| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 1 | 85 |
| | | HWYS. 12/59 SIGNAL & INTERS. IMPVTS. (GENTRY) (S) | | | | |

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

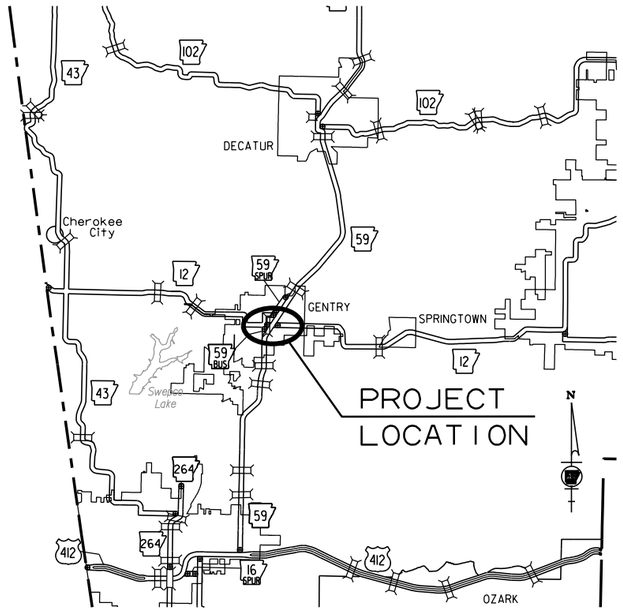
# HWYS. 12/59 SIGNAL & INTERS. IMPVTS. (GENTRY) (S)

BENTON COUNTY

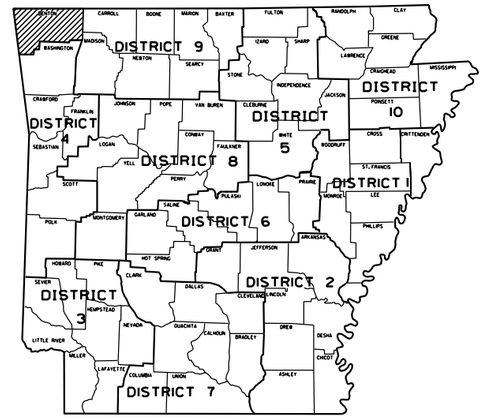
ROUTE 12 SECTIONS 1 & 2
ROUTE 59 SECTION 1

## JOB 090651

FED. AID PROJ. STPR-0004(91)



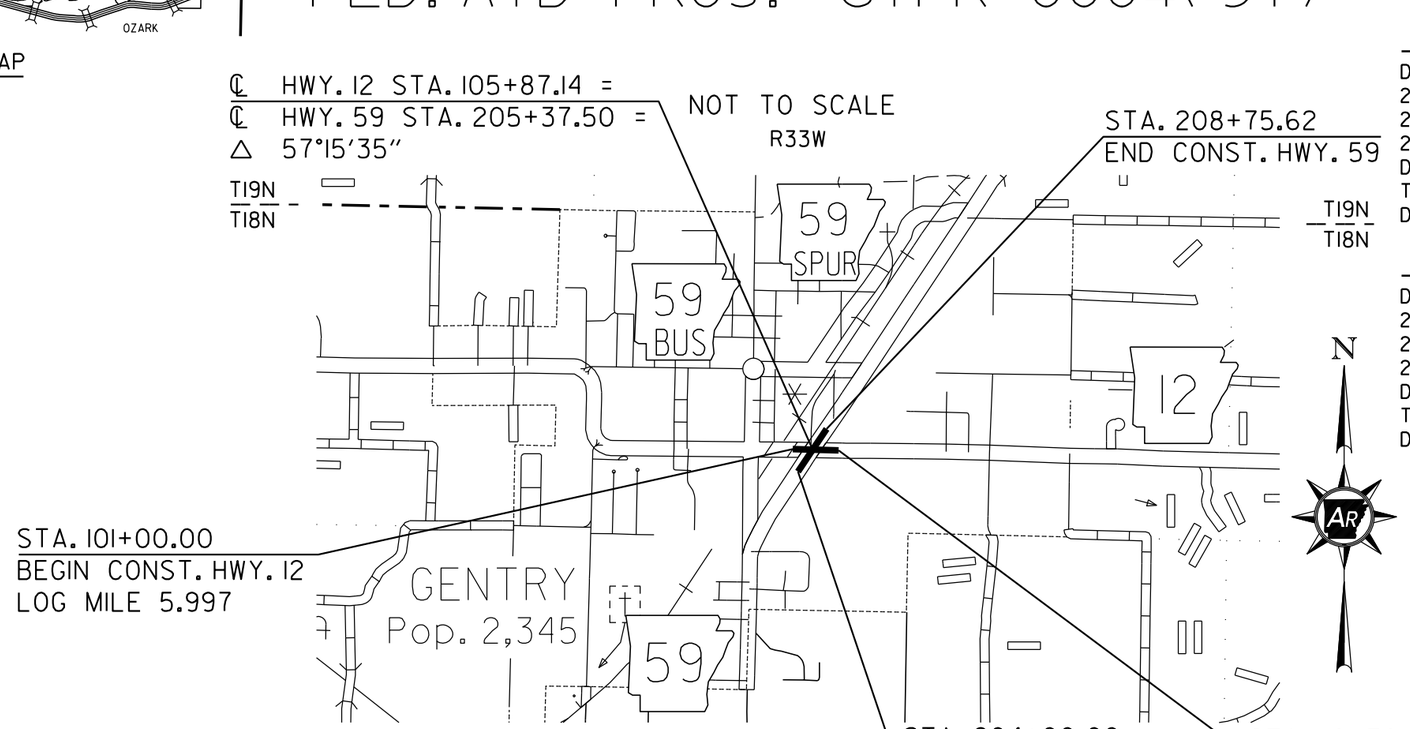

VICINITY MAP




ARK. HWY. DIST. NO. 9

NOT TO SCALE

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50 =
△ 57°15'35"




STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

STA. 208+75.62
END CONST. HWY. 59

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

STA. 110+70.00
END CONST. HWY. 12

• DESIGN TRAFFIC DATA (HWY. 12) •

| | |
|---|---|
| DESIGN YEAR | 2045 |
| 2025 ADT | 7,000 |
| 2045 ADT | 11,000 |
| 2045 DHV | 1210 |
| DIRECTIONAL DISTRIBUTION | 0.5 |
| TRUCKS | 5% |
| DESIGN SPEED | 35 MPH |

• DESIGN TRAFFIC DATA (HWY. 59) •

| | |
|---|---|
| DESIGN YEAR | 2045 |
| 2025 ADT | 17,000 |
| 2045 ADT | 27,000 |
| 2045 DHV | 2970 |
| DIRECTIONAL DISTRIBUTION | 0.5 |
| TRUCKS | 11% |
| DESIGN SPEED | 40 MPH |

| | | | | | |
|---|---|---|---|---|---|
| GROSS LENGTH OF PROJECT | 1445.62 | FEET | OR | 0.274 | MILES |
| NET LENGTH OF BRIDGES | 0.00 | FEET | OR | 0.000 | MILES |
| NET LENGTH OF ROADWAY | 1445.62 | FEET | OR | 0.274 | MILES |
| NET LENGTH OF PROJECT | 1445.62 | FEET | OR | 0.274 | MILES |

| BEGINNING OF PROJECT | MID POINT OF PROJECT | END OF PROJECT |
|---|---|---|
| LATITUDE = N 36°15'50"<br>LONGITUDE = W 94°29'00" | LATITUDE = N 36°15'50"<br>LONGITUDE = W 94°28'54" | LATITUDE = N 36°15'50"<br>LONGITUDE = W 94°28'48" |

CERTIFICATE OF AUTHORIZATION
BURNS & McDONNELL ENGINEERING COMPANY, INC.
No.17
ARKANSAS-ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13832
RYAN W. CASTOR
08/20/2025

8/20/2025
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 2 | 85 |
| | | INDEX OF SHEETS AND STANDARD DRAWINGS | | | | |

STATE OF ARKANSAS
10634
E TYLER MONCRIEF
08-13-2025

## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRWG.NO. |
|---|---|---|---|


1 _____ TITLE SHEET
2 _____ INDEX OF SHEETS AND STANDARD DRAWINGS
3 _____ GOVERNING SPECIFICATIONS AND GENERAL NOTES
4 - 6 _____ TYPICAL SECTIONS OF IMPROVEMENT
7 - 17 _____ SPECIAL DETAILS
18 - 24 _____ TEMPORARY EROSION CONTROL DETAILS
25 - 33 _____ MAINTENANCE OF TRAFFIC DETAILS
34 _____ PERMANENT PAVEMENT MARKING DETAILS
35 - 38 _____ QUANTITIES
39 _____ SUMMARY OF QUANTITIES AND REVISIONS
40 - 41 _____ SURVEY CONTROL DETAILS
42 - 44 _____ PLAN AND PROFILE SHEETS
45 _____ DRIVEWAY PROFILES
46 _____ SUMMARY OF TRAFFIC SIGNAL QUANTITIES
47 _____ TRAFFIC SIGNAL NOTES
48 _____ TRAFFIC SIGNAL STREET NAME SIGNS
49 _____ GROUNDING ARRAY DETAIL
50 _____ PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL
51 _____ TRAFFIC SIGNAL QUANTITIES
52 - 64 _____ SIGNALIZATION PLAN SHEETS
65 - 85 _____ CROSS SECTIONS


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

## BRIDGE STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|---|---|---|
| 55035_____ | STANDARD DETAILS FOR TYPE 'PT' APPROACH GUTTERS (BRIDGES WITH CONCRETE PARAPET RAILING) | 11-07-19 |

## ROADWAY STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|---|---|---|
| CDP-1_____ | CONCRETE DITCH PAVING | 12-08-16 |
| CG-1_____ | CURBING DETAILS | 11-29-07 |
| DR-1_____ | DETAILS OF DRIVEWAYS & ISLANDS | 05-22-25 |
| DR-2_____ | DETAILS OF DRIVEWAYS & STREET TURNOUTS | 05-19-22 |
| FES-1_____ | FLARED END SECTION | 10-18-96 |
| FES-2_____ | FLARED END SECTION | 10-18-96 |
| FPC-9_____ | DETAILS OF DROP INLETS & JUNCTION BOXES | 11-16-01 |
| FPC-9E____ | DETAILS OF DROP INLETS (TYPE C) | 08-22-02 |
| FPC-9M____ | DETAILS OF DROP INLET (TYPE MO) | 08-22-02 |
| FPC-9S____ | DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST) | 07-26-12 |
| GR-6_____ | GUARDRAIL DETAILS | 05-19-22 |
| GR-8_____ | GUARDRAIL DETAILS | 11-07-19 |
| GR-9_____ | GUARDRAIL DETAILS | 11-07-19 |
| GR-10_____ | GUARDRAIL DETAILS | 11-07-19 |
| GR-11_____ | GUARDRAIL DETAILS | 11-07-19 |
| GR-12_____ | GUARDRAIL DETAILS | 05-14-20 |
| PBC-1_____ | PRECAST CONCRETE BOX CULVERTS | 01-28-15 |
| PCC-1_____ | CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING | 02-27-14 |
| PCM-1_____ | METAL PIPE CULVERT FILL HEIGHTS & BEDDING | 02-27-14 |
| PCP-1_____ | PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | 02-27-14 |
| PCP-2_____ | PLASTIC PIPE CULVERT (PVC F949) | 02-27-14 |
| PCP-3_____ | PLASTIC PIPE CULVERT (POLYPROPYLENE) | 02-27-20 |
| PM-1_____ | PAVEMENT MARKING DETAILS | 02-27-20 |
| RCB-1_____ | REINFORCED CONCRETE BOX CULVERT DETAILS | 07-26-12 |
| RCB-2_____ | EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS | 11-20-03 |
| SD-5_____ | CONTROLLER CABINET UTILITY DRAWER | 09-12-13 |
| SD-6_____ | HEAVY DUTY PULL BOX | 02-13-24 |
| SD-7_____ | SPAN WIRE ASSEMBLY WOOD POLE | 02-13-24 |
| SD-8_____ | SIGNAL HEAD PLACEMENT | 12-08-16 |
| SD-9_____ | SERVICE POINT | 11-07-19 |
| SD-11_____ | STEEL POLE WITH MAST ARM | 02-13-24 |
| SI-1_____ | DETAILS OF SPECIAL ITEMS | 10-25-18 |
| SI-3_____ | CONCRETE WALK (TYPE SPECIAL) | 11-05-20 |
| TC-1_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-14-25 |
| TC-2_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-14-25 |
| TC-3_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-14-25 |
| TC-4_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER | 11-07-19 |
| TC-5_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER | 11-07-19 |
| TC-6_____ | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-14-25 |
| TEC-1_____ | TEMPORARY EROSION CONTROL DEVICES | 11-16-17 |
| TEC-3_____ | TEMPORARY EROSION CONTROL DEVICES | 11-03-94 |
| WR-1_____ | WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS | 11-10-05 |

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 3 | 85 |
| | | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | | | |

STATE OF ARKANSAS
10034
E. TYLER MONCRIEF
10-01-2025

## GOVERNING SPECIFICATIONS

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

| NUMBER | TITLE |
|---|---|
| ERRATA_____ | ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS |
| FHWA-1273__ | REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS |
| FHWA-1273__ | SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140) |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES |
| FHWA-1273__ | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS |
| FHWA-1273__ | SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS |
| FHWA-1273__ | SUPPLEMENT - WAGE RATE DETERMINATION |
| 100-3_____ | CONTRACTOR'S LICENSE |
| 100-4_____ | DEPARTMENT NAME CHANGE |
| 102-2_____ | ISSUANCE OF PROPOSALS |
| 102-3_____ | PREQUALIFICATION OF BIDDERS |
| 103-2_____ | CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS |
| 105-4_____ | MAINTENANCE DURING CONSTRUCTION |
| 107-2_____ | RESTRAINING CONDITIONS |
| 108-1_____ | LIQUIDATED DAMAGES |
| 108-2_____ | WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER |
| 110-1_____ | PROTECTION OF WATER QUALITY AND WETLANDS |
| 210-1_____ | UNCLASSIFIED EXCAVATION |
| 303-1_____ | AGGREGATE BASE COURSE |
| 306-1_____ | QUALITY CONTROL AND ACCEPTANCE |
| 307-2_____ | CEMENT TREATED BASE COURSE |
| 308-2_____ | CEMENT STABILIZED CRUSHED STONE BASE COURSE |
| 400-1_____ | TACK COATS |
| 400-4_____ | DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES |
| 400-5_____ | PERCENT AIR VOIDS FOR ACHM MIX DESIGNS |
| 400-6_____ | LIQUID ANTI-STRIP ADDITIVE |
| 400-7_____ | TRACKLESS TACK |
| 404-3_____ | DESIGN OF ASPHALT MIXTURES |
| 409-2_____ | ASPHALT LABORATORY FACILITY |
| 410-1_____ | CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES |
| 410-2_____ | DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS |
| 410-4_____ | EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL |
| 416-1_____ | RECYCLED ASPHALT PAVEMENT |
| 501-3_____ | PORTLAND CEMENT CONCRETE PAVEMENT |
| 502-1_____ | WELDED WIRE REINFORCEMENT |
| 505-1_____ | PORTLAND CEMENT CONCRETE DRIVEWAY |
| 600-2_____ | INCIDENTAL CONSTRUCTION |
| 603-1_____ | LANE CLOSURE NOTIFICATION |
| 604-1_____ | RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES |
| 604-3_____ | TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH) |
| 605-1_____ | CONCRETE DITCH PAVING |
| 606-1_____ | PIPE CULVERTS FOR SIDE DRAINS |
| 617-1_____ | GUARDRAIL TERMINAL (TYPE 2) |
| 617-2_____ | GUARDRAIL DELINEATORS |
| 620-1_____ | MULCH COVER |
| 621-1_____ | FILTER SOCKS |
| 632-1_____ | CONCRETE ISLAND |
| 633-1_____ | CONCRETE WALKS, CONCRETE STEPS, AND HAND RAILING |
| 634-1_____ | CURBING |
| 700-2_____ | TRAFFIC CONTROL FACILITIES |
| 800-1_____ | STRUCTURES |
| 802-5_____ | CONCRETE FOR STRUCTURES |
| 804-2_____ | REINFORCING STEEL FOR STRUCTURES |

## GOVERNING SPECIFICATIONS (CONT'D)

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

| NUMBER | TITLE |
|---|---|
| JOB 090651__ | ACCESSIBLE PEDESTRIAN SIGNAL (APS) |
| JOB 090651__ | ACTUATED CONTROLLER |
| JOB 090651__ | ARCHITECTURAL FINISH (CAST-IN-PLACE RETAINING WALLS) |
| JOB 090651__ | ASPHALT MIXTURES WITH PG 76-22 BINDER |
| JOB 090651__ | ASSESSNENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC |
| JOB 090651__ | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 090651__ | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB 090651__ | BUY AMERICA - CONSTRUCTION MATERIALS |
| JOB 090651__ | CABINET DRAWER ASSEMBLY |
| JOB 090651__ | CARGO PREFERENCE ACT REQUIREMENTS |
| JOB 090651__ | COLD MILLING – COUNTY PROPERTY |
| JOB 090651__ | DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES |
| JOB 090651__ | DESIGN OF ASPHALT MIXTURES - AGGREGATES |
| JOB 090651__ | DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES |
| JOB 090651__ | ELECTRICAL CONDUCTORS FOR LUMINAIRES (TRAFFIC SIGNAL) |
| JOB 090651__ | ELECTRICAL CONDUCTORS-IN-CONDUIT (TRAFFIC SIGNAL) |
| JOB 090651__ | FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT |
| JOB 090651__ | HYBRID VIDEO/RADAR DETECTION SYSTEM |
| JOB 090651__ | LED COUNTDOWN PEDESTRIAN SIGNAL HEAD |
| JOB 090651__ | LED LUMINAIRE ASSEMBLY (BUG U0 TYPE) |
| JOB 090651__ | LED TRAFFIC SIGNAL HEAD |
| JOB 090651__ | LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS |
| JOB 090651__ | LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES |
| JOB 090651__ | MAINTENANCE OF TRAFFIC |
| JOB 090651__ | MANDATORY ELECTRONIC CONTRACT |
| JOB 090651__ | MANDATORY ELECTRONIC DOCUMENT SUBMITTAL |
| JOB 090651__ | PARTNERING REQUIREMENTS |
| JOB 090651__ | PLASTIC PIPE |
| JOB 090651__ | PRICE ADJUSTMENT FOR ASPHALT BINDER |
| JOB 090651__ | PRICE ADJUSTMENT FOR FUEL |
| JOB 090651__ | PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT |
| JOB 090651__ | RELOCATION OF TRAFFIC SIGNAL HEAD |
| JOB 090651__ | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT |
| JOB 090651__ | RESTRICTIONS ON THE USE OF RECYCLED ASPHALT PAVEMENT MATERIAL |
| JOB 090651__ | RETROREFLECTIVE BACKPLATES |
| JOB 090651__ | SERVICE POINT ASSEMBLY (TRAFFIC CONTROL DEVICES) |
| JOB 090651__ | SHORING FOR CULVERTS |
| JOB 090651__ | SOIL STABILIZATION |
| JOB 090651__ | STORM WATER POLLUTION PREVENTION PLAN |
| JOB 090651__ | STREET NAME SIGN (MAST ARM MOUNTED) |
| JOB 090651__ | SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB 090651__ | SYSTEM LOCAL CONTROLLER |
| JOB 090651__ | TEXTURED COATING CONCRETE FINISH (CAST-IN PLACE RETAINING WALLS) |
| JOB 090651__ | UTILITY ADJUSTMENTS |
| JOB 090651__ | VALUE ENGINEERING |
| JOB 090651__ | VIDEO DETECTOR ROTATION |
| JOB 090651__ | WARM MIX ASPHALT |
| JOB 090651__ | WATER POLLUTION CONTROL |

## GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.



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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 4 | 85 |
| | | TYPICAL SECTIONS OF IMPROVEMENT | | | | |

NOTES:

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

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

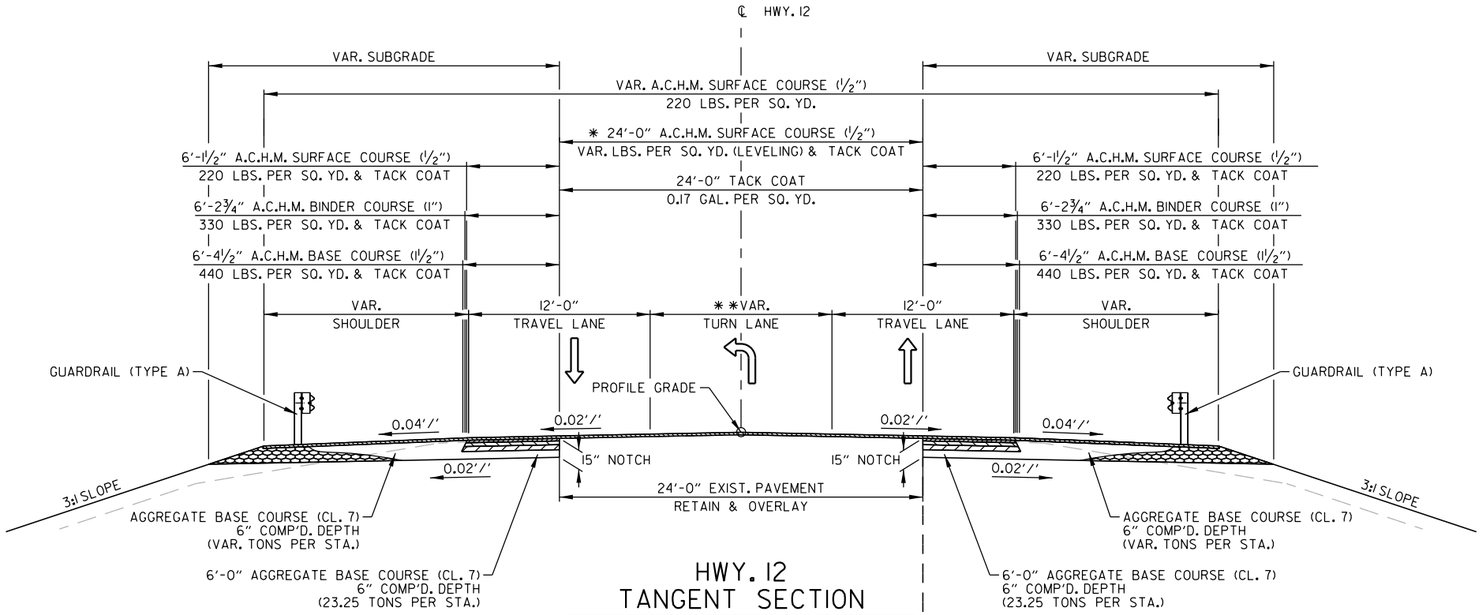
ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED INCLUDED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

IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

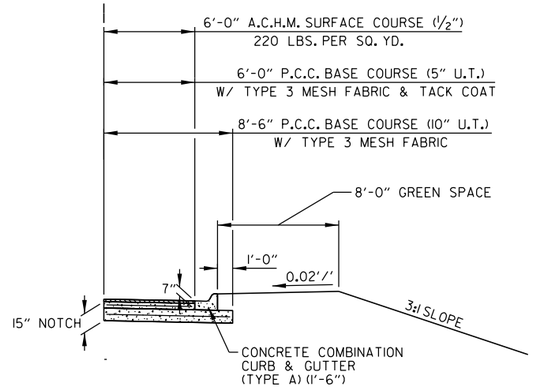



## HWY. 12
## TANGENT SECTION

STA. 101+00.00 - STA. 103+48.06

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

** 0'-0" FROM STA. 101+00.00 TO STA. 101+65.00
TRANSITION FROM 0'-0" AT STA. 101+65.00 TO 12'-0" AT STA. 102+90.00
12'-0" FROM STA. 102+90.00 TO STA. 103+48.06




## HWY. 12
## RIGHT END CONDITION

STA. 101+92.24 - STA. 103+48.06

STATE OF ARKANSAS
10634
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 5 | 85 |
| | | TYPICAL SECTIONS OF IMPROVEMENT | | | | |

NOTES:

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

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

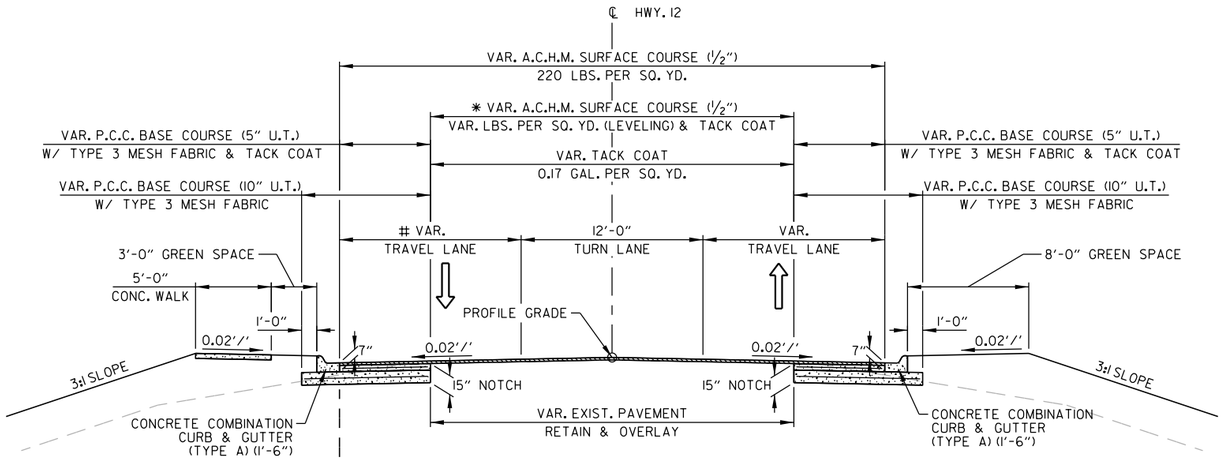
ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED INCLUDED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

IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

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

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



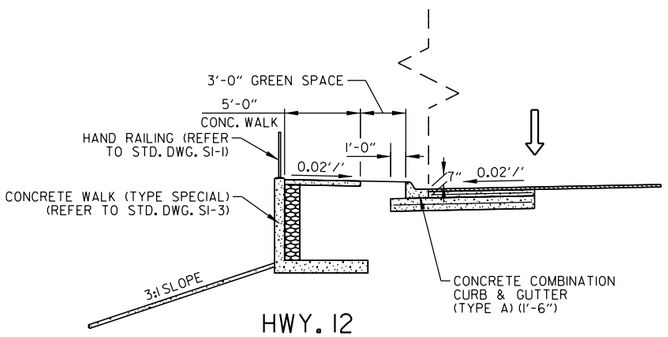

HWY. 12
TANGENT SECTION

STA. 103+81.95 - STA. 105+53.85
STA. 106+20.43 - STA. 108+02.92

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

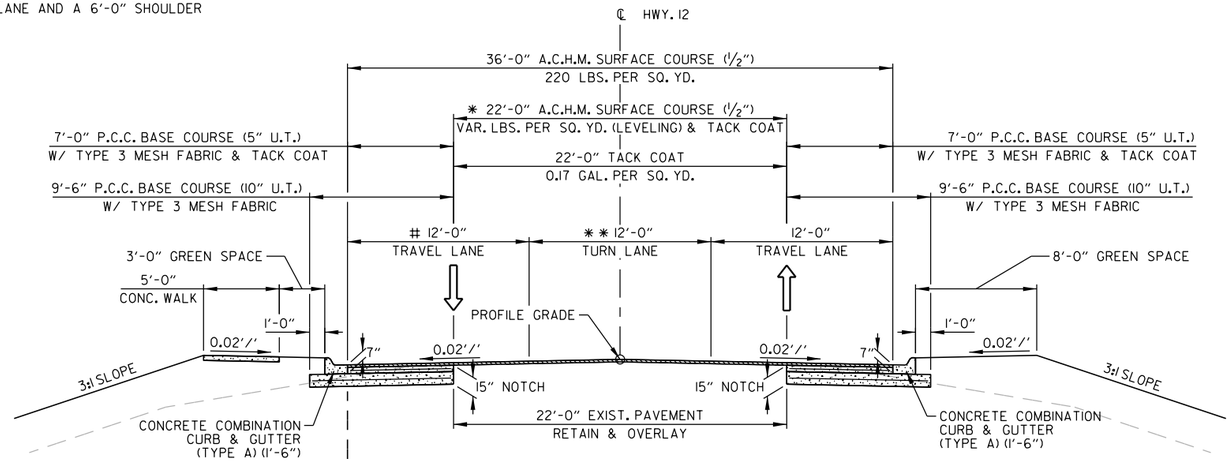
** 12'-0" FROM STA. 103+48.06 TO STA. 109+45.00
TRANSITION FROM 12'-0" AT STA. 109+45.00 TO 0'-0" AT STA. 110+70.00

# 12'-0" FROM STA. 107+57.47 TO STA. 109+45.00
TRANSITION FROM 12'-0" AT STA. 109+45.00 TO 18'-0" AT STA. 110+70.00
18'-0" WILL BE STRIPED AS A 12'-0" TRAVEL LANE AND A 6'-0" SHOULDER




HWY. 12
LEFT END CONDITION

STA. 107+75.00 - STA. 110+55.00




HWY. 12
TANGENT SECTION

STA. 103+48.06 - STA. 103+81.95
STA. 108+02.92 - STA. 110+70.00

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 6 | 85 |
| | | TYPICAL SECTIONS OF IMPROVEMENT | | | | |

NOTES:

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

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

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

IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

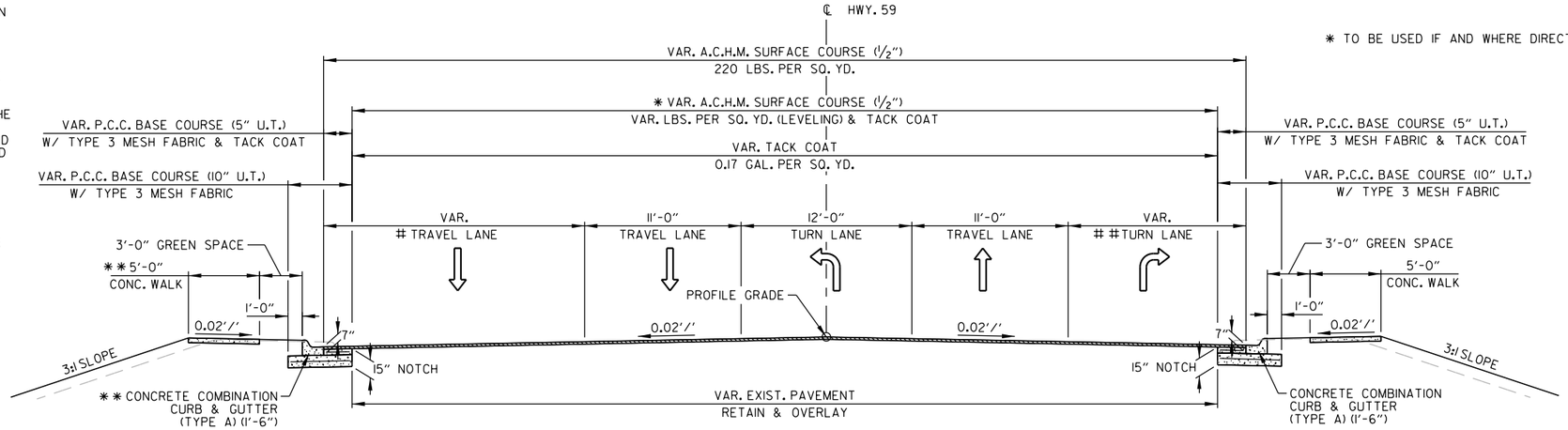
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

PRIOR TO AND DURING PLACEMENT OF PAVEMENT IN FRONT OF THE CURB AND GUTTER, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

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* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



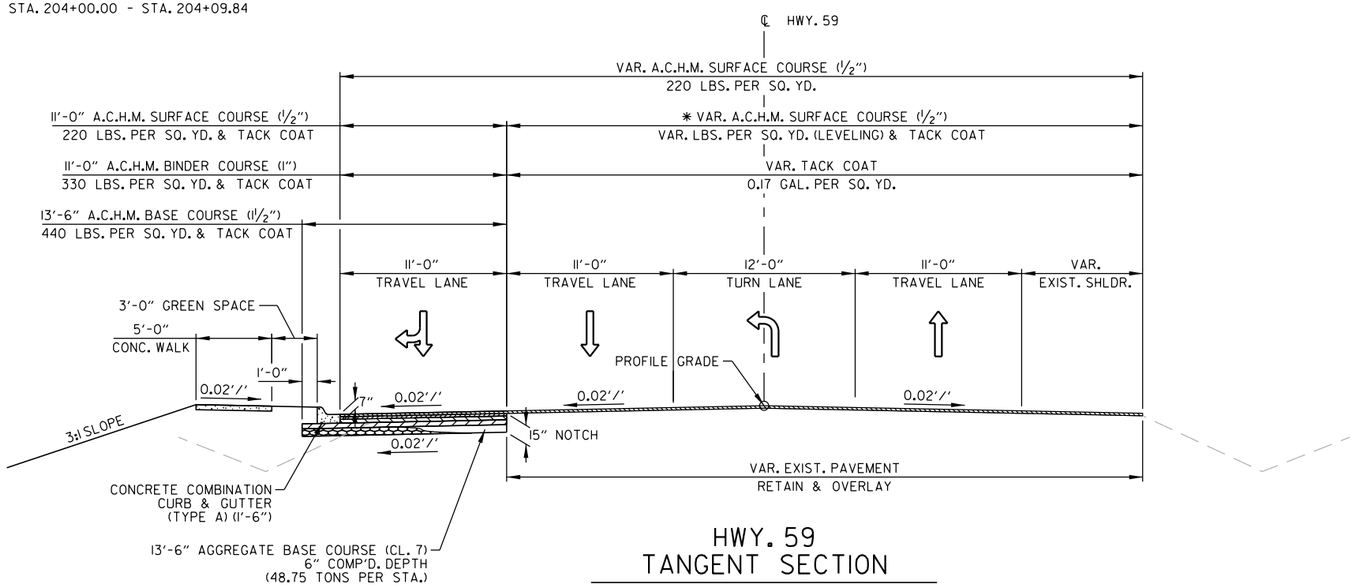

## HWY. 59
## TANGENT SECTION

STA. 204+00.00 - STA. 207+26.93

# TURN/THRU LANE, NORTH OF INTERSECTION

# # FUTURE TRAVEL LANE, NORTH OF INTERSECTION

** EXISTING CONCRETE WALK AND CURB IN GUTTER TO REMAIN IN PLACE
STA. 204+00.00 - STA. 204+09.84




## HWY. 59
## TANGENT SECTION

STA. 207+26.93 - STA. 208+75.62

NOTE:

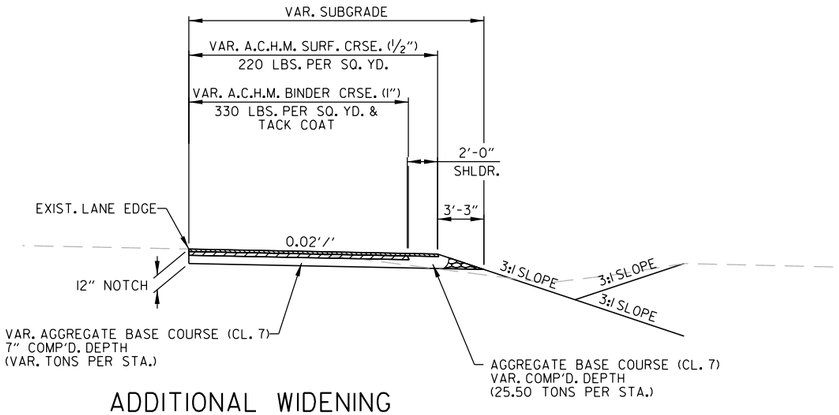
FROM STA. 207+26.93 TO STA. 208+75.62 THE CONTRACTOR MAY SUBSTITUTE THE PROPOSED PAVEMENT SECTION FOR P.C.C. BASE WITH THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE DEPARTMENT.

TYPICAL SECTIONS OF IMPROVEMENT

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|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 7 | 85 |
| | | SPECIAL DETAILS | | | | |

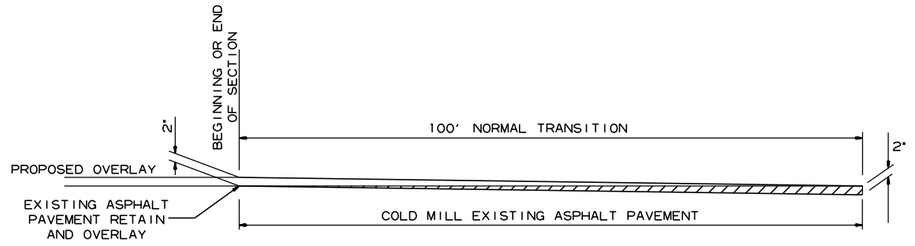
STATE OF ARKANSAS
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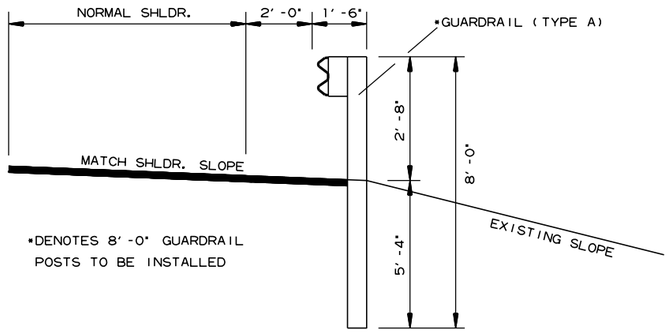

## ADDITIONAL WIDENING FOR MAINTENANCE OF TRAFFIC

(MIRROR FOR OPPOSITE DIRECTION)

EB HWY. 12: STA. 106+52.19 TO STA. 109+00.00
WB HWY. 12: STA. 107+21.53 TO STA. 109+25.00

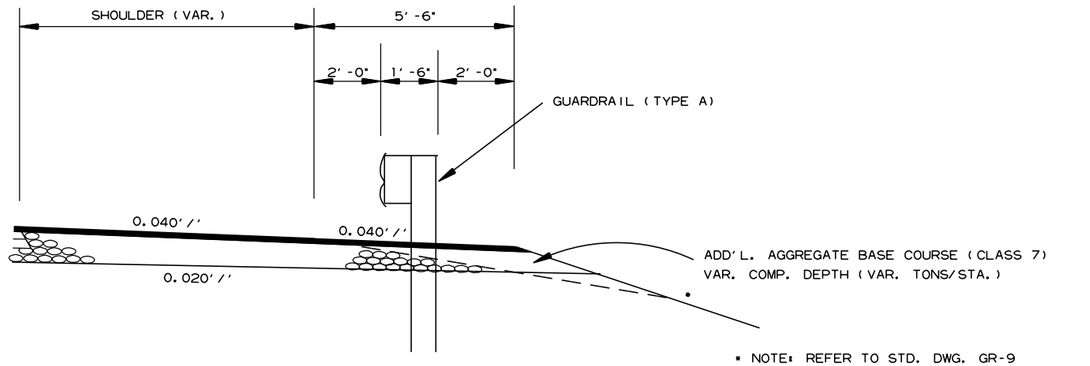



## DETAIL FOR TRANSITIONS




## SECTION DETAIL FOR GUARDRAIL

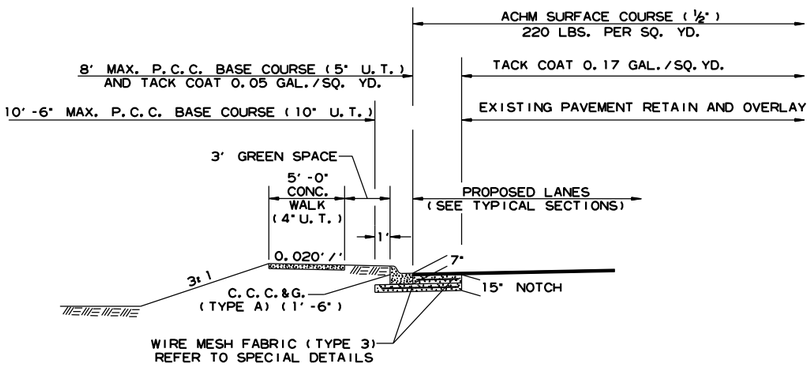
NOTE: REFER TO STANDARD DRAWINGS
GR-6, GR-8, GR-9, GR-10, GR-11, & GR-12
FOR ADDITIONAL INFORMATION.




## WIDENING FOR GUARDRAIL

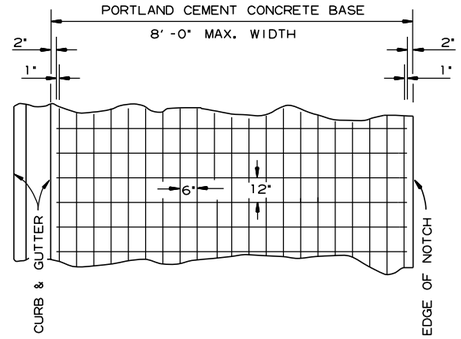
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 8 | 85 |
| | | SPECIAL DETAILS | | | | |




## P.C.C. BASE WIDENING DETAIL

P.C.C. BASE WIDENING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

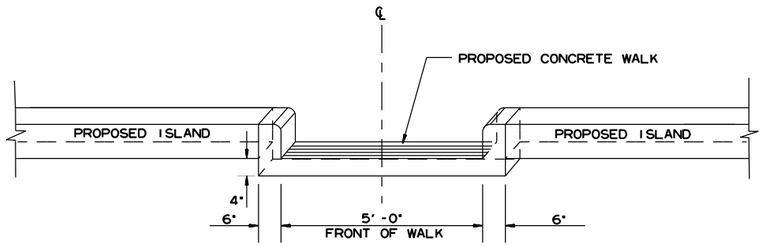



6" X 12" MESH FABRIC ( TYPE 3) (W5.5 X W2.9) = 4.26 LBS./SQ. YD.

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC ( TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE ( 5" U.T. ) OR ( 10" U.T. ), RESPECTIVELY.

## DETAIL OF REINFORCING STEEL FOR PAVEMENT ( MESH FABRIC TYPE 3)




FACE SHALL MEET REQUIREMENTS OF TYPE C CURB

NOTE: CONCRETE WALK-THROUGH ISLAND SHALL BE POURED MONOLITHICALLY. ALL MATERIALS REQUIRED TO CONSTRUCT CONCRETE WALK-THROUGH ISLAND SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE ISLAND.

## CONCRETE WALK-THROUGH ISLAND

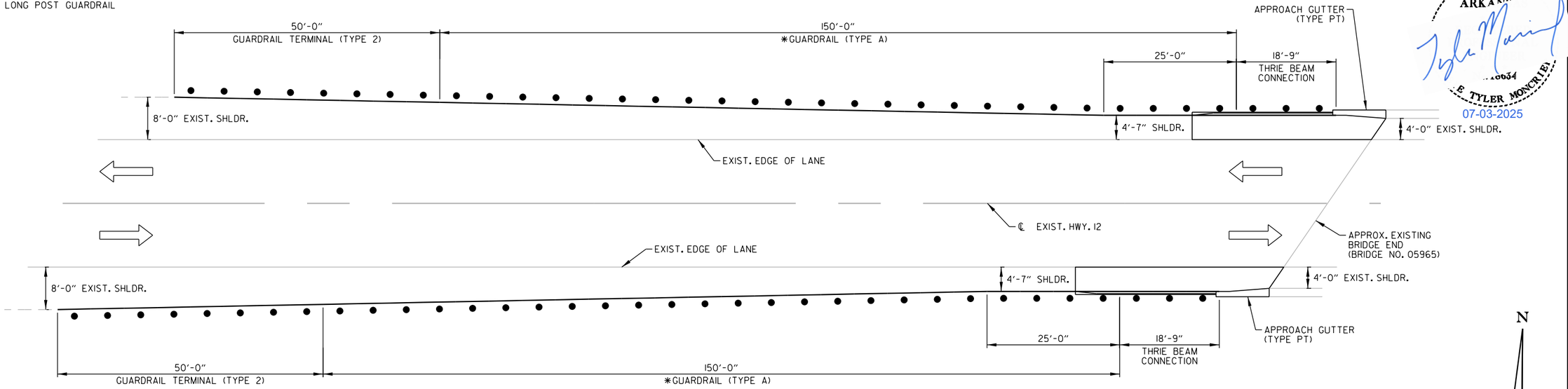
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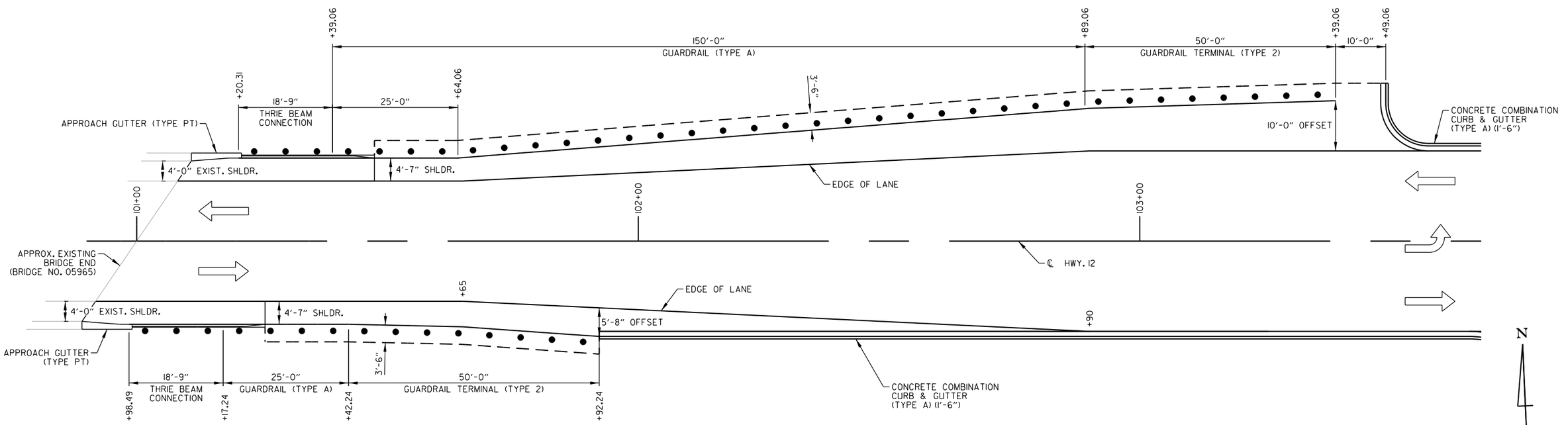
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 9 | 85 |
| | | SPECIAL DETAILS | | | | |

NOTE:
EXISTING BRIDGE LOCATION AND SHOULDER DIMENSIONS ARE APPROXIMATE.
CONTRACTOR TO VERIFY AND ADJUST GUARDRAIL AND APPROACH GUTTER ACCORDINGLY.

* DENOTES LONG POST GUARDRAIL




GUARDRAIL DETAIL
WEST END OF BRIDGE




NOTE:
EXISTING BRIDGE LOCATION AND SHOULDER DIMENSIONS ARE APPROXIMATE.
CONTRACTOR TO VERIFY AND ADJUST GUARDRAIL AND APPROACH GUTTER ACCORDINGLY.

GUARDRAIL DETAIL
EAST END OF BRIDGE

SPECIAL DETAILS

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|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 10 | 85 |
| | | SPECIAL DETAILS | | | | |

NOTES:

- STATION AND OFFSET LABELS ARE TO EDGE OF PAVEMENT.
- RADIUS LABELS ARE TO FACE OF CURB.
- INTERSECTION RETURNS AND ISLAND LABELS ARE BASED ON HWY. 12 CENTERLINE ALIGNMENT.
- FOR ADDITIONAL INFORMATION, SEE PLANS.

LEGEND

NOTCH AND WIDEN

RETAIN AND OVERLAY

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STA. 208+75.62
END CONST. HWY. 59

+49.00 49.00′
R 20′
+28.00 49.00′
+28.00 28.00′

+19.98 34.07′
R 100′
105+00
+13.95 28.00′
CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1′-6″)

+04.19 38.59′
+90.71 39.78′
+26.93 57.41′
+27.40 62.10′
+06.04 59.51′
R 20′
R 60′
+57.47 79.00′

+48.06 31.50′
+48.06 27.50′
R 8.5′
+57.56 27.50′
+57.51 18.00′
+81.95 18.00′
+30.54 33.63′
CONCRETE ISLAND W/ TYPE "C" CURB FACE
205+00
℄ HWY. 12

+60.20 54.46′
R 60′
+21.12 66.00′
+39.33 22.00′
R 2′ (TYP.)
+77.44 22.00′
+57.47 18.00′

CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1′-6″)
100+00
+52.50 39.00′
R 20′
+73.50 39.00′
+52.50 18.00′
+70.00 12.00′
+79.00 12.00′
R 20′
+79.00 33.00′
+00.00 33.00′

+92.24 18.00′
+35.44 18.00′
CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1′-6″)
CONCRETE ISLAND W/ TYPE "C" CURB FACE
R 2′ (TYP.)
+15.11 22.00′
+34.95 22.00′
S87°27′37″E
+53.67 25.89′
+02.92 18.00′
+45.00 18.00′
+23.31 40.10′
N35°16′48″E
R 90.5′
+35.44 69.00′
R 50′
+11.76 41.34′
+11.12 41.15′
+68.73 28.00′

℄ HWY. 12 STA. 105+87.14
℄ HWY. 59 STA. 205+37.50
△ 57°15′35″

CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1′-6″)

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

+00.00 28.70′
R 100′
+59.00 126.75′
℄ HWY. 59

STA. 110+70.00
END CONST. HWY. 12

N

SCALE RATIO 1″ = 60′
30 15 0 15 30 60

CURB AND GUTTER
SPECIAL DETAILS

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| | | 6 | ARK. | 090651 | 11 | 85 |
| | | SPECIAL DETAILS | | | | |

NOTES:

- ALL LABELS ARE ABOUT EDGE OF PAVEMENT, RELATIVE TO HWY. 12 CENTERLINE ALIGNMENT.
- FOR ADDITIONAL INFORMATION, SEE PLANS.

LEGEND

NOTCH AND WIDEN

RETAIN AND OVERLAY

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CONCRETE COMBINATION CURB & GUTTER (TYPE A) (1'-6")

105+00

205+00

℄ HWY. 12

S87°27'37"E

℄ HWY. 12 STA. 105+87.14
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

N35°16'48"E

R 10'

R 6'

R 5'

℄ HWY. 59

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

COORDINATE TABLE

| I.D. | STA. | OFF. | SIDE | ELEV. |
|---|---|---|---|---|
| 1 | 104+35.44 | 18.00' | RT. | 1231.71 |
| 2 | 104+58.28 | 23.40' | RT. | 1230.42 |
| 3 | 104+76.28 | 38.45' | RT. | 1229.02 |
| 4 | 104+85.63 | 59.97' | RT. | 1227.77 |
| 5 | 104+84.36 | 83.40' | RT. | 1226.97 |
| 6 | 104+35.44 | 69.00' | RT. | - |
| 7 | 105+73.50 | 72.99' | RT. | 1226.91 |
| 8 | 105+88.44 | 54.49' | RT. | 1227.01 |
| 9 | 106+07.29 | 39.99' | RT. | 1226.97 |
| 10 | 106+29.62 | 30.12' | RT. | 1226.74 |
| 11 | 106+53.67 | 25.89' | RT. | 1226.50 |
| 12 | 106+59.00 | 126.75' | RT. | - |
| 13 | 107+57.47 | 18.00' | LT. | 1226.18 |
| 14 | 107+27.50 | 25.87' | LT. | 1226.44 |
| 15 | 107+05.26 | 47.45' | LT. | 1227.21 |
| 16 | 106+96.50 | 77.17' | LT. | 1227.90 |
| 17 | 107+03.46 | 107.36' | LT. | 1228.32 |
| 18 | 107+57.47 | 79.00' | LT. | - |
| 19 | 106+04.93 | 79.45' | LT. | 1228.13 |
| 20 | 105+90.70 | 61.97' | LT. | 1227.87 |
| 21 | 105+72.95 | 48.08' | LT. | 1227.53 |
| 22 | 105+52.56 | 38.47' | LT. | 1227.40 |
| 23 | 105+30.54 | 33.63' | LT. | 1227.72 |
| 24 | 105+19.98 | 134.07' | LT. | - |

N

SCALE RATIO 1" = 40'

20 10 0 10 20 40

INTERSECTION SPECIAL DETAILS

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| | | 6 | ARK. | 090651 | 12 | 85 |
| | | SPECIAL DETAILS | | | | |

## INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 11'-8" | 3'-0" | 0'-9" | 0'-8" | 0 | 3:1 | 10'-8" | 1'-0" | 3'-10" | 1'-0" | 0 | 0 | 2'-2" | 2'-2" | 2'-2" | 0'-6" | 0'-6" | 8'-6" | 8'-6" | 8'-6" | 8'-6" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| INLET | INLET |
| CU.YD | LBS. |
| 3.07 | 296 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F1 LENGTHS | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F6 LENGTHS | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F8 LENGTHS | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 9 | L | Min 2'-0" / Max 4'-8" | - | - | - | L - | - | - | - | L - | 4 | 18 | 2 | Min 4'-10" / Max 4'-10" | 4 | 18 | 2 | 8'-2" | 4 | 18 | 6 | X | Min 2'-9" / Max 5'-3" | 4 | 6 | 8'-2" | 6 | 18 | 6 | Min 1'-8" / Max 1'-8" | Min - / Max - | - | - | - | Min - / Max - | 4 | 2 | 8'-6" | 4 | 2 | 9'-4" | 6 | 12 | 3 | L 3'-4" / X 1'-8" | 148 |
| | | | | X | Min 0'-9" / Max 0'-9" | | | | X - | | | | X - | | | | | | | | | | | | | Min 1'-4" / Max 1'-4" | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y | Min 1'-4" / Max 4'-0" | | | | Y - | | | | Y - | | | | | | | | | | | | | Min 1'-6" / Max 4'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 9 | L | Min 2'-0" / Max 4'-8" | - | - | - | L - | - | - | - | L - | 4 | 18 | 2 | Min 4'-10" / Max 4'-10" | 4 | 18 | 2 | 8'-2" | 4 | 18 | 6 | X | Min 2'-9" / Max 5'-3" | 4 | 6 | 8'-2" | 6 | 18 | 6 | Min 1'-8" / Max 1'-8" | Min - / Max - | - | - | - | Min - / Max - | 4 | 2 | 8'-6" | 4 | 2 | 9'-4" | 6 | 12 | 3 | L 3'-4" / X 1'-8" | 148 |
| | | | | X | Min 0'-9" / Max 0'-9" | | | | X - | | | | X - | | | | | | | | | | | | | Min 1'-4" / Max 1'-4" | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y | Min 1'-4" / Max 4'-0" | | | | Y - | | | | Y - | | | | | | | | | | | | | Min 1'-6" / Max 4'-0" | | | | | | | | | | | | | | | | | | | | | | | | |

## MID-SECTION BAR LAP TABLE

| # of Long. Laps Req'd. | SL = Section Length |
|---|---|
| 0 | < 40.0 ft |
| 1 | >40.0 ft - 78.0 ft |
| 2 | >78.0 ft - 116.0 ft |
| 3 | >116.0 ft - 154.0 ft |
| 4 | >154.0 ft - 192.0 ft |
| 5 | >192.0 ft - 230.0 ft |
| 6 | >230.0 ft - 268.0 ft |
| 7 | >268.0 ft - 306.0 ft |
| 8 | >306.0 ft -344.0 ft |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |




TABULAR DATA BY: JTM DATE: 02/06/23
CHECKED BY: RWC DATE: 02/12/23

This drawing to be used in conjunction with SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE', SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT', SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

① Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 60)."

## INLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINFORCING STEEL "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINFORCING STEEL "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | Max / Min | | | | Max / Min | | | | | | Max / Min | | | | | | | | | | | | | | | | Max / Min | | | | | | | | | | | | | | | | |

| "k1" HDWL BARS SIZE | "k1" HDWL BARS LENGTH | "k1" HDWL BARS NO. REQ'D | "k2" HDWL BARS SIZE | "k2" HDWL BARS LENGTH | "k2" HDWL BARS NO. REQ'D | "h" HDWL BARS SIZE | "h" HDWL BARS LENGTH | "h" HDWL BARS Y | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | ① REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|
| | |

## INLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D | BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D | SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D | INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | S | H | T | B | C | W | OW | OH | SL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| HDWL DEPTH HD | ADDITIONAL REINF. FOR HDWL LBS. | "h" HDWL BARS SIZE | "h" HDWL BARS Y | "h" HDWL BARS LENGTH | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|
| 3" | 15 | 4 | 0'-7" | 1'-7" | 13 |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| | |
| TOTAL | |
| 0.11 | 29 |

| Design Fill Depth | Range of Actual Fill Depth |
|---|---|
| 2 | 0.0 ft - 2.0 ft |
| 5 | >2.0 ft - 5.0 ft |
| 10 | >5.0 ft - 10.0 ft |
| 15 | >10.0 ft - 15.0 ft |
| 20 | >15.0 ft - 20.0 ft |
| 25 | >20.0 ft - 25.0 ft |
| 30 | >25.0 ft - 30.0 ft |
| 35 | >30.0 ft - 35.0 ft |
| 40 | >35.0 ft - 40.0 ft |

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

## MID-SECTION

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | SPACING | NO. REQ'D | BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | SPACING | NO. REQ'D | SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE | SPACING | NO. REQ'D | LENGTH | TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE | SPACING | NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | SPACING | NO. REQ'D | SIDE WALL DISTRIBUTION STEEL "d1" LENGTH = SL SIZE | SPACING | NO. REQ'D | INTERIOR WALL DISTRIBUTION STEEL "d2" LENGTH = SL SIZE | SPACING | NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | S | H | T | B | C | W | OW | OH | SL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | 5 | 5 | 3 | 8.0 | 9 | 6.0 | 8 | 11'-8" | 4'-5" | 78 | 4 | 11'-4" | 6 | 11'-6" | 4 | 11'-4" | 16 | 58 | 4 | 11'-4" | 4 | 11'-6" | 4 | 11'-4" | 17 | 55 | 4 | 9 | 208 | 4'-1" | 4 | 12 | 156 | 4'-1" | 4 | 12 | 23 | 4 | 12 | 23 | 4 | 12 | 6 | 4 | 12 | 6 |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| 62.19 | 7303 |

# SHEET 1 OF 2
# DETAILS OF R.C. BOX CULVERT
## DOUBLE BARREL BOX CULVERT
## STA. 107+52

# SPECIAL DETAILS

Ver. 1.17 FILENAME

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 13 | 85 |
| | | SPECIAL DETAILS | | | | |




TABULAR DATA BY: JTM DATE: 02/06/23
CHECKED BY: RWC DATE: 02/12/23

## OUTLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| | | | | | | | | | | | | | | | | | | | | |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| OUTLET | OUTLET |
| CU.YD | LBS. |
| | |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | | | | L Min / Max | | | | L | | | | L | | | | Min 4'-10" / Max 0'-4" | | | | | | | | L Min / Max | | | | | | Min 2'-10" / Max 2'-10" | | | | Min 3'-1" / Max 3'-1" | | | | | | | | | | L / X | 0 |
| | | | | X Min / Max | | | | X | | | | X | | | | | | | | | | | | X Min / Max | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y Min / Max | | | | Y | | | | Y | | | | | | | | | | | | Y Min / Max | | | | | | | | | | | | | | | | | | | | | |
| WING B | | | | L Min / Max | | | | L | | | | L | | | | Min 4'-10" / Max 0'-4" | | | | | | | | L Min / Max | | | | | | Min 2'-10" / Max 2'-10" | | | | Min 3'-1" / Max 3'-1" | | | | | | | | | | L / X | 0 |
| | | | | X Min / Max | | | | X | | | | X | | | | | | | | | | | | X Min / Max | | | | | | | | | | | | | | | | | | | | | |
| | | | | Y Min / Max | | | | Y | | | | Y | | | | | | | | | | | | Y Min / Max | | | | | | | | | | | | | | | | | | | | | |

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

ⓘ Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Grade 60)."

## OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINF. "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINF. "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINF. "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINF. "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINF. "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DIST. REINF. "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DIST. REINF. "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DIST. REINF. "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DIST. REINF. "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | | | Max / Min | | | | Max / Min | | | | Max / Min | | | | | | Max / Min | | | | | | | | | | | | | | Max / Min | | | | | | LONG / SHORT | | | |

| CLASS "S" CONCRETE (Includes HDWL) | ⓘ REINFORCING STEEL (GR 60) (Includes HDWL) |
|---|---|
| CU. YDS. | LBS. |
| | |

| "k1" HDWL BARS SIZE | "k1" HDWL BARS LENGTH | "k1" HDWL BARS NO. REQ'D | "k2" HDWL BARS SIZE | "k2" HDWL BARS LENGTH | "k2" HDWL BARS NO. REQ'D | "h" HDWL BARS SIZE | "h" HDWL BARS LENGTH | "h" HDWL BARS Y | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

## OUTLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | TOP SLAB THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | SECTION LENGTH (FT.) | TOP SLAB REINF. LENGTH = OW - 4" + BENDS "a" SIZE | "a" L | Bent "b" SIZE | Bent "b" L | "c" SIZE | "c" L | "c" SPACING | "c" NO. REQ'D | BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE | "d" L | Bent "b1" SIZE | Bent "b1" L | "f" SIZE | "f" L | "f" SPACING | "f" NO. REQ'D | SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE | "g" SPACING | "g" NO. REQ'D | BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE | "e" SPACING | "e" NO. REQ'D | SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE | "d1" SPACING | "d1" NO. REQ'D | INTERIOR WALL DIST. REINF. "d2" LENGTH = SL SIZE | "d2" SPACING | "d2" NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D | S | H | T | B | C | W | OW | OH | SL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| HDWL DEPTH HD | ADDITIONAL REINF. FOR HDWL LBS. | "h" HDWL BARS SIZE | "h" HDWL BARS Y | "h" HDWL BARS LENGTH | "h" HDWL BARS NO. REQ'D |
|---|---|---|---|---|---|
| | | | | | |

| CLASS "S" CONCRETE CU. YDS. | REINFORCING STEEL (GR. 60) LBS. |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| TOTAL | |
| | |

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2

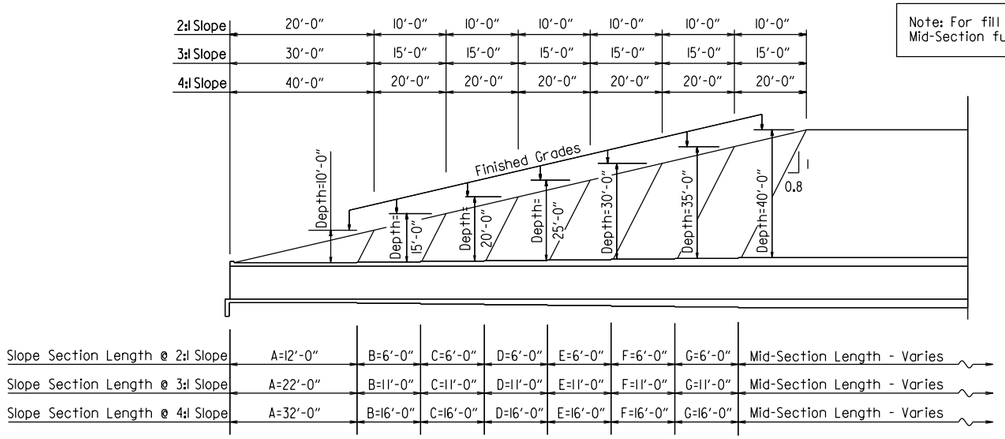
# DETAILS OF R.C. BOX CULVERT

DOUBLE BARREL BOX CULVERT
STA. 107+52

SPECIAL DETAILS

Ver. 1.117 FILENAME

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 14 | 85 |
| | | SPECIAL DETAILS | | | | |

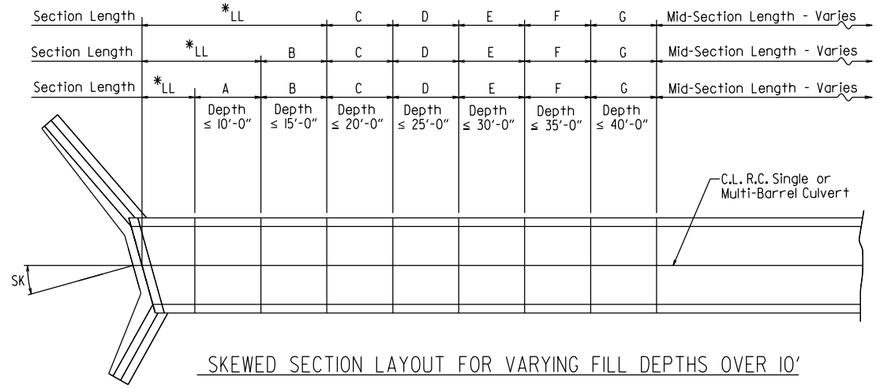



LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

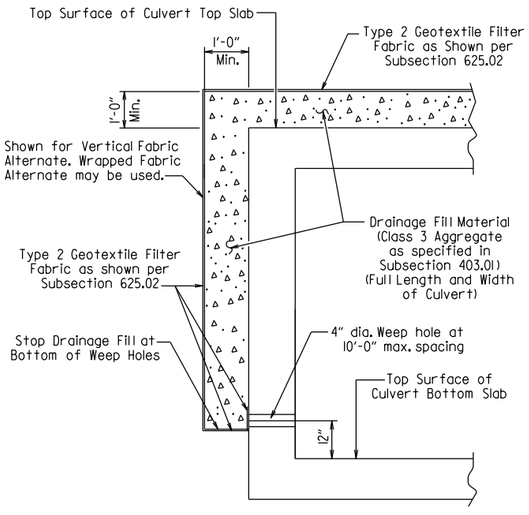
Lengths for Non-Skewed Boxes

Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

*LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.

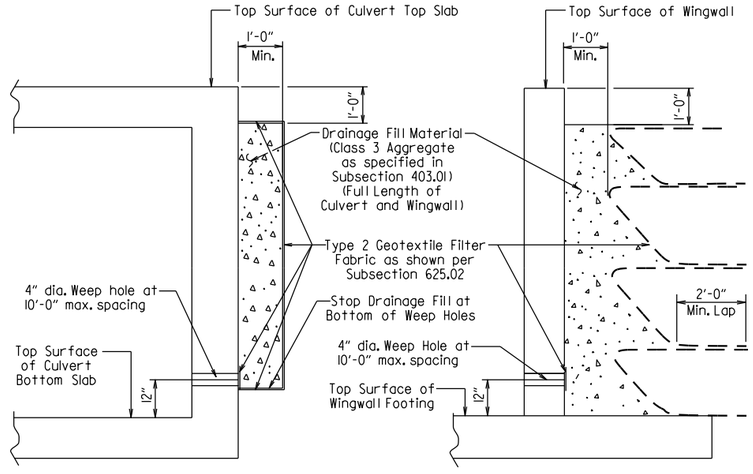



SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'




CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

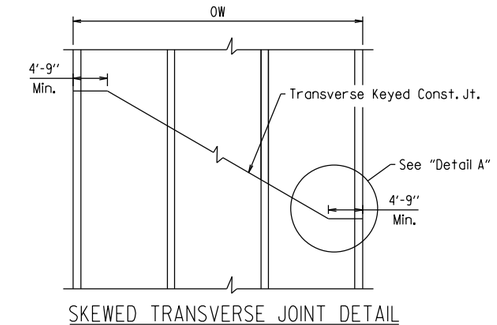



For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

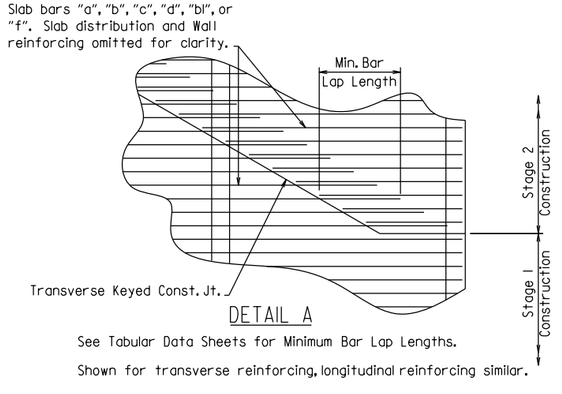
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL




SKEWED TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.




DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

**CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.**

**DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.**

**LIVE LOADING: HL-93**

**All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.**

**Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.**

**Reinforcing Steel Tolerances: The tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.**

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

**Membrane Waterproofing shall conform to the requirements of Section 815. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.**

**Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.**

**Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.**

**The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. All longitudinal construction joints shall be submitted to the Engineer for approval.**

**Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.**

**When the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class S Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".**

**When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.**

STATE OF ARKANSAS
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07-03-2025

SHEET 1 OF 4

# GENERAL DETAILS OF R.C. BOX CULVERT

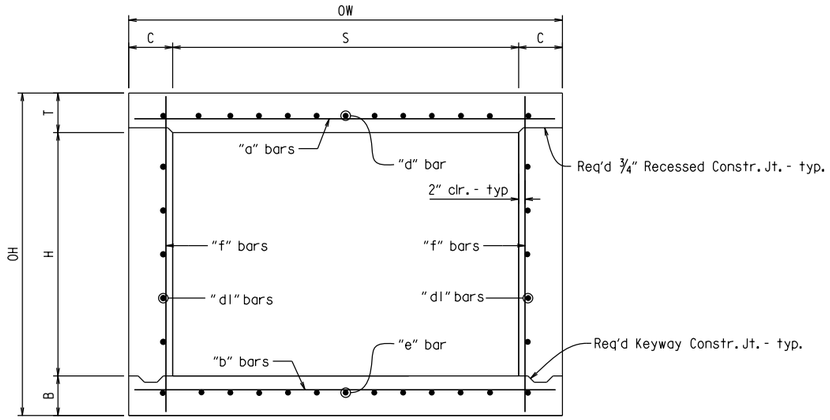
GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

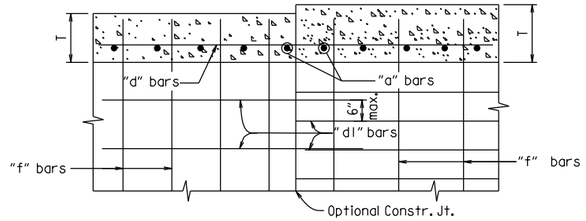
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|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 15 | 85 |
| | | SPECIAL DETAILS | | | | |

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



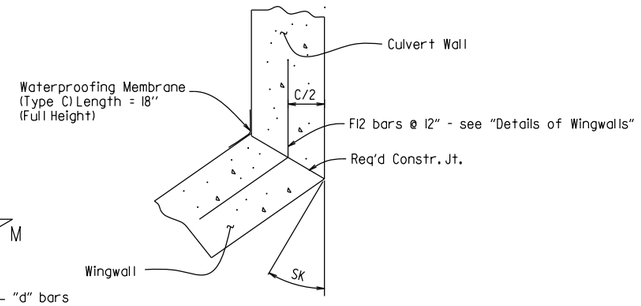

TYPICAL SECTION M-M




Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

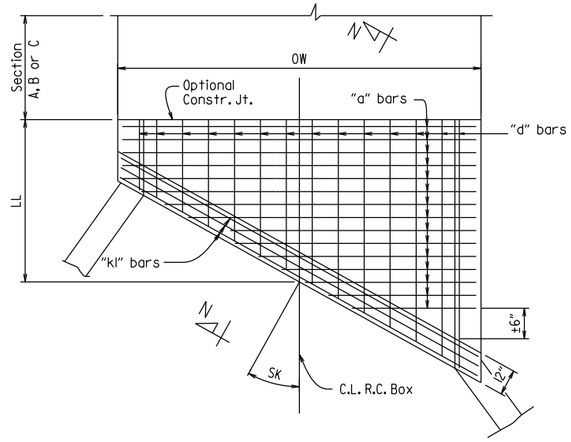
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

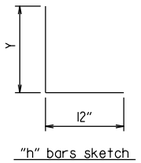



WINGWALL ATTACHMENT

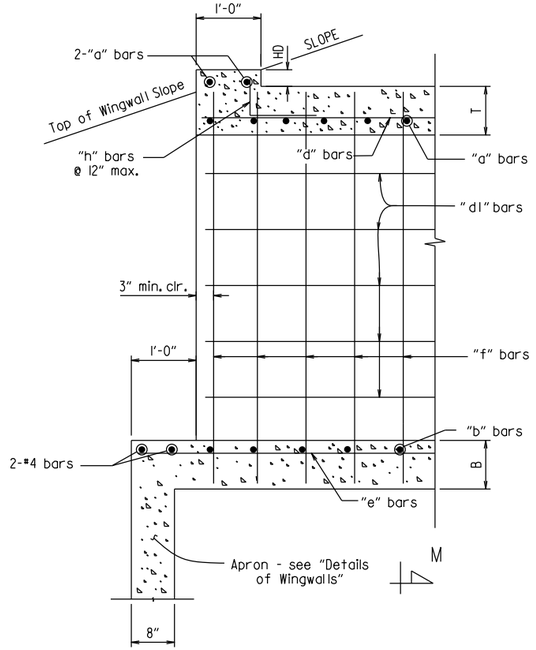
See "Details of Wingwalls" for additional information and wingwall details.




TOP SLAB REINFORCEMENT

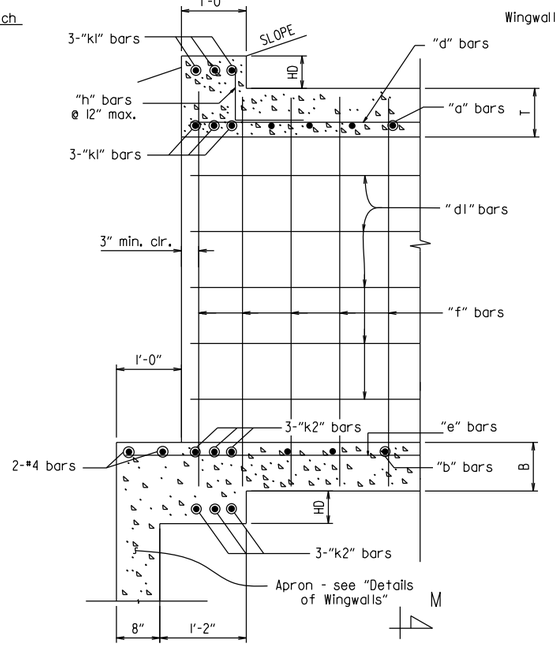



"h" bars sketch



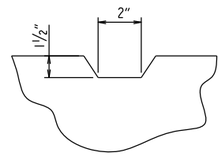

PART LONGITUDINAL SECTION

(Non-Skewed Ends)



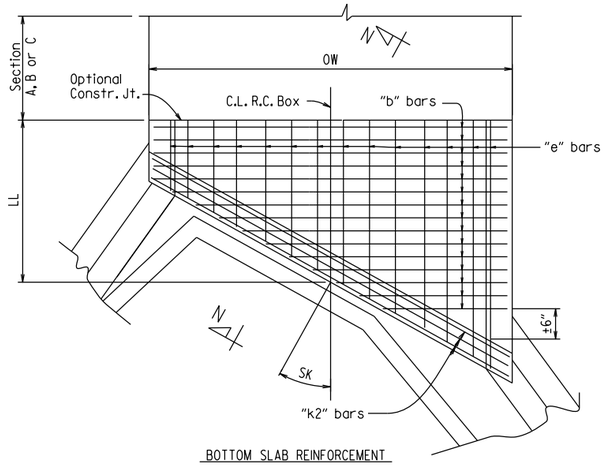

PART LONGITUDINAL SECTION N-N

(Skewed Ends)




TYPICAL KEYWAY DETAIL

(All Construction Joints)




BOTTOM SLAB REINFORCEMENT

SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

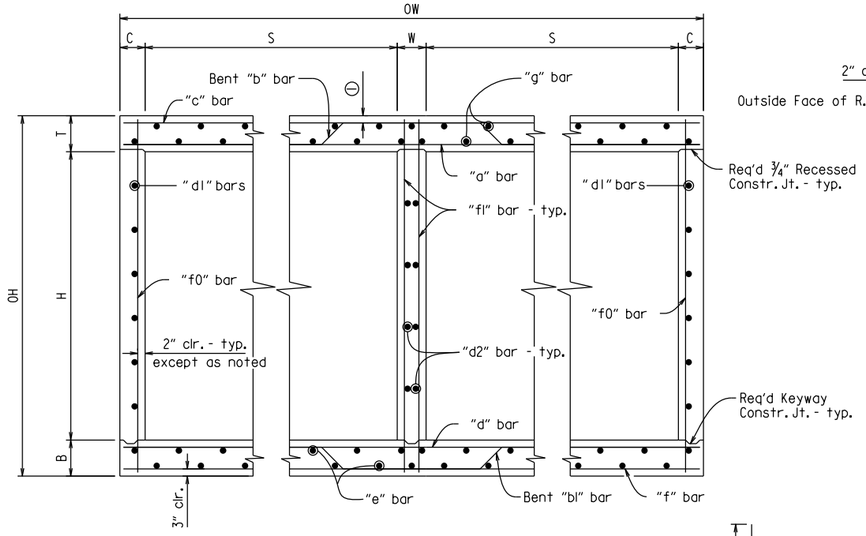
SPECIAL DETAILS

V 1.1.17 FILENAME

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| | | 6 | ARK. | 090651 | 16 | 85 |
| | | SPECIAL DETAILS | | | | |

① 2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.

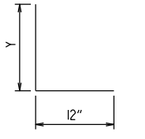
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



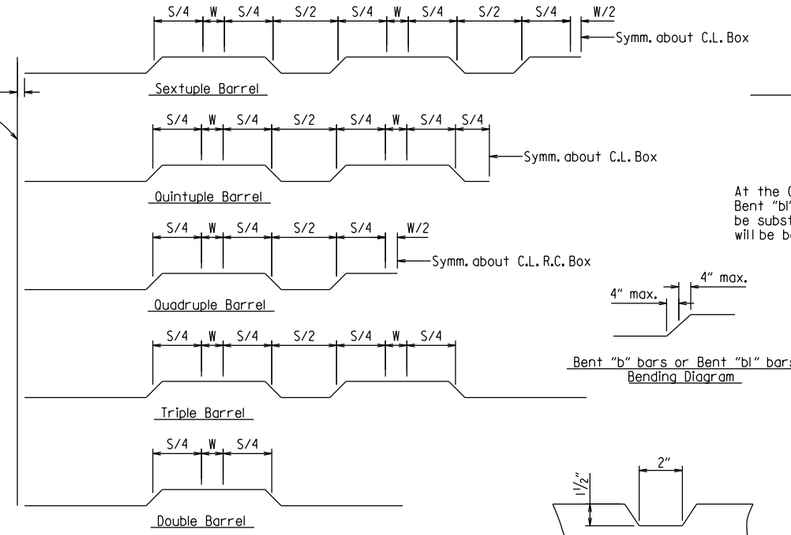

TYPICAL SECTION M-M

Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

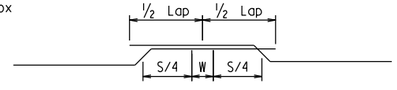
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.




"h" bars sketch




Bent "b" bars or Bent "bl" bars sketch

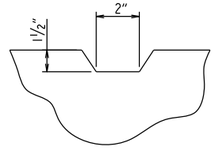



Lap Detail
For Bent "b" bars and Bent "bl" bars

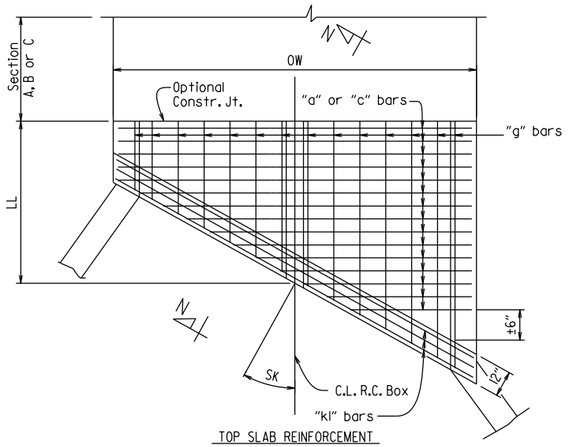
At the Contractor's option in lieu of providing Bent "b" or Bent "bl" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "bl" bar.



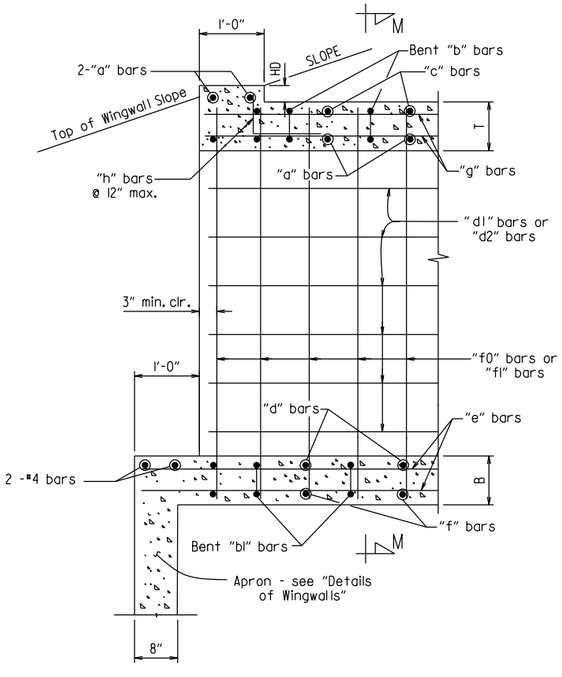

Bent "b" bars or Bent "bl" bars Bending Diagram



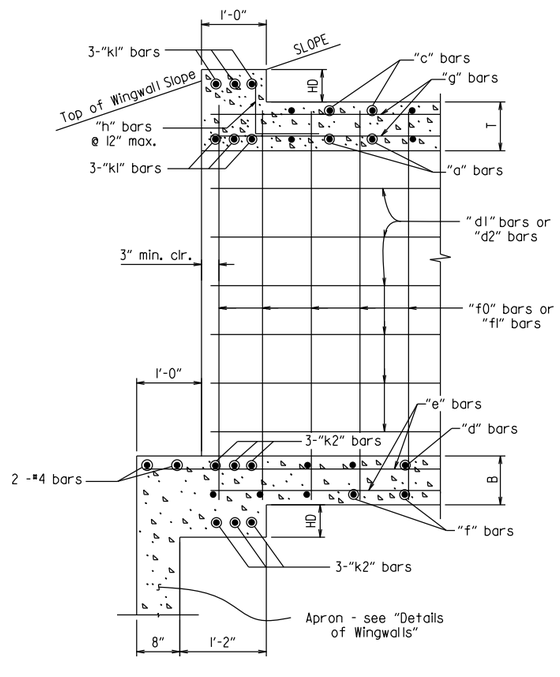

TYPICAL KEYWAY DETAIL
(All Construction Joints)



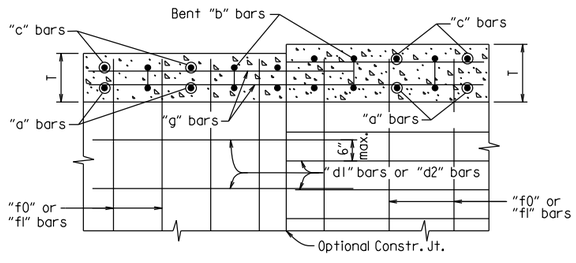

TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.




PART LONGITUDINAL SECTION
(Non-Skewed Ends)

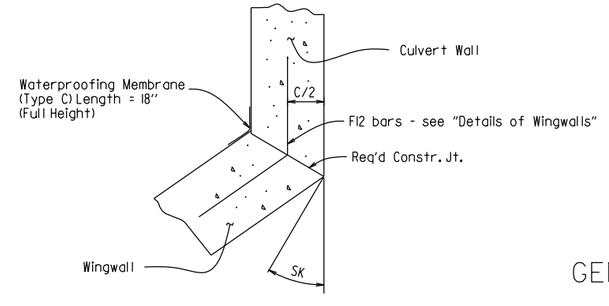



PART LONGITUDINAL SECTION N-N
(Skewed Ends)

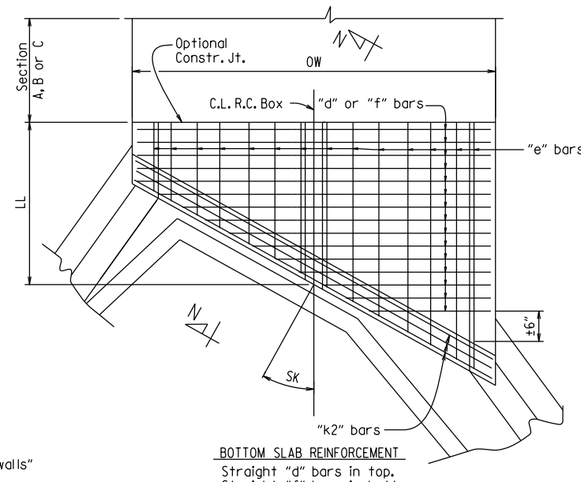



Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR




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




BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

SKEWED END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT

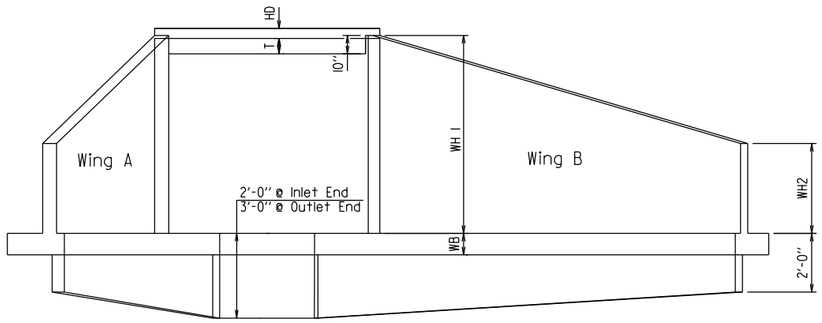
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
TYLER MONCRIEF
16634
07-03-2025

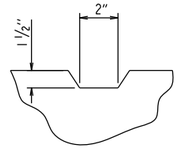
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| | | SPECIAL DETAILS | | | | |



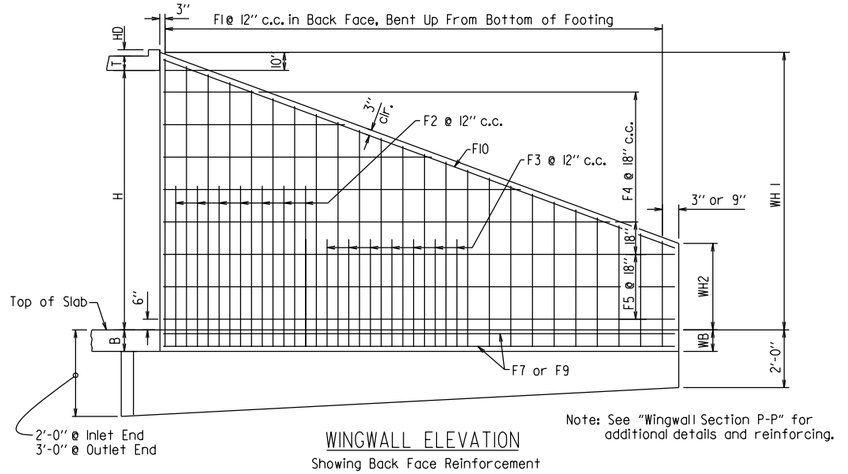

END ELEVATION

Flared Wingwalls Shown




TYPICAL KEYWAY DETAIL

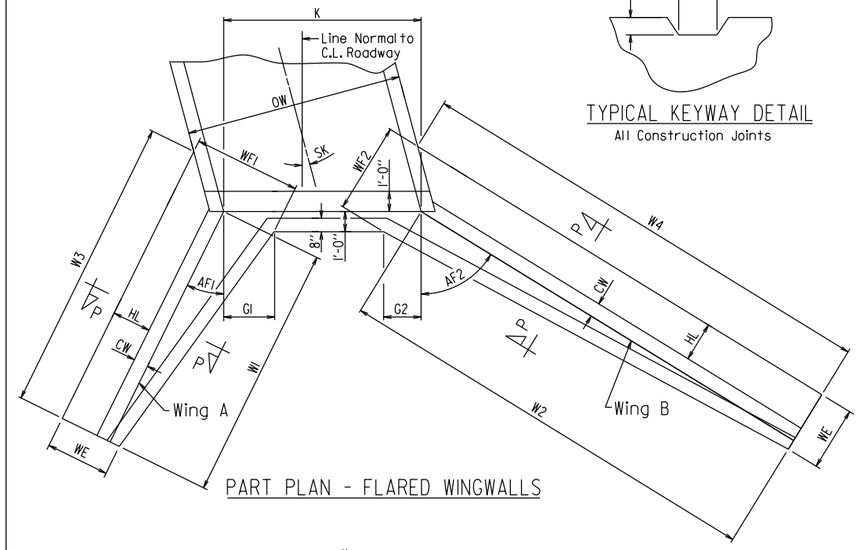
All Construction Joints



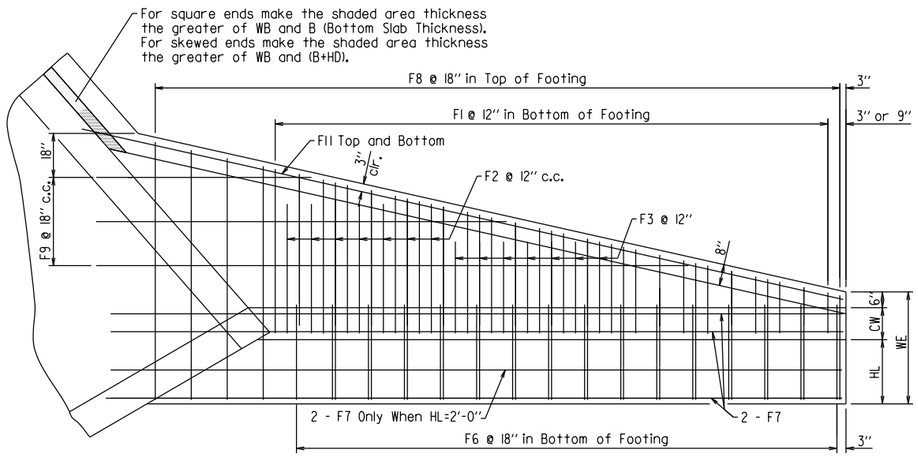

WINGWALL ELEVATION

Showing Back Face Reinforcement

Note: See "Wingwall Section P-P" for additional details and reinforcing.

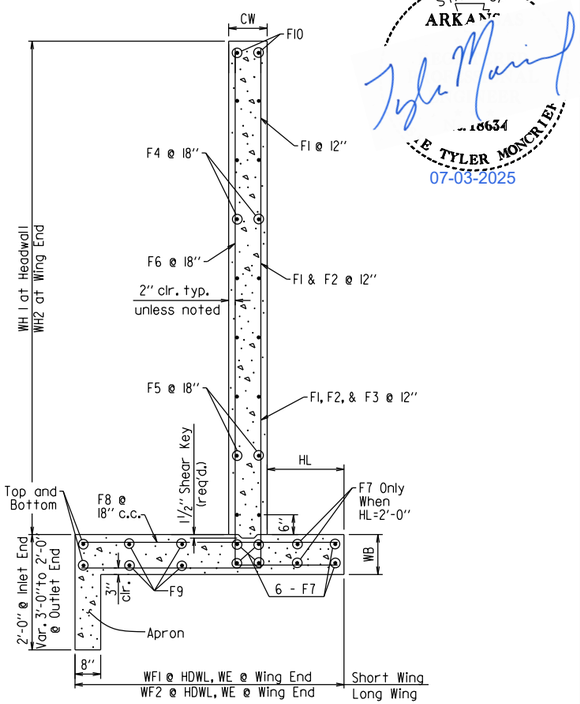



PART PLAN - FLARED WINGWALLS

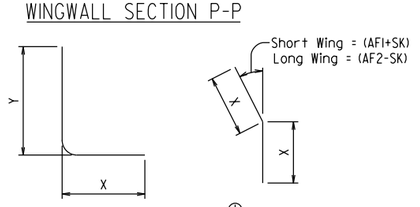



PLAN - FLARED WINGWALLS

Showing Footing Reinforcement



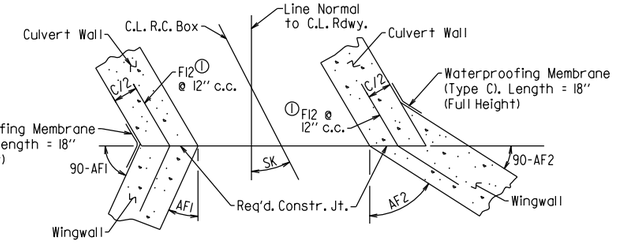

WINGWALL SECTION P-P




F1, F2, F3, & F6 BARS

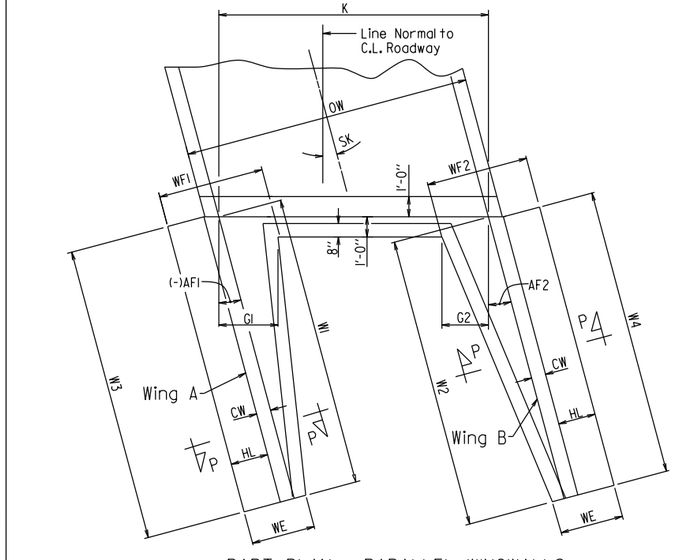
ⓘF12 BAR

ⓘF12 is a straight bar for parallel wingwalls

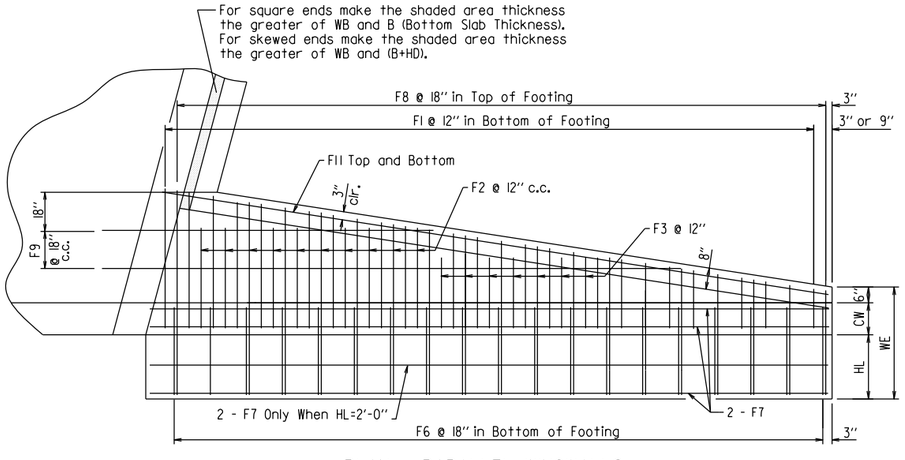



CONSTRUCTION JOINTS

Flared Wingwalls Shown




PART PLAN - PARALLEL WINGWALLS




PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement

SHEET 4 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF WINGWALLS

SPECIAL DETAILS

V_LI17 FILENAME

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | 6 | ARK. | 090651 | 18 | 85 |
| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
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| | |

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

## LEGEND

- E-6 = ROCK DITCH CHECKS
- E-11 = SILT FENCE
- E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.E. STA. 210+00.00

℄ HWY. 59

STA. 208+75.62
END CONST. HWY. 59

P.O.B. STA. 100+00.00

EXIST. R/W

PROP. TCE

105+00

110+00

P.O.E. STA. 112+00.00

PROP. R/W

PROP. TCE

EXIST. R/W

℄ HWY. 12

S87°27'37"E

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

EXIST. R/W

PROP. TCE

PROP. R/W

EXIST. R/W

EXIST. PCE

N35°16'48"E

℄ HWY. 59

EXIST. R/W

PROP. TCE

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

PROP. R/W

EXIST. R/W

STA. 110+70.00
END CONST. HWY. 12

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.B. STA. 200+00.00

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
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NOTE: EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

PROP. TCE

EXIST. PCE

PROP. R/W

105+00

205+00

℄ HWY. 59

N35°16'48"E

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

110+00

P.O.E. STA. 112+00.00

S87°27'37"E

E-6+30

+27

CONSTRUCTION LIMITS

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

STA. 110+70.00
END CONST. HWY. 12

STAGE A
TEMPORARY EROSION CONTROL DETAILS

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| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
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| | |

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

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

PROP. TCE

PROP. R/W

EXIST. PCE

105+00

205+00

℄ HWY. 59

N35°16'48"E

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

S87°27'37"E

CONSTRUCTION LIMITS

110+00

P.O.E. STA. 112+00.00

STA. 110+70.00
END CONST. HWY. 12

STAGE B
TEMPORARY EROSION CONTROL DETAILS

7/1/2025
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 21 | 85 |
| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
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| | |

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

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

PROP. TCE

PROP. R/W

EXIST. PCE

105+00

205+00

℄ HWY. 59

N35°16'48"E

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

CONSTRUCTION LIMITS

S87°27'37"E

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

110+00

P.O.E. STA. 112+00.00

STA. 110+70.00
END CONST. HWY. 12

STAGE C
TEMPORARY EROSION CONTROL DETAILS

7/1/2025
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 22 | 85 |
| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
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| | |
| | |

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

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

CONSTRUCTION LIMITS

PROP. TCE

EXIST. PCE

PROP. R/W

105+00

205+00

℄ HWY. 59

N35°16'48"E

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

S41°27'37"E

110+00

STA. 110+70.00
END CONST. HWY. 12

P.O.E. STA. 112+00.00

E-6

E-11

E-13

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STAGE I
TEMPORARY EROSION CONTROL DETAILS

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 23 | 85 |
| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
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| | |

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

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

CONSTRUCTION LIMITS

PROP. TCE

PROP. R/W

EXIST. PCE

205+00

℄ HWY. 59

N35°16'48"E

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

105+00

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

110+00

STA. 110+70.00
END CONST. HWY. 12

P.O.E. STA. 112+00.00

STAGE 2
TEMPORARY EROSION CONTROL DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 24 | 85 |
| | | TEMPORARY EROSION CONTROL DETAILS | | | | |

## REVISIONS

| DATE OF REVISION | REVISION |
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| | |

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

## LEGEND

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

E-13 = DROP INLET FILTER SOCK

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12

EXIST. R/W

CONSTRUCTION LIMITS

PROP. TCE

EXIST. PCE

PROP. R/W

105+00

205+00

℄ HWY. 59

N35°16'48"E

EXIST. R/W

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

PROP. TCE

EXIST. R/W

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

CONSTRUCTION LIMITS

110+00

CONSTRUCTION LIMITS

PROP. R/W

PROP. TCE

EXIST. R/W

℄ HWY. 12

PROP. R/W

EXIST. R/W

P.O.E. STA. 112+00.00

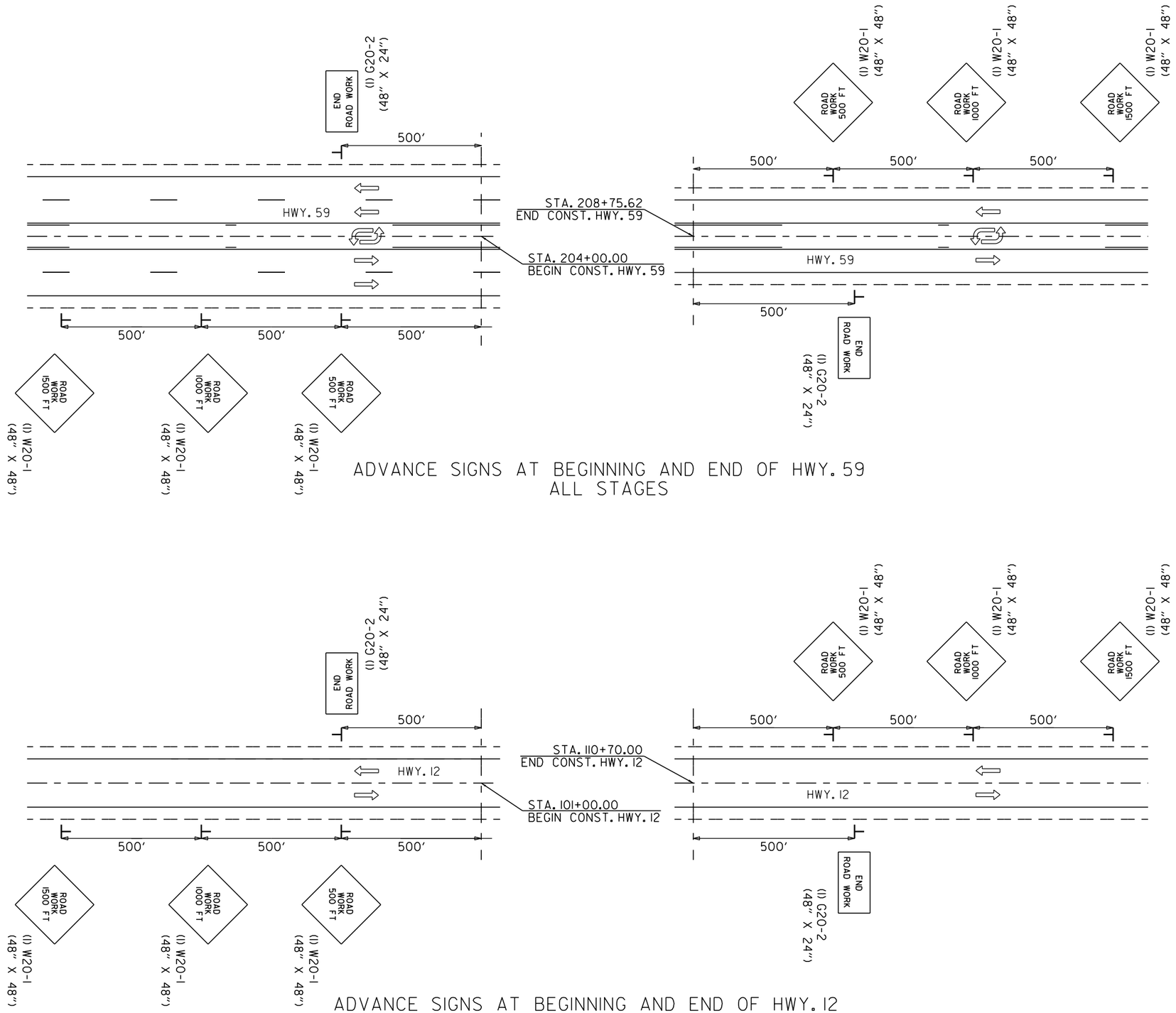
STA. 110+70.00
END CONST. HWY. 12

STAGE 3
TEMPORARY EROSION CONTROL DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 25 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025




ADVANCE SIGNS AT BEGINNING AND END OF HWY. 59
ALL STAGES



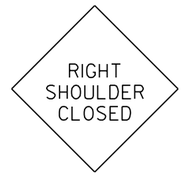

ADVANCE SIGNS AT BEGINNING AND END OF HWY. 12
ALL STAGES




R4-1
(24" X 30")




W8-1
(36" X 36")




W21-5a
(36" X 36")

ADVANCE SIGNS
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 26 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

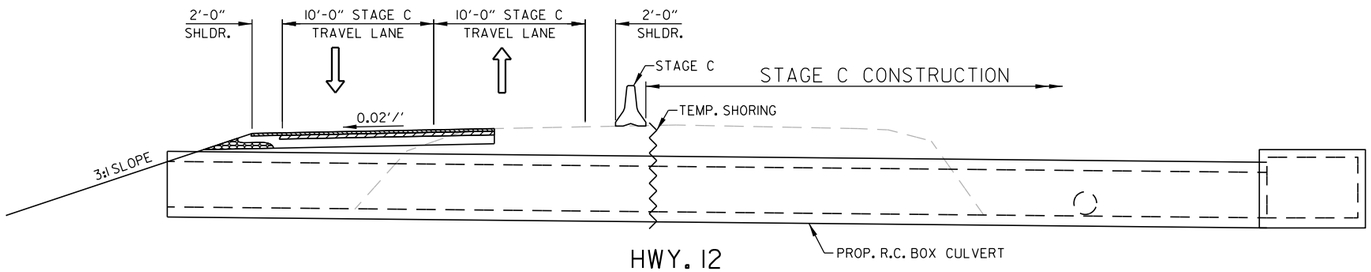
SEQUENCE OF CONSTRUCTION:

STAGES A-C TO BE CONSTRUCTED PRIOR TO STAGES 1-3.

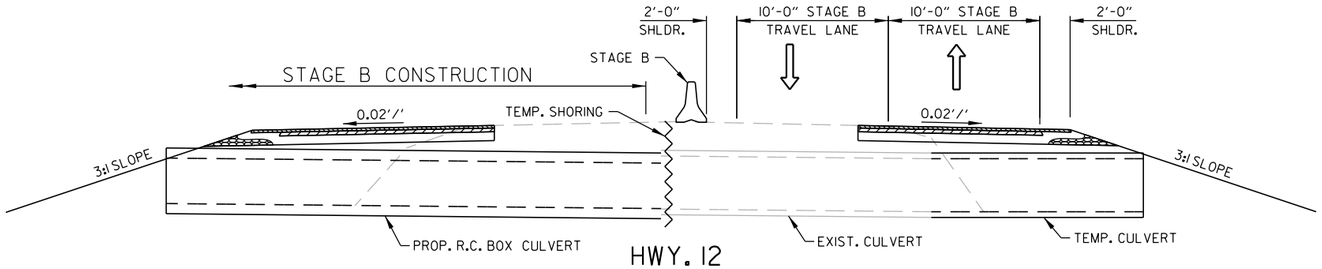
STAGE A:
- PLACE ADVANCE WARNING SIGNAGE (TO BE MAINTAINED IN ALL STAGES) AND TEMPORARY TRAFFIC CONTROL DEVICES.
- INSTALL THE TEMPORARY R.C. PIPES ON THE SOUTH SIDE OF HWY. 12.
- INSTALL THE TEMPORARY PAVEMENT ON THE SOUTH SIDE OF HWY. 12.

STAGE B:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TRAFFIC DETECTION ZONES TO ACCOMMODATE THE WESTBOUND TRAFFIC SHIFT.
- INSTALL NORTHERN PORTION OF THE PROPOSED BOX CULVERT.
- INSTALL THE TEMPORARY PAVEMENT ON THE NORTH SIDE OF HWY. 12.

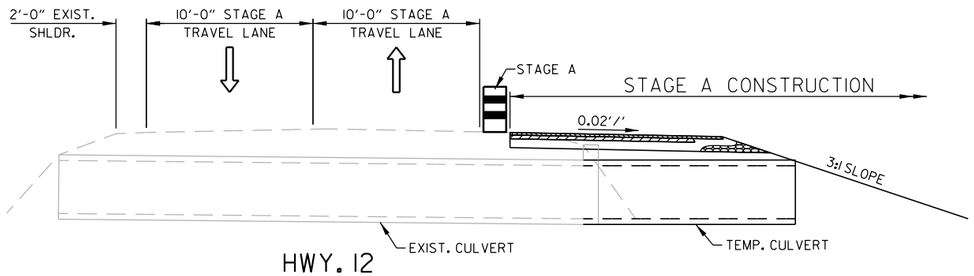
STAGE C:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TRAFFIC DETECTION ZONES TO ACCOMMODATE THE WESTBOUND TRAFFIC SHIFT.
- REMOVE STAGE IA WIDENING AND INSTALL SOUTHERN PORTION OF THE PROPOSED BOX CULVERT AND R.C.P. UNDER THE DRIVEWAY AT STA. 128+00.




HWY. 12
TANGENT SECTION
STAGE C CONSTRUCTION DETAIL




HWY. 12
TANGENT SECTION
STAGE B CONSTRUCTION DETAIL




HWY. 12
TANGENT SECTION
STAGE A CONSTRUCTION DETAIL

STATE OF ARKANSAS
10634
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07-03-2025

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BOX CULVERT CONSTRUCTION DETAILS
MAINTENANCE OF TRAFFIC DETAILS

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 27 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

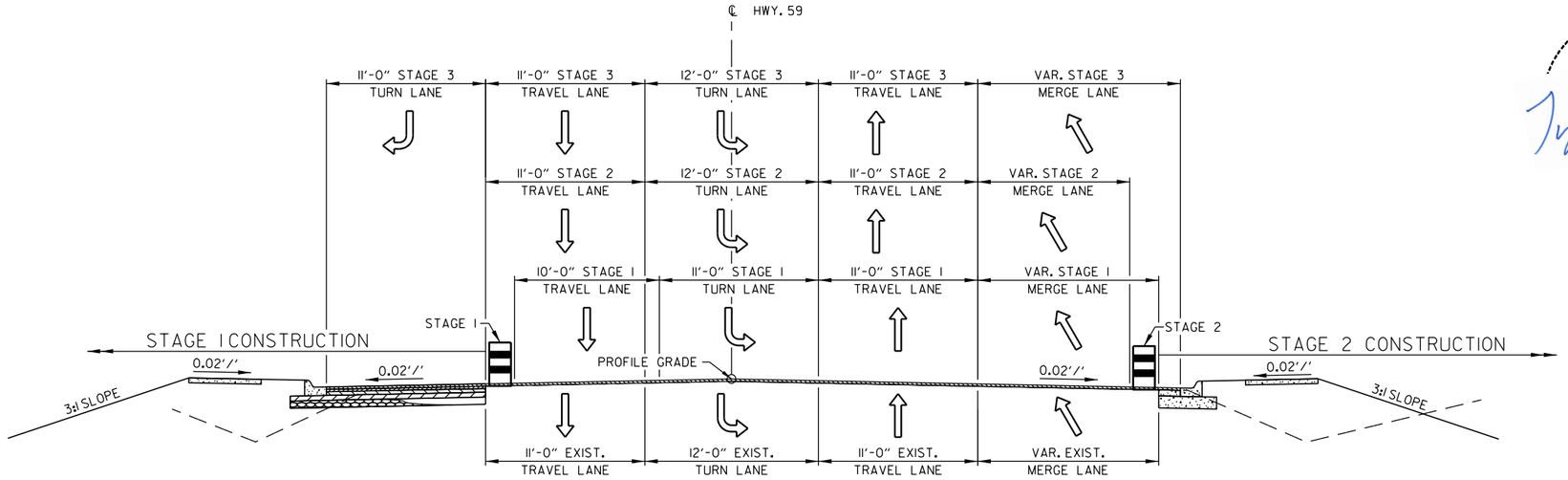
SEQUENCE OF CONSTRUCTION:

STAGE 1:
- PLACE ADVANCE WARNING SIGNAGE (TO BE MAINTAINED IN ALL STAGES) AND RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- CONSTRUCT BOX CULVERT ACROSS ROADWAY UTILIZING PROPOSED STAGES A-C
- INSTALL TEMPORARY TRAFFIC SIGNALS.
- CONSTRUCT NOTCH AND WIDEN OF NORTHWEST AND SOUTHEAST QUADRANTS OF THE INTERSECTION.

STAGE 2:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TEMPORARY TRAFFIC SIGNALS.
- CONSTRUCT NOTCH AND WIDEN OF NORTHEAST AND SOUTHWEST QUADRANTS OF THE INTERSECTION.

STAGE 3:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TEMPORARY TRAFFIC SIGNALS.
- REMOVE AND CONSTRUCT ISLANDS.
- CONSTRUCT FINAL LIFT OF ACHM AND CONSTRUCT MILL AND OVERLAY TRANSITIONS AT BEGIN AND END OF JOB.
- REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND INSTALL PERMANENT PAVEMENT MARKINGS.

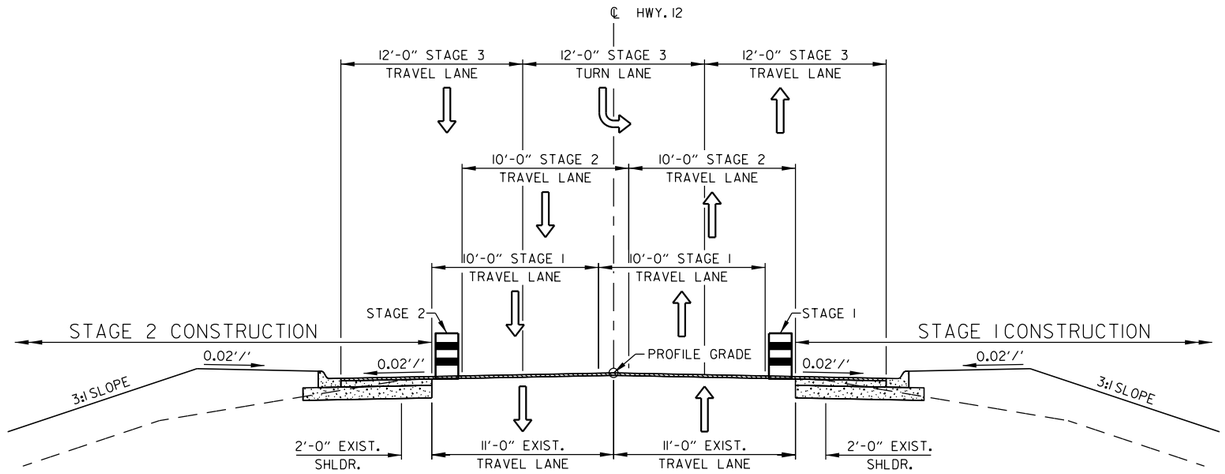
NOTE:
MILL AND OVERLAY TRANSITIONS MAY BE CONSTRUCTED USING SHORT TERM, ONE LANE CLOSURES. FOR SHORT TERM, ONE LANE CLOSURES, SEE ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD ROADWAY DRAWINGS, STANDARD DRAWING TC-2.




HWY. 59
TANGENT SECTION
(NORTH OF INTERSECTION)

NOTES: MIRROR SIMILAR FOR SOUTH SIDE OF INTERSECTION

SEE PLAN SHEETS FOR DEVIATIONS TO THE PROPOSED LANE WIDTHS.




HWY. 12
TANGENT SECTION
(EAST OF INTERSECTION)

NOTES: MIRROR SIMILAR FOR SOUTH SIDE OF INTERSECTION

SEE PLAN SHEETS FOR DEVIATIONS TO THE PROPOSED LANE WIDTHS.

TYPICAL SECTIONS OF IMPROVEMENT
MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
10634
E TYLER MONCRIEF
07-03-2025

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 28 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

STAGE A:
- PLACE ADVANCE WARNING SIGNAGE (TO BE MAINTAINED IN ALL STAGES) AND TEMPORARY TRAFFIC CONTROL DEVICES.
- INSTALL THE TEMPORARY R.C. PIPES ON THE SOUTH SIDE OF HWY. 12.
- INSTALL THE TEMPORARY PAVEMENT ON THE SOUTH SIDE OF HWY. 12.

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

N

P.O.E. STA. 210+00.00

℄ HWY. 59

STA. 208+75.62
END CONST. HWY. 59

P.O.B. STA. 100+00.00

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

105+00

110+00

EXISTING SIGNAL HEADS

205+00

TRAFFIC DRUMS (4) 30' O.C.

CONTINUOUS WHITE

CONTINUOUS DOUBLE YELLOW

TRAFFIC DRUMS (3) 30' O.C.

LEFT SHOULDER CLOSED
(1) W21-5a (36" X 36")

P.O.E. STA. 112+00.00

+25 50' TAPER +75

℄ HWY. 12

10'
10'

11'
11'

RIGHT SHOULDER CLOSED
(1) W21-5a (36" X 36")

N35°16'48"E

+52.19
26.00'

+75.00
26.00'

+00.00
13.73'

DBL. 42" X 14' TEMPORARY CULVERT

CONSTRUCTION LIMITS

TRAFFIC DRUMS (8) 10' O.C.

18" X 58' TEMPORARY CULVERT

TRAFFIC DRUMS (3) 10' O.C.

(1) W8-17 (48" X 48")

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

STA. 110+70.00
END CONST. HWY. 12

P.O.B. STA. 200+00.00

℄ HWY. 59

STAGE A - QUANTITIES

TRAFFIC DRUMS - 18 EACH
CONSTRUCTION PAVEMENT MARKINGS - 1,075 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS - 925 LIN. FT.

LEGEND

STAGE A WORKZONE

STAGE A
MAINTENANCE OF TRAFFIC DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 29 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

STAGE B:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TRAFFIC DETECTION ZONES TO ACCOMMODATE THE WESTBOUND TRAFFIC SHIFT.
- INSTALL NORTHERN PORTION OF THE PROPOSED BOX CULVERT.
- INSTALL THE TEMPORARY PAVEMENT ON THE NORTH SIDE OF HWY. 12.

STATE OF ARKANSAS
10634
E TYLER MONCRIEF
07-03-2025

N

P.O.E. STA. 210+00.00

℄ HWY. 59

STA. 208+75.62
END CONST. HWY. 59

TRAFFIC DRUMS (5)
30' O.C.

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

105+00

TRAFFIC DRUMS (7)
10' O.C.

EXISTING SIGNAL HEAD

205+00

P.O.B. STA. 100+00.00

℄ HWY. 12

4.39'

+29.67
28.00'
+65.72
28.00'

+21.53
28.00'

+75

125' TAPER

+75.00
28.02'

+00

CONSTRUCTION LIMITS

+25.00
12.72'

110+00

P.O.E. STA. 112+00.00

(1) OM-3L (12" X 36")
(1) W1-4aR (48" X 48")
(1) W13-1 (24" X 24")
(1) OM-3R (12" X 36")
(1) W8-17 (48" X 48")
(1) W1-4aL (48" X 48")
(1) W13-1 (24" X 24")
RIGHT SHOULDER CLOSED
(1) W21-5a (36" X 36")
30 MPH

11'
10'
10'
10'
10'
11'
℄ HWY. 12

8:1 TAPER

+59

+29

N35°16'48"E

TRAFFIC DRUMS (6)
30' O.C.

TEMPORARY IMPACT ATTENUATION BARRIER

CONTINUOUS DOUBLE YELLOW

120' TEMP. P.C.C.B.

CONTINUOUS WHITE

VIRTUAL 6'x50' PRESENCE VDZ (TYPICAL)

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 65' BEHIND STOP BAR

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

STA. 110+70.00
END CONST. HWY. 12

P.O.B. STA. 200+00.00

STAGE B - QUANTITIES

TRAFFIC DRUMS - 18 EACH
TEMPORARY PRECAST CONCRETE BARRIER - 120 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER - 1 EACH
CONSTRUCTION PAVEMENT MARKINGS - 1,555 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 1,075 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS - 575 LIN. FT.
VIDEO DETECTOR ROTATION - 1 EACH (SEE PAGE 51)

LEGEND

STAGE B BOX CONSTRUCTION ZONE

STAGE B WORKZONE

STAGE B
MAINTENANCE OF TRAFFIC DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 30 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

STAGE C:
- RELOCATED TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TRAFFIC DETECTION ZONES TO ACCOMMODATE THE WESTBOUND TRAFFIC SHIFT.
- REMOVE STAGE IA WIDENING AND INSTALL SOUTHERN PORTION OF THE PROPOSED BOX CULVERT AND R.C.P. UNDER THE DRIVEWAY AT STA. 128+00.

N

P.O.E. STA. 210+00.00

℄ HWY. 59

STA. 208+75.62
END CONST. HWY. 59

P.O.B. STA. 100+00.00

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

105+00

205+00

EXISTING SIGNAL HEADS

8.48°

N35°16'48"E

(1) W1-4dL (48" X 48")
(1) W13-1 (24" X 24")

VIRTUAL 6'x50' PRESENCE VDZ (TYPICAL)

CONTINUOUS WHITE

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 65' BEHIND STOP LINE

150' TAPER

140' P.C.C.B.

+75

+25

CONTINUOUS DOUBLE YELLOW

10'

+66

40'

110+00

(1) W1-4dR (48" X 48")
(1) W13-1 (24" X 24")

LEFT SHOULDER CLOSED

(1) W21-5a (36" X 36")

P.O.E. STA. 112+00.00

℄ HWY. 12

(1) W21-5a (36" X 36")

RIGHT SHOULDER CLOSED

30 MPH

(1) W1-4dL (48" X 48")
(1) W13-1 (24" X 24")

TEMPORARY IMPACT ATTENUATION BARRIER

(1) OM-3R (12" X 36")

TRAFFIC DRUMS (9) 10' O.C.

(1) OM-3L (12" X 36")

ROAD CLOSED

(1) RII-2 (48" X 30")

16' BARR. TYP. III RT.

(1) W1-4dR (48" X 48")
(1) W13-1 (24" X 24")

16' BARR. TYP. III LT.

16' BARR. TYP. III RT.

STA. 108+66 INSTALL 18" X 55' TEMPORARY RT. SIDE DRAIN CONST. TEMPORARY DRIVE

STA. 110+70.00
END CONST. HWY. 12

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.B. STA. 200+00.00

STAGE C - QUANTITIES

TRAFFIC DRUMS - 9 EACH
TEMPORARY PRECAST CONCRETE BARRIER - 140 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER - 1 EACH
CONSTRUCTION PAVEMENT MARKINGS - 1,615 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 1,505 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS - 85 LIN. FT.
VIDEO DETECTOR ROTATION - 1 EACH (SEE PAGE 51)

LEGEND

STAGE C BOX CONSTRUCTION ZONE

STAGE C
MAINTENANCE OF TRAFFIC DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 31 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTING STREETS AT ALL TIMES UNLESS APPROVED BY THE ENGINEER

STAGE I:
- PLACE ADVANCE WARNING SIGNAGE (TO BE MAINTAINED IN ALL STAGES) AND RELOCATED TEMPORARY TRAFFIC CONTROL DEVICES.
- CONSTRUCT BOX CULVERT ACROSS ROADWAY UTILIZING PROPOSED STAGES A-C.
- INSTALL TEMPORARY TRAFFIC SIGNALS.
- CONSTRUCT NOTCH AND WIDEN OF NORTHWEST AND SOUTHEAST QUADRANTS OF THE INTERSECTION.

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N

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

STA. 208+75.62
END CONST. HWY. 59

STA. 110+70.00
END CONST. HWY. 12

P.O.E. STA. 112+00.00

P.O.E. STA. 210+00.00

P.O.B. STA. 200+00.00

HWY. 12 STA. 105+87.14 =
HWY. 59 STA. 205+37.50
Δ 57°15'35"

S87°27'37"E

N35°16'48"E

105+00

110+00

205+00

STAGE I- QUANTITIES

TRAFFIC DRUMS - 107 EACH
CONSTRUCTION PAVEMENT MARKINGS - 3,970 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS - 420 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 1,345 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS - 1,955 LIN. FT.

LEGEND

STAGE I WORKZONE

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STAGE I
MAINTENANCE OF TRAFFIC DETAILS

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 32 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

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NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTING STREETS AT ALL TIMES UNLESS APPROVED BY THE ENGINEER

STAGE 2:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TEMPORARY TRAFFIC SIGNALS.
- CONSTRUCT NOTCH AND WIDEN OF NORTHEAST AND SOUTHWEST QUADRANTS OF THE INTERSECTION.

N

P.O.E. STA. 210+00.00

(1) W21-5D (36" X 36") RIGHT SHOULDER CLOSED

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS FROM END OF PROJECT

+50

11' 12' HWY. 59 11'

STA. 208+75.62
END CONST. HWY. 59

TRAFFIC DRUMS (41) 10' O.C.

SKIP YELLOW

CONTINUOUS YELLOW

CONTINUOUS WHITE

TRAFFIC DRUMS (6) 10' O.C.

(1) R9-9 (24" X 12") SIDEWALK CLOSED

CONTINUOUS WHITE

TRAFFIC DRUMS (6) 35' O.C.

CONSTRUCTION LIMITS

TRAFFIC DRUMS (8) 10' O.C.

(1) W8-17 (48" X 48") 110+00

P.O.E. STA. 112+00.00

(1) W21-5a (36" X 36") RIGHT SHOULDER CLOSED

(1) W21-5D (36" X 36") RIGHT SHOULDER CLOSED

P.O.B. STA. 100+00.00

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

105+00

+82

150' TURNING TAPER

+32

CONSTRUCTION LIMITS

100+00

205+00

+44

50' TAPER

+94

CONTINUOUS DOUBLE YELLOW

12' 12' ℄ HWY. 12

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS TO BEGIN OF PROJECT

TRAFFIC DRUMS (5) 10' O.C.

TRAFFIC DRUMS (8) 35' O.C.

CONTINUOUS WHITE

TRAFFIC DRUMS (12) 10' O.C.

CONSTRUCTION LIMITS

(1) W8-17 (48" X 48")

SIDEWALK CLOSED

(2) R9-9 (24" X 12")

VAR.

℄ HWY. 59

11' 12' 11'

N35°16'48"E

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS TO BEGIN OF PROJECT

+50

TRAFFIC DRUMS (9) 20' O.C.

TRAFFIC DRUMS (6) 20' O.C.

CONTINUOUS WHITE

S87°27'37"E

+00

50' TAPER

+50

10' 10'

℄ HWY. 12 11' 11'

CONTINUOUS DOUBLE YELLOW

CONSTRUCTION LIMITS

150' TURNING TAPER

+53

+03

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

SIDEWALK CLOSED

(1) R9-9 (24" X 12")

CONTINUOUS WHITE

STA. 110+70.00
END CONST. HWY. 12

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.B. STA. 200+00.00

STAGE 2 - QUANTITIES

TRAFFIC DRUMS - 101 EACH
CONSTRUCTION PAVEMENT MARKINGS - 4,575 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS - 420 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 4,175 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS - 615 LIN. FT.

LEGEND

STAGE 2 WORKZONE

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STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 33 | 85 |
| | | MAINTENANCE OF TRAFFIC DETAILS | | | | |

NOTES:

CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTING STREETS AT ALL TIMES UNLESS APPROVED BY THE ENGINEER.

ALL CONSTRUCTION PAVEMENT MARKINGS SHALL MATCH THAT OF STAGE 2. SEE STAGE 2 FOR ADDITIONAL INFORMATION.

STAGE 3:
- RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.
- ADJUST TEMPORARY TRAFFIC SIGNALS.
- REMOVE AND CONSTRUCT ISLANDS.
- CONSTRUCT FINAL LIFT OF ACHM AND CONSTRUCT MILL AND OVERLAY TRANSITIONS AT BEGIN AND END OF JOB.
- REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND INSTALL PERMANENT PAVEMENT MARKINGS.

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N

P.O.E. STA. 210+00.00
(1) W21-5D (36" X 36")
RIGHT SHOULDER CLOSED

STA. 208+75.62
END CONST. HWY. 59

TRAFFIC DRUMS (41)
10' O.C.

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

105+00

(1) R9-9 (24" X 12")
SIDEWALK CLOSED

TRAFFIC DRUMS (6)
10' O.C.

110+00

P.O.B. STA. 100+00.00
(1) W21-5D (36" X 36")
RIGHT SHOULDER CLOSED

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

CONSTRUCTION LIMITS

+82
150' TURNING TAPER
+32

205+00

+44
50' TAPER
+94

12'
12'
℄ HWY. 12

TRAFFIC DRUMS (9)
20' O.C.

TRAFFIC DRUMS (6)
35' O.C.

CONSTRUCTION LIMITS

TRAFFIC DRUMS (8)
10' O.C.

+00
50' TAPER
+50

P.O.E. STA. 112+00.00
(1) W21-5a (36" X 36")
RIGHT SHOULDER CLOSED

℄ HWY. 12

TRAFFIC DRUMS (5)
10' O.C.

TRAFFIC DRUMS (8)
35' O.C.

TRAFFIC DRUMS (27)
10' O.C.

S87°27'37"E

10'
10'

TRAFFIC DRUMS (12)
10' O.C.

CONSTRUCTION LIMITS

(2) R9-9 (24" X 12")
SIDEWALK CLOSED

VAR.

N35°16'48"E

℄ HWY. 59

150' TURNING TAPER

+53
+03

(1) R9-9 (24" X 12")
SIDEWALK CLOSED

TRAFFIC DRUMS (6)
20' O.C.

STA. 110+70.00
END CONST. HWY. 12

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.B. STA. 200+00.00

STAGE 3 - QUANTITIES

TRAFFIC DRUMS - 128 EACH
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS - 420 LIN. FT.

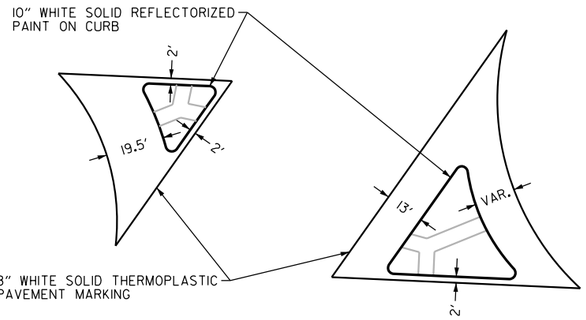
LEGEND

STAGE 3 WORKZONE

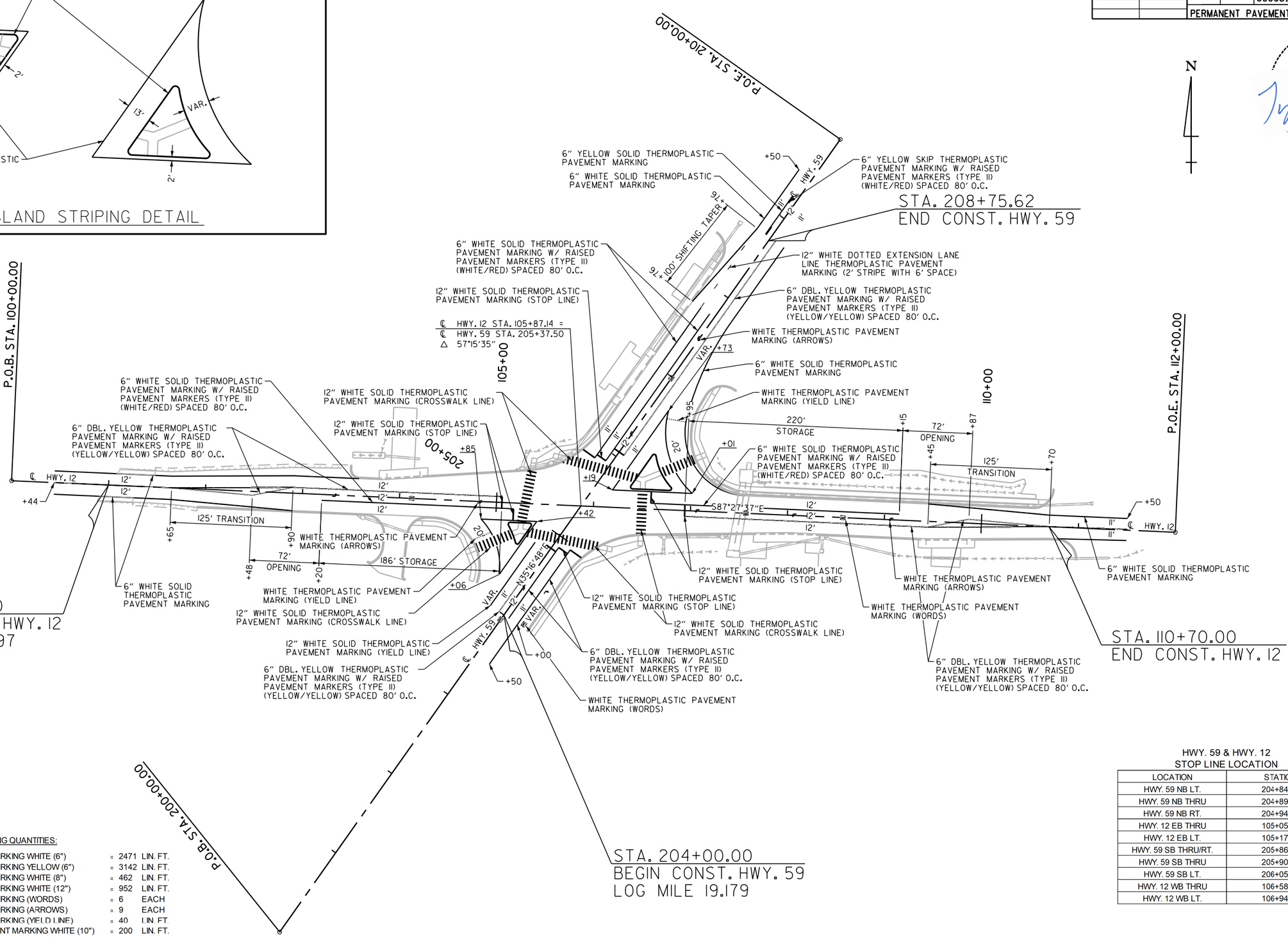
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 34 | 85 |
| | | PERMANENT PAVEMENT MARKING DETAILS | | | | |




ISLAND STRIPING DETAIL




N

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

HWY. 59 & HWY. 12
STOP LINE LOCATION

| LOCATION | STATION |
|---|---|
| HWY. 59 NB LT. | 204+84.01 |
| HWY. 59 NB THRU | 204+89.27 |
| HWY. 59 NB RT. | 204+94.10 |
| HWY. 12 EB THRU | 105+05.66 |
| HWY. 12 EB LT. | 105+17.81 |
| HWY. 59 SB THRU/RT. | 205+86.25 |
| HWY. 59 SB THRU | 205+90.25 |
| HWY. 59 SB LT. | 206+05.62 |
| HWY. 12 WB THRU | 106+58.89 |
| HWY. 12 WB LT. | 106+94.13 |

PERMANENT PAVEMENT MARKING QUANTITIES:

| | | |
|---|---|---|
| THERMOPLASTIC PAVEMENT MARKING WHITE (6") | = 2471 | LIN. FT. |
| THERMOPLASTIC PAVEMENT MARKING YELLOW (6") | = 3142 | LIN. FT. |
| THERMOPLASTIC PAVEMENT MARKING WHITE (8") | = 462 | LIN. FT. |
| THERMOPLASTIC PAVEMENT MARKING WHITE (12") | = 952 | LIN. FT. |
| THERMOPLASTIC PAVEMENT MARKING (WORDS) | = 6 | EACH |
| THERMOPLASTIC PAVEMENT MARKING (ARROWS) | = 9 | EACH |
| THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) | = 40 | LIN. FT. |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | = 200 | LIN. FT. |
| RAISED PAVEMENT MARKERS (TYPE II) (WHITE/RED) | = 13 | EACH |
| RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW) | = 20 | EACH |

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PERMANENT PAVEMENT MARKING DETAILS

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 35 | 85 |
| | | QUANTITIES | | | | |

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10634
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## ADVANCE WARNING SIGNS AND DEVICES

| | SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE A | STAGE B | STAGE C | STAGE 1 | STAGE 2 | STAGE 3 | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | | TRAFFIC DRUMS | BARRICADES (TYPE III) | | FURNISHING & INSTALLING PRECAST CONC. BARRIER | RELOCATING PRECAST CONCRETE BARRIER | TEMPORARY IMPACT ATTENUATION BARRIER | TEMP. IMPACT ATTEN.BARR. (REPAIR) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | RIGHT | LEFT | | | | |
| | | | | LIN. FT. - EACH | | | | | | | NO. | SQ. FT. | EACH | | | LIN. FT. | | EACH | |
| | W20-1 | ROAD WORK 1500 FT. | 48"x48" | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 64.0 | | | | | | | |
| | W20-1 | ROAD WORK 1000 FT. | 48"x48" | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 64.0 | | | | | | | |
| | W20-1 | ROAD WORK 500 FT. | 48"x48" | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 64.0 | | | | | | | |
| | G20-2 | END ROAD WORK | 48"x24" | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 32.0 | | | | | | | |
| | W1-4AR | REVERSE CURVE RT. | 48"x48" | | 2 | 2 | | | | 2 | 2 | 32.0 | | | | | | | |
| | W1-4AL | REVERSE CURVE LT. | 48"x48" | | 2 | 2 | | | | 2 | 2 | 32.0 | | | | | | | |
| | W13-1 | SPEED LIMIT (ADVISORY) | 24"x24" | | 4 | 4 | | | | 4 | 4 | 16.0 | | | | | | | |
| | R11-2 | ROAD CLOSED | 48"x30" | | | 2 | | | | 2 | 2 | 20.0 | | | | | | | |
| | OM-3L | OBJECT MARKER | 12"x36" | | 1 | 1 | | | | 1 | 1 | 3.0 | | | | | | | |
| | OM-3R | OBJECT MARKER | 12"x36" | | 1 | 1 | | | | 1 | 1 | 3.0 | | | | | | | |
| | W1-6 | LARGE ARROW | 48"x24" | | | 1 | | | | 1 | 1 | 8.0 | | | | | | | |
| * | R4-1 | DO NOT PASS | 24"x30" | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 10.0 | | | | | | | |
| | W21-5a | LEFT SHOULDER CLOSED | 36"x36" | 1 | | 1 | 2 | | | 2 | 2 | 18.0 | | | | | | | |
| * | W21-5a | RIGHT SHOULDER CLOSED | 36"x36" | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 45.0 | | | | | | | |
| * | W8-1 | BUMP | 36"x36" | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12.5 | | | | | | | |
| | W8-17 | SHOULDER DROP OFF | 48"x48" | 1 | 1 | | 4 | 2 | | 4 | 4 | 64.0 | | | | | | | |
| | R9-9 | SIDEWALK CLOSED | 24"X12" | | | | 1 | 5 | 5 | 5 | 5 | 10.0 | | | | | | | |
| | R9-9 | CROSSWALK CLOSED | 24"X12" | | | | 1 | | | 1 | 1 | 2.0 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | TRAFFIC DRUMS | | 18 | 18 | 4 | 107 | 101 | 128 | 128 | | | 128 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | TYPE III BARRICADE-RT. (16') | | | | 2 | | | | 2 | | | | 32 | | | | | |
| | | TYPE III BARRICADE-LT. (15') | | | | 1 | | | | 1 | | | | | 16 | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | | | 120 | 20 | | | | 140 | | | | | | 140 | | | |
| | | RELOCATING PRECAST CONCRETE BARRIER | | | | 120 | | | | 120 | | | | | | | 120 | | |
| | | TEMPORARY IMPACT ATTENUATION BARRIER | | | 1 | 1 | | | | 2 | | | | | | | | 2 | |
| | | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | | | 1 | 1 | | | | 2 | | | | | | | | | 2 |
| | | | | | | | | | | | | | | | | | | | |
| | **TOTALS:** | | | | | | | | | | | **499.5** | **128** | **32** | **16** | **140** | **120** | **2** | **2** |

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
* QUANTITY ESTIMATED (TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER)

## CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | STAGE A | STAGE B | STAGE C | STAGE 1 | STAGE 2 | STAGE 3 | END OF JOB | REMOVAL OF PERMANENT PAVEMENT MARKINGS | CONSTRUCTION PAVEMENT MARKINGS | REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | | THERMOPLASTIC PAVEMENT MARKING | | | | | | | REFLECTORIZED PAINT PAVEMENT MARKING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | TYPE II (WHITE/RED) | TYPE II (YELLOW/YELLOW) | 6" WHITE | 6" YELLOW | 8" WHITE | 12" WHITE | YIELD LINE | WORDS | ARROWS | 10" WHITE |
| | LIN. FT. - EACH | | | | | | | LIN. FT. | | LIN. FT. | | EACH | | LIN. FT. | | | | | EACH | | LIN. FT. |
| REMOVAL OF PERMANENT PAVEMENT MARKINGS | 925 | 575 | 85 | 1955 | 615 | | | 4155 | | | | | | | | | | | | | |
| CONSTRUCTION PAVEMENT MARKINGS | 1075 | 1555 | 1615 | 3970 | 4575 | | | | 12790 | | | | | | | | | | | | |
| CONSTRUCTION PAVEMENT MARKINGS (WORDS) | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION PAVEMENT MARKINGS (ARROWS) | | | | | | | | | | | | | | | | | | | | | |
| REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | | 1075 | 1505 | 1345 | 4175 | 420 | | | | 8520 | | | | | | | | | | | |
| REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | | | | 420 | 420 | | | | | | 840 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) | | | | | | | 13 | | | | | 13 | | | | | | | | | |
| RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) | | | | | | | 20 | | | | | | 20 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (6") | | | | | | | 2471 | | | | | | | 2471 | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING YELLOW (6") | | | | | | | 3142 | | | | | | | | 3142 | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (8") | | | | | | | 462 | | | | | | | | | 462 | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (12") | | | | | | | 952 | | | | | | | | | | 952 | | | | |
| THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) | | | | | | | 40 | | | | | | | | | | | 40 | | | |
| THERMOPLASTIC PAVEMENT MARKING (WORDS) | | | | | | | 6 | | | | | | | | | | | | 6 | | |
| THERMOPLASTIC PAVEMENT MARKING (ARROWS) | | | | | | | 9 | | | | | | | | | | | | | 9 | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | | | | | | | 200 | | | | | | | | | | | | | | 200 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS:** | | | | | | | | **4155** | **12790** | **8520** | **840** | **13** | **20** | **2471** | **3142** | **462** | **952** | **40** | **6** | **9** | **200** |

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

## ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

| LOCATION | TON | TACK COAT GALLON |
|---|---|---|
| ENTIRE PROJECT - TO BE USED IF AND WHERE | 8 | 16 |
| DIRECTED BY THE ENGINEER | | |
| | | |
| **TOTALS:** | **8** | **16** |

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE



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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 36 | 85 |
| | | QUANTITIES | | | | |

## REMOVAL AND DISPOSAL OF ITEMS

| STATION | STATION | LOCATION | CURB | CURB AND GUTTER | ROCK WALLS | CONCRETE DITCH PAVING | CONCRETE ISLANDS | CONCRETE DRIVEWAYS | WALKS | GUARDRAIL | SIGNS | SIGN FOUNDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LIN. FT. | LIN. FT. | LIN. FT. | SQ. YD. | SQ. YD. | SQ. YD. | SQ. YD. | LIN. FT. | EACH | EACH |
| 110+51 | 110+72 | HWY. 12 LT. | 35 | | | | | | | | | |
| 204+00 | 205+55 | HWY. 59 LT. & RT. | | 252 | | | | | | | | |
| 110+66 | 110+91 | HWY. 12 RT. | | | 54 | | | | | | | |
| 105+28 | 105+39 | HWY. 12 LT. | | | | 13 | | | | | | |
| 106+58 | 106+72 | HWY. 12 RT. | | | | 11 | | | | | | |
| 105+18 | 105+51 | HWY. 12 RT. | | | | | 70 | | | | | |
| 106+29 | 106+67 | HWY. 12 LT. | | | | | 89 | | | | | |
| 103+98 | | HWY. 12 DRIVEWAY RT. | | | | | | 223 | | | | |
| 108+00 | | HWY. 12 DRIVEWAY RT. | | | | | | 325 | | | | |
| 109+65 | | HWY. 12 DRIVEWAY RT. | | | | | | 63 | | | | |
| 204+09 | 208+49 | HWY. 59 LT. & RT. | | | | | | | 303 | | | |
| WEST BRIDGE END | | HWY. 12 RT. | | | | | | | | 200 | | |
| WEST BRIDGE END | | HWY. 12 LT. | | | | | | | | 125 | | |
| 100+91 | 102+16 | HWY. 12 RT. | | | | | | | | 125 | | |
| 101+12 | 103+12 | HWY. 12 LT. | | | | | | | | 200 | | |
| 100+96 | | HWY. 12 RT. | | | | | | | | | 1 | |
| 101+17 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 102+64 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 103+19 | | HWY. 12 RT. | | | | | | | | | 1 | |
| 103+53 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 103+79 | | HWY. 12 RT. | | | | | | | | | 1 | 1 |
| 104+13 | | HWY. 12 RT. | | | | | | | | | 1 | 1 |
| 105+00 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 107+54 | | HWY. 12 LT. & RT. | | | | | | | | | 2 | |
| 108+22 | | HWY. 12 LT. | | | | | | | | | 1 | 2 |
| 108+75 | | HWY. 12 RT. | | | | | | | | | 1 | |
| 109+07 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 109+91 | | HWY. 12 LT. | | | | | | | | | 1 | |
| 110+61 | | HWY. 12 RT. | | | | | | | | | 1 | |
| 110+87 | | HWY. 12 RT. | | | | | | | | | 1 | |
| 204+17 | | HWY. 59 LT. | | | | | | | | | 1 | |
| 204+51 | | HWY. 59 RT. | | | | | | | | | 1 | 2 |
| 204+73 | | HWY. 59 LT. | | | | | | | | | 1 | |
| 206+46 | | HWY. 59 LT. | | | | | | | | | 1 | |
| 206+77 | | HWY. 59 RT. | | | | | | | | | 1 | |
| 207+24 | | HWY. 59 RT. | | | | | | | | | 1 | 1 |
| | | | | | | | | | | | | |
| TOTALS: | | | 35 | 252 | 54 | 24 | 159 | 611 | 303 | 650 | 22 | 7 |

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.

## REMOVAL AND DISPOSAL OF FENCE

| STATION | STATION | LOCATION | FENCE |
|---|---|---|---|
| | | | LIN. FT. |
| 108+16 | 108+88 | HWY. 12 RT. | 81 |
| | | | |
| TOTAL: | | | 81 |

## REMOVAL AND DISPOSAL OF CULVERTS

| STATION | DESCRIPTION | PIPE CULVERTS |
|---|---|---|
| | | EACH |
| 103+98 | HWY. 12 RT. 18" X 72' CMP SIDE DRAIN | 1 |
| 105+25 | HWY. 12 LT. 18" X 28" X 9' RCP W/ FES | 1 |
| 105+54 | HWY. 12 LT. 18" X 34' CMP SIDE DRAIN | 1 |
| 107+46 | HWY. 12 RT. QUAD. 30" X 3' CMP W/ HDWL. | 4 |
| 107+54 | HWY. 12 DBL. 42" RCP W/ HDWL. & FES | 2 |
| 107+58 | HWY. 12 LT. 48" X 4' RCP W/ FES | 1 |
| 108+00 | HWY. 12 RT. 18" X 55' CMP SIDE DRAIN | 1 |
| 109+65 | HWY. 12 RT. 18" X 40' CMP SIDE DRAIN | 1 |
| 110+87 | HWY. 12 LT. 18" X 40' CMP SIDE DRAIN | 1 |
| 111+12 | HWY. 12 RT. 18" X 43' CMP SIDE DRAIN | 1 |
| 206+77 | HWY. 59 LT. 12" X 48' CMP SIDE DRAIN | 1 |
| 207+89 | HWY. 59 LT. 18" X 49' CMP SIDE DRAIN | 1 |
| 208+57 | HWY. 59 LT. 18" X 24' CMP SIDE DRAIN | 1 |
| | | |
| TOTAL: | | 17 |

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

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## CLEARING AND GRUBBING

| STATION | STATION | LOCATION | CLEARING | GRUBBING |
|---|---|---|---|---|
| | | | STATION | |
| 101+00 | 111+70 | HWY. 12 | 11 | 11 |
| 204+00 | 208+76 | HWY. 59 | 5 | 5 |
| | | | | |
| TOTALS: | | | 16 | 16 |

## EROSION CONTROL

| STATION | STATION | LOCATION | PERMANENT EROSION CONTROL | | | | | | TEMPORARY EROSION CONTROL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | SEEDING | LIME | MULCH COVER | WATER | SECOND SEEDING APPLICATION | SOLID SODDING | TEMPORARY SEEDING | MULCH COVER | WATER | SAND BAG DITCH CHECKS (E-5) | ROCK DITCH CHECKS (E-6) | SILT FENCE (E-11) | DROP INLET FILTER SOCK (12") (E-13) | *SEDIMENT REMOVAL & DISPOSAL |
| | | | ACRE | TON | ACRE | M.GAL. | ACRE | SQ.YD. | ACRE | ACRE | M.GAL. | BAG | CU.YD. | LIN. FT. | LIN. FT. | CU. YD. |
| ENTIRE | PROJECT | CLEARING AND GRUBBING | | | | | | | 1.84 | 1.84 | 37.5 | | 33 | 865 | | 43 |
| ENTIRE | PROJECT | STAGE A | | | | | | | 0.09 | 0.09 | 1.8 | | 6 | | | 2 |
| ENTIRE | PROJECT | STAGE B | | | | | | | 0.16 | 0.16 | 3.3 | | 6 | | | 2 |
| ENTIRE | PROJECT | STAGE C | | | | | | | 0.12 | 0.12 | 2.4 | | 6 | | 54 | 2 |
| ENTIRE | PROJECT | STAGE 1 | | | | | | | 0.90 | 0.90 | 18.4 | | 15 | 506 | 211 | 24 |
| ENTIRE | PROJECT | STAGE 2 | | | | | | | 0.75 | 0.75 | 15.3 | | 9 | 337 | 234 | 15 |
| ENTIRE | PROJECT | STAGE 3 | | | | | | | | | | | | | | |
| ENTIRE | PROJECT | | | | | 100.6 | | 7986 | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| *ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | | 0.50 | 1.00 | 0.50 | 61.1 | 0.50 | 799 | 0.39 | 0.39 | 8.0 | 110 | 6 | 150 | 50 | 6 |
| | | | | | | | | | | | | | | | | |
| TOTALS: | | | 0.50 | 1.00 | 0.50 | 161.7 | 0.50 | 8785 | 4.25 | 4.25 | 86.7 | 110 | 81 | 1858 | 549 | 94 |

BASIS OF ESTIMATE:
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD /LOCATION

NOTE: THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

*QUANTITIES ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## SOIL STABILIZATION

| STATION | STATION | LOCATION / DESCRIPTION | SOIL STABILIZATION |
|---|---|---|---|
| | | | TON |
| ENTIRE | PROJECT | TO BE USED IF AND WHERE | 50 |
| | | DIRECTED BY THE ENGINEER | |
| | | | |
| TOTAL: | | | 50 |

QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## STONE BACKFILL

| STATION | STATION | LOCATION / DESCRIPTION | STONE BACKFILL |
|---|---|---|---|
| | | | TON |
| ENTIRE | PROJECT | TO BE USED IF AND WHERE | 100 |
| | | DIRECTED BY THE ENGINEER | |
| | | | |
| TOTAL: | | | 100 |

QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## GUARDRAIL

| STATION | STATION | LOCATION | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|---|---|
| | | | LIN. FT. | EACH | |
| 100+98.49 | 101+92.24 | HWY 12. RT. | 25 | 1 | 1 |
| 101+20.31 | 103+39.06 | HWY 12. LT. | 150 | 1 | 1 |
| * WEST BRIDGE END | | HWY 12. RT. | 150 | 1 | 1 |
| * WEST BRIDGE END | | HWY 12. LT. | 150 | 1 | 1 |
| | | | | | |
| TOTALS: | | | 475 | 4 | 4 |

NOTE: EXISTING BRIDGE END IS APPROXIMATE. CONTRACTOR TO VERIFY LOCATION AND ADJUST ACCORDINGLY.
* DENONTES LONG POST GUARDRAIL.

## APPROACH GUTTERS AND SLABS

| STATION | STATION | LOCATION | APPROACH GUTTER (TYPE PT) | REINFORCING STEEL-RDWY. (GR. 60) |
|---|---|---|---|---|
| | | | CU.YD. | POUND |
| 100+89.09 | 101+25.59 | HWY. 12 RT. | 9.76 | 977 |
| 101+10.91 | 101+47.41 | HWY. 12 LT. | 9.76 | 977 |
| WEST BRIDGE END | | HWY. 12 RT. | 9.76 | 977 |
| WEST BRIDGE END | | HWY. 12 LT. | 9.76 | 977 |
| | | | | |
| TOTALS: | | | 39.04 | 3908 |

NOTE: USE T =14.5" FOR 4' SHOULDER.
NOTE: EXISTING BRIDGE END IS APPROXIMATE. CONTRACTOR TO VERIFY LOCATION AND ADJUST ACCORDINGLY.

## EARTHWORK

| STATION | STATION | LOCATION / DESCRIPTION | UNCLASSIFIED EXCAVATION | COMPACTED EMBANKMENT |
|---|---|---|---|---|
| | | | CU. YD. | |
| ENTIRE | PROJECT | STAGE A - HWY. 12 | 55 | 96 |
| ENTIRE | PROJECT | STAGE B - HWY. 12 | 39 | 142 |
| ENTIRE | PROJECT | STAGE 1 - HWY. 12 | 425 | 938 |
| ENTIRE | PROJECT | STAGE 2 - HWY. 12 | 530 | 1309 |
| ENTIRE | PROJECT | STAGE 1 - HWY. 59 | 147 | 70 |
| ENTIRE | PROJECT | STAGE 2 - HWY. 59 | 62 | 25 |
| ENTIRE | PROJECT | APPROACHES | 60 | 156 |
| ENTIRE | PROJECT | TEMPORARY APPROACHES | 50 | 50 |
| | | | | |
| | | CHANNEL CHANGE | 326 | |
| | | | | |
| TOTALS: | | | 1694 | 2786 |

NOTE: EARTHWORK QUANTITIES SHALL BE PAID AS PLAN QUANTITY.

QUANTITIES

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 37 | 85 |
| | | QUANTITIES | | | | |

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## CONCRETE COMBINATION CURB AND GUTTER

| STATION | STATION | LOCATION | TYPE A (1' 6") |
|---|---|---|---|
| | | | LIN. FT. |
| 101+92 | 103+66 | HWY. 12 RT. | 174 |
| 103+48 | 105+31 | HWY. 12 LT. | 191 |
| 103+66 | 104+30 | HWY. 12 DRIVEWAY RT. | 146 |
| 104+30 | 104+35 | HWY. 12 RT. | 5 |
| | | HWY. 12/59 SW RETURN | 94 |
| | | HWY. 12/59 NW RETURN | 90 |
| | | HWY. 12/59 NE RETURN | 123 |
| | | HWY. 12/59 SE RETURN | 96 |
| 106+54 | 111+00 | HWY. 12 RT. | 457 |
| 107+57 | 110+74 | HWY. 12 LT. | 326 |
| 204+00 | 204+69 | HWY. 59 RT. | 69 |
| 206+14 | 208+49 | HWY. 59 LT. | 245 |
| 206+91 | 207+27 | HWY. 59 RT. | 49 |
| | | | |
| TOTAL: | | | 2065 |

## CONCRETE DITCH PAVING

| STATION | STATION | LOCATION | LENGTH | "W" | "B" | CONC. DITCH PAVING (TYPE A) | CONC. DITCH PAVING (TYPE B) | SOLID SODDING | WATER |
|---|---|---|---|---|---|---|---|---|---|
| | | | LIN. FT. | FEET | FEET | SQ. YD. | SQ. YD. | SQ. YD. | M. GAL. |
| 107+75.00 | 108+25.00 | HWY. 12 LT. | 50.00 | 20.00 | 10.00 | 111.1 | | 22.22 | 0.28 |
| 108+25.00 | 110+55.00 | HWY. 12 LT. | 230.00 | VAR. | VAR. | 494.4 | | 102.22 | 1.29 |
| 103+50.00 | 103+83.00 | HWY. 12 LT. | 33.00 | 6.00 | | | 22.0 | 14.67 | 0.18 |
| | | | | | | | | | |
| TOTALS: | | | | | | 605.5 | 22.0 | 139.11 | 1.75 |

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

## CONCRETE WALKS

| STATION | STATION | LOCATION | LENGTH | CONCRETE WALKS |
|---|---|---|---|---|
| | | | LIN. FT. | SQ.YD. |
| 204+00 | 204+69 | HWY. 59 RT. | 69 | 38 |
| 206+14 | 206+43 | HWY. 59 LT. | 29 | 16 |
| 207+11 | 207+55 | HWY. 59 LT. | 44 | 24 |
| 208+23 | 208+33 | HWY. 59 LT. | 10 | 6 |
| | | HWY. 12/59 NE RETURN | VAR. | 81 |
| | | HWY. 12/59 NW RETURN | VAR. | 47 |
| | | HWY. 12/59 SW RETURN | VAR. | 50 |
| | | HWY. 12/59 SE RETURN | VAR. | 59 |
| | | | | |
| TOTAL: | | | | 321 |

## CONCRETE ISLAND

| STATION | LOCATION | CURB FACE TYPE | CONCRETE ISLAND |
|---|---|---|---|
| | | | SQ.YD. |
| 105+25 | HWY. 12 RT. | C | 34 |
| 106+58 | HWY. 12 LT. | C | 88 |
| | | | |
| TOTAL: | | | 122 |

## WHEELCHAIR RAMPS

| STATION | LOCATION | TYPE 3 |
|---|---|---|
| | | SQ.YD. |
| 104+20 | HWY. 12 RT. | 5 |
| 104+78 | HWY. 12 RT. (SW RETURN) | 4 |
| 105+36 | HWY. 12 LT. (NW RETURN) | 4 |
| 105+66 | HWY. 12 LT. (NW RETURN) | 6 |
| 106+12 | HWY. 12 RT. (SE RETURN) | 6 |
| 106+50 | HWY. 12 RT. (SE RETURN) | 4 |
| 107+06 | HWY. 12 LT. (NE RETURN) | 4 |
| 110+62 | HWY. 12 LT. | 5 |
| 207+14 | HWY. 59 RT. | 5 |
| 208+37 | HWY. 59 LT. | 5 |
| | | |
| TOTAL: | | 48 |

## FLOWABLE SELECT MATERIAL

| STATION | LOCATION | FLOWABLE SELECT MATERIAL |
|---|---|---|
| | | CU. YD. |
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | 50 |
| | | |
| TOTAL: | | 50 |

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## CONCRETE WALKS (TYPE SPECIAL)

| STATION | STATION | LOCATION | CONCRETE WALKS (TYPE SPECIAL) | HAND RAILING | ARCHITECTURAL FINISH | TEXTURED COATING FINISH |
|---|---|---|---|---|---|---|
| | | | SQ. YD. | LIN. FT. | SQ. FT. | SQ. YD. |
| 107+75 | 110+55 | HWY. 12 LT. | 156 | 280 | 1260 | 119 |
| | | | | | | |
| TOTALS: | | | 156 | 280 | 1260 | 119 |

## SELECTED PIPE BEDDING

| LOCATION | SELECTED PIPE BEDDING |
|---|---|
| | CU.YD. |
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 100 |
| | |
| | |
| TOTAL: | 100 |

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## STRUCTURES

| STATION | DESCRIPTION | REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18" | 24" | 48" | PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2 18" | FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18" | 24" | FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES 18" | TEMPORARY CULVERTS 18" | * 42" | DROP INLETS TYPE C | MO | ST | EXT. 4' | 8' | JUNCT. BOXES (TYPE ST) | SPAN | HEIGHT | LENGTH | CLASS S CONCRETE-ROADWAY | REINF. STEEL-ROADWAY (GRADE 60) | UNCL.EXC. FOR STR.-ROADWAY | SOLID SODDING | WATER | STD. DWG. NOS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EACH | | | LIN. FT. | EACH | | | LIN. FT. | | EACH | | | | | | LIN. FT. | | | CU.YD. | POUND | CU.YD. | SQ.YD. | M.GAL. | |
| 103+63 | HWY. 12 DROP INLET ON RT. W/ PIPE CULVERT W/ FES | 64 | | | | 1 | | | | | | 1 | | 1 | | | | | | | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1 |
| 105+25 | HWY. 12 DROP INLET ON LT. W/ PIPE CULVERT W/ FES | | 12 | | | | 1 | | | | 1 | | | 1 | | | | | | | | | 8 | 0.10 | FES-1, FES-2, FPC-9E, PCC-1 |
| 105+55 | HWY. 12 DROP INLET ON LT. W/ PIPE CULVERT | | | | 26 | | | | | | | 1 | | | 1 | | | | | | | | | | FPC-9E, FFC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 105+79 | HWY. 12 DROP INLET ON LT. W/ PIPE CULVERT | | | | 23 | | | | | | | 1 | | 1 | | | | | | | | | | | FPC-9E, FFC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 106+74 | HWY. 12 DROP INLET ON RT. W/ PIPE CULVERT W/ FES | 6 | | | 56 | 1 | | | | | | 1 | | 1 | | | | | | | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 107+25 | HWY. 12 DROP INLET ON LT. W/ BACK OPENING W/ PIPE CULVERT | | | | 23 | | | | | | | 1 | | | 1 | | | | | | | | | | FPC-9E, FFC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 107+34 | HWY. 12 DROP INLET ON RT. W/ PIPE CULVERT | | | | 7 | | | | | | | 1 | | | 1 | | | | | | | | | | FPC-9E, FFC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 107+46 | HWY. 12 DROP INLET ON RT. | | | | | | | | | | 1 | | | | | | | | | | | | | | FPC-9E |
| 107+51 | HWY. 12 DROP INLET ON LT. ON BOX CULVERT | | | | | | | | | | 1 | | | | 1 | | | | | | | | | | FPC-9, FPC-9E |
| 107+54 | HWY. 12 TEMPORARY PIPE CULVERT EXTENSION | | | | | | | | | 28 | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 107+56 | HWY. 12 JUNCTION BOX ON LT. W/ BOX CULVERT & W/ PIPE CULVERT | | | 8 | | | | | | | | | | | | 1 | 5 | 3 | 156 | 65.37 | 7628 | 35 | 6 | 0.08 | FPC-9S, PCC-1, RCB-1, RCB-2 |
| 108+00 | HWY. 12 TEMPORARY PIPE CULVERT | | | | | | | | 58 | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 108+00 | HWY. 12 DROP INLET ON LT. W/ PIPE CULVERT | | | | 38 | | | | | | 1 | | | 1 | | | | | | | | | | | FPC-9E, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 108+37 | HWY. 12 DROP INLET ON RT. W/ PIPE CULVERT W/ FES | | | | 154 | | | 1 | | | | 1 | | 1 | | | | | | | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, FPC-9M, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 108+37 | HWY. 12 DROP INLET ON RT. W/ PIPE CULVERT | | | | 11 | | | | | | | | 1 | | | | | | | | | | | | FPC-9S, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 110+50 | HWY. 12 DROP INLET ON LT. W/ PIPE CULVERT W/ FES | 56 | | | 246 | 1 | | | | | 1 | | | | | | | | | | | | 5 | 0.06 | FES-1, FES-2, FPC-9E, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 208+70 | HWY. 59 DROP INLET ON LT. W/ PIPE CULVERT | | | | 287 | | | | | | | | 1 | | | | | | | | | | | | FPC-9S, PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | 126 | 12 | 8 | 871 | 3 | 1 | 1 | 58 | 28 | 5 | 7 | 2 | 6 | 4 | 1 | | | | 65.37 | 7628 | 35 | 34 | 0.42 | |

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.
* 42" TEMPORARY PIPE CULVERT SHALL BE A R.C. PIPE TO MATCH THE EXISTING CULVERT MATERIAL.

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 38 | 85 |
| | | QUANTITIES | | | | |

## DRIVEWAYS & TURNOUTS

| STATION | SIDE | LOCATION | WIDTH | **MODIFIED CURB | | PORTLAND CEMENT CONCRETE DRIVEWAY | ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22) | | AGGREGATE BASE COURSE (CLASS 7) | SIDE DRAINS | STANDARD DRAWINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 18" | |
| | | | FEET | STATION | STATION | SQ. YD. | SQ. YD. | TON | TON | LIN. FT. | |
| 103+98 | RT. | HWY. 12 | 24 | | | 189.42 | | | | | |
| 104+02 | LT. | HWY. 12 | 24 | 103+76 | 104+28 | 46.22 | 168.91 | 18.58 | 68.97 | 36 | PCC-1, PCM-1, PCP-1. PCP-2, PCP-3 |
| 108+00 | RT. | HWY. 12 | 40 | 107+66 | 108+34 | 269.14 | | | | | |
| 109+65 | RT. | HWY. 12 | 30 | 109+36 | 109+94 | 51.56 | 64.97 | 7.15 | 26.53 | 40 | PCC-1, PCM-1, PCP-1. PCP-2, PCP-3 |
| 111+12 | RT. | HWY. 12 | | | | | | | | 42 | PCC-1, PCM-1, PCP-1. PCP-2, PCP-3 |
| 206+77 | LT. | HWY. 59 | 40 | 206+43 | 207+11 | 60.44 | 97.78 | 10.76 | 39.93 | | |
| 207+89 | LT. | HWY. 59 | 40 | 207+55 | 208+23 | 60.44 | 52.13 | 5.73 | 21.29 | | |
| | | | | | | | | | | | |
| * ENTIRE PROJECT TEMPORARY DRIVES | | | | | | 100.00 | 200.00 | 22.00 | 81.67 | 55 | PCC-1, PCM-1, PCP-1. PCP-2, PCP-3 |
| | | | | | | | | | | | |
| **TOTALS:** | | | | | | **777.22** | **583.79** | **64.22** | **238.39** | **173** | |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

** FOR INFORMATION ONLY

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

## CONCRETE BASE

| STATION | STATION | LOCATION | LENGTH | TACK COAT 0.05 GAL. PER SQ. YD. | | | PORTLAND CEMENT CONCRETE BASE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AVG. WID. | SQ. YD. | GAL. | AVG. WID. | 5" U.T. | AVG. WID. | 10" U.T. |
| | | | FEET | FEET | | | FEET | SQ. YD. | FEET | SQ. YD. |
| 101+92.24 | 104+35.44 | HWY. 12 RT. | 243.20 | 5.72 | 154.57 | 7.73 | 5.72 | 154.57 | 8.22 | 222.12 |
| 103+48.06 | 105+30.54 | HWY. 12 LT. | 182.48 | 3.72 | 75.43 | 3.77 | 3.72 | 75.43 | 6.22 | 126.11 |
| 104+35.44 | 104+87.20 | HWY. 12/59 SW RETURN | 51.76 | VARIES | 9.11 | 0.46 | VARIES | 9.11 | VARIES | 35.00 |
| 105+30.54 | 106+12.60 | HWY. 12/59 NW RETURN | 82.06 | VARIES | 24.33 | 1.22 | VARIES | 24.33 | VARIES | 177.89 |
| 106+52.38 | 111+00.00 | HWY. 12 RT. | 447.62 | 5.20 | 258.62 | 12.93 | 5.20 | 258.62 | 7.70 | 382.96 |
| 107+57.47 | 110+73.50 | HWY. 12 LT. | 316.03 | 7.28 | 255.63 | 12.78 | 7.28 | 255.63 | 9.78 | 343.42 |
| 204+00.00 | 204+68.73 | HWY. 59 RT. | 68.73 | | | | | | 2.50 | 19.09 |
| 204+68.73 | 205+50.94 | HWY. 12/59 SE RETURN | 82.21 | | | | | | VARIES | 26.50 |
| 206+33.47 | 207+26.93 | HWY. 59 RT. & HWY. 12/59 RETURN | 93.46 | VARIES | 84.33 | 4.22 | VARIES | 84.33 | VARIES | 132.11 |
| 208+28.00 | 208+49.00 | HWY. 59 RETURN LT. | 21.00 | VARIES | 10.56 | 0.53 | VARIES | 10.56 | VARIES | 19.11 |
| | | | | | | | | | | |
| **TOTALS:** | | | | | **872.58** | **43.64** | | **872.58** | | **1484.31** |

BASIS OF ESTIMATE:
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULISIFED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

## ACHM PATCHING OF EXISTING ROADWAY

| DESCRIPTION | TON |
|---|---|
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 8 |
| | |
| **TOTAL:** | **8** |

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

## PAVEMENT REPAIR OVER CULVERTS (CONCRETE)

| STATION | LOCATION | WIDTH | LENGTH | CU.YD. |
|---|---|---|---|---|
| | | FEET | | |
| 110+87 | HWY. 12 DRIVEWAY LT. | 7.92 | 40 | 8.8 |
| 111+12 | HWY. 12 DRIVEWAY RT. | 7.92 | 43 | 9.5 |
| | | | | |
| **TOTAL:** | | | | **18.3** |

AVG. DEPTH = 9"

## PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

| STATION | LOCATION | WIDTH | LENGTH | TON |
|---|---|---|---|---|
| | | FEET | | |
| 107+56 | HWY. 12 MAIN LANES | 19.18 | 28 | 56 |
| 208+57 | HWY. 59 DRIVEWAY LT. | 7.92 | 24 | 10 |
| | | | | |
| **TOTAL:** | | | | **66** |

AVG. DEPTH (MAIN LANES) = 17"
AVG. DEPTH (DRIVEWAYS) = 9"

## COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH | COLD MILLING ASPHALT PAVEMENT |
|---|---|---|---|---|
| | | | FEET | SQ. YD. |
| 101+00.00 | 101+63.00 | HWY. 12 | 24.00 | 168.00 |
| 110+70.00 | 111+70.00 | HWY. 12 | 22.00 | 244.44 |
| 204+00.00 | 205+00.00 | HWY. 59 | 56.00 | 622.22 |
| 204+00.00 | 205+68.71 | HWY. 12/59 NW & SW RETURNS | VARIES | 382.55 |
| 207+75.62 | 208+75.62 | HWY. 59 | 45.00 | 500.00 |
| | | | | |
| **TOTAL:** | | | | **1917.21** |

NOTE: COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE LOCATIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

STATE OF ARKANSAS
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E TYLER MONCRIEF
07-03-2025

## BASE AND SURFACING

| STATION | STATION | LOCATION | LENGTH | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | | | ACHM BASE COURSE (1 1/2") | | | | | ACHM BINDER COURSE (1") | | | | | ACHM SURFACE COURSE (1/2") | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (0.05 GAL. PER SQ. YD.) | | | (0.17 GAL. PER SQ. YD.) | | | | | | | | | | | | | | | | | | | | |
| | | | | TON / STATION | TON | TOTAL WID. | SQ.YD. | GALLON | TOTAL WID. | SQ.YD. | GALLON | TOTAL GALLONS | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 70-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 70-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 76-22 | AVG. WID. | SQ.YD. | POUND / SQ.YD. | PG 76-22 | TOTAL PG 76-22 |
| | | | FEET | | | FEET | | | FEET | | | | FEET | | | TON | FEET | | | TON | FEET | | | TON | FEET | | | TON | TON |
| **MAIN LANES** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101+00.00 | 101+65.00 | HWY. 12 | 65.00 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 24.00 | 173.33 | 220.00 | 19.07 | 19.07 |
| 101+65.00 | 101+92.24 | HWY. 12 TRANSITION | 27.24 | 15.50 | 4.22 | 13.46 | 40.74 | 2.04 | | | | 2.04 | 4.75 | 14.38 | 440.00 | 3.16 | 4.46 | 13.50 | 330.00 | 2.23 | 4.25 | 12.86 | 220.00 | 1.41 | 28.00 | 84.75 | 220.00 | 9.32 | 10.73 |
| 101+92.24 | 102+90.00 | HWY. 12 TRANSITION | 97.76 | 12.50 | 12.22 | 10.34 | 112.32 | 5.62 | | | | 5.62 | 3.58 | 38.89 | 440.00 | 8.56 | 3.43 | 37.26 | 330.00 | 6.15 | 3.33 | 36.17 | 220.00 | 3.98 | 33.80 | 367.14 | 220.00 | 40.39 | 44.37 |
| 102+90.00 | 103+48.06 | HWY. 12 | 58.06 | 23.25 | 13.50 | 18.74 | 120.89 | 6.04 | | | | 6.04 | 6.38 | 41.16 | 440.00 | 9.06 | 6.23 | 40.19 | 330.00 | 6.63 | 6.13 | 39.55 | 220.00 | 4.35 | 36.00 | 232.24 | 220.00 | 25.55 | 29.90 |
| 103+48.06 | 103+81.95 | HWY. 12 | 33.89 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 36.00 | 135.56 | 220.00 | 14.91 | 14.91 |
| 103+81.95 | 105+53.85 | HWY. 12 TRANSITION & WEST RETURNS | 171.90 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 66.67 | 1273.40 | 220.00 | 140.07 | 140.07 |
| 106+20.43 | 108+02.92 | HWY. 12 TRANSITION & EAST RETURNS | 182.49 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 57.82 | 1172.40 | 220.00 | 128.96 | 128.96 |
| 108+02.92 | 109+45.00 | HWY. 12 | 142.08 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 36.00 | 568.32 | 220.00 | 62.52 | 62.52 |
| 109+45.00 | 110+70.00 | HWY. 12 TRANSITION | 125.00 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 33.00 | 458.33 | 220.00 | 50.42 | 50.42 |
| 110+70.00 | 111+70.00 | HWY. 12 | 100.00 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 22.00 | 244.44 | 220.00 | 26.89 | 26.89 |
| 205+00.00 | 206+15.69 | HWY. 59 | 115.69 | | | | | | | | | | | | 440.00 | | | | 330.00 | | | | 220.00 | | 56.00 | 719.85 | 220.00 | 79.18 | 79.18 |
| 206+15.69 | 208+49.00 | HWY. 59 | 233.31 | 48.75 | 113.74 | 33.00 | 855.47 | 42.77 | | | | 42.77 | 13.50 | 349.97 | 440.00 | 76.99 | 11.00 | 285.16 | 330.00 | 47.05 | 11.00 | 285.16 | 220.00 | 31.37 | 11.00 | 285.16 | 220.00 | 31.37 | 62.74 |
| 208+49.00 | 208+75.62 | HWY. 59 TRANSITION | 26.62 | 58.25 | 15.51 | 6.74 | 19.94 | 1.00 | | | | 1.00 | 2.38 | 7.04 | 440.00 | 1.55 | 2.23 | 6.60 | 330.00 | 1.09 | 2.13 | 6.30 | 220.00 | 0.69 | 8.00 | 23.66 | 220.00 | 2.60 | 3.29 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ADDITIONAL FOR LEVELING** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101+63.00 | 103+48.06 | HWY. 12 | 185.06 | | | 24.00 | 493.49 | 24.67 | 24.00 | 493.49 | 83.89 | 108.56 | | | | | | | | | | | | | 24.00 | 493.49 | 110.00 | 27.14 | 27.14 |
| 103+48.06 | 105+36.45 | HWY. 12 TRANSITION & WEST RETURNS | 188.39 | | | 41.32 | 864.92 | 43.25 | 41.32 | 864.92 | 147.04 | 190.29 | | | | | | | | | | | | | 41.32 | 864.92 | 110.00 | 47.57 | 47.57 |
| 106+20.43 | 108+02.92 | HWY. 12 TRANSITION & EAST RETURNS | 182.49 | | | 57.82 | 1172.40 | 58.62 | 57.82 | 1172.40 | 199.31 | 257.93 | | | | | | | | | | | | | 57.82 | 1172.40 | 110.00 | 64.48 | 64.48 |
| 108+02.92 | 110+70.00 | HWY. 12 | 267.08 | | | 22.00 | 652.86 | 32.64 | 22.00 | 652.86 | 110.99 | 143.63 | | | | | | | | | | | | | 22.00 | 652.86 | 110.00 | 35.91 | 35.91 |
| 205+00.00 | 207+75.62 | HWY. 59 | 275.62 | | | 48.38 | 1481.61 | 74.08 | 48.38 | 1481.61 | 251.87 | 325.95 | | | | | | | | | | | | | 48.38 | 1481.61 | 110.00 | 81.49 | 81.49 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ADDITIONAL FOR GUARDRAIL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101+25.59 | 101+92.24 | HWY. 12 RT. TRANSITION | 66.65 | 96.50 | 64.32 | | | | | | | | | | | | | | | | | | | | 8.50 | 62.95 | 220.00 | 6.92 | 6.92 |
| 101+47.41 | 103+48.06 | HWY. 12 LT. TRANSITION | 200.65 | 110.25 | 221.22 | | | | | | | | | | | | | | | | | | | | 10.39 | 231.64 | 220.00 | 25.48 | 25.48 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ADDITIONAL FOR MAINTENANCE OF TRAFFIC** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 106+52.19 | 109+00.00 | HWY. 12 RT. | 247.81 | 55.50 | 137.53 | VAR. | 181.45 | 9.07 | | | | 9.07 | | | | | VAR. | 181.45 | 330.00 | 29.94 | | | | | VAR. | 236.48 | 220.00 | 26.01 | 26.01 |
| 107+21.53 | 109+25.00 | HWY. 12 LT. | 203.47 | 61.50 | 125.13 | VAR. | 179.96 | 9.00 | | | | 9.00 | | | | | VAR. | 179.96 | 330.00 | 29.69 | | | | | VAR. | 225.15 | 220.00 | 24.77 | 24.77 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS:** | | | | | **707.39** | | | | | | | **1101.90** | | | | **99.32** | | | | **122.78** | | | | **41.80** | | | | **971.02** | **1012.82** |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 160 FOR PG 70-22
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

7/1/2025
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 39 | 85 |
| | | SUMMARY OF QUANTITIES | | | | |

## SUMMARY OF QUANTITIES (BOX 1 OF 2)

| ITEM NUMBER | ITEM | | QUANTITY | UNIT |
|---|---|---|---|---|
| 201 | CLEARING | | 16 | STATION |
| 201 | GRUBBING | | 16 | STATION |
| 202 | REMOVAL AND DISPOSAL OF CURB | | 35 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF CURB AND GUTTER | | 252 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF FENCE | | 81 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF ROCK WALLS | | 54 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE ISLANDS | | 159 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING | | 24 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS | | 611 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF WALKS | | 303 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS | | 7 | EACH |
| 202 | REMOVAL AND DISPOSAL OF PIPE CULVERTS | | 17 | EACH |
| 202 | REMOVAL AND DISPOSAL OF GUARDRAIL | | 650 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF SIGNS | | 22 | EACH |
| SS & 206 | FLOWABLE SELECT MATERIAL | | 50 | CU. YD. |
| SP & 207 | STONE BACKFILL | | 100 | TON |
| SP, SS, & 210 | UNCLASSIFIED EXCAVATION | | 1694 | CU. YD. |
| SP & 210 | COMPACTED EMBANKMENT | | 2786 | CU. YD. |
| SP & 210 | SOIL STABILIZATION | | 50 | TON |
| SP, SS, & 303 | AGGREGATE BASE COURSE (CLASS 7) | | 946 | TON |
| SP, SS, & 309 | PORTLAND CEMENT CONCRETE BASE (5" UNIFORM THICKNESS) | | 873 | SQ. YD. |
| SP, SS, & 309 | PORTLAND CEMENT CONCRETE BASE (10" UNIFORM THICKNESS) | | 1484 | SQ. YD. |
| SS & 401 | TACK COAT | | 1162 | GAL. |
| SP, SS, & 405 | MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2") | | 95 | TON |
| SP, SS, & 405 | ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2") | | 4 | TON |
| SP, SS, & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | | 118 | TON |
| SP, SS, & 406 | ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1") | | 5 | TON |
| SP, SS, & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") | | 1020 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") | | 3 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2") | | 54 | TON |
| SP & 412 | COLD MILLING ASPHALT PAVEMENT | | 1917 | SQ. YD. |
| SP, SS, & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | | 8 | TON |
| SP, SS, & 415 | ACHM PATCHING OF EXISTING ROADWAY | | 8 | TON |
| SP, SS, & 504 | APPROACH GUTTERS | | 39.04 | CU. YD. |
| SP, SS, & 505 | PORTLAND CEMENT CONCRETE DRIVEWAY | | 777.22 | SQ. YD. |
| 601 | MOBILIZATION | | 1.00 | LUMP SUM |
| SP & 602 | FURNISHING FIELD OFFICE | | 1 | EACH |
| SP, SS, & 603 | MAINTENANCE OF TRAFFIC | | 1.00 | LUMP SUM |
| 603 | 18" TEMPORARY CULVERT | | 58 | LIN. FT. |
| 603 | 42" TEMPORARY CULVERT | | 28 | LIN. FT. |
| SS & 604 | SIGNS | | 500 | SQ. FT. |
| SS & 604 | BARRICADES | | 48 | LIN. FT. |
| SS & 604 | TRAFFIC DRUMS | | 128 | EACH |
| SS & 604 | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | | 140 | LIN. FT. |
| SS & 604 | RELOCATING PRECAST CONCRETE BARRIER | | 120 | LIN. FT. |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | | 12790 | LIN. FT. |
| 604 | REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | | 840 | LIN. FT. |
| 604 | REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS | | 8520 | LIN. FT. |
| 604 | REMOVAL OF PERMANENT PAVEMENT MARKINGS | | 4155 | LIN. FT. |
| SP, SS, & 605 | CONCRETE DITCH PAVING (TYPE A ) | | 606 | SQ. YD. |
| SP, SS, & 605 | CONCRETE DITCH PAVING (TYPE B) | | 22 | SQ. YD. |
| SS & 606 | 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 126 | LIN. FT. |
| * SS & 606 | 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | (ALTERNATE NO. 1) | 871 | LIN. FT. |
| * SS & 606 | 18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE | (ALTERNATE NO. 2) | 871 | LIN. FT. |
| SS & 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 12 | LIN. FT. |
| SS & 606 | 48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 8 | LIN. FT. |
| SP, SS, & 606 | 18" SIDE DRAIN | | 173 | LIN. FT. |
| SS & 606 | 18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 3 | EACH |
| SS & 606 | 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 1 | EACH |
| * SS & 606 | 18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | (ALTERNATE NO. 1) | 1 | EACH |
| * SS & 606 | 18" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS | (ALTERNATE NO. 2) | 1 | EACH |
| SS & 606 | SELECTED PIPE BEDDING | | 100 | CU. YD. |
| SS & 609 | DROP INLETS (TYPE C) | | 5 | EACH |
| SS & 609 | DROP INLETS (TYPE MO) | | 7 | EACH |
| SS & 609 | DROP INLETS (TYPE ST) | | 2 | EACH |
| SS & 609 | JUNCTION BOXES (TYPE ST) | | 1 | EACH |
| SS & 609 | DROP INLET EXTENSIONS (4') | | 6 | EACH |
| SS & 609 | DROP INLET EXTENSIONS (8') | | 4 | EACH |
| SS & 615 | PAVEMENT REPAIR OVER CULVERTS (CONCRETE) | | 18.3 | CU. YD. |
| SS & 615 | PAVEMENT REPAIR OVER CULVERTS (ASPHALT) | | 66 | TON |
| SS & 617 | GUARDRAIL (TYPE A) | | 475 | LIN. FT. |
| SS & 617 | GUARDRAIL TERMINAL (TYPE 2) | | 4 | EACH |
| SS & 617 | THRIE BEAM GUARDRAIL TERMINAL | | 4 | EACH |
| 620 | LIME | | 1 | TON |
| 620 | SEEDING | | 0.50 | ACRE |
| SS & 620 | MULCH COVER | | 4.75 | ACRE |
| 620 | WATER | | 250.6 | M. GAL. |
| 621 | TEMPORARY SEEDING | | 4.25 | ACRE |
| 621 | SILT FENCE | | 1858 | LIN. FT. |
| 621 | SAND BAG DITCH CHECKS | | 110 | BAG |
| 621 | SEDIMENT REMOVAL AND DISPOSAL | | 94 | CU. YD. |
| 621 | ROCK DITCH CHECKS | | 81 | CU. YD. |
| SS & 621 | FILTER SOCK (12") | | 549 | LIN. FT. |
| 623 | SECOND SEEDING APPLICATION | | 0.50 | ACRE |
| 624 | SOLID SODDING | | 8958 | SQ. YD. |
| SP, SS, & 632 | CONCRETE ISLAND | | 122 | SQ. YD. |
| SP, SS, & 633 | CONCRETE WALKS | | 321 | SQ. YD. |
| SP, SS, & 633 | CONCRETE WALKS (TYPE SPECIAL) | | 156 | SQ. YD. |
| SS & 633 | HAND RAILING | | 280 | LIN. FT. |
| SS & 634 | CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6") | | 2065 | LIN. FT. |
| 635 | ROADWAY CONSTRUCTION CONTROL | | 1.00 | LUMP SUM |
| SP, SS, & 641 | WHEELCHAIR RAMPS (TYPE 3) | | 48 | SQ. YD. |

* DENOTES ALTERNATE BID ITEMS.

## SUMMARY OF QUANTITIES (BOX 2 OF 2)

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP & 701 | SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES) | 2 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 16 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) | 6 | EACH |
| SP | RELOCATION OF TRAFFIC SIGNAL HEAD | 6 | EACH |
| SP & 707 | CENTRAL CONTROL UNIT | 1 | EACH |
| SP & 707 | POLE MOUNTED ASSEMBLY | 8 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 8 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) | 1770 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) | 1025 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) | 1600 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) | 820 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) | 825 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) | 205 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) | 85 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS FOR LUMINAIRES | 1005 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (2") | 40 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (3") | 30 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 125 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 666 | LIN. FT. |
| SS & 711 | CONCRETE PULL BOX (TYPE 2) | 7 | EACH |
| SS & 711 | CONCRETE PULL BOX (TYPE 1 HD) | 1 | EACH |
| SS & 711 | CONCRETE PULL BOX (TYPE 2 HD) | 3 | EACH |
| SS & 713 | SPAN WIRE ASSEMBLY | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48') | 1 | EACH |
| SP | LED LUMINAIRE ASSEMBLY | 4 | EACH |
| SS & 715 | TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION | 5 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 2 | EACH |
| SP | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | 1.00 | LUMP SUM |
| 716 | TREATED WOOD POLE (CLASS 1, 45') | 2 | EACH |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | 200 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (6") | 2471 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (8") | 462 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (12") | 952 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (6") | 3142 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING (YIELD LINE) | 40 | LIN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING (WORDS) | 6 | EACH |
| 719 | THERMOPLASTIC PAVEMENT MARKING (ARROWS) | 9 | EACH |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 33 | EACH |
| SP | 18" STREET NAME SIGN | 4 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER | 2 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | 2 | EACH |
| SP | VIDEO DETECTOR ROTATION | 2 | EACH |
| SP & 733 | VIDEO DETECTOR (IP) | 6 | EACH |
| SP & 733 | HYBRID VIDEO/RADAR DETECTOR | 2 | EACH |
| SP & 733 | VIDEO CABLE (EXTERIOR CAT 5E) | 1765 | LIN. FT. |
| SP & 733 | VIDEO MONITOR (CLR) | 2 | EACH |
| SP & 733 | CENTRAL CONTROL UNIT (8 CHANNEL) | 2 | EACH |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY | 35 | CU. YD. |
| SP, SS, & 802 | CLASS S CONCRETE-ROADWAY | 65.37 | CU. YD. |
| SP | ARCHITECTURAL FINISH | 1260 | SQ. FT. |
| SP | TEXTURED COATING FINISH | 119 | SQ. YD. |
| SS & 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | 11536 | POUND |
| | | | |
| | | | |

* DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS
10634
TYLER MONCRIEF
08-13-2025

## REVISIONS

| DATE | REVISION | SHEET NUMBER |
|---|---|---|
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SUMMARY OF QUANTITIES

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 40 | 85 |
| | | SURVEY CONTROL DETAILS | | | | |

STATE OF ARKANSAS
10634
E TYLER MONCRIEF
07-03-2025

SURVEY CONTROL COORDINATES

Project Name: s090651
Date: 2/25/2022
Coordinate System: ARKANSAS STATE PLANE – NORTH ZONE BASED ON GPS CONTROL, 040037 & 040135
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|---|---|---|---|---|---|
| 1 | 711372.9771 | 580353.1232 | 1222.83 | CTL | ARDOT STD MON STAMPED PN:1 |
| 2 | 711920.5785 | 580853.6882 | 1226.72 | CTL | ARDOT STD MON STAMPED PN:2 |
| 3 | 712565.8116 | 581187.7776 | 1231.14 | CTL | ARDOT STD MON STAMPED PN:3 |
| 4 | 711960.3765 | 580321.4536 | 1253.48 | CTL | ARDOT STD MON STAMPED PN:4 |
| 5 | 711903.2168 | 581585.6581 | 1236.04 | CTL | ARDOT STD MON STAMPED PN:5 |
| 100 | 711219.1368 | 579782.9438 | 1216.92 | GPS | GPS MON STAMPED PN:40037 |
| 101 | 709431.0632 | 579709.7890 | 1212.29 | GPS | GPS MON STAMPED PN:40135 |
| 900 | 711451.4513 | 580489.5646 | 1224.82 | TBM | |
| 901 | 712451.9480 | 581182.3616 | 1231.05 | TBM | SQUARE CUT CNTR E HW |
| 902 | 712001.2825 | 580335.2627 | 1253.46 | TBM | DISK SET ON NE ABUTMENT |
| 903 | 711981.4414 | 581275.5339 | 1227.87 | TBM | SQUARE CUT CNTR N HW |

*Note – Rebar and Cap – Standard – 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999528301 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s090651gi.CTL
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS – 0301–NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 040037 & 040135
CONVERGENCE ANGLE: 01 26 38.2 LEFT AT PN:2 LT:N36°15'49.5906" LG:W94°28'53.0912"
GRID AZIMUTH = ASTRONOMICAL AZIMUTH – CONVERGENCE ANGLE.

**CL - HWY. 12**

| POINT NO. | POINT TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8000 | POB | 100+00.00 | 711986.8445 | 580221.2187 |
| 8001 | POE | 112+00.00 | 711933.6705 | 581420.0400 |

**CL - HWY. 59**

| POINT NO. | POINT TYPE | STATION | NORTHING | EASTING |
|---|---|---|---|---|
| 8010 | POB | 200+00.00 | 711522.0478 | 580497.3369 |
| 8011 | POE | 210+00.00 | 712338.3870 | 581074.9096 |

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 41 | 85 |
| | | SURVEY CONTROL DETAILS | | | | |

STATE OF ARKANSAS
10634
E TYLER MONCRIEF
07-03-2025

P.O.B. STA. 100+00.00

8000

℄ HWY. 12

TBM
PN:902
PD:DISK SET ON NE ABUTMENT

CT
PN:4
PD:ARDOT STD MON STAMPED PN:4

SURVEY BASELINE S 85°43'25" E
533.72'

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

105+00

205+00

P.O.E. STA. 210+00.00

8011

℄ HWY. 59

SURVEY BASELINE N 03°05'10" W
588.25'

P.O.B. STA. 200+00.00

8010

N35°16'48"E
1000.00'

℄ HWY. 59

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

CT
PN:2
PD:ARDOT STD MON STAMPED PN:2

SURVEY BASELINE S 88°38'28" E
732.18'

S87°27'37"E
1200.00'

110+00

TBM
PN:901
PD:SQUARE CUT CNTR E HW

SURVEY BASELINE N 30°39'04" W
712.98'

P.O.E. STA. 112+00.00

TBM
PN:903
PD:SQUARE CUT CNTR N HW

8001

℄ HWY. 12

CT
PN:5
PD:ARDOT STD MON STAMPED PN:5

STA. 110+70.00
END CONST. HWY. 12

N

BEARINGS
ARE GRID
BASED ON GPS

SCALE RATIO 1" = 100'

50 25 0 25 50 100

HWY. 12
SURVEY CONTROL DETAILS

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 42 | 85 |
| | | PLAN & PROFILE STA. 100+00 - STA. 112+00 | | | | |

GUARDRAIL (TYPE A)

| STA. | STA. | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) | TYPE PT APPROACH GUTTER |
|---|---|---|---|---|---|
| 100+98.49 | 101+92.24 | 25′ | 1EA. | 1EA. | 1EA. |
| 101+20.31 | 103+39.06 | 150′ | 1EA. | 1EA. | 1EA. |
| WEST BRIDGE END (RT.) | | 150′ | 1EA. | 1EA. | 1EA. |
| WEST BRIDGE END (LT.) | | 150′ | 1EA. | 1EA. | 1EA. |

REMOVAL & DISPOSAL OF GUARDRAIL

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 100+91.03 | 102+16.35 | RT. | 125 |
| 101+12.00 | 103+11.76 | LT. | 200 |
| WEST BRIDGE END | | RT. | 200 |
| WEST BRIDGE END | | LT. | 125 |

REMOVAL & DISPOSAL OF FENCE

| STA. | STA. | SIDE | LIN. FT. |
|---|---|---|---|
| 108+16 | 108+88 | RT. | 81 |

CONCRETE DITCH PAVING (TYPE A)

| STA. | STA. | SIDE | "W" | "B" | SQ. YDS. |
|---|---|---|---|---|---|
| 107+75 | 108+25 | LT. | 20′-0″ | 10′-0″ | 111.1 |
| 108+25 | 110+55 | LT. | VARIES | VARIES | 494.4 |

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 103+50 | 103+83 | LT. | 6′-0″ | 22.0 |

STA. 105+25 CONSTRUCT
DROP INLET ON LT. H = 4′-1″
ON EXIST. R.C. PIPE CULVERT
WITH 4′ EXTENSION AND 24″ X 12′
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES
TYPE C DROP INLET = 4′ X 2′-6″

LOG MILE 5.92 IN PLACE
178 FT. X 34.8 FT. CLEAR ROADWAY
BRIDGE CONSISTING OF R.C. DECK
SUPPORTED BY STEEL CONTINUOUS GIRDERS
REMOVE EXIST. APPROACH GUTTERS AND
INSTALL TYPE PT APPROACH GUTTERS WITH
THRIE BEAM CONNECTIONS EACH END

STA. 105+55 CONSTRUCT
DROP INLET ON LT. H = 3′-6″
WITH 8′ EXTENSION AND 18″ X 26′
PIPE CULVERT TO DROP INLET ON LT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 26 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 26 LIN. FT.

STA. 105+79 CONSTRUCT
DROP INLET ON LT. H = 3′-8″
WITH 4′ EXTENSION AND 18″ X 23′
PIPE CULVERT TO DROP INLET ON LT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 23 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 23 LIN. FT.

STA. 104+02 INSTALL
18″ X 36′ PIPE CULVERT
LT. SIDE DRAIN
CONST. APPROACH = 95 CU. YDS.

STA. 105+66 CONSTRUCT LT.
TYPE 3 WHEEL CHAIR RAMP = 6 SQ. YDS.

STA. 105+36 CONSTRUCT LT.
TYPE 3 WHEEL CHAIR RAMP = 4 SQ. YDS.

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15′35″

STA. 107+25 CONSTRUCT
DROP INLET ON LT. H = 5′-0″
WITH BACK OPENING AND
WITH 8′ EXTENSION AND 18″ X 23′
PIPE CULVERT TO R.C. BOX CULVERT ON LT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 23 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 23 LIN. FT.

STA. 107+51 CONSTRUCT
DROP INLET ON LT. H = 2′-9″
WITH 8′ EXTENSION
ON R.C. BOX CULVERT
TYPE C DROP INLET = 4′ X 2′-6″

STA. 107+54 IN PLACE
DBL. 42″ X 50′ R.C. PIPE CULVERT
WITH FES LT. AND HDWL. RT.
REMOVE

STA. 107+56 CONSTRUCT
JUNCTION BOX ON LT. H = 5′-10″
WITH DBL. 5′ X 3′ X 72′ R.C. BOX CULVERT
TO JUNCTION BOX ON RT.
AND WITH DBL. 5′ X 3′ X 6′ R.C. BOX CULVERT
TO HEADWALL ON LT.
AND WITH 48″ X 8′ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
TO EXIST. PIPE CULVERT ON LT.
TYPE ST JUNCTION BOX = 13′ X 13′

STA. 110+62 CONSTRUCT LT.
TYPE 3 WHEEL CHAIR RAMP = 5 SQ. YDS.

STA. 107+06 CONSTRUCT LT.
TYPE 3 WHEEL CHAIR RAMP = 4 SQ. YDS.

STA. 110+87 IN PLACE
18″ X 40′ C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 104+20 CONSTRUCT RT.
TYPE 3 WHEEL CHAIR RAMP = 5 SQ. YDS.

STA. 104+78 CONSTRUCT RT.
TYPE 3 WHEEL CHAIR RAMP = 4 SQ. YDS.

STA. 103+98 IN PLACE
18″ X 72′ C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND
CONST. APPROACH = 24 CU. YDS. EXC.
= 18 CU. YDS. EMB.

STA. 103+63 CONSTRUCT
DROP INLET ON RT. H = 5′-0″
WITH 4′ EXTENSION AND 18″ X 64′
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″

STA. 106+74 CONSTRUCT
DROP INLET ON RT. H = 4′-0″
WITH 4′ EXTENSION AND 18″ X 6′
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES AND WITH 18″ X 56′
PIPE CULVERT TO DROP INLET ON LT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 62 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 56 LIN. FT.

STA. 107+34 CONSTRUCT
DROP INLET ON RT. H = 5′-9″
WITH 8′ EXTENSION AND 18″ X 7′
PIPE CULVERT TO R.C. BOX CULVERT ON RT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 7 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 7 LIN. FT.

STA. 106+12 CONSTRUCT RT.
TYPE 3 WHEEL CHAIR RAMP = 6 SQ. YDS.

STA. 106+50 CONSTRUCT RT.
TYPE 3 WHEEL CHAIR RAMP = 4 SQ. YDS.

STA. 107+46 CONSTRUCT
DROP INLET ON RT. H = 4′-8″
ON EXIST. C.M. PIPE CULVERTS
TYPE C DROP INLET = 13′ X 6′

STA. 108+00 CONSTRUCT
DROP INLET ON LT. H = 4′-0″
WITH 4′ EXTENSION AND 18″ X 38′
PIPE CULVERT TO R.C. BOX CULVERT ON LT.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 38 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 38 LIN. FT.

STA. 108+00 IN PLACE
18″ X 55′ C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND
CONST. APPROACH = 21 CU. YDS. EXC.
= 6 CU. YDS. EMB.

STA. 108+37 CONSTRUCT
DROP INLET ON RT. H = 3′-0″
WITH 18″ X 1′
PIPE CULVERT TO DROP INLET ON RT.
TYPE ST DROP INLET = 3′ X 3′
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 11 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 11 LIN. FT.

STA. 108+37 CONSTRUCT
DROP INLET ON RT. H = 4′-11″
WITH 4′ EXTENSION AND 18″ X 85′
PIPE CULVERT TO JUNCTION BOX ON RT.
AND WITH 18″ X 69′ PIPE CULVERT TO FES ON RT.
TYPE MO DROP INLET = 4′ DIA.
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 154 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 154 LIN. FT.

STA. 109+65 IN PLACE
18″ X 40′ C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18″ X 40′ PIPE CULVERT
RT. SIDE DRAIN
CONST. APPROACH = 37 CU. YDS.

STA. 111+12 IN PLACE
18″ X 43′ C.M.
PIPE CULVERT RT. SIDE DRAIN
REMOVE AND INSTALL
18″ X 42′ PIPE CULVERT
RT. SIDE DRAIN

STA. 110+50 CONSTRUCT
DROP INLET ON LT. H = 4′-2″
WITH 18″ X 246′ PIPE CULVERT TO DROP INLET ON LT.
AND WITH 18″ X 56′ R.C. PIPE CULVERT TO FES ON LT.
(CLASS III) (TYPE 3 BEDDING)
TYPE C DROP INLET = 4′ X 2′-6″
18″ R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 302 LIN. FT.
18″ SLPPMCCS PIPE (TYPE 2 BEDDING) = 246 LIN. FT.

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

P.O.B. STA. 100+00.00

P.O.E. STA. 112+00.00

P.O.B. STA. 200+00.00

P.O.E. STA. 210+00.00

STA. 110+70.00
END CONST. HWY. 12

℄ HWY. 12

℄ HWY. 59

N35°16′48″E

S87°27′37″E

APPROACH GUTTER (TYPE PT)

CONSTRUCTION LIMITS

EXIST. R/W

PROP. R/W

PROP. TCE

EXIST. PCE

125′ SHIFTING TAPER

150′ TURNING TAPER

CONCRETE WALK (TYPE SPECIAL)

CONSTRUCTION LIMITS R=60′

R=100′

R=50′

105+00

110+00

N

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

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HWY. 12

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 43 | 85 |
| | | PLAN & PROFILE STA. 100+00 - STA. 112+00 | | | | |

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

63' MILL & OVERLAY
VC = 155'
K = 37.62
e = -0.80'
P.V.C. 101+00.00
ELEV. 1254.21
P.V.I. 101+77.50
ELEV. 1250.96
P.V.T. 102+55.00
ELEV. 1244.52
P.V.C. 102+77.50
ELEV. 1242.65
-8.31%
PROFILE GRADE
EXISTING GROUND
℄ HWY. 12
LT. DITCH
-7.31%
VC = 275'
K = 49.11
e = 1.92'
P.V.I. 104+15.00
ELEV. 1231.23
+25
TOP D.I. = 1228.35
-2.71%
103+48.56
1232.70
103+80.00
1230.40
P.V.T. 105+52.50
ELEV. 1227.50
+54
TOP D.I. = 1227.87
P.V.I. 105+33.85
ELEV. 1227.46
1.21%
24" X 12'
@ 7.18%
18" X 26'
@ 0.30%
F.L. INLET = 1225.26
(24") F.L. IN = 1224.40
(18") F.L. IN = 1224.30
F.L. D.I. = 1224.30
+79
TOP D.I. = 1228.14
P.V.I. 106+20.43
ELEV. 1227.43
P.V.C. 106+40.00
ELEV. 1227.18
-1.30%
18" X 287'
@ 0.43%
18" X 23'
@ 0.40%
F.L. IN = 1224.38
F.L. D.I. = 1224.38
F.L. IN = 1224.57
F.L. D.I. = 1224.47
VC = 220'
K = 77.74
e = 0.78'
+25
TOP D.I. = 1227.02
P.V.I. 107+50.00
ELEV. 1225.75
+00
TOP D.I. = 1226.87
+56
TOP J.B. = 1226.82
+51
TOP D.I. = 1226.65
18" X 23'
@ 4.41%
18" X 38'
@ 4.86%
F.L. D.I. = 1222.02
F.L. OUT = 1221.01
F.L. IN = 1222.97
F.L. D.I. = 1222.87
F.L. OUT = 1221.01
107+72.00
1221.50
(R.C.B.) F.L. INLET = 1221.30
(48") F.L. IN = 1221.55
(R.C.B.)F.L. IN = 1221.10
F.L. J.B. = 1221.00
DBL. 5' X 3' X 72'
@ 0.83%
48" X 8'
@ 0.71%
DBL. 5' X 3' X 6'
@ 3.67%
P.V.T. 108+60.00
ELEV. 1227.43
18" X 246' @ 1.35%
LT. DITCH 0.65%
100' TRANS.
MILL & OVERLAY
P.V.I. 110+70.00
ELEV. 1230.65
+50
TOP D.I. = 1230.46
1.53%
18" X 56'
@ 1.19%
F.L. INLET = 1227.06
F.L. IN = 1226.39
F.L. D.I. = 1226.29
110+32.13
1223.20

STA. 101+00.00
BEGIN CONST. HWY. 12
LOG MILE 5.997

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

HWY. 12 PROFILE LT.

98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00

1285 1275 1265 1255 1245 1235 1225 1215 1205 1195

P.V.C. 101+00.00
ELEV. 1254.21
P.V.I. 101+77.50
ELEV. 1250.96
P.V.T. 102+55.00
ELEV. 1244.52
P.V.C. 102+77.50
ELEV. 1242.65
VC = 155'
K = 37.62
e = -0.80'
-8.31%
PROFILE GRADE
63'
MILL &
OVERLAY
EXISTING GROUND
℄ HWY. 12
VC = 275'
K = 49.11
e = 1.92'
P.V.I. 104+15.00
ELEV. 1231.23
+63
TOP D.I. = 1236.42
F.L. D.I. = 1231.42
F.L. OUT = 1227.75
18" X 64'
@ 5.73%
-2.71%
P.V.T. 105+52.50
ELEV. 1227.50
P.V.I. 105+33.85
ELEV. 1227.46
1.21%
-1.30%
P.V.I. 106+20.43
ELEV. 1227.43
P.V.C. 106+40.00
ELEV. 1227.18
+34
TOP D.I. = 1226.58
+74
TOP D.I. = 1226.80
RT. DITCH
0.67%
-1.30%
RT. DITCH
-0.30%
18" X 6'
@ 3.58%
HWY. 59 @
℄ HWY. 12
106+34.00
1223.40
106+74.00
1223.28
18" X 56'
@ 3.35%
F.L. INLET = 1223.11
F.L. IN = 1222.90
F.L. D.I. = 1222.80
VC = 220'
K = 77.74
e = 0.78'
P.V.I. 107+50.00
ELEV. 1225.75
107+46
TOP J.B. = 1225.06
107+33.00
1223.67
18" X 85'
@ 2.00%
18" X 7'
@ 3.16%
F.L. IN = 1220.92
F.L. D.I. = 1220.82
F.L. OUT = 1220.61
(18") F.L. IN = 1220.50
(R.C.B.) F.L. IN = 1220.40
F.L. J.B. = 1220.40
P.V.T. 108+60.00
ELEV. 1227.43
+37
TOP D.I. = 1227.24
+37
TOP D.I. = 1225.40
1.53%
18" X 69'
@ 4.26%
18" X 11'
@ 1.00%
109+12.00
1225.50
F.L. INLET = 1225.24
F.L. IN = 1222.30
F.L. D.I. = 1222.20
F.L. D.I. = 1222.40
RT. DITCH 0.65%
109+90.00
1226.01
RT. DITCH 1.66%
P.V.I. 110+70.00
ELEV. 1230.65
110+80.00
1227.50
100' TRANS.
MILL & OVERLAY

STA. 110+70.00
END CONST. HWY. 12

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

HWY. 12 PROFILE RT.

98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00

1285 1275 1265 1255 1245 1235 1225 1215 1205 1195

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 44 | 85 |
| | | PLAN & PROFILE STA. 200+00 - STA. 210+00 | | | | |

STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025

P.O.B. STA. 200+00.00

STA. 204+00.00
BEGIN CONST. HWY. 59
LOG MILE 19.179

P.O.E. STA. 210+00.00

STA. 208+75.62
END CONST. HWY. 59

℄ HWY. 59 N35°16'48"E

℄ HWY. 12 STA. 105+87.14 =
℄ HWY. 59 STA. 205+37.50
△ 57°15'35"

STA. 206+77 IN PLACE
12" X 48' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND
CONST. APPROACH = 8 CU. YDS. EXC.

STA. 207+89 IN PLACE
18" X 49' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND
CONST. APPROACH = 7 CU. YDS. EXC.

STA. 208+70 CONSTRUCT
DROP INLET ON LT. H = 3'-0"
WITH 18" X 287'
PIPE CULVERT TO DROP INLET ON LT.
TYPE ST DROP INLET = 3' X 3'
18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 287 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 287 LIN. FT.

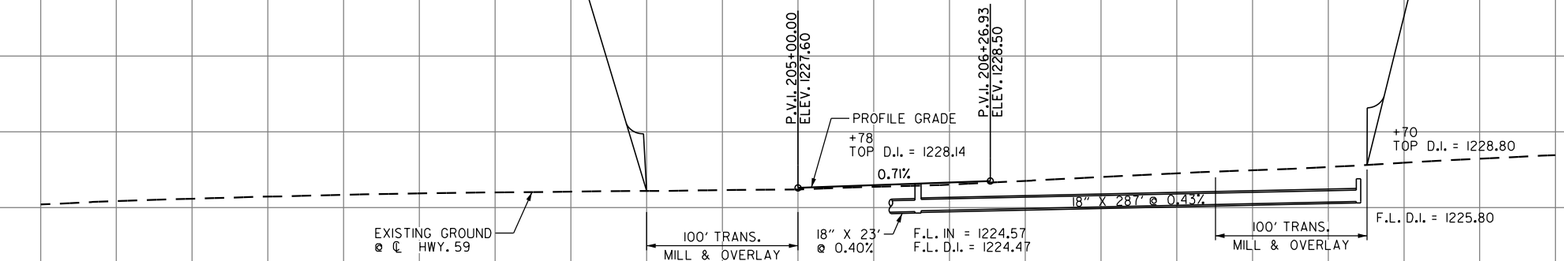
STA. 208+37 CONSTRUCT LT.
TYPE 3 WHEEL CHAIR RAMP = 5 SQ. YDS.

STA. 208+57 IN PLACE
18" X 24' C.M.
PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 207+14 CONSTRUCT RT.
TYPE 3 WHEEL CHAIR RAMP = 5 SQ. YDS.

CONSTRUCTION LIMITS
PROP. TCE
EXIST. PCE
PROP. R/W
EXIST. R/W
R=50'
R=100'
R=60'
100' TAPER
40'
28'
27.5'
VAR.
17'

HWY. 59

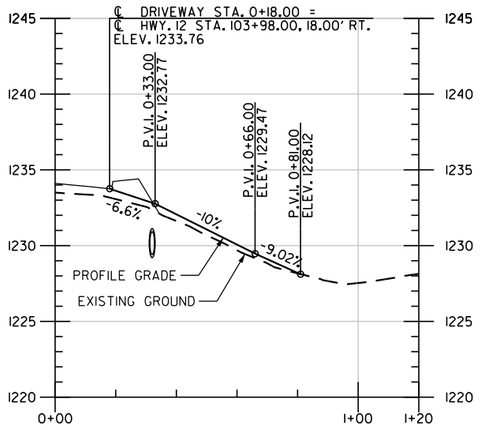



REFER TO SURVEY CONTROL DETAIL SHEETS
FOR HORIZONTAL AND VERTICAL CONTROL DATA.

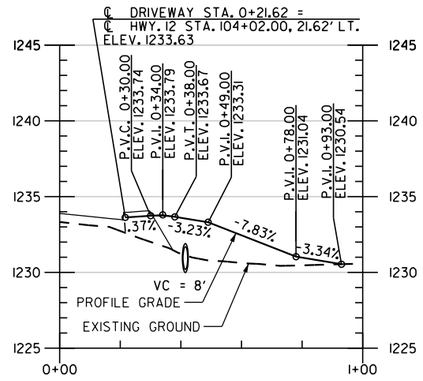
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| | | 6 | ARK. | 090651 | 45 | 85 |
| | | DRIVEWAY PROFILES | | | | |

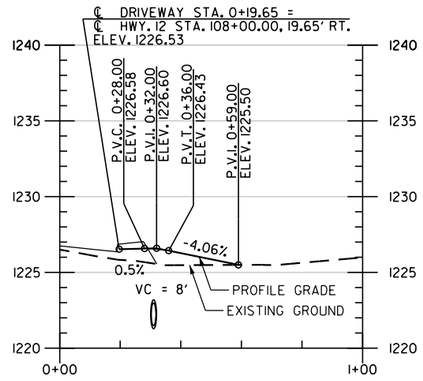
STATE OF ARKANSAS
10634
TYLER MONCRIEF
07-03-2025



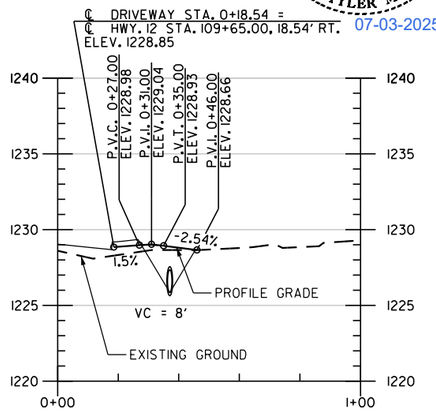

HWY. 12
STA. 103+98 RT.



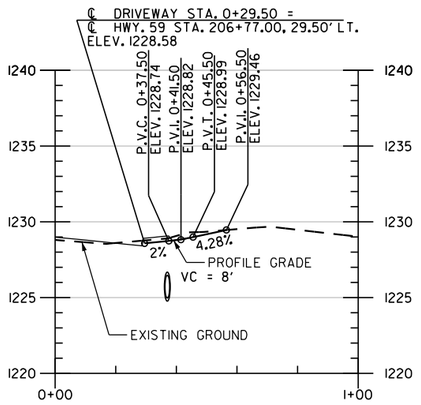

HWY. 12
STA. 104+02 LT.



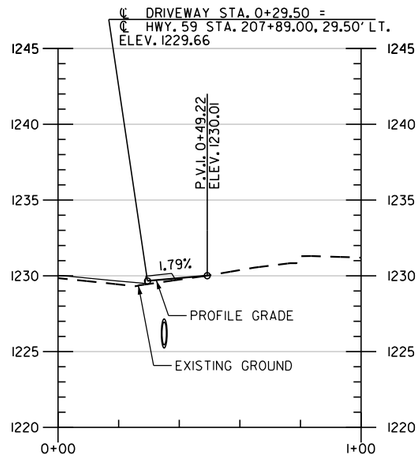

HWY. 12
STA. 108+00 RT.




HWY. 12
STA. 109+65 RT.




HWY. 59
STA. 206+77 LT.




HWY. 59
STA. 207+89 LT.

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DRIVEWAY PROFILES

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 46 | 85 |
| | | SUMMARY OF TRAFFIC SIGNAL QUANTITIES | | | | |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

# SUMMARY OF TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP & 701 | SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES) | 2 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 16 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) | 6 | EACH |
| SP | RELOCATION OF TRAFFIC SIGNAL HEAD | 6 | EACH |
| SP & 707 | CENTRAL CONTROL UNIT | 1 | EACH |
| SP & 707 | POLE MOUNTED ASSEMBLY | 8 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 8 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) | 1770 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) | 1025 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) | 1600 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) | 820 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) | 825 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) | 205 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) | 85 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS FOR LUMINAIRES | 1005 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (2") | 40 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (3") | 30 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 125 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 666 | LIN. FT. |
| SS & 711 | CONCRETE PULL BOX (TYPE 2) | 7 | EACH |
| SS & 711 | CONCRETE PULL BOX (TYPE 1 HD) | 1 | EACH |
| SS & 711 | CONCRETE PULL BOX (TYPE 2 HD) | 3 | EACH |
| SS & 713 | SPAN WIRE ASSEMBLY | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48') | 1 | EACH |
| SP | LED LUMINAIRE ASSEMBLY | 4 | EACH |
| SS & 715 | TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION | 5 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 2 | EACH |
| SP | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | 1.00 | LUMP SUM |
| 716 | TREATED WOOD POLE (CLASS 1, 45') | 2 | EACH |
| SP | 18" STREET NAME SIGN | 4 | EACH |
| SP | VIDEO DETECTOR ROTATION | 2 | EACH |
| SP & 733 | VIDEO DETECTOR (IP) | 6 | EACH |
| SP & 733 | HYBRID VIDEO/RADAR DETECTOR | 2 | EACH |
| SP & 733 | VIDEO CABLE (EXTERIOR CAT 5E) | 1765 | LIN. FT. |
| SP & 733 | VIDEO MONITOR (CLR) | 2 | EACH |
| SP & 733 | CENTRAL CONTROL UNIT (8 CHANNEL) | 2 | EACH |

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LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 47 | 85 |
| | | TRAFFIC SIGNAL NOTES | | | | |

## TRAFFIC SIGNAL NOTES:

1. THE TRAFFIC SIGNAL SHALL NOT BE PUT INTO OPERATION OR SWITCHED TO THE NEXT CONSTRUCTION STAGE PRIOR TO THE FOLLOWING:

   A. ALL TRAFFIC SIGNAL EQUIPMENT HAS BEEN INSTALLED ACCORDING TO THE PLANS, SPECIAL PROVISIONS, AND PROPERLY FUNCTIONAL. THIS INCLUDES BUT NOT LIMITED TO: CABINETS, PULL BOXES, JUNCTION BOXES, POLES, MAST ARMS, FOUNDATIONS, LUMINAIRES, SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PUSH BUTTONS, DETECTION SYSTEM, CONDUITS, CONDUCTORS, CABLES, TRAFFIC CONTROLLER, CONFLICT MONITOR, COMMUNICATION SYSTEM, SERVICE POINT, AND RAILROAD INTERCONNECT SYSTEM.

   B. THE DETECTION SYSTEM SHALL BE INSTALLED, SETUP, AND CONFIGURED BY THE CONTRACTOR OR THEIR SUPPLIER PER PLANS. A TRAFFIC OPERATIONS INSPECTOR SHALL INSPECT AND PROVIDE APPROVAL IN ORDER TO PUT THE TRAFFIC SIGNAL INTO OPERATION.

   C. THE TRAFFIC CONTROLLER AND CONFLICT MONITOR SHALL BE PROGRAMMED TO OPERATE AS REQUIRED PER THE PLANS (PHASING DIAGRAM, INTERVAL CHART, AND ANY ADDITIONAL NOTES), SPECIAL PROVISIONS AND ARDOT SPECIFICATIONS.

   D. TIMING SETTINGS HAVE BEEN PROGRAMMED AND APPROVED AS REQUIRED BY TSMO DIVISION.

   E. THE TRAFFIC SIGNAL HAS BEEN INSPECTED AND APPROVED BY A TRAFFIC OPERATIONS INSPECTOR.

   F. ALL REQUIRED DOCUMENTS RELATED TO THE TRAFFIC SIGNAL EQUIPMENT, THIS INCLUDES BUT NOT LIMITED TO: TEST RESULTS, CONFIGURATION/DATA REPORTS, WARRANTIES, AND ANY OTHER DOCUMENTATION REQUIRED PER PLANS AND SPECIAL PROVISIONS.

2. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

3. TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.

4. THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT, THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

5. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (CURRENT EDITION) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

6. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.

7. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/ COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.

8. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.

9. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.

10. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

11. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS, AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

12. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

13. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

14. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

15. ONE VIDEO PROGRAMMNG MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.

16. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.

17. THE LOCAL RADIO WITH ANTENNA AND TRAFFIC SIGNAL CONTROLLER SHALL BE COMPATIBLE WITH THE EXISTING COORDINATION SYSTEM IN THE CITY/COUNTY.

18. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHOD OR AS DIRECTED BY THE ENGINEER. PVC OR HDPE CONDUIT SHALL BE USED AND SHALL BE UL LISTED. PVC CONDUIT SHALL BE MARKED "DIR. BORING" OR "DIRECTIONAL BORING" PER NEC. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED. THE ENGINEER SHALL GRANT A WRITTEN APPROVAL PRIOR TO USING THE TRENCHING METHOD.

19. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS. ALL CONDUIT UNDER THE ROADWAY, SIDEWALKS, AND DRIVEWAYS SHALL HAVE A MINIMUM DEPTH OF 24" FROM THE TOP OF THE CONDUIT TO THE FINISHED GRADE. CONDUIT DEPTH MAY NEED TO INCREASE NEAR DRAINAGE STRUCTURES.

20. CONDUIT BELL END FITTINGS SHALL BE INSTALLED ON ALL TERMINATING ENDS OF NON-METALLIC CONDUIT RUNS. THIS INCLUDES PULL BOXES, POLE BASES, AND TRAFFIC SIGNAL CABINETS. THE COST OF THE FITTINGS SHALL BE CONSIDERED SUBSIDARY TO THE PAY ITEM. ALL NON-METALLIC CONDUIT SHALL USE LONG SWEEP 90 DEGREE ELBOWS ON ALL CONDUIT BENDS.

21. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. PULL BOX LIDS SHALL CLOSE FLUSH WITHOUT PINCHING ANY CONDUCTORS. CONDUIT LENGTHS IN PULL BOXES SHALL BE SET ACCORDINGLY. ANY CONDUCTORS THAT HAVE BEEN DAMAGED BY PINCHING SHALL BE COMPLETELY REPLACED AT THE CONTRACTOR'S EXPENSE.

22. ALL CONCRETE PULL BOXES SHALL BE SET ON A GRAVEL OR CRUSHED STONE BEDDING AS SPECIFIED IN SECTION 711, CONCRETE PULL BOX, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

23. CONTRACTOR SHALL ATTACH A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO EACH CONDUIT AT PULLBOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. EACH TAG SHALL INDICATE THE END LOCATION OF CONDUIT RUN. THE COST OF THE TAGS SHALL BE SUBSIDIARY TO THE CONDUIT PAY ITEM.
    EXAMPLES FOR CONDUIT IN SIDE CABINET: "TO POLE A AND B" OR "TO POLE C"
    EXAMPLES FOR CONDUIT IN PULL BOX: "TO POLE A" OR "TO TRAFFIC CABINET"

24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.

25. ALL TRAFFIC SIGNAL POLES SHALL BE GALVANIZED.

26. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

27. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.

28. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

29. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.

30. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.

31. LED LUMINAIRE ASSEMBLIES SHALL HAVE A BUG RATING OF U0.

32. BACKPLATES SHALL BE SUPPLIED FOR ALL TRAFFIC SIGNAL HEADS, REFER TO THE RETROREFLECTIVE BACKPLATES SPECIAL PROVISION FOR REQUIREMENTS.

33. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

34. BEFORE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL, THE CONTRACTOR SHALL PROVIDE TWO (2) SETS OF LEDGER SIZE (11" X 17") AS-BUILT TRAFFIC SIGNAL PLANS TO THE MAINTENANCE AUTHORITY AND ARDOT.

35. ALL SIGNAL HEADS AND SIGNS ON THE TEMPORARY SPAN WIRE SHALL HAVE AN ADDITIONAL TETHER WIRE (NOT SHOWN ON SD-7) AT THE BOTTOM CHORD TO MINIMIZE MOVEMENT DUE TO WIND EFFECTS. THE BOTTOM TETHER, HARDWARE, BRACKETS, AND ALL LABOR AND MATERIALS FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE TEMPORARY SIGNAL. THE BOTTOM TETHER SHALL BE INSTALLED BETWEEN THE MINIMUM AND MAXIMUM HEIGHT CLEARANCE ABOVE THE ROADWAY.

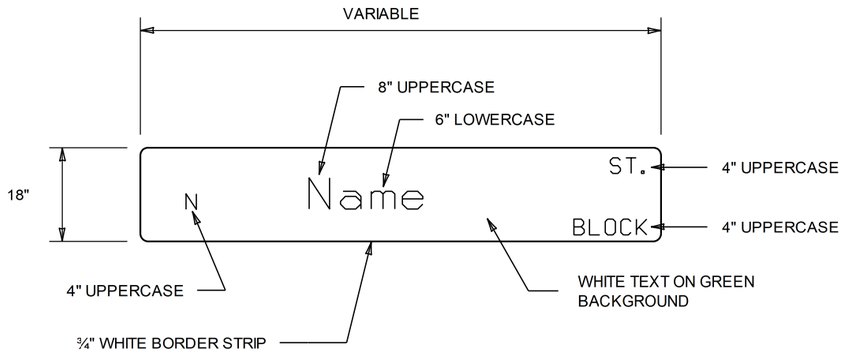
LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG02.dgn

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 48 | 85 |
| | | TRAFFIC SIGNAL STREET NAME SIGNS | | | | |

# OVERHEAD STREET NAME MARKER
# STANDARD MAST ARM MOUNTED



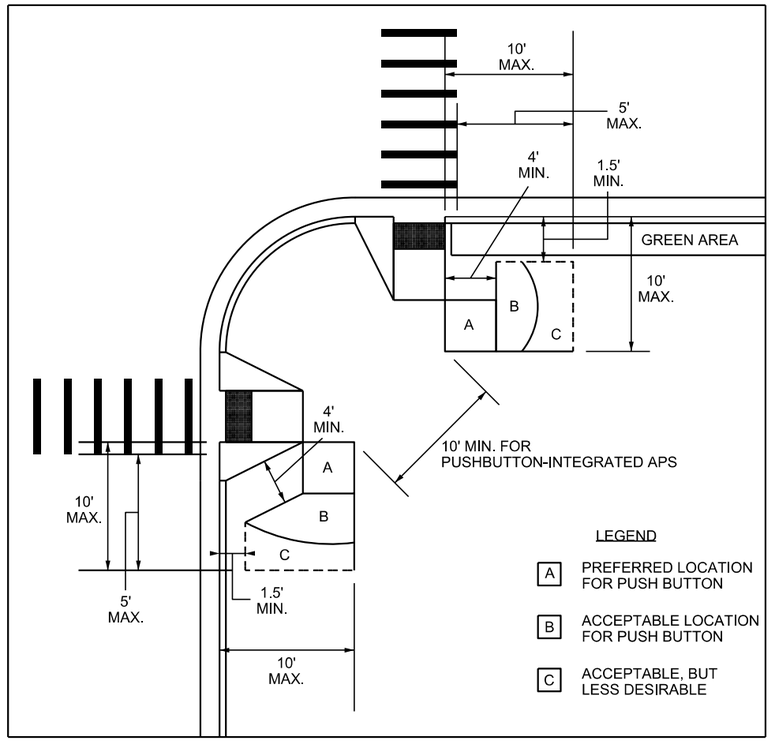




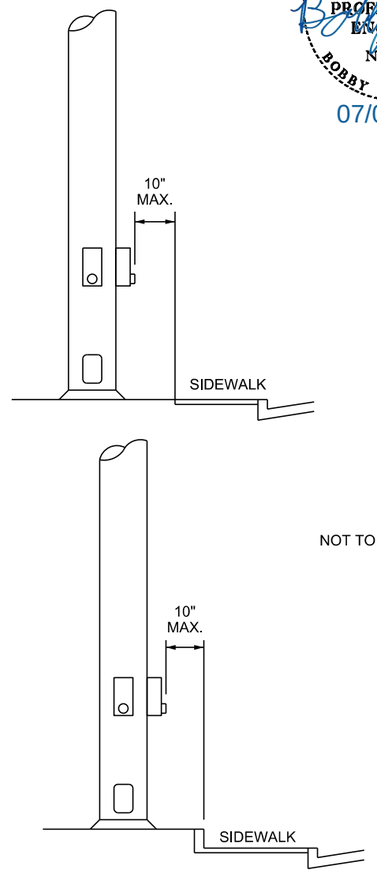



NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL BE ALSO ALODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/ COUNTY.
3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEARSIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.

## PUSH BUTTON LOCATION DETAIL




NOTES:
1. THE PUSH BUTTON DETECTOR SHOULD BE LOCATED 5 FEET OR LESS FROM THE OUTSIDE EDGE OF THE MARKED CROSSWALK FARTHEST FROM THE INTERSECTION.
2. THE PUSH BUTTON DETECTOR SHOULD BE LOCATED NO FARTHER FROM THE CROSSWALK THAN THE STOP LINE, IF ONE IS PRESENT.
3. A 4-FOOT MINIMUM UNOBSTRUCTED PEDESTRIAN ACCESS ROUTE SHOULD BE MAINTAINED.
4. THE MAXIMUM (MAX.) AND MINIMUM (MIN.) DIMENSIONS SHOWN IN THIS FIGURE ARE RECOMMENDATIONS.
5. TWO PEDESTRAIN PUSH BUTTONS ON THE SAME CORNER SHOULD BE SEPARATED BY AT LEAST 10 FEET. THE 10-FOOT DIMENSION SHOWN IN THIS FIGURE IS IN REFERENCE TO THE PLACEMENT OF THE PUSH BUTTONS WITHIN THEIR RESPECTIVE AREAS.
6. THE FIGURE SHOWS TYPICAL PUSH BUTTON LOCATIONS.
7. THIS FIGURE IS NOT DRAWN TO SCALE.




## SIDE REACH DETAIL

NOTES:
1. IN THE EVENT THAT A PLAN TRAFFIC SIGNAL LOCATION MUST BE ADJUSTED DUE TO UTILITY CONSULT WITH PROJECT ENGINEER PRIOR TO MAKING ADJUSTMENTS.

STATE OF ARKANSAS
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No. 19672
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DATE: 7/2/2025 FILENAME: ...\SIG\r090651_SIG03.dgn

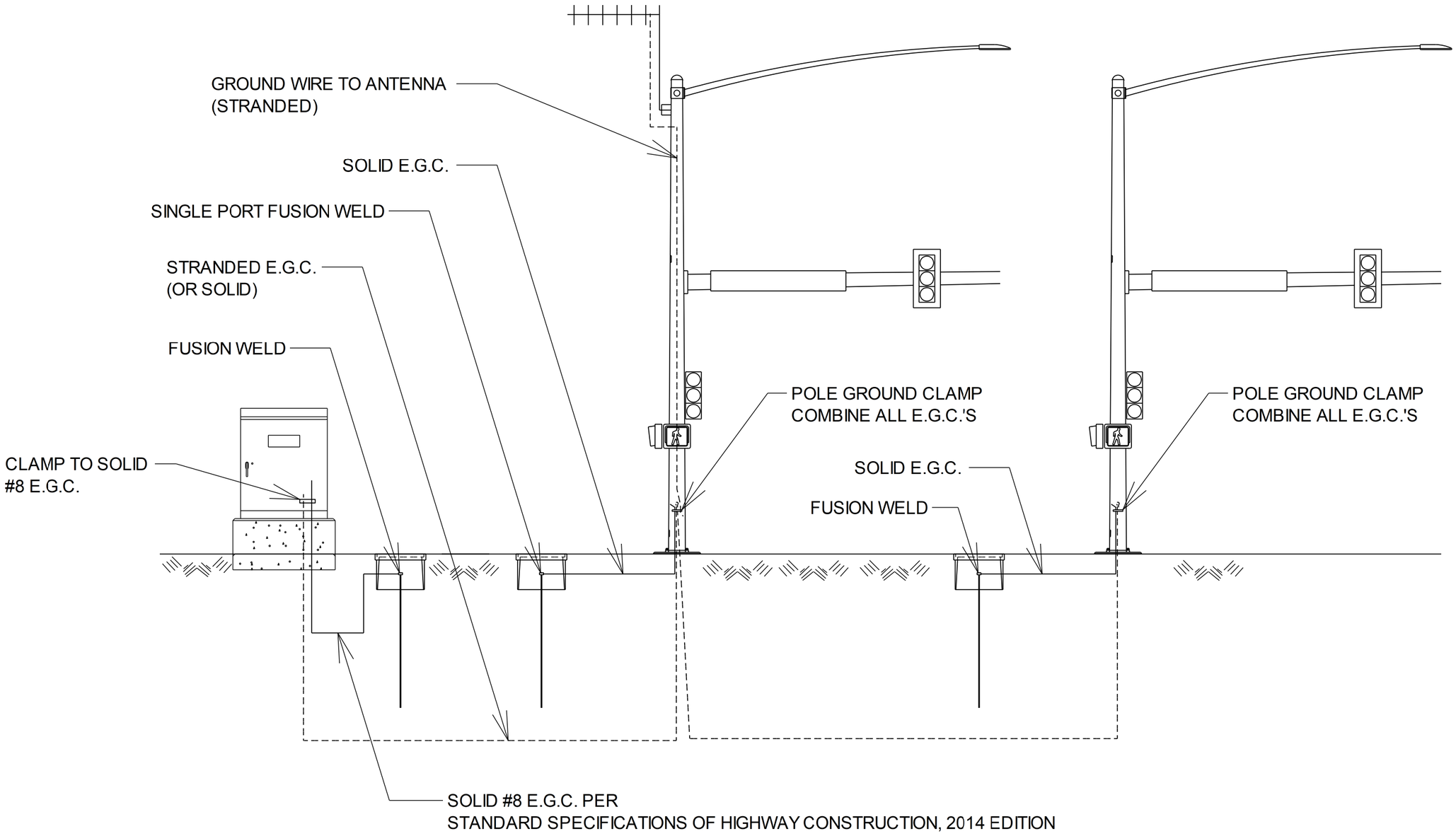
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CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 49 | 85 |
| | | GROUNDING ARRAY DETAIL | | | | |

# GROUNDING ARRAY
# SINGLE-PORT FUSION WELDS

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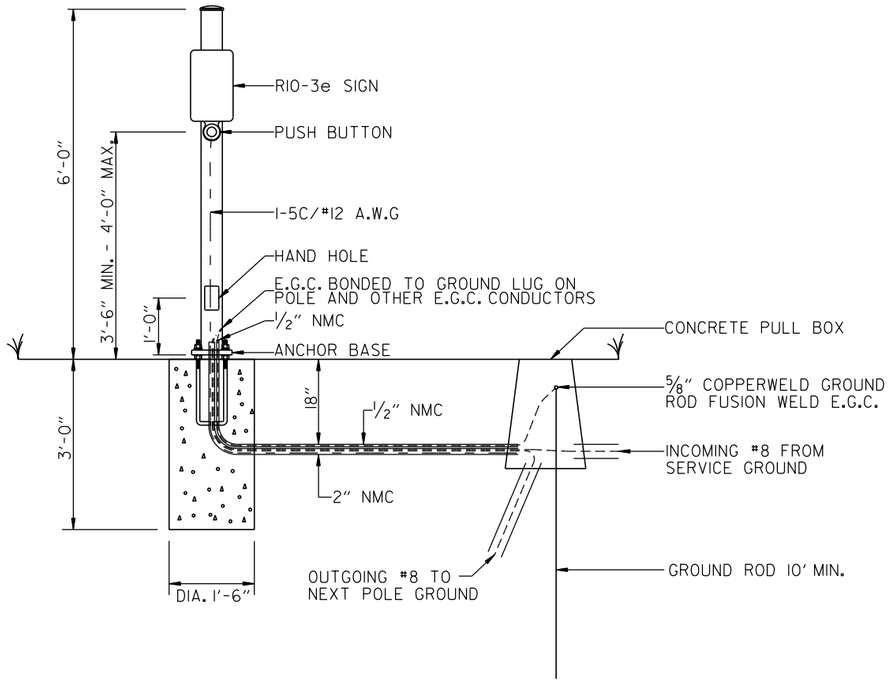


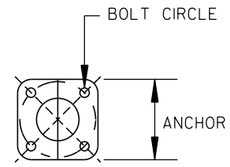

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CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

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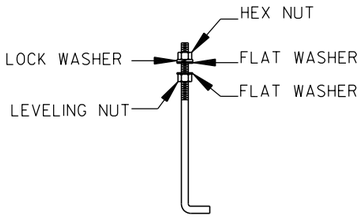
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| | | 6 | ARK. | 090651 | 50 | 85 |
| | | PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL | | | | |

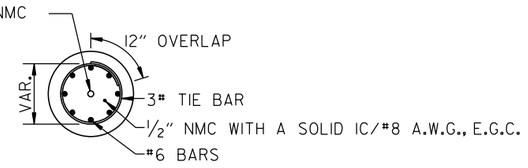


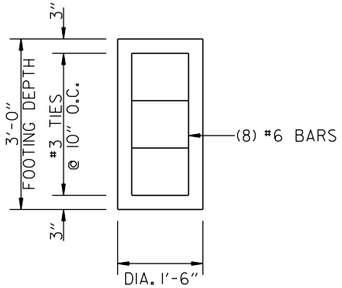




ANCHOR BASE
N.T.S.




ANCHOR BOLT
N.T.S.




STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

# PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL

NOTES:

EACH PEDESTRIAN PUSH BUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

POLE CAP - POLE CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

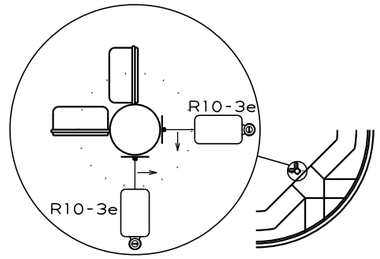
HAND HOLE - HAND HOLES SHALL BE 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL.

NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.

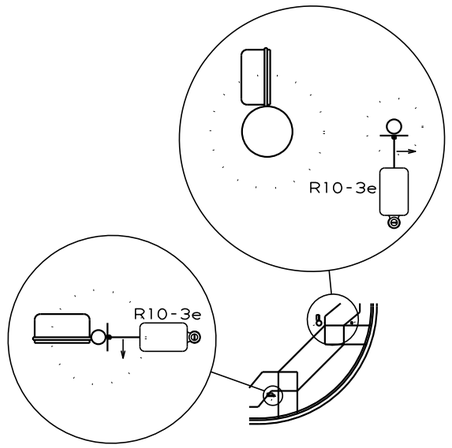
GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPARATELY.

POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

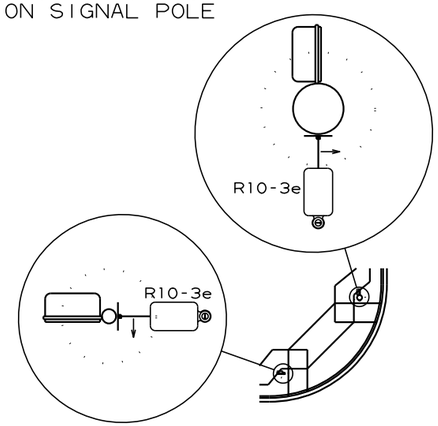
CONCRETE - ALL CONCRETE POLE FOUNDATION SHALL BE CLASS "S" OR GREATER.




TYPICAL MOUNTING PUSH BUTTON ON SIGNAL POLE




TYPICAL MOUNTING PUSH BUTTON ON PEDESTRIAN POLE AND PEDESTRIAN PUSH BUTTON POLE




TYPICAL MOUNTING PUSH BUTTON ON PEDESTRIAN POLE AND SIGNAL POLE

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 51 | 85 |
| | | TRAFFIC SIGNAL QUANTITIES | | | | |

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No. 19672
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07/03/2025

## STAGE B TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP | VIDEO DETECTOR ROTATION | 1 | EACH |

STAGE B:
EXISTING TRAFFIC SIGNAL IS USED IN PLACE. MODIFY DETECTION ZONES TO ACCOMMODATE WESTBOUND LANE SHIFT.
MAINTAIN EXISTING TRAFFIC SIGNAL CONFIGURATION .
(REFER TO PLAN SHEET NUMBER 29 IN THE MAINTENANCE OF TRAFFIC DETAILS.)

## STAGE C TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP | VIDEO DETECTOR ROTATION | 1 | EACH |

STAGE C:
EXISTING TRAFFIC SIGNAL IS USED IN PLACE. MODIFY DETECTION ZONES TO ACCOMMODATE WESTBOUND LANE SHIFT.
MAINTAIN EXISTING TRAFFIC SIGNAL CONFIGURATION.
(REFER TO PLAN SHEET NUMBER 30 IN THE MAINTENANCE OF TRAFFIC DETAILS.)

## STAGE 1 TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP & 701 | SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES) | 1 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 8 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) | 2 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) | 1310 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) | 40 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) | 40 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (2") | 20 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (3") | 30 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 20 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 6 | LIN. FT. |
| SS & 711 | CONCRETE PULL BOX (TYPE 1 HD) | 1 | EACH |
| SS & 713 | SPAN WIRE ASSEMBLY | 1 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 1 | EACH |
| SP | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | 0.50 | LUMP SUM |
| 716 | TREATED WOOD POLE (CLASS 1, 45') | 2 | EACH |
| SP & 733 | VIDEO DETECTOR (IP) | 4 | EACH |
| SP & 733 | VIDEO CABLE (EXTERIOR CAT 5E) | 620 | LIN. FT. |
| SP & 733 | VIDEO MONITOR (CLR) | 1 | EACH |
| SP & 733 | CENTRAL CONTROL UNIT (8 CHANNEL) | 1 | EACH |

STAGE 1:
INSTALL SPAN WIRE ASSEMBLY, TEMPORARY SIGNAL CONTROLLER, AND ALL TEMPORARY SIGNAL EQUIPMENT AS SHOWN ON STAGE 1 PLAN SHEETS.
REMOVE EXISTING SIGNAL EQUIPMENT AFTER THE TEMPORARY SIGNAL IS IN OPERATION.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 1 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

## STAGE 2 TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP | RELOCATION OF TRAFFIC SIGNAL HEAD | 6 | EACH |

STAGE 2:
RELOCATE SIGNAL HEADS 1, 2, 3, 6, 7, AND 8 TO ALLIGN WITH NEW LANE LOCATIONS.
MAINTAIN THIS TRAFFIC SIGNAL CONFIGURATION AS SHOWN ON THE STAGE 2 AND 3 TRAFFIC SIGNAL PLANS.
(REFER TO MAINTENANCE OF TRAFFIC DETAILS.)

## TRAFFIC SIGNAL QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| SP & 701 | SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES) | 1 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY) | 8 | EACH |
| SP & 706 | TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY) | 4 | EACH |
| SP & 707 | CENTRAL CONTROL UNIT | 1 | EACH |
| SP & 707 | POLE MOUNTED ASSEMBLY | 8 | EACH |
| SP & 707 | COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED | 8 | EACH |
| 708 | TRAFFIC SIGNAL CABLE (5C/12 A.W.G.) | 1770 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (5C/14 A.W.G.) | 1025 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (7C/14 A.W.G.) | 290 | LIN. FT. |
| 708 | TRAFFIC SIGNAL CABLE (20C/14 A.W.G.) | 820 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.) | 785 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., E.G.C.) | 205 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) | 45 | LIN. FT. |
| SP | ELECTRICAL CONDUCTORS FOR LUMINAIRES | 1005 | LIN. FT. |
| 709 | GALVANIZED STEEL CONDUIT (2") | 20 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (2") | 105 | LIN. FT. |
| 710 | NON-METALLIC CONDUIT (3") | 660 | LIN. FT. |
| SS & 711 | CONCRETE PULL BOX (TYPE 2) | 7 | EACH |
| SS & 711 | CONCRETE PULL BOX (TYPE 2 HD) | 3 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (36') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44') | 1 | EACH |
| SS & 714 | TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (48') | 1 | EACH |
| SP | LED LUMINAIRE ASSEMBLY | 4 | EACH |
| SS & 715 | TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION | 5 | EACH |
| SP | SERVICE POINT ASSEMBLY (2 CIRCUITS) | 1 | EACH |
| SP | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | 0.50 | LUMP SUM |
| SP | 18" STREET NAME SIGN | 4 | EACH |
| SP & 733 | VIDEO DETECTOR (IP) | 2 | EACH |
| SP & 733 | HYBRID VIDEO/RADAR DETECTOR | 2 | EACH |
| SP & 733 | VIDEO CABLE (EXTERIOR CAT 5E) | 1145 | LIN. FT. |
| SP & 733 | VIDEO MONITOR (CLR) | 1 | EACH |
| SP & 733 | CENTRAL CONTROL UNIT (8 CHANNEL) | 1 | EACH |

PERMANENT TRAFFIC SIGNAL:
INSTALL ALL PERMANENT TRAFFIC SIGNAL EQUIPMENT. ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT CAN BE REMOVED ONCE THE PERMANENT SIGNAL IS OPERATIONAL.
(REFER TO PERMANENT TRAFFIC SIGNAL PLANS.)

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 52 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

## PHASING DIAGRAM

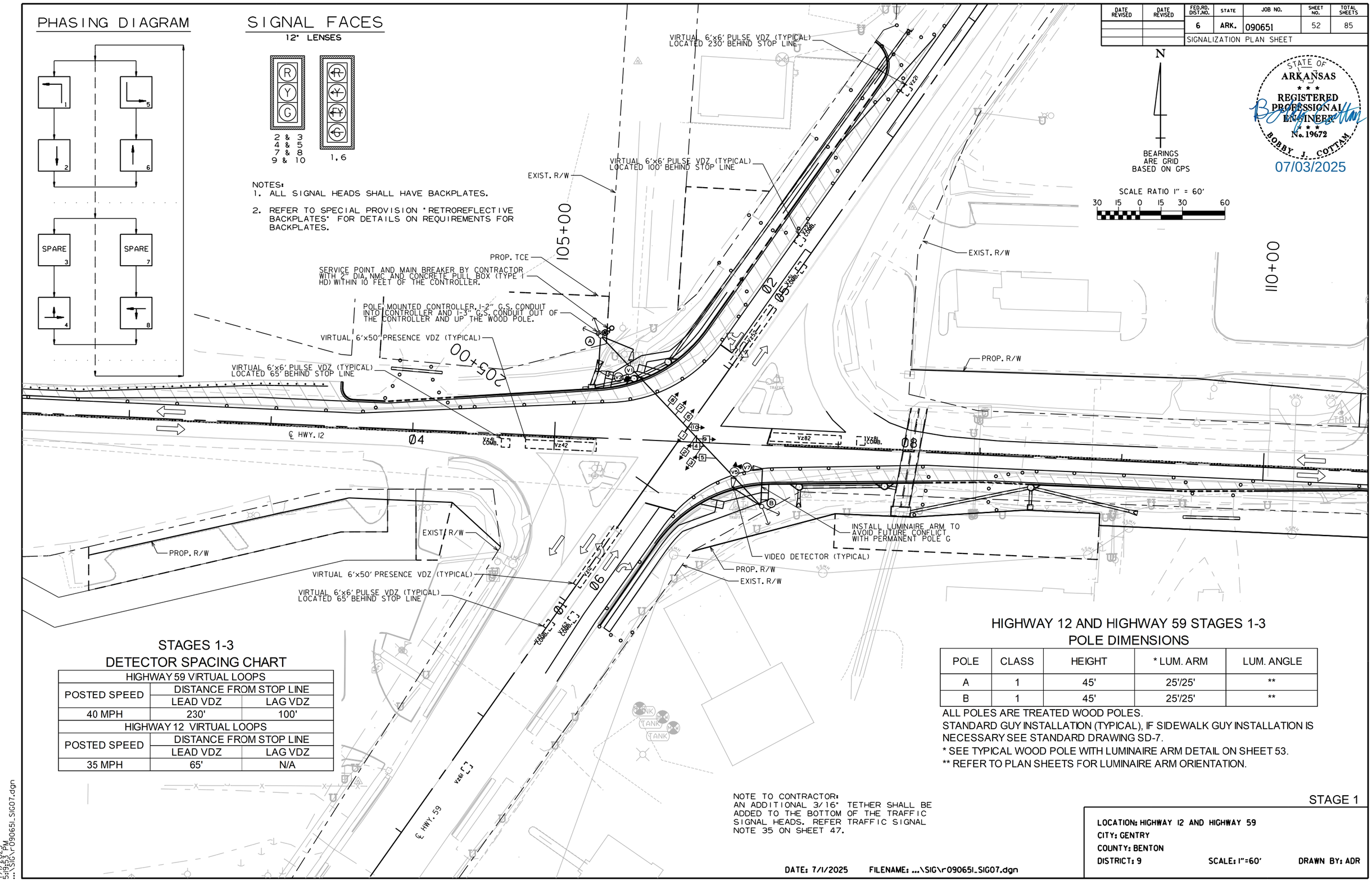



## SIGNAL FACES

12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.




N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 60'

30 15 0 15 30 60

STATE OF ARKANSAS
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## STAGES 1-3
## DETECTOR SPACING CHART

| HIGHWAY 59 VIRTUAL LOOPS | | |
|---|---|---|
| POSTED SPEED | DISTANCE FROM STOP LINE | |
| | LEAD VDZ | LAG VDZ |
| 40 MPH | 230' | 100' |
| **HIGHWAY 12 VIRTUAL LOOPS** | | |
| POSTED SPEED | DISTANCE FROM STOP LINE | |
| | LEAD VDZ | LAG VDZ |
| 35 MPH | 65' | N/A |

## HIGHWAY 12 AND HIGHWAY 59 STAGES 1-3
## POLE DIMENSIONS

| POLE | CLASS | HEIGHT | * LUM. ARM | LUM. ANGLE |
|---|---|---|---|---|
| A | 1 | 45' | 25'/25' | ** |
| B | 1 | 45' | 25'/25' | ** |

ALL POLES ARE TREATED WOOD POLES.
STANDARD GUY INSTALLATION (TYPICAL), IF SIDEWALK GUY INSTALLATION IS NECESSARY SEE STANDARD DRAWING SD-7.
* SEE TYPICAL WOOD POLE WITH LUMINAIRE ARM DETAIL ON SHEET 53.
** REFER TO PLAN SHEETS FOR LUMINAIRE ARM ORIENTATION.

NOTE TO CONTRACTOR:
AN ADDITIONAL 3/16" TETHER SHALL BE ADDED TO THE BOTTOM OF THE TRAFFIC SIGNAL HEADS. REFER TRAFFIC SIGNAL NOTE 35 ON SHEET 47.

STAGE 1

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG07.dgn

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## DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON MAINTENANCE OF TRAFFIC DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 53 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 40'

20 10 0 10 20 40

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07/03/2025

105+00

205+00

PROP. TCE

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITH 2" DIA. NMC AND CONCRETE PULL BOX (TYPE 1HD) WITHIN 10' OF THE CONTROLLER.

POLE MOUNTED CONTROLLER, 1-2" G.S. CONDUIT INTO THE CONTROLLER AND 1-3" G.S. CONDUIT OUT OF THE CONTROLLER AND UP THE WOOD POLE.

EXIST. R/W

PROP. R/W

℄ HWY. 12

Ø4

Vz41 COMB.

Vz42

Vz82

Vz81 COMB.

Ø8

Ø2

Ø5

Vz52 COMB.

Vz51 COMB.

Vz62 COMB.

Ø1

Ø6

℄ HWY. 59

22'30' (TYPICAL)

SPAN WIRE ASSEMBLY POLE (TYPICAL). GUY CABLES SHALL BE PLACED AT THE SAME HEIGHT AS THE SPAN WIRE PER STANDARD DRAWING SD-7

A

B

V1 V2 V3 V4 V5 V6 V7

1 2 3 4 5 6 7 8 9 10

25'-0"

37'-0"

33'-0"

8'-0"

LUMINAIRE ARM

TYPICAL WOOD POLE WITH LUMINAIRE ARM

NOTE TO CONTRACTOR:
LUMINAIRE ARMS (OR APPROVED MOUNTING HARDWARE) SHALL BE USED TO MOUNT VIDEO DETECTORS. LUMINAIRE ARM SHALL NOT INCLUDE LUMINAIRE ASSEMBLIES. THE COST FOR LUMINAIRE ARMS, MOUNTING, AND ALL HARDWARE IS INCLUDED IN PRICE BID FOR ITEM 716 TREATED WOOD POLE.

### HIGHWAY 12 AND HIGHWAY 59 STAGES 1-3
### POLE LOCATIONS

| POLE | LOCATION & STATION | OFFSET | X, Y COORDINATES |
|---|---|---|---|
| A | HWY. 59 - STA. 205+66.68 | 87.43' LT. | 580753.26, 712035.15 |
| B | HWY. 59 - STA. 205+34.15 | 74.60' RT. | 580866.75, 711915.01 |

STAGE 1

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9

SCALE: 1"=40'

DRAWN BY: ADR

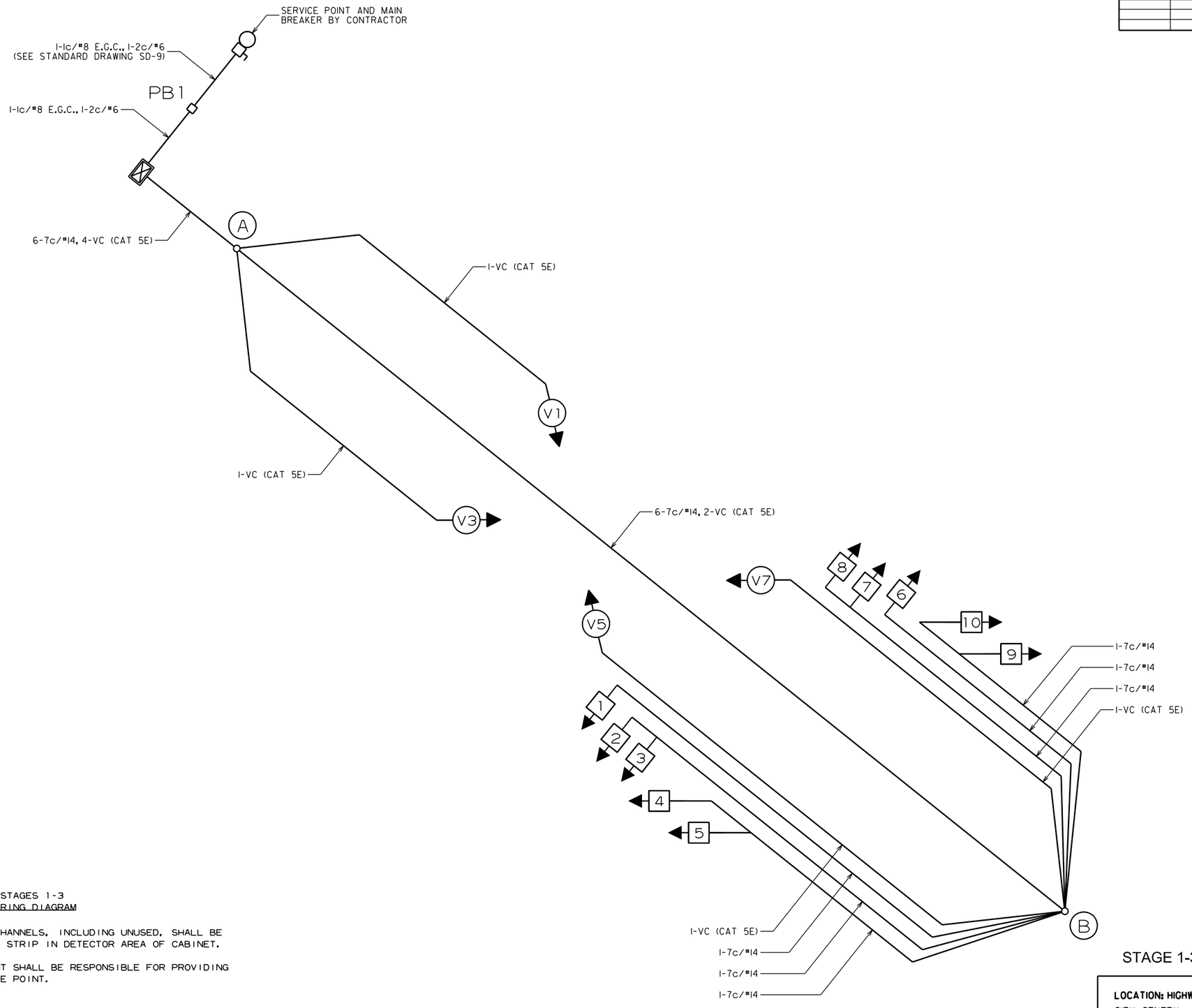
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 54 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025




STAGE 1-3 TEMPORARY WIRING DIAGRAM

STAGES 1-3
WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

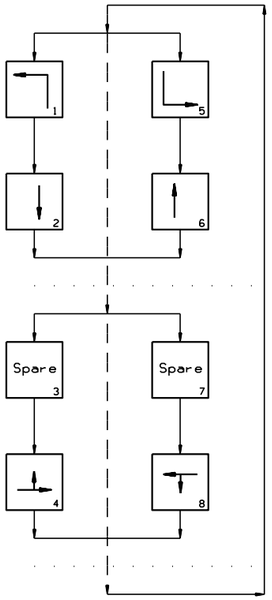
LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG09a.dgn

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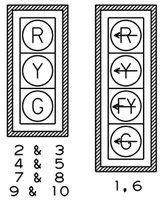
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 55 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

## PHASING DIAGRAM




## SIGNAL FACES

12" LENSES




2 & 3
4 & 5
7 & 8
9 & 10

1, 6

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM

07/03/2025

## DETECTOR CHART

| DETECTOR SYSTEM DESCRIPTION: JOB 090651 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGHWAY 12 AND HIGHWAY 59 DETECTOR ASSIGNMENTS | | | | HARDWARE INPUTS BY SUPPLIER | | | PROGRAM ASSIGNMENTS | | | COMMENTS | TUBE LENGTHS |
| | | | | | | | LOCAL | | MASTER SYSTEM | | |
| DET. ID # | LOCATION DIRECTION | TYPE | DET. # | CAB. TRM. # | AMP CHN. # | CON. IMP. # | PHS | SYSTEM DET. # | DETECTOR NUMBERS | | |
| Vz11 | NB LEFT TURN FAR | COMB. | | | 1 | V9 | 1 | 1 | | CAMERA V1 | 23" |
| Vz12 | NB LEFT TURN | LOCAL | | | 2 | V1 | 1 | | | CAMERA V1 | 23" |
| | | | | | | | | | | | |
| Vz21 | SB ADVANCE | LOCAL | | | 5 | V2 | 2 | | | CAMERA V5 | 23" |
| Vz22 | SB NEAR | COMB. | | | 6 | V10 | 2 | 2 | | CAMERA V5 | 23" |
| | | | | | | | | | | | |
| Vz41 | EB FAR | COMB. | | | 9 | V12 | 4 | 4 | | CAMERA V7 | 23" |
| Vz42 | EB NEAR | LOCAL | | | 10 | V4 | 4 | | | CAMERA V7 | 23" |
| | | | | | | | | | | | |
| Vz51 | SB LEFT TURN FAR | COMB. | | | 7 | V13 | 5 | 5 | | CAMERA V5 | 23" |
| Vz52 | SB LEFT TURN | LOCAL | | | 8 | V5 | 5 | | | CAMERA V5 | 23" |
| | | | | | | | | | | | |
| Vz61 | NB ADVANCE | LOCAL | | | 3 | V6 | 6 | | | CAMERA V1 | 23" |
| Vz62 | NB NEAR | COMB. | | | 4 | V14 | 6 | 6 | | CAMERA V1 | 23" |
| | | | | | | | | | | | |
| Vz81 | WB FAR | COMB. | | | 11 | V16 | 8 | 8 | | CAMERA V3 | 23" |
| Vz82 | WB NEAR | LOCAL | | | 12 | V8 | 8 | | | CAMERA V3 | 23" |
| | | | | | | | | | | | |
| | | | | | SPARE: 13-16 | | | | | | |

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

## INTERVAL CHART

| SIGNAL FACES | HIGHWAY 12 AND HIGHWAY 59 | | | | | | | | | | | FLASH SEQUENCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1+5 | CLR. | 1+6 | CLR. | 2+5 | CLR. | 2+6 | CLR. | 4+8 | CLR. | | |
| 1 | ~~G~~ | * | ~~G~~ | * | ~~FY~~ | *** | ~~FY~~ | *** | ~~R~~ | ~~R~~ | | ~~R~~ |
| 2 & 3 | R | R | G | ** | R | R | G | ** | R | R | | R |
| 4 & 5 | R | R | R | R | R | R | R | R | G | Y | | R |
| 6 | ~~G~~ | * | ~~FY~~ | *** | ~~G~~ | * | ~~FY~~ | *** | ~~R~~ | ~~R~~ | | ~~R~~ |
| 7 & 8 | R | R | R | R | G | ** | G | ** | R | R | | R |
| 9 & 10 | R | R | R | R | R | R | R | R | G | Y | | R |

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

STAGES 1-3 TEMPORARY SIGNALIZATION CHARTS

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG10.dgn

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 56 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

## PHASING DIAGRAM




## SIGNAL FACES

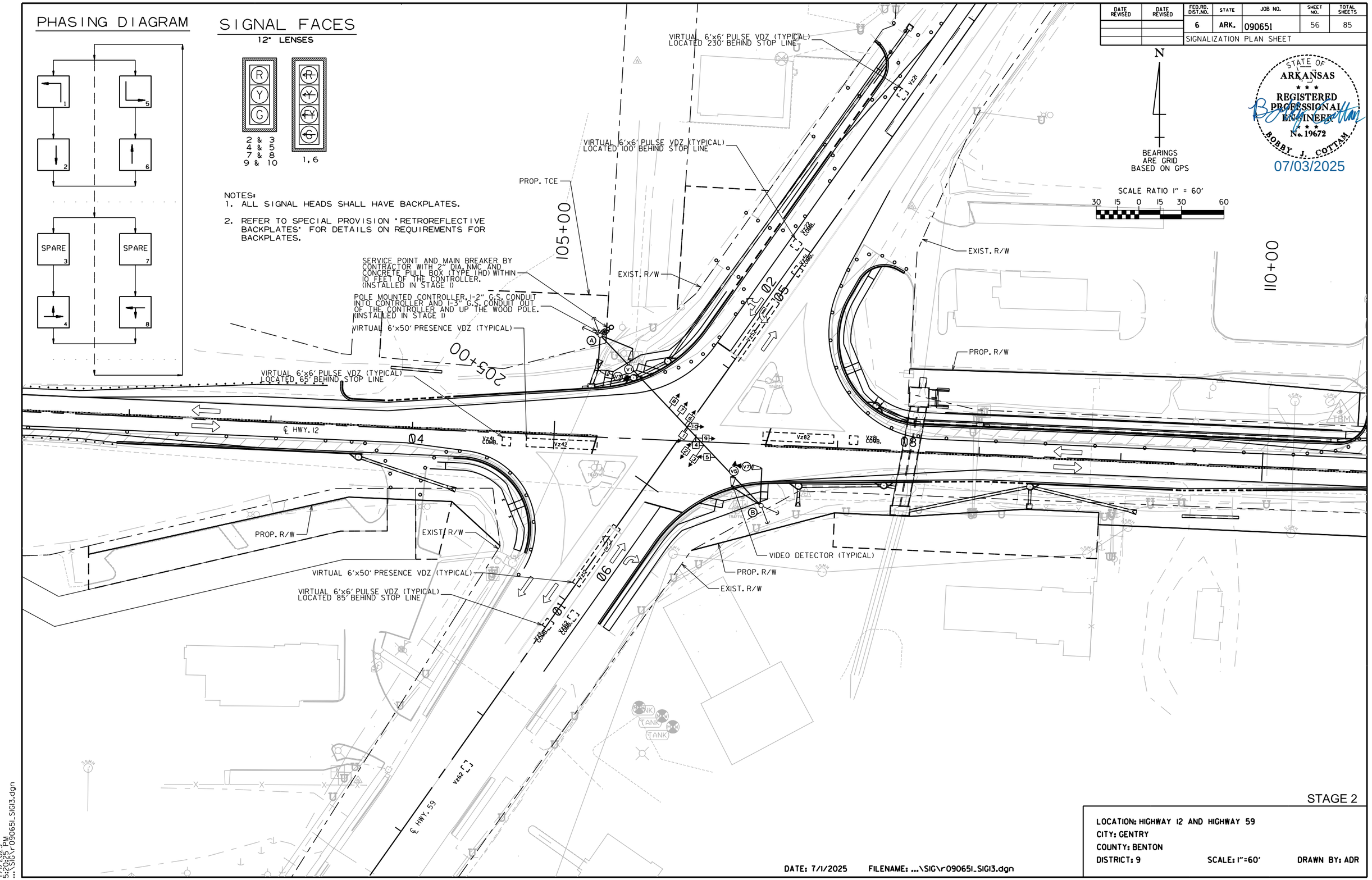
12" LENSES




2 & 3
4 & 5
7 & 8
9 & 10

1, 6

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.




N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 60'

30 15 0 15 30 60

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM

07/03/2025

STAGE 2

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG13.dgn

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## DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON MAINTENANCE OF TRAFFIC DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 57 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

SCALE RATIO 1" = 40'
20 10 0 10 20 40

105+00
205+00
PROP. TCE
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITH 2" DIA. NMC AND CONCRETE PULL BOX (TYPE 1HD) WITHIN 10' OF THE CONTROLLER. (INSTALLED IN STAGE 1)
POLE MOUNTED CONTROLLER, 1-2" G.S. CONDUIT INTO THE CONTROLLER AND 1-3" G.S. CONDUIT OUT OF THE CONTROLLER AND UP THE WOOD POLE. (INSTALLED IN STAGE 1)
EXIST. R/W
PROP. R/W
℄ HWY. 12
℄ HWY. 59
Ø1
Ø2
Ø4
Ø5
Ø6
Ø8
Vz41 COMB.
Vz42
Vz51 COMB.
Vz52
Vz61 COMB.
Vz62
Vz81 COMB.
Vz82
V1
V3
V5
V7
A
B
TRAFFIC
TANK
SSMH

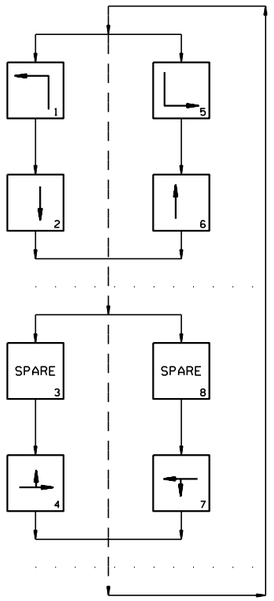
STAGE 2

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9
SCALE: 1"=40'
DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG14.dgn

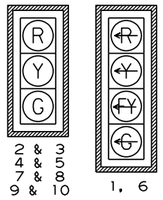
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## PHASING DIAGRAM




## SIGNAL FACES

12" LENSES




NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 58 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

SCALE RATIO 1" = 60'
30 15 0 15 30 60

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 230' BEHIND STOP LINE

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 100' BEHIND STOP LINE

EXIST. R/W

PROP. TCE

105+00

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITH 2" DIA. NMC AND CONCRETE PULL BOX (TYPE 1 HD) WITHIN 10 FEET OF THE CONTROLLER. (INSTALLED IN STAGE 1)

POLE MOUNTED CONTROLLER, 1-2" G.S. CONDUIT INTO CONTROLLER AND 1-3" G.S. CONDUIT OUT OF THE CONTROLLER AND UP THE WOOD POLE. (INSTALLED IN STAGE 1)

VIRTUAL 6'x50' PRESENCE VDZ (TYPICAL)

205+00

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 65' BEHIND STOP LINE

℄ HWY. 12

02

04

06

08

EXIST. R/W

PROP. R/W

110+00

PROP. R/W

VIDEO DETECTOR (TYPICAL)

PROP. R/W

EXIST. R/W

EXIST. R/W

VIRTUAL 6'x50' PRESENCE VDZ (TYPICAL)

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) LOCATED 85' BEHIND STOP LINE

℄ HWY. 59

STAGE 3

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG17.dgn

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## DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON MAINTENANCE OF TRAFFIC DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 59 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

SCALE RATIO 1" = 40'
20 10 0 10 20 40

EXIST. R/W
PROP. TCE
105+00
205+00
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITH 2" DIA. NMC AND CONCRETE PULL BOX (TYPE 1HD) WITHIN 10' OF THE CONTROLLER. (INSTALLED IN STAGE 1)
POLE MOUNTED CONTROLLER, 1-2" G.S. CONDUIT INTO THE CONTROLLER AND 1-3" G.S. CONDUIT OUT OF THE CONTROLLER AND UP THE WOOD POLE. (INSTALLED IN STAGE 1)
PROP. R/W
EXIST. R/W
℄ HWY. 12
℄ HWY. 59
Vz41 COMB.
Vz42
Vz82
Vz81 COMB.
Vz81
Vz52
Vz51 COMB.
Vz32 COMB.
Vz31
Vz11 COMB.
Vz12
Vz61 COMB.
Vz62
Vz71 COMB.
Vz72
01
02
04
05
06
08
A
B
V1
V3
V5
V7
TRAFFIC
TANK
SSMH

STAGE 3

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=40' DRAWN BY: ADR

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 60 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

## PHASING DIAGRAM




## SIGNAL FACES

12" LENSES




2 & 3
5 & 6
8 & 9
11 & 12



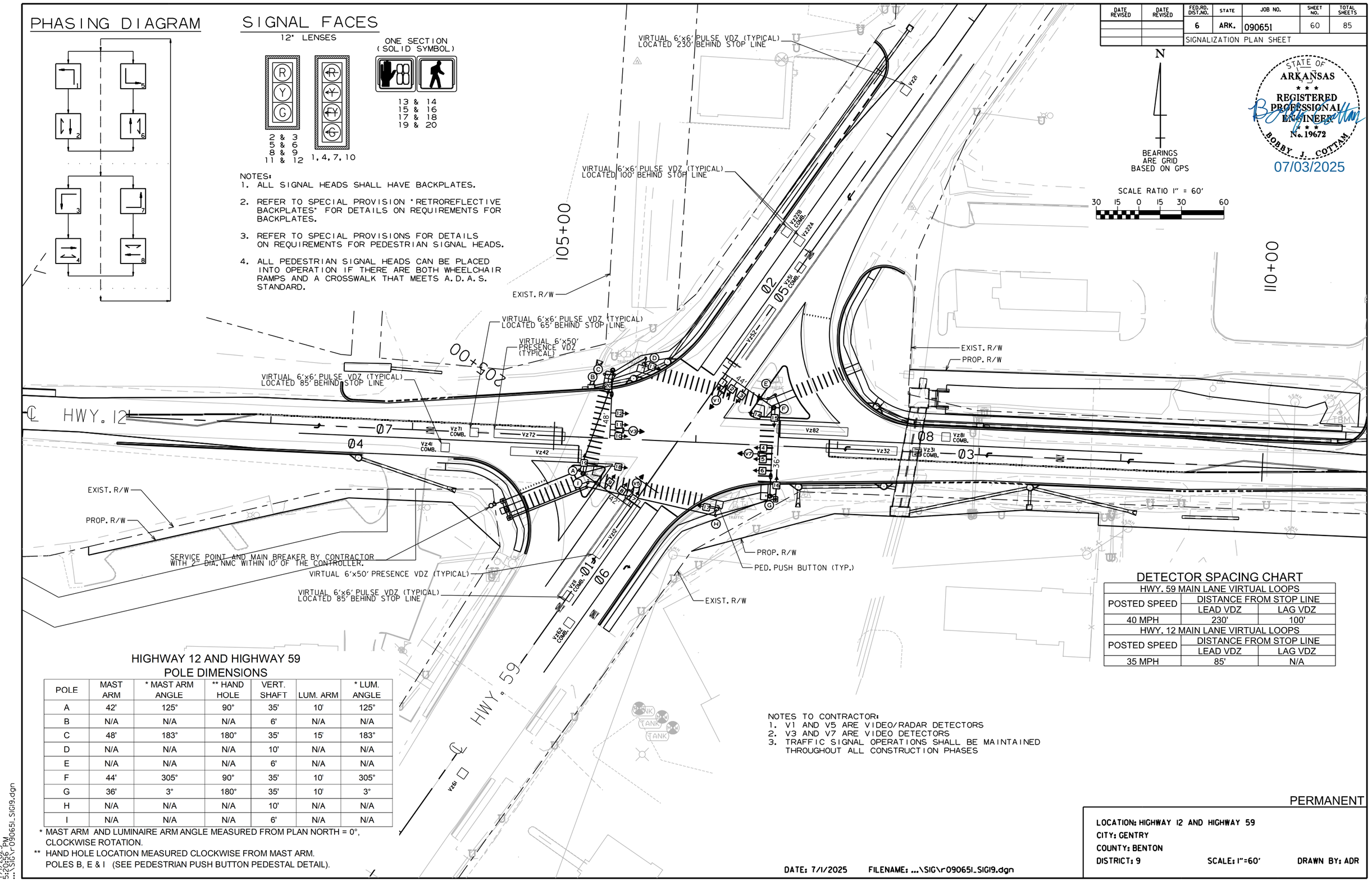

1, 4, 7, 10

ONE SECTION
(SOLID SYMBOL)



13 & 14
15 & 16
17 & 18
19 & 20

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.




N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 60'

30 15 0 15 30 60

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM

07/03/2025

## DETECTOR SPACING CHART

| HWY. 59 MAIN LANE VIRTUAL LOOPS | | |
|---|---|---|
| POSTED SPEED | DISTANCE FROM STOP LINE | |
| | LEAD VDZ | LAG VDZ |
| 40 MPH | 230' | 100' |
| HWY. 12 MAIN LANE VIRTUAL LOOPS | | |
| POSTED SPEED | DISTANCE FROM STOP LINE | |
| | LEAD VDZ | LAG VDZ |
| 35 MPH | 85' | N/A |

## HIGHWAY 12 AND HIGHWAY 59 POLE DIMENSIONS

| POLE | MAST ARM | * MAST ARM ANGLE | ** HAND HOLE | VERT. SHAFT | LUM. ARM | * LUM. ANGLE |
|---|---|---|---|---|---|---|
| A | 42' | 125° | 90° | 35' | 10' | 125° |
| B | N/A | N/A | N/A | 6' | N/A | N/A |
| C | 48' | 183° | 180° | 35' | 15' | 183° |
| D | N/A | N/A | N/A | 10' | N/A | N/A |
| E | N/A | N/A | N/A | 6' | N/A | N/A |
| F | 44' | 305° | 90° | 35' | 10' | 305° |
| G | 36' | 3° | 180° | 35' | 10' | 3° |
| H | N/A | N/A | N/A | 10' | N/A | N/A |
| I | N/A | N/A | N/A | 6' | N/A | N/A |

* MAST ARM AND LUMINAIRE ARM ANGLE MEASURED FROM PLAN NORTH = 0°, CLOCKWISE ROTATION.

** HAND HOLE LOCATION MEASURED CLOCKWISE FROM MAST ARM. POLES B, E & I (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

NOTES TO CONTRACTOR:
1. V1 AND V5 ARE VIDEO/RADAR DETECTORS
2. V3 AND V7 ARE VIDEO DETECTORS
3. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES

PERMANENT

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=60' DRAWN BY: ADR

DATE: 7/1/2025 FILENAME: ...\SIG\r090651_SIG19.dgn

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## DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST AND WEST APPROACH
40 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 61 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 40'
20 10 0 10 20 40

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

105+00
205+00
204+00
203+00
℄ HWY. 12
℄ HWY. 59
Ø1
Ø2
Ø3
Ø4
Ø5
Ø6
Ø7
Ø8
EXIST. R/W
PROP. R/W
PED. PUSH BUTTON (TYP.)
1-2" NMC
2-3" NMC
1-3" NMC
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITH 2" DIA. NMC WITHIN 10' OF THE CONTROLLER.
2-3" NMC, 1-2" NMC
Vz22A COMB.
Vz22B
Vz52
Vz42 COMB.
Vz72
Vz41
Vz71 COMB.
Vz12
Vz66 COMB.
Vz32
Vz82 COMB.
Vz81
Vz31 COMB.
TRAFFIC
TANK

## HIGHWAY 12 AND HIGHWAY 59
## POLE LOCATIONS

| POLE | LOCATION & STATION | OFFSET | X, Y COORDINATES |
|---|---|---|---|
| A | HWY. 59 - STA. 204+80.55 | 41.33' LT. | 580741.15, 711938.21 |
| B | HWY. 59 - STA. 205+46.38 | 69.38' LT. | 580756.27, 712008.15 |
| C | HWY. 59 - STA. 205+52.13 | 66.27' LT. | 580762.13, 712011.05 |
| D | HWY. 59 - STA. 205+68.37 | 50.77' LT. | 580784.17, 712015.35 |
| E | HWY. 59 - STA. 205+98.94 | 34.67' RT. | 580871.57, 711990.96 |
| F | HWY. 59 - STA. 205+96.21 | 41.70' RT. | 580875.73, 711984.67 |
| G | HWY. 59 - STA. 205+43.65 | 75.44' RT. | 580872.92, 711922.28 |
| H | HWY. 59 - STA. 205+14.36 | 50.10' RT. | 580835.31, 711913.01 |
| I | HWY. 59 - STA. 204+77.23 | 34.78' LT. | 580744.58, 711931.72 |

TOP OF POLE FOUNDATION ELEVATION SHALL BE THREE (3) INCHES ABOVE THE FINISHED SURFACE ELEVATION AT THE LOCATIONS SHOWN ABOVE.

TOP OF POLE FOUNDATION ELEVATION MAY BE INCREASED IN ACCORDANCE WITH STANDARD DRAWING SD-11.

POLES B, E & I (SEE PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL).

REFER TO THE SPECIAL DETAIL OF PUSH BUTTON LOCATION.

PERMANENT

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: 1"=40' DRAWN BY: ADR

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# HIGHWAY 12 AND HIGHWAY 59
## PULL BOX LOCATIONS

| PULL BOX | TYPE | LOCATION & STATION | * OFFSET | * X, Y COORDINATES |
|---|---|---|---|---|
| PB1 | 2 HD | HWY. 59 - STA. 204+32.32 | 76.25' LT. | 580684.79, 711919.01 |
| PB2 | 2 HD | HWY. 59 - STA. 204+25.34 | 65.49' LT. | 580689.54, 711907.09 |
| PB3 | 2 | HWY. 59 - STA. 204+74.24 | 33.69' LT. | 580743.74, 711928.65 |
| PB4 | 2 | HWY. 59 - STA. 204+81.00 | 44.76' LT. | 580738.61, 711940.56 |
| PB5 | 2 | HWY. 59 - STA. 205+50.15 | 63.16' LT. | 580763.53, 712007.64 |
| PB6 | 2 | HWY. 59 - STA. 205+72.41 | 52.02' LT. | 580785.48, 712019.37 |
| PB7 | 2 | HWY. 59 - STA. 206+04.17 | 37.19' RT. | 580876.65, 711993.78 |
| PB8 | 2 | HWY. 59 - STA. 205+98.54 | 45.29' RT. | 580880.01, 711984.50 |
| PB9 | 2 HD | HWY. 59 - STA. 205+44.19 | 80.05' RT. | 580877.00, 711920.06 |
| PB10 | 2 | HWY. 59 - STA. 205+10.38 | 51.91' RT. | 580834.50, 711908.71 |

* CENTER OF PULL BOX

ALL PULL BOXES SHALL BE PLACED AT THE FINISHED SURFACE ELEVATION.

## CONTROLLER CABINET LOCATION

| LOCATION & STATION | * OFFSET | * X, Y COORDINATES |
|---|---|---|
| HWY. 59 - STA. 204+28.83 | 70.87' LT. | 580687.16, 711913.05 |

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 62 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

N

BEARINGS ARE GRID BASED ON GPS

SCALE RATIO 1" = 30'

30 15 0 15 30

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM

07/03/2025

PED. PUSH BUTTON (TYP.)

I-2" NMC

EXIST. R/W

105+00

206+00

PB6

PB5

PB7

PB8

PB4

PB1

PB2

PB3

PB9

PB10

44'

48'

42'

36'

205+00

108+00

HWY. 12

HWY. 59

Vz71 COMB.

Vz72

Vz42 COMB.

Vz22A COMB.

Vz22B

Vz51 COMB.

Vz52

Vz82 COMB.

Vz32

Vz31 COMB.

Vz12

Vz11 COMB.

Vz62 COMB.

I-2" NMC
I-3" NMC
2-3" NMC

PROP. R/W

EXIST. R/W

PERMANENT

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9

SCALE: 1"=30'

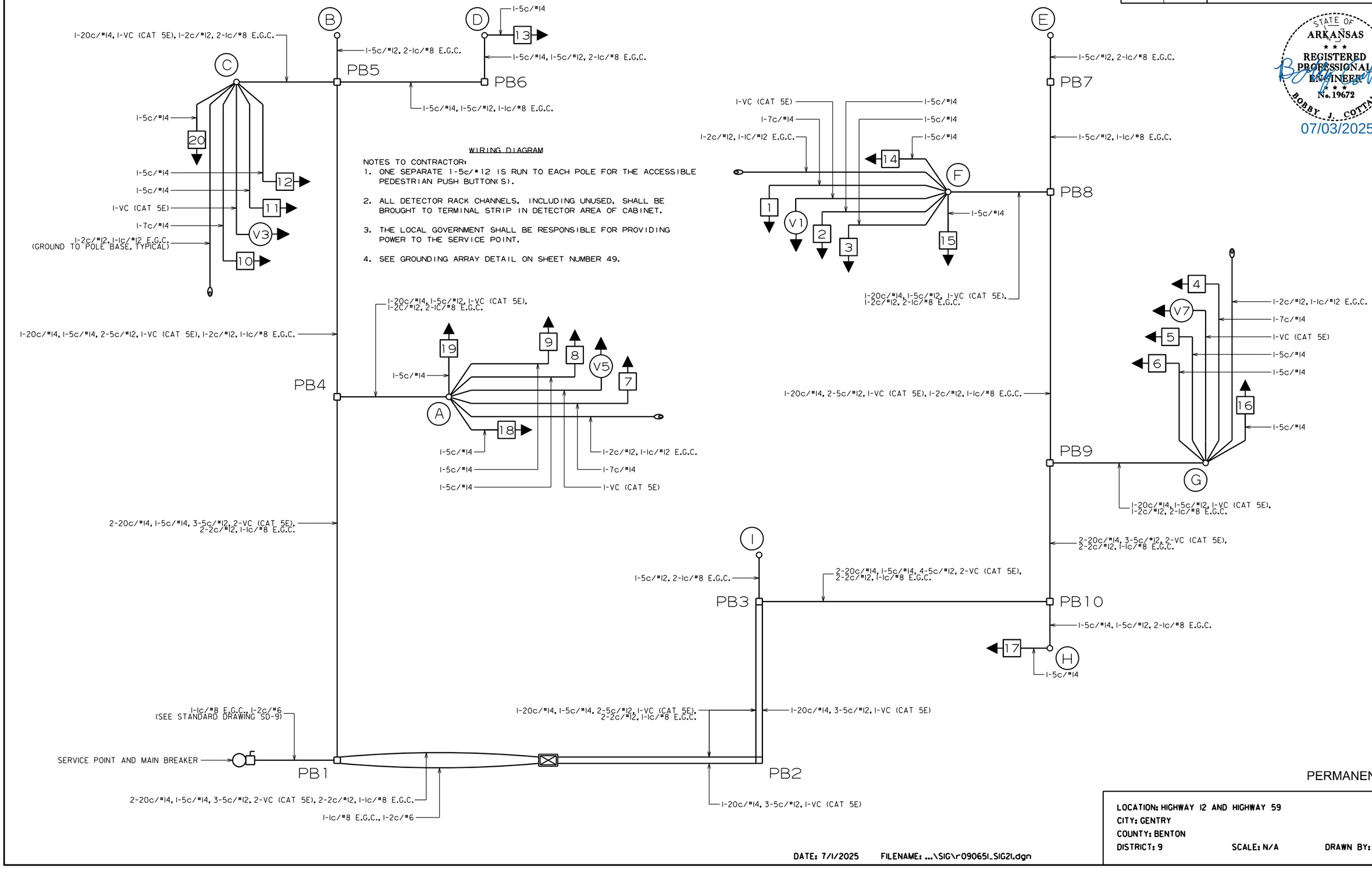
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 63 | 85 |
| | | SIGNALIZATION PLAN SHEET | | | | |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025




WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c/#12 IS RUN TO EACH POLE FOR THE ACCESSIBLE PEDESTRIAN PUSH BUTTON(S).
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. SEE GROUNDING ARRAY DETAIL ON SHEET NUMBER 49.

PERMANENT

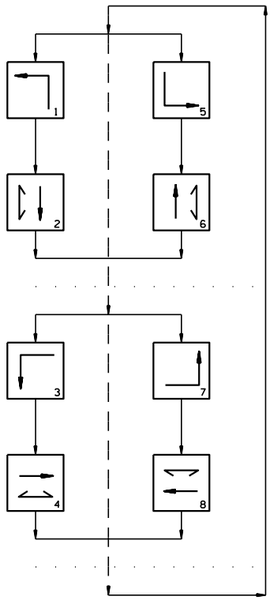
LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

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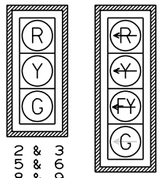
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|---|---|---|---|---|---|---|
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| | | SIGNALIZATION PLAN SHEET | | | | |

## PHASING DIAGRAM




## SIGNAL FACES

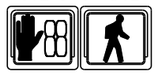
12" LENSES




2 & 3
5 & 6
8 & 9
11 & 12

1, 4, 7, 10

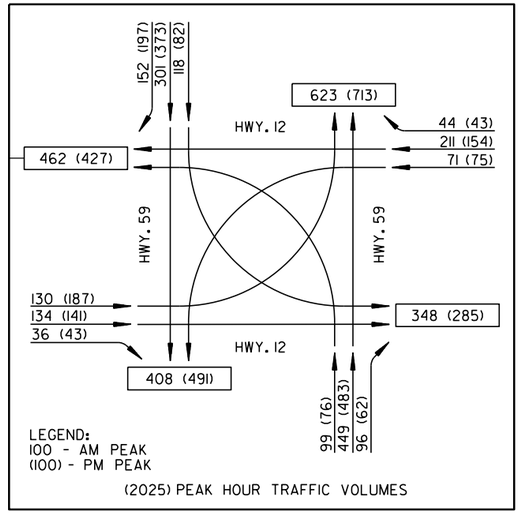
ONE SECTION
(SOLID SYMBOL)



13 & 14
15 & 16
17 & 18
19 & 20

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

## TRAFFIC FLOW DIAGRAM




LEGEND:
100 - AM PEAK
(100) - PM PEAK

(2025) PEAK HOUR TRAFFIC VOLUMES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19672
BOBBY J. COTTAM
07/03/2025

## DETECTOR CHART

| DETECTOR SYSTEM DESCRIPTION: JOB 090651 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGHWAY 12 AND HIGHWAY 59 DETECTOR ASSIGNMENTS | | | HARDWARE INPUTS BY SUPPLIER | | | PROGRAM ASSIGNMENTS LOCAL | | MASTER SYSTEM DETECTOR NUMBERS | COMMENTS | TUBE LENGTHS |
| DET. ID # | LOCATION DIRECTION | TYPE | DET. # | CAB. TRM. # | AMP CHN. # | CON. IMP. # | PHS | SYSTEM DET. # | | | |
| Vz11 | NB LEFT TURN FAR | COMB. | | | | V9 | 1 | 1 | | V1 | MAST ARM MOUNTED |
| Vz12 | NB LEFT TURN | LOCAL | | | | V1 | 1 | | | V1 | |
| | | | | | | | | | | | |
| Vz21 | SB ADVANCE | LOCAL | | | | V2 | 2 | | | V5 | MAST ARM MOUNTED |
| Vz22 A&B | SB NEAR | COMB. | | | | V10 | 2 | 2 | | V5 | |
| | | | | | | | | | | | |
| Vz31 | WB LEFT TURN FAR | COMB. | | | | V11 | 3 | 3 | | V3 | 74" |
| Vz32 | WB LEFT TURN | LOCAL | | | | V3 | 3 | | | V3 | 74" |
| | | | | | | | | | | | |
| Vz41 | EB ADVANCE | COMB. | | | | V12 | 4 | 4 | | V7 | 74" |
| Vz42 | EB NEAR | LOCAL | | | | V4 | 4 | | | V7 | 74" |
| | | | | | | | | | | | |
| Vz51 | SB LEFT TURN FAR | COMB. | | | | V13 | 5 | 5 | | V5 | MAST ARM MOUNTED |
| Vz52 | SB LEFT TURN | LOCAL | | | | V5 | 5 | | | V5 | |
| | | | | | | | | | | | |
| Vz61 | NB ADVANCE | LOCAL | | | | V6 | 6 | | | V1 | MAST ARM MOUNTED |
| Vz62 | NB NEAR | COMB. | | | | V14 | 6 | 6 | | V1 | |
| | | | | | | | | | | | |
| Vz71 | EB LEFT TURN FAR | COMB. | | | | V15 | 7 | 7 | | V7 | 74" |
| Vz72 | EB LEFT TURN | LOCAL | | | | V7 | 7 | | | V7 | 74" |
| | | | | | | | | | | | |
| Vz81 | WB ADVANCE | COMB. | | | | V16 | 8 | 8 | | V3 | 74" |
| Vz82 | WB NEAR | LOCAL | | | | V8 | 8 | | | V3 | 74" |
| | | | | | | | | | | | |
| PB2 A&B | HWY. 12 W. LEG | PED. | | | | P2 | 2 | | | | |
| PB4 A&B | HWY. 59 S. LEG | PED. | | | | P4 | 4 | | | | |
| PB6 A&B | HWY. 12 E. LEG | PED. | | | | P6 | 6 | | | | |
| PB8 A&B | HWY. 59 N. LEG | PED. | | | | P8 | 8 | | | | |
| | | | | | | | | | | | |
| | | | | | SPARE: | | | | | | |

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

## INTERVAL CHART

| SIGNAL FACES | HIGHWAY 12 AND HIGHWAY 59 1+5 | CLR. | 1+6 | CLR. | 2+5 | CLR. | 2+6 | CLR. | 3+7 | CLR. | 3+8 | CLR. | 4+7 | CLR. | 4+8 | CLR. | FLASH SEQUENCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ~~<-G~~ | * | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-FY~~ | *** | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ |
| 2 & 3 | R | R | G | ** | R | R | G | ** | R | R | R | R | R | R | R | R | R |
| 4 | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-R~~ |
| 5 & 6 | R | R | R | R | R | R | R | R | R | R | R | R | G | ** | G | ** | R |
| 7 | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ |
| 8 & 9 | R | R | R | R | G | ** | G | ** | R | R | R | R | R | R | R | R | R |
| 10 | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-R~~ | ~~<-G~~ | * | ~~<-G~~ | * | ~~<-FY~~ | *** | ~~<-FY~~ | *** | ~~<-R~~ |
| 11 & 12 | R | R | R | R | R | R | R | R | R | R | G | ** | R | R | G | ** | R |
| 13 & 14 | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | W | FDW | DW | DW | W | FDW | BLK |
| 15 & 16 | DW | DW | W | FDW | DW | DW | W | FDW | DW | DW | DW | DW | DW | DW | DW | DW | BLK |
| 17 & 18 | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | DW | W | FDW | W | FDW | BLK |
| 19 & 20 | DW | DW | DW | DW | W | FDW | W | FDW | DW | DW | DW | DW | DW | DW | DW | DW | BLK |

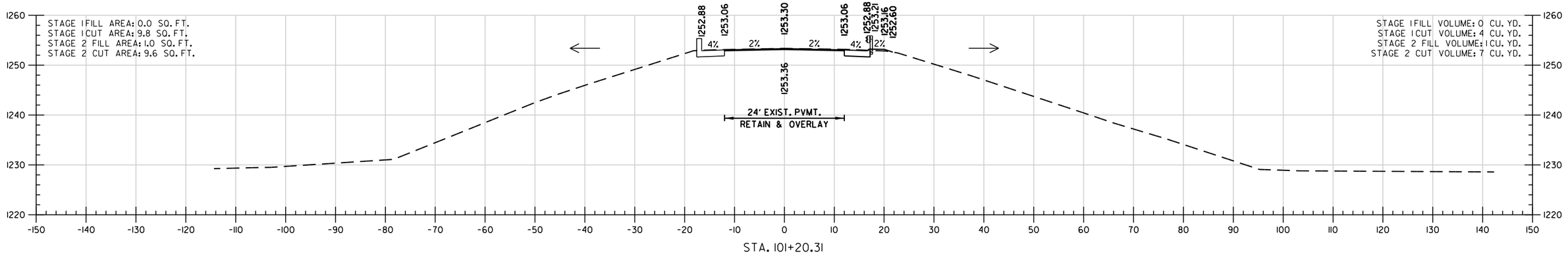
* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

LOCATION: HIGHWAY 12 AND HIGHWAY 59
CITY: GENTRY
COUNTY: BENTON
DISTRICT: 9 SCALE: N/A DRAWN BY: ADR

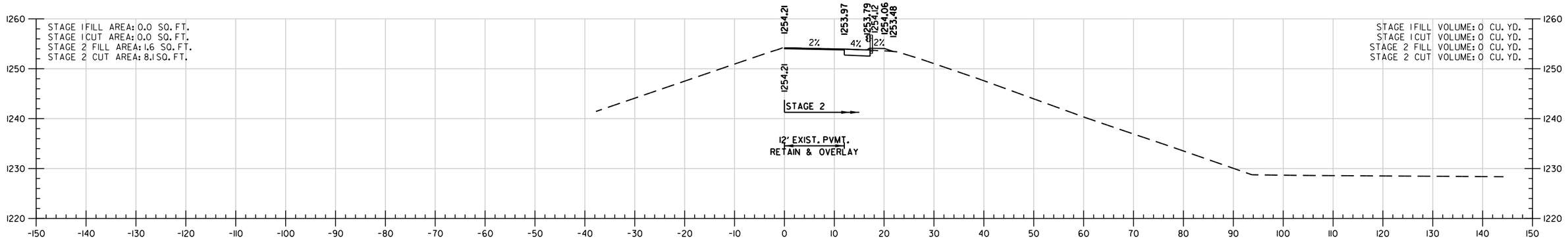
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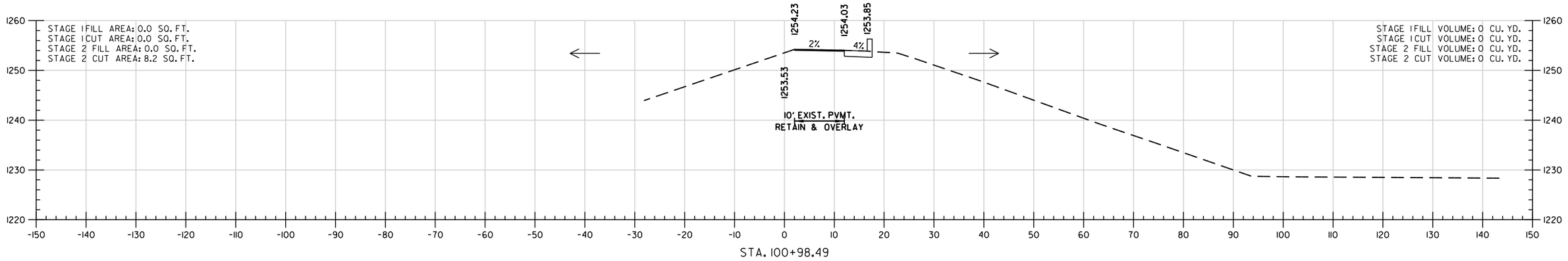
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| | | CROSS SECTIONS | | | | |




STA. 101+20.31




STA. 101+00.00

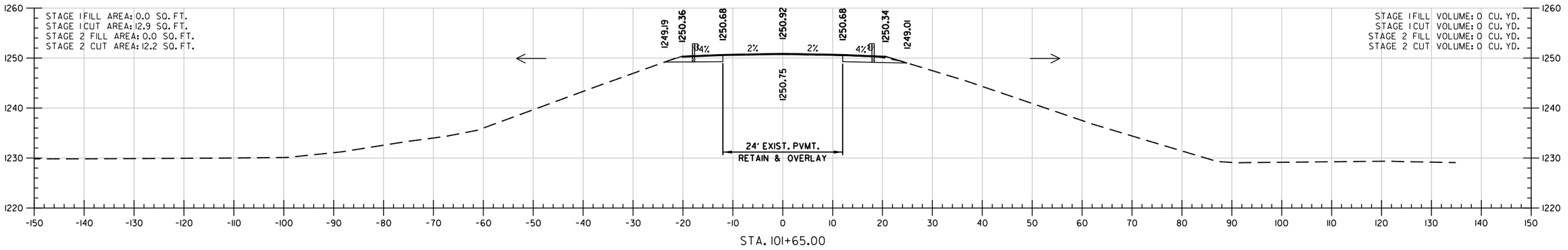



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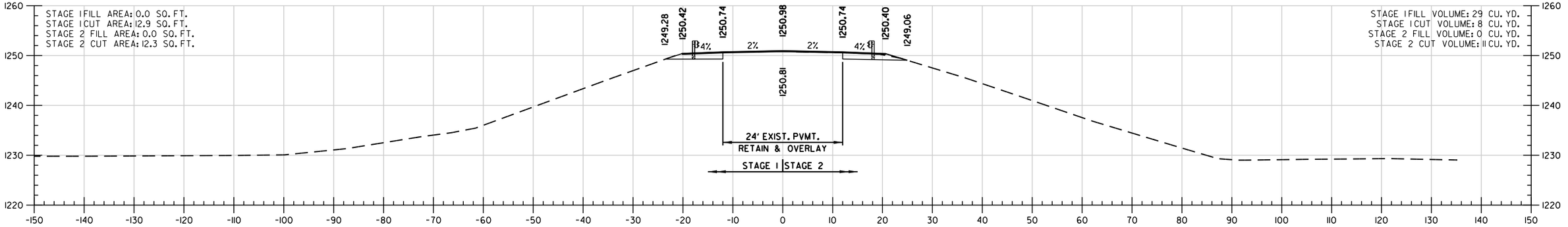
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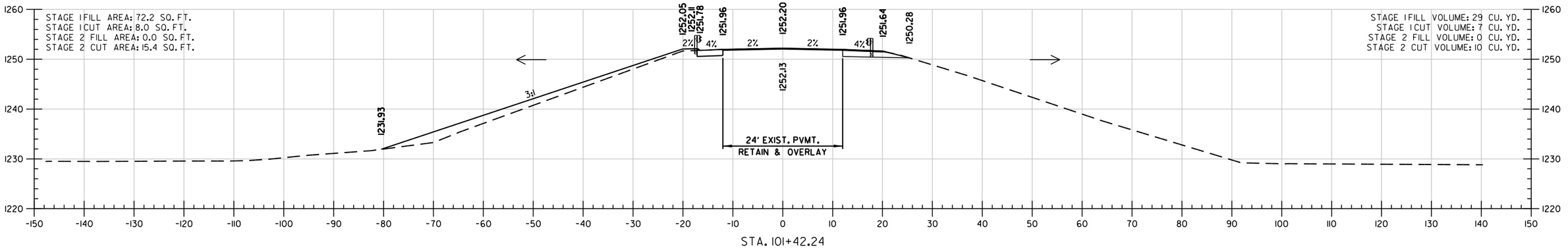
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STA. 101+65.00




STA. 101+64.06

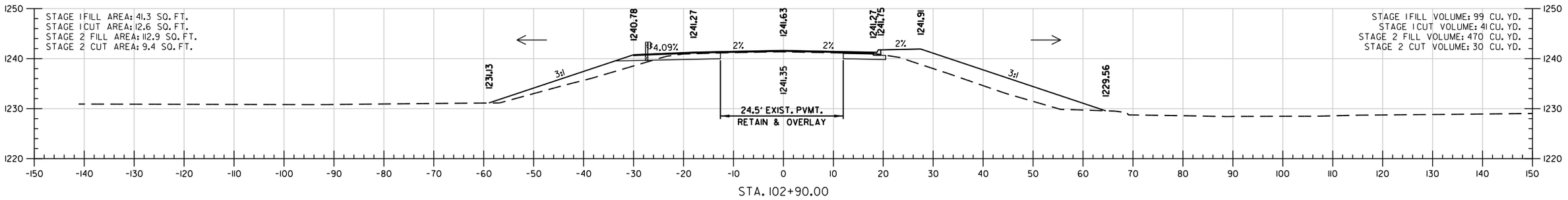



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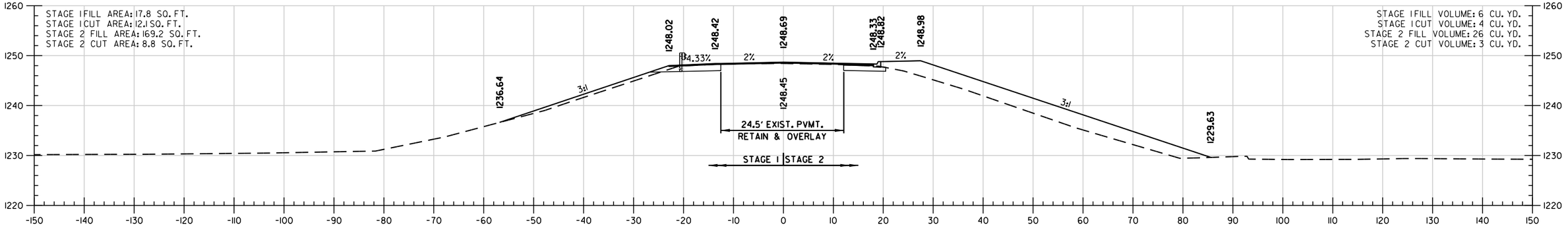
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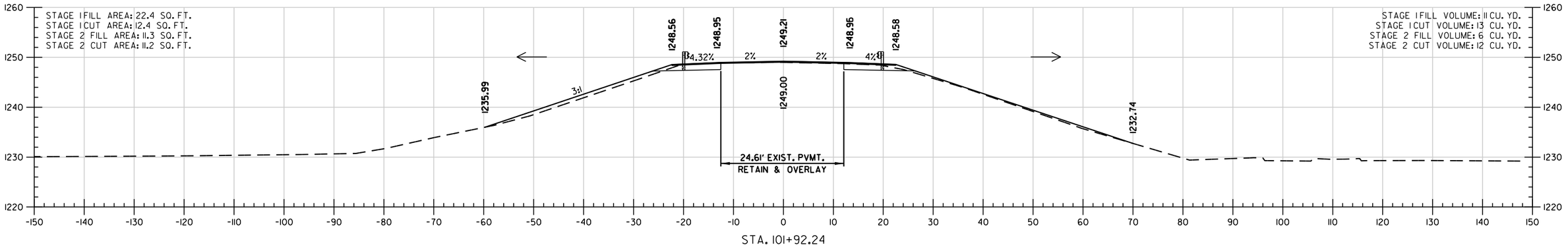
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STA. 102+90.00




STA. 102+00.00



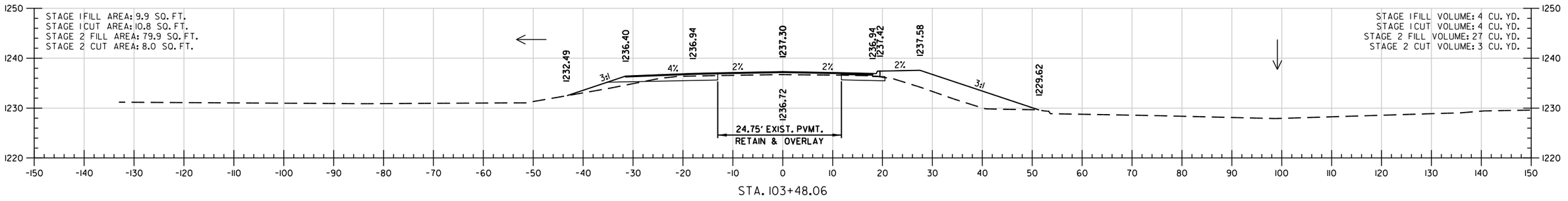

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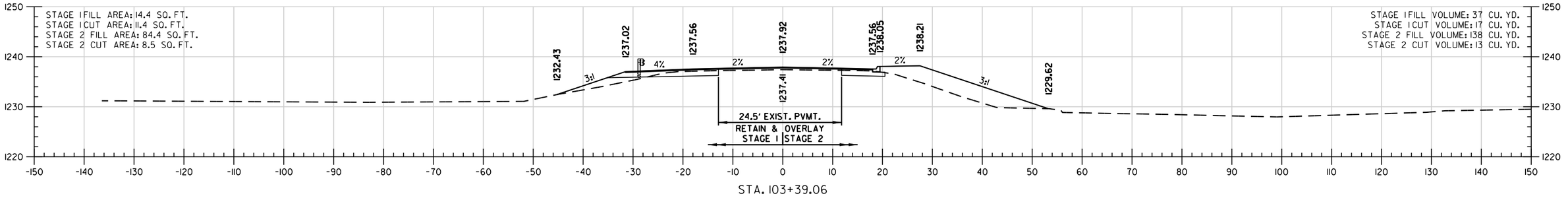
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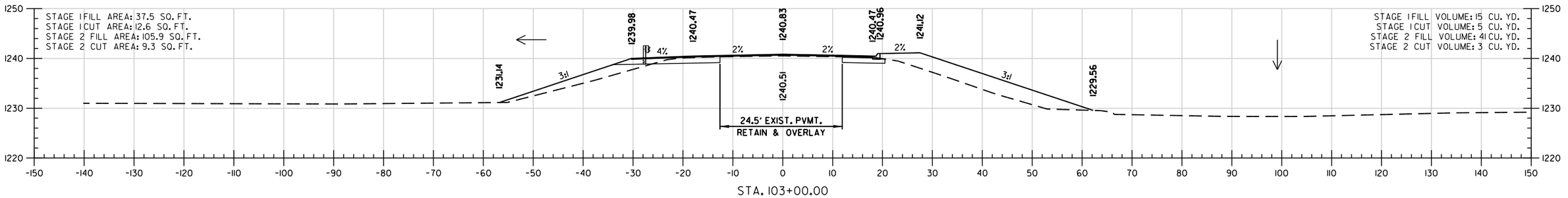
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-7.31% LT. DITCH GRADE
ELEV. 1232.70




STA. 103+48.06




STA. 103+39.06

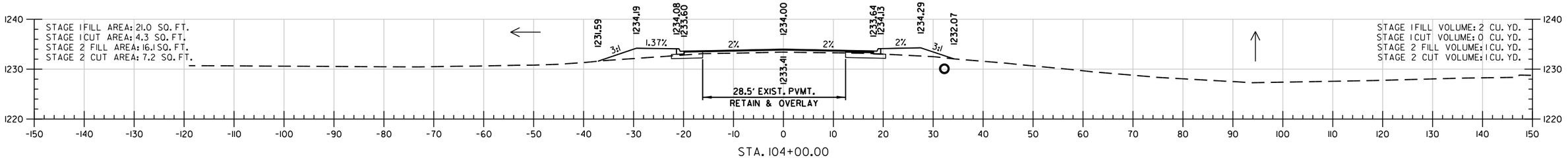



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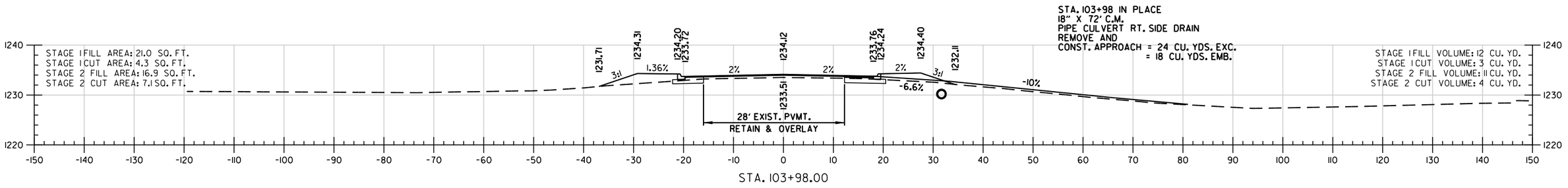
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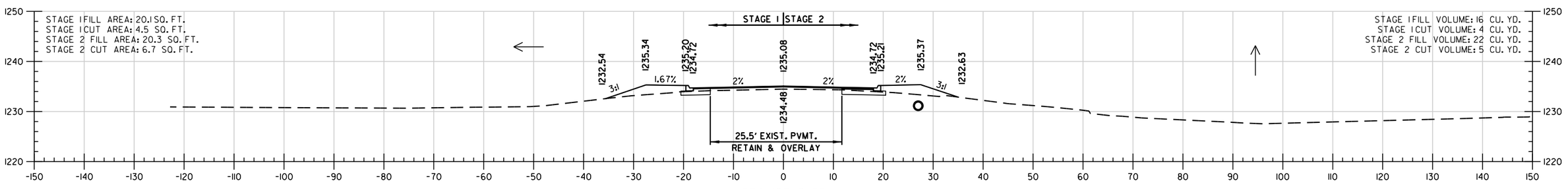
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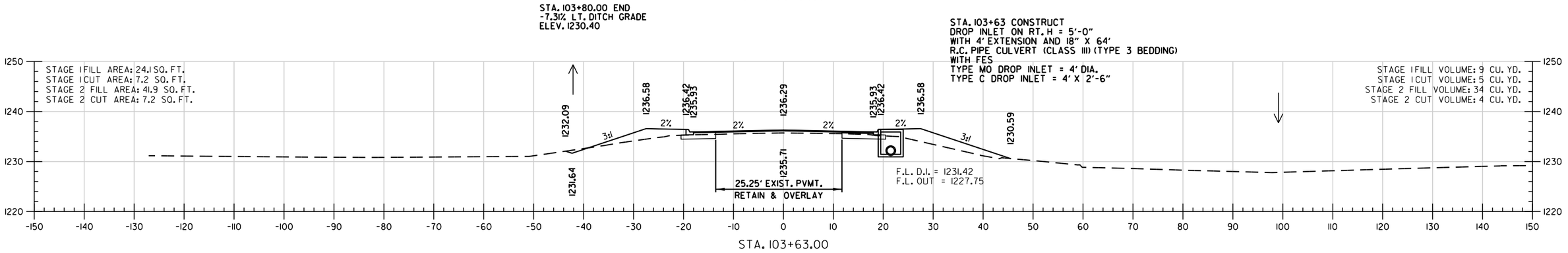

STA. 104+00.00




STA. 103+98.00




STA. 103+81.95

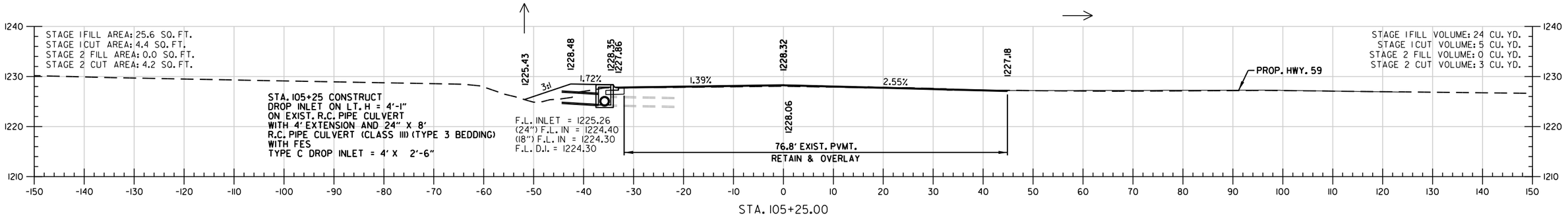



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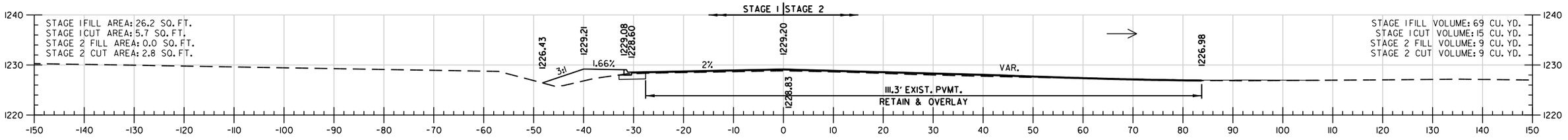
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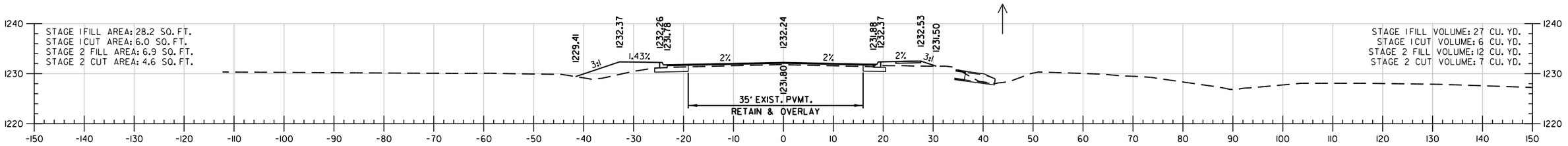
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | 6 | ARK. | 090651 | 70 | 85 |
| | | CROSS SECTIONS | | | | |



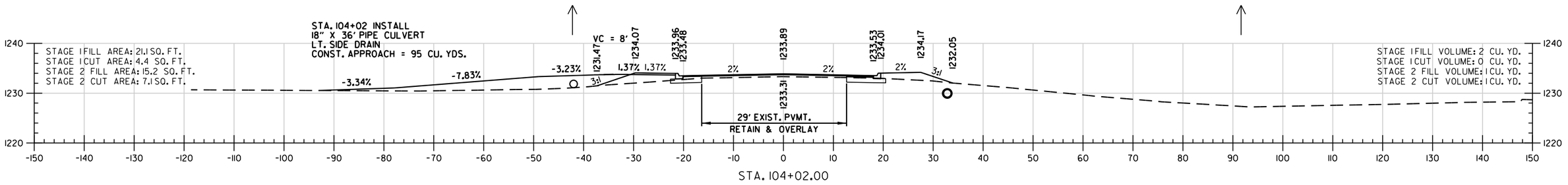

STA. 105+25.00




STA. 105+00.00




STA. 104+32.00



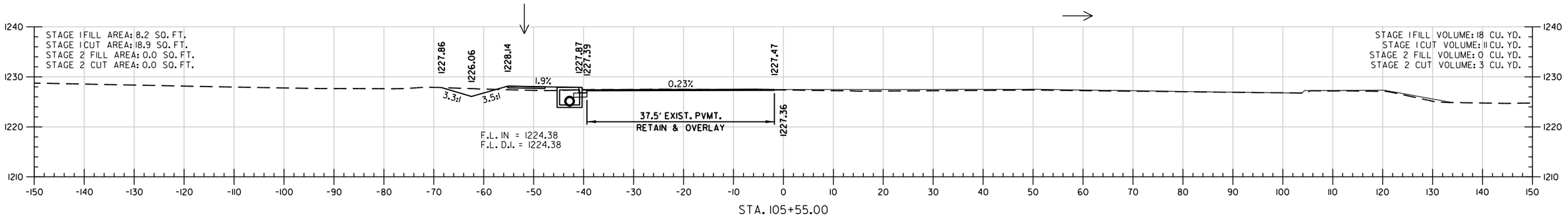

STA. 104+02.00

HWY. 12
STA. 104+02.00 TO STA. 105+25.00

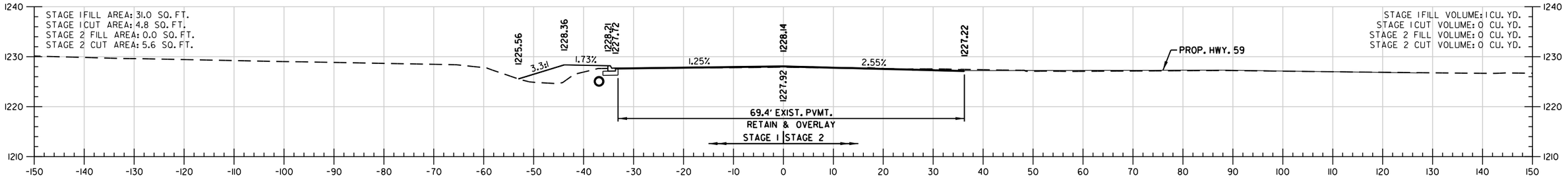
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 71 | 85 |
| | | CROSS SECTIONS | | | | |

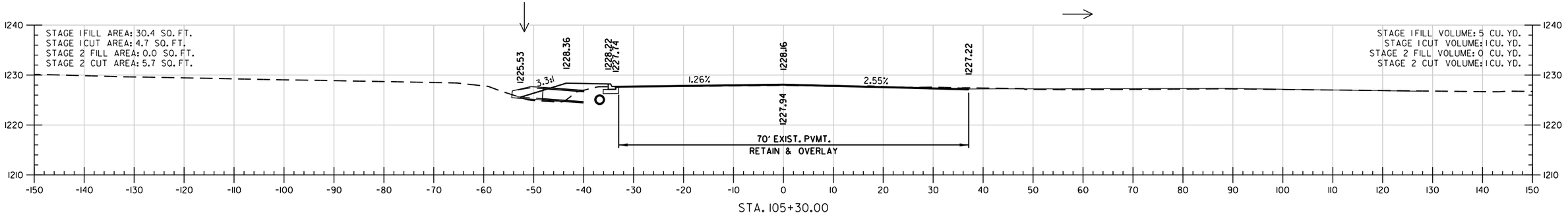
STA. 105+55 CONSTRUCT
DROP INLET ON LT. H = 3'-6"
WITH 8' EXTENSION AND 18" X 26'
PIPE CULVERT TO DROP INLET ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 26 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 26 LIN. FT.




STA. 105+55.00




STA. 105+30.54

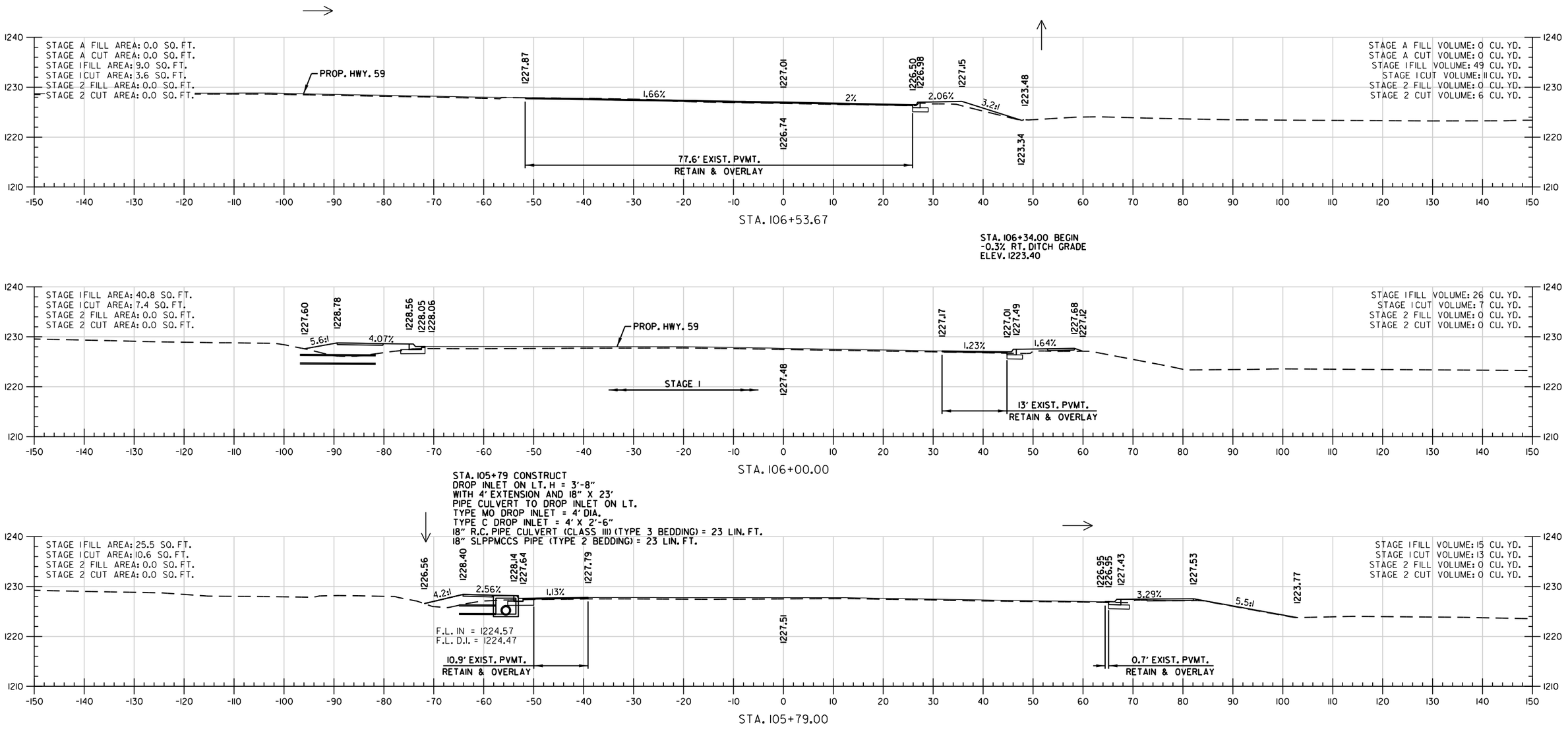



STA. 105+30.00

HWY. 12
STA. 105+30.00 TO STA. 105+55.00

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 72 | 85 |
| | | CROSS SECTIONS | | | | |



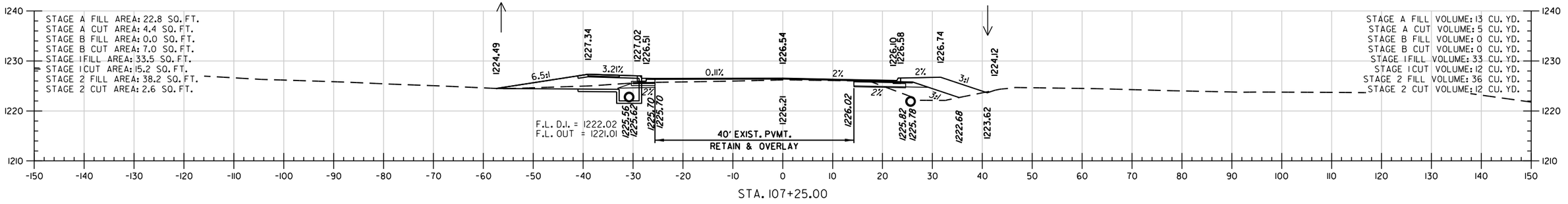

HWY. 12
STA. 105+79.00 TO STA. 106+53.67

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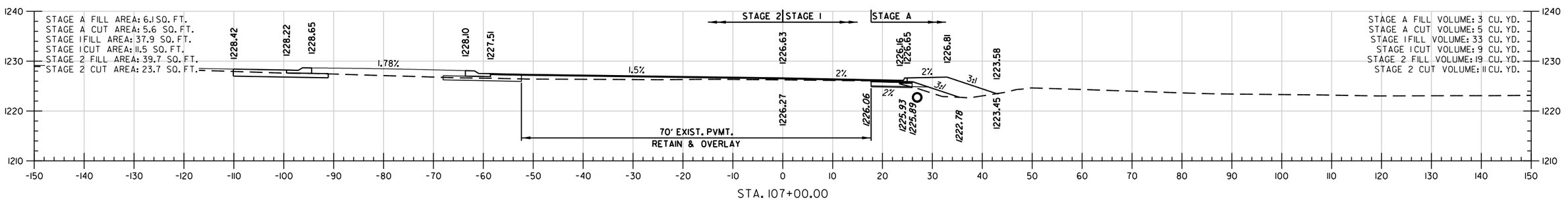
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 73 | 85 |
| | | CROSS SECTIONS | | | | |

STA. 107+25 CONSTRUCT
DROP INLET ON LT. H = 5'-0"
WITH BACK OPENING AND
WITH 8' EXTENSION AND 18" X 23'
PIPE CULVERT TO R.C. BOX CULVERT ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 23 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 23 LIN. FT.

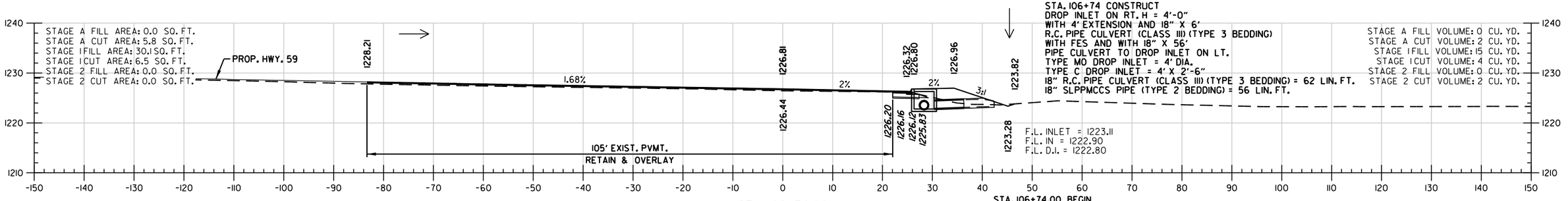
STA. 107+33.00 END
0.67% RT. DITCH GRADE
ELEV. 1223.67




STA. 107+25.00




STA. 107+00.00




STA. 106+74.00

STA. 106+74 CONSTRUCT
DROP INLET ON RT. H = 4'-0"
WITH 4' EXTENSION AND 18" X 6'
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH FES AND WITH 18" X 56'
PIPE CULVERT TO DROP INLET ON LT.
TYPE MO DROP INLET = 4' DIA.
TYPE C DROP INLET = 4' X 2'-6"
18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 62 LIN. FT.
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 56 LIN. FT.

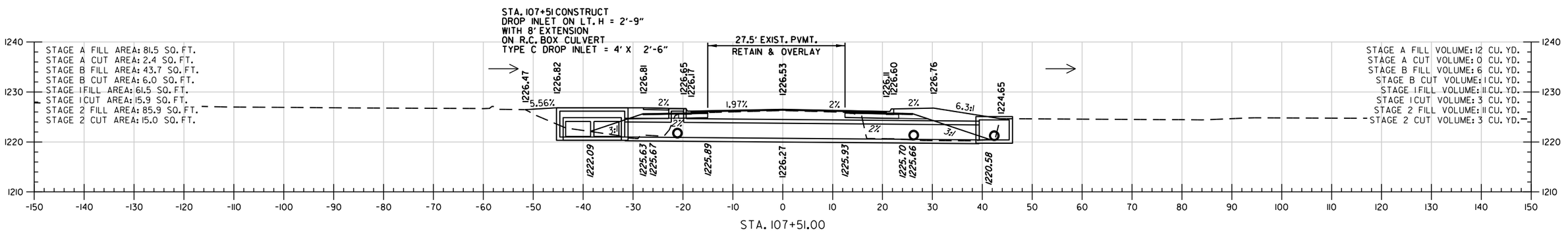
STA. 106+74.00 BEGIN
0.67% RT. DITCH GRADE
ELEV. 1223.28

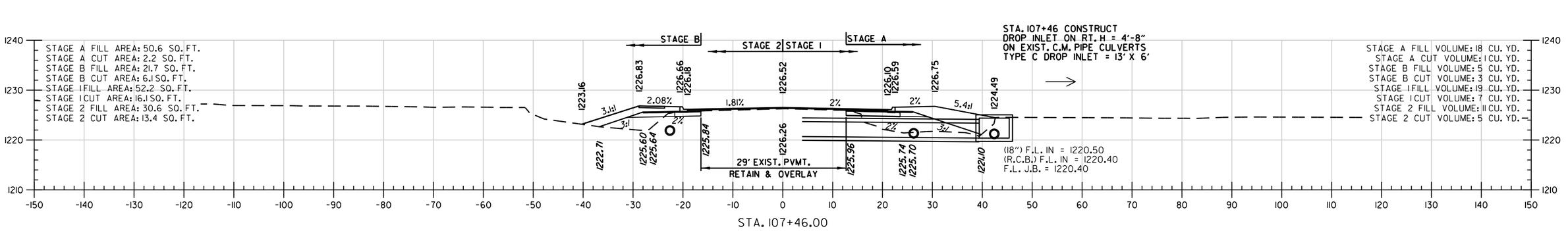
STA. 106+74.00 END
-0.3% RT. DITCH GRADE
ELEV. 1223.28

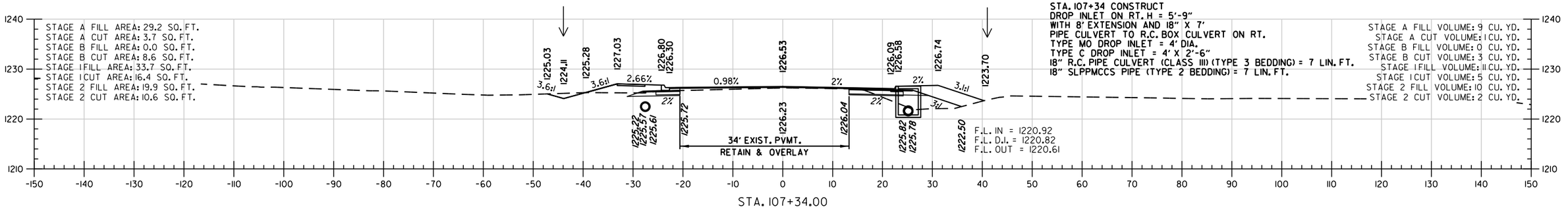
HWY. 12
STA. 106+74.00 TO STA. 107+25.00

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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 74 | 85 |
| | | CROSS SECTIONS | | | | |



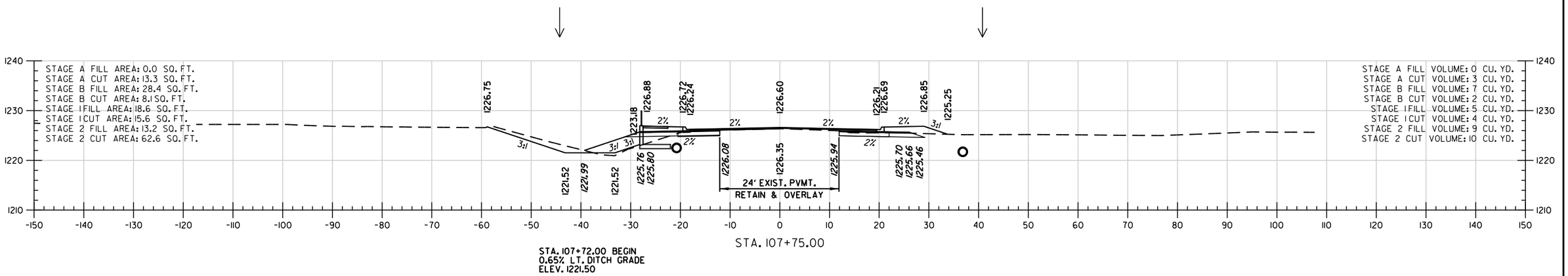




HWY. 12
STA. 107+34.00 TO STA. 107+51.00

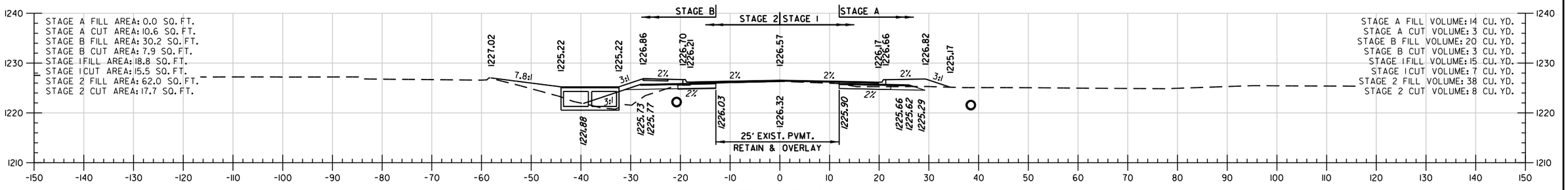
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 75 | 85 |
| | | CROSS SECTIONS | | | | |



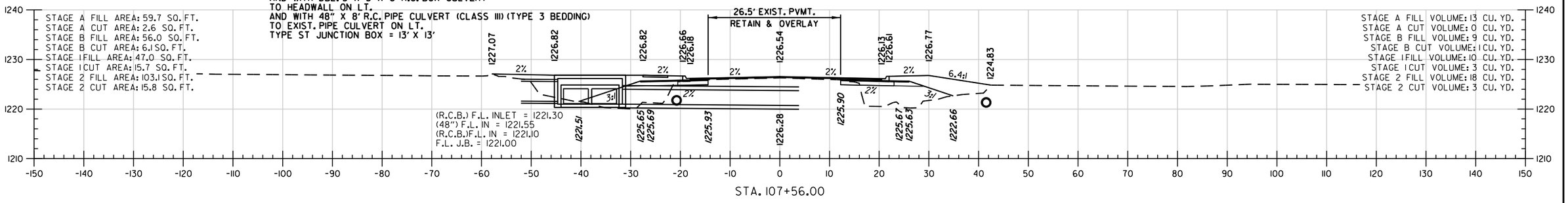

STA. 107+75.00

STA. 107+72.00 BEGIN
0.65% LT. DITCH GRADE
ELEV. 1221.50




STA. 107+68.50

STA. 107+56 CONSTRUCT
JUNCTION BOX ON LT. H = 5'-10"
WITH DBL. 5' X 3' X 72' R.C. BOX CULVERT
TO JUNCTION BOX ON RT.
AND WITH DBL. 5' X 3' X 6' R.C. BOX CULVERT
TO HEADWALL ON LT.
AND WITH 48" X 8' R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
TO EXIST. PIPE CULVERT ON LT.
TYPE ST JUNCTION BOX = 13' X 13'

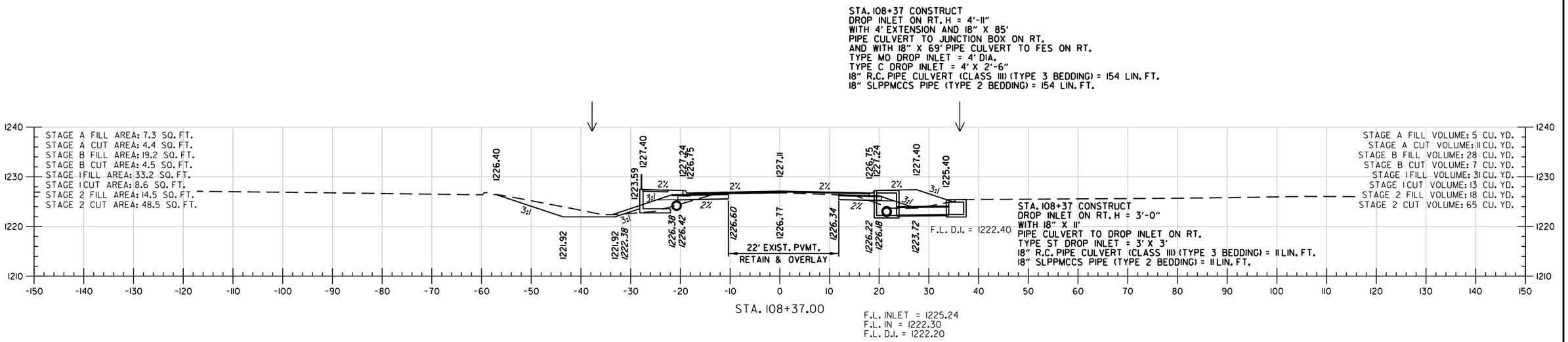



STA. 107+56.00

HWY. 12
STA. 107+56.00 TO STA. 107+75.00

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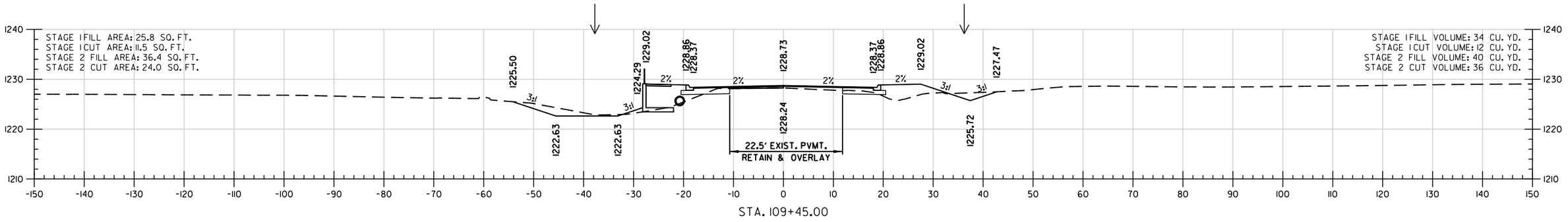
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 76 | 85 |
| | | CROSS SECTIONS | | | | |



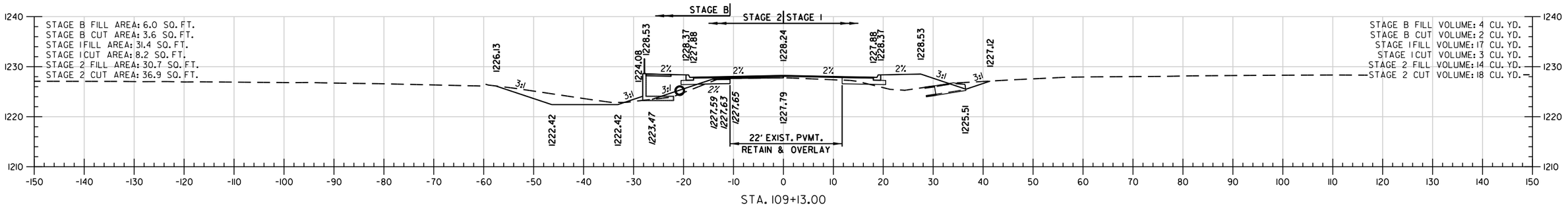

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HWY. 12
STA. 108+00.00 TO STA. 108+37.00

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | CROSS SECTIONS | | | | |

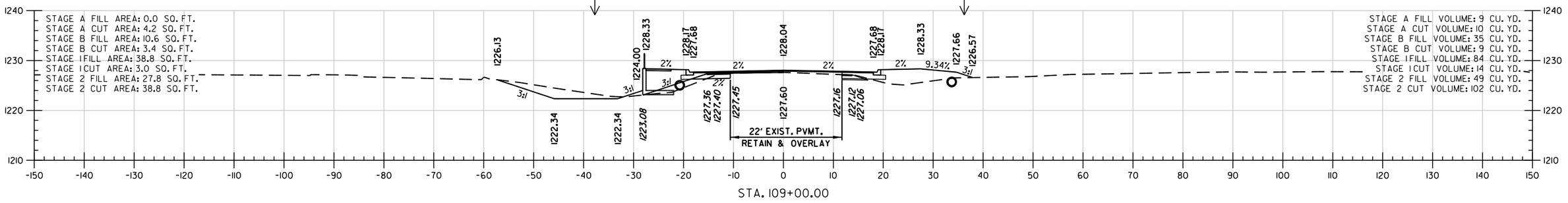



STA. 109+45.00




STA. 109+13.00

STA. 109+12.00 BEGIN
0.65% RT. DITCH GRADE
ELEV. 1225.50

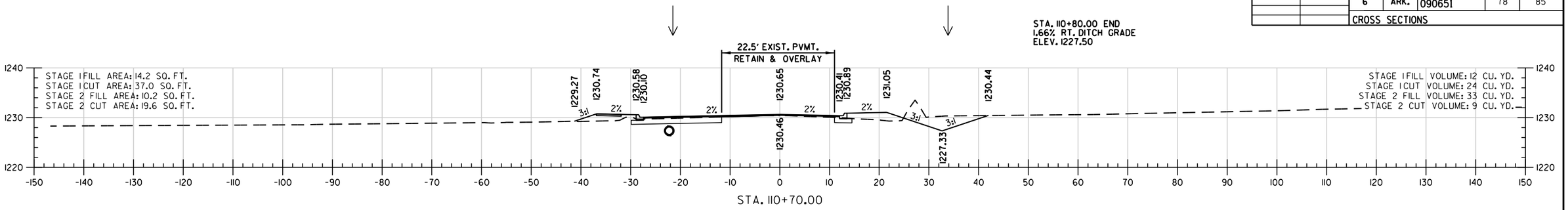


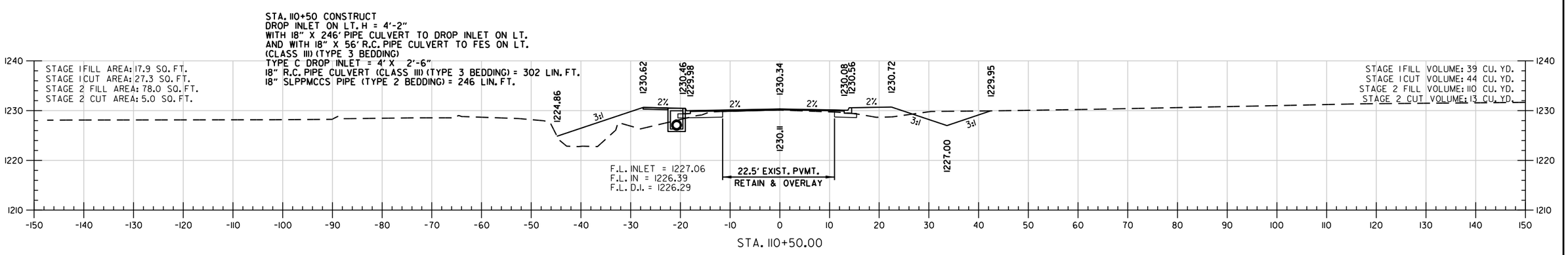

STA. 109+00.00

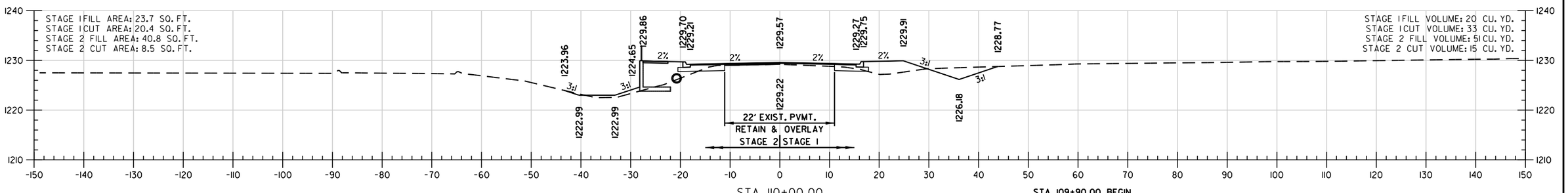
HWY. 12
STA. 109+00.00 TO STA. 109+45.00

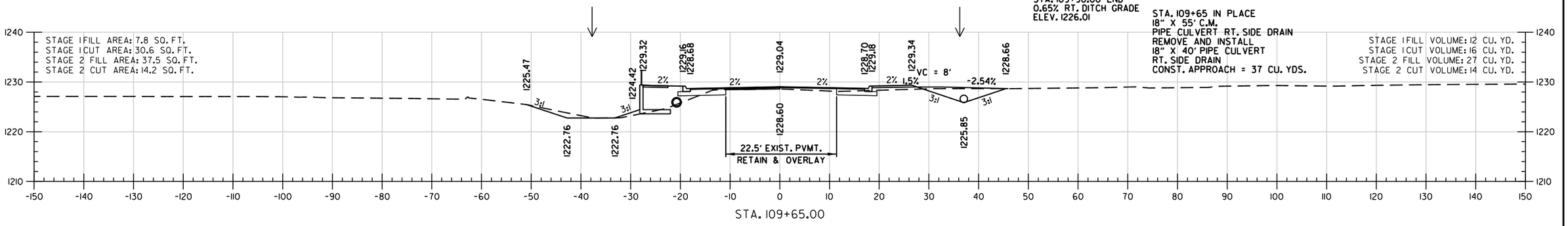
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| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 78 | 85 |
| | | CROSS SECTIONS | | | | |



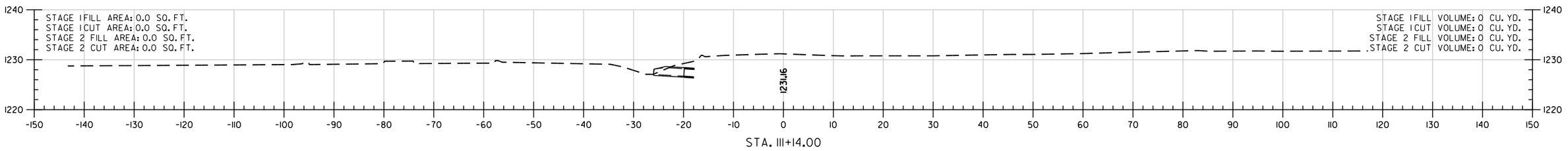



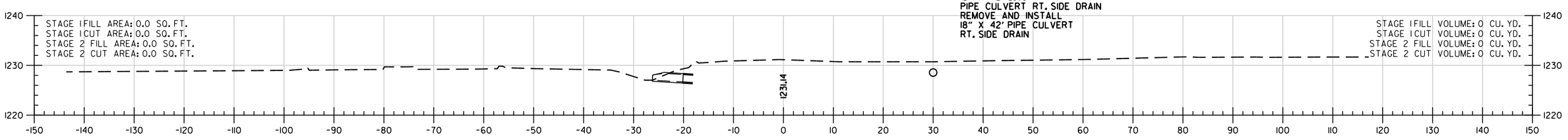

HWY. 12
STA. 109+65.00 TO STA. 110+70.00

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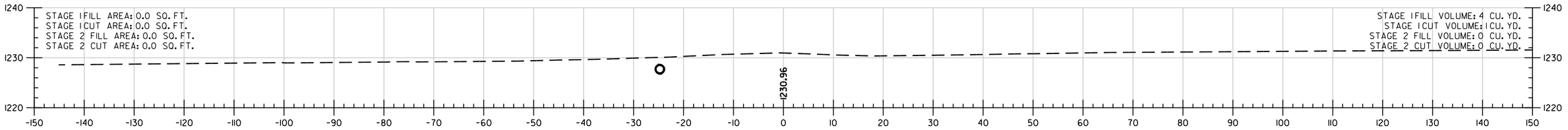
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | 6 | ARK. | 090651 | 79 | 85 |
| | | CROSS SECTIONS | | | | |



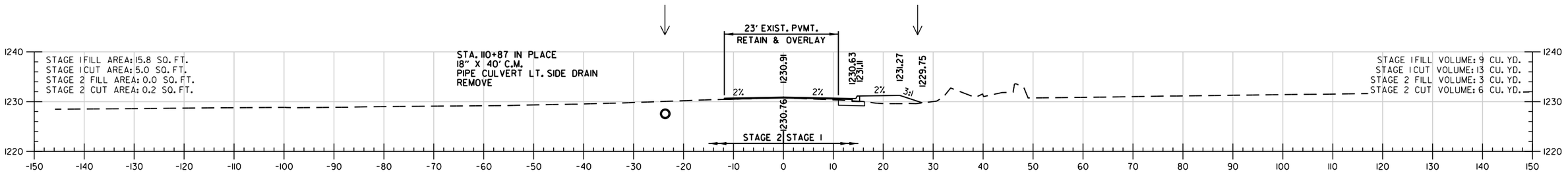

STA. 111+14.00




STA. 111+12.00




STA. 111+00.00

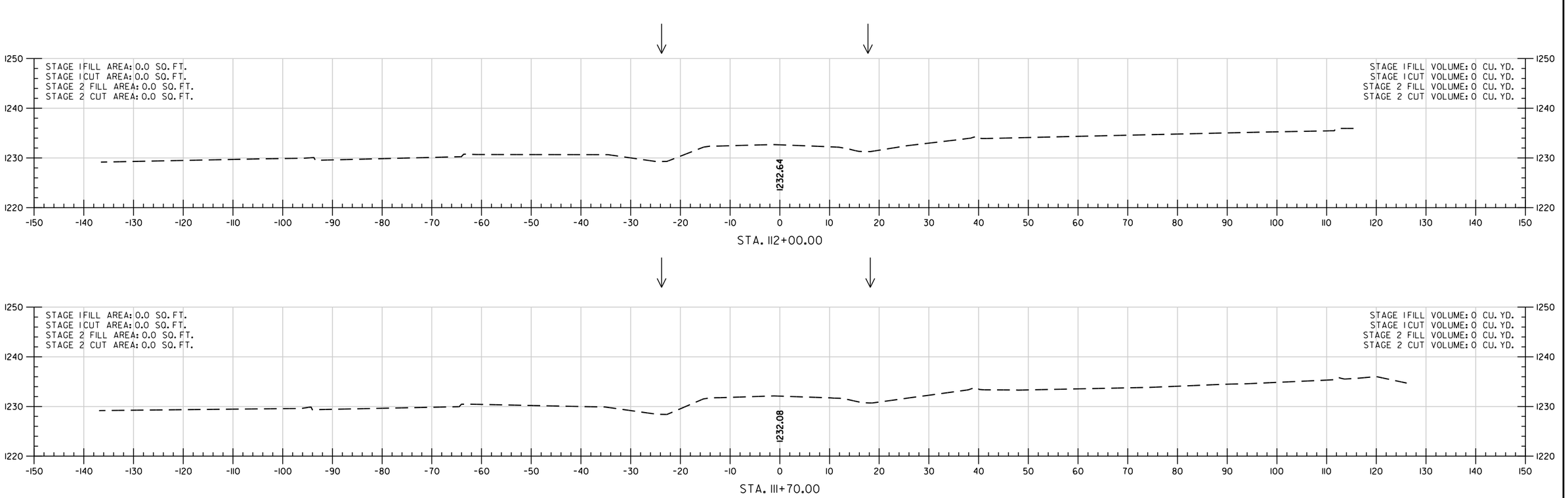



STA. 110+87.00

HWY. 12
STA. 110+87.00 TO STA. 111+14.00

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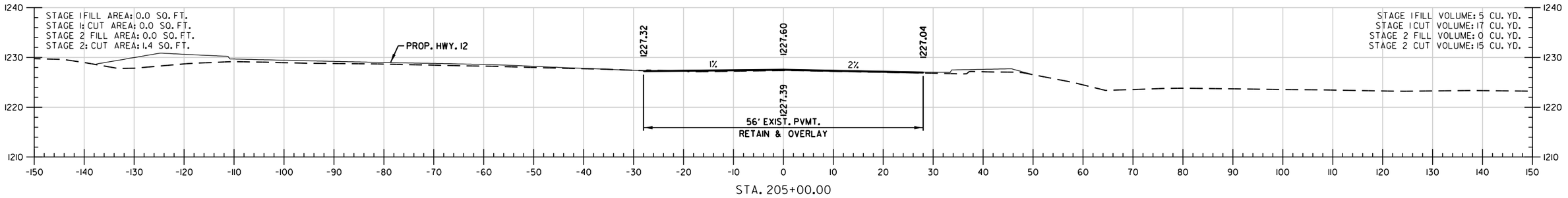
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|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 80 | 85 |
| | | CROSS SECTIONS | | | | |



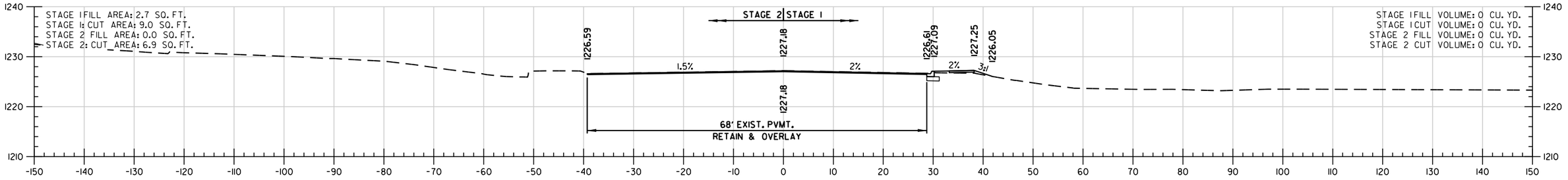

HWY. 12
STA. 111+70.00 TO STA. 112+00.00

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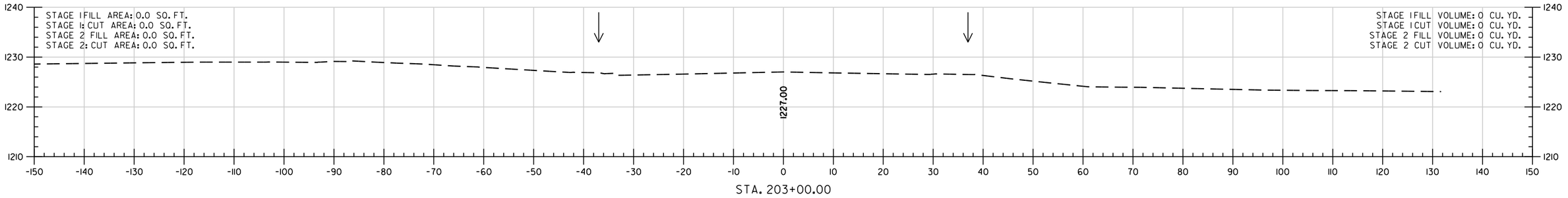
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 81 | 85 |
| | | CROSS SECTIONS | | | | |




STA. 205+00.00




STA. 204+00.00

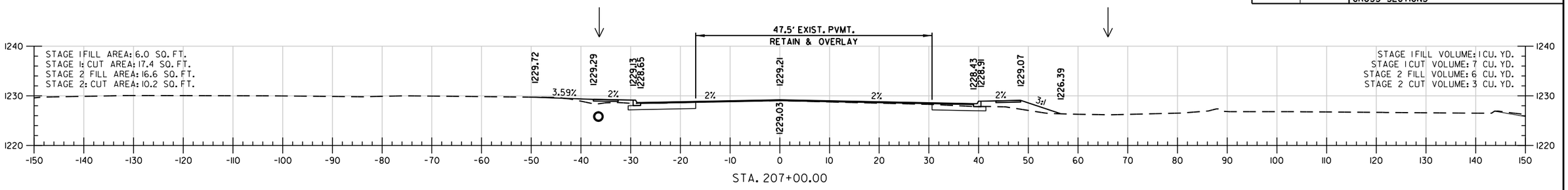



STA. 203+00.00

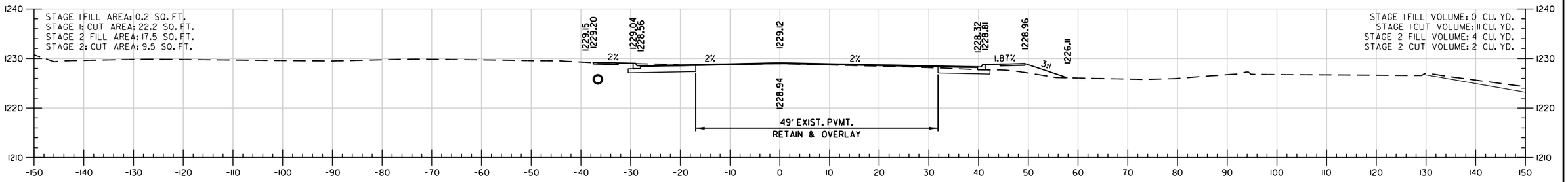
HWY. 59
STA. 203+00.00 TO STA. 205+00.00

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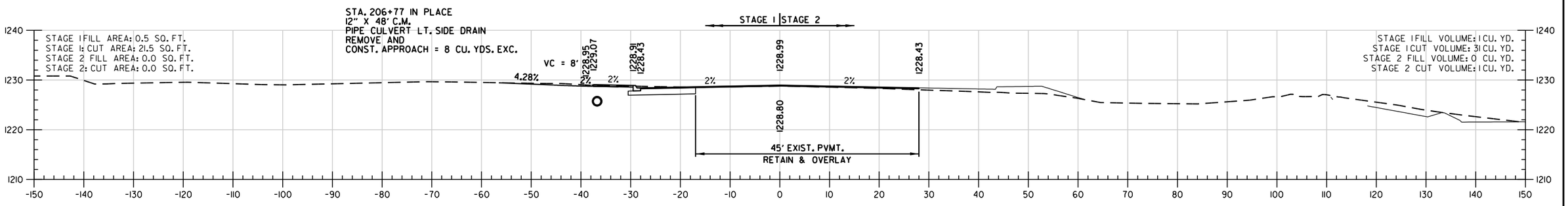
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 82 | 85 |
| | | CROSS SECTIONS | | | | |



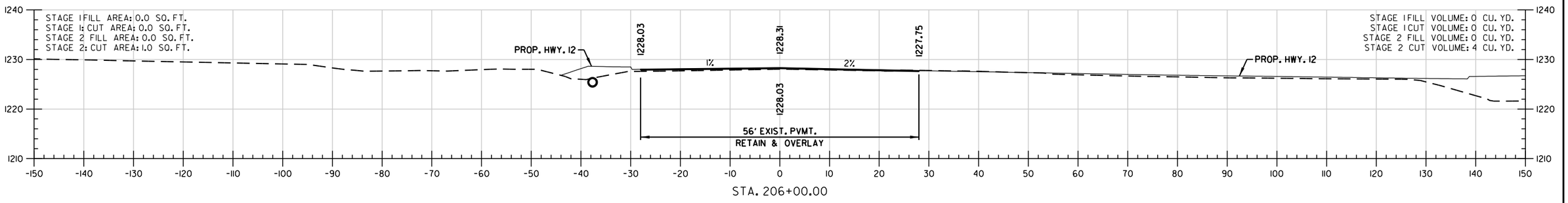

STA. 207+00.00




STA. 206+90.71




STA. 206+77.00

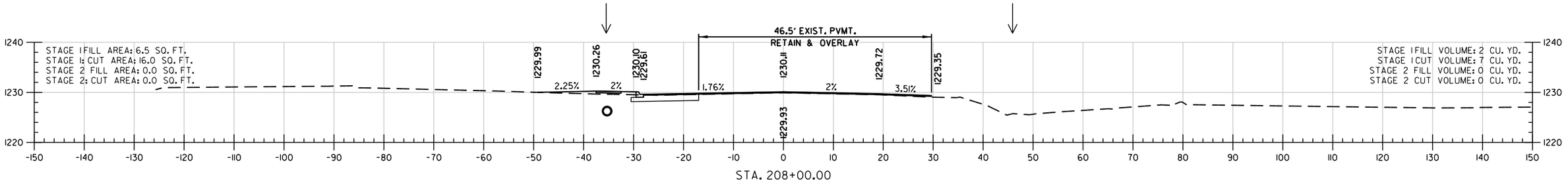



STA. 206+00.00

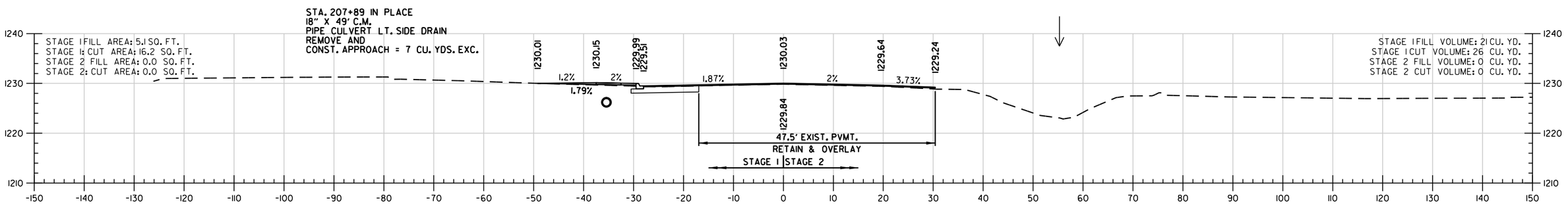
HWY. 59
STA. 206+00.00 TO STA. 207+00.00

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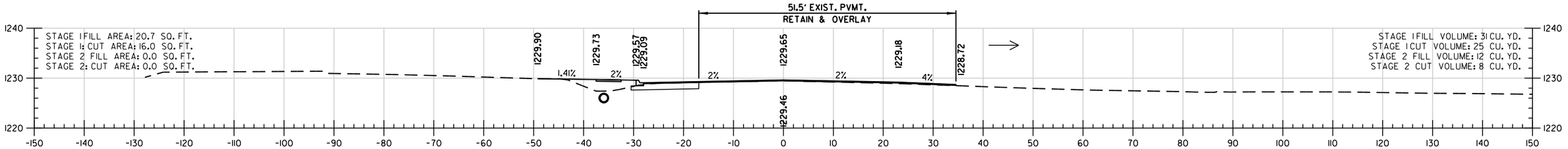
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 83 | 85 |
| | | CROSS SECTIONS | | | | |



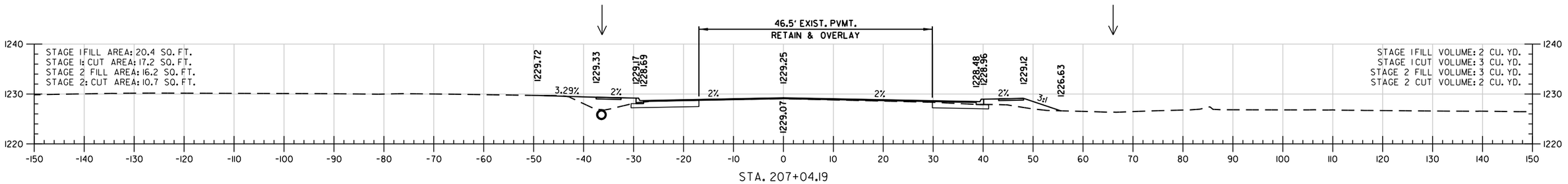

STA. 208+00.00




STA. 207+89.00




STA. 207+45.00

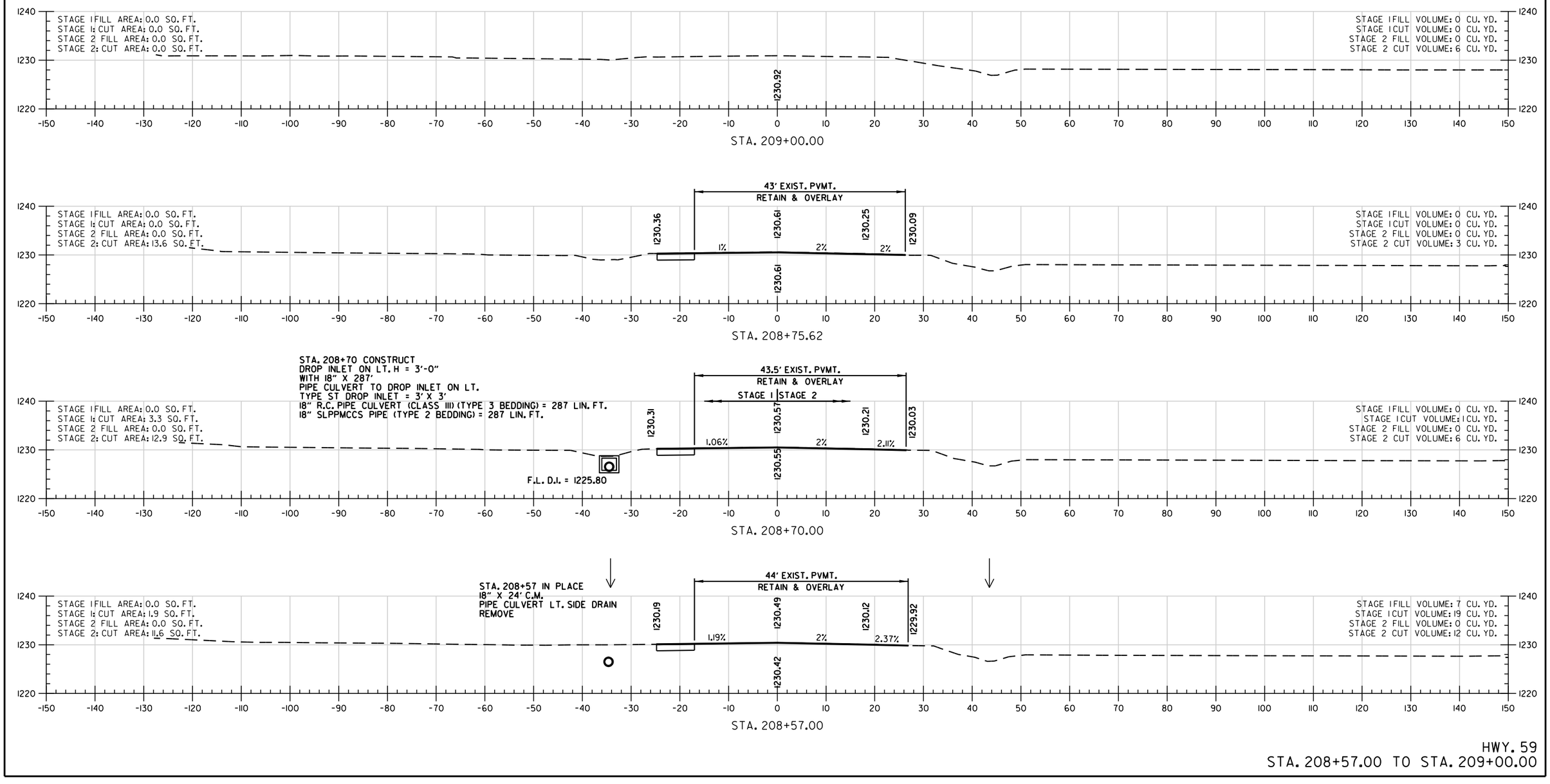



STA. 207+04.19

HWY. 59
STA. 207+04.19 TO STA. 208+00.00

7/1/2025
5:21:46 PM
...\CADD\Road_Sheets\CX\r090651.CX

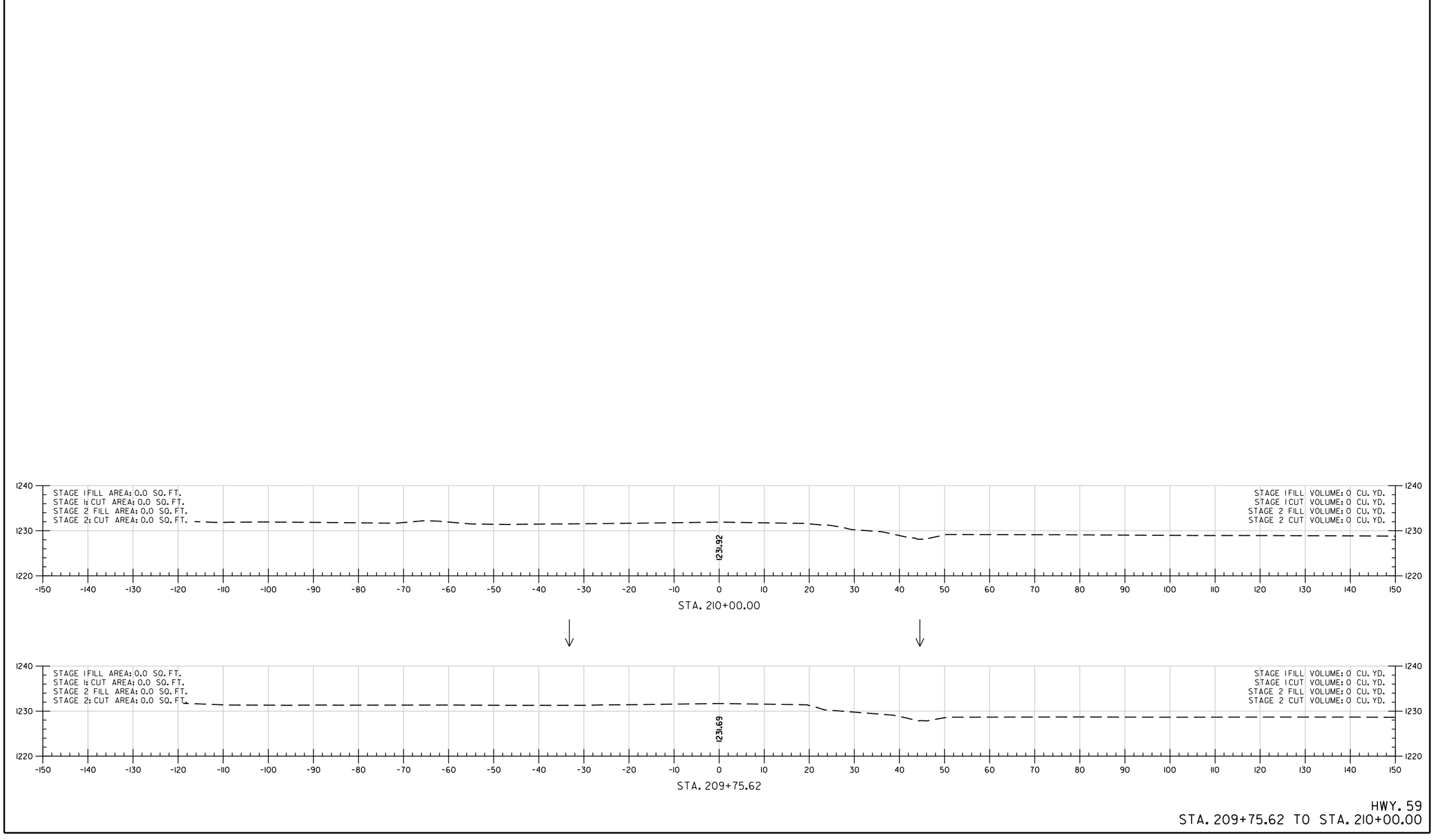
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 84 | 85 |
| | | CROSS SECTIONS | | | | |




HWY. 59
STA. 208+57.00 TO STA. 209+00.00

7/1/2025
5:21:46 PM
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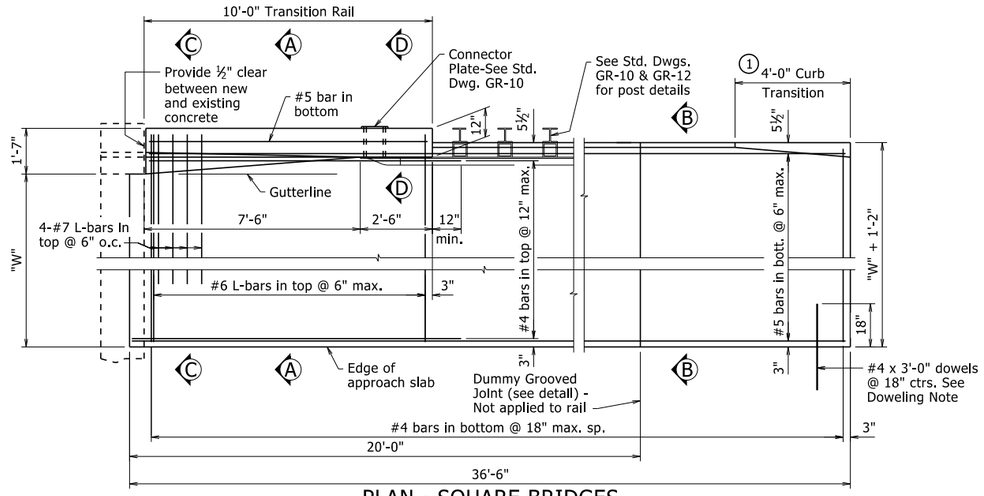
| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|
| | | 6 | ARK. | 090651 | 85 | 85 |
| | | CROSS SECTIONS | | | | |




HWY. 59
STA. 209+75.62 TO STA. 210+00.00

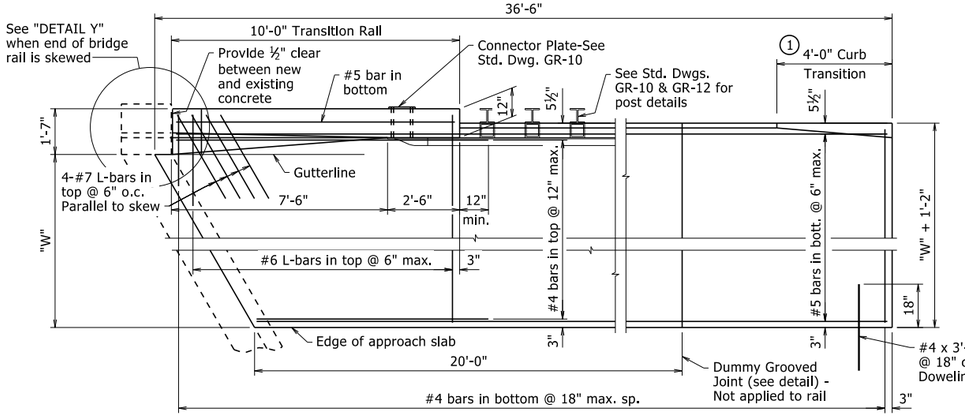
7/1/2025
5:24:49 PM
...\CADD\Road Sheets\CX\r090651.CX

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 11/7/19 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | | | |
| | | | | ① - TYPE PT GUTTERS - 55035 | | | | |



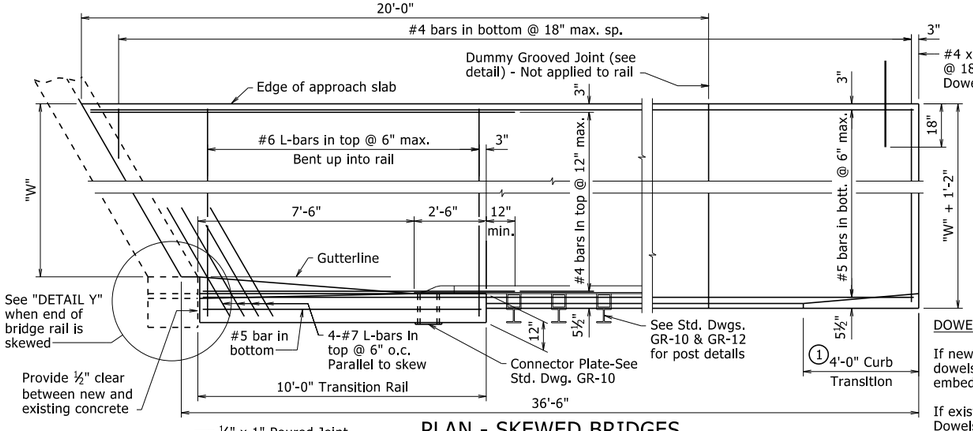

## PLAN - SQUARE BRIDGES

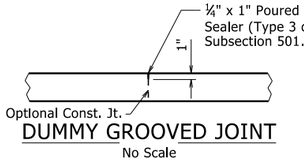
⅜" = 1'-0"




## PLAN - SKEWED BRIDGES

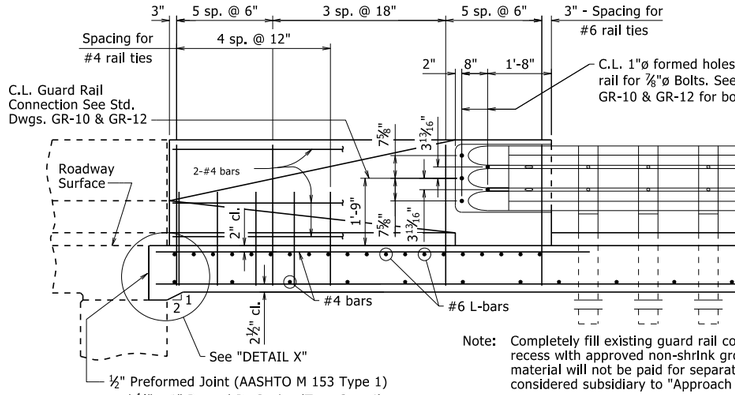
⅜" = 1'-0"




## DUMMY GROOVED JOINT

No Scale



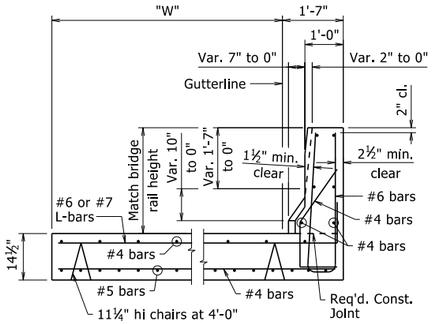

Note: Completely fill existing guard rail connection recess with approved non-shrink grout. Work and material will not be paid for separately but will be considered subsidiary to "Approach Gutters".

## LONGITUDINAL SECTION THRU GUTTER

½" = 1'-0"

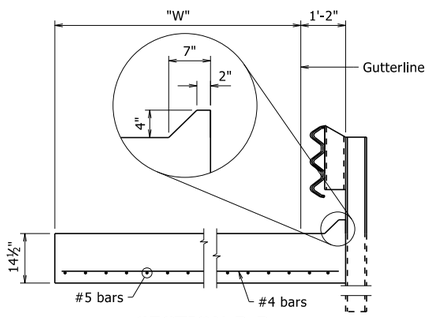
① Construct curb with height-transition as shown if drop inlet is not used at end of gutter.

Construct curb full height (no height-transition) if drop inlet is used at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



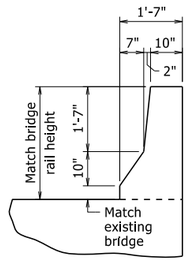

## SECTION A-A

½" = 1'-0"




## SECTION B-B

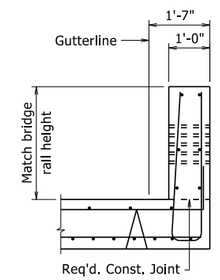
½" = 1'-0"




## SECTION C-C

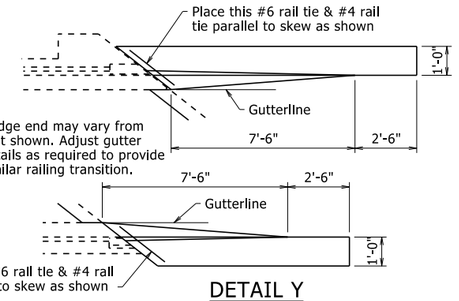
At End of Transition Rail

½" = 1'-0"




## SECTION D-D

½" = 1'-0"




## DETAIL Y

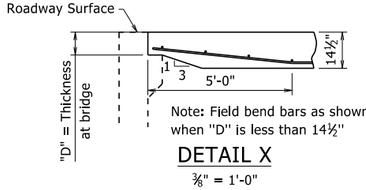
No Scale

### DOWELING NOTES

If new approach slab is used: Place dowels into approach slab using 18" embedment.

If existing approach slab is retained: Dowels shall be drilled and grouted 18" into existing slab. At the Contractor's option, existing dowels may be retained, cleaned and incorporated into new gutters. Work for drilling and grouting, or retaining and cleaning will not be paid for separately but will be considered subsidiary to "Approach Gutters".

Dowel bars, if required, will not be paid for separately, but will be considered subsidiary to other pay items.

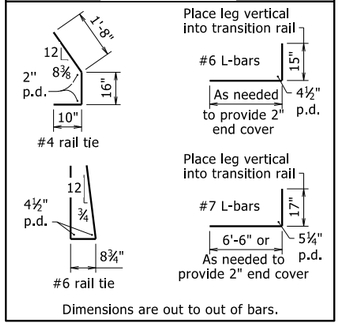



Note: Field bend bars as shown when "D" is less than 14½"

## DETAIL X

⅜" = 1'-0"

### BENDING DIAGRAMS




Dimensions are out to out of bars.

1 Revised and Redrawn. By: TMG
Checked By: CRE 11/7/2019

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on November 7, 2019. This copy is not a signed and sealed document.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

### GENERAL NOTES

Concrete shall be Class S or S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcing steel shall be Grade 60 (fy = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports. Fabricate bar lengths to provide 2" minimum cover at each end.

Approach gutters will be measured and paid for in accordance with Section 504.

Preformed Joint and Poured Joint Sealer included in the item "Approach Gutters".

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

When this Standard Drawing is used as a retrofit for an existing bridge and an existing drop inlet is located within the Plan of the approach gutter, adjust the reinforcing as needed to facilitate construction of the approach gutter, unless otherwise noted.

## APPROX. QUANTITIES FOR ONE SQUARE 36'-6" APPROACH GUTTER

(For Information Only)

| | |
|---|---|
| Concrete (cu. yd.) | ("W" x 1.63) + 3.24 |
| Reinforcing Steel (lb.) | ("W" x 129) + 461 |

Variables: Units of "W" and "L" are in feet.

"W" = Distance from gutterline to edge of shoulder or edge of approach slab. "W" shall not be less than 3'-0" unless approach gutter is doweled into an approach slab or concrete pavement.

# STANDARD DETAILS FOR TYPE 'PT' APPROACH GUTTERS (BRIDGES WITH CONCRETE PARAPET RAILING)

ROUTE SEC.

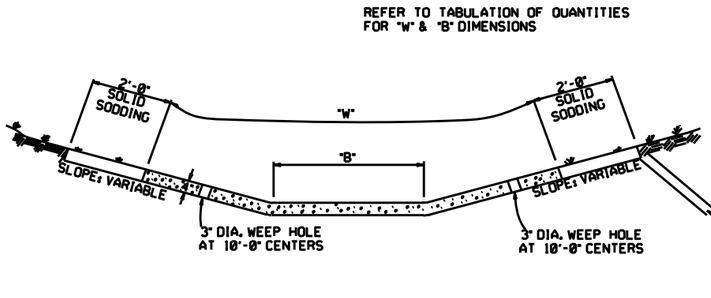
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | KDH | DATE: | 2/27/2014 | FILENAME: | b55035.dgn |
| CHECKED BY: | KWY | DATE: | 2/27/2014 | SCALE: | AS NOTED |
| DESIGNED BY: | STD | DATE: | - | | |

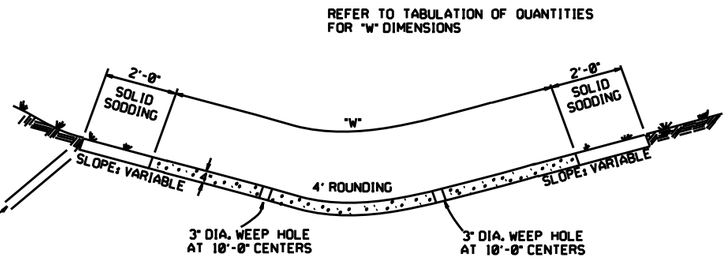
DRAWING NO. 55035

PRINT DATE: 11/20/2019




TYPE A

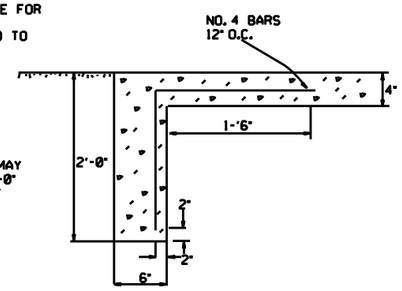
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.



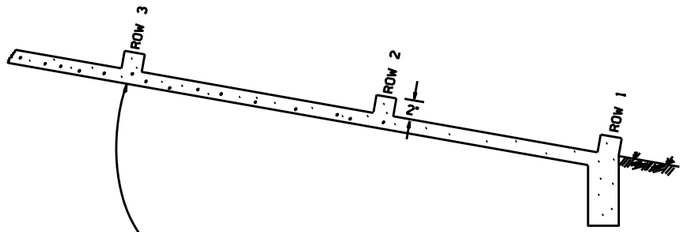

TYPE B

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

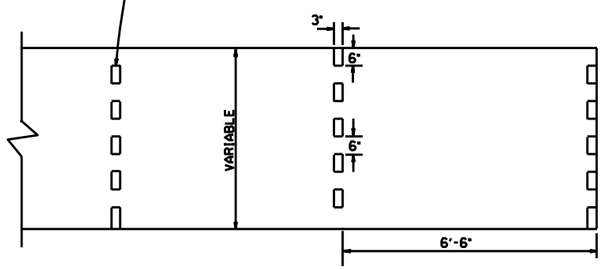
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION




TOE WALL DETAIL FOR CONCRETE DITCH PAVING




NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED




ENERGY DISSIPATORS
(NO SCALE)

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

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

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

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

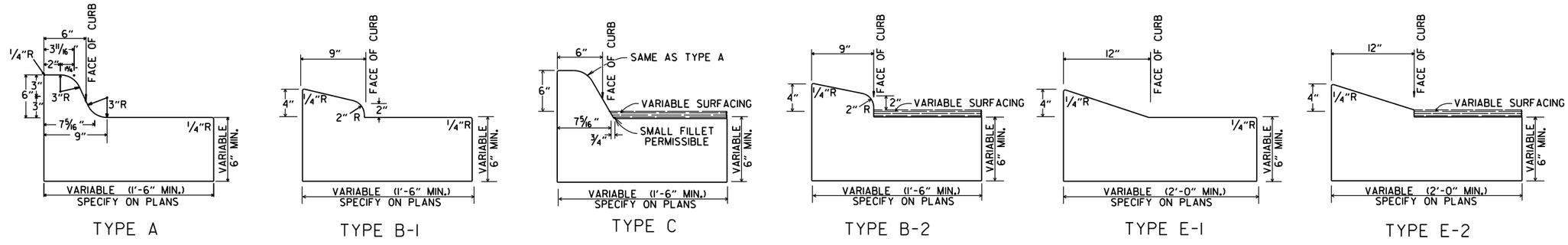
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

| DATE | REVISION | DATE FILM'D |
|---|---|---|
| 12-8-16 | CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE | |
| 11-17-10 | ADDED GENERAL NOTE | |
| 6-2-94 | ADDED GENERAL NOTE ABOUT SOLID SODDING | |
| 11-30-89 | ELIMINATED MIN. ROWS OF ELEMENTS | 111-30-89 |
| 7-15-88 | REVISED DISSIPATOR NOTE | 653-7-15-88 |
| 4-3-87 | REVISED ENERGY DISSIPATOR | 671-4-3-87 |
| 1-9-87 | MODIFIED NOTE ON ENERGY DISS. | 532-1-9-87 |
| 11-3-86 | ADDED NOTE TO ENERGY DISS. | 599-12-1-86 |
| 11-1-84 | ENERGY DISSIPATOR DETAILS ADDED | 508-11-1-84 |
| 11-1-84 | EXCAVATION DETAILS ADDED TYPED A & B | |
| 10-2-72 | REVISED AND REDRAWN | 508-10-2-72 |

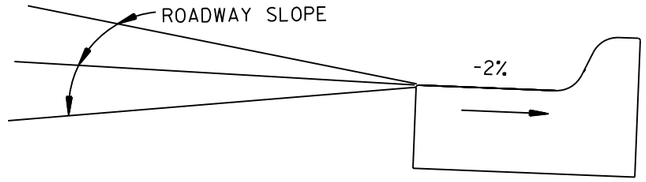
ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1

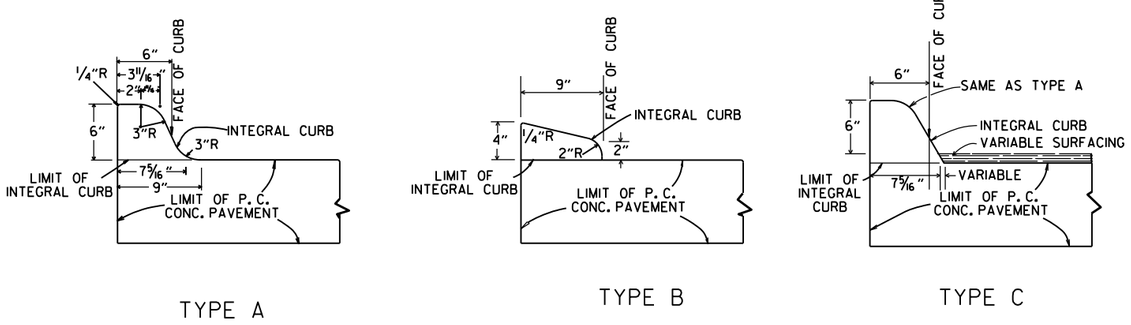



# CONCRETE COMBINATION CURB AND GUTTER

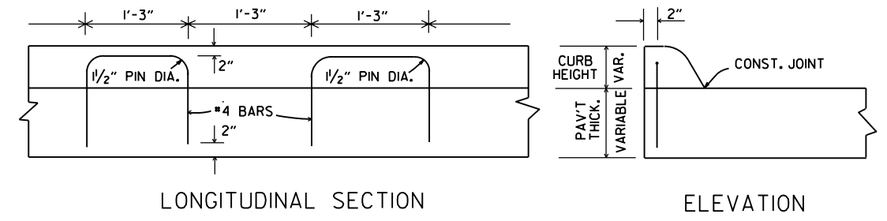



## DETAIL OF GUTTER SLOPE

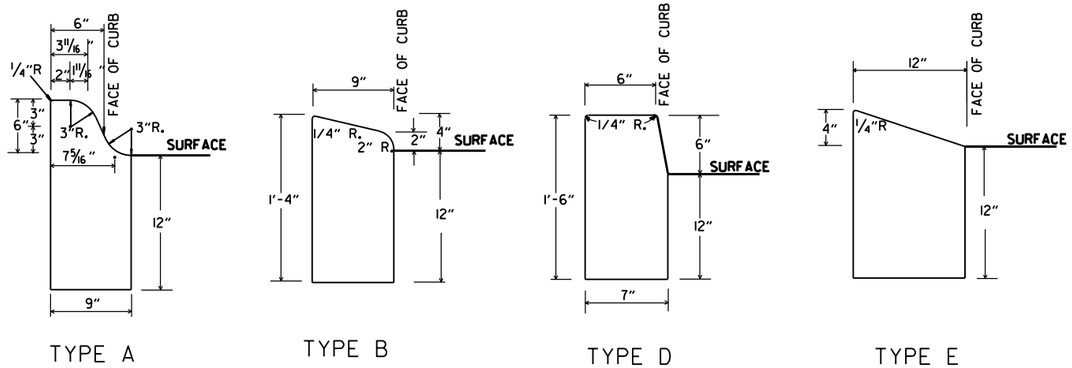
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



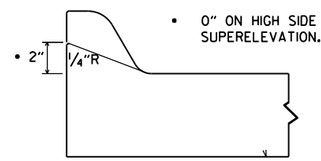

## INTEGRAL CURB




## ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB




## CONCRETE CURB




NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

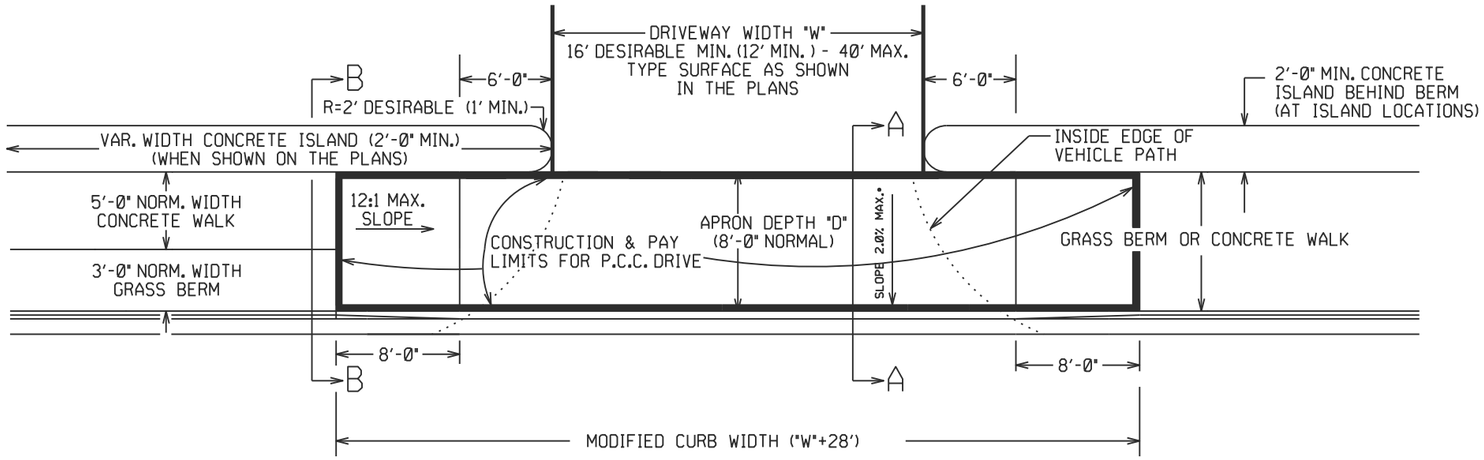
## DETAILS OF MODIFIED CURB

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 11-29-07 | REVISED GUTTER SLOPE & MODIFIED CURB DETAILS | |
| 11-10-05 | ADDED DETAILS OF TYPE E CURBS | |
| 11-16-01 | REVISED CONCRETE CURB TYPE B | |
| 11-18-98 | REVISED MODIFIED CURB | |
| 6-2-94 | ADDED NOTE TO SPECIAL MODIFIED CURB | |
| 8-5-93 | CORRECTED GUTTER SLOPE | 8-5-93 |
| 10-1-92 | ADDED DETAILS OF GUTTER SLOPE | 10-1-92 |
| 5-24-90 | ADDED DETAILS OF MODIFIED CURB | 5-24-90 |
| 11-30-89 | VARIBLE DEPTH TYPE A & B I | 11-30-89 |
| 7-15-88 | REVISED MODIFIED CURB | 630-7-15-88 |
| 11-1-73 | REVISED MODIFIED CURB | 500-11-1-73 |
| 10-2-72 | REVISED AND REDRAWN | 512-10-2-72 |

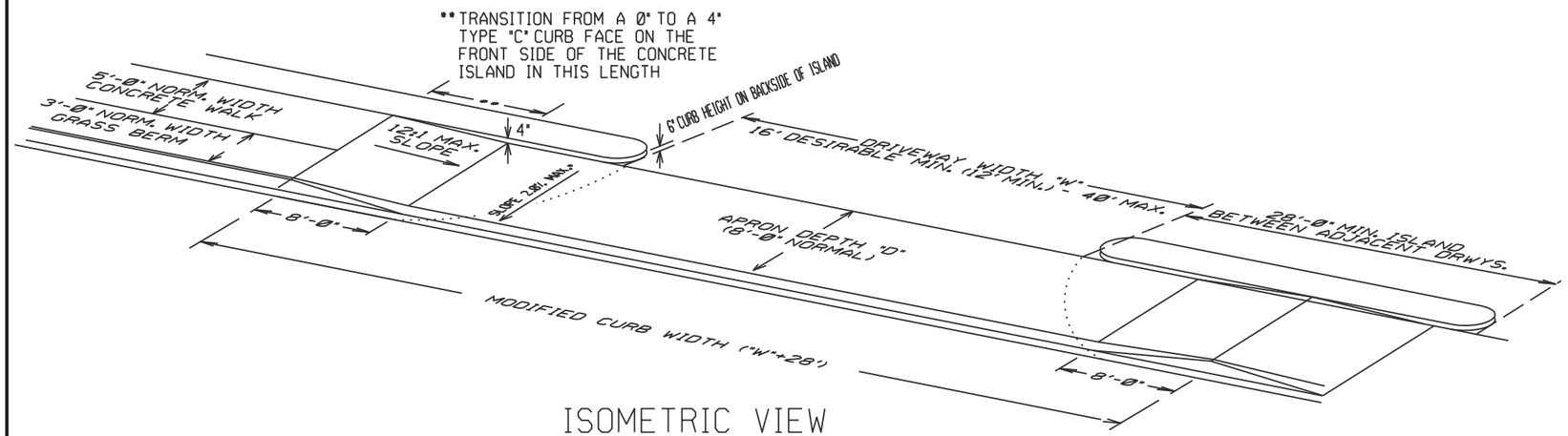
ARKANSAS STATE HIGHWAY COMMISSION

# CURBING DETAILS

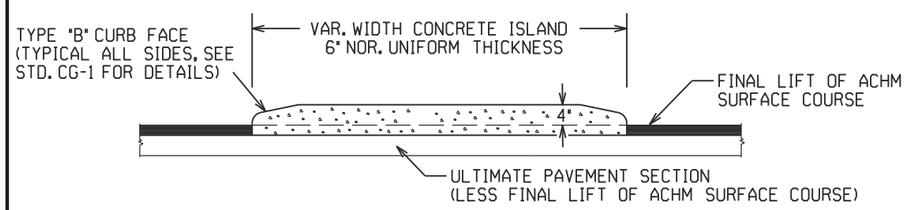
STANDARD DRAWING CG-1




PLAN VIEW




ISOMETRIC VIEW

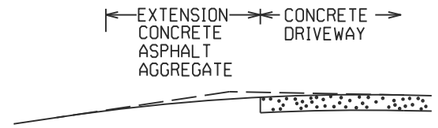



CURBED ISLANDS FOR CHANNELIZATION

CONCRETE ISLAND NOTES:

1. REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".

2. TRANSVERSE EXPANSION JOINTS, NOT LESS THAN 1/2" WIDE, SHALL BE PLACED AT MINIMUM INTERVAL OF 45'. TRANSVERSE JOINT SHALL BE CONSTRUCTED USING A JOINT FILLER COMPLYING WITH AASHTO M213.




EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

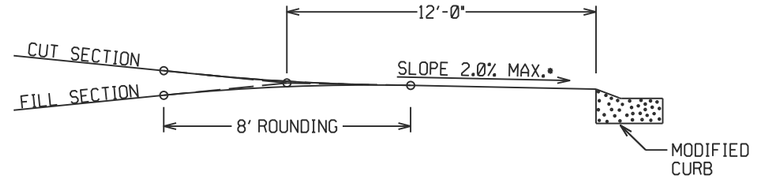
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

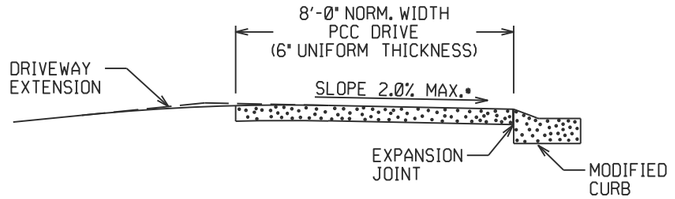
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

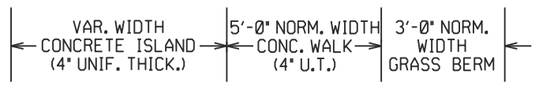


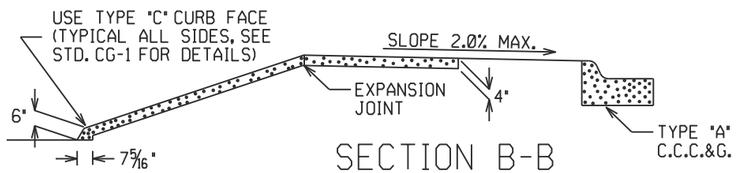

DRIVEWAY VERTICAL ALIGNMENT DETAILS

• NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.




SECTION A-A




SECTION B-B

CURBED ISLAND BEHIND WALK

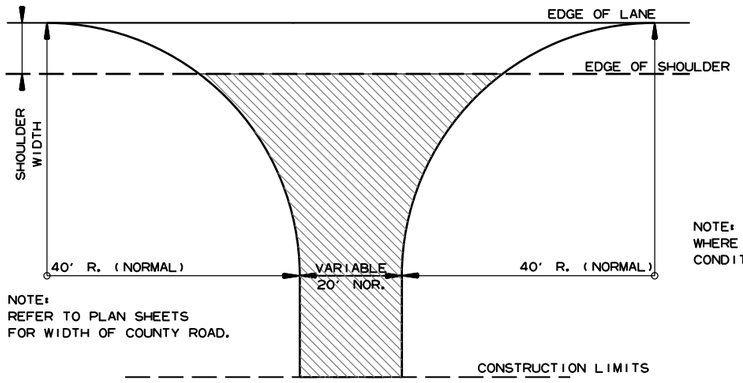
| DATE REV | DESCRIPTION |
|---|---|
| 05-22-25 | REVISED ISLAND DETAILS & ADDED DESIRABLE MIN. DRIVEWAY WIDTH |
| 05-19-22 | REVISED ISLAND NOTES |
| 11-07-19 | REVISED WALK DETAILS |
| 02-27-14 | REVISED PLAN & ISOMETRIC VIEW |
| 11-29-07 | ADDED CHANNELIZATION ISLAND & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL |

ARDOT ARKANSAS DEPARTMENT OF TRANSPORTATION

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DRIVEWAYS & ISLANDS

| DATE EFFECTIVE | STANDARD DRAWING | DR-1 |
|---|---|---|
| 05-22-2025 | | |

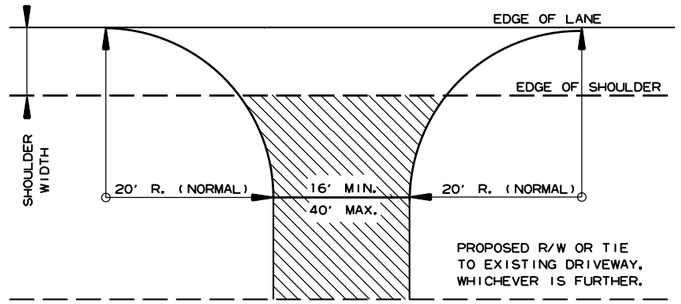



NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

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

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH, UNLESS OTHERWISE SPECIFIED IN PLANS.

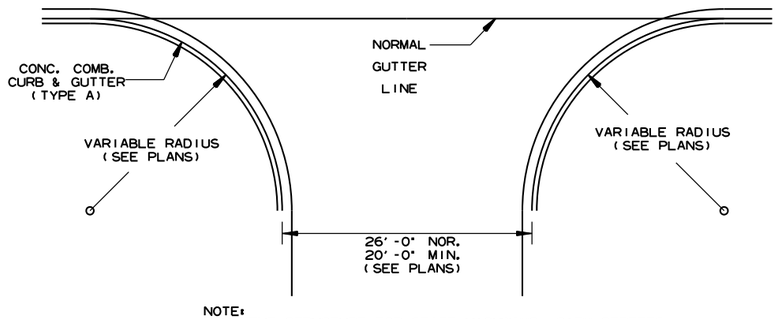
## DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION




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

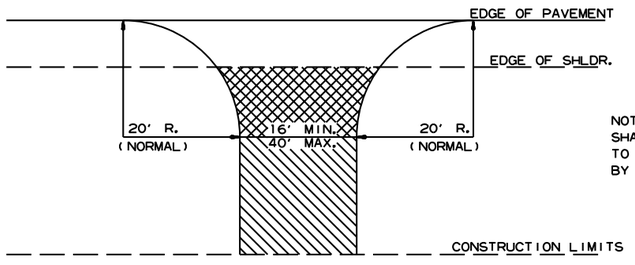
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING, OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

## DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)




NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

## DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION




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

ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR 6" CONCRETE IF CONCRETE DRIVE EXIST.

AGGREGATE BASE COURSE (CLASS 7) 9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY

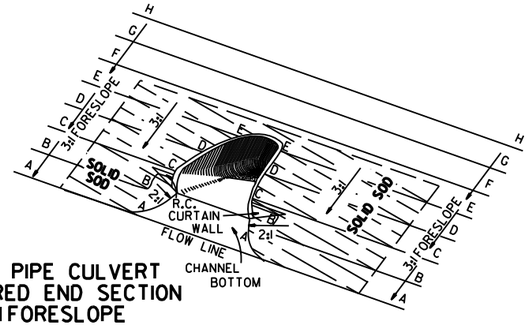
## DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

| DATE REV | DATE FILMED | DESCRIPTION |
|---|---|---|
| 5-19-22 | | ISSUED |

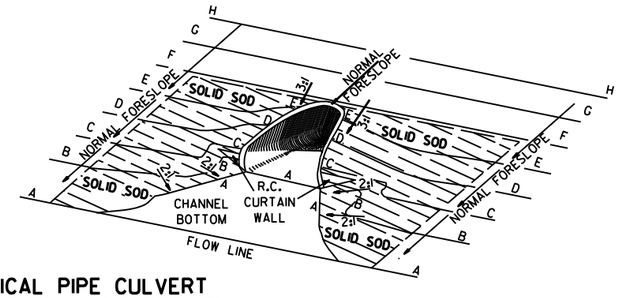
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

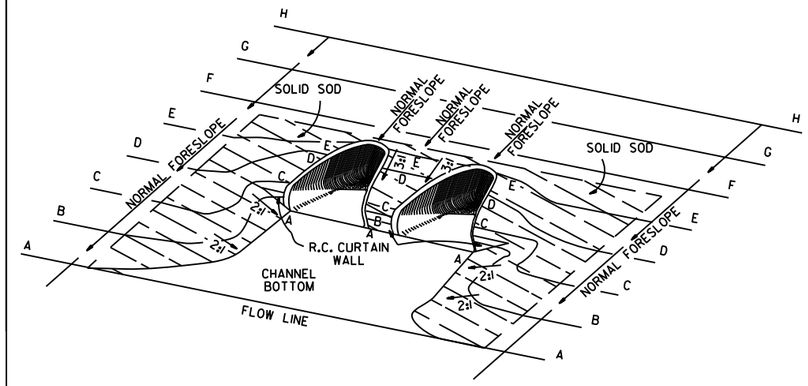
STANDARD DRAWING DR-2




TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE




TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES




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

## R.C. CURTAIN WALL
## DIMENSIONS & QUANTITIES

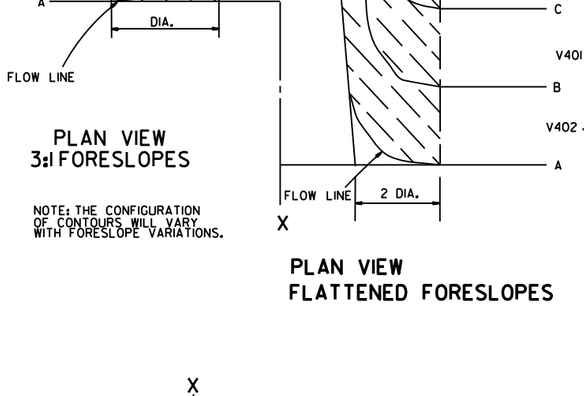
| PIPE DIA. | $H_1$ | $L_1$ | L | L (DBL.)/2 | SINGLE R.C.P.C. CONC. CU. YDS. | SINGLE R.C.P.C. REINF. STEEL LBS. | DOUBLE R.C.P.C. CONC. CU. YDS. | DOUBLE R.C.P.C. REINF. STEEL LBS. |
|---|---|---|---|---|---|---|---|---|
| 18" | 11½" | 3'-5" | 8'-0" | 6'-3" | 0.31 | 27.7 | 0.45 | 39.5 |
| 24" | 1'-0½" | 4'-6" | 9'-6" | 7'-6" | 0.37 | 33.4 | 0.53 | 48.0 |
| 30" | 1'-3½" | 5'-7" | 11'-0" | 9'-0" | 0.45 | 39.0 | 0.67 | 59.0 |
| 36" | 1'-7" | 6'-8" | 13'-0" | 10'-6" | 0.58 | 52.6 | 0.83 | 73.9 |
| 42" | 2'-1½" | 7'-3" | 15'-6" | 12'-0" | 0.82 | 77.1 | 1.10 | 100.7 |
| 48" | 2'-5" | 7'-10" | 17'-0" | 13'-0" | 0.98 | 94.9 | 1.27 | 120.4 |
| 54" | 2'-9½" | 8'-5" | 18'-6" | 14'-0" | 1.16 | 115.8 | 1.47 | 143.7 |
| 60" | 3'-4" | 9'-0" | 20'-6" | 15'-6" | 1.47 | 149.7 | 1.84 | 180.3 |
| 72" | 4'-5" | 10'-2" | 25'-6" | 18'-6" | 2.31 | 232.6 | 2.73 | 271.0 |

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.

## REINFORCING STEEL SCHEDULE

| PIPE DIA. | SINGLE R.C. PIPE CULVERT H401 L | H401 NO. | H402 L | H402 NO. | V401 L | V401 NO. | V402 L | V402 NO. | DOUBLE R.C. PIPE CULVERT H401 L | H401 NO. | H402 L | H402 NO. | H403 L | H403 NO. | V401 L | V401 NO. | V402 L | V402 NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 7'-8" | 2 | 1'-11½" | 4 | 1'-7½" | 8 | 8" | 8 | 12'-2" | 2 | 1'-11½" | 4 | 8" | 2 | 1'-7½" | 10 | 8" | 14 |
| 24" | 9'-2" | 2 | 2'-2" | 4 | 1'-8½" | 10 | 8" | 9 | 14'-8" | 2 | 2'-2" | 4 | 8" | 2 | 1'-8½" | 12 | 8" | 18 |
| 30" | 10'-8" | 2 | 2'-4½" | 4 | 1'-11½" | 10 | 8" | 12 | 17'-8" | 2 | 2'-4½" | 4 | 8" | 2 | 1'-11½" | 14 | 8" | 22 |
| 36" | 12'-8" | 2 | 2'-10" | 6 | 2'-3" | 12 | 8" | 14 | 20'-8" | 2 | 2'-10" | 6 | 8" | 3 | 2'-3" | 14 | 8" | 28 |
| 42" | 15'-2" | 2 | 3'-9½" | 8 | 2'-9½" | 16 | 8" | 15 | 23'-8" | 2 | 3'-9½" | 8 | 8" | 4 | 2'-9½" | 18 | 8" | 30 |
| 48" | 16'-8" | 2 | 4'-3" | 10 | 3'-1" | 18 | 8" | 16 | 25'-8" | 2 | 4'-3" | 10 | 8" | 5 | 3'-1" | 20 | 8" | 32 |
| 54" | 18'-2" | 2 | 4'-8½" | 12 | 3'-5½" | 20 | 8" | 17 | 27'-8" | 2 | 4'-9" | 12 | 8" | 6 | 3'-5½" | 22 | 8" | 34 |
| 60" | 20'-2" | 2 | 5'-5" | 14 | 4'-0" | 24 | 8" | 18 | 30'-8" | 2 | 5'-5" | 14 | 8" | 7 | 4'-0" | 26 | 8" | 36 |
| 72" | 25'-2" | 2 | 7'-4" | 18 | 5'-1" | 30 | 8" | 20 | 36'-8" | 2 | 7'-4" | 18 | 8" | 9 | 5'-1" | 33 | 8" | 40 |

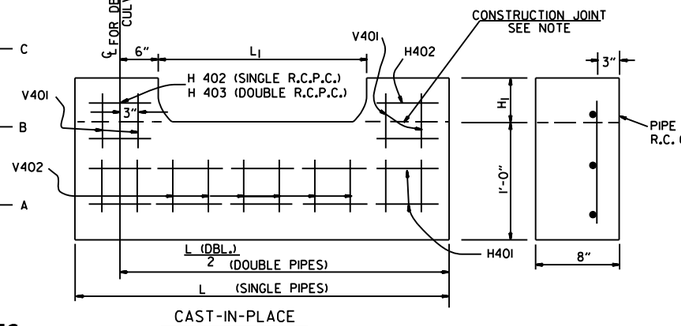
ALL REINFORCING STEEL #4 BARS @ 6" O.C.




PLAN VIEW
3:1 FORESLOPES

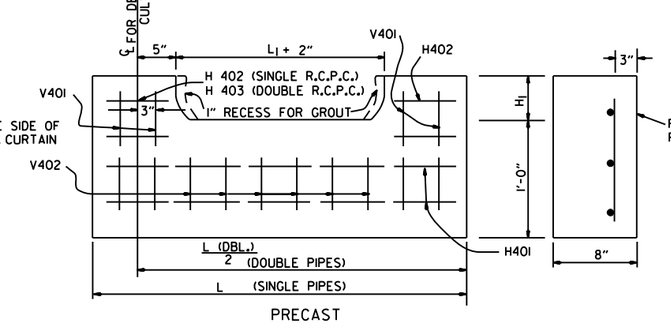
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES




CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.




PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

## R.C. CURTAIN WALL DETAILS

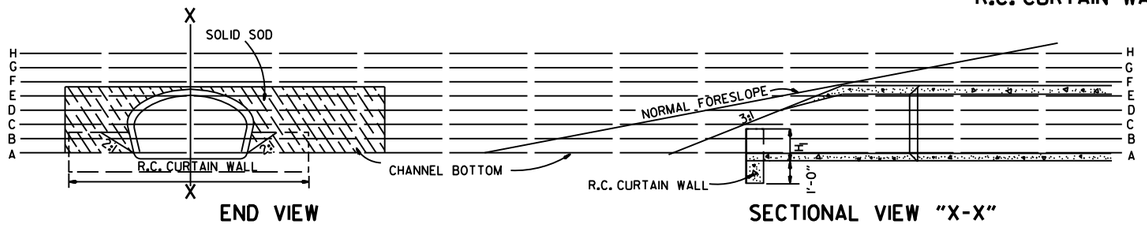
## SOLID SODDING

| PIPE DIA. | SINGLE R.C.P.C. 3:1 | 4:1 | 6:1 | DOUBLE R.C.P.C. 3:1 | 4:1 | 6:1 |
|---|---|---|---|---|---|---|
| | SQ. YDS. | | | SQ. YDS. | | |
| 18" | 5 | 7 | 12 | 6 | 8 | 13 |
| 24" | 8 | 12 | 19 | 9 | 13 | 20 |
| 30" | 13 | 18 | 29 | 14 | 19 | 30 |
| 36" | 17 | 26 | 41 | 18 | 28 | 43 |
| 42" | 23 | 35 | 55 | 25 | 37 | 57 |
| 48" | 29 | 46 | 68 | 31 | 48 | 70 |
| 54" | 35 | 57 | 85 | 37 | 59 | 87 |
| 60" | 45 | 62 | 104 | 48 | 65 | 107 |
| 72" | 64 | 92 | 156 | 67 | 95 | 159 |

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.




END VIEW



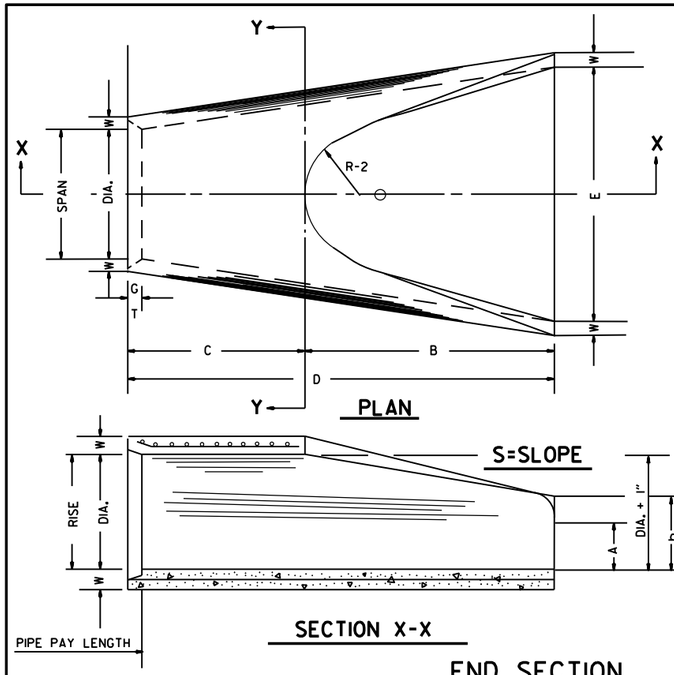

SECTIONAL VIEW "X-X"

| DATE | REVISION | FILMED |
|---|---|---|
| 10-18-96 | ADDED NOTE TO SOLID SODDING | |
| 10-12-95 | CORRECTED SPELLING | |
| 11- 3-94 | ADDED GENERAL NOTE NO. 4 | |
| 8-15-91 | REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT. | |
| 3-2-81 | ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES | |
| 5-15-80 | ADDED PRECAST WALL & GENERAL NOTES | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

# FLARED END SECTION

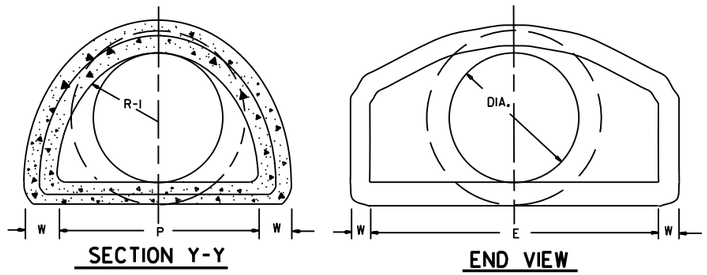
STANDARD DRAWING FES-1




# END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

## TABLE OF DIMENSIONS

| DIA. | WALL | A | B | C | D | E | S | DIA. + 1" | P | R-1 | R-2 | G-T | WT. | h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 2½" | 9" | 2'-3" | 3'-10" | 6'-1" | 3'-0" | 3:1 | 19" | 29" | 15½" | 12" | 2" | 1000 | 1'-0½" |
| 24" | 3" | 9½" | 3'-7½" | 2'-6" | 6'-1½" | 4'-0" | 3:1 | 25" | 33⅜" | 16⅛" | 14" | 2½" | 1600 | 1'-1½" |
| 30" | 3½" | 1'-0" | 4'-6" | 1'-7¾" | 6'-1¾" | 5'-0" | 3:1 | 31" | 37" | 18½" | 15" | 3¼" | 1940 | 1'-4⅝" |
| 36" | 4" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 6'-0" | 3:1 | 37" | 47⅛" | 24⅝" | 20" | 3½" | 4100 | 1'-8" |
| 42" | 4½" | 1'-9" | 5'-3" | 2'-11" | 8'-2" | 6'-6" | 3:1 | 43" | 53⅞" | 27½" | 22" | 3½" | 5380 | 2'-2½" |
| 48" | 5" | 2'-0" | 6'-0" | 2'-2" | 8'-2" | 7'-0" | 3:1 | 49" | 56½" | 28½" | 22" | 3½" | 6550 | 2'-6" |
| 54" | 5½" | 2'-4" | 6'-6" | 1'-10" | 8'-4" | 7'-6" | 3:1 | 55" | 65½" | 33⅛" | 24" | 4" | 8750 | 2'-10½" |
| 60" | 6" | 2'-10" | 6'-6" | 1'-10" | 8'-4" | 8'-0" | 3:1 | 61" | 72½" | 36⅛" | 24" | 4" | 9270 | 3'-5" |
| 72" | 7" | 3'-10" | 6'-6" | 1'-10" | 8'-4" | 9'-0" | 3:1 | 73" | 77⅛" | 38⅝" | 24" | 5" | 13250 | 4'-6" |

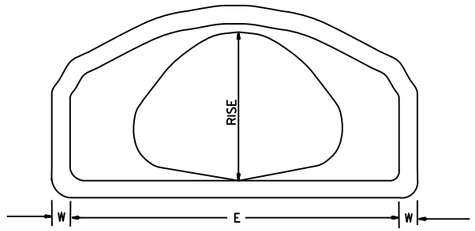



NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

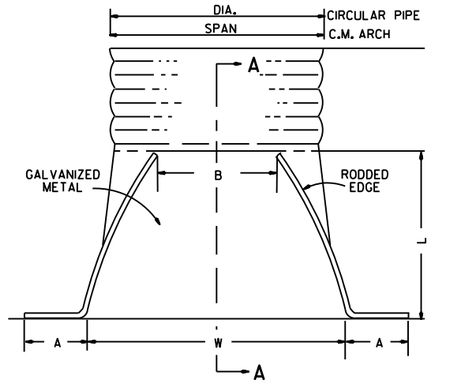
## ARCH PIPE

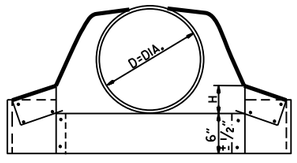
| EQUIV. DIA. | • SPAN AASHTO M 206 | • SPAN AHD NOMINAL | • RISE AASHTO M 206 | • RISE AHD NOMINAL | W | A | B | C | D | E | P | R2 | G-T | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | INCHES | | | | | | | | | | | | | |
| 15 | 18 | 18 | 11 | 11 | 2" | 4" | 2'-0" | 4'-0" | 6'-0" | 3'-0" | 29" | 12" | 1½" | 2½:1 |
| 18 | 22 | 22 | 13½ | 14 | 2½" | 5" | 2'-0" | 4'-1" | 6'-1" | 3'-6" | 32⅛" | 13" | 2½" | 2½:1 |
| 21 | 26 | 26 | 15½ | 16 | 2¾" | 7" | 2'-3" | 3'-10" | 6'-1" | 4'-0" | 34⅛" | 14" | 2½" | 2½:1 |
| 24 | 28½ | 29 | 18 | 18 | 3" | 9" | 2'-3" | 3'-10" | 6'-1" | 5'-0" | 36⅛" | 15" | 2½" | 2½:1 |
| 30 | 36¼ | 36 | 22½ | 23 | 3½" | 10" | 3'-1" | 3'-0½" | 6'-1½" | 6'-0" | 47⅛" | 20" | 3" | 2½:1 |
| 36 | 43¾ | 44 | 26⅝ | 27 | 4" | 10½" | 4'-0" | 2'-1½" | 6'-1½" | 6'-6" | 54⅝" | 22" | 3½" | 2½:1 |
| 42 | 51⅛ | 51 | 31⅝ | 31 | 4½" | 11½" | 4'-7" | 1-10¼" | 6'-5¼" | 7'-2" | 59½" | 23" | 3¾" | 2½:1 |
| 48 | 58½ | 59 | 36 | 36 | 5" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 7'-10" | 70⅜" | 24" | 4¼" | 2½:1 |
| 54 | 65 | 65 | 40 | 40 | 5½" | 1'-7" | 5'-3" | 2'-11" | 8'-2" | 8'-6" | 72⅛" | 24" | 4¾" | 2¼:1 |
| 60 | 73 | 73 | 45 | 45 | 6" | 1'-10" | 5'-6" | 2'-8" | 8'-2" | 9'-0" | 77⅛" | 24" | 5" | 2¼:1 |

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

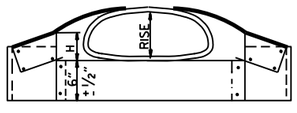



END VIEW
CONCRETE ARCH PIPE




CIRCULAR PIPE




C.M. ARCH PIPE

## CIRCULAR PIPE

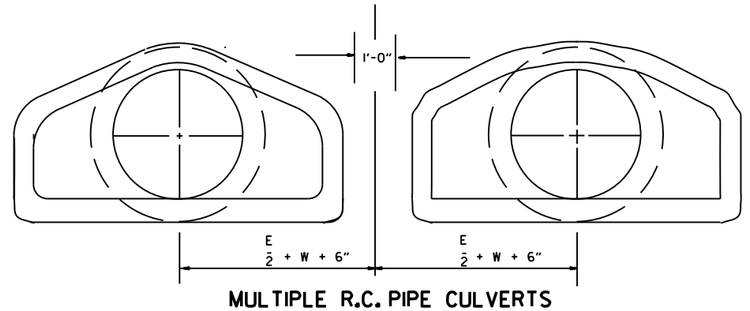
| D. DIA. | GAUGE | A 1" ± | B. MAX. | H 1" ± | L 1½" ± | W 2" ± | S |
|---|---|---|---|---|---|---|---|
| | | INCHES | | | | | |
| 12 | 16 | 6 | 6 | 6 | 21 | 24 | 2½:1 |
| 15 | 16 | 7 | 8 | 6 | 26 | 30 | 2½:1 |
| 18 | 16 | 8 | 10 | 6 | 31 | 36 | 2½:1 |
| 21 | 16 | 9 | 12 | 6 | 36 | 42 | 2½:1 |
| 24 | 16 | 10 | 13 | 6 | 41 | 48 | 2½:1 |
| 30 | 14 | 12 | 16 | 8 | 51 | 60 | 2½:1 |
| 36 | 14 | 14 | 19 | 9 | 60 | 72 | 2½:1 |
| 42 | 12 | 16 | 22 | 11 | 69 | 84 | 2½:1 |
| 48 | 12 | 18 | 27 | 12 | 78 | 90 | 2½:1 |
| 54 | 12 | 18 | 30 | 12 | 84 | 102 | 2:1 |
| 60 | 12 | 18 | 33 | 12 | 87 | 114 | 1¾:1 |
| 66 | 12 | 18 | 36 | 12 | 87 | 120 | 1½:1 |
| 72 | 12 | 18 | 39 | 12 | 87 | 126 | 1 1/3:1 |

## C.M. ARCH PIPE

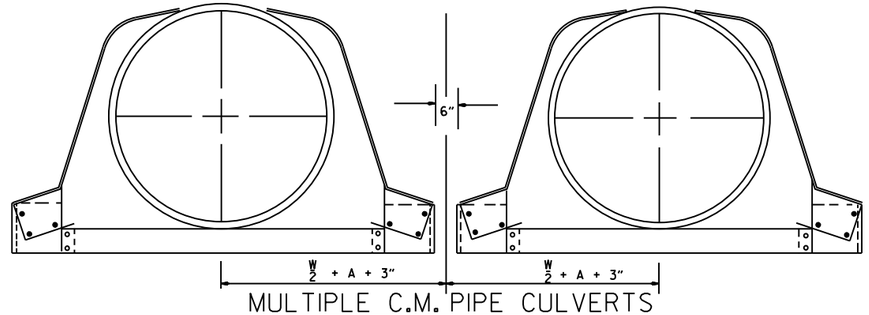
| EQUIV. DIA. | SPAN | RISE | A 1" ± | B MAX. | H 1" ± | L 1½" ± | W 2" ± | S | GAUGE |
|---|---|---|---|---|---|---|---|---|---|
| | INCHES | | | | | | | | |
| 15" | 17 | 13 | 7 | 9 | 6 | 19 | 30 | 2½:1 | 16 |
| 18" | 21 | 15 | 7 | 10 | 6 | 23 | 36 | 2½:1 | 16 |
| 21" | 24 | 18 | 8 | 12 | 6 | 28 | 42 | 2½:1 | 16 |
| 24" | 28 | 20 | 9 | 14 | 6 | 32 | 48 | 2½:1 | 16 |
| 30" | 35 | 24 | 10 | 16 | 6 | 39 | 60 | 2½:1 | 14 |
| 36" | 42 | 29 | 12 | 18 | 8 | 46 | 75 | 2½:1 | 14 |
| 42" | 49 | 33 | 13 | 21 | 9 | 53 | 85 | 2½:1 | 12 |
| 48" | 57 | 38 | 18 | 26 | 12 | 63 | 90 | 2½:1 | 12 |
| 54" | 64 | 43 | 18 | 30 | 12 | 70 | 102 | 2¼:1 | 12 |
| 60" | 71 | 47 | 18 | 33 | 12 | 77 | 114 | 2¼:1 | 12 |

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

# END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS




MULTIPLE R.C. PIPE CULVERTS



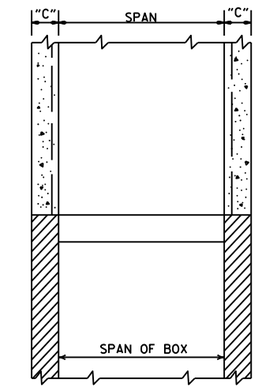

MULTIPLE C.M. PIPE CULVERTS

| DATE | REVISION | FILMED |
|---|---|---|
| 10-18-96 | REVISED ASTM REF. TO AASHTO | |
| 5-15-80 | REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S. | 664-5-15-80 |
| 7-14-78 | C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES | 752-7-14-78 |
| 8-22-75 | ADDED MULTIPLE PIPE CULVERTS | 517-8-22-75 |
| 12-5-74 | REMOVED NOTE RE REINF. FOR R.C. F.E.S. | 500-12-5-74 |
| 5-24-73 | CMP END SECTION, SHOW PIPE PAY LENGTH | 627-5-24-73 |
| 10-2-72 | REVISED AND REDRAWN | 760-10-2-72 |

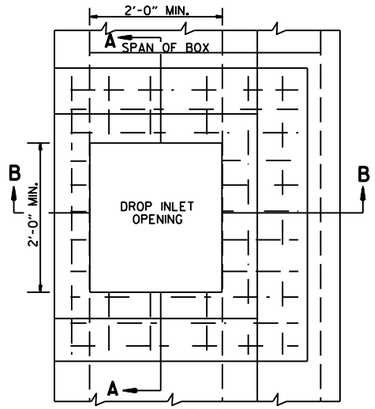
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

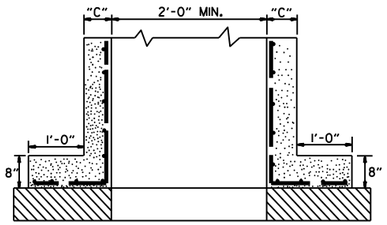
STANDARD DRAWING FES-2



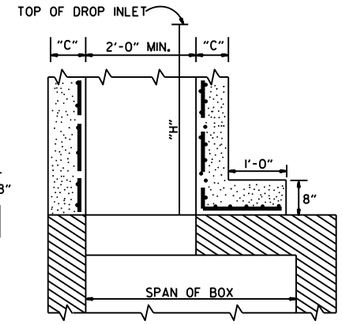

SECTION B-B




PLAN

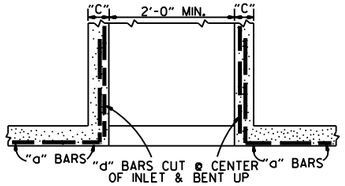



SECTION A-A

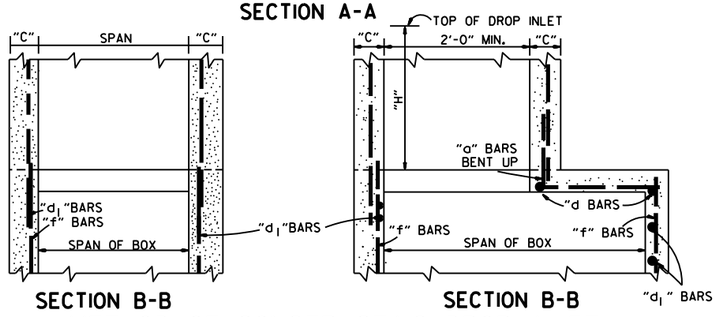



SECTION B-B

## METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



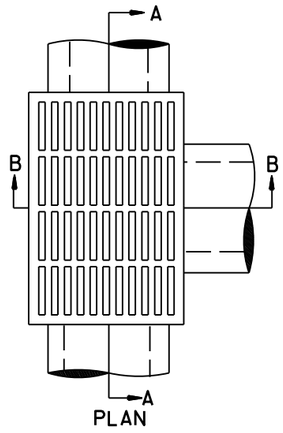

SECTION A-A



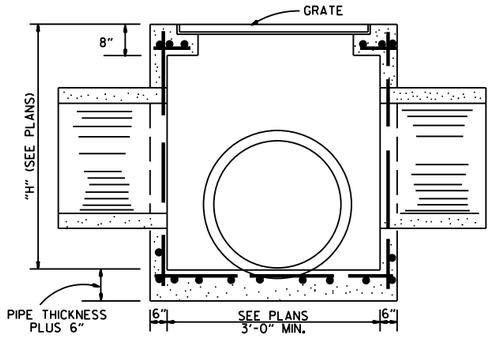

SECTION B-B SECTION B-B

## METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

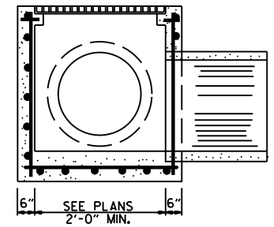
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.




PLAN



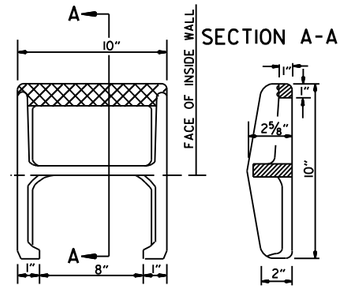

SECTION A-A




SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

## DROP INLET (TYPE E)



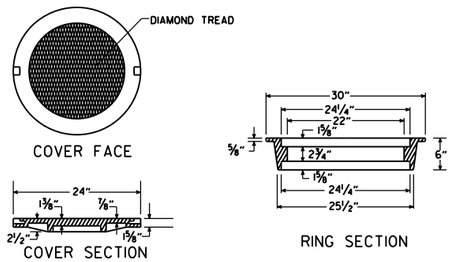

SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

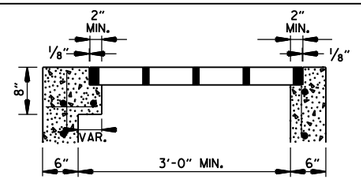
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

## DETAIL OF STEP FOR DROP INLET

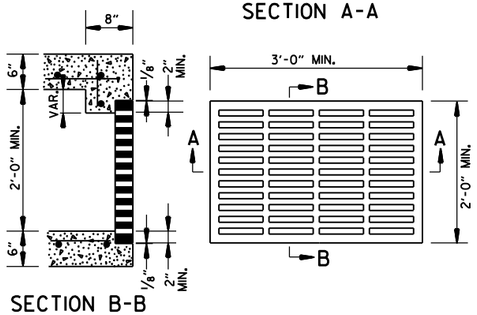



APPROXIMATE TOTAL WEIGHT = 333 LBS.

## HEAVY DUTY RING & COVER



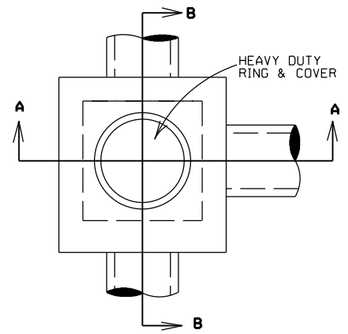

SECTION A-A



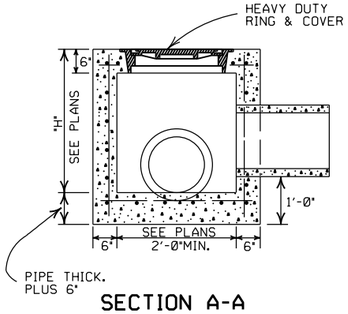

SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

## GRATE FOR TYPE E DROP INLET

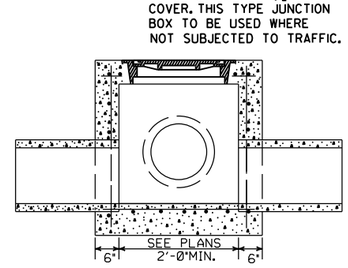



PLAN



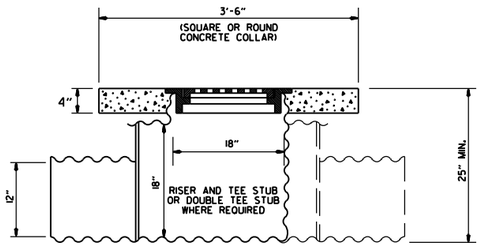

SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1½" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

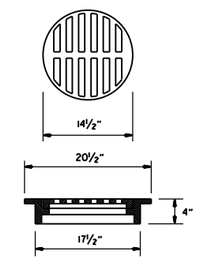



SECTION B-B

## JUNCTION BOX (TYPE E)




NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS " 12" SIDE DRAIN ".




USE NEENAH R-5901-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

## DETAIL OF YARD DRAIN

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

| DATE REV. | REVISION | DATE FILMED |
|---|---|---|
| 11-16-01 | ADDED NOTE 10 | |
| 1-12-00 | REVISED HEAVY DUTY RING & COVER | |
| 7-02-98 | CHANGED GRATE DETAIL, DELETED DI(TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E) | |
| 6-26-97 | ADDED DIMENSION TO TYPE IV-A | |
| 10-18-96 | ADDED DETAIL OF YARD DRAIN | |
| 8-15-91 | DELETE TYPE IV GRATE | |
| 7-15-88 | REVISED STEP DETAIL | |
| 5-20-83 | REVISED DETAILS OF GRATES (TYPE IV & IV-A) | |
| 2-4-83 | ADDED GENERAL NOTE NO. 4 | |
| 3-2-81 | ADDED TYPE IV-A GRATE | |
| 5-22-74 | DELETED INLET (TYPE F) & GRATE (TYPE III) | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

## 4'-0" LENGTH DROP INLET

| PIPE SIZE | MIN. WIDTH | HEIGHT 5'-0" CLASS A CONC. CU. YDS. | HEIGHT 5'-0" REINF. STEEL POUNDS | PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC. CU. YDS. | PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL POUNDS |
|---|---|---|---|---|---|
| 18" | 2'-6" | 1.77 | 156 | 0.28 | 22 |
| 24" | 2'-6" | 1.79 | 156 | 0.28 | 22 |
| 30" | 3'-2" | 2.39 | 205 | 0.30 | 26 |
| 36" | 3'-8" | 2.63 | 236 | 0.32 | 28 |
| 42" | 4'-4" | 2.95 | 250 | 0.34 | 30 |
| 48" | 4'-10" | 3.21 | 265 | 0.36 | 32 |

NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

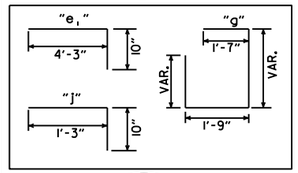
## DROP INLET EXTENSION

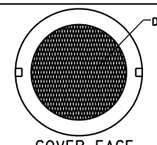
| 4'-0" CLASS A CONC. CU. YDS. | 4'-0" REINF. STEEL POUNDS | 8'-0" CLASS A CONC. CU. YDS. | 8'-0" REINF. STEEL POUNDS |
|---|---|---|---|
| 0.58 | 38 | 0.87 | 72 |
| DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED. | | | |
| 0.04 | 3 | | |

**DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET**

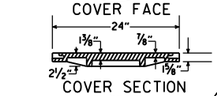
| INSIDE DIA. PIPE | CLASS A CONC. | REINF. STEEL |
|---|---|---|
| INCHES | CU. YDS. | POUNDS |
| 18 | 0.05 | 2 |
| 24 | 0.09 | 3 |
| 30 | 0.13 | 4 |
| 42 | 0.24 | 8 |

## BAR DIAGRAM

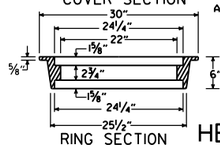



COVER FACE




COVER SECTION



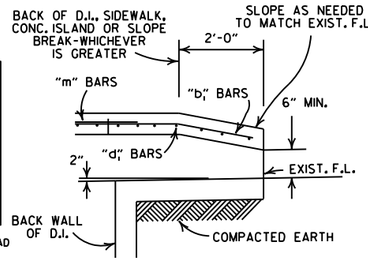

RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

## HEAVY DUTY RING & COVER

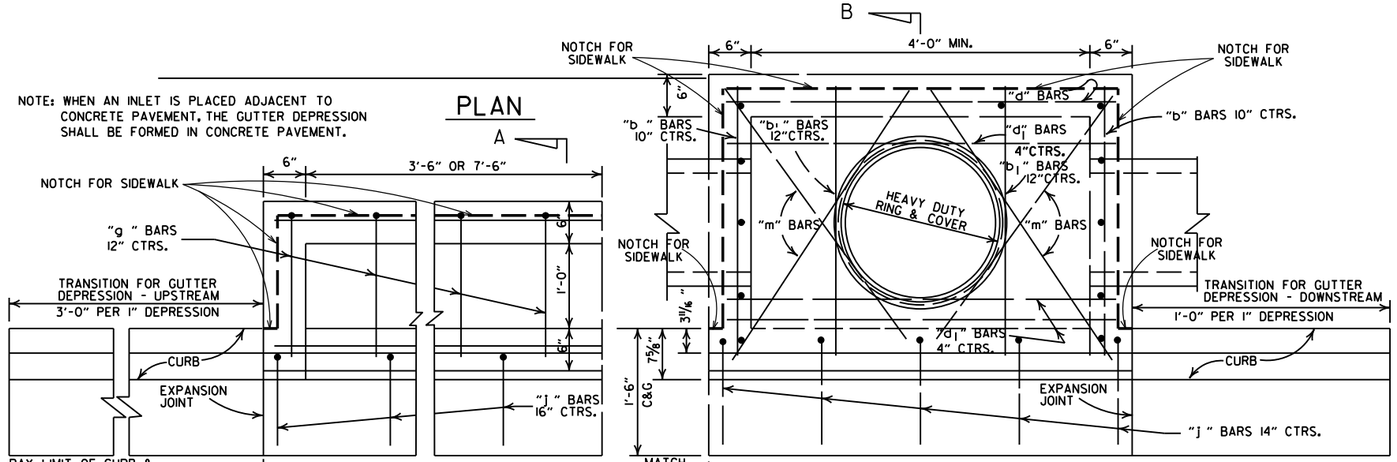
GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (FPC-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

## BACK OPENING

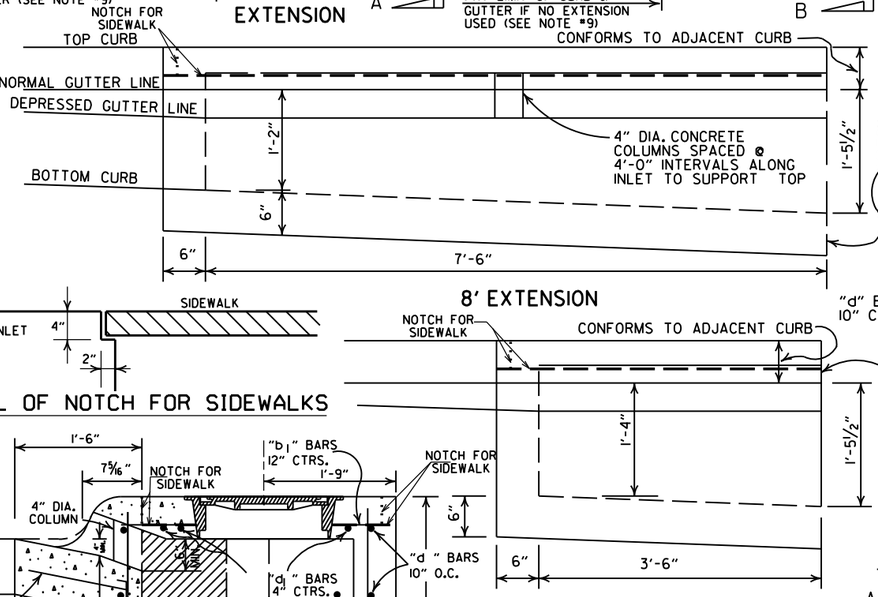



WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

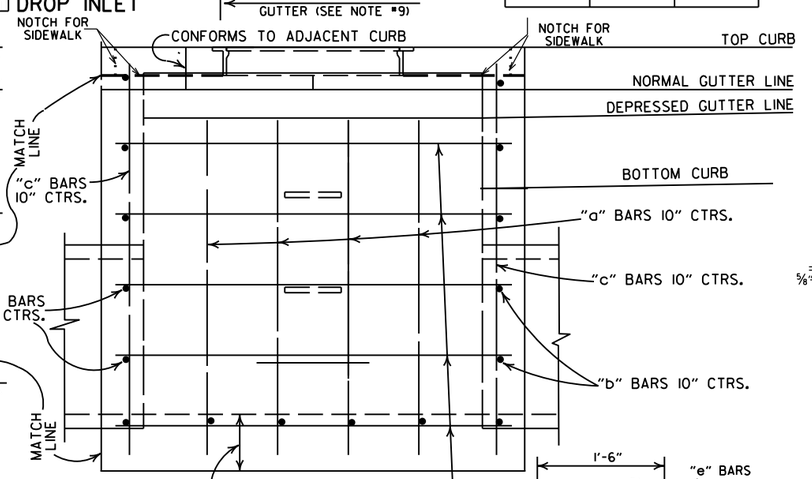
## PLAN




## EXTENSION

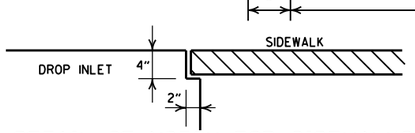



## DROP INLET

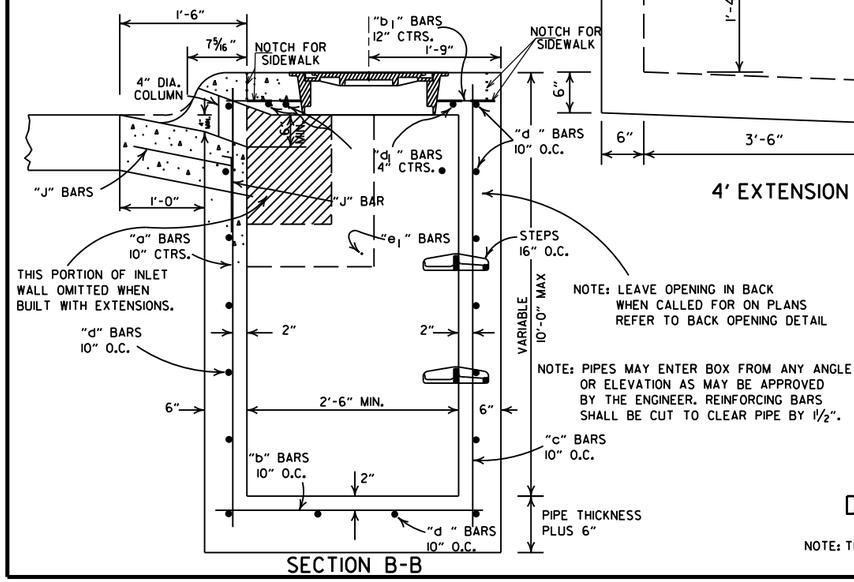



## ELEVATION

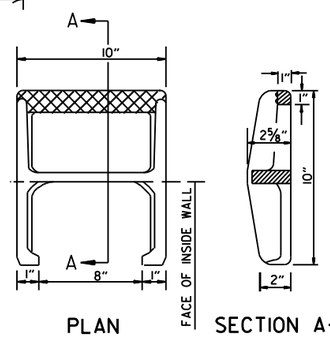
## DETAIL OF NOTCH FOR SIDEWALKS




## SECTION B-B



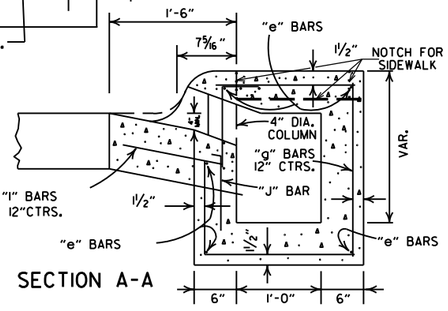

## DETAIL OF STEP FOR DROP INLET




PLAN SECTION A-A

APPROX. WEIGHT = 11 LBS. (CAST IRON)

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.




SECTION A-A

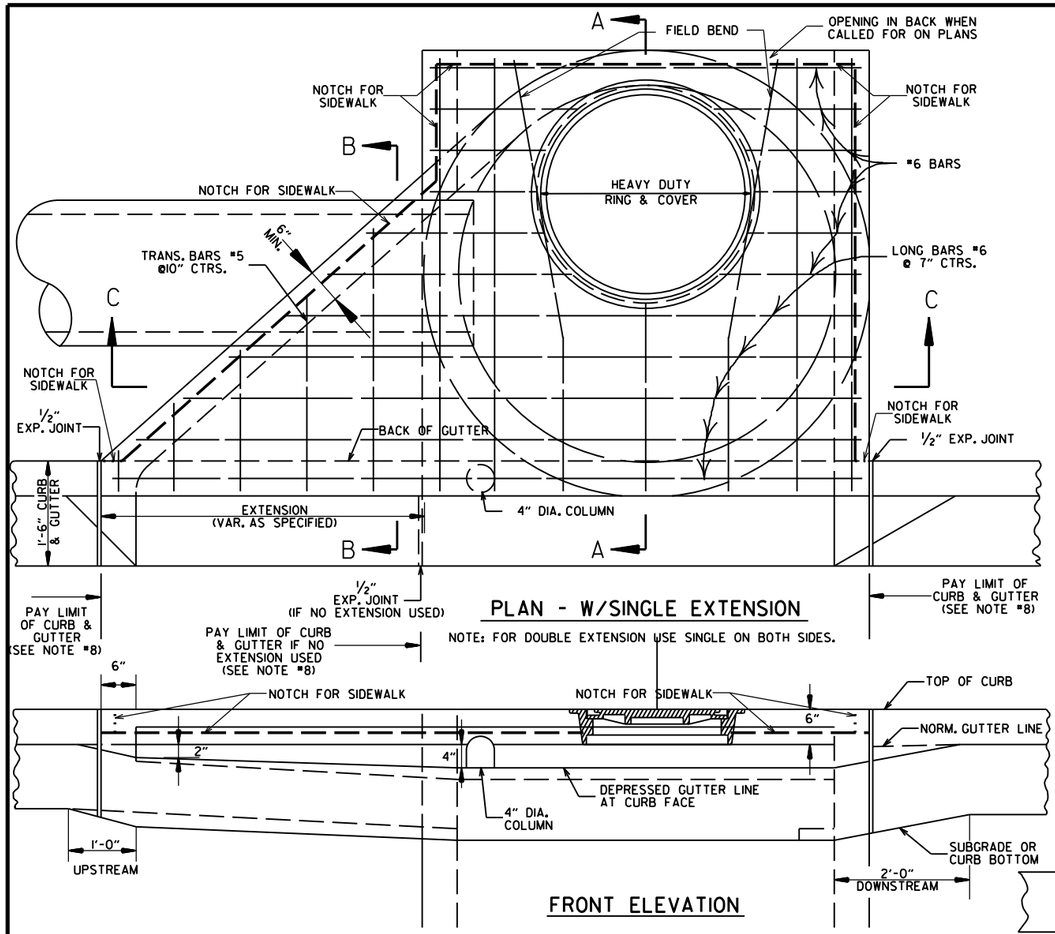
| DATE REV. | REVISION | DATE FILMED |
|---|---|---|
| 8-22-02 | ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B | |
| 11-16-01 | ADDED NOTE 13; REVISED SECTION B-B | |
| 1-12-00 | CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER | |
| 5-13-99 | ADDED DETAIL OF NOTCH FOR SIDEWALKS | |
| 7-02-98 | REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11 | |
| 10-18-96 | CORRECTED SPELLING | |
| 4-26-96 | ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES | 10-18-96 |
| 4-1-93 | REVISED BACK OPENING & NOTE | |
| 8-15-91 | DELETE TYPE IV GRATE | |
| 7-15-88 | REVISED STEP DETAIL | |
| 5-20-83 | REVISED DETAILS OF GRATES (TYPE IV & IV-A) | |
| 2-4-83 | ADDED GENERAL NOTE NO. 4 | |
| 3-2-81 | ADDED TYPE IV-A GRATE | |
| 5-22-74 | DELETED INLET (TYPE F) & GRATE (TYPE III) | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS

# (TYPE C)

STANDARD DRAWING FPC-9E

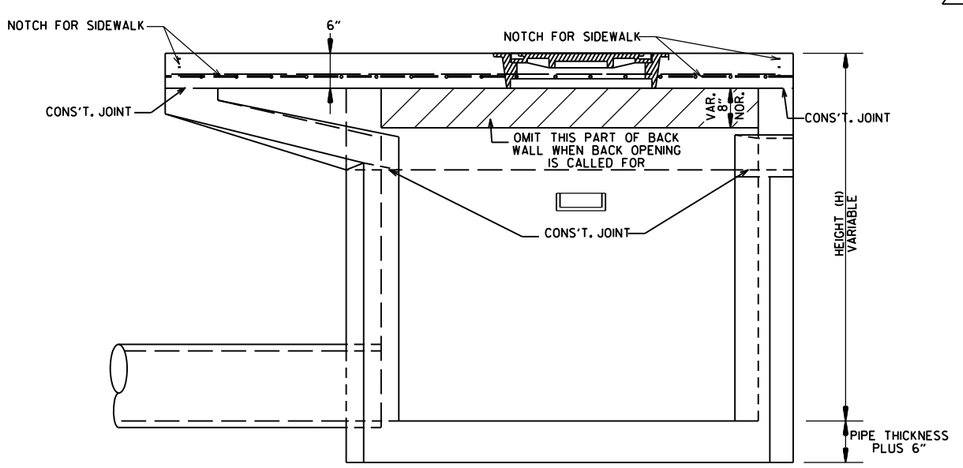



## PLAN - W/SINGLE EXTENSION

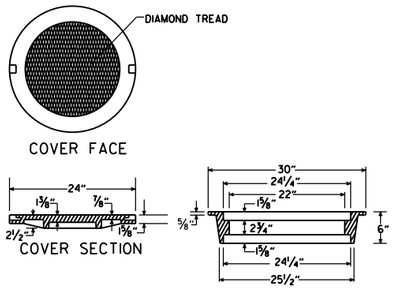
NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.




## FRONT ELEVATION



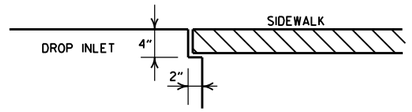

## SECTION C-C



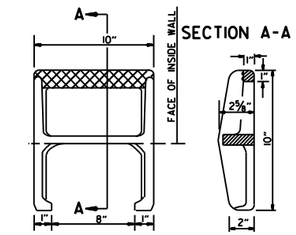

APPROXIMATE TOTAL WEIGHT = 333 LBS.

## HEAVY DUTY RING & COVER

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.




## DETAIL OF NOTCH FOR SIDEWALKS




## SECTION A-A

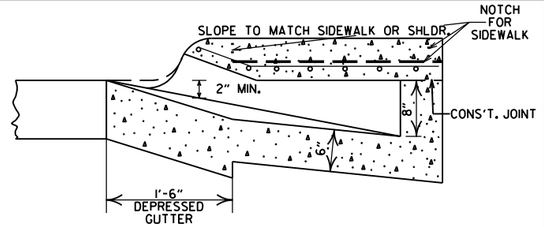



APPROX. WEIGHT = 11 LBS. (CAST IRON)

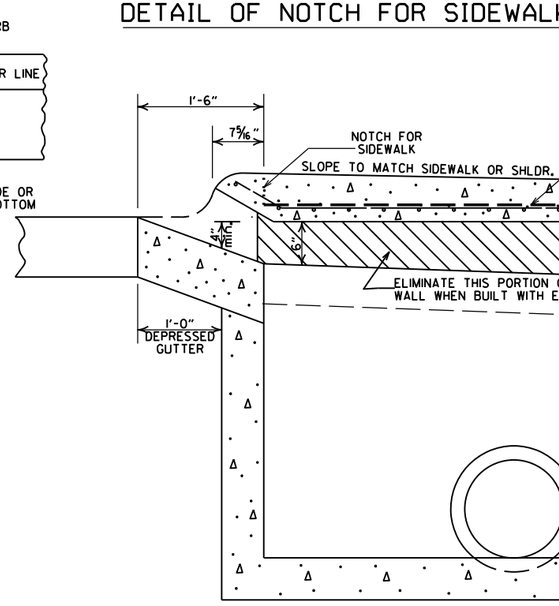
## PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

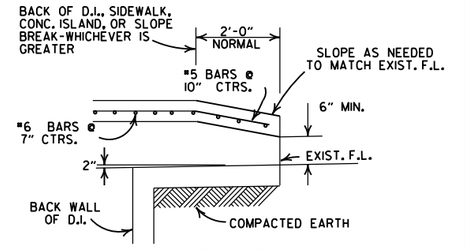
## DETAIL OF STEP FOR DROP INLET




## SECTION B-B




## SECTION A-A




## BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1½" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

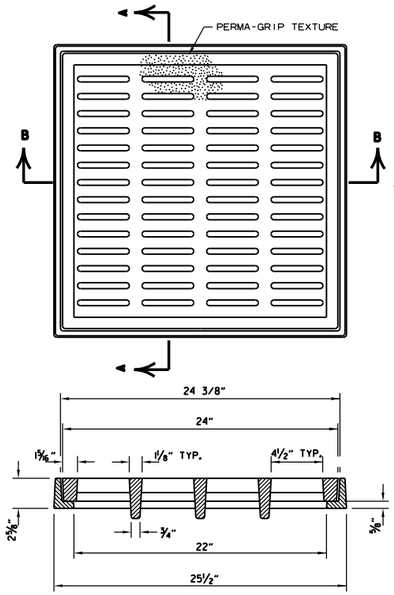
| DIA. OF D.I. | DIA. OF OUTLET PIPE | MINIMUM WALL THICKNESS | |
|---|---|---|---|
| | | CAST IN PLACE | PRECAST |
| 4' I.D. | 12" THRU 27" | 6" | 5" |
| 5' I.D. | 30" THRU 42" | 8" | 6" |
| 6' I.D. | 48" THRU 54" | 8" | 7" |

| DATE | REVISIONS | DATE FILMED |
|---|---|---|
| 8-22-02 | ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B | |
| 11-16-01 | ADDED NOTE 13 | |
| 1-12-00 | REVISED HEAVY DUTY RING & COVER | |
| 5-13-99 | ADDED NOTCH DETAIL FOR SIDEWALKS | |
| 7-02-98 | REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET | |
| 4-26-96 | ADDED NOTE 11 & ADJ. OPENING DIMENSION | |
| 10-12-95 | CORRECTED #6 BAR SPACING | |
| 7-20-95 | CORRECTED DIAMETER OF D.I. IN BOX | |
| 2-2-95 | TYPE C TO MO (OPEN. BACK DETAIL) | |
| 11-3-94 | REVISED GENERAL NOTES | 11-3-94 |
| 4-1-93 | REV. BACK OPEN. DETAIL & NOTE | 4-1-93 |
| 8-15-91 | REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL | 8-15-91 |
| 11-30-89 | ADDED NOTE NO. 12 | 11-30-89 |
| 5-23-89 | ADDED NOTE & MINIMUM WALL THICKNESS | 513-5-23-89 |
| 7-15-88 | ADDED EXTEND NOTE TO SECTION A-A | 629-7-15-88 |
| 1-14-87 | MODIFIED WALL THICKNESS | 783-1-14-87 |
| 6-12-87 | ISSUED | 4-6-12-87 |

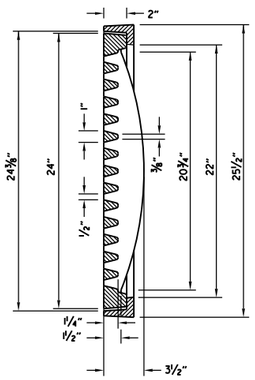
ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M




SECTION B-B

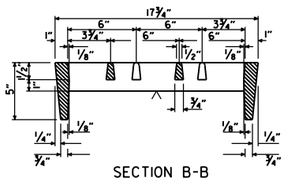



SECTION A-A

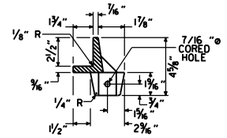
GENERAL NOTES ( PEDESTRIAN GRATE & FRAME )

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

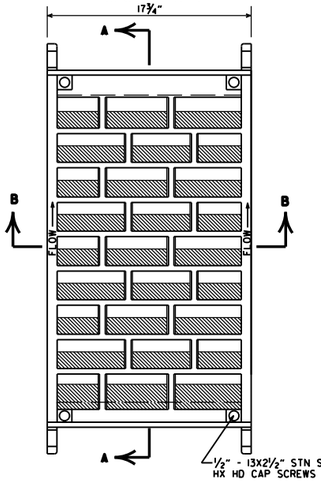
## DETAILS OF PEDESTRIAN GRATE AND FRAME

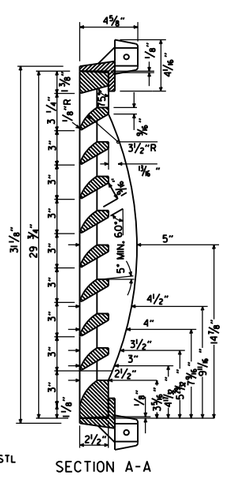



SECTION B-B




SECTION THRU FRAME



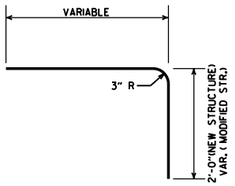




SECTION A-A

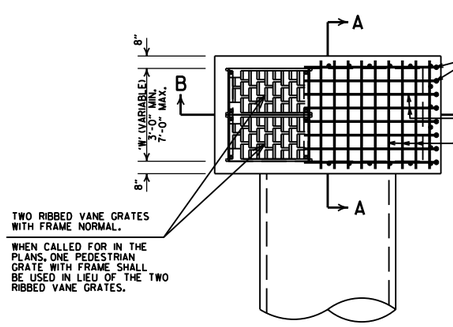
## DETAILS OF RIBBED VANE GRATE AND FRAME

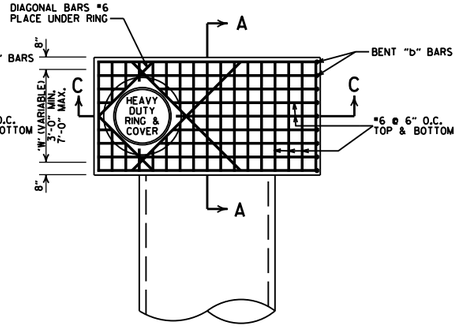
GENERAL NOTES ( RIBBED VANE GRATE & FRAME )

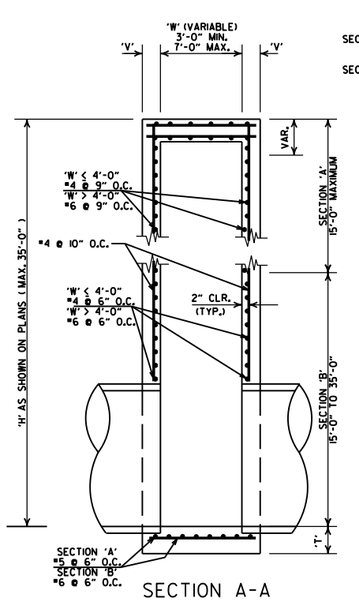
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.




## DETAIL OF BENT "b" BAR

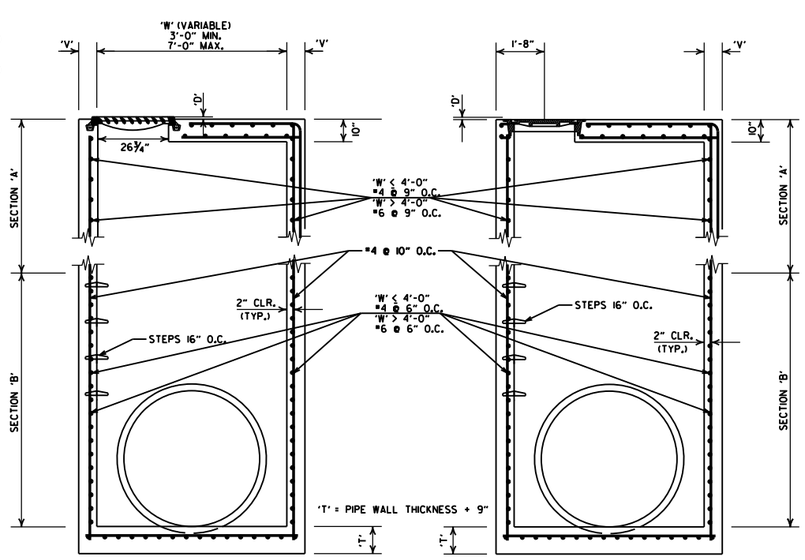



SECTION A-A

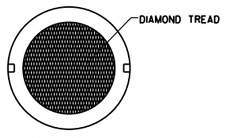
SECTION 'A' 'V' = 8"
SECTION 'B' (W≤4'-0") 'V' = 8"
SECTION 'B' (W>4'-0") 'V' = 10"



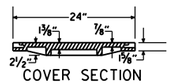

SECTION B-B

SECTION C-C

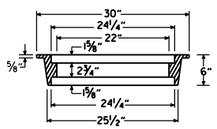
## DETAILS OF DROP INLET ( TYPE ST )




COVER FACE




COVER SECTION




RING SECTION

## HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

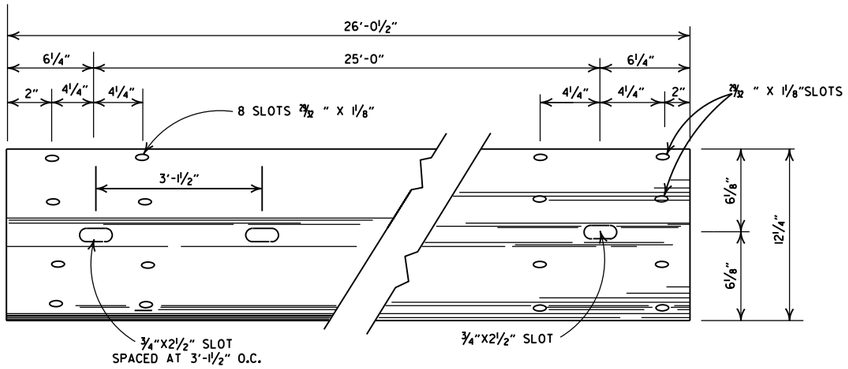
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

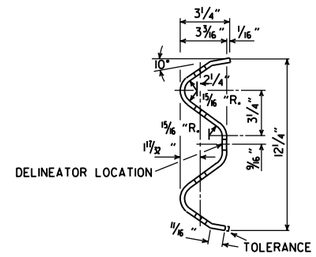
| DATE REVISED | DATE FILMED | DESCRIPTION |
|---|---|---|
| 7-26-12 | | REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS |
| 11-16-01 | | ADDED NOTE 4 |
| 1-12-00 | | REVISED HEAVY DUTY RING & COVER |
| 5-13-99 | | ADDED PEDESTRIAN FRAME & GRATE |
| 7-02-98 | | REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE |
| 10-18-96 | | REVISED ASTM REF. TO AASHTO |
| 10-1-92 | | REVISED & REISSUED |
| 8-15-91 | 8-15-91 | REVISED & REISSUED |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLET & JUNCTION BOX ( TYPE ST )

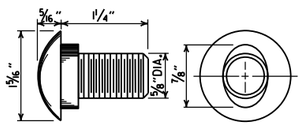
STANDARD DRAWING FPC-9S



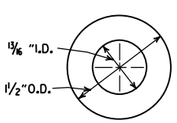




## DETAILS OF W-BEAM GUARDRAIL

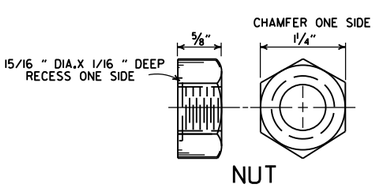
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



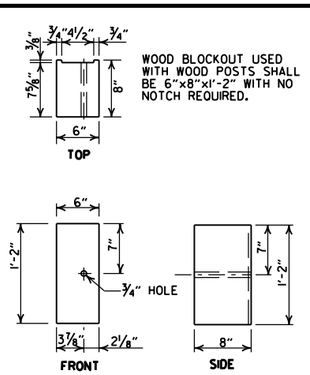

## SPLICE BOLT
## POST BOLT - SAME EXCEPT LENGTH



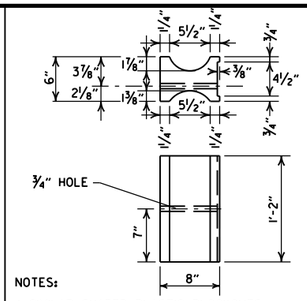

## CUT STEEL WASHER



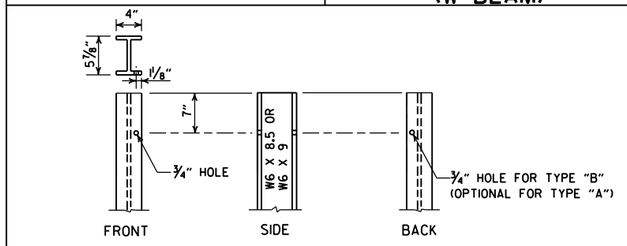

## NUT



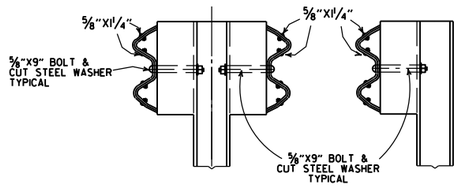

## WOOD BLOCKOUT (W-BEAM)




## PLASTIC BLOCKOUT (W-BEAM)




## STEEL POST




## DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

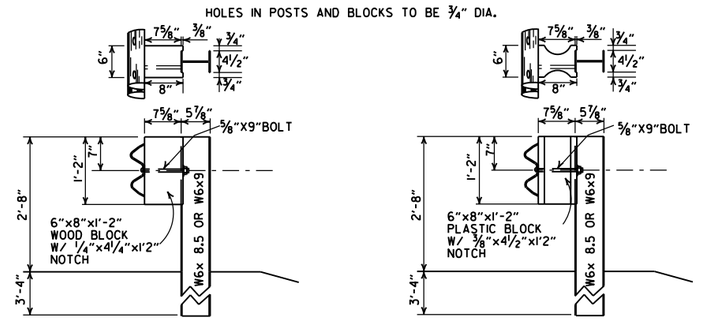
USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

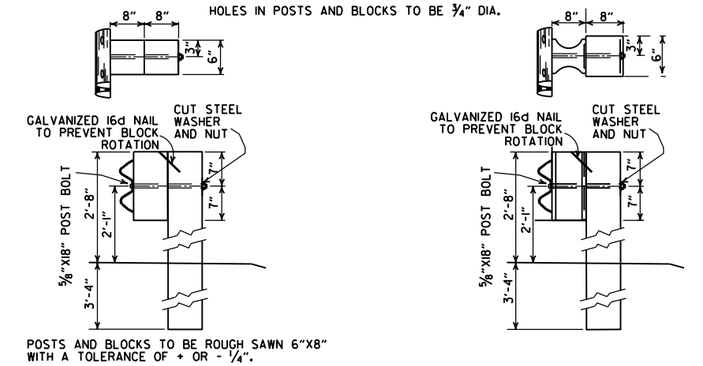
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

DELINEATORS SHALL BE MOUNTED AT 37.5' SPACING ON THE FRONT FACE OF THE GUARDRAIL. SPACING MAY BE REDUCED IN CURVES, AS DIRECTED BY THE ENGINEER. COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR GUARDRAIL.




## DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)




## DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

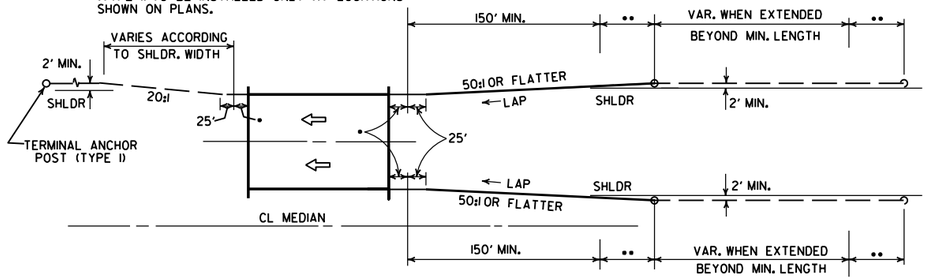
| DATE | REVISION | FILMED |
|---|---|---|
| 05-19-22 | REVISED GENERAL NOTES. ADDED DELINEATOR LOCATION. | |
| 11-07-19 | RENUMBERED AND RENAMED | |
| 11-16-17 | REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3" | |
| 07-14-10 | RAISED HEIGHT OF GUARDRAIL 1" | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 04-10-03 | REVISED GENERAL NOTES | |
| 08-22-02 | REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST | |
| 11-16-01 | REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS | |
| 03-30-00 | REMOVED GUARDRAIL AT BRIDGE ENDS | |
| 01-12-00 | ADDED PLASTIC BLOCKOUT | |
| 08-12-98 | REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES | |
| 04-03-97 | REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS | |
| 10-18-96 | REVISED WOOD POST NOTE | |
| 06-02-94 | ADDED ALT. STEEL POST SIZE | |
| 08-05-93 | REVISED STEEL POST SIZE | 8-5-93 |
| 10-01-92 | REDRAWN & REVISED | 10-1-92 |
| 08-15-91 | REVISED WASHER NOTE | 8-15-91 |
| 08-02-90 | REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK | 8-2-90 |
| 07-15-88 | REVISED SECTION 3 & GENERAL NOTES | |
| 03-04-88 | REV. ANCHOR POST ,ELEV. NOTES & POST IN ROCK | 780-3-4-88 |
| 10-30-87 | REVISED WOOD LINE POST DETAIL | 546-10-30-87 |
| 10-09-87 | REDRAWN & REVISED | 802-10-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

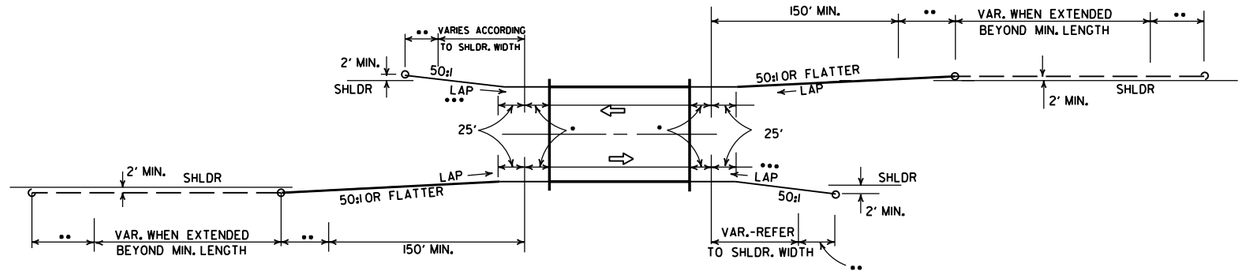
STANDARD DRAWING GR-6

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

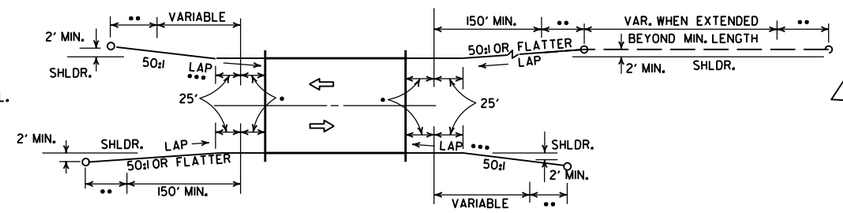
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

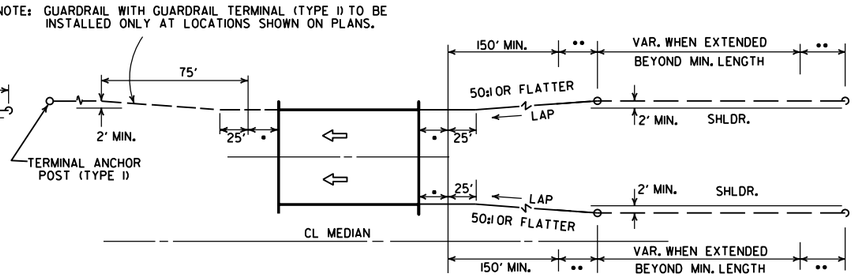
## METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

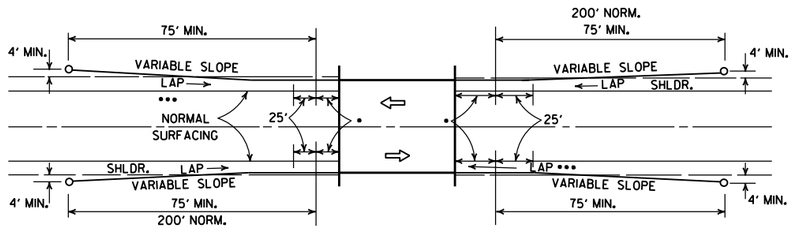
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

## METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




## METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

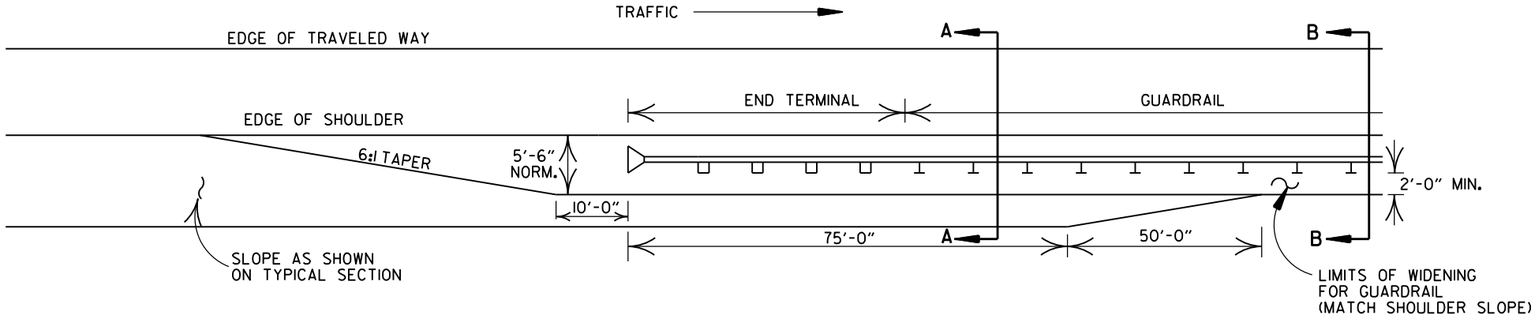
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

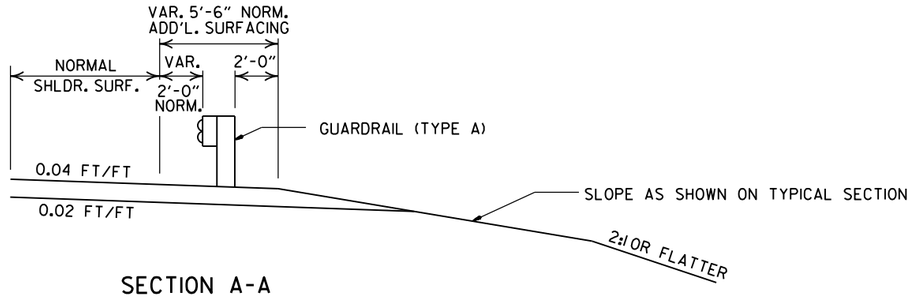
| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| 11-07-19 | RENUMBERED AND RENAMED | |
| 4-17-08 | REVISED LAYOUTS | |
| 11-10-05 | REMOVED GUARDRAIL NOTES AND DETAILS | |
| 11-16-01 | DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1) | |
| 1-12-00 | ADDED CONSTRUCTION NOTE | 1-12-00 |
| 6-26-97 | REVISED LAYOUT | |
| 10-1-92 | REDRAWN & REVISED | 10-1-92 |
| | ADDED NOTE | |
| 10-9-87 | REDRAWN & REVISED | |

ARKANSAS STATE HIGHWAY COMMISSION

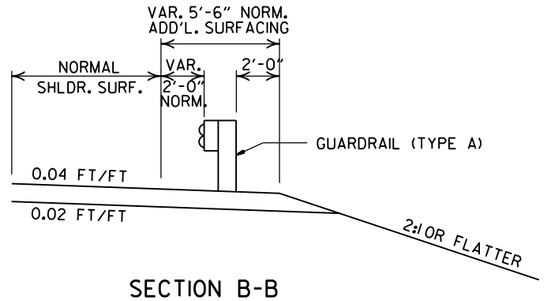
# GUARDRAIL DETAILS

STANDARD DRAWING GR-8



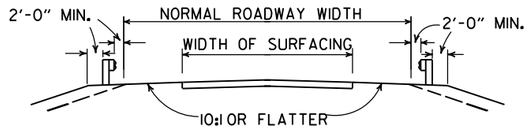

SECTION A-A



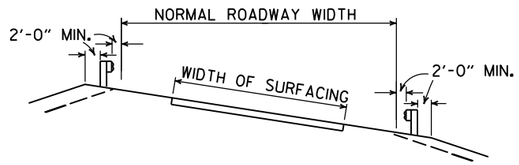

SECTION B-B

## DETAILS OF WIDENING FOR GUARDRAIL

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

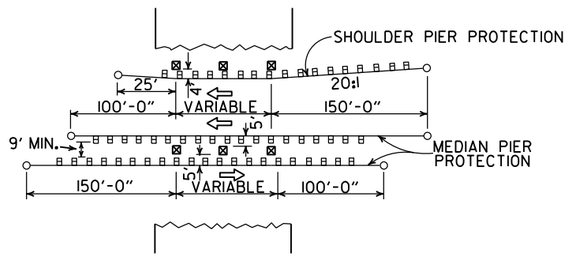



SECTION ON TANGENT




SECTION ON CURVE

## DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY



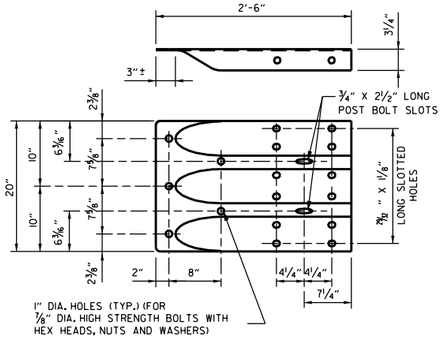

## METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

| DATE | REVISION | DATE FILM |
|---|---|---|
| 11-07-19 | RENUMBERED AND RENAMED | |
| 4-17-08 | MINOR REVISION | |
| 11-10-05 | DRAWN | |

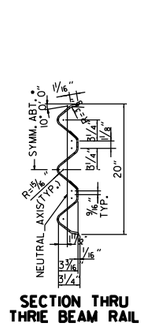
ARKANSAS STATE HIGHWAY COMMISSION

# GUARDRAIL DETAILS

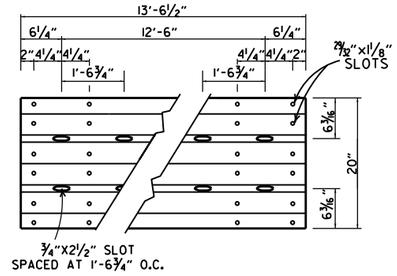
STANDARD DRAWING GR-9



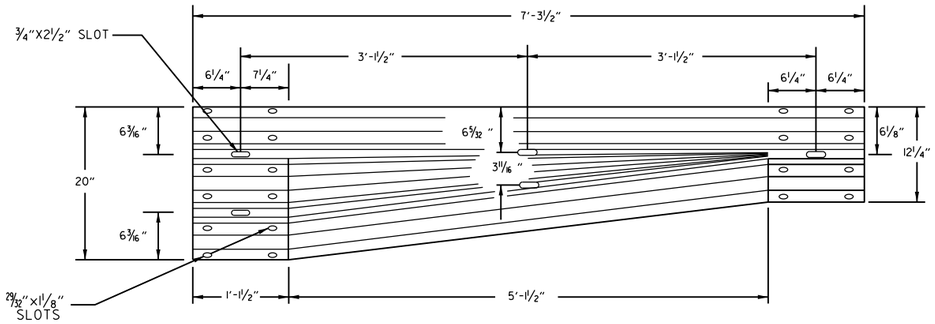

SPECIAL END SHOE



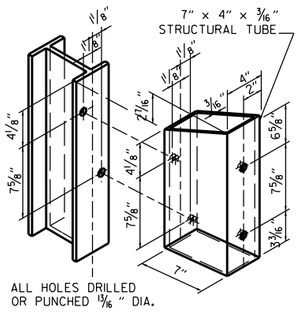

SECTION THRU THRIE BEAM RAIL




THRIE BEAM RAIL

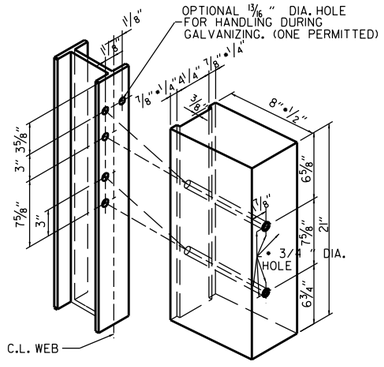



TRANSITION SECTION




ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

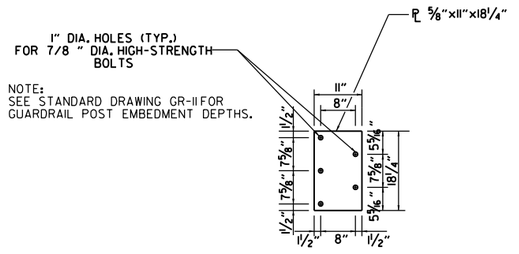
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL




ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

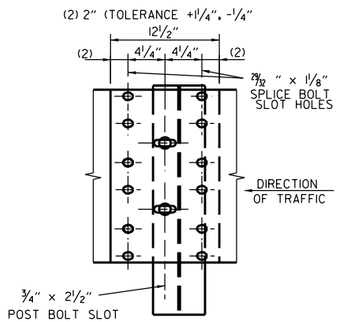
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.




CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.




THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3*4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

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

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

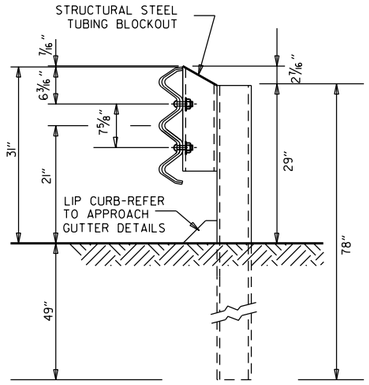
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | RENAMED AND REVISED REFERENCES | |
| 11-16-17 | REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12 | |
| 07-14-10 | RAISED HEIGHT OF W-BEAM 1" | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | |
| 11-10-05 | ADDED NOTE FOR ATTACHING STEEL BLOCKOUT | |
| 11-18-04 | REVISED GENERAL NOTES | |
| 10-9-03 | REVISED GENERAL NOTES | |
| 04-10-03 | REVISED GENERAL NOTES | |
| 08-22-02 | REVISED NOTE (2) | |
| 06-29-00 | MOVED DIMENSION LINES | |
| 05-18-00 | ADDED NOTE | |
| 03-30-00 | DRAWN & ISSUED | |

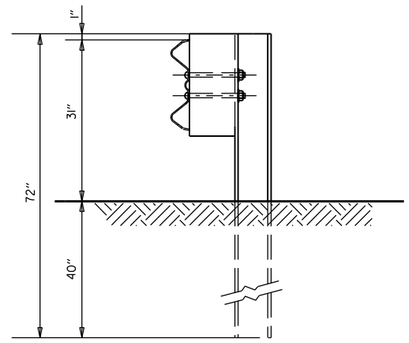
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

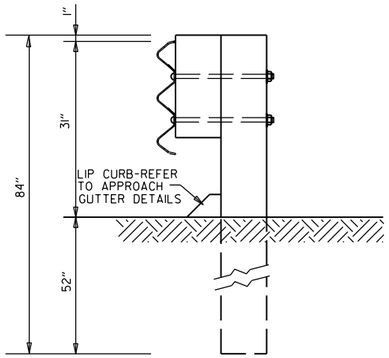
STANDARD DRAWING GR-10



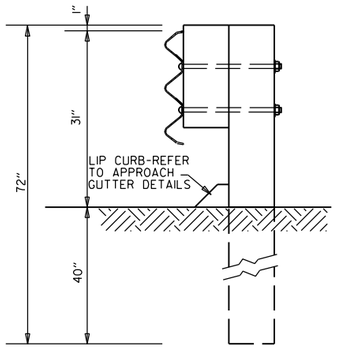

THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



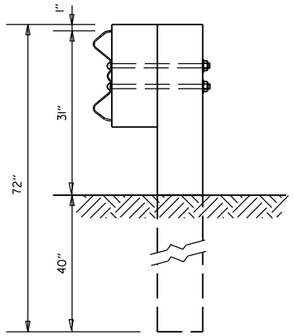

W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8




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




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




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

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

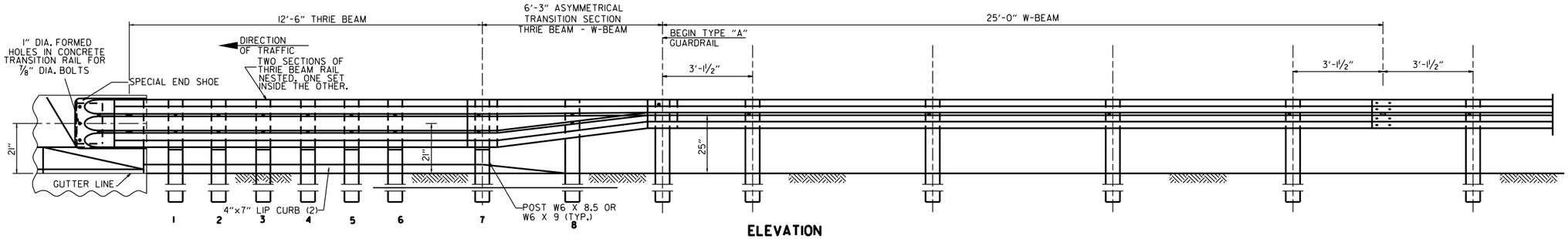
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

| DATE | REVISION | FILMED |
|---|---|---|
| | | |
| | | |
| 11-07-19 | RENAMED | |
| 11-16-17 | REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11 | |
| 07-14-10 | REVISED POST 8 DIMENSIONS | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | |
| 08-22-02 | REVISED LIP CURB NOTE | |
| 03-30-00 | DRAWN & ISSUED | |

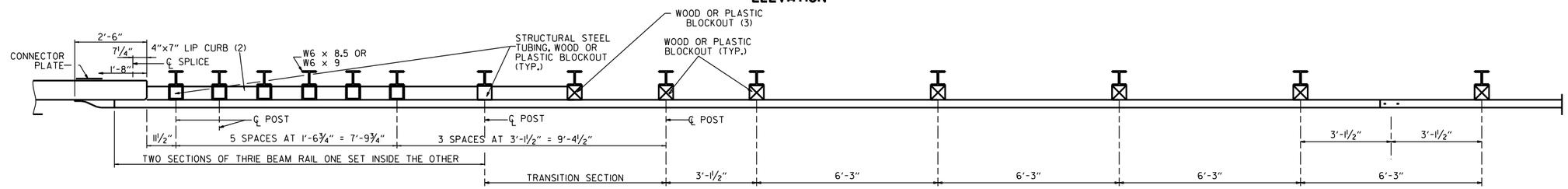
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

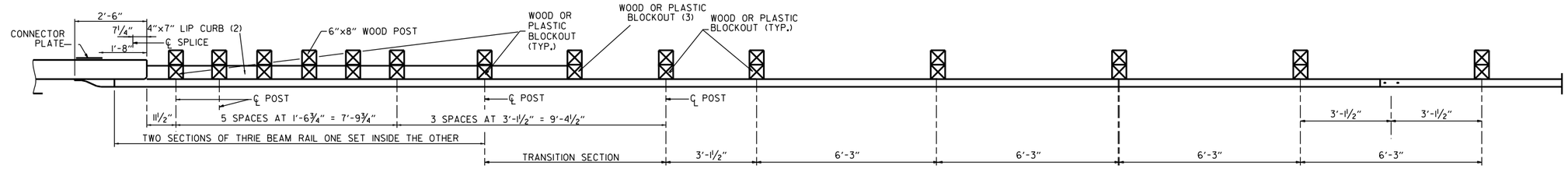
STANDARD DRAWING GR-11




ELEVATION




PLAN




PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

# THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

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

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

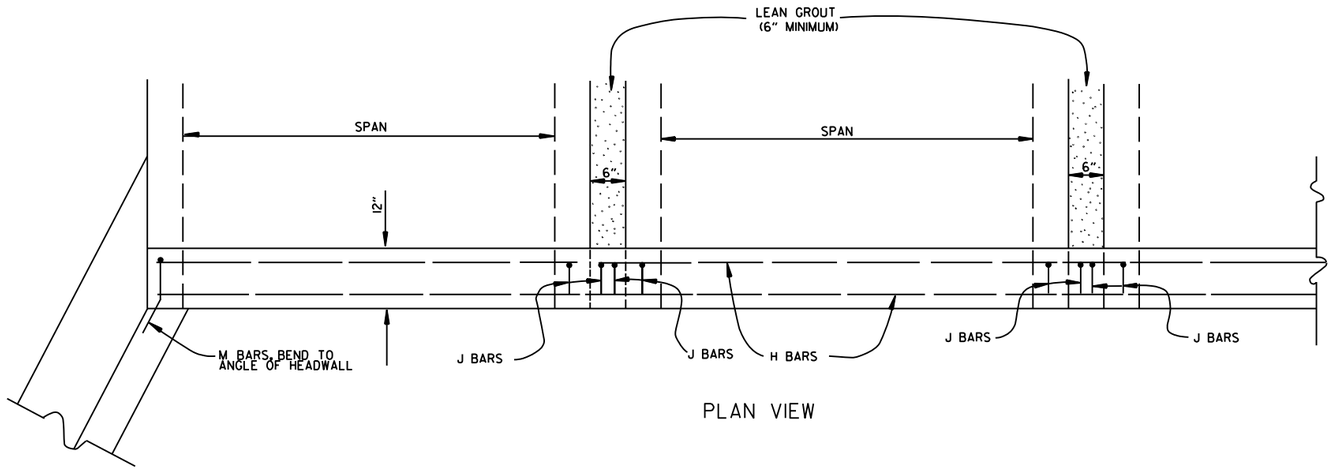
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

| DATE | REVISION | FILMED |
|---|---|---|
| 05-14-20 | REVISED NOTES | |
| 11-07-19 | RENAMED & REVISED REFERENCES | |
| 11-16-17 | RE-DRAWN FROM STD. DWG. GR-10 & ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

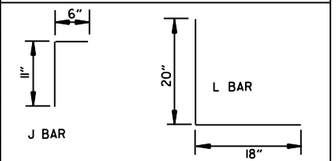
STANDARD DRAWING GR-12




PLAN VIEW

## BAR LIST

| BAR | NO. | SIZE | LENGTH | BAR BENDING DIAGRAM |
|---|---|---|---|---|
| H | 2 | #4 | • | |
| I | • | #4 | • | |
| J | • | #4 | 1'-5" | |
| L | • | #4 | 3'-2" | |
| M | • | #4 | 1'-8" | |




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

### GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

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, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

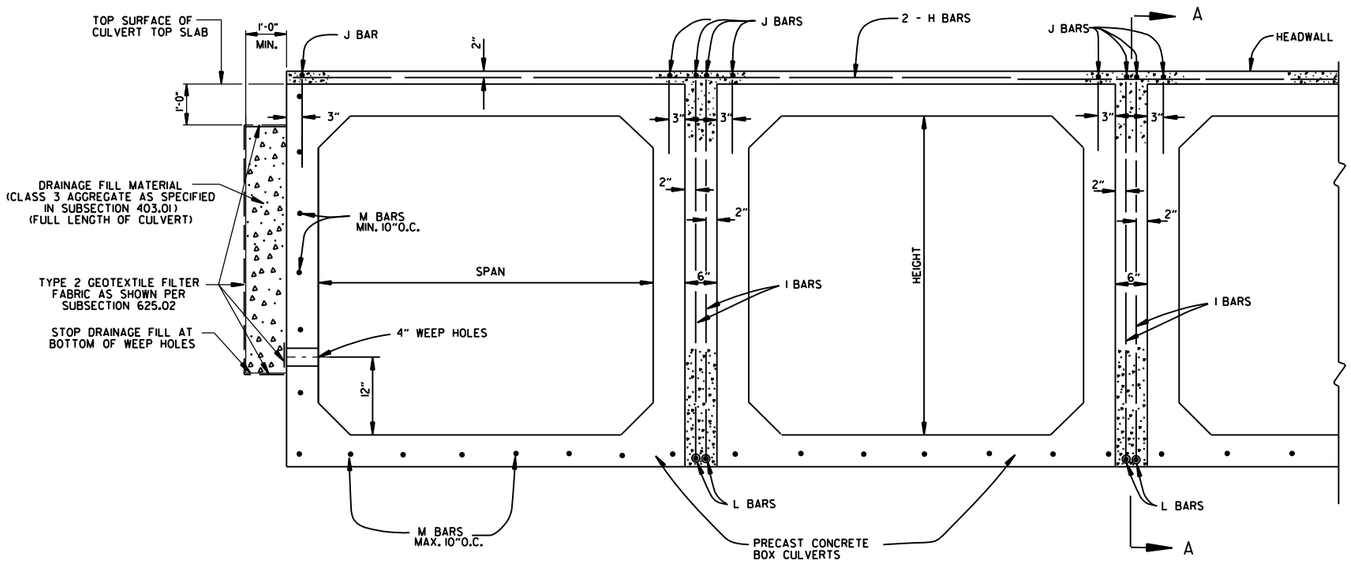
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

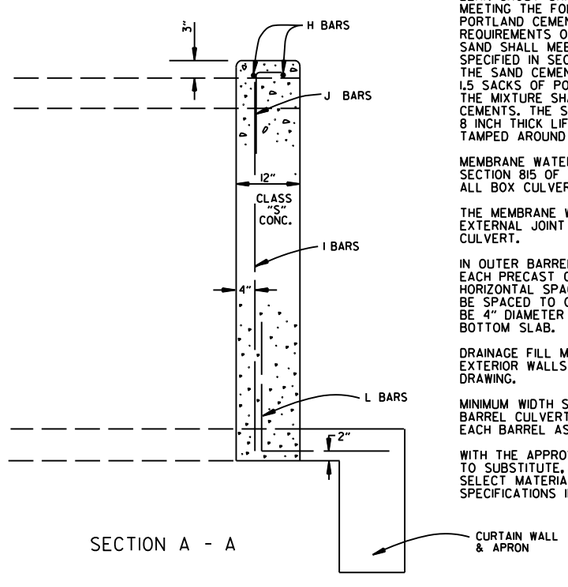
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.




END VIEW




SECTION A - A

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 1-28-15 | REVISED GEOTEXTILE FABRIC PLACEMENT | |
| 12-15-11 | ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL | |
| 10-15-09 | ADDED GENERAL NOTE | |
| 11-10-05 | REVISED SPACING OF "M" BARS | |
| 4-10-03 | REVISED GENERAL NOTES | |
| 10-18-96 | CORRECTED AASHTO REF. | |
| 10-1-92 | ADDED NOTE FOR MEMBRANE WATERPROOFING | |
| 8-15-91 | ADDED NOTE FOR LEAN GROUT | |
| 11- 8-90 | REVISED FOR 1991 SPECS | |
| 11-30-89 | ISSUED; JABE | |

ARKANSAS STATE HIGHWAY COMMISSION

# PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

## REINFORCED CONCRETE ARCH PIPE DIMENSIONS

| EQUIV. DIA. | SPAN | | RISE | |
|---|---|---|---|---|
| | AASHTO M 206 | ARDOT NOMINAL | AASHTO M 206 | ARDOT NOMINAL |
| INCHES | INCHES | | | |
| 15 | 18 | 18 | 11 | 11 |
| 18 | 22 | 22 | 13½ | 14 |
| 21 | 26 | 26 | 15½ | 16 |
| 24 | 28½ | 29 | 18 | 18 |
| 30 | 36¼ | 36 | 22½ | 23 |
| 36 | 43⅜ | 44 | 26⅝ | 27 |
| 42 | 51⅛ | 51 | 31⅝ | 31 |
| 48 | 58½ | 59 | 36 | 36 |
| 54 | 65 | 65 | 40 | 40 |
| 60 | 73 | 73 | 45 | 45 |
| 72 | 88 | 88 | 54 | 54 |
| 84 | 102 | 102 | 62 | 62 |
| 90 | 115 | 115 | 72 | 72 |
| 96 | 122 | 122 | 77½ | 77 |
| 108 | 138 | 138 | 87⅛ | 87 |
| 120 | 154 | 154 | 96⅜ | 97 |
| 132 | 168¾ | 169 | 106½ | 107 |

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

## REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

| EQUIV. DIA. | AASHTO M 207 | |
|---|---|---|
| | SPAN | RISE |
| INCHES | INCHES | |
| 18 | 23 | 14 |
| 24 | 30 | 19 |
| 27 | 34 | 22 |
| 30 | 38 | 24 |
| 33 | 42 | 27 |
| 36 | 45 | 29 |
| 39 | 49 | 32 |
| 42 | 53 | 34 |
| 48 | 60 | 38 |
| 54 | 68 | 43 |
| 60 | 76 | 48 |
| 66 | 83 | 53 |
| 72 | 91 | 58 |
| 78 | 98 | 63 |
| 84 | 106 | 68 |

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

## 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. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

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

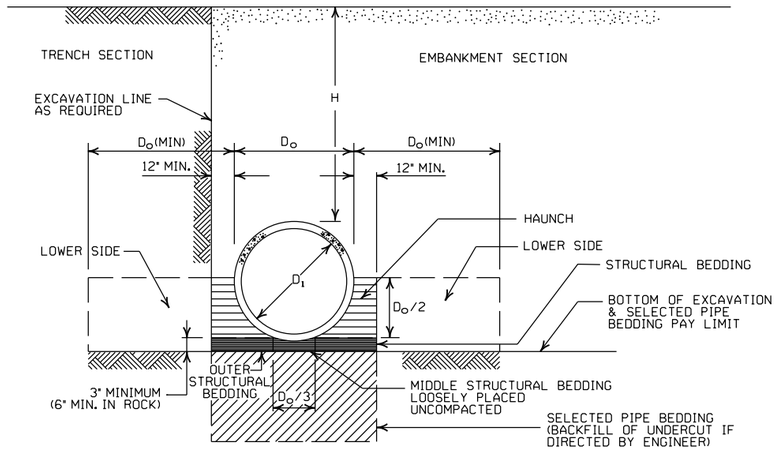
## - LEGEND -

$D_1$ = NORMAL INSIDE DIAMETER OF PIPE
$D_o$ = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

| INSTALLATION TYPE | MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING |
|---|---|
| TYPE 1 | AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7) |
| TYPE 2 | SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL* |
| TYPE 3** | AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL |

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.




## EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

## GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. 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.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

| | CLASS OF PIPE | | | |
|---|---|---|---|---|
| | CLASS III | | CLASS IV | CLASS V |
| INSTALLATION TYPE | TYPE 1 OR 2 | TYPE 3 | ALL | ALL |
| PIPE ID (IN.) | FEET | | | |
| 12-15 | 2 | 2.5 | 2 | 1 |
| 18-24 | 2.5 | 3 | 2 | 1 |
| 27-33 | 3 | 4 | 2 | 1 |
| 36-42 | 3.5 | 5 | 2 | 1 |
| 48 | 4.5 | 5.5 | 2 | 1 |
| 54-60 | 5 | 7 | 2 | 1 |
| 66-78 | 6 | 8 | 2 | 1 |
| 84-108 | 7.5 | 8 | 2 | 1 |

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

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

| INSTALLATION TYPE | CLASS OF PIPE | | |
|---|---|---|---|
| | CLASS III | CLASS IV | CLASS V |
| | FEET | | |
| TYPE 1 | 21 | 32 | 50 |
| TYPE 2 | 16 | 25 | 39 |
| TYPE 3 | 12 | 20 | 30 |

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

## MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

| INSTALLATION TYPE | CLASS OF PIPE | |
|---|---|---|
| | CLASS III | CLASS IV |
| | FEET | |
| TYPE 2 OR TYPE 3 | 2.5 | 1.5 |

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

## MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

| INSTALLATION TYPE | CLASS OF PIPE | |
|---|---|---|
| | CLASS III | CLASS IV |
| | FEET | |
| TYPE 2 | 13 | 21 |
| TYPE 3 | 10 | 16 |

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECIFICATIONS | |
| 5-18-00 | REVISED TYPE 3 BEDDING & ADDED NOTE | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

## CORRUGATED STEEL PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) | | | | |
|---|---|---|---|---|---|---|
| | | METAL THICKNESS (INCHES) | | | | |
| | | 0.064 | 0.079 | 0.109 | 0.138 | 0.168 |
| 2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | | | |
| 12 | 1 | 84 | 91 | | | |
| 15 | 1 | 67 | 73 | | | |
| 18 | 1 | 56 | 61 | | | |
| 24 | 1 | 42 | 46 | 59 | | |
| 30 | 2 | 34 | 36 | 47 | | |
| 36 | 2 | | 30 | 39 | 41 | |
| 42 | 2 | | 43 | 67 | 70 | 73 |
| 48 | 2 | | 37 | 58 | 61 | 64 |
| ② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM | | | | | | |
| 36 | 1 | 48 | 60 | 88 | 111 | 118 |
| 42 | 1 | 41 | 51 | 72 | 90 | 102 |
| 48 | 1 | 36 | 45 | 64 | 77 | 85 |
| 54 | 2 | 32 | 40 | 59 | 71 | 79 |
| 60 | 2 | 29 | 36 | 53 | 64 | 71 |
| 66 | 2 | 26 | 33 | 47 | 58 | 64 |
| 72 | 2 | 24 | 30 | 44 | 53 | 59 |
| 78 | 2 | | 28 | 41 | 49 | 54 |
| 84 | 2 | | 26 | 38 | 45 | 51 |
| 90 | 2 | | 24 | 35 | 43 | 45 |
| 96 | 2 | | 22 | 33 | 40 | 44 |
| 102 | 2 | | | 31 | 38 | 42 |
| 108 | 2 | | | 30 | 35 | 39 |
| 114 | 2 | | | 28 | 34 | 37 |
| 120 | 2 | | | 27 | 32 | 35 |

## CORRUGATED ALUMINUM PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) | | | | |
|---|---|---|---|---|---|---|
| | | METAL THICKNESS IN INCHES | | | | |
| | | 0.060 | 0.075 | 0.105 | 0.135 | 0.164 |
| | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | | | |
| 12 | 1 | 45 | 45 | | | |
| 18 | 2 | 30 | 30 | 52 | | |
| 24 | 2 | 22 | 22 | 39 | 41 | |
| 30 | 2 | | 18 | 31 | 32 | 34 |
| 36 | 2.5 | | 15 | 26 | 27 | 28 |
| 42 | 2 | | | 43 | 43 | 44 |
| 48 | 2 | | | 40 | 41 | 43 |
| 54 | 2 | | | 35 | 37 | 38 |
| 60 | 2 | | | | 33 | 34 |
| 66 | 2 | | | | | 31 |
| 72 | 2 | | | | | 29 |

## 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. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

| INSTALLATION TYPE | MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 1 | AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) |
| TYPE 2 | SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③ |

③ SM-3 WILL NOT BE ALLOWED.

## EQUIVALENT METAL THICKNESSES AND GAUGES

| METAL THICKNESS IN INCHES | | | GAUGE NUMBER |
|---|---|---|---|
| STEEL | | | |
| ZINC COATED | UNCOATED | ALUMINUM | |
| 0.064 | 0.0598 | 0.060 | 16 |
| 0.079 | 0.0747 | 0.075 | 14 |
| 0.109 | 0.1046 | 0.105 | 12 |
| 0.138 | 0.1345 | 0.135 | 10 |
| 0.168 | 0.1644 | 0.164 | 8 |

## CORRUGATED METAL PIPE ARCHES

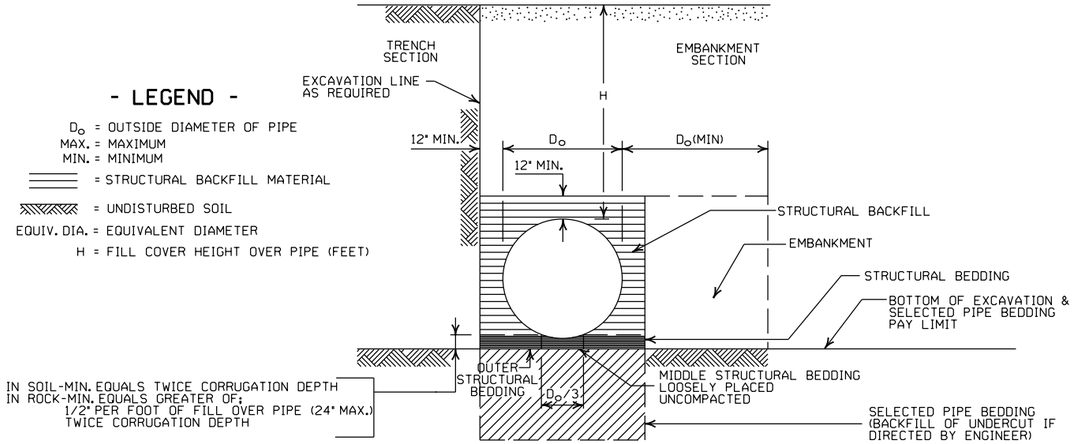
| EQUIV. DIA. (INCHES) | PIPE DIMENSION SPAN X RISE (INCHES) | MINUMUM CORNER RADIUS (INCHES) | STEEL | | | ALUMINUM | | |
|---|---|---|---|---|---|---|---|---|
| | | | MIN. THICKNESS REQUIRED INCHES | ① MIN. HEIGHT OF FILL, "H" (FT.) | MAX. HEIGHT OF FILL, "H" (FT.) | MIN. THICKNESS REQUIRED INCHES | ① MIN. HEIGHT OF FILL, "H" (FT.) | MAX. HEIGHT OF FILL, "H" (FT.) |
| | | | | INSTALLATION | INSTALLATION | | INSTALLATION | INSTALLATION |
| | | | | TYPE 1 | TYPE 1 | | TYPE 1 | TYPE 1 |
| | | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | |
| 15 | 17x13 | 3 | 0.064 | 2 | 15 | 0.060 | 2 | 15 |
| 18 | 21x15 | 3 | 0.064 | 2 | 15 | 0.060 | 2 | 15 |
| 21 | 24x18 | 3 | 0.064 | 2.25 | 15 | 0.060 | 2.25 | 15 |
| 24 | 28x20 | 3 | 0.064 | 2.5 | 15 | 0.075 | 2.5 | 15 |
| 30 | 35x24 | 3 | 0.079 | 3 | 12 | 0.075 | 3 | 12 |
| 36 | 42x29 | 3½ | 0.079 | 3 | 12 | 0.105 | 3 | 12 |
| 42 | 49x33 | 4 | 0.079 | 3 | 12 | 0.105 | 3 | 12 |
| 48 | 57x38 | 5 | 0.109 | 3 | 13 | 0.135 | 3 | 13 |
| 54 | 64x43 | 6 | 0.109 | 3 | 14 | 0.135 | 3 | 14 |
| 60 | 71x47 | 7 | 0.138 | 3 | 15 | 0.164 | 3 | 15 |
| 66 | 77x52 | 8 | 0.168 | 3 | 15 | | | |
| 72 | 83x57 | 9 | 0.168 | 3 | 15 | | | |
| | | | ② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | | |
| | | | | INSTALLATION | INSTALLATION | | | |
| | | | | TYPE 2 / TYPE 1 | TYPE 2 / TYPE 1 | | | |
| 36 | 40x31 | 5 | 0.079 | 3 / 2 | 12 / 15 | | | |
| 42 | 46x36 | 6 | 0.079 | 3 / 2 | 13 / 15 | | | |
| 48 | 53x41 | 7 | 0.079 | 3 / 2 | 13 / 15 | | | |
| 54 | 60x46 | 8 | 0.079 | 3 / 2 | 13 / 15 | | | |
| 60 | 66x51 | 9 | 0.079 | 3 / 2 | 13 / 15 | | | |
| 66 | 73x55 | 12 | 0.079 | 3 / 2 | 15 / 15 | | | |
| 72 | 81x59 | 14 | 0.079 | 3 / 2 | 15 / 15 | | | |
| 78 | 87x63 | 14 | 0.079 | 3 / 2 | 15 / 15 | | | |
| 84 | 95x67 | 16 | 0.109 | 3 / 2 | 15 / 15 | | | |
| 90 | 103x71 | 16 | 0.109 | 3 / 2 | 15 / 15 | | | |
| 96 | 112x75 | 18 | 0.109 | 3 / 2 | 15 / 15 | | | |
| 102 | 117x79 | 18 | 0.109 | 3 / 2 | 15 / 15 | | | |
| 108 | 128x83 | 18 | 0.138 | 3 / 2 | 15 / 15 | | | |

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

$D_o$ = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)




## EMBANKMENT AND TRENCH INSTALLATIONS

1. 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.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

## GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. 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.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1, | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECS | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

| INSTALLATION TYPE | •• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 2 | •SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) |

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

## MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

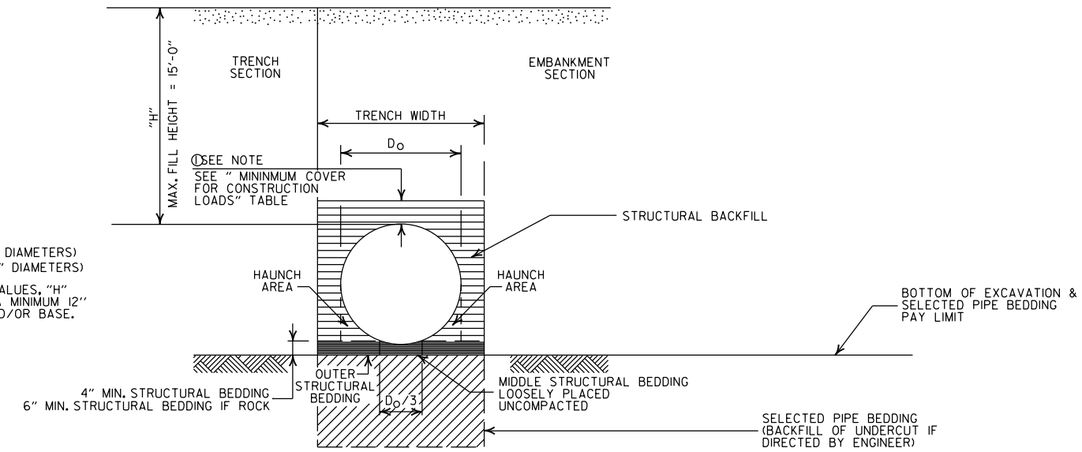
| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---|---|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |
| 42" | 3'-6" |
| 48" | 4'-0" |

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

| PIPE DIAMETER | TRENCH WIDTH (FEET) "H" < 10'-0" | TRENCH WIDTH (FEET) "H" >OR= 10'-0" |
|---|---|---|
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |
| 42" | 7'-0" | 10'-6" |
| 48" | 8'-0" | 12'-0" |

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. 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.

## MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
|---|---|---|---|---|
| 36" OR LESS | 2'-0" | 2'-6" | 3'-0" | 3'-0" |
| 42" OR GREATER | 3'-0" | 3'-0" | 3'-6" | 4'-0" |

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

## GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## - LEGEND -

H = FILL HEIGHT (FT.)
D = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED GENERAL NOTES & MINIMUM COVER NOTE | |
| 11-17-10 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

| INSTALLATION TYPE | •• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 2 | •SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) |

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

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

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---|---|---|
| | "H" < 10'-0" | "H" >OR= 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |

## MULTIPLE INSTALLATION OF PVC PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---|---|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |

## MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

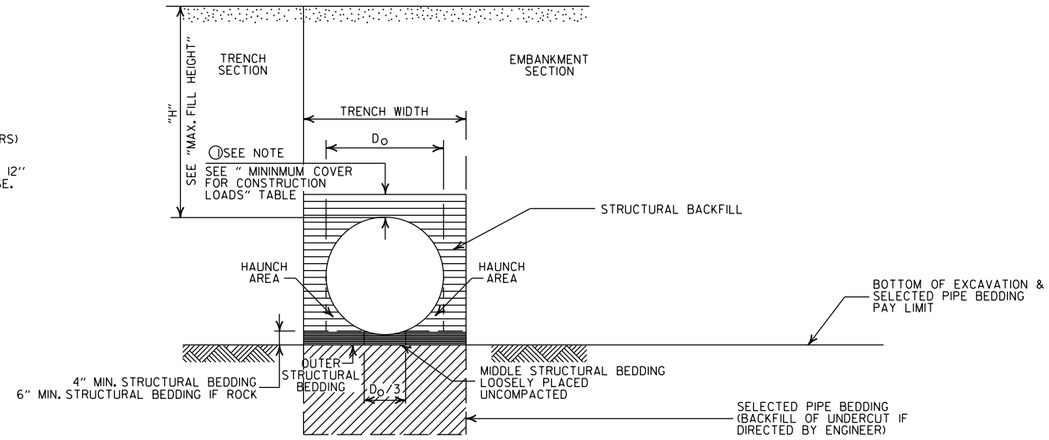
| PIPE DIAMETER | "H" |
|---|---|
| 18" | 45'-0" |
| 24" | 45'-0" |
| 30" | 40'-0" |
| 36" | 40'-0" |

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

## MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|---|---|---|---|---|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
| 18" THRU 36" | 2'-0" | 2'-6" | 3'-0" | 3'-0" |

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

## GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## - LEGEND -

H = FILL HEIGHT (FT.)
$D_O$ = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL | |
| 11-17-10 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

| INSTALLATION TYPE | **MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 1 | AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) |
| TYPE 2 | *SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) OR TYPE 1 INSTALLATION MATERIAL |

*SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

## MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---|---|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |
| 42" | 3'-6" |
| 48" | 4'-0" |
| 60" | 5'-0" |

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

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---|---|---|
| | "H" < 10'-0" | "H" >OR= 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |
| 42" | 7'-0" | 10'-6" |
| 48" | 8'-0" | 12'-0" |
| 60" | 10'-0" | 15'-0" |

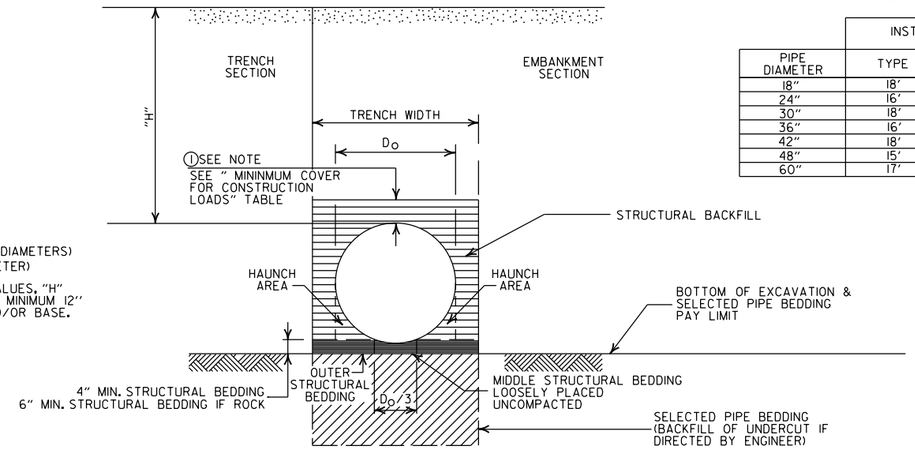
## MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|---|---|---|---|---|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-150.0 (KIPS) |
| 36" OR LESS | 2'-0" | 2'-6" | 3'-0" | 3'-0" |
| 42" OR GREATER | 3'-0" | 3'-0" | 3'-6" | 4'-0" |

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

①NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.




## MAXIMUM HEIGHT OF FILL "H"

| PIPE DIAMETER | INSTALLATION TYPE | |
|---|---|---|
| | TYPE 1 | TYPE 2 |
| 18" | 18' | 14' |
| 24" | 16' | 12' |
| 30" | 18' | 14' |
| 36" | 16' | 12' |
| 42" | 18' | 13' |
| 48" | 15' | 11' |
| 60" | 17' | 12' |

## EMBANKMENT AND TRENCH INSTALLATIONS

1. 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.

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

## GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. 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.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## - LEGEND -

H = FILL HEIGHT (FT.)
$D_O$ = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

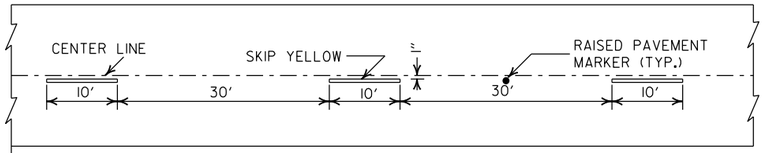
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| 02-27-20 | REVISED | |
| 11-07-19 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

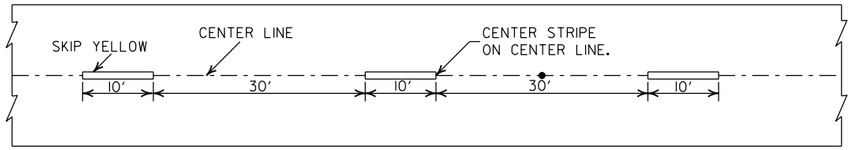
# PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

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

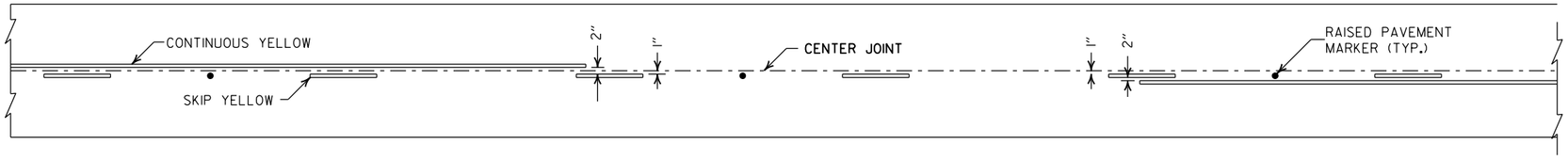



CONCRETE PAVEMENT

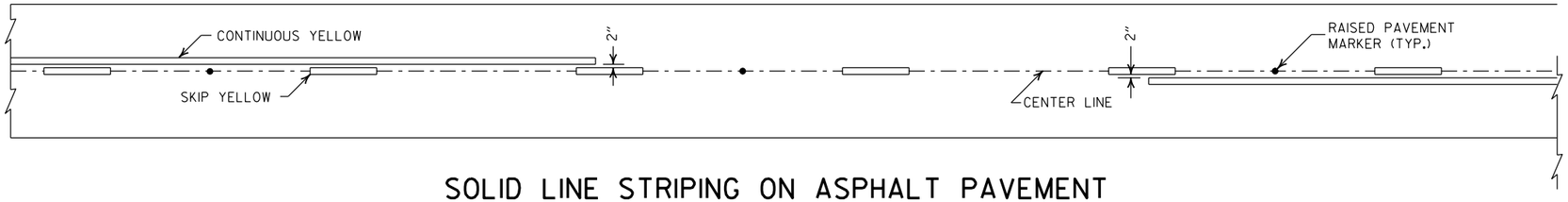



ASPHALT PAVEMENT

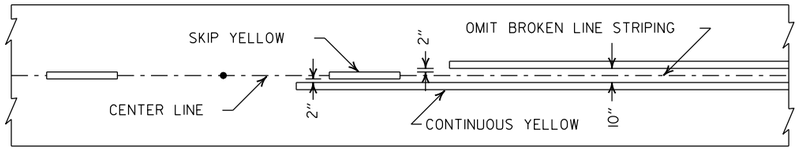
## BROKEN LINE STRIPING



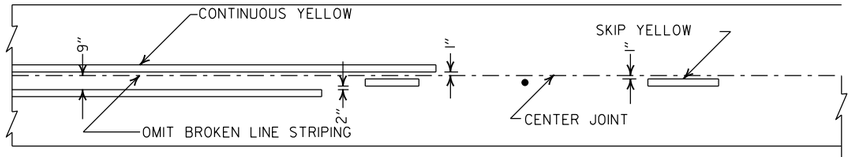

## SOLID LINE STRIPING ON CONCRETE PAVEMENT




## SOLID LINE STRIPING ON ASPHALT PAVEMENT

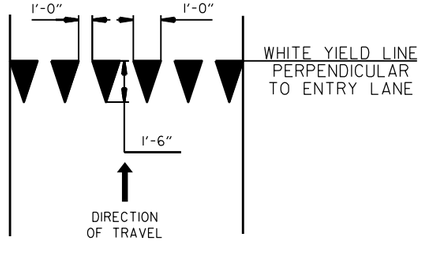



ASPHALT PAVEMENT

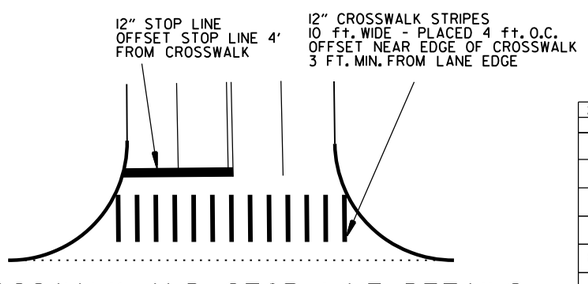



CONCRETE PAVEMENT

## STRIPING AT ADJACENT NO PASSING LANES

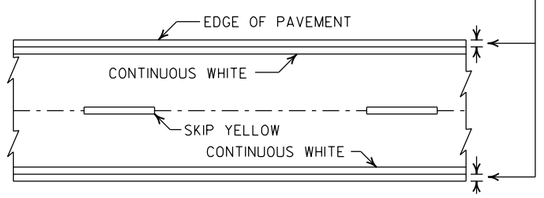



## YIELD LINE DETAIL




## CROSSWALK AND STOP LINE DETAILS

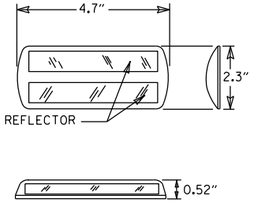
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT




## PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW




NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

## DETAIL OF STANDARD RAISED PAVEMENT MARKERS

| DATE | REVISION | FILMED |
|---|---|---|
| 2-27-20 | REVISED STOP LINE DETAILS | |
| 6-1-17 | ADDED YIELD LINE DETAIL | |
| 5-12-16 | REVISED LINE WIDTHS, SPACING, & NOTES | |
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 11-17-10 | REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS | |
| 11-18-04 | REVISED NOTE 2 & GENERAL NOTES | |
| 8-22-02 | ADDED CROSSWALK & STOPBAR DTLS. | |
| 7-02-98 | ADDED DETAILS OF STD. RAISED PAV'T. MARKERS | |
| 4-26-96 | REV. NOTES 3&4; ADDED R.P.M. | |
| 9-30-80 | DRAWN | 1-9-30-80 |

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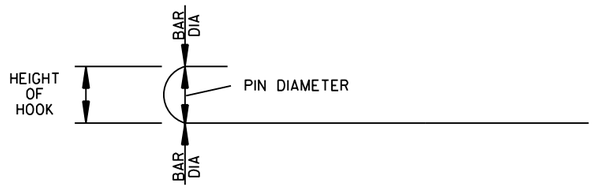
# PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

| BAR SIZE | PIN DIAMETER | HOOK EXTENSION "K" |
|---|---|---|
| 3 | 2 1/4" | 4" |
| 4 | 3 " | 4 1/2" |
| 5 | 3 3/4" | 5" |
| 6 | 4 1/2" | 6" |
| 7 | 5 1/4" | 7" |
| 8 | 6" | 8" |

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.




NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

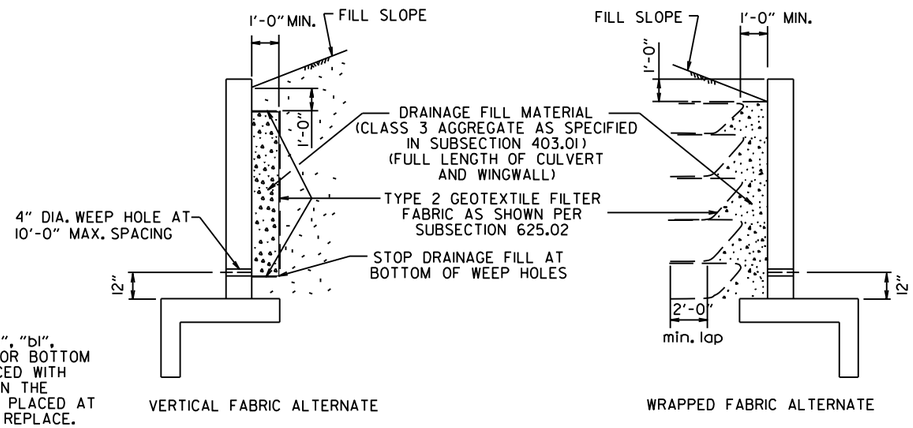
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

| BAR SIZE: "b", "b1", "b2" OR "b3" | LENGTH OF HOOKED BAR | LENGTH OF STRAIGHT BAR |
|---|---|---|
| #4 | L + 1' - 0" | SEE "c" BAR LENGTH |
| #5 | L + 1' - 2" | SEE "c" BAR LENGTH |
| #6 | L + 1' - 4" | SEE "c" BAR LENGTH |
| #7 | L + 1' - 8" | SEE "c" BAR LENGTH |
| #8 | L + 1' - 10" | SEE "c" BAR LENGTH |
| #9 | L + 2' - 6" | SEE "c" BAR LENGTH |

L = "OW" - 3 INCHES




WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

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

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

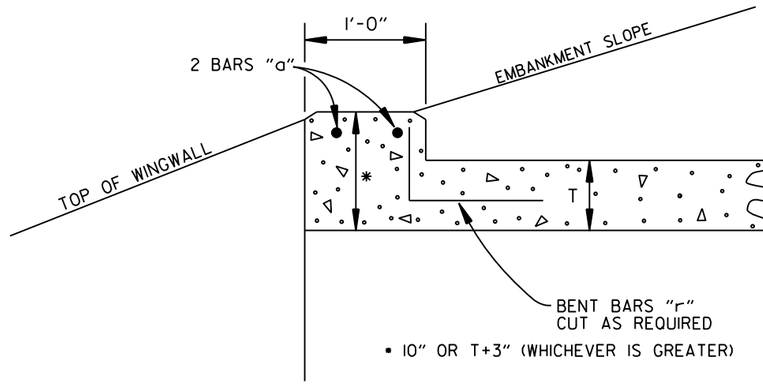
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

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




NOTE: FOR 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.

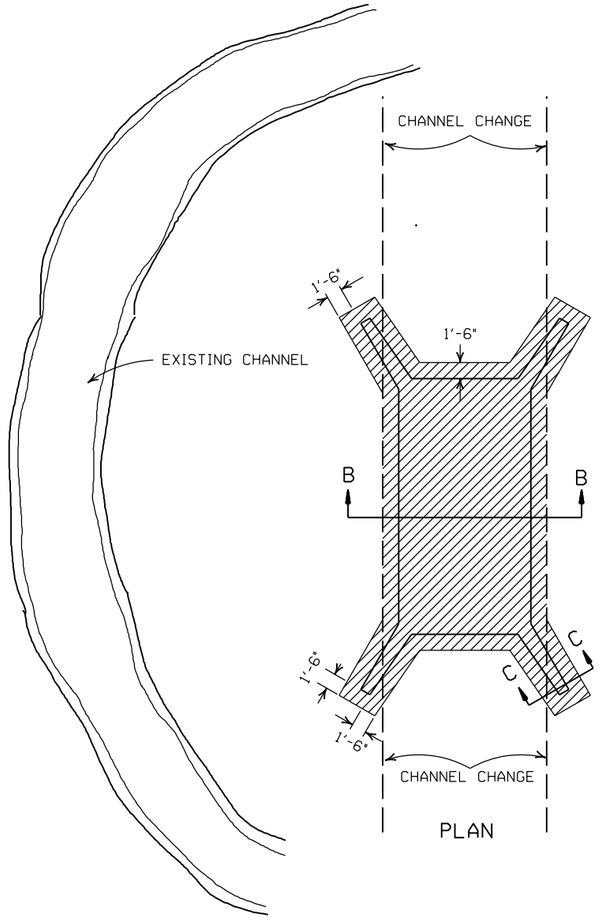
R.C. BOX CULVERT HEADWALL MODIFICATIONS

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 7/26/12 | REV. DRAINAGE FILL MATERIAL & DETAIL | |
| 12/15/11 | REQUIRE WEEP HOLES IN BOX CULVERT WALLS | |
| 5-25-06 | REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM | |
| 11-16-01 | ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES | |
| 10-18-96 | REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM | |
| 10-12-95 | MOVED SOLID SODDING DETAIL TO RCB-2 | |
| 6-2-94 | ADDED SOLID SODDING PLAN DETAIL | |
| 8-5-93 | REVISED PIN DIAMETER TO SPECS. | |
| 8-15-91 | DRAWN AND ISSUED | |

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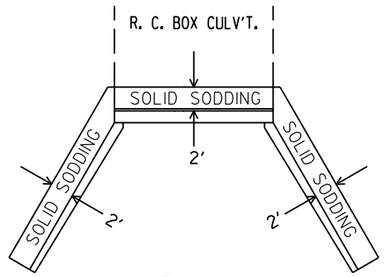
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1




PLAN

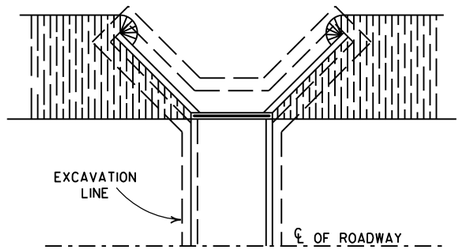
## SOLID SODDING



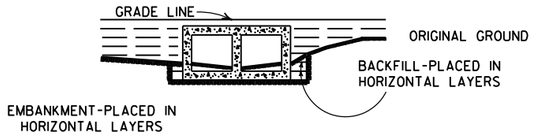

PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

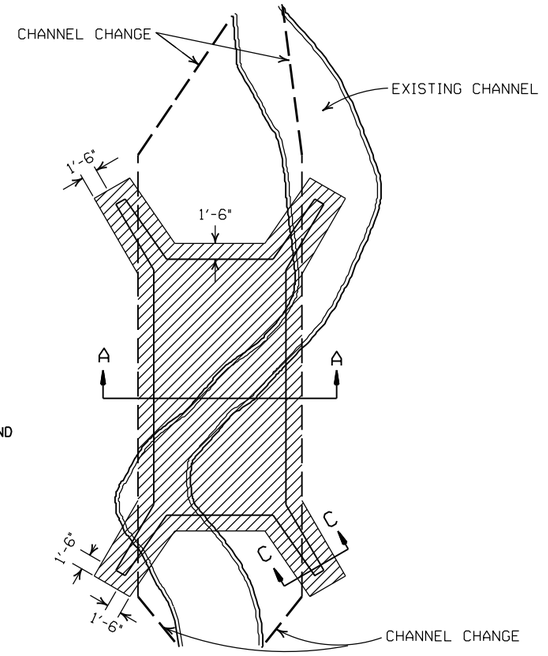



PLAN

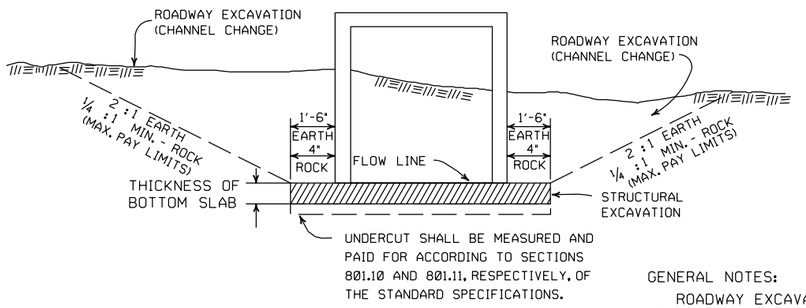



LONGITUDINAL SECTION

# BACKFILL DETAILS FOR BOX CULVERT

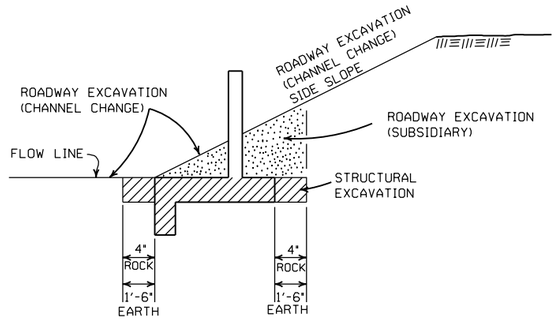



PLAN

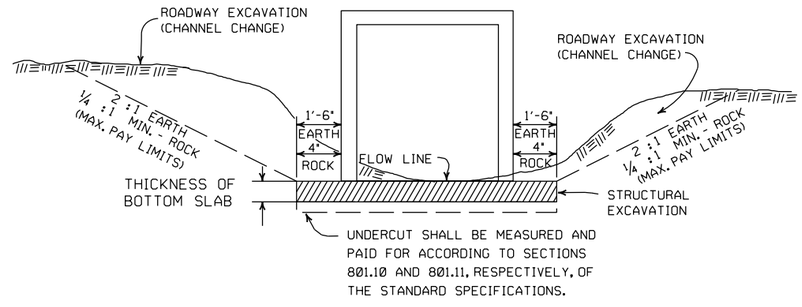



SECTION B-B

## DETAILS FOR NEW CHANNELS




SECTION C-C




SECTION A-A

## DETAILS THROUGH EXISTING CHANNELS

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 TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

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

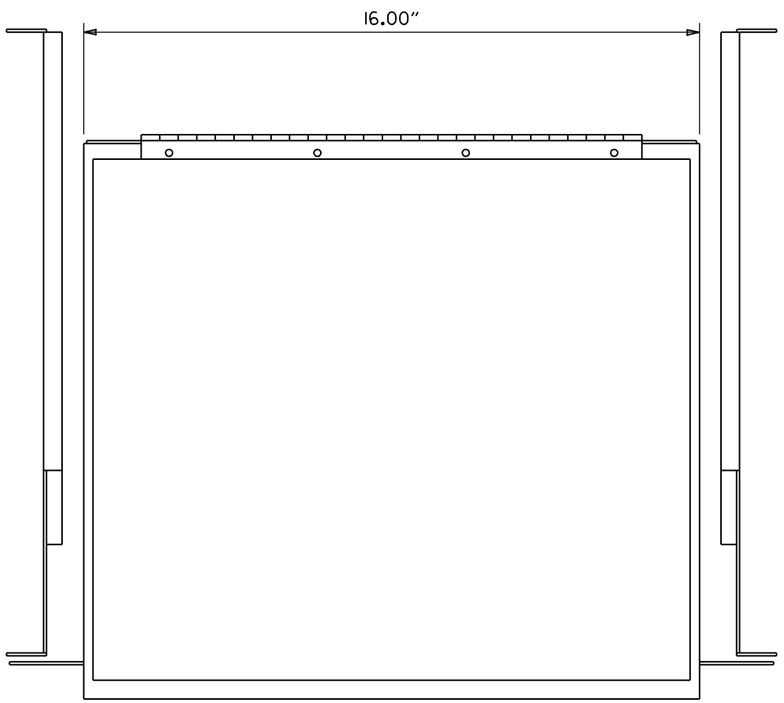
| DATE | REVISION | FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 11-20-03 | REVISED SECTION A-A NOTE | |
| 8-22-02 | REVISED SECTION B-B NOTE | |
| 10-12-95 | COMBINED 1891B AND 1888A | |
| 1-4-83 | REVISED GENERAL NOTES | 674-1-4-83 |
| | AND ADDED MAXIMUM PAY | |
| | LIMIT NOTES. | |
| 2-2-76 | EXCAV. PAY LIMITS | 917-2-2-76 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |

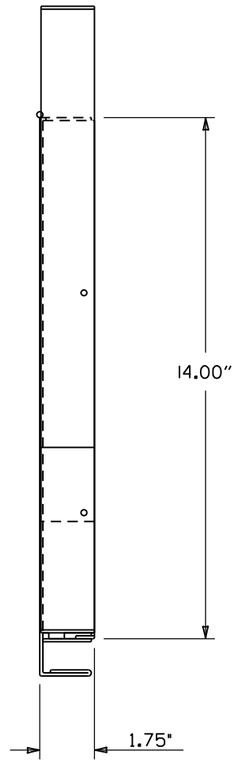
ARKANSAS STATE HIGHWAY COMMISSION

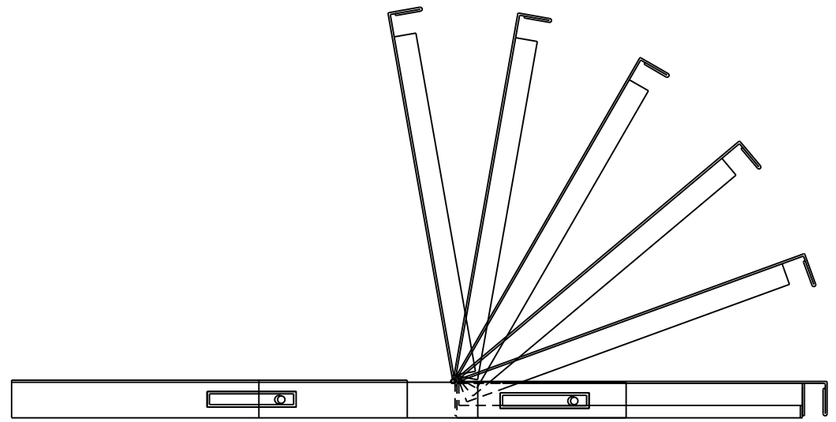
# EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2

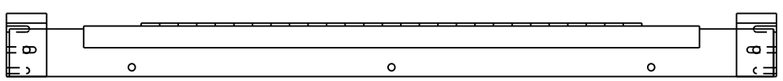
## DRAWER PLAN VIEW



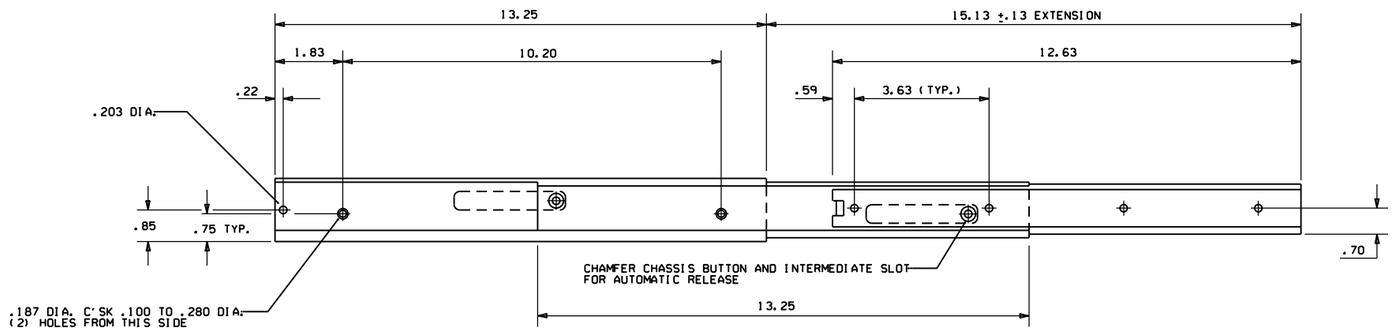



NOTES:
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW




RIGHT SIDE ASSEMBLY

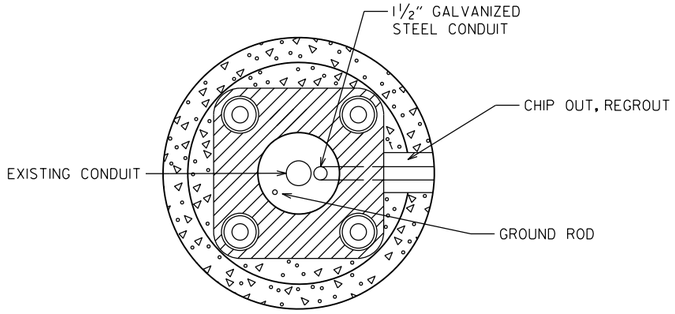
| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| | | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 6-15-05 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

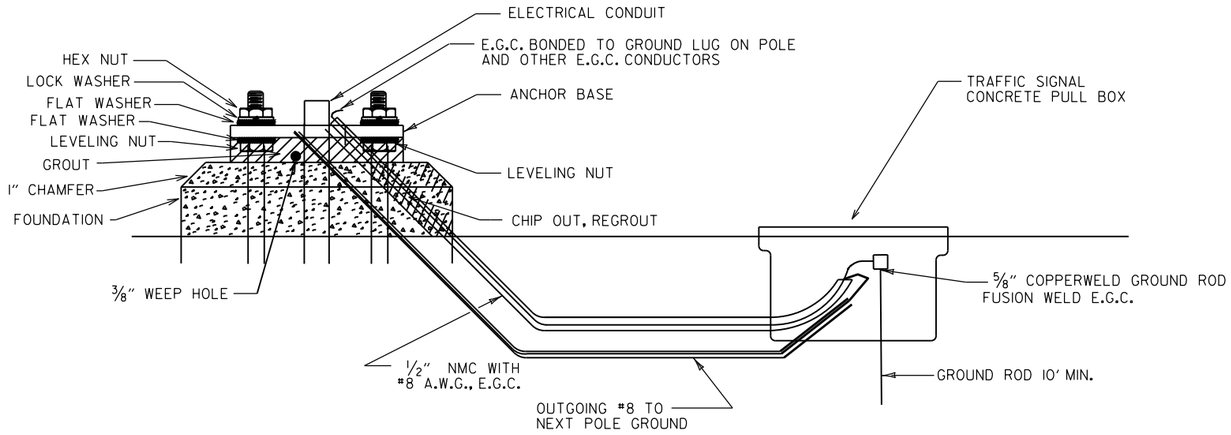
# CONTROLLER CABINET UTILITY DRAWER

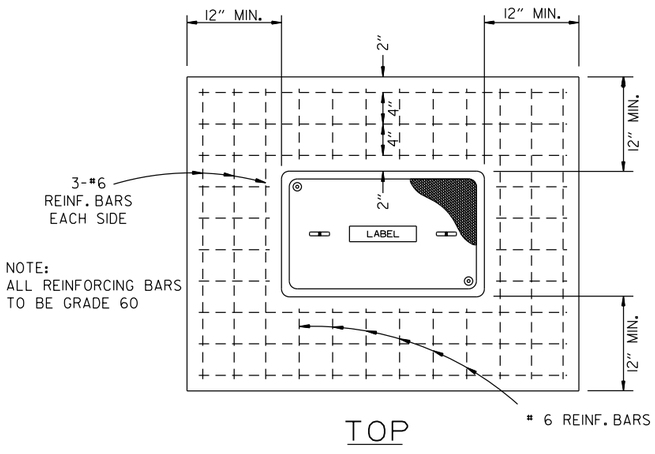
STANDARD DRAWING SD-5

## CONDUIT ENTRY TO EXISTING POLE BASE

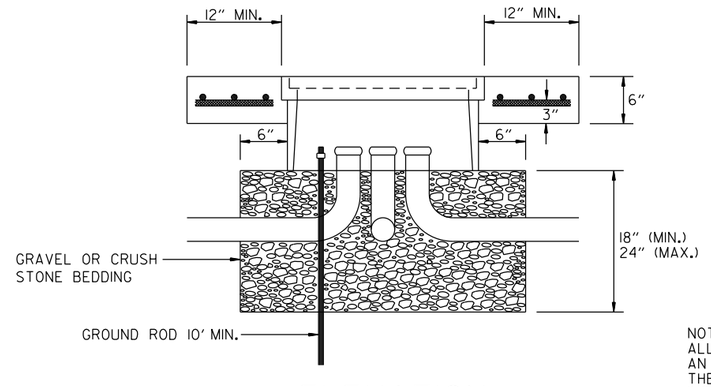



## ANCHOR BASE



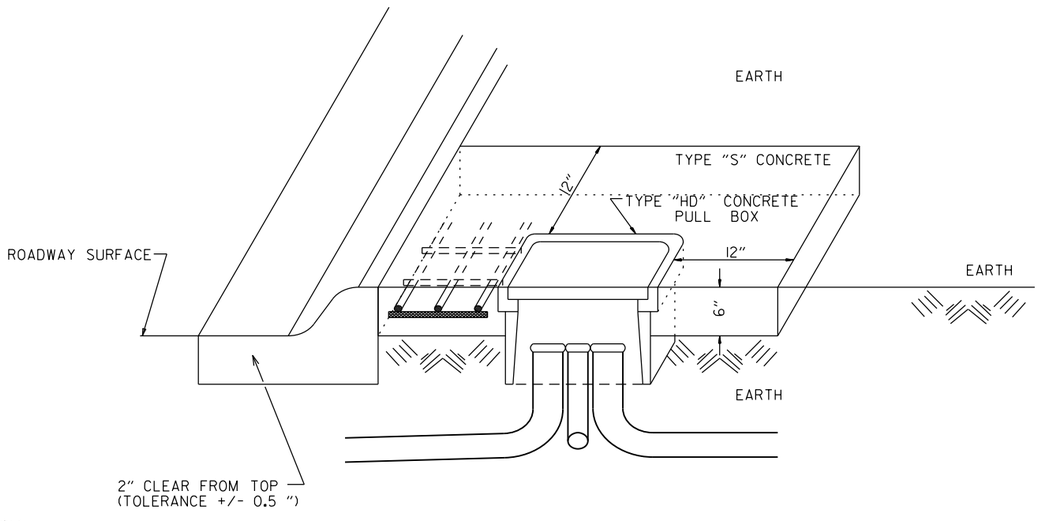




TOP



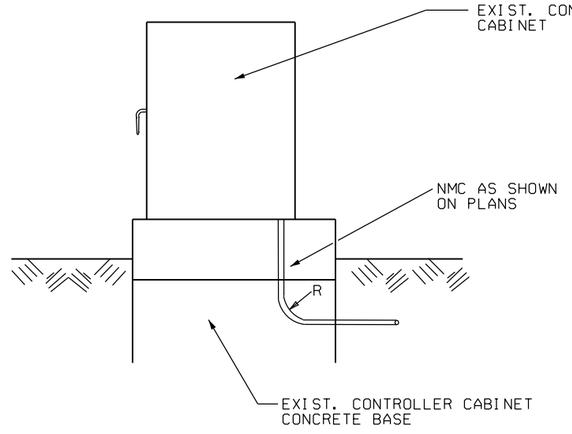

ELEVATION

## TYPE "HD" CONCRETE PULL BOX DETAIL




NOTE:
ALL TYPE 1 HD, TYPE 2 HD, AND TYPE 3 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 6" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

## CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



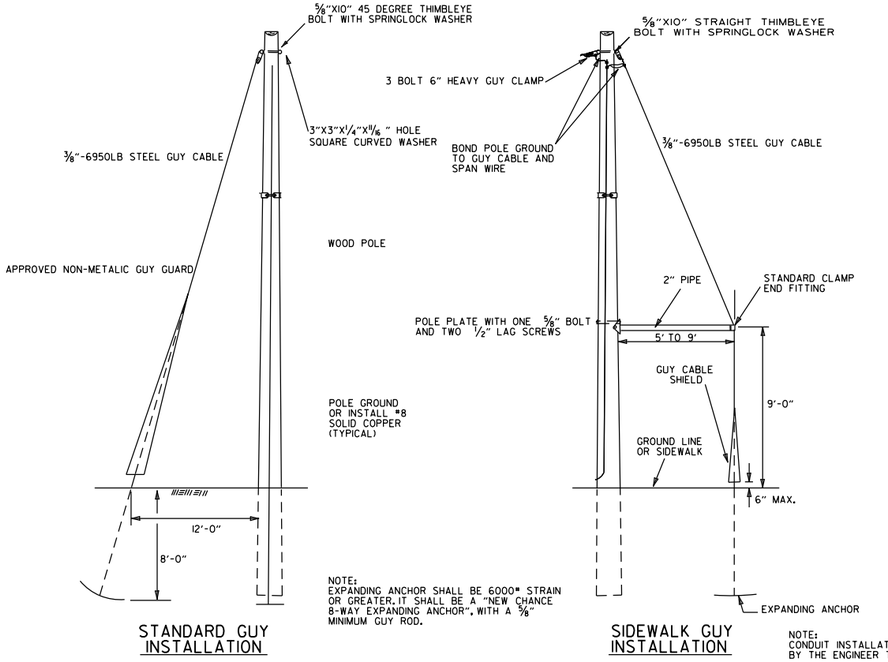

NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

| DATE | REVISION | FILMED |
|---|---|---|
| 02-13-24 | REVISED NOTES AND TYPE "HD" CONCRETE PULL BOX DETAILS | |
| 11-16-17 | REVISED NOTES | |
| 09-02-15 | REVISED PULL BOX DEPTH | |
| 09-12-13 | ISSUED AS STANDARD DRAWING | |
| 05-21-09 | REVISED GROUNDING | |
| 07-31-08 | ADDED & REVISED CONDUIT ENTRY | |
| 06-23-04 | REVISED CLEARANCE AT CURB ENTRY | |
| 01-04-02 | ADDED REINFORCING TO BOX APRON | |
| 07-02-01 | REVISED | |
| 12-27-99 | REVISED NOTES | |
| 11-18-98 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6

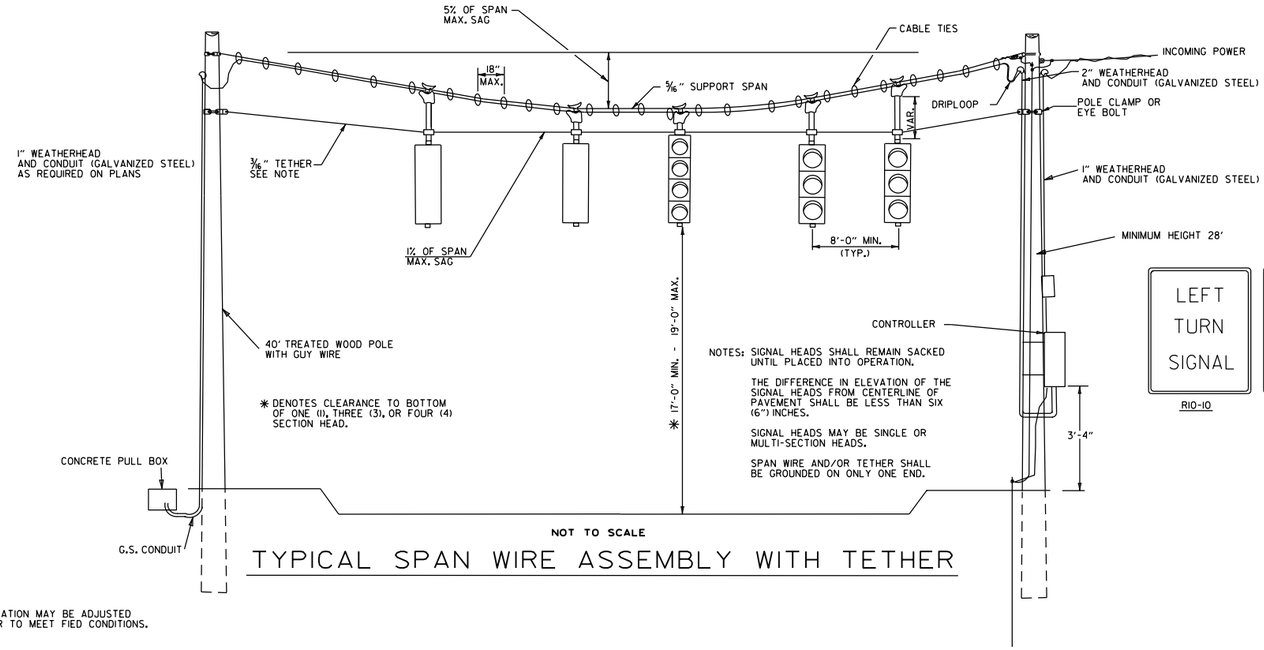



STANDARD GUY INSTALLATION

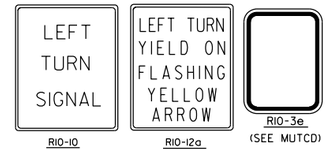



SIDEWALK GUY INSTALLATION

NOTE: CONDUIT INSTALLATION MAY BE ADJUSTED BY THE ENGINEER TO MEET FIED CONDITIONS.




TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

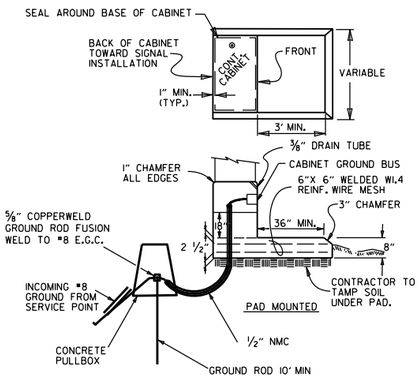



NOTES:
SPAN WIRE POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

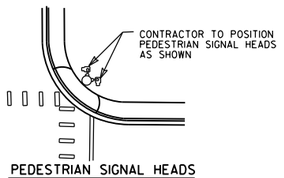
SPAN WIRE ASSEMBLIES WILL REQUIRE TETHER UNLESS OTHERWISE NOTED ON PLAN SHEETS.

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

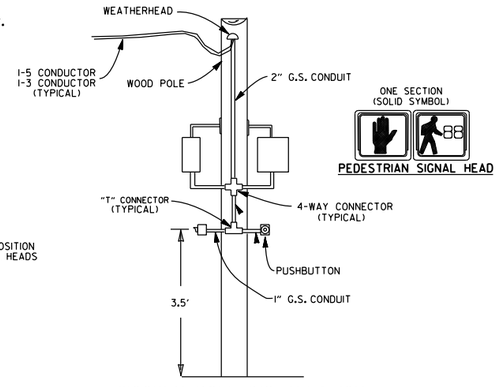
THE CONTROLLER POWER SUPPLY GROUND BUSS SHALL BE BONDED TO THE FOUNDATION GROUND ROD WITH A #8 A.W.G. SOLID COPPER WIRE. ON EXISTING FOUNDATIONS WITH NO GROUND ROD, CONTRACTOR SHALL INSTALL A 10' X 5/8" COPPERWELD GROUND ROD.




CONCRETE BASE MOUNTED CABINET DETAILS



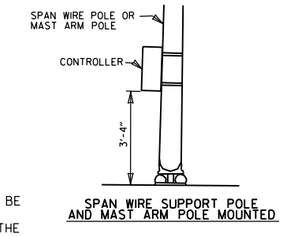

PEDESTRIAN SIGNAL HEADS



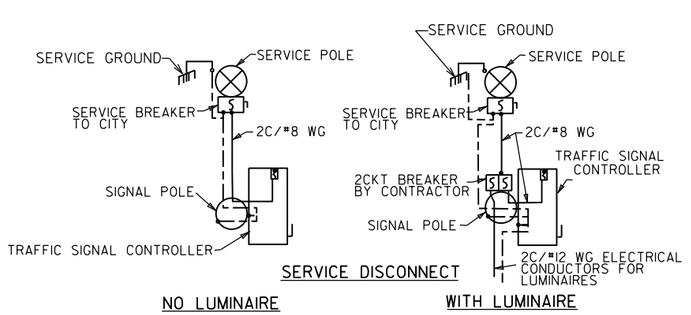

WOODEN POLE INSTALLATION OF PED HEADS




PEDESTRIAN SIGNAL HEAD




SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED




SERVICE DISCONNECT

NO LUMINAIRE WITH LUMINAIRE

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

NOTES:

EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SIGN (R10-12a) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)", TO BE USED AS A LEFT TURN INDICATION ONLY, SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

CABINET NOTE:

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

MINIMUM STRUCTURAL REQUIREMENTS:

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

CONSTRUCTION SPECIFICATIONS: STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH

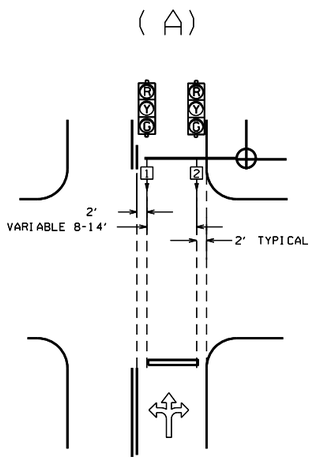
STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

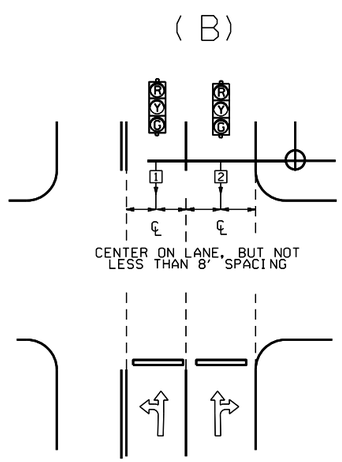
| DATE | REVISION | FILMED |
|---|---|---|
| 02-13-24 | REVISED SPECIAL SIGN TO R10-12a SIGN | |
| 11-16-17 | REVISED NOTES, ADDED SPAN WIRE SUPPORT POLE DETAIL, ADDED PEDESTRIAN SIGNAL HEAD DETAIL | |
| 02-27-14 | REVISED NOTES. | |
| 09-12-13 | ISSUED AS STANDARD DRAWING | |
| 07-21-11 | REVISED PEDESTRIAN SIGN & GROUNDING | |
| 04-17-08 | REVISED TO 2001 AASHTO STANDARDS | |
| 10-12-04 | REV. CABINET ORIENTATION & SIGNAL OPERATION | |
| 05-22-02 | REV. TYP. SPAN WIRE ASSEMBLY | |
| 12-27-99 | REVISED | |
| 11-18-98 | REVISION TO NOTES | |
| 11-21-95 | ISSUED | |

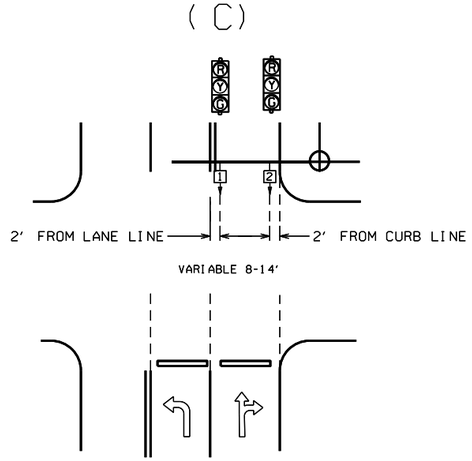
ARKANSAS STATE HIGHWAY COMMISSION

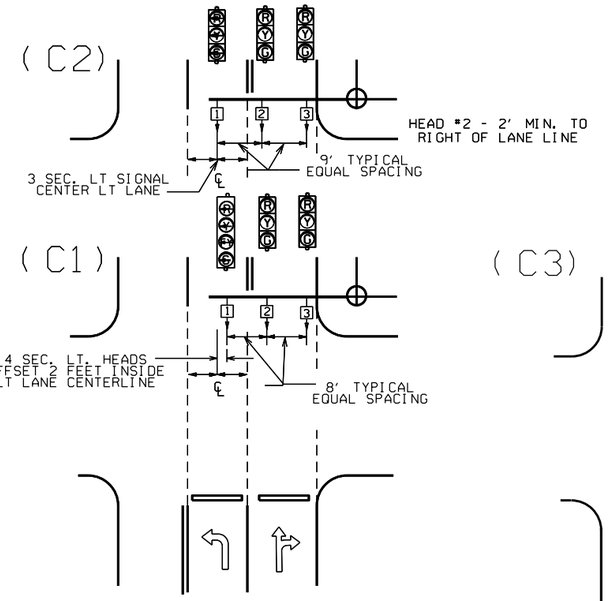
# SPAN WIRE ASSEMBLY WOOD POLE

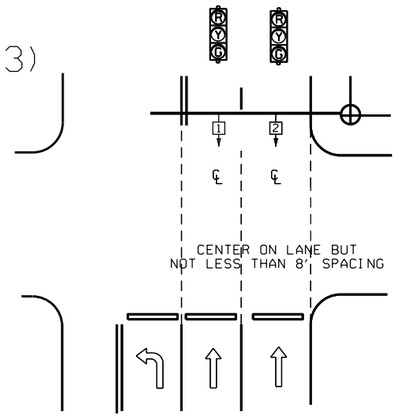
STANDARD DRAWING SD-7

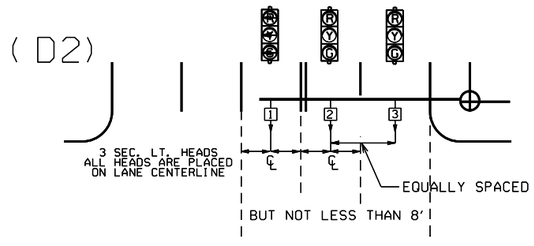


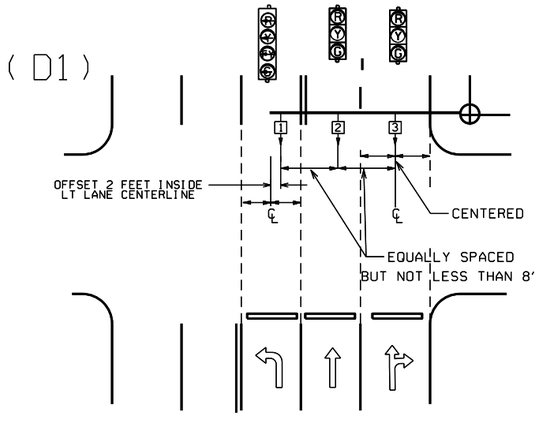



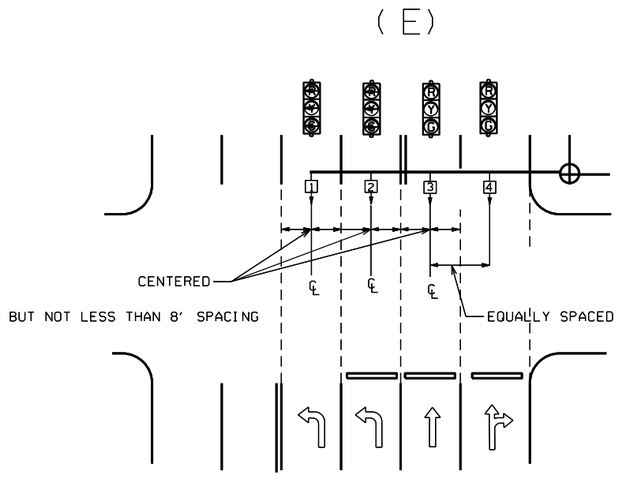




NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS.




℄ = CENTER OF LANE FROM APPROACH SIDE

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 POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

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

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

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.

| DATE | REVISION | DATE FILM |
|---|---|---|
| 12-8-16 | REVISED NOTE 6 | |
| 9-12-13 | ISSUED AS STANDARD DRAWING | |
| 3-11-10 | 2009 MUTCD | |
| 12-9-99 | ISSUED | |

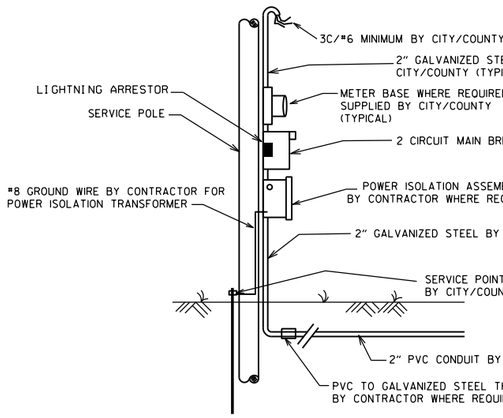
ARKANSAS STATE HIGHWAY COMMISSION

# SIGNAL HEAD PLACEMENT

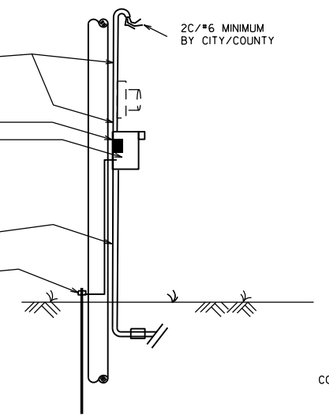
STANDARD DRAWING SD-8

# MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

WITH POWER ISOLATION ASSEMBLY




WITHOUT POWER ISOLATION ASSEMBLY




NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY):

ELECTRICAL SERVICE TYPICALLY FALLS INTO TWO CATEGORIES:
MAIN BREAKER NEAR CONTROLLER CABINET; AND MAIN BREAKER NOT NEAR CONTROLLER CABINET. THE CONTRACTOR'S AND THE CITY'S/COUNTY'S RESPONSIBILITY VARIES ACCORDINGLY AS INDICATED ON THESE DETAILS.

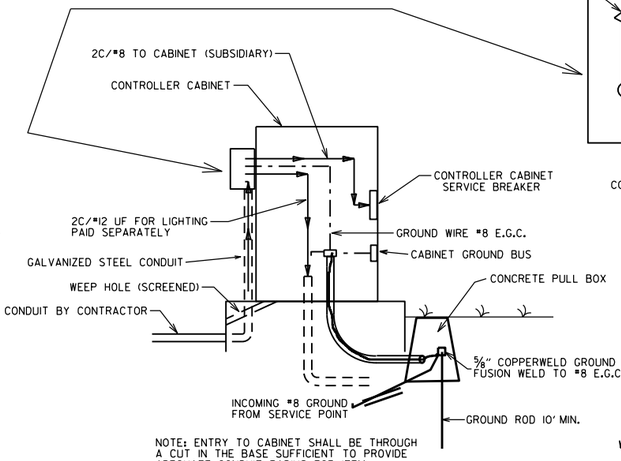
ALL SITUATIONS:
ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER) AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. SERVICE POINT INCLUDES GALVANIZED STEEL CONDUIT TO A POINT 18" BELOW GROUND LINE, TWO CIRCUIT MAIN BREAKER, LIGHTNING ARRESTOR, 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 (2C/#12 A.W.G. UF RATED, TYPICAL) 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 BREAKER, AND CONNECTION TO THE UTILITY IS THE RESPONSIBILITY OF THE CITY/COUNTY.

MAIN BREAKER NOT NEAR CONTROLLER CABINET:
THE MAIN BREAKER ASSEMBLY, GALVANIZED STEEL CONDUIT. WEATHERHEAD AND WIRE ABOVE MAIN BREAKER AND CONNECTION TO THE UTILITY SHALL BE PROVIDED BY CITY/COUNTY. CONTRACTOR SHALL PROVIDE AS PART OF CONTRACT SECONDARY BREAKER, CONDUIT, WIRE AND WIRING TO THE MAIN BREAKER.

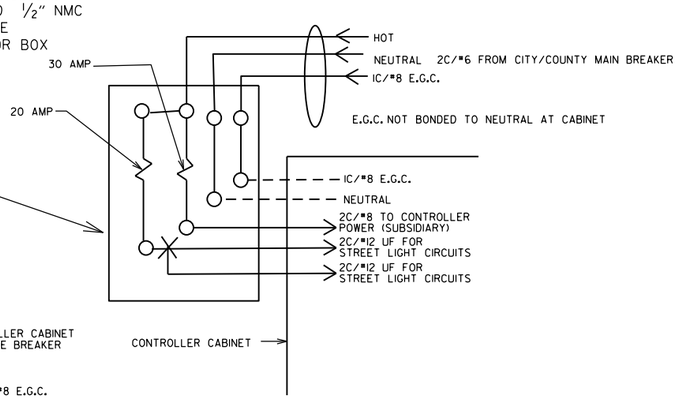
MAIN BREAKER NEAR CONTROLLER CABINET:
ALL COMPONENTS OF THE SERVICE POINT WITH THE EXCEPTION OF THE WIRE AND WIRING ABOVE THE MAIN BREAKER IS FURNISHED AND INSTALLED BY THE CONTRACTOR. WIRING FROM MAIN BREAKER INCLUDING CONNECTION TO THE UTILITY, IS THE RESPONSIBILITY OF THE CITY/COUNTY. IF METER LOOP IS REQUIRED, METER BASE AND HARDWARE IS PROVIDED BY THE CITY/COUNTY AND INSTALLED BY THE CONTRACTOR.

GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 701. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)



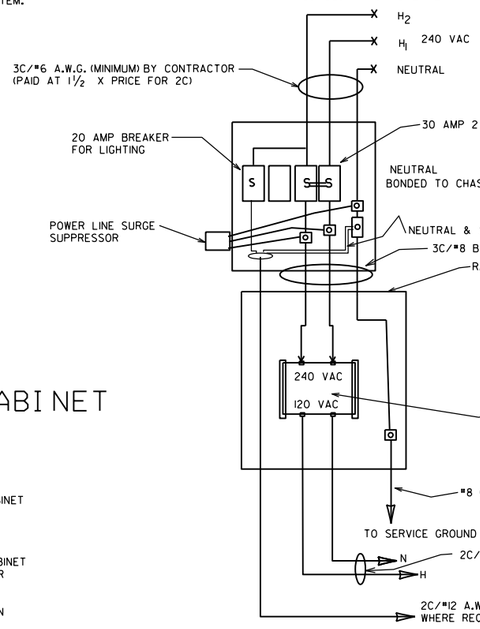

NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.



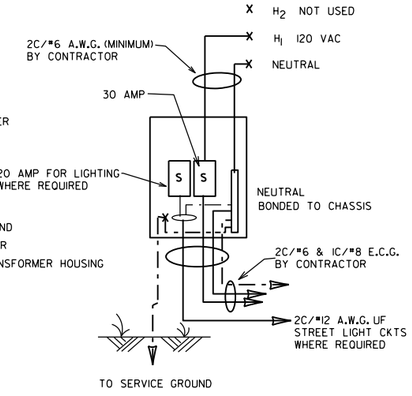

# MAIN BREAKER WIRING (TYPICAL)

SERVICE GROUND IS TYPICALLY TIED TO NEUTRAL AT THE MAIN BREAKER. AS SUCH, CONTROLLER GROUND IS NOT TIED TO NEUTRAL AT SECONDARY BREAKER OR IN CONTROLLER CABINET.

WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

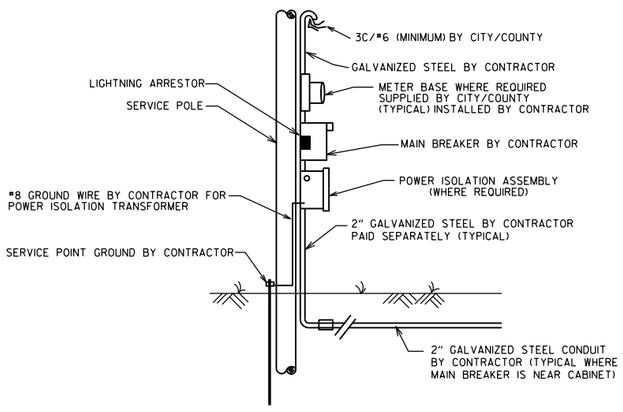


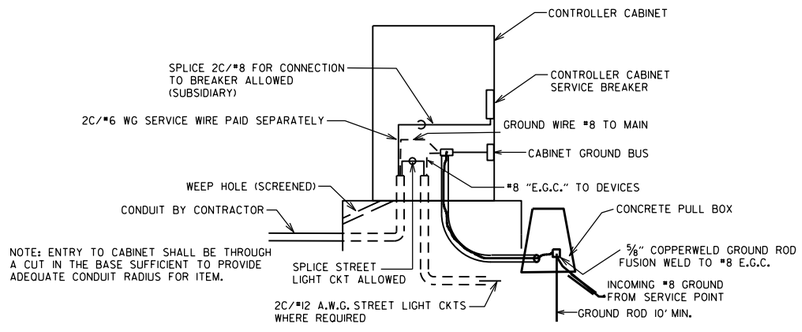

WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER




NOTE: ELECTRICAL GROUND CONDUCTOR (E.C.G.) ADDED 3-3-2003, CONSISTING OF A IC/#8 A.W.G. CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

# MAIN BREAKER NEAR CONTROLLER CABINET SECONDARY NOT REQUIRED




NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | REVISED | |
| 11-16-17 | REVISED NOTES | |
| 09-12-13 | ISSUED AS STANDARD DRAWING | |
| 04-18-13 | ADDED LIGHTNING ARRESTOR | |
| 05-21-09 | REVISED GROUNDING | |
| 07-31-08 | REVISED GROUNDING | |
| 03-03-03 | ADDED EGC NOTE | |
| 09-26-01 | REVISED | |
| 12-27-99 | REVISED | |
| 07-28-99 | REVISED | |
| 02-05-99 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

SERVICE POINT

STANDARD DRAWING SD-9

NOTES:
PEDESTRIAN AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SIGN (RIO-12a) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (RIO-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE RIO-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES:

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6"; 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (3 SEC., 56 LB., 8.3 SQ. FT.):
DESIGN TO ACCOMMODATE:
2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAT 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT.
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) - VARIABLE ARM LENGTH (MAX. WT. 75 LB., 3.3 SQ. FT.)
PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

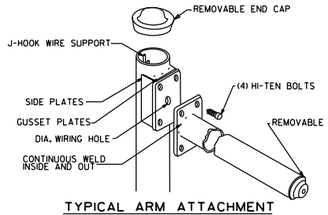
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACCUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

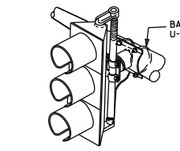
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

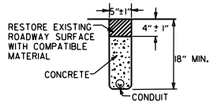
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



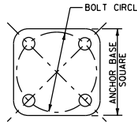

TYPICAL ARM ATTACHMENT



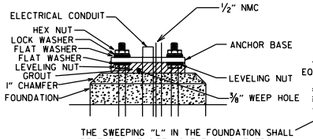

NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.

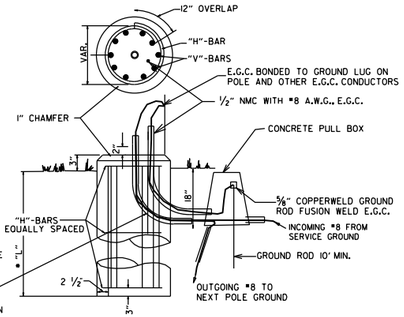



TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)




ANCHOR BASE



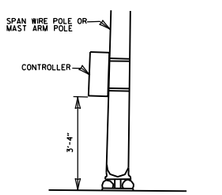

THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE GROUND ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

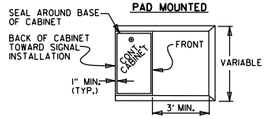
## TYPICAL FOUNDATION DETAILS

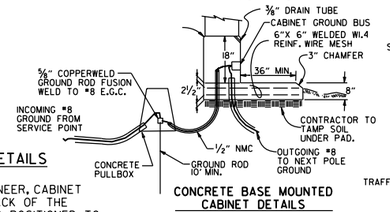
POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

| ARM LENGTH | FOUNDATION DIAMETER | DEPTH "L"* | STEEL | | |
|---|---|---|---|---|---|
| | | | VERTICAL | HORIZONTAL | O.C. |
| PED | 30" | 7'-0" | 12-#7 (6'-6") | 10-#4 | 8.44" |
| 2' TO 12' | 30" | 10'-6" | 12-#7 (10'-0") | 15-#4 | 8.42" |
| OVER 12' TO 20' | 30" | 11'-6" | 12-#7 (11'-0") | 16-#4 | 8.66" |
| OVER 20' TO 35' | 36" | 12'-6" | 13-#8 (12'-0") | 17-#4 | 8.88" |
| OVER 35' TO 50' | 36" | 13'-6" | 13-#8 (13'-0") | 19-#4 | 8.56" |
| OVER 50' TO 72' | 42" | 14'-6" | 18-#8 (14'-0") | 20-#4 | 8.74" |
| TWINS TO 20' | 30" | 16'-0" | 12-#6 (15'-6") | 22-#4 | 8.76" |
| TWINS OVER 20' TO 44' | 36" | 16'-0" | 13-#8 (15'-6") | 22-#4 | 8.76" |
| TWINS OVER 44' TO 50' | 42" | 16'-0" | 18-#8 (15'-6") | 22-#4 | 8.76" |
| TWINS OVER 50' TO 72' | 42" | 16'-6" | 18-#8 (16'-0") | 23-#4 | 8.64" |




SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED




CONCRETE BASE MOUNTED CABINET DETAILS

### CONTROLLER CABINET MOUNTING DETAILS

NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A ¼" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

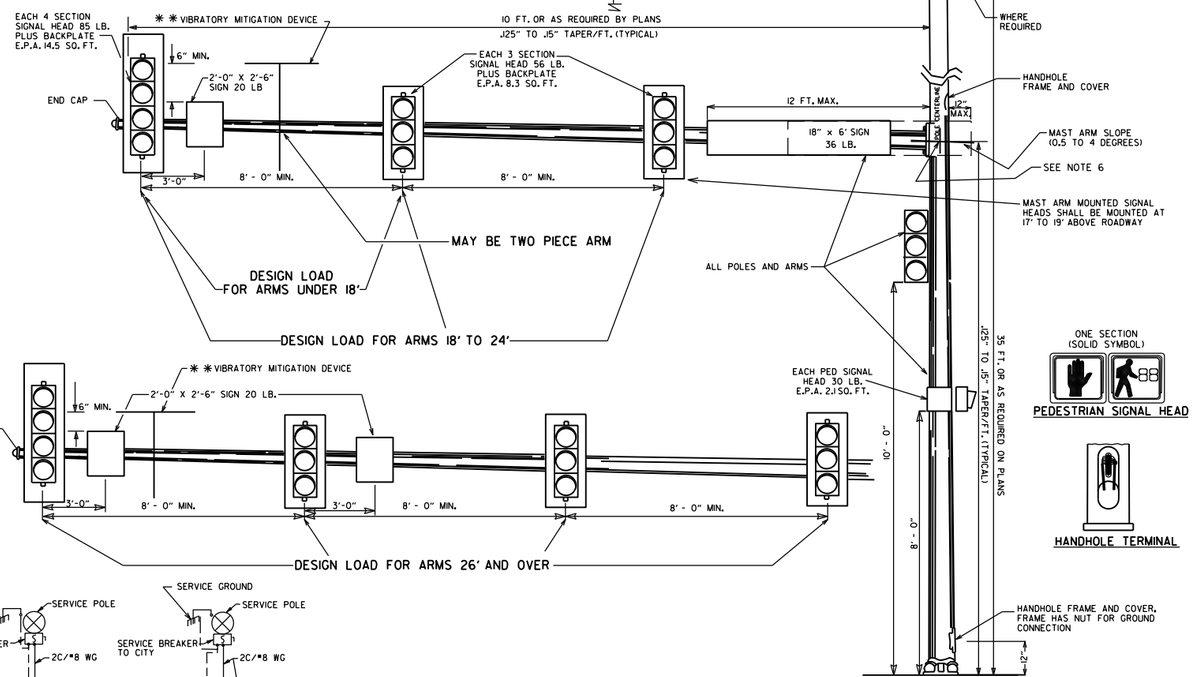
10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

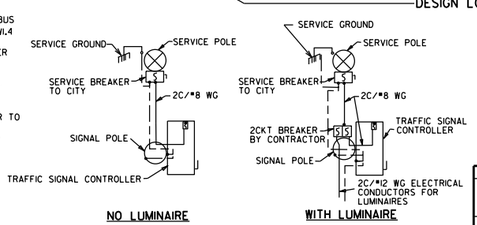
11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 707 PEDESTRIAN SIGNAL HEAD.

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANIFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60" X 16" X 0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH THE HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OF SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

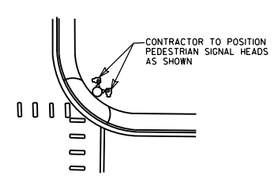
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.




SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES




PEDESTRIAN SIGNAL HEADS

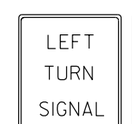
SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE.

**SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.**

| DATE | REVISION | FILMED |
|---|---|---|
| 02-13-24 | REVISED SPECIAL SIGN TO RIO-12a SIGN | |
| 11-16-17 | REVISED NOTES, ADDED PEDESTRIAN SIGNAL HEAD DETAIL, ADDED HANDHOLE TERMINAL DETAIL, ADDED TRENCHING DETAIL | |
| 02-27-14 | REVISED NOTES. | |
| 09-12-13 | ISSUED AS STANDARD DRAWING | |
| 12-08-16 | REVISED NOTES | |
| 02-27-14 | REVISED NOTES | |
| 09-12-13 | ISSUED AS STANDARD DRAWING | |
| 07-21-11 | REVISED VMD, SIGNAL HEADS | |
| 05-21-09 | REVISED GROUNDING | |
| 07-31-08 | REVISED GROUNDING | |
| 04-25-08 | ADDED VIBRATORY MITIGATION DEVICE & NOTES | |
| 04-18-08 | REVISED AASHTO NOTES | |
| 04-17-08 | REVISED TO 2001 AASHTO STANDARDS | |
| 10-12-04 | REVISED CABINET ORIENTATION | |
| 06-23-04 | REVISED | |
| 05-11-04 | REV. NOTE 3/AASHTO REQUIREMENTS | |
| 06-11-01 | REV. NOTES & POLE MAST ARM SLOPE | |
| 04-11-01 | REVISED POLE TAPERS | |
| 04-25-00 | REV. NOTES & SIGNAL HEAD PLACEMENT | |
| 11-22-99 | REVISED FOUNDATION DETAILS | |
| 11-17-98 | REVISED DETAILS AND NOTES | |
| 11-21-95 | ISSUED | |




RIO-10




RIO-12a

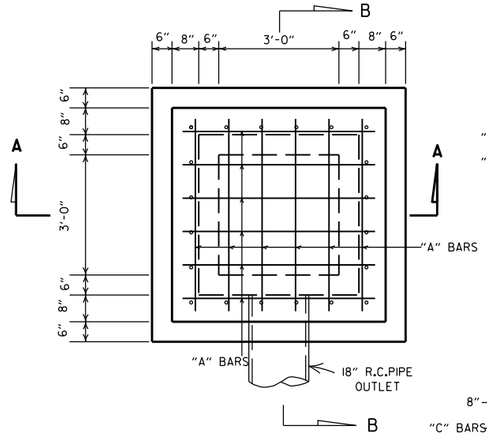


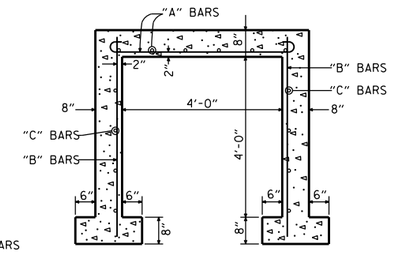
RIO-3e
(SEE MUTCD)

ARKANSAS STATE HIGHWAY COMMISSION

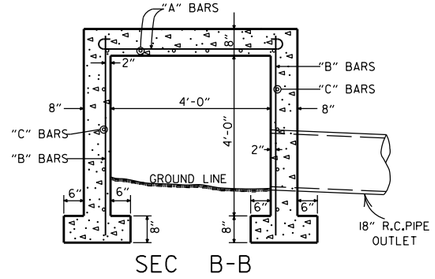
# STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11



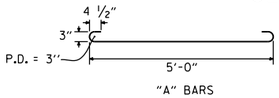




SEC A-A




SEC B-B

NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".




STEEL SCHEDULE

| BARS | NUMBER | LENGTH | SPACING |
|---|---|---|---|
| "A" | 12 | 6'-0" | 10" |
| "B" | 20 | 5'-0" | 10 1/2" |
| "C" | 16 | 5'-0" | 12" |

ALL STEEL TO BE #4 BARS

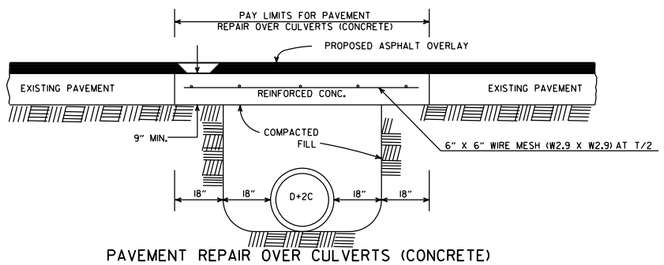
QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

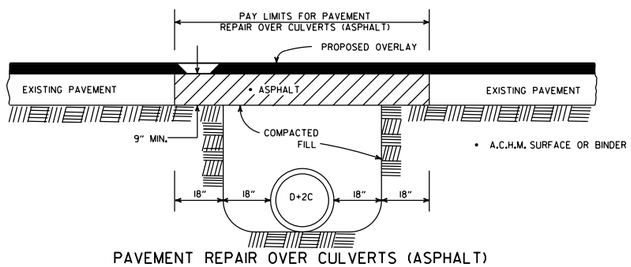
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITTIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

## REINFORCED CONCRETE SPRING BOX



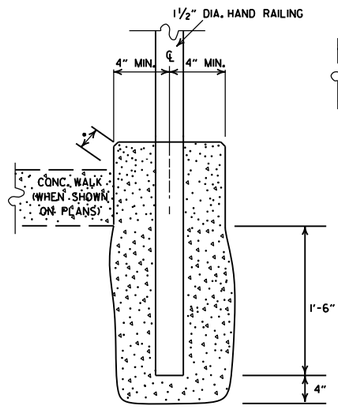

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



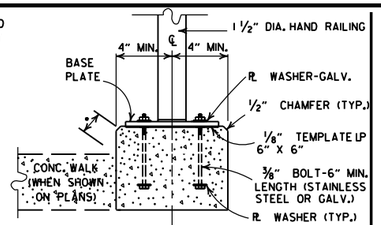

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

## DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

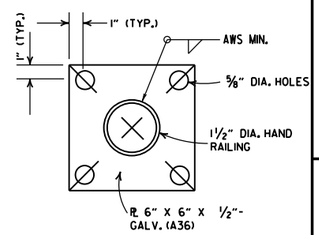
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.




DETAIL OF HAND RAILING SET IN CONCRETE

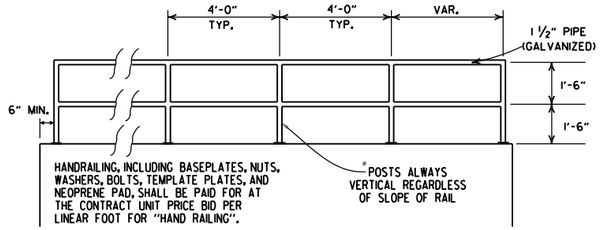



POST CONNECTION TO WALL

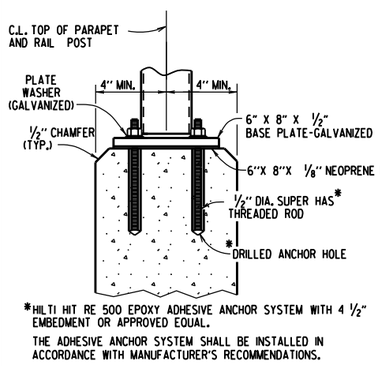



BASE PLATE

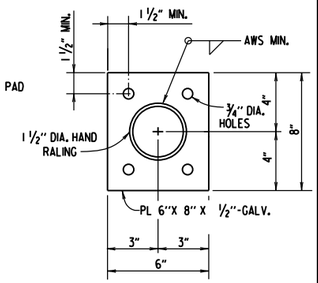
## POST CONNECTION DETAILS




HAND RAILING SHALL CONFORM TO SECTION 633.



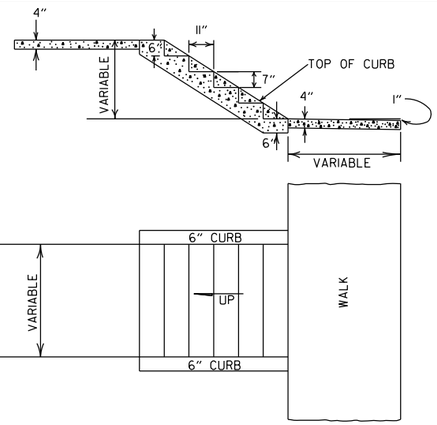

POST CONNECTION TO WALL




BASE PLATE

DETAILS OF ALTERNATE POST ANCHOR SYSTEM
(EPOXY ADHESIVE ANCHORS)

## HAND RAILING DETAILS




GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

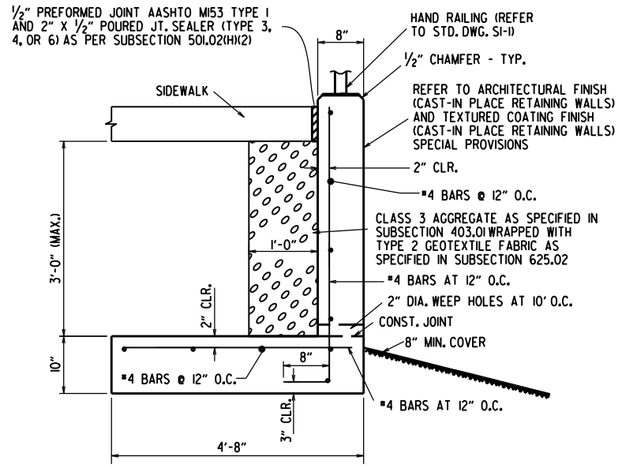
## DETAILS OF CONCRETE STEPS & WALKS

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 10-25-18 | REVISED DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS | |
| 9-12-13 | REVISED REINFORCED CONCRETE SPRING BOX | |
| 7-26-12 | REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS | |
| 4-17-08 | REV. JOINT & FOOTING STEP DETAILS | |
| 11-29-07 | REVISED RETAINING WALL DRAINAGE | |
| 5-25-06 | REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX | |
| 10-9-03 | REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS | |
| 4-10-03 | REVISED RETAINING WALL DRAWING | |
| 8-22-02 | ADDED HAND RAILING DETAIL | |
| 11-16-01 | REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES | |
| 11-18-98 | ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS | |
| 7-02-98 | ENLARGED PIPE | |
| 4-03-97 | ADDED NOTE TO STEEL BAR SCHED. | |
| 10-18-96 | CORRECTED SPELLING | |
| 4-26-96 | ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL | |
| 6-2-94 | CHANGED CONST. TO CONTRACTION JOINT | |
| 10-1-92 | CHANGED MESH FABRIC TO WIRE MESH | 10-1-92 |
| 8-15-91 | DELETED HDWL MODIFICATION DETAIL | 8-15-91 |
| 11-8-90 | DELETED COLD MIX FROM CULV'T. REPAIR | 11-8-90 |
| 11-30-89 | REV. RETAINING WALL STEEL SCHEDULE | 11-30-89 |
| 11-17-88 | V. BARS BEHIND ARROW | 665-11-17-88 |
| 7-15-88 | REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS | 649-7-15-88 |
| 11-1-84 | REV. TRENCH FOR PIPE UNDERDRAIN | 510-11-1-84 |
| 1-4-83 | ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE | 682-1-4-83 |
| 3-2-81 | SPELLING OF "UNDERDRAIN" | 721-3-2-81 |
| 4-20-79 | REV. UNDERDRAIN DET& PAVEMENT REPAIR | 674-4-20-79 |
| 2-2-76 | 12"MIN. GRAN. MAT'L. OVER PIPE | 919-2-2-76 |
| 4-10-75 | REM. SPECS. FOR GRAN. MAT'L. | 568-4-10-75-853 |
| 5-22-74 | GRANULAR MAT'L. TO BE SB-3 | 567-5-22-74-740 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |

ARKANSAS STATE HIGHWAY COMMISSION

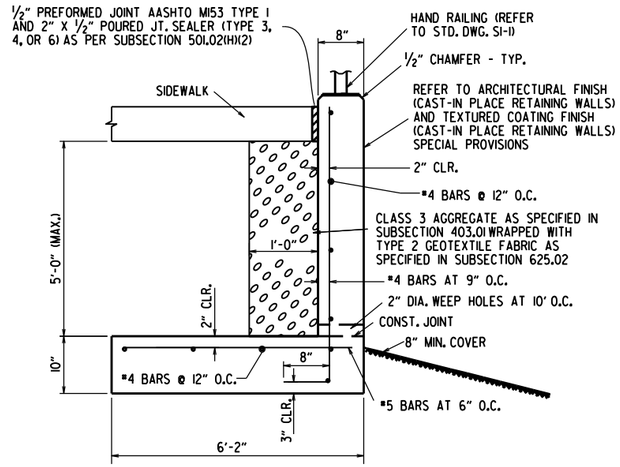
# DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1




## CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 3'-0"

N.T.S.




## CONCRETE WALK (TYPE SPECIAL) DETAIL MAX HEIGHT 5'-0"

N.T.S.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.

DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012).

LIVE LOAD: LIVE LOAD SURCHARGE IS NOT INCLUDED IN THE DESIGN OF THESE WALLS. VEHICULAR LIVE LOAD SHALL NOT BE ALLOWED WITHIN A DISTANCE EQUAL TO ONE-HALF THE HEIGHT OF THE WALL.

CONCRETE: CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS TO BE CHAMFERED ½". ALL CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C = 3,500 PSI. A CLASS 2 SURFACE FINISH SHALL BE USED ON ALL SURFACES OF THE CONCRETE UNLESS OTHERWISE NOTED. REFER TO ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS) AND TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS) SPECIAL PROVISIONS.

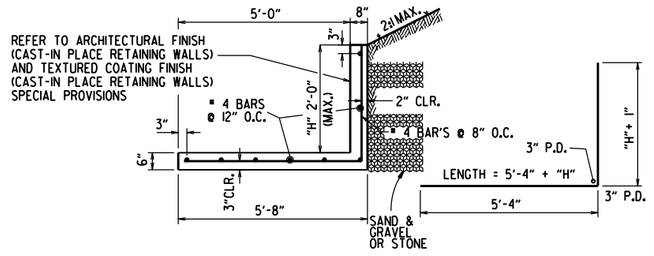
REINFORCING STEEL: ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 ORM53, GRADE 60.

FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH SUBSECTION 801.04. BACKFILL FOR RETAINING WALLS SHALL BE IN ACCORDANCE WITH SUBSECTION 801.08.

WATERPROOF MEMBRANE (TYPE C), WATERSTOPS, PREFORMED JOINTS, PREFORMED JOINT FILLER, WEEP HOLES, CLASS 3 AGGREGATE, REINF. STEEL, CONCRETE, & GEOTEXTILE FABRIC SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO CONCRETE WALKS (TYPE SPECIAL).

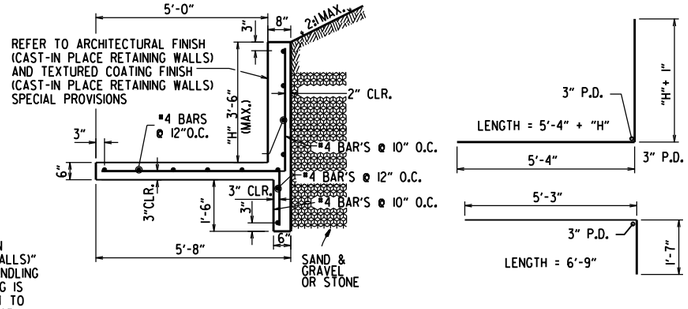
JOINTS IN THE WALL SHALL MATCH TYPE AND SPACING OF THE JOINTS IN THE WALK.

THESE DETAILS ARE NOT INTENDED FOR USE ALONG STREAMS OR DITCHES WITHOUT CONSIDERATION FOR SCOUR.



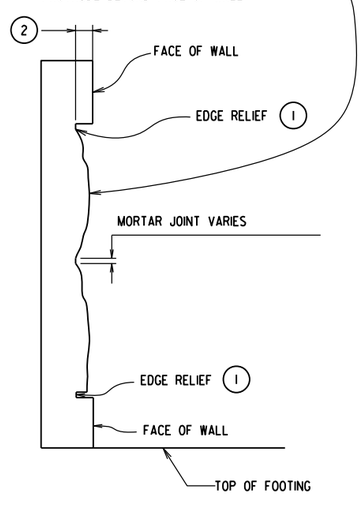

## CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 2'-0"

N.T.S.




## CONCRETE WALK (TYPE SPECIAL) DETAILS MAX HEIGHT 3'-6"

N.T.S.

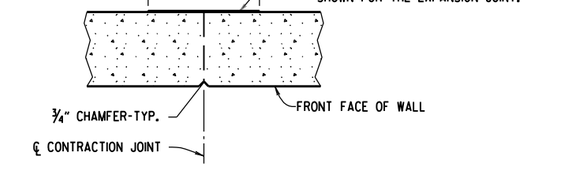



## ARCHITECTURAL FINISH DETAILS

N.T.S.

(1) PROVIDE EDGE RELIEF AROUND PERIMETER OF TEXTURE. EDGE RELIEF DIMENSIONS SHALL MATCH MANUFACTURERS EDGE DISTANCE.

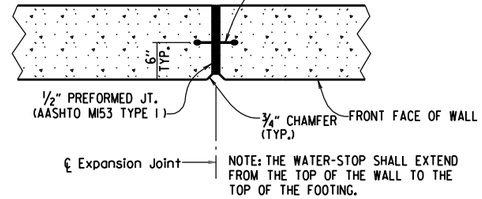
(2) DEPTH OF ASHLAR STONE PATTERN APPROX. 1⅜". SEE SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)".




## TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

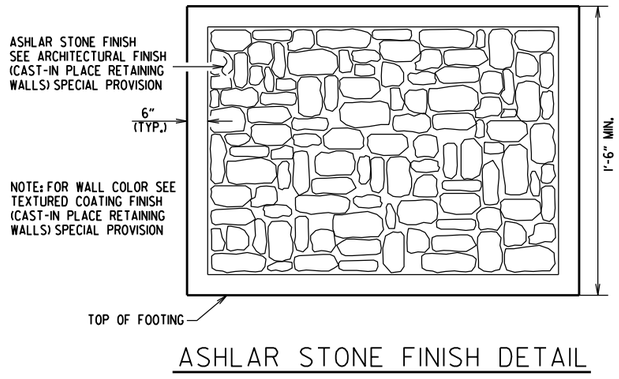
NOTE: 20'-0" MAX. SPACING BETWEEN CONTRACTION JOINTS. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTRACTION JOINTS.




## TYPICAL EXPANSION JOINT DETAIL

N.T.S.

NOTE: 60'-0" MAX. SPACING BETWEEN EXPANSION JOINTS. HORIZONTAL REINFORCING SHALL STOP 2" FROM ℄ EXPANSION JOINT.




## ASHLAR STONE FINISH DETAIL

NOTES:

WALL PATTERN SHALL BE APPLIED TO THE EXPOSED SURFACES OF WALL IN ACCORDANCE WITH SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)" AND AS SHOWN IN THE PLANS. CARE SHALL BE TAKEN WITH FORM LINER HANDLING AND INSTALLATION TO ENSURE AESTHETIC QUALITY OF THE WALL TEXTURING IS MAINTAINED. WHERE FORM LINER PANELS REQUIRE MODIFICATION TO CONFORM TO THE LOCATION, DIMENSIONS AND LINES SHOWN IN THE PLANS, THE CONTRACTOR SHALL PROVIDE EDGE RELIEF MATCHING THAT OF THE UNALTERED FORM LINER. PAYMENT FOR WALL TEXTURING SHALL BE IN ACCORDANCE WITH SP "ARCHITECTURAL FINISH (CAST-IN PLACE RETAINING WALLS)".

NO ADJUSTMENTS WILL BE MADE IN CONCRETE VOLUME DUE TO THE USE OF "ARCHITECTURAL FINISH". CLASS "S" CONCRETE SHALL BE MEASURED IN ACCORDANCE WITH SUBSECTION 802.24(A). CARE SHALL BE TAKEN IN PLACING CONCRETE TO AVOID SEGREGATION AND TO ELIMINATE FLOW LINES.

CLASS 3 TEXTURED COATING FINISH SHALL BE APPLIED TO WALL SURFACES AS SPECIFIED IN SP "TEXTURED COATING FINISH (CAST-IN PLACE RETAINING WALLS)" AND IN ACCORDANCE WITH SUBSECTION 802.19(B)(3).

| DATE | REVISION | DATE FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| 11-05-20 | REVISED GENERAL NOTES | |
| 5-14-20 | DRAWING ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE WALK (TYPE SPECIAL)

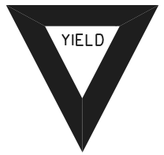
STANDARD DRAWING SI-3

R1-1




STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2




STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5




STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a




STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-6aP




48"X36"

*USE 6" C LETTERS
**USE 4" D LETTERS

R5-1



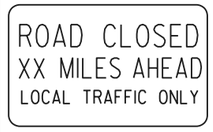

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2




48"X30"

RII-3A




60"X30"

RII-4




60"X30"

W21-5a




STD. 36"X36"
FWY. 48"X48"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2



STD. 36"X36"
FWY. 48"X48"

R2-11




36"X48"

W1-3



STD. 48"X48"

W1-4



STD. 48"X48"

W1-6



STD. 48"X24"
SPECIAL 60"X30"

W1-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



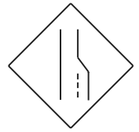
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

R56-1




STD. 18"X18"

W5-1




STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7




EXPWY. 36"X36"
FWY. 48"X48"

W9-2




STD. 36"X36"
FWY. 48"X48"

W13-1




STD. 24"X24"

W20-1




STD. 48"X48"

W20-2




STD. 48"X48"

W20-3




STD. 48"X48"

W20-4




STD. 48"X48"

W20-5




STD. 48"X48"

W20-7a




STD. 36"X36"
FWY. 48"X48"

W21-2




STD. 30"X30"
SPECIAL 36"X36"

W21-5




STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

W1-4b



STD. 48"X48"

W8-11




STD. 36"X36"
FWY. 48"X48"

W8-9



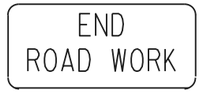

STD. 36"X36"
FWY. 48"X48"

G20-1



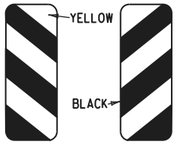

60"X24"

G20-2




48"X24"

OM-3L OM-3R




12"X36"

M4-9




STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10




48"X18"

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R2-6aP PLAQUES SHALL BE MOUNTED BELOW AN APPLICABLE ADVANCE WARNING SIGN THAT IS LOCATED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE PLAQUE SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE W3-5 "REDUCED SPEED AHEAD" SIGN. R2-11 SIGNS SHALL BE INSTALLED AT OR NEAR THE DOWNSTREAM END OF THE WORK ZONE. SEE STANDARD DRAWINGS TC-2, TC-3, AND TC-6 FOR TYPICAL PLACEMENT LOCATIONS.

• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

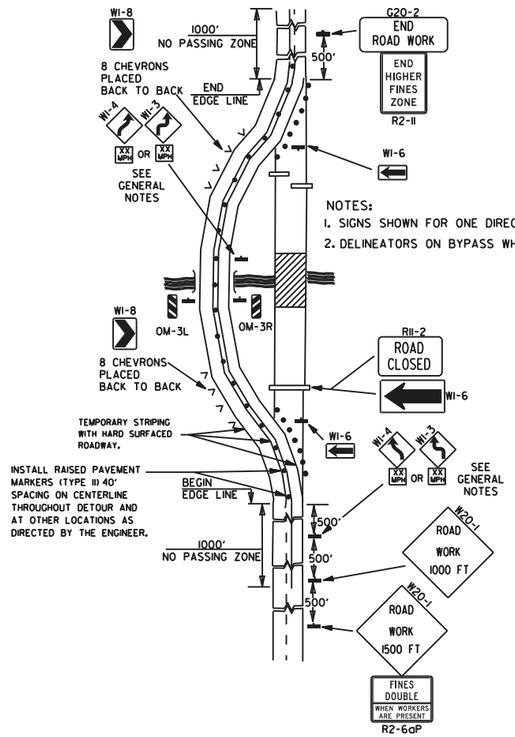
| DATE REV | DESCRIPTION |
|---|---|
| 08-14-25 | REPLACED R55-1 WITH R2-6aP, ADDED R2-11 & REVISED NOTE 10 |
| 11-07-19 | REVISED FOR MASH |
| 04-13-17 | DELETED RSP-1 & ADDED W21-5a |
| 09-02-15 | REVISED REDUCED SPEED LIMIT AHEAD SIGNS, REVISED ROAD WORK NEXT XX MILES |
| 12-15-11 | REVISED W24-1 |

ARDOT ARKANSAS DEPARTMENT OF TRANSPORTATION

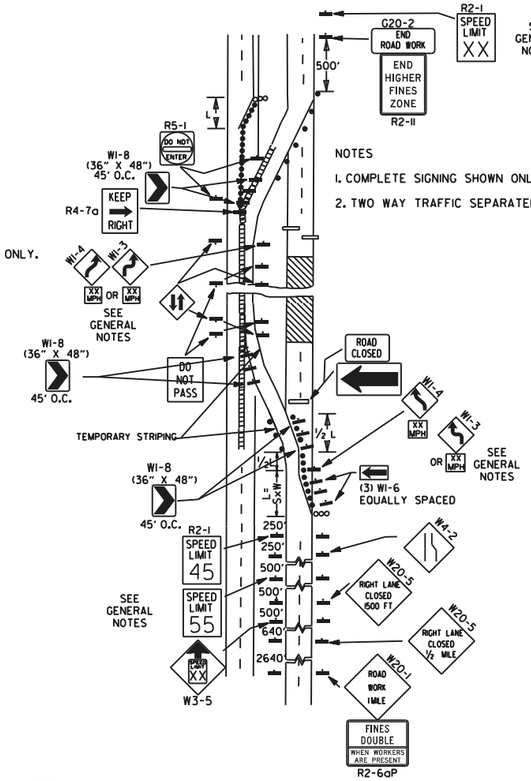
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

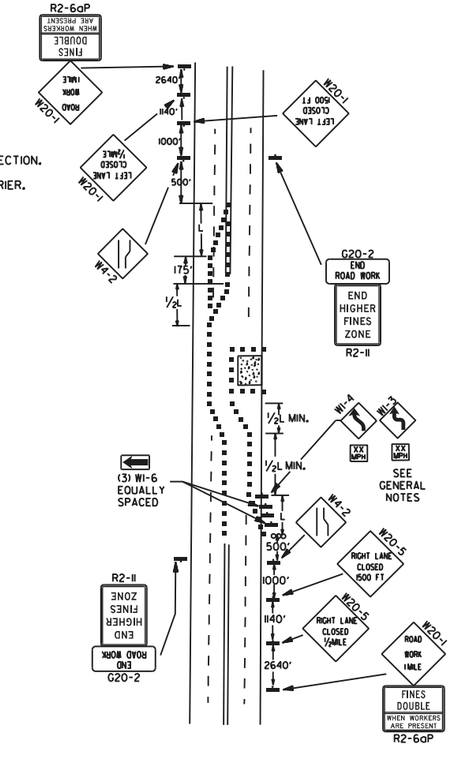
| DATE EFFECTIVE | STANDARD DRAWING | TC-1 |
|---|---|---|
| 08-14-2025 | | |



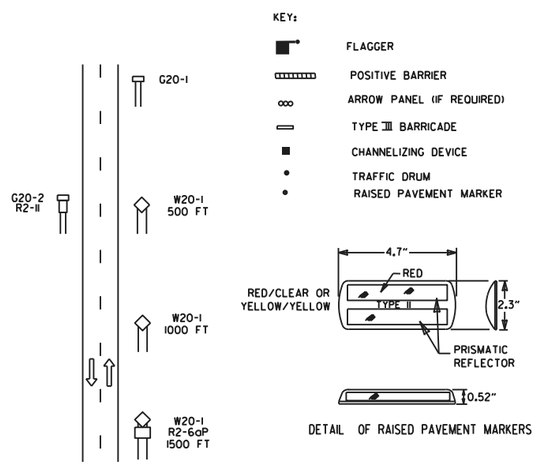

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.




(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.




(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.




TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

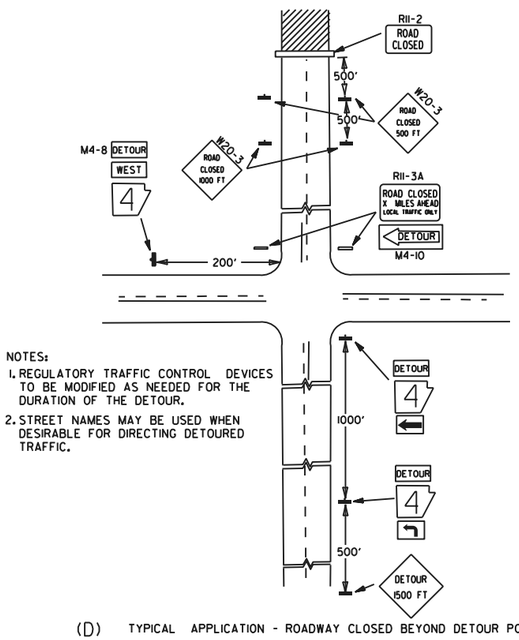
L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

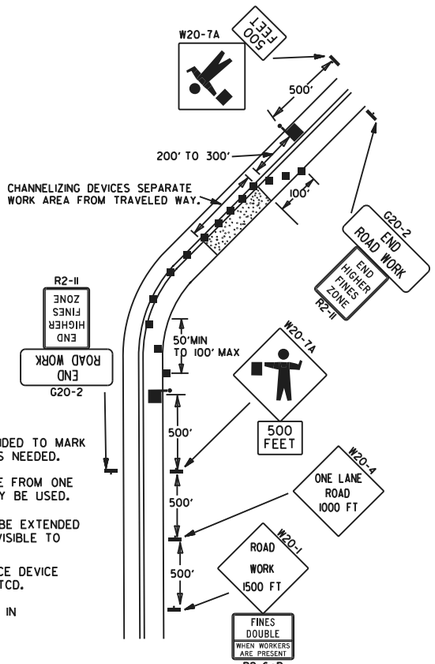
W= WIDTH OF OFFSET.

GENERAL NOTES:

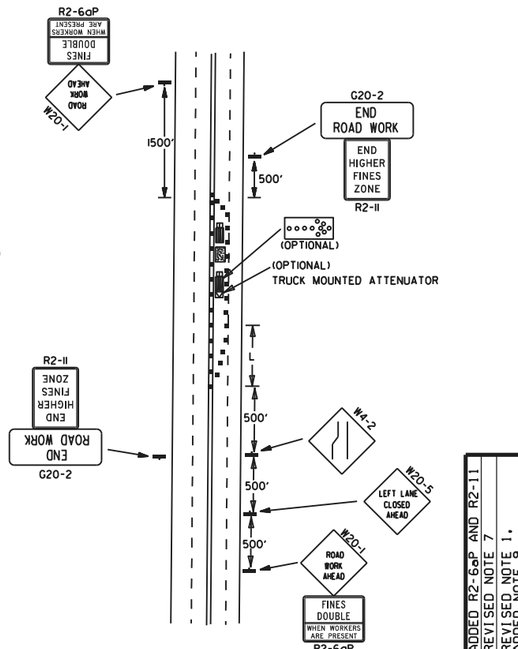
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).




(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.




(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



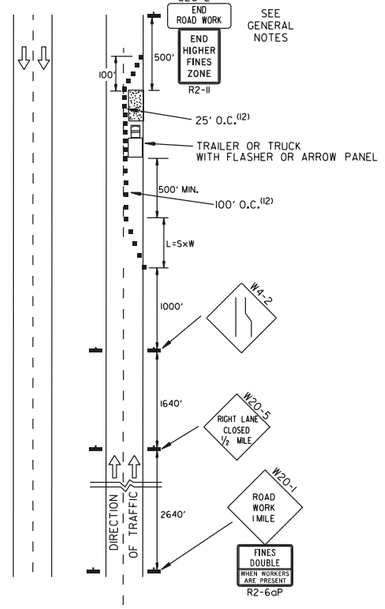

(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

| DATE REV | DESCRIPTION |
|---|---|
| 08-14-25 | ADDED R2-6aP AND R2-11 |
| 05-20-21 | REVISED NOTE 7 |
| 11-07-19 | REVISED NOTE 1. ADDED NOTE 9 |
| 09-02-15 | REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (AT & REPLACED R2-5A WITH W3-5 |
| 09-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKINGS |

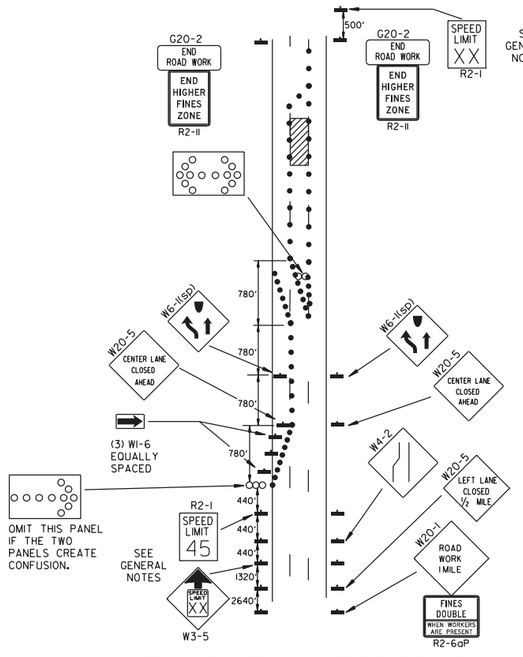
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

| DATE EFFECTIVE | STANDARD DRAWING | TC-2 |
|---|---|---|
| 08-14-2025 | | |




(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.




(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

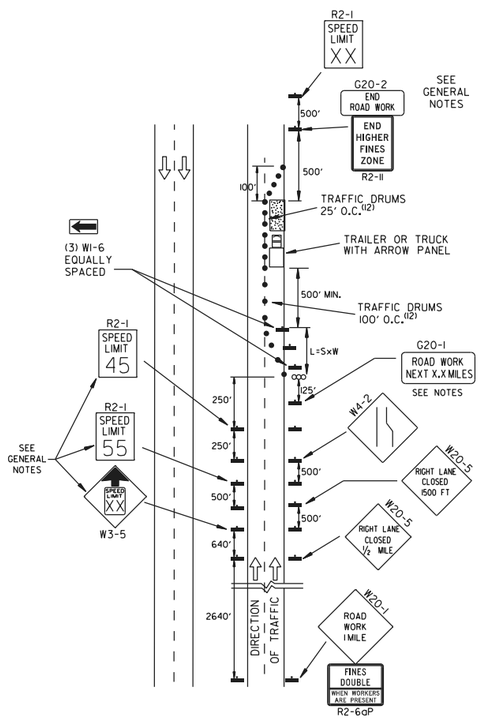
○○○ ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

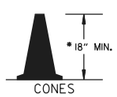
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-I(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-I 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-I(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-I(45) SHALL BE OMITTED. ADDITIONAL R2-I 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-I(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN SHOULD BE INSTALLED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS. THE DISTANCE DISPLAYED ON THE G20-1 SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
12. ONLY WHERE SPACE RESTRICTIONS DO NOT ALLOW FOR TRAFFIC DRUMS, TUBULAR MARKERS MAY BE USED AT 50' O.C. IN STABILIZATION ZONES AND AT 10' O.C. DIRECTLY ADJACENT TO CONSTRUCTION OPERATIONS AND AT EXIT TAPERS. TUBULAR MARKERS SHALL BE STABILIZED WITH WEIGHTED BASES IN ACCORDANCE WITH THE M.U.T.C.D.

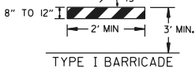


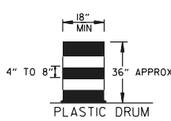

(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

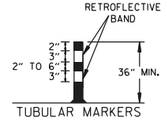
## CHANNELIZING DEVICES

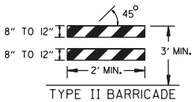


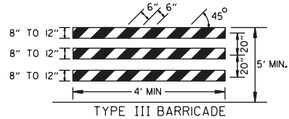

* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.



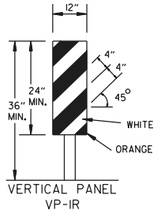



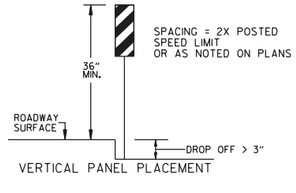



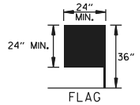



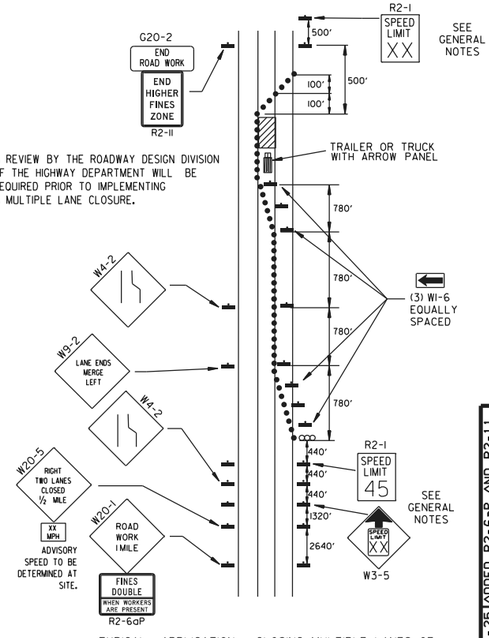

NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.




FLAG SHALL BE OF GOOD GRADE RED MATERIAL




(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

### TRAFFIC CONTROL DEVICES

**NON-INTERSTATE**

| VERTICAL DIFFERENTIAL | LOCATION | TRAFFIC CONTROL ≤ 45 MPH | TRAFFIC CONTROL > 45 MPH |
|---|---|---|---|
| ≤ 1" | CENTERLINE | W8-11 | W8-11 |
| > 1" ≤ 3" | CENTERLINE | W8-11 AND CENTERLINE LANE STRIPING | W8-11 AND CENTERLINE LANE STRIPING |
| > 3" | CENTERLINE | STANDARD LANE CLOSURE(6) | STANDARD LANE CLOSURE(6) |
| ≤ 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9 AND TRAFFIC DRUMS(1) | W8-9 AND TRAFFIC DRUMS(1) |
| > 3" ≤ 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1) | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1) |
| > 6" ≤ 18" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1) | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) |
| > 18" ≤ 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(1) | A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(3) |
| > 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER(4) & EDGE LINES | PRECAST CONCRETE BARRIER(4) & EDGE LINES |

**INTERSTATE**

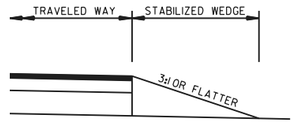
| VERTICAL DIFFERENTIAL | LOCATION | TRAFFIC CONTROL |
|---|---|---|
| ≤ 3" | CENTERLINE | W8-11 AND LANE STRIPING |
| ≤ 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) |
| > 3" ≤ 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) |
| > 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER & EDGE LINES |

**INTERSTATE AND NON-INTERSTATE**

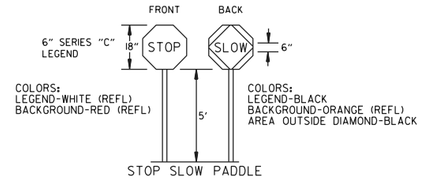
| FORESLOPE | HEIGHT | TRAFFIC CONTROL |
|---|---|---|
| 1:1 | > 2 FT | PRECAST CONCRETE BARRIER |
| 2:1 | ≤ 5 FT | TRAFFIC DRUMS |
| 2:1 | > 5 FT | PRECAST CONCRETE BARRIER |
| Flatter than 2:1 | N/A | TRAFFIC DRUMS |

GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).



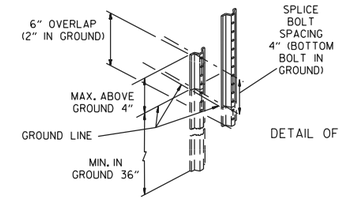

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

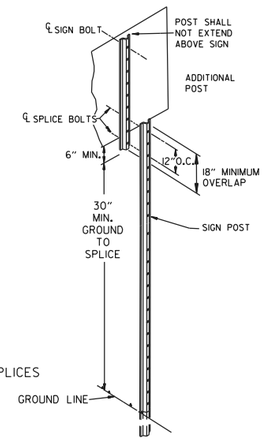



NOTES:
USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.




| DATE REV | DESCRIPTION |
|---|---|
| 08-14-25 | ADDED R2-6aP AND R2-11 |
| 05-22-25 | REVISED TRAFFIC CONTROL DEVICES AND NOTES. ADDED NOTE 12 |
| 08-12-21 | REVISED TRAFFIC CONTROL DEVICES AND NOTES |
| 05-20-21 | REVISED NOTE 10 |
| 02-27-20 | REVISED TRAFFIC CONTROL DEVICES DETAILS |

ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

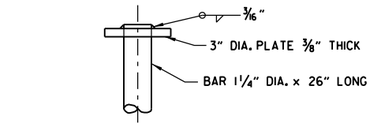
DATE EFFECTIVE 08-14-2025

STANDARD DRAWING

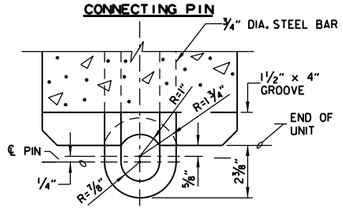
TC-3

## REINFORCING BAR TABLE PER BARRIER UNIT

| MARK | LOCATION | BAR SIZE | (NO. BARS) | SKETCH |
|---|---|---|---|---|
| H-1 | HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS | #5 | (6) | 19'-3" |
| H-2 | CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY | #5 | (6) | 6'-6" |
| H-3 | TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1 | #4 | (2) | 1'-6" |
| S-1 | OVER LIFT HOLES | #4 | (2) | 2'-5", 90°, 3 3/8" R, LIFTING HOLE |
| S-2 | HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS | #4 | (2) | 1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP |
| V-1 | VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS | #5 | (16) | TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 9 1/2", 2'-1 3/8", 4 3/8" |

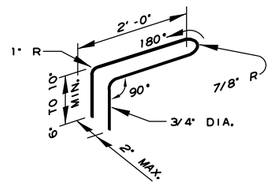



CONNECTING PIN

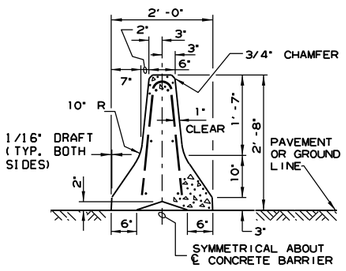



SECTION E-E

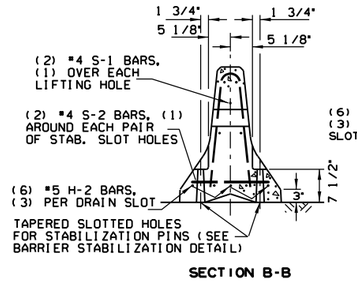
CONNECTION DETAILS



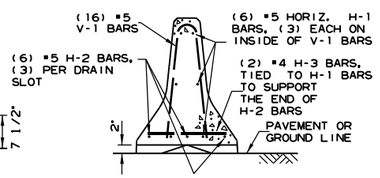

CONNECTION LOOP



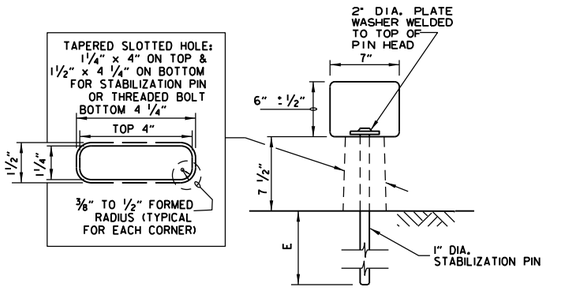

SECTION A-A



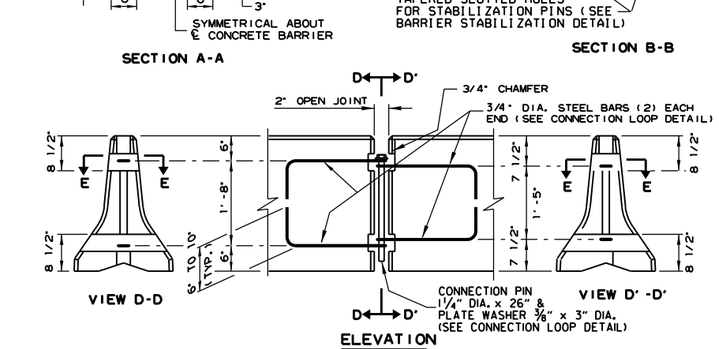

SECTION B-B




SECTION C-C

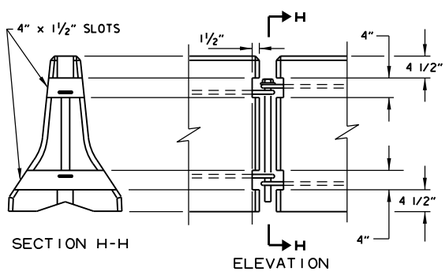



BARRIER STABILIZATION DETAIL




VIEW D-D VIEW D'-D'

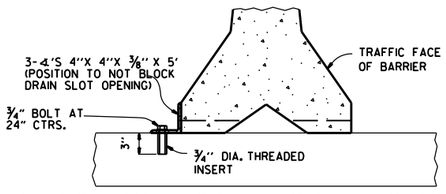
ELEVATION




BARRIER REMOVAL SLOT DETAILS

ROADWAY SECTION

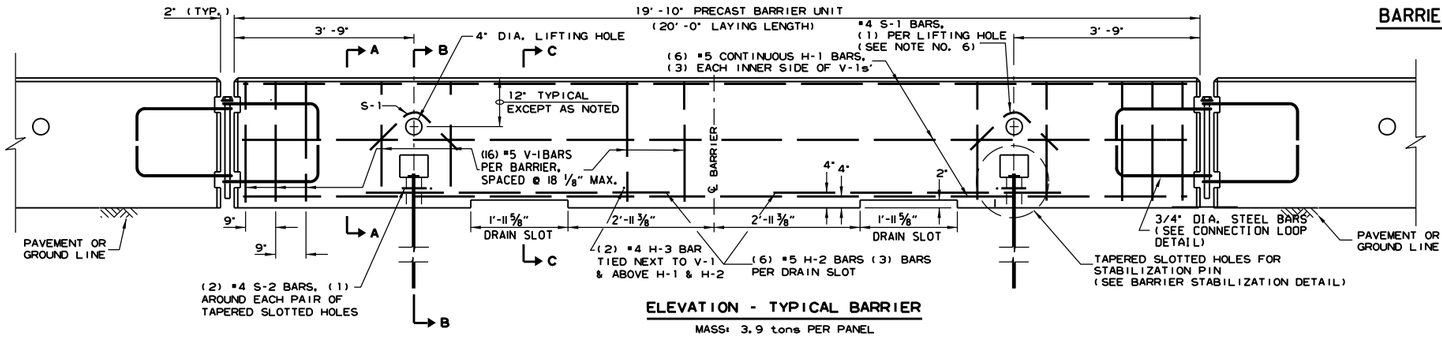
(E) 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS




NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL

BRIDGE DECKS




ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

### GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

2. MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
   STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
   DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

   IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
   DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

3. OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

4. DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

5. ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

6. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

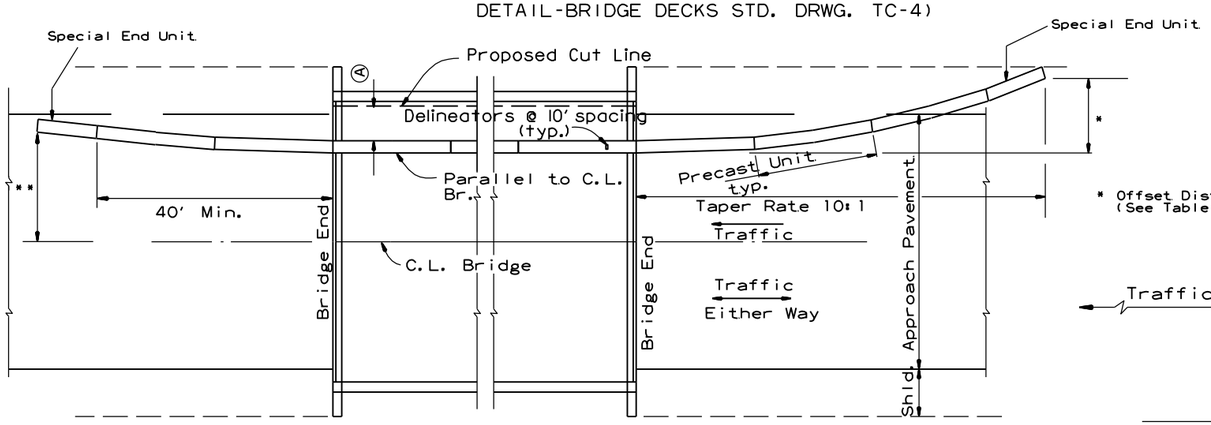
| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | REVISED NOTE 3 | |
| 2-27-14 | REVISED BARRIER STABILIZATION DETAIL | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 8-5-09 | REV. NOTE 3 CONCERNING DRAIN SLOTS | |
| 11-29-07 | REVISED NOTE 3 | |
| 5-25-06 | DELETED GENERAL NOTE 7 | |
| 11-18-04 | REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS | |
| 4-10-03 | REVISED GENERAL NOTE 2 | |
| 8-22-02 | ISSUED NEW DRAWING | |

ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

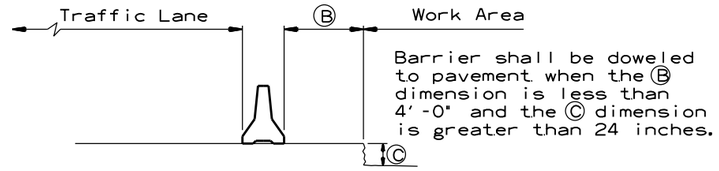
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)




## BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

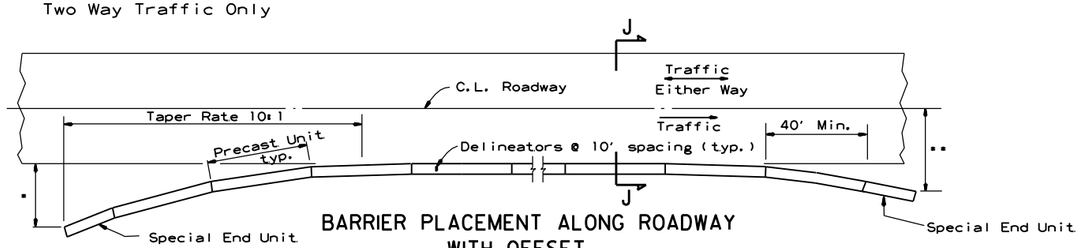
** Offset Distance for Two Way Traffic Only




Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

## SECTION J-J

No Scale




## BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

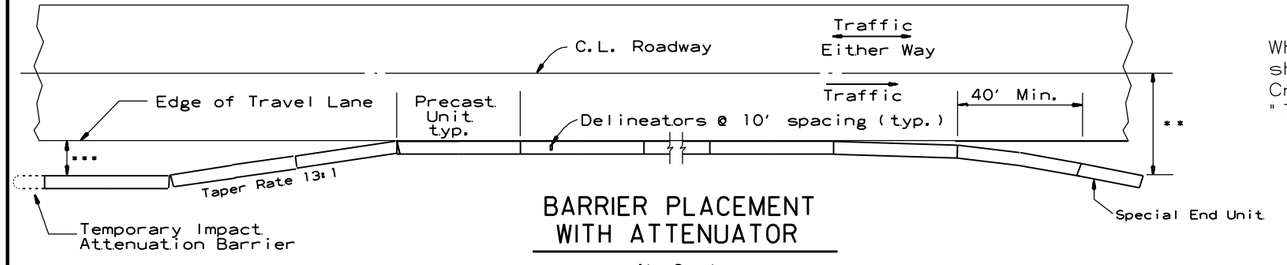
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

| Speed (MPH) | Offset Distance (FT.) |
|---|---|
| ≤ 45 | 12 |
| > 45 | 18 |

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

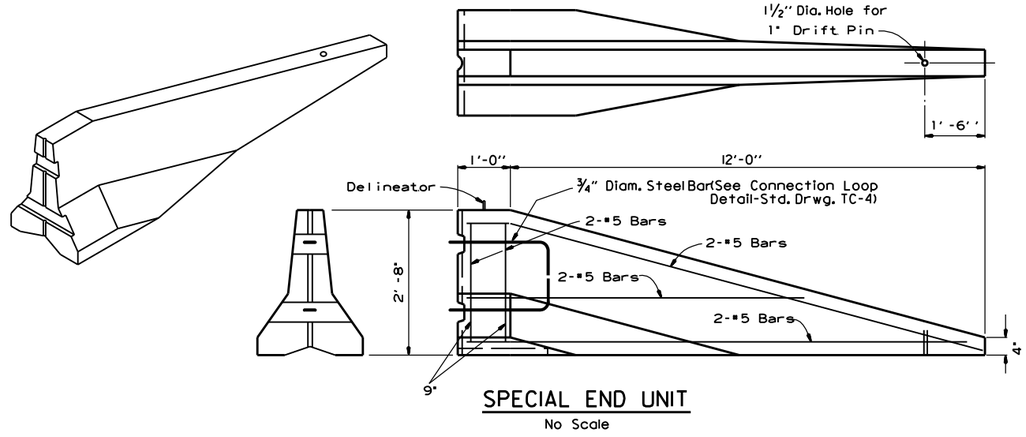



## BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only




## SPECIAL END UNIT

No Scale

### General Notes

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

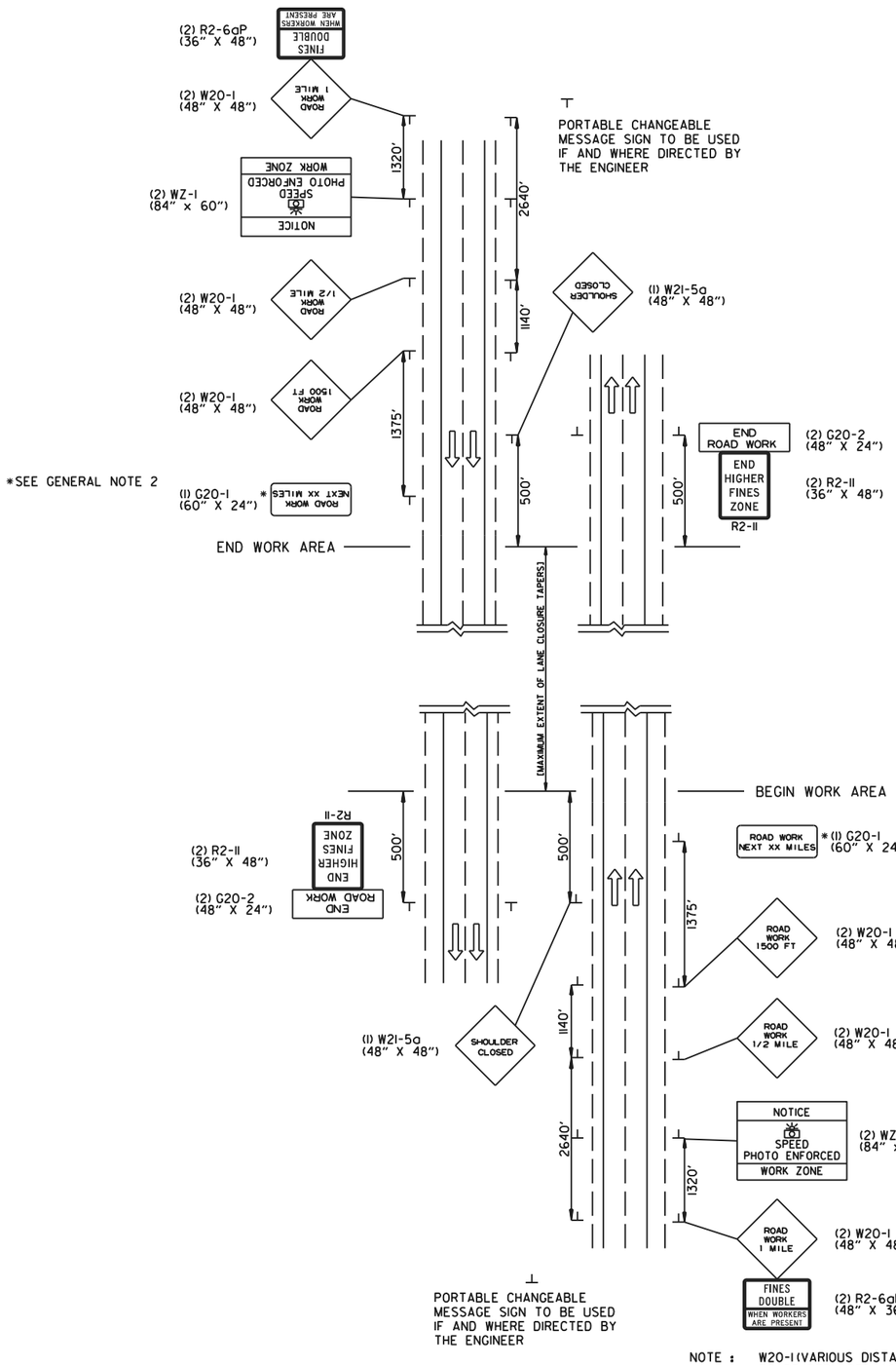
| DATE | REVISION | FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 11-07-19 | REVISED NOTE | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 5-25-06 | REVISED BARRIER PLACEMENT | |
| 8-22-02 | ISSUED NEW DRAWING | |

**ARKANSAS STATE HIGHWAY COMMISSION**

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

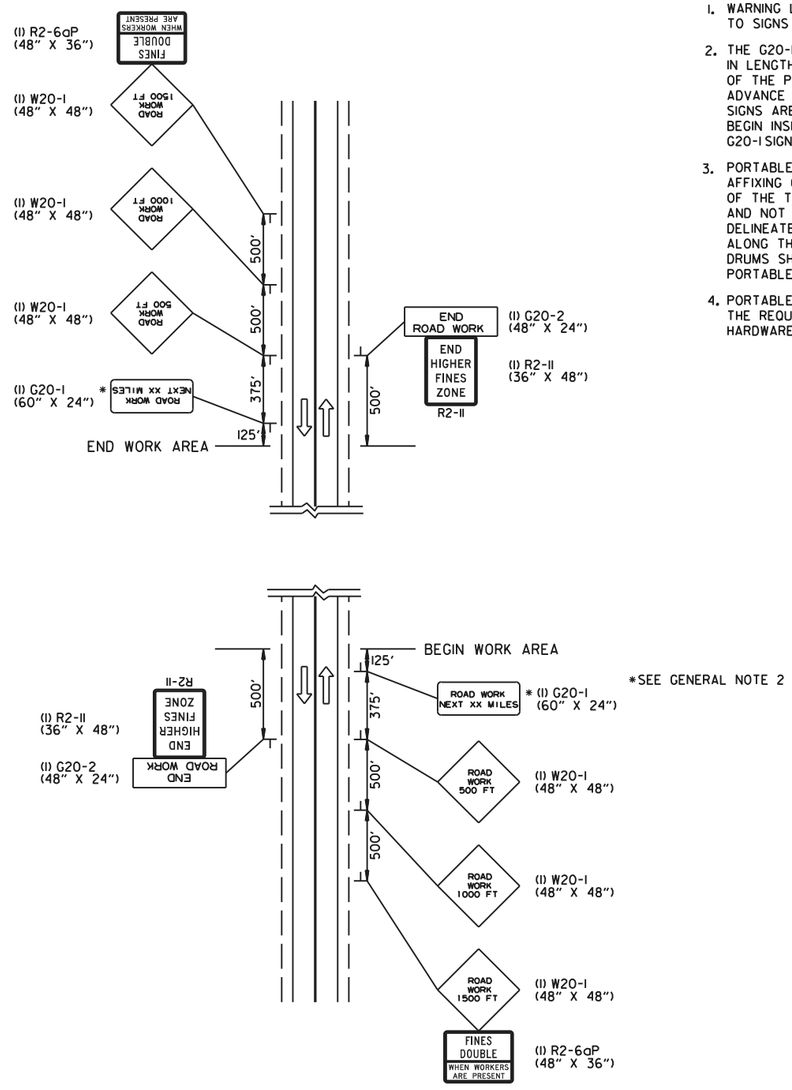
STANDARD DRAWING TC-5

NOTE : W20-1 (VARIOUS DISTANCE) ADVANCE SIGNS TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS AS WORKING AREA SHIFTS.




NOTE : W20-1 (VARIOUS DISTANCE) ADVANCE SIGNS TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS AS WORKING AREA SHIFTS.

(A) TYPICAL APPLICATION - ADVANCE WARNING SIGNS AT BEGINNING AND END OF JOB (FULLY CONTROLLED ACCESS FACILITIES) (ALL STAGES)




(B) TYPICAL APPLICATION - ADVANCE WARNING SIGNS AT BEGINNING AND END OF JOB (NON-FULLY CONTROLLED ACCESS FACILITIES) (ALL STAGES)

GENERAL NOTES:

1. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
2. THE G20-1 SIGN SHOULD BE INSTALLED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE OR 1500 FT) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS. THE DISTANCE DISPLAYED ON THE G20-1 SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.
3. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THIS DEVICE SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR PORTABLE CHANGEABLE MESSAGE SIGNS.
4. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

| DATE REV | ISSUED | DESCRIPTION |
|---|---|---|
| 08-14-25 | | |

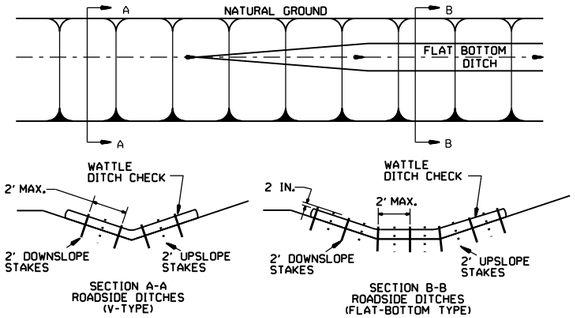
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

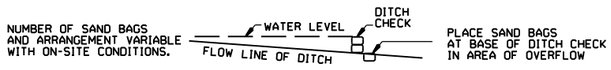
| DATE EFFECTIVE | STANDARD DRAWING | TC-6 |
|---|---|---|
| 08-14-2025 | | |

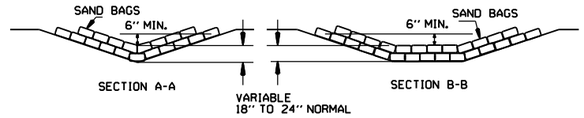
GENERAL NOTES

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

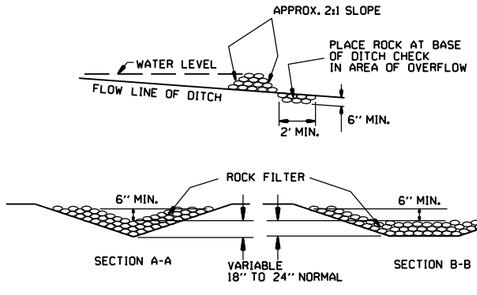



## WATTLE DITCH CHECK (E-1)




## SAND BAG DITCH CHECK (E-5)

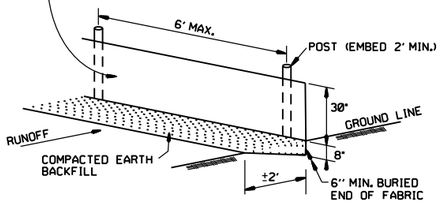



## ROCK DITCH CHECK (E-6)

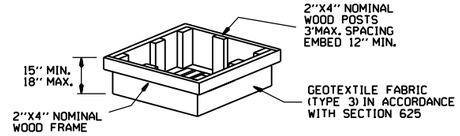
GENERAL NOTES

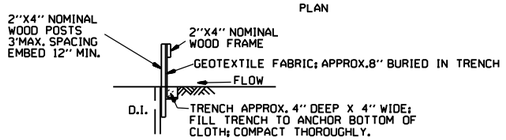
GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

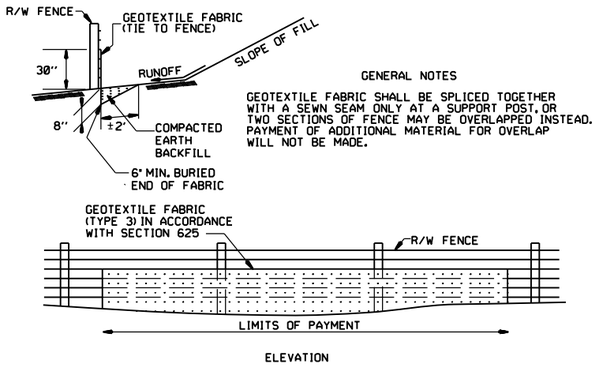



## SILT FENCE (E-11)




## DROP INLET SILT FENCE (E-7)




GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

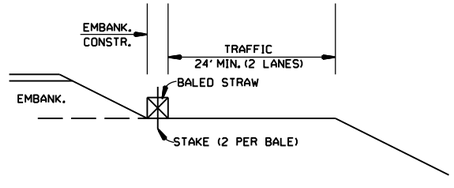
## SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

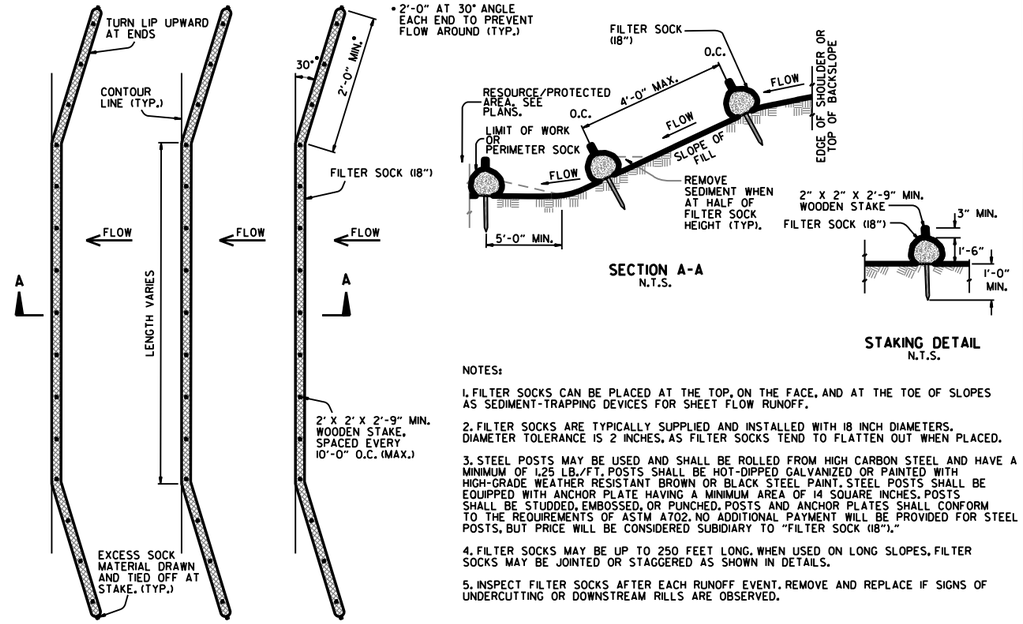
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.




## BALED STRAW FILTER BARRIER (E-2)




PLAN VIEW
N.T.S.

SECTION A-A
N.T.S.

STAKING DETAIL
N.T.S.

NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

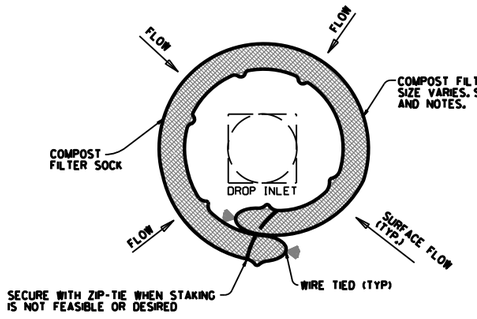
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

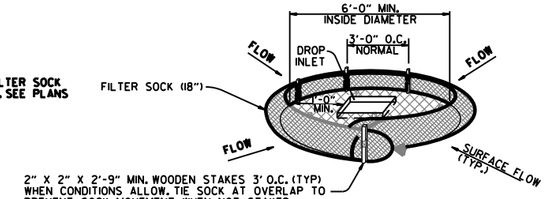
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

## FILTER SOCK ALONG SLOPE (E-3)




DROP INLET PLAN VIEW
N.T.S.




DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

## COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

| DATE | REVISION | FILMED |
|---|---|---|
| 11-16-17 | ADDED FILTER SOCK E-3 AND E-13 | |
| 12-15-11 | DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK | |
| 11-18-98 | ADDED NOTES | |
| 07-02-98 | ADDED BALED STRAW FILTER BARRIER (E-2) | |
| 07-20-95 | REVISED SILT FENCE E-4 AND E-11 | 7-20-95 |
| 07-15-94 | REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC | |
| 06-02-94 | REVISED E-1,4,7 & 11; DELETED E-2 & 3 | 6-2-94 |
| 04-01-93 | REDRAWN | |
| 10-01-92 | REDRAWN | |
| 08-02-76 | ISSUED R.D.M. | 298-7-28-76 |

ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

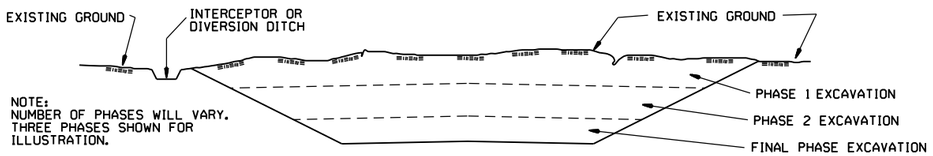
STANDARD DRAWING TEC-1

# CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

# EXCAVATION



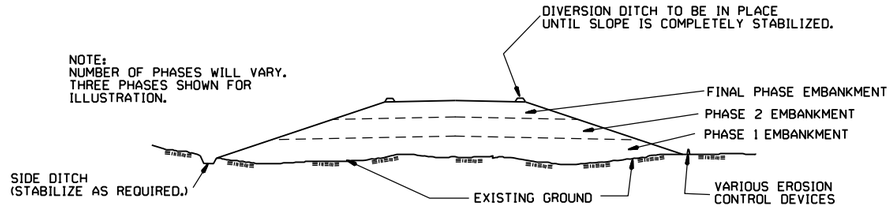

GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

# EMBANKMENT




GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

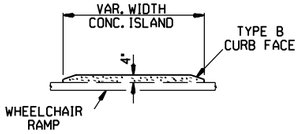
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-03-94 | CORRECTED SPELLING | |
| 6-2-94 | Drawn & Issued | 6-2-94 |

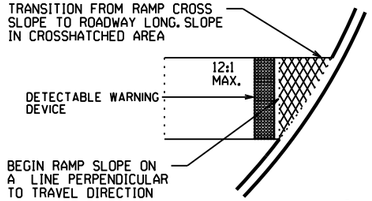
ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

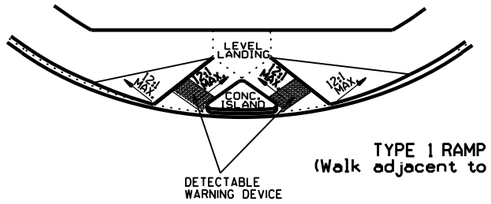
STANDARD DRAWING TEC-3



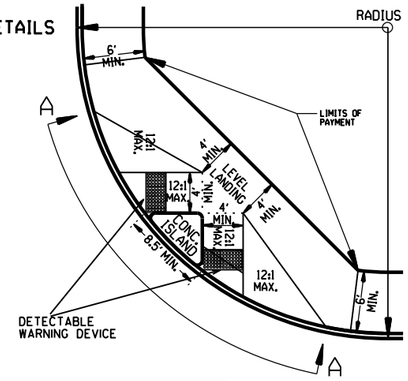

CONCRETE ISLAND DETAIL

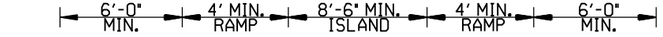



SLOPE TRANSITION DETAILS




TYPE 1 RAMP
(Walk adjacent to curb)

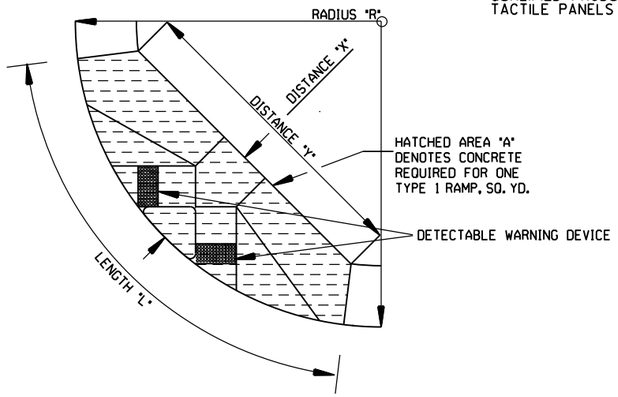



SECTION A-A

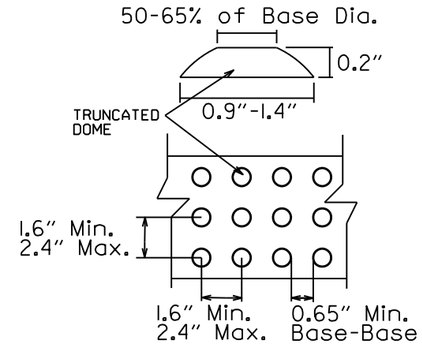
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

| RADIUS "R" FEET | DISTANCE "X" FEET | DISTANCE "Y" FEET | LENGTH "L" FEET | RAMP AREA "A" SQ. YD. |
|---|---|---|---|---|
| 15 | 11.67 | 18.82 | 32.18 | 26.21 |
| 20 | 11.52 | 22.28 | 35.46 | 30.07 |
| 25 | 11.43 | 26.60 | 38.77 | 33.80 |
| 30 | 11.37 | 30.26 | 40.93 | 36.90 |
| 35 | 11.33 | 33.51 | 43.11 | 39.77 |
| 40 | 11.30 | 36.45 | 45.26 | 42.45 |
| 45 | 11.27 | 39.16 | 47.34 | 44.97 |
| 50 | 11.25 | 41.69 | 49.36 | 47.35 |
| 55 | 11.24 | 44.07 | 51.31 | 49.63 |
| 60 | 11.22 | 46.33 | 53.21 | 51.80 |




GENERAL NOTES FOR DETECTABLE WARNING DEVICES

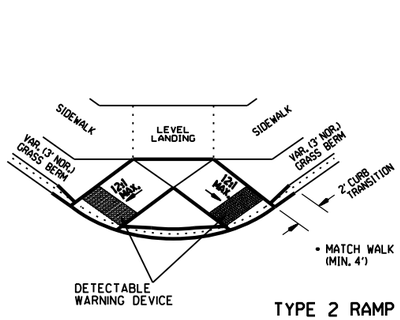
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



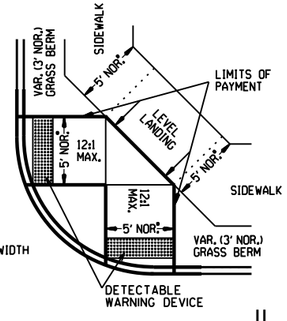

DETECTABLE WARNING DEVICE DETAIL

GENERAL NOTES:

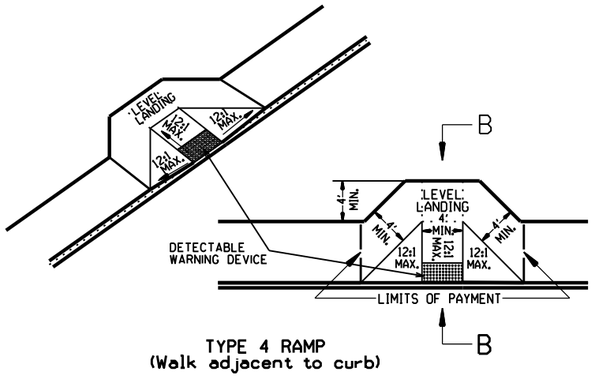
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK 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 PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



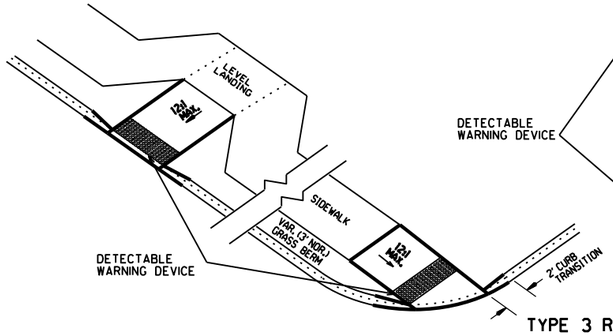

TYPE 2 RAMP



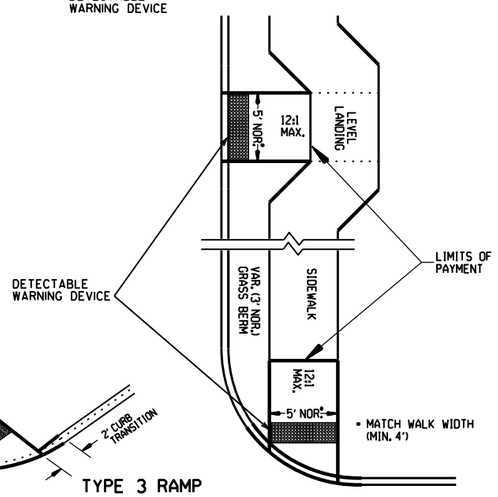

NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

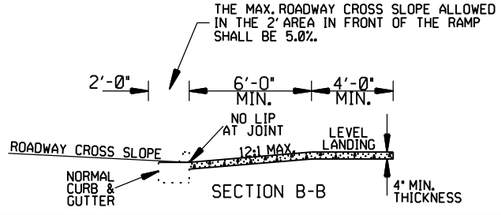



TYPE 4 RAMP
(Walk adjacent to curb)




TYPE 3 RAMP




SECTION B-B

RAMP SELECTION CRITERIA

| | | |
|---|---|---|
| FIRST CHOICE | TYPE 1 | CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 2 | CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 3 | CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| | TYPE 4 | TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS). |
| SECOND CHOICE | TYPE 5 | TANGENT LOCATIONS (ALTERATIONS ONLY). |
| THIRD CHOICE | TYPE 6 | CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS. |
| FOURTH CHOICE | | 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). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES. |

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF 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.

| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| 11-10-05 | REVISED TO NEW SIDEWALK POLICY | |
| 10-9-03 | REVISED GEN. NOTES & ADDED NOTE | |
| 4-10-03 | REV. DETECTABLE WARNING DEVICES | |
| 8-22-02 | ADD DETECTABLE WARNING DEVICES | |
| 3-30-00 | ADD. SLOPE TRANS. & REV. ISL. DIMS. | |
| 11-18-98 | REVISED NOTES | |
| 8-12-98 | REVISED TEXTURE | |
| 7-02-98 | REDRAWN & REISSUED | |
| 10-18-96 | CORRECTED DIMENSIONS | 10-18-96 |
| 5-24-90 | FROM@1TO12=MAX. SLOPES | 5-24-90 |
| 7-15-88 | ADJUSTED MAX. SLOPE | 652-7-15-88 |
| 7-14-88 | INCLUD. "CONC. ISLD." IN PAY ITEM | ------ |
| 6-02-76 | ISSUED-P.M.D. | 299-7-28-76 |

ARKANSAS STATE HIGHWAY COMMISSION

# WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS

STANDARD DRAWING WR-1