| CDP-1 | 12-06-16 | CONCRETE DITCH PAVING | SD-1 | 11-16-17 | ANTENNA POLE |
| CG-1 | 11-20-07 | CURBING DETAILS | SD-2 | 09-12-13 | SPAN WIRE INSTALLATION WITH COMMUNICATION CABLE CROSSING |
| CPOR-1 | 10-18-06 | CONCRETE PAVEMENT DETAILS CONTINUOUSLY REINFORCED | SD-3 | 11-16-17 | SPAN WIRE ASSEMBLY STEEL POLE |
| CPOR-1 | 03-20-08 | CONCRETE PAVEMENT DETAILS CONTINUOUSLY REINFORCED DEFORMED WIRE MAT | SD-4 | 09-12-13 | LOOP DETECTOR INSTALLATION |
| CPOR-2 | 10-10-06 | DETAILS OF TERMINAL JOINTS FOR CONCRETE PAVEMENT CONTINUOUSLY REINFORCED | SD-5 | 09-12-13 | CONTROLLER CABINET UTILITY DRAWER |
| CPOR-4 | 02-27-14 | DETAILS OF ENTRANCE & EXIT RAMPS FOR CONCRETE PAVEMENT CONTINUOUSLY REINFORCED | SD-6 | 11-16-17 | HEAVY DUTY FULL 30X |
| CPTJ-4A | 02-27-14 | TRANSVERSE & LATERAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED) | SD-7 | 11-16-17 | SPAN WIRE ASSEMBLY WOOD POLE |
| DR-1 | 02-27-14 | DETAILS OF DRIVEWAYS & ISLANDS | SD-8 | 12-06-16 | SIGNAL HEAD PLACEMENT |
| FES-1 | 10-18-06 | FLARED END SECTION | SD-9 | 11-16-17 | SERVICE POINT |
| FES-2 | 10-18-06 | FLARED END SECTION | SD-10 | 11-16-17 | WOOD POLE SPAN WIRE INSTALLATION |
| FPOC-2 | 03-20-08 | PIPE SPOKE | SD-11 | 11-16-17 | STEEL POLE WITH MAST ARM |
| FPOC-9 | 11-16-01 | DETAILS OF DROP INLETS & JUNCTION BOXES | SD-12 | 11-16-17 | SERVICE POINT INSTALLATION WITH SUPPLEMENTAL GROUNDING ARRAY |
| FPOC-9D | 08-22-02 | DETAILS OF DROP INLETS | SD-13 | 11-16-17 | FLASHING BEACON INSTALLATION FOR HAZARDOUS CONDITIONS |
| FPOC-9E | 08-22-02 | DETAILS OF DROP INLETS (TYPE C) | SD-14 | 11-16-17 | FLASHING BEACON INSTALLATION FOR HAZARDOUS CONDITIONS AND SCHOOL ZONES |
| FPOC-9M | 08-22-02 | DETAILS OF DROP INLETS (TYPE MO) | SD-15 | 11-16-17 | SOLAR POWERED FLASHING BEACON INSTALLATION FOR SCHOOL ZONE SIGNING |
| FPOC-9N | 07-02-08 | DETAILS OF DROP INLETS AND SPILLWAY OUTLET | SD-16 | 09-12-13 | OVERHEAD SIGN DETAILS (OVERHEAD SIGN MOUNTED ON STEEL POLE WITH MAST ARM) |
| FPOC-9S | 07-02-12 | DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST) | SE-1 | 01-08-87 | TABLES AND METHOD OF SUPERELEVATION FOR ONE WAY TRAFFIC |
| G-1 | 08-15-91 | STEEL GRATE ASSEMBLY (TYPE 1) | SE-2 | 10-18-96 | TABLES AND METHOD OF SUPERELEVATION FOR TWO WAY TRAFFIC |
| G-2 | 08-15-91 | STEEL GRATE ASSEMBLY (TYPE 1) | SE-5 | 10-18-96 | SAFETY END SECTION FOR CIRCULAR AND ARCH PIPES |
| G-3 | 08-15-91 | STEEL GRATE ASSEMBLY (TYPE 1) | SHS-1 | 09-12-13 | STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES |
| GC-1 | 10-18-06 | GUARD CABLE | SHS-2 | 02-27-14 | U-CLEAN CHANNEL POST ASSEMBLIES |
| GR-7 | 11-16-17 | GUARD RAIL DETAILS (TYPE C) STREET/Road BARRICADE OR TEMPORARY INSTALLATION | SHS-3 | 09-12-13 | DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS |
| GR-8 | 11-16-17 | GUARD RAIL DETAILS | SHS-4 | 09-12-13 | DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS |
| GR-8A | 11-16-17 | GUARD RAIL DETAILS | SHS-5 | 09-12-13 | DETAIL OF GUIDE SIGN PANELS |
| GR-9 | 04-17-08 | GUARD RAIL DETAILS | SHS-6 | 09-12-13 | MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUARD SIGNS |
| GR-9A | 04-17-08 | GUARD RAIL DETAILS | SHS-7 | 09-12-13 | DETAIL OF OILOIRECTIONAL BREAKAWAY SIGN SUPPORTS |
| GR-10 | 11-16-17 | GUARD RAIL DETAILS | SHS-8 | 11-16-17 | TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEM |
| GR-11 | 11-16-17 | GUARD RAIL DETAILS | SI-1 | 05-25-15 | DETAILS OF SPECIAL ITEMS |
| LH-12 | 07-16-17 | WALLS & RAMPS | H-2 | 03-10-16 | WALLS & RAMPS WALL-001 AND 002, LVC-JUAN S LUMAYAN (2) |
| GR-13 | 11-16-17 | CONCRETE BARRELL WALL (PER PROTECTION TYPE A) | TC-1 | 04-13-17 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION |
| GRT-1 | 11-16-17 | GUARD RAIL DETAILS | TC-2 | 09-02-15 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION |
| IB-1 | 10-15-09 | IMPACT ATTENUATION BARRIER | TC-3 | 07-25-19 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION |
| MB-1 | 11-18-00 | MAILBOX DETAILS | TC-4 | 02-27-14 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER |
| PCC-1 | 01-25-15 | PRECAST CONCRETE BOX CULVERTS | TC-5 | 10-15-09 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER |
| PCC-1 | 02-27-14 | CONCRETE PIPE CULVERT CORRECT HEIGHTS & BEDDING | TECH-1 | 11-16-17 | TEMPORARY EROSION CONTROL DEVICES |
| PCC-1 | 02-27-14 | CONCRETE PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | TECH-2 | 06-22-94 | TEMPORARY EROSION CONTROL DEVICES |
| PCC-1 | 02-27-14 | PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | TECH-3 | 11-03-94 | TEMPORARY EROSION CONTROL DEVICES |
| PCC-2 | 02-27-14 | PLASTIC PIPE CULVERT PVC 489 | TECH-4 | 07-28-12 | TEMPORARY EROSION CONTROL DEVICES |
| PM-1 | 06-01-17 | PAVE MARKING DETAILS | TR-1 | 01-12-00 | DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS |
| PM-2 | 12-06-16 | PERMANENT PAVE MARKING ON ACCESS CONTROLLED ROADSWAYS | TR-1A | 06-22-02 | DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED) |
| PJ-1 | 12-06-16 | DETAILS OF PIPE UNDERGROUND | WP-1 | 08-22-02 | WIRE FENCE TYPE A AND B |
| RC-68-12 | 07-02-12 | REINFORCED CONCRETE BOX CULVERT DETAILS | WP-2 | 04-20-79 | WIRE FENCE WATER GAPS |
| RC-2 | 11-20-03 | EXCAVATION PAY LIMITS, BACKFILL, & SCULPT SANDING FOR BOX CULVERTS | WP-3 | 11-17-10 | CHAIN LINK FENCE |
| RC-3 | 10-12-95 | METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS | WP-4 | 08-22-02 | WIRE FENCE TYPE C AND D |
| RR-1 | 12-06-18 | PAVEMENT MARKING FOR RAILROAD CROSSING | WR-1 | 11-10-05 | WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS |
| RFW-03 | 04-10-03 | RAILROAD HIGHWAY ORAIC CROGOING SIGNALS ["FLASHER LIGHT TYPE"] | WR-2 | 10-09-00 | WHEELCHAIR RAMPS ALTERATIONS ONLY |
GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 4'-0" INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1
CONCRETE COMBINATION CURB AND GUTTER

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

LONGITUDINAL SECTION

ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB

CONCRETE CURB

INTEGRAL CURB

NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1.

DETAILS OF MODIFIED CURB

NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1.

ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1
DETAILS OF TERMINAL JOINTS FOR CONCRETE PAVEMENT WITH DOWELS

EXPANSION JOINTS

SECTION A-A

SECTION B-B

SECTION C-C

NOTES:

1. JOINT ASSEMBLY SHALL BE SECURELY FASTENED INTO PLACE PRIOR TO PLACING CONCRETE.

2. AFTER SECOND PASSAGE OF FINISHING MACHINE REMOVE CONCRETE TO 1" BELOW TOP OF BOARD AND NAIL 3/8" X 2" WOOD STRIP TO TOP OF BOARD FILLER TO FORM JOINT SEAL SPACE.

3. REPLACE CONCRETE AND FINISH WITH LONGITUDINAL FLOAT.

4. THE WOOD STRIP SHALL NOT BE REMOVED UNTIL IMMEDIATELY PRIOR TO POURING JOINT SEAL.

GENERAL NOTES

OTHER TYPES OF EXPANSION JOINTS MAY BE CONSTRUCTED AT THE OPTION OF THE CONTRACTOR AFTER APPROVAL BY THE ENGINEER.

LOAD TRANSMISSION UNITS AND DOWELS SHALL BE SECURED PARALLEL TO THE PAVEMENT SURFACE AND CENTERLINE.

ALL EXPANSION JOINTS, INCLUDING ALL MATERIALS, DEVICES, AND WORK REQUIRED SHALL BE CONSIDERED AS SUBSIDIARY WORK AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT. NO DIRECT PAYMENT WILL BE MADE FOR ANY MATERIAL, BAR, CHAIR, STEEL OR ANY OTHER DEVICE SHOWN FOR THE INSTALLATION.

TYPICAL MANNER OF INSTALLATION

NOTE: WELD 12" X 10" X 1" STEEL PLATE TO ENDS OF BEAM AFTER PLACEMENT OF CONCRETE PAVEMENT.

NOTE: BOARD JOINT FILLER OF SPECIFIED TYPE SHALL BE SECURED ON SUBGRADE IN EXACT POSITION AND LINE AS ILLUSTRATED OR BY OTHER APPROVED DEVICE.

JOINT SUPPORT IN JT. SUPPORT CONSTRUCTION JOINT

PLAN

SECTION A-A

DETAIL OF EXPANSION JOINT

SECTION B-B

DETAIL OF WIDE FLANGE BEAM & JOINT SUPPORT

SECTION C-C

SUPPORT

ELEVATION

PLAN

TRANSVERSE SECTION THROUGH WF BEAM

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF TERMINAL JOINTS

FOR CONCRETE PAVEMENT

CONTINUOUSLY REINFORCED

STANDARD DRAWING CPCR-3
LONGITUDINAL CONSTRUCTION JOINT

SECTION A - A

DETAIL FOR JUNCTION WITH FLEXIBLE TYPE PAVEMENT STRUCTURE

NOTE:

ON GRADERS IN EXCESS OF 4%, THE LENGTHS "Y" & "L" MAY BE VARIED TO FIT THE CASE IN THE RATION OF \( \frac{y}{l} \).

GENERAL NOTES

THE SEQUENCE OF OPERATIONS ON PLACING THE RAMP SHALL BE AS DIRECTED BY THE ENGINEER. THE LONGITUDINAL STEEL SHALL BE PLACED IN A DIRECTION APPROXIMATELY PARALLEL TO THE DIRECTION OF THE RAMP.

SAWED JOINT AND JOINT SEALANT FOR LONGITUDINAL CONSTRUCTION JOINT SHALL CONFORM TO THE DETAILS SHOWN FOR SAWED LONGITUDINAL JOINT ON STANDARD DRAWING CPCR-6A.

NOTE:
ON SHOULDER, THE LOCATION OF THE CURVE SHOULD BE AS SHOWN.
END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

MULTIPLE R.C. PIPE CULVERTS

MULTIPLE C.M. PIPE CULVERTS

CIRCULAR PIPE

CIRCULAR PIPE

CIRCULAR PIPE

C.M. ARCH PIPE

C.M. ARCH PIPE

C.M. ARCH PIPE

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURERS STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.
NOTE: HEADWALLS SHALL BE CONSTRUCTED ONLY WHEN SPECIFIED WITH THE ITEM "PIPE SIPHON". PIPE DIAMETERS ARE AVAILABLE IN TWO INCH INCREMENTS.
ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B
ADDED NOTE 13
REVISED HEAVY DUTY RING & COVER
ADDED NOTCH DETAIL FOR SIDEWALKS
CALLED FOR ON PLANS
1"
CORRECTED #6 BAR SPACING
‡"
NOTCH FOR SIDEWALK
REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR
ADDED NOTE 11; ADJ. OPENING DIMENSION
EXP. JOINT
1'-6 "  C U R B &  G U T T E R
UPSTREAM
1'-0"
TRANS. BARS #5
@10" CTRS.
CONS'T. JOINT
2" NOTCH FOR SIDEWALK
VAR. AS SPECIFIED
& GUTTER IF NO
EXTENSION USED
EXTENSION
NOTCH FOR SIDEWALK
6 " (IF NO EXTENSION USED)
BACK OF GUTTER
6" 4"
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.
PLAN - W/SINGLE EXTENSION
COLUMN 4" DIA.
FRONT ELEVATION
SECTION C-C
WALL WHEN BUILT WITH EXTENSION
ELIMINATE THIS PORTION OF BACK
OPENING IN BACK WHEN
DOWNSTREAM
CONS'T. JOINT
2'-0"
CONS'T. JOINT
GREASE
SLOPE TO MATCH SIDEWALK OR SHLDR.
SIDEWALK
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.
PLAN - W/SINGLE EXTENSION
COLUMN 4" DIA.
FRONT ELEVATION
SECTION C-C
WALL WHEN BUILT WITH EXTENSION
ELIMINATE THIS PORTION OF BACK
OPENING IN BACK WHEN
DOWNSTREAM
CONS'T. JOINT
2'-0"
CONS'T. JOINT
GREASE
SLOPE TO MATCH SIDEWALK OR SHLDR.
SIDEWALK
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.
GENERAL NOTES (GRATE & FRAME)


2. GRATE AND FRAME SHALL NOT BE PAINTED.

3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.

4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

ALL BARS #4 @ 6" SPACING

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET

DETAILS OF RIBBED VANE GRATE AND FRAME

DETAILS OF CONCRETE SPILLWAY (TYPE A)
DESCRIPTION

REMOVED NOTE 4, REVISED "T", 3

REVISED HEAVY DUTY RING & COVER

ADDED NOTE 4

SECTION C-C

'V'

REVISED ASTM REF. TO AASHTO 'V'

B

ADDED PEDESTRIAN FRAME & GRATE

6"

3 Š

25" 22"

1” 7/16 " HOLE

" VARIABLE (MODIFIED STD.)

#4 @ 10" O.C.

#6 @ 9" O.C.

'W' < 4'-0"

#4 @ 6" O.C.

'W' > 4'-0"

#6 @ 6" O.C.

#6 @ 6" O.C.

#6 @ 6" O.C.

'W' (VARIABLE)

7'-0" MAX.

3'-0" MIN.

GENERAL NOTES (HEAVY DUTY RING & COVER):

1. THE 'D' DIMENSION SHALL MATCH THE FINAL
LIFT OF ACHM SURFACE COURSE SHOWN
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ƒ" CHAMFER.
4. APPROXIMATE HEIGHT OF GRATE SHALL BE 122 SQ. IN.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.
7. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 170 LBS.
8. THE GRATE AND FRAME SHALL NOT BE PAINTED.
9. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP
   INLET SO THAT THE ƒ" OPENINGS ARE PERPENDICULAR
   TO THE PATH OF PEDESTRIAN TRAVEL.
10. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF
    THE DROP INLET
11. THE GRATE AND FRAME SHALL NOT BE PAINTED.
12. THE GRATE AND FRAME SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
13. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
14. PERMA-GRIP TEXTURE
15. HX HD CAP SCREWS
16. 13X2ƒ" STN STL
17. FLOW 'V'
18. " R
19. 29 ƒ " R
20. 24 … " R
21. 3 Š " R
22. 1Œ 7/16 " CORED
23. 26ƒ" 26"
24. V A R . (M O D IF IE D  S T R .)
LOCATION OF ANCHOR BOLTS TYPICAL FOR EACH ANGLE CONNECTION

SIDE ELEVATION

PLAN

TYPICAL SECTION

DETAIL OF ANGLE CONNECTION

NOTE: 2" STANDARD STEEL PIPE TO BE VENTED FOR GALVANIZING.

END ELEVATION

BENDING DIAGRAM

QUANTITIES & DIMENSIONS - ONE GRATE COMPLETE

BAR LISTS - ONE HEADWALL

ARKANSAS STATE HIGHWAY COMMISSION

STEEL GRATE ASSEMBLY (TYPE I)

STANDARD DRAWING G-1
LOCATION OF ANCHOR BOLTS
TYPICAL FOR EACH ANGLE CONNECTION

SIDE ELEVATION

END ELEVATION

BENDING DIAGRAM

QUANTITIES & DIMENSIONS - ONE GRATE COMPLETE

<table>
<thead>
<tr>
<th>DIA.</th>
<th>W - 1</th>
<th>W - 2</th>
<th>L</th>
<th>S</th>
<th>H</th>
<th>PANEL SIZE</th>
<th>NUMBER OF PANELS</th>
<th>ANGLE DIM.</th>
<th>APPROX. CONC. QUANT.</th>
</tr>
</thead>
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<td>14</td>
<td>6</td>
<td>6</td>
<td>24'</td>
<td>4</td>
<td>5</td>
<td>42&quot; PIPE</td>
<td>1</td>
<td>6&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

BAR LISTS - ONE HEADWALL

ARKANSAS STATE HIGHWAY COMMISSION

STEEL GRATE ASSEMBLY
(TYPE II)
GALVANIZED U-CHANNEL
1'-6" LONG, 2 LBS. PER FT.

DELINEATOR POST
3/8" D. HOLES 1" O.C.
POST PRE-PUNCHED WITH

MAIN LANES
GUARD CABLE
ONE-WAY
FRTG. ROAD
GUARD CABLE
ONE-WAY
FRTG. ROAD

TYPE 1 DELINEATOR (Y)
TYPE 2 DELINEATOR (W)

DELINEATOR PLACEMENT
APPROX. 300' APART.
ATTACHED TO LINE POST
DELINEATOR POST TO BE
ANCHOR ASSEMBLY
EXPANDABLE OR SCREW
END ANCHOR
CABLE END
ANCHOR POST
12'-6"
1/2" CABLE
LINE POST
1'-6"
1'-0"
ANCHOR POST
300' MAX. (BETWEEN ANCHORS)
ANCHOR POST
GROUND LINE OR SHOULDER ELEVATION
INTERMEDIATE ANCHOR
12'-6"
12'-6"
12'

NOTE: DELINEATORS ARE TO BE MOUNTED
INuminum. PIN LENGTH SHOULD
(FASTENERS) WHICH ARE 6061 Allum-
POST USING PIN AND COLLAR
PAST THE COLLAR.
NOT EXTEND FURTHER THAN 1/8"
BACK ON A SINGLE POST.
2 REFLECTORS MOUNTED BACK-TO-
TYPE 2 DELINEATOR CONSIST OF
TYPE 1 & 2 DELINEATORS

ARKANSAS STATE HIGHWAY COMMISSION
INTERNATIONAL TRAFFIC IN ARMED CONFLICT
GUARD CABLE
STANDARD DRAWING GC-1
11-30-89
RELABED & LENGTHENED ANCHOR POST
11-30-89
3-23-89
LABELED POSTS
514-3-23-89
1-9-87
ISSUED
535-1-9-87
DATE
REVISION
FILMED
X

DELINEATOR POST DETAIL
NOTE: POST MAY BE WOOD OR STEEL. IN GENERAL, ONLY ONE MATERIAL WILL BE
ALLOWED WITHIN A SINGLE PROJECT. HOWEVER, WITH APPROVAL OF THE ENGINEER,
POSTS MAY BE MIXED ON A JOB PROVIDED DEFINITE LIMITS ARE ESTABLISHED AND
ALL POSTS ARE OF THE SAME TYPE WITHIN THOSE LIMITS. ONLY ONE TYPE POST
MAY BE USED WITHIN A SINGLE ASSEMBLY.

SPLICE DETAIL

ANCHOR ROD ASSEMBLY
3 CLIPS REQUIRED

CABLE END

POST DETAILS
NOTES: POST ASSEMBLY IS TO BE MOUNTED TO POST ASSEMBLY WHERE
DELINEATOR POSTS ARE PROVIDED. ALL POSTS ARE MOUNTED ON A SINGLE ANCHOR ASSEMBLY.

TYPE 1 & 2 DELINEATORS
NOTE: IN LIEU OF THE U-CHANNEL DELINEATOR POST THE
CONTRACTOR SHALL HAVE THE OPTION OF EXTENDING
THE GUARD CABLE LINE POST 1'-0" TALLER WHERE
DELINEATOR POSTS ARE REQUIRED.

FOR WOOD POSTS, DELINEATORS MAY BE MOUNTED
ON THE ANCHOR POSTS AT SPECIFIED INTERVALS.

DELINEATOR PLACEMENT
NOTE: USE Š D. HEX. HEAD BOLT AND
SPLICE DETAIL
6'-6" ROD
ATTACH TO ANCHOR
1'-1"
6"
1" 0
1" 0
240°
6" FOR STEEL POST
1'-3" FOR WOOD POST
& HEX NUT
PL WASHER
4"
ANCHOR ROD ASSEMBLY
4" R
6" FOR STEEL POST
& HEX NUT
PL WASHER
4"
WOOD POST
STEEL POST

WELDED BEAM CONSTRUCTION WIDTH 60"
STEEL POST
WOOD POST

3 CLIPS REQUIRED
WELDED BEAM CONSTRUCTION WIDTH 60"
3 CLIPS REQUIRED
WELDED BEAM CONSTRUCTION WIDTH 60"
3 CLIPS REQUIRED

STEEL POST
WOOD POST

WOOD POST
STEEL POST

STEEL POST
WOOD POST

STEEL POST
WOOD POST

STEEL POST
WOOD POST

STEEL POST
WOOD POST

STEEL POST
WOOD POST

STEEL POST
WOOD POST
ADDED REFERENCE TO MASH

REVISED WOOD POST NOTE

SIDE SIDE BACK

GLAZED 16d NAIL TO PREVENT BLOCK

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS

-GENERAL NOTES-

-GENERAL NOTES-

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

CULVERT (REFER TO DETAIL)

3'-1"" SPACING BOLTED TO POSTS WITH BASE PLATES @ PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT AVOID INTERIOR AND EXTERIOR WALLS. WHEN THIS IS NOT POSSIBLE, POSTS SHALL BE SPACED BY THE ENGINEER.

USING METHODS AND MATERIALS APPROVED SHALL BE INSTALLED BY DRILLING AND EPOXING INTERIOR OR EXTERIOR WALL, ANCHOR BOLTS AND POST(S) MUST BE INSTALLED OVER AN ACCEPTABLE HOLE CONFIGURATION.

CASE 1

BACKFILL ACCORDING TO SECTION 617.03(a). ZONE A:

44" MINUS THE DEPTH OF SOIL WHICHEVER IS LESS.

CASE 2

Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" which is the depth of soil ranging from 18" to 44".

For design speeds of 50 MPH OR LESS and 55 MPH OR MORE:

TYPE "E" CURB FACE SHALL BE USED.

STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 50 MPH OR LESS, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED.

FOR DESIGN SPEEDS OF 50 MPH OR LESS, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED.

FOR DESIGN SPEEDS OF 55 MPH OR MORE, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED.

BASE PLATE

M270 (GR. 36) STEEL

WASHER PLATE

M270 (GR. 36) STEEL

"X8"X12" AASHTO

"X8"X11" AASHTO

1" HEX HEAD BOLT WITH NUT

FRONT FACE OF GUARD POSTS ARE TO BE BOLTED AT FACE OF GUARD RAIL, PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

FOR DESIGN SPEEDS OF 50 MPH OR LESS, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED.

FOR DESIGN SPEEDS OF 55 MPH OR MORE, ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED.

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

PLAN VIEW STEEL POSTS

Either hole configuration acceptable.

PLAN VIEW WOOD POSTS

Either hole configuration acceptable.

SOLID ROCK

IN SOLID ROCK (W-BEAM)

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB

DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB

PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

WITH CONCRETE INSERT ANCHOR

Arkansas Highway Commission

Guardsrail Details

Standard Drawing GR-8A
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

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

METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE 1)
(FULL SHOULDER WIDTH OR LESS BRIDGES)
NOTE:
Normal section to each side to support guard rail.

Normal Roadway Width

Width of Surfacing

Section on Curve

Method of Installation of Guard Rail at Fixed Obstacle

Details Showing Position of Guard Rail on Highway

Details of Widening for Guard Rail

Shoulder Pier Protection

Median Pier Protection

Arkansas State Highway Commission

Guard Rail Details

Standard Drawing GR-9A
SPECIAL END SHOE

THREE BEAM RAIL

TRANSITION SECTION

CONNECTOR PLATE

STRUCTURAL STEEL TUBING

BLOCKOUT DETAIL

THREE BEAM RAIL SPICE AT POST

HOLE PUNCHING DETAIL

FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BOLTS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LENGTH.

GENERAL NOTES:
- THE CONNECTOR PLATE SHALL BE MADE OF STEEL AND SHALL BE 12 GAUGE.
- ZINC COATING SHALL BE TYPE 1.
- THE THREE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.

NOTE:
- ALL HOLES 3/4" DIAMETER EXCEPT AS NOTED

WASHERS SHALL BE USED UNDER THE HEAD AND NUT.
- BOLTS, NUTS AND WASHERS USING 3/8" DIAM. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE.
- STANDARD SPECIFICATIONS
- CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE AFTER FABRICATION.
- GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS.
- CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED.

ATTACH BLOCKOUT TO POST USING 3/8" DIAM. HEX HEAD BOLTS WITH 1 1/2" O.D. CUT STEEL WASHERS AND NUT.

FOR HANDLING DURING GALVANIZING. (ONE PERMITTED)

NOTE:
- BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.
- BLOCKOUT DETAILS SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.
- ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
- ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS VERTICALLY IN CROSS SECTION.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND MADE OF STEEL AND SHALL BE 12 GAUGE.

THE POST BOLT SLOTS SHALL BE SPACED AT 1'-6" O.C.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

THREE BEAM POSTS SHALL BE MADE OF W-BEAM POST FOR ENTIRE JOB.

USE THREE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

THREE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12.

THREE BEAM GUARD RAIL TRANSITION SECTION SHOWN ON STANDARD DRAWING GR-13.

THREE BEAM GUARD RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.

NOTES:
- ADDITIONAL NOTES
- REVISED NOTE (2)
- MOVED DIMENSION LINES
- REVISED GENERAL NOTES
- ADDED NOTE FOR ATTACHING STEEL BLOCKOUT
- REVISED TRANSITION SECTION, GUARD RAIL BLOCKOUT
- ADDED NOTE
- REVISED GENERAL NOTES
- ADDED PLASTIC BLOCKOUTS
**GUARD RAIL DETAILS**

**STRUCTURAL STEEL**

- **POSTS 1-7**

  1. **THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST**
  2. **W-Beam to THREE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST POST 8**

**POST 8**

  1. **PLASTIC BLOCKOUT & WOOD POST WITH W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD OR W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD POST**

**GENERAL NOTES:**

- Post shall be set perpendicular to the roadway profile grade and vertically in cross section.
- Wood posts & wood blocks shall be either dense No. 1 structural or better with wood P1 or P100 southern pine.
- STD. DWG. NUMBER FROM GR-10A TO GR-11
- REVISED GUARD RAIL HEIGHT, CHANGED

**Date:** 08-22-02

**Drawn & Issued:** 03-30-00

**Rev. Date:** 11-16-17

**Rev. Post 8 Dimensions:** 07-14-10

**Rev. Lip Curb Note:** 11-29-07

**Standard Drawing GR-II**
THREE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

The three beam guard rail system, end shoe, and the transition section shall be made of steel and shall be of the same material, same model.

THREE BEAM GUARD RAIL COMPONENTS OF THE SAME MATERIAL, SAME MODEL.

GENERAL NOTES:

The three beam guard rail components shall be made of steel and shall be of the same material, same model.

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The three beam guard rail components shall be made of steel and shall be of the same material, same model.

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THREE BEAM GUARD RAIL COMPONENTS OF THE SAME MATERIAL, SAME MODEL.

GENERAL NOTES:

The three beam guard rail components shall be made of steel and shall be of the same material, same model.

THREE BEAM GUARD RAIL COMPONENTS OF THE SAME MATERIAL, SAME MODEL.
NOTE: SIDE TYPE A IS FOR USE WITH PROPOSED PAVEMENT.

NOTE: SIDE TYPE A-1 IS FOR USE WITH EXISTING PAVEMENT.

ELEVATION OF CONCRETE BARRIER WALL
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

RAISED HEIGHT OF GUARD RAIL 1"

4"

GROUND LINE

THIS SECTION TO BE TWISTED THROUGH 90°

9"

5 "

5 "

15 "

7 "

12 2

18"

18" DIA.

CL ANCHORAGE AND RAIL CONNECTION

IN ANCHOR SLOTTED HOLE "X2"

CONCRETE CLASS A OR S

ANCHOR ASSEMBLY

15" OF ANCHOR POST AND

NOTE: GALVANIZE UPPER

NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND THE POST IF CONTRACTOR SO DESIRES.

"SLOTS

70°

SPLICE BOLT

6"X6"XŠ"X1'-6"

W 8 X 18

"X1"

TERMINAL SECTION

EDGE OF SHLDR. 2' MIN.

USING THESE 4 HOLES ATTACH TERMINAL ANCHOR POST USING 8 W 18 POST IF CONTRACTOR SO DESIRES.

ELEVATION - GUARD RAIL TERMINAL (TYPE 1)

PLAN - GUARD RAIL TERMINAL (TYPE 1)

SECTION 1

TERMINAL ANCHOR POST

SECTION 1

ATTACH TERMINAL ANCHOR POST USING THESE 3 BOLTS

SECTION 2

SECTION 1

TERMINAL ANCHOR POST

TERMINAL ANCHOR POST

SECTION 1

ANCHOR POST (TYPE 1)

DETAIL OF TERMINAL ANCHOR POST (TYPE 1)

DETAIL OF TERMINAL ANCHOR POST (TYPE 1)
**General Notes:**

1. Dimensions shown are to top of plastic modules.
2. Spacing between plastic modules shall not exceed 6" at the top.
3. Plastic modules shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).

**Method of Installation of Impact Attenuation Barrier for Pier Protection**

**Apparent Quantities Per Pad**

<table>
<thead>
<tr>
<th>Type</th>
<th>Aggregate Base Course</th>
<th>Portland Cement Concrete</th>
<th>A.C.H.M. Surf. Course (1/2&quot;)</th>
<th>Aggregate Base Course Avg. 8'-6&quot; (Compacted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9.7</td>
<td>4.6</td>
<td>1400</td>
<td>34.9</td>
</tr>
<tr>
<td>B</td>
<td>6.6</td>
<td>3.8</td>
<td>1400</td>
<td>28.3</td>
</tr>
<tr>
<td>C</td>
<td>6.6</td>
<td>3.8</td>
<td>1400</td>
<td>28.3</td>
</tr>
</tbody>
</table>

**Note:** Approximate quantities shown are for informational purposes only. Payment to be included in unit price bid for impact attenuation barrier.

**Detail of Barrier Pad**

- **Type A**: BARRIER LENGTH = 2'-6"; DESIGN IMPACT SPEED = 70 mph, 103 fps.
- **Type B**: BARRIER LENGTH = 3'-6"; DESIGN IMPACT SPEED = 60 mph, 88 fps.
- **Type C**: BARRIER LENGTH = 2'-6"; DESIGN IMPACT SPEED = 50 mph, 73.3 fps.

**NOTICE:** TO BE USED WHERE SHOWN ON THE PLANS.

**Method of Installation of Impact Attenuation Barrier for Shielding Individual Hazards**

- **Pad Length = 4' - 6"**
- **Maximum 10:1 Slope**
- **Embankment Material**
- **Normal Roadway Slope**

**Standard Drawing IB-1**

Arkansas State Highway Commission

Impact Attenuation Barrier

**Date**

- Revised Fixed Object
- Revised Notes & Type A Mod. Wts.
- Redrawn
- Conformed to E88 specs

**Revision**

- 11-18-98
- 11-19-98
- 11-29-07
- 10-15-09

**Date Filmed**

- 7-15-88
- 7-29-87
GENERAL NOTES
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE
    PRESSURE TREATED FOR GROUND CONTACT. IN ACCORDANCE WITH
    SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. METAL, PLATES SHALL BE USED ONLY ON METAL POSTS.
3. WOODEN PIPE, MUFFLER CLAMP SHALL BE MODIFIED TO FIT
    MAILBOXES OF A DIFFERENT SIZE.
4. MAILBOX SHELF, BRACKET & PLATFORM THAT IS SHOWN IS FOR
    STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE
    SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO
    SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
5. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY
    BE USED PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS
    LIST FOR MAILBOX SUPPORTS.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY
    BE USED PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS
    LIST FOR MAILBOX SUPPORTS.
7. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
8. WOODEN PIPE, MUFFLER CLAMP SHALL BE MODIFIED TO FIT
    MAILBOXES OF A DIFFERENT SIZE.

SHELF

PLATFORM

SINGLE INSTALLATION

DOUBLE INSTALLATION

ARMS

MAILBOX

SPACING FOR MULTIPLE POST INSTALLATION

STANDARD DRAWING MB-1

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

ISSUED 11-17-88

ADJUSTED DIMENSIONS OF STEEL POSTS

10-27-89

DELETED SLOTS FROM SHELF & PLTF

10-30-89

ADJUSTED HEIGHT & ADDED NOTE

11-18-96

CORRECTED AASHTO

10-9-03

REVISED NOTE 6

8-22-02

REVISED NOTES

8-15-91

9-26-91

10-1-92

NEW PHONE NUMBER

10-18-96

CORRECTED SPELLING
**ANGLE OF HEADWALL**

**M BARS, BEND TO MIN. 4" WEEP HOLES**

**SPECIFICATIONS IN LIEU OF LEAN GROUT.**

**SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE LEAN GROUT WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED EACH BARREL AS DESCRIBED ABOVE.**

**BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE DRAWING.**

**EXTERNAL WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.**

**DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE BOTTOM SLAB.**

**WEEP HOLES SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM SPACING OF 10'-0" IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF CULVERT.**

**THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERIOR WALL AND SHALL EXTEND 1' DOWN THE SIDES OF THE PRECAST CULVERTS.**

**WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.**

**ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, ALL EXPOSED CORNERS TO HAVE 1/2" CHAMFERS.**

---

### BAR LIST

<table>
<thead>
<tr>
<th>BAR</th>
<th>NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>1</td>
<td>#4</td>
<td>1'-8&quot;</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
<td>#4</td>
<td>3'-2&quot;</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>#4</td>
<td>1'-5&quot;</td>
</tr>
<tr>
<td>L</td>
<td>2</td>
<td>#4</td>
<td>1'-0&quot;</td>
</tr>
</tbody>
</table>

---

**NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT**

---

**GENERAL NOTES**

**WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERTS BY STIRRUP BARS CIRCUMFERENCE MIN. 3/4". M BARS AND H BARS SHALL BE PLACED IN A MINIMUM OF 2" IN PRECAST BOX.**

**WINGS, STUDWALLS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MATERIALS, METHODS AND DETAILS SHOWN ON THIS PRECAST BOX CULVERTS.**

**ALL EXPOSED CONCRETE TO BE AND WINGWALLS AND CURTAIN WALLS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.**

**ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, ALL EXPOSED CORNERS TO HAVE 1/2" CHAMFERS.**

**WINGS, CURTAIN WALLS AND APRONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.**

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**ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, ALL EXPOSED CORNERS TO HAVE 1/2" CHAMFERS.**

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**ARKANSAS STATE HIGHWAY COMMISSION**

**PRECAST CONCRETE BOX CULVERTS**

**STANDARD DRAWING PBC-I**

---

**DETAILS:**

- **PLAN VIEW**
- **END VIEW**
- **SECTION A - A**

---

**BAR RODDING DIAGRAM**

**BAR LIST**

<table>
<thead>
<tr>
<th>NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>#4</td>
<td>1'-8&quot;</td>
</tr>
<tr>
<td>2</td>
<td>#4</td>
<td>3'-2&quot;</td>
</tr>
<tr>
<td>3</td>
<td>#4</td>
<td>1'-5&quot;</td>
</tr>
<tr>
<td>4</td>
<td>#4</td>
<td>1'-0&quot;</td>
</tr>
</tbody>
</table>

---

**NOTE:**

- **LEAN GROUT**
- **LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:**
  - **PORTLAND CEMENT SHALL BE TYPE 1 AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.**
  - **PORTLAND CEMENT SHALL BE TYPE 1 AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.**
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**REVISIONS:**

- **10-15-09**
- **10-15-11**
- **11-30-89**
- **10-1-92**
- **8-15-91**
- **10-18-96**
- **4-10-03**
- **11-10-05**
- **1-28-15**
- **JABE**
- **REVISED FOR 1991 SPECS**
- **ADDED NOTE FOR LEAN GROUT**
- **ADDED NOTE FOR MEMBRANE WATERPROOFING**
CONSTRUCTION SEQUENCE

1. Place the necessary bedding material to shape, do not compact.
2. Install pipe to grade.
3. Compact bedding material within the hole using pipe to keep the pipe in place.
4. Place and compact the backfill at least a third of the pipe.
5. Complete backfilling according to the general notes.

NOTES: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

1. Normal pipe diameters of pipe.
2. Up to 90° from level pipe.
3. Pipe removed.
4. Structural bedding.

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

<table>
<thead>
<tr>
<th>INSTALLATION TYPE</th>
<th>CLASS I</th>
<th>CLASS II</th>
<th>CLASS III</th>
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<tr>
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<td>4.5</td>
<td>5.5</td>
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MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

<table>
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<th>CLASS III</th>
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<tbody>
<tr>
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<td>Type 2</td>
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<td>15</td>
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MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

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<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
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<td>Type 2</td>
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</table>

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

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<th>CLASS II</th>
<th>CLASS III</th>
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<td>Type 1</td>
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<td>15</td>
<td>15</td>
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</tr>
</tbody>
</table>
CONSTRUCTION SEQUENCE

1. Structural backfill and structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.
2. Structural backfill and structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.
3. Structural backfill and structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.

INSTALLATION TYPE

- **TYPE 1:** Round or oval corrugated metal pipe arches
- **TYPE 2:** Round or oval corrugated metal pipe arches

EQUIVALENT METAL THICKNESSES AND GAUGES

<table>
<thead>
<tr>
<th>METAL FINISHES IN INCHES</th>
<th>STEEL</th>
<th>TYPE 1</th>
<th>TYPE 2</th>
</tr>
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<tbody>
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<tr>
<td>0.164</td>
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</table>

GENERAL NOTES

1. Structural backfill, embankment, and other structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.
2. Structural backfill and structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.
3. Structural backfill and structural bedding material shall be compacted to twice the minimum density as specified for the given diameter.
**GENERAL NOTES**

1. **Type 2 Embankment and Trench Installations**
   - Structural backfill and bedding materials shall be compacted to 95% of the maximum density according to the type or class of material used.

2. **Minimum Trench Width Based on Fill Height “H”**
   - The minimum trench width shall be calculated based on the fill height “H” using the following formula:
   
   \[
   \text{Trench Width} = \frac{D}{2} + \frac{2H}{3}
   \]
   - Where “D” is the diameter of the pipe and “H” is the fill height.

3. **Multiple Installation of High Density Polyethylene Pipes**
   - The minimum cover for construction loads shall be calculated based on the construction loads indicated.

4. **Minimum Cover for Construction Loads**
   - The minimum cover values “H” shall be determined based on the construction load applied and the pipe diameter.

5. **Structural Backfill Material**
   - Structural backfill and structural bedding material shall have a maximum particle size of 1.50 inches in diameter or frozen lumps.

6. **Structural Bedding Material**
   - Structural bedding material shall have a maximum particle size of 1 inch.

7. **Type 2 Embankment and Trench Installations**
   - Structural backfill, embankment, and outer structural bedding material shall be compacted to 95% of the maximum density according to the type or class of material used.

8. **Construction Sequence**
   - Place structural bedding material to grade, do not compact.
   - Install pipe to grade.
   - Compact structural bedding outside the middle third of the pipe.
   - Compact structural bedding and embankment simultaneously to the elevation of the minimum cover.

9. **Selecting Material**
   - Impervious material should be placed as directed by the engineer at the ends of the culvert to prevent loss of structural bedding when pervious material is used for structural bedding and/or backfill.

10. **PAVEMENT AND/OR BASE**
    - A minimum of 12 inches of pavement and/or base shall include a minimum 4 inches structural bedding and a minimum 12 inches of pavement and/or base.

11. **MINIMUM COVER**
    - Minimum cover shall be measured from top of pipe to top of the maintained construction surface. The surface shall be maintained.

12. **PLASTIC PIPE CULVERT DESIGN**
    - Plastic pipe culvert design shall conform to AASHTO LRFD Bridge Design Specifications, Fifth Edition.

13. **PLASTIC PIPE CULVERT DESIGN**
    - Plastic pipe culvert design shall conform to AASHTO LRFD Bridge Construction Specifications, Fifth Edition.

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60. **PLASTIC PIPE CULVERT DESIGN**
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**GENERAL NOTES**

1. Pipe shall conform to AASHTO Figure 47. All Class 8 pipes shall be installed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) specifications.


3. Placement of pipe and trench design shall conform to the American Road and Transportation Builders Association (ARTBA) specifications.

4. The maximum allowable dredge rate shall be determined by the contractor.

5. Structural backfill and embankment shall be compacted to 95% of the maximum density according to the type or class of material used.

6. The structural backfill shall be placed and compacted in accordance with the American Association of State Highway and Transportation Officials (AASHTO) specifications.

7. The structural backfill shall be placed and compacted in accordance with the American Society for Testing and Materials (ASTM) specifications.

8. Compaction of the structural backfill shall be performed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) specifications.

9. Structural backfill and embankment shall be compacted to 95% of the maximum density according to the type or class of material used.

**CONSTRUCTION SEQUENCE**

1. Place structural bedding material to grade. Do not compact.

2. Install pipe to grade.

3. Compact structural bedding outside the middle third of the pipe.

4. The structural backfill shall be placed and compacted in accordance with the American Association of State Highway and Transportation Officials (AASHTO) specifications.

5. Pipe installation may require the use of restraints, weightings, and simultaneous to the elevation of the minimum cover.

6. The structural backfill shall be placed and compacted in accordance with the American Association of State Highway and Transportation Officials (AASHTO) specifications.

7. Structural backfill and embankment shall be compacted to 95% of the maximum density according to the type or class of material used.

**LEGEND**

- **M** - Full height
- **H** - Middle third of pipe
- **D** - Minimum cover
- **S** - Structural backfill
- **W** - Undrained soil

**CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>Trench Width</th>
<th>Maximum Cover (Feet)</th>
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<tbody>
<tr>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
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<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
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<td>5'-0&quot;</td>
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<td>6'-0&quot;</td>
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**MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"**

<table>
<thead>
<tr>
<th>Trench Width</th>
<th>Minimum Trench Width (Feet)</th>
</tr>
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<tbody>
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<tr>
<td>3'-0&quot;</td>
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<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
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</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Minimum Cover (Feet)</th>
</tr>
</thead>
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<td>18&quot;</td>
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<td>48&quot;</td>
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<tr>
<td>54&quot;</td>
<td>8'-0&quot;</td>
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</table>

**MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL**

<table>
<thead>
<tr>
<th>Fill Height</th>
<th>Maximum Fill Height (Feet)</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
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</table>

**MULTIPLE INSTALLATION OF PVC PIPES**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Minimum Cover (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>54&quot;</td>
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**REVISION 50.0-75.0 DATE FILMED**

**ARKANSAS STATE HIGHWAY COMMISSION**

**PLASTIC PIPE CULVERT (PVC F949)**

**STANDARD DRAWING PCP-2**

**NOTE:** This document contains important information regarding the installation of plastic pipe culverts. Please consult the American Association of State Highway and Transportation Officials (AASHTO) specifications for further details and guidelines.
REVISED LANE WIDTH ON EXIT RAMP

ADDED DIMENSIONS & QUANTITIES; REVISED ENTRANCE & EXIT RAMPS ADDED & REVISED NOTES; REVISED PER 2009 MUTCD 6-3-10 11-17-10

REMOVED PLOWABLE PAVEMENT MARKERS 12-15-11

REVISED RPMs ACCORDING TO LATEST POLICY 7-26-12

REVISED RPM NOTATION 9-12-13

RAISED PAVEMENT MARKERS

REVISED DETAIL OF STANDARD ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2 REVISION DATE 2-2-95 PLACED IN USE 2-2-95 4-26-96 7-02-98 CHANGED TYPES TO ROMAN NUMERALS 5-18-00 REMOVED HASHMARKS 8-22-02 11-18-04 REVISED NOTES

12-8-16 REVISED WIDTH OF STRIPING

REVISED RAISED PAVEMENT MARKERS FOR 80' SPACING; LATEST REVISION.

THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH MARKERS SHALL BE DETERMINED BY THE ENGINEER.

AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY

END RAMP PAVEMENT MARKING

80'- (14) STANDARD TYPE II R.P.M. SPACED @ 10' O.C.

VARIABLE STANDARD TYPE II R.P.M. SPACED @ 36' O.C. AS SHOWN

RAISED PAVEMENT MARKERS TYPE I1 (WHITE/RED) = 48 EACH

RAISED PAVEMENT MARKERS TYPE I1 (WHITE/RED) = 38 EACH

BEGIN RAMP PAVEMENT MARKING

2 8 0'-(2 9) STANDARD TYPE II R.P.M. @ 10' O.C. (19) STANDARD TYPE II R.P.M.

TRAFFIC MOVEMENT.

NOTE:

FACE THE INCORRECT TYPE II R.P.M. SHALL

THE RED LENS OF THE NOTE:

1520'-(38) STANDARD TYPE II R.P.M. @ 40' O.C. (TYP.)

THEORETICAL GORE

375'-(38) STANDARD TYPE II R.P.M. @ 10' O.C.

40' (TYP)

4' (TYP.)

6' (TYP.)

10' SHLDR. (TYP.)

4' SHLDR. (TYP.)

6" WHITE LINE

8" WHITE LINE

6" YELLOW LINE

8" DOTTED WHITE

8" WHITE = 228 LIN. FT.

8" WHITE = 655 LIN. FT.

ARKANSAS STATE HIGHWAY COMMISSION PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS STANDARD DRAWING PM-2
NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR AT 250' INTERVALS ON STREETS, AT SAGS AND AT 250' INTERVALS ON GRADES.

2. PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS.

3. LATERALS SHALL BE INSTALLED AT ALL INTERSECTIONS AND AT 250' INTERVALS ON STREETS, AT SAGS AND AT 250' INTERVALS ON GRADES.

4. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO THE NEW SYSTEM SHALL BE INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND GRAVEL. LAP FABRIC 12" OR ALL AROUND & LAPED AT TOP.

8. UNDERDRAIN COVER (WHERE REQUIRED) SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

9. SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

*NOTE:

ARMS OF SCREEN WAS PLACED IN APPROX. CENTER
ANCHOR & 1" STAINLESS STEEL BOLT WITH 1" STAINLESS STEEL SLEEVE OR EQUAL WITH 2 CLAMPS (TYPICAL)

FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC)
FERNCO 1056-44 (4" CI/PLASTIC) OR SWEEP 90° ELBOW OR EQUAL WITH 2 CLAMPS (TYPICAL)
REINFORCED CONCRETE BOX CULVERT DETAILS

**Concrete**
Concrete shall be Class S with a minimum 28-day compressive strength of 3500 psi. Reinforced steel shall be AASHTO M-110 or M-53, Grade 60.

**Construction and Materials**
Construction and materials for wingwall and culvert drainage, including wingwall and granular materials, shall be subsidiary to the bid item "Class S Concrete." Construction and materials for wingwall and culvert drainage, including wingwall and granular materials, shall be subsidiary to the bid item "Class S Concrete."

**Membrane Waterproofing**
Membrane waterproofing shall conform to the requirements of Section 815 of the Standard Specifications.

**Wingwall & Culvert Drainage**
Wingwall and culvert drainage shall be constructed parallel to the skew angle of the box culvert. The modified headwall shall be equal to the roadway length "RL." The ends of the headwall shall be constructed parallel to the skew angle of the box culvert.

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**Reinforced Concrete Box Culvert General Notes**

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**Reinforced Concrete Box Culvert Headwall Modifications**

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**Reinforced Concrete Box Culvert Details**

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**Standard Drawing RCB-1**

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**Arkansas State Highway Commission**

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**Table:**

<table>
<thead>
<tr>
<th>Bar Size</th>
<th>Length of Hooked Bar</th>
<th>Length of Straight Bar</th>
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<tbody>
<tr>
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<tr>
<td>12</td>
<td>L + 1'-0&quot;</td>
<td>See &quot;g&quot; Bar Length</td>
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</tbody>
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**Notes:**
- All skewed R.C. box culverts, the length "k" of the modified headwall shall be equal to the roadway length "RL." The ends of the headwall shall be constructed parallel to the skew angle of the box culvert.
- Cut as required.

---

**Diagram:**

- Diagram of wingwall and culvert drainage detail.
- Diagram of replacement bar lengths table.
- Diagram of reinforced concrete box culvert headwall modifications.

---

**Drawing:**

- Drawing of reinforced concrete box culvert details.
- Drawing of standard drawing RCB-1.
GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPLETED BY ORIGINAL END PIPE METRIC. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES. EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT BOX CULVERT ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

EXISTING CHANNEL

CHANNEL CHANGE

EXCAVATION PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

SECTION B-B

DETAILS FOR NEW CHANNELS

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2
PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 & 2.

FOOTINGS AND TOEWALLS
REMOVE WINGS, APRONS, EACH SPLICE 3 WIRE TIES

REINFORCING DETAILS AND CULVERT DIMENSIONS
SAME AS STANDARD CULVERT DRAWINGS

THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.

IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE 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, THIS CONCRETE APRON SHALL BE REMOVED WITH THE WINGS, THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE SO THE CUB YARD FOR OLD CONCRETE REMOVED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

MATERIALS FOR Securing REINFORCING bars shall meet the requirements of Section 507.02 of the Standard Specifications.

Dowel Bars shall be installed as following: The drilling process shall be performed by the contractor and shall be an INJECTION-TYPE SYSTEM which will INSURE that sufficient material is placed in the hole and fills the hole.

The Contractor shall have the option of using either Method 1 or Method 2. PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1 OR METHOD 2.

NOTE: ANY OF THE STANDARDS IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION, SEE STANDARD DRAWING NUMBERED IN TABLE OF CONTENTS FOR ALL NEW CONSTRUCTION DETAILS.

ARThANS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3
MARKINGS FOR RXR SYMBOLS DETAILS.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND RXR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUALLY ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD APPROACH TO A CROSSING.
CENTRE LANE FOR TWO-LANE APPROACH OPERATION ON THE A THREE LANE ROADWAY SHOULD BE MARKED WITH A CENTERLNE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS, THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RXR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND RXR SYMBOLS DETAILS.

NOTE:
THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND THE LIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT PROBABLY SHOULD NOT BE LESS THAN 50 FEET.
A THREE LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS, THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RXR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND RXR SYMBOLS DETAILS.

DETAIL OF PAVEMENT MARKINGS FOR RAILROAD CROSSING
PAVEMENT MARKING TO BE SYMMETRICAL ABOUT RAILROAD

LANE C.L.

6" YELLOW SKIP LINE
2'

6" YELLOW CONTINUOUS LINE
15'

(LAPPROX.)
2'

VARIABLE

WIDTH MAY VARY ACCORDING TO LANE WIDTH

20'-0" 6'-0"

8'-0" 6'-0" 2'-0" 6'-0"

16" 2'-0"

L. H. WIDTH

8'-0"

6'-0"

25'

25'

50'

10'

ARCANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING FOR RAILROAD CROSSING

STANDARD DRAWING RRS-1
**TYPICAL FOUNDATION DETAILS**

**POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING.**

<table>
<thead>
<tr>
<th>POLE HEIGHT</th>
<th>FOUNDATION DIAMETER</th>
<th>VERTICAL TIE SPACING</th>
<th>HORIZONTAL TIE SPACING</th>
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<tr>
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**Note:**

Communication pole sheets shall be tied to the concrete at one the point shown. The sheath shall be maintained continuous through all splices; please refer to setting procedures in General Specifications.

**ANTENNA POLE**
COMMUNICATION CABLE CROSSING BETWEEN SPAN WIRE POLES

NOTE: COMMUNICATION CABLE SHIELD SHALL BE TIED TO GROUND AT ONLY ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.

COMMUNICATION CABLE CROSSING BETWEEN SPAN WIRE POLES

TYPICAL WIRING DIAGRAM FOR COMMUNICATION CABLE

NOTE: COMMUNICATION CABLE SHIELD SHALL BE TIED TO GROUND AT ONLY ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.

COMMUNICATION CABLE CROSSING BETWEEN SPAN WIRE POLES

TYPICAL WIRING DIAGRAM FOR COMMUNICATION CABLE

NOTE: COMMUNICATION CABLE SHIELD SHALL BE TIED TO GROUND AT ONLY ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.
NOTES:

1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.

2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.

3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.

FRONT VIEW

DRAWER PLAN VIEW

RIGHT SIDE ASSEMBLY

UTILITY DRAWER

CONTROLLER CABINET

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD DRAWING SD-5
CONDUIT ENTRY TO EXISTING POLE BASE

ANCHOR BASE

CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

TYPE "HD" CONCRETE PULL BOX DETAIL

ELEVATION

NOTE: ALL TYPE "HD" CONCRETE PULL BOXES ARE INSTALLED WITH AN AVERAGE OF CONCRETE OF 6" AND 7" IN HEIGHT. ALL MATERIALS SHALL BE REGISTERED IN THE SHIRE OF THE TYPE "HD" CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED PLUMB TO SURFACE AND THE USC-16 SHEET INDICATED BY THE CONCRETE PULL BOX OF CLASS "S" TYPE "HD". TYPICAL MATERIALS SHOWN IN THE SHIRE ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.
NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR IN DETAIL, AHEADS SHOWN SHOULD STILL BE ALIGNED FOR FUTURE INSTALLATION. HEADS SHOWN SHOULD NOT BE ALIGNED WITH TRAFFIC LINES AS SHOWN ON DETAILS.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, EXCEPT AS MENTIONED TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE SPECIFICATIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE DwONSTRUCTION.

6. MINIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET, WITHIN 2' OF TRAFFIC LINES. THE CENTER OF EACH MOUNTING APPEARS TO BE LESS THAN 8' SPACING.

GENERAL NOTES:

1. FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE RULES OTHER THAN AS SHOWN ON PLAN SHEETS OR WORKING DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MOUNTING HEIGHT AND ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, EXCEPT AS MENTIONED TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE SPECIFICATIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE DWONSTRUCTION.

6. MINIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM TRAFFIC LINES SHALL BE IN ACCORDANCE WITH FIGURE 405-5 OR 2055 MUTCD.
NOTES:

- SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR FEET BEHIND CURB OR SHOULDERS.
- SPAN WIRE ASSEMBLIES MUST REQUIRE INTERNAL GROUND SHIELD.

CABLE TIES SHALL BE SUITABLE FOR OUTSIDE USE (BLACK).

THE CONTROLLED POWER SUPPLY GROUND BUS MUST BE CONNECTED TO THE GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, THE CONTROLLER POWER SUPPLY GROUND BUS MUST BE BONDED TO THE GROUND ROD CABLE TIES MUST BE SUITABLE FOR OUTSIDE USE (BLACK).

SPAN WIRE ASSEMBLIES REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

NOTES:

- BEACON CONTROLLER, COMPANY, A SERVICE POINT AND UNDERGROUND/AERIAL POWER TO THE FLASHING BEACON.

THE CITY/COUNTY SHALL BE RESPONSIBLE FOR PROVIDING, THROUGH A LOCAL UTILITY, FAIL PROTECTION.

DATE TIME CLOCK WITH DAYLIGHT SAVINGS TIME PROGRAMMING AND 48 HOUR POWER.

MINOR APPROACH, FLASHING BEACON CONTROLLER AND A SOLID STATE CALANDER

GALVANIZED STEEL CONDUIT, TRAFFIC SIGNAL CABLE, 12" TRAFFIC SIGNAL HEAD.

THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTNING AND R.F.I. SUPPRESSORS, CURRENT EDITION WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND 2006 INTERIM.

FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS.

GENERAL NOTES:


CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS), THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTING AND R.F.I. SUPPRESSORS, GALVANIZED STEEL CONDUIT, TRAFFIC SIGNAL CABLE, 12" TRAFFIC SIGNAL HEAD.

- MATERIALS WIRE PULLING RODS, RIGGING DIRECTIONS, CABLE TIES, JUMPSHOES.

- THE CITY/COUNTY SHALL BE RESPONSIBLE FOR PROVIDING, THROUGH A LOCAL UTILITY COMPANY, A SERVICE POINT AND UNDERGROUND/MASTED POLES TO THE FLASHING BEACON CONTROLLER.

ARKANSAS STATE HIGHWAY COMMISSION

WOOD POLE SPAN WIRE INSTALLATION

STANDARD DRAWING SD-10
**Notes:**

Location of Services:

To meet the requirements for safety and maximize lightning protection, the "Service Point Main" from the utility primary service point must be within six (6') feet of the traffic signal controller cabinet. Electrical service shall be provided by the city/county to a service pole or pedestal with external main breaker/main breaker at a mutually acceptable point within the right-of-way. Service point includes galvanized steel conduit to a pole 8' above ground line. Two circuit main breaker, power isolation assembly, where required, meter loop if required by local utility company, electrical conductors, and weatherhead, where street lighting is included as part of signal installation, street lighting circuit 1C/#8 AWG rated, typically shall be kept separate from the circuit serving traffic signal service wire and wiring from the controller to main breaker is provided by the contractor as a part of this contract. Wire and wiring from main responsibility of the city/county.

Meter Loop:

All components of the service point with the exception of the wire and wiring above the main breaker is furnished and installed by the contractor. Wiring from main breaker including connection to the utility is the responsibility of the city/county. If meter loop is required, meter base and hardware is provided by the city/county and installed by the contractor.

Supplement Ground Rods:

Supplement ground rods are fusion welded to 1/4" A.W.G. solid copper ground wire. Attachment to primary ground may be an approved clamp. Ground rods are located in a box approved by the engineer meeting the same loading requirements as section 704 concrete pull box of the standard specifications, with the exception to dimensions, the concrete pull box may be either round or square approximately six (6') inches minimum inside dimensions and six (6') inches depth. Strongwell PC0608BA06 with PC0608CA00 lid or equal.

Arkansas State Highway Commission

Service Point Installation with Supplement Grounding Array

Standard Drawing SD-12

Issued: 01-17-08

Issued as Standard Drawing

Revision: 11-16-17

Arkansas State Highway Commission

Service Point Installation with Supplement Grounding Array

Standard Drawing SD-12

Issued: 09-12-13

Arkansas State Highway Commission

Service Point Installation with Supplement Grounding Array

Standard Drawing SD-12

Issued: 07-31-08

Arkansas State Highway Commission

Service Point Installation with Supplement Grounding Array

Standard Drawing SD-12

Issued: 01-01-08

Arkansas State Highway Commission

Service Point Installation with Supplement Grounding Array

Standard Drawing SD-12

Issued: 09-30-07
**DETAIL OF**

**SIGN SUPPORT ASSEMBLY**

**METAL BAND OR CLAMP**

1" GALVANIZED STEEL CONDUIT

**TYPICAL INSTALLATION**

- **1" CROSS CONNECTOR WITH CAP**
- **4" YELLOW FLASHING BEACONS**
- **SEALING CAP**

**STAINLESS STEEL BANDS PLACED AT 18" SPACING**

**WIRING DIAGRAM**

- **FLASHING BEACON CONTROLLER**
- **SERVICE PANEL**
- **CIRCUIT BREAKER IN WEATHERPROOF BOX**

**NOTES:**

1. All construction shall conform to the standard specifications for highway construction (current edition), division 700, Traffic Control Facilities.
2. The flashing beacon assembly shall include lighting suppressors, traffic signal cable, and 1" traffic signal heads. The flashing beacon controller and solid-state calendar date and countdown timers shall be considered subsidiary to the item for flashing beacon controller.
3. Any fittings, bands, ground rods, or accessories necessary to mount conduit and flashing beacon controller shall be considered subsidiary to the item for flashing beacon controller.
4. All conduits, tees, clamps, and hardware necessary to mount signal heads shall be considered subsidiary to the item for flashing beacon controller.
5. The city/county shall be responsible for providing, through a local utility company, a service point and power to the flashing beacon controller. This note applies only when used at a school location.

** Arkansan State Highway Commission**

**Flashing Beacon Installation for Hazardous Conditions**

**Standard Drawing SD-13**
NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), DIVISION 700, TRAFFIC CONTROL FACILITIES.

2. THE FLASHING BEACON ASSEMBLY SHALL INCLUDE LIGHTING SUPPRESSORS, TRAFFIC SIGNAL CABLE, THO書きによる TRAFFIC SIGNAL HEADS, THE CONTRACTOR SHALL INSTALL THE FLASHING BEACON ASSEMBLY AHEAD OF THE HIGHWAY CONSTRUCTION DIVISION 700, TRAFFIC SIGNAL CABLE, TWO 12" TRAFFIC SIGNAL HEADS (1 SEC., 1 WAY). THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

3. ANY FITTINGS, BANDS, GROUND ROD OR ACCESSORIES NECESSARY TO MOUNT CONDUIT AND FLASHING BEACON CONTROLLER SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR FLASHING BEACON CONTROLLER.

4. ALL COUPLINGS, TEES, CLAMPS AND HARDWARE NECESSARY TO MOUNT SIGNAL HEADS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR TRAFIC SIGNAL HEAD(S). THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

5. THE FLASHING BEACON CONTROLLER AND SOLAR PANEL SHOULD BE LOCATED WITHIN THE HIGHWAY RIGHT-OF-WAY BUT AS FAR AWAY FROM THE VEHICLE TRAVEL PATH AS POSSIBLE TO AVOID VEHICLE IMPACTS.

6. TRAVEL WAY AS POSSIBLE TO AVOID VEHICLE IMPACTS.

7. WITHIN THE HIGHWAY RIGHT-OF-WAY BUT AS FAR AWAY FROM THE VEHICLE TRAVEL PATH AS POSSIBLE TO AVOID VEHICLE IMPACTS.

8. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

9. HEADS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM FOR TRAFFIC SIGNAL HEAD(S). THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

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11. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

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42. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

43. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

44. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.

45. THE CONTRACTOR SHALL REMOVE SIGNS AND RE-INSTALL THEM AFTER FLASHING BEACONS ARE INSTALLED.
Signals shall be mounted 17' to 18' from high point of roadway.

Each signal head shall have a separate 5 conductor signal cable.

The sign mounting bracket shall be subsidiary to the pay item - traffic signal.

Mounting bracket shall be subsidiary to the pay item - traffic signal.

NOTES:
1. The signal mounting bracket shall be of the type shown.
2. The signal mounting bracket shall be of the type shown.
3. The signal mounting bracket shall be of the type shown.
4. The signal mounting bracket shall be of the type shown.

Arkansas State Highway Commission
Standard Drawing SD-16

2" I.D. N.M.C. Conduit

1.5" I.D. G.S. Weather Head

Strain Relief w/ 1" Dia. Eye

Install Pull Box if greater than 20'.

Wood Pole

4-14-03
6-21-06
7-14-95
4-17-08
### General Notes

1. In accordance with the procedures, the super-elevation shall be
   applied to one or both lanes. For two lanes, the table values shall be
   applied to each lane. The maximum super-elevation shall be
   obtained from the super-elevation formula.

2. The super-elevation values shown on the tables are based on
   the minimum and maximum values of super-elevation at the point of
   control. The super-elevation values shown on the cross sections are
   based on the mean values of super-elevation at the point of control.

3. Lengths for Ls may be rounded in multiples of 25 ft. or 50 ft.

4. Minimum Ls values are based on the mean values of super-
   elevation at the point of control. Desirable values shall
   be used for ramps and other areas where the super-elevation
   is not uniform.

5. Where two or more lanes are involved, the super-elevation
   shall be applied to all lanes.

### Super-elevation Formula

- For one-way traffic: $S = L \cdot (d - C)$
- For two-way traffic: $S = L \cdot (d + C)$

Where:
- $S$ = Super-elevation
- $L$ = Length of super-elevation transition (ft.)
- $d$ = Width of pavement
- $C$ = Normal crown (ft.)
- $d\epsilon$ = Maximum rate of super-elevation (ft. per ft.)
- $L\epsilon$ = Length of super-elevation transition (ft.)
- $e$ = Maximum rate of super-elevation (ft. per ft.)

### Diagram

[Diagram of one-way traffic super-elevation with profiles and control points]

### Tables

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### Super-elevation Table for One-Way Traffic

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### SUPERELEVATION TABLE FOR TWO-WAY TRAFFIC

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<td>330</td>
<td>400</td>
<td>480</td>
<td>520</td>
</tr>
<tr>
<td>0.045</td>
<td>275</td>
<td>300</td>
<td>360</td>
<td>440</td>
<td>520</td>
<td>560</td>
</tr>
<tr>
<td>0.050</td>
<td>300</td>
<td>330</td>
<td>400</td>
<td>480</td>
<td>580</td>
<td>620</td>
</tr>
</tbody>
</table>

### ABBREVIATIONS
- NC: Normal Crown
- RC: Reverse Crown
- Ls: Length of Superelevation Transition (FT.)
- e: Rate of Superelevation (FT. per FT.)
- d: Width of Pavement
- C: Normal Crown (FT.)
- L: Distance from beginning of superelevation transition to any point (FT.)
- e: Rate of Superelevation (FT. per FT.)

### GENERAL NOTES
1. On a pavement with two-way traffic, the superelevation shall be revolved around the center line, unless otherwise noted on the plans or standard drawing SE-2.
2. Super elevation values shown on the cross sections are values to be used or in superimposed from the point of control.
3. Minimum values are multiples of 25 ft., or 50 ft.
4. Payments noted less than 2 lanes shall have additional transition length as follows:
   - 3 Lane Unдержанed: 500 ft.
   - 4 Lane Unдержанed: 1000 ft.
   - 5 Lane Unдержанed: 1500 ft.

Notes: Maintain normal crown on bends until superelevation exceeds 2C.

### SUPERELEVATION FOR TWO-WAY TRAFFIC

- **Standard Method When Super elevation Revolves Around Inner Subgrade Point or Inner Pavement Edge**
- **Standard Method When Super elevation Revolves Around Center Line**

---

**ARKANSAS STATE HIGHWAY COMMISSION**

**TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC**

**STANDARD DRAWING SE-2**
NOTE:
ALL ADDITIONAL MOUNTING HARDWARE (BOLTS, NUTS, CHANNELS, BAR STRAPS) REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SUPPORT.

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE \( \frac{1}{4} \)" UNLESS OTHERWISE SHOWN.

NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE

DIST. TO BE PROVIDED BY SIGN AS REQUIRED

HOLE SPACING

4" (SUBSIDIARY)

怖OUTH OF LOWEST SIGN

LOCK WASHERS

\( \frac{3}{8} " \)X1" HEX HEAD BOLT AND NUT (A307)

FLAT WASHER

NYLON WASHER

I-BEAM (TYP.)

.5" TYP. BETWEEN SIGNS

SIGN POST

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)

YIELD SIGN PARKING SIGN ROUTE MARKER SET

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)

NOTE:
ALL BOLT HOLES SHALL BE \( \frac{1}{4} \)" UNLESS OTHERWISE SHOWN.

NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE

DIST. TO BE PROVIDED BY SIGN AS REQUIRED

HOLE SPACING

4" (SUBSIDIARY)

BOTTOM OF LOWEST SIGN

LOCK WASHERS

\( \frac{3}{8} " \)X1" HEX HEAD BOLT AND NUT (A307)

FLAT WASHER

NYLON WASHER

I-BEAM (TYP.)

.5" TYP. BETWEEN SIGNS

SIGN POST

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)

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4" (SUBSIDIARY)

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YIELD SIGN PARKING SIGN ROUTE MARKER SET

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)

SUBSIDIARY 3"X4.1 CHANNEL (TYPICAL)
DETAILS OF GUIDE SIGN PANELS

SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL".

SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN.

"X1" BAR POSITION AS REQ. BY SIGN ASSEM.

ONE PIECE EXTRUDED SIGN PANELS

ONE PIECE EXTRUDED SIGN PANEL

SLOTTED HOLES (7/16" X ‡") DRILLED OR PUNCHED @ 12" O.C. BEGINNING 6" FROM ONE END.

SIGN POST

POST CLIPS

ALUMINUM PANEL BOLT AND HEX NUT (3/8"-16X3/4"

ALUMINUM POST CLIP BOLT AND FLAT WASHER

ALUMINUM STOP NUT

MOUNTING HARDWARE

POST CLIP BOLT

POST CLIPS

SIGN PANEL

SIGN POST

EXIT PANEL DETAILS

EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BACKGROUND. THE BACK GROUND COLOR WILL BE AS USED SPECIFIED. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED TO AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBDIVIDED TO THE EXIT NUMBER PANEL.

EXIT PANEL DETAILS

EXIT WITH 1 DIGIT

EXIT WITH 2 DIGITS

EXIT WITH 3 DIGITS

EXIT WITH 1 DIGIT PLUS "A" OR "B"

EXIT WITH 2 DIGITS PLUS "A" OR "B"

EXIT WITH 3 DIGITS PLUS "A" OR "B"

EXIT WITH 1 DIGIT PLUS "A" & "B"

EXIT WITH 2 DIGITS PLUS "A" & "B"

EXIT WITH 3 DIGITS PLUS "A" & "B"

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BACKGROUND. THE BACK GROUND COLOR WILL BE AS USED SPECIFIED. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED TO AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBDIVIDED TO THE EXIT NUMBER PANEL.

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NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BACKGROUND. THE BACK GROUND COLOR WILL BE AS USED SPECIFIED. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED TO AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBDIVIDED TO THE EXIT NUMBER PANEL.
The contractor shall drill and pop-rivet legend, shields, arrows, or other copy as shown.

Legends on guide signs on the main lanes shall be demountable legend. Legends on guide signs on cross roads and ramps shall be direct applied. The demountable and direct applied legends shall be type IX sheeting.

The background on all guide signs and standard signs shall be constructed using type III sheeting.

Type IX sheeting for border, legend, shields, arrows, or other copy shall be oriented vertically as per manufacturer’s datum marks, orientation marks, or other recommendations.

No other method of applying characters is allowed.
MIN. 2" X 2" X 12GA.

BY THE ENGINEER.
MAY BE SUBSTITUTED AS APPROVED
2" X 2" SQUARE TUBE SIGN POSTS

TOP PLATE DIMENSIONS AND SUPPORT
SIGN SUPPORTS THAT HAVE THE SAME
OTHER MASH COMPLIANT BREAKAWAY

9-12-13
ISSUED

BREAKAWAY SIGN SUPPORTS
DETAIL OF OMNI-DIRECTIONAL

ARKANSAS STATE HIGHWAY COMMISSION
DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
STANDARD DRAWING SHS-7
### Typical Exit Ramp Delineator Placement

**Notes:**
1. Wrong-way signs may be mounted on the rear side of existing sign supports where feasible.

**Wrong-Way Sign Assembly Details**
1. Wrong-way signs may be offset when barrier walls are present on the outside shoulder.

**Typical Exit Ramp Delineator Placement**
- The delineators shall be placed at a 4' height measured from the pavement edge to the bottom of the delineator. Delineator posts shall be placed 2 to 8 ft. outside the outside edge of the shoulder. Delineator spacing in curves shall be reduced to 10 ft.
- The delineators shall be placed as close to the ramp terminal as possible.

**Permanent Barrier Wall Delineator Detail**
- Type 2 delineators may be mounted on the back side of existing sign supports.

**Delineator Details**
- Type 2 delineators shall be made of a thermoplastic material.
- The delineators shall be placed at a 4' height measured from the pavement edge to the bottom of the delineator.
- The delineators shall be placed as close to the ramp terminal as possible.

**Wrong-Way Sign Details**
- The wrong-way signs shall be placed as close to the ramp terminal as possible.
- The wrong-way signs shall be placed 2 to 8 ft. outside the outside edge of the shoulder.

**Legend**
- △ Delineator

**Typical Exit Ramp Sign and Delineator Details**
- Standard Drawing SHS-8

**Notes:**
- When uniform spacing is interrupted by signs, a minimum of 6 ft. of delineator posts may be placed on both sides of the warning line.
- Delineator spacing in curves shall be reduced to 30 ft.
- Delineator posts shall be placed 2 to 8 ft. outside the outside edge of the shoulder.
- Delineator spacing in curves shall be reduced to 30 ft.
- Delineator posts shall be placed 2 to 8 ft. outside the outside edge of the shoulder.

**Typical Exit Ramp Sign**
- Standard Drawing SHS-8
REVISED SIGN DESIGNATIONS
ROAD WORK
REVISED DETAIL OF RAISED PAVEMENT MARKERS
ADDED (AFAD)
6-8-95
DIRECTED BY THE ENGINEER.
AT OTHER LOCATIONS AS
THROUGHOUT DETOUR AND
SPACING ON CENTERLINE
MARKERS (TYPE II) 40'
(2)
FOR DIRECTING DETOURED TRAFFIC.
REGULATORY TRAFFIC CONTROL DEVICES TO BE
(A)
ROADWAY.
WITH HARD SURFACED
TEMPORARY STRIPING
BACK TO BACK
PLACED
W1-8
TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY
W1-8
NOTES
SEE
OR
(D)
W 1-3
OM-3L
4
EDGE LINE
1000'
END
OM-3R
CLOSED
ROAD
500'
MPH
R11-2
OR
W 1-3
1000 FT
DETOUR
GENERAL NOTES:
1. FLAGGER STATIONS AT NIGHT AS NEEDED.
TO A POINT WHERE THEY ARE VISIBLE TO
(AFAD) OPTIONAL. REFER TO MUTCD.
4.7"
REFLECTOR
PRISMATIC
2.3"
KEY:
POSITIVE BARRIER
TIME OF DAY
ELECTRIFICATED SIGN
VARIABLE MESSAGE
PLACED ON ROADWAY
TYPICAL ADVANCE WARNING SIGN PLACEMENT
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE
ROADWORK IS CLOSED AND A BYPASS SECTOR IS PROVIDED.
TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE THE
ROADWAY IS CLOSED.
TYPICAL APPLICATION - ROADWAY CLOSED BEFORE DETOUR POINT.
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH NO LANE CLOSED.
TYPICAL APPLICATION - 4-LANE DIVERSION ROADWAY.
NOTES
SAFETY ZONES (FOR HIGHWAY CONSTRUCTION)
NOTES
GENERAL NOTES:
W 1-4
SPEED LIMIT
L=     FOR SPEEDS OF 40MPH OR LESS.
WS
60
L=     FOR SPEEDS OF 45MPH OR MORE.
W= WIDTH OF OFFSET.
NOTE:
L=SXW FOR SPEEDS OF 50MPH OR MORE.
NOTE:
TYPICAL ADVANCE WARNING SIGN PLACEMENT
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE
ROADWORK IS CLOSED AND A BYPASS SECTOR IS PROVIDED.
TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE THE
ROADWAY IS CLOSED.
TYPICAL APPLICATION - ROADWAY CLOSED BEFORE DETOUR POINT.
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.
TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH NO LANE CLOSED.
TYPICAL APPLICATION - 4-LANE DIVERSION ROADWAY.
NOTES
GENERAL NOTES:
Typical application - daily maintenance operations of short duration on a single divided roadway where half of the roadway is closed.

(B) Typical application - 2-lane roadway where median lane is closed.

1. A speed limit reduction may be implemented 24 hours a day, when approved by the roadway design division.
2. When the existing speed limit is 55 mph and the signs require a speed limit of 45 mph, the signs and channelizing devices shall be placed in accordance with the MUTCD. The signs shall be installed at a maximum of 1 mile intervals, at the end of the work zone, and shall be approximately equal in feet to the speed limit.
3. The maximum spacing between channelizing devices in a taper shall be of sufficient length to extend across the entire roadway.
4. Additional W20-1 (1 MILE) signs are not required in advance of lane closures.

Notes

A review by the Roadway Design Division of Section 603.02 of the Standard Specifications is recommended when the plans require a speed limit increase.

5. Smaller spacing between channelizing devices to a lesser degree shall be approximately equal to the speed limit.
6. For all road closures, the Type III barricades with red material shall be of sufficient length to extend across the entire roadway.

For all road closures, the Type III barricades shall be placed to stop traffic in the direction of travel and to extend across the entire roadway.

Additional W20-1 (1 MILE) signs are not required in advance of lane closures.

Notes

(1) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

(C) Typical application - closure of multiple lanes of a multilane highway.

[D] Typical application - construction operations of intermediate to long term duration on a multi-lane highway.
GENERAL NOTES

3. Concerning drain slots, filmed /4 view D'-D'

DELETED GENERAL NOTE

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4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (See BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)

**Offset Distance for Two Way Traffic Only**

**Offset Distance Table**

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance (ft)</th>
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<tr>
<td>10</td>
<td>10</td>
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<tr>
<td>&gt; 15</td>
<td>15</td>
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</tbody>
</table>

If offset distance is not attainable then see "Barrier Placement With Attenuator" detail shown below.

**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."

**Special End Unit**

Edge of Travel Lane

Temporary Impact Attenuation Barrier

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

**Offset Distance For Two Way Traffic Only**
CLEARING AND GRUBBING

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

EXCAVATION

EXISTING GROUND

GENERAL NOTE
- All cut slopes shall be constructed, prepared, seeded and mulched as the work progresses; slopes shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically.
- All embankment slopes shall be prepared, prepared, seeded and mulched as the work progresses; slopes shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically.

EXISTING GROUND

PHASE 1 EXCAVATION

PHASE 2 EXCAVATION

PHASE 3 EXCAVATION

GENERAL NOTE
- Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.

EMBANKMENT

EXISTING GROUND

PHASE 1 EMBANKMENT

PHASE 2 EMBANKMENT

PHASE 3 EMBANKMENT

GENERAL NOTE
- Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.

Notes:
- Numbers of phases will vary; three phases shown for illustration.
- Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.

EMBANKMENT

EXISTING GROUND

PHASE 1 EMBANKMENT

PHASE 2 EMBANKMENT

PHASE 3 EMBANKMENT

GENERAL NOTE
- Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.

CONSTRUCTION SEQUENCE
1. Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.
2. Construct diversion ditches, check valves, silt fences, etc.
3. Place permanent or temporary seeding.
4. Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.
5. Provide diversion ditches and slope drains if embankment construction is to be temporarily abandoned for a period of greater than 21 days.
6. Place final phase of embankment with permanent or temporary seeding.

EMBANKMENT

EXISTING GROUND

PHASE 1 EMBANKMENT

PHASE 2 EMBANKMENT

PHASE 3 EMBANKMENT

GENERAL NOTE
- Tier off embankment slopes and slope drains and maintain until entire slope is stabilized.
TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS IN SUMP LOCATIONS.

SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS FOR TRIANGULAR SILT DIKE INSTALLATION. WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS. POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT DIVERSION DITCH AND/OR DITCH LINER FOR TRIANGULAR SILT DIKE INSTALLATION.

CONTINUOUS BARRIER FOR TRIANGULAR SILT DIKE INSTALLATION. TEMPORARY DITCH LINER FOR TRIANGULAR SILT DIKE INSTALLATION.

SECTION A-A

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHOULD BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE CENTER OF THE ROADWAY OR OVER DRAINAGE DITCHES AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 3' TO 6' FROM THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM. THE DIKES SHALL BE PINNED UNDERNEATH THE ROADWAY DITCH OR DRAINAGE DITCH. STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.

3. THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OF FLOW. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE Silt Accumulation, the contractor shall replace them as directed by the engineer. The contractor shall remove any debris and relocate it as directed by the engineer. The contractor shall inspect all dike points every 3 months. The contractor shall replace any damaged dike points as directed by the engineer.

4. THE CONTRACTOR SHALL KEEP THE UNITS IN PLACE AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

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ENTRANCE RAMP

NOTES:

- Joint spacing on the main lanes shall be adjusted as necessary to conform to these joint layouts. The main lane joint spacing may be reduced to 12' minimum.
- Joint layouts shall be included in the price bid for the above items.
- Expansion joints shall be measured and paid for as p.c.c.
- The joint support may be constructed with Class "A", "S", or paving concrete. Payment for the joint support shall be for the contract unit price bid for the class of concrete used. All other work and materials required for the construction of the joint support shall be included in the price bid for the joint support.

DETAIL "A"

CONTRACTION JOINTS WITH DOWELS @ 15' CENTERS

DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE:

The expansion joints shall be measured and paid for as p.c.c. The joint support may be constructed with Class "A", "S", or paving concrete. Payment for the joint support shall be for the contract unit price bid for the class of concrete used. All other work and materials required for the construction of the joint support shall be included in the price bid for the joint support.

EXIT RAMP

NOTE:

Joint spacing on the main lanes shall be adjusted as necessary to conform to these joint layouts. The main lane joint spacing may be reduced to 12' minimum.

DETAIL 'A'

CONTRACTION JOINTS WITH DOWELS @ 15' CENTERS

DETAIL OF EXPANSION JOINT & JOINT SUPPORT

NOTE:

The expansion joints shall be measured and paid for as p.c.c. The joint support may be constructed with Class "A", "S", or paving concrete. Payment for the joint support shall be for the contract unit price bid for the class of concrete used. All other work and materials required for the construction of the joint support shall be included in the price bid for the joint support.

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT

FOR

ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A
GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATIONS WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATIONS. 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 SHOWN WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

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

Arkansas State Highway Commission
Wire Fence Water Gaps
Standard Drawing WF-2
GENERAL NOTES

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED.

THEME SIDE POSTS CANNOT BE ALLелD ON GROUNDED BUSES MUST
LIE ON THE RIGHT SIDE OF THE FENCE INSTALLATIONS WITH WIRE SPECIFIED.
ON STANDARD DRAWING WF-3, COMMON LINES, APPROVED ALTERNATIVES
ARE ACCEPTABLE. ALLOWANCE IN LENGTH OF FENCE OF WOODEN
POSTS SHALL BE 1'-0".
WHEELCHAIR RAMPS

NEW CONSTRUCTION

ALTERATIONS

GENERAL NOTES:

Type of Wheelchair Ramps to be provided shall be determined by the engineer after consideration of the following:

1. The area to be accessible.
2. The type of construction, existing or new.
3. The economic and practical requirements.
4. The need for water drainage and urban planning considerations.

DETACHABLE WARNING DEVICES:

Type of Wheelchair Ramps to be provided shall be determined by the engineer after consideration of the following:

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1. The area to be accessible.
2. The type of construction, existing or new.
3. The economic and practical requirements.
4. The need for water drainage and urban planning considerations.
GENERAL NOTES:

IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURVED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.

THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.

THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.

ALL PAYMENT AREAS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE SURFACE TEXTURE OF THE PAVEMENT SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.

THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".

ENGINEER, MAY BE MADE TO ADJUST TO LOCAL CONDITIONS.

WIDTH OR 36", WHICHEVER IS GREATER.

THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE EXISTING WALK SECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.

IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTER-SECTION WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.

CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB AND ALTERATIONS.

TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.

CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE EXISTING WALK WIDTH OF 36" WHEELCHAIR RAMP TO BE CONSTRUCTED.

FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX.

PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY).

THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX.

IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY).

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NOTE: IN ALTERATIONS THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.) PLUS ACCESSIBILITY AND THE SUFFICIENT WIDTH OF THE RAMPS.

THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.).

A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY, SIGNALIZATION PROJECTS, ETC. THAT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

NOTE: ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

THE FULL WIDTH OF THE CURB RAMP OR FLUSH PLATE TACTILE PANELS (ADA DETECTABLE WARNING)

THE DETECTABLE WARNING DEVICE SHALL BE LOCATED 6 TO 8 INCHES FROM THE FACE OF THE CURB.

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