

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|------------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 1 | 40 |
| ELMO CREEK STR. & APPRS. (S) | | | | | | |

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

ELMO CREEK
STR. & APPRS. (S)

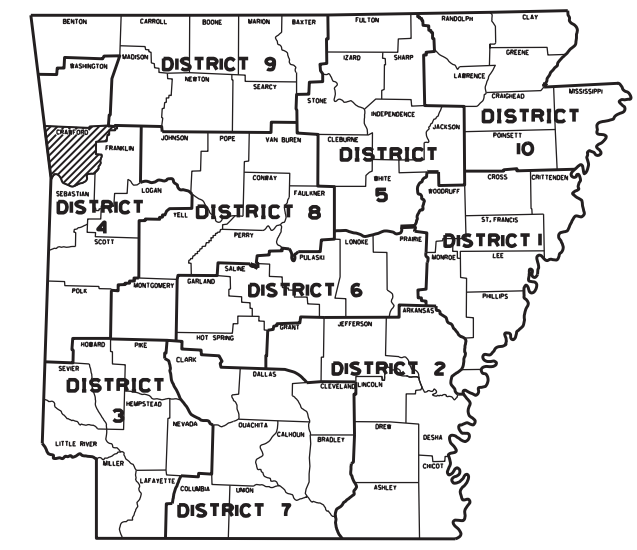
CRAWFORD COUNTY

ROUTE 220 SECTION 2

JOB 040779

FED. AID PROJ. NHPP-0017(45)

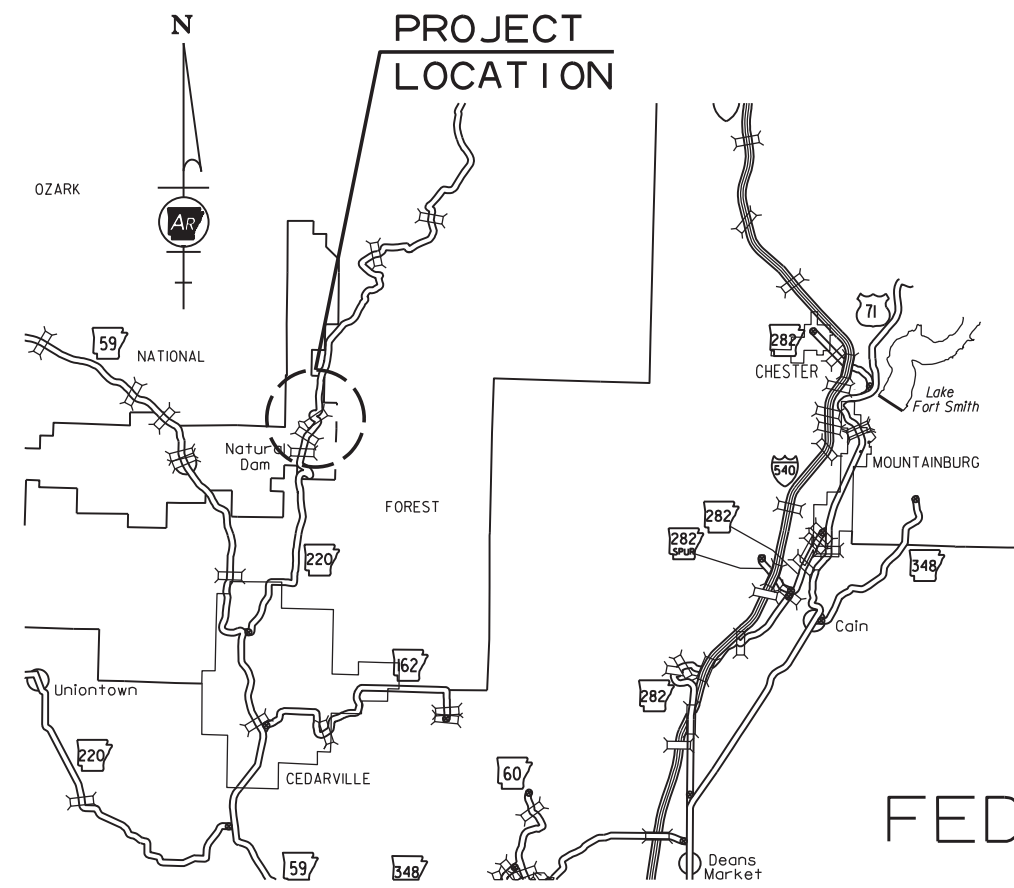
NOT TO SCALE



ARK. HWY. DIST. NO. 4

• DESIGN TRAFFIC DATA •

| | |
|--------------------------|--------|
| DESIGN YEAR | 2042 |
| 2022 ADT | 440 |
| 2042 ADT | 550 |
| 2042 DHV | 61 |
| DIRECTIONAL DISTRIBUTION | 60% |
| TRUCKS | 3% |
| DESIGN SPEED | 30 MPH |



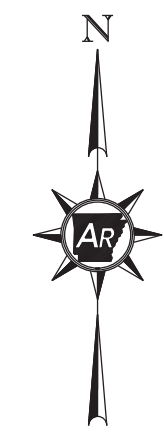
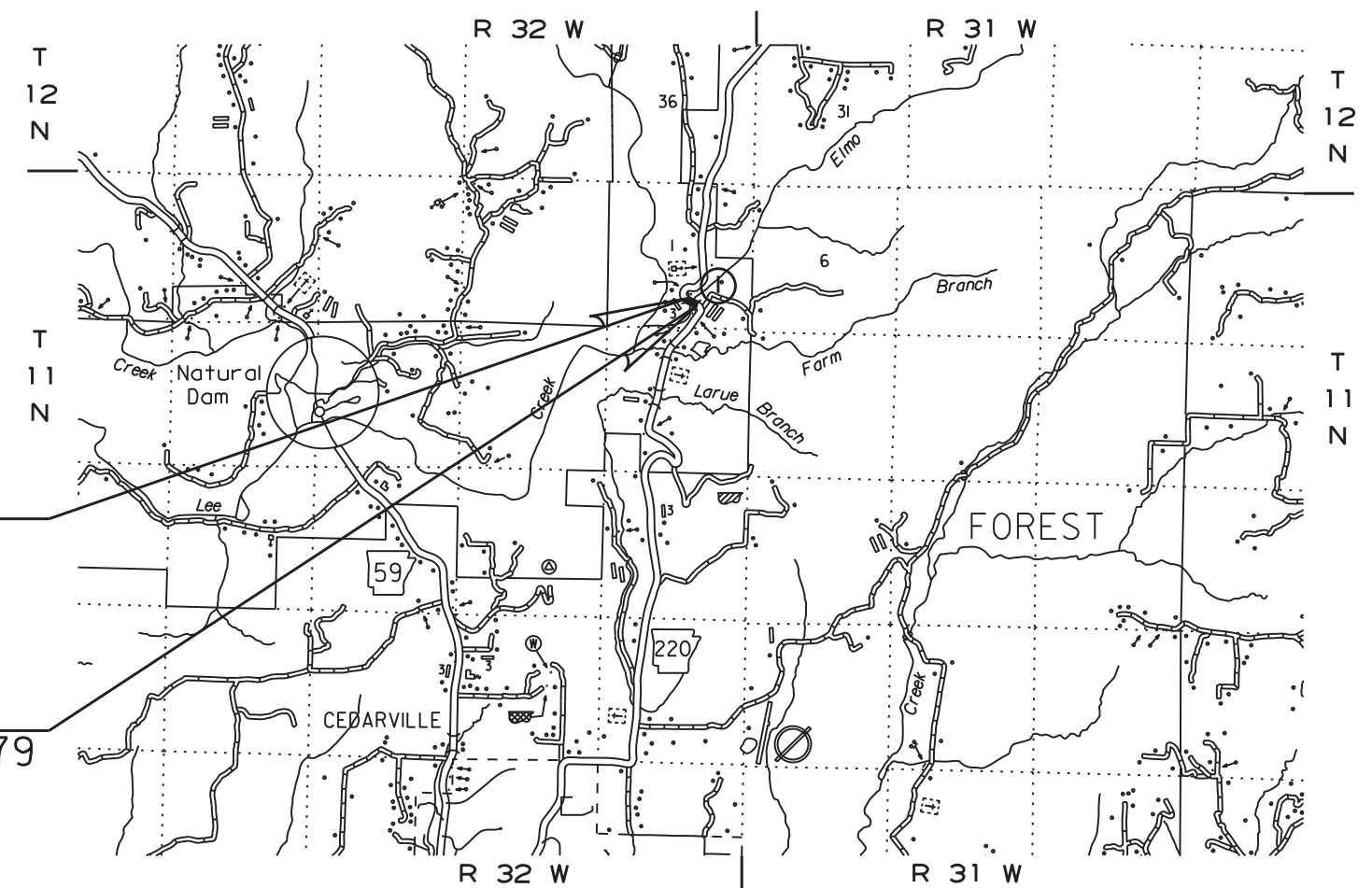
VICINITY MAP

STRUCTURES OVER 20'-0" SPAN

- ① STA. 108+35 - CONSTRUCT
QUINT. 12' x 12' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 4370 CFS, D.A. = 7.7 SQ. MI.
SPAN = 66.83 LIN. FT.

STA. 109+15.00
END JOB 040779

STA. 107+60.00
BEGIN JOB 040779
LOG MILE 5.35



APPROVED



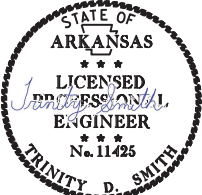
Kelvin Rex Vines
Vines, Rex
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DEPUTY DIRECTOR
AND CHIEF ENGINEER

| | BEGIN PROJECT | MID-POINT OF PROJECT | END PROJECT |
|-----------|---------------|----------------------|-------------|
| LATITUDE | N 35°39'27" | N 35°39'27" | N 35°39'27" |
| LONGITUDE | W 94°20'53" | W 94°20'54" | W 94°20'55" |

| | | | | |
|-------------------------|--------|---------|-------|-------|
| GROSS LENGTH OF PROJECT | 155.00 | FEET OR | 0.029 | MILES |
| NET " " ROADWAY | 88.17 | " " | 0.017 | " |
| NET " " BRIDGES | 66.83 | " " | 0.012 | " |
| NET " " PROJECT | 155.00 | " " | 0.029 | " |

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| | | 6 | ARK. | 040779 | 2 | 40 |
| INDEX OF SHEETS & STANDARD DRAWINGS | | | | | | |



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INDEX OF SHEETS

| SHEET NO. | TITLE |
|-----------|--|
| 1 | TITLE SHEET |
| 2 | INDEX OF SHEETS AND STANDARD DRAWINGS |
| 3 | GOVERNING SPECIFICATIONS AND GENERAL NOTES |
| 4 - 5 | TYPICAL SECTIONS OF IMPROVEMENT |
| 6 - 12 | SPECIAL DETAILS |
| 13 - 16 | TEMPORARY EROSION CONTROL DETAILS |
| 17 - 20 | MAINTENANCE OF TRAFFIC DETAILS |
| 21 | PERMANENT PAVEMENT MARKING DETAILS |
| 22 - 26 | QUANTITIES |
| 27 | SUMMARY OF QUANTITIES AND REVISIONS |
| 28 - 30 | SURVEY CONTROL DETAILS |
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| 32 | DETOUR PLAN AND PROFILE SHEET |
| 33 - 40 | CROSS SECTIONS |

ROADWAY STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|----------|--|----------|
| CDP-1 | CONCRETE DITCH PAVING | 12-08-16 |
| DR-2 | DETAILS OF DRIVEWAYS & STREET TURNOUTS | 05-19-22 |
| MB-1 | MAILBOX DETAILS | 11-18-04 |
| 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 |
| PM-1 | PAVEMENT MARKING DETAILS | 02-27-20 |
| PU-1 | DETAILS OF PIPE UNDERDRAIN | 12-08-16 |
| RCB-1 | REINFORCED CONCRETE BOX CULVERT DETAILS | 07-26-12 |
| RCB-2 | EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS | 11-20-03 |
| SE-2 | TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC | 11-07-19 |
| TC-1 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 11-07-19 |
| TC-2 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 05-20-21 |
| TC-3 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-12-21 |
| 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 |
| TEC-1 | TEMPORARY EROSION CONTROL DEVICES | 11-16-17 |
| TEC-2 | TEMPORARY EROSION CONTROL DEVICES | 06-02-94 |
| TEC-3 | TEMPORARY EROSION CONTROL DEVICES | 11-03-94 |
| WF-4 | WIRE FENCE TYPE C AND D | 08-22-02 |

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 |
| 105-4 | MAINTENANCE DURNG 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 |
| 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 |
| 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 |
| 501-2 | CEMENT |
| 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 |
| 620-1 | MULCH COVER |
| 621-1 | FILTER SOCKS |
| 800-1 | STRUCTURES |
| 802-3 | CONCRETE FOR STRUCTURES |
| 802-4 | CEMENT |
| 804-2 | REINFORCING STEEL FOR STRUCTURES |
| JOB 040779 | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 040779 | BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT |
| JOB 040779 | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB 040779 | CARGO PREFERENCE ACT REQUIREMENTS |
| JOB 040779 | CAVE DISCOVERY |
| JOB 040779 | COLD MILLING - COUNTY PROPERTY |
| JOB 040779 | CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS |
| JOB 040779 | DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES |
| JOB 040779 | DISPOSAL OF ILLEGAL DUMP MATERIAL |
| JOB 040779 | ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT |
| JOB 040779 | FLEXIBLE BEGINNING OF WORK |
| JOB 040779 | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION |
| JOB 040779 | LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS |
| JOB 040779 | MANDATORY ELECTRONIC CONTRACT |
| JOB 040779 | MANDATORY ELECTRONIC DOCUMENT SUBMITTAL |
| JOB 040779 | NESTING SITES OF MIGRATORY BIRDS |
| JOB 040779 | OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS |
| JOB 040779 | PRICE ADJUSTMENT FOR ASPHALT BINDER |
| JOB 040779 | PRICE ADJUSTMENT FOR FUEL |
| JOB 040779 | PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT |
| JOB 040779 | SHORING FOR CULVERTS |
| JOB 040779 | SOIL STABILIZATION |
| JOB 040779 | SPECIAL CLEARINGPUP SEASON REQUIREMENTS |
| JOB 040779 | STORM WATER POLLUTION PREVENTION PLAN |
| JOB 040779 | SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB 040779 | UTILITY ADJUSTMENTS |
| JOB 040779 | VEGETATED BUFFER ZONE |
| JOB 040779 | WARM MIX ASPHALT |
| JOB 040779 | WATER POLLUTION CONTROL |

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| GOVERNING SPECS. & GENERAL NOTES | | | | | | |



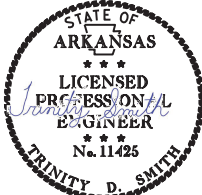
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GENERAL NOTES

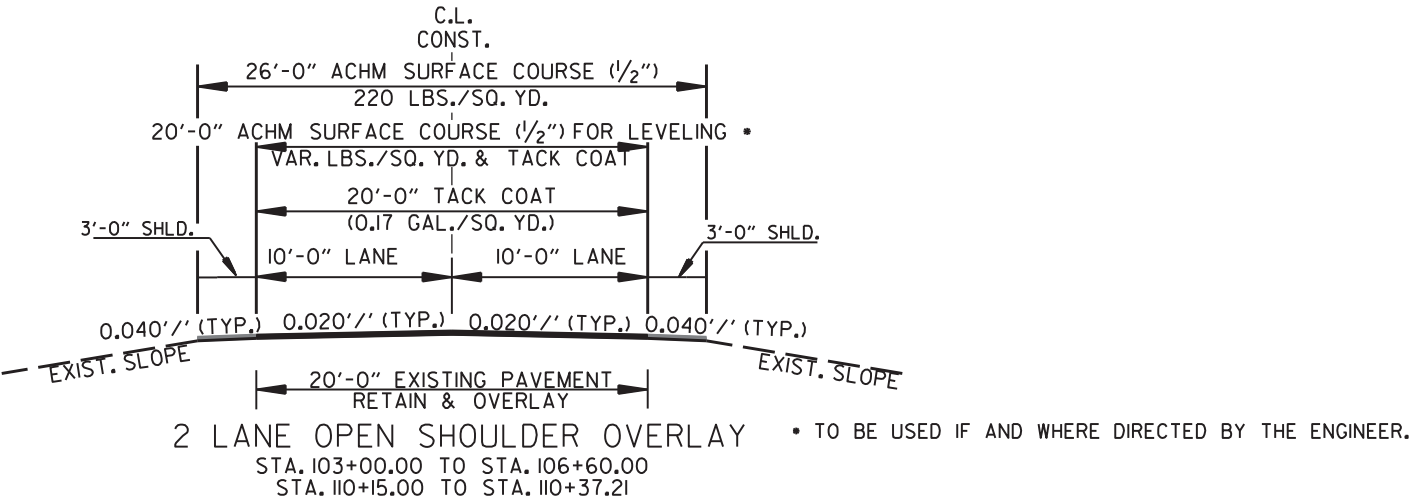
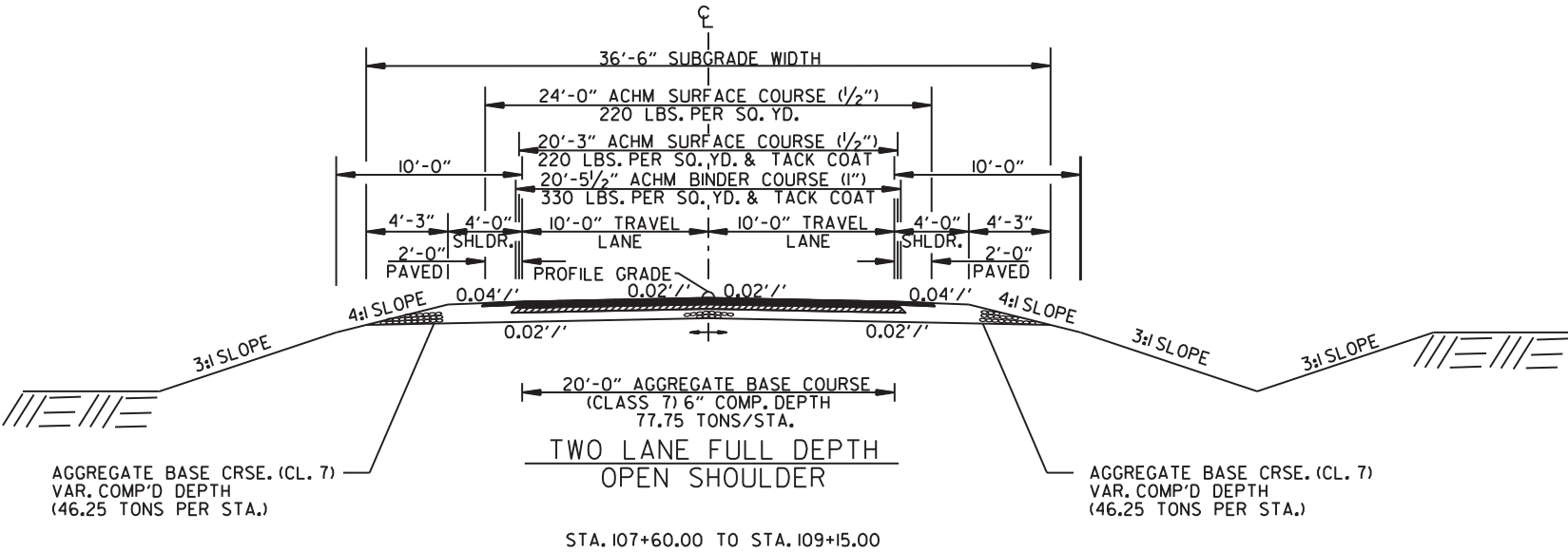
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- 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.
- 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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| TYPICAL SECTIONS OF IMPROVEMENT | | | | | | |



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NOTES:

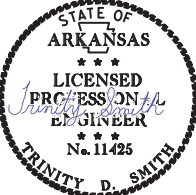
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

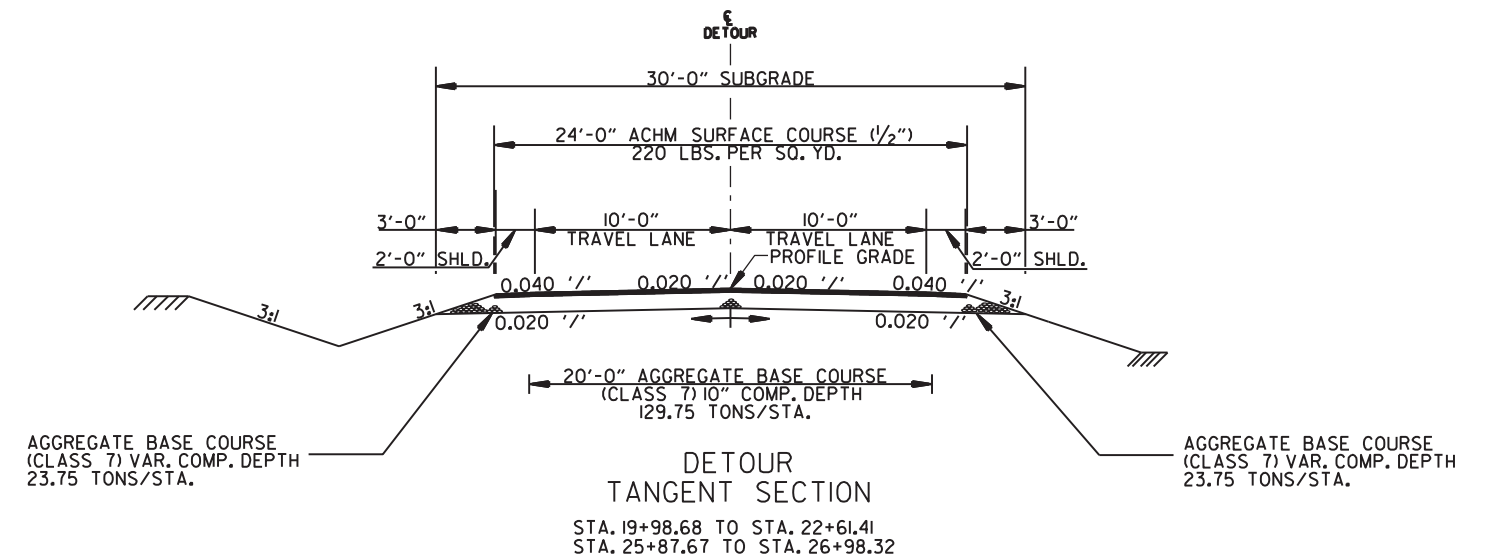
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

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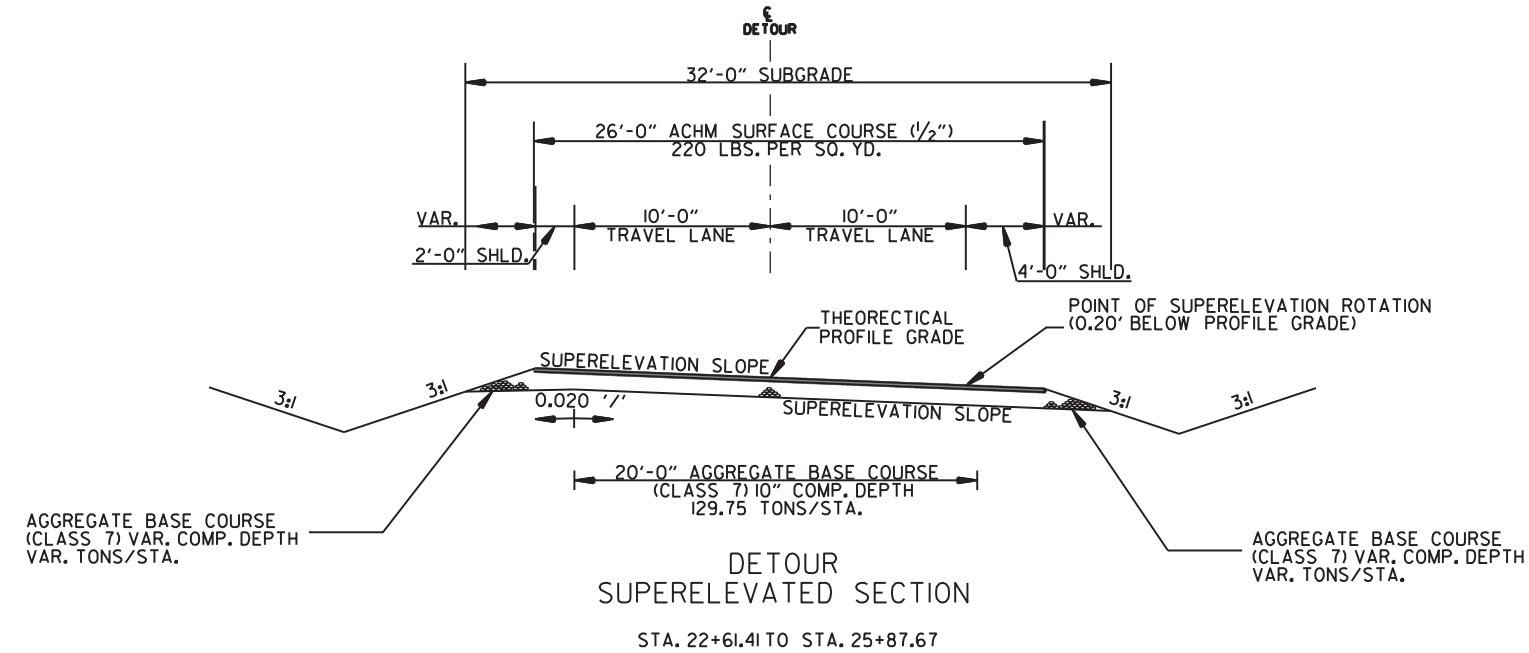


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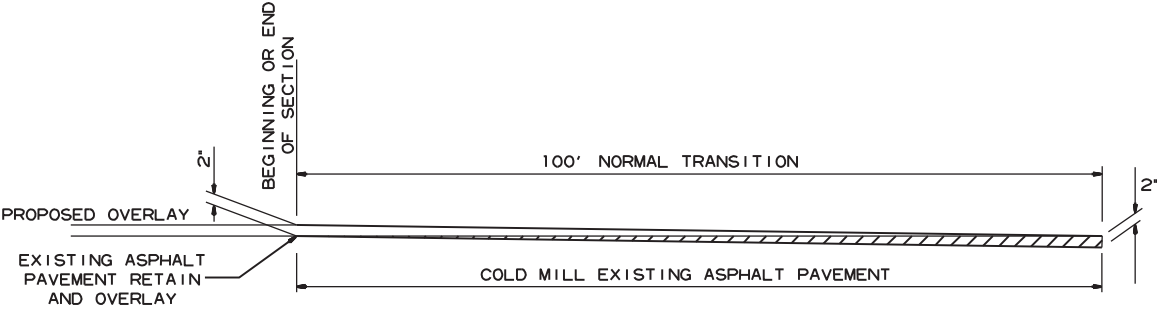


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| SPECIAL DETAILS | | | | | | |

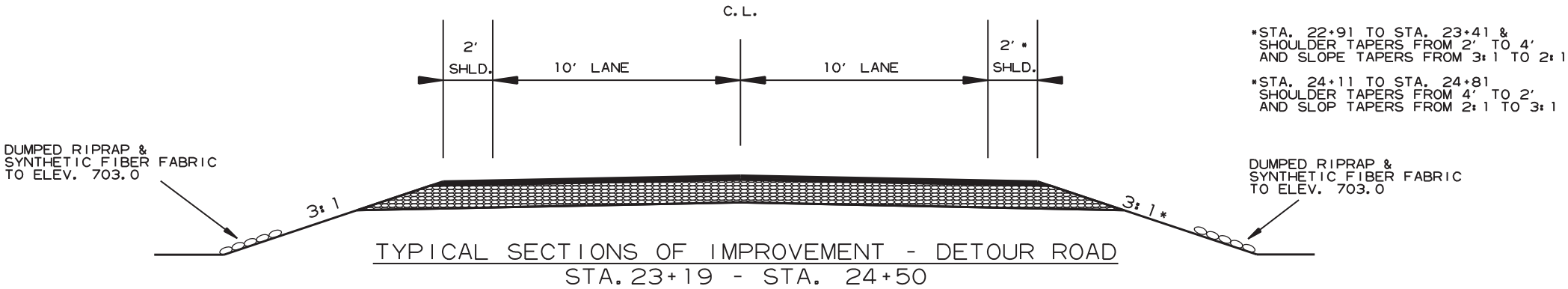


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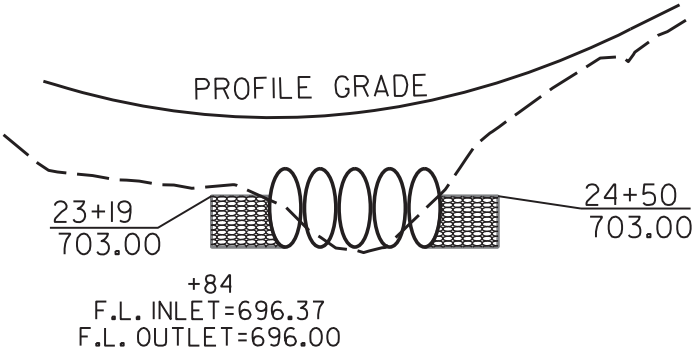
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DETAIL FOR TRANSITIONS



THIS STREAM IS CLASSIFIED AS AN PERENNIAL STREAM. THE PERENNIAL STREAM BANK ELEVATION IS 703.0 FT. MSL.



MID-SECTION

| R.C. BOX SECTION | | | | | | | | | | SECTION LENGTH (FT.) | TOP SLAB REINFORCING STEEL | | | | | | BOTTOM SLAB REINFORCING STEEL | | | | | | SIDE WALL REINFORCING STEEL | | | | INTERIOR WALL REINFORCING STEEL | | | | TOP SLAB DISTRIBUTION REINF. STEEL | | | BOTTOM SLAB DISTRIBUTION REINF. STEEL | | | SIDE WALL DISTRIBUTION REINF. STEEL | | | INTERIOR WALL DISTRIBUTION REINF. STEEL | | | | | | |
|-------------------------|----|----|----|----|----|------|----|--------|--------|----------------------|----------------------------|--------|----------|--------|------|--------|-------------------------------|-----------|------|--------|-----------|--------|-----------------------------|--------|---------|-----------|---------------------------------|---------|-----------|--------|------------------------------------|---------|-----------|---------------------------------------|------|---------|-------------------------------------|------|---------|---|------|-----|------|---|------|----|
| DESIGN FILL DEPTH (FT.) | | | | | | | | | | | LENGTH = OW - 4" + BENDS | | | | | | LENGTH = OW - 4" + BENDS | | | | | | LENGTH = OH - 4" | | | | LENGTH = OH - 4" | | | | LENGTH = SL | | | LENGTH = SL | | | LENGTH = SL | | | LENGTH = SL | | | | | | |
| CLEAR SPAN (FT.) | | | | | | | | | | | "a" | | Bent "b" | | "c" | | SPACING | NO. REQ'D | "d" | | Bent "b1" | | "f" | | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | | | | | | |
| D | S | H | T | B | C | W | OW | OH | SL | | SIZE | L | SIZE | L | SIZE | L | | | SIZE | L | SIZE | L | SIZE | L | | | | | | | | | | | | | | | | | SIZE | L | SIZE | L | SIZE | L |
| A | 10 | 12 | 12 | 15 | 15 | 12.5 | 8 | 64'-9" | 14'-6" | 72 | 4 | 64'-5" | 8 | 66'-5" | 4 | 64'-5" | 18 | 48 | 4 | 64'-5" | 5 | 66'-4" | 5 | 64'-5" | 11 | 78 | 6 | 4 | 432 | 14'-2" | 6 | 14 | 488 | 14'-2" | 5 | 11 | 149 | 5 | 11 | 149 | 4 | 8.5 | 34 | 4 | 12 | 96 |

| CLASS "S" CONCRETE | REINFORCING STEEL (GR. 60) |
|--------------------|----------------------------|
| CU. YDS. | LBS. |
| 583.67 | 77035 |

INLET SLOPE SECTION(S)

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| DESIGN FILL DEPTH (FT.) | | | | | | | | | | | LENGTH = OW - 4" + BENDS | | | | | | LENGTH = OW - 4" + BENDS | | | | | | LENGTH = OH - 4" | | | | LENGTH = OH - 4" | | | | LENGTH = SL | | | LENGTH = SL | | | LENGTH = SL | | | LENGTH = SL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | S | H | T | B | C | W | OW | OH | SL | | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | L | SIZE | L | SIZE | L | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | SIZE | SPACING | NO. REQ'D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| CLASS "S" CONCRETE | REINFORCING STEEL (GR. 60) |
|--------------------|----------------------------|
| CU. YDS. | LBS. |
| 0.60 | 181 |

| 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.

INLET SKEWED END SECTION

| SK | SL | D | S | H | LL | T | HD | B | C | W | OW | OH | TOP SLAB REINFORCING STEEL | | | | | | | | BOTTOM SLAB REINFORCING STEEL | | | | | | | | SIDE WALL REINFORCING STEEL | | | | INTERIOR WALL REINFORCING STEEL | | | | TOP SLAB DISTRIBUTION REINFORCING STEEL | | | | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL | | | | SIDE WALL DISTRIBUTION REINFORCING STEEL | | | | INTERIOR WALL DISTRIBUTION REINFORCING STEEL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | "a" | | | | "c" | | | | "d" | | | | "f" | | | | "f0" | | | | "f1" | | | | "g" | | | | "e" | | | | "d1" | | | | "d2" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | SIZE | SPACING | LENGTHS VARY | NO. REQ'D | SIZE | SPACING | LENGTHS VARY | NO. REQ'D | SIZE | SPACING | LENGTHS VARY | NO. REQ'D | SIZE | SPACING | LENGTHS VARY | NO. REQ'D | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTHS VARY | SIZE | SPACING | NO. REQ'D | LENGTHS VARY | SIZE | SPACING | NO. REQ'D | LENGTH | SIZE | SPACING | NO. REQ'D | LENGTH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | Max | | | | Max | | | | | | | | | | Max | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | </ |

INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT | | WINGWALL ANGLE (DEGREE) | | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL | | FOOTING DIMENSION PARALLEL WITH HDWL | | LENGTH OF WINGWALLS | | LENGTH OF FOOTING HEEL | | CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--------------|--------------|----------------|-----------------|-------------------------|-------------|--------------|-------------|--------------|-------------------------|--------------|---------------------------|--------------------------------|-----------|--------------------------------------|-----------|---------------------|---|------------------------|------------|-------------------------------------|---|---|----------|--------------|-----------|--------------|--|--------------|-----------|--------------|----------------------------------|---|---|--------|---|---|--------|---|----|----|---|-------|------|
| | | | | | | | | AT HDWL | AT WING END | WING A | WING B | | WING A | WING B | WING A | WING B | WING A | WING B | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 | CU.YD | LBS. | | | | | | | | | | | | | | | | | | | | | | |
| 64'-9" | 12'-0" | 1'-1" | 1'-0" | 0 | 3:1 | 62'-8" | 2'-0" | 12'-10" | 4'-0" | 30 | 30 | 3'-6" | 6'-6" | 6'-6" | 3'-5 1/2" | 3'-5 1/2" | 30'-6" | 30'-6" | 33'-7 3/8" | 33'-7 3/8" | 36.53 | 2820 | | | | | | | | | | | | | | | | | | | | | | |
| WING | F1 | | | F2 | | | F3 | | | F4 | | | F5 | | | F6 | | | F7 | | F8 | | F9 | | | F10 | | F11 | | F12 | | REINF. STEEL QTY. PER WING (LBS) | | | | | | | | | | | | |
| | BAR SIZE | MAX. SPACING | NO. REQ'D | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | BAR SIZE | MAX. SPACING | NO. REQ'D | LENGTHS VARY | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WING A | 4 | 12 | 31 | L | Min 5'-8" Max 17'-3" | | L | 10'-3" | | L | 6'-1" | | Min 5'-7" Max 26'-4" | 4 | 18 | 10 | X | Min 2'-8" Max 2'-8" Min 4'-8" Max 13'-4" | 4 | 18 | 21 | X | Min 7'-3" Max 15'-11" Min 2'-8" Max 2'-8" Min 4'-8" Max 13'-4" | 4 | 18 | 21 | X | Min 3'-0" Max 17'-8" Min 3'-0" Max 33'-4" | 4 | 18 | 4 | Min 17'-8" Max 33'-4" | 4 | 2 | 31'-3" | 4 | 2 | 33'-7" | 6 | 12 | 12 | L | 3'-4" | 1410 |
| WING B | 4 | 12 | 31 | L | Min 5'-8" Max 17'-3" | | L | 10'-3" | | L | 6'-1" | | Min 5'-7" Max 26'-4" | 4 | 18 | 10 | X | Min 2'-8" Max 2'-8" Min 4'-8" Max 13'-4" | 4 | 18 | 21 | X | Min 7'-3" Max 15'-11" Min 2'-8" Max 2'-8" Min 4'-8" Max 13'-4" | 4 | 18 | 21 | X | Min 3'-0" Max 17'-8" Min 3'-0" Max 33'-4" | 4 | 18 | 4 | Min 17'-8" Max 33'-4" | 4 | 2 | 31'-3" | 4 | 2 | 33'-7" | 6 | 12 | 12 | L | 3'-4" | 1410 |

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 |

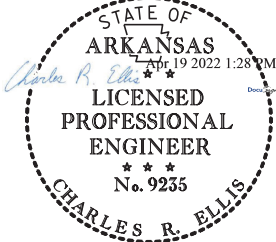
This drawing to be used in conjunction with SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE', SHEET 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT', SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT",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

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

| 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: DKS DATE: 3/10/2022
CHECKED BY: ASM DATE: 3/23/2022



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

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 108+35

SPECIAL DETAILS



OUTLET SLOPE SECTION(S)

[illegible]

| | | |
|------|----------|-------------------------------|
| | CU. YDS. | CLASS "S" CONCRETE |
| | LBS. | REINFORCING STEEL (GR. 60) |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | TOTAL | |
| 0.60 | 181 | |

OUTLET SKEWED END SECTION

[illegible]

OUTLET WINGWALL TABLE

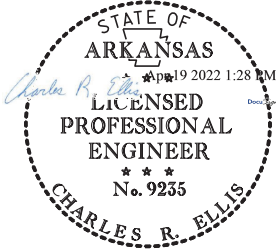
[illegible]

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

| | |
|----|--------|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

| | | | | | | | | |
|---|----------------|-----------------|----------------|------------------------|-------|--------------------|--------------|-----------------|
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 040779 | 8 | 40 |
| <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div> | | | | SPECIAL DETAILS | | | | |

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



TABULAR DATA BY: DKS DATE: 3/10/2022
CHECKED BY: ASM DATE: 3/23/2022

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 108+35

SPECIAL DETAILS



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.

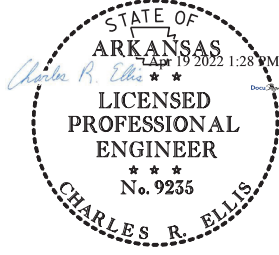
| | | | | | | | |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| 2:1 Slope | 20'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" |
| 3:1 Slope | 30'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" |
| 4:1 Slope | 40'-0" | 20'-0" | 20'-0" | 20'-0" | 20'-0" | 20'-0" | 20'-0" |

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.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 040779 | 9 | 40 |

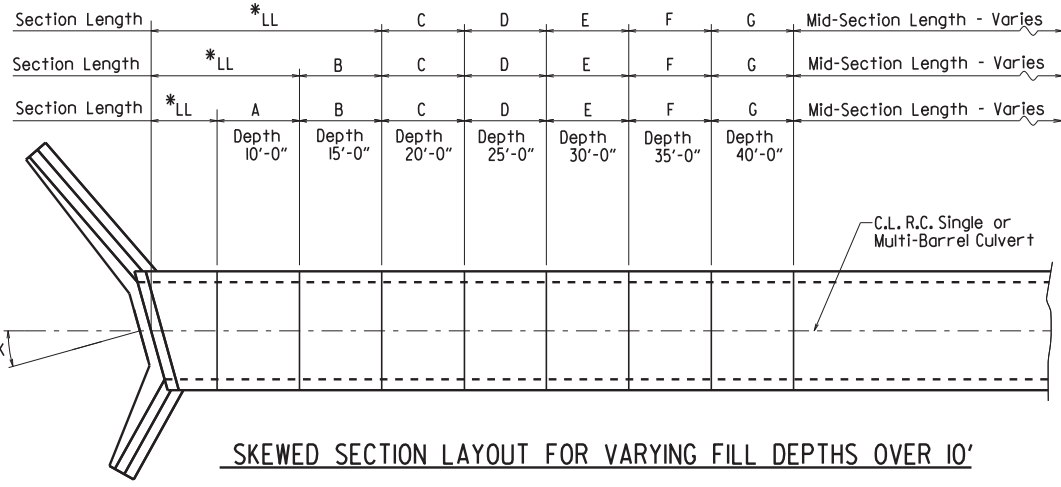
SPECIAL DETAILS



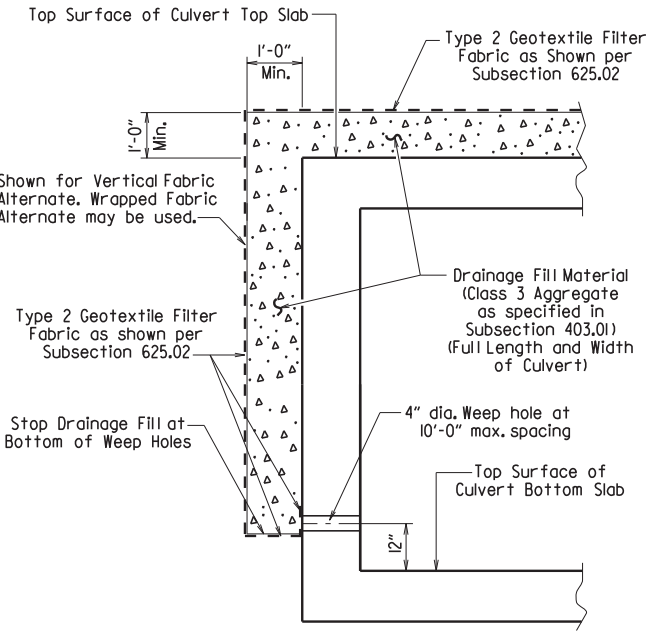
| | | | | | | | | |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------------------------|
| Slope Section Length @ 2:1 Slope | A=12'-0" | B=6'-0" | C=6'-0" | D=6'-0" | E=6'-0" | F=6'-0" | G=6'-0" | Mid-Section Length - Varies |
| Slope Section Length @ 3:1 Slope | A=22'-0" | B=11'-0" | C=11'-0" | D=11'-0" | E=11'-0" | F=11'-0" | G=11'-0" | Mid-Section Length - Varies |
| Slope Section Length @ 4:1 Slope | A=32'-0" | B=16'-0" | C=16'-0" | D=16'-0" | E=16'-0" | F=16'-0" | G=16'-0" | Mid-Section Length - Varies |

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes

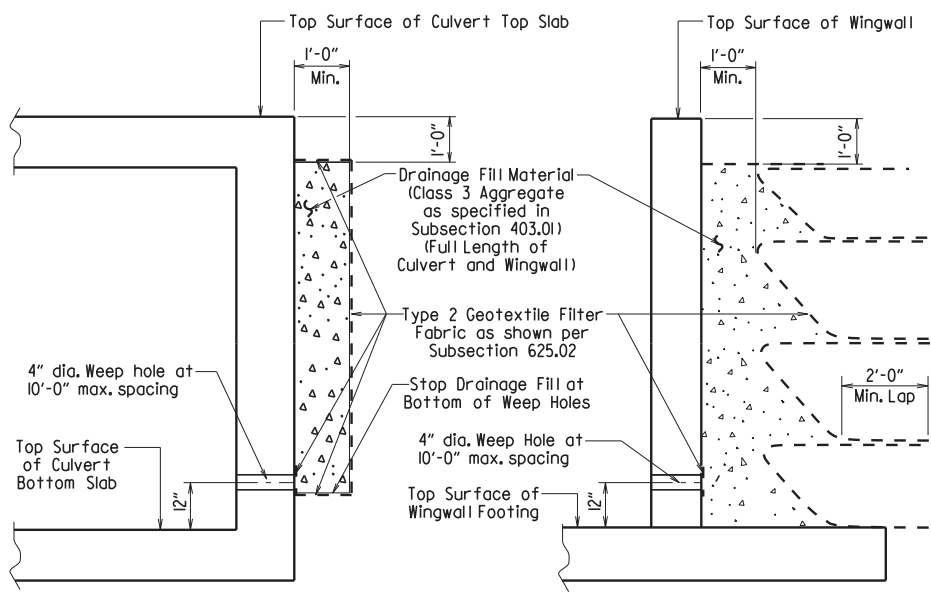


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



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.

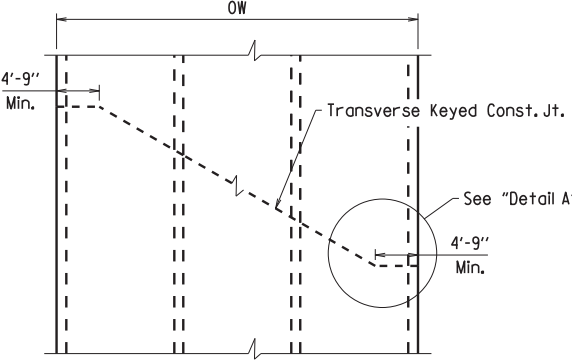
VERTICAL FABRIC ALTERNATE

(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE

(Shown for Wingwall, Similar for Culvert)

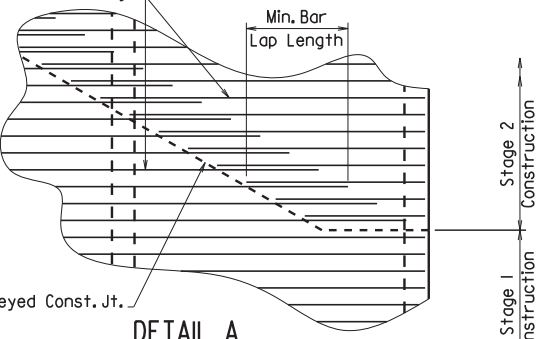
WINGWALL & CULVERT DRAINAGE DETAIL



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.

Slab bars "a", "b", "c", "d", "bl", or "f". Slab distribution and Wall reinforcing omitted for clarity.



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 3/4" 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".

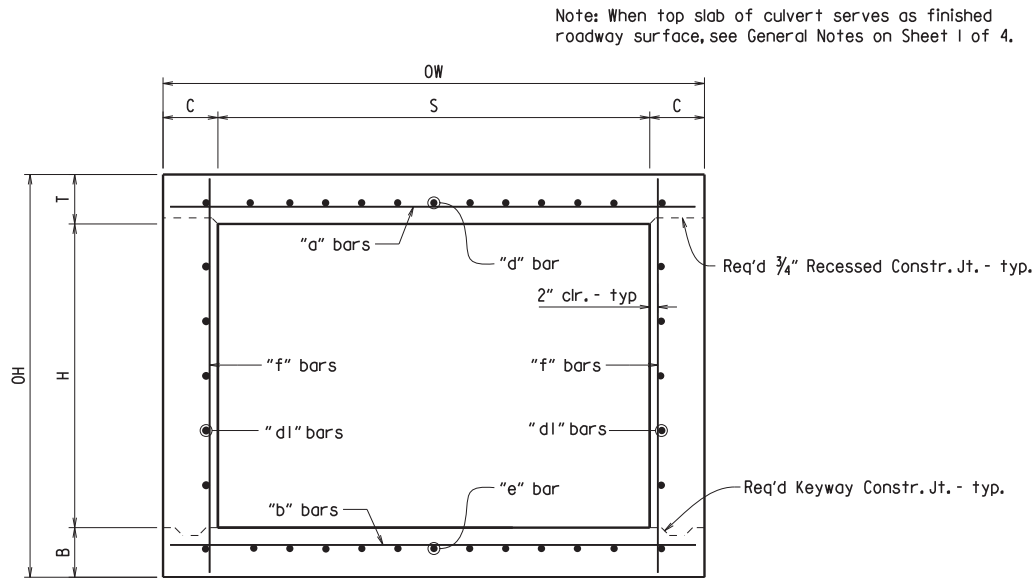
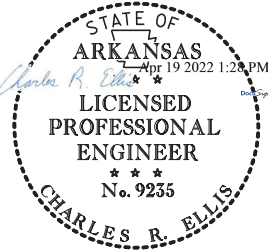
When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert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

SHEET 1 OF 4 GENERAL DETAILS OF R.C. BOX CULVERT GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE

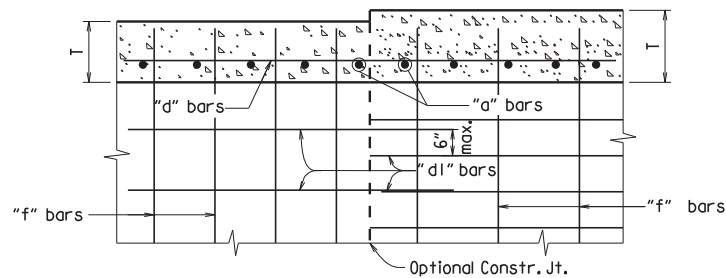
SPECIAL DETAILS



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 040779 | 10 | 40 |
| SPECIAL DETAILS | | | | | | | | |

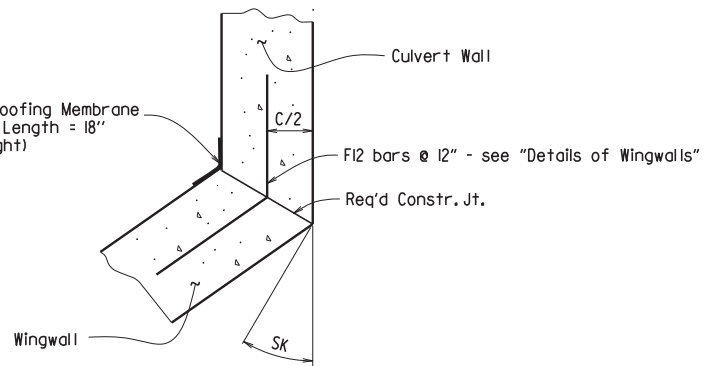


TYPICAL SECTION M-M



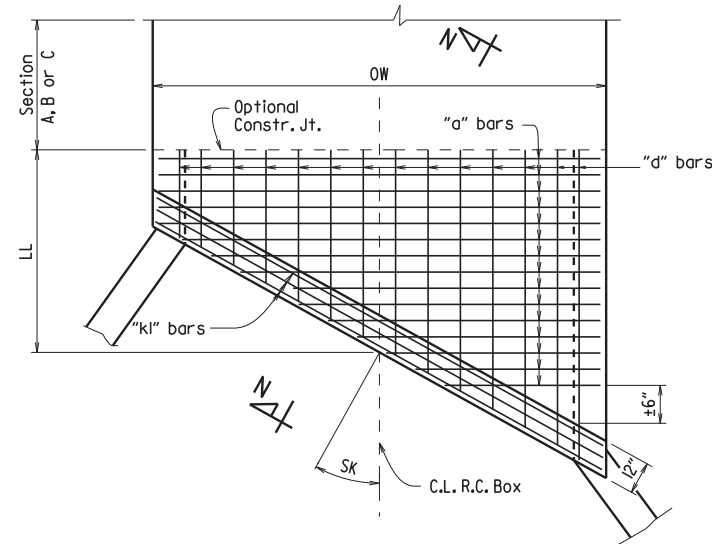
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

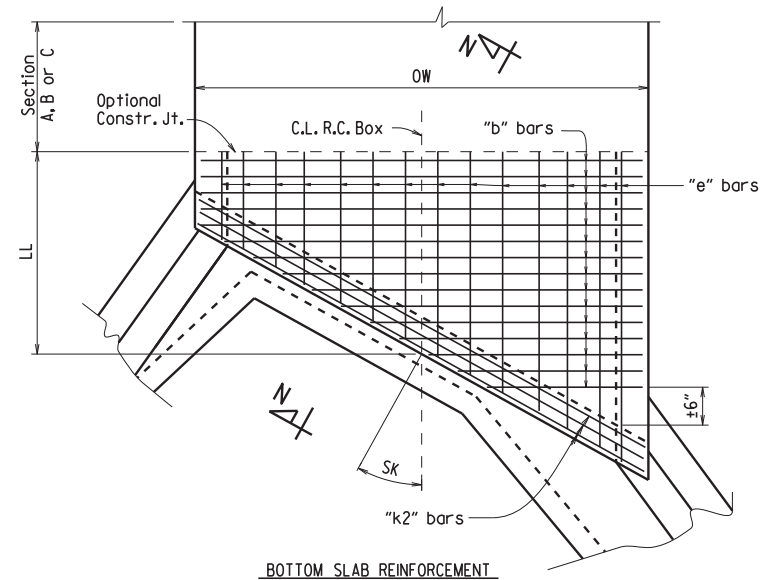


WINGWALL ATTACHMENT

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



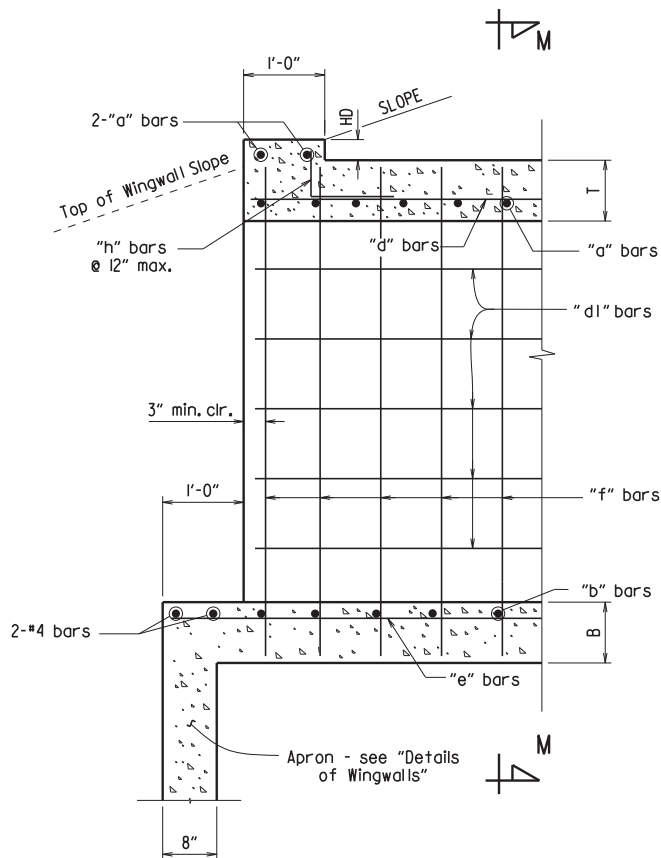
TOP SLAB REINFORCEMENT



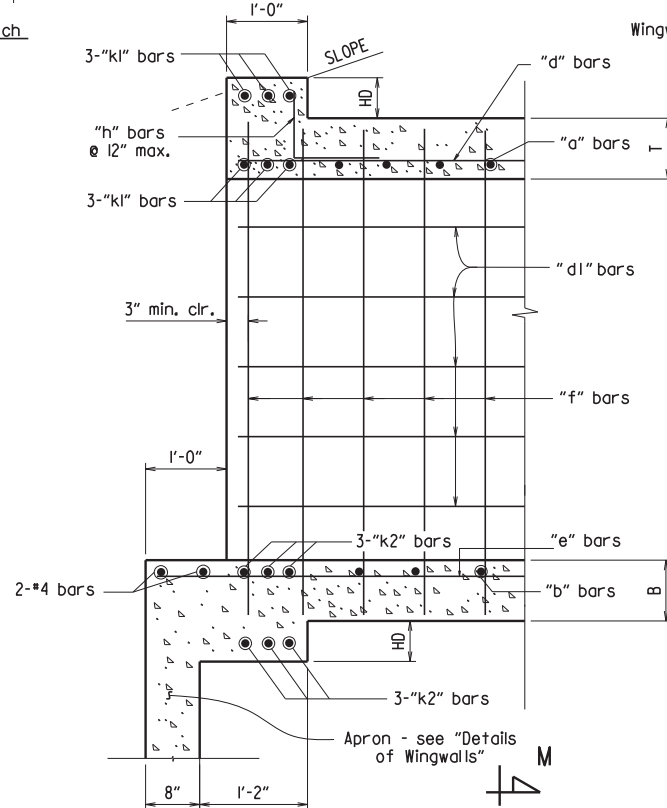
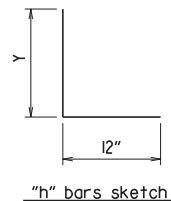
BOTTOM SLAB REINFORCEMENT

SKewed END SECTION DETAILS

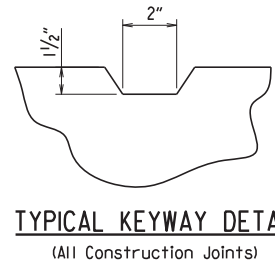
SHEET 2 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF SINGLE BARREL
R.C. BOX CULVERT
SPECIAL DETAILS



PART LONGITUDINAL SECTION
(Non-Skewed Ends)



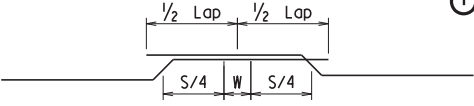
PART LONGITUDINAL SECTION N-N
(Skewed Ends)



TYPICAL KEYWAY DETAIL
(All Construction Joints)

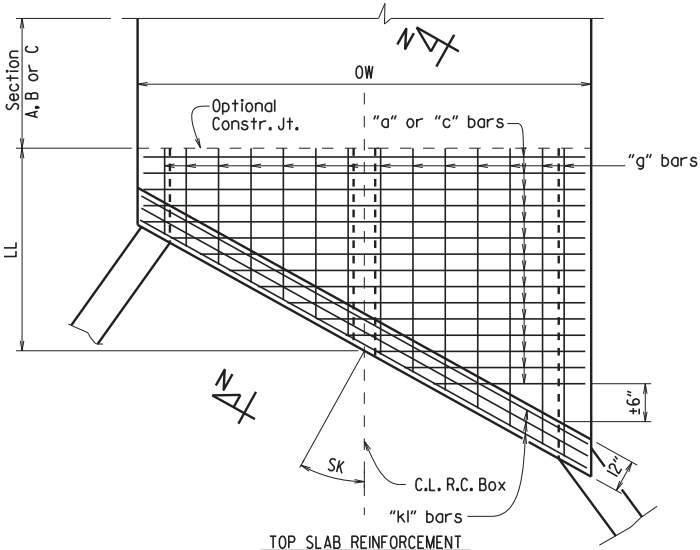
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| | | | | JOB NO. | | 040779 | 11 | 40 |

SPECIAL DETAILS

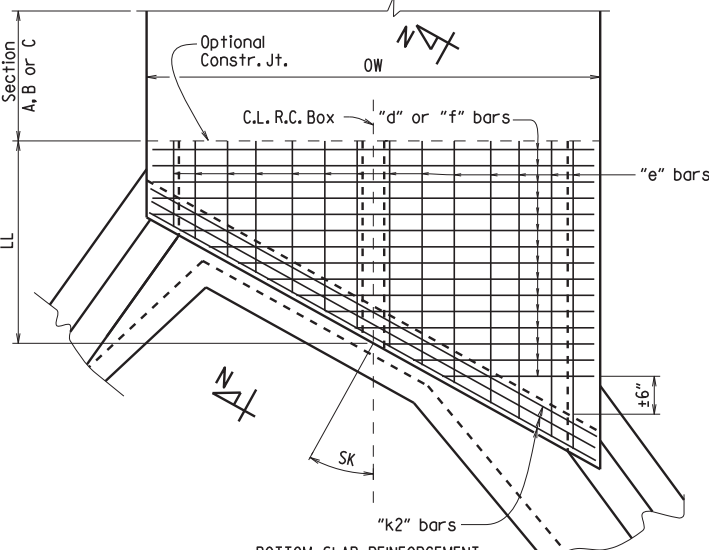


Lap Detail
For Bent "b" bars and Bent "bl" bars

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.



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



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

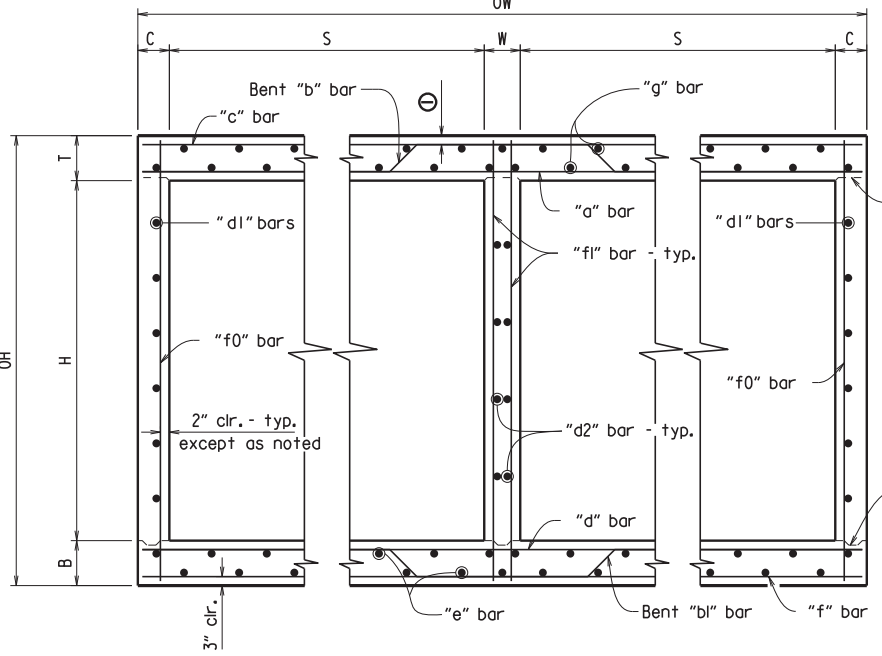
SKewed END SECTION DETAILS

SHEET 3 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF MULTI-BARREL
R.C. BOX CULVERT
SPECIAL DETAILS



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

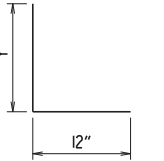
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



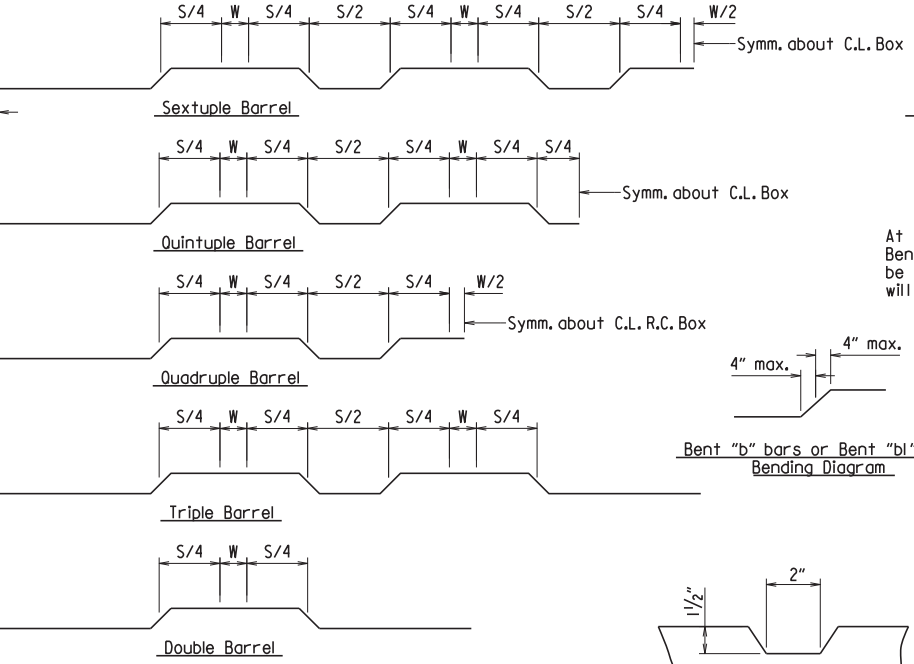
TYPICAL SECTION M-M

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

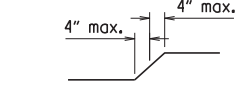
Bottom Slab
Straight "d" bars shall alternate with Bent "bl" bars in top.
Straight "f" bars shall alternate with Bent "bl" bars in bottom.



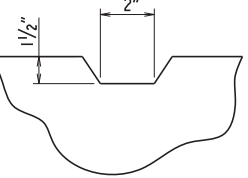
"h" bars sketch



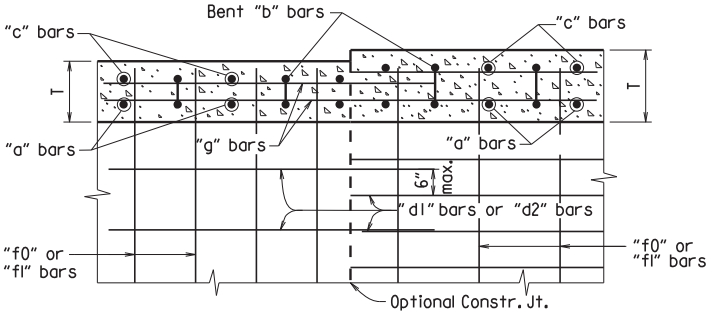
Bent "b" bars or Bent "bl" bars sketch



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



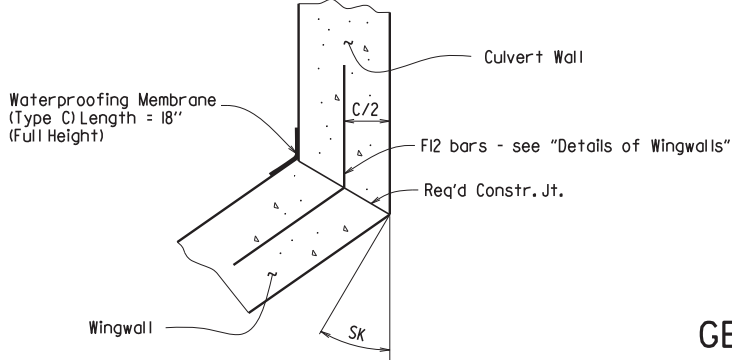
TYPICAL KEYWAY DETAIL
(All Construction Joints)



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

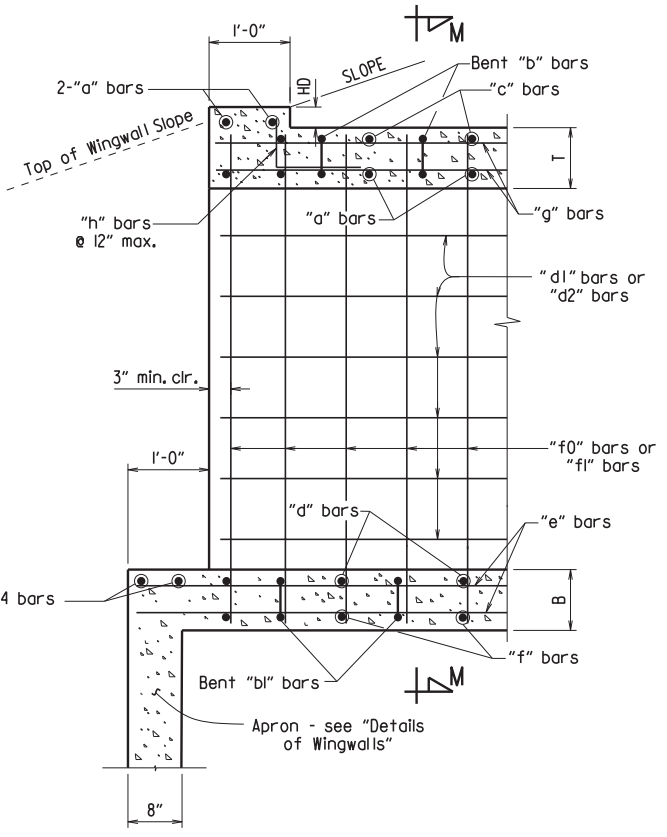
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



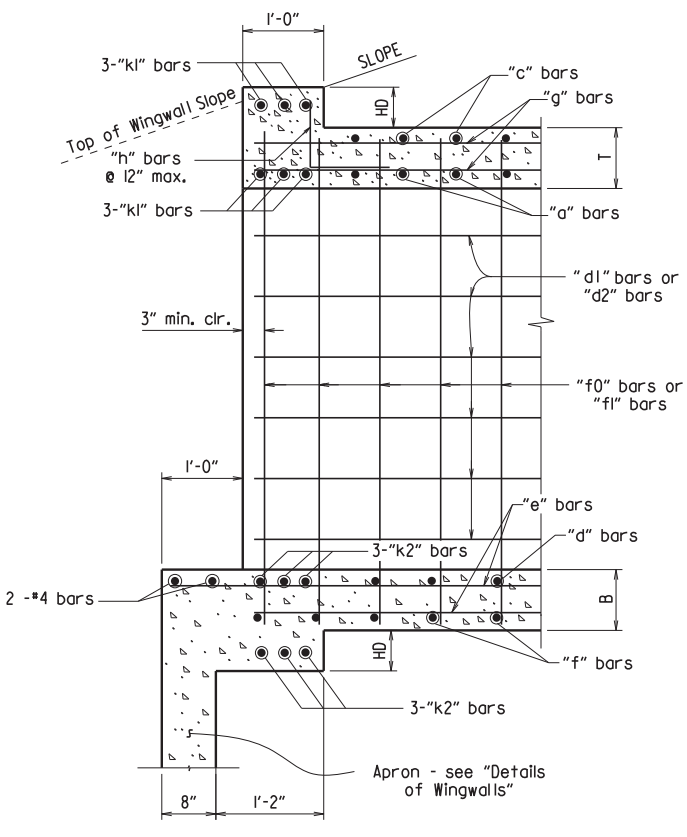
WINGWALL ATTACHMENT

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



PART LONGITUDINAL SECTION

(Non-Skewed Ends)

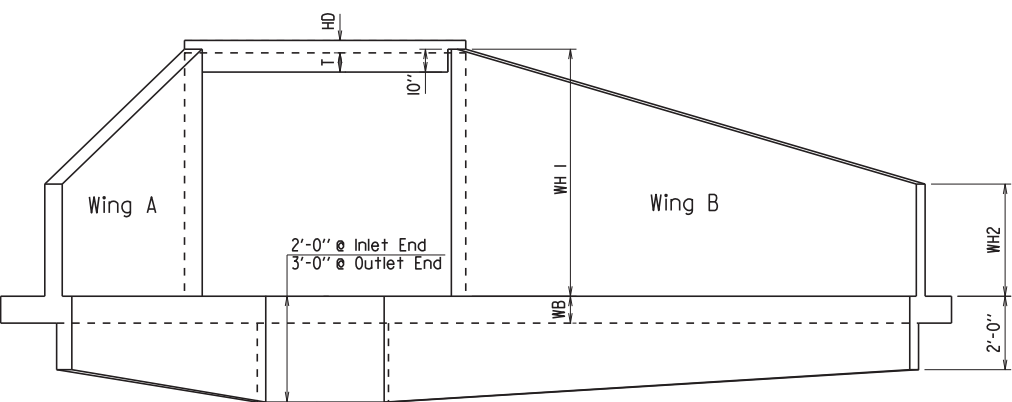


PART LONGITUDINAL SECTION N-N

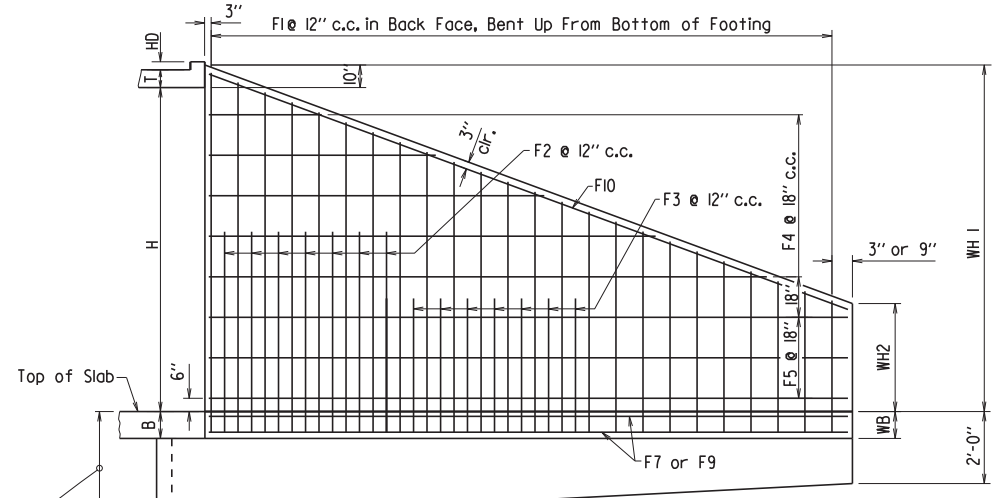
(Skewed Ends)

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| 1 SPECIAL DETAILS | | | | | | | | |

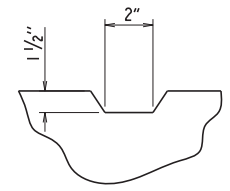


END ELEVATION
Flared Wingwalls Shown

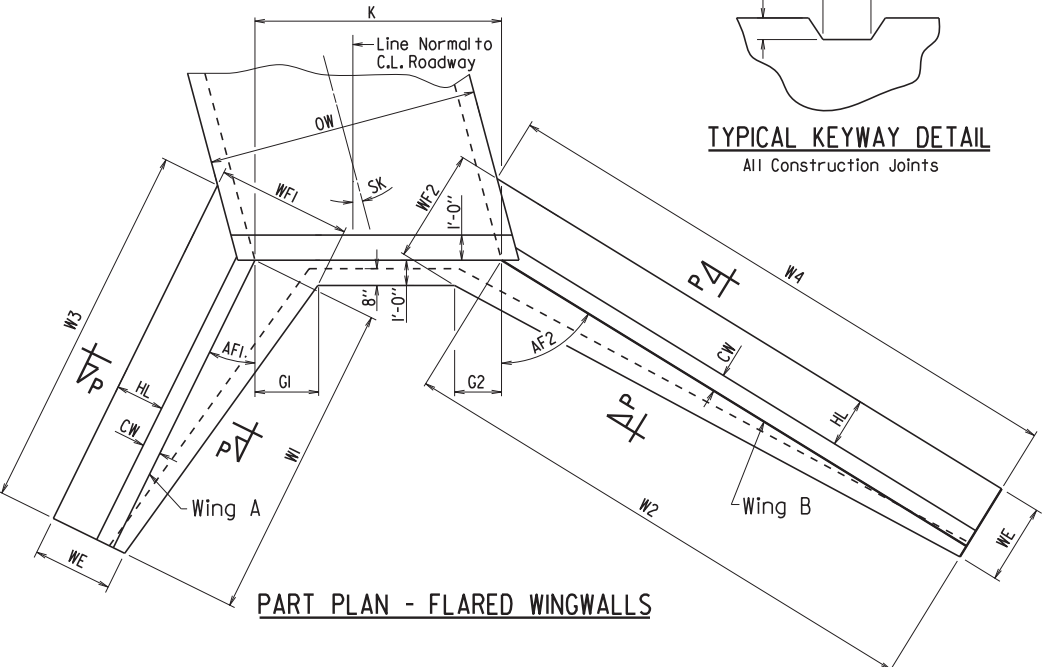


WINGWALL ELEVATION
Showing Back Face Reinforcement

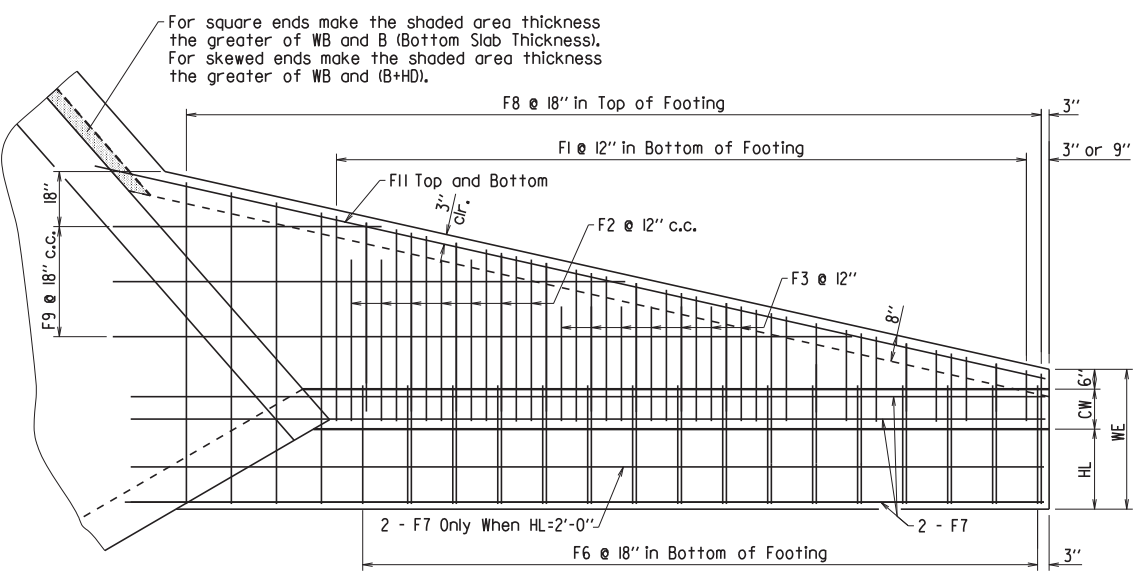
Note: See "Wingwall Section P-P" for additional details and reinforcing.



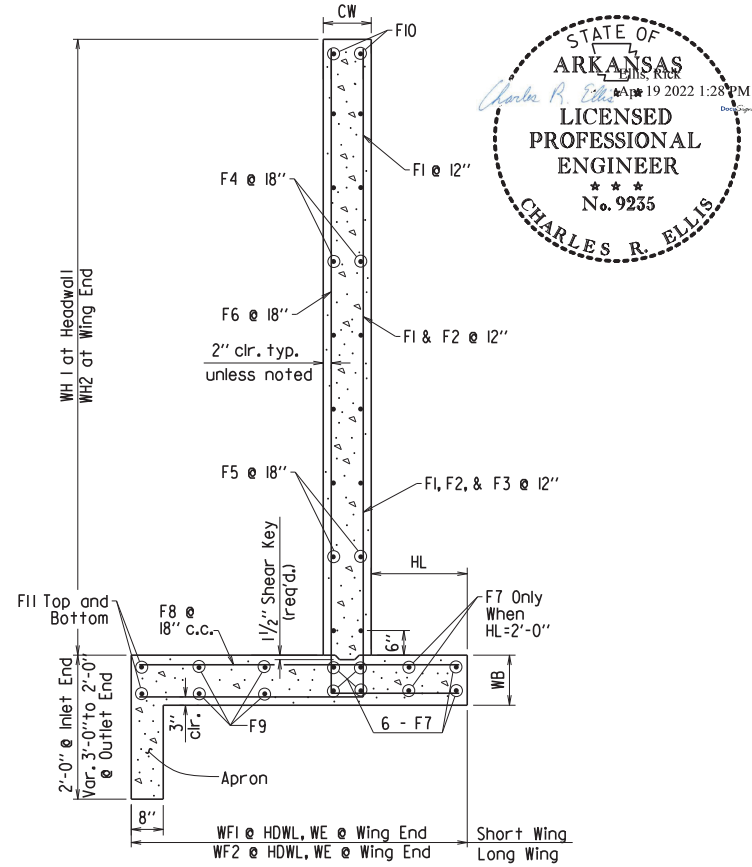
TYPICAL KEYWAY DETAIL
All Construction Joints



PART PLAN - FLARED WINGWALLS



PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



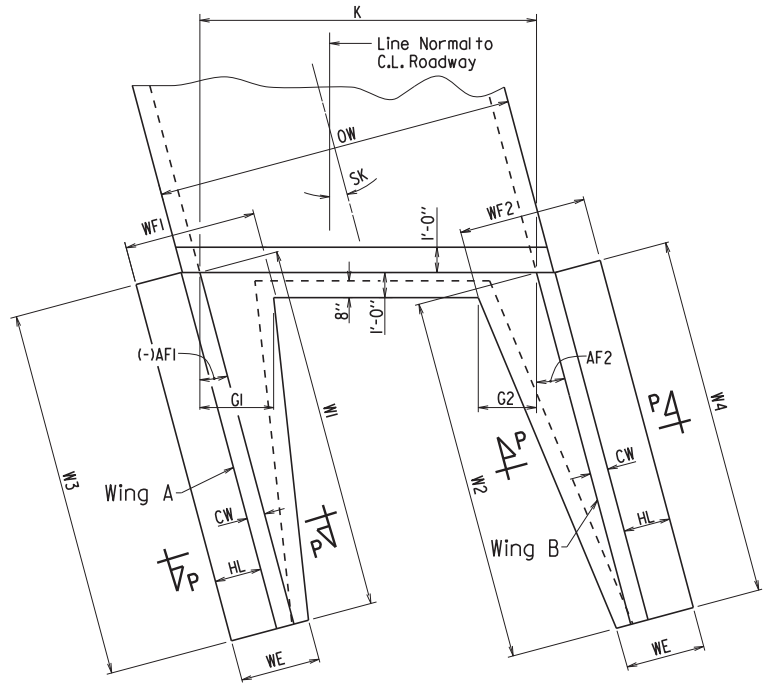
WINGWALL SECTION P-P

Short Wing = (AF1+SK)
Long Wing = (AF2-SK)

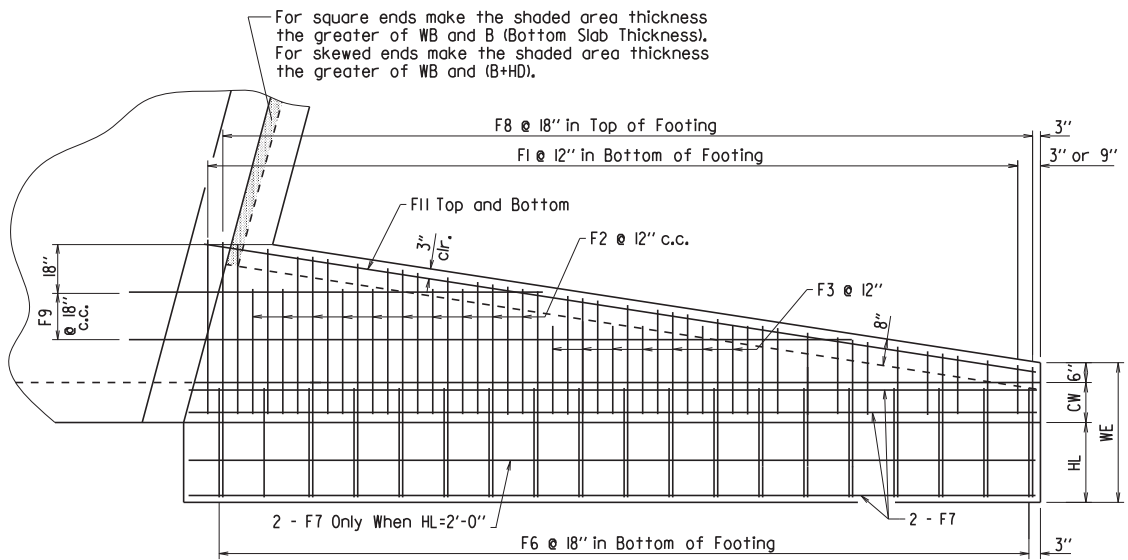
F1, F2, F3, & F6 BARS

F12 BAR

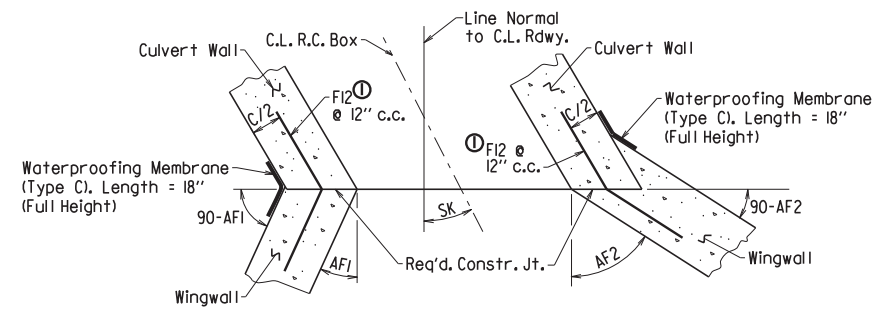
F12 is a straight bar for parallel wingwalls



PART PLAN - PARALLEL WINGWALLS



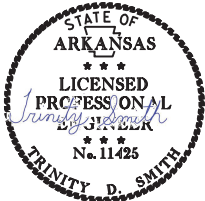
PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



CONSTRUCTION JOINTS
Flared Wingwalls Shown

SHEET 4 OF 4
GENERAL DETAILS OF R.C. BOX CULVERT
DETAILS OF WINGWALLS
SPECIAL DETAILS

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| | | 6 | ARK. | 040779 | 13 | 40 |
| EROSION CONTROL DETAILS | | | | | | |



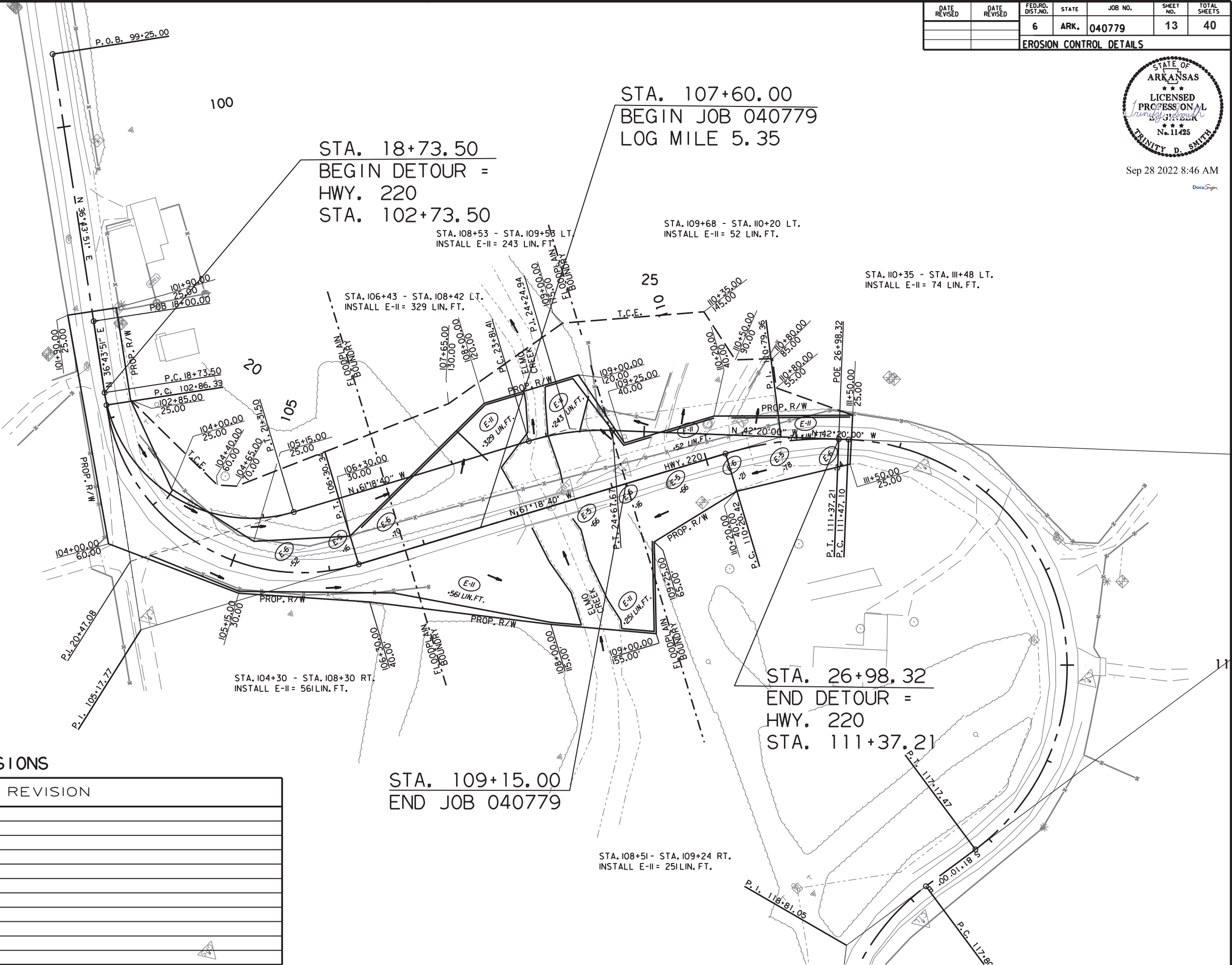
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LEGEND

| | |
|-----------------|-----------------------|
| (E-5) | SAND BAG DITCH CHECKS |
| (E-6) | ROCK DITCH CHECKS |
| (E-II) — (E-II) | SILT FENCE |

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

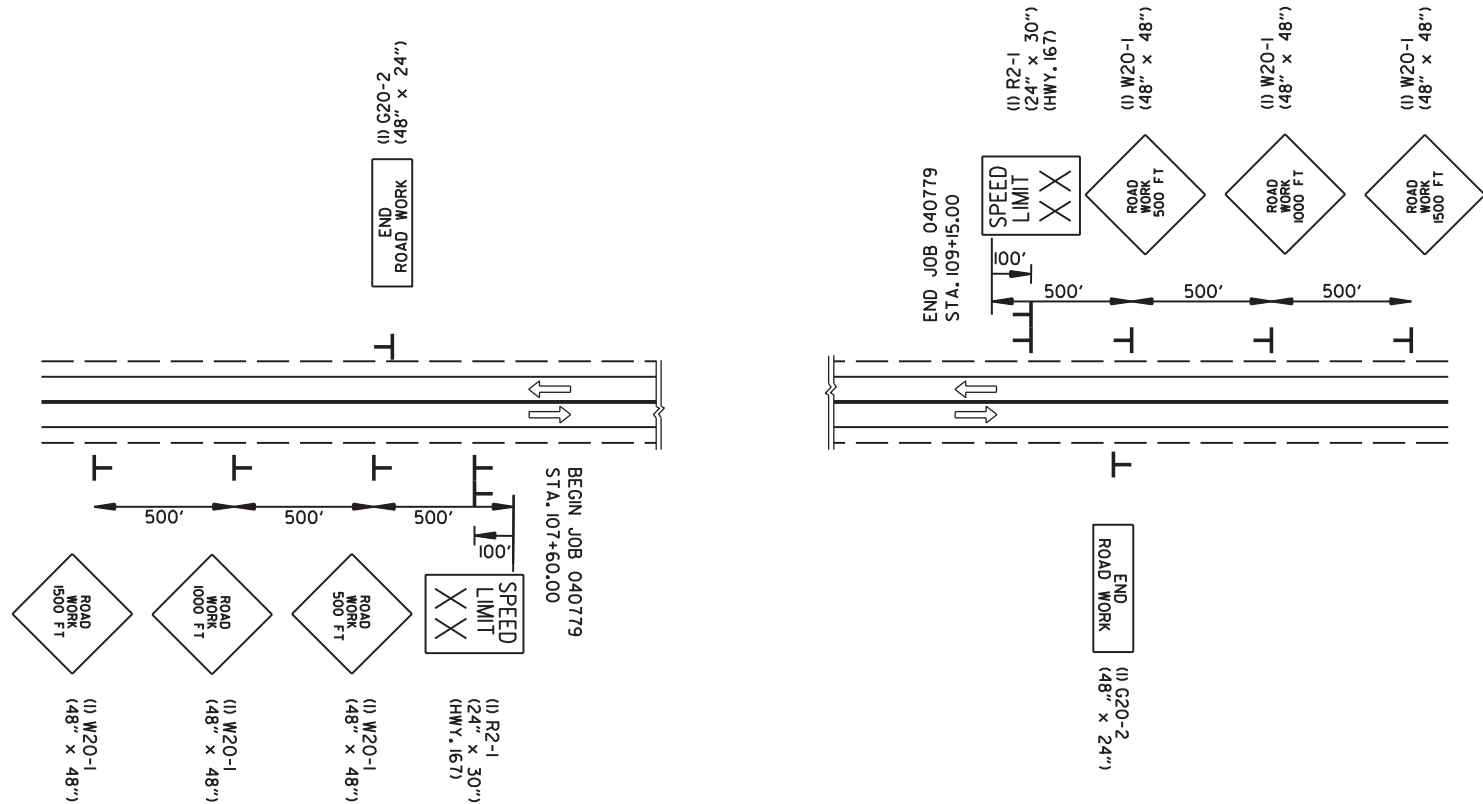


REVISIONS

| DATE OF REVISION | REVISION |
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CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

ADVANCE WARNING (ALL STAGES)



SHOULDER
CLOSED (2) W21-5a
(36" X 36")

DO
NOT
PASS (2) R4-1
(24" X 30")

BUMP (2) W8-1
(30" X 30")

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

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

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

STAGE 1 CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS,
AND INSTALL ROAD WORK AHEAD (W20-1) SIGN AS SHOWN
ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON
CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS
TO DELINEATE DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 18+73.50 TO
STA. 26+98.32 AS SHOWN IN THE STAGE 1 MAINTENANCE OF
TRAFFIC DETAILS.

STAGE 2 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE
ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE DETOUR AS SHOWN IN THE STAGE
2 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON
CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS
TO DELINEATE DRIVEWAYS.

CONSTRUCT STRUCTURES AND EMBANKMENT LT. & RT.
FROM STA. 111+50.00 TO STA. 112+50.00 AS SHOWN IN
THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS. STAGE
2 CONSTRUCTION WILL CONSIST OF ONLY WINGWALLS ON THE
NORTH SIDE OF THE R.C. BOX CULVERT.

STAGE 3 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE
ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE NEW ROADWAY AS SHOWN IN THE
STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON
CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS
TO DELINEATE DRIVEWAYS.

OBLITERATE DETOUR AND CONSTRUCT FINAL PORTIONS OF
EMBANKMENT, STRUCTURES, AND DRIVEWAYS AS SHOWN IN
THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 1 QUANTITIES

SIGNS = 182.5 SQ. FT.
TRAFFIC DRUMS = 14 EACH
VERTICAL PANELS = 9 EACH
TYPE III BARRICADE-RT. = 16 LIN. FT.
TYPE III BARRICADE-LT. = 16 LIN. FT.

STAGE 2 QUANTITIES

SIGNS = 198.5 SQ. FT.
TRAFFIC DRUMS = 21 EACH
VERTICAL PANELS = 9 EACH
PRECAST CONCRETE BARRIER WALL = 200 LIN. FT.
PRECAST BARRIER WALL SPECIAL ENDING = 2 EACH
TYPE III BARRICADE-RT. = 32 LIN. FT.
TYPE III BARRICADE-LT. = 32 LIN. FT.

STAGE 3 QUANTITIES

SIGNS = 182.5 SQ. FT.
TRAFFIC DRUMS = 19 EACH
VERTICAL PANELS = 14 EACH
PRECAST CONCRETE BARRIER WALL = 180 LIN. FT.
PRECAST BARRIER WALL SPECIAL ENDING = 1 EACH
TYPE III BARRICADE-RT. = 32 LIN. FT.
TYPE III BARRICADE-LT. = 32 LIN. FT.

ADVANCE WARNING
MAINTENANCE OF TRAFFIC DETAILS

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
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| | | 6 | ARK. | 040779 | 17 | 40 |
| MAINTENANCE OF TRAFFIC DETAILS | | | | | | |



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| MAINTENANCE OF TRAFFIC DETAILS | | | | | | |



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(5) VERTICAL PANELS SPACED 45' ON CENTER

ROAD
CLOSED

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

8' BARR.
TYP. III RT.
8' BARR.
TYP. III LT.

ROAD
CLOSED

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

8' BARR.
TYP. III RT.
8' BARR.
TYP. III RT.

(5) VERTICAL PANELS SPACED 45' ON CENTER

(II) TRAFFIC DRUMS SPACED 45' ON CENTER

STAGE I CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS, END ROAD WORK SIGNS,
AND INSTALL ROAD WORK AHEAD (W20-I) SIGN AS SHOWN
ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON
CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS
TO DELINEATE DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 18+73.50 TO
STA. 26+98.32 AS SHOWN IN THE STAGE I MAINTENANCE OF
TRAFFIC DETAILS.

STA. 109+15.00
END JOB 040779

STA. 26+98.32
END DETOUR =
HWY. 220
STA. 111+37.21

STA. 107+60.00
BEGIN JOB 040779
LOG MILE 5.35

STA. 18+73.50
BEGIN DETOUR =
HWY. 220
STA. 102+73.50

MAINTENANCE OF TRAFFIC DETAILS

STAGE I

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|--------------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 19 | 40 |
| MAINTENANCE OF TRAFFIC DETAILS | | | | | | |



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(5) VERTICAL PANELS SPACED 45' ON CENTER

- (1) RII-2 (48" X 30")
- (1) WI-6 (48" X 24")
- 16' BARR. TYP. III RT.



(8) WI-8 (18" X 24")

(11) TRAFFIC DRUMS SPACED 45' ON CENTER

STAGE 2 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE DETOUR AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT STRUCTURES AND EMBANKMENT LT. & RT. FROM STA. 107+60.00 TO STA. 109+15.00 AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS. STAGE 2 CONSTRUCTION WILL CONSIST OF WINGWALLS AND BARRELS ON THE NORTH SIDE OF THE R.C. BOX CULVERT.

PRECAST CONCRETE BARRIER WALL 20' O.C. = 200 LIN. FT. WITH 2 TEMPORARY IMPACT ATTENUATION BARRIERS

STA. 109+15.00
END JOB 040779

STA. 107+60.00
BEGIN JOB 040779
LOG MILE 5.35

- (1) RII-2 (48" X 30")
- (1) WI-6 (48" X 24")
- 16' BARR. TYP. III LT.



(5) VERTICAL PANELS SPACED 45' ON CENTER

STA. 26+98.32
END DETOUR =
HWY. 220
STA. 111+37.21

STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|--------------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 20 | 40 |
| MAINTENANCE OF TRAFFIC DETAILS | | | | | | |



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(5) VERTICAL PANELS SPACED 45' ON CENTER

(I) RII-2
(48" X 30")
(I) WI-6
(48" X 24")
16' BARR.
TYP. III LT.



(I) RII-2
(48" X 30")
(I) WI-6
(48" X 24")
16' BARR.
TYP. III RT.

(5) VERTICAL PANELS SPACED 45' ON CENTER

STAGE 3 CONSTRUCTION SEQUENCE

MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE NEW ROADWAY AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

OBLITERATE DETOUR AND CONSTRUCT FINAL PORTIONS OF EMBANKMENT, STRUCTURES, AND DRIVEWAYS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

PRECAST CONCRETE
BARRIER WALL
20' O.C. = 180 LIN. FT.
WITH TEMPORARY IMPACT
ATTENUATION BARRIERS

STA. 109+15.00
END JOB 040779

STA. 26+98.32
END DETOUR =
HWY. 220
STA. 111+37.21

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

mh39735 6/18/2021 R040779.DGN

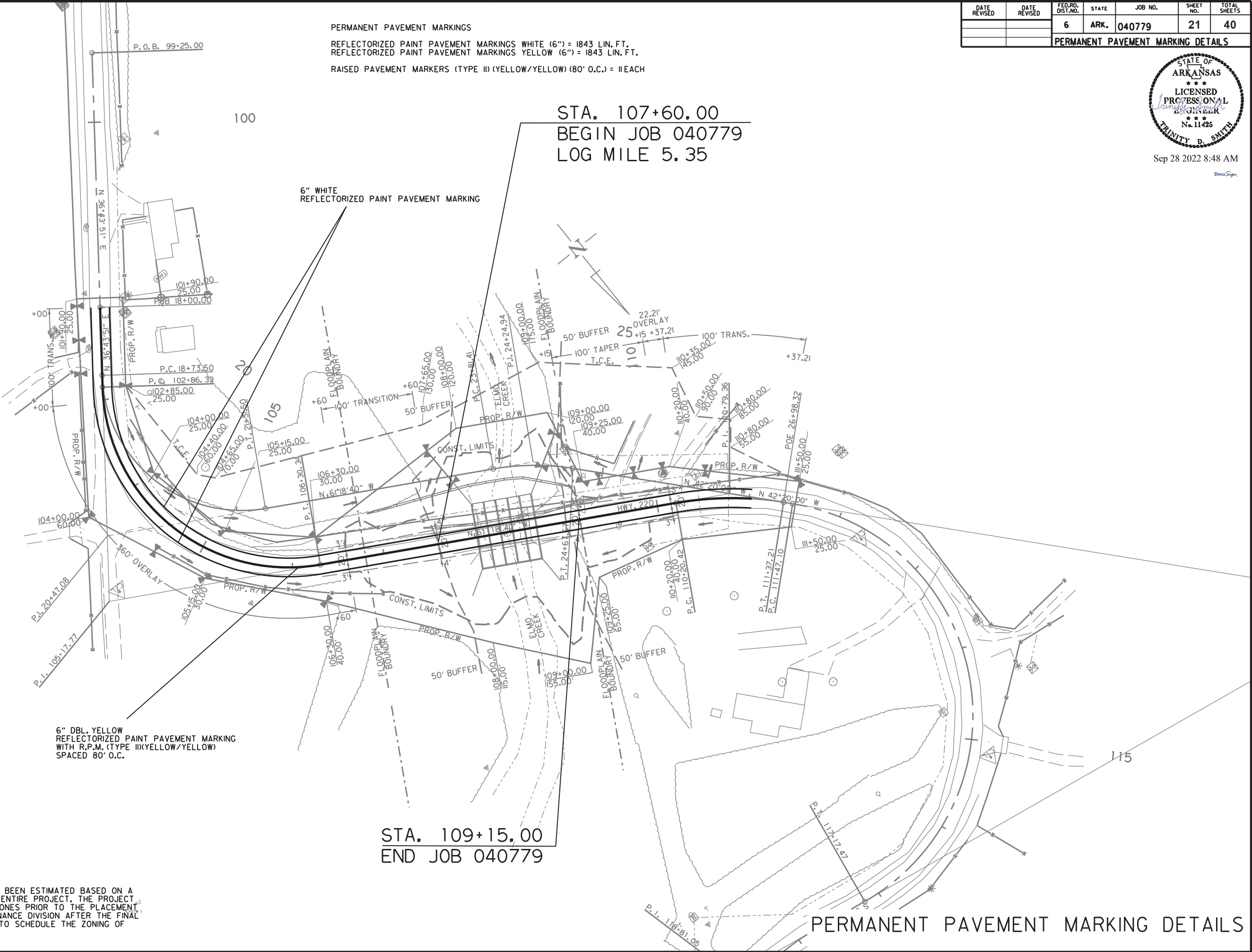
| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|------------------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 21 | 40 |
| PERMANENT PAVEMENT MARKING DETAILS | | | | | | |



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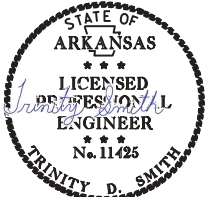
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PERMANENT PAVEMENT MARKINGS
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (6") = 1843 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS YELLOW (6") = 1843 LIN. FT.
RAISED PAVEMENT MARKERS (TYPE II) (YELLOW/YELLOW) (80' O.C.) = 11 EACH



NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

PERMANENT PAVEMENT MARKING DETAILS



Smith, Trinity D.
Nov 1 2022 9:00 AM

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ADVANCE WARNING SIGNS AND DEVICES

| SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1 | STAGE 2 | STAGE 3 | END OF JOB | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | | VERTICAL PANELS | TRAFFIC DRUMS | BARRICADES (TYPE III) | | FURNISHING & INSTALLING PRECAST CONC. BARRIER | RELOCATING PRECAST CONCRETE BARRIER | TEMPORARY IMPACT ATTENUATION BARRIER | TEMP. IMPACT ATTEN.BARR. (RELOCATION) | TEMP. IMPACT ATTEN.BARR. (REPAIR) |
|----------------|--|-----------|-----------------|---------|---------|---------------|-------------------------------|----------------------|---------|--------------------|------------------|-----------------------|----------|--|--|---|---|---|
| | | | | | | | | NO. | SQ. FT. | | | EACH | RIGHT | | | | | |
| | | | LIN. FT. - EACH | | | | | | | EACH | | | LIN. FT. | | EACH | | | |
| W20-1 | ROAD WORK 1500 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | | | | | | |
| W20-1 | ROAD WORK 1000 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | | | | | | |
| W20-1 | ROAD WORK 500 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | | | | | | |
| G20-2 | END ROAD WORK | 48"x24" | 2 | 2 | 2 | 2 | 2 | 2 | 16.0 | | | | | | | | | |
| R11-2 | ROAD CLOSED | 48"x30" | 2 | 2 | 2 | | 2 | 2 | 20.0 | | | | | | | | | |
| OM-3L | OBJECT MARKER | 12"x36" | | 3 | 3 | | 3 | 3 | 9.0 | | | | | | | | | |
| OM-3R | OBJECT MARKER | 12"x36" | | 3 | 3 | | 3 | 3 | 9.0 | | | | | | | | | |
| W1-6 | LARGE ARROW | 48"x24" | | 2 | 2 | | 2 | 2 | 16.0 | | | | | | | | | |
| W1-8 | CHEVRONS | 18"x24" | 2 | 10 | 2 | 2 | 10 | 10 | 30.0 | | | | | | | | | |
| W21-5a | RIGHT SHOULDER CLOSED | 36"x36" | 2 | 2 | 2 | 2 | 2 | 2 | 18.0 | | | | | | | | | |
| W8-1 | BUMP | 30"x30" | 2 | 2 | 2 | 2 | 2 | 2 | 12.5 | | | | | | | | | |
| R4-1 | DO NOT PASS | 24"x30" | 2 | 2 | 2 | 2 | 2 | 2 | 10.0 | | | | | | | | | |
| R2-1 | SPEED LIMIT XX MPH | 24"x30" | 2 | 2 | 2 | 2 | 2 | 2 | 10.0 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | VERTICAL PANELS | | 9 | 9 | 14 | | 14 | | | 14 | | | | | | | | |
| | TRAFFIC DRUMS | | 14 | 21 | 19 | | 21 | | | | 21 | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | TYPE II BARRICADE-RT. (8') | | 2 | | | | 2 | | | | | 16 | | | | | | |
| | TYPE II BARRICADE-LT. (8') | | 2 | | | | 2 | | | | | | 16 | | | | | |
| | TYPE II BARRICADE-RT. (16') | | | 1 | 1 | | 1 | | | | | 16 | | | | | | |
| | TYPE II BARRICADE-LT. (16') | | | 1 | 1 | | 1 | | | | | | 16 | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | | | 200 | | | 200 | | | | | | | 200 | | | | |
| | RELOCATING PRECAST CONCRETE BARRIER | | | | 180 | | 180 | | | | | | | | 180 | | | |
| | TEMPORARY IMPACT ATTENUATION BARRIER | | | 2 | | | 2 | | | | | | | | | 2 | | |
| | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | | | | 1 | | 1 | | | | | | | | | | 1 | |
| | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | | | 2 | 1 | | 2 | | | | | | | | | | | 2 |
| | | | | | | | | | | | | | | | | | | |
| TOTALS: | | | | | | | | | 246.5 | 14 | 21 | 32 | 32 | 200 | 180 | 2 | 1 | 2 |

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

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | STAGE 2 | END OF JOB | CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | REFLECTORIZED PAINT PAVEMENT MARKING | |
|--|-----------------|------------|--------------------------------|-------------------------|--------------------------------------|------|
| | | | | TYPE II | 6" | |
| | (YELLOW/YELLOW) | WHITE | YELLOW | | | |
| | LIN. FT. - EACH | LIN. FT. | EACH | LIN. FT. | | |
| CONSTRUCTION PAVEMENT MARKINGS | 3236 | | 3236 | | | |
| RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) | | 11 | | 11 | | |
| | | | | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | | 1805 | | | 1805 | |
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | | 1805 | | | | 1805 |
| | | | | | | |
| | | | | | | |
| TOTALS: | | | 3236 | 11 | 1805 | 1805 |

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.



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CLEARING AND GRUBBING

| STATION | STATION | LOCATION | CLEARING | GRUBBING |
|---------|---------|-------------------|----------|----------|
| | | | STATION | |
| 101+90 | 111+50 | HWY 220 LT. & RT. | 10 | 10 |
| | | | | |
| TOTALS: | | | 10 | 10 |

REMOVAL OF EXISTING BRIDGE STRUCTURE

| STATION | STATION | LOCATION | LUMP SUM |
|---------|---------|----------|----------|
| 108+04 | 108+60 | HWY 220 | 1.00 |
| | | | |
| | | | |

NOTE: SALVAGEABLE BRIDGE SUPERSTRUCTURE UNITS SHALL REMAIN PROPERTY OF THE DEPARTMENT, IF AND WHERE DIRECTED BY THE ENGINEER.

NOTE: 114 LF OF GUARDRAIL ON BRIDGE RAIL SHALL BE INCLUDED IN THE REMOVAL OF THE BRIDGE.

REMOVAL AND DISPOSAL OF ITEMS

| STATION | STATION | LOCATION | ROCK WALL | TIRES | WASTE | GUARDRAIL | CATTLE GUARD | SIGNS |
|---------|---------|-------------|--------------|-------|---------|-----------|-----------------|-------|
| | | | LIN. FT. | EACH | CU. YD. | LIN. FT. | EACH | EACH |
| | 102+40 | HWY. 220 RT | 12 | | | | 1 | |
| | 102+50 | HWY. 220 RT | | | | | | 1 |
| | 102+50 | HWY. 220 RT | | | | | | |
| | 102+60 | HWY. 220 RT | 12 | | | | | |
| | 107+45 | HWY. 220 LT | | 30 | 10 | | | |
| 107+54 | 109+13 | HWY. 220 LT | | | | 82 | | |
| 107+54 | 108+90 | HWY. 220 RT | | | | 58 | | |
| | 107+72 | HWY. 220 LT | | | 10 | | | |
| | 108+82 | HWY. 220 LT | | | 10 | | | |
| | | | | | | | | |
| TOTALS: | | | 24 | 30 | 30 | 140 | 1 | 1 |

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. |
| 102+70 | 103+95 | HWY 220 RT. | 151 |
| 102+85 | 111+50 | HWY 220 LT. | 789 |
| 104+61 | 106+92 | HWY 220 RT. | 256 |
| 109+09 | 109+91 | HWY 220 LT. | 181 |
| 110+56 | 110+76 | HWY 220 LT. | 55 |
| | | | |
| TOTAL: | | | 1432 |

EARTHWORK

| STATION | STATION | LOCATION / DESCRIPTION | UNCLASSIFIED EXCAVATION | COMPACTED EMBANKMENT | * SOIL STABILIZATION |
|---------|---------|---|----------------------------|-------------------------|-------------------------|
| | | | CU. YD. | | TON |
| ENTIRE | PROJECT | STAGE 1-DETOUR CONST. | 694 | 3951 | |
| ENTIRE | PROJECT | STAGE 2-MAIN LANES CONST. | 1443 | 3365 | |
| ENTIRE | PROJECT | STAGE 3-DETOUR OBLITERATION | 4673 | 1007 | |
| ENTIRE | PROJECT | APPROACHES | 40 | 260 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| * | ENTIRE | TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | 50 |
| | | | | | |
| TOTALS: | | | 6850 | 8583 | 50 |

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

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE SHALL BE PAID AS PLAN QUANTITY.

CONCRETE DITCH PAVING

| STATION | STATION | LOCATION | LENGTH | "W" | CONC. DITCH PAVING (TYPE B) | SOLID SODDING | WATER |
|-----------|-----------|-------------|----------|------|-----------------------------------|------------------|---------|
| | | | LIN. FT. | FEET | SQ. YD. | SQ. YD. | M. GAL. |
| 107+00.00 | 107+85.00 | HWY 220 RT. | 85.00 | 4.00 | 37.78 | 37.73 | 0.48 |
| 107+62.00 | 107+85.00 | HWY 220 LT. | 23.00 | 4.00 | 10.22 | 10.22 | 0.13 |
| 108+85.00 | 109+15.00 | HWY 220 RT. | 30.00 | 4.00 | 13.33 | 13.33 | 0.17 |
| 108+85.00 | 109+15.00 | HWY 220 LT. | 30.00 | 4.00 | 13.33 | 13.33 | 0.17 |
| 109+15.00 | 109+87.00 | HWY 220 RT. | 72.00 | 4.00 | 32.00 | 32.00 | 0.40 |
| | | | | | | | |
| TOTALS: | | | | | 106.66 | 106.66 | 1.35 |

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

SOIL LOG

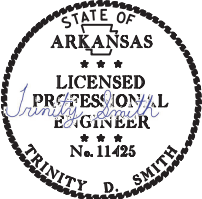
| LOG MILE | LATITUDE | | | LONGITUDE | | | LOCATION | DEPTH | LIQUID LIMIT | PLASTICITY INDEX | AASHTO CLASSIFICATION | COLOR |
|----------|----------|-----|-------|-----------|-----|-------|----------|-------|-----------------|---------------------|--------------------------|-----------|
| | DEG | MIN | SEC | DEG | MIN | SEC | | FEET | | | | |
| 5.43 | 35 | 39 | 23.60 | 94 | 20 | 50.10 | 30' RT. | 0-2.5 | 23 | 7 | A-4(2) | RED/BROWN |
| 5.43 | 35 | 39 | 23.70 | 94 | 20 | 50.40 | 05' RT. | 0-2.5 | 18 | 4 | A-4(0) | RED/BROWN |
| 5.43 | 35 | 39 | 23.60 | 94 | 20 | 50.10 | 30' RT. | 0-2.5 | 23 | 6 | A-4(2) | RED/BROWN |
| 5.59 | 35 | 39 | 29.00 | 94 | 20 | 57.60 | 05' LT. | 0-2.5 | ND | NP | A-4(0) | RED/BROWN |
| 5.59 | 35 | 39 | 29.00 | 94 | 20 | 57.80 | 14' LT. | 0-2.5 | 23 | 8 | A-4(1) | RED/BROWN |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.
NP - NON-PLASTIC
ND - NOT DETERMINABLE

EROSION CONTROL MATTING

| STATION | STATION | LOCATION | LENGTH | CLASS 3 |
|-----------|-----------|-------------|----------|---------|
| | | | LIN. FT. | SQ. YD. |
| 106+60.00 | 107+00.00 | HWY 220 LT. | 40.00 | 35.56 |
| 106+60.00 | 107+00.00 | HWY 220 RT. | 40.00 | 35.56 |
| 109+15.00 | 110+15.00 | HWY 220 LT. | 100.00 | 88.89 |
| 109+87.00 | 110+15.00 | HWY 220 RT. | 28.00 | 24.89 |
| | | | | |
| | | | | |
| TOTAL: | | | | 184.90 |

NOTE: AVERAGE WIDTH = 8'-0"



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BENCH MARKS

| STATION | LOCATION | BENCH MARKS |
|---------|-------------------------------------|-------------|
| | | EACH |
| 108+68 | HDWL. OF R.C. BOX CULVERT - HWY 220 | 1 |
| | | |
| | | |
| TOTAL: | | 1 |

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

4" PIPE UNDERDRAIN

| STATION | STATION | LOCATIONS | 4" PIPE UNDERDRAINS | UNDERDRAIN OUTLET PROTECTORS |
|--|---------|-----------|------------------------|------------------------------------|
| | | | LIN. FT. | EACH |
| ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | 200 | 2 |
| | | | | |
| TOTALS: | | | 200 | 2 |

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

MAILBOXES

| LOCATION | MAILBOXES | MAILBOX SUPPORTS (SINGLE) |
|----------------|-----------|------------------------------|
| | | EACH |
| ENTIRE PROJECT | 3 | 3 |
| | | |
| TOTALS: | 3 | 3 |

FENCING

| STATION | STATION | LOCATION | WIRE FENCE | * 16'-0" GATES |
|---------|---------|-------------|------------|-------------------|
| | | | (TYPE D) | |
| | | | LIN. FT. | EACH |
| 102+70 | 103+95 | HWY 220 RT. | 125 | |
| 102+85 | 111+50 | HWY 220 LT. | 910 | |
| 104+61 | 106+92 | HWY 220 RT. | 110 | |
| | 107+81 | HWY 200 LT. | | 1 |
| 109+09 | 109+91 | HWY 220 LT. | 180 | |
| 110+56 | 110+76 | HWY 220 LT. | 55 | |
| | | | | |
| TOTALS: | | | 1380 | 1 |

* DENOTES ALTERNATE BID ITEM.

DUMPED RIPRAP

| STATION | STATION | LOCATION | DUMPED RIPRAP | FILTER BLANKET |
|---------|---------|---|------------------|-------------------|
| | | | CU. YD. | SQ. YD. |
| 23+19 | 24+50 | LT. SLOPE OF DETOUR RD. | 125 | 225 |
| 23+19 | 24+50 | RT. SLOPE OF DETOUR RD. | 110 | 215 |
| | | | | |
| | | *TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 275 | 550 |
| | | | | |
| TOTALS: | | | 510 | 990 |

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

EROSION CONTROL

| STATION | STATION | LOCATION | PERMANENT EROSION CONTROL | | | | | TEMPORARY EROSION CONTROL | | | | | | | |
|---|---------|-------------------------------|---------------------------|------|-------------|-------|----------------------------|---------------------------|-------------|-------|-------------|-----------------------|-------------------|------------|------------------------------|
| | | | SEEDING | LIME | MULCH COVER | WATER | SECOND SEEDING APPLICATION | TEMPORARY SEEDING | MULCH COVER | WATER | FILTER SOCK | SAND BAG DITCH CHECKS | ROCK DITCH CHECKS | SILT FENCE | *SEDIMENT REMOVAL & DISPOSAL |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ACRE | TON | ACRE | M.GAL. | |
| ENTIRE | PROJECT | CLEARING AND GRUBBING | | | | | | 2.67 | 2.67 | 54.5 | | 110 | 12 | 1510 | 61 |
| ENTIRE | PROJECT | STAGE 1 - DETOUR CONST. | | | | | | 1.87 | 1.87 | 38.1 | | 66 | | 561 | 24 |
| ENTIRE | PROJECT | STAGE 2 - MAIN LANE CONST. | | | | | | 1.09 | 1.09 | 22.2 | | | | 203 | 8 |
| ENTIRE | PROJECT | STAGE 3 - DETOUR OBLITERATION | 0.76 | 1.52 | 0.76 | 77.5 | 0.76 | 1.87 | 1.87 | 38.1 | | 66 | | 151 | 9 |
| | | | | | | | | | | | | | | | |
| *ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | | 0.15 | 0.30 | 0.15 | 15.3 | 0.15 | 1.50 | 1.50 | 30.6 | 400 | 48 | 2 | 485 | 18 |
| | | | | | | | | | | | | | | | |
| TOTALS: | | | 0.91 | 1.82 | 0.91 | 92.8 | 0.91 | 9.00 | 9.00 | 183.5 | 400 | 290 | 14 | 2910 | 120 |

BASIS OF ESTIMATE:
LIME2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
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.

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 25 | 40 |
| QUANTITIES | | | | | | |



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| DRIVEWAYS & TURNOUTS | | | | | | |
|-----------------------------------|------|----------|-------|--|-------|---------------------------------------|
| STATION | SIDE | LOCATION | WIDTH | ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22) | | AGGREGATE BASE COURSE (CLASS 7) |
| | | | FEET | SQ. YD. | TON | TON |
| 109+55 | LT | HWY. 220 | 16 | 201.59 | 22.17 | 82.32 |
| 110+15 | LT | HWY. 220 | 16 | 189.46 | 20.84 | 77.36 |
| | | | | | | |
| * ENTIRE PROJECT TEMPORARY DRIVES | | | | | | 60.00 |
| TOTALS: | | | | 391.05 | 43.01 | 219.68 |

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

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

ACHM PATCHING OF EXISTING ROADWAY

| DESCRIPTION | TON |
|--|-----|
| 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.

ASPHALT CONCRETE PATCHING FOR
MAINTENANCE OF TRAFFIC

| LOCATION | TON | TACK COAT |
|---|-----|-----------|
| | | GALLON |
| *ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 10 | 20 |
| TOTALS: | 10 | 20 |

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

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

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.

COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH | COLD MILLING ASPHALT PAVEMENT |
|-----------|-----------|------------|------------|-------------------------------------|
| | | | FEET | SQ. YD. |
| 102+00.00 | 103+00.00 | MAIN LANES | 20.00 | 222.22 |
| 110+37.21 | 111+37.21 | MAIN LANES | 20.00 | 222.22 |
| TOTAL: | | | | 444.44 |

NOTE: AVERAGE MILLING DEPTH 1".

STOCKPILE LOCATION: 5811 ARKHOLA RD, VAN BUREN, AR 72956

STRUCTURES

| STATION | DESCRIPTION | TEMPORARY CULVERTS | SPAN | HEIGHT | LENGTH | CLASS S CONCRETE- ROADWAY | REINF. STEEL- ROADWAY (GRADE 60) | UNCL.EXC. FOR STR.- ROADWAY | SOLID SODDING | WATER | STD. DWG NOS. |
|-------------------------------|---|-----------------------|------|--------|--------|---------------------------------|---|-----------------------------------|------------------|-------|-------------------------------|
| | | 96" | | | | | | | | | |
| | | LIN. FT. | | | | | | | | | |
| 23+84 | TEMP. QUINT. 96" X 88' R.C. PIPE CULVERT ON A 15° LT. FWD. SKEW | 440 | | | | | | | | | PCC-1, PCM-1 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| SUBTOTALS: | | 440 | | | | | | | | | |
| STRUCTURES OVER 20' - 0" SPAN | | | | | | | | | | | |
| 108+35 | QUINT. 12' X 12' X 72' R.C. BOX CULVERT | | 12 | 12 | 72 | 660.09 | 83037 | 204 | 72 | 0.91 | RCB-1, RCB-2, SPECIAL DETAILS |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| SUBTOTALS: | | | | | | 660.09 | 83037 | 204 | 72 | 0.91 | |
| TOTALS: | | 440 | | | | 660.09 | 83037 | 204 | 72 | 0.91 | |

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.

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 26 | 40 |
| QUANTITIES | | | | | | |



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BASE AND SURFACING

| STATION | STATION | LOCATION | LENGTH | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | | | ACHM BINDER COURSE (1") | | | | ACHM SURFACE COURSE (1/2") | | | | | | | | | | |
|-------------------------|-----------|-----------------------------------|-----------------|---------------------------------|---------|-------------------------|---------|-----------------|-------------------------|---------|--------|-------------------------|----------------|--------|----------------|----------------------------|----------------|--------|----------------|--------------|----------------|---------|----------------|--------------|--------------------|--|
| | | | | TON / STATION | TON | (0.05 GAL. PER SQ. YD.) | | | (0.17 GAL. PER SQ. YD.) | | | TOTAL GALLONS | AVG. WID. FEET | SQ.YD. | POUND / SQ.YD. | PG 64-22 TON | AVG. WID. FEET | SQ.YD. | POUND / SQ.YD. | PG 64-22 TON | AVG. WID. FEET | SQ.YD. | POUND / SQ.YD. | PG 64-22 TON | TOTAL PG 64-22 TON | |
| | | | TOTAL WID. FEET | | | SQ.YD. | GALLON | TOTAL WID. FEET | SQ.YD. | GALLON | | | | | | | | | | | | | | | | |
| MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102+00.00 | 103+00.00 | TRANSITION | 100.00 | | | | | | VAR. | 222.22 | 37.78 | 37.78 | | | | | | | | | VAR. | 222.22 | 220.00 | 24.44 | 24.44 | |
| 103+00.00 | 106+60.00 | OVERLAY | 360.00 | 4.00 | 14.40 | 26.00 | 1040.00 | 52.00 | 26.00 | 1040.00 | 176.80 | 228.80 | | | | | | | | | 26.00 | 1040.00 | 220.00 | 114.40 | 114.40 | |
| 106+60.00 | 107+60.00 | TAPER | 100.00 | VAR. | 222.93 | | | | | | | | | | | | | | | | VAR. | 244.44 | 220.00 | 26.89 | 26.89 | |
| 107+60.00 | 109+15.00 | FULL DEPTH | 155.00 | 170.25 | 263.89 | 40.71 | 701.12 | 35.06 | | | | 35.06 | 20.46 | 352.37 | 330.00 | 58.14 | 20.25 | 348.75 | 220.00 | 38.36 | 24.00 | 413.33 | 220.00 | 45.47 | 83.83 | |
| 109+15.00 | 110+15.00 | TAPER | 100.00 | VAR. | 222.93 | | | | | | | | | | | | | | | | VAR. | 244.44 | 220.00 | 26.89 | 26.89 | |
| 110+15.00 | 110+37.21 | OVERLAY | 22.21 | 4.00 | 0.89 | 26.00 | 64.16 | 3.21 | 26.00 | 64.16 | 10.91 | 14.12 | | | | | | | | | 26.00 | 64.16 | 220.00 | 7.06 | 7.06 | |
| 110+37.21 | 111+37.21 | TRANSITION | 100.00 | | | | | | VAR. | 222.22 | 37.78 | 37.78 | | | | | | | | | VAR. | 222.22 | 220.00 | 24.44 | 24.44 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ADDITIONAL FOR LEVELING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103+00.00 | 106+60.00 | OVERLAY | 360.00 | | | | | | 20.00 | 800.00 | 136.00 | 136.00 | | | | | | | | | 20.00 | 800.00 | 220.00 | 88.00 | 88.00 | |
| 110+15.00 | 110+37.21 | OVERLAY | 22.21 | | | | | | 20.00 | 49.36 | 8.39 | 8.39 | | | | | | | | | 20.00 | 49.36 | 220.00 | 5.43 | 5.43 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DETOUR | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18+73.50 | 19+98.68 | DETOUR - NOTCH & WIDEN | 125.18 | VAR. | 245.31 | | | | | | | | | | | | | | | | | 287.65 | 220.00 | 31.64 | 31.64 | |
| 19+98.68 | 22+11.41 | DETOUR - FULL DEPTH | 212.73 | 177.25 | 377.06 | | | | | | | | | | | | | | | | 24.00 | 567.28 | 220.00 | 62.40 | 62.40 | |
| 22+11.41 | 22+61.41 | DETOUR - BEGIN TAPER | 50.00 | VAR. | 88.63 | | | | | | | | | | | | | | | | VAR. | 141.44 | 220.00 | 15.56 | 15.56 | |
| 22+61.41 | 23+41.19 | DETOUR - FULL DEPTH | 79.78 | 177.25 | 141.41 | | | | | | | | | | | | | | | | 26.00 | 230.48 | 220.00 | 25.35 | 25.35 | |
| 23+41.19 | 24+11.75 | DETOUR - FULL DEPTH (4' SHOULDER) | 70.56 | 201.00 | 141.83 | | | | | | | | | | | | | | | | 26.00 | 203.84 | 220.00 | 22.42 | 22.42 | |
| 24+11.75 | 25+87.67 | DETOUR - TAPER | 175.92 | VAR. | 311.82 | | | | | | | | | | | | | | | | VAR. | 190.08 | 220.00 | 20.91 | 20.91 | |
| 25+87.67 | 26+37.67 | DETOUR - FULL DEPTH | 50.00 | 177.25 | 88.63 | | | | | | | | | | | | | | | | 24.00 | 133.33 | 220.00 | 14.67 | 14.67 | |
| 25+72.26 | 26+98.32 | DETOUR - NOTCH & WIDEN | 126.06 | VAR. | 108.08 | | | | | | | | | | | | | | | | | 122.04 | 220.00 | 13.42 | 13.42 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | | | | 2227.81 | | 1805.28 | 90.27 | | 2397.96 | 407.66 | 497.93 | | 352.37 | | 58.14 | | 348.75 | | 38.36 | | 5176.31 | | 569.39 | 607.75 | |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------------------------|--------------|------------------|-------|---------|-----------|--------------|
| 10/24/22 | | 6 | ARK. | 040779 | 27 | 40 |
| SUMMARY OF QUANTITIES & REVISIONS | | | | | | |



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SUMMARY OF QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---------------|---|----------|----------|
| 201 | CLEARING | 10 | STATION |
| 201 | GRUBBING | 10 | STATION |
| SP | REMOVAL AND DISPOSAL OF TIRES | 30 | EACH |
| 202 | REMOVAL AND DISPOSAL OF FENCE | 1432 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF ROCK WALLS | 24 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF GUARDRAIL | 140 | LIN. FT. |
| 202 | REMOVAL AND DISPOSAL OF CATTLE GUARD | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SIGNS | 1 | EACH |
| SP, SS, & 210 | UNCLASSIFIED EXCAVATION | 6850 | CU. YD. |
| SP & 210 | COMPACTED EMBANKMENT | 8583 | CU. YD. |
| SP & 210 | SOIL STABILIZATION | 50 | TON |
| SP, SS, & 303 | AGGREGATE BASE COURSE (CLASS 7) | 2447 | TON |
| SS & 401 | TACK COAT | 518 | GAL. |
| SP, SS, & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | 56 | TON |
| SP, SS, & 406 | ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1") | 3 | TON |
| SP, SS, & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") | 616 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") | 35 | TON |
| SP & 412 | COLD MILLING ASPHALT PAVEMENT | 444 | SQ. YD. |
| SP, SS, & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | 10 | TON |
| SP, SS, & 415 | ACHM PATCHING CF EXISTING ROADWAY | 50 | TON |
| 601 | MOBILIZATION | 1.00 | LUMP SUM |
| SP & 602 | FURNISHING FIELD OFFICE | 1 | EACH |
| SS & 603 | MAINTENANCE OF TRAFFIC | 1.00 | LUMP SUM |
| 603 | 96" TEMPORARY CULVERT | 440 | LIN. FT. |
| SS & 604 | SIGNS | 247 | SQ. FT. |
| SS & 604 | BARRICADES | 64 | LIN. FT. |
| SS & 604 | TRAFFIC DRUMS | 21 | EACH |
| SS & 604 | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | 230 | LIN. FT. |
| SS & 604 | RELOCATING PRECAST CONCRETE BARRIER | 130 | LIN. FT. |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | 3236 | LIN. FT. |
| SS & 604 | VERTICAL PANELS | 14 | EACH |
| SP, SS, & 605 | CONCRETE DITCH PAVING (TYPE B) | 137 | SQ. YD. |
| 606 | SELECTED PIPE BEDDING | 130 | CU. YD. |
| SS & 611 | UNDERDRAIN OUTLET PROTECTORS | 2 | EACH |
| SS & 611 | 4" PIPE UNDERDRAINS | 230 | LIN. FT. |
| SS & 619 | WIRE FENCE (TYPE D) | 1380 | LIN. FT. |
| * SS & 619 | 16" STEEL GATES (ALTERNATE NO. 1) | 1 | EACH |
| * SS & 619 | 16" ALUMINUM GATES (ALTERNATE NO. 2) | 1 | EACH |
| 620 | LIME | 2 | TON |
| 620 | SEEDING | 0.91 | ACRE |
| SS & 620 | MULCH COVER | 9.91 | ACRE |
| 620 | WATER | 278.6 | M. GAL. |
| 621 | TEMPORARY SEEDING | 9.00 | ACRE |
| 621 | SILT FENCE | 2910 | LIN. FT. |
| 621 | SAND BAG DITCH CHECKS | 230 | BAG |
| 621 | SEDIMENT REMOVAL AND DISPOSAL | 120 | CU. YD. |
| 621 | ROCK DITCH CHECKS | 14 | CU. YD. |
| SS & 621 | FILTER SOCK (18") | 400 | LIN. FT. |
| 623 | SECOND SEEDING APPLICATION | 0.91 | ACRE |
| 624 | SOLID SODDING | 179 | SQ. YD. |
| 626 | EROSION CONTROL MATTING (CLASS 3) | 135 | SQ. YD. |
| 635 | ROADWAY CONSTRUCTION CONTROL | 1.00 | LUMP SUM |
| 637 | MAILBOXES | 3 | EACH |
| 637 | MAILBOX SUPPORTS (SINGLE) | 3 | EACH |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | 1805 | LIN. FT. |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | 1805 | LIN. FT. |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 1 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER | 2 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | 2 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | 1 | EACH |
| SS & 816 | FILTER BLANKET | 990 | SQ. YD. |
| SS & 816 | DUMPED RIPRAP | 510 | CU. YD. |
| SP | DISPOSAL OF WASTE | 30 | CU. YD. |
| | | | |
| | | | |
| | STRUCTURES OVER 20' SPAN | | |
| 205 | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) | 1.00 | LUMP SUM |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY | 234 | CU. YD. |
| SP, SS, & 802 | CLASS S CONCRETE-ROADWAY | 660.09 | CU. YD. |
| SS & 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | 83337 | POUND |
| | | | |
| | | | |
| | | | |

* DENOTES ALTERNATE BID ITEMS.

REVISIONS

| DATE | REVISION | SHEET NUMBER |
|------------|---|--------------|
| 10/24/2022 | REVISED PLAN SHEET TO CORRECT DESCRIPTION OF RAISED PAVEMENT MARKERS. REVISED ALTERNATE ON SCHEDULE OF ITEMS. | 22 & 27 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
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| | | |

| DATE REVISED | DATE REVISED | FED.RD. DIST.NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|------------------------|-----------------|---------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 28 | 40 |
| SURVEY CONTROL DETAILS | | | | | | |



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SURVEY CONTROL COORDINATES

Project Name: s040779
Date: 2/4/2019
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|---------------|-------------|-------------|---------|---------|-------------------------------|
| 1 | 489588.6447 | 614856.0130 | 719.340 | CTL | ARDOT STD. MON. STAMPED PN: 1 |
| 2 | 490119.9755 | 615220.9403 | 724.808 | CTL | ARDOT STD. MON. STAMPED PN: 2 |
| 3 | 490358.2716 | 614774.4276 | 717.336 | CTL | ARDOT STD. MON. STAMPED PN: 3 |
| 4 | 490574.9552 | 614558.7836 | 735.181 | CTL | ARDOT STD. MON. STAMPED PN: 4 |
| 5 | 490846.4053 | 614596.0371 | 759.836 | CTL | ARDOT STD. MON. STAMPED PN: 5 |
| 6 | 490897.3159 | 614888.8648 | 776.805 | CTL | ARDOT STD. MON. STAMPED PN: 6 |
| 7 | 491124.8100 | 615281.3585 | 777.651 | CTL | ARDOT STD. MON. STAMPED PN: 7 |
| 100 | 489175.2806 | 614525.5168 | 719.012 | GPS | ARDOT GPS #170034 |
| 101 | 490401.7472 | 615421.5993 | 726.278 | GPS | ARDOT GPS #170034A |
| 900 | 490331.7345 | 614830.1896 | 715.504 | TBM | CHISELED SQUARE SW END OF BR |

*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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999059066 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 s040779gi.ctb
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: 170034 - 170034A
CONVERGENCE ANGLE: 01 21 59.8757 LEFT AT LT: 35-39-27.20 LG: 094-20-54.86
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY 220

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|-----------|-------------|-------------|
| 8000 | POB | 99+25.00 | 489645.9318 | 614881.6526 |
| 8001 | PC | 102+86.33 | 489935.5229 | 615097.7497 |
| 8003 | PT | 106+30.34 | 490232.1132 | 615033.1361 |
| 8004 | PC | 110+20.42 | 490419.3744 | 614690.9390 |
| 8006 | PT | 111+37.21 | 490491.2309 | 614599.5527 |
| 8007 | PC | 111+47.10 | 490498.5427 | 614592.8917 |
| 8009 | PT | 117+17.47 | 490883.1958 | 614799.5732 |
| 8010 | PC | 117+80.26 | 490873.5538 | 614861.6179 |
| 8012 | PT | 119+70.58 | 490919.8440 | 615040.8509 |
| 8013 | POE | 123+19.59 | 491133.7328 | 615316.6360 |

DETOUR

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|----------|-------------|-------------|
| 8014 | POB | 18+00.00 | 489866.3316 | 615046.1182 |
| 8015 | PC | 18+73.50 | 489925.2358 | 615090.0733 |
| 8017 | PT | 21+31.50 | 490147.6785 | 615041.6131 |
| 8018 | PC | 23+81.41 | 490267.6464 | 614822.3863 |
| 8020 | PT | 24+67.67 | 490320.7223 | 614754.8851 |
| 8006 | POE | 26+98.32 | 490491.2309 | 614599.5527 |

DRIVE STA. 109+55

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|----------|-------------|-------------|
| 8021 | POB | 40+00.00 | 490324.9070 | 614661.7361 |
| 8022 | PC | 40+67.17 | 490355.6556 | 614721.4301 |
| 8023 | PT | 40+96.00 | 490375.6899 | 614697.7500 |
| 8024 | POE | 41+00.00 | 490387.6899 | 614741.6119 |

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 29 | 40 |
| SURVEY CONTROL DETAILS | | | | | | |



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HWY. 220
P.I. = 105+17.77
 Δ = 98° 02' 31" LT.
D = 28° 30' 00"
T = 231.44'
L = 344.01'
P.C. = 102+86.33
P.T. = 106+30.34
MATCH EXISTING

HWY. 220
P.I. = 110+79.36
 Δ = 18° 58' 40" RT.
D = 16° 15' 00"
T = 58.94'
L = 116.79'
P.C. = 110+20.42
P.T. = 111+37.21
MATCH EXISTING

DETOUR
P.I. = 20+47.08
 Δ = 98° 02' 31" LT.
D = 38° 00' 00"
T = 173.58'
L = 258.01'
P.C. = 18+73.50
P.T. = 21+31.50
NO SUPER

STA. 18+73.50
BEGIN DETOUR =
HWY. 220
STA. 102+73.50

STA. 107+60.00
BEGIN JOB 040779
LOG MILE 5.35

STA. 26+98.32
END DETOUR =
HWY. 220
STA. 111+37.21

HWY. 220
P.I. = 118+03.87
 Δ = 141° 10' 00" RT.
D = 24° 45' 00"
T = 656.76'
L = 570.37
P.C. = 111+47.10
P.T. = 117+17.47
FOR INFORMATION ONLY

DETOUR
P.I. = 24+24.94
 Δ = 18° 58' 40" RT.
D = 22° 00' 00"
T = 43.53'
L = 86.26'
P.C. = 23+81.41
P.T. = 24+67.67
e = 0.065'/'
Ls = 160'

STA. 109+15.00
END JOB 040779

SURVEY BASELINE

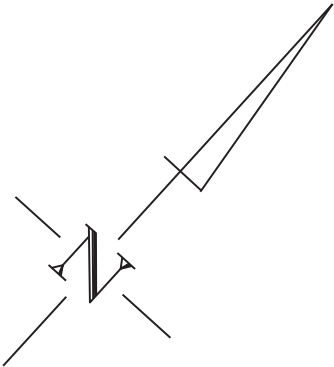
SURVEY CONTROL DETAILS

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|------------------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 30 | 40 |
| SURVEY CONTROL DETAILS | | | | | | |

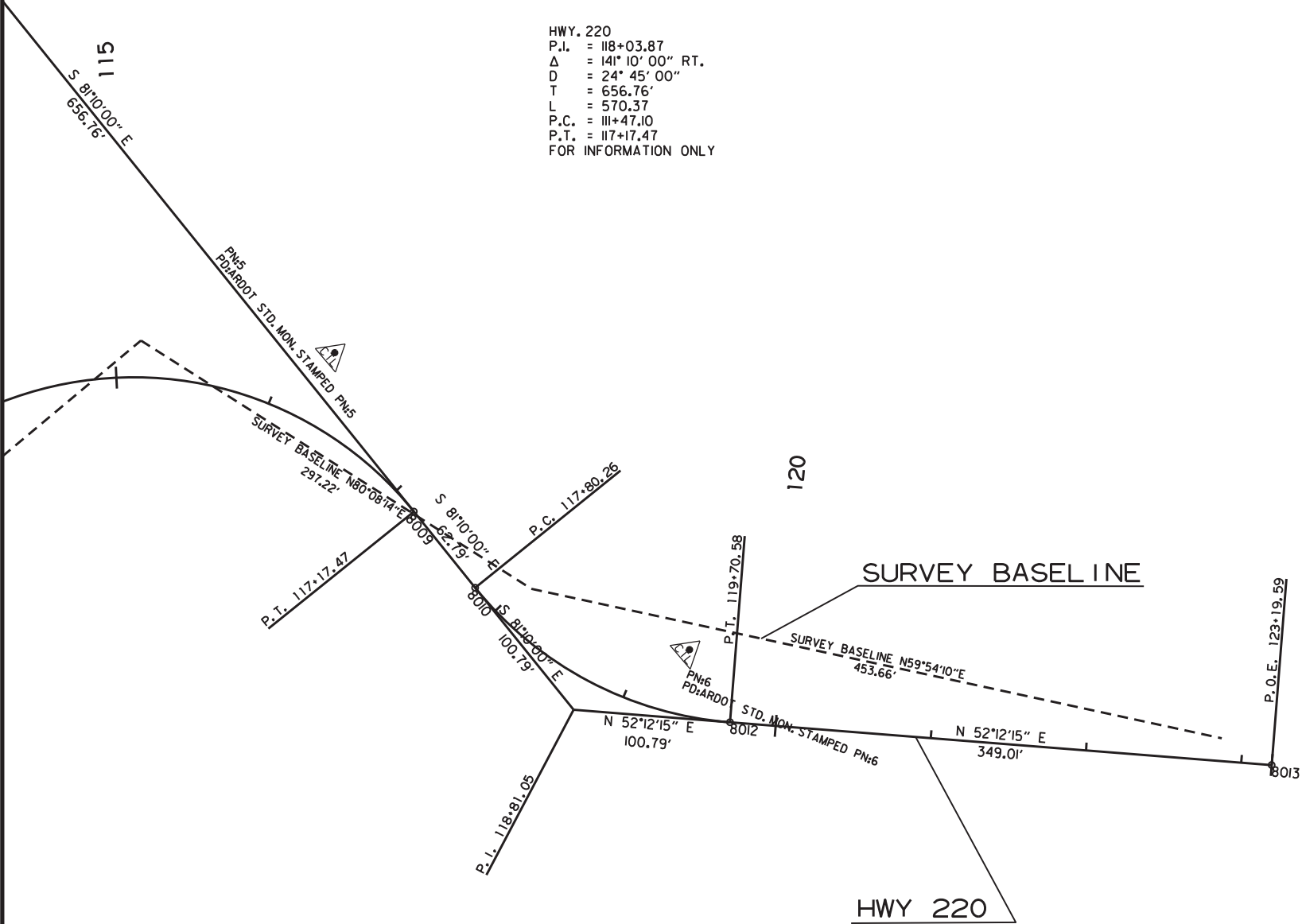


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HWY. 220
P.I. = 118+03.87
Δ = 141° 10' 00" RT.
D = 24° 45' 00"
T = 656.76'
L = 570.37'
P.C. = 111+47.10
P.T. = 117+17.47
FOR INFORMATION ONLY



STATE OF
ARKANSAS

LICENSED
PROFESSIONAL
ENGINEER
Trinity D. Smith

No. 11425
TRINITY D. SMITH

DocuSign

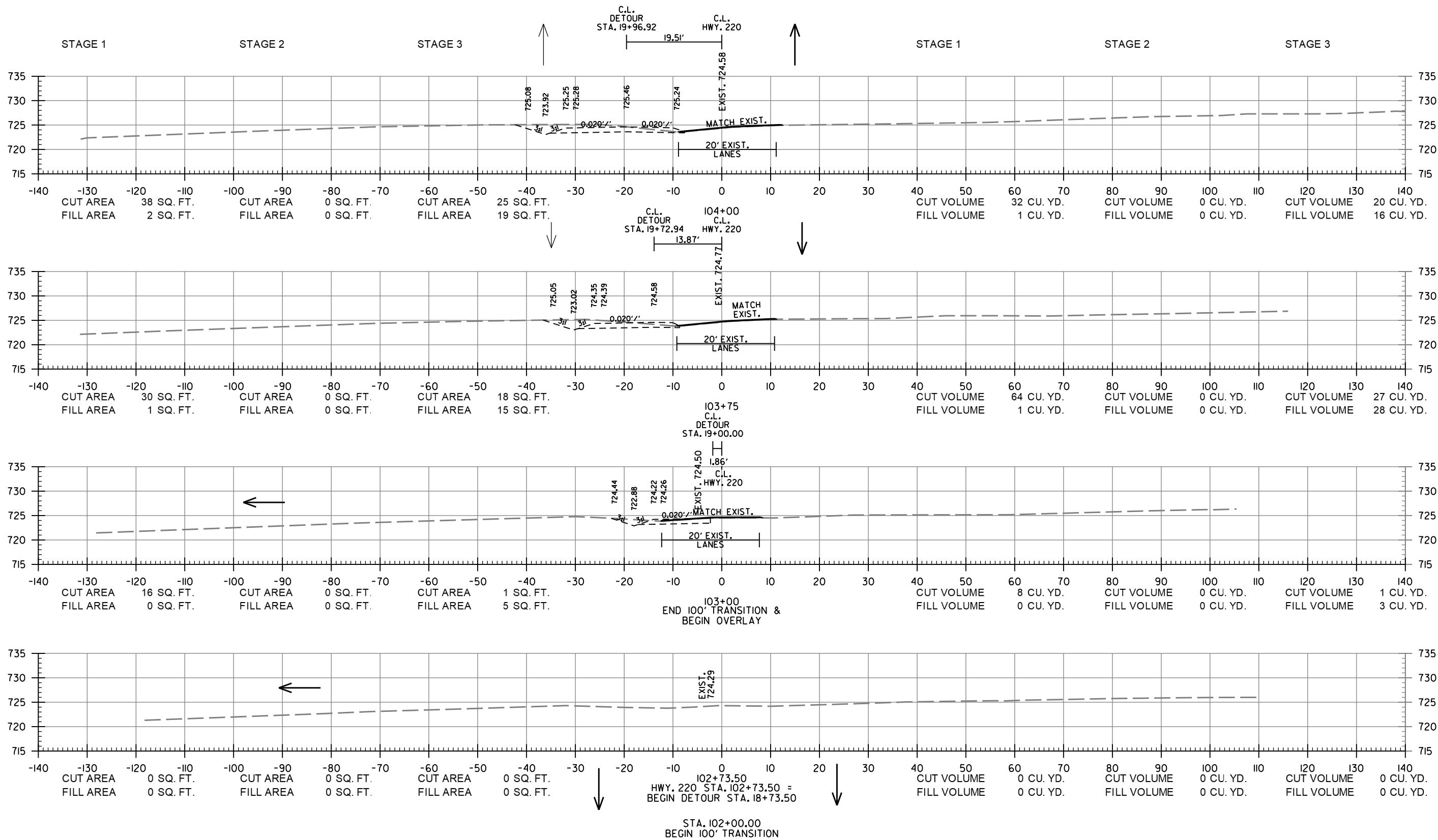
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 107+60.00 1
BEGIN JOB 040779
LOG MILE 5.35 1

| | |
|------|------------|
| STA. | 109+15.00 |
| END | JOB 040779 |

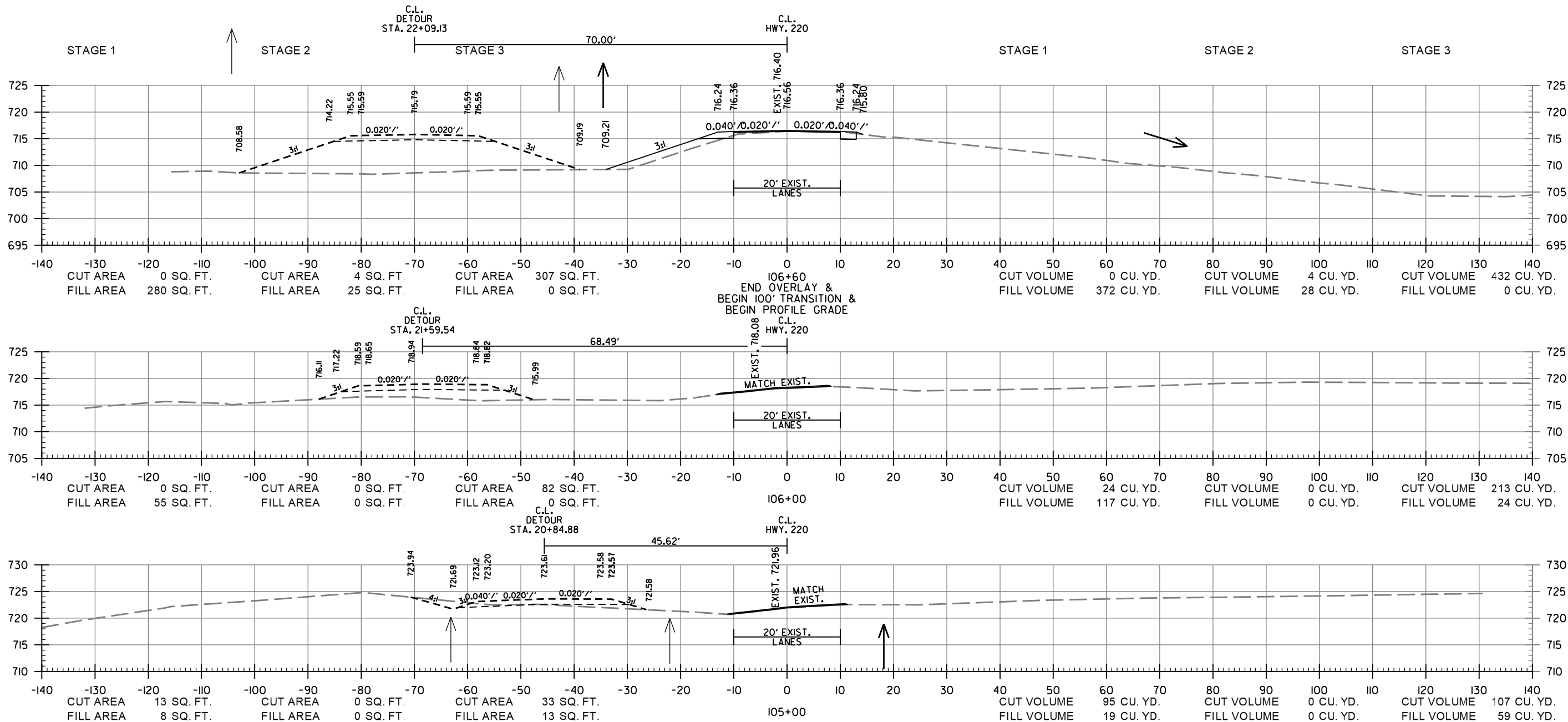


| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|----------------|--------------|--------------------|-------|---------|-----------|--------------|
| | | 6 | ARK. | 040779 | 33 | 40 |
| CROSS SECTIONS | | | | | | |



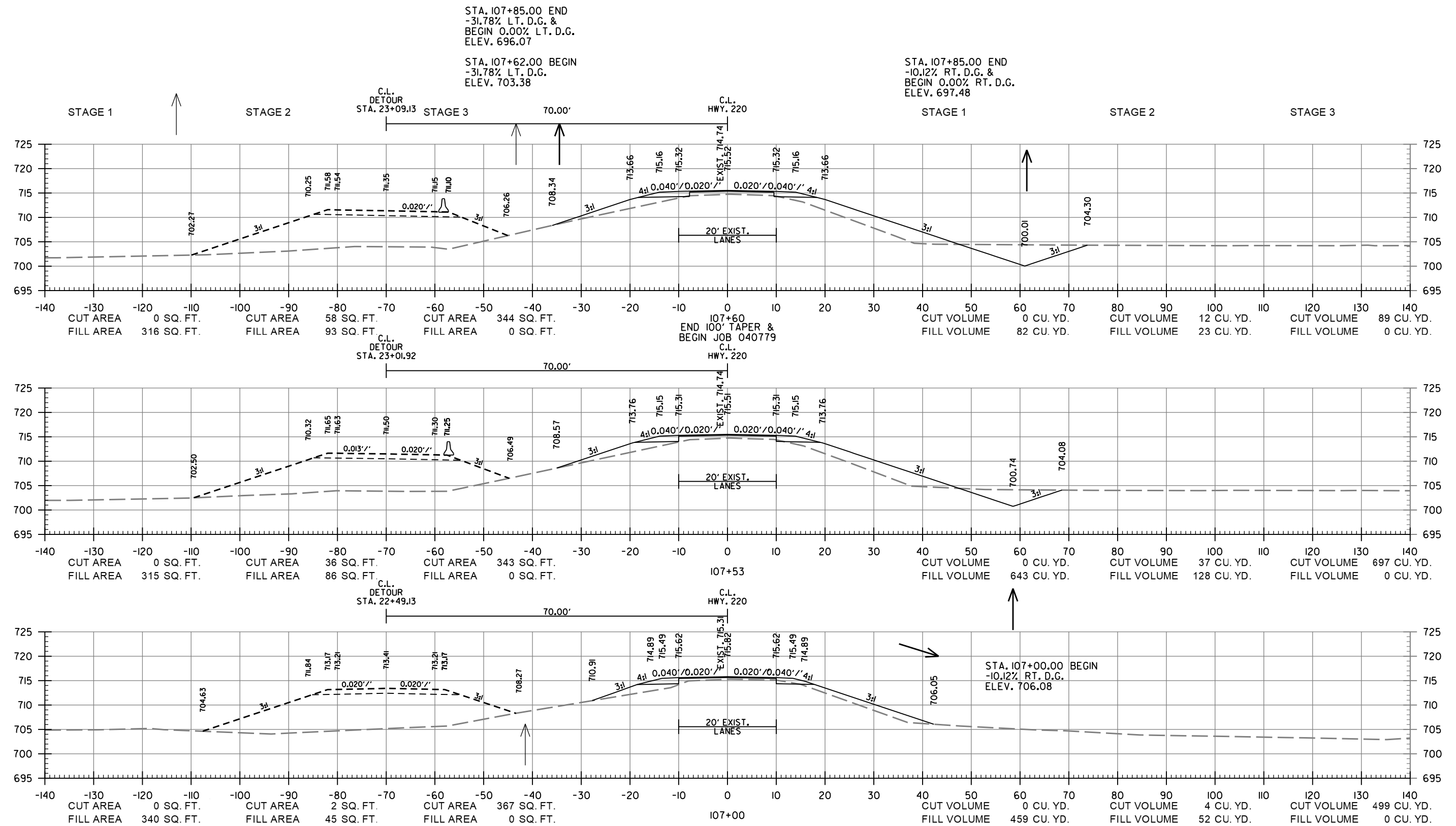
CROSS SECTION STA. 102+00 TO STA. 104+00

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 34 | 40 |
| CROSS SECTIONS | | | | | | |



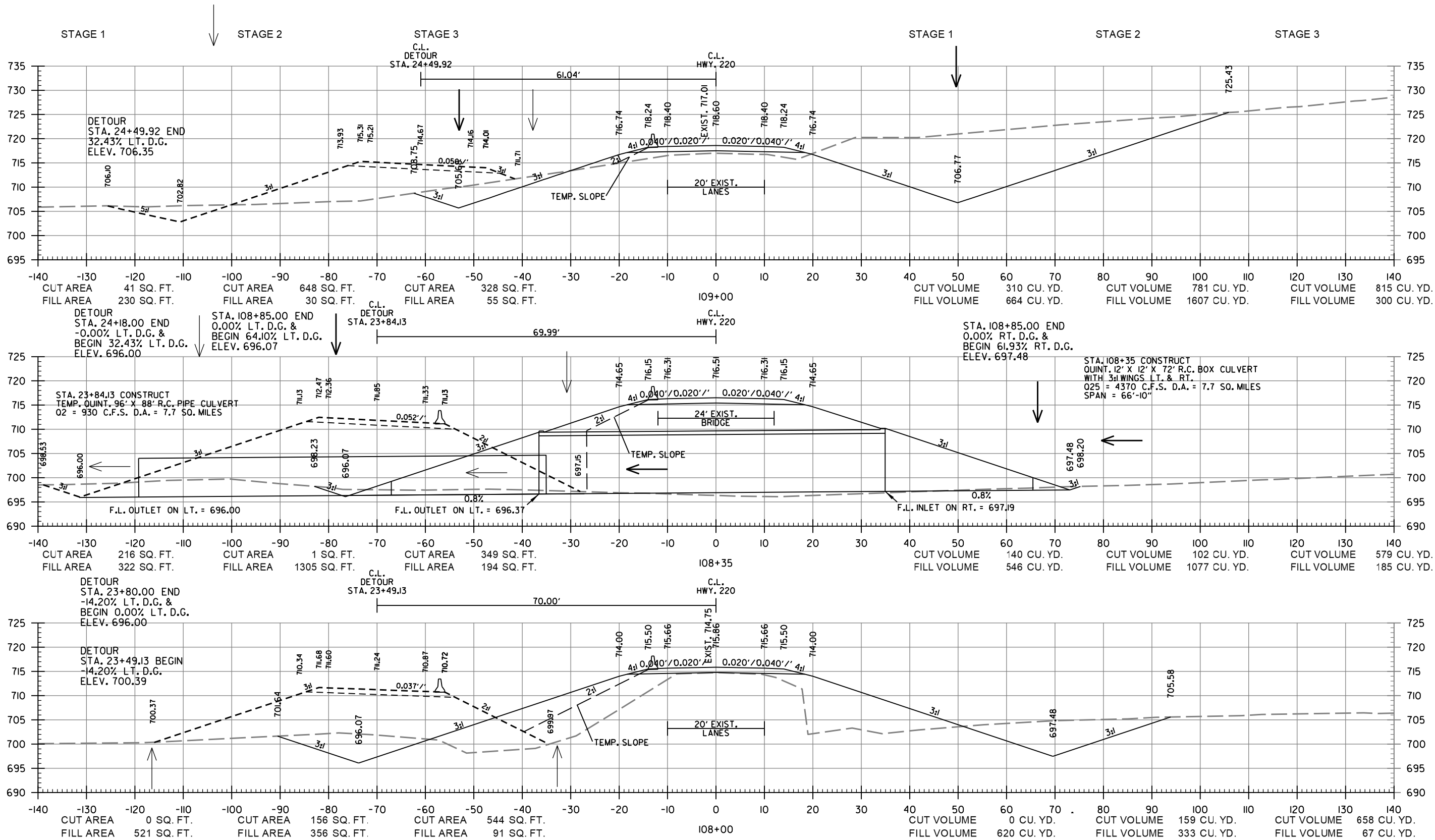
CROSS SECTION STA. 105+00 TO STA. 106+60

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 35 | 40 |
| | | CROSS SECTIONS | | | | |



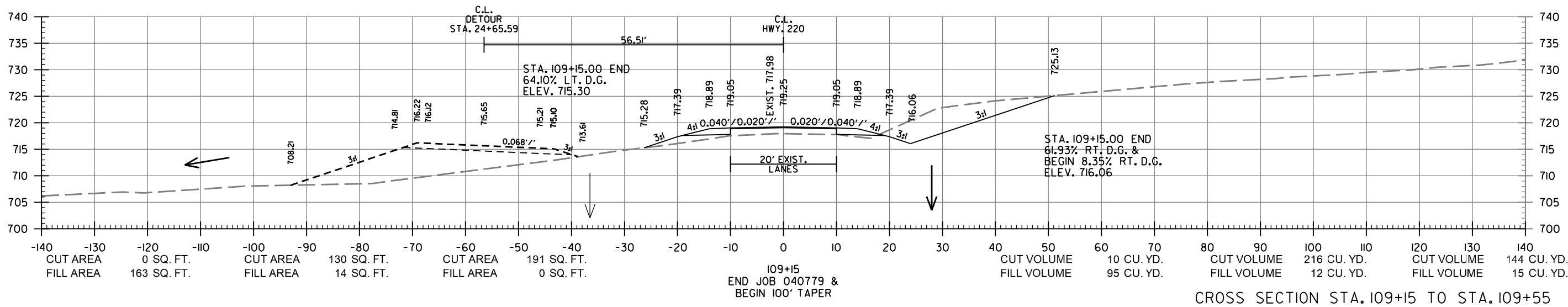
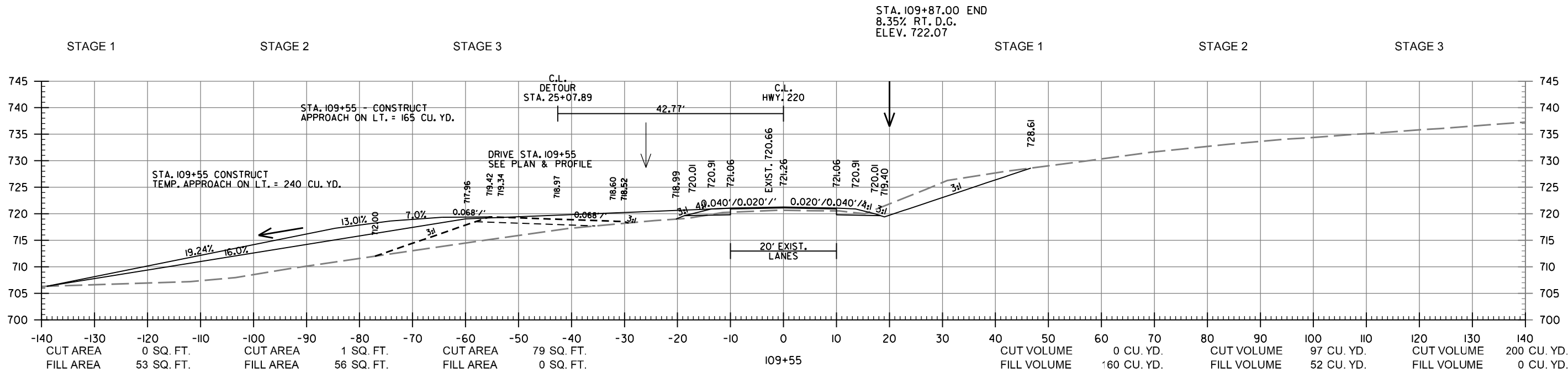
CROSS SECTION STA. 107+00 TO STA. 107+60

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 36 | 40 |
| CROSS SECTIONS | | | | | | |

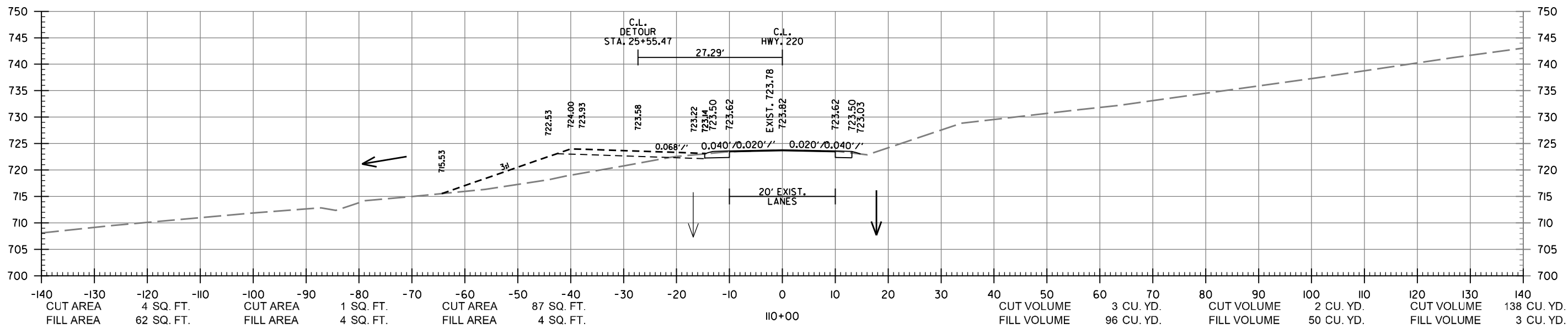
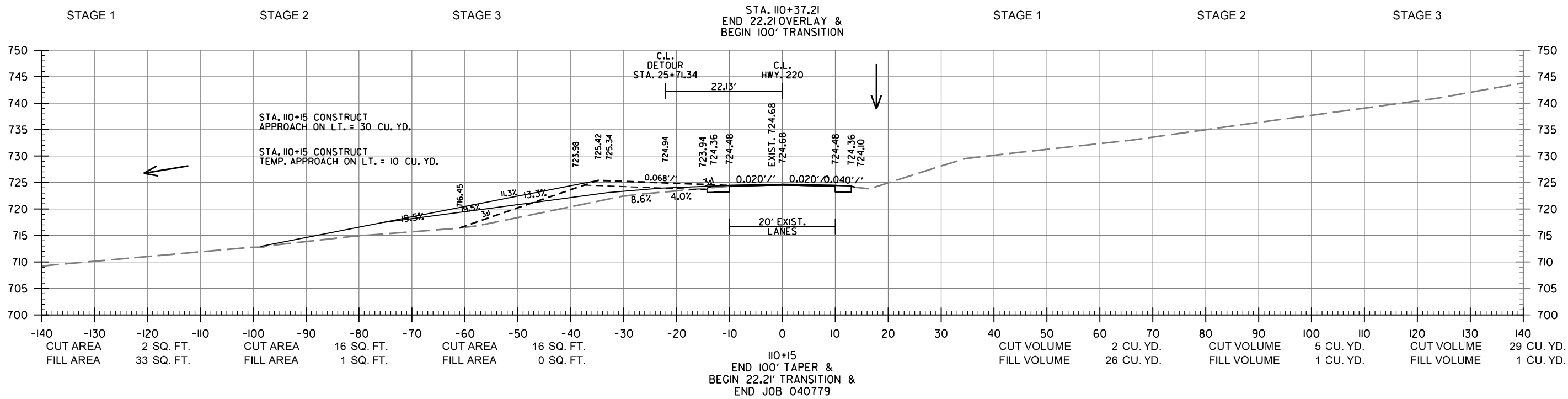


CROSS SECTION STA. 108+00 TO STA. 109+00

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 37 | 40 |
| CROSS SECTIONS | | | | | | |

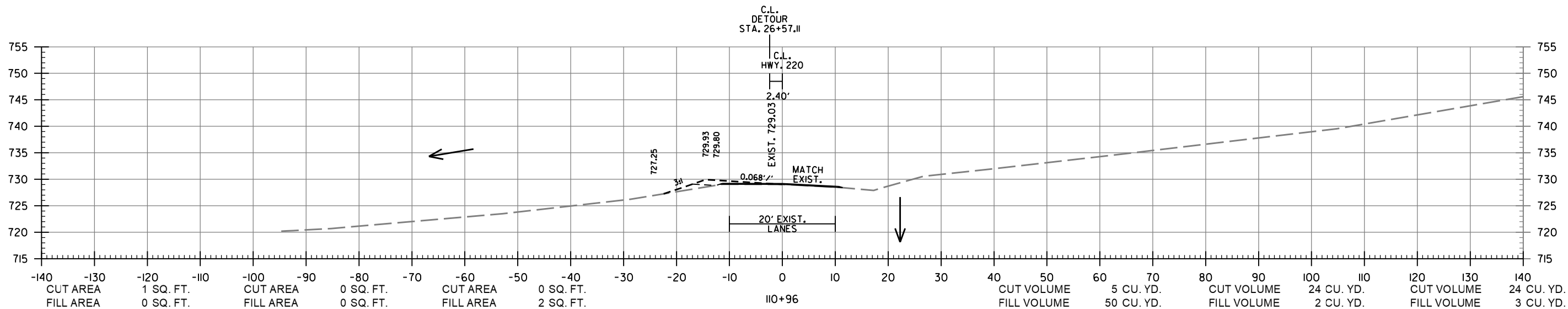
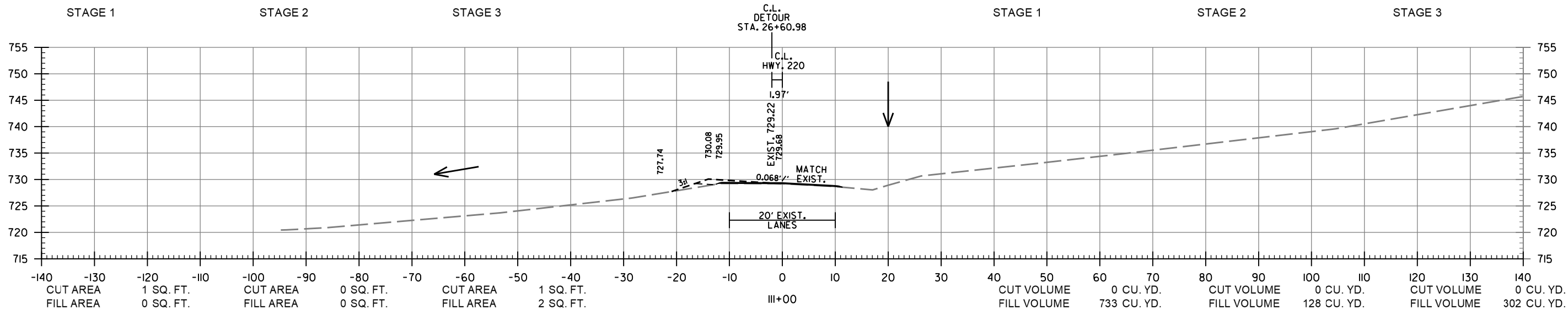


| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 38 | 40 |
| CROSS SECTIONS | | | | | | |



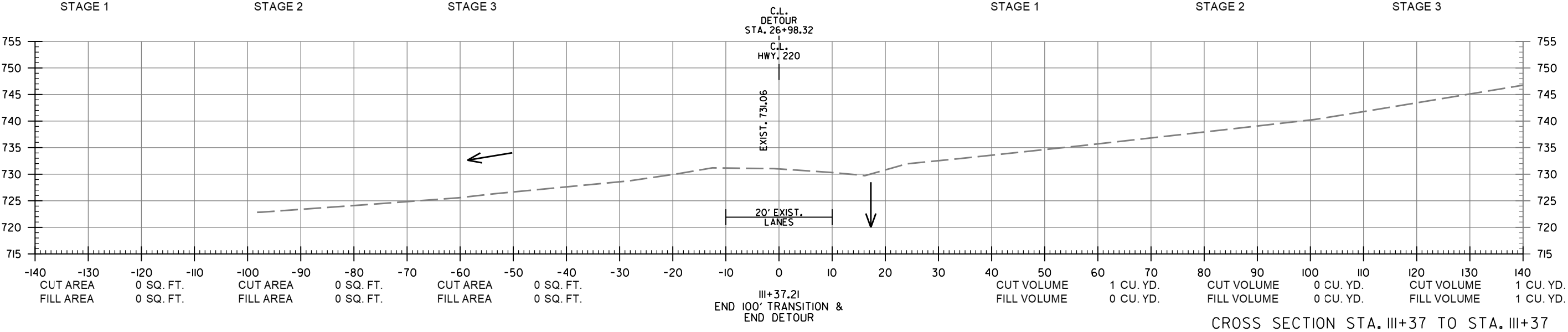
CROSS SECTION STA. 110+00 TO STA. 110+15

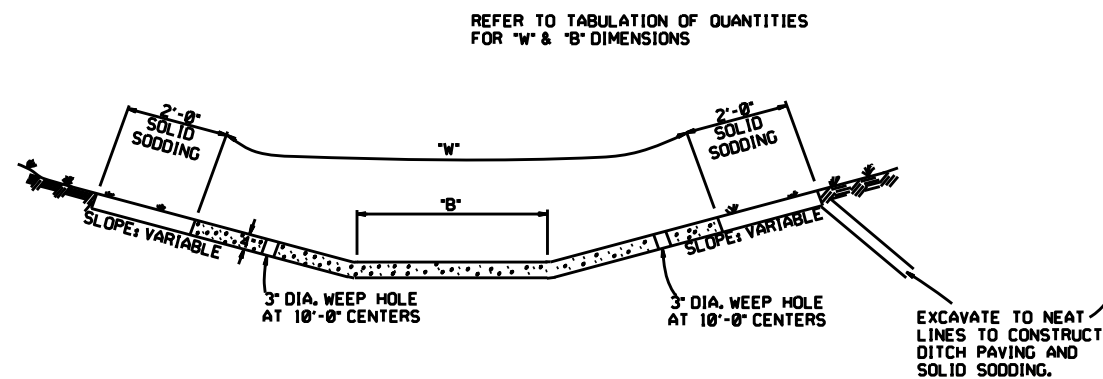
| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 39 | 40 |
| CROSS SECTIONS | | | | | | |



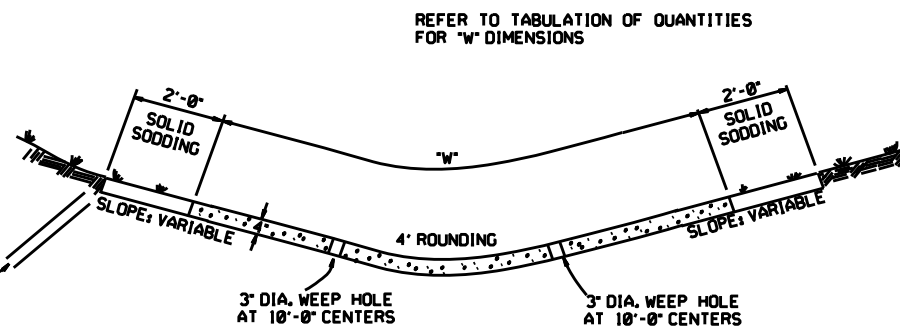
CROSS SECTION STA. II+96 TO STA. III+00

| DATE REVISED | DATE REVISED | FED. RD. DIST. NO. | STATE | JOB NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------|-----------------------|-------|---------|--------------|-----------------|
| | | 6 | ARK. | 040779 | 40 | 40 |
| CROSS SECTIONS | | | | | | |



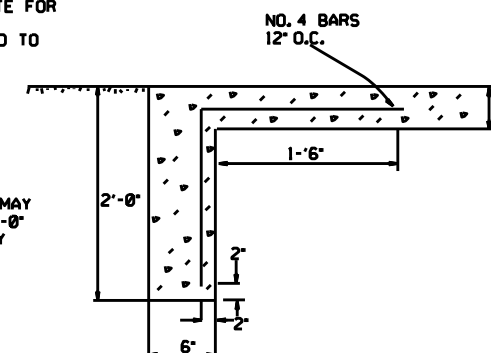


TYPE A

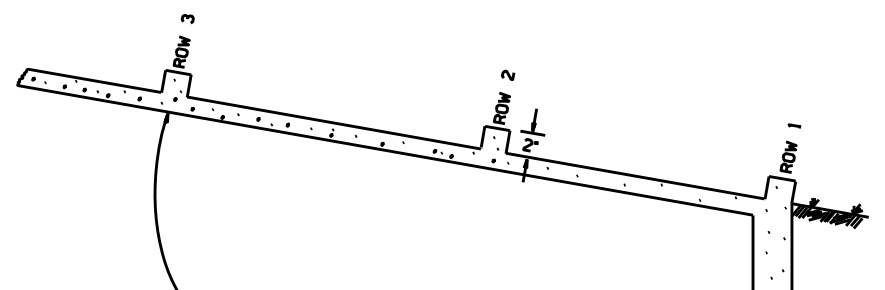


TYPE B

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."

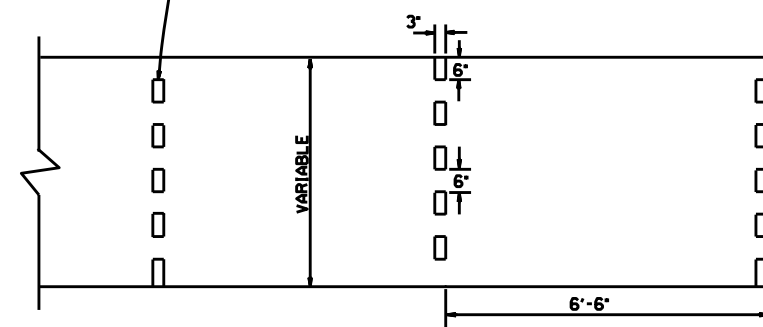


TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

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



ENERGY DISSIPATORS
(NO SCALE)

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.

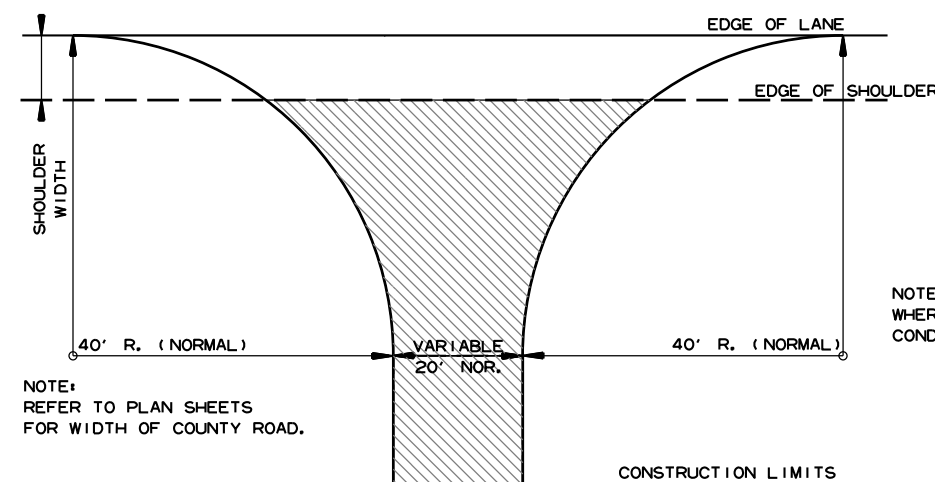
1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

| 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 | |
| 11-30-88 | 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. | 632-1-9-87 |
| 11-3-86 | ADDED NOTE TO ENERGY DISS. | 639-12-1-86 |
| 11-1-84 | ENERGY DISSIPATOR DETAILS ADDED | 508-11-1-84 |
| 11-1-84 | EXCAVATION DETAILS ADDED | |
| 10-2-72 | TYPED A & B | |
| | REVISED AND REDRAWN | 508-10-2-72 |
| | | |

ARKANSAS STATE HIGHWAY COMMISSION

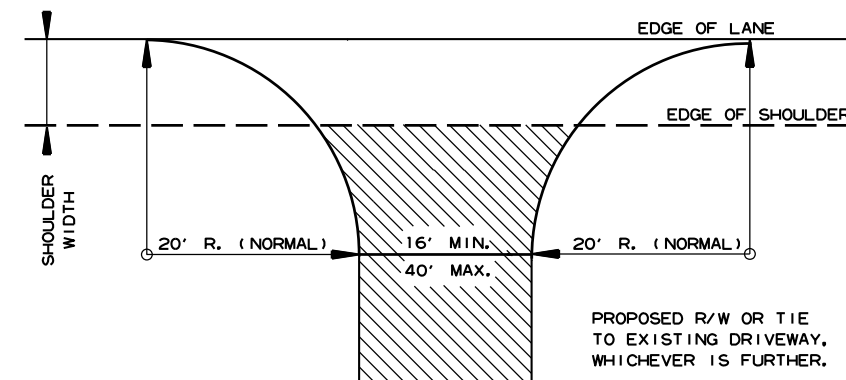
CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1



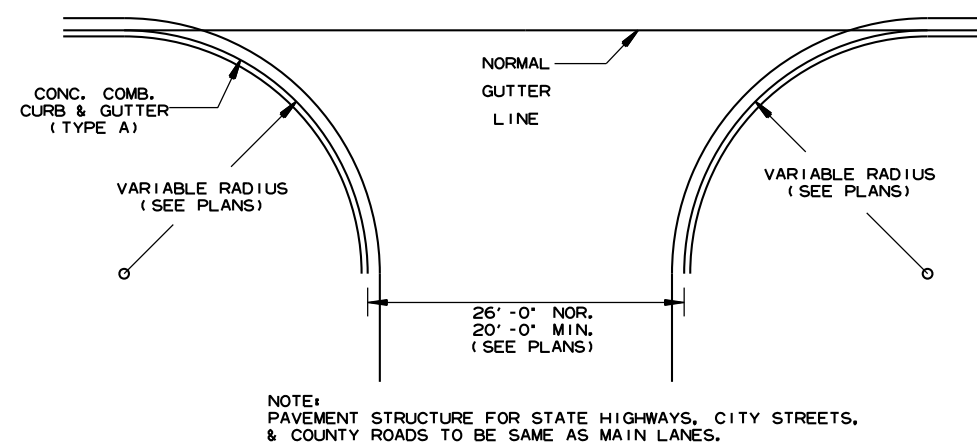
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

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

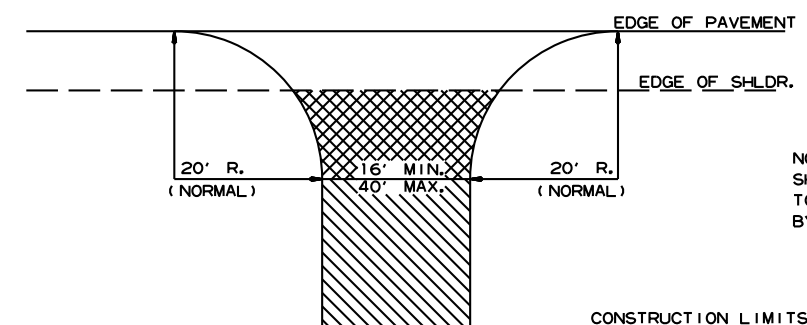


DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION
(ARTERIALS)

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



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.

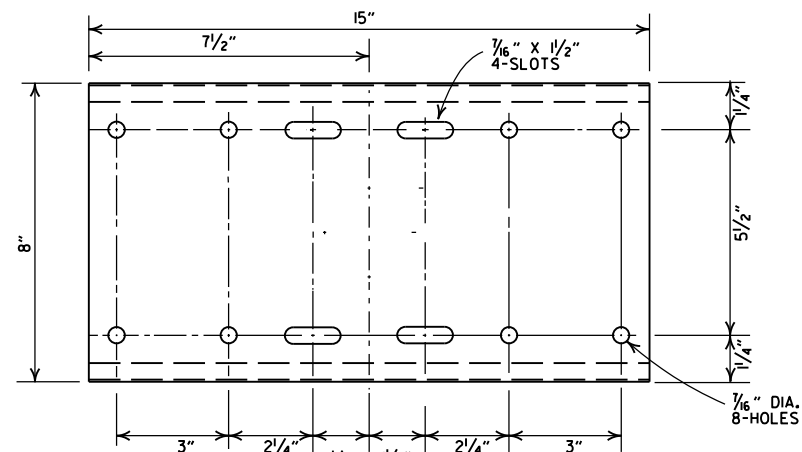
AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

DETAIL FOR DRIVEWAY TURNOUTS
(COLLECTORS)

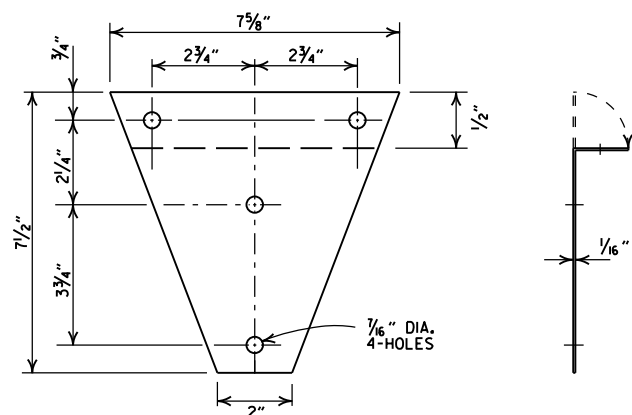
NOTE: TURNOUTS AND PRIVATE DRIVES
SHALL BE MODIFIED WHERE NECESSARY
TO MEET LOCAL CONDITIONS AS DIRECTED
BY THE ENGINEER.

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

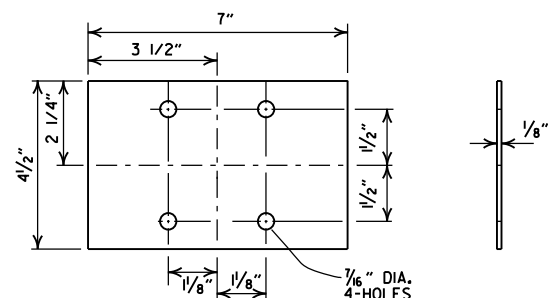
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & STREET
TURNOUTS
STANDARD DRAWING DR-2



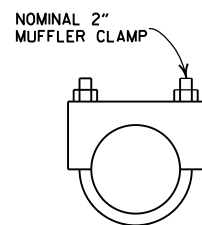
SHELF



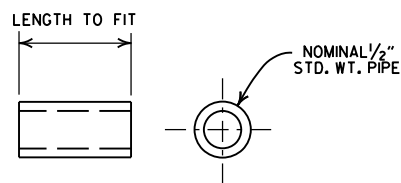
BRACKET



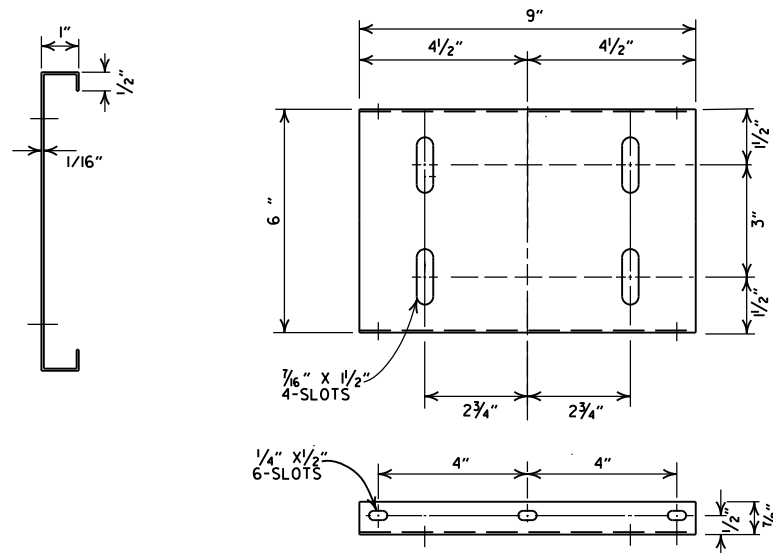
ANTI-TWIST PLATE



CLAMP



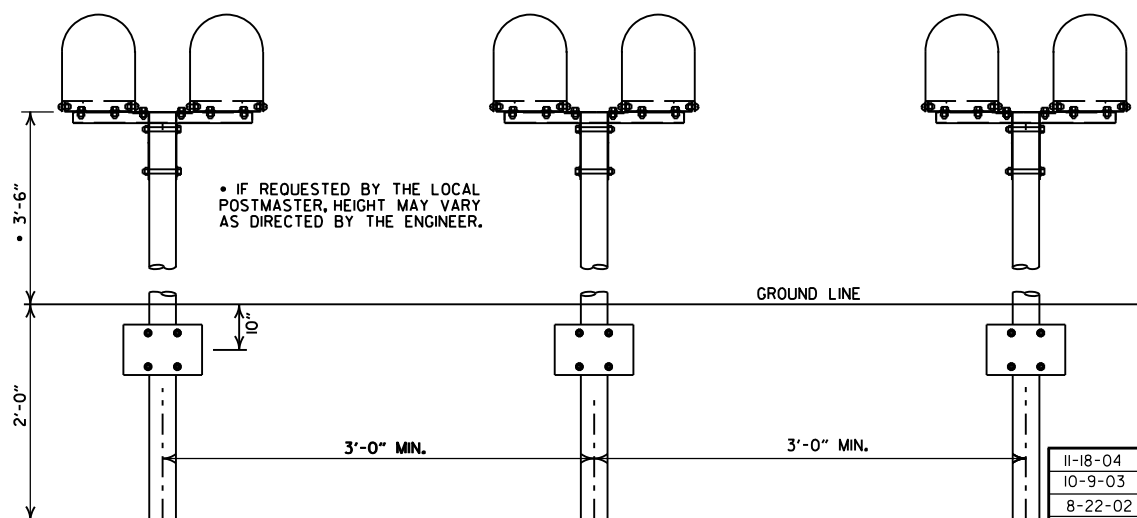
SPACER



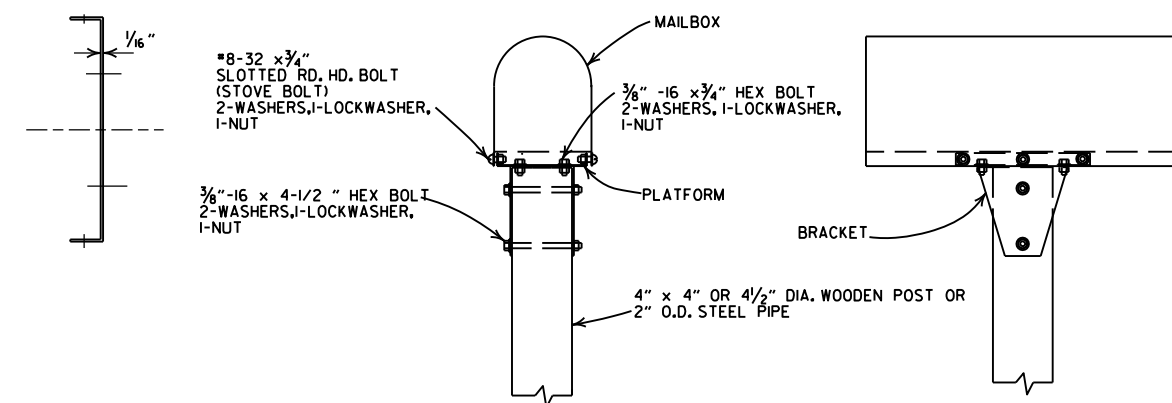
PLATFORM

GENERAL NOTES

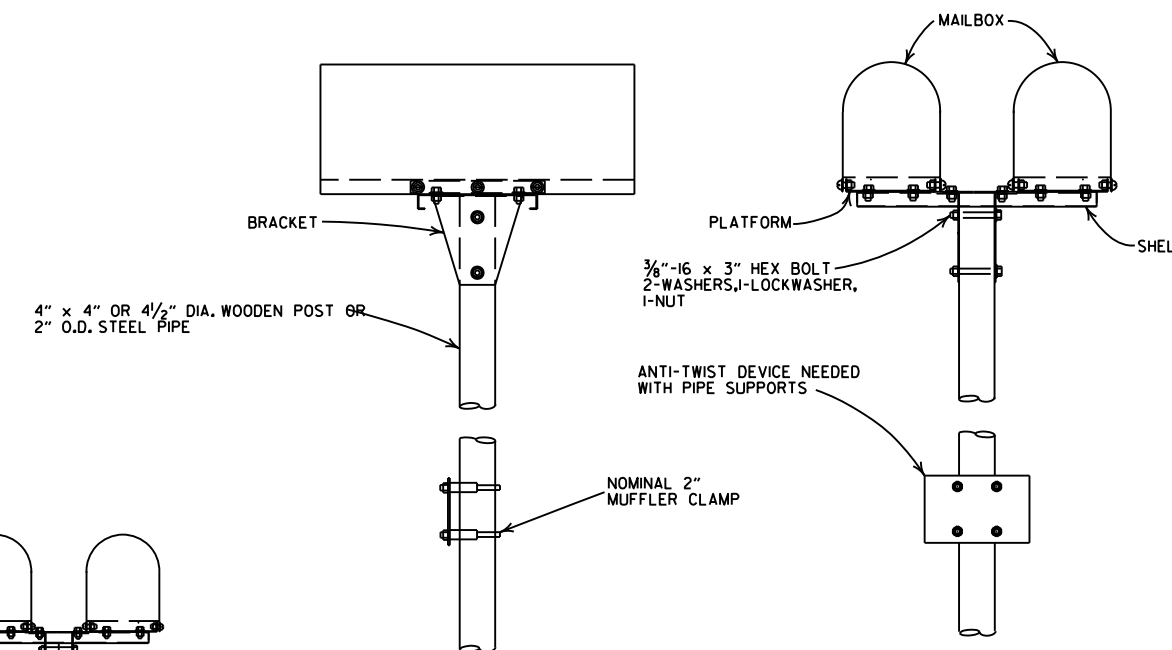
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 x 3/4" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



SPACING FOR MULTIPLE POST INSTALLATION



SINGLE INSTALLATION



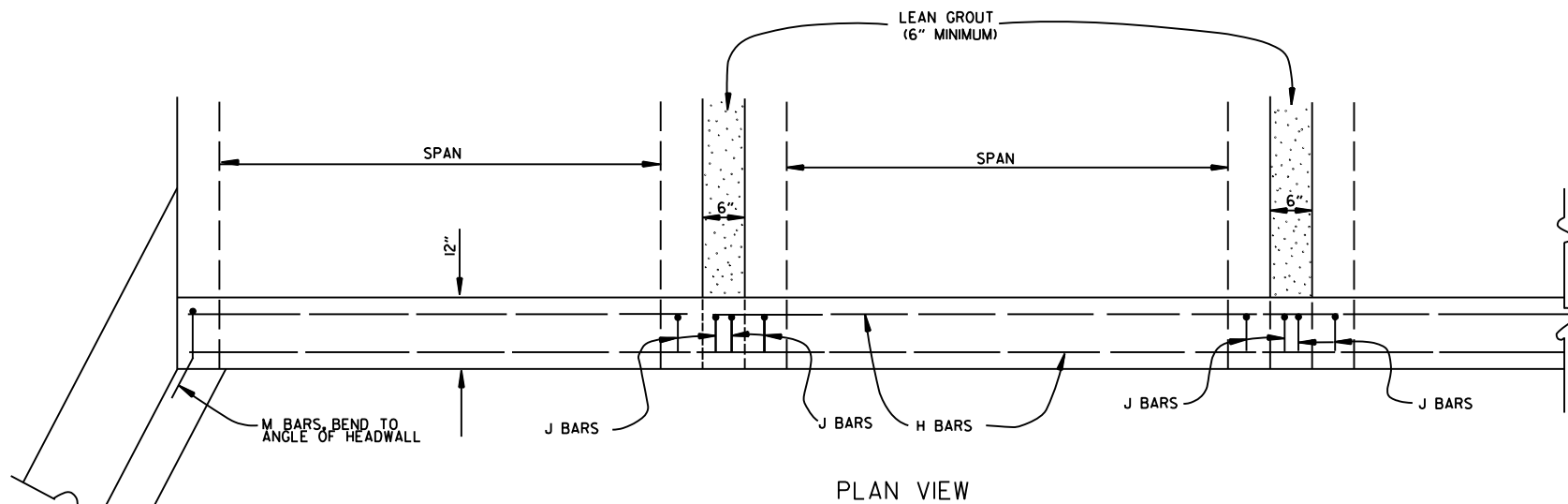
DOUBLE INSTALLATION

| DATE | FILMED | REVISION |
|----------|-------------|------------------------------------|
| 11-18-04 | | REVISED NOTES |
| 10-9-03 | | REVISED NOTE 6 |
| 8-22-02 | | REVISED NOTE 6 |
| 10-18-96 | | CORRECTED AASHTO |
| 10-1-92 | | CORRECTED SPELLING |
| 9-26-91 | | NEW PHONE NUMBER |
| 8-15-91 | | ADDED NOTE |
| 11-30-89 | | ADJUSTED HEIGHT & ADDED NOTE |
| 2-16-89 | | DELETED SLOTS FROM SHELF & PLTF |
| 11-17-88 | 10-1-92 | ADJUSTED DIMENSIONS OF STEEL POSTS |
| 7-15-88 | 120-7-15-88 | ISSUED |
| | | |

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1



| 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 $\frac{3}{4}$ " 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.

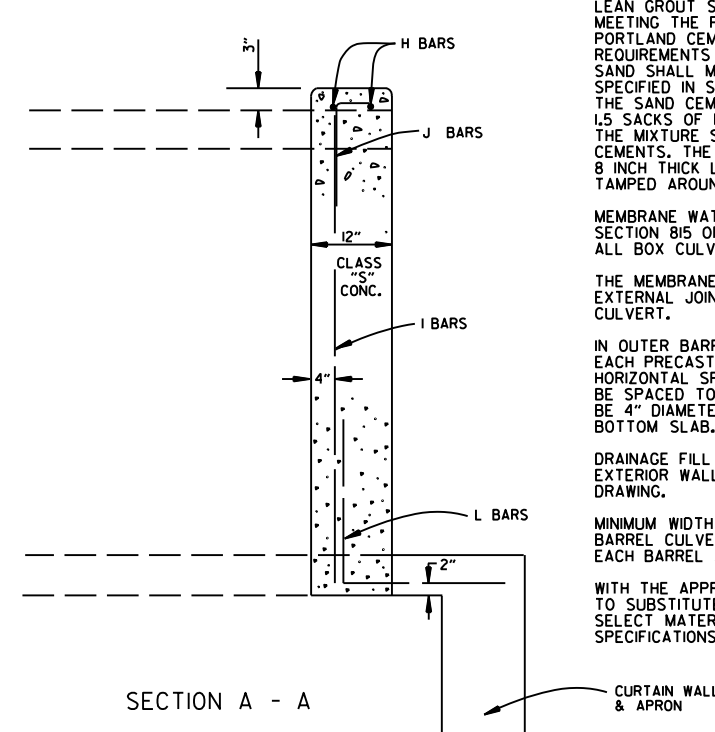
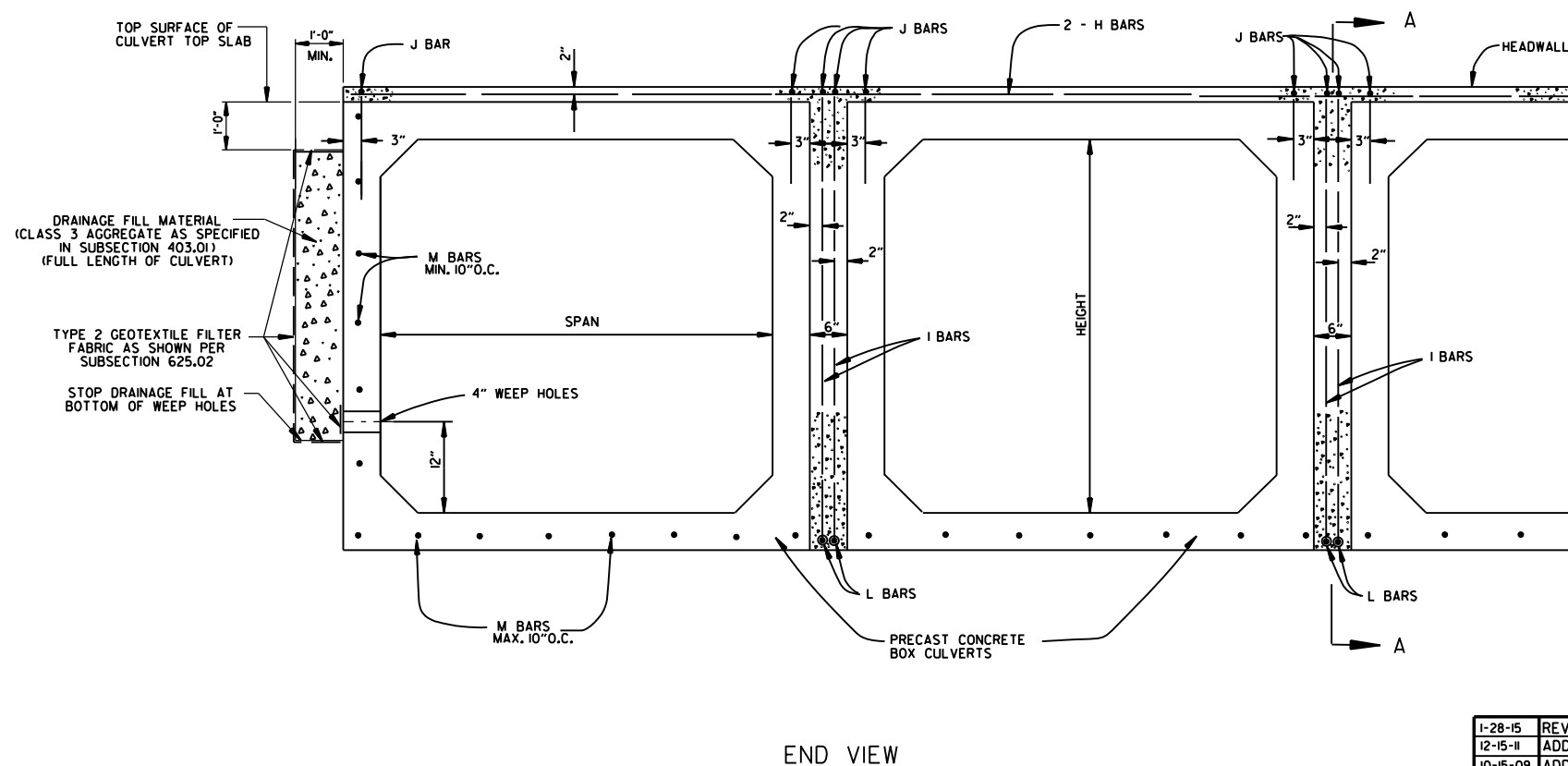
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.



| 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 | 43¾ | 44 | 26¾ | 27 |
| 42 | 51½ | 51 | 31¾ | 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 | 87½ | 87 |
| 120 | 154 | 154 | 96¾ | 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.

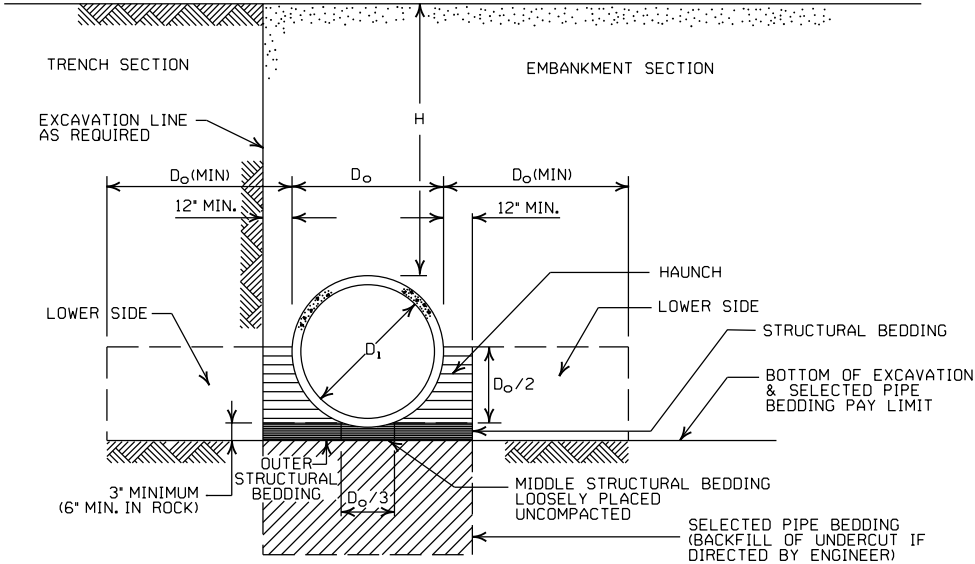
- LEGEND -

D_i = 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.

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 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.

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.

| | | |
|----------|--|-------------|
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| | | |
| 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 | |
| DATE | REVISION | DATE FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



CORRUGATED STEEL PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINIMUM 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 |
| 2 3/4 INCH BY 1/2 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 MINIMUM 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 3/4 INCH BY 1/2 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 |

CORRUGATED METAL PIPE ARCHES

| EQUIV. DIA. (INCHES) | PIPE DIMENSION SPAN X RISE (INCHES) | MINIMUM 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 ¾ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | 2 ¾ 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 | 0.135 | 3 | 15 | | |
| 66 | 77x52 | 8 | 0.168 | 3 | 15 | 0.164 | 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 | | | | ① FOR MINIMUM COVER VALUES, "H" SHALL ② WHERE THE STANDARD 2 2/3" x ½" COR WITH A 3' x 1' OR 5' x 1' CORRUGATION OR GREATER THAN THE MAXIMUM FILL | | | |
| | | | 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 | | | |

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.

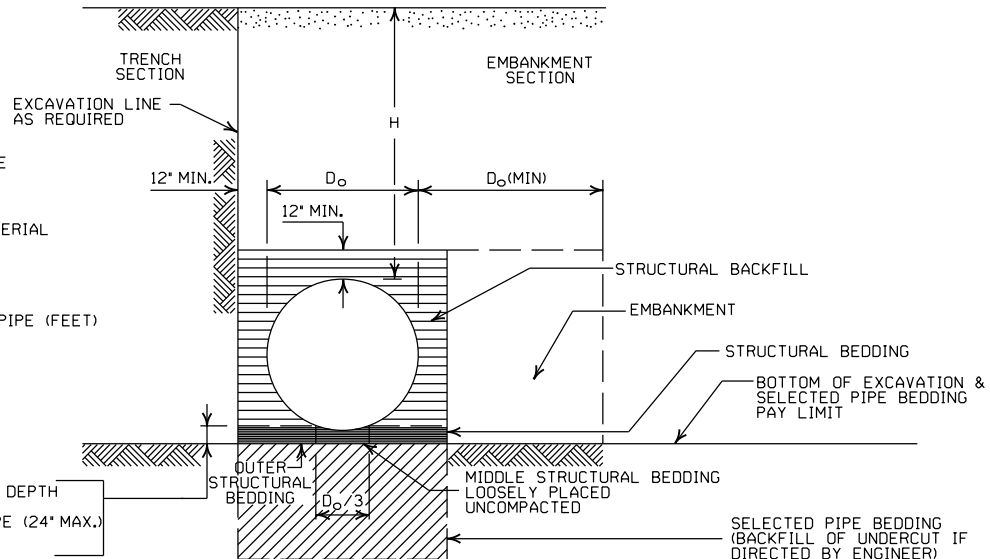
EQUIVALENT METAL THICKNESSES AND GAUGES

| METAL THICKNESS IN INCHES | | | GAUGE NUMBER |
|---------------------------|----------|----------|-----------------|
| STEEL | | ALUMINUM | |
| ZINC COATED | UNCOATED | | |
| 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 |

- 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)

IN SOIL-MIN. EQUALS TWICE CORRUGATION DEPTH
IN ROCK-MIN. EQUALS GREATER OF:
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)
TWICE CORRUGATION DEPTH



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. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/4" X 1/2" 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."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3" X 1/2" 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.

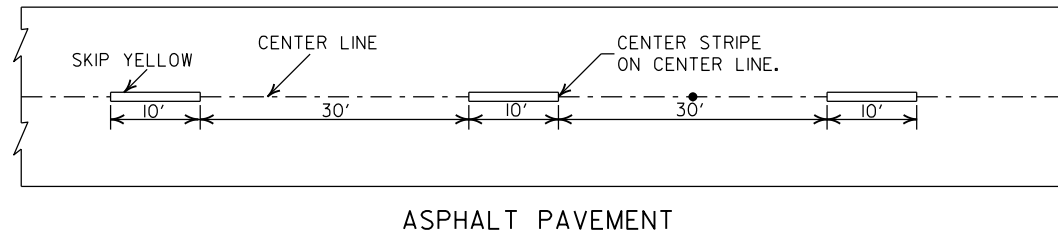
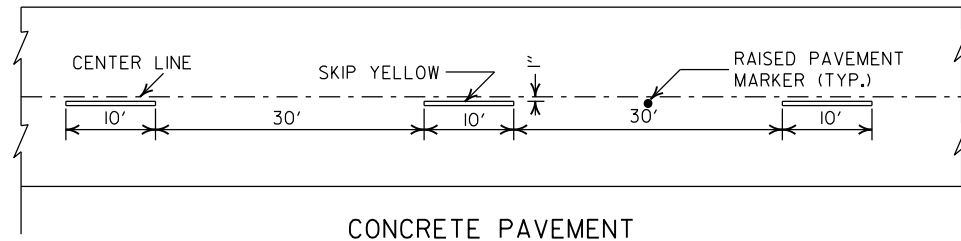
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| | | |
| | | |
| 2-27-14 | REVISED GENERAL NOTE 1 | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECS | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |
| DATE | REVISION | DATE FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

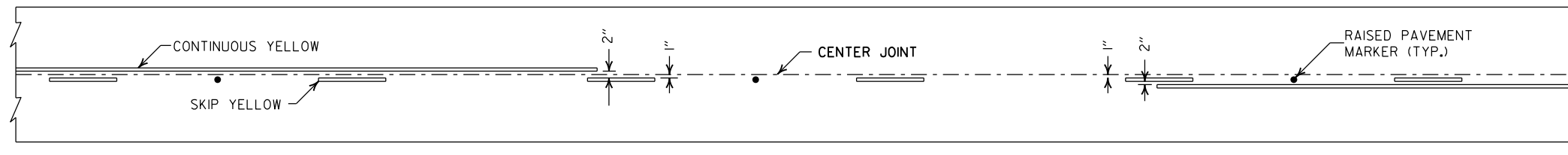
METAL PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

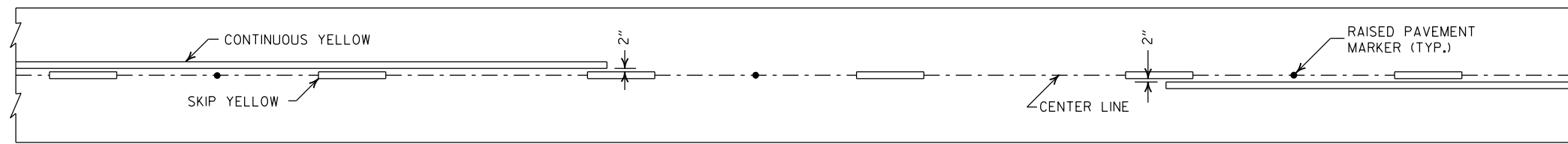




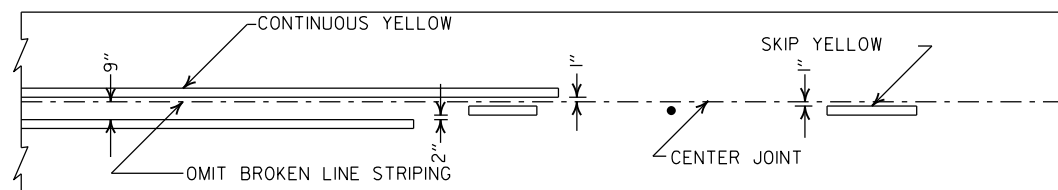
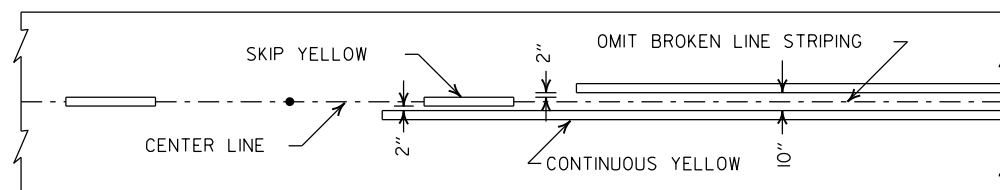
BROKEN LINE STRIPING



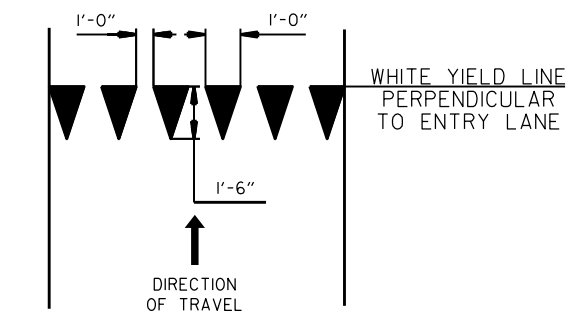
SOLID LINE STRIPING ON CONCRETE PAVEMENT



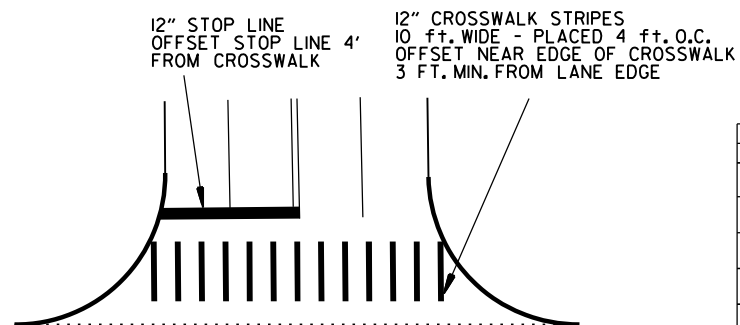
SOLID LINE STRIPING ON ASPHALT PAVEMENT



STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL

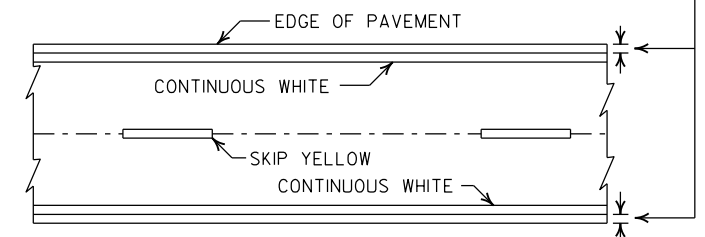


CROSSWALK AND STOP LINE DETAILS

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.

2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT

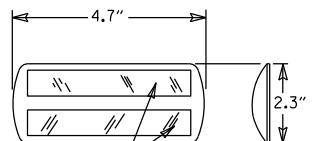


PAVEMENT EDGE LINE MARKING

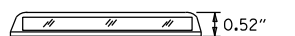
NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW

PRISMATIC REFLECTOR



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

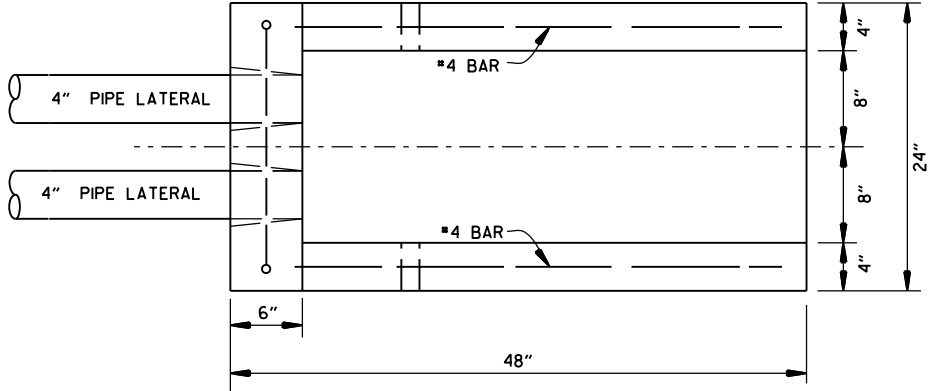
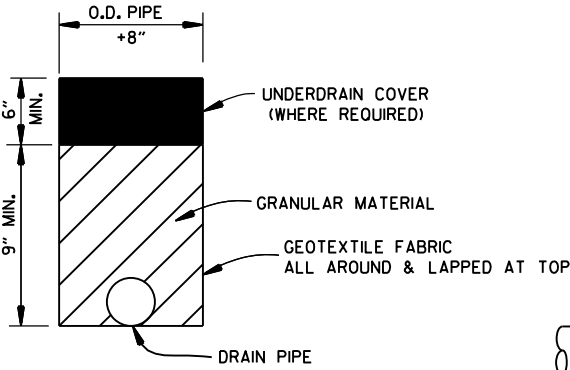
| | | |
|----------|---|-----------|
| 2-27-20 | REVISED STOP LINE DETAILS | |
| 6-1-17 | ADDED YIELD LINE DETAIL | |
| 5-12-16 | REVISED LINE WIDTHS, SPACING, & NOTES | |
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 11-17-10 | REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS | |
| 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 |
| DATE | REVISION | FILMED |

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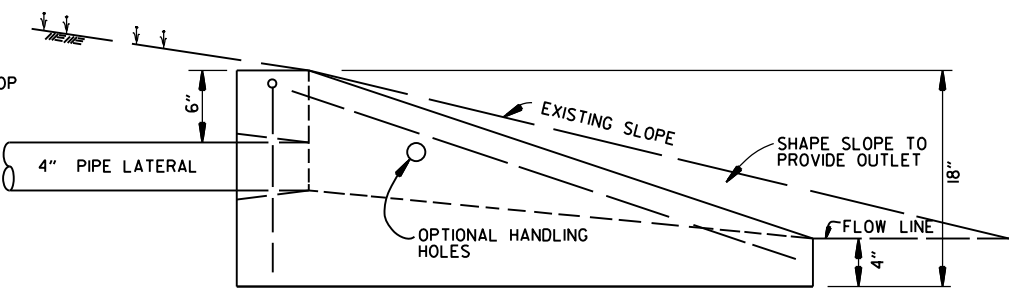
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

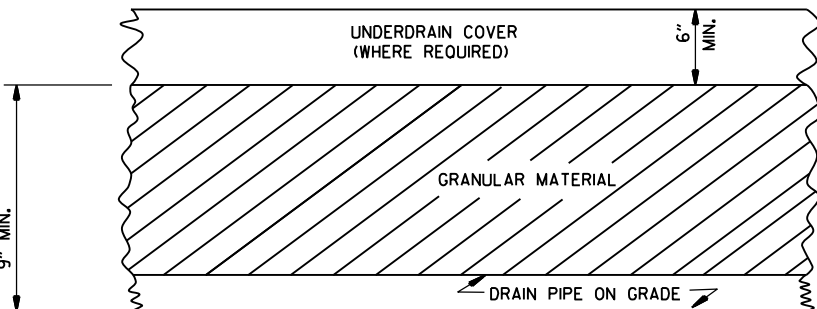
NOTE:
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



PLAN VIEW



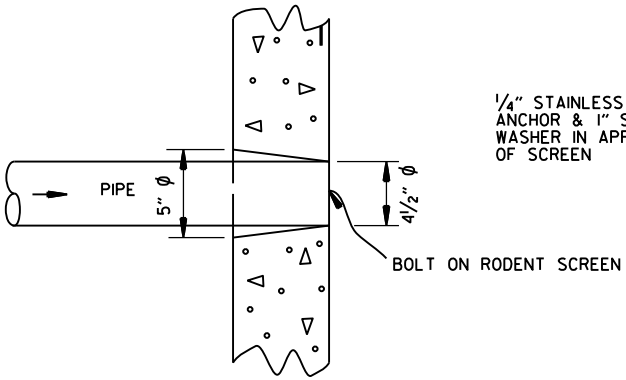
SIDE VIEW



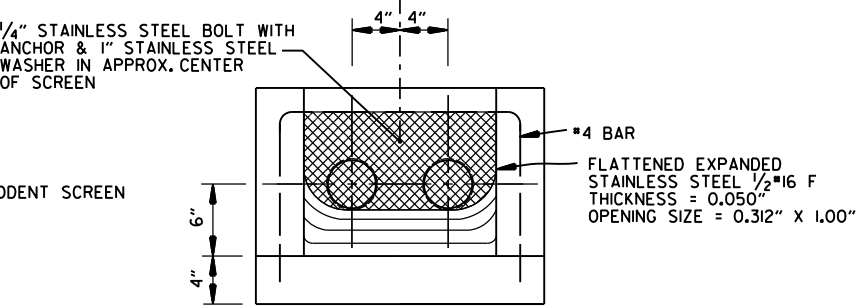
DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.
3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.
5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."
7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.



DETAIL OF HOLE FOR 4" PIPE

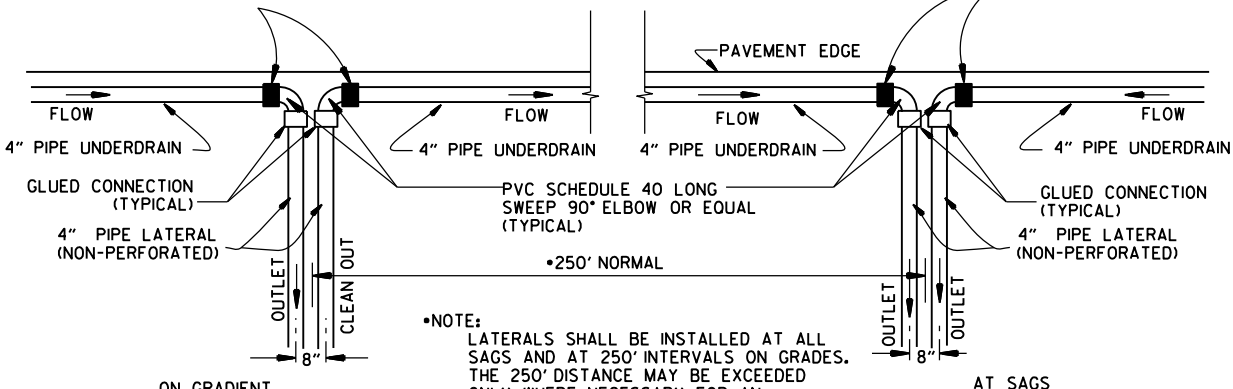


FRONT VIEW (DETAIL OF RODENT SCREEN)

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DI OR 4" CI/PLASTIC) COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



NOTE: LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

| | | |
|----------|--|-------------|
| 12-8-16 | ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC | |
| 4-10-03 | REVISED NOTE 3 | |
| 1-12-00 | REVISED DETAIL OF UNDERDRAIN LATERALS | |
| 11-18-98 | REVISED NOTE | |
| 10-18-96 | REVISED MIN. DEPTH & GEOTEXTILE FABRIC | |
| 4-26-96 | ADDED LATERAL NOTE: 5 1/2" TO 5" | |
| 11-22-95 | REVISED LATERALS | |
| 7-20-95 | REVISED LATERALS & ADDED NOTE | |
| 11- 3-94 | REVISED FOR DUAL LATERALS | 11- 3-94 |
| 10- 1-92 | SUBSTITUTED GEOTEXTILE | 10- 1-92 |
| 8-15-91 | ADDED POLYETHYLENE PIPE | 8-15-91 |
| 11- 8-90 | DELETED ALTERNATE NOTE | 11- 8-90 |
| 1-25-90 | ADDED 4" SNAP ADAPTER | 1-25-90 |
| 11-30-89 | DEL. (SUBGRADE); ADDED (WHERE REQUIRED) | 11-30-89 |
| 7-15-88 | ISSUED P.L.M. | 647-7-15-88 |
| DATE | REVISION | DATE FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

| 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" |



OVERALL HEIGHT OF HOOKED BAR DIAGRAM

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 |

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (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.

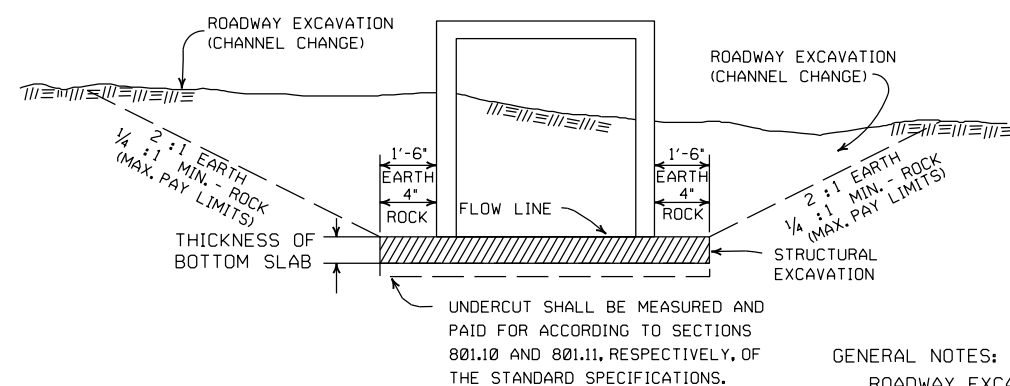
WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

Diagram illustrating the reinforcement details for a wingwall cross-section. The diagram shows the wingwall structure, including the top of the wingwall and the embankment slope. Key reinforcement features include:

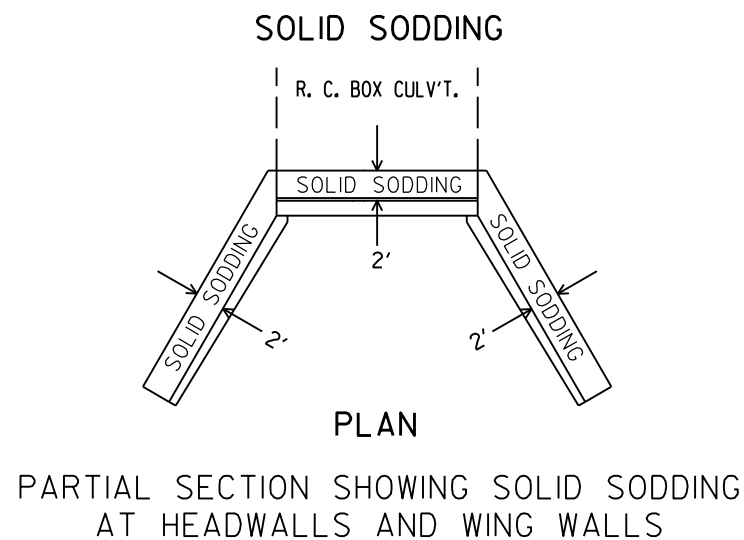
- 2 BARS "a" (top reinforcement bars).
- 1'-0" (width dimension).
- BENT BARS "r" CUT AS REQUIRED (bottom reinforcement bars).
- 10" OR $T+3$ " (WHICHEVER IS GREATER) (dimension for bent bars).

R.C. BOX CULVERT HEADWALL MODIFICATIONS

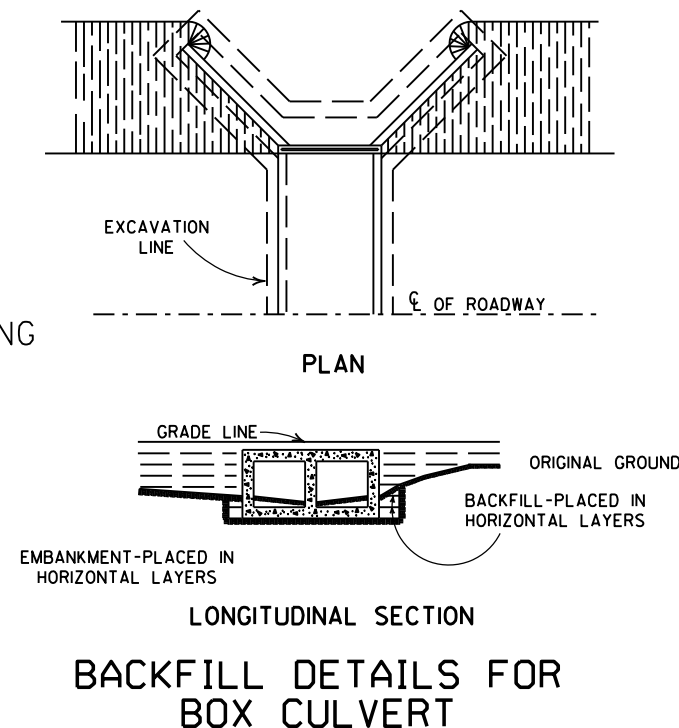
| | | | |
|----------|---|-------------|--|
| 7/26/12 | REV. DRAINAGE FILL MATERIAL & DETAIL | | ARKANSAS STATE HIGHWAY COMMISSION |
| 12/15/11 | REQUIRE WEEP HOLES IN BOX CULVERT WALLS | | |
| 5-25-06 | REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM | | |
| 11-16-01 | ADDED WINGWALL DRAINAGE 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 | | REINFORCED CONCRETE BOX CULVERT DETAILS |
| 6-2-94 | ADDED SOLID SODDING PLAN DETAIL | | STANDARD DRAWING RCB-1 |
| 8-5-93 | REVISED PIN DIAMETER TO SPECS. | | |
| 8-15-91 | DRAWN AND ISSUED | | |
| DATE | REVISION | DATE FILMED | |



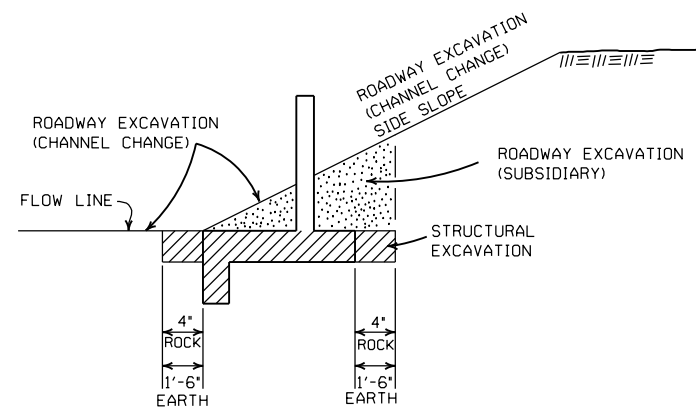
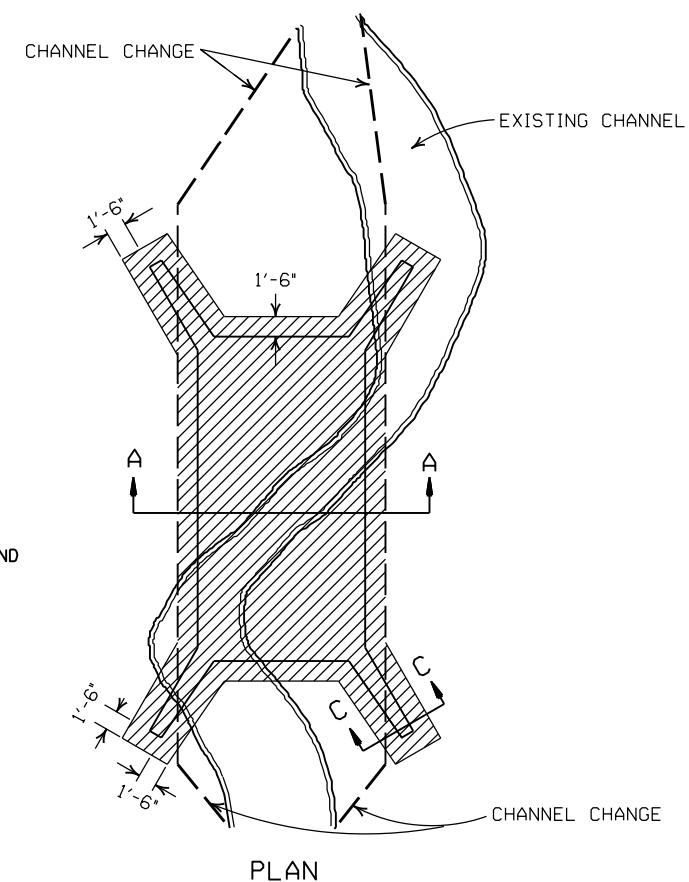
SECTION B-B
DETAILS FOR NEW CHANNELS



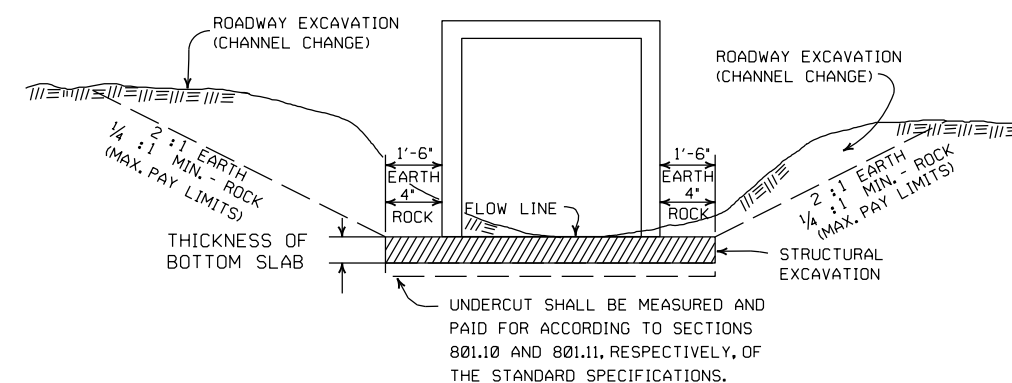
NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



BACKFILL DETAILS FOR BOX CULVERT



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.

| | | |
|----------|--|--------------|
| | | |
| | | |
| | | |
| | | |
| 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 AND ADDED MAXIMUM PAY LIMIT NOTES. | 674-1-4-83 |
| 2-2-76 | EXCAV. PAY LIMITS | 917-2-2-76 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |
| DATE | REVISION | FILE NO. |

ARKANSAS STATE HIGHWAY COMMISSION

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

STANDARD DRAWING RCB-2

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

| DEGREE OF CURVE | 30 MPH | | | 35 MPH | | | 40 MPH | | | 45 MPH | | | 50 MPH | | | 55 MPH | | | 60 MPH | | | 65 MPH | | | 70 MPH | | | 75 MPH | | |
|-----------------------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|
| | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | |
| | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE |
| 0° 15' | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | |
| 0° 30' | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | | RC | 96 | | RC | 96 | |
| 0° 45' | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | | 0.024 | 106 | | 0.026 | 110 | | 0.030 | 120 | | 0.030 | 120 | |
| 1° 00' | NC | | | NC | | | NC | | | RC | 90 | | 0.022 | 101 | | 0.026 | 110 | | 0.030 | 120 | | 0.034 | 130 | | 0.038 | 139 | | 0.038 | 139 | |
| 1° 15' | NC | | | NC | | | RC | 84 | | 0.022 | 95 | | 0.028 | 115 | | 0.032 | 125 | | 0.038 | 139 | | 0.042 | 149 | | 0.046 | 158 | | 0.046 | 158 | |
| 1° 30' | NC | | | RC | 78 | | 0.022 | 88 | | 0.028 | 108 | | 0.032 | 125 | | 0.038 | 139 | | 0.044 | 154 | | 0.050 | 168 | | 0.056 | 182 | | 0.056 | 182 | |
| 1° 45' | RC | 72 | | RC | 78 | | 0.026 | 97 | | 0.030 | 113 | | 0.036 | 134 | | 0.044 | 154 | | 0.050 | 168 | | 0.056 | 182 | | 0.064 | 202 | | 0.064 | 202 | |
| 2° 00' | RC | 72 | | 0.024 | 86 | | 0.028 | 101 | | 0.034 | 122 | | 0.042 | 149 | | 0.048 | 163 | | 0.056 | 182 | | 0.064 | 202 | | 0.070 | 216 | | 0.070 | 216 | |
| 2° 15' | RC | 72 | | 0.026 | 90 | | 0.032 | 109 | | 0.038 | 131 | | 0.046 | 158 | | 0.054 | 178 | | 0.062 | 197 | | 0.070 | 216 | | 0.078 | 235 | | 0.078 | 235 | |
| 2° 30' | 0.022 | 75 | | 0.028 | 94 | | 0.034 | 113 | | 0.042 | 140 | | 0.050 | 168 | | 0.058 | 187 | | 0.068 | 211 | | 0.076 | 230 | | 0.086 | 254 | | 0.086 | 254 | |
| 2° 45' | 0.024 | 79 | | 0.030 | 98 | | 0.038 | 122 | | 0.046 | 149 | | 0.054 | 178 | | 0.064 | 202 | | 0.072 | 221 | | 0.082 | 245 | | 0.092 | 269 | | 0.092 | 269 | |
| 3° 00' | 0.026 | 83 | | 0.034 | 105 | | 0.040 | 126 | | 0.050 | 158 | | 0.058 | 187 | | 0.068 | 211 | | 0.078 | 235 | | 0.088 | 259 | | 0.098 | 283 | | 0.098 | 283 | |
| 3° 15' | 0.028 | 86 | | 0.036 | 109 | | 0.044 | 134 | | 0.052 | 162 | | 0.062 | 197 | | 0.072 | 221 | | 0.082 | 245 | | 0.092 | 269 | | 0.100 | 288 | | 0.100 | 288 | |
| 3° 30' | 0.030 | 90 | | 0.038 | 113 | | 0.046 | 139 | | 0.056 | 171 | | 0.066 | 206 | | 0.076 | 230 | | 0.086 | 254 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | |
| 3° 45' | 0.032 | 93 | | 0.040 | 117 | | 0.050 | 147 | | 0.058 | 176 | | 0.070 | 216 | | 0.080 | 240 | | 0.090 | 264 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | |
| 4° 00' | 0.034 | 97 | | 0.042 | 121 | | 0.052 | 151 | | 0.062 | 185 | | 0.072 | 221 | | 0.084 | 250 | | 0.094 | 274 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 4° 15' | 0.036 | 100 | | 0.044 | 125 | | 0.054 | 155 | | 0.064 | 189 | | 0.076 | 230 | | 0.086 | 254 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 4° 30' | 0.036 | 100 | | 0.046 | 129 | | 0.056 | 160 | | 0.068 | 198 | | 0.078 | 235 | | 0.090 | 264 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 4° 45' | 0.038 | 104 | | 0.048 | 133 | | 0.060 | 168 | | 0.070 | 203 | | 0.082 | 245 | | 0.092 | 269 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 5° 00' | 0.040 | 108 | | 0.050 | 137 | | 0.062 | 172 | | 0.072 | 207 | | 0.084 | 250 | | 0.094 | 274 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 5° 30' | 0.044 | 115 | | 0.054 | 144 | | 0.066 | 181 | | 0.078 | 221 | | 0.088 | 259 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 6° 00' | 0.046 | 119 | | 0.058 | 152 | | 0.070 | 189 | | 0.082 | 230 | | 0.092 | 269 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 6° 30' | 0.050 | 126 | | 0.062 | 160 | | 0.074 | 198 | | 0.086 | 223 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 7° 00' | 0.052 | 130 | | 0.064 | 164 | | 0.078 | 206 | | 0.090 | 248 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 7° 30' | 0.054 | 133 | | 0.068 | 172 | | 0.080 | 210 | | 0.092 | 252 | | 0.096 | 278 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 8° 00' | 0.058 | 140 | | 0.070 | 176 | | 0.084 | 219 | | 0.094 | 257 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 8° 30' | 0.060 | 144 | | 0.072 | 179 | | 0.086 | 223 | | 0.096 | 261 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 9° 00' | 0.062 | 148 | | 0.076 | 187 | | 0.088 | 227 | | 0.098 | 266 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 9° 30' | 0.064 | 151 | | 0.078 | 191 | | 0.092 | 235 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 10° 00' | 0.066 | 155 | | 0.080 | 195 | | 0.094 | 240 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 11° 00' | 0.070 | 162 | | 0.084 | 203 | | 0.096 | 244 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 12° 00' | 0.074 | 169 | | 0.088 | 211 | | 0.098 | 248 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 13° 00' | 0.076 | 173 | | 0.090 | 215 | | 0.098 | 248 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 14° 00' | 0.080 | 180 | | 0.094 | 222 | | 0.098 | 248 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 15° 00' | 0.082 | 184 | | 0.096 | 226 | | 0.098 | 248 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 16° 00' | 0.086 | 191 | | 0.098 | 230 | | 0.098 | 248 | | 0.098 | 270 | | 0.098 | 283 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 17° 00' | 0.088 | 194 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 18° 00' | 0.090 | 198 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 19° 00' | 0.092 | 202 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 20° 00' | 0.094 | 205 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 21° 00' | 0.096 | 209 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 22° 00' | 0.096 | 209 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 23° 00' | 0.098 | 212 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 24° 00' | 0.098 | 212 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |
| 25° 00' | 0.100 | 216 | | 0.100 | 234 | | 0.100 | 252 | | 0.100 | 270 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | | 0.100 | 288 | |

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)

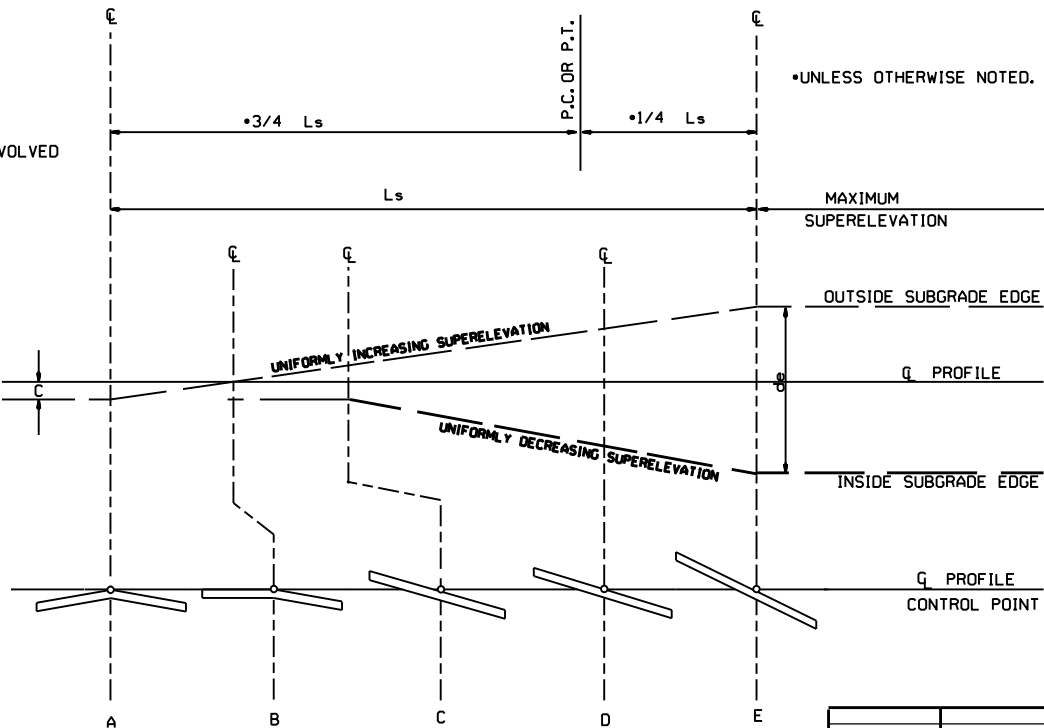
ABBREVIATIONS

- GENERAL NOTES
- ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
 - SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
 - LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
 - PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

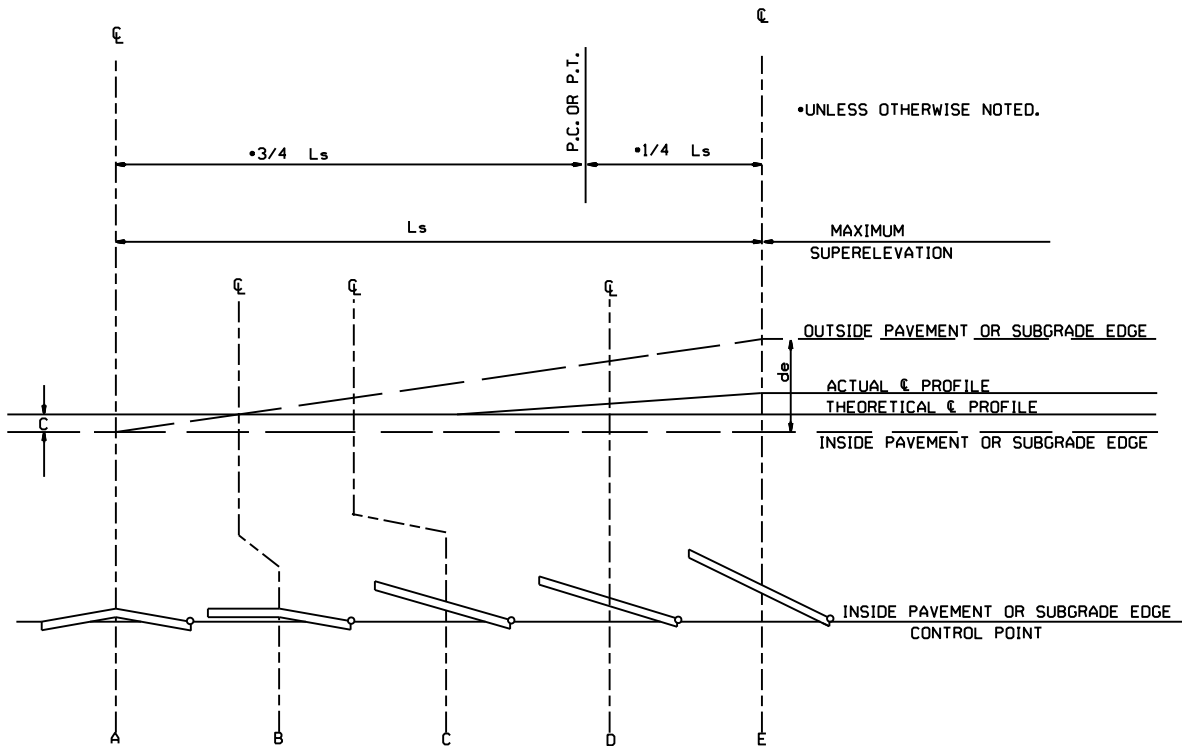
3 LANE UNDIVIDED - - - - +20%
4 LANE UNDIVIDED - - - - +50%
5 LANE UNDIVIDED - - - - +80%
6 LANE UNDIVIDED - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.


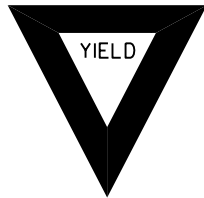

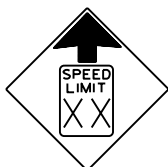

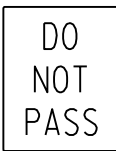



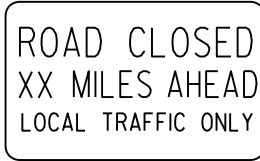


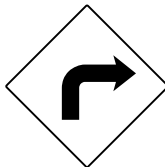




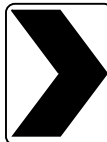
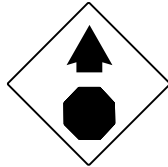
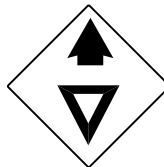
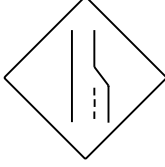



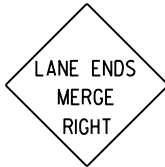


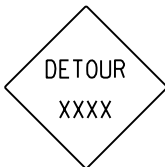










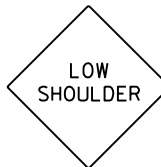

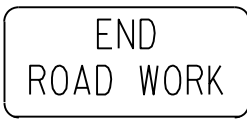
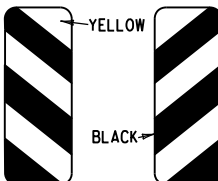


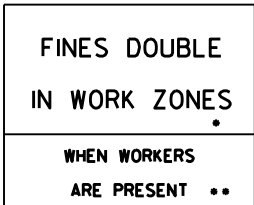
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

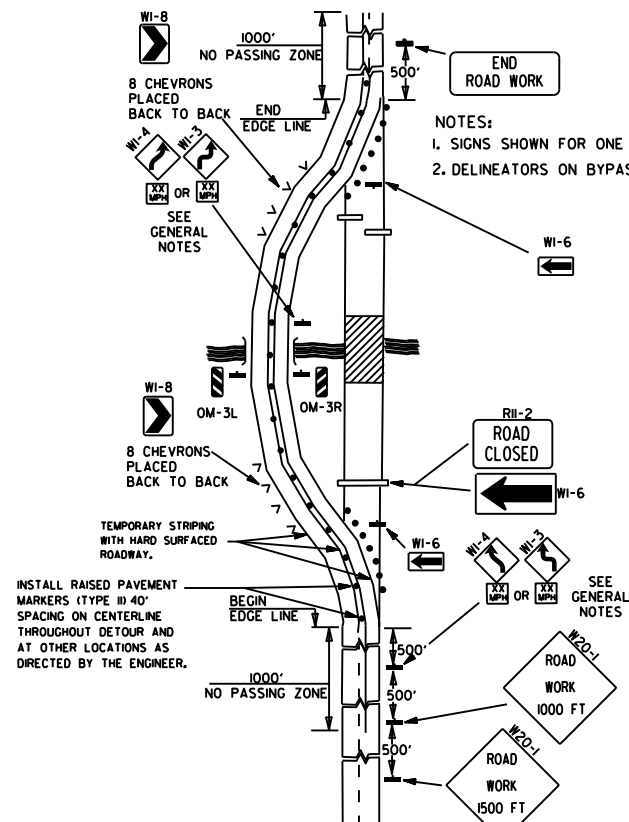


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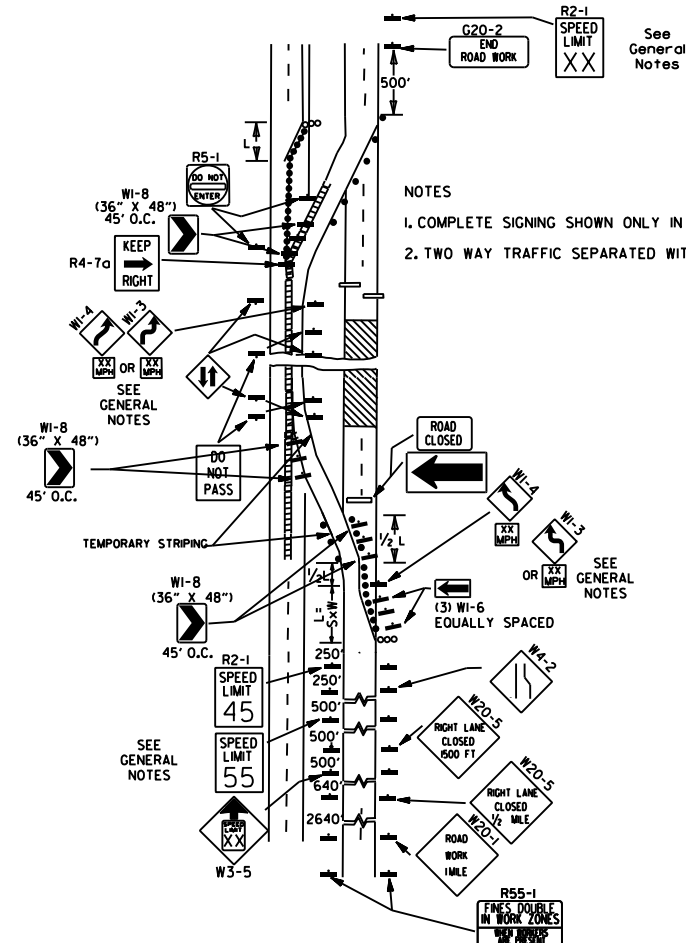
| | | | | | | | |
|---|--|---|--|---|--|--|--|
| <div>RI-I</div> <div></div> <div>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</div> | <div>RI-2</div> <div></div> <div>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</div> | <div>R2-I</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div> | <div>W3-5</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div> | <div>W3-5a</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div> | <div>R4-I</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div> | <div>R4-2</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div> | <div>ADVANCE DISTANCES (XXXX)</div> <div>500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD</div> <div>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. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN. • 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.</div> |
| <div>R5-I</div> <div></div> <div>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</div> | <div>R1I-2</div> <div></div> <div>48"x30"</div> | <div>R1I-3A</div> <div></div> <div>60"x30"</div> | <div>R1I-4</div> <div></div> <div>60"x30"</div> | <div>W2I-5a</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>WI-I</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>WI-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | |
| <div>WI-3</div> <div></div> <div>STD. 48"x48"</div> | <div>WI-4</div> <div></div> <div>STD. 48"x48"</div> | <div>WI-6</div> <div></div> <div>STD. 48"x24" SPECIAL 60"x30"</div> | <div>WI-8</div> <div></div> <div>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</div> | <div>W3-I</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div> | <div>W3-2</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div> | <div>W4-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | |
| <div>W5-I</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div> | <div>W6-3</div> <div></div> <div>EXPWY. 36"x36" SPECIAL 48"x48"</div> | <div>W8-7</div> <div></div> <div>EXPWY. 36"x36" FWY. 48"x48"</div> | <div>W9-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>W13-I</div> <div></div> <div>STD. 24"x24"</div> | <div>W20-I</div> <div></div> <div>STD. 48"x48"</div> | <div>W20-2</div> <div></div> <div>STD. 48"x48"</div> | <div>W20-3</div> <div></div> <div>STD. 48"x48"</div> |
| <div>W20-4</div> <div></div> <div>STD. 48"x48"</div> | <div>W20-5</div> <div></div> <div>STD. 48"x48"</div> | <div>W20-7a</div> <div></div> <div>18" 500 FEET 24" W16-2</div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>W2I-2</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div> | <div>W2I-5</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div> | <div>W24-I</div> <div></div> <div>STD. 36"x36"</div> | <div>WI-4b</div> <div></div> <div>STD. 48"x48"</div> | <div>R56-I</div> <div></div> <div>STD. 18"x18"</div> |
| <div>W8-II</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>W8-9</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div> | <div>G20-I</div> <div></div> <div>60"x24"</div> | <div>G20-2</div> <div></div> <div>48"x24"</div> | <div>OM-3L OM-3R</div> <div></div> <div>12"x36"</div> | <div>M4-9</div> <div></div> <div>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</div> | <div>M4-10</div> <div></div> <div>48"x18"</div> | <div>R55-I</div> <div></div> <div>36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS</div> |

| | | |
|----------|--|--------|
| 11-07-19 | REVISED FOR MASH | |
| 4-13-17 | DELETED RSP-1 & ADDED W2I-5a | |
| 9-2-15 | REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES | |
| 12-15-11 | REVISED W24-1 | |
| 11-17-10 | DELETED W8-9a & ADDED W8-9 | |
| 10-15-09 | ADDED REFERENCE TO MASH & ADDED SIGN W24-1 | |
| 4-17-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | REVISED NOTES | |
| 10-9-03 | REVISED NOTE 1 | |
| 11-16-01 | REVISED NOTE 7 | |
| 9-28-00 | REVISED NOTE | |
| 11-18-98 | ADDED NOTE | |
| 6-26-97 | REVISED NOTE 5 | |
| 4-03-97 | REVISED NOTE 5 | |
| 10-18-96 | ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7 | |
| 10-12-95 | ADDED R55-1 | |
| 6-8-95 | REVISED TO CORRECT SIGN ILLUSTRATIONS | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |
| DATE | REVISION | FILMED |

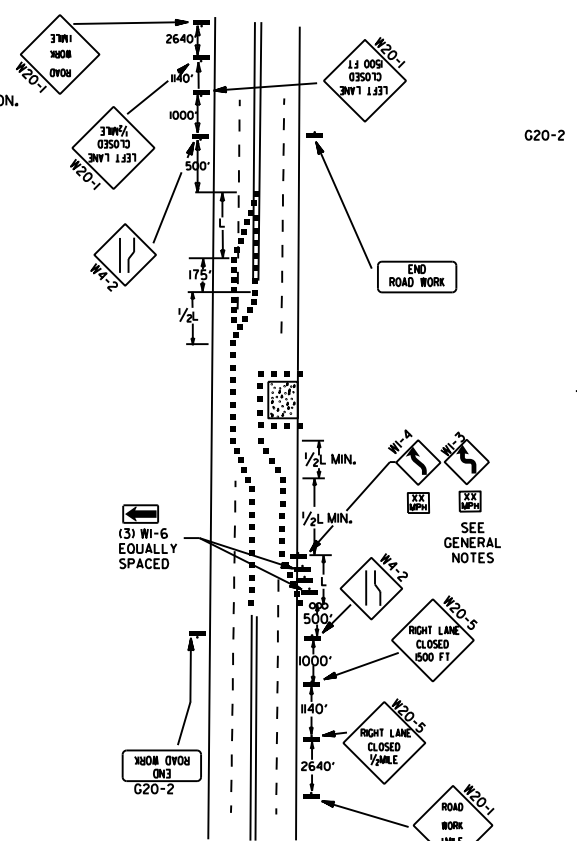
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



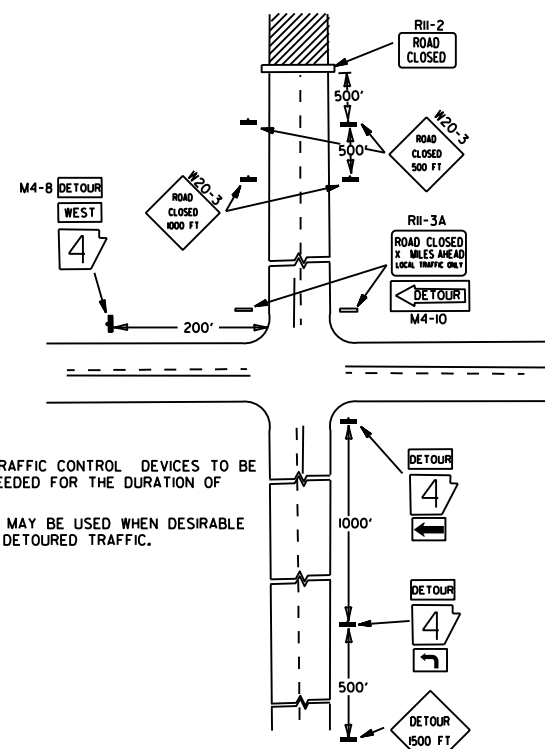
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



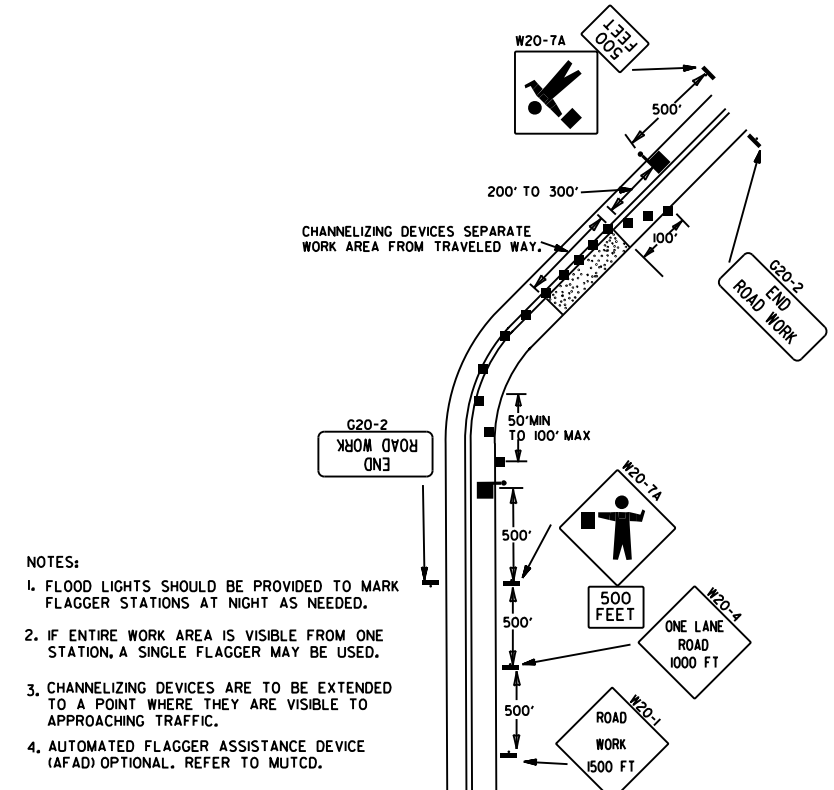
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



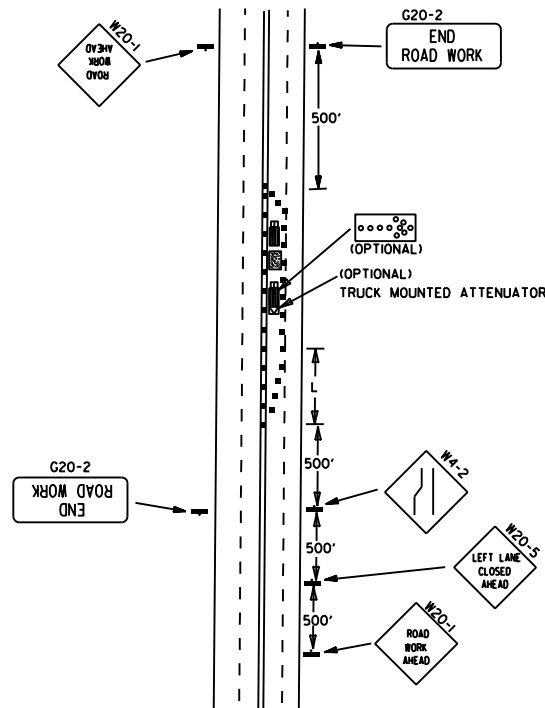
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



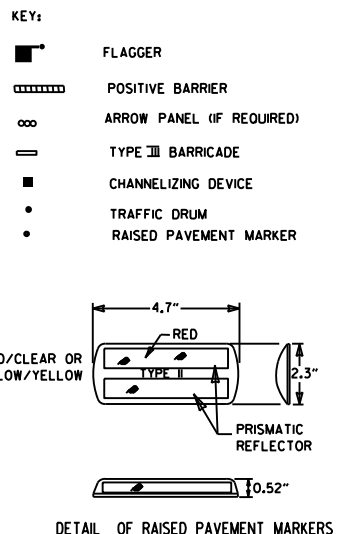
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(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.



- 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(45)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE 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(65) SHALL BE OMITTED. ADDITIONAL R2-1(55)MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE 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).

| | | |
|----------|--|--------|
| 05-20-21 | REVISED NOTE 7 | |
| 11-07-19 | REVISED NOTE 1, ADDED NOTE 9 | |
| 9-2-15 | REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5 | |
| 9-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKERS | |
| 3-11-10 | ADDED (AFAD) | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | ADDED GENERAL NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 4-26-96 | CORRECTED (a) BEHIND G20-2 | |
| 6-8-95 | CORRECTED SIGN IDENT. ON W1-4A | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |
| DATE | REVISION | FILMED |

(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

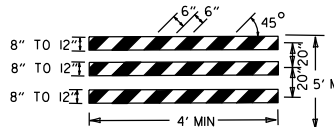
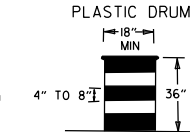
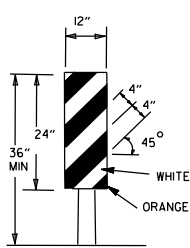
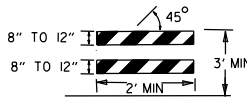
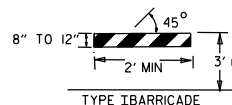
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

CHANNELIZING DEVICES



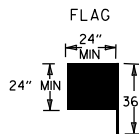
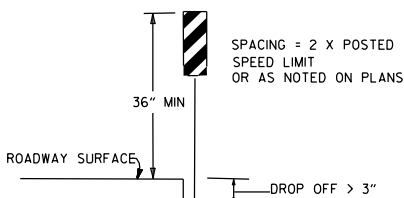
• WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

CONES



NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

VERTICAL PANEL PLACEMENT



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

KEY:

- ○ ○ ARROW PANEL (IF REQUIRED)
- CHANNELIZING DEVICE
- TRAFFIC DRUM

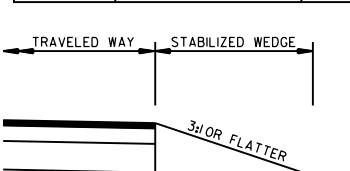
GENERAL NOTES:

- A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
- WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(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 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(65) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- 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.
- WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
- PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
- THE G20-1 SIGN WILL BE REQUIRED 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 (1/2 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
- FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- 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.
- 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).

| TRAFFIC CONTROL DEVICES | | | |
|-------------------------|---|---|--|
| NON-INTERSTATE | | | |
| VERTICAL DIFFERENTIAL | LOCATION | TRAFFIC CONTROL | |
| | | ≤ 45 MPH | > 45 MPH |
| ≤ 1" | CENTERLINE | W8-11 | W8-11 |
| > 1" | CENTERLINE | W8-11 AND CENTERLINE LANE STRIPING | W8-11 AND CENTERLINE LANE STRIPING |
| ≤ 3" | CENTERLINE | STANDARD LANE CLOSURE ⁽⁶⁾ | STANDARD LANE CLOSURE ⁽⁶⁾ |
| > 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" | 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" | 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" | 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" | 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 |

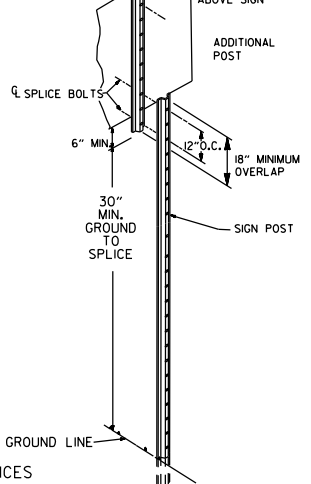
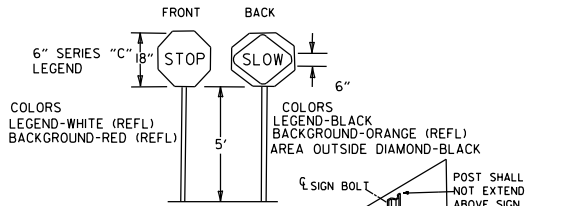


STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

- GENERAL NOTES:
- 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.
 - WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
 - 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.
 - 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.
 - W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
 - TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

STOP SLOW PADDLE



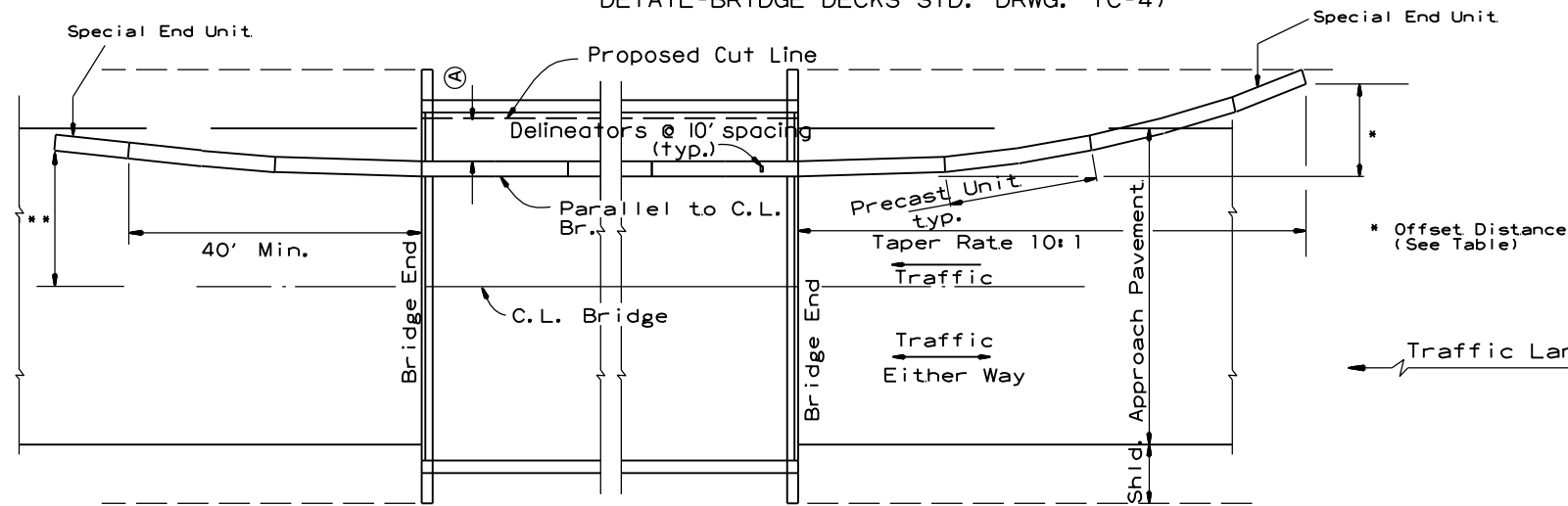
DETAIL OF SPLICES

| DATE | REVISION | FILED |
|----------|---|--------|
| 08-12-21 | REVISED TRAFFIC CONTROL DEVICES AND NOTES | |
| 05-20-21 | REVISED NOTE 10 | |
| 2-27-20 | REVISED TRAFFIC CONTROL DEVICES DETAILS | |
| 11-07-19 | REVISED NOTE 9, ADDED NOTE 11 | |
| 7-25-19 | REVISED TRAFFIC CONTROL DEVICES DETAILS | |
| 9-2-15 | REVISED NOTE 2 & REPLACED R2-5A WITH W3-5 | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | ADDED NOTE | |
| 10-1-98 | ADDED NOTE | |
| 4-03-97 | ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 10-12-95 | MOVED UPPER SPLICE | |
| 6-8-95 | REVISED SPLICE DETAIL, TEXT | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

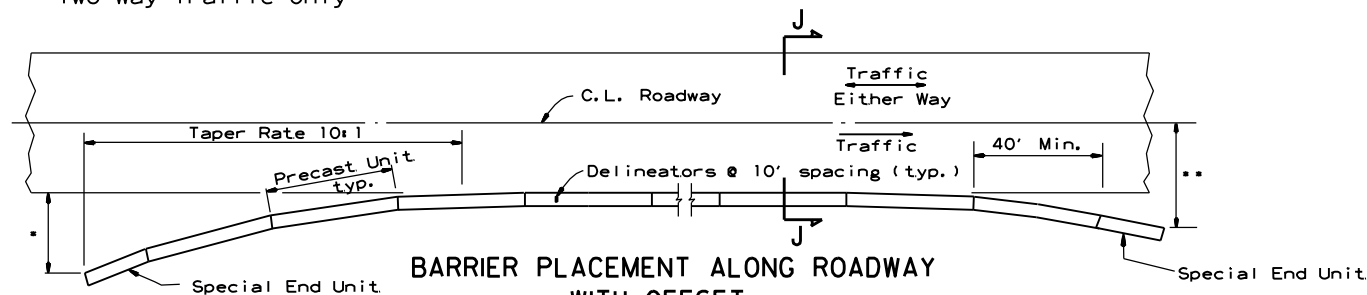
- Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

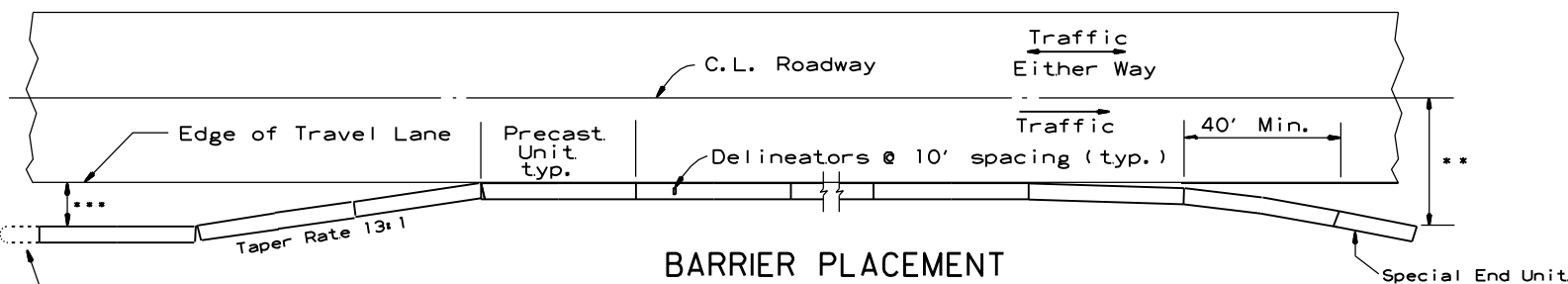
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

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.

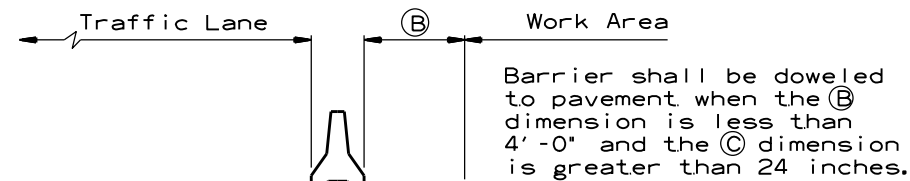


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

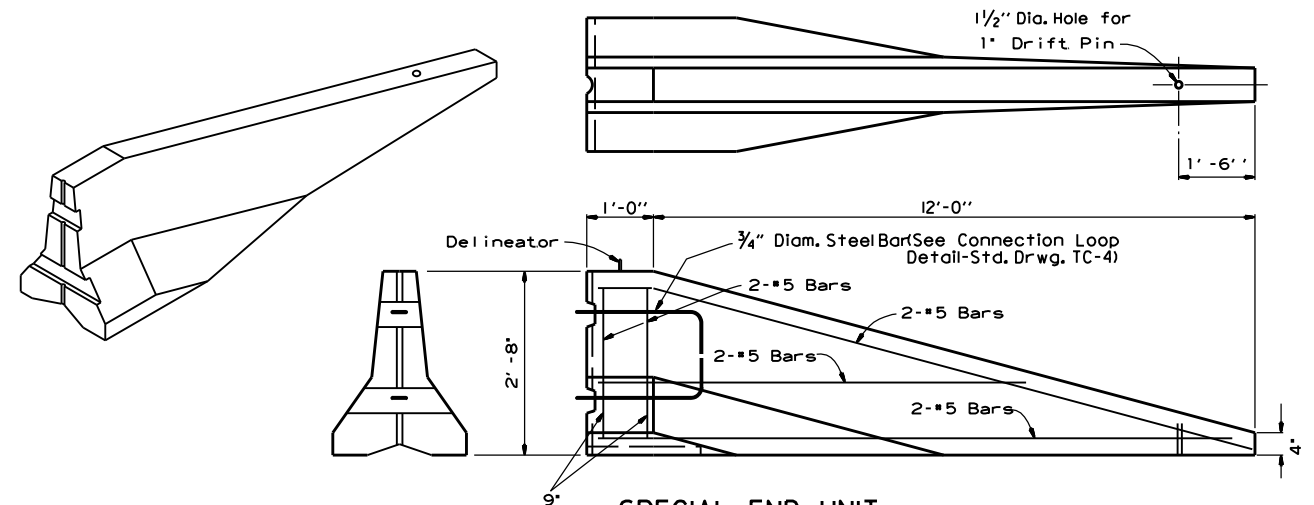
***Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



SECTION J-J

No Scale

Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.



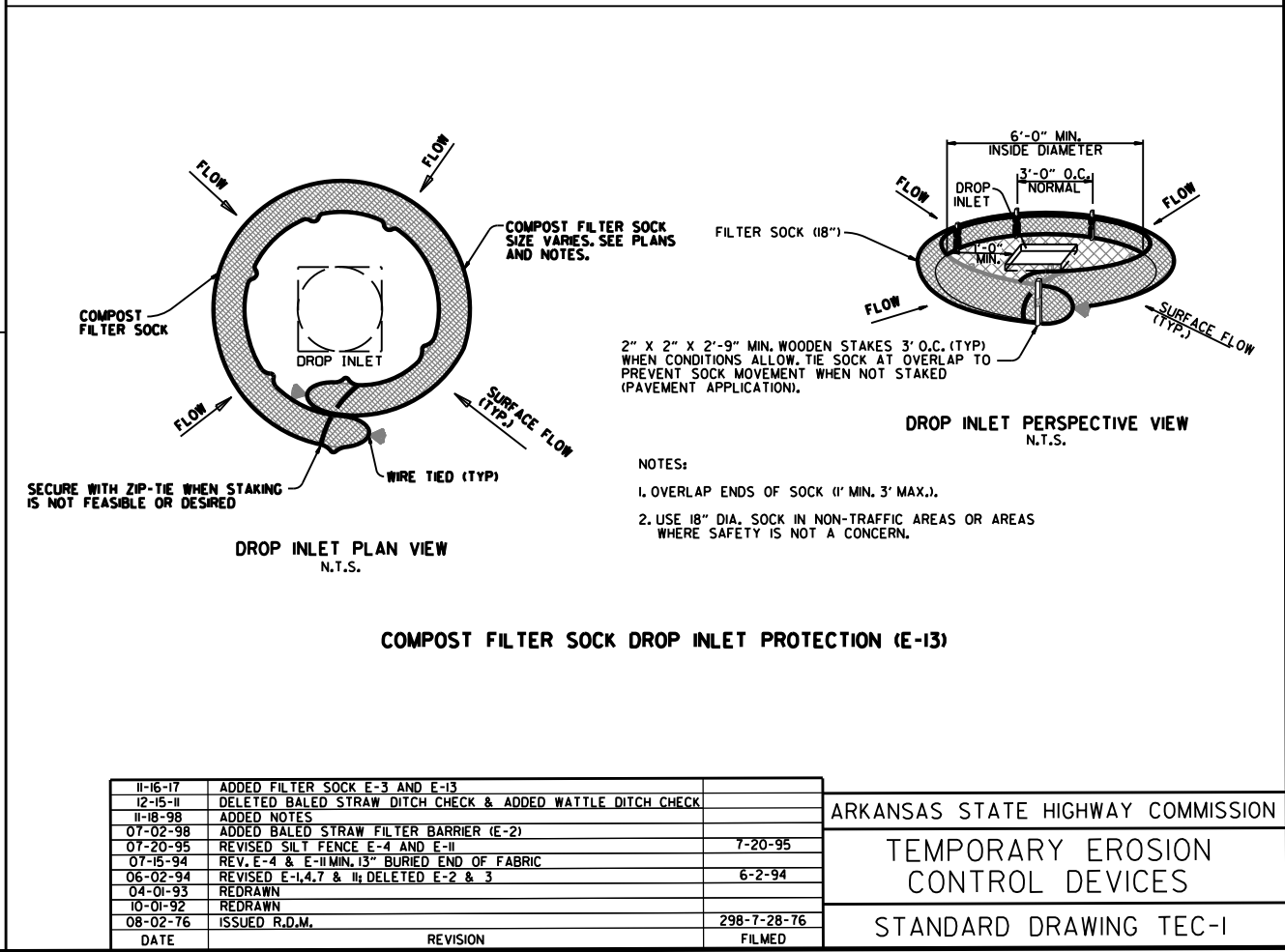
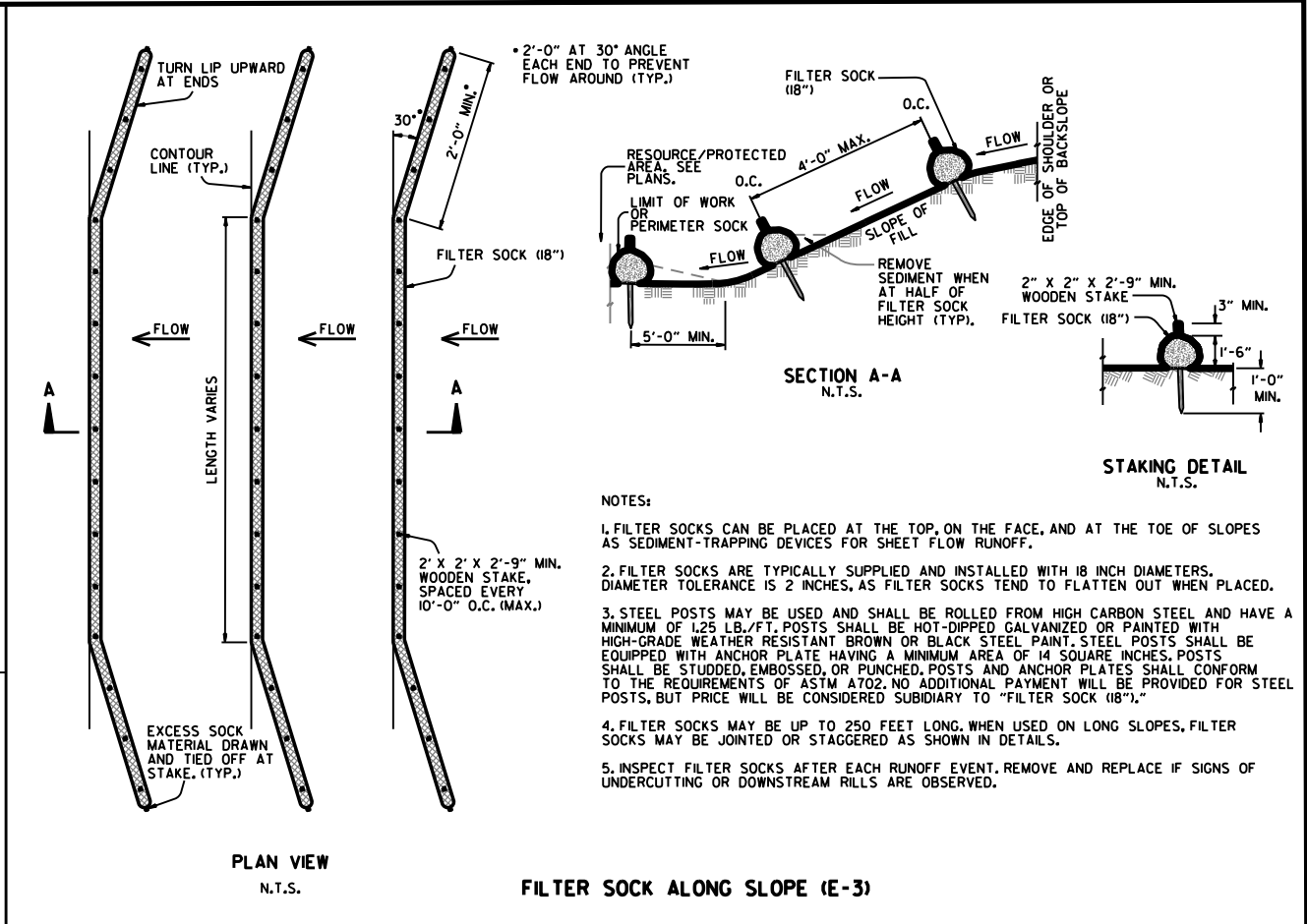
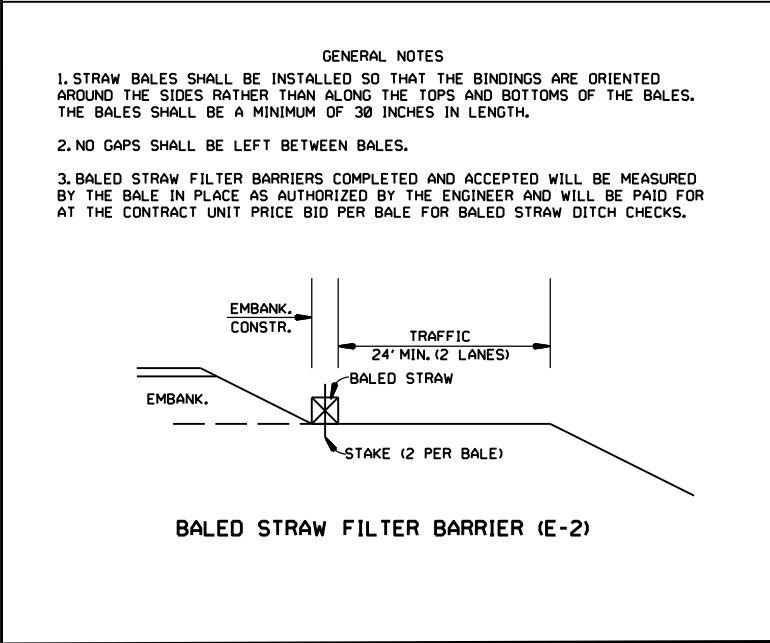
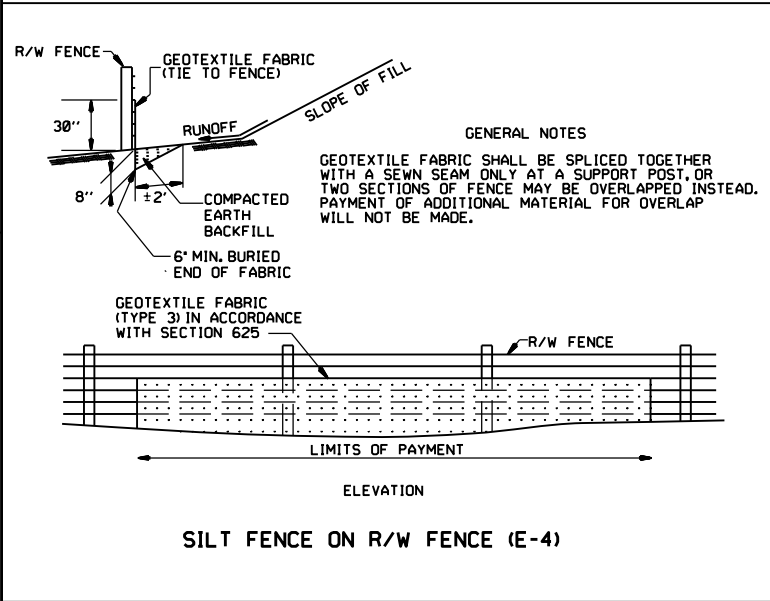
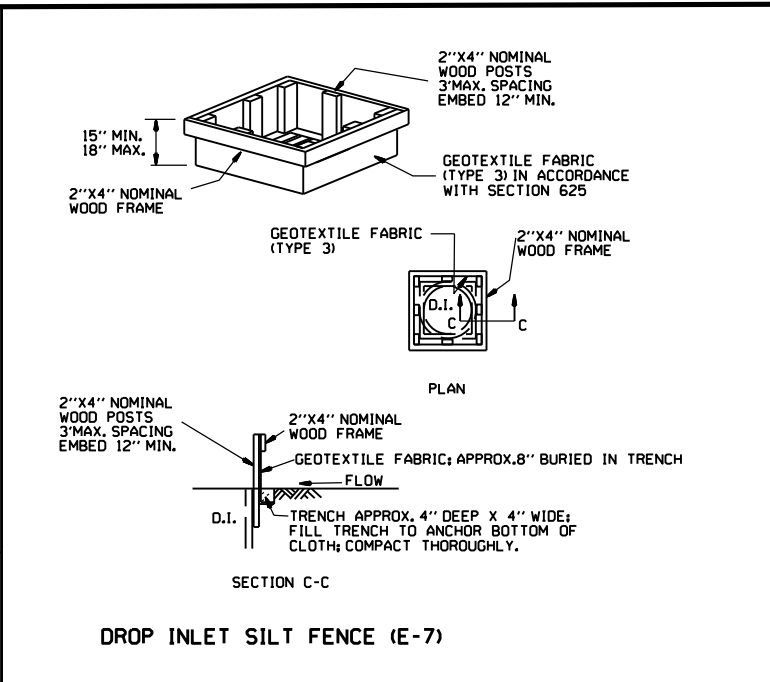
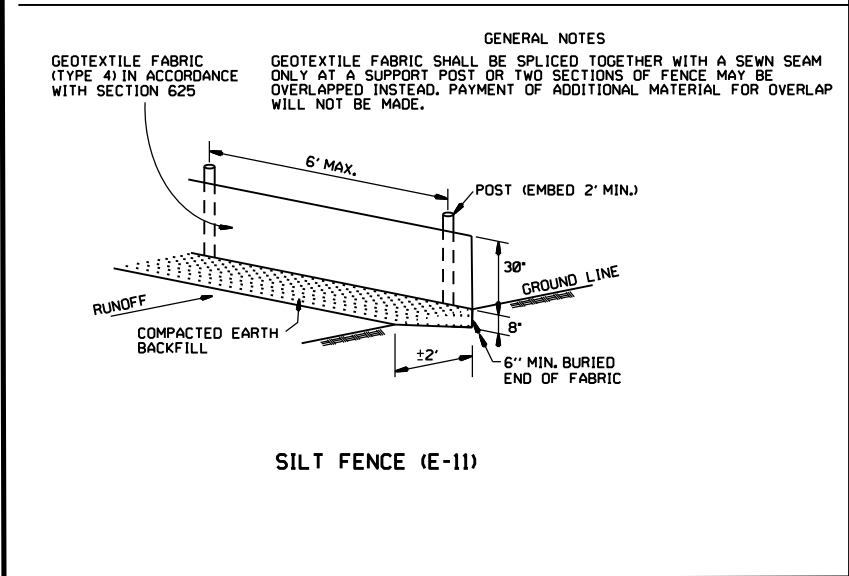
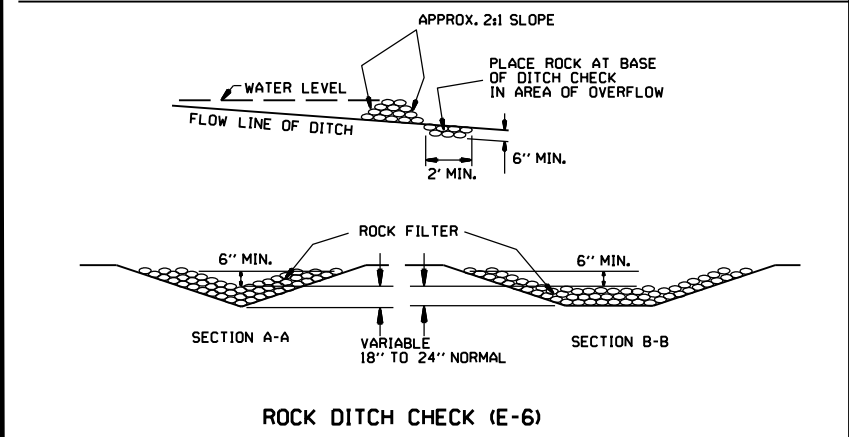
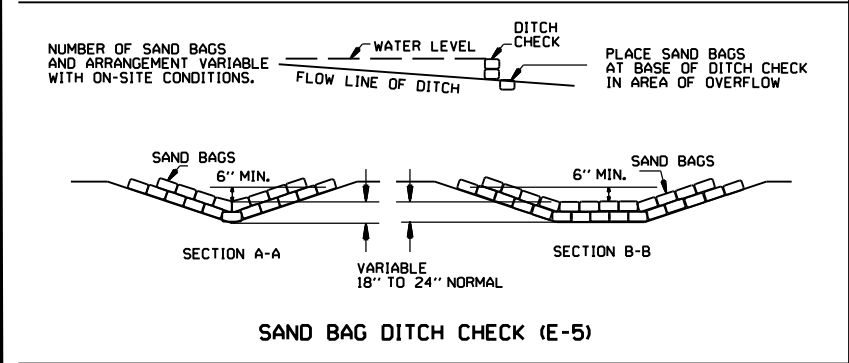
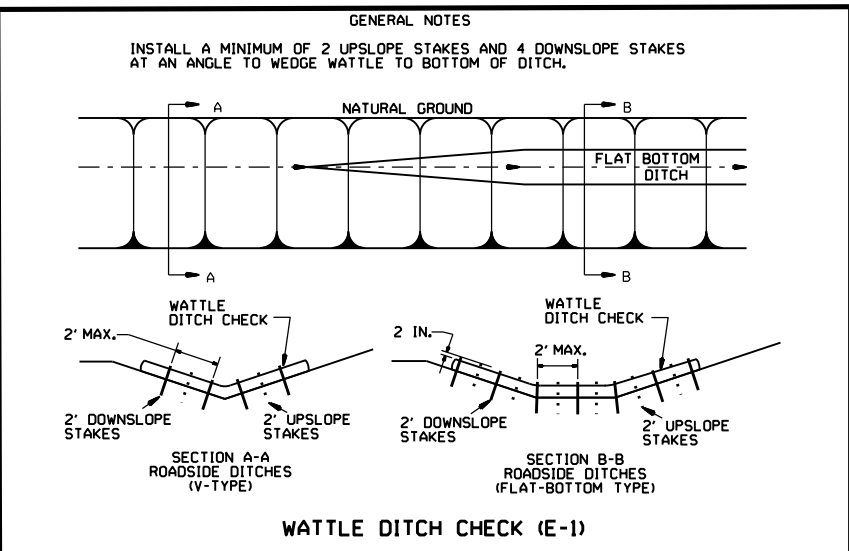
SPECIAL END UNIT

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."

| | | | | |
|----------|---------------------------|--------|---|--|
| | | | ARKANSAS STATE HIGHWAY COMMISSION | |
| | | | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER | |
| 11-07-19 | REVISED NOTE | | STANDARD DRAWING TC-5 | |
| 10-15-09 | ADDED REFERENCE TO MASH | | | |
| 5-25-06 | REVISED BARRIER PLACEMENT | | | |
| 8-22-02 | ISSUED NEW DRAWING | | | |
| DATE | REVISION | FILMED | | |

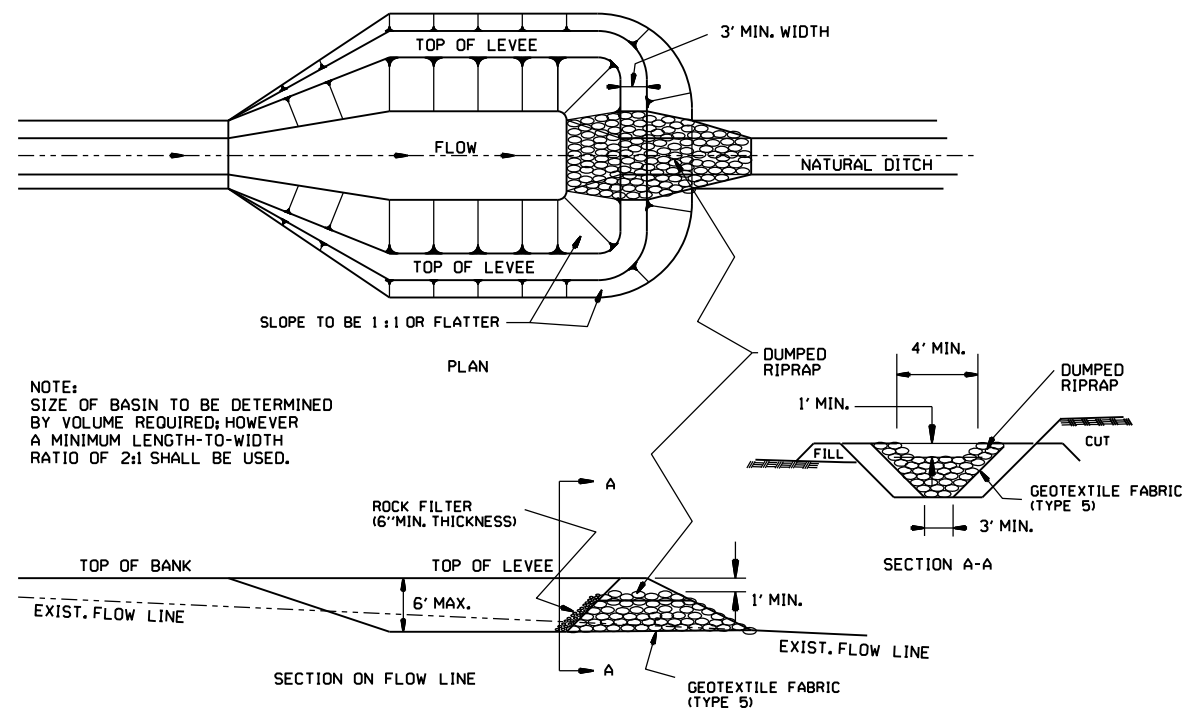


| | | | |
|----------|--|-------------|--|
| 11-16-17 | ADDED FILTER SOCK E-3 AND E-13 | | |
| 12-15-11 | DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK | | |
| 11-18-98 | ADDED NOTES | | |
| 07-02-98 | ADDED BALED STRAW FILTER BARRIER (E-2) | | |
| 07-20-95 | REVISED SILT FENCE E-4 AND E-11 | 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 | |
| DATE | REVISION | FILMED | |

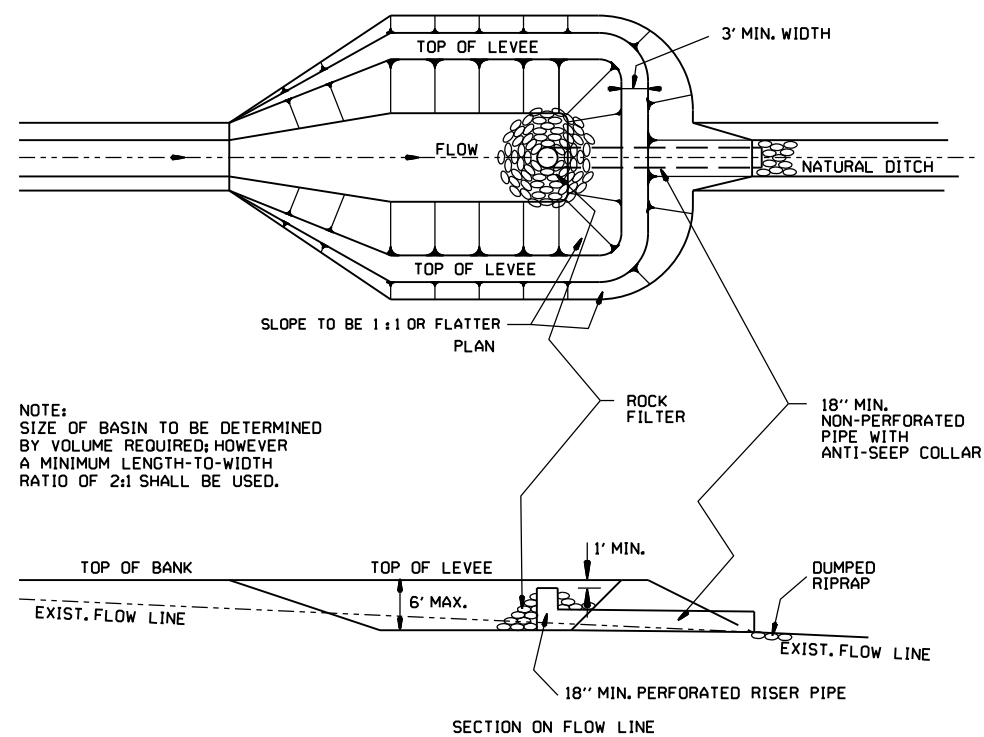
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

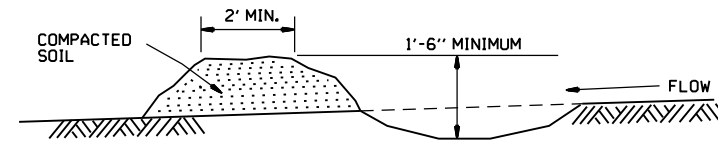
STANDARD DRAWING TEC-1



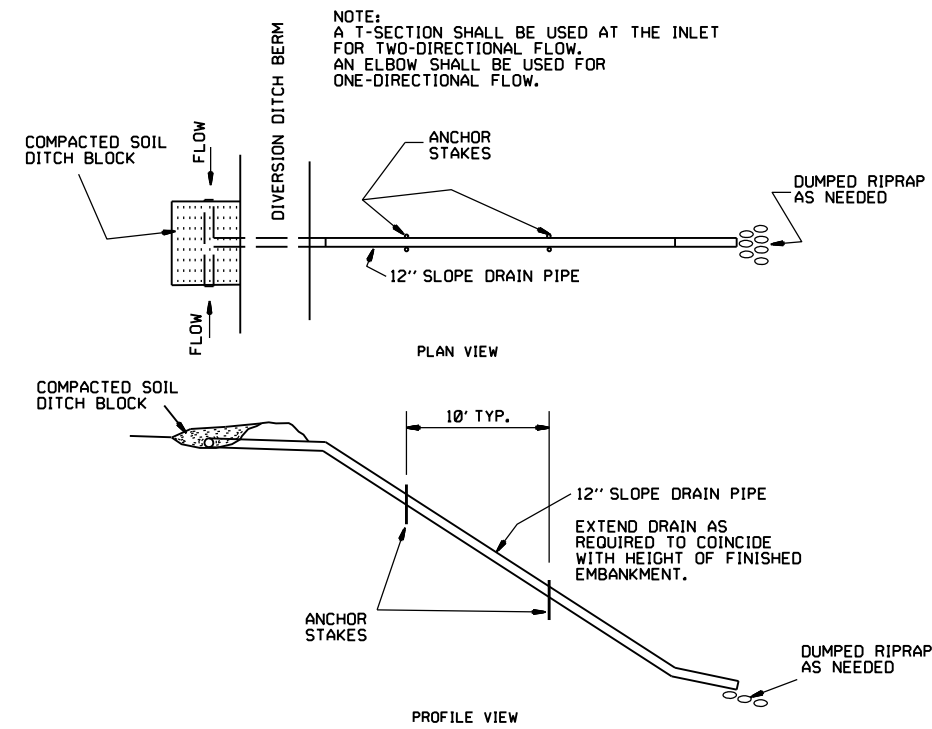
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



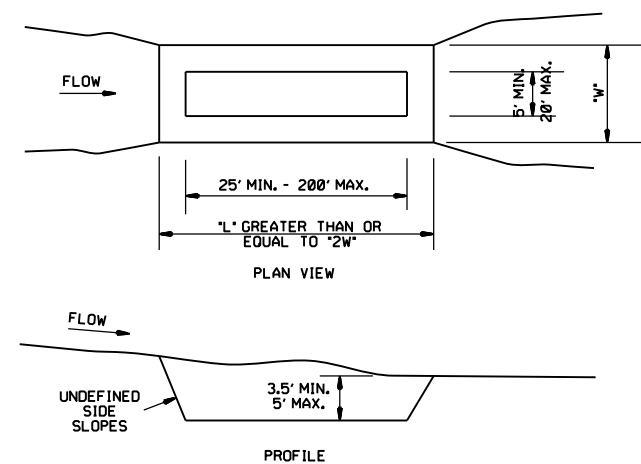
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



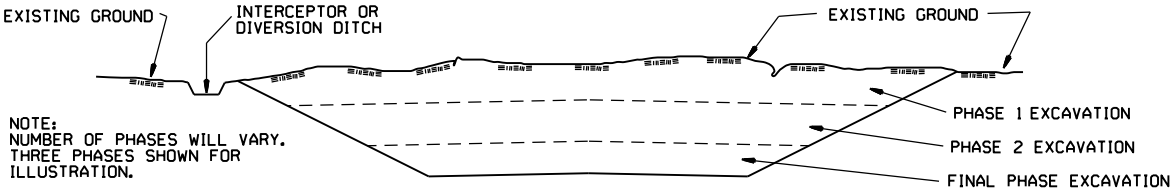
SEDIMENT BASIN (E-14)

| | | | |
|--------|---|--------|-----------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | TEMPORARY EROSION CONTROL DEVICES |
| | | | STANDARD DRAWING TEC-2 |
| 6-2-94 | Revised E-8 & E-12; Added E-14 & Deleted E-13 | | |
| 4-1-93 | ISSUED | | |
| DATE | REVISION | FILMED | |

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

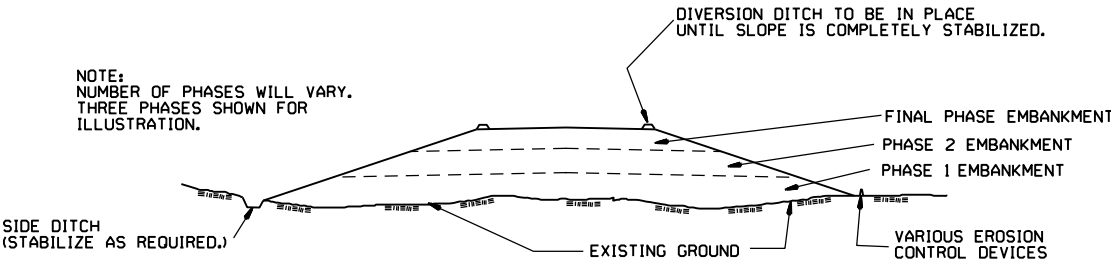


GENERAL NOTE

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

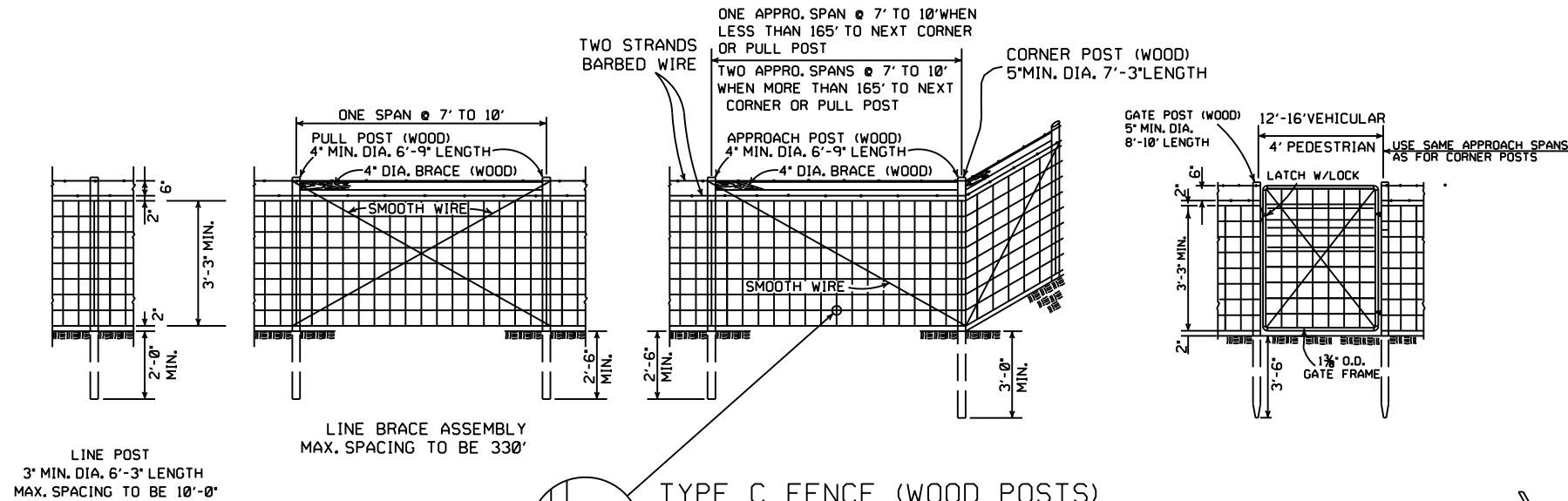


GENERAL NOTE

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.

| | | | |
|----------|--------------------|--------|-----------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | TEMPORARY EROSION CONTROL DEVICES |
| 11-03-94 | CORRECTED SPELLING | | STANDARD DRAWING TEC-3 |
| 6-2-94 | Drawn & Issued | 6-2-94 | |
| DATE | REVISION | FILMED | |



GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.

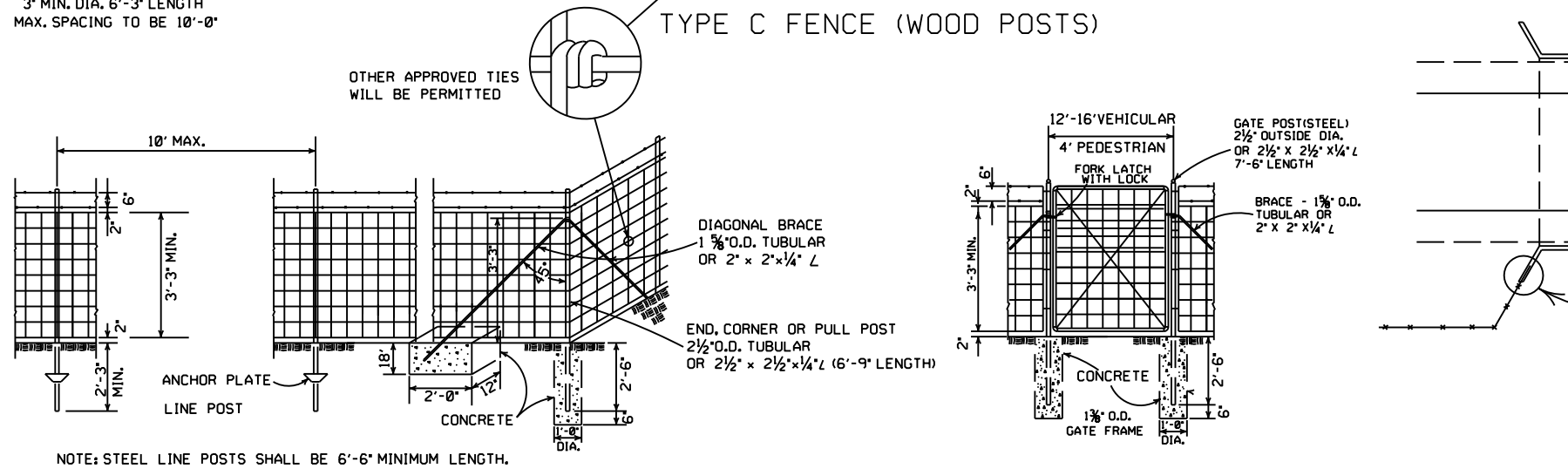
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".

TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

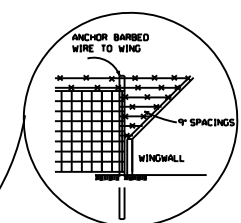
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.



NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



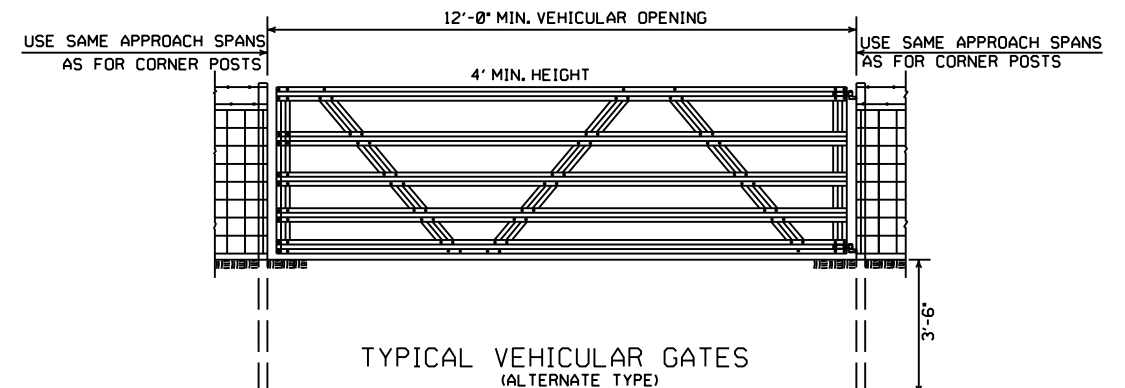
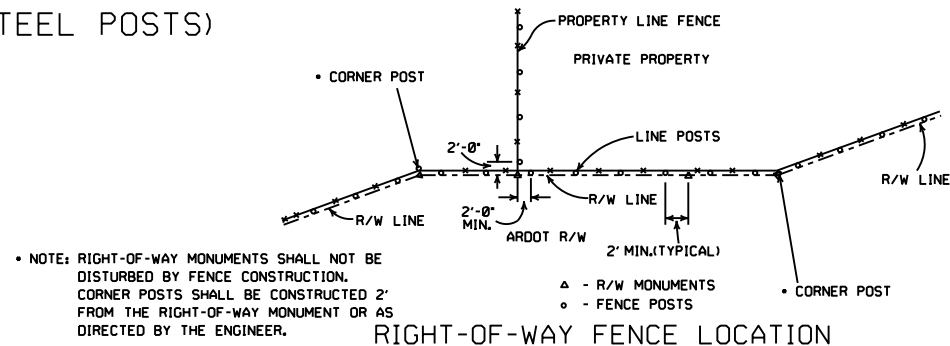
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

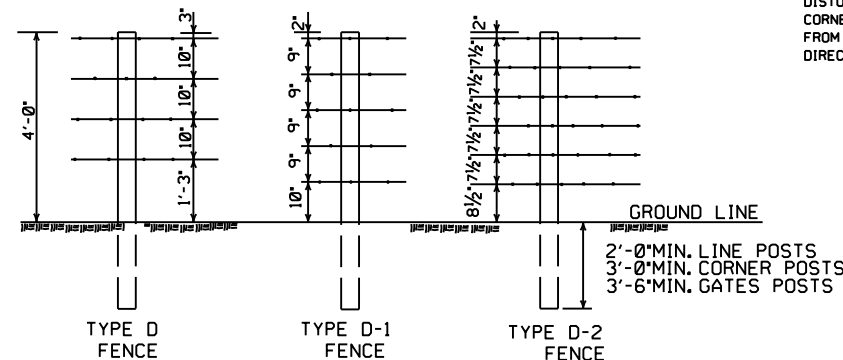
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

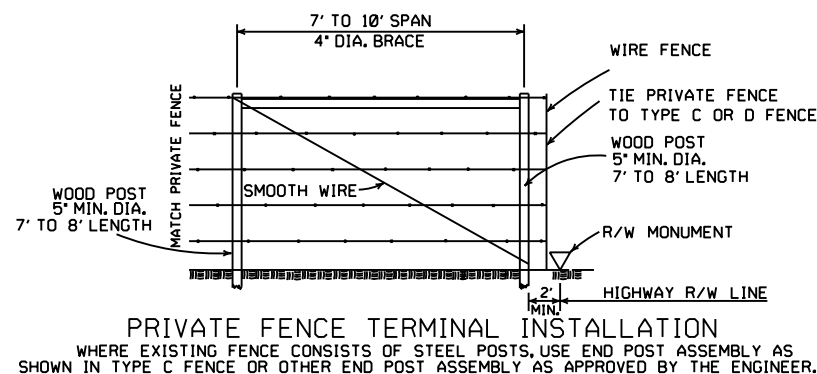


OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

- 4 STRANDS BARBED WIRE (D)
- 5 STRANDS BARBED WIRE (D-1)
- 6 STRANDS BARBED WIRE (D-2)



NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



| | | |
|----------|-----------------------------------|--------------|
| 8-22-02 | REVISED GENERAL NOTES | |
| 10-18-96 | REVISED AASHTO | |
| 11-22-95 | REVISED R-O-W LOCATION DETAIL | |
| 6-2-94 | REVISED BARB WIRE AND | 6-2-94 |
| | ADDED CORNER POST NOTES | |
| 8-5-93 | REVISED R/W INSTALLATION FENCE | 8-5-93 |
| 10-1-92 | ADDED STAPLE NOTE | 10-1-92 |
| 8-15-91 | ADDED TYPE D-2 FENCE | 8-15-91 |
| 11-30-89 | DELETED CLASS CONCRETE | 11-30-89 |
| 7-15-88 | ADDED SPLICE NOTE | 700-7-15-88 |
| 10-30-87 | GENERAL REVISIONS | 549-10-30-87 |
| 11-1-84 | MAX. POST SPACING MIN. WIRE GAUGE | 507-11-1-84 |
| 1-4-83 | MIN. DIA. LINE POST | 648-1-4-83 |
| 3-2-81 | TOLERANCE FOR POST LENGTH | 722-3-2-81 |
| 12-1-72 | ADDED D-1 & FENCE INSTALLATION | 564-12-1-72 |
| 10-2-72 | REVISED AND REDRAWN | 540-10-2-72 |
| DATE | REVISION | FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4