</td>
<td>40</td>
<td>6300</td>
<td>6400</td>
<td>821</td>
<td>776</td>
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</table>

*Note: This is a high traffic volume road as defined in Section 604.03, standard specifications for highway construction. The project must be marked for passing zones prior to the placement of any final striping. Contact the maintenance division after the final lift of surface course has been placed to schedule the zoning of the project.*
### ADVANCE WARNING SIGNS AND DEVICES - HSP-0073(60)

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGN SIZE</th>
<th>STAGE 1</th>
<th>STAGE 1A</th>
<th>STAGE 2</th>
<th>MAXIMUM NUMBER REQUIRED</th>
<th>TOTAL SIGNS REQUIRED</th>
<th>CONSTRUCTION PROJECT INFORMATION SIGN UPDATE</th>
<th>VERTICAL PANELS</th>
<th>TRAFFIC DRUMS</th>
<th>BARRICADES (TYPE III)</th>
<th>FURNISHING &amp; INSTALLING PRECAST CONCRETE BARRIER</th>
<th>RELOCATING PRECAST CONCRETE BARRIER</th>
<th>TEMPORARY IMPACT ATTENUATION BARRIER</th>
<th>TEMP IMPACT ATTEN. BARR. (REPAIR)</th>
<th>TEMP IMPACT ATTEN. BARR. (RELOCATION)</th>
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<tbody>
<tr>
<td>W00-1</td>
<td>ROAD WORK, 1500 FT.</td>
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<td>6</td>
<td>R.</td>
<td>L.</td>
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<td>6</td>
<td>R.</td>
<td>L.</td>
<td>EACH</td>
<td>EACH</td>
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<tr>
<td>W00-1</td>
<td>ROAD WORK AHEAD</td>
<td>48&quot;x48&quot;</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>464</td>
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<td>L.</td>
<td>EACH</td>
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<tr>
<td>G02-2</td>
<td>END ROAD WORK</td>
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<td>24</td>
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<tr>
<td>G03-1</td>
<td>ROAD WORK NEXT 9 MILES</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
<td>R.</td>
<td>L.</td>
<td>EACH</td>
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<tr>
<td>R11-2</td>
<td>ROAD CLOSED</td>
<td>48&quot;x48&quot;</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
<td>R.</td>
<td>L.</td>
<td>EACH</td>
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<tr>
<td>CM-3L</td>
<td>OBJECT MARKER</td>
<td>12&quot;x26&quot;</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>R.</td>
<td>L.</td>
<td>EACH</td>
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<tr>
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<td>OBJECT MARKER</td>
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<td>6</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>R.</td>
<td>L.</td>
<td>EACH</td>
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<tr>
<td>R4-2</td>
<td>DO NOT PASS</td>
<td>24&quot;x20&quot;</td>
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<tr>
<td>R01-2A</td>
<td>RIGHT SHOULDER CLOSED</td>
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<tr>
<td>WB-1</td>
<td>BUMP</td>
<td>20&quot;x20&quot;</td>
<td>8</td>
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<td>8</td>
<td>50</td>
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<td>SPECIAL</td>
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#### SITE 2 - ADVANCE WARNING SIGNS AND DEVICES - NHPP-0073(60)

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGN SIZE</th>
<th>STAGE 1</th>
<th>STAGE 2</th>
<th>MAXIMUM NUMBER REQUIRED</th>
<th>TOTAL SIGNS REQUIRED</th>
<th>TRAFFIC DRUMS</th>
<th>BARRICADES (TYPE III)</th>
<th>FURNISHING &amp; INSTALLING PRECAST CONCRETE BARRIER</th>
<th>RELOCATING PRECAST CONCRETE BARRIER</th>
<th>TEMPORARY IMPACT ATTENUATION BARRIER</th>
<th>TEMP IMPACT ATTEN. BARR. (REPAIR)</th>
<th>TEMP IMPACT ATTEN. BARR. (RELOCATION)</th>
</tr>
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<tbody>
<tr>
<td>H00-1</td>
<td>ROAD WORK AHEAD</td>
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<tr>
<td>G03-2</td>
<td>END ROAD WORK</td>
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<td>10</td>
<td>18.0</td>
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<tr>
<td>R11-2</td>
<td>ROAD CLOSED</td>
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<td>2</td>
<td>20</td>
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<td>2</td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### NOTE

- This is a high traffic volume road as defined in Section 604.03, Standard Specifications for Highway Construction.
- The quantity of vertical panels provided in the contract is for one side of the roadway for 2 miles. This is the maximum quantity required to allow the contractor to notch one-mile, backfill to a point where the vertical differential is 4" or less, and then notch another one-mile section. This is the maximum number of vertical panels that will be paid for. Refer to Section 603.02 of the Standard Specifications for Construction Requirements.

### SITE 2 - ADVANCE WARNING SIGNS AND DEVICES - NHPP-0073(60)

<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGN SIZE</th>
<th>STAGE 1</th>
<th>STAGE 2</th>
<th>MAXIMUM NUMBER REQUIRED</th>
<th>TOTAL SIGNS REQUIRED</th>
<th>TRAFFIC DRUMS</th>
<th>BARRICADES (TYPE III)</th>
<th>FURNISHING &amp; INSTALLING PRECAST CONCRETE BARRIER</th>
<th>RELOCATING PRECAST CONCRETE BARRIER</th>
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<th>TEMP IMPACT ATTEN. BARR. (REPAIR)</th>
<th>TEMP IMPACT ATTEN. BARR. (RELOCATION)</th>
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<tbody>
<tr>
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<td>1</td>
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<tr>
<td>G03-2</td>
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<td>18.0</td>
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<tr>
<td>R11-2</td>
<td>ROAD CLOSED</td>
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</table>

#### NOTE

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- The quantity of vertical panels provided in the contract is for one side of the roadway for 2 miles. This is the maximum quantity required to allow the contractor to notch one-mile, backfill to a point where the vertical differential is 4" or less, and then notch another one-mile section. This is the maximum number of vertical panels that will be paid for. Refer to Section 603.02 of the Standard Specifications for Construction Requirements.

#### QUANTITIES

1388.8
10
235
562
96
279
79
279
79
1
1
2
2
### TOTALS:

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<th>TOTALS</th>
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<tr>
<td>416.59</td>
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<td>818.41</td>
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### SITE 2 - REMOVAL AND DISPOSAL OF ITEMS - NHP-0073(60)

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<th>LOCATION</th>
<th>CONCRETE DITCH PAVING - NHP-0073(60)</th>
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<tr>
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<td>LOCATION</td>
<td>LENGTH</td>
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<tr>
<td>STATION</td>
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<td>(TYPE A)</td>
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<td>209-16</td>
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<td>221-34</td>
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<td>222-40</td>
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### REMOVAL AND DISPOSAL OF FENCE - NHP-0073(60)

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<td>STATION</td>
<td>LOCATION</td>
<td>LENGTH FT.</td>
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<td>820-20</td>
<td>820-30</td>
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### BASE OF ESTIMATE:

WATER: 12.9 GAL. / SQ. YD. OF SOLID SODDING.
### SOIL LOG

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<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>LOCATION</th>
<th>DEPTH</th>
<th>LIQUID LIMIT</th>
<th>PLASTICITY INDEX</th>
<th>ASHETY CLASSIFICATION</th>
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<td>20</td>
<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
</tr>
<tr>
<td>119-20</td>
<td>35 15 51.80</td>
<td>91 52.30</td>
<td>20</td>
<td>12 4 15</td>
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<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
<td>120-00</td>
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<td>91 52.30</td>
<td>20</td>
<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
<td>120-20</td>
<td>35 15 51.80</td>
<td>91 52.30</td>
<td>20</td>
<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
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<td>91 52.30</td>
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<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
<td>122-00</td>
<td>35 15 51.80</td>
<td>91 52.30</td>
<td>20</td>
<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
<td>123-00</td>
<td>35 15 51.80</td>
<td>91 52.30</td>
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<td>12 4 15</td>
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<td>A-4(1)</td>
<td>BROWN</td>
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<tr>
<td>124-00</td>
<td>35 15 51.80</td>
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<td>12 4 15</td>
<td>25</td>
<td>15</td>
<td>A-4(1)</td>
<td>BROWN</td>
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</table>

### TOTALS:

- **44** different samples
- **59** samples per location

### MAILBOXES - HSP-0073(60)

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<th>LOCATION</th>
<th>MAILBOXES</th>
<th>MAILBOX SUPPORTS</th>
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<tbody>
<tr>
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<td>34 24</td>
<td>SINGLE 1 DOUBLE</td>
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**TOTALS:** 38 28 5

### FENCING - HSP-0073(60)

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<th>STATION</th>
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<th><strong>8' CHAIN LINK FENCE</strong></th>
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<td>126-12</td>
<td>400</td>
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<td>126-20</td>
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**TOTALS:** 400 400

### MAILBOXES - NHPP-0073(60)

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<th>LOCATION</th>
<th>MAILBOXES</th>
<th>MAILBOX SUPPORTS</th>
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**TOTALS:** 3 1 2
## EROSION CONTROL - HSIP-0073(60)

### PERMANENT EROSION CONTROL

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<td>SITE 1 - CLEARING AND GRUBBING</td>
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<tr>
<td>501+20</td>
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<td>257+40</td>
<td>SITE 1 - CLEARING AND GRUBBING</td>
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<td>SITE 3 - CLEARING AND GRUBBING</td>
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<td>SITE 3 - STAGE 2</td>
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<td>334+21</td>
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### TEMPORARY EROSION CONTROL

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### QUANTITIES

**SELECTIONS PIPE BEDDING - HSIP-0073(60)**

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<tbody>
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<td>SITE 1, 2 AND 4 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
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**TOTAL:** 170

### SITE 2 - SELECTED PIPE BEDDING - HSIP-0073(60)**

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**TOTAL:** 20

### PAVEMENT REPAIR OVER CULVERTS (ASPHALT) - HSIP-0073(60)**

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<td>133+01</td>
<td>SITE 3</td>
<td>8.80</td>
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**TOTAL:** 18

**AVERAGE DEPTH = 13.50"**

---

**BASE OF ESTIMATE:**
- 2 TONS/ACRE OF SEEDING
- 120 M.G./ACRE OF WATER
- 30 A.M.G. /ACRE OF TEMPORARY SEEDING

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

**QUANTITIES ESTIMATED:** See Section 104.03 of the Std. Specs.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

BASIS OF ESTIMATE:

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

SITE 2 - APPROACH GUTTERS AND SLABS - NHP-0073(685)

RUMBLE STRIPES IN ASPHALT SHOULDERS - NHP-0073(685)

SITE 2 - DRIVESWAYS & TURNOUTS - NHP-0073(685)

SITE 2 - RUMBLE STRIPS IN ASPHALT SHOULDERS - NHP-0073(685)
**DRIVeways & TURNOUTS - HSP-0073(60)**

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<th>WIDTH</th>
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**COLD MILLING ASPHALT PAVEMENT - HSP-0073(60)**

**SITE 1 - COLD MILLING ASPHALT PAVEMENT - HSP-0073(60)**

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<th>STATION</th>
<th>STATION</th>
<th>LOCATION</th>
<th>AVG. WIDTH</th>
<th>COLD MILLING ASPHALT PAVEMENT</th>
<th>SQ.FT.</th>
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**SITE 2 - COLD MILLING ASPHALT PAVEMENT - HSP-0073(60)**

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**COLD MILLING ASPHALT PAVEMENT - HSP-0073(60)**

**SITE 2 - COLD MILLING ASPHALT PAVEMENT - HSP-0073(60)**

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**ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC - HSP-0073(60)**

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<th>LOCATION</th>
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<td>SITE 1, 2, 3, AND 10 - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER</td>
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**BASE OF ESTIMATE**

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON KIT/MAINTENANCE OF TRAFFIC...50 GALLON

**QUANTITY ESTIMATED**

SEE SECTION 104.03 OF THE STD. SPECS.

**SITE 2 - ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC - HSP-0073(60)**

<table>
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**BASE OF ESTIMATE**

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON KIT/MAINTENANCE OF TRAFFIC...50 GALLON

**QUANTITY ESTIMATED**

SEE SECTION 104.03 OF THE STD. SPECS.

**CENTERLINE RUMBLE STRIPES IN ASPHALT ROADSWAYS - HSP-0073(60)**

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**TOTALS**

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**QUANTITIES**

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**TOTAL QUANTITIES**

- **ACME SURFACE COURSE (°C):** 94% MIN AGGR, 5% ASPHALT BINDER
- **ACME BINDER COURSE (°C):** 95% MIN AGGR, 4% ASPHALT BINDER
- **MAXIMUM NUMBER OF VARIATIONS:** ± 15% FOR PG 64-22

Tack coat quantities were calculated using the emulsified asphalt rates. Refer to SS-400-1 for the residual asphalt application rates.
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</tbody>
</table>

1. All steel piling shall be Grade 50 and are required to have approved driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling HP 0x537". All piles shall conform to Standard Drawing No. 55953.

JIM POOL
BOXER SECTOR SUPERVISOR

SCHEDULE OF BRIDGE QUANTITIES
JOY - SEARCY (S)
WHITE COUNTY

ARKANSAS STATE HIGHWAY COMMISSION
ROUTE NO. SEC. 3
LITTLE ROCK, ARK.

ARCHITECT:
PROFESSIONAL ENGINEER:

BRIDGE NO. 07429, 07430 DRAWING NO. 60389

jącego Date:
Prepared:
March 2018

PRINT DATE: 1/23/2019
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Notes</th>
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<td>09/01/20</td>
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<td>Site</td>
<td>HWY</td>
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<td>4</td>
<td>HWY 36</td>
<td>Site 4</td>
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**SURVEY CONTROL DETAILS**
STA. 804+00.00
BEGIN SITE 2
LOG MILE 11.22

STA. 834+00.00
END SITE 2

SURVEY CONTROL DETAILS
LOG MILE 8.40
BEGIN JOB 050280
STA. 510+48.33
BEGIN SITE 1
LOG MILE 9.54
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 510+48.33
BEGIN SITE I
LOG MILE 9.54
Refer to survey control detail sheets for horizontal and vertical control data.

STA. 510+00 33 feet above datum
STA. 512+33 33 feet above datum + 0.097' / 1
STA. 523+10 10 feet above datum + 0.087' / 1
STA. 508+93 10 feet above datum

STA. 527+50.00 END SITE 1
NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK AS PER AREA, REFER TO SURVEY CONTROL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
REFER TO SURVEY CONTROL DATA SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
Refer to Survey Control, Detail Sheets for Horizontal and Vertical Control Data.
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
STA. 401+86.00
BEGIN HWY. 305

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.
Wings are to be constructed on concentric arcs. For details of wings and radius, see Dwg No. 60480.

Bars B401E, B402E, & B403E shall have a 2'-6" embedment into the end bent cap. Granular Backfill and Pipe underdrain required behind Cap. See Dwg No. 60397. Bent 4 is shown. Bent 3 is the mirror image of Bent 4 when looking back.

For details of anchor bolts, see Dwg No. 60391.

TYPICAL ANCHOR BOLT LAYOUT

PLAN
Bent 4 Shown
Bent 4 Order

ELEVATION
Looking Ahead Bent 4
Bent 4 Order

2'-0" 4'-0"
2'-0"
8 sq. 6" 8 sq. 6"
3 sq. 6" 3 sq. 6"
6'-0"
Door 267.17
Door 267.26

SECTION A-A
N = 0'-6"

BAR LIST - PER BENT

<table>
<thead>
<tr>
<th>Work</th>
<th>No.</th>
<th>Length</th>
<th>Min. Dia.</th>
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<tbody>
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<tr>
<td>B402</td>
<td>6</td>
<td>27'-1&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>B403</td>
<td>6</td>
<td>27'-1&quot;</td>
<td>2&quot;</td>
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<tr>
<td>B404</td>
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</tr>
<tr>
<td>B405</td>
<td>8</td>
<td>27'-1&quot;</td>
<td>2&quot;</td>
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</table>

DETAILS OF END BENTS
WEST HOG THIEF CREEK

ARKANSAS STATE HIGHWAY COMMISSION

LEWIS, ARK.

ENGINEER

Dwg. 60480 for additional notes.
SECTION C-C
No Scale

SECTION B-B
No Scale

SECTION D-D
No Scale

SECTION E-E
No Scale

BAR LIST - PER BENT

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<th>P.O.</th>
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<tr>
<td>60</td>
<td>22'-6&quot;</td>
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<tr>
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</tr>
<tr>
<td>60</td>
<td>6'-0&quot;</td>
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Dimensions are out to out of bars.

1. Non-pay items, Subsidiary to Special Provision Job No. 050280 "Drilled Shaft Foundations".
2. Reinforcement shall have Headed Steel Bars in accordance with Special Provision Job No. 050280 "Headed Steel Bars for Concrete Reinforcement". Steel length shown is estimated and may require adjustment.

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
WEST HOG THEIF CREEK

STATE HIGHWAY NO. 107
LITTLE ROCK, ARK.

ARKANSAS STATE HIGHWAY COMMISSION
LICENSED PROFESSIONAL ENGINEER

PROPRIETARY INFORMATION

DATE: 05/24/2006  DRAWN BY: 07429 - INT. BENTS - 050280
CHECKED BY: 05/24/2006  FILING: 050280.dgn - 4.65 MB
DESIGNED BY: 01479 - SHEET NO. 050280
DRAWING NO. 60094

LITTLE ROCK, ARK.

DRAFTSPECS.COM
Bar positions or clearances from the forms shall be maintained by means of stays, false headers, or other approved devices per Subsection 10.01. Placement of oblong bolts with full-length lower runners directly on removable wood or steel ways.

(1) See Adjustment for Sea Water Thickness Tolerance on Std. Deo. No. 5502.

(2) Tolerance: All +1/2 in. Plus used to the amount of slab thickness used to meet slab thickness tolerance. See Adjustment for Sea Water Thickness Tolerance on Std. Deo. No. 5502.

Close 0.5 to 1 ft of the roadway surface treatment shall be applied to the roadway base slab and the roadway surface and top of concrete parapet rail.

Lone Star Carpentry will not be used in the roadway surface and top of concrete parapet rail. The Contractor's option, plus straight slope No. 5 bolts are placed in top and one placed in bottom, may be substituted for the O.D. 20.7 rating for reinforcing will be based on the weight of our steel.

BAR LIST

SHEET 1 OF 6

DETAILS OF 100'-0" INTEGRAL W-BEAM UNIT

WEST HOG THIEF CREEK

ARKANSAS STATE HIGHWAY COMMISSION

ROUTE

LITTLE ROCK, ARK.

DRAWN BY: D.K. DATED: 9-8-86

PLAN SHEET: 7-20-86

STATE HIGHWAY COMMISSION

ARMS, AS DESIGNED

LITTLE ROCK, ARK.

FOOTING DRAWING NO. 60396

ENGINEER

LONE STAR CARPENTRY
All beams are placed concentric to C.L. Bridge.
All diaphragms are placed on radial lines.
1. Dimension measured along C.L. Construction.
2. Dimension measured along C.L. Beam.

**TABLE OF VARIABLES**

<table>
<thead>
<tr>
<th>Beam No.</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
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<tbody>
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<tr>
<td>2</td>
<td>27&quot;</td>
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<tr>
<td>3</td>
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<tr>
<td>5</td>
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</table>

**TYPICAL BEAM ELEVATION**

For Shear Connector detail, see Std. Dou. No. 55007.

**DETAILS OF FIELD SPICE**

**SHEET 3 OF 6**

**DETAILS OF 100'-0" INTEGRAL W-BEAM UNIT**

**WEST HOG THIEF CREEK**

**ROUTE**

**SEC.**

**ARKANSAS STATE HIGHWAY COMMISSION**

**DESIGNER**

**DRAWN BY**

**CHECKED BY**

**CHECK DATE**

**DESIGNED BY**

**DATE**

**ENGINEER**

**DATE**

**DRAFTSMAN**

**DATE**

**SPECIFICATIONS**

**DATE**

**DESCRIPTION**

**DATE**

**PRELIMINARY**

**DATE**

**DATE**

**DATE**

**DATE**

**DATE**

**DATE**

**DATE**

**DATE**
TABLE OF DEAD LOAD DEFLECTIONS INCHES

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<th>Slab Steel + Slab + Parap.</th>
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</table>

Poured Sequence Notes:
- Pours with the same number may be poured simultaneously or separately. No 11 must be poured before Pour 10 can be poured. A 2-hour elapsed between the end of a pour and the start of the next pour. 2 hours shall elapse between adjacent pours.
- Any rolling pour made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.
- Concrete in bridge superstructure shall be placed, consolidated, and retired after the entire pour before any concrete has set. This may require the use of a retarding agent.
- Concrete diaphragms at end bents shall be poured monolithically with the deck.

REINFORCING PLAN AND POURING SEQUENCE

- All transverse reinforcing shall be spaced on radial lines to C.L. Bridge. Spacing shown is measured along C.L. Construction.
- All longitudinal lines and longitudinal reinforcing shall be spaced on curves concentric to C.L. Construction.
- Slope length, slab pour length, and transverse reinforcing slope are measured along C.L. Construction.
- Roll spacings are shown as gutterless.
- Required slab joints and pouring sequence joints shall align with parapet joint if the gutter.
- Partial depth parapet joint at this location.
- Full depth parapet joint at this location.
- For typical roadway section at end bents, see Dwg.No.60397.

DEAD LOAD DEFLECTION DIAGRAM

Symmetrical about half-point of joint.
Three dimensional view of wing & rail at integral end bent
No scale

TABLE OF VARIABLES

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<th>Bent</th>
<th>Wing</th>
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<th>Q. R.</th>
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<td>4</td>
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<tr>
<td></td>
<td>Low Side</td>
<td>380.45</td>
<td>1/8</td>
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</table>

Provide 8"W hole for drain pipe, see 5/16" Dia. HR-8 & Section H.

8"W formed holes for guard rail connection, see 5/16" Dia. HR-8 & SA-2 for bolt spacing and additional connection details.


SECTION K-K
No Scale

SECTION L-L
No Scale

TABLE OF VARIABLES

<table>
<thead>
<tr>
<th>Bent</th>
<th>Wing</th>
<th>Elev. ft.</th>
<th>Q. R.</th>
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<td>1/8</td>
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SECTION K-K
No Scale

SECTION L-L
No Scale

TABLE OF VARIABLES

<table>
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<tr>
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<th>Wing</th>
<th>Elev. ft.</th>
<th>Q. R.</th>
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<tbody>
<tr>
<td>1</td>
<td>High Side</td>
<td>383.74</td>
<td>1/8</td>
</tr>
<tr>
<td></td>
<td>Low Side</td>
<td>380.45</td>
<td>1/8</td>
</tr>
<tr>
<td>4</td>
<td>High Side</td>
<td>383.35</td>
<td>1/8</td>
</tr>
<tr>
<td></td>
<td>Low Side</td>
<td>380.45</td>
<td>1/8</td>
</tr>
</tbody>
</table>

Provide 8"W hole for drain pipe, see 5/16" Dia. HR-8 & Section H.

8"W formed holes for guard rail connection, see 5/16" Dia. HR-8 & SA-2 for bolt spacing and additional connection details.


SECTION K-K
No Scale

SECTION L-L
No Scale
For location of full and partial depth parapet joints, see Fig. No. 6038.

**Table of Variables**

<table>
<thead>
<tr>
<th>Panel Length</th>
<th>Bar Length</th>
<th>No. of Bars</th>
<th>Panel Length</th>
<th>Bar Length</th>
<th>No. of Bars</th>
<th>Panel Length</th>
<th>Bar Length</th>
<th>No. of Bars</th>
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<td>26</td>
<td></td>
<td>0' - 0''</td>
<td>26</td>
<td></td>
<td>0' - 0''</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>0' - 1''</td>
<td>26</td>
<td></td>
<td>0' - 1''</td>
<td>26</td>
<td></td>
<td>0' - 1''</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>0' - 2''</td>
<td>6</td>
<td></td>
<td>0' - 2''</td>
<td>6</td>
<td></td>
<td>0' - 2''</td>
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<td></td>
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<tr>
<td>0' - 3''</td>
<td>11</td>
<td></td>
<td>0' - 3''</td>
<td>11</td>
<td></td>
<td>0' - 3''</td>
<td>11</td>
<td></td>
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</tbody>
</table>

Panel lengths are measured along parapets.

**Detail 2**

Parapet Stud shall be 1/2" dia. round, flux filled, solid, round, or equal, cold drawn and welded to the plate. Studs and plates shall meet the requirements of Section 603. Studs and plates shall be measured and paid for as "Structural Steel In Sheets & Strips W 70.50, SW."

The surfaces of the 1/2" Plates which will not be in contact with concrete shall be spangled with a suitable flux, or as directed by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Flashing will not be paid for directly but will be considered subsidiary to "Structural Steel In Sheets & Strips W 70.50, SW."

For location of full and partial depth parapet joints, see Fig. No. 6038.
PLAN OF TYPE SPECIAL APPROACH GUTTER

Measured along gutterline.

SECTION A-A

SECTION B-B

SECTION C-C

BACKGROUND FOR ONE TYPE SPECIAL APPROACH GUTTER

Quantities for one Type Special Approach Gutter

Reinforcing Concrete

<table>
<thead>
<tr>
<th>Mark</th>
<th>No.</th>
<th>Rec.</th>
<th>Description</th>
<th>Units</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>C401</td>
<td>1</td>
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<td>Gutter 1</td>
<td>Yds.</td>
<td>0.50</td>
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<tr>
<td>C402</td>
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<td></td>
<td>Gutter 2</td>
<td>Yds.</td>
<td>0.50</td>
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<tr>
<td>C403</td>
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<td>Gutter 3</td>
<td>Yds.</td>
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<tr>
<td>C404</td>
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<tr>
<td>C405</td>
<td>1</td>
<td></td>
<td>Gutter 5</td>
<td>Yds.</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Details of Type Special Approach Gutter

West Hog Thief Creek

ARKANSAS STATE HIGHWAY COMMISSION

ROUTE 12
SEC. 9.08

All concrete shall be Class 5 or Class SHS or mixture used for Portland Cement Concrete Pavement and shall be placed in the dry. All reinforcing used shall be Grade 60 (yield strength 60,000 psi) conforming to ASTM or AASHTO M 324, Type 4, with mill test reports. Approach Gutter will be measured and paid for in accordance with Section 504.

GENERAL NOTES

All longitudinal lines within the Delta of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on grade line to C.L. Bridge.
CONSTRUCTION SPECIFICATIONS:

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 2004 Edition with appropriate Supplement Specifications and Supplement Provisions, unless otherwise noted, Section Numbers, Black and White Details.


BENCHMARK: Vertical Control Points are shown on the Survey Control Sheets.

CONSTRUCTION SPECIFICATIONS:

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction 2004 Edition with appropriate Supplement Specifications and Supplement Provisions, unless otherwise noted, Section Numbers, Black and White Details.


ELEVATION OF SOIL BORINGS

“N” VALUES

[Diagram and text related to survey data, soil borings, and engineering values]
SECTION C-C
No Scale

SECTION B-B
No Scale

SECTION D-D
No Scale

SECTION E-E
No Scale

3'-0" Column Diameter

4-1/2" in. Schedule 40 steel

4-5/8" in. Schedule 40 steel

4-3/8" in. Schedule 40 steel

4-1/2" in. Schedule 40 steel

3'-0" Drilled Shaft

4-1/2" in. Schedule 40 steel

Dimensions are out to out of bars.

1. Non-poy concrete in accordance with Special Provision Job No.05280 "Piled In".
2. Rebar length shown is correct and may require adjustment.

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
EAST HOG THIEF CREEK

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

PROFESSIONAL ENGINEER
ARKANSAS

BRIDGE NO. 07430 DRAWING NO. 60407
TYPICAL ROADWAY SECTION

BAR LIST

<table>
<thead>
<tr>
<th>MARK. NO.</th>
<th>REV.</th>
<th>SECTION LENGTH F.L.</th>
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<tr>
<td>S026</td>
<td>1</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>S027</td>
<td>10</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>S072</td>
<td>20</td>
<td>20'-0&quot;</td>
</tr>
<tr>
<td>S401</td>
<td>30</td>
<td>30'-0&quot;</td>
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<tr>
<td>S402</td>
<td>40</td>
<td>40'-0&quot;</td>
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<td>S407</td>
<td>90</td>
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<td>100</td>
<td>100'-0&quot;</td>
</tr>
<tr>
<td>S409</td>
<td>110</td>
<td>110'-0&quot;</td>
</tr>
<tr>
<td>S410</td>
<td>120</td>
<td>120'-0&quot;</td>
</tr>
</tbody>
</table>

Bar positions or clearances from the forms shall be maintained by means of stops, spacers, or other approved devices per Subsection B-604. Placement of add bars at full length, or in two or four spaced sets, shall be allowed.

At the Contractor's option, two straight, easy-cast nos. 5 bars shall be placed in top rod, may be substituted for bar S027. Rebars for reinforcing shall be based on the weight of bars S026.

2. Tolerance Allow 1/8" Plus equal to the amount of bar spacing used, to fully compensate for any variation in Slope Tolerance on S027, Dwg. No. 59501.
3. Working point to gutterline.

Class 2 Protective Surface Treatment shall be applied to the roadway surface and the roadway face to prevent damage to concrete pavement.

Note: "S" as shown S026 or S027 as shown, see "Reinforcing Plan and Pouring Sequence" (Dwg. No. 59401).

Tolerance shown is 1/8" plus equal to the amount of bar spacing used. See "Reinforcing Plan and Pouring Sequence" (Dwg. No. 59401) for construction details. Tolerance shown is 1/8" plus equal to the amount of bar spacing used. See "Reinforcing Plan and Pouring Sequence" (Dwg. No. 59401) for construction details.

4. If permanent steel bridge deck forms are used, the fabricator shall clip the bars as necessary to accommodate the deck form support.
Pouring Sequence Notes:

- Pours with the same number may be placed simultaneously or separately. Pour 11 must be placed before Pour 12 can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour, 72 hours shall elapse between adjacent pours.
- Any rolling pour made before the entire slab unit has been placed must be approved by the Engineer. Concrete diamonoids at ends of unit shall be poured monolithically with the deck. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.
- Concrete in bridge superstructure shall be placed, consolidated and smoothed off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.
- Concrete diamonoids at ends and bevels shall be poured monolithically with the deck.

Pouring Sequence (continued):

- Pour 11 - C.I. Bridge & Bent 2
- Pour 12 - C.L. Bridge & Bent 3
- Pour 12 - End Bridge

Concrete diamonoids in the entire pour shall be poured monolithically with the deck.

Pouring Sequence Notes:

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Pouring Sequence (continued):

- Pour 11 - C.I. Bridge & Bent 2
- Pour 12 - C.L. Bridge & Bent 3
- Pour 12 - End Bridge

Concrete diamonoids in the entire pour shall be poured monolithically with the deck.
CUT AREA 2 SOFT, FILL AREA 36 SOFT, STAGE 1
CUT AREA 3 SOFT, FILL AREA 9 SOFT, STAGE 2
CUT VOLUME 9 CU.YD, FILL VOLUME 104 CU.YD, STAGE 1
CUT VOLUME 11 CU.YD, FILL VOLUME 97 CU.YD, STAGE 2

CUT AREA 6 SOFT, FILL AREA 18 SOFT, STAGE 1
CUT AREA 9 SOFT, FILL AREA 5 SOFT, STAGE 2
CUT VOLUME 20 CU.YD, FILL VOLUME 44 CU.YD, STAGE 1
CUT VOLUME 14 CU.YD, FILL VOLUME 35 CU.YD, STAGE 2

CUT AREA 8 SOFT, FILL AREA 6 SOFT, STAGE 1
CUT AREA 15 SOFT, FILL AREA 3 SOFT, STAGE 2
CUT VOLUME 30 CU.YD, FILL VOLUME 84 CU.YD, STAGE 1
CUT VOLUME 26 CU.YD, FILL VOLUME 25 CU.YD, STAGE 2

CUT AREA 8 SOFT, FILL AREA 9 SOFT, STAGE 1
CUT AREA 14 SOFT, FILL AREA 8 SOFT, STAGE 2
CUT VOLUME 50 CU.YD, FILL VOLUME 25 CU.YD, STAGE 1
CUT VOLUME 29 CU.YD, FILL VOLUME 33 CU.YD, STAGE 2

SITE 3
STA 161+00 TO STA 164+00
STA. 187+42 IN PLACE
18" X 36" PIPE CULVERT
REPLACE AND INSTALL
18" X 36" PIPE CULVERT
1 STAGE APPROACH = 25 CU.YD.

STA. 187+00 END
-44° LT. DITCH GRADE
SLAB LT. DITCH GRADE
0.04% = 300.00

ELEV=300.00

STA.187+42

STAGE 1 TRAFFIC
STAGE 1 TRAFFIC

STAGE 2 TRAFFIC
STAGE 2 TRAFFIC

CUT VOLUME 27 CU.YD.
FILL VOLUME 24 CU.YD.
STAGE 1

CUT VOLUME 37 CU.YD.
FILL VOLUME 15 CU.YD.
STAGE 2

CUT VOLUME 50 CU.YD.
FILL VOLUME 63 CU.YD.
STAGE 1

FILL VOLUME 61 CU.YD.
STAGE 2

CUT VOLUME 43 CU.YD.
FILL VOLUME 45 CU.YD.
STAGE 1

FILL VOLUME 102 CU.YD.
STAGE 2

CUT VOLUME 8 CU.YD.
FILL VOLUME 9 CU.YD.
STAGE 1

FILL VOLUME 102 CU.YD.
STAGE 2

STA. 185+00 TO STA. 187+42
STA. 405+00 C.L. HWY. 305

STA. 405+65 C.L. HWY. 305

<table>
<thead>
<tr>
<th>STA</th>
<th>CUT VOLUME</th>
<th>FILL VOLUME</th>
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<tr>
<td>405+00</td>
<td>147 ft³</td>
<td>0 ft³</td>
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<tr>
<td>405+65</td>
<td>143 ft³</td>
<td>101 ft³</td>
</tr>
</tbody>
</table>

CUT VOLUME = 147 ft³
FILL VOLUME = 101 ft³

CUT AREA: 24 ft
FILL AREA: 435 ft

STAGE IA
STAGE IB
The Bridge End Embankment shall be defined as a section of embankment not less than 20 feet long adjacent to the bridge and, together with the side slopes and slopes under the bridge end abutment around the end of the vertical wall abutment. The embankment shall be constructed of horizontal layers whose measured and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 20.23/L.05 and 20.08 for construction requirements.
CONCRETE

unless otherwise noted, concrete in cast, columns and footings except sealed footing shall be Class "C" with a minimum 28 day compressive strength Fi > 2,000 psi.

Concrete in drilled shafts shall be Class "C" as modified by Job SP "Pier Shaft Foundation".

All exposed surfaces shall be chaffered Fi unless otherwise noted.

REINFORCING STEEL

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to ASTM A 615 Type 3 or A 522 Type 2 with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with order bolts or drift plates.

STRUCTURAL STEEL

Structural steel in end beams shall be ASTM A927 W 270 with grade and payment as specified in the plans.

STRUCTURAL STEEL PLATE GIRDERS

All girder web and flange plates, all flange plate, and all diaphragms, cross-frame and connection plates attached to horizontally curved members are considered cast iron carrying members and shall meet the longitudinal Charpy V-Ishock Test specified in Subsection 80.3.6. This work and material will not be paid for directly, but shall be considered subcontracted in Bid Bonds 6 W 270.5, 6.. etc.

All beams in continuous units and shop spans with field splices shall be blocked in their true position in the shop as specified in Subsection 80.5.4(b) with the welds horizontal. The center, length of sections, distance between bearings, and dimensions of joints shall be measured and this information shall become part of the permanent records. The component parts shall be marked and recorded in this assembly and these works shall be shown on the design drawing.

Flange field splices shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. All beam dimensions based on a temperature of 90 degrees F. A tolerance of ± 3% is allowed for bending.

Bent plate diaphragms for horizontally curved beams shall be blocked in such a way that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight beams may be cut and fabricated in accordance with Subsection 80.7.4 as required for horizontally curved beams.

Unless otherwise noted, diaphragms shall be installed as plates. All bolts in flange field splices shall be hilted and tightened in accordance with Subsection 80.10 prior to pouring the concrete deck.

STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWING NO. 55056

DATE CHECKED DATE APPROVED

A.F. 10/25/73 11/19/73

STATE PROJECT NO. 2230

LITTLE ROCK, ARK.

M. R. F.

STATE HIGHWAY COMMISSION

11/08/73

DOUGLAS R. BIRD

D. R. BIRD

STATE HIGHWAY COMMISSION

ENGR, NO.

347

STATE HIGHWAY COMMISSION
GENERAL NOTES FOR STEEL H-PILES

Steel H-Pile shall conform to AASHTO M 212, Grade 36 or greater.
See Bridge Layout and Form Details for dia., extremity length, spacing, pile anchorage if required and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be protected in accordance with subsection 8220.

Broader tips, caps, stems, etc., driving points, pile painting, coating and washing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling."

VIEW X-X

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

Typical Service Details

G - pile anchors manufactured by Associated Pile and Fitting Corporation. LB - Fitting Piling. Stingy Steel or equivalent may be used in lieu of the "gale" pile anchors shown. Steel anchors shall be the same grade of steel specified for the pile and shall be welded to the pile with a 90° bead around the entire perimeter of the gusset plate. Flanges shall be welded with a complete penetration weld complying with AASHTO. Joint design will be either by bolts or welds. All welding shall conform to Subsection B1.28 of the AWSD Standard Specifications for Highway Construction 1994 Edition.

REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASCMENTS

See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All concrete shall be Class C with a minimum 28-day compressive strength, f'cu = 3,000 psi, if concrete cannot be placed in the dry, relaxed concrete may be used from top to bottom.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 13 or M 202, Type k.

Welded wire fabric shall conform to AASHTO M 55 or M 220. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 16 and M 26.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pipe Encasement."

TABLE OF VARIABLES FOR PILE ENCASEMENT

PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Weight Encasement)

Note:

Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Pipe Encasement."

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASCMENTS

ARKANSAS STATE HIGHWAY COMMISSION

This document is privileged, issued and sealed by Charles K. Osborn, No. 8256, on March 24, 2001. This copy is not a signed and sealed document.
Refer to tabulation of quantities for "A" dimensions.

Energy dissipators to be used for the entire length of ditch unless slope of ditch exceeds 7%. The dissipators shall not be paid for directly, but shall be considered to be included in the price bid 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.

3" wide transverse expansion joints shall be placed in concrete ditch paving at 40' interval. The space shall be filled with approved joint filler complying with AASHTO M213.
**Plan View**

**ISOMETRIC VIEW**

**Isometric View**

**Details of Drives**

**Driveway Extension Details**

**Driveway Vertical Alignment Details**

**Section A-A**

**Section B-B**

**Curbed Island Behind Walk**

**Curbed Islands for Channelization**

**Arkansas State Highway Commission**

**Details of Drives & Islands**

**Standard Drawing DR-1**

**Extension Typical Sections**

1. Concrete - 6" P.C. Concrete Driveway
2. Asphalt - 2" A.C.M. Surface Course 0/27"
   4" A.C.M. Binder Course on 4" A.C.M. Base Course 0/17"
3. Asphalt - 2" A.C.M. Surface Course 0/27"
   7" Aggregate Base Course
4. Aggregate - 6" Aggregate Base Course

The type of extension shall be as shown in the plans. The contractor may, with the approval of the engineer, substitute a lower numbered type of extension in lieu of the type specified in the plans, but at no additional cost to the Department.

**Cut Section**

**Fill Section**

**8' Rounding**

**Modified Curb**

**Driveway Extension**

**Driveway Vertical Alignment Details**

**Note:** Driveways may not be sloped away from the roadway unless approved by the Engineer.

**Section A-A**

**Expanded Section**

**Curbed Island Behind Walk**

**Curbed Islands for Channelization**

**Arkansas State Highway Commission**

**Details of Drives & Islands**

**Standard Drawing DR-1**

**Extension Typical Sections**

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**Cut Section**

**Fill Section**

**8' Rounding**

**Modified Curb**

**Driveway Extension**

**Driveway Vertical Alignment Details**

**Note:** Driveways may not be sloped away from the roadway unless approved by the Engineer.

**Section A-A**

**Expanded Section**

**Curbed Island Behind Walk**

**Curbed Islands for Channelization**

**Arkansas State Highway Commission**

**Details of Drives & Islands**

**Standard Drawing DR-1**
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

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

VAR. WHEN EXTENDED

BEYOND MIN LENGTH

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

VAR. WHEN EXTENDED

BEYOND MIN LENGTH

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

VAR. WHEN EXTENDED

BEYOND MIN LENGTH

LEGEND

THREE BEAM GUARD RAIL TERMINAL

GUARD RAIL TERMINAL (TYPE 2)

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

ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9
GUARD RAIL

TRAFFIC

END TERMINAL

GUARD RAIL

SLOPE AS SHOWN ON TYPICAL SECTION

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

SECTION A-A

DETAILS OF WIDENING FOR GUARD RAIL

SECTION B-B

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

SHOULDER PER PROTECTION

MEDIAN PER PROTECTION

METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

NORMAL

ADDITIONAL SURFACING

NORMAL SHOULDER SURF.

NORMAL

VAR. 5'-6" NORMAL

ADD'L. SURFACING

VAR. 2'-0"

SLOPE AS SHOWN ON TYPICAL SECTION

2" OR FLATTER

2" OR FLATTER

SECTION ON TANGENT

2'-0" MIN.

NORMAL ROADWAY WIDTH

WIDTH OF SURFACING

SETTING OUT

SECTION ON CURVE

2'-0" MIN.

NORMAL ROADWAY WIDTH

WIDTH OF SURFACING

2'-0" MIN.

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-9A
**SPECIAL END SHOE**

**THREE BEAM RAIL**

**TRANSITION SECTION**

**STRUCTURAL STEEL TUBING BLOCKOUT DETAIL**

**HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS**

**CONNECTOR PLATE**

**GENERAL NOTES**

1. All holes shall be drilled to the same type throughout the project limits.
2. Use three beam guard rail components of same material for entire job.
3. The transition section shall be made of steel and shall be of such gauge, size, and character as specified in the standard drawing.
4. The guard rail shall be galvanized and shall conform to subsection 130.

**STANDARD DRAWING GR-10**

**ARKANSAS STATE HIGHWAY COMMISSION**

**GUARD RAIL DETAILS**
THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POSTS 1-7

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

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

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

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

GENERAL NOTES:
- RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADING VERTICALLY IN CROSS SECTION.
- WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER OR NO. 2 SOFTWOOD Or NO. 255 Or SOUTHERN PINE.

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS
STANDARD DRAWING GR-II
THREE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:
1. THE THREE BEAM RAIL SPECIAL END SHOE AND THE TRANSITION SECTION SHALL BE BOLTED TO STEEL AND SHALL BE OF STEEL, AND CONFORM TO TYPE A.
2. RAIL POSTS SHALL BE PERPENDICULAR TO THE HIGHWAY PROFILE GRADE AND HORIZONTALLY IN TRANSITION SECTION.
3. ALL LIP PLACES INCLUDING SPECIAL END SHOES SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARDS DRAWINGS OR AS SHOWN.
4. REFER TO STANDARDS DR-12 FOR POST DETAILS.
5. USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.
6. THREE BEAM POSTS SHALL BE SAME MATERIAL AS RAIL BEAMS FOR ENTIRE JOB.
7. POSTS SHALL BE PLACED AT THE MID-SPAN OF THE RAIL.

USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.
THREE BEAM POSTS SHALL BE SAME MATERIAL AS RAIL BEAMS FOR ENTIRE JOB.
POSTS SHALL BE PLACED AT THE MID-SPAN OF THE RAIL.

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS

AR 12-
THE DRAWING IS FOR INFORMATION ONLY TO SHOW THE GENERAL ARRANGEMENT OF THE GUARD RAILS IN THIS SECTION WHERE NO. 1 POSTS ARE TO BE USED FOR THE ENDS OF THE RAIL. PLACE NO. 1 POSTS AT THE MID-SPAN OF THE RAIL. USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS

STANDARD DRAWING GR-12
GENERAL NOTES

1. Mailbox posts may be wood or metal. Wood posts shall be pressure treated for ground contact in accordance with Section 617.02 of the Standard Specifications.

2. Anti-twist plates shall be used only on metal posts.

3. The bracket shall be made of either cast iron, structural steel, or aluminum.

4. Mailbox shell and platform that is shown is for standard size mailboxes. The shelf and platform shall be adaptable for standard size dimensions.

5. Metal pipe for mailbox support shall be 1/2" outside diameter sized with a wall thickness of 1/16" and a weight of 2.72 lbs per ft. Outside diameter and weight shall have a tolerance of ±1/8" according to ASME B36.19.

6. Mailbox support system offerings from those shown may be used provided they are on the AHS Qualified Products List for Mailbox Supports.

SPACING FOR MULTIPLE POST INSTALLATION

- If requested by the local administrator, a bracket may be used as directed by the engineer.

URAL STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1
**CONSTRUCTION SEQUENCE**

1. Place structural bedding material to grade, do not compact.
2. Install pipe to grade.
3. Compact pipe and bedding outside the middle third of the pipe.
4. Complete installation according to subsection G.D.6.E.

**NOTE:** Haunch and structural bedding material will not be paid for separately, but compensation will be considered to be included in the price bid per linear foot of concrete pipe.

---

**LEGEND**

- **D.L.** Normal inside diameter of pipe
- **D.O.** Outside diameter of pipe
- **N.H.** Nominal height over pipe (feet)
- **M.I.** Moisture-imposed soil
- **H.S.** Hardened soil
- **G.S.** Gravelly soil
- **S.S.** Silty soil
- **F.S.** Fine soil

---

**INSTALLATION MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING**

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Width (in.)</th>
<th>Height (in.)</th>
<th>Density (pcf)</th>
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<tr>
<td>Type 1</td>
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<td>2</td>
<td>100</td>
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<tr>
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**MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS**

<table>
<thead>
<tr>
<th>Type of Pipe</th>
<th>Class of Pipe</th>
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<th>Class IV</th>
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<td>16-24</td>
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**MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS**

<table>
<thead>
<tr>
<th>Type of Pipe</th>
<th>Class of Pipe</th>
<th>Installation Type</th>
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<th>Class IV</th>
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<td>16-24</td>
<td>2</td>
<td>Type 2</td>
<td>16</td>
<td>25</td>
<td>34</td>
</tr>
<tr>
<td>27-33</td>
<td>2</td>
<td>Type 3</td>
<td>12</td>
<td>20</td>
<td>30</td>
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</tbody>
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**INSTALLATION MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING**

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Width (in.)</th>
<th>Height (in.)</th>
<th>Density (pcf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>2</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Type 2</td>
<td>2</td>
<td>2</td>
<td>150</td>
</tr>
</tbody>
</table>

---

**GENERAL NOTES**

1. Concrete pipe culvert construction shall conform to the Arkansas State Highway and Transportation Department Standards for Reinforced Concrete Culvert Cip. This includes materials, specifications, and design procedures. Failure to comply with the Standards may result in the nullification of the contract.

2. The culvert sections shall be furnished with the necessary reinforcing steel to conform to the design requirements of the project.

3. The culvert sections shall be furnished with the necessary reinforcing steel to conform to the design requirements of the project.

4. The culvert sections shall be furnished with the necessary reinforcing steel to conform to the design requirements of the project.

5. The culvert sections shall be furnished with the necessary reinforcing steel to conform to the design requirements of the project.

6. The culvert sections shall be furnished with the necessary reinforcing steel to conform to the design requirements of the project.

---

**EMBANKMENT AND TRENCH INSTALLATIONS**

1. The embankment and trench must be installed according to the project specifications.

2. The trench must be installed according to the project specifications.

3. The trench must be installed according to the project specifications.

4. The trench must be installed according to the project specifications.

5. The trench must be installed according to the project specifications.
**GENERAL NOTES**

1. PIPE SHALL CONFORM TO ASHTO LP-4A. TYPE 5 INSTALLATION SHALL CONFORM TO USE SPECIAL PROVISIONS.“PLASTIC PIPE AND SECTION SIDE OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION CURRENT EDITIONS.

2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO ASHTO LPS-4 CULVERT DESIGN SPECIFICATIONS, FIFTH EDITION.

3. WITH SPECIAL PROVISIONS.

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

5. WHEN DIRECTED BY THE ENGINEER, UNSTABLE MATERIAL THAT IS IDENTIFIED AT THE BOTTOM OF THE EXCAVATED TRENCHES B ELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" AREA(ES) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL ACCORDING TO ASHTO LPS-4 DETAILS UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS SELECTED PIPE BEDDING.

6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSTABLE, THE SUBSTITUTE MATERIALS IDENTIFIED AS "STRUCTURAL BACKFILL" MATERIALS OR MATERIALS TO BE USED IN THEolocation OF THE AREA IDENTIFIED AS "STRUCTURAL BACKFILL" MATERIALS WILL BE USED AS THE SUBSTITUTE MATERIALS.

7. FOR INSTALLATIONS OF DURABLE NON-MOLLE AIR LAND EMBANKMENT, DRIPS, EMBANKMENTS, OR PIPE EXCAVATIONS IN projects, JOINTS SHOULD BE SELECTED THAT WILL PERMIT THE FILL TO BE COMPRESSED OR PROFILED proper.

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

**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 4 FT. THE LAYERS SHALL BE BROUGHT UP EQUALLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.

5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, BONING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.
MAXIMUM FILL HEIGHT
BASED ON STRUCTURAL BACKFILL

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>MAXIMUM FILL HEIGHT</th>
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<tbody>
<tr>
<td>8&quot;</td>
<td>9'4&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6'0&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>3'0&quot;</td>
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</tbody>
</table>

MINIMUM TRENCH WIDTH
BASED ON FILL HEIGHT "9'4"

<table>
<thead>
<tr>
<th>TRENCH WIDTH</th>
<th>&quot;9'4&quot; O.D. &quot;9'4&quot; I.D. O.D. &quot;9'0&quot; &quot;9'4&quot; FILL</th>
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</thead>
<tbody>
<tr>
<td>7'8&quot;</td>
<td>6'1&quot;</td>
</tr>
<tr>
<td>5'0&quot;</td>
<td>4'2&quot;</td>
</tr>
</tbody>
</table>

MINIMUM COVER
FOR CONSTRUCTION LOADS

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>DEPTH BENEATH STRUCTURAL BEDDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>4&quot;</td>
<td>2'-0&quot;</td>
</tr>
</tbody>
</table>

NOTE:
- Minimum cover shall be measured from top of pipe to the bottom of the backfilled trench section. The surface shall be maintained.
- The maximum allowable trench width shall be the minimum plus a sufficient extra to ensure working room to properly and safely place and compact backfill and other backfill materials.
- Imperious material shall 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.
- When directed by the engineer, the pervious material that is encountered at the bottom of the excavated trench section area classified as "structural bedding" and will be excavated and replaced with selected pipe bedding material. The pervious backfill area up to the selected pipe bedding area shall be backfilled with undisturbed soil.
- Steel pipe used for structural bedding will not be excavated. When used for structural bedding, the steel pipe shall be replaced with selected pipe bedding material.
- Steel pipe used for structural bedding will not be excavated. When used for structural bedding, the steel pipe shall be replaced with selected pipe bedding material.

TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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 bedding shall be placed and compacted in accordance with the standards specified in the fourth edition of "AASHTO LRFD Bridge Design Specifications, 2014 Edition".
5. Pipe installation may require the use of restraints, wedging, or other approved methods in order to help maintain grade and alignment.

GENERAL NOTES

1. Pipe shall conform to ASTM F949 (PCP). Installation shall conform to job specific provision.
3. The maximum allowable trench width shall be the minimum plus a sufficient extra to ensure working room to properly and safely place and compact bedding and/or backfill materials.
4. Imperious materials shall 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, the pervious material that is encountered at the bottom of the excavated trench section area classified as "structural bedding" and will be excavated and replaced with selected pipe bedding material. The pervious backfill area up to the selected pipe bedding area shall be backfilled with undisturbed soil.
6. Steel pipe used for structural bedding will not be excavated. When used for structural bedding, the steel pipe shall be replaced with selected pipe bedding material.
7. Pipe installation may require the use of restraints, wedging, or other approved methods in order to help maintain grade and alignment.

NOTES:
- Fill height 9'4".
- O.D. = Outside Diameter of Pipe
- M.P. = Minimum
- S.B. = Structural Backfill Material
- U.S. = Undisturbed Soil

ARKANSAS STATE HIGHWAY COMMISSION
PLASTIC PIPE CULVERT (PCP F949)
STANDARD DRAWING PCP-2
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.

---

**CONCRETE PAVEMENT**

**BROKEN LINE STRIPING**

**ASPHALT PAVEMENT**

**SOLID LINE STRIPING ON CONCRETE PAVEMENT**

**SOLID LINE STRIPING ON ASPHALT PAVEMENT**

**ASPHALT PAVEMENT**

**STRIPING AT ADJACENT NO PASSING LINES**

**CONCRETE PAVEMENT**

**CROSSWALK AND STOPBAR DETAILS**

**YIELD LINE DETAIL**

---

**ARIZONA STATE HIGHWAY COMMISSION**

**PAVEMENT MARKING DETAILS**

**STANDARD DRAWING PM-1**

---

**NOTES:**
- The red lens of the type II R.P.M. shall face the incorrect traffic movement.
- Dimensions shown for raised pavement markers are typical. The contractor may substitute similar markers with the approval of the engineer. Approval for similar markers may be made by referring to the ARDOT qualified products list.
Reinforced Concrete Box Culvert General Notes

Concrete shall be of a Class 5 with a minimum 28 day compressive strength of 3500 psi.

Reinforcing steel shall be AASHO M 38 or M 53, Grade 60.

Construction and materials for wingwall & culvert drainage, including weep holes and granular material, shall be subservient to this item, "Class 5 Concrete".

Membrane waterproofing shall conform to the requirements of Section 8.5 of the Standard Specifications.

Membrane waterproofing shall be applied to all construction joints in the top slab and the sidewalks of R/C box culverts as directed by the engineer. No payment shall be made for this item, but payment may be considered to be included in the various items bid for the R/C box culvert.

Reinforced Steel tolerances for reinforcing steel shall meet those listed in "Manual of Standard Practice" published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerances for steel bars such as Figure 9 on page 7-14 of the CRSI Manual shall be minus zero to plus 1/16 in.

Weep holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" in diameter and shall be placed 2'-0" above the top of the bottom slab.

Weep holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two weep holes in each wingwall, the drain opening shall be 4" in diameter and shall be placed 2'-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

R/C. Box Culvert Headwall 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.
Arkansas State Highway Commission

Section A-A

Method 1

- Top View
- R.C. Box Culvert
- Remove wings, aprons, footings, and sidewalks
- These dimensions to be 2 inches plus 40 times diameter of steel
- Remove top slab, bottom slab, walls, and wings beyond these lines
- 2 bars ties each splice

Method 2

- Top View
- R.C. Box Culvert
- Remove headwall
- Reinforcing details and culvert dimensions

- Reinforcing Details and Culvert Dimensions
  Same as standard culvert drawings

General Notes

- The resident engineer will make individual calculations of quantities for each structure.
- Lengths only.
- Allowance for overbreakage beyond the lines indicated.
- In all instances concrete shall be removed so as to permit full as diameter space of reinforcing steel.
- Reinforcing steel removed from existing structure shall not be reused in constructing extension.
- On R.C. box culverts that have an existing concrete apron the concrete apron shall be removed with the wings. The cost of removing all old concrete shall be included in the work. Old pipe and/or pipe pads for existing structures shall be removed.
- Additional compensation will be allowed.
- Materials for securing bents, bars shall meet the requirements of Section 50.02 of the Standard Specifications.
- R.C. bars shall be installed as follows: the drilling procedure shall be approved by the engineer. The filling system shall be approved by the engineer, and the entire filling shall be an injection type system which will ensure the R.C. steel being completely surrounded the bent and fill the holes.

The contractor shall have the option of using either method 1 or method 2. Regardless of which method is used, pay quantities will be calculated based on method 1.

Note:
- No part of this standard is to be used for any details relative to new construction.
- See standard drawings listed in tabulation of structures for all new construction details.

Arkansas State Highway Commission

Method of Extending Existing R.C. Box Culverts

Standard Drawing RCB-3
# General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

## Table: Offset Distance Table

<table>
<thead>
<tr>
<th>Speed (MPH)</th>
<th>Offset Distance (FT)</th>
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<tr>
<td>20-40</td>
<td>15</td>
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</tr>
</tbody>
</table>

If offset distance is not attainable, then see "Barrier Placement WITH Attenuator" Detail shown below.

## Special End Unit

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

### Standard Drawing TC-5

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>STANDARD TRAFFIC CONTROLS</td>
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<td>FOR HIGHWAY CONSTRUCTION -</td>
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<td>TEMPORARY PRECAST BARRIER</td>
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<table>
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<td>DRAWN TO SCALE</td>
<td>1:25</td>
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</tbody>
</table>
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

1. Excavate and stabilize interceptor or diversion ditches.
2. Perform Phase 1 excavation, place permanent or temporary seeding.
3. Perform Phase 2 excavation, place permanent or temporary seeding.
4. Perform final Phase 2 excavation, place permanent or temporary seeding, sediment basins, or other erosion control devices as needed.

GENERAL NOTE

All cut slopes shall be covered, prepared, seeded, and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 25 feet, measured vertically.

EMBANKMENT

CONSTRUCTION SEQUENCE

1. Construct 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. Provide erosion ditches and slope drains if embankment construction is to be temporarily maintained for a period of greater than 21 days.
3. Place Phase 2 embankment with permanent or temporary seeding. Provide erosion ditches and slope drains if embankment construction is to be temporarily maintained for a period of greater than 21 days.
4. Place final Phase of embankment with permanent or temporary seeding.
5. Place erosion ditches and slope drains and maintain until entire slope is stabilized.
GENERAL NOTES:

These installations to be used where normal fencing installation would cause the collecting of drift in the channel or the depression will not permit normal installation. Installations will be made only where directed by the engineer.

When a fence line approaches a ditch, gully or depression, the last post on level ground shall be placed close enough to the edge of the drop off, that the fence may be strung to the post in the depression without touching the ground.

In terrain of such extreme irregularity that minor grading will not be feasible, the normal fence shall continue on grade and the gullies or depressions treated by auxiliary fences as shown.

Payment for the type installation used will not be made directly but will be included in the contract unit price bid for wire fence or chain link fence.

1. Line posts shall be 8' 6"-0" max.
2. Deadmen to be tied to posts with 100 lbs. min.
3. Wire fencing to be 25'-0" maximum.
4. Normal line fencing to continue on grade.
5. Normal line fencing shall be 8 strands of twisted wire or cable (zinc coated).
6. Line posts shall be 6" min. dia. treated post or timber to be free swinging.
7. Grade if necessary to fan wires.
8. 2"-0" steel or 3'-0" aluminum posts.

Arkansas State Highway Commission
Wire Fence Water Gaps

Standard Drawing WF-2
### ARKANSAS STATE HIGHWAY COMMISSION

#### DETAILS OF STANDARD WINGS

**FOR REINFORCED CONCRETE BOX CULVERTS**

<table>
<thead>
<tr>
<th>Class/Type</th>
<th>Spans</th>
<th>Depths of Cover</th>
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<td>5-7</td>
<td>10-12</td>
<td>Standard</td>
<td>Standard</td>
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</tbody>
</table>

#### BAR LIST FOR ONE WING - 4 REQUIRED

<table>
<thead>
<tr>
<th>Bar Type</th>
<th>Size</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>3/8&quot;</td>
<td>4</td>
</tr>
<tr>
<td>A2</td>
<td>1/2&quot;</td>
<td>4</td>
</tr>
<tr>
<td>A3</td>
<td>3/4&quot;</td>
<td>4</td>
</tr>
<tr>
<td>A4</td>
<td>1&quot;</td>
<td>4</td>
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</tbody>
</table>

#### SAMPLE PLAN

- **Plan View**
- **Elevation**
- **Section A-A**

#### Construction Notes

- Bars shall be bent up into the slabs at the head of each length of wing.
- Bars shall be placed in the center of the wing.
- Bars shall be placed in the center of the wing.
- Bars shall be placed in the center of the wing.

#### END ELEVATION

- Single barrel outlet
- Double barrel outlet
- Triple barrel outlet

#### SECTION A-A

- Construction detail
- Bar placement
- Material properties

---

**Class S Concrete**

- **Standard Details**
- **Bar Placement**
- **Material Properties**

---

**Class B Concrete**

- **Standard Details**
- **Bar Placement**
- **Material Properties**

---

**Class C Concrete**

- **Standard Details**
- **Bar Placement**
- **Material Properties**

---

**Class D Concrete**

- **Standard Details**
- **Bar Placement**
- **Material Properties**

---

**Class S Concrete**

- **Standard Details**
- **Bar Placement**
- **Material Properties**

---

For any additional information, please refer to the ARKANSAS STATE HIGHWAY COMMISSION's standards and specifications.
### Bill List for Barrel-Section BOX in Length

<table>
<thead>
<tr>
<th>Diameter</th>
<th>E Long</th>
<th>Y Long</th>
<th>E Short</th>
<th>Y Short</th>
<th>E Rebar</th>
<th>Y Rebar</th>
<th>FIRST</th>
<th>SECOND</th>
<th>THIRD</th>
<th>FOURTH</th>
<th>FIFTH</th>
<th>SIXTH</th>
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</thead>
<tbody>
<tr>
<td>D 1/2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>D 1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>D 1 1/2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
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### Dimensions

<table>
<thead>
<tr>
<th>Barrel</th>
<th>Dimensions</th>
<th>Work</th>
<th>Quantities</th>
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</table>

### Unit Quantities

<table>
<thead>
<tr>
<th>Rebar</th>
<th>Steel</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>

### Reinforced Steel

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

### Design Live Load

**PRE-CURED BOX)**

- **SPECIAL**:
  - **MANUFACTURER**:
    - **TWO AASHTO 26-03**
  - **SIZE**:
    - **BOX**
    - **SPANS**
  - **STANDARD**:
    - **Class S Concrete**
    - **31 on 4:1 SLOPES**

**UNDER 6'-6" COVER**

**CLASS S CONCRETE**

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

464771 and SPANS 31 on 4:1 SLOPES UNDER 6'-6" COVER

STANDARD DRAWING NO. R-1028-0